

EXHIBIT 8



FULLY EXECUTED
Purchase Order No: 4300679725
Original PO Effective Date: 01/27/2021
PO Issue Date: **01/28/2021**
Valid From: 02/01/2021 To 01/31/2026

Your SAP Vendor #: 362040

Supplier Name/Address:
AKSIA LLC
599 LEXINGTON AVE FL 37
NEW YORK NY 10022-6152 US

Supplier Phone Number: 212-710-5779

Purchasing Agent

Name: Cathy Gusler
Phone: 717-720-4889
Fax: 717-783-8760

Please Deliver To:
PSERS
5 N 5th Street, Third Floor
Harrisburg PA 17101-1905 US

Please Bill To:
Save time, reduce cost, get paid faster:
Email PDF invoice to 69180@pa.gov
<https://www.budget.pa.gov/Programs/Pages/e-Invoicing.aspx>

Or mail paper invoice to:
Commonwealth of Pennsylvania
PO Box 69180, Harrisburg, PA 17106

Purchase Order Description:
Aksia Hedge Fund 2020-1

This Purchase Order is comprised of: The above-referenced Solicitation, the Suppliers Bid or Proposal, and any documents attached to this Purchase Order or incorporated by reference.

Suppliers must provide four mandatory elements on PO invoices: PO Number, Invoice Date, Invoice Number, and Invoice Gross Amount. Failure to comply will result in the return of the invoice. Additional optional information such as supplier name, address, remit to information and PO Line Item information will improve invoice processing.

Item	Material/Service Desc	Qty	UOM	Delivery Date	Net Price	Price Unit	Total
1	Hedge Fund & Private Credit Consulting	4.000	Each	02/01/2021	212,500.00	1	850,000.00
Item Text Vendor to provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services for the period 02/01/2021 thru 01/31/2022.							
2	Special Services	4.000	Each	02/01/2021	62,500.00	1	250,000.00
Item Text Vendor may complete special projects and/or services upon terms and conditions mutually agreed upon by the Vendor and PSERS during the period 2/01/2021 thru 1/31/2022.							

Information:

Total Amount:
SEE LAST PAGE FOR TOTAL OF ALL ITEMS

Currency: USD

Supplier's Signature _____

Printed Name _____

Title _____

Date _____



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Supplier Name:
AKSIA LLC

Item	Material/Service Desc	Qty	UOM	Delivery Date	Net Price	Price Unit	Total
3	Hedge Fund & Private Credit Consulting	4.000	Each	02/01/2022	200,000.00	1	800,000.00
Item Text Vendor to provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services for the period 02/01/2022 thru 01/31/2023.							
4	Special Services	4.000	Each	02/01/2022	62,500.00	1	250,000.00
Item Text Vendor may complete special projects and/or services upon terms and conditions mutually agreed upon by the Vendor and PSERS during the period 2/01/2022 thru 1/31/2023.							
5	Hedge Fund & Private Credit Consulting	4.000	Each	02/01/2023	200,000.00	1	800,000.00
Item Text Vendor to provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services for the period 02/01/2023 thru 01/31/2024.							
6	Special Services	4.000	Each	02/01/2023	62,500.00	1	250,000.00
Item Text Vendor may complete special projects and/or services upon terms and conditions mutually agreed upon by the Vendor and PSERS during the period 2/01/2023 thru 1/31/2024.							
7	Hedge Fund & Private Credit Consulting	4.000	Each	02/01/2024	200,000.00	1	800,000.00
Item Text Vendor to provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services for the period 02/01/2024 thru 01/31/2025.							
8	Special Services	4.000	Each	02/01/2024	62,500.00	1	250,000.00
Item Text Vendor may complete special projects and/or services upon terms and conditions mutually agreed upon by the Vendor and PSERS during the period 2/01/2024 thru 1/31/2025.							

Information:

Total Amount:
SEE LAST PAGE FOR TOTAL OF ALL ITEMS

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AKSIA LLC

Item	Material/Service Desc	Qty	UOM	Delivery Date	Net Price	Price Unit	Total
9	Hedge Fund & Private Credit Consulting	4.000	Each	02/01/2025	200,000.00	1	800,000.00

Item Text

Vendor to provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services for the period 02/01/2025 thru 01/31/2026.

10	Special Services	4.000	Each	02/01/2025	62,500.00	1	250,000.00
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Item Text

Vendor may complete special projects and/or services upon terms and conditions mutually agreed upon by the Vendor and PSERS during the period 2/01/2025 thru 1/31/2026.

General Requirements for all Items:**Header Text**

Vendor to provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services.

The following documents are incorporated by reference and made part of this Purchase Order:

- Rider I – Purchase Order Terms and Conditions (attached hereto and signed by PSERS and Aksia)
- Rider II – Information Security Addendum (attached to Rider I)
- Rider III – Commonwealth of Pennsylvania Standard Terms & Conditions
- Rider IV – Travel Expense Quarterly Report - (attached hereto)
- Rider V – PSERS RFP 2020-1
- Rider VI – Aksia's Technical Proposal
- Aksia's Cost Proposal as amended by the attached 5/5/2020 email

No further information for this PO.

Information:

Total Amount:
5,300,000.00

Currency: USD

PURCHASE ORDER
TERMS AND CONDITIONS
RIDER I

Pursuant to purchase order number 4300679725 ("Purchase Order"), Aksia LLC (the "CONSULTANT") agrees to perform the services set forth therein, those set forth below, those set forth in its Proposal of April 8, 2020, which is attached to the Purchase Order as Rider VI and incorporated therein by reference, and those set forth in the Public School Employees' Retirement Board ("Board") transacting business as the Public School Employees' Retirement System's ("PSERS") Request for Proposal ("RFP") dated March 4, 2020, PSERS RFP 2020-1, which is attached to the Purchase Order as Rider V and incorporated therein by reference.

A. In providing Consulting Services for the Fund's Hedge Fund and Private Credit portfolios, the CONSULTANT will:

1. Conduct a comprehensive review and analysis of investment objectives, policies, asset allocation, and portfolio structure, inclusive of defining an investable risk beta portfolio, and recommend changes, if appropriate.
2. Review the adequacy of PSERS' Investment Office Professionals and resources and make recommendations regarding PSERS' Investment Office Professionals and resources changes, if any.
3. Prepare a written annual, 3-year and 10-year investment plan by February 1 of each calendar year for PSERS' hedge fund and private credit allocations.
4. Prepare and deliver, by March 1 of each year, an annual written report that contains a comparative analysis of PSERS' hedge fund and private credit results with the annual investment plan provided for in subsection 3.
5. Recommend suitable investment opportunities and practical implementation methods; research supporting such recommendations must have been completed within the prior 12 months.
6. Recommend appropriate investment strategies, tactics, procedures, and practices.
7. Review and make recommendations regarding the guidelines applicable to the hedge fund and private credit allocations at least annually.
8. Maintain a disciplined and comprehensive process to screen institutional quality managers for consideration by PSERS.
9. Provide PSERS with information on high conviction emergent managers at the earliest possible juncture to permit PSERS to secure capacity and negotiate terms with promising emergent managers.

10. Assist PSERS' Investment Office Professionals in conducting investment manager searches and facilitate the hiring of suitable institutional quality managers, including
 - a. providing opportunities and expense reimbursement for PSERS to jointly meet and evaluate new managers at industry conferences;
 - b. providing a list of potential institutional quality managers appropriate for the mandate being considered;
 - c. conducting interviews with potential managers at PSERS;
 - d. conducting on-site due diligence meetings with potential managers prior to their selection; and
 - e. assisting with the contract/fee negotiations.
11. Assist the Board and PSERS' Investment Office Professionals in identification of new investment opportunities, including in-depth due diligence covering areas including investment strategy, personnel, risk management, operations (including pricing, independent administrator, and independent auditor), infrastructure, regulatory and compliance reviews, etc. Any recommendation for investment will be supported by appropriate written due diligence summaries.
12. Provide on-going monitoring and oversight reports as requested for PSERS' hedge fund and private credit investment managers, including:
 - a. advance notice to PSERS of in-person meetings with investment managers in the Fund's hedge fund and private credit portfolios;
 - b. analysis of each manager's absolute and relative performance in relation to benchmarks, investment objectives, and peer groups, including analysis of ex-post risk-adjusted performance;
 - c. an analysis of attribution, holdings, style, and risk;
 - d. updated research on each investment manager in the Fund's portfolio updated at least once every 18 months to include a review of investment performance, process, and the manager's organization;
 - e. conduct on-site investment and operational due diligence meetings with current investment managers a minimum of every three years;
 - f. advice on manager retention/termination; and
 - g. assist in developing a formal manager review process.
13. Assist PSERS' Investment Office Professionals in developing liquidity schedules, analysis of cash flow, and recommendations on redemptions.
14. Recommend a performance and risk benchmarks for the total hedge fund and private credit allocations as well as individual hedge fund and private credit portfolios. Reconcile CFs, NAVs, and other fund details.
15. Collect and compile underlying investment exposure details (quarterly), if applicable.

16. Collect details on fees and profit sharing on a quarterly basis and maintain ITD data.
17. Calculate performance in a variety of ways (portfolio, region, strategy, currency, industry, vintage year, etc.).
18. Provide currency exposure on the underlying investments.
19. Prepare detailed quarterly and annual reporting (confidential and public versions).
20. Prepare quarterly and annual PowerPoint slides to be presented to the Board, including but not limited to:
 - a. quarterly board report
 - b. underperforming funds
 - c. profit sharing and fees
 - d. contributors and detractors
21. Provide ADV monitoring.
22. Provide K-1 monitoring.
23. Conduct a quarterly audit of PSERS' year-end NAVs for each investment and compare that to PSERS' reported performance and multiple.
24. Verify placement agent fee offsets, if applicable.
25. Provide currency hedge analysis.
26. Provide research reports on asset allocation and investment issues, and provide description and evaluation of alternative approaches.
27. Provide information on market conditions and explain their impact on the Fund's investments.
28. Meet with the Board to report on investment matters. Generally, there are six regularly scheduled Board meetings annually. Special meetings may be scheduled as needed.
29. Present performance results to the Board quarterly, including relative results versus pre-established benchmarks, and the returns relative to the risks taken.
30. Provide access to CONSULTANT's investment research, including return, risk and correlation assumptions of various strategies and other information deemed relevant by PSERS, including CONSULTANT's manager database.

31. Provide and maintain a secure, client-facing, web-based platform that is frequently updated and continuously available to PSERS that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools, allowing PSERS to:

- a. formulate investment policy and implement strategies;
- b. develop asset allocation and rebalancing recommendations;
- c. select and evaluate managers;
- d. analyze and optimize managers; and,
- e. analyze the risk characteristics of individual managers and the portfolios as a whole.

It is expected that PSERS' historical performance data, by portfolio and composite, will be included and that the database will be updated on a monthly basis.

32. Provide on-site training to PSERS and the Board, as needed, but in no case more than two days in any one calendar year. PSERS reserves the right to videotape any training sessions for educational purposes.

33. The CONSULTANT will carry out other assignments that may be specified by PSERS and the Board.

B. In providing Risk Measurement and Performance Measurement Services for the Fund's portfolios that invest in hedge funds and private credit, the CONSULTANT will:

1. Prepare a written monthly report containing calculated total return (gross and net of fees) for each composite, and each individual portfolio, and compare PSERS' calculated data with benchmarks and with comparable data for a similar population of funds. Returns should be calculated for the following time periods: one month, three months, fiscal year, calendar year-to-date, 1-year, 3-year, 5-year, 10-year, 15-year, 20-year, 25-year, 30-year, and since inception.
2. Prepare a quarterly risk analysis report for each individual fund and for PSERS total hedge fund and private credit allocations. The risk analysis should include a variety of risk measures, including Sharpe and other statistically relevant ratios, skewness, kurtosis, volatility, correlations to a variety of market betas and other funds, VaR, scenario analysis, etc.
3. Prepare a written quarterly report containing the calculated total return (gross and net of fees) for the total hedge fund and private credit allocations, and each individual private credit and hedge fund, and compare PSERS calculated data with benchmarks and with data for a similar population of funds by asset class and portfolio management styles. Returns should be calculated for the following time periods: quarter, fiscal and

calendar year-to-date, 1-year, 3-year, 5-year, 10-year, 15-year, 20-year, 25-year, 30-year, and since inception.

4. Provide quarter, fiscal, and calendar year-to-date, 1-year, 3-year, 5-year, and 10-year quartile ranking reports of composite returns for PSERS' hedge fund and private credit allocations as well as individual hedge fund and private credit investment manager returns.
5. Reconcile performance with both individual fund managers as well as the custodian bank on a quarterly basis.
6. Create additional composites with historical returns for those composites as requested by PSERS.
7. Prepare ex-post risk statistics and analytics for the same time periods, to the degree of depth, including benchmark comparatives, and use the same performance data from the above. Ex-post risk statistics and analytics should be robust and inclusive of industry best practices risk information.
8. Provide reasonable assistance to PSERS in uploading the CONSULTANT's performance data to PSERS' proprietary or third-party investment system(s).

C. Terms and Conditions

1. The CONSULTANT's compensation for performing the above services shall be as set forth in the Purchase Order. The CONSULTANT acknowledges and agrees that no further fees are payable by PSERS for the services rendered under the Purchase Order.
2. The CONSULTANT shall hold the Commonwealth of Pennsylvania, the Board, PSERS, the Fund, their beneficiaries, directors, officers, agents, and employees harmless from and indemnify the Commonwealth of Pennsylvania, the Board, PSERS, the Fund, their beneficiaries, directors, officers, agents, and employees against any and all claims, demands, actions, or liability of any nature, including attorneys' fees and court costs, based upon or arising out of acts or omissions constituting bad faith, willful misfeasance, negligence, or the reckless disregard of duties in connection with any services performed, or the failure to perform services, by the CONSULTANT, its directors, officers, employees, and agents under the Purchase Order and shall, at the request of PSERS, defend at the CONSULTANT's expense actions brought against the Commonwealth of Pennsylvania, the Board, PSERS and/or the Fund that result from acts or omissions constituting bad faith, willful misfeasance, negligence, and/or reckless disregard of CONSULTANT's duties, and the costs of such defense shall be borne by the CONSULTANT and shall not constitute any expense of, nor shall be paid out of, the Fund, Board, PSERS or Commonwealth of Pennsylvania assets. This provision shall supersede Section 1.21 "Hold Harmless Provision" of the Purchase Order Standard Terms and Conditions.

3. PSERS acknowledges that MAX and Manager Portal (the “Software”) is provided under the Purchase Order solely for PSERS’ use. PSERS shall not provide any other organization with access to the Software, or with reports or any other information obtained through it, except that PSERS may provide any asset manager who manages the Fund’s assets with copies of holdings, transaction and performance information that relate to the assets under management by that manager. For the avoidance of doubt, PSERS shall not provide any asset manager with a copy of any CONSULTANT due diligence report. Notwithstanding the foregoing, PSERS shall be authorized to provide access to and copies of the reports and any other information obtained through the Software and the services performed under the Purchase Order to the public and any other organization as may be required under the Right to Know Law and other similar laws, provided that CONSULTANT has been provided with reasonable advance notice of PSERS’ intent to disclose such reports and/or information and an opportunity to contest the disclosure of information.

The Purchase Order entitles PSERS to use as many copies of the Software as it shall reasonably require during the term of the Purchase Order. CONSULTANT retains all title and ownership of the Software, including the original disk copy and all subsequent copies of the Software, regardless of the form or media in or on which the original and other copies may exist. The Purchase Order is not a sale of the original Software or any copy.

CONSULTANT retains all title and ownership of the software and accompanying documentation, including the original disk copy and all subsequent copies of the software and documentation, regardless of the form or media in or on which the original and other copies may exist. PSERS agrees upon termination of the Purchase Order to return to CONSULTANT all software and portions and copies thereof, documentation and other equipment furnished with the service.

All reports specifically customized or developed under the Purchase Order for PSERS shall become the property of PSERS. For the avoidance of doubt, the CONSULTANT’s due diligence reports shall not be deemed “specifically customized or developed” for PSERS, provided that PSERS shall have the right to retain and use all due diligence reports that were delivered under this contract.

CONSULTANT shall defend, at its expense, any action brought against PSERS arising out of any claim that PSERS’ use of the services provided hereunder infringes upon the intellectual property rights of any third party; provided further that CONSULTANT shall indemnify and hold PSERS harmless against any and all damages and costs awarded against PSERS by final court order or fully executed settlement agreement.

The Software and accompanying written materials (the “Documentation”) are owned by CONSULTANT and are protected by United States copyright laws and international treaty provisions. Therefore, PSERS must treat the Software and Documentation like any other copyrighted material. Unauthorized copying of the Software, including Software that has been modified, merged, or included with other software, or the

Documentation is expressly forbidden. Subject to these restrictions, PSERS may make a reasonable number of copies of the Software solely for back-up purposes.

PSERS may not distribute copies of the Software or Documentation to others, nor may PSERS rent or lease the Software or the Documentation or transfer control of the Software or Documentation to a third party without CONSULTANT's prior express written consent. In addition, PSERS may not modify, adapt, translate, reverse engineer, decompile, disassemble, or create derivative works based on the Software without CONSULTANT's prior express written consent.

CONSULTANT warrants that (i) it has the right to provide PSERS with access to the Software in accordance with the Purchase Order, and (ii) the Software shall conform to the written documentation and shall operate in accordance with CONSULTANT's written representations to PSERS.

Neither party shall be liable to the other party for any loss, injury, delay, damages or other casualties suffered by the other due to strikes, riots, storms, fires, or acts of God or government, beyond the reasonable control of such party.

4. The CONSULTANT shall not enter into any agreement by or on behalf of PSERS that (i) is binding on PSERS or allows, either expressly or by operation of law, recourse to PSERS, and (ii) creates any actual or potential liability on the part of PSERS that exceeds the scope of authority delegated to the CONSULTANT under the Purchase Order, or (iii) waives any of PSERS' rights, defenses, causes of action, or immunities. Liabilities that are not authorized by PSERS and prohibited by this Section D (4) include, without limitation, any obligation on the part of PSERS to indemnify a third party or to pay attorney fees, legal expenses, penalties, or liquidated damages.
5. The CONSULTANT shall maintain during the term of the Purchase Order a policy of errors and omissions insurance for the protection of the Fund with a limit of liability of at least \$10,000,000, to cover the CONSULTANT, its officers, and its affiliates to the extent any affiliate performs services under the Purchase Order. Unless otherwise approved by PSERS, the maximum deductible on the errors and omissions policy shall be no greater than \$1,000,000. The CONSULTANT shall submit copies of the actual policies of said insurance as directed by PSERS. CONSULTANT shall thereafter maintain annual filings of current certificates of insurance with PSERS during the term of the Purchase Order and any extension thereof. If the CONSULTANT changes insurance carriers for insurance required hereunder, CONSULTANT shall submit copies of the actual policies of said insurance as directed by PSERS. The errors and omissions policy shall contain a provision or endorsement that coverage afforded thereunder shall not be canceled or changed until the underwriter has furnished PSERS at least 30 days' prior written notice of any cancellation or change. PSERS may, in its discretion, require such changes with respect to insurance coverage as it deems appropriate for the protection of the PSERS' Fund by giving written notice of such changes to the CONSULTANT at least 30 days in advance of the effective date for such changes.

6. The CONSULTANT represents and confirms that it is duly registered and in good standing as an investment advisor under the Investment Advisers Act of 1940 or is exempt therefrom (and will maintain such registration or exemption). If registered pursuant to said Act, the CONSULTANT has furnished to PSERS Parts 1 and 2 of the CONSULTANT's current Form ADV filed with the Securities and Exchange Commission pursuant to Section 203(c) of the Investment Advisers Act of 1940.
7. The CONSULTANT shall perform its services under the Purchase Order as an independent contractor, and CONSULTANT acknowledges that it maintains Workers' Compensation Insurance and shall accept full responsibility for the payments of premiums for Workers' Compensation Insurance and Social Security, as well as all income tax deductions and other taxes or payroll deductions required by law for itself for performing services specified by the Purchase Order.
8. The CONSULTANT shall provide immediate written notice to PSERS of any material change in the CONSULTANT's status, including, without limitation, change in directors, officers, or employees who consult on PSERS' account; modification of the business organization; material change in SEC or other government or private registration, accreditation, or licensing; material deterioration of financial condition including but not limited to the filing of petition in bankruptcy; the CONSULTANT's awareness that its representations and warranties herein cease to be true; and litigation alleging the CONSULTANT's negligence or fraud.
9. The CONSULTANT covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services under the Purchase Order. CONSULTANT further covenants that, in the performance of the Purchase Order, it will not knowingly engage any other person having such interest.
10. It is agreed between the parties to the Purchase Order that the Purchase Order contemplates the rendition of expert professional services, and, therefore, neither the Purchase Order, nor any interest therein, nor any claim arising thereunder shall be transferred or assigned by either party to any other party or parties.
11. The performance of work under the Purchase Order may be terminated by the BOARD in whole or in part, from time to time. Any such termination shall be effected by delivery to the CONSULTANT of a written Notice of Termination thirty (30) days prior to termination specifying the extent to which performance of the work under the contract is terminated and the date on which such termination becomes effective. In the event of termination, fees for services shall be prorated and paid or repaid. Such termination shall not relieve CONSULTANT of any liability that may be incurred for its activities in connection with the Purchase Order prior to said termination. Likewise, CONSULTANT shall have the right to terminate the Purchase Order with thirty (30) days' written notice to PSERS. Also, under these circumstances, the fees for services shall be prorated and paid or repaid.

12. The CONSULTANT shall not publish or otherwise disclose, except to PSERS and except matters of public record, any information or data obtained hereunder from private individuals, organizations, or public agencies, in a publication whereby the information or data furnished by or about any particular person or establishment can be identified as relating to PSERS or its responsibilities, except with the consent of such person or establishment.
13. The CONSULTANT agrees that any specific plans, material, records, etc. specifically customized or developed for PSERS under the Purchase Order remain the property of PSERS, and reproduction or duplication of such specifically customized or developed materials may be done only with the approval of PSERS. For the avoidance of doubt, the CONSULTANT's due diligence reports shall not be deemed "specifically customized or developed" for PSERS, provided that PSERS shall have the right to retain and use all due diligence reports that were delivered under this contract. This provision shall supersede Section 1.10 "Ownership Rights" of the Purchase Order Standard Terms and Conditions.
14. No member of the General Assembly of the Commonwealth of Pennsylvania or any individual employed by the Commonwealth shall be admitted to any share or part of the Purchase Order, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to the Purchase Order if made with a corporation for its general benefit.
15. The CONSULTANT shall comply with the Standard Contract Terms and Conditions attached to the Purchase Order as Rider III and incorporated therein by reference, which provisions may be modified from time to time with written notice to CONSULTANT.
16. CONSULTANT shall maintain such records, books, and accounts pertaining to services and payments under the Purchase Order in accordance with generally accepted accounting principles consistently applied. All such records, books, and accounts shall be maintained and preserved during the term of the Purchase Order and any extension thereof and for four years thereafter. During such period, PSERS, or any other department or representative of the Commonwealth of Pennsylvania, from time to time upon reasonable notice, shall have the right to inspect, duplicate, and audit such records, books, and accounts for all purposes authorized and permitted by law. CONSULTANT may preserve such records, books, and accounts in original form or on microfilm, magnetic tape, or any other generally recognized and accepted process.
17. Any notice, demand, direction, instruction, or other communication required or permitted hereunder shall be confirmed in writing and shall be sufficiently given for all purposes when sent (a) by certified or registered U.S. mail, postage prepaid, (b) by a nationally recognized courier service that maintains verification of actual delivery, (c) by facsimile or email, with a copy sent by first class U.S. mail (provided that if the date of dispatch is not a working day, the facsimile or email shall be deemed to have been received at the opening of business of the addressee on the next working day), or (d)

by delivering the same in person to any party at the following addresses or such other addresses as may be designated in writing from time to time by the parties:

PSERS: James H. Grossman, Jr., Chief Investment Officer
Pennsylvania, Public School Employees'
Retirement System
5 North Fifth Street
Harrisburg, Pennsylvania 17101

CONSULTANT: Jim Vos
599 Lexington Avenue, 37th Floor
New York, NY 10022

As to legal notices, the same address with a copy to
Attn: General Counsel or [REDACTED]

18. PSERS reserves all immunities, defenses, rights, or actions arising out of its status as a sovereign entity or from the Eleventh Amendment to the United States Constitution. No provision of the Purchase Order shall be construed as a waiver of any such immunities, defenses, rights, or actions.
19. Execution of the Purchase Order constitutes certification by CONSULTANT that (a) the number appearing on the Purchase Order is CONSULTANT's correct taxpayer identification number, and (b) CONSULTANT is not subject to backup withholding because (i) CONSULTANT is exempt from backup withholding, (ii) CONSULTANT has not been notified by the IRS that it is subject to backup withholding as a result of a failure to report all interest or dividends, or (iii), the IRS has notified CONSULTANT that it is no longer subject to backup withholding.
20. The Purchase Order shall be governed by the laws of the Commonwealth of Pennsylvania and, for all purposes, shall be construed in accordance with said laws and the decisions of the courts of the Commonwealth of Pennsylvania therein, and shall be binding upon the successors and assigns of the parties thereto, and constitutes the entire agreement between PSERS and CONSULTANT with respect to the consulting services to be furnished as provided herein. No amendment or modification changing the scope or terms of the Purchase Order shall have any force or effect unless it is in writing and approved by both parties.
21. If any one or more of the covenants, agreements, provisions, or terms of the Purchase Order shall be held contrary to any express provision of law, or contrary to the policy of express law though not expressly prohibited, or against public policy, or shall for any reason whatsoever be held invalid, then such covenants, agreements, provisions, or terms shall be deemed severable from the remaining covenants, agreements, provisions, or terms of the Purchase Order and shall in no way affect the validity or enforceability of the remainder of the Purchase Order or the rights of the parties thereto.

22. CONSULTANT shall reimburse PSERS, or pay directly on PSERS' behalf, the reasonable travel expenses actually incurred by PSERS, if any, for each contract year (i) for travel to CONSULTANT's location for due diligence and/or to discuss performance results, economic outlook, investment strategy, organization changes and other pertinent matters, (ii) to attend investment conferences, training, seminars or similar events sponsored by CONSULTANT or any affiliate of CONSULTANT, and (iii) to attend meetings and interviews at existing or prospective investment manager sites. Reimbursable or directly payable expenses shall include airfare, automobile rental, lodging, meals, CONSULTANT -sponsored meeting registration fees, and other travel-related expenses at maximum allowance rates established by the Commonwealth Management Directive 230.10 as revised, Travel and Subsistence Allowances. The reimbursable or directly payable expenses for each of (i) or (ii), above, shall not exceed \$35,000 per calendar year. PSERS shall submit a properly documented claim for reimbursement or direct payment of such travel expenses, which CONSULTANT shall pay within 30 days after receipt. CONSULTANT shall submit the Travel Expense Quarterly Report, which is attached to the Purchase Order and incorporated therein as Rider IV, to PSERS within six weeks of the end of each calendar quarter, specifying for the quarter then ended: (a) the total amount reimbursed and/or paid to PSERS for travel and related expenses, and (b) for each item reimbursed and/or paid, the name and address of the provider, its description, and the amount.
23. CONSULTANT shall perform services under the Purchase Order subject to the exercise of that degree of judgment and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence who are experts in such matters, exercise in the management of like matters, not in regard to speculation but in regard to the permanent disposition of the Fund, considering the probable income to be derived therefrom as well as the probable safety of the invested capital. CONSULTANT acknowledges that it is a "fiduciary" with respect to PSERS and the Fund as that term is defined in the Employee Retirement Income Security Act of 1974 (ERISA), regardless of the applicability of ERISA to the Purchase Order.
24. The services of the CONSULTANT are not exclusive, and the CONSULTANT provides similar services to other clients.
25. The CONSULTANT will not vote proxies on behalf of PSERS and PSERS will retain all voting authority with respect to any security owned by it.
26. Each of the parties to this Agreement represents that it is duly authorized and empowered to execute, deliver and perform this Agreement, that such action does not materially conflict with or violate any provision of law, rule or regulation, contract, deed of trust, or other instrument to which it is a party or to which any of its property is subject, and that this Agreement is a valid and binding obligation, enforceable against such party in accordance with its terms.

27. Special Projects: Subject to mutual agreement by PSERS and the CONSULTANT, at the request of PSERS and detailed in applicable statements of work, the CONSULTANT may complete special projects and/or services for PSERS outside the scope of the Services to be performed by the CONSULTANT pursuant to this Agreement upon terms and conditions to be mutually agreed upon by PSERS and the CONSULTANT, including but not limited to an agreement on additional fees, expenses and/or costs to be charged by the CONSULTANT to PSERS for such special projects and/or services. The CONSULTANT shall separately invoice for any special project and/or service upon completion of a special project and/or service, unless otherwise agreed upon by the parties, and such invoices will be paid in full by PSERS within 45 days of receipt. The additional fees, expenses and/or costs of any special projects and/or services performed by the CONSULTANT pursuant to this Section shall not exceed \$250,000 per annum.
28. The CONSULTANT agrees that regardless of whether it is subject to the reporting requirements set forth in 25 P.S. § 3260a, it has submitted to PSERS' Executive Director a copy of its current report to the Secretary of the Commonwealth of Pennsylvania, or if not required then a report as though it were required, and hereby agrees to submit upon request by PSERS' a copy of each successive report to PSERS' Executive Director by February 15 of each year during the term of this Agreement.
29. The CONSULTANT hereby agrees and acknowledges that any legal proceeding involving any contract claim asserted against PSERS arising out of the Agreement may only be brought before and subject to the exclusive jurisdiction of the Board of Claims of the Commonwealth of Pennsylvania pursuant to 62 Pa. C.S. §§1721-1726, and that such proceeding shall be governed by the procedural rules and laws of the Commonwealth of Pennsylvania, without regard to the principles of conflicts of law.

(remainder of page intentionally left blank)

IN WITNESS WHEREOF, the CONSULTANT and PSERS have executed this Agreement as of the effective date of the Purchase Order.

Pennsylvania Public School Employees' Retirement System

BY:  _____
Name: CC1D0979F2E5408... JOSEPH E. WASIAK, JR.
Title: Deputy Executive Director
of Administration

By:  _____
Name: BE92491DCED44C1... Glen R. Grell
Title: Executive Director

Date Signed: 12/8/2020 _____

Aksia LLC

BY:  _____
Name: Jim Vos
Title: Chief Executive Officer

Date Signed: December 1, 2020 _____

Information Security Addendum
Rider II

This Information Security Addendum (“Addendum”) made as of the Effective Date, by and between the Commonwealth of Pennsylvania, Public School Employees’ Retirement System (“PSERS”) and Aksia LLC (“Contractor”) sets forth additional terms and conditions with respect to information security applicable to purchase order No. 4300679725 (the “Agreement”). The terms and conditions agreed to in this Addendum are the minimum required for the Agreement and shall take precedence over any term of the Agreement which attempts to reduce, waive or remove these terms and conditions.

WHEREAS, PSERS wishes to disclose certain information to Contractor, and Contractor is authorized to collect and/or use certain information, pursuant to the terms of the Agreement; and

WHEREAS, PSERS and Contractor intend to protect the privacy and provide for the confidentiality of such information.

NOW THEREFORE, in consideration of the foregoing recitals, which are incorporated herein, and the mutual promises and undertakings hereinafter set forth, and the exchange of information pursuant to the Agreement and this Addendum, the parties agree as follows:

I. Definitions

- A. Authorized Persons. Authorized Persons include Contractor’s employees and contractors who have a specific need for such access in order to perform Contractor’s services for PSERS.
- B. Industry Standards. Industry Standards include National Institute of Standards and Technology (NIST) 800 Series, NIST Cybersecurity Framework and ISO 27001/2, or their generally recognized equivalents.
- C. PSERS Data. PSERS Data is any data or information that Contractor creates, obtains, accesses, receives (from PSERS or on behalf of PSERS), hosts or uses in the course of its performance of the Agreement;
- D. Public Data. Public Data means any specific information or data, regardless of form or format, that PSERS has actively and intentionally disclosed, disseminated, or made available to the public.
- E. Multi-Factor Authentication: The use of two or more of the Authentication Methods listed below. Two-factor would employ two of the methods; three-factor would employ one each of all three methods.
 - i. Something you know (e.g. PIN, password, shared information)
 - ii. Something you possess (e.g. token, smart card, digital certificate)
 - iii. Something you are (biometrics – e.g. fingerprint, voice, iris, face).
- F. Services. The services pursuant to the Agreement and any Statement of Work (“SOW”).

- G. Documentation. All documentation related to the Services, including but not limited to the SOW.
- H. PSERS Confidential Information. PSERS Data that is not Public Data, including but not limited to information containing personally identifiable information (“PII”) protected health information (“PHI”) and electronic protected health information (“ePHI”) as defined in HIPPA regulations, investment portfolio information and trade secrets. (For the avoidance of doubt, trade secrets include but are not limited to limited partnership agreements, side letters, private placement memoranda and similar information.)

II. Data Security.

- A. Compliance. Contractor shall comply with the Information Technology (“IT”) standards and policies issued by the Governor’s Office of Administration, Office for Information Technology (OA/OIT) (located at: <http://www.oa.pa.gov/Policies/Pages/itp.aspx>), including the accessibility standards set out in IT Bulletin ACC001, IT Accessibility Policy. The Contractor shall ensure that Services procured under this Contract comply with the applicable standards. In the event such standards change during Contractor’s performance, and the Commonwealth requests that Contractor comply with the changed standard, then any incremental costs incurred by Contractor to comply with such changes shall be paid for pursuant to a change order to the Contract.
- B. Data Protection. To the extent that Contractor is charged with creating, accessing, transmitting, maintaining, hosting or using PSERS’ Data under the Agreement, Contractor shall preserve the confidentiality, integrity and availability of PSERS’ Data by implementing and maintaining administrative, technical and physical controls that reasonably conform to Commonwealth of Pennsylvania IT Policies and Industry Standards. Implemented security controls shall provide a level of security which is commensurate with the sensitivity of the data to be protected.
- C. Data Use and Access. Contractor shall use PSERS’ Data only and exclusively to support the performance of services for PSERS under the Agreement and not for any other purpose. With the exception of Public Data, absent PSERS’ prior written consent, Contractor shall not at any time during or after the term of the Agreement disclose PSERS’ Data to any person, other than Authorized Persons and PSERS personnel in connection with the performance of the services (except as required by law). If such disclosure is required by law, Contractor shall notify PSERS prior to such disclosure, unless such notification is prohibited by law.
- D. Data Backup. Where appropriate to protect the integrity and availability of PSERS’ Data, Contractor shall maintain (and cause any third-party hosting company that it uses to maintain) a means to backup and recover PSERS’ Data in the event that PSERS’ Data is lost, corrupted or improperly destroyed. PSERS shall have the right to establish backup security for PSERS’ Data and to keep backup PSERS’ Data and PSERS’ Data files in its possession if it chooses.
- E. Return of PSERS’ Data. Contractor shall ensure that, upon request, PSERS can retrieve PSERS’ Data in the event the Contractor is unable to continue providing

the services under the Agreement due to termination of the Agreement or otherwise. In the event of a termination and upon PSERS' request, the Contractor will provide PSERS' Data in a mutually acceptable format.

- F. Destruction of PSERS' Data. Contractor shall erase, destroy, and/or render unrecoverable all PSERS' Data in Contractor's possession that is no longer required for the performance of its duties under the Agreement. Upon request, Contractor shall certify in writing that these actions have been completed within seven (7) days of PSERS' request. Notwithstanding the foregoing, Contractor shall be entitled to retain copies of all PSERS' Data in its records to ensure compliance with applicable law, rule or regulation.
- G. Effect of Termination. Unless directed otherwise by PSERS, upon termination of the Agreement for any reason, Contractor shall maintain PSERS' Data and continue to extend the protections of the Agreement and this Addendum to such information for a period of six months at which point it shall return and destroy all PSERS' Data received from PSERS (or created or received by Contractor on behalf of PSERS) regardless of form, and shall retain no copies of PSERS' Data except those copies the Contractor is required to retain by applicable law, rule or regulation. If return or destruction of PSERS' Data is not feasible, Contractor shall continue to extend the protections of the Agreement and this Addendum to such information and limit further use of PSERS' Data to those purposes that make the return or destruction of PSERS' Data infeasible.

III. Contractor Security.

- A. Information Security Program. For the term of the Agreement, Contractor agrees that it has and will maintain a formal information security program which is appropriate for the types of services that it provides. Such program is and will be consistent with Industry Standards.
- B. Contractor Personnel. Contractor agrees that it shall only use highly qualified personnel and contractors in performing the Agreement and, to the extent not prohibited by applicable law, shall require each to pass a background check.
- C. Acceptance of Acceptable Use Policy. Contractor shall ensure that all Contractor personnel, including employees and contractors, who access PSERS' network as a part of performing the Agreement, will agree to PSERS' Acceptable Use Policy as found in Management Directive 205.34, as it may be amended from time to time.
- D. Multi-Factor Authentication. For services exposed to the Internet, where sensitive information is stored, processed or transmitted, Contractor will provide Multi-Factor Authentication for user authentication to the web application via workstation and mobile browsers. If the service is provided via mobile application as well, that application must also be protected by Multi-Factor Authentication.
- E. Security Awareness Training. Contractor shall ensure its personnel and partners are provided cybersecurity awareness education and are adequately trained to perform their information security-related duties and responsibilities consistent with Commonwealth of Pennsylvania IT Policies.

IV. Security Incident and Breach Notification.

- A. Contractor agrees to notify PSERS upon learning of: (i) unauthorized access, loss, alteration, theft or corruption of PSERS' Confidential Information; (ii) any event that creates a substantial risk to the confidentiality, integrity or availability of PSERS' Data; (iii) a breach of any of Contractor's security obligations under this Addendum; or (iv) any other event requiring notification under applicable law. In such an instance, Contractor agrees to:
- i. Take such action as may be necessary to preserve forensic evidence and eliminate the cause of the risk or breach within Contractor's reasonable control. As soon as practicable after discovery, Contractor shall undertake a thorough forensic investigation of any compromise or improper use and provide PSERS all information necessary to enable PSERS to fully understand the nature and extent of the compromise or improper use to the extent known.
 - ii. And, notify PSERS by telephone at (717) 720-4699 and by e-mail at RA-PSISO@pa.gov regarding such an event without undue delay and in any event within 24 hours of discovery, and
 - iii. To the extent that the breach or incident was the result of acts or omissions constituting bad faith, willful misfeasance, negligence, or the reckless disregard of duties by Contractor:
 - a) assume the cost of informing all such affected individuals in accordance with applicable law, and
 - b) indemnify, hold harmless and defend PSERS and its trustees, officers, and employees from and against any claims, damages, or other harm related to such incident or breach.

B. Security Incident Investigations.

Contractor agrees to cooperate with PSERS in investigating a security incident, as declared by PSERS, and provide the name and contact information, of at least two (2) security contacts who will respond to PSERS in a timely manner, dependent on criticality, in the event that PSERS must investigate a security incident. The current security contacts are as follows:

Contact Names: _____
Phone Numbers: _____
Email Addresses: _____

V. Maintenance of Safeguards.

- A. Contractor shall maintain and follow Industry Standards with respect to any of PSERS' Confidential Information in Contractor's possession or control and protect such information against any loss, alteration, theft or corruption.
- B. At PSERS' request, Contractor shall provide PSERS with copies of its information security policies, processes, and procedures. Contractor will notify PSERS of any material changes to its policies, processes or procedures that relate to the security of PSERS' Confidential Information in Contractor's possession.

VI. Information Security Audit.

- A. PSERS shall have the right to review Contractor's information security program prior to the commencement of Services and from time to time during the Term of the Agreement. During the performance of the Services, on an ongoing basis annually and immediately in the event of a security incident, PSERS, including its professional advisors and auditors, at its own expense, shall be entitled to perform, or to have performed, an on-site assessment of Contractor's information security program.
- B. PSERS shall have the right to review Contractor's information security program through Contractor's annual submission to PSERS of its current SOC2 report, or similar report to the extent applicable. The report must document an assessment conducted by a qualified, independent third party. Assessment scope must address the services provided to PSERS, including but not limited to related people, process and technology. PSERS acknowledges and agrees that due to the nature of Contractor's business, it is not required to obtain a SOC2 report.
- C. Upon PSERS' request, Contractor agrees to complete, within forty-five (45 days) of receipt of PSERS' request, an assessment questionnaire provided by PSERS regarding Contractor's information security program, including artifacts for a subset of controls.

VII. Application Security.

In the event the Contractor conducts application software development for PSERS, Contractor will either make source codes available for review by PSERS or will conduct source code scanning using a commercial security tool. Scans must be conducted annually and at any time significant code changes are made. Scan reports will be made available to PSERS within two weeks of execution. Contractor must disclose remediation timelines for high, medium and low risk security code defects. Scans must occur before code is implemented in production. High risk security code defects may not be implemented in production without written approval from either PSERS' Executive Director, Deputy Executive Director or Assistant Executive Director.

VIII. Compliance with Applicable State and Federal Law.

Contractor shall comply with all applicable federal, state, and local laws concerning data protection and privacy when handling PSERS' Data.

IX. Enforcing Compliance.

Contractor shall enforce and be responsible for compliance by all its personnel and contractors with the provisions of this Information Security Addendum and all other confidentiality obligations owed to PSERS.

X. Accommodation of Additional Protections.

Contractor agrees to comply with such additional protections as PSERS shall reasonably request.

XI. Termination.

A breach by Contractor of any provision of this Addendum, as reasonably determined by PSERS, shall constitute a material breach of the Agreement and shall provide grounds for immediate termination of the Agreement by PSERS pursuant to the Agreement.

XII. Indemnification.

Contractor shall indemnify, hold harmless and defend PSERS from and against all claims, losses, liabilities, damages, judgments, costs and other expenses, including PSERS's costs and attorney fees, incurred as a result of, or arising directly or indirectly out of or in connection with Contractor's acts or omissions constituting bad faith, willful misfeasance, negligence, or the reckless disregard of duties that results in Contractor's failure to meet any of its security obligations under this Addendum; and (ii) any claims, demands, awards, judgments, actions and proceedings made by any person or organization arising out of or in any way connected with Contractor's acts or omissions constituting bad faith, willful misfeasance, negligence, or the reckless disregard of duties under this Addendum. Limitations on Contractor's liability, regardless of conflicting language elsewhere in the Agreement, shall not apply to claims related to Contractor's breach of the information security sections of this Addendum.

XIII. Intellectual Property Infringement Indemnification.

Contractor shall indemnify, defend and hold PSERS harmless from any and all claims brought against PSERS alleging that the Services and/or Documentation or PSERS' use of the Services and/or Documentation constitutes a misappropriation or infringement of intellectual property ("IP") of any Third Party. Contractor agrees to be responsible for all costs or expenses, to include reasonable attorneys' fees awarded or resulting from any claim. PSERS shall, after receiving notice of a claim, advise Contractor of such notification. Limitations on Contractor's liability, regardless of conflicting language elsewhere in any Agreement, shall not apply to claims related to Contractor's misappropriation or infringement of another's intellectual property.

XIV. Contractor Liability Insurance.

Contractor shall procure, and maintain for the duration of the contract, professional liability insurance against claims and damages which may arise from or in connection with the performance of its work. Coverage shall have limits of no less than \$5,000,000.00 per occurrence and \$10,000,000.00 aggregate.

XV. Survival; Order of Precedence.

The provisions of this Addendum shall survive expiration or termination of the Agreement.

XVI. Entire Agreement.

The Agreement, including any exhibits and/or schedules thereto, and this Addendum contain the entire understanding of the Parties with respect to the subject matter hereof and supersedes all prior agreements, oral or written, and all other communications between the Parties relating to such subject matter.

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PO - STANDARD TERMS and CONDITIONS

1.1 CONTRACT-001.1c Contract Terms and Conditions – Stand-Alone (Jan 24 2007)

The Contractor and the Commonwealth agree that the following terms and conditions are part of the Contract:

1.2 CONTRACT-002.1B Term of Contract – Stand-Alone PO (July 2015)

The term of the Contract created by the issuance of the Purchase Order shall commence on the Original PO Effective Date, which will be printed on the Purchase Order output form after the Solicitation Response or Purchase Order has been signed and returned by the contractor, electronically signed by the Commonwealth and approved as required by Commonwealth contracting procedures. If the Purchase Order output form does not have "Fully Executed" at the top of the first page and does not have the name of the Purchasing Agent printed in the appropriate box, the Purchase Order has not been fully executed. Subject to the other provisions of the Contract, the Contract shall end on the later of: a) complete delivery and acceptance of the awarded item(s); b) the expiration of any specified warranty and maintenance period; c) payment by the Commonwealth for the item or items received; or d) any Expiration Date identified in the Purchase Order.

1.3 CONTRACT-002.3 Extension of Contract Term (Nov 30 2006)

The Commonwealth reserves the right, upon notice to the Contractor, to extend any single term of the Contract for up to three (3) months upon the same terms and conditions.

1.4 CONTRACT-003.1D Signatures – Stand-Alone Purchase Order (July 2015)

The Contract shall not be a legally binding contract until the fully-executed Purchase Order has been sent to the Contractor. No Commonwealth employee has the authority to verbally direct the commencement of any work or delivery of any supply under this Purchase Order prior to the Original PO Effective Date. The Contractor hereby waives any claim or cause of action for any service or work performed prior to the Original PO Effective Date.

The Purchase Order may be signed in counterparts. The Contractor shall sign the Solicitation Response or Purchase Order and return it to the Commonwealth. After the Solicitation Response or Purchase Order is signed by the Contractor and returned to the Commonwealth, it will be processed for Commonwealth signatures and approvals. When the Purchase Order has been electronically signed and approved by the Commonwealth as required by Commonwealth contracting procedures, it shall: 1) clearly indicate "Fully executed" at the top of the form; 2) include a printed Original PO Effective Date and 3) include the printed name of the Purchasing Agent indicating that the document has been electronically signed and approved by the Commonwealth. Until the Contractor receives the Purchase Order output form with this information on the Purchase Order output form, there is no legally binding contract between the parties.

The fully-executed Purchase Order may be sent to the Contractor electronically or through facsimile equipment. The electronic transmission of a Purchase Order shall require acknowledgement of receipt of the transmission by the Contractor. Receipt of the electronic or facsimile transmission of the Purchase Order shall constitute receipt of the fully-executed Purchase Order.

The Commonwealth and the Contractor specifically agree as follows:

- a. No handwritten signature shall be required in order for the Purchase Order to be legally enforceable.
- b. The parties agree that no writing shall be required in order to make the Purchase Order legally binding, notwithstanding contrary requirements in any law. The parties hereby agree not to contest the validity or enforceability of a genuine Purchase Order or acknowledgement issued electronically under the provisions of a statute of frauds or any other applicable law relating to whether certain agreements be in writing and signed by the party bound thereby. Any genuine Purchase Order or acknowledgement issued electronically, if introduced as

evidence on paper in any judicial, arbitration, mediation, or administrative proceedings, will be admissible as between the parties to the same extent and under the same conditions as other business records originated and maintained in documentary form. Neither party shall contest the admissibility of copies of a genuine Purchase Order or acknowledgements under either the business records exception to the hearsay rule or the best evidence rule on the basis that the Purchase Order or acknowledgement were not in writing or signed by the parties. A Purchase Order or acknowledgment shall be deemed to be genuine for all purposes if it is transmitted to the location designated for such documents.

c. Each party will immediately take steps to verify any document that appears to be obviously garbled in transmission or improperly formatted to include re-transmission of any such document if necessary.

1.5 CONTRACT-004.1a Definitions (Oct 2013)

As used in this Contract, these words shall have the following meanings:

- a. Agency: The department, board, commission or other agency of the Commonwealth of Pennsylvania listed as the Purchasing Agency. If a COSTARS entity or external procurement activity has issued an order against this contract, that entity shall also be identified as "Agency".
- b. Contracting Officer: The person authorized to administer this Contract for the Commonwealth and to make written determinations with respect to the Contract.
- c. Days: Unless specifically indicated otherwise, days mean calendar days.
- d. Developed Works or Developed Materials: All documents, sketches, drawings, designs, works, papers, files, reports, computer programs, computer documentation, data, records, software, samples or any other tangible material without limitation authored or prepared by Contractor as the work product covered in the scope of work for the Project.
- e. Documentation: All materials required to support and convey information about the services required by this Contract. It includes, but is not necessarily restricted to, written reports and analyses, diagrams, maps, logical and physical designs, system designs, computer programs, flow charts, disks, and/or other machine-readable storage media.
- f. Services: All Contractor activity necessary to satisfy the Contract.

1.6 CONTRACT-006.1 Independent Prime Contractor (Oct 2006)

In performing its obligations under the Contract, the Contractor will act as an independent contractor and not as an employee or agent of the Commonwealth. The Contractor will be responsible for all services in this Contract whether or not Contractor provides them directly. Further, the Contractor is the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from the Contract.

1.7 CONTRACT-007.01b Delivery of Services (Nov 30 2006)

The Contractor shall proceed with all due diligence in the performance of the services with qualified personnel, in accordance with the completion criteria set forth in the Contract.

1.8 CONTRACT-008.1a Warranty (Oct 2006)

The Contractor warrants that all items furnished and all services performed by the Contractor, its agents and subcontractors shall be free and clear of any defects in workmanship or materials. Unless otherwise stated in the Contract, all items are warranted for a period of one year following delivery by the Contractor and acceptance by the Commonwealth. The Contractor shall repair, replace or otherwise correct any problem with the delivered item. When an item is replaced, it shall be replaced with an item of equivalent or superior quality without any additional cost to the Commonwealth.

1.9 CONTRACT-009.1c Patent, Copyright, and Trademark Indemnity (Oct 2013)

The Contractor warrants that it is the sole owner or author of, or has entered into a suitable legal agreement

concerning either: a) the design of any product or process provided or used in the performance of the Contract which is covered by a patent, copyright, or trademark registration or other right duly authorized by state or federal law or b) any copyrighted matter in any report, document or other material provided to the Commonwealth under the contract.

The Contractor shall defend any suit or proceeding brought against the Commonwealth on account of any alleged patent, copyright or trademark infringement in the United States of any of the products provided or used in the performance of the Contract.

This is upon condition that the Commonwealth shall provide prompt notification in writing of such suit or proceeding; full right, authorization and opportunity to conduct the defense thereof; and full information and all reasonable cooperation for the defense of same.

As principles of governmental or public law are involved, the Commonwealth may participate in or choose to conduct, in its sole discretion, the defense of any such action.

If information and assistance are furnished by the Commonwealth at the Contractor's written request, it shall be at the Contractor's expense, but the responsibility for such expense shall be only that within the Contractor's written authorization.

The Contractor shall indemnify and hold the Commonwealth harmless from all damages, costs, and expenses, including attorney's fees that the Contractor or the Commonwealth may pay or incur by reason of any infringement or violation of the rights occurring to any holder of copyright, trademark, or patent interests and rights in any products provided or used in the performance of the Contract.

If any of the products provided by the Contractor in such suit or proceeding are held to constitute infringement and the use is enjoined, the Contractor shall, at its own expense and at its option, either procure the right to continue use of such infringement products, replace them with non-infringement equal performance products or modify them so that they are no longer infringing.

If the Contractor is unable to do any of the preceding, the Contractor agrees to remove all the equipment or software which are obtained contemporaneously with the infringing product, or, at the option of the Commonwealth, only those items of equipment or software which are held to be infringing, and to pay the Commonwealth: 1) any amounts paid by the Commonwealth towards the purchase of the product, less straight line depreciation; 2) any license fee paid by the Commonwealth for the use of any software, less an amount for the period of usage; and 3) the pro rata portion of any maintenance fee representing the time remaining in any period of maintenance paid for. The obligations of the Contractor under this paragraph continue without time limit. No costs or expenses shall be incurred for the account of the Contractor without its written consent.

1.10 CONTRACT-009.1d Ownership Rights (Oct 2006)

The Commonwealth shall have unrestricted authority to reproduce, distribute, and use any submitted report, data, or material, and any software or modifications and any associated documentation that is designed or developed and delivered to the Commonwealth as part of the performance of the Contract.

1.11 CONTRACT-010.1a Acceptance (Oct 2006)

No item(s) received by the Commonwealth shall be deemed accepted until the Commonwealth has had a reasonable opportunity to inspect the item(s). Any item(s) which is discovered to be defective or fails to conform to the specifications may be rejected upon initial inspection or at any later time if the defects contained in the item(s) or the noncompliance with the specifications were not reasonably ascertainable upon the initial inspection. It shall thereupon become the duty of the Contractor to remove rejected item(s) from the premises without expense to the Commonwealth within fifteen (15) days after notification. Rejected item(s) left longer than fifteen (15) days will be regarded as abandoned, and the Commonwealth shall have the right to dispose of them as its own property and shall retain that portion of the proceeds of any sale which represents the Commonwealth's costs and expenses in regard to the storage and sale of the item(s). Upon notice of rejection, the Contractor shall immediately replace all such rejected item(s) with others conforming to the specifications and which are not defective. If the Contractor fails, neglects or refuses to do so, the Commonwealth shall then have the right to procure a corresponding quantity of such

item(s), and deduct from any monies due or that may thereafter become due to the Contractor, the difference between the price stated in the Contract and the cost thereof to the Commonwealth.

1.12 CONTRACT-011.1a Compliance With Law (Oct 2006)

The Contractor shall comply with all applicable federal and state laws and regulations and local ordinances in the performance of the Contract.

1.13 CONTRACT-013.1 Environmental Provisions (Oct 2006)

In the performance of the Contract, the Contractor shall minimize pollution and shall strictly comply with all applicable environmental laws and regulations, including, but not limited to: the Clean Streams Law Act of June 22, 1937 (P.L. 1987, No. 394), as amended 35 P.S. Section 691.601 et seq.; the Pennsylvania Solid Waste Management Act, Act of July 7, 1980 (P.L. 380, No. 97), as amended, 35 P.S. Section 6018.101 et seq.; and the Dam Safety and Encroachment Act, Act of November 26, 1978 (P.L. 1375, No. 325), as amended, 32 P.S. Section 693.1.

1.14 CONTRACT-014.1 Post-Consumer Recycled Content (June 2016)

Except as specifically waived by the Department of General Services in writing, any products which are provided to the Commonwealth as a part of the performance of the Contract must meet the minimum percentage levels for total recycled content as specified by the Environmental Protection Agency in its Comprehensive Procurement Guidelines, which can be found at <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

1.15 CONTRACT-014.3 Recycled Content Enforcement (Feb 2009)

The Contractor may be required, after delivery of the Contract item(s), to provide the Commonwealth with documentary evidence that the item(s) was in fact produced with the required minimum percentage of post-consumer and recovered material content.

1.16 CONTRACT-015.1A Compensation/Expenses (May 2008)

The Contractor shall be required to perform the specified services at the price(s) quoted in the Contract. All services shall be performed within the time period(s) specified in the Contract. The Contractor shall be compensated only for work performed to the satisfaction of the Commonwealth. The Contractor shall not be allowed or paid travel or per diem expenses except as specifically set forth in the Contract.

1.17 CONTRACT-015.2 Billing Requirements (February 2012)

Unless the Contractor has been authorized by the Commonwealth for Evaluated Receipt Settlement or Vendor Self-Invoicing, the Contractor shall include in all of its invoices the following minimum information:

- Vendor name and "Remit to" address, including SAP Vendor number;
- Bank routing information, if ACH;
- SAP Purchase Order number;
- Delivery Address, including name of Commonwealth agency;
- Description of the supplies/services delivered in accordance with SAP Purchase Order (include purchase order line number if possible);
- Quantity provided;
- Unit price;
- Price extension;
- Total price; and
- Delivery date of supplies or services.

If an invoice does not contain the minimum information set forth in this paragraph, the Commonwealth may return the invoice as improper. If the Commonwealth returns an invoice as improper, the time for processing a payment will be suspended until the Commonwealth receives a correct invoice. The Contractor may not receive payment until the Commonwealth has received a correct invoice.

Contractors are required to establish separate billing accounts with each using agency and invoice them directly. Each invoice shall be itemized with adequate detail and match the line item on the Purchase Order. In no instance shall any payment be made for services to the Contractor that are not in accordance with the prices on the Purchase Order, the Contract, updated price lists or any discounts negotiated by the purchasing agency.

1.18 CONTRACT-016.1 Payment (Oct 2006)

- a. The Commonwealth shall put forth reasonable efforts to make payment by the required payment date. The required payment date is: (a) the date on which payment is due under the terms of the Contract; (b) thirty (30) days after a proper invoice actually is received at the "Bill To" address if a date on which payment is due is not specified in the Contract (a "proper" invoice is not received until the Commonwealth accepts the service as satisfactorily performed); or (c) the payment date specified on the invoice if later than the dates established by (a) and (b) above. Payment may be delayed if the payment amount on an invoice is not based upon the price(s) as stated in the Contract. If any payment is not made within fifteen (15) days after the required payment date, the Commonwealth may pay interest as determined by the Secretary of Budget in accordance with Act No. 266 of 1982 and regulations promulgated pursuant thereto. Payment should not be construed by the Contractor as acceptance of the service performed by the Contractor. The Commonwealth reserves the right to conduct further testing and inspection after payment, but within a reasonable time after performance, and to reject the service if such post payment testing or inspection discloses a defect or a failure to meet specifications. The Contractor agrees that the Commonwealth may set off the amount of any state tax liability or other obligation of the Contractor or its subsidiaries to the Commonwealth against any payments due the Contractor under any contract with the Commonwealth.
- b. The Commonwealth shall have the option of using the Commonwealth purchasing card to make purchases under the Contract or Purchase Order. The Commonwealth's purchasing card is similar to a credit card in that there will be a small fee which the Contractor will be required to pay and the Contractor will receive payment directly from the card issuer rather than the Commonwealth. Any and all fees related to this type of payment are the responsibility of the Contractor. In no case will the Commonwealth allow increases in prices to offset credit card fees paid by the Contractor or any other charges incurred by the Contractor, unless specifically stated in the terms of the Contract or Purchase Order.

1.19 CONTRACT-017.1 Taxes (Dec 5 2006)

The Commonwealth is exempt from all excise taxes imposed by the Internal Revenue Service and has accordingly registered with the Internal Revenue Service to make tax free purchases under Registration No. 23-23740001-K. With the exception of purchases of the following items, no exemption certificates are required and none will be issued: undyed diesel fuel, tires, trucks, gas guzzler emergency vehicles, and sports fishing equipment. The Commonwealth is also exempt from Pennsylvania state sales tax, local sales tax, public transportation assistance taxes and fees and vehicle rental tax. The Department of Revenue regulations provide that exemption certificates are not required for sales made to governmental entities and none will be issued. Nothing in this paragraph is meant to exempt a construction contractor from the payment of any of these taxes or fees which are required to be paid with respect to the purchase, use, rental, or lease of tangible personal property or taxable services used or transferred in connection with the performance of a construction contract.

1.20 CONTRACT-018.1 Assignment of Antitrust Claims (Oct 2006)

The Contractor and the Commonwealth recognize that in actual economic practice, overcharges by the Contractor's suppliers resulting from violations of state or federal antitrust laws are in fact borne by the Commonwealth. As part of the consideration for the award of the Contract, and intending to be legally bound, the Contractor assigns to the

Commonwealth all right, title and interest in and to any claims the Contractor now has, or may acquire, under state or federal antitrust laws relating to the products and services which are the subject of this Contract.

1.21 CONTRACT-019.1 Hold Harmless Provision (Nov 30 2006)

- a. The Contractor shall hold the Commonwealth harmless from and indemnify the Commonwealth against any and all third party claims, demands and actions based upon or arising out of any activities performed by the Contractor and its employees and agents under this Contract, provided the Commonwealth gives Contractor prompt notice of any such claim of which it learns. Pursuant to the Commonwealth Attorneys Act (71 P.S. Section 732-101, et seq.), the Office of Attorney General (OAG) has the sole authority to represent the Commonwealth in actions brought against the Commonwealth. The OAG may, however, in its sole discretion and under such terms as it deems appropriate, delegate its right of defense. If OAG delegates the defense to the Contractor, the Commonwealth will cooperate with all reasonable requests of Contractor made in the defense of such suits.
- b. Notwithstanding the above, neither party shall enter into any settlement without the other party's written consent, which shall not be unreasonably withheld. The Commonwealth may, in its sole discretion, allow the Contractor to control the defense and any related settlement negotiations.

1.22 CONTRACT-020.1 Audit Provisions (Oct 2006)

The Commonwealth shall have the right, at reasonable times and at a site designated by the Commonwealth, to audit the books, documents and records of the Contractor to the extent that the books, documents and records relate to costs or pricing data for the Contract. The Contractor agrees to maintain records which will support the prices charged and costs incurred for the Contract. The Contractor shall preserve books, documents and records that relate to costs or pricing data for the Contract for a period of three (3) years from the date of final payment. The Contractor shall give full and free access to all records to the Commonwealth and/or their authorized representatives.

1.23 CONTRACT-021.1 Default (Oct 2013)

- a. The Commonwealth may, subject to the Force Majeure provisions of this Contract, and in addition to its other rights under the Contract, declare the Contractor in default by written notice thereof to the Contractor, and terminate (as provided in the Termination Provisions of this Contract) the whole or any part of this Contract or any Purchase Order for any of the following reasons:
 - 1) Failure to begin work within the time specified in the Contract or Purchase Order or as otherwise specified;
 - 2) Failure to perform the work with sufficient labor, equipment, or material to ensure the completion of the specified work in accordance with the Contract or Purchase Order terms;
 - 3) Unsatisfactory performance of the work;
 - 4) Failure to deliver the awarded item(s) within the time specified in the Contract or Purchase Order or as otherwise specified;
 - 5) Improper delivery;
 - 6) Failure to provide an item(s) which is in conformance with the specifications referenced in the Contract or Purchase Order;
 - 7) Delivery of a defective item;
 - 8) Failure or refusal to remove material, or remove and replace any work rejected as defective or unsatisfactory;
 - 9) Discontinuance of work without approval;

- 10) Failure to resume work, which has been discontinued, within a reasonable time after notice to do so;
- 11) Insolvency or bankruptcy;
- 12) Assignment made for the benefit of creditors;
- 13) Failure or refusal within 10 days after written notice by the Contracting Officer, to make payment or show cause why payment should not be made, of any amounts due for materials furnished, labor supplied or performed, for equipment rentals, or for utility services rendered;
- 14) Failure to protect, to repair, or to make good any damage or injury to property;
- 15) Breach of any provision of the Contract;
- 16) Failure to comply with representations made in the Contractor's bid/proposal; or
- 17) Failure to comply with applicable industry standards, customs, and practice.

b. In the event that the Commonwealth terminates this Contract or any Purchase Order in whole or in part as provided in Subparagraph a. above, the Commonwealth may procure, upon such terms and in such manner as it determines, items similar or identical to those so terminated, and the Contractor shall be liable to the Commonwealth for any reasonable excess costs for such similar or identical items included within the terminated part of the Contract or Purchase Order.

c. If the Contract or a Purchase Order is terminated as provided in Subparagraph a. above, the Commonwealth, in addition to any other rights provided in this paragraph, may require the Contractor to transfer title and deliver immediately to the Commonwealth in the manner and to the extent directed by the Contracting Officer, such partially completed items, including, where applicable, reports, working papers and other documentation, as the Contractor has specifically produced or specifically acquired for the performance of such part of the Contract or Purchase Order as has been terminated. Except as provided below, payment for completed work accepted by the Commonwealth shall be at the Contract price. Except as provided below, payment for partially completed items including, where applicable, reports and working papers, delivered to and accepted by the Commonwealth shall be in an amount agreed upon by the Contractor and Contracting Officer. The Commonwealth may withhold from amounts otherwise due the Contractor for such completed or partially completed works, such sum as the Contracting Officer determines to be necessary to protect the Commonwealth against loss.

d. The rights and remedies of the Commonwealth provided in this paragraph shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

e. The Commonwealth's failure to exercise any rights or remedies provided in this paragraph shall not be construed to be a waiver by the Commonwealth of its rights and remedies in regard to the event of default or any succeeding event of default.

f. Following exhaustion of the Contractor's administrative remedies as set forth in the Contract Controversies Provision of the Contract, the Contractor's exclusive remedy shall be to seek damages in the Board of Claims.

1.24 CONTRACT-022.1 Force Majeure (Oct 2006)

Neither party will incur any liability to the other if its performance of any obligation under this Contract is prevented or delayed by causes beyond its control and without the fault or negligence of either party. Causes beyond a party's control may include, but aren't limited to, acts of God or war, changes in controlling law, regulations, orders or the requirements of any governmental entity, severe weather conditions, civil disorders, natural disasters, fire, epidemics and quarantines, general strikes throughout the trade, and freight embargoes.

The Contractor shall notify the Commonwealth orally within five (5) days and in writing within ten (10) days of the date on which the Contractor becomes aware, or should have reasonably become aware, that such cause would

prevent or delay its performance. Such notification shall (i) describe fully such cause(s) and its effect on performance, (ii) state whether performance under the contract is prevented or delayed and (iii) if performance is delayed, state a reasonable estimate of the duration of the delay. The Contractor shall have the burden of proving that such cause(s) delayed or prevented its performance despite its diligent efforts to perform and shall produce such supporting documentation as the Commonwealth may reasonably request. After receipt of such notification, the Commonwealth may elect to cancel the Contract, cancel the Purchase Order, or to extend the time for performance as reasonably necessary to compensate for the Contractor's delay.

In the event of a declared emergency by competent governmental authorities, the Commonwealth by notice to the Contractor, may suspend all or a portion of the Contract or Purchase Order.

1.25 CONTRACT-023.1a Termination Provisions (Oct 2013)

The Commonwealth has the right to terminate this Contract or any Purchase Order for any of the following reasons. Termination shall be effective upon written notice to the Contractor.

a. **TERMINATION FOR CONVENIENCE:** The Commonwealth shall have the right to terminate the Contract or a Purchase Order for its convenience if the Commonwealth determines termination to be in its best interest. The Contractor shall be paid for work satisfactorily completed prior to the effective date of the termination, but in no event shall the Contractor be entitled to recover loss of profits.

b. **NON-APPROPRIATION:** The Commonwealth's obligation to make payments during any Commonwealth fiscal year succeeding the current fiscal year shall be subject to availability and appropriation of funds. When funds (state and/or federal) are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal year period, the Commonwealth shall have the right to terminate the Contract or a Purchase Order. The Contractor shall be reimbursed for the reasonable value of any nonrecurring costs incurred but not amortized in the price of the supplies or services delivered under the Contract. Such reimbursement shall not include loss of profit, loss of use of money, or administrative or overhead costs. The reimbursement amount may be paid from any appropriations available for that purpose.

c. **TERMINATION FOR CAUSE:** The Commonwealth shall have the right to terminate the Contract or a Purchase Order for Contractor default under the Default Clause upon written notice to the Contractor. The Commonwealth shall also have the right, upon written notice to the Contractor, to terminate the Contract or a Purchase Order for other cause as specified in the Contract or by law. If it is later determined that the Commonwealth erred in terminating the Contract or a Purchase Order for cause, then, at the Commonwealth's discretion, the Contract or Purchase Order shall be deemed to have been terminated for convenience under the Subparagraph a.

1.26 CONTRACT-024.1 Contract Controversies (Oct 2011)

a. In the event of a controversy or claim arising from the Contract, the Contractor must, within six months after the cause of action accrues, file a written claim with the contracting officer for a determination. The claim shall state all grounds upon which the Contractor asserts a controversy exists. If the Contractor fails to file a claim or files an untimely claim, the Contractor is deemed to have waived its right to assert a claim in any forum. At the time the claim is filed, or within sixty (60) days thereafter, either party may request mediation through the Commonwealth Office of General Counsel Dispute Resolution Program.

b. If the Contractor or the contracting officer requests mediation and the other party agrees, the contracting officer shall promptly make arrangements for mediation. Mediation shall be scheduled so as to not delay the issuance of the final determination beyond the required 120 days after receipt of the claim if mediation is unsuccessful. If mediation is not agreed to or if resolution is not reached through mediation, the contracting officer shall review timely-filed claims and issue a final determination, in writing, regarding the claim. The final determination shall be issued within 120 days of the receipt of the claim, unless extended by consent of the contracting officer and the Contractor. The contracting officer shall send his/her written determination to the

Contractor. If the contracting officer fails to issue a final determination within the 120 days (unless extended by consent of the parties), the claim shall be deemed denied. The contracting officer's determination shall be the final order of the purchasing agency.

c. Within fifteen (15) days of the mailing date of the determination denying a claim or within 135 days of filing a claim if, no extension is agreed to by the parties, whichever occurs first, the Contractor may file a statement of claim with the Commonwealth Board of Claims. Pending a final judicial resolution of a controversy or claim, the Contractor shall proceed diligently with the performance of the Contract in a manner consistent with the determination of the contracting officer and the Commonwealth shall compensate the Contractor pursuant to the terms of the Contract.

1.27 CONTRACT-025.1 Assignability and Subcontracting (Oct 2013)

a. Subject to the terms and conditions of this paragraph, this Contract shall be binding upon the parties and their respective successors and assigns.

b. The Contractor shall not subcontract with any person or entity to perform all or any part of the work to be performed under this Contract without the prior written consent of the Contracting Officer, which consent may be withheld at the sole and absolute discretion of the Contracting Officer.

c. The Contractor may not assign, in whole or in part, this Contract or its rights, duties, obligations, or responsibilities hereunder without the prior written consent of the Contracting Officer, which consent may be withheld at the sole and absolute discretion of the Contracting Officer.

d. Notwithstanding the foregoing, the Contractor may, without the consent of the Contracting Officer, assign its rights to payment to be received under the Contract, provided that the Contractor provides written notice of such assignment to the Contracting Officer together with a written acknowledgement from the assignee that any such payments are subject to all of the terms and conditions of this Contract.

e. For the purposes of this Contract, the term "assign" shall include, but shall not be limited to, the sale, gift, assignment, pledge, or other transfer of any ownership interest in the Contractor provided, however, that the term shall not apply to the sale or other transfer of stock of a publicly traded company.

f. Any assignment consented to by the Contracting Officer shall be evidenced by a written assignment agreement executed by the Contractor and its assignee in which the assignee agrees to be legally bound by all of the terms and conditions of the Contract and to assume the duties, obligations, and responsibilities being assigned.

g. A change of name by the Contractor, following which the Contractor's federal identification number remains unchanged, shall not be considered to be an assignment hereunder. The Contractor shall give the Contracting Officer written notice of any such change of name.

1.28 CONTRACT-026.1 Other Contractors (Oct 2006)

The Commonwealth may undertake or award other contracts for additional or related work, and the Contractor shall fully cooperate with other contractors and Commonwealth employees, and coordinate its work with such additional work as may be required. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Commonwealth employees. This paragraph shall be included in the Contracts of all contractors with which this Contractor will be required to cooperate. The Commonwealth shall equitably enforce this paragraph as to all contractors to prevent the imposition of unreasonable burdens on any contractor.

1.29 CONTRACT-027.1 Nondiscrimination/Sexual Harassment Clause (August 2018)

The Contractor agrees:

1. In the hiring of any employee(s) for the manufacture of supplies, performance of work, or any other activity required under the contract or any subcontract, the Contractor, each subcontractor, or any person acting on behalf of the Contractor or subcontractor shall not discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the *Pennsylvania Human Relations Act* (PHRA) and applicable federal laws, against any citizen of this Commonwealth who is qualified and available to perform the work to which the employment relates.
2. Neither the Contractor nor any subcontractor nor any person on their behalf shall in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, against or intimidate any employee involved in the manufacture of supplies, the performance of work, or any other activity required under the contract.
3. Neither the Contractor nor any subcontractor nor any person on their behalf shall in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, in the provision of services under the contract.
4. Neither the Contractor nor any subcontractor nor any person on their behalf shall in any manner discriminate against employees by reason of participation in or decision to refrain from participating in labor activities protected under the *Public Employee Relations Act*, *Pennsylvania Labor Relations Act* or *National Labor Relations Act*, as applicable and to the extent determined by entities charged with such Acts' enforcement, and shall comply with any provision of law establishing organizations as employees' exclusive representatives.
5. The Contractor and each subcontractor shall establish and maintain a written nondiscrimination and sexual harassment policy and shall inform their employees in writing of the policy. The policy must contain a provision that sexual harassment will not be tolerated and employees who practice it will be disciplined. Posting this Nondiscrimination/Sexual Harassment Clause conspicuously in easily-accessible and well-lighted places customarily frequented by employees and at or near where the contracted services are performed shall satisfy this requirement for employees with an established work site.
6. The Contractor and each subcontractor shall not discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of PHRA and applicable federal laws, against any subcontractor or supplier who is qualified to perform the work to which the contract relates.
7. The Contractor and each subcontractor represents that it is presently in compliance with and will maintain compliance with all applicable federal, state, and local laws, regulations and policies relating to nondiscrimination and sexual harassment. The Contractor and each subcontractor further represents that it has filed a Standard Form 100 Employer Information Report ("EEO-1") with the U.S. Equal Employment Opportunity Commission ("EEOC") and shall file an annual EEO-1 report with the EEOC as required for employers' subject to *Title VII of the Civil Rights Act of 1964*, as amended, that have 100 or more employees and employers that have federal government contracts or first-tier subcontracts and have 50 or more employees. The Contractor and each subcontractor shall, upon request and within the time periods requested by the Commonwealth, furnish all necessary employment documents and records, including EEO-1 reports, and permit access to their books, records, and accounts by the contracting agency and the Bureau of Diversity, Inclusion and Small Business Opportunities for purpose of ascertaining compliance with provisions of this Nondiscrimination/Sexual Harassment Clause.
8. The Contractor shall include the provisions of this Nondiscrimination/Sexual Harassment Clause in every subcontract so that those provisions applicable to subcontractors will be binding upon each subcontractor.
9. The Contractor's and each subcontractor's obligations pursuant to these provisions are ongoing from and after the effective date of the contract through the termination date thereof. Accordingly, the Contractor and each subcontractor shall have an obligation to inform the Commonwealth if, at any time during the term of the contract, it becomes aware of any actions or occurrences that would result in violation of these provisions.
10. The Commonwealth may cancel or terminate the contract and all money due or to become due under

the contract may be forfeited for a violation of the terms and conditions of this Nondiscrimination/Sexual Harassment Clause. In addition, the agency may proceed with debarment or suspension and may place the Contractor in the Contractor Responsibility File.

1.30 CONTRACT-028.1 Contractor Integrity Provisions (Jan 2015)

It is essential that those who seek to contract with the Commonwealth of Pennsylvania ("Commonwealth") observe high standards of honesty and integrity. They must conduct themselves in a manner that fosters public confidence in the integrity of the Commonwealth contracting and procurement process.

1. DEFINITIONS. For purposes of these Contractor Integrity Provisions, the following terms shall have the meanings found in this Section:

a. "Affiliate" means two or more entities where (a) a parent entity owns more than fifty percent of the voting stock of each of the entities; or (b) a common shareholder or group of shareholders owns more than fifty percent of the voting stock of each of the entities; or (c) the entities have a common proprietor or general partner.

b. "Consent" means written permission signed by a duly authorized officer or employee of the Commonwealth, provided that where the material facts have been disclosed, in writing, by prequalification, bid, proposal, or contractual terms, the Commonwealth shall be deemed to have consented by virtue of the execution of this contract.

c. "Contractor" means the individual or entity, that has entered into this contract with the Commonwealth.

d. "Contractor Related Parties" means any affiliates of the Contractor and the Contractor's executive officers, Pennsylvania officers and directors, or owners of 5 percent or more interest in the Contractor.

e. "Financial Interest" means either:

(1) Ownership of more than a five percent interest in any business; or

(2) Holding a position as an officer, director, trustee, partner, employee, or holding any position of management.

f. "Gratuity" means tendering, giving, or providing anything of more than nominal monetary value including, but not limited to, cash, travel, entertainment, gifts, meals, lodging, loans, subscriptions, advances, deposits of money, services, employment, or contracts of any kind. The exceptions set forth in the *Governor's Code of Conduct, Executive Order 1980-18, the 4 Pa. Code §7.153(b)*, shall apply.

g. "Non-bid Basis" means a contract awarded or executed by the Commonwealth with Contractor without seeking bids or proposals from any other potential bidder or offeror.

2. In furtherance of this policy, Contractor agrees to the following:

a. Contractor shall maintain the highest standards of honesty and integrity during the performance of this contract and shall take no action in violation of state or federal laws or regulations or any other applicable laws or regulations, or other requirements applicable to Contractor or that govern contracting or procurement with the Commonwealth.

b. Contractor shall establish and implement a written business integrity policy, which includes, at a minimum, the requirements of these provisions as they relate to the Contractor activity with the Commonwealth and Commonwealth employees and which is made known to all Contractor employees. Posting these Contractor Integrity Provisions conspicuously in easily-accessible and well-lighted places customarily frequented by employees and at or near where the contract services are performed shall satisfy this requirement.

c. Contractor, its affiliates, agents, employees and anyone in privity with Contractor shall not accept, agree to give, offer, confer or agree to confer or promise to confer, directly or indirectly, any gratuity or pecuniary benefit to any person, or to influence or attempt to influence any person in violation of any federal or state law, regulation, executive order of the Governor of Pennsylvania, statement of policy, management directive or any other published standard of the Commonwealth in connection with performance of work under this contract, except as provided in

this contract.

d. Contractor shall not have a financial interest in any other contractor, subcontractor, or supplier providing services, labor or material under this contract, unless the financial interest is disclosed to the Commonwealth in writing and the Commonwealth consents to Contractor's financial interest prior to Commonwealth execution of the contract. Contractor shall disclose the financial interest to the Commonwealth at the time of bid or proposal submission, or if no bids or proposals are solicited, no later than the Contractor's submission of the contract signed by Contractor.

e. Contractor certifies to the best of its knowledge and belief that within the last five (5) years Contractor or Contractor Related Parties have not:

(1) been indicted or convicted of a crime involving moral turpitude or business honesty or integrity in any jurisdiction;

(2) been suspended, debarred or otherwise disqualified from entering into any contract with any governmental agency;

(3) had any business license or professional license suspended or revoked;

(4) had any sanction or finding of fact imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, bid rigging, embezzlement, misrepresentation or anti-trust; and

(5) been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or civil anti-trust investigation by any federal, state or local prosecuting or investigative agency.

If Contractor cannot so certify to the above, then it must submit along with its bid, proposal or contract a written explanation of why such certification cannot be made and the Commonwealth will determine whether a contract may be entered into with the Contractor. The Contractor's obligation pursuant to this certification is ongoing from and after the effective date of the contract through the termination date thereof. Accordingly, the Contractor shall have an obligation to immediately notify the Commonwealth in writing if at any time during the term of the contract it becomes aware of any event which would cause the Contractor's certification or explanation to change. Contractor acknowledges that the Commonwealth may, in its sole discretion, terminate the contract for cause if it learns that any of the certifications made herein are currently false due to intervening factual circumstances or were false or should have been known to be false when entering into the contract.

f. Contractor shall comply with the requirements of the *Lobbying Disclosure Act (65 Pa.C.S. §13A01 et seq.)* regardless of the method of award. If this contract was awarded on a Non-bid Basis, Contractor must also comply with the requirements of the *Section 1641 of the Pennsylvania Election Code (25 P.S. §3260a)*.

g. When contractor has reason to believe that any breach of ethical standards as set forth in law, the Governor's Code of Conduct, or these Contractor Integrity Provisions has occurred or may occur, including but not limited to contact by a Commonwealth officer or employee which, if acted upon, would violate such ethical standards, Contractor shall immediately notify the Commonwealth contracting officer or the Office of the State Inspector General in writing.

h. Contractor, by submission of its bid or proposal and/or execution of this contract and by the submission of any bills, invoices or requests for payment pursuant to the contract, certifies and represents that it has not violated any of these Contractor Integrity Provisions in connection with the submission of the bid or proposal, during any contract negotiations or during the term of the contract, to include any extensions thereof. Contractor shall immediately notify the Commonwealth in writing of any actions or occurrences that would result in a violation of these Contractor Integrity Provisions. Contractor agrees to reimburse the Commonwealth for the reasonable costs of investigation incurred by the Office of the State Inspector General for investigations of the Contractor's compliance with the terms of this or any other agreement between the Contractor and the Commonwealth that results in the suspension or debarment of the Contractor. Contractor shall not be responsible for investigative costs for investigations that do not result in the Contractor's suspension or debarment.

i. Contractor shall cooperate with the Office of the State Inspector General in its investigation of any alleged Commonwealth agency or employee breach of ethical standards and any alleged Contractor non-compliance with

these Contractor Integrity Provisions. Contractor agrees to make identified Contractor employees available for interviews at reasonable times and places. Contractor, upon the inquiry or request of an Inspector General, shall provide, or if appropriate, make promptly available for inspection or copying, any information of any type or form deemed relevant by the Office of the State Inspector General to Contractor's integrity and compliance with these provisions. Such information may include, but shall not be limited to, Contractor's business or financial records, documents or files of any type or form that refer to or concern this contract. Contractor shall incorporate this paragraph in any agreement, contract or subcontract it enters into in the course of the performance of this contract/agreement solely for the purpose of obtaining subcontractor compliance with this provision. The incorporation of this provision in a subcontract shall not create privity of contract between the Commonwealth and any such subcontractor, and no third party beneficiaries shall be created thereby.

j. For violation of any of these Contractor Integrity Provisions, the Commonwealth may terminate this and any other contract with Contractor, claim liquidated damages in an amount equal to the value of anything received in breach of these Provisions, claim damages for all additional costs and expenses incurred in obtaining another contractor to complete performance under this contract, and debar and suspend Contractor from doing business with the Commonwealth. These rights and remedies are cumulative, and the use or non-use of any one shall not preclude the use of all or any other. These rights and remedies are in addition to those the Commonwealth may have under law, statute, regulation or otherwise.

1.31 CONTRACT-029.1 Contractor Responsibility Provisions (Nov 2010)

For the purpose of these provisions, the term contractor is defined as any person, including, but not limited to, a bidder, offeror, loan recipient, grantee or lessor, who has furnished or performed or seeks to furnish or perform, goods, supplies, services, leased space, construction or other activity, under a contract, grant, lease, purchase order or reimbursement agreement with the Commonwealth of Pennsylvania (Commonwealth). The term contractor includes a permittee, licensee, or any agency, political subdivision, instrumentality, public authority, or other public entity in the Commonwealth.

1. The Contractor certifies, in writing, for itself and its subcontractors required to be disclosed or approved by the Commonwealth, that as of the date of its execution of this Bid/Contract, that neither the Contractor, nor any such subcontractors, are under suspension or debarment by the Commonwealth or any governmental entity, instrumentality, or authority and, if the Contractor cannot so certify, then it agrees to submit, along with its Bid/Contract, a written explanation of why such certification cannot be made.

2. The Contractor also certifies, in writing, that as of the date of its execution of this Bid/Contract it has no tax liabilities or other Commonwealth obligations, or has filed a timely administrative or judicial appeal if such liabilities or obligations exist, or is subject to a duly approved deferred payment plan if such liabilities exist.

3. The Contractor's obligations pursuant to these provisions are ongoing from and after the effective date of the Contract through the termination date thereof. Accordingly, the Contractor shall have an obligation to inform the Commonwealth if, at any time during the term of the Contract, it becomes delinquent in the payment of taxes, or other Commonwealth obligations, or if it or, to the best knowledge of the Contractor, any of its subcontractors are suspended or debarred by the Commonwealth, the federal government, or any other state or governmental entity. Such notification shall be made within 15 days of the date of suspension or debarment.

4. The failure of the Contractor to notify the Commonwealth of its suspension or debarment by the Commonwealth, any other state, or the federal government shall constitute an event of default of the Contract with the Commonwealth.

5. The Contractor agrees to reimburse the Commonwealth for the reasonable costs of investigation incurred by the Office of State Inspector General for investigations of the Contractor's compliance with the terms of this or any other agreement between the Contractor and the Commonwealth that results in the suspension or debarment of the contractor. Such costs shall include, but shall not be limited to, salaries of investigators, including overtime; travel and lodging expenses; and expert witness and documentary fees. The Contractor shall not be responsible for investigative costs for investigations that do not result in the Contractor's suspension or debarment.

6. The Contractor may obtain a current list of suspended and debarred Commonwealth contractors by either searching the Internet at <http://www.dgs.state.pa.us/> or contacting the:

Department of General Services
Office of Chief Counsel
603 North Office Building
Harrisburg, PA 17125
Telephone No: (717) 783-6472
FAX No: (717) 787-9138

1.32 CONTRACT-030.1 Americans with Disabilities Act (Oct 2006)

- a. Pursuant to federal regulations promulgated under the authority of The Americans With Disabilities Act, 28 C.F.R. Section 35.101 et seq., the Contractor understands and agrees that it shall not cause any individual with a disability to be excluded from participation in this Contract or from activities provided for under this Contract on the basis of the disability. As a condition of accepting this contract, the Contractor agrees to comply with the "General Prohibitions Against Discrimination," 28 C.F.R. Section 35.130, and all other regulations promulgated under Title II of The Americans With Disabilities Act which are applicable to all benefits, services, programs, and activities provided by the Commonwealth of Pennsylvania through contracts with outside contractors.
- b. The Contractor shall be responsible for and agrees to indemnify and hold harmless the Commonwealth of Pennsylvania from all losses, damages, expenses, claims, demands, suits, and actions brought by any party against the Commonwealth of Pennsylvania as a result of the Contractor's failure to comply with the provisions of Subparagraph a. above.

1.33 CONTRACT-032.1 Covenant Against Contingent Fees (Oct 2006)

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Commonwealth shall have the right to terminate the Contract without liability or in its discretion to deduct from the Contract price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

1.34 CONTRACT-033.1 Applicable Law (Oct 2006)

This Contract shall be governed by and interpreted and enforced in accordance with the laws of the Commonwealth of Pennsylvania (without regard to any conflict of laws provisions) and the decisions of the Pennsylvania courts. The Contractor consents to the jurisdiction of any court of the Commonwealth of Pennsylvania and any federal courts in Pennsylvania, waiving any claim or defense that such forum is not convenient or proper. The Contractor agrees that any such court shall have in personam jurisdiction over it, and consents to service of process in any manner authorized by Pennsylvania law.

1.35 CONTRACT-034.1d Integration – Stand Alone Purchase Order (Nov 30 2006)

This Purchase Order, including all referenced documents, constitutes the entire agreement between the parties. No agent, representative, employee or officer of either the Commonwealth or the Contractor has authority to make, or has made, any statement, agreement or representation, oral or written, in connection with the Contract, which in any way can be deemed to modify, add to or detract from, or otherwise change or alter its terms and conditions. No negotiations between the parties, nor any custom or usage, shall be permitted to modify or contradict any of the terms and conditions of the Contract. No modifications, alterations, changes, or waiver to the Contract or any of its terms shall be valid or binding unless accomplished by a written amendment signed by both parties.

1.36 CONTRACT-034.3 Controlling Terms and Conditions (Aug 2011)

The terms and conditions of this Contract shall be the exclusive terms of agreement between the Contractor and the Commonwealth. All quotations requested and received from the Contractor are for obtaining firm pricing only. Other terms and conditions or additional terms and conditions included or referenced in the Contractor's quotations, invoices, business forms, or other documentation shall not become part of the parties' agreement and shall be disregarded by the parties, unenforceable by the Contractor and not binding on the Commonwealth.

1.37 CONTRACT-035.1a Changes (Oct 2006)

The Commonwealth reserves the right to make changes at any time during the term of the Contract or any renewals or extensions thereof: 1) to increase or decrease the quantities resulting from variations between any estimated quantities in the Contract and actual quantities; 2) to make changes to the services within the scope of the Contract; 3) to notify the Contractor that the Commonwealth is exercising any Contract renewal or extension option; or 4) to modify the time of performance that does not alter the scope of the Contract to extend the completion date beyond the Expiration Date of the Contract or any renewals or extensions thereof. Any such change shall be made by the Contracting Officer by notifying the Contractor in writing. The change shall be effective as of the date of the change, unless the notification of change specifies a later effective date. Such increases, decreases, changes, or modifications will not invalidate the Contract, nor, if performance security is being furnished in conjunction with the Contract, release the security obligation. The Contractor agrees to provide the service in accordance with the change order. Any dispute by the Contractor in regard to the performance required by any notification of change shall be handled through Contract Controversies Provision.

1.38 CONTRACT-036.1 Background Checks (February 2016)

a. The Contractor must, at its expense, arrange for a background check for each of its employees, as well as the employees of any of its subcontractors, who will have access to Commonwealth facilities, either through on-site access or through remote access. Background checks are to be conducted via the Request for Criminal Record Check form and procedure found at <http://www.psp.state.pa.us/psp/lib/psp/sp4-164.pdf>. The background check must be conducted prior to initial access and on an annual basis thereafter.

b. Before the Commonwealth will permit access to the Contractor, the Contractor must provide written confirmation that the background checks have been conducted. If, at any time, it is discovered that a Contractor employee has a criminal record that includes a felony or misdemeanor involving terroristic behavior, violence, use of a lethal weapon, or breach of trust/fiduciary responsibility or which raises concerns about building, system or personal security or is otherwise job-related, the Contractor shall not assign that employee to any Commonwealth facilities, shall remove any access privileges already given to the employee and shall not permit that employee remote access unless the Commonwealth consents to the access, in writing, prior to the access. The Commonwealth may withhold its consent in its sole discretion. Failure of the Contractor to comply with the terms of this Section on more than one occasion or Contractor's failure to appropriately address any single failure to the satisfaction of the Commonwealth may result in the Contractor being deemed in default of its Contract.

c. The Commonwealth specifically reserves the right of the Commonwealth to conduct background checks over and above that described herein.

d. Access to certain Capitol Complex buildings and other state office buildings is controlled by means of card readers and secured visitors' entrances. Commonwealth contracted personnel who have regular and routine business in Commonwealth worksites may be issued a photo identification or access badge subject to the requirements of the contracting agency and DGS set forth in [Enclosure 3 of Commonwealth Management Directive 625.10 \(Amended\) Card Reader and Emergency Response Access to Certain Capitol Complex Buildings and Other State Office Buildings](#). The requirements, policy and procedures include a processing fee payable by the Contractor for contracted personnel photo identification or access badges.

1.39 CONTRACT-037.1a Confidentiality (Oct 2013)

a) The Contractor agrees to protect the confidentiality of the Commonwealth's confidential information. The Commonwealth agrees to protect the confidentiality of Contractor's confidential information. In order for information to be deemed confidential, the party claiming confidentiality must designate the information as "confidential" in such a way as to give notice to the other party (notice may be communicated by describing the information, and the specifications around its use or disclosure, in the SOW). Neither party may assert that information owned by the other party is such party's confidential information. The parties agree that such confidential information shall not be copied, in whole or in part, or used or disclosed except when essential for authorized activities under this Contract and, in the case of disclosure, where the recipient of the confidential information has agreed to be bound by confidentiality requirements no less restrictive than those set forth herein. Each copy of such confidential information shall be marked by the party making the copy with any notices appearing in the original. Upon termination or cancellation of this Contract or any license granted hereunder, the receiving party will return to the disclosing party all copies of the confidential information in the receiving party's possession, other than one copy, which may be maintained for archival purposes only, and which will remain subject to this Contract's security, privacy, data retention/destruction and confidentiality provisions (all of which shall survive the expiration of this Contract). Both parties agree that a material breach of these requirements may, after failure to cure within the time frame specified in this Contract, and at the discretion of the non-breaching party, result in termination for default pursuant to the DEFAULT provision of this Contract, in addition to other remedies available to the non-breaching party.

(b) Insofar as information is not otherwise protected by law or regulation, the obligations stated in this Section do not apply to information:

- (1) already known to the recipient at the time of disclosure other than through the contractual relationship;
- (2) independently generated by the recipient and not derived by the information supplied by the disclosing party.
- (3) known or available to the public, except where such knowledge or availability is the result of unauthorized disclosure by the recipient of the proprietary information;
- (4) disclosed to the recipient without a similar restriction by a third party who has the right to make such disclosure; or
- (5) required to be disclosed by law, regulation, court order, or other legal process.

There shall be no restriction with respect to the use or disclosure of any ideas, concepts, know-how, or data processing techniques developed alone or jointly with the Commonwealth in connection with services provided to the Commonwealth under this Contract.

(c) The Contractor shall use the following process when submitting information to the Commonwealth it believes to be confidential and/or proprietary information or trade secrets:

- (1) Prepare an un-redacted version of the appropriate document, and
- (2) Prepare a redacted version of the document that redacts the information that is asserted to be confidential or proprietary information or a trade secret, and
- (3) Prepare a signed written statement that states:
 - (i) the attached document contains confidential or proprietary information or trade secrets;
 - (ii) the Contractor is submitting the document in both redacted and un-redacted format in accordance with 65 P.S. § 67.707(b); and
 - (iii) the Contractor is requesting that the document be considered exempt under 65 P.S. § 67.708(b)(11) from public records requests.
- (4) Submit the two documents along with the signed written statement to the Commonwealth.

1.40 CONTRACT-051.1 Notice (Dec 2006)

Any written notice to any party under this Contract shall be deemed sufficient if delivered personally, or by facsimile, telecopy, electronic or digital transmission (provided such delivery is confirmed), or by a recognized overnight courier service (e.g., DHL, Federal Express, etc.) with confirmed receipt, or by certified or registered United States mail, postage prepaid, return receipt requested, and sent to following:

- a. If to the Contractor: the Contractor's address as recorded in the Commonwealth's Supplier Registration system.
- b. If to the Commonwealth: the address of the Issuing Office as set forth on the Contract.

1.41 CONTRACT-052.1 Right to Know Law (Feb 2010)

a. The Pennsylvania Right-to-Know Law, 65 P.S. §§ 67.101-3104, ("RTKL") applies to this Contract. For the purpose of these provisions, the term "the Commonwealth" shall refer to the contracting Commonwealth agency.

b. If the Commonwealth needs the Contractor's assistance in any matter arising out of the RTKL related to this Contract, it shall notify the Contractor using the legal contact information provided in this Contract. The Contractor, at any time, may designate a different contact for such purpose upon reasonable prior written notice to the Commonwealth.

c. Upon written notification from the Commonwealth that it requires the Contractor's assistance in responding to a request under the RTKL for information related to this Contract that may be in the Contractor's possession, constituting, or alleged to constitute, a public record in accordance with the RTKL ("Requested Information"), the Contractor shall:

1. Provide the Commonwealth, within ten (10) calendar days after receipt of written notification, access to, and copies of, any document or information in the Contractor's possession arising out of this Contract that the Commonwealth reasonably believes is Requested Information and may be a public record under the RTKL; and
2. Provide such other assistance as the Commonwealth may reasonably request, in order to comply with the RTKL with respect to this Contract.

d. If the Contractor considers the Requested Information to include a request for a Trade Secret or Confidential Proprietary Information, as those terms are defined by the RTKL, or other information that the Contractor considers exempt from production under the RTKL, the Contractor must notify the Commonwealth and provide, within seven (7) calendar days of receiving the written notification, a written statement signed by a representative of the Contractor explaining why the requested material is exempt from public disclosure under the RTKL.

e. The Commonwealth will rely upon the written statement from the Contractor in denying a RTKL request for the Requested Information unless the Commonwealth determines that the Requested Information is clearly not protected from disclosure under the RTKL. Should the Commonwealth determine that the Requested Information is clearly not exempt from disclosure, the Contractor shall provide the Requested Information within five (5) business days of receipt of written notification of the Commonwealth's determination.

f. If the Contractor fails to provide the Requested Information within the time period required by these provisions, the Contractor shall indemnify and hold the Commonwealth harmless for any damages, penalties, costs, detriment or harm that the Commonwealth may incur as a result of the Contractor's failure, including any statutory damages assessed against the Commonwealth.

g. The Commonwealth will reimburse the Contractor for any costs associated with complying with these provisions only to the extent allowed under the fee schedule established by the Office of Open Records or as otherwise provided by the RTKL if the fee schedule is inapplicable.

h. The Contractor may file a legal challenge to any Commonwealth decision to release a record to the public with the Office of Open Records, or in the Pennsylvania Courts, however, the Contractor shall indemnify the Commonwealth for any legal expenses incurred by the Commonwealth as a result of such a challenge and shall hold the Commonwealth harmless for any damages, penalties, costs, detriment or harm that the Commonwealth may

incur as a result of the Contractor's failure, including any statutory damages assessed against the Commonwealth, regardless of the outcome of such legal challenge. As between the parties, the Contractor agrees to waive all rights or remedies that may be available to it as a result of the Commonwealth's disclosure of Requested Information pursuant to the RTKL.

i. The Contractor's duties relating to the RTKL are continuing duties that survive the expiration of this Contract and shall continue as long as the Contractor has Requested Information in its possession.

1.42 CONTRACT-053.1 Enhanced Minimum Wage Provisions (July 2018)

1. **Enhanced Minimum Wage.** Contractor/Lessor agrees to pay no less than \$12.00 per hour to its employees for all hours worked directly performing the services called for in this Contract/Lease, and for an employee's hours performing ancillary services necessary for the performance of the contracted services or lease when such employee spends at least twenty per cent (20%) of their time performing ancillary services in a given work week.
2. **Adjustment.** Beginning July 1, 2019, and annually thereafter, the minimum wage rate shall be increased by \$0.50 until July 1, 2024, when the minimum wage reaches \$15.00. Thereafter, the minimum wage rate would be increased by an annual cost-of-living adjustment using the percentage change in the Consumer Price Index for All Urban Consumers (CPI-U) for Pennsylvania, New Jersey, Delaware, and Maryland. The applicable adjusted amount shall be published in the Pennsylvania Bulletin by March 1 of each year to be effective the following July 1.
3. **Exceptions.** These Enhanced Minimum Wage Provisions shall not apply to employees:
 - a. exempt from the minimum wage under the Minimum Wage Act of 1968;
 - b. covered by a collective bargaining agreement;
 - c. required to be paid a higher wage under another state or federal law governing the services, including the Prevailing Wage Act and Davis-Bacon Act; or
 - d. required to be paid a higher wage under any state or local policy or ordinance.
4. **Notice.** Contractor/Lessor shall post these Enhanced Minimum Wage Provisions for the entire period of the contract conspicuously in easily-accessible and well-lighted places customarily frequented by employees at or near where the contracted services are performed.
5. **Records.** Contractor/Lessor must maintain and, upon request and within the time periods requested by the Commonwealth, furnish all employment and wage records necessary to document compliance with these Enhanced Minimum Wage Provisions.
6. **Sanctions.** Failure to comply with these Enhanced Minimum Wage Provisions may result in the imposition of sanctions, which may include, but shall not be limited to, termination of the contract or lease, nonpayment, debarment or referral to the Office of General Counsel for appropriate civil or criminal referral.
7. **Subcontractors.** Contractor/Lessor shall include the provisions of these Enhanced Minimum Wage Provisions in every subcontract so that these provisions will be binding upon each subcontractor.

Travel Expense Quarterly Report

PSERS' Employee Name:

Reporting Period: **From** **To**

Legal Entity Name:

Consultant Name:

Consultant Authorized Signature:

Title:

Email Address:

☐ Check box if no payments or reimbursements during reporting period[illegible]

Do not include the incremental cost of group meeting space, catering, or speaker fees.

**REQUEST FOR PROPOSALS FOR
HEDGE FUND AND PRIVATE CREDIT INVESTMENT CONSULTING SERVICES**

ISSUING OFFICE

**COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS)
5 NORTH 5TH STREET
HARRISBURG, PA 17101**

RFP NUMBER

PSERS RFP 2020-1

DATE OF ISSUANCE

March 4, 2020

REQUEST FOR PROPOSALS FOR
Hedge Fund and Private Credit Investment Consulting Services

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**APPENDIX H, MODEL FORM OF SMALL DIVERSE BUSINESS AND SMALL
BUSINESS SUBCONTRACT AGREEMENT**

CALENDAR OF EVENTS

The Commonwealth will make every effort to adhere to the following schedule:

Activity	Responsibility	Date
Deadline to submit Questions via email to Lenann Engler at lengler@pa.gov .	Potential Offerors	March 13, 2020
Pre-proposal Conference—Location.	Issuing Office/Potential Offerors	None
Answers to Potential Offeror questions posted to eMarketplace at http://www.emarketplace.state.pa.us/Search.aspx no later than this date.	Issuing Office	March 20, 2020
Please monitor website for all communications regarding the RFP.	Potential Offerors	Ongoing
Sealed proposal must be received by the Issuing Office at: Public School Employees' Retirement System ATTN: Cathy Gusler 5 N. 5th Street Harrisburg, PA 17101	Offerors	April 9, 2020
Finalist presentations at PSERS' Headquarters if necessary. Offerors should be available to present in person if requested.	Selected Offerors	May 4-8, 2020

PART I

GENERAL INFORMATION

- I-1. Purpose.** This request for proposals (RFP) provides to those interested in submitting proposals for the subject procurement (“Offerors”) sufficient information to enable them to prepare and submit proposals for the **Public School Employees’ Retirement System’s (“PSERS”)** consideration on behalf of the Commonwealth of Pennsylvania (“Commonwealth”) to satisfy a need for Hedge Fund and Private Credit Investment Consulting Services (“Project”). This RFP contains instructions governing the requested proposals, including the requirements for the information and material to be included; a description of the service to be provided; requirements which Offerors must meet to be eligible for consideration; general evaluation criteria; and other requirements specific to this RFP.
- I-2. Issuing Office.** PSERS (“Issuing Office”) has issued this RFP on behalf of the Commonwealth. The sole point of contact in the Commonwealth for this RFP shall be Lenann T. Engler, Manager of Investment Processes, PSERS, 5 North 5th Street, Harrisburg, PA 17101, Lengler@pa.gov, the Issuing Officer for this RFP. Please refer all inquiries to the Issuing Officer.
- I-3. Overview of Project.** PSERS is the administrator of a cost-sharing, multiple-employer, defined benefit retirement system established by the Commonwealth of Pennsylvania to provide pension benefits for employees of the public school system in the Commonwealth. PSERS’ funding policy provides for periodic member contributions at statutory rates and periodic employer contributions at actuarially determined rates that are sufficient to accumulate assets to pay defined benefits when due. The Public School Employees’ Retirement Fund (“Fund”) consists of all monies of the Defined Benefit Plan. As provided by statute, the PSERS’ Board of Trustees (Board) has exclusive control and management responsibility of the Fund and full power to invest the Fund. In exercising its fiduciary responsibility to PSERS’ membership, the Board is governed by the “prudent investor” rule and has adopted an Investment Policy Statement to formally document investment objectives and responsibilities. This policy, as well as applicable state law, defines permissible investments for PSERS. The Investment Policy Statement, Objectives, and Guidelines can be obtained on the internet at <http://www.psers.pa.gov/About/Investment/Pages/Guide.aspx>.

The market value of the Fund’s net assets totaled approximately \$60.1 billion as of December 31, 2019. Based on this valuation of its assets, the Fund is the 15th largest defined benefit public pension fund in the nation. A copy of the Fund’s most recent comprehensive annual financial report can be obtained on the internet at <http://www.psers.pa.gov> under the Financial Publications section. Currently, the allocation to hedge fund investments is approximately \$6.1 billion across 28 hedge funds in the absolute return portfolio, and \$5.6 billion across 15 hedge funds in other asset classes. The primary investment objective for the Fund’s absolute return portfolio is to achieve risk-adjusted returns not available in or correlated to the traditional public

markets. Currently, PSERS' allocation to private credit investments is approximately \$5.2 billion across 20 managers in its private credit portfolio. The primary investment objectives of the Fund's private credit portfolio are to provide access to investment opportunities that are generally not available in publicly-traded fixed income markets and to target risk-adjusted returns in excess of the portfolio's benchmark (S&P/LSTA Leveraged Loan Index +200bps), net of fees, over a full market cycle. The Board has determined that it will obtain investment consulting and risk and performance measurement services for its non-discretionary hedge fund and private credit investments to fulfill its fiduciary duties with respect to the Fund.

I-4. Objectives.

A. General. The purpose of this RFP is to obtain the services of an Offeror to provide hedge fund and private credit investment consulting services.

B. Specific. Additional detail is provided in Part III of this RFP.

I-5. Type of Contract. It is proposed that if the Issuing Office enters into a contract as a result of this RFP, it will be a fixed-fee contract purchase order containing the Standard Contract Terms and Conditions as shown in **Part VI** and the terms and conditions contained in **Appendix A**. The Issuing Office, in its sole discretion, may undertake negotiations with Offerors whose proposals, in the judgment of the Issuing Office, show them to be qualified, responsible and capable of performing the Project.

I-6. Rejection of Proposals. The Issuing Office reserves the right, in its sole and complete discretion, to reject any proposal received as a result of this RFP.

I-7. Incurring Costs. The Issuing Office is not liable for any costs the Offeror incurs in preparation and submission of its proposal, in participating in the RFP process or in anticipation of award of the contract.

I-8. Pre-proposal Conference. **There will be no Pre-proposal conference for this RFP. If there are any questions, please forward them to the Issuing Officer in accordance with Section I-9.**

I-9. Questions & Answers. If an Offeror has any questions regarding this RFP, the Offeror must submit the questions by email (**with the subject line "PSERS RFP 2020-1 Question"**) to the Issuing Officer named in **Part I, Section I-2** of the RFP. If the Offeror has questions, they may be submitted as they arise via email, but **no later than** the date indicated on the Calendar of Events. The Issuing Officer shall post the answers to the questions to eMarketplace at <http://www.emarketplace.state.pa.us/Search.aspx> on an ongoing basis until the deadline stated on the Calendar of Events. When an Offeror submits a question after the deadline date for receipt of questions indicated on the Calendar of Events, the Issuing Officer *may* respond to questions of an administrative

nature by directing the questioning Offeror to specific provisions in the RFP. To the extent that the Issuing Office decides to respond to a non-administrative question *after* the deadline date, the question and answer will be provided to all Offerors through an addendum.

All questions and responses as posted to eMarketplace are considered as an addendum to, and part of, this RFP in accordance with RFP **Part I, Section I-10**. Each Offeror shall be responsible to monitor eMarketplace for new or revised RFP information. The Issuing Office shall not be bound by any verbal information nor shall it be bound by any written information that is not either contained within the RFP or formally issued as an addendum by the Issuing Office. The Issuing Office does not consider questions to be a protest of the specifications or of the solicitation. The required protest process for Commonwealth procurements is described in **Part I, Section I-26**.

I-10. Addenda to the RFP. If the Issuing Office deems it necessary to revise any part of this RFP before the proposal response date, the Issuing Office will post an addendum to eMarketplace at <http://www.emarketplace.state.pa.us/Search.aspx>. It is the Offeror's responsibility to periodically check eMarketplace for any new information or addenda to the RFP. Answers to the questions asked during the Questions & Answers period also will be posted to eMarketplace as addenda to the RFP.

I-11. Response Date. To be considered for selection, proposal submissions as described in **Part I, Section I-12** must arrive at the Issuing Office on or before the time and date specified in the RFP Calendar of Events. The Issuing Office will **not** accept proposals via email or facsimile transmission. Offerors who send proposals by mail or other delivery service should allow sufficient delivery time to ensure timely receipt of their proposals. If, due to inclement weather, natural disaster, or any other cause, the Commonwealth office location to which proposals are to be returned is closed on the proposal response date, the deadline for submission will be automatically extended until the next Commonwealth business day on which the office is open, unless the Issuing Office otherwise notifies Offerors. The hour for submission of proposals shall remain the same. The Issuing Office will reject (unopened) any late proposals.

I-12. Proposal Requirements.

A. Proposal Submission: To be considered, Offerors should submit a complete response to this RFP to the Issuing Office, using the format provided in **Section I-12B**, providing **fifteen (15) paper copies [one marked "ORIGINAL"] of the Technical Submittal and one (1) paper copy of the Cost Submittal and two (2) paper copies of the Small Diverse Business and Small Business (SDB/SB) Participation Submittal and related Letter(s) of Intent**. In addition to the paper copies of the proposal, Offerors shall submit one **complete and exact** copy of the entire proposal (Technical, Cost and SDB/SB submittals, along with all requested documents) on CD-ROM or Flash drive in Microsoft Office or Microsoft Office-compatible format. The electronic copy must be a mirror image of the paper copy and any spreadsheets must be in Microsoft Excel. The Offerors may not lock or

protect any cells or tabs. Offerors should ensure that there is no costing information in the technical submittal. Offerors should not reiterate technical information in the cost submittal. The CD or Flash drive should clearly identify the Offeror and include the name and version number of the virus scanning software that was used to scan the CD or Flash drive before it was submitted. The Offeror shall make no other distribution of its proposal to any other Offeror or Commonwealth official or Commonwealth consultant. Each proposal page should be numbered for ease of reference. An official authorized to bind the Offeror to its provisions must sign the proposal. If the official signs the **Proposal Cover Sheet (Appendix B to this RFP)** and the Proposal Cover Sheet is attached to the Offeror's proposal, the requirement will be met. For this RFP, the proposal must remain valid for **120** days or until a contract is fully executed. If the Issuing Office selects the Offeror's proposal for award, the contents of the selected Offeror's proposal will become, except to the extent the contents are changed through Best and Final Offers or negotiations, contractual obligations.

Each Offeror submitting a proposal specifically waives any right to withdraw or modify it, except that the Offeror may withdraw its proposal by written notice received at the Issuing Office's address for proposal delivery prior to the exact hour and date specified for proposal receipt. An Offeror or its authorized representative may withdraw its proposal in person prior to the exact hour and date set for proposal receipt, provided the withdrawing person provides appropriate identification and signs a receipt for the proposal. An Offeror may modify its submitted proposal prior to the exact hour and date set for proposal receipt only by submitting a new clearly identified revised sealed proposal or sealed modification marked as "Revised Proposal" which complies with the RFP requirements.

B. Proposal Format: Offerors must submit their proposals in the format, including heading descriptions, outlined below. To be considered, the proposal must respond to all proposal requirements. Offerors should provide any other information thought to be relevant, but not applicable to the enumerated categories, as an appendix to the Proposal. All cost data relating to this proposal and all Small Diverse Business and Small Business cost data should be kept separate from and not included in the Technical Submittal. Offerors should not reiterate technical information in the cost submittal. Each proposal shall consist of the following **three** separately sealed submittals:

1. Technical Submittal, in response to Part III:

- a. Complete, sign and include Appendix C – Domestic Workforce Utilization Certification; and**
- b. Complete, sign and include Appendix D - Iran Free Procurement Certification Form.**

2. Cost Submittal, in response to RFP Part IV; and

3. Small Diverse Business and Small Business (SDB/SB) Participation Submittal, in response to RFP **Part V**:

- a. Complete and include **Appendix G - SDB/SB Participation Submittal Form** and **SDB/SB Letter of Intent**. Offeror must provide a Letter of Intent for each SDB and SB listed on the SDB/SB Participation Submittal Form.

The Issuing Office reserves the right to request additional information which, in the Issuing Office's opinion, is necessary to assure that the Offeror's competence, number of qualified employees, business organization, and financial resources are adequate to perform according to the RFP.

The Issuing Office may make investigations as deemed necessary to determine the ability of the Offeror to perform the Project, and the Offeror shall furnish to the Issuing Office all requested information and data. The Issuing Office reserves the right to reject any proposal if the evidence submitted by, or investigation of, such Offeror fails to satisfy the Issuing Office that such Offeror is properly qualified to carry out the obligations of the RFP and to complete the Project as specified.

- I-13. Economy of Preparation.** Offerors should prepare proposals simply and economically, providing a straightforward, concise description of the Offeror's ability to meet the requirements of the RFP.
- I-14. Alternate Proposals.** The Issuing Office has identified the basic approach to meeting its requirements, allowing Offerors to be creative and propose their best solution to meeting these requirements. The Issuing Office will not accept alternate proposals.
- I-15. Discussions for Clarification.** Offerors may be required to make an oral or written clarification of their proposals to the Issuing Office to ensure thorough mutual understanding and responsiveness to the solicitation requirements. The Issuing Office will initiate requests for clarification. Clarifications may occur at any stage of the evaluation and selection process prior to contract execution.
- I-16. Prime Contractor Responsibilities.** The selected Offeror must perform at least 50% of the total contract value. Nevertheless, the contract will require the selected Offeror to assume responsibility for all services offered in its proposal whether it produces them itself or by subcontract. Further, the Issuing Office will consider the selected Offeror to be the sole point of contact with regard to all contractual matters.
- I-17. Proposal Contents.**
 - A. Confidential Information.** The Commonwealth is not requesting, and does not require, confidential proprietary information or trade secrets to be included as part of

Offerors' submissions in order to evaluate proposals submitted in response to this RFP. Accordingly, except as provided herein, Offerors should not label proposal submissions as confidential or proprietary or trade secret protected. Any Offeror who determines that it must divulge such information as part of its proposal must submit the signed written statement described in subsection C. below and must additionally provide a redacted version of its proposal on CD, which removes only the confidential proprietary information and trade secrets, for required public disclosure purposes. The CD should clearly identify the Offeror, note that it is a redacted copy and include the name and version number of the virus scanning software that was used to scan the CD before it was submitted. If a written statement and redacted version of the proposal is not submitted at the time of the proposal submission, the proposal will be subject to release as submitted with only financial capability redacted.

- B. Commonwealth Use.** All material submitted with the proposal shall be considered the property of the Commonwealth of Pennsylvania. The Commonwealth has the right to use any or all ideas not protected by intellectual property rights that are presented in any proposal regardless of whether the proposal becomes part of a contract. Notwithstanding any Offeror copyright designations contained in proposals, the Commonwealth shall have the right to make copies and distribute proposals internally and to comply with public record or other disclosure requirements under the provisions of any Commonwealth or United States statute or regulation, or rule or order of any court of competent jurisdiction.
- C. Public Disclosure.** After the award of a contract pursuant to this RFP, all proposal submissions are subject to disclosure in response to a request for public records made under the Pennsylvania Right-to-Know-Law, 65 P.S. § 67.101, *et seq.* If a proposal submission contains confidential proprietary information or trade secrets, a signed written statement to this effect must be provided with the submission in accordance with 65 P.S. § 67.707(b) for the information to be considered exempt under 65 P.S. § 67.708(b)(11) from public records requests. Refer to **Appendix E** of the RFP for a **Trade Secret Confidential Proprietary Information Notice Form** that may be utilized as the signed written statement, if applicable. If financial capability information is submitted in response to Part III of this RFP, such financial capability information is exempt from public records disclosure under 65 P.S. § 67.708(b)(26).

I-18. Best and Final Offers (BAFO).

- A.** While not required, the Issuing Office reserves the right to conduct discussions with Offerors for the purpose of obtaining "best and final offers." To obtain best and final offers from Offerors, the Issuing Office may do one or more of the following, in any combination and order:
1. Schedule oral presentations;
 2. Request revised proposals;

3. Conduct an online auction; and
 4. Enter into pre-selection negotiations.
- B.** The following Offerors will **not** be invited by the Issuing Office to submit a Best and Final Offer:
1. Those Offerors which the Issuing Office has determined to be not responsible or whose proposals the Issuing Office has determined to be not responsive.
 2. Those Offerors which the Issuing Office has determined in accordance with **Part II, Section II-5** from the submitted and gathered financial and other information, do not possess the financial capability, experience or qualifications to assure good faith performance of the contract.
 3. Those Offerors whose score for their technical submittal of the proposal is less than 75% of the total amount of technical points allotted to the technical criterion.

The Issuing Office may further limit participation in the best and final offers process to those remaining responsible offerors which the Issuing Office has, within its discretion, determined to be within the top competitive range of responsive proposals.

- C.** The Evaluation Criteria found in **Part II, Section II-4**, shall also be used to evaluate the Best and Final offers.
- D.** Price reductions offered through any online auction shall have no effect upon the Offeror's Technical Submittal.
- E.** Any reduction to commitments to Small Diverse Businesses and Small Businesses must be proportional to the reduction in the total price offered through any BAFO process or contract negotiations unless approved by Bureau of Diversity, Inclusion and Small Business Opportunities (BDISBO).
- I-19. News Releases.** Offerors shall not issue news releases, Internet postings, advertisements or any other public communications pertaining to this Project without prior written approval of the Issuing Office, and then only in coordination with the Issuing Office.
- I-20. Restriction of Contact.** From the issue date of this RFP until the Issuing Office selects a proposal for award, the Issuing Officer is the sole point of contact concerning this RFP. Any violation of this condition may be cause for the Issuing Office to reject the offending Offeror's proposal. If the Issuing Office later discovers that the Offeror has engaged in any violations of this condition, the Issuing Office may reject the offending Offeror's proposal or rescind its contract award. Offerors must agree not to distribute any part of their proposals beyond the Issuing Office. An Offeror who shares information contained

in its proposal with other Commonwealth personnel and/or competing Offeror personnel may be disqualified.

- I-21. Issuing Office Participation.** Offerors shall provide all services, supplies, facilities, and other support necessary to complete the identified work, except as otherwise provided in this **Part I, Section I-21**.
- I-22. Term of Contract.** The term of the contract will commence on the Effective Date and will end five years after the Effective Date. The Issuing Office will fix the Effective Date after the contract has been fully executed by the selected Offeror and by the Commonwealth and all approvals required by Commonwealth contracting procedures have been obtained. The selected Offeror shall not start the performance of any work prior to the Effective Date of the contract and the Commonwealth shall not be liable to pay the selected Offeror for any service or work performed or expenses incurred before the Effective Date of the contract.
- I-23. Offeror's Representations and Authorizations.** By submitting its proposal, each Offeror understands, represents, and acknowledges that:
- A.** All of the Offeror's information and representations in the proposal are material and important, and the Issuing Office may rely upon the contents of the proposal in awarding the contract(s). The Commonwealth shall treat any misstatement, omission or misrepresentation as fraudulent concealment of the true facts relating to the Proposal submission, punishable pursuant to 18 Pa. C.S. § 4904.
 - B.** The Offeror has arrived at the price(s) and amounts in its proposal independently and without consultation, communication, or agreement with any other Offeror or potential offeror.
 - C.** The Offeror has not disclosed the price(s), the amount of the proposal, nor the approximate price(s) or amount(s) of its proposal to any other firm or person who is an Offeror or potential offeror for this RFP, and the Offeror shall not disclose any of these items on or before the proposal submission deadline specified in the Calendar of Events of this RFP.
 - D.** The Offeror has not attempted, nor will it attempt, to induce any firm or person to refrain from submitting a proposal on this contract, or to submit a proposal higher than its proposal, or to submit any intentionally high or noncompetitive proposal or other form of complementary proposal.
 - E.** The Offeror makes its proposal in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive proposal.
 - F.** To the best knowledge of the person signing the proposal for the Offeror, the Offeror, its affiliates, subsidiaries, officers, directors, and employees are not currently under

investigation by any governmental agency and have not in the last **four** years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding or proposing on any public contract, except as the Offeror has disclosed in its proposal.

- G.** To the best of the knowledge of the person signing the proposal for the Offeror and except as the Offeror has otherwise disclosed in its proposal, the Offeror has no outstanding, delinquent obligations to the Commonwealth including, but not limited to, any state tax liability not being contested on appeal or other obligation of the Offeror that is owed to the Commonwealth.
- H.** The Offeror is not currently under suspension or debarment by the Commonwealth, any other state or the federal government, and if the Offeror cannot so certify, then it shall submit along with its proposal a written explanation of why it cannot make such certification.
- I.** The Offeror has not made, under separate contract with the Issuing Office, any recommendations to the Issuing Office concerning the need for the services described in its proposal or the specifications for the services described in the proposal.
- J.** Each Offeror, by submitting its proposal, authorizes Commonwealth agencies to release to the Commonwealth information concerning the Offeror's Pennsylvania taxes, unemployment compensation and workers' compensation liabilities.
- K.** Until the selected Offeror receives a fully executed and approved written contract from the Issuing Office, there is no legal and valid contract, in law or in equity, and the Offeror shall not begin to perform.
- L.** The Offeror is not currently engaged, and will not during the duration of the contract engage, in a boycott of a person or an entity based in or doing business with a jurisdiction which the Commonwealth is not prohibited by Congressional statute from engaging in trade or commerce.

I-24. Notification of Selection.

- A. Contract Negotiations.** The Issuing Office will notify all Offerors in writing of the Offeror selected for contract negotiations after the Issuing Office has determined, taking into consideration all of the evaluation factors, the proposal that is the most advantageous to the Issuing Office.
- B. Award.** Offerors whose proposals are not selected will be notified when contract negotiations have been successfully completed and the Issuing Office has received the final negotiated contract signed by the selected Offeror.

I-25. Debriefing Conferences. Upon notification of award, Offerors whose proposals were not selected will be given the opportunity to be debriefed. The Issuing Office will

schedule the debriefing at a mutually agreeable time. The debriefing will not compare the Offeror with other Offerors, other than the position of the Offeror's proposal in relation to all other Offeror proposals. An Offeror's exercise of the opportunity to be debriefed does not constitute nor toll the time for filing a protest (See **Section I-26** of this RFP).

- I-26. RFP Protest Procedure.** The RFP Protest Procedure is on the DGS website at <http://www.dgs.pa.gov/Documents/Procurement%20Forms/Handbook/Pt1/Pt%20I%20Ch%2058%20Bid%20Protests.pdf>. A protest by a party that has not or has not yet submitted a proposal must be filed no later than the proposal submission deadline specified in the Calendar of Events of the RFP. Offerors may file a protest within **seven** days after the protesting Offeror knew or should have known of the facts giving rise to the protest, but in no event may an Offeror file a protest later than **seven** days after the date the notice of award of the contract is posted on the DGS website. The date of filing is the date of receipt of the protest. A protest must be filed in writing with the Issuing Office. To be timely, the protest must be received by 4:00 p.m. on the seventh day.
- I-27. Use of Electronic Versions of this RFP.** This RFP is being made available by electronic means. If an Offeror electronically accepts the RFP, the Offeror acknowledges and accepts full responsibility to insure that no changes are made to the RFP. In the event of a conflict between a version of the RFP in the Offeror's possession and the Issuing Office's version of the RFP, the Issuing Office's version shall govern.

PART II

CRITERIA FOR SELECTION

II-1. Mandatory Responsiveness Requirements. To be eligible for selection, a proposal must:

- A. Be timely received from an Offeror (see **Part I, Section I-11**);
- B. Be properly signed by the Offeror (see **Part I, Section I-12A**); and
- C. Meet all of the Mandatory Minimum Qualifications outlined in Section III-3 (see **Part III, Section III-3**).

II-2. Technical Nonconforming Proposals. The three (3) Mandatory Responsiveness Requirements set forth in **Section II-1** above (A-C) are the only RFP requirements that the Commonwealth will consider to be *non-waivable*. The Issuing Office reserves the right, in its sole discretion, to (1) waive any other technical or immaterial nonconformities in an Offeror's proposal, (2) allow the Offeror to cure the nonconformity, or (3) consider the nonconformity in the scoring of the Offeror's proposal.

II-3. Evaluation. The Issuing Office has selected a committee of qualified personnel to review and evaluate timely submitted proposals. Independent of the committee, BDISBO will evaluate the Small Diverse Business and Small Business Participation Submittal and provide the Issuing Office with a rating for this component of each proposal. The Issuing Office will notify in writing of its selection for negotiation the responsible Offeror whose proposal is determined to be the most advantageous to the Commonwealth as determined by the Issuing Office after taking into consideration all of the evaluation factors.

II-4. Evaluation Criteria. The following criteria will be used in evaluating each proposal:

Technical: The Issuing Office has established the weight for the Technical criterion for this RFP as **70%** of the total points. Evaluation will be based upon the following: **Personnel Qualifications, Soundness of Approach, Offeror Qualifications, Understanding the Problem.** The final Technical scores are determined by giving the maximum number of technical points available to the proposal(s) with the highest raw technical score. The remaining proposals are rated by applying the Technical Scoring Formula set forth at the following webpage:

https://www.dgs.pa.gov/MaterialsServicesProcurement/ProcurementResources/Pages/RFP_SCORING_FORMULA.aspx

Cost: The Issuing Office has established the weight for the Cost criterion for this RFP as **10%** of the total points. The cost criterion is rated by giving the proposal with the lowest total cost the maximum number of Cost points available. The remaining proposals are rated by applying the Cost Formula set forth at the following webpage:

A.

B. Small Diverse Business and Small Business Participation: BDISBO has established the minimum evaluation weight for the Small Diverse Business and Small Business Participation criterion for this RFP as **20%** of the total points.

1. The Small Diverse and Small Business point allocation is based entirely on the percentage of the contract cost committed to Small Diverse Businesses and Small Businesses. If the Offeror is a Small Diverse Business, 100% of the contract cost is allocated to Small Diverse Business participation. If the Offeror is a Small Business, 100% of the contract cost is allocated to Small Business participation.
2. A total combined SDB/SB commitment less than one percent (1%) of the total contract cost is considered de minimis and will receive no Small Diverse Business or Small Business points.
3. Based on a maximum total of 200 available points for the Small Diverse Business and Small Business Participation Submittal, the scoring mechanism is as follows:

Small Diverse Business and Small Business Raw Score =

$$200 (\text{SDB}\% + (1/3 * \text{SB } \%))$$

4. The Small Diverse Business and Small Business Raw Score is capped at 200.
5. The Offeror with the highest raw score will receive 200 points. Each Offeror's raw score will be pro-rated against the Highest Offeror's raw score by applying the formula set forth on the following webpage:

6. The Offeror's prior performance in meeting its contractual obligations to Small Diverse Businesses and Small Businesses will be considered by BDISBO during the scoring process. To the extent the Offeror has failed to meet prior contractual commitments, BDISBO may recommend to the Issuing Office that the Offeror be determined non-responsible for the limited purpose of eligibility to receive Small Diverse Business and Small Business points.

C. Domestic Workforce Utilization: Any points received for the Domestic Workforce Utilization criterion are bonus points in addition to the total points for this RFP. The maximum amount of bonus points available for this criterion is 3% of the total points for this RFP.

To the extent permitted by the laws and treaties of the United States, each proposal will be scored for its commitment to use domestic workforce in the fulfillment of the contract. Maximum consideration will be given to those Offerors who will perform the contracted direct labor exclusively within the geographical boundaries of the United States or within the geographical boundaries of a country that is a party to the World Trade Organization Government Procurement Agreement. Those who propose to perform a portion of the direct labor outside of the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement will receive a correspondingly smaller score for this criterion. See the following webpage for the Domestic Workforce Utilization Formula:

https://www.dgs.pa.gov/MaterialsServicesProcurement/ProcurementResources/Pages/RFP_SCORING_FORMULA.aspx

D. Iran Free Procurement Certification and Disclosure. Prior to entering a contract worth at least \$1,000,000 or more with a Commonwealth entity, an offeror must: a) certify it is not on the current list of persons engaged in investment activities in Iran created by the Pennsylvania Department of General Services (“DGS”) pursuant to Section 3503 of the Procurement Code and is eligible to contract with the Commonwealth under Sections 3501-3506 of the Procurement Code; or b) demonstrate it has received an exception from the certification requirement for that solicitation or contract pursuant to Section 3503(e). All offerors must complete and return the Iran Free Procurement Certification form, (**Appendix D, Iran Free Procurement Certification Form**), which is attached hereto and made part of this RFP. The completed and signed Iran Free Procurement Certification form must be submitted as part of the Technical Submittal.

See the following web page for current Iran Free Procurement list:

<http://www.dgs.pa.gov/Documents/Procurement%20Forms/ProposedIranFreeProcurementList.pdf>

II-5. Offeror Responsibility. To be responsible, an Offeror must submit a responsive proposal and possess the capability to fully perform the contract requirements in all respects and the integrity and reliability to assure good faith performance of the contract.

In order for an Offeror to be considered responsible for this RFP and therefore eligible for selection for best and final offers or selection for contract negotiations:

- A.** The total score for the technical submittal of the Offeror’s proposal must be greater than or equal to 75% of the **available technical points**; and
- B.** The Offeror’s financial information must demonstrate that the Offeror possesses the financial capability to assure good faith performance of the contract. The Issuing Office will review the Offeror’s previous three financial statements, any additional information received from the Offeror, and any other publicly-available financial information concerning the Offeror, and assess each Offeror’s financial capacity

based on calculating and analyzing various financial ratios, and comparison with industry standards and trends.

An Offeror who fails to demonstrate sufficient financial capability to assure good faith performance of the contract as specified herein may be considered by the Issuing Office, in its sole discretion, for Best and Final Offers or contract negotiation contingent upon such Offeror providing contract performance security for the first contract year cost proposed by the Offeror in a form acceptable to the Issuing Office. Based on the financial condition of the Offeror, the Issuing Office may require a certified or bank (cashier's) check, letter of credit, or a performance bond conditioned upon the faithful performance of the contract by the Offeror. The required performance security must be issued or executed by a bank or surety company authorized to do business in the Commonwealth. The cost of the required performance security will be the sole responsibility of the Offeror and cannot increase the Offeror's cost proposal or the contract cost to the Commonwealth.

Further, the Issuing Office will award a contract only to an Offeror determined to be responsible in accordance with the most current version of Commonwealth Management Directive 215.9, Contractor Responsibility Program.

II-6. Final Ranking and Award.

- A.** After any best and final offer process conducted, the Issuing Office will combine the evaluation committee's final technical scores, BDISBO's final Small Diverse Business and Small Business Participation Submittal scores, the final cost scores, and (when applicable) the domestic workforce utilization scores, in accordance with the relative weights assigned to these areas as set forth in this Part.
- B.** The Issuing Office will rank responsible offerors according to the total overall score assigned to each, in descending order.
- C.** The Issuing Office must select for contract negotiations the offeror with the highest overall score.
- D.** The Issuing Office has the discretion to reject all proposals or cancel the request for proposals at any time prior to the time a contract is fully executed when it is in the best interests of the Commonwealth. The reasons for the rejection or cancellation shall be made part of the contract file.

PART III

TECHNICAL SUBMITTAL

Background.

PSERS is the administrator of a cost-sharing, multiple-employer, defined benefit retirement system established by the Commonwealth of Pennsylvania to provide pension benefits for employees of the public school system in the Commonwealth. PSERS' funding policy provides for periodic member contributions at statutory rates and periodic employer contributions at actuarially determined rates that are sufficient to accumulate assets to pay defined benefits when due. The Public School Employees' Retirement Fund ("Fund") consists of all monies of the Defined Benefit Plan. As provided by statute, the PSERS' Board of Trustees (Board) has exclusive control and management responsibility of the Fund and full power to invest the Fund. In exercising its fiduciary responsibility to PSERS' membership, the Board is governed by the "prudent investor" rule and has adopted an Investment Policy Statement to formally document investment objectives and responsibilities. This policy, as well as applicable state law, defines permissible investments for PSERS. The Investment Policy Statement, Objectives, and Guidelines can be obtained on the internet at <http://www.psers.pa.gov/About/Investment/Pages/Guide.aspx>

The market value of PSERS' net assets in the Fund totaled approximately \$60.1 billion as of December 31, 2019. Based on this valuation of its assets, PSERS is the 15th largest defined benefit public pension fund in the nation. A copy of the Fund's most recent comprehensive annual financial report can be obtained on the internet at <http://www.psers.state.pa.us/publications/general/cafr.htm> <http://www.psers.pa.gov> under the Financial Publications section. Currently, the allocation to hedge fund investments is approximately \$6.1 billion across 28 hedge funds in the absolute return portfolio and \$5.6 billion across 15 hedge funds in other asset classes. The primary investment objective for the Fund's absolute return portfolio is to achieve risk-adjusted returns not available in or correlated to the traditional public markets. Currently, PSERS' allocation to private credit investments is approximately \$5.2 billion across 20 managers in its private credit portfolio. The primary investment objectives of the Fund's private credit portfolio are to provide access to investment opportunities that are generally not available in publicly-traded fixed income markets and to target risk-adjust returns in excess of the portfolio's benchmark (S&P/LSTA Leveraged Loan Index +200bps), net of fees, over a full market cycle. The Board has determined that it will obtain investment consulting and risk and performance measurement services for its non-discretionary hedge fund and private credit investments to fulfill its fiduciary duties with respect to the Fund.

III-1. Requested Services.

The contractor will provide non-discretionary hedge fund and private credit investment consulting and/or performance measurement services for the period September 15, 2020 through September

14, 2025. The contractor will serve in a fiduciary capacity and will acknowledge in writing the contractor's fiduciary status, without qualification. In all cases, the hedge fund and private credit consultant and its staff will offer its advice to the Board, in conformity with the Board's policies, and in the interest of PSERS' members and beneficiaries.

A. In providing Consulting Services for the Fund's hedge fund and private credit portfolios, the consultant will:

1. Conduct a comprehensive review and analysis of investment objectives, policies, asset allocation, and portfolio structure, inclusive of defining an investable risk beta portfolio, and recommend changes, if appropriate.
2. Review the adequacy of PSERS' Investment Office Professionals and resources and make recommendations regarding PSERS' Investment Office Professionals and resources changes, if any.
3. Prepare a written annual, 3-year and 10-year investment plan by February 1 of each calendar year for PSERS' hedge fund and private credit allocations.
4. Prepare and deliver, by March 1 of each year, an annual written report that contains a comparative analysis of PSERS' hedge fund and private credit results with the annual investment plan provided for in subsection 3.
5. Recommend suitable investment opportunities and practical implementation methods; research supporting such recommendations must have been completed within the prior 12 months.
6. Recommend appropriate investment strategies, tactics, procedures, and practices.
7. Review and make recommendations regarding the guidelines applicable to hedge fund and private credit investments at least annually.
8. Conduct thorough and independent operational due-diligence reviews on hedge fund and private credit managers, including, but not limited to, qualitative assessments that thoroughly depict the organizations and teams that contribute to the investment process, operations, all internal control (including compliance and conflict of interest mitigation policy development and application), overall risk management (including, but not limited to, infrastructure management, regulatory monitoring and management, valuation policy development and application, business continuity/disaster recovery/cybersecurity plan development, application and testing), service provider confirmation and review, financial statement review, fund and key personnel regulatory and disciplinary filing review, partnership agreement review.
9. Prepare and present final written operational due diligence reports for PSERS, as appropriate for recommended investments. Such reports should include, but not be

limited to, comprehensive analysis, overall and sub-grading/rating, and inclusion of summarized elements of importance in subsection 8 above.

10. Maintain a disciplined and comprehensive process to screen institutional quality managers for consideration by PSERS.
11. Assist in developing pacing studies.
12. Provide PSERS with information on high conviction emergent managers at the earliest possible juncture to permit PSERS to secure capacity and negotiate terms with promising emergent managers.
13. Assist PSERS' Investment Office Professionals in conducting investment manager searches and facilitate the hiring of suitable institutional quality managers, including:
 - a. providing opportunities and expense reimbursement for PSERS to jointly meet and evaluate new managers at industry conferences;
 - b. providing a list of potential institutional quality managers appropriate for the mandate(s) being considered;
 - c. conducting interviews with potential managers at PSERS;
 - d. conducting on-site due diligence meetings with potential managers prior to their selection; and
 - e. assisting with the contract/fee negotiations.
14. Assist the Board and PSERS' Investment Office Professionals in identification of new investment opportunities, including in-depth due diligence covering areas including investment strategy, personnel, risk management, operations (including pricing, independent administrator, and independent auditor), infrastructure, regulatory and compliance reviews, etc. Any recommendation for investment will be supported by appropriate written due diligence summaries.
15. Provide on-going monitoring and oversight reports as requested for PSERS' hedge fund and private credit investment managers, including:
 - a. advance notice to PSERS of in-person meetings with investment managers in the Fund's hedge fund and private credit portfolios;
 - b. analysis of each manager's absolute and relative performance in relation to benchmarks, investment objectives, and peer groups, including analysis of ex-post risk-adjusted performance;
 - c. an analysis of attribution, holdings, style, and risk;
 - d. updated research on each investment manager in the portfolios updated at least once every 18 months to include a review of investment performance, process, and the manager's organization;
 - e. conduct on-site investment and operational due diligence meetings with current investment managers a minimum of every three years;
 - f. advice on manager retention/termination; and

- g. assist in developing a formal manager review process.
-
- 16. Assist PSERS' Investment Office Professionals in developing liquidity schedules, analysis of cash flow, and recommendations on redemptions.
 - 17. Recommend performance and risk benchmarks for the total hedge fund and private credit allocations as well as individual hedge fund and private credit portfolios.
 - 18. Reconcile CFs, NAVs, and other fund details.
 - 19. Collect and compile underlying investment exposure details (quarterly), if applicable.
 - 20. Collect details on fees and profit sharing on a quarterly basis and maintain ITD data.
 - 21. Calculate performance in a variety of ways (portfolio, region, strategy, currency, industry, vintage year, etc.).
 - 22. Provide currency exposure on the underlying investments.
 - 23. Prepare detailed quarterly and annual reporting (confidential and public versions).
 - 24. Prepare quarterly and annual PowerPoint slides to be presented to the Board, including but not limited to:
 - a. quarterly board report
 - b. underperforming funds
 - c. profit sharing and fees
 - d. contributors and detractors
 - 25. Provide ADV monitoring.
 - 26. Provide K-1 monitoring.
 - 27. Conduct a quarterly audit of PSERS' year-end NAVs for each investment and compare that to PSERS' reported performance and multiple.
 - 28. Verify placement agent fee offsets, if applicable.
 - 29. Provide currency hedge analysis.
 - 30. Provide research reports on asset allocation and investment issues and provide description and evaluation of alternative approaches.
 - 31. Provide information on market conditions and explain their impact on the Fund's investments.

32. Meet with the Board to report on investment matters. Generally, there are six regularly scheduled Board meetings annually. Special meetings may be scheduled as needed.
33. Present performance results to the Board quarterly, including relative results versus pre-established benchmarks, and the returns relative to the risks taken.
34. Provide access to consultant's investment research, including return, risk and correlation assumptions of various strategies and other information deemed relevant by PSERS, including consultant's manager database.
35. Provide and maintain a secure, client-facing, web-based platform that is frequently updated and continuously available to PSERS that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools, allowing PSERS to:
 - a. formulate investment policy and implement strategies;
 - b. develop asset allocation and rebalancing recommendations;
 - c. select and evaluate managers;
 - d. analyze and optimize managers; and,
 - e. analyze the risk characteristics of individual managers and the portfolios as a whole.

It is expected that PSERS' historical performance data, by portfolio and composite, will be included and that the database will be updated on a monthly basis.

36. Provide on-site training to PSERS and the Board, as needed, but in no case more than two days in any one calendar year. PSERS reserves the right to videotape any training sessions for educational purposes.
 37. The consultant will carry out other assignments that may be specified by PSERS and the Board.
- B. In providing Risk Measurement and Performance Measurement Services for the Fund's portfolios that invest in hedge funds and private credit, the consultant will:
1. Prepare a written monthly report containing calculated total return (gross and net of fees) for each composite, and each individual portfolio and compare PSERS' calculated data with benchmarks and with comparable data for a similar population of funds. Returns should be calculated for the following time periods: one month, three months, fiscal year, calendar year-to-date, 1-year, 3-year, 5-year, 10-year, 15-year, 20-year, 25-year, 30-year, and since inception.
 2. Prepare a quarterly risk analysis report for each individual fund and for PSERS total hedge fund and private credit allocations. The risk analysis should include a variety of

risk measures, including Sharpe and other statistically relevant ratios, skewness, kurtosis, volatility, correlations to a variety of market betas and other funds, VaR, scenario analysis, etc.

3. Prepare a written quarterly report containing the calculated total return (gross and net of fees if applicable) for the total hedge fund and private credit allocations, and each individual private credit and hedge fund, and compare PSERS calculated data with benchmarks and with data for a similar population of funds by asset class and portfolio management styles. Returns should be calculated for the following time periods: quarter, fiscal and calendar year-to-date, 1-year, 3-year, 5-year, 10-year, 15-year, 20-year, 25-year, 30-year, and since inception.
4. Provide quarter, fiscal, and calendar year-to-date, 1-year, 3-year, 5-year, and 10-year quartile ranking reports of composite returns for PSERS' hedge fund and private credit allocations as well as individual hedge fund and private credit investment manager returns.
5. Reconcile performance with both individual fund managers as well as the custodian bank on a quarterly basis.
6. Create additional composites with historical returns for those composites as requested by PSERS.
7. Prepare ex-post risk statistics and analytics for the same time periods, to the degree of depth, including benchmark comparatives, and use the same performance data from the above. Ex-post risk statistics and analytics should be robust and inclusive of industry best practices risk information.
8. Provide reasonable assistance to PSERS in uploading the consultant's performance data to PSERS' proprietary or third-party investment system(s).

III-2. Requirements.

A. Emergency Preparedness.

To support continuity of operations during an emergency, including a pandemic, the Commonwealth needs a strategy for maintaining operations for an extended period of time. One part of this strategy is to ensure that essential contracts that provide critical business services to the Commonwealth have planned for such an emergency and put contingencies in place to provide needed goods and services.

1. Describe how you anticipate such a crisis will impact your operations.
2. Describe your emergency response continuity of operations plan. Please attach a copy of your plan, or at a minimum, summarize how your plan addresses the following aspects of pandemic preparedness:

- a. Employee training (describe your organization's training plan, and how frequently your plan will be shared with employees).
- b. Identified essential business functions and key employees (within your organization) necessary to carry them out.
- c. Contingency plans for:
 - i. How your organization will handle staffing issues when a portion of key employees are incapacitated due to illness.
 - ii. How employees in your organization will carry out the essential functions if contagion control measures prevent them from coming to the primary workplace.
- d. How your organization will communicate with staff and suppliers when primary communications systems are overloaded or otherwise fail, including key contacts, chain of communications (including suppliers), etc.
- e. How and when your emergency plan will be tested, and if the plan will be tested by a third-party.

III-3. Mandatory Minimum Qualifications.

- A. The Offeror must meet all of the following minimum qualifications to be given further consideration. Failure to satisfy each of the minimum qualifications, or agree to meet each of the following requirements, will result in the immediate rejection of the proposal.
 - 1. The Offeror must have been in the business of providing hedge fund and private credit investment consulting services for at least three (3) years, evidenced by a certificate of incorporation or copy of Form ADV as well as documentation of investment consulting clients (including venture capital/private equity/real estate consulting clients) which date back five years.
 - 2. The Offeror must be a Registered Investment Advisor with the SEC under the Investment Advisors Act of 1940. Provide a copy of the latest Form ADV Parts I and II.
 - 3. The primary consultant and principal assistant that will be assigned to the PSERS account must each have at least five years' experience analyzing, monitoring, recommending for investment, or investing in hedge funds and private credit funds for institutional clients.

4. The Offeror must have, or have access to, a database sufficient in size and scope to allow an analysis of the risk and returns of hedge fund and private credit managers by a variety of factors, including capitalization size, style, etc.
 5. As of December 31, 2019, the Offeror must have provided non-discretionary hedge fund and private credit consulting services to at least three (3) tax exempt clients, including at least two (2) public pension clients each having over \$10 billion in total assets.
 6. The Offeror's primary source (i.e. at least 60%) of revenue must be from non-discretionary consulting services.
 7. The Offeror will be required to reimburse PSERS, or pay directly on PSERS' behalf, the reasonable travel expenses actually incurred by PSERS, if any, for each contract year (i) for travel to Offeror's location for due diligence and/or to discuss performance results, economic outlook, investment strategy, organization changes and other pertinent matters; (ii) to attend investment conferences, training, seminars or similar events sponsored by Offeror (or any affiliate of Offeror relating to the services to be provided pursuant to this RFP); and (iii) to attend meetings and interviews at existing or prospective investment manager sites. Reimbursable or directly payable expenses will include airfare, automobile rental, lodging, meals, Offeror-sponsored event registration fees, and other travel-related expenses at maximum allowance rates established by the Commonwealth Management Directive 230.10 as revised, Travel and Subsistence Allowances. The reimbursable or directly payable expenses for each of (i), (ii), and (iii), above, shall not exceed \$35,000 per calendar year.
 8. The Offeror will be required to perform services contemplated by this RFP subject to the exercise of that degree of judgment and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence who are experts in such matters, exercise in the management of like matters, not in regard to speculation but in regard to the permanent disposition of the Fund, considering the probable income to be derived therefrom as well as the probable safety of the invested capital. Offeror will be required to acknowledge, with respect to PSERS and the Fund that, without qualification, it is a "fiduciary" as that term is defined in the Employee Retirement Income Security Act of 1974 (ERISA), regardless of the applicability of ERISA to PSERS or the Fund.
 9. Offeror must provide and maintain a secure, client-facing, web-based platform that is frequently updated and continuously available to PSERS that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools.
- B. The Offeror's consulting team must provide written responses to each of the aforementioned mandatory qualifications substantiating how your firm satisfies each

qualification and confirming that your firm will satisfy each requirement. The responses must contain sufficient information as prescribed to assure the Board of its accuracy. **Failure to provide complete information will result in immediate rejection of the proposal.**

III-4. Offeror's Qualifications.

A. Please provide the following information about your firm:

1. Provide a summary description of your firm including the name, year formed, history, ownership structure, names of owners or partners, subsidiary or affiliate relationships, and the reporting and control structure. If you are an affiliate or subsidiary of another company, what percentage of the firm's total revenue does your division generate? Please describe the organizational structure and your relationship to the parent company and any other subsidiaries. List services to the investment community (trading, investment management, database) other than hedge fund and private credit investment consulting services, provided by your firm, as well as services of any parent, subsidiary, or affiliate. If hedge fund and private credit consulting is not your only line of business, please make clear in answering these questions the history and circumstances of your entrance into hedge fund and private credit consulting.
2. Do senior executives have ownership interests in the firm? If so, how much?
3. State the name, title, address and telephone number of the proposal contact person. Will the primary consultant assigned to PSERS' account have ownership interest in the firm or is there a specific arrangement for sharing in the profits earned by the enterprise (e.g., salary, bonus, group/individual performance incentives, profit sharing, etc.)? Please describe.
4. How long has your firm provided general consulting services to public pension plans? Hedge fund and private credit consulting services?

B. Please provide the following indicators of financial stability:

1. Audited financial statements for the past three (3) years, including a breakdown of revenue by line of business, and
2. Any special audit reports concerning internal controls for the past three (3) years.

C. Within the past five (5) years, have there been any significant developments in your firm (changes in ownership, personnel reorganization, new business ventures, etc.)? If so, describe in detail and outline the circumstances.

D. Do you anticipate any significant changes in your firm? If so, describe these changes and their impact on clients.

- E. Explain your firm's goals for expansion and accepting new client business. How will the firm control the quality of service to clients? Include the following:
1. Total number of accounts that will be accepted.
 2. Total assets that will be accepted.
 3. Plans for additions to professional staff and approximate timing in relation to growth of accounts and/or assets.
- F. What is the location(s) of firm headquarters and branch offices? If several locations, what quality controls does the firm use to ensure consistency of services among clients, and how does the firm handle research, information processing and databases?
- G. Present the previous experience and expertise of the firm providing the services proposed for PSERS.
1. List the name of pension funds your firm has as clients, indicating whether your firm represents these clients on a discretionary or non-discretionary basis.
 2. List your five (5) largest hedge fund and private credit consulting clients by assets and your three (3) largest public pension fund hedge fund and private credit consulting clients, including:
 - a. Type of client;
 - b. Total size of fund;
 - c. Assets on which you provide consulting services;
 - d. Length of service to them;
 - e. Nature of relationship (retainer or project-based);
 - f. Nature of service provided (discretionary or non-discretionary);
 - g. Type of investments (direct, fund of funds, separate account, or a combination of all three); and
 - h. Brief description of services provided.

3. Please complete the following for current clients:

Asset Value of Pension Fund Client	No. of Pension Fund Clients	Average Years Clients Retained the Firm
Less than \$1 billion		
\$1 billion – less than \$10 billion		
\$10 billion – less than \$30 billion		
\$30 billion or more		

4. Does your firm operate any funds or other pooled investment vehicles, including, but not limited to, funds of funds? Please identify each.
 5. Please list the names of pension plan clients that you have added in the last three (3) years, and the assets of each account.
 6. Please provide the names of all pension plan clients that you have lost in the last three (3) years, the asset size of each account, and the reason(s) for termination.
- H. Describe any other service not included in this Part III Technical Submittal that you believe would be beneficial to PSERS and you are proposing to provide for PSERS.
- I. State what you believe sets your consulting services apart from your competitors. What do you consider to be your firm's consulting specialties, strengths, and limitations?
- J. Does your firm have any record or rating system depicting value it has added over either a random selection process or an intelligent indexing approach? If so, please provide and explain.
- K. How does your firm evaluate the quality of its consulting services?
- L. Over the past five years, has your organization or any officer or principal been involved in any litigation or other legal proceedings, regulatory or other governmental investigation relating to your consulting or investment activities? If so, provide a brief explanation and indicate the current status.
- M. Has your firm or any officer, director, partner, principal or employee ever been the subject of any non-routine investigation, inquiry, or enforcement action by a governmental agency or self-regulatory body regarding fiduciary responsibilities, consulting activities, or other investment-related matters or activities? If so, describe each instance and summarize any directives or letters of opinion that were issued.
- N. Please provide the names of all government agencies and regulatory bodies to whose oversight your firm is subject.
- O. Please provide a copy of the most recent review of your firm by a government agency or regulatory body that relates to the services sought by PSERS.
- P. Please describe the levels of coverage for errors and omissions insurance and any fiduciary or professional liability insurance your firm carries. Is the coverage on a per client basis, or is the dollar figure applied to the firm as a whole? List the insurance carriers. Has your firm ever submitted a claim to your errors and omissions, liability, fiduciary or fidelity bond carrier(s)? If so, describe each instance.
- Q. Describe your disaster recovery plan and facilities.

- R. Does your firm have a policy that incorporates Environmental, Social and Governance (ESG) issues into the investment decision-making process?
- S. How do you evaluate and monitor compliance with your ESG policy? Does your firm have staff dedicated to integrating ESG issues in the investment decision-making process? Does your firm have staff dedicated to compliance with the policy?
- T. Does your firm allocate resources, including an internal staff and/or external services, to review and evaluate sustainability reports of companies whose securities are held in client accounts and/or are potential investments under consideration?
- U. If your firm has established an internal staff to review and evaluate company ESG sustainability reports, please describe how it is positioned and interacts within your firm's organizational structure.
- V. Does the internal structure/staff prepare periodic reports on its review and evaluation of invested company ESG/sustainability reports, and if so, are such reports reviewed by senior management and the board/leadership?
- W. In addition to the application of ESG in its investment decision-making process, has your firm adopted an ESG/sustainability policy and implementation process and procedures for its overall business operations? If yes, describe the management and/or board structure, process and procedures in place to ensure full implementation and compliance.
- X. Describe your research and analysis capabilities, noting supporting human expertise and technology.
1. Are your resources internal or external? If any external resources are used, provide a description including the name of vendors providing these resources. How is the information used to inform and advise clients? List investment research reports or studies that you have provided clients in the past 12 months. Describe your capability to carry out special projects requested by PSERS. Provide sample reports that best represent your research capabilities.
 2. Does your firm maintain a secure, client-facing platform that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools?
 3. Is all firm research, including proprietary research, available to clients regardless of the firm department in which it was created?

4. Is analysis available to clients through firm analysts and software comparing hedge fund and private credit managers with their peers? How quickly is this information provided following request?
5. Outline the sources used to obtain data for publication of newsletters or periodicals. Include samples of your publications.
6. Describe any other service not included in Part IV “Work Statement” that you believe would be beneficial to PSERS and that you are proposing to provide for PSERS.
7. Explain in detail any potential for conflict that would be created by your firm contracting with PSERS, including other client relationships that may inhibit services to PSERS and/or the other clients.
8. How does your firm resolve potential conflicts of interest in recommending or making investments in prospective programs among clients?

III-5. Personnel Qualifications.

- A. How many employees work at your firm? How many in each category (using the categories that your firm uses to organize employees into departments, i.e. consulting, research (broken down by investment due diligence and operational due diligence), technology, marketing, etc.).
- B. Provide an organization chart showing name, title, function, years of experience (both total and with the firm), and area of expertise of pension fund consulting professionals and support staff.
- C. What is the average number of clients per consultant?
- D. Delineate the proposed management of services to PSERS. Provide names of staff who will serve as primary consultants, principal assistant, serve as PSERS’ contacts with your firm, and provide services for PSERS. Specify the role and scope of involvement for each individual. Will the primary consultant be available to attend all Board meetings and assist PSERS’ Investment Office Professionals when needed?
- E. For proposed primary consultant, principal assistant, and other key individuals who will be providing services to PSERS, provide a biographical profile to include education, years and areas of professional investment consulting experience, and years and areas of professional investment consulting experience with your firm.
- F. For proposed primary consultant and principal assistant, provide the names of all clients, fund portfolio size, and nature of engagement for which these individuals assume a similar role. What are their other duties for the firm?

- G. Provide name and position of consulting professionals who were added to the firm during the past three (3) years. Provide name and position of consulting professionals who left the firm during the past three (3) years. Have any senior executives left or joined the firm in the past five (5) years? Please describe the circumstances of their departure(s) or their current roles. Please provide a description of your succession and continuity plans for management of the firm.
- H. What is the full-time-equivalent number of hedge fund and private credit analysts employed by the firm, the average length of experience, and at which location(s) do they work?
- I. How does the firm monitor performance of consultants, analysts, and other investment professionals that it employs?
- J. Provide a brief general description of the firm's compensation agreements for professional staff, including bonuses, profit sharing and equity ownership. Is some component of compensation deferred? Does your firm have employment contracts and/or non-compete agreements with investment professionals?
- K. Describe the job qualifications required by your firm when hiring investment professionals. Are there specific qualifications unique to those involved in hedge fund and private credit consulting?
- L. Describe your internal training procedures for consultants and research analysts.
- M. Describe your continuity plan and procedures in the event that key personnel for this assignment should leave the firm.
- N. Are any of the activities related to your consulting services outsourced to a third party? If so, please describe each arrangement including the compensation structure.

III-6. Soundness of Approach.

A. General

1. What differentiates your firm from other competing firms? Please identify your competitive advantages and disadvantages.
2. Discuss the challenges generally involved in designing, implementing, and monitoring a hedge fund or private credit program for a very large client with substantial capital to deploy.
3. In light of the current environment, please discuss the unique challenges, areas of concern and opportunities that both hedge fund and private credit managers and investors currently face, including the following:

- a. How has the landscape changed over the past year, and what further changes do you expect?
 - b. Are there any strategies that are fundamentally impaired, and if so, why?
 - c. Are there any strategies that are particularly attractive going forward, and if so, why?
4. Provide a sample Investment Policy Statement covering hedge fund and private credit programs for a large pension plan.
5. Discuss your views on utilizing funds of funds vs. direct fund investments vs. separate accounts and provide your rationale.
6. Discuss your views on applying additional leverage to fund investments.
7. Discuss your views on registration/regulatory issues with respect to hedge fund and private credit.
8. Discuss your views on hedge fund and private credit fee structures.
9. Discuss your views on position transparency. What level of information do you require from the managers you recommend to clients? Discuss your ability to collect individual investment positions and provide them to PSERS' risk management system provider. What level of transparency do you typically require from a manager before recommending them for a portfolio? What percentage of your recommended managers provides full transparency? Please answer separately for both single strategy managers and funds of funds.
10. Do you host any client events or conferences? If so, please describe them. Are fund managers invited to attend?
11. Discuss your willingness to establish a knowledge transfer relationship with PSERS and describe the activities and information that this would entail including data sharing and analytics.
12. Describe the access and interaction PSERS would have with members of your staff, other than the assigned consultant and backup.
13. What is the overall philosophy of the firm regarding an investment consultant's role with respect to boards, staff, and investment managers?
14. List all standard services provided in a typical pension plan consulting assignment. List the specialized services that you have provided to meet other needs of your clients.
15. Discuss your views on liquidity and lock-ups.

16. Discuss your views on recent decisions by public pension plans to liquidate their hedge fund portfolios.

B. Portfolio Construction

1. It is the Board's desire that the hedge fund and private credit portfolios complement, or diversify, the primary holdings of the Fund. How would you ensure the programs are structured in this manner? How would you monitor the programs in relation to PSERS' total investments on an ongoing basis to ensure the programs are truly providing diversification?
2. Describe the process you will use to recommend hedge fund and private credit program investment objectives and policies for PSERS. Provide a sample of investment objectives and policies you have developed for a pension fund client.
3. Describe the framework used for hedge fund and private credit classification, including a list of the specific categories. Describe the process and resources you will use to recommend hedge fund and private credit asset allocation for PSERS. Discuss the possible circumstances and process whereby you might recommend that an asset allocation should be changed. Provide a sample of an asset allocation plan you have developed for a pension fund client.
4. Describe the hedge fund and private credit program construction framework and process, including how recommended allocations to hedge fund and private credit strategy types, geographic regions and individual managers are derived.
 - a. Do you develop forecasts for distinct strategy types that form the basis of allocation decisions?
 - b. Do you employ an optimization routine?
5. Are there any strategy types or geographic regions that you specifically target or avoid? If so, why?
6. How do you identify style drift in a hedge fund or private credit portfolio? When style drift is identified how is it evaluated and what actions are taken?
7. Describe the variables and methodology you will consider in recommending hedge fund and private credit performance benchmark(s) for PSERS. Provide samples of benchmarks you have recommended for pension fund clients. Can the firm provide customized benchmarks?
8. How are expected or potential exposures to macro-level risk factors and correlations among strategy types and individual funds incorporated into the portfolio construction process?

9. Describe your approach to managing the liquidity profile of a client's hedge fund and private credit portfolios. Include a discussion of lock-ups, redemption frequencies, side pockets, etc.
10. Describe the methodology you would use to construct a hedge fund portfolio based on a set of parameters and constraints (i.e. HFRI Fund of Funds Conservative Index plus 100 basis points targeted return, HFRI Fund of Funds Conservative Index risk benchmark, maximum drawdown constraints, limits on illiquid strategies, etc.).
11. Describe the methodology you would use to construct a private credit portfolio based on a set of parameters and constraints (i.e. S&P/LSTA Leveraged Loan Index +200bps, maximum drawdown constraints, limits on illiquid strategies, etc.).

C. Sourcing Hedge Fund and Private Credit Investment Opportunities

1. List the main channels through which new managers are sourced and the appropriate percentage of current managers sourced through each. Which route do you feel is most effective and why?
2. Describe your investment and operational research and analysis capabilities related to hedge fund and private credit portfolios. Are your resources internal or external? If any external resources are used, provide a description including the name of vendors providing these resources. How is the information used to inform and advise clients?
3. Describe your overall approach to manager research and selection, including a list of any specific criteria that must be met in order for a manager to be considered and any characteristics that will automatically exclude a manager from consideration. Please provide an outline of your manager evaluation framework and sample reports.
4. Describe your process of performing due diligence review and analysis on the professional staff and operations of investment managers. How often is the analysis updated? Provide samples of reports that would be made available to PSERS which detail the results of your firm's analysis.
5. Describe the process you will use to conduct investment manager searches and to recommend candidates to PSERS. Identify all criteria that might be taken into account in order to complete your recommendations. Include a description of the size of your manager database and experience negotiating performance-based fees.
6. Do you have dedicated individuals or teams separately responsible for investment, operational, and legal/compliance due diligence? If so, does each group have authority to "veto" a prospective investment before a recommendation is made to a client or at any time thereafter?
7. Do you perform background checks on the key individuals of all prospective managers? What roles/titles are typically included in this group (i.e. CIO, portfolio managers,

- CEO, CFO, etc.)? What specific red flags are you looking for? What service provider(s) do you utilize for background checks?
8. Describe your approach to performing reference checks on prospective managers, including both named and informal references.
 9. Do you examine and contact the third-party service providers of all prospective managers? If so, describe the key diligence components and areas of focus with respect to: 1) Administrators, 2) Custodians and Prime Brokers, 3) Auditors, and 4) Legal Advisors.
 10. Please discuss the firm's database of hedge fund and private credit managers. How many single-strategy and how many fund of funds managers are in the database? What are some key factors the firm uses to rate managers in the database? Can the database be accessed by clients online?
 11. How willing is the firm to perform due diligence on managers that are not in the database but that the Board would like reviewed? Is there an extra charge for that type of research?
 12. Each year, on average, how many managers do you: 1) Meet with, 2) Subject to full due diligence, 3) Update prior full due diligence, and 4) Approve for investment?
 13. Describe your abilities as to the extent of possible involvement in negotiating legal documents, including side agreements, where appropriate.
 14. Briefly describe your requirements or preferences regarding level of management fees, level of profit sharing/carried interest, hurdle rates of return, acceptable levels of leverage and transparency, key person provisions, and other criteria you view as of high importance.
 15. Describe your pre-investment due diligence process including the groups or individuals, deliverables, decision points and timeframe associated with each component.
 16. Please provide a sample investment and operational due diligence summary report/memo.
 17. If you use a questionnaire as part of your hedge fund and private credit manager due diligence process, please attach as an appendix to your response.
 18. Describe how you verify the use of soft dollar arrangements and if they are used in capital raising activities.
 19. Describe how your firm verifies SEC investigations and other regulatory proceedings of the fund and its personnel.

20. Describe how your firm interacts with placement agents.
21. Please identify best practices for public pension plans with regard to placement agents and associated costs.
22. Describe how you develop an opinion of the internal control environment of a manager.
23. Describe the systems and procedures used to store and access manager-related information (performance, portfolio exposures, research notes, due diligence reports, etc.), including any third-party and internally developed databases or document storage utilities.
 - a. How is the information collected? (i.e. surveys, due diligence questionnaires, meetings, etc.)?
 - b. How many unique funds are covered by your database?
 - c. Do you have dedicated support staff and/or technology professionals that focus on data management?
 - d. If you maintain an internal manager database, do you sell it to third parties? How is the compensation for access structured?
 - e. What fees or other consideration, if any, do you receive from managers who wish to be maintained in your database?

D. Risk Management and Monitoring

1. Describe your process for monitoring risk exposures, both for individual and clients' aggregate hedge fund and private credit portfolios. What specific risk exposures are monitored and with what frequency? Include a description of key risks inherent in various sub-strategies based on a manager's strategy and style. Are individual fund risk exposures aggregated across sectors/strategy styles as well as the entire portfolio? How? Do you use holdings-based measures, return-based measures, or some combination? Please provide a sample exposure report.
2. Do you have dedicated individuals or a team separately responsible for risk management?
3. Do you employ stress testing and/or scenario analysis? If so, please describe.
4. List any quantitative risk metrics you utilize along with a description of how they are used and why you believe they are useful.
5. Provide an overview of any third-party or internally developed risk systems or tools, how they are used, and the standard output/reports they generate. Please include a standard risk report as an appendix to your response.

6. Describe your process of reviewing investment manager performance and consistency of investment approach.
7. How do you ensure the accuracy of manager-reported position/exposure data and fund NAV? How is this information collected and processed?
8. Describe your process for providing ongoing monitoring and oversight related to investment objectives, contract and guideline compliance, account restrictions, conflicts of interest, and reporting requirements.
9. Describe your approach to post-investment due diligence including the groups or individuals, deliverables, decision points, and timeframe associated with each component. How often do follow-up due diligence meetings, onsite visits, etc. occur? Which areas are reviewed? How often are follow-up due diligence reports/memos issued?
10. Discuss generally the issue of on-going risk management analysis of the funds PSERS will be invested in, the tools you employ and the risk management reports you provide. Are the tools and reports available online?
11. How do you monitor leverage within fund managers? How do you track style drift?
12. Under what circumstances do you typically recommend full redemptions? What process would you follow to evaluate the situation, formulate a recommendation and ultimately communicate this to the client?
13. Has a fund that your firm has recommended to a client ever been liquidated or otherwise gone out of business? How long after the initial recommendation did the liquidation occur? If so, describe each instance, the lessons that were learned and any subsequent changes that were made in response to these events.

E. Reporting

1. List investment research reports or studies that you have provided clients in the past 12 months. Describe your capability to carry out special projects requested by PSERS. Provide a sample report that best represents your research capabilities.
2. What types of general research reports or white papers do you produce and distribute to clients? Please attach the three most recent reports. Outline the sources used to obtain data for publication of newsletters or periodicals. Include samples of your publications.
3. How do you communicate important developments and relevant information to clients outside of standard reporting packages and board meetings?

F. Conflicts of Interest

1. Describe in detail any potential conflicts of interest your firm may have in providing consulting services to PSERS. Include any activities of affiliated or parent organizations, brokerage activities, investment banking activities, or other relevant functions. Include any other pertinent activities, actions, or relationships not specifically outlined in this question.
2. Has your firm adopted the CFA Institute's code of Ethics and Standards of Professional Conduct?
3. Does your firm maintain a comparable written ethics or compliance manual or policy? If so, please provide a copy and a description of any similar management control tools.
4. Does the firm or any employees of the firm invest their own capital in investment opportunities that they also recommend for clients? If yes, please explain how potential conflicts that arise from these activities are mitigated.
5. Are there any circumstances under which your organization or any of its employee's receives compensation, finder's fees, or any other benefit from investment managers or third parties? If yes, please describe these arrangements in detail.
6. Describe how your firm is compensated on discretionary accounts you manage for clients.
7. Does the firm, its affiliates, or the ultimate parent of the firm receive revenues from investment managers for consulting services provided, software sold, attendance at conferences, access to manager databases, or for any other reason? If so, for 2019, please list the names of all investment managers from which revenues were received as well as the dollar amounts received from each entity and the service provided. Disclose all services provided and compensation received (including the sources of such compensation, whether direct or indirect) between your firm and investment managers, plan officials, beneficiaries, sponsors, and/or others as required by Standard 2b of the Investment Management Consultants Association Standards of Practice.
8. State whether you, any of your principals, or any other affiliates have any business involvements that could be viewed as potential conflicts of interest.
9. Provide a copy of your current Code of Ethics adopted pursuant to 204A-1 of the Advisers Act.

G. Performance Measurement

1. Describe the process and sources of data for analyzing, monitoring, and reporting the performance of clients' hedge fund and private credit portfolios.

2. Describe the content and format of the monthly and quarterly performance reports you will prepare for PSERS. Include:
 - a. Data and method used to calculate total return before and after fees;
 - b. Time periods for which total returns will be calculated;
 - c. Standard indices, custom indices, and benchmarks you will use for comparison;
 - d. Characteristics you will compare; and
 - e. Market conditions.

Please comment on your ability to provide draft performance reports within 45 days after quarter-end given final market values from our hedge funds are typically received 30 days after quarter-end. Please comment on your ability to provide draft performance reports within 75 days after quarter-end given final market values from our private credit funds are typically received 60 days after quarter-end. Will you be able to issue final reports within 3 business days after receiving comments from PSERS on the draft? What quality control systems and procedures do you use to ensure that reports are prepared accurately and delivered on time?

Describe in detail the performance measurement attribution and analysis service you propose to provide for PSERS. Note its usefulness for PSERS.

3. Describe your performance evaluation and reporting process including the types of analysis typically included.
4. Please attach samples of all standard reports described above.
5. Can investors receive custom reports? If so, discuss the range of customization available.
6. Describe in detail the Internet-based fund management and consulting tools to which your firm will provide the Board and PSERS' Investment Office Professionals access. Provide sample reports. NOTE: PSERS may require demonstration of such tools.

III-7. Miscellaneous.

- A. Does your firm offer both discretionary and non-discretionary hedge fund and private credit consulting services? If so, what percentage of clients are discretionary and what percentage of revenues are derived from discretionary client relationships?
- B. What are your views of the role of private credit and hedge funds in a pension fund, particularly of the size of PSERS?
- C. What do you see as being the most significant changes that will be occurring in asset allocation for pension funds over the next 10 years? In private credit and hedge funds specifically? Please comment.

- D. Do you believe that investing in small and/or emerging funds offers adequate potential excess returns or other benefits that outweigh the increased operational and business risks?
- E. Describe any business relationships that you or any of your affiliates have had within the past two years with the Commonwealth of Pennsylvania or within the past five years with PSERS' Investment Office Professionals or Board members.

III-8. References.

List five (5) current non-discretionary hedge fund and private credit consulting clients as references, including at least two (2) public pension fund clients. For each reference, include client name, name of contact person with title, address (both building and email), telephone number, asset value of client, amount invested in private credit and hedge funds, number of funds, services the client uses, and number of years the client retained the firm. PSERS intends to contact the references.

In addition, identify the five (5) largest clients lost within the last 5 years and indicate the reason(s) for termination. Include client name, name of contact person with title, address (both building and email), telephone number, services the client used, and number of years the client retained the firm.

III-9. Work Plan.

Describe in narrative form your technical plan for accomplishing the work. Use the task descriptions in Part IV of this RFP as your reference point. Modifications of the task descriptions are permitted; however, reasons for changes should be fully explained. Indicate the number of person hours allocated to each task. Include a Program Evaluation and Review Technique (PERT) or similar type display, time related, showing each event. If more than one approach is apparent, comment on why you chose this approach.

III-10. Objections and Additions to Standard Contract Terms and Conditions.

The Offeror will identify which, if any, of the terms and conditions contained in **Part VI and Appendix A** it would like to negotiate and what additional terms and conditions the Offeror would like to add to the standard contract terms and conditions. The Offeror's failure to make a submission under this paragraph will result in its waiving its right to do so later, but the Issuing Office may consider late objections and requests for additions if to do so, in the Issuing Office's sole discretion, would be in the best interest of the Commonwealth. The Issuing Office may, in its sole discretion, accept or reject any requested changes to the standard contract terms and conditions. The Offeror shall not request changes to the other provisions of the RFP, nor shall the Offeror request to completely substitute its own terms and conditions for **Part VI and Appendix A**. All terms and conditions must appear in one integrated contract. The Issuing Office will not accept references to the Offeror's, or any other, online guides or online terms and conditions contained in any proposal. The Board will not consider proposals that contain any limitations of Offeror liability for services provided. Any proposal containing such a limitation shall be rejected.

Regardless of any objections set out in its proposal, the Offeror must submit its proposal, including the cost proposal, on the basis of the terms and conditions set out in **Part VI and Appendix A**. The Issuing Office will reject any proposal that is conditioned on the negotiation of the terms and conditions set out in **Part VI and Appendix A or to other provisions of the RFP as specifically identified above**.

PART IV

COST SUBMITTAL

- IV-1. Cost Submittal.** The information requested in this **Part IV** shall constitute the Cost Submittal. The Cost Submittal shall be placed in a separate sealed envelope within the sealed proposal, separated from the technical submittal in compliance with **Part I, Section 1-12(A)**. The total proposed cost should be broken down into the components set forth in **Appendix F – Cost Submittal Worksheet**. The percentage of commitment to Small Diverse Businesses and Small Businesses should not be stated in the Cost Submittal. Offerors should **not** include any assumptions in their cost submittals. If the Offeror includes assumptions in its cost submittal, the Issuing Office may reject the proposal. Offerors should direct in writing to the Issuing Office pursuant to **Part I, Section I-9** of this RFP any questions about whether a cost or other component is included or applies. All Offerors will then have the benefit of the Issuing Office's written answer so that all proposals are submitted on the same basis.

The Issuing Office will reimburse the selected Offeror for work satisfactorily performed after execution of a written contract and the start of the contract term, in accordance with contract requirements, and only after the Issuing Office has issued a notice to proceed.

PART V

SMALL DIVERSE BUSINESS AND SMALL BUSINESS PARTICIPATION SUBMITTAL

- V-1. Small Diverse Business and Small Business General Information.** The Issuing Office encourages participation by Small Diverse Businesses and Small Businesses as prime contractors, and encourages all prime contractors to make significant commitments to use Small Diverse Businesses and Small Businesses as subcontractors and suppliers.

A Small Business must meet each of the following requirements:

- The business must be a for-profit, United States business;
- The business must be independently owned;
- The business may not be dominant in its field of operation;
- The business may not employ more than 100 full-time or full-time equivalent employees;
- The business may not exceed an average of \$38.5 million in gross annual revenues over the preceding three years.

For credit in the RFP scoring process, a Small Business must complete the DGS/BDISBO self-certification process. Additional information on this process can be found at:

<https://www.dgs.pa.gov/Small%20Diverse%20Business%20Program/Small-Diverse-Business-Verification/Pages/default.aspx>

A Small Diverse Business is a DGS-verified minority-owned small business, woman-owned small business, veteran-owned small business, service-disabled veteran-owned small business, LGBT-owned small business, Disability-owned small business, or other small businesses as approved by DGS, that are owned and controlled by a majority of persons, not limited to members of minority groups, who have been deprived of the opportunity to develop and maintain a competitive position in the economy because of social disadvantages.

For credit in the RFP scoring process, a Small Diverse Business must complete the DGS verification process. Additional information on this process can be found at:

<https://www.dgs.pa.gov/Small%20Diverse%20Business%20Program/Small-Diverse-Business-Verification/Pages/default.aspx>

An Offeror that qualifies as a Small Diverse Business or a Small Business and submits a proposal as a prime contractor is not prohibited from being included as a subcontractor in separate proposals submitted by other Offerors.

A Small Diverse Business or Small Business may be included as a subcontractor with as many prime contractors as it chooses in separate proposals.

The Department's directory of self-certified Small Businesses and DGS/BDISBO-verified Small Diverse Businesses can be accessed from:

<http://www.dgs.internet.state.pa.us/suppliersearch>

Questions regarding the Small Diverse Business and Small Business Programs, including questions about the self-certification and verification processes can be directed to:

Department of General Services
Bureau of Diversity, Inclusion and Small Business Opportunities (BDISBO)
Room 611, North Office Building
Harrisburg, PA 17125
Phone: (717) 783-3119
Fax: (717) 787-7052
Email: RA-BDISBOVerification@pa.gov
Website: www.dgs.pa.gov

V-2. Small Diverse Business and Small Business (SDB/SB) Participation Submittal

All Offerors are required to submit the Small Diverse Business and Small Business Participation Submittal Form and related Letter(s) of Intent (available at <http://www.dgs.pa.gov/layouts/download.aspx?SourceUrl=http://www.dgs.pa.gov/Documents/Procurement%20Forms/Small%20Diverse%20Business%20and%20Small%20Business%20Participation%20Submittal.xlsx>) as described in Part I, Section I-11. To receive points for Small Diverse Business or Small Business participation commitments, the Small Diverse Business or Small Business must be listed in the Department's directory of self-certified Small Businesses and DGS/BDISBO-verified Small Diverse Businesses as of the proposal due date and time. BDISBO reserves the right to adjust overall Small Diverse Business or Small Business commitments to correctly align with the Small Diverse Business or Small Business status of a prime contractor or subcontractor as of the solicitation due date and time, and also to reflect the correct sum of individual subcontracting commitments listed within the Letters of Intent.

- A. Offerors must indicate their status as a Small Diverse Business and as a Small Business through selection of the appropriate checkboxes.
- B. Offerors must include a numerical percentage which represents the total percentage of the total cost in the Cost Submittal that the Offeror commits to paying to Small Diverse Businesses and Small Businesses as subcontractors.
- C. Offerors must include a listing of and required information for each of the Small Diverse Businesses and/or Small Businesses with whom they will subcontract to achieve the participation percentages outlined on the Small Diverse Business and Small Business Participation Submittal.
- D. Offerors must include a Letter of Intent (available at the following link: <http://www.dgs.pa.gov/layouts/download.aspx?SourceUrl=http://www.dgs.pa.gov/D>

[ocuments/Procurement%20Forms/Small%20Diverse%20Business%20and%20Small%20Business%20Participation%20Submittal.xlsx\)](#)

signed by both the Offeror and the Small Diverse Business or Small Business for each of the Small Diverse Businesses and Small Businesses identified in the Small Diverse Business and Small Business Participation Submittal form. At minimum, the Letter of Intent must include the following:

1. The fixed numerical percentage commitment and associated estimated dollar value of the commitment made to the Small Diverse Business or Small Business; and
 2. A description of the services or supplies the Small Diverse Business or Small Business will provide; and
 3. The timeframe during the initial contract term and any extensions, options and renewals when the Small Diverse Business or Small Business will perform or provide the services and/or supplies; and
 4. The name and telephone number of the Offeror's point of contact for Small Diverse Business and Small Business participation; and
 5. The name, address, and telephone number of the primary contact person for the Small Diverse Business or Small Business.
- E. Each Small Diverse Business and Small Business commitment which is credited by BDISBO along with the overall percentage of Small Diverse Business and Small Business commitments will become contractual obligations of the selected Offeror.

NOTE: Offerors will not receive credit for any commitments for which information as above is not included in the Small Diverse Business and Small Business Participation Submittal. Offerors will not receive credit for stating that after the contract is awarded they will find a Small Diverse Business or Small Business.

NOTE: Equal employment opportunity and contract compliance statements referring to company equal employment opportunity policies or past contract compliance practices do not constitute proof of Small Diverse Business and/or Small Business Status or entitle an Offeror to receive credit for Small Diverse Business or Small Business participation.

- V-3. Contract Requirements—Small Diverse Business and Small Business Participation.** All contracts containing Small Diverse Business and Small Business Participation must contain the following contract provisions to be maintained through the initial contract term and any subsequent options or renewals:

- A. Each Small Diverse Business and Small Business commitment which was credited by BDISBO and the total percentage of such Small Diverse Business and Small Business commitments made at the time of proposal submittal, BAFO or contract negotiations, as applicable, become contractual obligations of the selected Offeror upon execution of its contract with the Commonwealth.
- B. For purposes of monitoring compliance with the selected Offeror's SDB or SB commitments, the contract cost is the total amount paid to the selected Offeror throughout the initial contract term.
- C. All Small Diverse Business and Small Business subcontractors credited by BDISBO must perform at least 50% of the work subcontracted to them.
- D. The individual percentage commitments made to Small Diverse Businesses and Small Businesses cannot be altered without written approval from BDISBO.
- E. Small Diverse Business and Small Business commitments must be maintained in the event the contract is assigned to another prime contractor.
- F. The selected Offeror and each Small Diverse Business and Small Business for which a commitment was credited by BDISBO must submit a final, definitive subcontract agreement signed by the selected Offeror and the Small Diverse Business and/or Small Business to BDISBO within 30 days of the final execution date of the Commonwealth contract. A Model Subcontract Agreement which may be used to satisfy this requirement – **Model Form of Small Diverse and Small Business Subcontract Agreement** – is available at the following link: <http://www.dgs.pa.gov/layouts/download.aspx?SourceUrl=http://www.dgs.pa.gov/Documents/Procurement%20Forms/Model%20Form%20Subcontract%20Agreement.docx>). The subcontract must contain:
 - 1. The specific work, supplies or services the Small Diverse Business and/or Small Business will perform; location for work performed; how the work, supplies or services relate to the project; and the specific timeframe during the initial term and any extensions, options and renewals of the prime contract when the work, supplies or services will be provided or performed.
 - 2. The fixed percentage commitment and associated estimated dollar value that each Small Diverse Business and/or Small Business will receive based on the final negotiated cost for the initial term of the prime contract.
 - 3. Payment terms indicating that the Small Diverse Business and/or Small Business will be paid for work satisfactorily completed within 14 days of the selected Offeror's receipt of payment from the Commonwealth for such work.
 - 4. Commercially reasonable terms for the applicable business/industry that are no less favorable than the terms of the selected Offeror's contract with the

Commonwealth and that do not place disproportionate risk on the Small Diverse Business and/or Small Business relative to the nature and level of the Small Diverse Business' and/or Small Business' participation in the project.

- G.** If the subcontract terms omit any of the information required in paragraph F, and that information is otherwise reflected within the selected Offeror's SDB and SB Participation Submittal or LOI, that information is incorporated into the subcontract agreement. To the extent that any subcontract terms conflict with the requirements of paragraph F or information contained within the selected Offeror's SDB and SB Participation Submittal or LOI, the order of precedence is as follows: 1) the requirements of paragraph F, 2) the selected Offeror's SDB and SB Participation Submittal, and 3) the terms of the subcontract agreement.
- H.** If the selected Offeror and a Small Diverse Business or Small Business credited by BDISBO cannot agree upon a definitive subcontract within 30 days of the final execution date of the Commonwealth contract, the selected Offeror must notify BDISBO.
- I.** The Selected Offeror shall complete the Prime Contractor's Quarterly Utilization Report and submit it to the contracting officer of the Issuing Office and BDISBO within ten (10) business days at the end of each quarter of the contract term and any subsequent options or renewals. This information will be used to track and confirm the actual dollar amount paid to Small Diverse Business and Small Business subcontractors and suppliers and will serve as a record of fulfillment of the contractual commitment. If there was no activity during the quarter, the form must be completed by stating "No activity in this quarter." A late fee of \$100.00 per day may be assessed against the Selected Offeror if the Utilization Report is not submitted in accordance with the schedule above.
- J.** The Selected Offeror shall notify the Contracting Officer of the Issuing Office and BDISBO when circumstances arise that may negatively impact the selected Offeror's ability to comply with Small Diverse Business and/or Small Business commitments and to provide a corrective action plan. Disputes will be decided by the Issuing Office and DGS.
- K.** If the Selected Offeror fails to satisfy its Small Diverse Business and/or Small Business commitment(s), it may be subject to a range of sanctions BDISBO deems appropriate. Such sanctions include, but are not limited to, one or more of the following: a determination that the selected Offeror is not responsible under the Contractor Responsibility Program; withholding of payments; suspension or termination of the contract together with consequential damages; revocation of the selected Offeror's Small Diverse Business status and/or Small Business status; and/or suspension or debarment from future contracting opportunities with the Commonwealth.

PART VI

CONTRACT TERMS AND CONDITIONS

Please refer to this website for Commonwealth Standard Contract Terms and Conditions (BOP-1203):

[http://www.dgs.pa.gov/Documents/Procurement%20Forms/BOP-1203 Std Terms and Conditions ElectronicContract.pdf](http://www.dgs.pa.gov/Documents/Procurement%20Forms/BOP-1203%20Std%20Terms%20and%20Conditions%20ElectronicContract.pdf)

APPENDIX A

SAMPLE PURCHASE ORDER TERMS AND CONDITIONS AND INFORMATION **SECURITY ADDENDUM**

PURCHASE ORDER **TERMS AND CONDITIONS** **RIDER I**

Pursuant to purchase order number _____ (“Purchase Order”), _____ (the “CONSULTANT”) agrees to perform the services set forth therein, those set forth below, those set forth in its Proposal of XX XX, 2020, which is attached to the Purchase Order as Rider __ and incorporated therein by reference, and those set forth in the Public School Employees’ Retirement Board (“Board”) transacting business as the Public School Employees’ Retirement System’s (“PSERS”) Request for Proposal (“RFP”) dated March 4, 2020, PSERS RFP 2020-1, which is attached to the Purchase Order as Rider __ and incorporated therein by reference.

- A. In providing Consulting Services for the Fund’s Hedge Fund and Private Credit portfolios, the consultant will:
1. Conduct a comprehensive review and analysis of investment objectives, policies, asset allocation, and portfolio structure, inclusive of defining an investable risk beta portfolio, and recommend changes, if appropriate.
 2. Review the adequacy of PSERS’ Investment Office Professionals and resources and make recommendations regarding PSERS’ Investment Office Professionals and resources changes, if any.
 3. Prepare a written annual, 3-year and 10-year investment plan by February 1 of each calendar year for PSERS’ hedge fund and private credit allocations.
 4. Prepare and deliver, by March 1 of each year, an annual written report that contains a comparative analysis of PSERS’ hedge fund and private credit results with the annual investment plan provided for in subsection 3.
 5. Recommend suitable investment opportunities and practical implementation methods; research supporting such recommendations must have been completed within the prior 12 months.
 6. Recommend appropriate investment strategies, tactics, procedures, and practices.
 7. Review and make recommendations regarding the guidelines applicable to the hedge fund and private credit allocations at least annually.

8. Maintain a disciplined and comprehensive process to screen institutional quality managers for consideration by PSERS.
9. Provide PSERS with information on high conviction emergent managers at the earliest possible juncture to permit PSERS to secure capacity and negotiate terms with promising emergent managers.
10. Assist PSERS' Investment Office Professionals in conducting investment manager searches and facilitate the hiring of suitable institutional quality managers, including
 - a. providing opportunities and expense reimbursement for PSERS to jointly meet and evaluate new managers at industry conferences;
 - b. providing a list of potential institutional quality managers appropriate for the mandate being considered;
 - c. conducting interviews with potential managers at PSERS;
 - d. conducting on-site due diligence meetings with potential managers prior to their selection; and
 - e. assisting with the contract/fee negotiations.
11. Assist the Board and PSERS' Investment Office Professionals in identification of new investment opportunities, including in-depth due diligence covering areas including investment strategy, personnel, risk management, operations (including pricing, independent administrator, and independent auditor), infrastructure, regulatory and compliance reviews, etc. Any recommendation for investment will be supported by appropriate written due diligence summaries.
12. Provide on-going monitoring and oversight reports as requested for PSERS' hedge fund and private credit investment managers, including:
 - a. advance notice to PSERS of in-person meetings with investment managers in the Fund's hedge fund and private credit portfolios;
 - b. analysis of each manager's absolute and relative performance in relation to benchmarks, investment objectives, and peer groups, including analysis of ex-post risk-adjusted performance;
 - c. an analysis of attribution, holdings, style, and risk;
 - d. updated research on each investment manager in the Fund's portfolio updated at least once every 18 months to include a review of investment performance, process, and the manager's organization;
 - e. conduct on-site investment and operational due diligence meetings with current investment managers a minimum of every three years;
 - f. advice on manager retention/termination; and
 - g. assist in developing a formal manager review process.
13. Assist PSERS' Investment Office Professionals in developing liquidity schedules, analysis of cash flow, and recommendations on redemptions.

14. Recommend a performance and risk benchmarks for the total hedge fund and private credit allocations as well as individual hedge fund and private credit portfolios. Reconcile CFs, NAVs, and other fund details.
15. Collect and compile underlying investment exposure details (quarterly), if applicable.
16. Collect details on fees and profit sharing on a quarterly basis and maintain ITD data.
17. Calculate performance in a variety of ways (portfolio, region, strategy, currency, industry, vintage year, etc.).
18. Provide currency exposure on the underlying investments.
19. Prepare detailed quarterly and annual reporting (confidential and public versions).
20. Prepare quarterly and annual PowerPoint slides to be presented to the Board, including but not limited to:
 - a. quarterly board report
 - b. underperforming funds
 - c. profit sharing and fees
 - d. contributors and detractors
21. Provide ADV monitoring.
22. Provide K-1 monitoring.
23. Conduct a quarterly audit of PSERS' year-end NAVs for each investment and compare that to PSERS' reported performance and multiple.
24. Verify placement agent fee offsets, if applicable.
25. Provide currency hedge analysis.
26. Provide research reports on asset allocation and investment issues, and provide description and evaluation of alternative approaches.
27. Provide information on market conditions and explain their impact on the Fund's investments.
28. Meet with the Board to report on investment matters. Generally, there are six regularly scheduled Board meetings annually. Special meetings may be scheduled as needed.
29. Present performance results to the Board quarterly, including relative results versus pre-established benchmarks, and the returns relative to the risks taken.

30. Provide access to consultant's investment research, including return, risk and correlation assumptions of various strategies and other information deemed relevant by PSERS, including consultant's manager database.
31. Provide and maintain a secure, client-facing, web-based platform that is frequently updated and continuously available to PSERS that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools, allowing PSERS to:
 - a. formulate investment policy and implement strategies;
 - b. develop asset allocation and rebalancing recommendations;
 - c. select and evaluate managers;
 - d. analyze and optimize managers; and,
 - e. analyze the risk characteristics of individual managers and the portfolios as a whole.

It is expected that PSERS' historical performance data, by portfolio and composite, will be included and that the database will be updated on a monthly basis.

32. Provide on-site training to PSERS and the Board, as needed, but in no case more than two days in any one calendar year. PSERS reserves the right to videotape any training sessions for educational purposes.
 33. The consultant will carry out other assignments that may be specified by PSERS and the Board.
- B. In providing Risk Measurement and Performance Measurement Services for the Fund's portfolios that invest in hedge funds and private credit, the consultant will:
1. Prepare a written monthly report containing calculated total return (gross and net of fees) for each composite, and each individual portfolio, and compare PSERS' calculated data with benchmarks and with comparable data for a similar population of funds. Returns should be calculated for the following time periods: one month, three months, fiscal year, calendar year-to-date, 1-year, 3-year, 5-year, 10-year, 15-year, 20-year, 25-year, 30-year, and since inception.
 2. Prepare a quarterly risk analysis report for each individual fund and for PSERS total hedge fund and private credit allocations. The risk analysis should include a variety of risk measures, including Sharpe and other statistically relevant ratios, skewness, kurtosis, volatility, correlations to a variety of market betas and other funds, VaR, scenario analysis, etc.

3. Prepare a written quarterly report containing the calculated total return (gross and net of fees) for the total hedge fund and private credit allocations, and each individual private credit and hedge fund, and compare PSERS calculated data with benchmarks and with data for a similar population of funds by asset class and portfolio management styles. Returns should be calculated for the following time periods: quarter, fiscal and calendar year-to-date, 1-year, 3-year, 5-year, 10-year, 15-year, 20-year, 25-year, 30-year, and since inception.
4. Provide quarter, fiscal, and calendar year-to-date, 1-year, 3-year, 5-year, and 10-year quartile ranking reports of composite returns for PSERS' hedge fund and private credit allocations as well as individual hedge fund and private credit investment manager returns.
5. Reconcile performance with both individual fund managers as well as the custodian bank on a quarterly basis.
6. Create additional composites with historical returns for those composites as requested by PSERS.
7. Prepare ex-post risk statistics and analytics for the same time periods, to the degree of depth, including benchmark comparatives, and use the same performance data from the above. Ex-post risk statistics and analytics should be robust and inclusive of industry best practices risk information.
8. Provide reasonable assistance to PSERS in uploading the consultant's performance data to PSERS' proprietary or third-party investment system(s).

C. Terms and Conditions

1. The CONSULTANT's compensation for performing the above services shall be as set forth in the Purchase Order. The CONSULTANT acknowledges and agrees that no further fees are payable by PSERS for the services rendered under the Purchase Order.
2. The CONSULTANT shall hold the Commonwealth of Pennsylvania, the Board, PSERS, the Fund, their beneficiaries, directors, officers, agents, and employees harmless from and indemnify the Commonwealth of Pennsylvania, the Board, PSERS, the Fund, their beneficiaries, directors, officers, agents, and employees against any and all claims, demands, actions, or liability of any nature, including attorneys' fees and court costs, based upon or arising out of any services performed, or the failure to perform services, by the CONSULTANT, its directors, officers, employees, and agents under the Purchase Order and shall, at the request of PSERS, defend at the CONSULTANT's expense actions brought against the Commonwealth of Pennsylvania, the Board, PSERS and/or the Fund, based upon any such claims or demands, and the costs of such defense shall be borne by the CONSULTANT and shall not constitute any expense of, nor shall be paid out of, the Fund, Board, PSERS or Commonwealth of Pennsylvania assets.

3. PSERS acknowledges that [name of PC-Based or Internet-Based tool] (the “Software”) is provided under the Purchase Order solely for PSERS’ use. PSERS shall not provide any other organization with access to the Software, or with reports or any other information obtained through it, except that PSERS may provide any asset manager who manages the Fund’s assets with copies of reports that relate to the assets under management by that manager. Notwithstanding the foregoing, PSERS shall be authorized to provide access to and copies of the reports and any other information obtained through the Software and the services performed under the Purchase Order to the public and any other organization as may be required under the Right to Know Law and other similar laws.

The Purchase Order entitles PSERS to use as many copies of the Software as it shall reasonably require during the term of the Purchase Order. CONSULTANT retains all title and ownership of the Software, including the original disk copy and all subsequent copies of the Software, regardless of the form or media in or on which the original and other copies may exist. The Purchase Order is not a sale of the original Software or any copy.

CONSULTANT retains all title and ownership of the software and accompanying documentation, including the original disk copy and all subsequent copies of the software and documentation, regardless of the form or media in or on which the original and other copies may exist. PSERS agrees upon termination of the Purchase Order to return to CONSULTANT all software and portions and copies thereof, documentation and other equipment furnished with the service.

All reports prepared under the Purchase Order for PSERS shall become the property of PSERS.

CONSULTANT shall defend, at its expense, any action brought against PSERS arising out of any claim that PSERS’ use of the services provided hereunder infringes upon the intellectual property rights of any third party; provided further that CONSULTANT shall indemnify and hold PSERS harmless against any and all damages and costs awarded against PSERS by final court order or fully executed settlement agreement.

The Software and accompanying written materials (the “Documentation”) are owned by CONSULTANT and are protected by United States copyright laws and international treaty provisions. Therefore, PSERS must treat the Software and Documentation like any other copyrighted material. Unauthorized copying of the Software, including Software that has been modified, merged, or included with other software, or the Documentation is expressly forbidden. Subject to these restrictions, PSERS may make a reasonable number of copies of the Software solely for back-up purposes.

PSERS may not distribute copies of the Software or Documentation to others, nor may PSERS rent or lease the Software or the Documentation or transfer control of the Software or Documentation to a third party without CONSULTANT’s prior express

written consent. In addition, PSERS may not modify, adapt, translate, reverse engineer, decompile, disassemble, or create derivative works based on the Software without CONSULTANT's prior express written consent.

CONSULTANT warrants that (i) it has the right to provide PSERS with access to the Software in accordance with the Purchase Order, and (ii) the Software shall conform to the written documentation and shall operate in accordance with CONSULTANT's written representations to PSERS.

Neither party shall be liable to the other party for any loss, injury, delay, damages or other casualties suffered by the other due to strikes, riots, storms, fires, or acts of God or government, beyond the reasonable control of such party.

4. The CONSULTANT shall not enter into any agreement by or on behalf of PSERS that (i) is binding on PSERS or allows, either expressly or by operation of law, recourse to PSERS, and (ii) creates any actual or potential liability on the part of PSERS that exceeds the scope of authority delegated to the CONSULTANT under the Purchase Order, or (iii) waives any of PSERS' rights, defenses, causes of action, or immunities. Liabilities that are not authorized by PSERS and prohibited by this Section D (4) include, without limitation, any obligation on the part of PSERS to indemnify a third party or to pay attorney fees, legal expenses, penalties, or liquidated damages.
5. The CONSULTANT shall maintain during the term of the Purchase Order a policy of errors and omissions insurance for the protection of the Fund with a limit of liability of at least \$10,000,000, to cover the CONSULTANT, its officers, and its affiliates to the extent any affiliate performs services under the Purchase Order. Unless otherwise approved by PSERS, the maximum deductible on the errors and omissions policy shall be no greater than \$1,000,000. The CONSULTANT shall submit copies of the actual policies of said insurance as directed by PSERS. CONSULTANT shall thereafter maintain annual filings of current certificates of insurance with PSERS during the term of the Purchase Order and any extension thereof. If the CONSULTANT changes insurance carriers for insurance required hereunder, CONSULTANT shall submit copies of the actual policies of said insurance as directed by PSERS. The errors and omissions policy shall contain a provision or endorsement that coverage afforded thereunder shall not be canceled or changed until the underwriter has furnished PSERS at least 30 days' prior written notice of any cancellation or change. PSERS may, in its discretion, require such changes with respect to insurance coverage as it deems appropriate for the protection of the PSERS' Fund by giving written notice of such changes to the CONSULTANT at least 30 days in advance of the effective date for such changes.
6. The CONSULTANT represents and confirms that it is duly registered and in good standing as an investment advisor under the Investment Advisers Act of 1940 or is exempt therefrom (and will maintain such registration or exemption). If registered pursuant to said Act, the CONSULTANT has furnished to PSERS Parts 1 and 2 of the

CONSULTANT's current Form ADV filed with the Securities and Exchange Commission pursuant to Section 203(c) of the Investment Advisers Act of 1940.

7. The CONSULTANT shall perform its services under the Purchase Order as an independent contractor, and CONSULTANT acknowledges that it maintains Workers' Compensation Insurance and shall accept full responsibility for the payments of premiums for Workers' Compensation Insurance and Social Security, as well as all income tax deductions and other taxes or payroll deductions required by law for itself for performing services specified by the Purchase Order.
8. The CONSULTANT shall provide immediate written notice to PSERS of any change in the CONSULTANT's status, including, without limitation, change in directors, officers, or employees who consult on PSERS' account; modification of the business organization; material change in SEC or other government or private registration, accreditation, or licensing; material deterioration of financial condition including but not limited to the filing of petition in bankruptcy; the CONSULTANT's awareness that its representations and warranties herein cease to be true; and litigation alleging the CONSULTANT's negligence or fraud.
9. The CONSULTANT covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services under the Purchase Order. CONSULTANT further covenants that, in the performance of the Purchase Order, it will not knowingly engage any other person having such interest.
10. It is agreed between the parties to the Purchase Order that the Purchase Order contemplates the rendition of expert professional services, and, therefore, neither the Purchase Order, nor any interest therein, nor any claim arising thereunder shall be transferred or assigned by either party to any other party or parties.
11. The performance of work under the Purchase Order may be terminated by the BOARD in whole or in part, from time to time. Any such termination shall be effected by delivery to the CONSULTANT of a written Notice of Termination specifying the extent to which performance of the work under the contract is terminated and the date on which such termination becomes effective. In the event of termination, fees for services shall be prorated and paid or repaid. Such termination shall not relieve CONSULTANT of any liability that may be incurred for its activities in connection with the Purchase Order prior to said termination. Likewise, CONSULTANT shall have the right to terminate the Purchase Order with thirty (30) days' written notice to PSERS. Also, under these circumstances, the fees for services shall be prorated and paid or repaid.
12. The CONSULTANT shall not publish or otherwise disclose, except to PSERS and except matters of public record, any information or data obtained hereunder from private individuals, organizations, or public agencies, in a publication whereby the information or data furnished by or about any particular person or establishment can be

identified as relating to PSERS or its responsibilities, except with the consent of such person or establishment.

13. The CONSULTANT agrees that any specific plans, material, records, etc., developed under the Purchase Order remain the property of PSERS, and reproduction or duplication of such materials may be done only with the approval of PSERS.
14. No member of the General Assembly of the Commonwealth of Pennsylvania or any individual employed by the Commonwealth shall be admitted to any share or part of the Purchase Order, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to the Purchase Order if made with a corporation for its general benefit.
15. The CONSULTANT shall comply with the Standard Contract Terms and Conditions attached to the Purchase Order as Rider ____ and incorporated therein by reference, which provisions may be modified from time to time with written notice to CONSULTANT.
16. CONSULTANT shall maintain such records, books, and accounts pertaining to services and payments under the Purchase Order in accordance with generally accepted accounting principles consistently applied. All such records, books, and accounts shall be maintained and preserved during the term of the Purchase Order and any extension thereof and for four years thereafter. During such period, PSERS, or any other department or representative of the Commonwealth of Pennsylvania, from time to time upon reasonable notice, shall have the right to inspect, duplicate, and audit such records, books, and accounts for all purposes authorized and permitted by law. CONSULTANT may preserve such records, books, and accounts in original form or on microfilm, magnetic tape, or any other generally recognized and accepted process.
17. Any notice, demand, direction, instruction, or other communication required or permitted hereunder shall be confirmed in writing and shall be sufficiently given for all purposes when sent (a) by certified or registered U.S. mail, postage prepaid, (b) by a nationally recognized courier service that maintains verification of actual delivery, (c) by facsimile, with a copy sent by first class U.S. mail (provided that if the date of dispatch is not a working day, the facsimile shall be deemed to have been received at the opening of business of the addressee on the next working day), or (d) by delivering the same in person to any party at the following addresses or such other addresses as may be designated in writing from time to time by the parties:

PSERS:	James H. Grossman, Jr., Chief Investment Officer Pennsylvania, Public School Employees' Retirement System 5 North Fifth Street Harrisburg, Pennsylvania 17101
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CONSULTANT:	_____
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18. PSERS reserves all immunities, defenses, rights, or actions arising out of its status as a sovereign entity or from the Eleventh Amendment to the United States Constitution. No provision of the Purchase Order shall be construed as a waiver of any such immunities, defenses, rights, or actions.
19. Execution of the Purchase Order constitutes certification by CONSULTANT that (a) the number appearing on the Purchase Order is CONSULTANT's correct taxpayer identification number, and (b) CONSULTANT is not subject to backup withholding because (i) CONSULTANT is exempt from backup withholding, (ii) CONSULTANT has not been notified by the IRS that it is subject to backup withholding as a result of a failure to report all interest or dividends, or (iii), the IRS has notified CONSULTANT that it is no longer subject to backup withholding.
20. The Purchase Order shall be governed by the laws of the Commonwealth of Pennsylvania and, for all purposes, shall be construed in accordance with said laws and the decisions of the courts of the Commonwealth of Pennsylvania therein, and shall be binding upon the successors and assigns of the parties thereto, and constitutes the entire agreement between PSERS and CONSULTANT with respect to the consulting services to be furnished as provided herein. No amendment or modification changing the scope or terms of the Purchase Order shall have any force or effect unless it is in writing and approved by both parties.
21. If any one or more of the covenants, agreements, provisions, or terms of the Purchase Order shall be held contrary to any express provision of law, or contrary to the policy of express law though not expressly prohibited, or against public policy, or shall for any reason whatsoever be held invalid, then such covenants, agreements, provisions, or terms shall be deemed severable from the remaining covenants, agreements, provisions, or terms of the Purchase Order and shall in no way affect the validity or enforceability of the remainder of the Purchase Order or the rights of the parties thereto.
22. CONSULTANT shall reimburse PSERS, or pay directly on PSERS' behalf, the reasonable travel expenses actually incurred by PSERS, if any, for each contract year (i) for travel to CONSULTANT's location for due diligence and/or to discuss performance results, economic outlook, investment strategy, organization changes and other pertinent matters, (ii) to attend investment conferences, training, seminars or similar events sponsored by CONSULTANT or any affiliate of CONSULTANT, and (iii) to attend meetings and interviews at existing or prospective investment manager sites. Reimbursable or directly payable expenses shall include airfare, automobile rental, lodging, meals, CONSULTANT -sponsored meeting registration fees, and other travel-related expenses at maximum allowance rates established by the Commonwealth Management Directive 230.10 as revised, Travel and Subsistence Allowances. The

reimbursable or directly payable expenses for each of (i) or (ii), above, shall not exceed \$35,000 per calendar year. PSERS shall submit a properly documented claim for reimbursement or direct payment of such travel expenses, which CONSULTANT shall pay within 30 days after receipt.

23. CONSULTANT shall perform services under the Purchase Order subject to the exercise of that degree of judgment and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence who are experts in such matters, exercise in the management of like matters, not in regard to speculation but in regard to the permanent disposition of the Fund, considering the probable income to be derived therefrom as well as the probable safety of the invested capital. CONSULTANT acknowledges that it is a “fiduciary” with respect to PSERS and the Fund as that term is defined in the Employee Retirement Income Security Act of 1974 (ERISA), regardless of the applicability of ERISA to the Purchase Order.

(remainder of page intentionally left blank)

Information Security Addendum

Rider II

This Information Security Addendum (“Addendum”) made as of the Effective Date, by and between the Commonwealth of Pennsylvania, Public School Employees’ Retirement System (“PSERS”) and _____ (“Contractor”) sets forth additional terms and conditions with respect to information security applicable to _____ (the “Agreement”). The terms and conditions agreed to in this Addendum are the minimum required for the Agreement and shall take precedence over any term of the Agreement which attempts to reduce, waive or remove these terms and conditions.

WHEREAS, PSERS wishes to disclose certain information to Contractor, and Contractor is authorized to collect and/or use certain information, pursuant to the terms of the Agreement; and

WHEREAS, PSERS and Contractor intend to protect the privacy and provide for the confidentiality of such information.

NOW THEREFORE, in consideration of the foregoing recitals, which are incorporated herein, and the mutual promises and undertakings hereinafter set forth, and the exchange of information pursuant to the Agreement and this Addendum, the parties agree as follows:

I. Definitions

- A. Authorized Persons. Authorized Persons include Contractor’s employees and contractors who have appropriate PSERS’ clearance and a specific need for such access in order to perform Contractor’s services for PSERS.
- B. Industry Standards. Industry Standards include National Institute of Standards and Technology (NIST) 800 Series, NIST Cybersecurity Framework and ISO 27001/2, or their generally recognized equivalents.
- C. PSERS Data. PSERS Data is any data or information that Contractor creates, obtains, accesses, receives (from PSERS or on behalf of PSERS), hosts or uses in the course of its performance of the Agreement;
- D. Public Data. Public Data means any specific information or data, regardless of form or format, that PSERS has actively and intentionally disclosed, disseminated, or made available to the public.
- E. Multi-Factor Authentication: The use of two or more of the Authentication Methods listed below. Two-factor would employ two of the methods; three-factor would employ one each of all three methods.
 - i. Something you know (e.g. PIN, password, shared information)
 - ii. Something you possess (e.g. token, smart card, digital certificate)
 - iii. Something you are (biometrics – e.g. fingerprint, voice, iris, face).
- F. Services. The services pursuant to the Agreement and any Statement of Work (“SOW”).

- G. Documentation. All documentation related to the Services, including but not limited to the SOW.
- H. PSERS Confidential Information. PSERS Data that is not Public Data, including but not limited to information containing personally identifiable information (“PII”) protected health information (“PHI”) and electronic protected health information (“ePHI”) as defined in HIPPA regulations, investment portfolio information and trade secrets. (For the avoidance of doubt, trade secrets include but are not limited to limited partnership agreements, side letters, private placement memoranda and similar information.)

II. Data Security.

- A. Compliance. Contractor shall comply with the Information Technology (“IT”) standards and policies issued by the Governor’s Office of Administration, Office for Information Technology (OA/OIT) (located at: <http://www.oa.pa.gov/Policies/Pages/itp.aspx>), including the accessibility standards set out in IT Bulletin ACC001, IT Accessibility Policy. The Contractor shall ensure that Services procured under this Contract comply with the applicable standards. In the event such standards change during Contractor’s performance, and the Commonwealth requests that Contractor comply with the changed standard, then any incremental costs incurred by Contractor to comply with such changes shall be paid for pursuant to a change order to the Contract.
- B. Data Protection. To the extent that Contractor is charged with creating, accessing, transmitting, maintaining, hosting or using PSERS’ Data under the Agreement, Contractor shall preserve the confidentiality, integrity and availability of PSERS’ Data by implementing and maintaining administrative, technical and physical controls that conform to Commonwealth of Pennsylvania IT Policies and Industry Standards. Implemented security controls shall provide a level of security which is commensurate with the sensitivity of the data to be protected.
- C. Data Use and Access. Contractor shall use PSERS’ Data only and exclusively to support the performance of services for PSERS under the Agreement and not for any other purpose. With the exception of Public Data, absent PSERS’ prior written consent, Contractor shall not at any time during or after the term of the Agreement disclose PSERS’ Data to any person, other than Authorized Persons and PSERS personnel in connection with the performance of the services (except as required by law). If such disclosure is required by law, Contractor shall notify PSERS prior to such disclosure, unless such notification is prohibited by law.
- D. Data Backup. Where appropriate to protect the integrity and availability of PSERS’ Data, Contractor shall maintain (and cause any third-party hosting company that it uses to maintain) a means to backup and recover PSERS’ Data in the event that PSERS’ Data is lost, corrupted or improperly destroyed. PSERS shall have the right to establish backup security for PSERS’ Data and to keep backup PSERS’ Data and PSERS’ Data files in its possession if it chooses.
- E. Return of PSERS’ Data. Contractor shall ensure that, upon request, PSERS can retrieve PSERS’ Data in the event the Contractor is unable to continue providing

the services under the Agreement due to termination of the Agreement or otherwise. In the event of a termination and upon PSERS' request, the Contractor will provide PSERS' Data in a mutually acceptable format.

- F. Destruction of PSERS' Data. Contractor shall erase, destroy, and/or render unrecoverable all PSERS' Data in Contractor's possession that is no longer required for the performance of its duties under the Agreement. Upon request, Contractor shall certify in writing that these actions have been completed within seven (7) days of PSERS' request.
- G. Effect of Termination. Unless directed otherwise by PSERS, upon termination of the Agreement for any reason, Contractor shall maintain PSERS' Data and continue to extend the protections of the Agreement and this Addendum to such information for a period of six months at which point it shall return and destroy all PSERS' Data received from PSERS (or created or received by Contractor on behalf of PSERS) regardless of form, and shall retain no copies of PSERS' Data. If return or destruction of PSERS' Data is not feasible, Contractor shall continue to extend the protections of the Agreement and this Addendum to such information and limit further use of PSERS' Data to those purposes that make the return or destruction of PSERS' Data infeasible.

III. Contractor Security.

- A. Information Security Program. For the term of the Agreement, Contractor agrees that it has and will maintain a formal information security program which is appropriate for the types of services that it provides. Such program is and will be consistent with Industry Standards.
- B. Contractor Personnel. Contractor agrees that it shall only use highly qualified personnel and contractors in performing the Agreement and, to the extent not prohibited by applicable law, shall require each to pass a background check.
- C. Acceptance of Acceptable Use Policy. Contractor shall ensure that all Contractor personnel, including employees and contractors, who access PSERS' network as a part of performing the Agreement, will agree to PSERS' Acceptable Use Policy as found in Management Directive 205.34, as it may be amended from time to time.
- D. Multi-Factor Authentication. For services exposed to the Internet, where sensitive information is stored, processed or transmitted, Contractor will provide Multi-Factor Authentication for user authentication to the web application via workstation and mobile browsers. If the service is provided via mobile application as well, that application must also be protected by Multi-Factor Authentication.
- E. Security Awareness Training. Contractor shall ensure its personnel and partners are provided cybersecurity awareness education and are adequately trained to perform their information security-related duties and responsibilities consistent with Commonwealth of Pennsylvania IT Policies.

IV. Security Incident and Breach Notification.

- A. Contractor agrees to notify PSERS upon learning of: (i) unauthorized access, loss, alteration, theft or corruption of PSERS' Confidential Information; (ii) any event that creates a substantial risk to the confidentiality, integrity or availability of PSERS' Data; (iii) a breach of any of Contractor's security obligations under this Addendum; or (iv) any other event requiring notification under applicable law. In such an instance, Contractor agrees to:
- i. Take such action as may be necessary to preserve forensic evidence and eliminate the cause of the risk or breach within Contractor's reasonable control. As soon as practicable after discovery, Contractor shall undertake a thorough forensic investigation of any compromise or improper use and provide PSERS all information necessary to enable PSERS to fully understand the nature and extent of the compromise or improper use to the extent known.
 - ii. And, notify PSERS by telephone at (____) ____ - ____ and (____) ____ - ____ and by e-mail at RA-PSISO@pa.gov regarding such an event without undue delay and in any event within 24 hours of discovery, and
 - iii. To the extent that the breach or incident was the fault of Contractor:
 - a) assume the cost of informing all such affected individuals in accordance with applicable law, and
 - b) indemnify, hold harmless and defend PSERS and its trustees, officers, and employees from and against any claims, damages, or other harm related to such incident or breach.

B. Security Incident Investigations.

Contractor agrees to cooperate with PSERS in investigating a security incident, as declared by PSERS, and provide the name and contact information, of at least two (2) security contacts who will respond to PSERS in a timely manner, dependent on criticality, in the event that PSERS must investigate a security incident. The current security contacts are as follows:

Contact Names: _____
Phone Numbers: _____
Email Addresses: _____

V. Maintenance of Safeguards.

- A. Contractor shall maintain and follow Industry Standards with respect to any of PSERS' Confidential Information in Contractor's possession or control and protect such information against any loss, alteration, theft or corruption.
- B. At PSERS' request, Contractor shall provide PSERS with copies of its information security policies, processes, and procedures. Contractor will notify PSERS of any changes to its policies, processes or procedures that relate to the security of PSERS' Confidential Information in Contractor's possession.

VI. Information Security Audit.

- A. PSERS shall have the right to review Contractor's information security program prior to the commencement of Services and from time to time during the Term of the Agreement. During the performance of the Services, on an ongoing basis

annually and immediately in the event of a security incident, PSERS, including its professional advisors and auditors, at its own expense, shall be entitled to perform, or to have performed, an on-site assessment of Contractor's information security program.

- B. PSERS shall have the right to review Contractor's information security program through Contractor's annual submission to PSERS of its current SOC2 report. The report must document an assessment conducted by a qualified, independent third party. Assessment scope must address the services provided to PSERS, including but not limited to related people, process and technology.
- C. Upon PSERS' request, Contractor agrees to complete, within forty-five (45) days of receipt of PSERS' request, an assessment questionnaire provided by PSERS regarding Contractor's information security program, including artifacts for a subset of controls.

VII. Application Security.

In the event the Contractor conducts application software development for PSERS, Contractor will either make source codes available for review by PSERS or will conduct source code scanning using a commercial security tool. Scans must be conducted annually and at any time significant code changes are made. Scan reports will be made available to PSERS within two weeks of execution. Contractor must disclose remediation timelines for high, medium and low risk security code defects. Scans must occur before code is implemented in production. High risk security code defects may not be implemented in production without written approval from either PSERS' Executive Director, Deputy Executive Director or Assistant Executive Director.

VIII. Compliance with Applicable State and Federal Law.

Contractor shall comply with all applicable federal, state, and local laws concerning data protection and privacy when handling PSERS' Data.

IX. Enforcing Compliance.

Contractor shall enforce and be responsible for compliance by all its personnel and contractors with the provisions of this Information Security Addendum and all other confidentiality obligations owed to PSERS.

X. Accommodation of Additional Protections.

Contractor agrees to comply with such additional protections as PSERS shall reasonably request.

XI. Termination.

A breach by Contractor of any provision of this Addendum, as reasonably determined by PSERS, shall constitute a material breach of the Agreement and shall provide grounds for immediate termination of the Agreement by PSERS pursuant to the Agreement.

XII. Indemnification.

Contractor shall indemnify, hold harmless and defend PSERS from and against all claims, losses, liabilities, damages, judgments, costs and other expenses, including PSERS's costs and attorney fees, incurred as a result of, or arising directly or indirectly out of or in connection with Contractor's failure to meet any of its security obligations under this Addendum; and (ii) any claims, demands, awards, judgments, actions and proceedings made by any person or organization arising out of or in any way connected with Contractor's performance under this Addendum. Limitations on Contractor's liability, regardless of conflicting language elsewhere in the Agreement, shall not apply to claims related to Contractor's breach of the information security sections of this Addendum.

XIII. Intellectual Property Infringement Indemnification.

Contractor shall indemnify, defend and hold PSERS harmless from any and all claims brought against PSERS alleging that the Services and/or Documentation or PSERS' use of the Services and/or Documentation constitutes a misappropriation or infringement of intellectual property ("IP") of any Third Party. Contractor agrees to be responsible for all costs or expenses, to include reasonable attorneys' fees awarded or resulting from any claim. PSERS shall, after receiving notice of a claim, advise Contractor of such notification. Limitations on Contractor's liability, regardless of conflicting language elsewhere in any Agreement, shall not apply to claims related to Contractor's misappropriation or infringement of another's intellectual property.

XIV. Contractor Liability Insurance.

Contractor shall procure, and maintain for the duration of the contract, insurance against claims and damages which may arise from or in connection with the performance of its work to include IP infringement and privacy or data breaches coverage. Coverage shall have limits of no less than \$5,000,000.00 per occurrence and \$10,000,000.00 aggregate.

XV. Survival; Order of Precedence.

The provisions of this Addendum shall survive expiration or termination of the Agreement.

XVI. Entire Agreement.

The Agreement, including any exhibits and/or schedules thereto, and this Addendum contain the entire understanding of the Parties with respect to the subject matter hereof and supersedes all prior agreements, oral or written, and all other communications between the Parties relating to such subject matter.

**APPENDIX B - PROPOSAL COVER SHEET
COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM**

RFP# PSERS RFP 2020-1

Enclosed in three separately sealed submittals for Technical, Cost and SDB/SB is the proposal of the Offeror identified below for the above-referenced RFP:

Offeror Information:	
Offeror Name	
Offeror Mailing Address	
Offeror Website	
Offeror Contact Person	
Contact Person's Phone Number	
Contact Person's E-Mail Address	
Offeror Federal ID Number	
Offeror SAP/SRM Vendor Number	

Submittals Enclosed and Separately Sealed:	
<input type="checkbox"/>	Technical Submittal <input type="checkbox"/> Domestic Workforce Utilization Certification
<input type="checkbox"/>	Small Diverse Business and Small Business Participation Submittal <input type="checkbox"/> Small Diverse Business and Small Business Participation Submittal Form <input type="checkbox"/> Small Diverse Business and Small Business Letter(s) of Intent
<input type="checkbox"/>	Cost Submittal

<i>Signature</i>	
Signature of an official authorized to bind the Offeror to the provisions contained in the Offeror's proposal:	
Printed Name	
Title	

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM WITH THE OFFEROR'S PROPOSAL MAY RESULT IN THE REJECTION OF THE OFFEROR'S PROPOSAL

APPENDIX C
DOMESTIC WORKFORCE UTILIZATION CERTIFICATION

To the extent permitted by the laws and treaties of the United States, each proposal will be scored for its commitment to use the domestic workforce in the fulfillment of the contract. Maximum consideration will be given to those offerors who will perform the contracted direct labor exclusively within the geographical boundaries of the United States or within the geographical boundaries of a country that is a party to the World Trade Organization Government Procurement Agreement. Those who propose to perform a portion of the direct labor outside of the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement will receive a correspondingly smaller score for this criterion. In order to be eligible for any consideration for this criterion, offerors must complete and sign the following certification. This certification will be included as a contractual obligation when the contract is executed. Failure to complete and sign this certification will result in no consideration being given to the offeror for this criterion.

I, _____ **[title]** of _____ **[name of Contractor]** a
_____ **[place of incorporation]** corporation or other legal entity, ("Contractor") located at
_____ **[address]** do hereby certify and represent to
the Commonwealth of Pennsylvania ("Commonwealth") (Check **one** of the boxes below):

☐ ☐ All of the direct labor performed within the scope of services under the contract will be performed exclusively within the geographical boundaries of the United States or one of the following countries that is a party to the World Trade Organization Government Procurement Agreement: Aruba, Austria, Belgium, Bulgaria, Canada, Chinese Taipei, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom

OR

☐ ☐ _____ **percent (____%) [Contractor must specify the percentage]** of the direct labor performed within the scope of services under the contract will be performed within the geographical boundaries of the United States or within the geographical boundaries of one of the countries listed above that is a party to the World Trade Organization Government Procurement Agreement. Please identify the direct labor performed under the contract that will be performed outside the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement and identify the country where the direct labor will be performed:

[Use additional sheets if necessary]

The Department of General Services **[or other purchasing agency]** shall treat any misstatement as fraudulent concealment of the true facts punishable under Section 4904 of the *Pennsylvania Crimes Code*, Title 18, of Pa. Consolidated Statutes.

Attest or Witness:

Corporate or Legal Entity's Name

Signature/Date

Signature/Date

Printed Name/Title

Printed Name/Title

APPENDIX D

IRAN FREE PROCUREMENT CERTIFICATION

<http://www.dgs.pa.gov/Documents/Procurement%20Forms/IranFreeProcurementCertificationForm.pdf>

<http://www.dgs.pa.gov/Documents/Procurement%20Forms/ProposedIranFreeProcurementList.pdf>

APPENDIX E

Trade Secret Confidential Proprietary Information Notice Form

http://www.dgs.pa.gov/Documents/Procurement%20Forms/TradeSecret_ConfidentialPropertyInfoNotice.pdf

APPENDIX F
COST SUBMITTAL

The Cost Submittal shall be placed in a separate sealed envelope within the sealed proposal, separated from the technical submittal. The total proposed cost shall be broken down into the following components:

Calendar Year	Consulting Fee		
XX/2020 to XX/2021	\$		
XX/2021 to XX/2022	\$		
XX/2022 to XX/2023	\$		
XX/2023 to XX/2024	\$		
XX/2024 to XX/2025	\$		
Total (5 years)	\$		

- (1) – fee should include use of analytics software.
- (2) – fee should include use of analytics software as well as attendance of up to six board meetings a year (on average, your attendance would normally only be requested quarterly).
- (3) – does not need to be the total of the two individually if discount provided for having both contracts.

Offerors should **not** include any assumptions in their cost submittals. If the Offeror includes assumptions in its cost submittal, the Issuing Office may reject the proposal.

APPENDIX G

**SMALL DIVERSE BUSINESS AND SMALL BUSINESS PARTICIPATION
SUBMITTAL FORM AND LETTERS OF INTENT**



Copy of SDBSB
Participation Submit

APPENDIX H

MODEL FORM OF SMALL DIVERSE BUSINESS AND SMALL BUSINESS SUBCONTRACT AGREEMENT



SDSDB Model Form
For Subcontractor A

Aksia LLC Response to:
**Commonwealth of Pennsylvania Public
School Employees' Retirement System**

**Request for Proposals for
Hedge Fund and Private Credit Investment
Consulting Services
PSERS RFP 2020-1**

**TECHNICAL SUBMITTAL
REDACTED**

Contact Information:

Matthew Mullarkey
p: 212.710.5778
f: 212.710.5711
matt.mullarkey@aksia.com

Mailing Address:

599 Lexington Avenue, 37th Floor
New York, NY 10022



April 8, 2020

RE: Pennsylvania Public School Employees' Retirement System ("PSERS")
Request for Proposals No. 2020-01
Hedge Fund and Private Credit Investment Consulting Services

Respondent: Aksia LLC
Phone: 212-710-5710
Street Address: 599 Lexington Avenue, 37th Floor
New York, NY 10022

Contact Information: Matt Mullarkey
Head of Portfolio Advisory, Americas
212-710-5778
matt.mullarkey@aksia.com

Dear PSERS' Staff & Board,

On behalf of Aksia LLC, I am pleased to submit this response to the Pennsylvania Public School Employees' Retirement System ("PSERS") Request for Proposals for Hedge Fund and Private Credit Investment Consulting Services.

As you know, Aksia is a specialist consultant that provides institutional investors with high quality research and guidance on building and maintaining a portfolio of institutional-quality alternative investments. Aksia has a keen understanding of the needs of institutional investors and extensive experience servicing public pensions, currently providing hedge fund and/or private credit non-discretionary advisory services to 10 US public pensions.¹

Aksia does not operate a one-size-fits-all model. Rather, we work with our clients to develop a customized portfolio that fits within the framework of a client's overall investment program. In this regard, we have worked closely with clients, including PSERS, to establish guidelines and constraints for their alternatives portfolios, discuss ideas, source managers, and ultimately strive to build a successful program.

We believe it is important to have an advisor that understands the needs of each client and has the resources to follow through on those needs. Aksia takes pride in providing: comprehensive analysis that expresses opinions on investment opportunities, high-touch portfolio advisory services, thorough operational due diligence reviews, senior investment professionals that facilitate strategic discussions, and tools and processes to aggregate risk and assist in streamlining decision making.

¹As of January 31, 2020.

Since PSERS began using our advisory services in 2010, PSERS and Aksia have developed a collaborative relationship that is enhanced through regular dialogue and the sharing of ideas. We strive to continue to seek to improve our services and expand our capabilities to meet the evolving needs of our clients, including PSERS. As we consider our current and future relationship with PSERS, we believe Aksia offers several differentiated, value-add services that fit the unique needs of PSERS' investment program. Some of these include:

- Aksia has worked collaboratively with PSERS on the hedge fund portfolio for nearly a decade, and as our relationship progressed we expanded our services to PSERS to private credit advisory, currently providing quarterly monitoring and risk reporting for the new PSERS private credit investments that we underwrite. In this regard, we feel there is inherent value in PSERS' hedge fund portfolio not requiring any historical onboarding, and that in private credit we can leverage prior efforts, maximizing efficiencies and reducing the burden of onboarding for both Aksia and PSERS.
- The combination of our "MAX" platform and operations and accounting services provides PSERS with the ability to use one system to efficiently access research, monitoring, portfolio construction, and performance reporting. PSERS can leverage these systems with respect to both their hedge fund and private credit portfolios in one easily accessible location.
- Aksia currently provides quarterly monitoring through loan-level risk transparency for the new PSERS new private credit investments that we underwrite. Upon being awarded the private credit mandate, we would onboard the legacy portfolio holdings and be able to provide PSERS with full risk reporting across the entire PC portfolio, requesting PC loan level transparency from PSERS' managers with a quarterly update thereafter.
- PSERS can and does utilize Aksia's specialist teams (research, advisory, operations etc.) as an extension of staff to support ongoing needs as well as with ad-hoc projects.
- Above all, Aksia has a deep understanding of PSERS' investment program and philosophy, based on our long relationship and the direct engagement of our advisory and research teams with PSERS Staff.

We greatly enjoy collaborating with PSERS and are enthusiastic about the prospect of continuing to serve the organization. In addition, we are excited to highlight to PSERS that on March 31, 2020 Aksia acquired TorreyCove Capital Partners LLC, a specialist investment research and advisory firm that focuses on private equity and real asset strategies. Aksia will remain headquartered in New York, with offices of its affiliates based in San Diego, London, Tokyo, Boston, Athens, and Hong Kong. As a result of the acquisition, we believe clients will benefit from larger and deeper research capabilities, broader geographic reach, pan-alternatives expertise, and a focus on technology solutions for accessing a wide range of research on investments as well as portfolio, accounting, and risk information reporting.

Aksia and its affiliates, now including Aksia TorreyCove Partners LLC, will advise on over \$160 billion in alternative assets with more than 250 professionals globally, including over 160 professionals focused on research and risk management. As a result of this acquisition, the Aksia partnership has gained five members from the TorreyCove predecessor entity: David Fann, Vice Chairman; Kara King, Head of Client Operations and PE/RA Risk Management; Mike Krems, Head of Co-Investments; Tom Martin, Head of Private Equity Research; and Michelle Davidson, Co-Head of Advisory Americas. However, please note that this RFP, and all answers contained herein, do not reflect the TorreyCove subsidiary, as

the information is provided as of January 31, 2020 or December 31, 2019, depending on the response, which is before the acquisition closed.

Finally, please note that we have designated certain portions of the enclosed response to the RFP as Confidential Information, as detailed in “Appendix E -Trade Secret/Confidential Proprietary Information Notice”. We believe such information constitutes Aksia’s trade secrets and/or confidential financial information for all purposes, including for purposes of the Freedom of Information Act, the Pennsylvania Right-to-Know Law, or any comparable law or regulation of any government, municipality or regulator.

We look forward to hearing from you regarding the outcome of our submission and are eager to continue to work with PSERS in the future.

Respectfully,



Jim Vos
CEO



Pennsylvania Public School Employees' Retirement System
RFP for Hedge Fund and Private Credit Investment Consulting Services

RFP Number: PSERS RFP 2020-1

REDACTED

Cover Letter

Appendix B – Proposal Cover Sheet

Appendix C – Domestic Workforce Utilization Certification

Appendix D – Iran Free Procurement Certification Form

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Appendices

1. ☐ Appendix 1 – Firm Overview

Appendix 1A – Form ADV Parts II and III

Appendix 1B – Business Continuity and Disaster Recovery Plan

Appendix 1C – Table of Contents of Aksia Compliance Manual and Code of Ethics

Appendix 1D – Firmwide Employee Organizational Chart

2. ☐ Appendix 2 – Financial Information

****CONFIDENTIAL****

Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, these documents are exempt from disclosure per 65 P.S. § 67.708(b)(26).

Note that these appendices have been provided as separate PDF files as part of the electronic submittal and removed entirely from the redacted electronic submittal required for public disclosure.

Appendix 2A – 2016 Audited Financial Statements

Appendix 2B – 2017 Audited Financial Statements

Appendix 2C – 2018 Audited Financial Statements

3. ☐ Appendix 3– Consulting

****CONFIDENTIAL****

Aksia is a commercial entity whose reports and services offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 3A – Sample Hedge Fund Investment Policy Considerations

Appendix 3B – Sample Private Credit Investment Policy Considerations

Appendix 3C – Cash Flow Projection Report

Appendix 3D – Sample Liquidity Report

Appendix 3E – Private Credit Pricing Report

4. ☐ Appendix 4 – Industry Research

Appendix 4A – Q1 2020 Hedge Fund Strategy Outlook

Appendix 4B – 2019 Private Credit Strategy Outlook

Appendix 4C – Private Credit Monthly Email

Appendix 4D – Additional Aksia Whitepapers

5. ☐ Appendix 5 – Manager Research

****CONFIDENTIAL****

Aksia is a commercial entity whose investment and operational due diligence processes and reports structure and content are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 5A – Hedge Fund Investment and Operational Due Diligence Report
Appendix 5B – Private Credit Investment and Operational Due Diligence Report
Appendix 5C – Hedge Fund DDQ Manager Data Request
Appendix 4E – Private Credit DDQ Manager Data Request

6. Appendix 6 – Performance Reporting & Monitoring

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Aksia is a commercial entity whose reports and services offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 6A – Private Credit Portfolio Performance Report
Appendix 6B – Private Credit Portfolio Risk Transparency Report
Appendix 6C – Private Credit Fund Risk Transparency Report
Appendix 6D – Private Credit Track Record Analysis
Appendix 6E – Hedge Fund Portfolio Performance Report
Appendix 6F – Hedge Fund Risk Report
Appendix 6G – MAX Overview Presentation

7. Appendix 7 – Aksia Amendments to Appendix A

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Aksia is a commercial entity whose internal governance and business practices are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that this appendix has been removed from the redacted electronic submittal required for public disclosure.


Appendix 7A – Aksia Amendments to Appendix A, Sample Rider Including Terms and Conditions

APPENDIX B - PROPOSAL COVER SHEET
COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM
RFP# PSERS RFP 2020-1

Enclosed in three separately sealed submittals for Technical, Cost and SDB/SB is the proposal of the Offeror identified below for the above-referenced RFP:

Offeror Information:	
Offeror Name	Aksia LLC
Offeror Mailing Address	599 Lexington Avenue, 37 th Floor New York, New York 10022
Offeror Website	https://aksia.com/
Offeror Contact Person	Matt Mullarkey, Head of Advisory, Americas
Contact Person's Phone Number	(212) 710 - 5778
Contact Person's E-Mail Address	Matt.Mullarkey@aksia.com
Offeror Federal ID Number	20 - 5385739
Offeror SAP/SRM Vendor Number	362040

Submittals Enclosed and Separately Sealed:	
✓	Technical Submittal <input checked="" type="checkbox"/> Domestic Workforce Utilization Certification
□	Small Diverse Business and Small Business Participation Submittal <input type="checkbox"/> Small Diverse Business and Small Business Participation Submittal Form <input type="checkbox"/> Small Diverse Business and Small Business Letter(s) of Intent
✓	Cost Submittal

<i>Signature</i>	
Signature of an official authorized to bind the Offeror to the provisions contained in the Offeror's proposal:	
Printed Name	Jim Vos
Title	CEO

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM WITH THE OFFEROR'S PROPOSAL MAY RESULT IN THE REJECTION OF THE OFFEROR'S PROPOSAL

APPENDIX C

DOMESTIC WORKFORCE UTILIZATION CERTIFICATION

To the extent permitted by the laws and treaties of the United States, each proposal will be scored for its commitment to use the domestic workforce in the fulfillment of the contract. Maximum consideration will be given to those offerors who will perform the contracted direct labor exclusively within the geographical boundaries of the United States or within the geographical boundaries of a country that is a party to the World Trade Organization Government Procurement Agreement. Those who propose to perform a portion of the direct labor outside of the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement will receive a correspondingly smaller score for this criterion. In order to be eligible for any consideration for this criterion, offerors must complete and sign the following certification. This certification will be included as a contractual obligation when the contract is executed. Failure to complete and sign this certification will result in no consideration being given to the offeror for this criterion.

I, **CEO of Aksia LLC** a **Delaware** corporation or other legal entity, ("Contractor") located at **599 Lexington Avenue, 37th Floor, New York, NY 10022** do hereby certify and represent to the Commonwealth of Pennsylvania ("Commonwealth") (Check **one** of the boxes below):

☒ All of the direct labor performed within the scope of services under the contract will be performed exclusively within the geographical boundaries of the United States or one of the following countries that is a party to the World Trade Organization Government Procurement Agreement: Aruba, Austria, Belgium, Bulgaria, Canada, Chinese Taipei, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom

OR

☐ ☐ _____ percent (____ %) [Contractor must specify the percentage] of the direct labor performed within the scope of services under the contract will be performed within the geographical boundaries of the United States or within the geographical boundaries of one of the countries listed above that is a party to the World Trade Organization Government Procurement Agreement. Please identify the direct labor performed under the contract that will be performed outside the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement and identify the country where the direct labor will be performed:

[Use additional sheets if necessary]

The Department of General Services [or other purchasing agency] shall treat any misstatement as fraudulent concealment of the true facts punishable under Section 4904 of the *Pennsylvania Crimes Code*, Title 18, of Pa. Consolidated Statutes.

Attest or Witness:

Aksia LLC

Corporate or Legal Entity's Name

Signature/Date

 **April 8th, 2020**

Signature/Date

Printed Name/Title

Jim Vos, CEO

Printed Name/Title

APPENDIX D

IRAN FREE PROCUREMENT CERTIFICATION FORM

(Pennsylvania's Procurement Code Sections 3501-3506, 62 Pa.C.S. §§ 3501-3506)

To be eligible for an award of a contract with a Commonwealth entity for goods or services worth at least \$1,000,000 or more, a vendor must either: a) certify it is **not** on the current list of persons engaged in investment activities in Iran created by the Pennsylvania Department of General Services ("DGS") pursuant to Section 3503 of the Procurement Code **and** is eligible to contract with the Commonwealth under Sections 3501-3506 of the Procurement Code; or b) demonstrate it has received an exception from the certification requirement for that solicitation or contract pursuant to Section 3503(e).

To comply with this requirement, please insert your vendor or financial institution name and complete **one** of the options below. Please note: Pennsylvania law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (Section 3503 of the Procurement Code.)

OPTION #1 - CERTIFICATION

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor/financial institution identified below, and the vendor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS **and** is eligible to contract with the Commonwealth of Pennsylvania Sections 3501-3506 of the Procurement Code.

<i>Vendor Name/Financial Institution (Printed)</i>		Aksia LLC
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		<i>Date Executed</i>
Jim Vos, CEO		April 8, 2020

OPTION #2 – EXEMPTION

Pursuant to Procurement Code Section 3503(e), DGS may permit a vendor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to enter into a contract for goods and services.

If you have obtained a written exemption from the certification requirement, please fill out the information below, and attach the written documentation demonstrating the exemption approval.

<i>Vendor Name/Financial Institution (Printed)</i>	
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

Pennsylvania Department of General Services
Iran Free Procurement List

List Date: August 1, 2019

Entities Ineligible to enter into a contract with the Commonwealth entity to provide for goods and services worth at least \$1,000,000 per Sections 3501-3506 of the Commonwealth Procurement Code, 62 Pa. C.S. §§ 3501-3506.

1. ☐ Ak Makina
2. ☐ Amona
3. ☐ Belneftkhim
4. ☐ China CSSC Holdings Limited
5. ☐ China National Offshore Oil Corporation (CNOOC)
6. ☐ China Oil
7. ☐ China Oilfield Services Ltd.
8. ☐ China Shipbuilding Industry Co., Ltd.
9. ☐ China National Petroleum Corporation
10. DK Tech Corporation
11. EAL Oil Company, Ltd.
12. GAIL (India) Limited
13. Glencore PLC
14. GS Engineering & Construction Corp.
15. GS Holdings
16. Gubre Fabrikalari T.A.S.
17. Indian Oil Company, Ltd.
18. JNK Heaters Co. Ltd.
19. Kunlun Energy Company Ltd. (fka: CNPC Hong Kong)
20. Mangalore Refinery & Petrochemicals Ltd.
21. MTN Group, Ltd.
22. Naftiran Intertrade Co. (NICO)
23. Oil and Natural Gas Corp. (ONGC)
24. Oil India Limited
25. Open Joint Stock Company Gazprom
26. Petroleos de Venezuela (PDVSA Petroleo, SA)
27. Petroliam Nasional Berhad (Petronas)

- 28.PetroChina Co., Ltd.
- 29.Shandong FIN CNC Machine Co., Ltd.
- 30.Sinohydro Co., Ltd.
- 31.Sinopec Corp. (China Petroleum & Chemical Corporation)
- 32.SK Energy Co., Ltd.
- 33.SKS Ventures
- 34.The Siam Cement Public Company Limited
- 35.Unipec (China International United Petroleum & Chemicals Co., Ltd.)
- 36.Zhuhai Zhenrong Co.

If you have any questions regarding this list, please contact:

Department of General Services Office of Chief Counsel

brossner@pa.gov

III-2. Requirements.

A. Emergency Preparedness.

To support continuity of operations during an emergency, including a pandemic, the Commonwealth needs a strategy for maintaining operations for an extended period of time. One part of this strategy is to ensure that essential contracts that provide critical business services to the Commonwealth have planned for such an emergency and put contingencies in place to provide needed goods and services.

1. ☐ Describe how you anticipate such a crisis will impact your operations.

Aksia does not anticipate that a crisis, such as the current COVID-19 Pandemic, would have a material impact on our operations. Aksia has a Business Continuity and Disaster Recovery Plan (the "Plan") in place that is designed to ensure our business operations continue to run without significant disruption for an extended period of time in the event of a crisis. The Plan includes (i) the ability of all Aksia employees to remotely access Aksia's systems, including by logging into their desktops using VPN, to continue working outside of Aksia offices; (ii) access to employee contact information through our Compliance website; and (iii) technology to support video and conference calls in the event that meetings, including on-site due diligence meetings, need to take place remotely. Therefore, we believe that business will resume and continue quickly and efficiently in the event of a short-term or long-term emergency. Please see our responses below for further detail on how our business is operating under the Plan during the current COVID-19 Pandemic.

2. ☐ Describe your emergency response continuity of operations plan. Please attach a copy of your plan, or at a minimum, summarize how your plan addresses the following aspects of pandemic preparedness:
- a. ☐ Employee training (describe your organization's training plan, and how frequently your plan will be shared with employees).
 - b. ☐ Identified essential business functions and key employees (within your organization) necessary to carry them out.

Business Continuity

Please see attached for a copy of the Plan, which is designed to ensure that business will continue uninterrupted, or resume as quickly and efficiently as possible, in the event of any short-term or long-term significant disruption. Aksia aims to test the Plan at least annually to assess whether the firm can continue operations without significant disruption in the event of an emergency. Compliance records and retains results of this test. Compliance provides training on the Plan to all new employees upon joining the firm and annually as part of Aksia's Annual Compliance Training. Additionally, upon joining the firm, new employees meet with our IT department for instruction on setting up their systems, including remote VPN access, and employees are required to make quarterly attestations that they have successfully installed the VPN.

If Aksia's main facilities become inoperative or employees are required to work outside of the office, such as adhering to "social distancing" guidelines during the current COVID-19 Pandemic, employees have the ability to work from any remote location. Aksia employees can access email, files, and communication/phone services through any browser using a standard internet connection. Remote access is secured using modern TLS encryption and two-factor authentication. Employees can also use the VPN

to securely access their individual office workstation from any location. Aksia has created a password-protected compliance website which is accessible from any location and provides access to key information, including employee personal contact details and updates on the status of the office in the event the Plan is triggered. The compliance site enables Aksia to communicate via phone, text, and/or email in the event that a system is not functional. Additionally, in response to the current COVID-19 Pandemic, Aksia's IT team created an Aksia help site, which contains documentation on all things related to IT at Aksia. This site serves as a central reference point to help employees adjust to working remotely and contains answers to several commonly asked questions that IT has received over the past few weeks.

Key decisions surrounding the Plan and creation of business continuity initiatives are made by Aksia's eleven partners in conjunction with Lauren Viccaro, Director of Human Resources, Bailey Somers, Senior Legal & Compliance Officer, and Clifton Ramsundar, Managing Director, Head of Information Technology. Additionally, proactive communication of initiatives to staff and clients during the COVID-19 Pandemic have been carried out by various Aksia staff including Jim Vos, CEO, Clifton Ramsundar, Managing Director and Head of Information Technology, Lauren Viccaro, Director of Human Resources, and members of Aksia's Advisory team.

Disaster Recovery

With regard to disaster recovery, all Aksia documents, emails, and databases are backed up daily to a combination of on-premises storage, off-site locations within Microsoft's Azure cloud platform, or another third-party off-site location in Winterhaven, Florida. Aksia can restore data within a reasonable time period. Aksia also monitors the success of back-ups, antivirus software updates, operating system patches, and hardware.

c. **Contingency plans for:**

- i. How your organization will handle staffing issues when a portion of key employees are incapacitated due to illness.

Aksia does not foresee issues in carrying out our day-to-day business functions in the extreme circumstance where a portion of key employees are incapacitated due to illness. Aksia's partners meet each week to jointly discuss important business initiatives and decisions and as a result of this collaborative dialogue, leaders across various teams are briefed on firmwide initiatives. This cross-coverage knowledge sharing would enable the firm to continue to run in the event of a senior leader becoming ill. Additionally, in response to the current COVID-19 Pandemic, Aksia's partners have had biweekly conference call meetings to keep abreast of updates that relate to our business. With respect to advisory professionals assigned to client accounts, Aksia client relationships are managed on a team basis, and should a member of the primary coverage team fall ill, the client would continue to have access to professionals with whom the client has already built a relationship and who are familiar with the client's program. Finally, all other Aksia teams, including Aksia's research teams, meet regularly and attempt to create redundancies and coverage overlap so another team member could assume coverage of an ill employee's responsibilities.

- ii. How employees in your organization will carry out the essential functions if contagion control measures prevent them from coming to the primary workplace.

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Aksia is a commercial entity whose internal governance and business practices are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

- d. ☐ How your organization will communicate with staff and suppliers when primary communications systems are overloaded or otherwise fail, including key contacts, chain of communications (including suppliers), etc.

Aksia diversifies our communication system providers in an effort to avoid major disruption should one communication system fail. Our major communication systems are hosted by a number of well-known providers. For example, electronic mail and instant messaging are hosted with Microsoft's Office 365 platform, and phone and conferencing are hosted on the RingCentral platform, which mitigates a single point of failure.

Aksia uses a BCP system hosted on an external provider that contains the contact information for all core providers. When Aksia's BCP system is triggered, an email will be sent to all employees via their personal email. Interruptions can be communicated to employees via work email, instant messaging or via the employees' personal email.

In general, Aksia's communication with employees, clients, managers, and service providers remains a top priority and we do not believe it will be interrupted while our business continuity procedures are in effect. Within our organization, the Plan allows us to leverage technology to remain connected to our team and colleagues so we can continue to productively and collaboratively work remotely. Aksia employees can continue to proactively communicate and schedule regular meetings, use Microsoft Teams for team and group discussion and RingCentral for calls and video calls. Additionally, in response to working remotely during the current COVID-19 Pandemic, an organization wide group chat has been created on Microsoft Teams to easily communicate firm wide developments and updates. Our IT online help site provides instructions on how to use these technology platforms to effectively communicate.

- e. ☐ How and when your emergency plan will be tested, and if the plan will be tested by a third-party.

As noted in our response to question two above, the firm aims to test the Plan at least annually to assess whether the firm can continue operations without significant disruption in the event of an emergency. Aksia has not had the Plan tested by a third-party. On March 4, 2020, given the growing concerns surrounding the COVID-19 Pandemic, Aksia conducted a successful business continuity emergency "work from home" test across all Aksia's global offices. This test allowed the firm to troubleshoot potential employee connectivity or software issues and allowed employees to practice working remotely. Following the test, Aksia employees filled out a survey confirming that the test was successful and highlighting any issues that may have arisen, which were subsequently addressed by IT.

III-3. Mandatory Minimum Qualifications.

A. ☐ The Offeror must meet all of the following minimum qualifications to be given further consideration. Failure to satisfy each of the minimum qualifications, or agree to meet each of the following requirements, will result in the immediate rejection of the proposal.

1. ☐ The Offeror must have been in the business of providing hedge fund and private credit investment consulting services for at least three (3) years, evidenced by a certificate of incorporation or copy of Form ADV as well as documentation of investment consulting clients (including venture capital/private equity/real estate consulting clients) which date back five years.

Aksia has been in the business of providing investment consulting services for over three years. Aksia began providing hedge fund investment consulting services to public pension plans in 2007, and began providing private credit investment consulting services to public pensions in 2010. Please see our Form ADV Parts I and II included as Appendix 1A.

2. ☐ The Offeror must be a Registered Investment Advisor with the SEC under the Investment Advisors Act of 1940. Provide a copy of the latest Form ADV Parts I and II.

Aksia is a Registered Investment Advisor with the SEC under the Investment Advisors Act of 1940. Please see our Form ADV Parts I and II included as Appendix 1A.

3. ☐ The primary consultant and principal assistant that will be assigned to the PSERS account must each have at least five years' experience analyzing, monitoring, recommending for investment, or investing in hedge funds and private credit funds for institutional clients.

The PSERS account will continue to be serviced by the primary consultants, Brett Minarik, 11+ years industry experience, and Sylvia Owens, 27+ years industry experience, and principal assistant Lynn O'Connell, 10+ years industry experience, meeting the requirement of at least five years' experience in hedge fund and private credit investment advisement for institutional clients. Please note that Brett will be the first point of contact, but Sylvia, as Aksia's Global Private Credit Strategist, will be the lead for PSERS' private credit portfolio and continue to play a prominent role in the relationship, including attending PSERS' Board Meetings. Please find further information on Brett, Sylvia, and Lynn's experience, responsibilities, and biographies in Section III-5 of this RFP.

4. ☐ The Offeror must have, or have access to, a database sufficient in size and scope to allow an analysis of the risk and returns of hedge fund and private credit managers by a variety of factors, including capitalization size, style, etc.

Aksia maintains a secure proprietary online platform, MAX, which houses hedge fund and private credit due diligence, client portfolio information, monitoring tools, risk analytics and industry research and resources for our clients' use.

5. ☐ As of December 31, 2019, the Offeror must have provided non-discretionary hedge fund and private credit consulting services to at least three (3) tax exempt clients, including at least two (2) public pension clients each having over \$10 billion in total assets.

Aksia currently has 10 US public pension hedge fund and/or private credit non-discretionary advisory clients, all of which are tax exempt entities and all of which exceed \$10 billion in total plan assets, as of December 31, 2020.

6. ☐ The Offeror's primary source (i.e. at least 60%) of revenue must be from non-discretionary consulting services.

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Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, the information provided as part of this question is exempt from disclosure per 65 P.S. § 67.708(b)(26).

7. ☐ The Offeror will be required to reimburse PSERS, or pay directly on PSERS' behalf, the reasonable travel expenses actually incurred by PSERS, if any, for each contract year (i) for travel to Offeror's location for due diligence and/or to discuss performance results, economic outlook, investment strategy, organization changes and other pertinent matters; (ii) to attend investment conferences, training, seminars or similar events sponsored by Offeror (or any affiliate of Offeror relating to the services to be provided pursuant to this RFP); and (iii) to attend meetings and interviews at existing or prospective investment manager sites. Reimbursable or directly payable expenses will include airfare, automobile rental, lodging, meals, Offeror-sponsored event registration fees, and other travel-related expenses at maximum allowance rates established by the Commonwealth Management Directive 230.10 as revised, Travel and Subsistence Allowances. The reimbursable or directly payable expenses for each of (i), (ii), and (iii), above, shall not exceed \$35,000 per calendar year.

Aksia acknowledges and accepts this reimbursement requirement.

8. ☐ The Offeror will be required to perform services contemplated by this RFP subject to the exercise of that degree of judgment and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence who are experts in such matters, exercise in the management of like matters, not in regard to speculation but in regard to the permanent disposition of the Fund, considering the probable income to be derived therefrom as well as the probable safety of the invested capital. Offeror will be required to acknowledge, with respect to PSERS and the Fund that, without qualification, it is a "fiduciary" as that term is defined in the Employee Retirement Income Security Act of 1974 (ERISA), regardless of the applicability of ERISA to PSERS or the Fund.

Aksia acknowledges with respect to PSERS and the Fund that it is a "fiduciary" as defined in the Employee Retirement Income Security Act of 1974.

9. ☐ Offeror must provide and maintain a secure, client-facing, web-based platform that is frequently updated and continuously available to PSERS that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity

notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools.

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Aksia is a commercial entity whose online client platform and its capabilities are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

The Offeror's consulting team must provide written responses to each of the aforementioned mandatory qualifications substantiating how your firm satisfies each qualification and confirming that your firm will satisfy each requirement. The responses must contain sufficient information as prescribed to assure the Board of its accuracy. **Failure to provide complete information will result in immediate rejection of the proposal.**

III-4. Offeror's Qualifications.

A. ☐ Please provide the following information about your firm:

1. ☐ Provide a summary description of your firm including the name, year formed, history, ownership structure, names of owners or partners, subsidiary or affiliate relationships, and the reporting and control structure. If you are an affiliate or subsidiary of another company, what percentage of the firm's total revenue does your division generate? Please describe the organizational structure and your relationship to the parent company and any other subsidiaries. List services to the investment community (trading, investment management, database) other than hedge fund and private credit investment consulting services, provided by your firm, as well as services of any parent, subsidiary, or affiliate. If hedge fund and private credit consulting is not your only line of business, please make clear in answering these questions the history and circumstances of your entrance into hedge fund and private credit consulting.

Aksia is an alternative investment portfolio advisory and research firm focused on hedge funds and private credit strategies. Our clients are sophisticated institutional investors from around the world and our business model is tailored to meet their individual needs.

Aksia was founded on October 1, 2006 by Jim Vos, Patrick Adelsbach, Norman Kilarjian, Joseph Larucci, Simon Fludgate, and Alex Panagiotidis, all of whom were former members of the Hedge Fund Investment Group of Credit Suisse (i.e., the fund-of-funds group). The partners saw the need for, and limited availability of, well resourced, high quality research and investment advisory services for institutional investors who were becoming increasingly knowledgeable and shifting from fund-of-funds allocations to direct investments. Aksia was formed to meet this demand with the following core principles and goals:

- ☐ Working with experienced, long-term institutional investors;
- ☐ Aligning the interests of Aksia with those of investors;
- ☐ Maintaining in-depth and independent research; and
- ☐ Providing proactive and unbiased investment advice and a customizable, high-touch portfolio advisory service.

Aksia advises on the alternative investment universe, with a core focus on hedge funds ("HFs") and private credit ("PC"), with research capabilities that include thorough and independent investment due diligence ("IDD") and operational due diligence ("ODD"). Aksia's research processes and opinions are integrated throughout our advisory services, which provide bespoke solutions based on the needs and objectives of individual clients. Our services are comprehensive, providing both front office investment support and middle and back office operational assistance, aiding clients in building institutional-quality alternatives programs without being limited by their internal resources. Clients are further supported by our proprietary online platform, MAX, which houses due diligence, client portfolio information, monitoring tools, risk tools, portfolio builder analytics, and industry research and resources.

Aksia is headquartered in New York, and maintains offices in North America, Europe, and Asia. As of January 31, 2020, Aksia employed 181 professionals globally, including 100 research (IDD and ODD) and risk professionals, and is 100% employee-owned by its eleven partners. We have 73 total clients globally, which include public pensions, corporate pensions, healthcare organizations, sovereign wealth funds, insurance companies, endowments and foundations, and financial institutions, and advise on over \$85 billion of alternative investment assets.

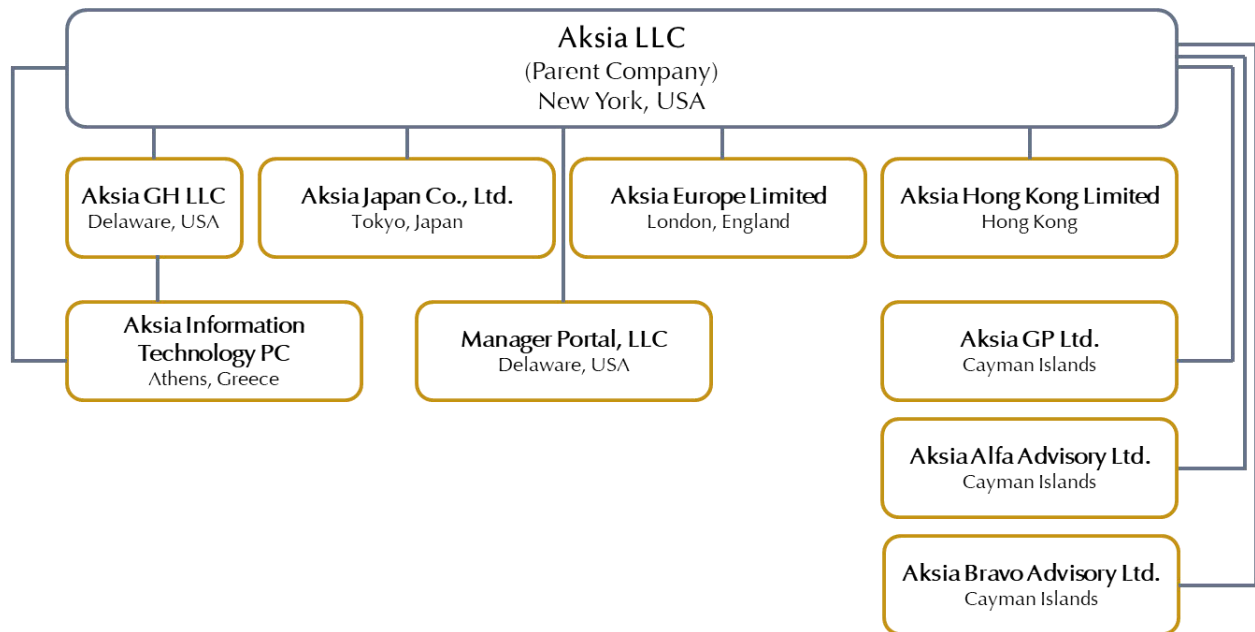
Aksia Partnership and Employee Reporting Structure

As of January 31, 2020, Aksia LLC was entirely owned and controlled by eleven equity partners who head the firm's functional teams and are all active members of the firm. Firm-wide decisions are made jointly by the eleven partners, with our Chief Executive Officer and managing partner of the firm, Jim Vos, having ultimate managerial and financial decision-making authority.

- Jim Vos – CEO
- Alex Panagiotidis – Europe Operations Manager
- Norman Kilarjian – Head of Macro & Quant Strategies
- Joseph Larucci – Head of Equity Strategies
- Patrick Adelsbach – Head of Credit Strategies
- Simon Fludgate – Head of Operational Due Diligence
- Manabu Washio – Head of Aksia Asia
- Valerie Benard – Head of Aksia Europe
- Maya Fishman – Head of Legal & Compliance
- Oliver Newton – Head of Portfolios
- Matt Mullarkey – Head of Advisory, America

Organization

Aksia LLC is the parent company; please find below Aksia's firm organizational structure chart.



- ☐ Aksia LLC is the SEC-registered parent company.
- ☐ Aksia Europe Limited researches local managers and services primarily EMEA and Australia-based investors.
- ☐ Aksia Japan Co., Ltd. and Aksia Hong Kong Limited research local managers and service primarily Asia-based investors.
- ☐ Aksia Information Technology provides support services to Aksia globally, including IT, data management, client services, operations and accounting services, and research support services.
- ☐ Manager Portal, LLC is a networking platform designed to allow investment managers to share information directly with current and prospective investors.
- ☐ Aksia GP Ltd., Aksia Alfa Advisory Ltd., and Aksia Bravo Advisory Ltd. each act as a GP to a bespoke Cayman Islands fund of one.

March 2020 Acquisition

On March 31, 2020 Aksia acquired TorreyCove Capital Partners LLC, a specialist investment research and advisory firm that focuses on private equity and real asset strategies. Aksia will remain headquartered in New York, with offices of its affiliates based in San Diego, London, Tokyo, Boston, Athens, and Hong Kong. As a result of the acquisition, we believe clients will benefit from larger and deeper research capabilities, broader geographic reach, pan-alternatives expertise, and a focus on technology solutions for accessing a wide range of research on investments as well as portfolio, accounting, and risk information reporting.

Aksia and its affiliates, now including Aksia TorreyCove Partners LLC, will advise on over \$160 billion in alternative assets with more than 250 professionals globally, including over 160 professionals focused on research and risk management. As a result of this acquisition, the Aksia partnership has gained five members from the TorreyCove predecessor entity: David Fann, Vice Chairman; Kara King, Head of Client Operations and PE/RA Risk Management; Mike Krems, Head of Co-Investments; Tom Martin,

Head of Private Equity Research; and Michelle Davidson, Co-Head of Advisory Americas. However, please note that this RFP, and all answers contained herein, do not reflect the TorreyCove subsidiary, as the information is provided as of January 31, 2020 or December 31, 2019, depending on the response, which is before the acquisition closed.

In addition, please note that as a result of this acquisition, Aksia's services to the investment community have now expanded beyond hedge fund and private credit investment consulting services to include private equity and real assets investment consulting services.

2. ☐ Do senior executives have ownership interests in the firm? If so, how much?

As of January 31, 2019, Aksia was 100% owned and controlled by eleven equity partners who are all active members of the firm. Jim Vos is the managing partner of the firm and has managerial and financial decision-making responsibility. Alex Panagiotis, Aksia's Europe Operations Manager, owns a large stake in Aksia as a result of providing initial seed capital to build out the firm.

Ownership % of Each Partner

- ☐ Jim Vos – CEO: <25%
- ☐ Alex Panagiotidis – Europe Operations Manager: <50%
- ☐ Norman Kilarjian – Head of Macro & Quant Strategies: <10%
- ☐ Joseph Larucci – Head of Equity Strategies: <10%
- ☐ Patrick Adelsbach – Head of Credit Strategies: <10%
- ☐ Simon Fludgate – Head of Operational Due Diligence: <5%
- ☐ Manabu Washio – Head of Aksia Asia: <5%
- ☐ Valerie Benard – Head of Aksia Europe: <5%
- ☐ Maya Fishman – Head of Legal & Compliance: <5%
- ☐ Oliver Newton – Head of Portfolios: <5%
- ☐ Matt Mullarkey – Head of Advisory, Americas: <5%

Additionally, as noted in the prior question Section III-4 Question 1, as result of the Aksia TorreyCove Acquisition on March 31, 2020, the Aksia partnership has gained five members from the TorreyCove predecessor entity: David Fann, Vice Chairman; Kara King, Head of Client Operations and PE/RA Risk Management; Mike Krems, Head of Co-Investments; Tom Martin, Head of Private Equity Research; and Michelle Davidson, Co-Head of Advisory Americas. Each will own less than 5% of Aksia LLC.

3. ☐ State the name, title, address and telephone number of the proposal contact person. Will the primary consultant assigned to PSERS' account have ownership interest in the firm or is there a specific arrangement for sharing in the profits earned by the enterprise (e.g., salary, bonus, group/individual performance incentives, profit sharing, etc.)? Please describe.

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Aksia is a commercial entity whose internal governance and business practices are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. §

67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

4. ☐ How long has your firm provided general consulting services to public pension plans? Hedge fund and private credit consulting services?

Aksia began providing hedge fund investment consulting services to its first public pension client in 2007, and began providing private credit investment consulting services its first public pension client in 2010. Aksia does not provide general consulting services.

Please provide the following indicators of financial stability:

5. ☐ Audited financial statements for the past three (3) years, including a breakdown of revenue by line of business, and

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Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, this information and these documents are exempt from disclosure per 65 P.S. § 67.708(b)(26).

6. ☐ Any special audit reports concerning internal controls for the past three (3) years.

There have been no special audit reports concerning internal controls for the past three years.

- B. ☐ Within the past five (5) years, have there been any significant developments in your firm (changes in ownership, personnel reorganization, new business ventures, etc.)? If so, describe in detail and outline the circumstances.

Aksia has always been 100% employee-owned, and all eleven of Aksia's current partners are actively involved with the firm and serve as heads of functional teams. Regarding significant firm developments within the past five years, Aksia has made some notable hires and promotions that have enriched our research and advisory capabilities, as well as parted ways with one partner as described below.

Partnership

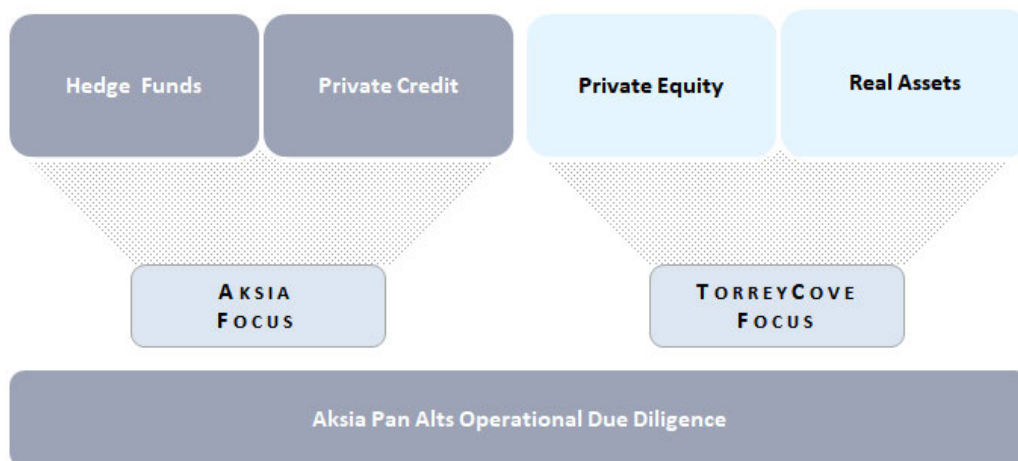
- ☐ In January 2016, Oliver Newton, hired in April 2012 as a senior member of the European Advisory team in London, was promoted to Partner and Head of Portfolios, EMEA.
- ☐ In August 2016, Aksia and Bruce Ruehl, former Partner and Global Portfolio Strategist, decided to part ways. For continuity following Bruce's departure in August 2016, Oliver Newton's purview was expanded to encompass portfolios globally (now titled Partner and Head of Portfolios, globally), while the role of Global Portfolio Strategist was eliminated.
- ☐ In January 2019, Matt Mullarkey, hired in 2011 and promoted to Head of Portfolio Advisory, Americas in August 2015, was promoted to Partner.

In addition to the above personnel changes, as noted in Section III-4 Question A.1, Aksia acquired TorreyCove Capital Partners LLC on March 31, 2020, and the Aksia partnership has gained five members from the TorreyCove predecessor entity: David Fann, Vice Chairman; Kara King, Head of Client Operations and PE/RA Risk Management; Mike Krems, Head of Co-Investments; Tom Martin, Head of Private Equity Research; and Michelle Davidson, Co-Head of Advisory Americas.

C. ☐ Do you anticipate any significant changes in your firm? If so, describe these changes and their impact on clients.

As noted in our response to Section III-4 Question A.1, on March 31, 2020, Aksia acquired TorreyCove Capital Partners LLC, a specialist investment research and advisory firm that focuses on private equity and real asset strategies. Aksia will remain headquartered in New York, with offices of its affiliates based in San Diego, London, Tokyo, Boston, Athens, and Hong Kong. As a result of the acquisition, we believe clients will benefit from larger and deeper research capabilities, broader geographic reach, pan-alternatives expertise, and a focus on technology solutions for accessing a wide range of research on investments as well as portfolio, accounting, and risk information reporting.

Aksia and its affiliates, now including Aksia TorreyCove Partners LLC, will advise on over \$160 billion in alternative assets with more than 250 professionals globally, including over 160 professionals focused on research and risk management. As a result of this acquisition, the Aksia partnership has gained five members from the TorreyCove predecessor entity: David Fann, Vice Chairman; Kara King, Head of Client Operations and PE/RA Risk Management; Mike Krems, Head of Co-Investments; Tom Martin, Head of Private Equity Research; and Michelle Davidson, Co-Head of Advisory Americas.



D. ☐ Explain your firm's goals for expansion and accepting new client business. How will the firm control the quality of service to clients? Include the following:

1. ☐ Total number of accounts that will be accepted.
2. ☐ Total assets that will be accepted.
3. ☐ Plans for additions to professional staff and approximate timing in relation to growth of accounts and/or assets.

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cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

E. ☐ What is the location(s) of firm headquarters and branch offices? If several locations, what quality controls does the firm use to ensure consistency of services among clients, and how does the firm handle research, information processing and databases?

Office Locations

Aksia is headquartered in New York City and maintains main offices in London, Tokyo and Hong Kong, which research local managers and service investors based in the EMEA/Australia, in the case of London, and Asian regions, in the case of Hong Kong and Tokyo. Aksia also has an additional office in Long Island, NY, which provides middle and back office services to advisory clients globally, as well as an additional office in Athens, which provides IT, data management, client services, operations and accounting services, and research support.

Quality Control

Aksia's offices are united in supporting our clients' varying needs, however, each office is uniquely tailored to service clients of their respective region, and/or provide functional support. From a geographic standpoint, this model allows offices to communicate more easily with managers and clients within the same time zone, as well as have those more familiar with the industry practices, rules and regulations of the jurisdiction directly service the clients. From a functional standpoint, we believe having specialized offices concentrated on middle/back office and technology support leads to cohesion in work product and greater teamwork, efficiency, and innovation. This said, ☐ Aksia's teams seek to strike a balance between having uniformity in standards of care and expectations across Aksia globally, while remaining flexible to adapt to local cultures and regulatory environments. In this regard, Aksia's global offices follow a consistent onboarding and training process for new employees across our office locations, as well as follow the same established processes and procedures in servicing client portfolios, including a consistent research framework and structured reports. ☐

Additionally, Aksia has integrated quality control measures within our business model as a way of seeking to ensure clients are receiving quality research and service. We have designed an internal workflow management system, Cedric, which we use to assign, manage, and track client deliverables through multiple teams and layers of review. Cedric tracks the progress of all tasks to promote timeliness of client deliverables and foster accountability; report and client task status is transparent to all Aksia staff globally.

Global Client Portfolio Reviews

To maintain consistency across Aksia's global offices, consultant recommendations are routinely reviewed and monitored through our monthly hedge fund and private credit portfolio review processes, which each bring together Aksia's advisory team and senior representatives for each investment research team, globally.

In our hedge fund monthly portfolio review we look at each portfolio every month, discussing items such as exposures to markets, sectors and individual funds, liquidity, and notice periods for upcoming subscriptions and redemptions. These discussions lead to specific recommendations for each underlying

portfolio in both the near and long term, which the advisory team then discusses with clients or enacts, depending on the type of relationship.

In our private credit monthly portfolio we review each private credit portfolio at least once per quarter (and potentially more often), depending on level of activity and available capital. Broad market trends, risk considerations and highlighted research ideas are discussed. Given the closed ended nature of private funds, attention is given to proactively discussing the forward pipeline of funds, both in market and pre-launch.

F. ☐ Present the previous experience and expertise of the firm providing the services proposed for PSERS.

1. ☐ List the name of pension funds your firm has as clients, indicating whether your firm represents these clients on a discretionary or non-discretionary basis.

Please find below a list of Aksia's pension advisory (non-discretionary and discretionary) and research (non-discretionary) clients as of January 31, 2020. Client names have been redacted for confidentiality purposes, however, Aksia is happy to provide a select list of client names upon PSERS' request.

	Aksia Client	Service Type
1	US Public Pension	Non-Discretionary Advisory
2	US Public Pension	Non-Discretionary Advisory
3	US Public Pension	Non-Discretionary Advisory
4	US Public Pension	Non-Discretionary Advisory
5	US Public Pension	Non-Discretionary Advisory
6	US Public Pension	Non-Discretionary Advisory
7	US Public Pension	Non-Discretionary Advisory
8	US Public Pension	Non-Discretionary Advisory
9	US Public Pension	Non-Discretionary Advisory
10	US Public Pension	Non-Discretionary Advisory
11	US Public Pension	Research
12	US Corporate Pension	Non-Discretionary Advisory
13	US Corporate Pension	Non-Discretionary Advisory
14	US Corporate Pension	Non-Discretionary Advisory
15	US Supranational Pension	Research
16	Canadian Corporate Pension	Non-Discretionary Advisory
17	EMEA Public Pension	Discretionary Advisory
18	EMEA Public Pension	Non-Discretionary Advisory
19	EMEA Public Pension	Research
20	EMEA Corporate Pension	Discretionary Advisory
21	EMEA Corporate Pension	Discretionary Advisory
22	EMEA Corporate Pension	Discretionary Advisory
23	EMEA Corporate Pension	Non-Discretionary Advisory

24	EMEA Corporate Pension	Non-Discretionary Advisory
25	EMEA Corporate Pension	Non-Discretionary Advisory
26	EMEA Corporate Pension	Non-Discretionary Advisory
27	EMEA Corporate Pension	Non-Discretionary Advisory
28	EMEA Corporate Pension	Research
29	Asia & Oceania Corporate Pension	Research
30	Superannuation Pension	Non-Discretionary Advisory
31	Superannuation Pension	Research

2. ☐ List your five (5) largest hedge fund and private credit consulting clients by assets and your three (3) largest public pension fund hedge fund and private credit consulting clients, including:

- a. ☐ Type of client;
- b. ☐ Total size of fund;
- c. ☐ Assets on which you provide consulting services;
- d. ☐ Length of service to them;
- e. ☐ Nature of relationship (retainer or project-based);
- f. ☐ Nature of service provided (discretionary or non-discretionary);
- g. ☐ Type of investments (direct, fund of funds, separate account, or a combination of all three); and
- h. ☐ Brief description of services provided.

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3. ☐ Please complete the following for current clients:

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the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

4. ☐ Does your firm operate any funds or other pooled investment vehicles, including, but not limited to, funds of funds? Please identify each.

Aksia does not offer any commingled fund products. At the request of discretionary clients, Aksia has created two pooled investment vehicles that allow affiliated client entities to invest in the same fund, and one pooled investment vehicle that allows two clients who wanted to invest together to do so. These funds were created solely at the request of the invested clients and are not open to investment from other entities.

5. ☐ Please list the names of pension plan clients that you have added in the last three (3) years, and the assets of each account.

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6. ☐ Please provide the names of all pension plan clients that you have lost in the last three (3) years, the asset size of each account, and the reason(s) for termination.

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- G. ☐ Describe any other service not included in this Part III Technical Submittal that you believe would be beneficial to PSERS and you are proposing to provide for PSERS.

We find that Part III Technical Submittal, in conjunction with all other parts of our proposal submission, is comprehensive in its description of the services Aksia has provided, would continue to provide, and are proposing to provide as the hedge fund and private credit non-discretionary investment consultant to PSERS.

H. ☐ State what you believe sets your consulting services apart from your competitors. What do you consider to be your firm's consulting specialties, strengths, and limitations?

Aksia offers comprehensive research and portfolio advisory solutions for public pensions, as we know that building and maintaining a successful alternatives program requires significant resources. Aksia supports clients' hedge fund and private credit programs across a broad array of needs, providing clients with a flexible framework, resources and experience to build an investment program from the ground up or to transition and further develop an existing program. Below we describe key strengths and what we believe to be Aksia's competitive advantages:

Customized High-Touch Approach

Aksia's goal is to help create the "client's portfolio" not an "Aksia portfolio". We understand that each client's investment team has its own preferences and areas of expertise, and that each client's portfolio operates under a unique set of objectives and constraints. Our recommendations carefully consider a client's existing investments and our high staff-to-client ratio allows us to tailor our advice to each client's unique situation. This is evidenced by the heterogeneity of our existing clients' portfolios, representing the needs and goals of each program.

Investor Mindset

Our investment partners and advisory heads have direct relevant investment experience prior to Aksia; none are career consultants. This experience allows us to assist our clients with building portfolios, navigating markets, and performing fund due diligence from the perspective of an investor seeking attractive risk-adjusted returns.

Deep, Dedicated ODD Team with Experienced Leadership

Aksia's dedicated ODD team has been conducting operational due diligence on alternative investment strategies since October 2006. Our Head of Operational Due Diligence, Simon Fludgate, has over 26 years of audit, financial accounting, and operational due diligence experience. As of January 31, 2020, the global ODD team is comprised of 40 professionals from varied backgrounds, including audit, operations, legal, risk management, and fraud and investigations, each bringing unique perspectives to the evaluation and identification of operational risks that relate to alternative asset investing. The ODD team seeks to provide insightful research and a 360 degree view of a manager. The team functions independently from IDD, with the ability to "veto" any investment based on operational concerns, and ODD reviews are conducted on a team basis with multiple layers of review. In addition, the global presence of our ODD team allows us to visit fund managers wherever they are located and enables clients to contact our team in their preferred time zone.

Niche and Specialist Research Capabilities

Aksia's investment professionals proactively seek out niche, off-the-run managers and funds, including in cases where the opportunity may only be appropriate for one client. Aksia regularly updates its proprietary database and pipeline of managers, including anticipated new launches. The team regularly attends industry conferences to meet both established and emerging fund managers and has long advocated for clients to diversify their portfolios by using smaller managers to complement larger, established ones. We believe that our commitment to sourcing is important to identifying these opportunities.

Proprietary Technology Platform

In addition to housing Aksia's manager research, monitoring, and meeting/call notes, our online client-facing platform, MAX, provides clients with access to risk analytics and portfolio construction tools. MAX also offers clients transparency into our process, as it is the same system used internally by our research and advisory teams. We have been happy to work closely with PSERS over the years to customize or develop various tools, features, options and outputs within the system to better meet PSERS' specific needs.

Middle and Back Office Support

Aksia's client operations and accounting team has served as an extension of clients' staffs for over 10 years. The team performs back office and operational support services ranging from performance reporting using manager-supplied data to share class-specific accounting and administration support. We believe that this allows clients to focus more time on investments rather than on administrative functions and provides our portfolio advisory team with accurate, up-to-date information to better support clients' programs.

Hedge Fund and Private Credit Portfolio Risk Monitoring

Hedge Funds: Aksia's data team collects monthly risk exposures at the asset class, region, and industry level for each monitored hedge fund investment. This data is available to clients directly through MAX and can be viewed on the fund or aggregated portfolio level.

Private Credit: Subject to GP's willingness to provide the data, Aksia's risk team collects and processes position-level information from underlying GPs, which includes 50+ loan-specific attributes and tens of thousands of cash flow line items. Aksia's model aggregates this data to conduct return attribution analysis, outlier analysis, style drift analysis, benchmarking analysis, and to identify risk trends and areas of underperformance.

Fee Discounts

Aksia has a structured program for actively negotiating fee discounts for the benefit of our clients, typically based on aggregated client investments, with the full benefits of Aksia's scale available to advisory clients. Our program has steadily grown and with our ongoing efforts, we are optimistic about our ability to continue to negotiate preferential fees and terms on behalf of our clients. There is no "one-size-fits-all" solution, so Aksia employs a flexible approach to negotiating a better alignment of fees and terms for our clients. While PSERS has been very successful negotiating fee discounts with managers directly, they have also benefited from Aksia's fee negotiation program (e.g. two private credit managers and a hedge fund manager).

Knowledge Transfer & Education

Our high-touch advisory process aims to ensure that our professionals stay in front of client needs and are available to answer client questions. Our research teams are available to help support that process through calls and meetings and jointly attending manager due diligence meetings with clients. We have experience working with staff and boards with varying degrees of investment background or experience and can customize an educational program from basic Hedge Fund/Private Credit 101 to a granular strategy or manager analysis, tailored to staff's or the board's needs or interests. For example, in early 2019 we hosted several professionals from PSERS' Risk Team in our NY office for a risk "deep dive," which included, among other topics, an overview of data sources and potential data quality considerations, Aksia risk systems, approach to portfolio risk management, separate investment and operational due diligence risk management and evaluation sessions, discussion of transparency and associated

considerations, forward-looking ways to seek to reduce risk and several case studies (e.g., risk and exposure management within Insurance-Linked Strategies). We have also been selected by ILPA to be their exclusive provider of private credit educational content, which we believe exemplifies our ability to provide knowledge transfer to a broad audience with mixed private credit experience.

- I. ☐ Does your firm have any record or rating system depicting value it has added over either a random selection process or an intelligent indexing approach? If so, please provide and explain.

While Aksia does not keep such a record or rating system, we have built tools for hedge funds in MAX that can be used to perform value-add analysis (see Alpha Analysis in Section III-6 Question G.6) and return breakdown analysis (see Factor Replication in Section III-6 Question G.6) on the return stream of a hedge fund or portfolio of hedge funds. We would also be happy to perform custom analysis for hedge funds as a project per PSERS' request.

- J. ☐ How does your firm evaluate the quality of its consulting services?

Aksia is committed to the investment performance of our clients' portfolios as well as to providing high quality hedge fund and private credit consulting services. Aksia believes that the quality of our services should be monitored and measured on the basis of the following factors:

- ☐ Performance of the overall program relative to the codified objectives;
- ☐ Understanding and communication of the industry, managers, and events that impact the portfolio;
- ☐ Being proactive in modifying the program where necessary;
- ☐ Identifying investment opportunities at the macro and manager levels;
- ☐ Presentation of unique and innovative investment ideas;
- ☐ Underlying manager performance; and
- ☐ Client service, including timely and effective communication on pertinent matters and ability to act as a resourceful extension of staff.

As noted above in Section III-4 Question F, Aksia has integrated quality control measures within our business model as a way of seeking to ensure that our clients receive quality research and service. We have designed an internal workflow management system which we use to assign, manage, and track client deliverables through multiple teams and layers of review.

Aksia's objective is to support our clients' varying needs and as such, Aksia has built a platform capable of supporting an investor's program in whatever capacity is required. Although there are many measures by which to evaluate investment performance versus peers, we believe a key benchmark is the satisfaction of our clients. We believe we have a differentiated model which focuses on servicing each client's individual needs. We continually solicit and incorporate feedback regarding the quality of our research, investment advice, online platform and overall service. For example, since the inception of our relationship with PSERS in 2010, we have worked closely with Staff and received and implemented feedback on a range of topics, including direct on-screen and export functionality in Portfolio Builder, the development and deployment of Manager Portal, and the content and structure of standard and customized reports.

K. ☐ Over the past five years, has your organization or any officer or principal been involved in any litigation or other legal proceedings, regulatory or other governmental investigation relating to your consulting or investment activities? If so, provide a brief explanation and indicate the current status.

Although neither Aksia nor any of its officers or principals has been involved in litigation or legal proceedings related to our investment advisory activities over the past five years, in December 2017, Aksia CEO Jim Vos pled no contest to failure to halt possession of alcohol by a minor in connection with a small graduation party that Jim's daughter held at Jim's home. This misdemeanor charge does not relate to Aksia or its business.

L. ☐ Has your firm or any officer, director, partner, principal or employee ever been the subject of any non-routine investigation, inquiry, or enforcement action by a governmental agency or self-regulatory body regarding fiduciary responsibilities, consulting activities, or other investment-related matters or activities? If so, describe each instance and summarize any directives or letters of opinion that were issued.

In November 2013, Aksia, along with 19 other consultants to the New York City and State Pension Systems, was subpoenaed by the New York State Department of Financial Services, in connection with its general inquiry into the practices of consultants who serve the New York City and State Pension Systems. Aksia produced documents on November 22, 2013 in accordance with the Subpoena and cooperated with the investigation.

M. ☐ Please provide the names of all government agencies and regulatory bodies to whose oversight your firm is subject.

As of January 31, 2020, Aksia is registered with the below government agencies/regulatory bodies:

Location	Agency/Regulatory Body
Aksia LLC - US	Securities and Exchange Commission (SEC) under Investment Advisers Act of 1940 Commodity Futures Trading Commission (CFTC)
Aksia Europe Limited - UK	Investment Advisor with the Financial Conduct Authority (FCA) in the United Kingdom
Aksia Japan Co., Ltd. - Japan	Financial Services Agency (FSA)
Aksia Hong Kong Limited - Hong Kong	Securities and Futures Commission (SFC)

N. ☐ Please provide a copy of the most recent review of your firm by a government agency or regulatory body that relates to the services sought by PSERS.

As an SEC Registered Investment Advisor, Aksia was subject to a routine exam in July 2010. Subsequently, the SEC issued a letter to Aksia outlining the results of the examination. In the letter, the staff pointed out two issues, one requesting that Aksia include in the Compliance Manual a description of the IDD process so it could be reviewed as part of the Annual Review, and one related to Aksia's marketing materials. Both issues were already addressed prior to receipt of the letter, and, as such, the SEC determined that no further action or response by Aksia was necessary.

- O. ☐ Please describe the levels of coverage for errors and omissions insurance and any fiduciary or professional liability insurance your firm carries. Is the coverage on a per client basis, or is the dollar figure applied to the firm as a whole? List the insurance carriers. Has your firm ever submitted a claim to your errors and omissions, liability, fiduciary or fidelity bond carrier(s)? If so, describe each instance.

Aksia maintains Professional Liability coverage through Allianz Global Risk US Insurance Company and Excess professional Liability coverage through Argonaut Insurance Company with a combined \$10 million aggregate limit of liability. This encompasses coverage in the following areas: errors and omissions, fiduciary liability, directors and officers liability, and employment practice liability a/k/a professional & management liability. The \$10 million limit is shared across all the coverage areas and subject a deductible of \$500,000 for errors and omissions, \$250,000 for directors and officers liabilities, \$500,000 for fiduciary liability, and \$100,000 for employment practice liabilities. Aksia holds a separate ERISA Bond Policy through Fireman's Fund Insurance Company with a \$10 million limit and a \$1 million Crime/Fidelity Bond with XL Specialty Insurance Company.

In addition, Aksia maintains a \$1 million per occurrence (\$2 million aggregate) limit for its primary commercial general liability through Phoenix Insurance Company and \$5 million umbrella coverage, through Travelers Indemnity Company.

Aksia has never submitted a claim to our errors and omissions, liability, fiduciary or fidelity bond carrier(s).

- P. ☐ Describe your disaster recovery plan and facilities.

Aksia maintains a Business Continuity and Disaster Recovery Plan (the "Plan"), which is designed to ensure that business will resume as quickly and efficiently as possible in the event of any short-term or long-term significant disruption. Aksia's Plan is described in depth in the beginning of this RFP in Section III-2 Requirements A. Emergency Preparedness.

With respect to disaster recovery specifically, Aksia documents, emails, and databases are backed up daily to a combination of on-premises storage, off-site locations within Microsoft's Azure cloud platform, or another third-party off-site location in Winterhaven, Florida. Aksia can restore data within a reasonable time period. Aksia also monitors the success of back-ups, antivirus software updates, operating system patches, and hardware.

- Q. ☐ Does your firm have a policy that incorporates Environmental, Social and Governance (ESG) issues into the investment decision-making process?

Yes, Aksia has an Environmental, Social and Governance ("ESG") policy which describes our approach to integrating ESG principles into our research, investment process and client relationships. Our policy was developed by the ESG Committee (further described in Section III-4 Question S below) in consultation with Aksia's advisory, investment due diligence and operational due diligence groups.

Aksia seeks to evaluate ESG factors across the following areas:

- ☐ **Environmental:** Factors affecting climate change, pollution, extinction risk or resource utilization;

- ☐ **Social:** Factors relating to discrimination, munitions, privacy violations or the exploitation of vulnerable populations; and
- ☐ **Governance:** Factors relating to business ethics, company governance and board independence.

Our approach to evaluating ESG factors is consistent with our value proposition to clients to offer our experience, expertise, and implementation capabilities to provide clients with flexible solutions that aim to meet their specific needs and complement existing internal resources. Aksia believes that by integrating ESG analysis into our due diligence and advisory services, we are able to:

- ☐ Assess ESG considerations as a part of our research and evaluation process in a manner that is consistent with our overall approach to due diligence;
- ☐ Assist clients in developing investment programs that seek to invest in a manner that is consistent with their specific ESG objectives; and
- ☐ Encourage greater awareness and adoption of responsible investment practices in the alternatives industry.¹

Aksia seeks to incorporate ESG analysis into our investment process by: (1) evaluating the ESG processes and degree of ESG integration into the investment processes of investment managers; (2) an assessment of the positive and negative ESG factors of investment managers and their funds' strategies and underlying investments; and (3) with respect to certain client objectives and ESG investment policies, the implementation and sourcing of sustainability-focused investment strategies.

- R. ☐ How do you evaluate and monitor compliance with your ESG policy? Does your firm have staff dedicated to integrating ESG issues in the investment decision-making process? Does your firm have staff dedicated to compliance with the policy?

Aksia has staff tasked with integrating ESG issues into the investment decision-making process as well implementing ESG initiatives across Aksia as a whole - we have established an ESG & Sustainability Officer, ESG Committee, and ESG Working Group, further described below. We have also implemented ESG training procedures for research staff that integrate ESG considerations into the manager evaluation process, as described in Section III-4 Question V. In addition, Aksia has developed training sessions focused on educating employees on the integration of ESG considerations into our business practices.

ESG & Sustainability Officer

Michelle Perry, a Director of ODD, is Aksia's ESG & Sustainability Officer, is responsible for the integration of ESG considerations across functional areas at Aksia and for the promotion of our values to our stakeholders and the broader investment community.

ESG Committee

Aksia's ESG Committee is responsible for the development of Aksia's ESG policy and the evaluation of ESG considerations. The ESG Committee is comprised of senior employees across business functions globally, including research, advisory, legal and risk, who typically meet on a quarterly basis. The current

¹ Aksia has adopted the definition of responsible investment set forth by the U.N.-supported Principles of Responsible Investment, which is "a strategy and practice to incorporate ESG factors in investment decisions and active ownership."

members of the ESG Committee are Michelle Perry (Director, Operational Due Diligence, ESG & Sustainability Officer), Oliver Newton (Head of Portfolios, Partner), Maya Fishman (Head of Legal and Compliance, Partner), Steve Beckett (Director, Private Markets Risk), Federica Cazzaniga (Portfolio Advisor), Afolabi Oliver (Senior Analyst, Operational Due Diligence), and Joshua Hemley (Managing Director, Investment Due Diligence).

The ESG Committee is supported by an ESG Working Group, which is responsible for the functional implementation and ongoing development of Aksia's ESG policy.

ESG Training

Aksia performs annual ESG training sessions focused on educating employees on Aksia's approach to the evaluation of ESG factors and the integration of ESG considerations into our business practices. In addition, Aksia hosts speakers on related ESG topics as part of our Lunch & Learn series of educational seminars.

Aksia has also established an ESG Research Group to act as a knowledge sharing forum, regularly distributing ESG-related research content to seek to ensure group members are informed of current and emerging ESG issues that pertain to our business practices, investments and the management of our client relationships

- S. ☐ Does your firm allocate resources, including an internal staff and/or external services, to review and evaluate sustainability reports of companies whose securities are held in client accounts and/or are potential investments under consideration?

Please reference the prior response for detail on ESG internal staff, committees and working group. Please refer to our response to Section III-4 Question V below for a detailed description of how Aksia evaluates ESG factors in our due diligence processes, including client invested or prospective funds.

Aksia has certain clients that have regulatory requirements or are particularly sensitive to ESG considerations. Aksia seeks to accommodate these clients' requests and needs regarding ESG integration and reporting as follows:

- ☐ Providing custom ESG-related reporting; and
- ☐ Assisting clients in tailoring investment mandates towards sustainability oriented funds and/or funds with ESG mandates in accordance with client specific directives.

In addition, should an ESG consideration be flagged during the ongoing monitoring of our client invested funds, or if a material ESG development with one of the managers in a client's portfolio comes to our attention, the research team would promptly post a desk note to MAX and may also contact staff through an email or a call.

- T. ☐ If your firm has established an internal staff to review and evaluate company ESG sustainability reports, please describe how it is positioned and interacts within your firm's organizational structure.

Please see our response to Section III-4 Question S above for a description of Aksia's ESG related internal staff, committee, working group and training process.

Aksia has been a signatory to the internationally recognized and United Nations supported Principles for Responsible Investment (“PRI”) since April 2018. Aksia is committed to promoting the PRI’s six principles within the investment industry and to incorporating ESG analysis into our due diligence approach and policies.

- U. ☐ Does the internal structure/staff prepare periodic reports on its review and evaluation of invested company ESG/sustainability reports, and if so, are such reports reviewed by senior management and the board/leadership?

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Aksia is a commercial entity whose investment and operational due diligence, risk management, and portfolio construction processes are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708 (b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

- V. ☐ In addition to the application of ESG in its investment decision-making process, has your firm adopted an ESG/sustainability policy and implementation process and procedures for its overall business operations? If yes, describe the management and/or board structure, process and procedures in place to ensure full implementation and compliance.

Aksia’s commitment to ESG is demonstrated by our focus on building a sustainable and responsible internal culture. Aksia’s approach to corporate social responsibility (“CSR”) is in the process of being formalized, but we anticipate it will include an outline of Aksia’s approach to community engagement, responsible employment practices, diversity & inclusion, reducing our negative environmental impact and our reporting commitment as signatories to the PRI. In the interim, please see below for a description of how Aksia is incorporating environmental, social and governance considerations throughout our business operations.

Environmental Considerations

From an environmental perspective, Aksia is proud to have its headquarters at 599 Lexington Avenue, a Boston Properties building that has a mixed paper recycling program in place in accordance with NYC Local Law 87, which is mandatory for all tenants. As such, all Aksia employees have three bins conveniently located in each desk row – one for glass, plastic and aluminum, one for mixed paper, and one for trash. Additionally, Aksia further promotes recycling by housing a designated bin for plastic bag recycling in the pantry, does not supply single-use straws, and uses dishwasher safe, reusable cups to avoid using paper or plastic. Aksia participates in a compost program and has a designated bin to collect compostable items in each pantry.

In terms of natural resource conservation and sustainability, 599 Lexington Avenue has several policies in place to reduce energy and water waste. Specifically, our building participates in the “Demand Response” program with Con Edison to reduce electricity usage. Additionally, as part of our effort to reduce electricity usage, Aksia’s floor, office, and conference room lights are motion sensitive. In terms of water conservation, the building has low flow water dispersion in the core bathroom locations

throughout the building, and the building measures domestic water feeds to try to reduce water waste. Lastly, the building cleaners only utilize green cleaning products, and the exterminators use the Integrated Pest Management ("IPM") method, which is an approach that discourages the development of pest populations while minimizing the risk to humans and the environment.

Social Considerations

In terms of social considerations, Aksia has several key policies in place to ensure that the firm encourages a professional environment that promotes equal opportunities and diversity, and prohibits discriminatory practices against existing and prospective employees. Specifically, Aksia's Employee Handbook contains an Equal Employment Opportunity Policy which includes Anti-Harassment and Anti-Discrimination and Anti-Sexual Harassment Policies which prohibit discrimination and harassment against any employee or candidate because of a protected category. This policy applies to recruiting, hiring, promotion, work assignment, performance evaluation, compensation, training, and termination decisions. In the event that an employee or candidate believes he or she has been discriminated against or subjected to discriminatory conduct or harassment, or believes that he or she has witnessed such conduct, Aksia has a formal complaint procedure which involves Human Resources conducting a thorough investigation of the situation.

Additionally, Aksia focuses on social responsibility through its commitment to giving back to the local community. For example, in the New York office, Aksia prides itself on its ongoing partnership with local Brooklyn middle school MS 582. In 2017, Aksia partnered with MS 582 to enhance and expand the chess program. This program was available originally only after school to students in grades five through eight. Through our growing collaborative partnership over the past three years, Aksia has been able to expand the program to middle-school lunch time as well as to elementary school students. Aksia engaged chess organization Chess NYC to provide coaching to MS 582 students, and Chess NYC now sends a chess coach to the school up to four times a week, with Aksia employees often joining after school sessions. In addition, the firm hosts chess tournaments and Aksia-sponsored educational events for the students.

Corporate Governance Considerations

From a governance perspective, as of January 31, 2020, Aksia is entirely owned and controlled by eleven equity partners who are all active members of the firm. Firm-wide decisions are made jointly by the eleven partners, with our Chief Executive Officer, Jim Vos, having ultimate decision-making authority. This structure aims to ensure that major firm decisions are driven by consensus and builds in checks and balances to the process. As previously discussed in Section III-4 Question S, we have established a global ESG Committee to discuss and evaluate our ESG approach and integration process.

Additionally, Aksia has a Legal & Compliance department which manages the firm's compliance program. The team maintains a written Compliance Manual, which includes a Code of Ethics that follows standards of practice similar to the CFA Institute's Code of Ethics and Standards of Professional Conduct. The Code of Ethics is designed to prevent improper personal trading, identify conflicts of interest and provide a means to resolve an actual or potential conflicts in favor of Aksia's clients. Compliance provides training to all new employees upon joining the firm and through ongoing annual training, and also monitors employees' personal trading accounts, political contributions, and gifts and entertainment given and received. We have included a copy of these policies in Appendix 1C.

W. ☐ Describe your research and analysis capabilities, noting supporting human expertise and technology.

1. ☐ Are your resources internal or external? If any external resources are used, provide a description including the name of vendors providing these resources. How is the information used to inform and advise clients? List investment research reports or studies that you have provided clients in the past 12 months. Describe your capability to carry out special projects requested by PSERS. Provide sample reports that best represent your research capabilities.

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Aksia is a commercial entity whose reports and service offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

2. ☐ Does your firm maintain a secure, client-facing platform that contains investment due diligence and operational due diligence reviews and reports, quantitative reports, activity notes related to managers, industry research, portfolio builder analytics, monitoring tools, customizable manager searches, and interactive risk exposure tools?

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Aksia is a commercial entity whose online client platform and its capabilities are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

3. ☐ Is all firm research, including proprietary research, available to clients regardless of the firm department in which it was created?

PSERS would have full access to all of firm research for the hedge fund and private credit asset classes that is housed in MAX (subject to manager confidentiality restrictions), as well as the tools described in Section III-6 Question G.6 as part of the advisory contract.

4. ☐ Is analysis available to clients through firm analysts and software comparing hedge fund and private credit managers with their peers? How quickly is this information provided following request?

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5. ☐ Outline the sources used to obtain data for publication of newsletters or periodicals. Include samples of your publications.

Please reference our response to Section III-6 Question E.2 for this information. Sources used to obtain data for publication of our reports vary and are clearly cited in each report.

6. ☐ Describe any other service not included in Part IV "Work Statement" that you believe would be beneficial to PSERS and that you are proposing to provide for PSERS.

We find that Part III-9 Work Plan (Part IV Work Statement is not a section in this RFP), in conjunction with Part III Technical Submittal and all other parts of our proposal submission, is comprehensive in its description of the services Aksia has provided, would continue to provide, and is proposing to provide as PSERS hedge fund and private credit non-discretionary investment consultant.

7. ☐ Explain in detail any potential for conflict that would be created by your firm contracting with PSERS, including other client relationships that may inhibit services to PSERS and/or the other clients.

Aksia is not aware of any conflicts of interest specific to providing services to PSERS at this time. However, as a Registered Investment Adviser, Aksia is required to disclose and mitigate potential conflicts of interest and has thus identified the below conflicts that are associated with Aksia's business in general, and has adopted policies and procedures that both identify and address these potential conflicts. These potential conflicts include:

- a) ☐ *Allocation of Investment Opportunities:* Aksia provides portfolio advisory services to both discretionary and non-discretionary clients (together, "Advisory Clients"). With the exception of secondaries and co-investments sourced by Aksia, all other opportunities are allocated equitably among discretionary and non-discretionary clients. On occasion, a fund that has ceased to widely solicit additional investor capital will reach out to Aksia to offer limited capacity to its Advisory Clients. In these instances, Aksia will first present the manager with the names of all eligible Advisory Clients that are interested in the capacity, and then have the manager, not Aksia, decide

which clients will receive the capacity allocation. In the event that our aggregate client interest exceeds the available capacity and the manager is unwilling to decide between eligible clients, Aksia will seek to split the capacity pro rata among interested and eligible Advisory Clients.

With respect to co-investment opportunities, Aksia will first recommend co-investments to its discretionary clients who have elected in their investment management agreement with Aksia or who have otherwise contracted with Aksia to provide services regarding co-investments. If there is an excess allocation above the amount that Aksia determines will be allocated to discretionary clients, the excess allocation may be offered to any client of Aksia or to any third party, in each case selected by Aksia in its sole discretion.

- b) ☐ *Performance-Based Fees and Side-by-Side Management*: While most advisory clients choose to pay fixed or asset-based fees, some pay performance-based fees. In addition, amongst clients paying fixed or asset-based fees, some may pay higher fees than others. These different payment structures may give rise to a potential conflict of interest. Aksia is mindful of its obligation to act in the best interests of its advisory clients and has thus adopted policies and procedures designed to mitigate the potential conflicts of interest that relate to the management of multiple accounts, including accounts with differing fee arrangements.
- c) ☐ *Clients with Affiliated Investment Managers*: Aksia does not invest for its own account, does not invest in any funds (or securities) that Aksia recommends to clients, and does not have as clients any hedge fund managers or prime brokers. However, given that Aksia's clients are large institutions there are certain circumstances where Aksia may recommend, purchase, or sell for its clients' funds managed by investment managers that are affiliated with clients of Aksia (whether because Aksia's clients own a passive GP stake or otherwise are affiliated with an asset manager). Aksia has addressed this potential conflict of interest through the implementation of policies and procedures reasonably designed to ensure that its activities are carried out in compliance with applicable regulatory requirements and in the best interests of clients. For example, if Aksia were to recommend an investment with an investment manager that Aksia knew was affiliated with an Aksia client, Aksia would fully disclose the relationship in its due diligence report. In addition, the potential investment would be subjected to Aksia's extensive due diligence process, which includes multiple layers of review by multiple individuals. This type of situation is rare.

Gifts and Business Entertainment: In the ordinary course of business, Aksia personnel may receive and provide gifts and business entertainment. Such gifts and entertainment are strictly monitored by Aksia's compliance team and governed by Aksia's Compliance Manual and Code of Ethics. Aksia's Gifts and Business Entertainment Policy mandates the disclosure and preclearance of all gifts and business entertainment above a designated threshold.

8. ☐ How does your firm resolve potential conflicts of interest in recommending or making investments in prospective programs among clients?

While we find that in most instances, the hedge funds that Aksia recommends to its clients are either (i) actively raising capital for 6-12 months (or more) before reaching their fund raising targets in the case of private credit funds, or (ii) are open and actively seeking capital from institutional investors in the case of hedge funds, we do, on occasion, get allocated scarce capacity from hedge fund managers that are either

closed or imminently nearing capacity. In these instances, Aksia's policy requires the objective allocation of general investment opportunities to ensure fair and equitable allocation among accounts.

In the event that there is limited capacity in a hedge fund in which multiple clients (discretionary and non-discretionary) may be interested, Aksia will first evaluate the opportunity in light of the investment guidelines and restrictions relevant to each client, in order to determine whether the opportunity would be suitable for the client (for example, if the size of the potential investment opportunity is capped at \$10 million, and a client's guidelines mandate a minimum investment size of \$20 million, Aksia would not present the opportunity to the such client). Once Aksia has identified the clients for which the investment opportunity may be suitable, Aksia will reach out to each client to gauge such client's interest in investing. When Aksia has received responses from all of the identified clients, Aksia will advise the underlying manager offering the investment opportunity which of Aksia's clients (discretionary and non-discretionary) are interested in investing in its vehicle and allow the manager to determine the allocations.

In the event that a manager is unable to make a determination among Aksia's clients and thereby Aksia must make the determination, Aksia will endeavor to allocate the opportunity among its clients in a fair and equitable manner, with a preference towards a pro rata allocation. An exception to this allocation policy is co-investment opportunities, which are not included in this mandate. Aksia outlines its co-investment allocation policy in its Form ADV Part 2A.

Please see our response to the preceding question as well as Section III-4 Question F.1. for further detail on the policies and procedures that both identify and address potential conflicts, including allocation of investment opportunities.

III-5. Personnel Qualifications.

- A. ☐ How many employees work at your firm? How many in each category (using the categories that your firm uses to organize employees into departments, i.e. consulting, research (broken down by investment due diligence and operational due diligence), technology, marketing, etc.).

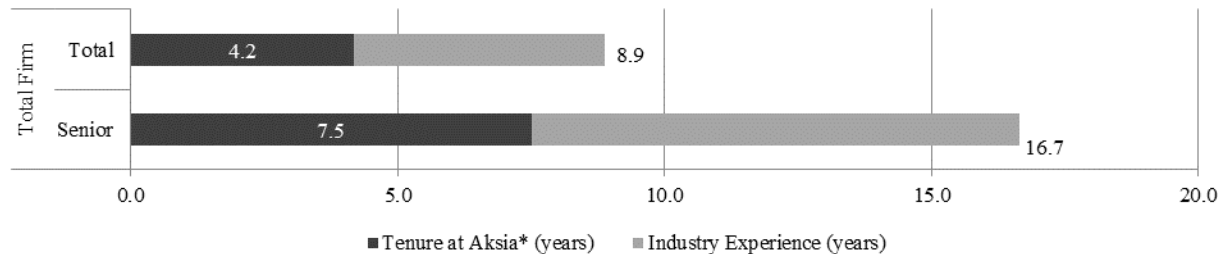
Please find below a breakdown of Aksia's global employees by team, as of January 31, 2020.

Aksia Department	Total
Research	
Investment Due Diligence	53
Operational Due Diligence	40
Risk	7
Portfolio Advisory	33
Client Operations and Treasury & Hedging	13
Legal & Compliance	7
Information Technology	14
Operations & Administration	14
Total	181

- B. ☐ Provide an organization chart showing name, title, function, years of experience (both total and with the firm), and area of expertise of pension fund consulting professionals and support staff.

Please reference Appendix 1D for Aksia's firmwide organizational chart.

In addition, please find below the average firmwide Aksia tenure and industry experience, as of January 31, 2020.



- C. ☐ What is the average number of clients per consultant?

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(subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

- D.□ Delineate the proposed management of services to PSERS. Provide names of staff who will serve as primary consultants, principal assistant, serve as PSERS' contacts with your firm, and provide services for PSERS. Specify the role and scope of involvement for each individual. Will the primary consultant be available to attend all Board meetings and assist PSERS' Investment Office Professionals when needed?

Advisory Support

The PSERS account will continue to be serviced by the advisory team Staff has worked with for years--primary consultants Brett Minarik and Sylvia Owens, who are further supported by Lynn O'Connell as the primary assistant. Biographies for Brett, Sylvia, and Lynn are included in our response to the following question below.

Either Brett or Sylvia will be available to attend all required Board meetings and assist PSERS' Investment Office Professionals when needed. Brett, Sylvia, and Lynn will be responsible for addressing day-to-day management of the hedge fund and private credit portfolios and continue to work closely with PSERS Staff in understanding the goals, objectives, guidelines, and specifications of the program so that ideas and recommendations are tailored to the client's needs. Brett, Sylvia, and Lynn's responsibilities are focused on clients' immediate and long-term portfolio management needs, including pipeline management and pacing, ongoing portfolio reviews, board presentations, and custom projects or client ad-hoc requests. In addition to the above-mentioned consultants, Aksia would also assign an analyst to the PSERS relationship to participate in conference calls and assist with the delivery of reports, ongoing projects, and ad hoc requests necessary for the client relationship.

Aksia provides a number of resources across research, risk, technology, and operations and accounting, with our advisory professionals responsible for bringing those resources together for PSERS and facilitating access to these specialized teams. The frequency and method of communication will be determined depending on PSERS' preferences, though we are happy to continue our regularly scheduled calls, which have typically included: ad-hoc calls 2 to 4 times per month for hedge funds, monthly private credit pipeline calls, and ad-hoc private credit calls at times as frequently as 3 to 4 times per week.

Research & Middle/Back Office Support

PSERS would also have direct access to Aksia's research teams, including investment research sector and strategy heads and operational due diligence and risk professionals to discuss strategies, funds, and managers in further depth. As has been PSERS' practice, staff would also continue to engage extensively with Aksia research professionals on fund manager pipelines, as well as to attend manager onsite meetings with Aksia staff, as desired. The research sector heads are actively involved with each portfolio during the monthly portfolio review process when they, together with the global advisory team, review each client portfolio and discuss existing positions, proposed changes, the macro environment, forthcoming opportunities and general market thoughts.

Lastly, PSERS would continue to be serviced by the assigned members of the client operations and accounting team, Ellen Lu and Daisy Da, both Vice Presidents of Client Operations & Accounting, who would be actively involved in the onboarding of the private credit portfolio and the ongoing tracking of the hedge fund and private credit portfolios, as well as continuing to be available for ad-hoc middle and back office support.

- E. ☐ For proposed primary consultant, principal assistant, and other key individuals who will be providing services to PSERS, provide a biographical profile to include education, years and areas of professional investment consulting experience, and years and areas of professional investment consulting experience with your firm.

As noted, the PSERS account will continue to be serviced by the consultant team of Brett Minarik, who has 11.3 years of industry experience and 9.2 years of Aksia tenure, Sylvia Owens, who has 27.4 years of industry experience and 3.5 years of Aksia tenure, and Lynn O'Connell, 10.5 years of industry experience and 8.1 years of Aksia tenure. All figures are as of January 31, 2020. Please find biographies of Brett, Sylvia, and Lynn below.

Brett Minarik, CAIA – Senior Portfolio Advisor

As a Senior Portfolio Advisor, Brett is responsible for advising institutional investors on their alternative investment programs, including portfolio construction, risk management, and manager evaluation. He works with clients to support their investment and due diligence processes, manager sourcing and selection, portfolio analysis and implementation, as well as governance management and reporting. Brett also plays an integral role in the development and deployment of MAX, Aksia's proprietary client-facing research platform.

Prior to joining Aksia in December 2010, Brett was the Client Service Manager for Carlsbad Wealth Advisory Group, a boutique wealth advisory firm servicing high net worth clients. In this role, he served as head of account services and client operations while supporting the investment advisors through the provision of risk tolerance and asset allocation analysis, portfolio performance reporting and presentation materials.

Brett graduated from the George Argyros School of Business at Chapman University with a BBA, with emphases in Finance and International Business. Brett has earned the CAIA designation. In 2016, he was recognized as a Rising Star of Hedge Funds by Institutional Investor and as a Knowledge Brokers "New Guard" by Chief Investment Officer.

Sylvia Owens – Managing Director, Global Private Credit Strategist

Sylvia oversees the implementation of private credit portfolios across Aksia's global base of LPs. As a Managing Director and Global Private Credit Strategist, she advises the firm's clients with respect to portfolio construction, investment selection, pacing, risk, performance monitoring, benchmarking, co-investment programs, structuring, tactical plans and board presentations. She is also a member of the firm's Private Credit Investment Committee.

Sylvia has partnered with prominent industry organizations to increase awareness of private credit as an asset class, including spearheading the development of ILPA's Private Credit Specialist Series, where she is one of the lead instructors for the course. In addition, she speaks regularly at industry conferences about the challenges of building private credit portfolios and has contributed to articles including Preqin's Future of Alternatives Series and Institutional Allocator Magazine.

Prior to joining Aksia in July 2016, Sylvia spent nearly a decade in the private market space, working with both investors and GPs across private equity, real assets and private credit selection and positioning. She began her career in 1992 at Goldman Sachs in Chicago, where she oversaw the Midwest Convertibles business and then moved to New York to co-lead the institutional synthetics convertibles business.

Sylvia graduated from the University of Southern California with a BA in Economics and East Asian Studies and completed her MBA in Finance from the University of Chicago Graduate School of Business. Sylvia is a founding board member of the Private Equity Women Investor Network (PEWIN), an invitation only group founded in 2008 and that currently has 550 members globally, consisting of women at the most senior levels of their respective firms.

Lynn O'Connell – Portfolio Advisor

Lynn joined Aksia in January 2012 and is a member of the New York Portfolio Advisory team, primarily responsible for supporting clients in the management of their alternative investment programs. Prior to joining the advisory team in January 2019, Lynn was a Senior Analyst on the Operational Due Diligence team focusing on assessing the operational, business and fraud risks of alternative investment funds. While on the Operational Due Diligence team she worked closely with clients during their due diligence process, educating and advising them on risk considerations and providing recommendations on the operational sufficiency of funds.

Prior to joining Aksia, Lynn worked as an Operations Associate at ICON Investments, an alternative investment manager, where she supported the legal, accounting, technology and investment departments. Lynn graduated from Binghamton University with a BS in Financial Economics and has earned the CAIA designation. Lynn is a member of 100 Women in Finance and was recognized as a Rising Star of Hedge Funds by Institutional Investor Magazine in 2017.

F. For proposed primary consultant and principal assistant, provide the names of all clients, fund portfolio size, and nature of engagement for which these individuals assume a similar role. What are their other duties for the firm?

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G. ☐ Provide name and position of consulting professionals who were added to the firm during the past three (3) years. Provide name and position of consulting professionals who left the firm during the past three (3) years. Have any senior executives left or joined the firm in the past five (5) years? Please describe the circumstances of their departure(s) or their current roles. Please provide a description of your succession and continuity plans for management of the firm.

Please note we have anonymized professionals' names in all tables below to protect the privacy of our employees.

Consulting Professionals Joined

Please find below a list of Aksia's portfolio advisory consulting professionals that were added to the firm within the last three years (Feb 2017 – Jan 2020). Please note that the list below is inclusive of new firm hires and firm departures to and from the advisory team, and as such does not include internal transfers of Aksia employees.

Professionals – Joined	Date Joined	Title/Job Function
Employee 1	Feb-17	Analyst, Advisory
Employee 2	May-18	Senior Portfolio Advisor
Employee 3	May-18	Senior Portfolio Advisor
Employee 4	Jun-18	Analyst, Advisory
Employee 5	Sep-18	Analyst, Advisory
Employee 6	Oct-18	Analyst, Advisory
Employee 7	Jan-19	Analyst, Advisory
Employee 8	Jan-19	Analyst, Advisory
Employee 92	Feb-19	Analyst, Advisory
Employee 10	Mar-19	Portfolio Advisor
Employee 11	Mar-19	Analyst, Advisory
Employee 12	Apr-19	Portfolio Advisor
Employee 13	May-19	Analyst, Advisory
Employee 14	Jul-19	Analyst, Advisory
Employee 15	Aug-19	Marketing / Executive Assistant

Consulting Professionals Departed

Please find below a list of Aksia's portfolio advisory consulting professionals that departed from the firm within the last three years (Feb 2017 – Jan 2020).

Professionals - Departed	Date Departed	Title/Job Function
Employee 1	Mar-18	Senior Portfolio Advisor
Employee 2	Jun-18	Analyst, Advisory
Employee 3	Sep-19	Senior Portfolio Advisor

Senior Executives Joined/Departed

Please find below a list of Aksia Partners who joined or departed from the partnership in the last five years (Feb 2015 – Jan 2020).

- In January 2016, Oliver Newton, hired in April 2012 as a senior member of the European Advisory team in London, was promoted to Partner and Head of Portfolios, EMEA.
- In August 2016, Aksia and Bruce Ruehl, former Partner and Global Portfolio Strategist, decided to part ways. For continuity following Bruce's departure in August 2016, Oliver Newton's purview was expanded to encompass portfolios globally (now titled Partner and Head of Portfolios, globally), while the role of Global Portfolio Strategist was eliminated.

- ☐ In January 2019, Matt Mullarkey, hired in 2011 and promoted to Head of Portfolio Advisory, Americas in August 2015, was promoted to Partner.

With regard to succession planning, Aksia's partners meet each week to ensure all are involved in discussions around important business decisions. As of January 31, 2020, Aksia was owned and managed by eleven equity partners, and as a result of this collaborative nature, in the event of an unexpected departure, the company will continue to be managed by the remaining partners in accordance with the Operating Agreement of Aksia LLC.

- H. ☐ What is the full-time-equivalent number of hedge fund and private credit analysts employed by the firm, the average length of experience, and at which location(s) do they work?

As of January 31, 2019, of Aksia's 100 total firmwide research professionals (investment due diligence, operational due diligence, and risk), 97 spend some or all of their time covering hedge fund and/or private credit investments. Out of this 97, 3 professionals work on a part-time basis. As such, the below reflects the 94 full-time hedge fund and/or private credit research professionals at Aksia.

Location	Research Total Count
New York & US EX-NY	45
London	15
Hong Kong	4
Tokyo	2
Athens	28
Total	94

The average length of experience of the above 94 full time hedge fund and private credit research professionals is 7.4 years.

- I. ☐ How does the firm monitor performance of consultants, analysts, and other investment professionals that it employs?

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- i. ☐ Provide a brief general description of the firm's compensation agreements for professional staff, including bonuses, profit sharing and equity ownership. Is some component of compensation deferred? Does your firm have employment contracts and/or non-compete agreements with investment professionals?

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- ii. ☐ Describe the job qualifications required by your firm when hiring investment professionals. Are there specific qualifications unique to those involved in hedge fund and private credit consulting?

Aksia heavily invests resources into recruiting, training, and retaining employees at all levels. As a firm, we focus our recruiting efforts on identifying individuals who are intellectually curious, entrepreneurial, collaborative, client-focused, and possess excellent technical skills. We seek to attract and develop individuals from top universities and from a range of professional and educational backgrounds. Irrespective of team and level of seniority, candidates for all positions globally participate in a rigorous interview process which consists of several rounds of qualitative discussions with Aksia professionals as well as job-relevant exercises.

As a global business, our professionals represent a variety of industry experiences and educational backgrounds, and we welcome an individual's unique skills, perspectives and original ideas. Depending on the team for which we are recruiting, the qualifications and experience we look for may vary. For example, when recruiting private credit investment research professionals, we may look for credit specialists with varying and complementary backgrounds, including former analysts at private credit funds, debt advisors to portfolio companies, alternatives analysts at family offices, and members of banks' leveraged finance group. In addition to hiring experienced professionals, Aksia also hires recent graduates from top universities. These employees participate in our 2.5-year rotational analyst program, during which they spend time on each of the investment research sector teams allowing for broad exposure across our research business early on in their career.

- iii. ☐ Describe your internal training procedures for consultants and research analysts.

As mentioned in the prior question, Aksia heavily invests resources in training and retaining our employees.

As part of the employee onboarding process, we focus on helping new and/or junior staff members assimilate by partnering them with senior members of the team, conducting training, and integrating them into projects and workflows. The open floor layout in all of Aksia's offices enables direct access to senior team members and allows employees to remain closely connected when working on client-specific projects, which we believe enhances the learning experience for junior staff members. Throughout an employee's first several years, we work to develop their individual strengths, which eventually determine what career path they follow at Aksia. All employees also undergo initial and annual compliance training and yearly reviews with the human resources manager and lead partner on their team.

In addition, Aksia staff are encouraged and expected to regularly attend manager meetings, industry conferences and Aksia's Lunch & Learns to stay abreast of the current market environment. Aksia also encourages employees to further their expertise by taking industry relevant professional certification examinations such as the CFA, CAIA, and CPA. Aksia reimburses employees for pertinent exam fees, study materials, and yearly professional dues as well as granting one day of paid time off to study. In addition, Aksia encourages employees to take courses on topics specifically related to their roles. For example, operational due diligence employees have taken a two-week course on Socially Responsible Investing (SRI).

- iv. ☐ Describe your continuity plan and procedures in the event that key personnel for this assignment should leave the firm.

Aksia's portfolio advisory team is dedicated to serving our clients and meeting their portfolio needs. With respect to any changes to the key individuals servicing PSERS, Aksia client relationships are managed on a team basis. In addition to the primary coverage team of Brett Minarik and Sylvia Owens, there are advisory professionals also assigned to the PSERS account that have supporting responsibilities, which include attending meetings and coordinating portfolio activities alongside the primary coverage. As previously mentioned, this support includes Lynn O'Connell and a dedicated analyst who participate in conference calls and have responsibility for the delivery of reports and documentation necessary to each client relationship. Aksia's New York advisory team sits together on one desk and collaborates on various client projects.

This team-oriented approach aims to ensure that in addition to the primary members, other members of the advisory team are familiar with the client and integrated on the account. In this way, should one of the Aksia advisory members assigned to PSERS be unavailable, PSERS would continue to be able to collaborate with professionals with whom staff has already built a relationship and who are well versed with the PSERS portfolio. In the event that a member of the PSERS consulting team needs to be replaced, Aksia will notify PSERS Staff and Board to ensure proper disclosure and a satisfactory replacement.

- v. ☐ Are any of the activities related to your consulting services outsourced to a third party? If so, please describe each arrangement including the compensation structure.

Aksia does not outsource our consulting services to a third party, although Aksia does use third party service providers for the provision of background checks, which we use as one piece of information during the operational due diligence process.

Aksia has identified and engaged with multiple background check providers that are capable of providing the service, but most frequently uses BackTrack Reports, Inc. (owned by First Advantage) and Exiger. The operational due diligence team monitors its arrangements with the background check providers. Both providers charge for background checks on a per check basis.

III-6. Soundness of Approach.

1. General

1. ☐ What differentiates your firm from other competing firms? Please identify your competitive advantages and disadvantages.

Competitive Advantages

Aksia was formed specifically to serve institutional investors such as PSERS on a bespoke basis and avoid the “generic” approach associated with traditional consulting models. We are proud of our work product and our business model, which is based on providing clients with opinionated, unbiased advice. We pride ourselves on working closely and communicating regularly with clients, with the goal of providing high quality services, from the front to the back office, and delivering these services in an effective and efficient manner.

Below we have listed a few areas where we believe we have distinguished ourselves among peers:

- ☐ **Deep Investment Experience** – Our investment partners and advisory heads had roles as investors prior to Aksia, instilling an investor’s mindset in our portfolio management and investment processes. As investors, our founders saw the need for, and limited availability of, well resourced, high quality portfolio advisory and management and research services for institutional investors—Aksia was formed to meet this demand.
- ☐ **Depth of Research** – Aksia’s largest team is our research and risk team, which, as of January 31, 2020, includes 100 professionals across investment due diligence, risk, and operational due diligence. Aksia’s research and risk team is comprised of specialists with varying complementary backgrounds and the team strives to produce concise, value added, opinionated research that provides perspectives independent of managers’ marketing efforts, which informs and shapes our investment and portfolio management advice. We maintain independent investment and operational due diligence processes to establish a system of checks and balances—failure to pass either IDD or ODD means we will not recommend the fund for investment by clients.
- ☐ **Global Footprint** – With offices in North America, Europe, Tokyo, and Hong Kong, we believe that our global footprint enables us to more easily source and due diligence managers in various regions, stay abreast of industry developments from a local perspective, and to better tailor our services to client needs globally.
- ☐ **Customization** – Aksia was formed specifically to serve and partner with institutional investors like PSERS on a bespoke basis and avoid the “generic” approach associated with traditional consulting models. As PSERS is aware, our approach to customized solutions is rooted in (i) open sourcing philosophy—we do not operate off a “buy list” and any fund that passes Aksia’s formal due diligence process is eligible for client investment; and, (ii) tailored portfolio management and services specific to client program goals, objectives, and constraints.

- ☐ **Middle & Back Office Support** – A challenging aspect of managing a hedge fund and/or private credit program can be the demand on internal resources for administrative tasks. Aksia has a dedicated client operations and accounting team that can help alleviate this burden. A full description of the services provided by our dedicated client operations and accounting team is provided in Section III – G of the RFP.
- ☐ **Transparency and Client Portal** – Our clients have direct access to each of our specialist teams, including investment and operational due diligence, risk, and client operations and accounting. We encourage our research teams to know our clients and their portfolios/programs, as we believe that the sector heads and senior investment analysts are a critical component of our monthly portfolio review process. In this capacity, the research team is able to proactively bring client-specific ideas to the assigned advisory team for discussion and consideration. We feel this type of access and engagement benefits our clients, our internal teams and the Aksia/client partnership overall. Additionally, our proprietary online platform, MAX, offers further transparency into our process and provides clients with real-time access to manager research reports, analytical tools, and a resource center with educational materials. Please see our response to Section III-6 Question G.6 for more information on the tools and resources available on MAX, as well as an overview presentation of the database in Appendix 6G.
- ☐ **People and Culture** – Finally, we believe Aksia's greatest strength is our people and culture. As Aksia has grown, we have sought to hire talented individuals who are curious, energetic and thrive in a team environment. We strive to hire employees with varying industry backgrounds who can bring unique industry skill and perspective to the firm, as we feel that having diverse expertise is an asset when conducting thorough due diligence and managing client portfolios. We encourage prospective clients to spend time meeting our team, as it reflects our depth, transparency and business model.

Please reference Section III-4 Question I for a detailed description of our strengths which we believe also differentiate Aksia from other competing firms.

Disadvantages

Given our focus on alternative investments, we do not have expertise across all asset classes in which our clients invest. In the past, we have encountered situations in which clients have asked us to opine on their asset allocation plans, which does not fall within our standard expertise. We believe that generalist consultants are better positioned to lead such discussions, but we have collaborated with our clients' generalist consultants to provide advice on our areas of expertise in the development of such plans. We are aware that this may be seen as a disadvantage as there may be peers who have broader cross asset class capabilities that are better suited to this task. In this regard, with the acquisition of TorreyCove, Aksia has now gained expertise across private equity and real assets, which should enhance our ability to add more value to clients as they consider their overall asset allocation.

2. ☐ Discuss the challenges generally involved in designing, implementing, and monitoring a hedge fund or private credit program for a very large client with substantial capital to deploy.

Our clients' portfolios range in size from tens of millions to greater than ten billion. There are advantages (i.e., potential for better access, lower fees) and disadvantages (i.e., harder to invest in smaller managers) to managing very large hedge fund and/or private credit programs, however, given that it is a

multi-trillion dollar industry, it is feasible to implement a successful hedge fund and/or private credit program even as a very large investor.

With respect to hedge funds, one challenge we could foresee for a large investor would be not having access to some of the more niche strategies (i.e., statistical arbitrage, small cap activists or mortgage derivative RV) due to the limited size of some of these funds. We do not believe this would be a major impediment for most programs as these strategies tend not to be the core of most hedge fund portfolios. As for portfolio construction, we may recommend a larger number of managers in the portfolio in order to add more unique risks (reduce idiosyncratic risk and enhance strategy diversification) and include some smaller managers. We would also recommend patience and not forcing putting capital to work. There are many strategies that are typically open to new capital in significant size, but we believe it is more important to build a diverse book of strategies. In our experience working with PSERS, the headwinds commonly associated with very large investors have proven manageable, as we believe PSERS has been successful in using their size to their advantage to secure attractive economics, negotiate custom relationships and strategic implementations while building a diversified portfolio that successfully incorporates both traditional and niche hedge fund strategies.

Regarding private credit, we believe that PSERS has already successfully navigated many of the challenges associated with deploying a private credit portfolio of its size, such as accessing niche/small strategies or managers without driving up line-items to the extent that Staff is unable to manage the workload. As with other areas of their alternatives program, PSERS has addressed challenges by: (i) leveraging existing platform relationships to extend to niche or tactical opportunities (e.g., a private credit manager); (ii) keeping line items down to a manageable number allows for efficient monitoring; and (iii) employing a core plus satellite approach which provides flexibility to invest in smaller positions alongside core relationships.

3. ☐ In light of the current environment, please discuss the unique challenges, areas of concern and opportunities that both hedge fund and private credit managers and investors currently face, including the following:

a. ☐ How has the landscape changed over the past year, and what further changes do you expect?

Institutional investors have, and will continue to, seek out alternative strategies that diversify away from their primary long-only risks. The past few years, leading up until the end of 2019, saw a market environment with low and declining volatility, low rates and flat yield curves, tightening credit spreads and otherwise relatively benign conditions. This environment presented a challenge for a number of hedge fund strategies (particularly long-only strategies) given the relentless rise in equity and credit markets as short positions and hedges were generally costly, differentiation between companies, industries and quality was minimal, and volatility remained depressed.

As electronic trading continues to play an increasingly larger role within the investment landscape, it is having a further impact on alternative strategies. A broad array of systematic and rules-based strategies taking advantage of this electronification is having a growing impact on financial markets, from simple ETFs and index trackers with predictable rebalancing methods, to sophisticated, fast moving, hedged quantitative strategies.

The zero-interest rate policy had sent many investors in search for higher yields and further increased financial regulation was adding to pressures to certain strategies previously employed by banks and other

providers of capital. Investors were spending a greater amount of time focused on capturing illiquidity and complexity premia through a range of credit and lending strategies and this was leading to distortion in pricing and valuation of illiquidity risk.

Despite these challenges, top quality hedge fund managers were able to evolve and adapt to the changing market conditions in a number of ways, which include, but are not limited to:

- ☐ Incorporating greater levels of less broadly used data;
- ☐ Adapting strategies to utilize quantitative techniques (even in fundamental strategies);
- ☐ Improving efficiency of trade execution;
- ☐ Broadening trading strategies into new regions and markets;
- ☐ Utilizing optionality and convexity into trade structure;
- ☐ Maintaining tail or hedge books despite the related costs; and
- ☐ Adopting closed-ended or contingent structures more similar to private equity-type funds.

Update for Q1 2020

At the time of writing, markets are experiencing a significant degree of uncertainty as a result of the COVID-19 Pandemic. This is causing significant disruption in markets, with equity and credit markets dropping precipitously, volatility rising, and various other dramatic market moves. Many countries around the world are experiencing full or partial lockdown of their populations and the impact on industries will be large, and the ultimate size and period of impact remain uncertain.

This current environment is having a disparate impact on hedge fund strategies. Strategies that exhibit a residual beta to equity or credit markets are generally seeing the market decline dominating any alpha contribution, resulting in negative performance in the quarter (sometimes in low double digits). Even market neutral equity and credit strategies have suffered losses, as de-risking has resulted in technical pressures to trades and a widening of basis. We have also seen shorter term dislocations in usually robust relationships – for example, the US cash-futures bond basis widened dramatically mid-March, but has since retracted much of the widening – causing significant mark-to-market volatility for FI RV and RV Multi-Strategy funds.

At the same time, Tail Risk strategies, short-biased strategies, certain Global Macro strategies (particularly those with a focus on the front end of the rates curve and convexity) and most CTAs/Trend-Following strategies have been able to generate sometimes very attractive returns during these market dislocations.

It is too soon to determine the exact implications on the forward-looking view for all hedge fund strategies. In general, we would expect that the increase in volatility, potential for indiscriminate forced selling, and reduction in asset values leading to an increase in expected returns going forward for most hedge fund strategies (perhaps with the exception of Tail Risk and short-biased strategies). From what we can see today, an area likely to present a notably attractive opportunity in the coming period is stressed and distressed credit.

Private Credit

Private credit strategies had been walking a tightrope for the past year. Conservative investors were favoring these credit investments, but capital flows meant that creditor protections were slowly deteriorating. Leverage ratios were increasing, covenants were disappearing, and loan documentation was deteriorating. Still, there were compelling opportunities to be found, such as:

- ☐ Identifying GPs with robust sourcing channels (so that they are more likely to get the “first call”

from borrowers), strong underwriting standards and sufficient resources within “on-the-run” strategies such as upper middle market corporate credit and large loan CRE lending.

- ☐ Focusing on capacity-constrained, niche strategies that relied on a GP’s effort to unlock value (i.e., “low return on effort”) and finding strategies and regions where the pressures from liquid markets were less and GPs could extract illiquidity and complexity premiums.

These core themes remain intact in the COVID-19 world but are supplemented by opportunities to buy distressed assets in the secondary market, as well as to provide fresh capital to solve the liquidity needs of affected companies.

b. ☐ Are there any strategies that are fundamentally impaired, and if so, why?

As noted above, there have been broad changes to the market over the last few years in addition to the current period of significant volatility that will have a meaningful impact on the forward-looking landscape for many strategies. Although we are working to determine the medium and longer term impacts of the current (Q1 2020) global events on hedge fund and private credit strategies, our current thoughts are summarized below:

- ☐ Fundamental stock picking strategies run by small teams with limited quantitative or data analysis, predicated on outguessing next quarter’s earnings will likely struggle going forward. Our preference is to extract this alpha through better-resourced and sophisticated fundamental managers and/or the top conviction quantitative strategies.
- ☐ We believe the future environment will remain challenging for delta one directional developed-market Global Macro (i.e., trying to outguess the market direction), due to a lack of informational advantages and a likely increase in government/central bank intervention.
- ☐ The current crisis has led to mass layoffs across broad swaths of the economy, which will lead to defaults on consumer loans. We do not think it would be wise to invest in strategies seeking to collect bad debts from this population. Leaving aside the potential ethical or ESG concerns, the government is highly motivated to protect these individuals in an effort to prevent civil unrest and economic collapse. Uncertainty regarding changes in the legal and regulatory environment make related strategies generally uninvestable for the time being.
- ☐ Although not strategy specific, we feel that managers running an actual or perceived asset-liability mismatch, such as daily dealing real estate or credit funds, are likely to run into issues as recent performance volatility could cause redemptions that the funds cannot meet, forcing them to suspend redemptions. Due to their experience following the global financial crisis in 2008/9, we feel many hedge funds have learned lessons from this, but there are other industries, such as the mutual fund industry (as we saw with the Woodford mutual funds) are likely to be susceptible to these risks.
- ☐ Similarly, investors will be increasingly focused on a manager’s break-even revenue to determine going concern issues and to assess the resources of the manager. Managers that have experienced significant negative performance in Q1 2020 and are far below their high water marks, as well as those that have faced (or are facing) AUM declines, might struggle to be profitable and hence pose a greater risk of closure or staff losses.

c. ☐ Are there any strategies that are particularly attractive going forward, and if so, why?

Hedge Funds

As noted above, we feel that the current market dislocations may cause a significant improvement in the forward-looking opportunity set of a number of alternative strategies. Our immediate focus is on identifying opportunities within the credit markets, specifically the opportunities presented from selling pressures in stressed corporate credit of high quality companies and senior structured credit. Our preference is to work with strong, experienced credit managers that have a clean vehicle that is not burdened with legacy or potentially mispriced existing positions. These strategies look to own credit in solid companies that will continue to operate in the current and future environment and pay an ongoing coupon to provide stability if the markets remain in a period of stress. The low dollar purchase price offers the potential for convexity and upside participation as and when markets recover.

We also see potential for an improved opportunity set in other hedge fund strategies, including:

- ☐ **Fixed Income Arbitrage** – given the likely increase in issuance, current dislocations and likely increase volatility in these markets.
- ☐ **Merger Arbitrage** – a short term potential opportunity as a result of the technical pressures leading to a widening of deal spreads, with active selection to avoid deals likely to delay or break. In the medium term, this is a less attractive strategy as we expect the volume of new deals to decline.

Private Credit

Although there is a lot that we do not know, we do know that assets are a lot cheaper now than they were a few months ago. After a long period of calm, this crisis threatens to expose many of the weaknesses that had been masked by the buoyant markets and could lead a wave of financial distress. We expect that existing PE dry powder and HF cash will be sufficient for the initial wave of distress, but we expect to see 1) pockets of distress that existing funds are not positioned to take advantage of, and 2) periodic entry points after much of this “war chest” money has been spent.

With this in mind, we think that investors should consider “tiptoeing” into stressed debt, distressed debt, rescue finance, and, for LPs with substantial internal resources, private credit secondaries. Not all at once and not into a single strategy, but start to build positions across the distressed landscape so that the capital can be invested over the next 2 to 3 years, preferably after much of the existing pile of distressed capital has been invested. It is impossible to time the cycle perfectly, but after a decade of calm, the probability of an extended default cycle is finally real.

Aksia Initiative

During the current period of market stress, Aksia is hosting “Aksia Market Update Conference Calls” and publishing “Daily MAX Market Updates” most weekdays. Market Updates were introduced to clients by our CEO on March 16th, and were designed to be an efficient and easy way for clients to access the information gathered by our HF/PC research and risk professionals, as well as to utilize our research and advisory bandwidth to better serve our clients.

4. ☐ Provide a sample Investment Policy Statement covering hedge fund and private credit programs for a large pension plan.

Please find sample Investment Policy Statement Considerations covering hedge fund and private credit programs for large pension plans attached in Appendices 3A and 3B.

5. ☐ Discuss your views on utilizing funds of funds vs. direct fund investments vs. separate accounts and provide your rationale.

Most of our clients invest in hedge fund and private credit investments directly rather than through fund of funds vehicles in order to take advantage of potential benefits related to customization, lower fees, and greater control and transparency. However, fund of funds may be useful in areas where clients may have difficulty in accessing strategies efficiently, such as emerging managers, emerging markets, ESG related strategies, Asia private credit and/or co-investments.

While Aksia does not offer any sponsored commingled fund of funds products, we have assisted with the set-up and management of customized fund of one mandates, which we believe can be a good solution for large pension investors, and we also have clients that utilize outside fund of funds providers. Since the term “managed account” is often used loosely throughout the industry, we want to be clear in noting our definition of a managed account is simply a brokerage account through which a manager can directly trade the assets of the investor, there is no separate legal entity such as an SPV and the brokerage account is in the name of the investor (e.g., the pension fund itself). A real managed account (not housed in a fund entity) is a very low-cost solution but can create unlimited liability and requires a comprehensive back office capable of settling individual securities and derivative transactions.

We believe that managed accounts can be value-add for certain clients, for example, some of our clients, like PSERS, are large enough to negotiate fees and terms based on their individual allocation size, which can be structured through a managed account. Aksia has helped clients create template term sheets which can then be used as a starting point for negotiation with managers. For certain clients of size, we have also helped structure and negotiate custom funds of ones or SMAs which combine various strategies or funds across a single manager’s platform to further reduce fees and increase control and flexibility.

We would be happy to discuss with PSERS Staff the pros and cons of direct investments, fund of funds, and managed accounts.

6. ☐ Discuss your views on applying additional leverage to fund investments.

Aksia does not offer any sponsored commingled investment products nor employ structural leverage on behalf of the portfolios we manage for our discretionary clients, though we are favorable on the usage of credit facilities for bridge financing between subscriptions as a portfolio management tool, and, when appropriate, the allocation to ‘levered funds’ for capital efficiency purposes (e.g., 1.5x or ‘enhanced’ versions of a given manager’s standard fund). We do have clients who employ or have employed leverage in the management of their investment portfolios, either through portable alpha, notional funding, or other means, such as total return swaps. We do take clients’ usage of such enhanced measures into consideration as part of our portfolio construction and management process, as (i) leverage typically magnifies the underlying risks of an investment, and (ii) typically the underlying investments in portfolios of alternative funds already employ leverage (as mentioned below). In our observations, clients employing additional, explicit leverage are typically doing so to meet specific portfolio objectives and have vetted the accompanying risks and rewards at the plan level, typically along with their generalist consultant.

Hedge Funds

Aksia reviews a fund’s use of leverage as part of both our IDD and ODD analysis. Aksia does not impose

specific minimum or maximum levels of acceptable leverage, but rather attempts to fully understand how the manager utilizes leverage, how it is calculated, what allowable levels can be employed and whether we believe it is appropriate for the strategy. We have found that leverage can be defined in many ways and a clever manager can hide leverage by using OTC derivatives (e.g., total return swaps), utilizing leverage inside of non-recourse vehicles, or by purchasing assets with embedded leverage. Aksia tracks a hedge fund's notional leverage, which is more conservative than tracking balance sheet leverage, in a manner that allows for aggregating leverage information up to the portfolio level. Aksia also analyzes the terms of the leverage and seeks to understand if there are asset/liability mismatches that result from short-term leverage for longer term illiquid assets. The ODD team also often requests a summary of the key terms of leverage agreements and/or ISDAs in an effort to understand the level of counterparty risk that the fund is taking.

Private Credit

Certain private credit strategies may use fund-level leverage (including subscription lines). A manager's use of a fund-level leverage facility to achieve target returns is not necessarily a concern but we believe that it is important to evaluate the risks associated with and nuances of a manager's debt facilities given the potential risks involved. Specific risks may include mark-to-market risks, extension risks (if shorter duration), regulatory risks, call risk, among others. Aksia has consulted with external experts (attorneys and bankers) to educate our staff about the complexities of this particular topic.

7. ☐ Discuss your views on registration/regulatory issues with respect to hedge fund and private credit.

Aksia generally welcomes well thought out regulation of hedge funds and private credit investments. Typically, regulation adds more transparency to investors and disclosure obligations to managers, which should permit investors to make more informed decisions. In addition, the added regulatory oversight of managers may serve as a deterrent to a manager from acting in a dishonest manner. However, the increased regulations may have a downside to investors by creating a barrier to entry for new managers. By making it difficult for new managers to bear the burden of such costly regulations, the outcome is an unintended advantage to large, established managers. In addition, investors may bear the cost of many of these new regulatory requirements in the form of increased expenses (e.g., costs of regulatory filings, increased reporting, professional advisers, etc.), which may negatively affect net returns.

8. ☐ Discuss your views on hedge fund and private credit fee structures.

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9. ☐ Discuss your views on position transparency. What level of information do you require from the managers you recommend to clients? Discuss your ability to collect individual investment positions and provide them to PSERS' risk management system provider. What level of transparency do you typically require from a manager before recommending them for a portfolio? What percentage of your recommended managers provides full transparency? Please answer separately for both single strategy managers and funds of funds.

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10. ☐ Do you host any client events or conferences? If so, please describe them. Are fund managers invited to attend?

Yes, Aksia hosts periodic educational and networking events globally for clients and other investors that feature managers, Aksia's Sector Heads and/or various industry professionals discussing relevant industry themes and trends, a few of which PSERS' Staff have attended, such as Aksia's Annual Private Credit Forum or "December Event". Aksia's December Event is a global educational networking event with various GPs, LPs, and Aksia professionals that began as a one-day conference in 2017, and has now expanded to multiple days, including workshops, LP-only roundtable discussions, and curated speakers. We also recently added a CIO symposium that features CIOs gathering for idea and knowledge sharing. We were delighted to have Jim Grossman of PSERS speak on our CIO Panel at our most recent December event. In 2019, 145 LP representatives, both clients and non-clients, including PSERS, attended the event. Our event concluded with a one-day long private credit ILPA education course for ILPA members.

Aksia receives no compensation from these events, and costs for hosting the event are typically paid for by Aksia, or, in some cases shared with another industry participant. See below for a partial list of events held by Aksia in recent years, some of which are also described in our response to the following Section III-6 Question A.11.

US/.Canada Event	Location / Theme
2020	Washington DC – LP Roundtable Lunch
2019	New York, NY – CIO Symposium & PC Conference
2019	Dallas, TX – LP Dinner
2019	Honolulu, HI – LP Roundtable
2019	London – ILPA Event
2019	Washington DC – LP Roundtable Lunch
2018	San Francisco, CA – Disparities in Credit
2018	Austin, TX – LP Roundtable
2018	Chicago, IL – ILPA Event

2018	Montreal, Canada – LP Roundtable
2017	New York, NY – LP Roundtable
2017	New York, NY – LP Fee Roundtable
2017	Austin, TX – LP Discussion

11. ☐ Discuss your willingness to establish a knowledge transfer relationship with PSERS and describe the activities and information that this would entail including data sharing and analytics.

Aksia seeks to be an education-centric firm and have devoted considerable resources to developing bespoke training for our clients as well as creating external course materials. Aksia has experience working with clients with varying degrees of investment experience and has created customized educational programs tailored to each client's needs or interests. Even with experienced investors, new team hires can often benefit from educational programs.

Our professionals welcome the opportunity to provide an overview or to delve deeper into strategies or regions with which our clients may be less familiar. For example, in early 2019 we hosted several professionals from PSERS Risk Team in our NY office for a risk “deep dive,” which included, among other topics, an overview of data sources / quality considerations, Aksia risk systems, approach to portfolio risk management, separate IDD and ODD risk management and evaluation sessions, discussion of transparency and associated considerations, forward-looking ways to reduce risk and several case studies (e.g., risk and exposure management within Insurance-Linked Strategies).

In addition, Aksia also often regularly shares general views on topics such as best practices and industry trends impacting the industry. Below are some additional examples of bespoke training and regular educational services available to Aksia clients:

Customized Staff and Board Training

- ☐ **Hedge Fund and/or Private Credit 101** - Clients who would like detailed educational formats may prefer a classroom setting with prepared materials and Q&A discussions. We tailor these educational sessions to the individual needs of each client, and they can range from introductory level Hedge Fund or Private Credit 101 to more granular, in-depth discussions of specific strategies.
- ☐ **ODD Process Teach-in/Study Sessions** - Aksia's Head of Operational Due Diligence, Simon Fludgate, has prepared customized training seminars to teach clients' staff and boards the importance of ODD and the identification of key operational risks. These educational sessions are also tailored to the individual needs of each client and can range from introductory ODD 101 to more granular, in-depth discussions.
- ☐ **In-house Experience** - New staff members may need intensive training to get up to speed quickly. To assist, Aksia can host new employees or other trainees in our New York headquarters. During their time, they benefit from focused educational seminars, meetings with managers, and working alongside our research analysts, sector heads, and advisory team.
- ☐ **Due Diligence Meetings** - Our clients are welcome to attend due diligence meetings with our research analysts, through which they can experience our due diligence process first-hand and compare notes with our research analysts.

- ☐ **Client Operations and Accounting Support** – The client operations and accounting support team can help provide tutorials to clients on back office operations, including pointers on filling out subscription and other fund documents.
- ☐ **MAX Training** – As PSERS is familiar, our advisory teams conduct individualized MAX training with new staff members and are available to help additional follow-on in-depth trainings and with usage, interpretation, and analysis. Please see our response to Section III-6 Question G.6 a description of MAX's analytical tools and platform capabilities, as well as our MAX Overview Presentation in Appendix 6G.

Ongoing Series & Market Insights

- ☐ **Strategy Outlook Report and Calls** – Please refer to Section III-6 Question E.2 for a detailed description of our Strategy Outlooks. Please find a copy of Aksia's most recent Hedge Fund and Private Credit Strategy Outlook reports in Appendices 4A and 4B.
- ☐ **Private Credit Monthly Update** - Please refer to Section III-6 Question E.2 for a detailed description of the Private Credit Monthly Update. We have provided a sample of the email with its relevant industry commentary attachments in Appendix 4C.
- ☐ **Lunch & Learn Call Series** - Aksia hosts educational Lunch & Learn seminars featuring various industry professionals from a broad range of backgrounds. We encourage our clients to call in or join in person at our New York office.
- ☐ **LP Roundtable Events** - Aksia hosts periodic educational and networking events at its global offices for clients and other investors that feature GPs, LPs, Aksia's senior research team and/or various industry professionals to speak about relevant industry themes and trends such as fees, terms, benchmarking, compelling opportunities and other asset class specific topics. At each roundtable we typically conduct an LP survey and provide the results to attendees on an anonymized basis.
- ☐ **Exclusive Provider of Private Credit Education for ILPA** - Aksia is also the exclusive provider of private credit education for ILPA, which we believe speaks to our expertise in the private credit space and ability to provide educational content to an audience with a varied experience. Additionally, Aksia hosts educational networking events globally to delve into topics with various GPs, LPs, and Aksia professionals including Aksia's Annual Private Credit Forum, which is described in the preceding question, Section III-6 Question A.11.

12. ☐ Describe the access and interaction PSERS would have with members of your staff, other than the assigned consultant and backup.

Aksia seeks to act as an extension of PSERS' staff. We intend for our sourcing, manager due diligence, and portfolio advisory processes to promote significant dialogue and idea sharing between Aksia and each client's team, while creating a workflow to help advance priorities. We have a flat organizational structure which creates accessibility and we encourage our staff to actively engage with clients. Our approach is flexible and is designed to evolve as the client's team, process, and goals change over the course of the relationship. While PSERS' first point of contact would be the advisory team that supports PSERS' day to day needs and coordination of resources, PSERS will be able to draw on our specialist teams, including our IDD, ODD, risk, and operations and accounting teams.

PSERS will continue to have access to investment research sector and strategy heads and operational due diligence and risk professionals to discuss strategies, funds, and managers in further depth during the

diligence process, from sourcing and identifying managers to ongoing risk monitoring and portfolio suitability and pacing studies. As PSERS is familiar, Staff would also continue to engage extensively with Aksia research professionals on fund manager pipelines, as well as to attend manager onsite meetings with Aksia staff, as desired. The research heads have an active involvement in each portfolio during the monthly portfolio review when they, together with advisory, review each portfolio and discuss existing positions, proposed changes, the macro environment, forthcoming opportunities at a thematic and fund level, cash levels, and general market thoughts.

Due to Aksia's full-access collaborative nature, many of our clients generally develop relationships with senior members of our research teams as well as the individual analysts, including for onsite manager visits and comparing notes. For example, PSERS' Staff has worked extensively with Amit Patel, Strategy Head in charge of Quantitative Strategies and Reinsurance, in the development, deployment and ongoing management of PSERS Reinsurance investment program, which as of Dec 2019 accounts for approximately 14% of PSERS Absolute Return portfolio. In addition, PSERS staff has also worked closely with Josh Hemley, a Managing Director with expertise in real estate related investments across HF and PC for support, including for several custom mandates.

Lastly, PSERS would continue to be serviced by the assigned members of the client operations and accounting team, Ellen Lu and Daisy Da, both Vice Presidents of Client Operations and Accounting, who would be actively involved in the onboarding of the private credit portfolio and the ongoing tracking of the hedge fund and private credit portfolios as well as continuing to be available for middle and back office support.

13. ☐ What is the overall philosophy of the firm regarding an investment consultant's role with respect to boards, staff, and investment managers?

Aksia works closely and communicates regularly with clients. We regularly attend client Board Meetings and we are available for client calls and to answer ad-hoc inquiries. In addition, we often work with generalist consultants as part of our interaction with clients.

We actively promote the free flow of information and ideas and a high level of communication between Aksia, the managers and our clients, including both client staff and Boards. As such, we encourage PSERS Staff and board members to visit our offices in New York where they can work side by side with our research team and jointly attend manager meetings. We also make our research and notes from our interactions with managers available through MAX and welcome any suggestions regarding our processes.

As we previously detailed in Section III-6 Question A.11, Aksia is often highly involved in creating educational programs to meet clients' individual needs. We also understand that each client's governance and decision-making structure may necessitate approvals at the investment committee, chief investment officer or board level. Aksia may prepare materials or assist staff in the development of materials to aid in the decision-making process, present to the board in support of our recommendation, and work on ad-hoc projects as necessary.

14. ☐ List all standard services provided in a typical pension plan consulting assignment. List the specialized services that you have provided to meet other needs of your clients.

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15. ☐ Discuss your views on liquidity and lock-ups.

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16. ☐ Discuss your views on recent decisions by public pension plans to liquidate their hedge fund portfolios.

In periods of sustained positive performance of risk assets, portfolios that dedicate a portion of their allocation to hedged strategies, or strategies designed to dampen risk or offer protection, rather than capitalize on or try to exceed market beta, will typically see performance in that allocation lag that of the market overall. Often, this creates pressure to reevaluate such allocations, and we see various investors episodically do so. Occasionally, the investor decides the protection-seeking allocation can be better spent on lower fee, simpler investments that attempt to offer higher returns commensurate with potentially higher risk. We see this as a small part of the natural cycle as investments fall in and out of favor during certain market conditions.

The years between the Global Financial Crisis of 2008/2009 and 2020 were a long and generally stable bull market, which led to many such re-evaluations. For example, in the mid-2010's, there were a number of media articles regarding public pensions eliminating hedge funds from their investment portfolios.. In general, we believe that investors should consider the pros and cons of investing in hedge funds and determine if using these strategies is appropriate for their portfolio and organization. Institutional investors differ in governance, investment objectives, investment philosophy, and capacity, which are all important considerations when selecting an investment.

Despite the significant press attention these pension decisions created, in the years since we have only seen a handful of other examples and not a broader trend of public pensions eliminating or reducing hedge fund allocations. In our experience, for each plan reducing or eliminating its hedged allocation, we have observed other institutional investors, including public pensions, increasing their use of hedge fund strategies, especially within their fixed income allocations.

We are submitting this RFP during the worst crisis affecting financial markets and otherwise since the GFC, and one that is still unfolding. While nothing is certain, we would not be surprised if hedged and protection-oriented strategies experience an uptick in interest going forward.

B. Portfolio Construction

1. ☐ It is the Board's desire that the hedge fund and private credit portfolios complement, or diversify, the primary holdings of the Fund. How would you ensure the programs are structured in this manner? How would you monitor the programs in relation to PSERS' total investments on an ongoing basis to ensure the programs are truly providing diversification?

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2. ☐ Describe the process you will use to recommend hedge fund and private credit program investment objectives and policies for PSERS. Provide a sample of investment objectives and policies you have developed for a pension fund client.

We seek to work closely and communicate regularly with clients – we actively promote the free-flow of information and ideas and a high level of communication between Aksia and our clients, including both client staff and investment committees. Our advisory team usually begins an engagement by working with the client's staff, investment committee, and any existing investment consultants to help customize an investment program to each client's specifications. These specifications are often the result of several conversations with staff and governing bodies, and the review of relevant documentation including investment guidelines. Our advisory team works with staff to codify the results of the document review and meetings into the Investment Policy Statement.

The Investment Policy Statement ("IPS") typically details the structure, eligible strategies, diversification parameters (e.g., maximum position sizes and minimum number of positions) and risk/return objectives of the program. In addition, it establishes a set of parameters (e.g., directional vs. non-directional, risk definition, liquidity, and correlation) around portfolio implementation which will inform the manager research process. Implementation guidelines often include, but are not limited to, assets under management, liquid versus illiquid investments, fund structures and lock-ups, and regulatory registrations. Finally, and crucially, the IPS often delineates the requisite governance, oversight, and decision-making processes that will provide the framework for the day-to-day management and execution of portfolio decisions. Plans that include certain governance processes (e.g., Committee Vote, Negative Consent, Staff-driven with Veto, Hybrid w/ Advisor, etc.) in their IPS at the outset may benefit from multiple efficiencies as the plan is implemented. Each investor is unique, so we work to understand our individual client's needs and customize the IPS appropriately.

We have included a sample IPS for hedge funds and private credit as Appendices 3A and 3B .

3. ☐ Describe the framework used for hedge fund and private credit classification, including a list of the specific categories. Describe the process and resources you will use to recommend hedge fund and private credit asset allocation for PSERS. Discuss the possible circumstances and process whereby you might recommend that an asset allocation should be changed. Provide a sample of an asset allocation plan you have developed for a pension fund client.

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4. ☐ Describe the hedge fund and private credit program construction framework and process, including how recommended allocations to hedge fund and private credit strategy types, geographic regions and individual managers are derived.

a. ☐ Do you develop forecasts for distinct strategy types that form the basis of allocation decisions?

b. ☐ Do you employ an optimization routine?

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5. ☐ Are there any strategy types or geographic regions that you specifically target or avoid? If so, why?

Aksia maintains a flexible investment approach and is willing to consider any investment that we believe is institutional grade and passes our investment and operational due diligence processes. We are often

drawn to fund strategies that we believe have an edge including strategies (i) with a higher level of complexity, (ii) that we consider to be niche investment opportunities, and (iii) that are less trafficked, but would not highlight any significant biases. While we do not have a blanket “no” on any strategies, there are certain strategy types and geographic regions that we have historically avoided, as outlined below:

- ☐ **Life Insurance Settlement Strategies** – We have researched this strategy for over 10 years. Our belief is that the actuarial firms that managers use to execute this strategy are conflicted in their motivations, and that the insurance brokers that practice in this space are conflicted in their activities. These conflicts can make it difficult for investors to win when investing through a hedge fund strategy, despite optimistic projections in fund marketing materials that may say otherwise. We have also come across very few firms that have successfully managed a portfolio to maturity. As such, we consider an investment in the strategy to be more of an opportunistic play during periods of stress resulting in asset/liability mismatches. We do keep tabs on the asset class for such opportunities that may arise. Note that this is in contrast to property and casualty (re)insurance-based strategies, which we cover and have recommend to clients.
- ☐ **Countries with Poor ‘Rule of Law’** (e.g., former Soviet Union and certain emerging countries), in which institutions are not held accountable to laws and laws are not properly enforced.

6. ☐ How do you identify style drift in a hedge fund or private credit portfolio? When style drift is identified how is it evaluated and what actions are taken?

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7. ☐ Describe the variables and methodology you will consider in recommending hedge fund and private credit performance benchmark(s) for PSERS. Provide samples of benchmarks you have recommended for pension fund clients. Can the firm provide customized benchmarks?

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agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

8. ☐ How are expected or potential exposures to macro-level risk factors and correlations among strategy types and individual funds incorporated into the portfolio construction process?

As we consider high-level strategy allocations for a portfolio, we try to be conscious of the relationships between seemingly unrelated strategies that may cause a spike in correlation during potential macro-level shocks. Our perspective on these risks stems from our evaluation of historical periods of stress as well as our qualitative understanding of various strategies' positioning in the current environment. In order to select funds that offer complementary features and to try to limit unintended exposure to macro risks, we seek to develop an intimate understanding of each managers' strategy. As we monitor the portfolio and consider potential recommendations, we try to undertake active qualitative consideration and frequent quantitative measurement of macro risk factors and the correlation among strategies and funds and integrate such considerations throughout our processes.

Through our hedge fund and private credit monthly portfolio review processes, our advisory team discusses each fund in a client's portfolio with our sector heads and relevant senior investment research professionals to ensure portfolios are in line with client-specific objectives and constraints. We integrate the views of the PSC, PCIC, and our other committees (further described below) into our recommendations to clients, and we flag any material issues that our teams may have identified.

- ☐ **Aksia's Portfolio Strategies Committee ("PSC") (HF)** - Aksia's PSC is comprised of: Jim Vos (Partner and Chief Executive Officer), Joseph Larucci (Partner and Head of Equity Strategies), Norm Kilarjian (Partner and Head of Macro and Quant Strategies) and Brian Goldberg (Managing Director, Hedge Fund Investment Research) with Simon Fludgate (Partner and Head of Operational Due Diligence) having ODD veto authority. The PSC determines "Focus" rated funds and evaluates market conditions and how they translate into opportunity sets for various strategies, which helps guide our recommendations for portfolio construction and manager investment across our client base.
- ☐ **Aksia's Private Credit Investment Committee ("PCIC") (PC)** - Aksia's PCIC is comprised of: Jim Vos (Partner and Chief Executive Officer), Oliver Newton (Partner and Head of Portfolios), Sylvia Owens (Managing Director and Global Private Credit Strategist) and Tim Nest (Managing Director, Private Credit Investment Research), with Simon Fludgate (Partner and Head of Operational Due Diligence) having ODD veto authority. The PCIC determines top-down thematic views and market opportunities and is responsible for asset allocation framework and portfolio themes for private credit strategies. The PCIC also meets and votes on the ratings for individual private credit funds after an analysis of the risk-adjusted return profile and relative value attractiveness of a given opportunity.
- ☐ **Aksia's Risk Committee (HF)** - On a monthly basis, discusses managers and strategies in light of the forward-looking macro risk environment. The Risk Committee also quantitatively analyzes both realized and pro forma portfolio betas to significant market factors in an effort to ensure that portfolios are positioned appropriately based on their objectives, and to assess how they might perform under a variety of market conditions. Aksia's Risk Committee is described in more detail in Section III-6 Question D.2)

- ☐ **Aksia's Risk Team (PC)** - Each quarter, our risk team gathers investment-level data from managers in a standardized format, subject to the GP's provision of such data to Aksia. We also seek to capture cash flows associated with each transaction and all cash flows between the LPs and GP, to the extent provided by the GP. We clean and parse the data and then aggregate it across our clients' portfolios to help them better understand where the pools of risk lie within their portfolios. In conjunction with our IDD team, the risk team performs an in-depth analysis of each vehicle in which our clients have an investment, including performance attribution, outlier analysis, and credit metric trend analysis.

9. ☐ Describe your approach to managing the liquidity profile of a client's hedge fund and private credit portfolios. Include a discussion of lock-ups, redemption frequencies, side pockets, etc.

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10. ☐ Describe the methodology you would use to construct a hedge fund portfolio based on a set of parameters and constraints (i.e. HFRI Fund of Funds Conservative Index plus 100 basis points targeted return, HFRI Fund of Funds Conservative Index risk benchmark, maximum drawdown constraints, limits on illiquid strategies, etc.).

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11. ☐ Describe the methodology you would use to construct a private credit portfolio based on a set of parameters and constraints (i.e. S&P/LSTA Leveraged Loan Index +200bps, maximum drawdown constraints, limits on illiquid strategies, etc.).

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C. Sourcing Hedge Fund and Private Credit Investment Opportunities

1. ☐ List the main channels through which new managers are sourced and the appropriate percentage of current managers sourced through each. Which route do you feel is most effective and why?

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2. ☐ Describe your investment and operational research and analysis capabilities related to hedge fund and private credit portfolios. Are your resources internal or external? If any external resources are used, provide a description including the name of vendors providing these resources. How is the information used to inform and advise clients?

Aksia's Research Resources

Aksia has a deep research team committed to the research coverage of the hedge fund and private credit industry. The depth of our team, detailed below, enables us to react quickly to client requests, including performing diligence on client-sourced managers or formulating opinions on new and complex situations. Aksia's headquarters in Manhattan gives us access to a large number of institutional quality managers and our global presence allows us to visit fund managers wherever they are located quickly and efficiently, as well as facilitates communication between Aksia and our clients in their preferred time zone.

Aksia's dedicated IDD, ODD, and risk teams are all responsible for manager research in various capacities – the IDD and ODD teams conduct due diligence on potential investment managers and the risk team conducts risk analysis and ongoing risk monitoring. These teams make up our research team, which is the largest team at Aksia, totaling 100 professionals, 97 of which spend some or all of their time on hedge funds and/or private credit, across investment due diligence, risk, and operational due diligence, as of January 31, 2019. The teams are comprised of specialists with varying and complementary backgrounds and strive to produce concise, value added, opinionated research illustrating perspectives independent of managers' marketing efforts. Research staff report to one of the four sector-specific partners: Simon Fludgate (Operational Due Diligence), Norman Kilarjian (Relative Value and Tactical Trading Strategies), Joseph Larucci (Long/Short Equity Strategies), and Patrick Adelsbach (Private Credit Strategies).

Aksia's IDD team is comprised of 53 professionals globally, 50 of which spend some or all of their time on hedge funds and/or private credit, and is responsible for investment due diligence. We divide our investment due diligence research team into sector-specific teams, and our research professionals may further specialize in certain strategies or regions, allowing our analysts to develop focus and experience in one space. In the event that a certain strategy includes both evergreen and closed-end structures (e.g.,

structured credit and insurance-linked strategies), an analyst who specializes in such strategies may split his or her time between the respective hedge fund and private credit sector teams.

Aksia's ODD team is an independent team comprised of 40 professionals globally who come from varied backgrounds, including audit, operations, legal, risk management, and fraud and investigations, each bringing unique skills and perspectives to the operational review process. Aksia's ODD professionals are generalists and conduct due diligence across asset classes – they do not specialize in one strategy or product type; rather, they are cross trained. We believe that cross training, senior mentorship, and our various levels of review allow us to maintain quality and consistency in our reports globally.

Aksia's risk team is comprised of seven professionals and is responsible for ongoing risk monitoring of third-party managers.

Aksia's extensive due diligence process includes several layers of review by multiple individuals. The IDD and ODD team employ a team approach in completing due diligence reviews— for IDD each fund has a primary analyst assigned with a Strategy Head reviewer, and for ODD each fund is assigned to both a lead and a secondary reviewer, with oversight by the head of the department or director-level staff to ensure we maintain global consistency. Aksia's internal workflow management system sets tasks and due dates for the research team's deliverables and tracks progress and timeliness.

External Resources

All of Aksia's resources and capabilities are internal, with the exception of conducting background checks for operational due diligence. As previously mentioned and further detailed in Section III-6 Question C.7 below, Aksia performs detailed manager background checks with the help of a third-party providers (typically BackTrack Reports, Inc. and Exiger) as part of our standard operational due diligence review process. After a thorough investigation based on the results of the background check, our ODD team writes a detailed analysis as part of our ODD review which is included in the formal operational due diligence report given to clients.

3. ☐ Describe your overall approach to manager research and selection, including a list of any specific criteria that must be met in order for a manager to be considered and any characteristics that will automatically exclude a manager from consideration. Please provide an outline of your manager evaluation framework and sample reports.

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4. ☐ Describe your process of performing due diligence review and analysis on the professional staff and operations of investment managers. How often is the analysis updated? Provide

samples of reports that would be made available to PSERS which detail the results of your firm's analysis.

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5. ☐ Describe the process you will use to conduct investment manager searches and to recommend candidates to PSERS. Identify all criteria that might be taken into account in order to complete your recommendations. Include a description of the size of your manager database and experience negotiating performance-based fees.

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6. ☐ Do you have dedicated individuals or teams separately responsible for investment, operational, and legal/compliance due diligence? If so, does each group have authority to "veto" a prospective investment before a recommendation is made to a client or at any time thereafter?

Yes, Aksia's investment due diligence and operational due diligence teams (including legal/compliance due diligence performed by the operational due diligence team) perform independent research functions, as we find it is important to maintain separation between IDD and ODD to preserve the independence of each. At any time during the initial due diligence or ongoing monitoring process, the operational due diligence team can "veto" any investment based on operational concerns, irrespective of the result of investment due diligence. As such, in order for a fund to be eligible for recommendation, it must receive a passing rating on both IDD and ODD.

7. ☐ Do you perform background checks on the key individuals of all prospective managers? What roles/titles are typically included in this group (i.e. CIO, portfolio managers, CEO, CFO, etc.)? What specific red flags are you looking for? What service provider(s) do you utilize for background checks?

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8. ☐ Describe your approach to performing reference checks on prospective managers, including both named and informal references.

In addition to the background check review completed during our operational due diligence process which is detailed in the preceding question Section III-6 Question C.7, our investment due diligence team performs a reference check on key investment professionals (e.g., the portfolio manager) for each initial review and as needed for each subsequent annual update. When performing the reference check, we seek to speak with former colleagues and employees as well as current and former clients, either named by the manager directly or sourced through our network of industry contacts. While the results of the reference check are kept internal, reliable references play a role in formulating an opinion on the manager.

9. ☐ Do you examine and contact the third-party service providers of all prospective managers? If so, describe the key diligence components and areas of focus with respect to: 1) Administrators, 2) Custodians and Prime Brokers, 3) Auditors, and 4) Legal Advisors.

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10. ☐ Please discuss the firm's database of hedge fund and private credit managers. How many single-strategy and how many fund of funds managers are in the database? What are some key factors the firm uses to rate managers in the database? Can the database be accessed by clients online?

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11. ☐ How willing is the firm to perform due diligence on managers that are not in the database but that the Board would like reviewed? Is there an extra charge for that type of research?

Commissioned Research

Aksia has an open-door policy and will consider any investment for due diligence, whether its sourced internally or by the client, including those outside of our coverage list. Should PSERS and Aksia agree to conduct due diligence on a new fund or a manager not already in our database, the assigned research analyst will first have an introductory call/meeting with the manager, then generate a detailed note on his/her findings in our system which will be passed on to the portfolio advisory team. The portfolio advisory team and the client will then typically exchange notes and feedback through a call or meeting and together decide whether to proceed. If the decision is made to proceed, the assigned research analyst will then generate an Insight Report, which is a high-level summary of our preliminary views of the fund. If full due diligence is the preferred next step, the advisory professional will kick off a full due diligence workflow in our workflow management system which assigns research analysts to each step of the due diligence process.

Pricing

Commissioned due diligence is included in PSERS fee proposal. Commissioned due diligence shall be performed upon the mutual consent of the parties and upon mutually agreeable deliverable time frames.

12. ☐ Each year, on average, how many managers do you: 1) Meet with, 2) Subject to full due diligence, 3) Update prior full due diligence, and 4) Approve for investment?

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13. ☐ Describe your abilities as to the extent of possible involvement in negotiating legal documents, including side agreements, where appropriate.

Aksia is able to provide assistance in negotiating favorable fee terms and other non-market provisions on an as needed basis. Such assistance may be provided by members of the investment due diligence team and/or the legal team, as necessary. Please see below for the bio of Siddhya Mukerjee, who often assists clients with these issues.

Siddhya Mukerjee – Legal Director

Siddhya is a Legal Director and is a part of the Operational Due Diligence team, where she helps manage the document/fund terms review process for alternative investments. She is also a member of Aksia's Legal and Compliance team. In addition, Siddhya assists clients with investment structuring matters including the negotiation of client-specific side letters, terms sheets and LPAs.

Prior to joining Aksia in September 2010, Siddhya was an associate attorney at Seward & Kissel LLP in New York where she provided legal advice to investment managers on hedge fund and private equity fund structuring, formation, operations, compliance, regulatory filings, and other matters. Siddhya received an AB in Psychology from the University of Chicago and received a JD from Brooklyn Law School. She is admitted to the New York and District of Columbia bars.

14. ☐ Briefly describe your requirements or preferences regarding level of management fees, level of profit sharing/carried interest, hurdle rates of return, acceptable levels of leverage and transparency, key person provisions, and other criteria you view as of high importance.

Aksia does not have any simple line-in-the-sand rules governing the various issues raised in this question. However, all of these factors are considered in our due diligence process and, where appropriate, we note our opinion as to whether a fund is mis-aligned with market standards (negative or positive). There may be issues significant enough where a fund may not pass our due diligence process (e.g., lack of transparency to the point we cannot conduct a thorough ODD review or a fixed income arbitrage fund with high leverage levels and insufficient unencumbered cash reserves). In short, we evaluate each fund and assess the relative attractiveness and risk of each investment individually.

Additionally, some investors will apply hard line minimum qualification standards for potential hedge fund and/or private credit investments based on tangible metrics such as management/incentive fees, hurdle rates, or levels of leverage and transparency. While these factors are important, they should be thought of in the context of a number of larger considerations. Through our due diligence processes, we seek to objectively identify and evaluate the fund's risks and in all cases have a preference for terms that are most aligned with the best interest of investors. We take each client's preferences into consideration as we work the them to build and manage their portfolios.

Section III-6 Questions A.8 and A.9 also provides a discussion of our views on hedge fund fee structures and levels of transparency of our investment and operational due diligence processes.

15. ☐ Describe your pre-investment due diligence process including the groups or individuals, deliverables, decision points and timeframe associated with each component.

Please reference Section III-6 Question C.1 - 5 for a detailed description of our investment and operational due diligence processes, including pre-investment due diligence.

16. ☐ Please provide a sample investment and operational due diligence summary report/memo.

Please find attached a sample investment and operational due diligence report in Appendices 5A (hedge fund) and 5B (private credit).

17. ☐ If you use a questionnaire as part of your hedge fund and private credit manager due diligence process, please attach as an appendix to your response.

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18. ☐ Describe how you verify the use of soft dollar arrangements and if they are used in capital raising activities.

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19. ☐ Describe how your firm verifies SEC investigations and other regulatory proceedings of the fund and its personnel.

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20. ☐ Describe how your firm interacts with placement agents.

Aksia meets with placement agents in an effort to remain abreast of new fund launches, manager updates and the fundraising landscape. Aksia also meets with managers that are introduced to Aksia via placement agents in order to potentially source new opportunities and emerging managers for client portfolios. Aksia receives no commissions or compensation from placement agents or from the funds they work with.

21. ☐ Please identify best practices for public pension plans with regard to placement agents and associated costs.

We are broadly indifferent to the source of an idea, but on average, we have found that the best quality funds have been sourced through referrals and generally less promising prospects have been sourced through placement agents. This may occur because managers that are unwilling to invest in their own marketing departments are also unwilling to invest in the rest of their business. However, our bias against placement agents is based on very imprecise science - we have seen just the opposite on many occasions, as well; our goal is to evaluate each fund independently from multiple perspectives without overdue attention paid to the source of the idea.

When evaluating a fund that utilizes a placement agent, one unique consideration is how much revenue the manager is forgoing to pay for distribution. The typical model calls for the placement agent to receive 20% of revenue, which significantly diminishes the funds available for other critical resources, particularly at smaller firms where fixed costs (real estate, legal advice, compliance) also represent a large percentage of revenue.

There have been several high-profile cases of investment managers using placement agents to immorally and/or illegally influence investors to allocate capital in exchange for personal gain. This unethical behavior could theoretically take many forms, but the placement agent structure has been the most convenient way to commit these crimes. Aksia will aggressively avoid any placement agents or managers that we suspect of untoward behavior and if we were to uncover evidence of such crimes, we would report them to appropriate authorities.

22. ☐ Describe how you develop an opinion of the internal control environment of a manager.

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23. ☐ Describe the systems and procedures used to store and access manager-related information (performance, portfolio exposures, research notes, due diligence reports, etc.), including any third-party and internally developed databases or document storage utilities.
- a. ☐ How is the information collected? (i.e. surveys, due diligence questionnaires, meetings, etc.)?
- b. ☐ How many unique funds are covered by your database?
- c. ☐ Do you have dedicated support staff and/or technology professionals that focus on data management?
- d. ☐ If you maintain an internal manager database, do you sell it to third parties? How is the compensation for access structured?
- e. ☐ What fees or other consideration, if any, do you receive from managers who wish to be maintained in your database?

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D. Risk Management and Monitoring

1. ☐ Describe your process for monitoring risk exposures, both for individual and clients' aggregate hedge fund and private credit portfolios. What specific risk exposures are monitored and with what frequency? Include a description of key risks inherent in various sub-strategies based on a manager's strategy and style. Are individual fund risk exposures aggregated across sectors/strategy styles as well as the entire portfolio? How? Do you use holdings-based measures, return-based measures, or some combination? Please provide a sample exposure report.

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2. ☐ Do you have dedicated individuals or a team separately responsible for risk management?

Risk Team

Aksia's dedicated risk team is comprised of seven professionals as of January 31, 2020. Of the seven members of the risk team, five are dedicated to private credit and two spend some or all of their time on hedge funds and private credit. Aksia's risk team is an independent team that conducts its own risk monitoring of third-party managers. Similar to the investment and operational due diligence process, Aksia's internal workflow management system sets tasks and due dates for each risk team deliverable and tracks progress and timeliness.

Risk Committee

Aksia's Risk Committee is comprised of Simon Fludgate (Partner and Head of Operational Due Diligence), Antonis Antypas (Head of Risk), Alex Panagiotidis (Partner and Europe Operations Manager) and Steve Beckett (Director, Private Markets Risk). The committee is independent of the investment due diligence teams in an effort to provide unbiased oversight of risk and typically meets monthly to discuss prevalent market, fund, and portfolio-level risks, including:

- ☐ **Stress Testing (HF)** – described in detail in our response to the following Question below;
- ☐ **Monitoring Aksia Investor Concentration (HF)** – at management company and program level (i.e., the percentage of aggregate AUA that Aksia clients have invested in the funds and management companies in which they invest);
- ☐ **Reviewing Performance Outliers (HF)** – for monitored funds; and
- ☐ **Identifying Style Drift (HF)** – using fund exposures. If exposure drift is identified, it may trigger additional research from the IDD team.

3. ☐ Do you employ stress testing and/or scenario analysis? If so, please describe.

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4. List any quantitative risk metrics you utilize along with a description of how they are used and why you believe they are useful.

Please reference our responses to Section III-6 Question D.1 and Section III-6 Question G.6 for a detailed description of our risk management process and quantitative risk metrics/analyses.

5. Provide an overview of any third-party or internally developed risk systems or tools, how they are used, and the standard output/reports they generate. Please include a standard risk report as an appendix to your response.

A description of our risk tools, internally developed and third party, is included in our response to Section III-6 Question D.1 above, as well as a description of the full suite of tools in MAX included in Section III-6 Question G.6.

Please reference the table in Section III-6 Question G.2, for the description, timing, and frequency of our standard performance and risk reports as well as their corresponding appendix number.

6. Describe your process of reviewing investment manager performance and consistency of investment approach.

As previously discussed, our investment due diligence process is focused on assessing a manager's ability to execute their strategy effectively. We evaluate drivers of past performance and also assess the forward looking opportunity set for both the manager and the strategy, which is integral to our rating of the fund. As for consistency, this is also assessed in our due diligence process and monitored over time to identify any new developments which would be a cause to reassess the manager and change our level of conviction. We also describe this in our discussion of manager due diligence in Section II-6 Questions C.3-5 and style drift question 11 of this section (below).

7. ☐ How do you ensure the accuracy of manager-reported position/exposure data and fund NAV?
How is this information collected and processed?

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8. ☐ Describe your process for providing ongoing monitoring and oversight related to investment objectives, contract and guideline compliance, account restrictions, conflicts of interest, and reporting requirements.

Please see our response to the following question for our full ongoing monitoring process broken out by each Aksia team.

9. ☐ Describe your approach to post-investment due diligence including the groups or individuals, deliverables, decision points, and timeframe associated with each component. How often do follow-up due diligence meetings, onsite visits, etc. occur? Which areas are reviewed? How often are follow-up due diligence reports/memos issued?

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10. ☐ Discuss generally the issue of on-going risk management analysis of the funds PSERS will be invested in, the tools you employ and the risk management reports you provide. Are the tools and reports available online?

Please reference Section III-6 Question D.1. for a detailed explanation of our risk management process and on-going analysis, as well as Section III-6 Question G.6 for a description of the tools we employ. Please refer to Section III-6 Question D.12 for detail on the risk management reports we provide and the method and timing of their delivery.

11. ☐ How do you monitor leverage within fund managers? How do you track style drift?

Leverage

Aksia's research teams review the amount of leverage applied at the manager level and determine whether the leverage employed is suitable for both the strategy and the client's portfolio. Aksia does not impose specific minimum or maximum levels of acceptable leverage, but rather attempts to fully understand how the manager utilizes leverage, how it is calculated, what allowable levels can be employed, and whether we believe it is appropriate for the strategy.

With regard to leverage of the underlying portfolio funds, we collect risk exposures on client-invested funds that can be aggregated to the portfolio level. This information provides an indication as to the extent of aggregate leverage employed by the underlying managers. For hedge funds, we collect exposures by asset class, geography, and industry on a long/short, gross, and net basis. For private credit, we collect loan-level information for the fund's underlying investments across 50+ data points.

This leverage data is monitored by our research analysts and communicated to clients when they feel there may be potential risks of note.

Style Drift

Aksia performs ongoing due diligence on monitored funds, which are generally those in which Aksia's advisory clients are invested. Our frequent contact with managers, along with our quantitative analyses, give us a good monitoring framework with which to continually assess each manager. If Aksia's research analysts discover that a manager has expanded or shifted its investment strategy into an area that we feel they are not suitably qualified to execute, this may trigger a review of the manager. AUM and staffing changes can also lead to style drift, since increasing AUM can lead to expansion into areas outside of a manager's expertise, and since expansion into related strategies typically requires incremental expertise. Our research teams also utilize the collected exposure data to help monitor funds, as data can aid in analyzing fund exposures through time and in flagging style drift.

Analysts document their findings from ongoing monitoring in activities posted to MAX, which are generally available to clients. Should a change at the fund or management company level, such as style drift, affect Aksia's opinion of the fund or manager, we would seek to promptly notify our clients.

☐

12. ☐ Under what circumstances do you typically recommend full redemptions? What process would you follow to evaluate the situation, formulate a recommendation and ultimately communicate this to the client?

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12. Has a fund that your firm has recommended to a client ever been liquidated or otherwise gone out of business? How long after the initial recommendation did the liquidation occur? If so, describe each instance, the lessons that were learned and any subsequent changes that were made in response to these events.

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E. Reporting

1. ☐ List investment research reports or studies that you have provided clients in the past 12m months. Describe your capability to carry out special projects requested by PSERS. Provide a sample report that best represents your research capabilities.

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Aksia is a commercial entity whose reports and services offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

2. ☐ What types of general research reports or white papers do you produce and distribute to clients? Please attach the three most recent reports. Outline the sources used to obtain data for publication of newsletters or periodicals. Include samples of your publications.

PSERS would receive the following industry research reports and ongoing series of market insights:

- ☐ **Strategy Outlook Report and Calls** - Aksia publishes its views on the hedge fund (quarterly) and private credit (annually) landscape in its Strategy Outlook Report. The Strategy Outlook Report examines the key drivers of risk and return in each strategy (i.e. credit spreads, volatility, sector dispersion and convertible issuance) and provides a 12-18 month view on the relative return potential and attractiveness of each strategy. As a supplement, Aksia holds a call with clients to discuss views and outlook on the hedge fund and private credit landscapes. Please find a copy of Aksia's most recent Hedge Fund Strategy Outlook and most recent Private Credit Strategy Outlook reports in Appendices 4A and 4B.
- ☐ **Private Credit Monthly Update** - Patrick Adelsbach, Head of Credit Strategies, produces a monthly email that includes timely commentary on the PC landscape, our views on PC funds in market for which we have recently completed research, as well as a pipeline of funds on which we will be performing research in the coming months. Our intention is to keep clients abreast of interesting opportunities in the private credit space and alert clients to funds that we deem to be of high conviction. We have provided a sample of the email with its relevant industry commentary attachments in Appendix 4C.
- ☐ **Lunch & Learn Call Series** - Aksia hosts educational Lunch & Learn seminars featuring various industry professionals from a broad range of backgrounds. We encourage our clients to call in or join in person at our New York office.

Alongside the above, PSERS would have full access to written manager research and industry research reports within our MAX database (subject to any manager confidentiality restrictions), which is described

in Section III-6 Question G.6 of this RFP. Additional research papers written by Aksia staff can be found in Appendix 4D.

Sources used to obtain data for publication of our reports vary and are clearly cited in each report.

3. ☐ How do you communicate important developments and relevant information to clients outside of standard reporting packages and board meetings?

As PSERS is aware, a key part of Aksia's high touch advisory model is the exchange of information between Aksia and our clients. Aksia's assigned PSERS' consultants manage day-to-day communications as well as the exchange of important and time sensitive portfolio material. We generally have regular standing client calls (bi-weekly, monthly, quarterly) to share ideas, keep abreast of current activities, and manage forward looking projects. The frequency and method of communication will be determined depending on PSERS' preferences, though we are happy to continue our regularly scheduled calls which have typically included: ad-hoc calls 2 to 4 times per month for hedge funds, monthly private credit pipeline calls, and ad-hoc private credit calls at times as frequently as 3 to 4 times per week.

We take a proactive approach to client communication and should we identify a significant change at a fund or management company that affects Aksia's opinion, we would seek to promptly notify our clients via a Desk Note published to MAX. Likewise, If there is a development with one of the managers in PSERS' portfolio, in addition to the research team's note to MAX, Aksia's assigned PSERS consultants, such as Brett or Sylvia, would typically contact PSERS' staff through an email or a call. Desk Notes can also be emailed directly to clients through the set up "alerts" in MAX for their invested funds.

F. Conflicts of Interest

1. ☐ Describe in detail any potential conflicts of interest your firm may have in providing consulting services to PSERS. Include any activities of affiliated or parent organizations, brokerage activities, investment banking activities, or other relevant functions. Include any other pertinent activities, actions, or relationships not specifically outlined in this question.

Aksia does not foresee any conflicts of interest specific to providing services to PSERS, however, as a Registered Investment Adviser, Aksia is required to disclose and mitigate potential conflicts of interest. As such, Aksia has adopted policies and procedures that both identify and address potential conflicts. These potential conflicts include:

- d) ☐ *Allocation of Investment Opportunities:* Aksia provides portfolio advisory services to both discretionary and non-discretionary clients (together, "Advisory Clients"). With the exception of secondaries and co-investments sourced by Aksia, all other opportunities are allocated equitably among discretionary and non-discretionary clients. On occasion, a fund that has ceased to widely solicit additional investor capital will reach out to Aksia to offer limited capacity to its Advisory Clients. In these instances, Aksia will first present the manager with the names of all eligible Advisory Clients that are interested in the capacity, and then have the manager, not Aksia, decide which clients will receive the capacity allocation. In the event that our aggregate client interest exceeds the available capacity and the manager is unwilling to decide between eligible clients, Aksia will seek to split the capacity pro rata among interested and eligible Advisory Clients.

With respect to co-investment opportunities, Aksia will first recommend co-investments to its discretionary clients who have elected in their investment management agreement with Aksia or who have otherwise contracted with Aksia to provide services regarding co-investments. If there is an excess allocation above the amount that Aksia determines will be allocated to discretionary clients, the excess allocation may be offered to any client of Aksia or to any third party, in each case selected by Aksia in its sole discretion.

- e) ☐ *Performance-Based Fees and Side-by-Side Management:* While most advisory clients choose to pay fixed or asset-based fees, some pay performance-based fees. In addition, amongst clients paying fixed or asset-based fees, some may pay higher fees than others. These different payment structures may give rise to a potential conflict of interest. Aksia is mindful of its obligation to act in the best interests of its advisory clients and has thus adopted policies and procedures designed to mitigate the potential conflicts of interest that relate to the management of multiple accounts, including accounts with differing fee arrangements.
- f) ☐ *Clients with Affiliated Investment Managers:* Aksia does not invest for its own account, does not invest in any funds (or securities) that Aksia recommends to clients, and does not have as clients any hedge fund managers or prime brokers. However, given that Aksia's clients are large institutions there are certain circumstances where Aksia may recommend, purchase, or sell for its clients' funds managed by investment managers that are affiliated with clients of Aksia (whether because Aksia's clients own a passive GP stake or otherwise are affiliated with an asset manager). Aksia has addressed this potential conflict of interest through the implementation of policies and

procedures reasonably designed to ensure that its activities are carried out in compliance with applicable regulatory requirements and in the best interests of clients. For example, if Aksia were to recommend an investment with an investment manager that Aksia knew was affiliated with an Aksia client, Aksia would fully disclose the relationship in its due diligence report. In addition, the potential investment would be subjected to Aksia's extensive due diligence process, which includes multiple layers of review by multiple individuals. This type of situation is rare.

g) ☐ *Gifts and Business Entertainment*: In the ordinary course of business, Aksia personnel may receive and provide gifts and business entertainment. Such gifts and entertainment are strictly monitored by Aksia's compliance team and governed by Aksia's Compliance Manual and Code of Ethics. Aksia's Gifts and Business Entertainment Policy mandates the disclosure and preclearance of all gifts and business entertainment above a designated threshold.

2. ☐ Has your firm adopted the CFA Institute's code of Ethics and Standards of Professional Conduct?

Aksia has a formal Compliance Manual and a Code of Ethics that follows standards of practice similar to the CFA Institute's Code of Ethics and Standards of Professional Conduct. All staff are required to adhere to Aksia's Compliance Manual and Code of Ethics.

3. ☐ Does your firm maintain a comparable written ethics or compliance manual or policy?
If so, please provide a copy and a description of any similar management control tools.

Yes, as noted in the preceding question, Aksia has implemented and maintains a Compliance Manual and Code of Ethics, which govern the conduct of Aksia and its employees. Aksia has attached the Table of Contents of our Compliance Manual and Aksia's Code of Ethics for PSERS' reference in Appendix 1C.

Aksia is committed to fostering a culture of compliance and upholding its fiduciary duty to its advisory clients. Aksia's Legal and Compliance team consists of Head of Legal and Compliance Maya Fishman, who acts as General Counsel and Chief Compliance Officer and is supported by six professionals who provide full-time legal and/or compliance support, as well as two additional professionals who split their time between Legal and Compliance and Operational Due Diligence.

The compliance department is tasked with ensuring that all Aksia personnel adhere to the policies and procedures outlined in Aksia's compliance manual, such as: monitoring personal trading activities, gifts and business entertainment, confidentiality, and compliance with client guidelines.

As noted in Section III-4 Question F.1 above, Aksia has also implemented policies and procedures in order to address potential conflicts of interest. Aksia maintains a conflicts of interest policy designed to protect the interests of clients. Compliance is responsible for enforcing the policy and conducting a review at least annually to ensure that the policy is properly implemented. Compliance includes all relevant disclosures concerning potential conflicts of interest in Aksia's Form ADV, reviews existing policies and procedures designed to address conflicts of interest, and develops and implements additional policies and procedures as needed.

To help Compliance monitor and enforce compliance with the Code and specifically with restrictions on personal trading activities and gifts and business entertainment, Aksia has implemented Schwab

Compliance Technologies, Inc., a cloud-based compliance automation software, which aggregates, analyses, and flags employee compliance-related activities and stores employee affirmations.

4. ☐ Does the firm or any employees of the firm invest their own capital in investment opportunities that they also recommend for clients? If yes, please explain how potential conflicts that arise from these activities are mitigated.

****CONFIDENTIAL****

Aksia is a commercial entity whose internal governance and business practices are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

5. ☐ Are there any circumstances under which your organization or any of its employee's receives compensation, finder's fees, or any other benefit from investment managers or third parties? If yes, please describe these arrangements in detail.

****CONFIDENTIAL****

Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, the information provided as part of this question is exempt from disclosure per 65 P.S. § 67.708(b)(26).

6. ☐ Describe how your firm is compensated on discretionary accounts you manage for clients

****CONFIDENTIAL****

Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, the information provided as part of this question is exempt from disclosure per 65 P.S. § 67.708(b)(26).

7. ☐ Does the firm, its affiliates, or the ultimate parent of the firm receive revenues from investment managers for consulting services provided, software sold, attendance at conferences, access to manager databases, or for any other reason? If so, for 2019, please list the names of all investment managers from which revenues were received as well as the dollar amounts received from each entity and the service provided. Disclose all services provided and compensation received (including the sources of such compensation, whether direct or indirect) between your firm and investment managers, plan officials, beneficiaries, sponsors, and/or others as required by Standard 2b of the Investment Management Consultants Association Standards of Practice.

No, as previously mentioned, Aksia does not receive any revenues from investment managers that are recommended, considered for recommendation, or for services rendered to an investment manager. However, Aksia does have a number of clients who may be categorized as alternative managers or their intermediaries or affiliates. Due to confidentiality restrictions, we are unable to disclose the fees paid by these clients.

8. ☐ State whether you, any of your principals, or any other affiliates have any business involvements that could be viewed as potential conflicts of interest.

Apart from the potential conflicts of interests described in Section II-4 Question F.1, above, of which all clients should be aware, Aksia does not foresee any additional conflicts of interests in providing services to PSERS.

9. ☐ Provide a copy of your current Code of Ethics adopted pursuant to 204A-1 of the Advisers Act.

As noted in Section II-4 Question F.3 above, we have included a copy of Aksia's Code of Ethics in Appendix 1C.

G. Performance Measurement

1. ☐ Describe the process and sources of data for analyzing, monitoring, and reporting the performance of clients' hedge fund and private credit portfolios.

****CONFIDENTIAL****

Aksia is a commercial entity whose performance measurement and monitoring processes are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708 (b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

2. ☐ Describe the content and format of the monthly and quarterly performance reports you will prepare for PSERS.

****CONFIDENTIAL****

Aksia is a commercial entity whose reports and services offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

Include:

- a. ☐ Data and method used to calculate total return before and after fees;
- b. ☐ Time periods for which total returns will be calculated;
- c. ☐ Standard indices, custom indices, and benchmarks you will use for comparison;
- d. ☐ Characteristics you will compare; and
- e. ☐ Market conditions.

Please comment on your ability to provide draft performance reports within 45 days after quarter-end given final market values from our hedge funds are typically received 30 days after quarter-end. Please comment on your ability to provide draft performance reports within 75 days after quarter-end given final market values from our private credit funds are typically received 60 days after quarter-end. Will you be able to issue final reports within 3

business days after receiving comments from PSERS on the draft? What quality control systems and procedures do you use to ensure that reports are prepared accurately and delivered on time?

Describe in detail the performance measurement attribution and analysis service you propose to provide for PSERS. Note its usefulness for PSERS.

****CONFIDENTIAL****

Aksia is a commercial entity whose performance measurement and monitoring processes are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708 (b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

3. ☐ Describe your performance evaluation and reporting process including the types of analysis typically included.

Please reference Section III-6 Questions G.1 and G.2 above, for a detailed description of Aksia's performance evaluation and reporting process.

4. ☐ Please attach samples of all standard reports described above.

Please reference Section III-6 Question G.2 above for a list of Aksia's standard reports and their corresponding appendix number.

5. ☐ Can investors receive custom reports? If so, discuss the range of customization available.

Yes. Portfolio information is housed in MAX, through which clients can generate customized reports at any time. For instance, clients can select to build an abridged report of summary statistics, one that includes fund-specific metrics, or one that is a detailed ledger of all transactions, to name a few. As PSERS is aware, our reporting is customizable to meet specialized client needs; commercially reasonable customization efforts are included in the fee quoted in this RFP.

In addition to providing customized reports, Aksia maintains ongoing dialogue with our clients to receive feedback and suggestions. For example, since the inception of our relationship with PSERS in 2010, we have worked closely with Staff and received and implemented feedback on a range of topics, including direct on-screen and export functionality in Portfolio Builder, the development and deployment of Manager Portal, and the content and structure of standard and customized reports. Timing for implementation and cost for changes would vary depending upon the complexity of the request and can be discussed in detail with PSERS, subject to mutual agreement.

6. ☐ Describe in detail the Internet-based fund management and consulting tools to which your firm will provide the Board and PSERS' Investment Office Professionals access. Provide sample reports. NOTE: PSERS may require demonstration of such tools.

****CONFIDENTIAL****

Aksia is a commercial entity whose online client platform and its capabilities are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

III-7. Miscellaneous.

- A. ☐ Does your firm offer both discretionary and non-discretionary hedge fund and private credit consulting services? If so, what percentage of clients are discretionary and what percentage of revenues are derived from discretionary client relationships?

CONFIDENTIAL

Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, the information provided as part of this question is exempt from disclosure per 65 P.S. § 67.708(b)(26).

- B. ☐ What are your views of the role of private credit and hedge funds in a pension fund, particularly of the size of PSERS?

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Aksia is a commercial entity whose investment and operational due diligence, risk management, and portfolio construction processes are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708 (b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

- C. ☐ What do you see as being the most significant changes that will be occurring in asset allocation for pension funds over the next 10 years? In private credit and hedge funds specifically? Please comment.

Hedge Funds

We believe that the landscape for hedge funds has evolved and continues to do so, though we remain constructive on the opportunity set. There is certainly a cautionary case to be made about the steady increase in capital entering the industry, and the implications of more investors competing for what is arguably a limited opportunity set, although the events of Q1 2020 are likely to cause a sizeable rebalancing of investor capital.

The three key trends/changes that we expect over the next 10 years within hedge fund strategies relating to asset allocation for pension funds are:

- I. ☐ The continued blurring of the lines between asset classes as we see hedge fund managers and strategies increasingly overlap with private credit, private equity, real asset and long only areas. We have already seen some hedge fund managers offering long-only solutions, the commoditization of hedge fund strategies into low cost, risk premia offerings (such as merger arb and trend-following), the utilization of closed ended and contingent structures (e.g. in insurance linked strategies and credit) and activist hedge funds interacting and competing with private equity firms.

It is our view that pension funds will need to be flexible in the way they setup their internal teams, encouraging greater interaction between the different asset class teams to best utilize both their internal experience and expertise in each asset class and to share information across them. Encouraging information flow between these asset class teams will help make more informed decisions around risk in the portfolio as well as helping to identifying optimal ways to capture opportunities presented by the market.

- II. ☐ Aksia does not agree with the commonly held view of hedge fund as a single homogenous asset class. Unlike some of the other asset classes, the range and variety of strategies offered by hedge funds is very broad and the correlation between these strategies is often negative (consider the relationship between an activist fund (that is significantly long equity) and a tail risk fund (that is typically short equity)).

Instead, Aksia's view is that hedge fund strategies should be considered in a pension fund's portfolio for their own specific role and monitored and assessed relative to these expectations. Certain strategies may be viewed as return-enhancing, with strategies such as Activist and Distressed falling into this category, carrying a higher degree of beta, but offering a differentiated return stream relative to traditional approaches. Other strategies should be seen as diversifying, as they seek returns agnostic to market direction, such as Insurance Linked Strategies, Quantitative, and Fixed Income Arbitrage. Additionally, there are risk reducing strategies such as Tail Risk and Short only, they explicitly look to reduce exposure to long equity and credit in a pension fund's portfolio.

We believe that pension funds are increasingly thinking about the strategies within their hedge fund allocation in this manner. This helps when assessing the potential building blocks of a hedge fund allocation, selecting the appropriate managers to express the strategy, as well as when setting risk and return expectations relating to these strategies and the ongoing monitoring of them.

- III. ☐ The final trend we see and expect to continue to have an impact on the asset allocation of pension funds is that the gap (in risk-adjusted performance) between the best managers and the rest of the field will increase. We expect this to be particularly acute in Quantitative Strategies and RV Multi-Strategy firms, where size helps attract the best PMs, allows for more sophisticated risk management, gives greater access to broad and unique data sets, and helps ensure the best trade execution and counterparty relationships.

We believe it is very important for pension funds to establish, build and grow relationships with the handful of top firms in these spaces in order to obtain access to capacity in these managers. This process can often take time and patience, but we feel that taking the time to establish relationships will help position an investor to access capacity when this periodically becomes available.

Private Credit

The key trends/changes that we expect over the next 10 years within private credit strategies relating to asset allocation for pension funds are:

- 1) The growth of the private credit asset class over the recent years has led to a proliferation of new funds and managers of various quality. We expect that this rapid expansion will eventually lead to a

consolidation with the best, or at least the strongest, managers surviving. This consolidation may improve efficiency for LPs, allowing for fewer manager relationships and more customized vehicles, however, it also may imply that many of the marginal players will cease to exist as a going concern, which may result in “zombie funds”. If a GP ends up in this situation, it will be important to assert its rights as an LP to maximize the ultimate outcome. The current crisis may accelerate this process, as small managers find themselves out of the money on their carried interest and without prospects of raising additional capital.

Even in a consolidated environment, we expect a proliferation of less scalable, higher target return specialty funds run by independent GPs. These strategies often do not fit well inside of larger platforms because the manager values its independence and/or doesn't see any advantage of working for a large firm. Similar to the long-term trend in private equity buyout, many of these funds will be perennially over-subscribed and investors will then have to rely on their relationship for access.

2) Private credit firms have generally been transparent with LPs, especially when pushed by their large LPs. We expect this trend to continue and even improve as the asset class continues to institutionalize. However, smaller firms may have difficulty with the logistics of providing this transparency, which may create LPs' expectations in these situations. In any case, we expect this increased transparency to lead to better benchmarking (focusing on alternative uses of capital) and increased accountability. As LPs increasingly think of these funds as part of the broader asset allocation, this information will be used to justify or exclude the asset class and will drive fees in a manner that is consistent with their value-add.

D. ☐ Do you believe that investing in small and/or emerging funds offers adequate potential excess returns or other benefits that outweigh the increased operational and business risks?

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Aksia is a commercial entity whose investment and operational due diligence, risk management, and portfolio construction processes are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708 (b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

E. ☐ Describe any business relationships that you or any of your affiliates have had within the past two years with the Commonwealth of Pennsylvania or within the past five years with PSERS' Investment Office Professionals or Board members.

CONFIDENTIAL

Aksia is a commercial entity whose clients' past investments are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the

confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

III-8. References.

List five (5) current non-discretionary hedge fund and private credit consulting clients as references, including at least two (2) public pension fund clients. For each reference, include client name, name of contact person with title, address (both building and email), telephone number, asset value of client, amount invested in private credit and hedge funds, number of funds, services the client uses, and number of years the client retained the firm. PSERS intends to contact the references.

****CONFIDENTIAL****

Aksia is a commercial entity whose client list and clients' contact information are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

In addition, identify the five (5) largest clients lost within the last 5 years and indicate the reason(s) for termination. Include client name, name of contact person with title, address (both building and email), telephone number, services the client used, and number of years the client retained the firm.

****CONFIDENTIAL****

Aksia is a commercial entity whose client list and clients' contact information are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

II.9. Work Plan. Describe in narrative form your technical plan for accomplishing the work. Use the task descriptions in Part IV of this RFP as your reference point. Modifications of the task descriptions are permitted; however, reasons for changes should be fully explained. Indicate the number of person hours allocated to each task. Include a Program Evaluation and Review Technique (PERT) or similar type display, time related, showing each event. If more than one approach is apparent, comment on why you chose this approach.

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Aksia is a commercial entity whose investment and operational due diligence, risk management, and portfolio construction processes are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

Aksia LLC Response to:
**Commonwealth of Pennsylvania Public
School Employees' Retirement System**

**Request for Proposals for
Hedge Fund and Private Credit Investment
Consulting Services
PSERS RFP 2020-1**

**APPENDICES
REDACTED**

Contact Information:

Matthew Mullarkey
p: 212.710.5778
f: 212.710.5711
matt.mullarkey@aksia.com

Mailing Address:

599 Lexington Avenue, 37th Floor
New York, NY 10022





1. ☐ Appendix 1 – Firm Overview

Appendix 1A – Form ADV Parts II and III

Appendix 1B – Business Continuity and Disaster Recovery Plan

Appendix 1C – Table of Contents of Aksia Compliance Manual and Code of Ethics

Appendix 1D – Firmwide Employee Organizational Chart

FORM ADV

UNIFORM APPLICATION FOR INVESTMENT ADVISER REGISTRATION AND REPORT BY EXEMPT REPORTING ADVISERS

Primary Business Name: AKSIA LLC	CRD Number: 143422
Annual Amendment - All Sections	Rev. 10/2017
3/26/2020 7:38:54 PM	

WARNING: Complete this form truthfully. False statements or omissions may result in denial of your application, revocation of your registration, or criminal prosecution. You must keep this form updated by filing periodic amendments. See Form ADV General Instruction 4.

Item 1 Identifying Information

Responses to this Item tell us who you are, where you are doing business, and how we can contact you. If you are filing an *umbrella registration*, the information in Item 1 should be provided for the *filing adviser* only. General Instruction 5 provides information to assist you with filing an *umbrella registration*.

A. Your full legal name (if you are a sole proprietor, your last, first, and middle names):
AKSIA LLC

B. (1) Name under which you primarily conduct your advisory business, if different from Item 1.A.
AKSIA LLC

List on Section 1.B. of Schedule D any additional names under which you conduct your advisory business.

(2) If you are using this Form ADV to register more than one investment adviser under an *umbrella registration*, check this box ☐

If you check this box, complete a Schedule R for each relying adviser.

C. If this filing is reporting a change in your legal name (Item 1.A.) or primary business name (Item 1.B.(1)), enter the new name and specify whether the name change is of
☐ your legal name or ☐ your primary business name:

D. (1) If you are registered with the SEC as an investment adviser, your SEC file number: 801-67661

(2) If you report to the SEC as an *exempt reporting adviser*, your SEC file number:

(3) If you have one or more Central Index Key numbers assigned by the SEC ("CIK Numbers"), all of your CIK numbers:
No Information Filed

E. (1) If you have a number ("CRD Number") assigned by the *FINRA*'s *CRD* system or by the IARD system, your *CRD* number: 143422

If your firm does not have a *CRD* number, skip this Item 1.E. Do not provide the *CRD* number of one of your officers, employees, or affiliates.

(2) If you have additional *CRD* Numbers, your additional *CRD* numbers:
No Information Filed

F. Principal Office and Place of Business

(1) Address (do not use a P.O. Box):

Number and Street 1:
599 LEXINGTON AVENUE
City:
NEW YORK

State:
New York

Number and Street 2:
FLOOR 37
Country:
United States

ZIP+4/Postal Code:
10022

If this address is a private residence, check this box: ☐

List on Section 1.F. of Schedule D any office, other than your principal office and place of business, at which you conduct investment advisory business. If you are applying for registration, or are registered, with one or more state securities authorities, you must list all of your offices in the state or states to which you are applying for registration or with whom you are registered. If you are applying for SEC registration, if you are registered only with the SEC, or if you are reporting to the SEC as an exempt reporting adviser, list the largest twenty-five offices in terms of numbers of employees as of the end of your most recently completed fiscal year.

(2) Days of week that you normally conduct business at your principal office and place of business:
☒ Monday - Friday ☐ Other:

Normal business hours at this location:
9:00-6:00

(3) Telephone number at this location:
212-710-5710

(4) Facsimile number at this location, if any:
212-710-5711

(5) What is the total number of offices, other than your principal office and place of business, at which you conduct investment advisory business as of the end of your most recently completed fiscal year?
2

Intended Recipient: Pennsylvania School Employees' Retirement System

PRIVATE & CONFIDENTIAL

G. Mailing address, if different from your *principal office and place of business* address:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

H. If you are a sole proprietor, state your full residence address, if different from your *principal office and place of business* address in Item 1.F.:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

I. Do you have one or more websites or accounts on publicly available social media platforms (including, but not limited to, Twitter, Facebook and LinkedIn)?

YesNo

If "yes," list all firm website addresses and the address for each of the firm's accounts on publicly available social media platforms on Section 1.I. of Schedule D. If a website address serves as a portal through which to access other information you have published on the web, you may list the portal without listing addresses for all of the other information. You may need to list more than one portal address. Do not provide the addresses of websites or accounts on publicly available social media platforms where you do not control the content. Do not provide the individual electronic mail (e-mail) addresses of employees or the addresses of employee accounts on publicly available social media platforms.

J. Chief Compliance Officer

(1) Provide the name and contact information of your Chief Compliance Officer. If you are an *exempt reporting adviser*, you must provide the contact information for your Chief Compliance Officer, if you have one. If not, you must complete Item 1.K. below.

Name:

Other titles, if any:

Telephone number:

Facsimile number, if any:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

Electronic mail (e-mail) address, if Chief Compliance Officer has one:

(2) If your Chief Compliance Officer is compensated or employed by any *person* other than you, a *related person* or an investment company registered under the Investment Company Act of 1940 that you advise for providing chief compliance officer services to you, provide the *person's* name and IRS Employer Identification Number (if any):

Name:

IRS Employer Identification Number:

K. Additional Regulatory Contact Person: If a person other than the Chief Compliance Officer is authorized to receive information and respond to questions about this Form ADV, you may provide that information here.

Name:

Titles:

Telephone number:

Facsimile number, if any:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

Electronic mail (e-mail) address, if contact person has one:

L. Do you maintain some or all of the books and records you are required to keep under Section 204 of the Advisers Act, or similar state law, somewhere other than your *principal office and place of business*?

YesNo

If "yes," complete Section 1.L. of Schedule D.

M. Are you registered with a *foreign financial regulatory authority*?

YesNo

Answer "no" if you are not registered with a *foreign financial regulatory authority*, even if you have an affiliate that is registered with a *foreign financial regulatory authority*. If "yes," complete Section 1.M. of Schedule D.

N. Are you a public reporting company under Sections 12 or 15(d) of the Securities Exchange Act of 1934?

YesNo

O. Did you have \$1 billion or more in assets on the last day of your most recent fiscal year?

If yes, what is the approximate amount of your assets:

YesNo

☐ \$1 billion to less than \$10 billion

☐ \$10 billion to less than \$50 billion

☐ \$50 billion or more

For purposes of Item 1.O. only, "assets" refers to your total assets, rather than the assets you manage on behalf of clients. Determine your total assets using the total assets shown on the balance sheet for your most recent fiscal year end.

P. Provide your *Legal Entity Identifier* if you have one:
254900C4HFOS6G66LO17

A *legal entity identifier* is a unique number that companies use to identify each other in the financial marketplace. You may not have a *legal entity identifier*.

SECTION 1.B. Other Business Names

No Information Filed

SECTION 1.F. Other Offices

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest twenty-five offices (in terms of numbers of *employees*).

Number and Street 1: 80 ORVILLE DRIVE		Number and Street 2: SUITE 100	
City: BOHEMIA	State: New York	Country: United States	ZIP+4/Postal Code: 11716

If this address is a private residence, check this box: ☐

Telephone Number: 631-244-1485	Facsimile Number, if any:
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If this office location is also required to be registered with FINRA or a *state securities authority* as a branch office location for a broker-dealer or investment adviser on the Uniform Branch Office Registration Form (Form BR), please provide the *CRD* Branch Number here:

How many *employees* perform investment advisory functions from this office location?
3

- Are other business activities conducted at this office location? (check all that apply)
- ☐ (1) Broker-dealer (registered or unregistered)
 - ☐ (2) Bank (including a separately identifiable department or division of a bank)
 - ☐ (3) Insurance broker or agent
 - ☐ (4) Commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
 - ☐ (5) Registered municipal advisor
 - ☐ (6) Accountant or accounting firm
 - ☐ (7) Lawyer or law firm

Describe any other *investment-related* business activities conducted from this office location:

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest twenty-five offices (in terms of numbers of *employees*).

Number and Street 1: 6425 LIVING PLACE, 2ND FLOOR		Number and Street 2: SUITE 2078	
City: PITTSBURGH	State: Pennsylvania	Country: United States	ZIP+4/Postal Code: 15206

If this address is a private residence, check this box: ☐

Telephone Number: 212-710-5766	Facsimile Number, if any:
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If this office location is also required to be registered with FINRA or a *state securities authority* as a branch office location for a broker-dealer or investment adviser on the Uniform

How many *employees* perform investment advisory functions from this office location?
1

- Are other business activities conducted at this office location? (check all that apply)
- ☐ (1) Broker-dealer (registered or unregistered)
 - ☐ (2) Bank (including a separately identifiable department or division of a bank)
 - ☐ (3) Insurance broker or agent
 - ☐ (4) Commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
 - ☐ (5) Registered municipal advisor
 - ☐ (6) Accountant or accounting firm
 - ☐ (7) Lawyer or law firm

Describe any other *investment-related* business activities conducted from this office location:

SECTION 1.I. Website Addresses

List your website addresses, including addresses for accounts on publicly available social media platforms where you control the content (including, but not limited to, Twitter, Facebook and/or LinkedIn). You must complete a separate Schedule D Section 1.I. for each website or account on a publicly available social media platform.

Address of Website/Account on Publicly Available Social Media Platform: HTTPS://MAX.AKSIA.COM

Address of Website/Account on Publicly Available Social Media Platform: HTTP://WWW.AKSIA.COM

Address of Website/Account on Publicly Available Social Media Platform: HTTPS://WWW.MANAGERPORTAL.COM

Address of Website/Account on Publicly Available Social Media Platform: HTTPS://WWW.LINKEDIN.COM/COMPANY/AKSIA/

SECTION 1.L. Location of Books and Records

Complete the following information for each location at which you keep your books and records, other than your *principal office and place of business*. You must complete a separate Schedule D, Section 1.L. for each location.

Name of entity where books and records are kept:
STATE STREET FUND SERVICES INC.

Number and Street 1: STATE STREET FINANCIAL CENTER	Number and Street 2: ONE LINCOLN STREET, SFC10
City: BOSTON	State: Massachusetts
Country: United States	ZIP+4/Postal Code: 02111

If this address is a private residence, check this box: ☐

Telephone Number:
617-786-3000

Facsimile number, if any:

This is (check one):

- ☐ one of your branch offices or affiliates.
- ☒ a third-party unaffiliated recordkeeper.
- ☐ other.

Briefly describe the books and records kept at this location.
ADMINISTRATIVE BOOKS AND RECORDS FOR CERTAIN CLIENTS.

Number and Street 1:
17 DOMINION STREET

City:
LONDON EC3M 2EF

State:

Country:
United Kingdom

Number and Street 2:

ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

Telephone Number:
4402074100125

Facsimile number, if any:

- This is (check one):
- ☐ one of your branch offices or affiliates.
 - ☒ a third-party unaffiliated recordkeeper.
 - ☐ other.

Briefly describe the books and records kept at this location.
ADMINISTRATIVE BOOKS AND RECORDS FOR CERTAIN CLIENTS.

Name of entity where books and records are kept:
AKSIA EUROPE LIMITED

Number and Street 1:
55 ST. JAMES'S STREET

City:
LONDON

State:

Country:
United Kingdom

Number and Street 2:
FIRST FLOOR

ZIP+4/Postal Code:
SW1A1LA

If this address is a private residence, check this box: ☐

Telephone Number:
442034716060

Facsimile number, if any:

- This is (check one):
- ☒ one of your branch offices or affiliates.
 - ☐ a third-party unaffiliated recordkeeper.
 - ☐ other.

Briefly describe the books and records kept at this location.
EUROPE-RELATED RESEARCH, ADVISORY, AND ADMINISTRATIVE FILES

Name of entity where books and records are kept:
AKSIA JAPAN CO., LTD.

Number and Street 1:
313 MINAMI AOYAMA BLDG. 8F

City:
TOKYO

State:

Country:
Japan

Number and Street 2:
3-13-18 MINAMI AOYAMA, MINATO-KU

ZIP+4/Postal Code:
107-0062

If this address is a private residence, check this box: ☐

Telephone Number:
81-3-5771-6900

Facsimile number, if any:
81-3-5771-6906

- This is (check one):
- ☒ one of your branch offices or affiliates.
 - ☐ a third-party unaffiliated recordkeeper.
 - ☐ other.

Name of entity where books and records are kept:
GLOBAL RELAY COMMUNICATIONS INC.

Number and Street 1: 220 CAMBIE STREET		Number and Street 2: FLOOR 2	
City: VANCOUVER	State:	Country: Canada	ZIP+4/Postal Code: V6B 2M9

If this address is a private residence, check this box: ☐

Telephone Number: 604-484-6630	Facsimile number, if any:
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- This is (check one):
- ☐ one of your branch offices or affiliates.
 - ☒ a third-party unaffiliated recordkeeper.
 - ☐ other.

Briefly describe the books and records kept at this location.
ELECTRONIC MAIL AND OTHER ELECTRONIC MESSAGES

Name of entity where books and records are kept:
UNITRENDS

Number and Street 1: 199 AVE B NORTHWEST		Number and Street 2:	
City: WINTER HAVEN	State: Florida	Country: United States	ZIP+4/Postal Code: 33881

If this address is a private residence, check this box: ☐

Telephone Number: (803) 454-0308	Facsimile number, if any:
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- This is (check one):
- ☐ one of your branch offices or affiliates.
 - ☒ a third-party unaffiliated recordkeeper.
 - ☐ other.

Briefly describe the books and records kept at this location.
ELECTRONIC BOOKS AND RECORDS

Name of entity where books and records are kept:
THE BANK OF NEW YORK MELLON CORPORATION

Number and Street 1: 101 BARCLAY STREET		Number and Street 2:	
City: NEW YORK	State: New York	Country: United States	ZIP+4/Postal Code: 10286

If this address is a private residence, check this box: ☐

Telephone Number: 212-763-4900	Facsimile number, if any:
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Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

This is (check one):

- ☐ one of your branch offices or affiliates.
- ☒ a third-party unaffiliated recordkeeper.
- ☐ other.

Briefly describe the books and records kept at this location.
ADMINISTRATIVE BOOKS AND RECORDS FOR PRIVATE FUNDS

Name of entity where books and records are kept:
AKSIA INFORMATION TECHNOLOGY PC

Number and Street 1: 17TH KM. NATIONAL ROAD		Number and Street 2: ATHENS-LAMIA & FINIKOS STR. NEA KIFISIA	
City: ATHENS	State:	Country: Greece	ZIP+4/Postal Code: 14564

If this address is a private residence, check this box: ☐

Telephone Number: 30-210-6257122	Facsimile number, if any:
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- This is (check one):
- ☒ one of your branch offices or affiliates.
 - ☐ a third-party unaffiliated recordkeeper.
 - ☐ other.

Briefly describe the books and records kept at this location.
RESEARCH, ADVISORY, AND ADMINISTRATIVE FILES.

Name of entity where books and records are kept:
AKSIA HONG KONG LIMITED

Number and Street 1: UNIT 18, 43/F, CHAMPION TOWER		Number and Street 2: 3 GARDEN ROAD	
City: CENTRAL	State:	Country: Hong Kong	ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

Telephone Number: 852 2168 0615	Facsimile number, if any:
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- This is (check one):
- ☒ one of your branch offices or affiliates.
 - ☐ a third-party unaffiliated recordkeeper.
 - ☐ other.

Briefly describe the books and records kept at this location.
ASIA-RELATED RESEARCH, ADVISORY, AND ADMINISTRATIVE FILES

Name of entity where books and records are kept:
IRON MOUNTAIN INC.

Number and Street 1: 100 HARBOR DRIVE		Number and Street 2:	
City: JERSEY CITY	State: New Jersey	Country: United States	ZIP+4/Postal Code: 07305

If this address is a private residence, check this box: ☐

Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

This is (check one):

☐ one of your branch offices or affiliates.

☒ a third-party unaffiliated recordkeeper.

☐ other.

Briefly describe the books and records kept at this location.

RESEARCH, ADVISORY, AND ADMINISTRATIVE FILES

Name of entity where books and records are kept:

THE NORTHERN TRUST COMPANY

Number and Street 1:
50 SOUTH LASALLE STREET

Number and Street 2:

City:
CHICAGO

State:
Illinois

Country:
United States

ZIP+4/Postal Code:
60603

If this address is a private residence, check this box: ☐

Telephone Number:
(312) 630-6000

Facsimile number, if any:

This is (check one):

☐ one of your branch offices or affiliates.

☒ a third-party unaffiliated recordkeeper.

☐ other.

Briefly describe the books and records kept at this location.

ADMINISTRATIVE BOOKS AND RECORDS FOR CERTAIN CLIENTS.

Name of entity where books and records are kept:

EGNYTE

Number and Street 1:
1350 W MIDDLEFIELD RD

Number and Street 2:

City:
MOUNTAIN VIEW

State:
California

Country:
United States

ZIP+4/Postal Code:
94043

If this address is a private residence, check this box: ☐

Telephone Number:
1-877-734-6983

Facsimile number, if any:

This is (check one):

☐ one of your branch offices or affiliates.

☒ a third-party unaffiliated recordkeeper.

☐ other.

Briefly describe the books and records kept at this location.

ELECTRONIC BOOKS AND RECORDS.

Name of entity where books and records are kept:

MUFG ALTERNATIVE FUND SERVICES (CAYMAN) LIMITED

Number and Street 1:
MUFG HOUSE - 227 ELGIN AVE

Number and Street 2:
PO 852

Intended Recipient: Pennsylvania School Employees' Retirement System

If this address is a private residence, check this box: ☐

Telephone Number:
3459141000

Facsimile number, if any:

- This is (check one):
- ☐ one of your branch offices or affiliates.
- ☒ a third-party unaffiliated recordkeeper.
- ☐ other.

Briefly describe the books and records kept at this location.
ADMINISTRATIVE BOOKS AND RECORDS FOR CERTAIN CLIENTS.

SECTION 1.M. Registration with Foreign Financial Regulatory Authorities

No Information Filed

Item 2 SEC Registration/Reporting

Responses to this Item help us (and you) determine whether you are eligible to register with the SEC. Complete this Item 2.A. only if you are applying for SEC registration or submitting an *annual updating amendment* to your SEC registration. If you are filing an *umbrella registration*, the information in Item 2 should be provided for the *filing adviser* only.

- A. To register (or remain registered) with the SEC, you must check **at least one** of the Items 2.A.(1) through 2.A.(12), below. If you are submitting an *annual updating amendment* to your SEC registration and you are no longer eligible to register with the SEC, check Item 2.A.(13). Part 1A Instruction 2 provides information to help you determine whether you may affirmatively respond to each of these items.
- You (the adviser):
- ☒ (1) are a **large advisory firm** that either:

(a) has regulatory assets under management of \$100 million (in U.S. dollars) or more; or

(b) has regulatory assets under management of \$90 million (in U.S. dollars) or more at the time of filing its most recent *annual updating amendment* and is registered with the SEC;

☐ (2) are a **mid-sized advisory firm** that has regulatory assets under management of \$25 million (in U.S. dollars) or more but less than \$100 million (in U.S. dollars) and you are either:

(a) not required to be registered as an adviser with the *state securities authority* of the state where you maintain your *principal office and place of business*; or

(b) not subject to examination by the *state securities authority* of the state where you maintain your *principal office and place of business*;

Click **HERE** for a list of states in which an investment adviser, if registered, would not be subject to examination by the state securities authority.

(3) Reserved

☐ (4) have your *principal office and place of business* **outside the United States**;

☐ (5) are an **investment adviser (or subadviser) to an investment company** registered under the Investment Company Act of 1940;

☐ (6) are an **investment adviser to a company which has elected to be a business development company** pursuant to section 54 of the Investment Company Act of 1940 and has not withdrawn the election, and you have at least \$25 million of regulatory assets under management;

☐ (7) are a **pension consultant** with respect to assets of plans having an aggregate value of at least \$200,000,000 that qualifies for the exemption in rule 203A-2(a);

☐ (8) are a **related adviser** under rule 203A-2(b) that *controls*, is *controlled* by, or is under common *control* with, an investment adviser that is registered with the SEC, and your *principal office and place of business* is the same as the registered adviser;

If you check this box, complete Section 2.A.(8) of Schedule D.

☐ (9) are an **adviser** relying on rule 203A-2(c) because you **expect to be eligible for SEC registration within 120 days**;

If you check this box, complete Section 2.A.(9) of Schedule D.

☐ (10) are a **multi-state adviser** that is required to register in 15 or more states and is relying on rule 203A-2(d);

If you check this box, complete Section 2.A.(10) of Schedule D.

☐ (11) are an **Internet adviser** relying on rule 203A-2(e);

☐ (12) have **received an SEC order** exempting you from the prohibition against registration with the SEC;

If you check this box, complete Section 2.A.(12) of Schedule D.

☐ (13) are **no longer eligible** to remain registered with the SEC.

Intended Recipient: Pennsylvania School Employees' Retirement System

PRIVATE & CONFIDENTIAL

State Securities Authority Notice Filings and State Reporting by Exempt Reporting Advisers

C. Under state laws, SEC-registered advisers may be required to provide to *state securities authorities* a copy of the Form ADV and any amendments they file with the SEC. These are called *notice filings*. In addition, *exempt reporting advisers* may be required to provide *state securities authorities* with a copy of reports and any amendments they file with the SEC. If this is an initial application or report, check the box(es) next to the state(s) that you would like to receive notice of this and all subsequent filings or reports you submit to the SEC. If this is an amendment to direct your *notice filings* or reports to additional state(s), check the box(es) next to the state(s) that you would like to receive notice of this and all subsequent filings or reports you submit to the SEC. If this is an amendment to your registration to stop your *notice filings* or reports from going to state(s) that currently receive them, uncheck the box(es) next to those state(s).

Jurisdictions

<input type="checkbox"/> AL	<input type="checkbox"/> IL	<input type="checkbox"/> NE	<input type="checkbox"/> SC
<input type="checkbox"/> AK	<input type="checkbox"/> IN	<input type="checkbox"/> NV	<input type="checkbox"/> SD
<input type="checkbox"/> AZ	<input type="checkbox"/> IA	<input type="checkbox"/> NH	<input type="checkbox"/> TN
<input type="checkbox"/> AR	<input type="checkbox"/> KS	<input type="checkbox"/> NJ	<input type="checkbox"/> TX
<input type="checkbox"/> CA	<input type="checkbox"/> KY	<input type="checkbox"/> NM	<input type="checkbox"/> UT
<input type="checkbox"/> CO	<input type="checkbox"/> LA	<input checked="" type="checkbox"/> NY	<input type="checkbox"/> VT
<input type="checkbox"/> CT	<input type="checkbox"/> ME	<input type="checkbox"/> NC	<input type="checkbox"/> VI
<input type="checkbox"/> DE	<input type="checkbox"/> MD	<input type="checkbox"/> ND	<input type="checkbox"/> VA
<input type="checkbox"/> DC	<input type="checkbox"/> MA	<input type="checkbox"/> OH	<input type="checkbox"/> WA
<input type="checkbox"/> FL	<input type="checkbox"/> MI	<input type="checkbox"/> OK	<input type="checkbox"/> WY
<input type="checkbox"/> GA	<input type="checkbox"/> MN	<input type="checkbox"/> OR	
<input type="checkbox"/> GU	<input type="checkbox"/> MS	<input type="checkbox"/> PA	
<input type="checkbox"/> HI	<input type="checkbox"/> MO	<input type="checkbox"/> PR	
<input type="checkbox"/> ID	<input type="checkbox"/> MT	<input type="checkbox"/> RI	

If you are amending your registration to stop your notice filings or reports from going to a state that currently receives them and you do not want to pay that state's notice filing or report filing fee for the coming year, your amendment must be filed before the end of the year (December 31).

SECTION 2.A.(8) Related Adviser

If you are relying on the exemption in rule 203A-2(b) from the prohibition on registration because you *control*, are *controlled* by, or are under common *control* with an investment adviser that is registered with the SEC and your *principal office and place of business* is the same as that of the registered adviser, provide the following information:

Name of Registered Investment Adviser

CRD Number of Registered Investment Adviser

SEC Number of Registered Investment Adviser
-

SECTION 2.A.(9) Investment Adviser Expecting to be Eligible for Commission Registration within 120 Days

If you are relying on rule 203A-2(c), the exemption from the prohibition on registration available to an adviser that expects to be eligible for SEC registration within 120 days, you are required to make certain representations about your eligibility for SEC registration. By checking the appropriate boxes, you will be deemed to have made the required representations. You must make both of these representations:

- ☐ I am not registered or required to be registered with the SEC or a *state securities authority* and I have a reasonable expectation that I will be eligible to register with the SEC within 120 days after the date my registration with the SEC becomes effective.
- ☐ I undertake to withdraw from SEC registration if, on the 120th day after my registration with the SEC becomes effective, I would be prohibited by Section 203A(a) of the Advisers Act from registering with the SEC.

SECTION 2.A.(10) Multi-State Adviser

If you are relying on rule 203A-2(d), the multi-state adviser exemption from the prohibition on registration, you are required to make certain representations about your eligibility for SEC registration. By checking the appropriate boxes, you will be deemed to have made the required representations.

If you are applying for registration as an investment adviser with the SEC, you must make both of these representations:

- ☐ I have reviewed the applicable state and federal laws and have concluded that I am required by the laws of 15 or more states to register as an investment adviser with the *state securities authorities* in those states.
- ☐ I undertake to withdraw from SEC registration if I file an amendment to this registration indicating that I would be required by the laws of fewer than 15 states to register as an investment adviser with the *state securities authorities* of those states.

If you are submitting your *annual updating amendment*, you must make this representation:

- ☐ Within 90 days prior to the date of filing this amendment, I have reviewed the applicable state and federal laws and have concluded that I am required by the laws of at least 15 states to register as an investment adviser with the *state securities authorities* in those states.

SECTION 2.A.(12) SEC Exemptive Order

If you are relying upon an SEC order exempting you from the prohibition on registration, provide the following information:

Application Number:
803-

Date of order:

Item 3 Form of Organization

If you are filing an umbrella registration, the information in Item 3 should be provided for the filing adviser only.

- A. How are you organized?
- ☐ Corporation
- ☐ Sole Proprietorship
- ☐ Limited Liability Partnership (LLP)
- ☐ Partnership
- ☒ Limited Liability Company (LLC)
- ☐ Limited Partnership (LP)
- ☐ Other (specify):

If you are changing your response to this Item, see Part 1A Instruction 4.

- B. In what month does your fiscal year end each year?
DECEMBER

- C. Under the laws of what state or country are you organized?
- StateCountry
- DelawareUnited States

If you are a partnership, provide the name of the state or country under whose laws your partnership was formed. If you are a sole proprietor, provide the name of the state or country where you reside.

If you are changing your response to this Item, see Part 1A Instruction 4.

Item 4 Successions

- YesNo
- A. Are you, at the time of this filing, succeeding to the business of a registered investment adviser, including, for example, a change of your structure or legal status (e.g., form of organization or state of incorporation)?
- ☐☒

If "yes", complete Item 4.B. and Section 4 of Schedule D.

- B. Date of Succession: (MM/DD/YYYY)

If you have already reported this succession on a previous Form ADV filing, do not report the succession again. Instead, check "No." See Part 1A Instruction 4.

SECTION 4 Successions

No Information Filed

Item 5 Information About Your Advisory Business - Employees, Clients, and Compensation

Responses to this Item help us understand your business, assist us in preparing for on-site examinations, and provide us with data we use when making regulatory policy. Part 1A Instruction 5.a. provides additional guidance to newly formed advisers for completing this Item 5.

Employees

Intended Recipient: Pennsylvania School Employees' Retirement System

If you are organized as a sole proprietorship, include yourself as an employee in your responses to Item 5.A. and Items 5.B.(1), (2), (3), (4), and (5). If an employee performs more

A. Approximately how many *employees* do you have? Include full- and part-time *employees* but do not include any clerical workers.

82

B. (1) Approximately how many of the *employees* reported in 5.A. perform investment advisory functions (including research)?

63

(2) Approximately how many of the *employees* reported in 5.A. are registered representatives of a broker-dealer?

0

(3) Approximately how many of the *employees* reported in 5.A. are registered with one or more *state securities authorities* as *investment adviser representatives*?

0

(4) Approximately how many of the *employees* reported in 5.A. are registered with one or more *state securities authorities* as *investment adviser representatives* for an investment adviser other than you?

0

(5) Approximately how many of the *employees* reported in 5.A. are licensed agents of an insurance company or agency?

0

(6) Approximately how many firms or other *persons* solicit advisory *clients* on your behalf?

1

In your response to Item 5.B.(6), do not count any of your employees and count a firm only once – do not count each of the firm's employees that solicit on your behalf.

Clients

In your responses to Items 5.C. and 5.D. do not include as "clients" the investors in a private fund you advise, unless you have a separate advisory relationship with those investors.

C. (1) To approximately how many *clients* for whom you do not have regulatory assets under management did you provide investment advisory services during your most recently completed fiscal year?

41

(2) Approximately what percentage of your *clients* are non-United States persons?

55%

D. For purposes of this Item 5.D., the category "individuals" includes trusts, estates, and 401(k) plans and IRAs of individuals and their family members, but does not include businesses organized as sole proprietorships.

The category "business development companies" consists of companies that have made an election pursuant to section 54 of the Investment Company Act of 1940. Unless you provide advisory services pursuant to an investment advisory contract to an investment company registered under the Investment Company Act of 1940, do not answer (d)(1) or (d)(3) below.

Indicate the approximate number of your *clients* and amount of your total regulatory assets under management (reported in Item 5.F. below) attributable to each of the following type of *client*. If you have fewer than 5 *clients* in a particular category (other than (d), (e), and (f)) you may check Item 5.D.(2) rather than respond to Item 5.D.(1).

The aggregate amount of regulatory assets under management reported in Item 5.D.(3) should equal the total amount of regulatory assets under management reported in Item 5.F.(2)(c) below.

If a *client* fits into more than one category, select one category that most accurately represents the *client* to avoid double counting *clients* and assets. If you advise a registered investment company, business development company, or pooled investment vehicle, report those assets in categories (d), (e), and (f) as applicable.

Type of Client	(1) Number of Client(s)	(2) Fewer than 5 Clients	(3) Amount of Regulatory Assets under Management
(a) Individuals (other than <i>high net worth individuals</i>)	0	<input type="checkbox"/>	\$ 0
(b) <i>High net worth individuals</i>	0	<input type="checkbox"/>	\$ 0
(c) Banking or thrift institutions		<input checked="" type="checkbox"/>	\$ 4,326,829,233
(d) Investment companies	0		\$ 0
(e) Business development companies	0		\$ 0
(f) Pooled investment vehicles (other than investment companies and business development companies)	3		\$ 513,558,720
(g) Pension and profit sharing plans (but not the plan participants or government pension plans)	8	<input type="checkbox"/>	\$ 2,905,778,919
(h) Charitable organizations	0	<input type="checkbox"/>	\$ 0
(i) State or municipal <i>government entities</i> (including government pension plans)		<input checked="" type="checkbox"/>	\$ 277,953,816
(j) Other investment advisers	0	<input type="checkbox"/>	\$ 0
(k) Insurance companies	8	<input type="checkbox"/>	\$ 818,169,644
(l) Sovereign wealth funds and foreign official institutions		<input checked="" type="checkbox"/>	\$ 1,817,327,987
(m) Corporations or other businesses not listed above	0	<input checked="" type="checkbox"/>	\$ 27,824,314

Compensation Arrangements

E. You are compensated for your investment advisory services by (check all that apply):

- ☒ (1) A percentage of assets under your management
- ☐ (2) Hourly charges
- ☐ (3) Subscription fees (for a newsletter or periodical)
- ☒ (4) Fixed fees (other than subscription fees)
- ☐ (5) Commissions
- ☒ (6) Performance-based fees
- ☐ (7) Other (specify):

Item 5 Information About Your Advisory Business - Regulatory Assets Under Management

Regulatory Assets Under Management

F. (1) Do you provide continuous and regular supervisory or management services to securities portfolios?

YesNo

☒☐

(2) If yes, what is the amount of your regulatory assets under management and total number of accounts?

	U.S. Dollar Amount	Total Number of Accounts
Discretionary:	(a) \$ 8,147,886,946	(d) 19
Non-Discretionary:	(b) \$ 2,539,555,687	(e) 5
Total:	(c) \$ 10,687,442,633	(f) 24

Part 1A Instruction 5.b. explains how to calculate your regulatory assets under management. You must follow these instructions carefully when completing this Item.

(3) What is the approximate amount of your total regulatory assets under management (reported in Item 5.F.(2)(c) above) attributable to clients who are non-United States persons?

\$ 9,941,205,095

Item 5 Information About Your Advisory Business - Advisory Activities

Advisory Activities

G. What type(s) of advisory services do you provide? Check all that apply.

- ☐ (1) Financial planning services
- ☐ (2) Portfolio management for individuals and/or small businesses
- ☐ (3) Portfolio management for investment companies (as well as "business development companies" that have made an election pursuant to section 54 of the Investment Company Act of 1940)
- ☒ (4) Portfolio management for pooled investment vehicles (other than investment companies)
- ☒ (5) Portfolio management for businesses (other than small businesses) or institutional clients (other than registered investment companies and other pooled investment vehicles)
- ☒ (6) Pension consulting services
- ☒ (7) Selection of other advisers (including private fund managers)
- ☐ (8) Publication of periodicals or newsletters
- ☐ (9) Security ratings or pricing services
- ☐ (10) Market timing services
- ☐ (11) Educational seminars/workshops
- ☒ (12) Other(specify): NON-ADVISORY RESEARCH ON ALTERNATIVE INVESTMENT STRATEGIES

Do not check Item 5.G.(3) unless you provide advisory services pursuant to an investment advisory contract to an investment company registered under the Investment Company Act of 1940, including as a subadviser. If you check Item 5.G.(3), report the 811 or 814 number of the investment company or investment companies to which you provide advice in Section 5.G.(3) of Schedule D.

H. If you provide financial planning services, to how many clients did you provide these services during your last fiscal year?

- ☒ 0
- ☐ 1 - 10
- ☐ 11 - 25
- ☐ 26 - 50
- ☐ 51 - 100
- ☐ 101 - 250
- ☐ 251 - 500
- ☐ More than 500
- If more than 500, how many?
(round to the nearest 500)

- I. (1) Do you participate in a *wrap fee program*?
- (2) If you participate in a *wrap fee program*, what is the amount of your regulatory assets under management attributable to acting as:

(a) *sponsor* to a *wrap fee program*
\$

(b) portfolio manager for a *wrap fee program*?
\$

(c) *sponsor* to and portfolio manager for the same *wrap fee program*?
\$
- If you report an amount in Item 5.I.(2)(c), do not report that amount in Item 5.I.(2)(a) or Item 5.I.(2)(b).
- If you are a portfolio manager for a wrap fee program, list the names of the programs, their sponsors and related information in Section 5.I.(2) of Schedule D.
- If your involvement in a wrap fee program is limited to recommending wrap fee programs to your clients, or you advise a mutual fund that is offered through a wrap fee program, do not check Item 5.I.(1) or enter any amounts in response to Item 5.I.(2).
- J. (1) In response to Item 4.B. of Part 2A of Form ADV, do you indicate that you provide investment advice only with respect to limited types of investments?

(2) Do you report *client* assets in Item 4.E. of Part 2A that are computed using a different method than the method used to compute your regulatory assets under management?
- K. Separately Managed Account *Clients*
- (1) Do you have regulatory assets under management attributable to *clients* other than those listed in Item 5.D.(3)(d)-(f) (separately managed account *clients*)?
- If yes, complete Section 5.K.(1) of Schedule D.
- (2) Do you engage in borrowing transactions on behalf of any of the separately managed account *clients* that you advise?
- If yes, complete Section 5.K.(2) of Schedule D.
- (3) Do you engage in derivative transactions on behalf of any of the separately managed account *clients* that you advise?
- If yes, complete Section 5.K.(2) of Schedule D.
- (4) After subtracting the amounts in Item 5.D.(3)(d)-(f) above from your total regulatory assets under management, does any custodian hold ten percent or more of this remaining amount of regulatory assets under management?
- If yes, complete Section 5.K.(3) of Schedule D for each custodian.
- SECTION 5.G.(3) Advisers to Registered Investment Companies and Business Development Companies
- No Information Filed
- SECTION 5.I.(2) Wrap Fee Programs
- No Information Filed
- SECTION 5.K.(1) Separately Managed Accounts
- After subtracting the amounts reported in Item 5.D.(3)(d)-(f) from your total regulatory assets under management, indicate the approximate percentage of this remaining amount attributable to each of the following categories of assets. If the remaining amount is at least \$10 billion in regulatory assets under management, complete Question (a). If the remaining amount is less than \$10 billion in regulatory assets under management, complete Question (b).
- Any regulatory assets under management reported in Item 5.D.(3)(d), (e), and (f) should not be reported below.
- If you are a subadviser to a separately managed account, you should only provide information with respect to the portion of the account that you subadvise.
- End of year refers to the date used to calculate your regulatory assets under management for purposes of your *annual updating amendment* . Mid-year is the date six months before the end of year date. Each column should add up to 100% and numbers should be rounded to the nearest percent.
- Investments in derivatives, registered investment companies, business development companies, and pooled investment vehicles should be reported in those categories. Do not report those investments based on related or underlying portfolio assets. Cash equivalents include bank deposits, certificates of deposit, bankers' acceptances and similar bank instruments.
- Some assets could be classified into more than one category or require discretion about which category applies. You may use your own internal methodologies and the conventions of your service providers in determining how to categorize assets, so long as the methodologies or conventions are consistently applied and consistent with information you report
- Intended Recipient: Pennsylvania School Employees' Retirement System
- Private & Confidential

(a)

Asset Type	Mid-year	End of year
(i) Exchange-Traded Equity Securities	0 %	0 %
(ii) Non Exchange-Traded Equity Securities	0 %	0 %
(iii) U.S. Government/Agency Bonds	0 %	0 %
(iv) U.S. State and Local Bonds	0 %	0 %
(v) Sovereign Bonds	0 %	0 %
(vi) Investment Grade Corporate Bonds	0 %	0 %
(vii) Non-Investment Grade Corporate Bonds	0 %	0 %
(viii) Derivatives	0 %	0 %
(ix) Securities Issued by Registered Investment Companies or Business Development Companies	0 %	0 %
(x) Securities Issued by Pooled Investment Vehicles (other than Registered Investment Companies or Business Development Companies)	98 %	98 %
(xi) Cash and Cash Equivalents	2 %	2 %
(xii) Other	0 %	0 %

Generally describe any assets included in "Other"

(b)

Asset Type	End of year
(i) Exchange-Traded Equity Securities	%
(ii) Non Exchange-Traded Equity Securities	%
(iii) U.S. Government/Agency Bonds	%
(iv) U.S. State and Local Bonds	%
(v) Sovereign Bonds	%
(vi) Investment Grade Corporate Bonds	%
(vii) Non-Investment Grade Corporate Bonds	%
(viii) Derivatives	%
(ix) Securities Issued by Registered Investment Companies or Business Development Companies	%
(x) Securities Issued by Pooled Investment Vehicles (other than Registered Investment Companies or Business Development Companies)	%
(xi) Cash and Cash Equivalents	%
(xii) Other	%

Generally describe any assets included in "Other"

SECTION 5.K.(2) Separately Managed Accounts - Use of Borrowingsand Derivatives

☐ No information is required to be reported in this Section 5.K.(2) per the instructions of this Section 5.K.(2)

If your regulatory assets under management attributable to separately managed accounts are at least \$10 billion, you should complete Question (a). If your regulatory assets under management attributable to separately managed accounts are at least \$500 million but less than \$10 billion, you should complete Question (b).

(a) In the table below, provide the following information regarding the separately managed accounts you advise. If you are a subadviser to a separately managed account, you should only provide information with respect to the portion of the account that you subadvise. End of year refers to the date used to calculate your regulatory assets under management for purposes of your *annual updating amendment*. Mid-year is the date six months before the end of year date.

In column 1, indicate the regulatory assets under management attributable to separately managed accounts associated with each level of gross notional exposure. For purposes of this table, the gross notional exposure of an account is the percentage obtained by dividing (i) the sum of (a) the dollar amount of any *borrowings* and (b) the *gross notional value* of all derivatives, by (ii) the regulatory assets under management of the account.

In column 2, provide the dollar amount of *borrowings* for the accounts included in column 1.

In column 3, provide aggregate *gross notional value* of derivatives divided by the aggregate regulatory assets under management of the accounts included in column 1 with respect to each category of derivatives specified in 3(a) through (f).

You may, but are not required to, complete the table with respect to any separately managed account with regulatory assets under management of less than \$10,000,000.

Any regulatory assets under management reported in Item 5.D.(3)(d), (e), and (f) should not be reported below.

(i) Mid-Year

Gross Notional Exposure	(1) Regulatory Assets Under Management	(2) Borrowings	(3) Derivative Exposures					
			(a) Interest Rate Derivative	(b) Foreign Exchange Derivative	(c) Credit Derivative	(d) Equity Derivative	(e) Commodity Derivative	(f) Other Derivative
Less than 10%	\$ 8,214,587,204	\$ 37,900,000	%	0.01 %	%	%	%	%
10-149%	\$	\$	%	%	%	%	%	%
150% or more	\$	\$	%	%	%	%	%	%

Optional: Use the space below to provide a narrative description of the strategies and/or manner in which *borrowings* and derivatives are used in the management of the separately managed accounts that you advise.

(ii) End of Year

Gross Notional Exposure	(1) Regulatory Assets Under Management	(2) Borrowings	(3) Derivative Exposures					
			(a) Interest Rate Derivative	(b) Foreign Exchange Derivative	(c) Credit Derivative	(d) Equity Derivative	(e) Commodity Derivative	(f) Other Derivative
Less than 10%	\$ 10,173,883,909	\$ 36,750,000	%	0.01 %	%	%	%	%
10-149%	\$	\$	%	%	%	%	%	%
150% or more	\$	\$	%	%	%	%	%	%

Optional: Use the space below to provide a narrative description of the strategies and/or manner in which *borrowings* and derivatives are used in the management of the separately managed accounts that you advise.

(b) In the table below, provide the following information regarding the separately managed accounts you advise as of the date used to calculate your regulatory assets under management for purposes of your *annual updating amendment*. If you are a subadviser to a separately managed account, you should only provide information with respect to the portion of the account that you subadvise.

In column 1, indicate the regulatory assets under management attributable to separately managed accounts associated with each level of gross notional exposure. For purposes of this table, the gross notional exposure of an account is the percentage obtained by dividing (i) the sum of (a) the dollar amount of any *borrowings* and (b) the *gross notional value* of all derivatives, by (ii) the regulatory assets under management of the account.

In column 2, provide the dollar amount of *borrowings* for the accounts included in column 1.

You may, but are not required to, complete the table with respect to any separately managed accounts with regulatory assets under management of less than \$10,000,000.

Any regulatory assets under management reported in Item 5.D.(3)(d), (e), and (f) should not be reported below.

Gross Notional Exposure	(1) Regulatory Assets Under Management	(2) Borrowings
Less than 10%	\$	\$
10-149%	\$	\$
150% or more	\$	\$

Optional: Use the space below to provide a narrative description of the strategies and/or manner in which *borrowings* and derivatives are used in the management of the separately managed accounts that you advise.

SECTION 5.K.(3) Custodians for Separately Managed Accounts

Complete a separate Schedule D Section 5.K.(3) for each custodian that holds ten percent or more of your aggregate separately managed account regulatory assets under management.

(a)

Legal name of custodian:
SUMITOMO MITSUI TRUST (UK) LIMITED

(b)

Primary business name of custodian:
SUMITOMO

(c)

The location(s) of the custodian's office(s) responsible for *custody* of the assets :

City: DUBLINState:Country: Ireland

(d)

Is the custodian a *related person* of your firm? Intended Recipient: Pennsylvania School Employees' Retirement System
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Yes

No

(e)

If the custodian is a broker-dealer, provide its SEC registration number (if any)

-

(f)

If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its *legal entity identifier* (if any)

213800MOA24TW7YO3S21

(g)

What amount of your regulatory assets under management attributable to separately managed accounts is held at the custodian?

\$ 711,585,219

(a)

Legal name of custodian:

THE NORTHERN TRUST COMPANY

(b)

Primary business name of custodian:

THE NORTHERN TRUST COMPANY

(c)

The location(s) of the custodian's office(s) responsible for *custody* of the assets :

City:

CHICAGO

State:

Illinois

Country:

United States

(d)

Is the custodian a *related person* of your firm?

Yes

No

(e)

If the custodian is a broker-dealer, provide its SEC registration number (if any)

-

(f)

If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its *legal entity identifier* (if any)

6PTKHDJ8HDUF78PFWH30

(g)

What amount of your regulatory assets under management attributable to separately managed accounts is held at the custodian?

\$ 1,817,327,987

(a)

Legal name of custodian:

STATE STREET BANK AND TRUST COMPANY

(b)

Primary business name of custodian:

STATE STREET

(c)

The location(s) of the custodian's office(s) responsible for *custody* of the assets :

City:

BOSTON

State:

Massachusetts

Country:

United States

(d)

Is the custodian a *related person* of your firm?

Yes

No

(e)

If the custodian is a broker-dealer, provide its SEC registration number (if any)

-

(f)

If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its *legal entity identifier* (if any)

571474TGEMMWANRLN572

(g)

What amount of your regulatory assets under management attributable to separately managed accounts is held at the custodian?

\$ 3,957,238,853

Item 6 Other Business Activities

In this Item, we request information about your firm's other business activities.

A.

You are actively engaged in business as a (check all that apply):

☐

(1)

broker-dealer (registered or unregistered)

☐

(2)

registered representative of a broker-dealer

☒

(3)

commodity pool operator or commodity trading advisor (whether registered or exempt from registration)

☐

(4)

futures commission merchant

☐

(5)

real estate broker, dealer, or agent

☐

(6)

insurance broker or agent

☐

(7)

bank (including a separately identifiable department or division of a bank)

☐

(8)

trust company

☐

(9)

registered municipal advisor

☐

(10)

registered security-based swap dealer

☐

(11)

major security-based swap participant

☐

(12)

accountant or accounting firm

☐

(13)

lawyer or law firm

☐

(14)

other financial product salesperson (specify):

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If you engage in other business using a name that is different from the names reported in Items 1.A. or 1.B.(1), complete Section 6.A. of Schedule D.

Yes No

B. (1) Are you actively engaged in any other business not listed in Item 6.A. (other than giving investment advice)?

☐ ☒

(2) If yes, is this other business your primary business?

☐ ☐

If "yes," describe this other business on Section 6.B.(2) of Schedule D, and if you engage in this business under a different name, provide that name.

Yes No

(3) Do you sell products or provide services other than investment advice to your advisory clients?

☐ ☒

If "yes," describe this other business on Section 6.B.(3) of Schedule D, and if you engage in this business under a different name, provide that name.

SECTION 6.A. Names of Your Other Businesses

No Information Filed

SECTION 6.B.(2) Description of Primary Business

Describe your primary business (not your investment advisory business):

If you engage in that business under a different name, provide that name:

SECTION 6.B.(3) Description of Other Products and Services

Describe other products or services you sell to your client. You may omit products and services that you listed in Section 6.B.(2) above.

If you engage in that business under a different name, provide that name:

Item 7 Financial Industry Affiliations

In this Item, we request information about your financial industry affiliations and activities. This information identifies areas in which conflicts of interest may occur between you and your clients.

A. This part of Item 7 requires you to provide information about you and your related persons, including foreign affiliates. Your related persons are all of your advisory affiliates and any person that is under common control with you.

You have a related person that is a (check all that apply):

- ☐ (1) broker-dealer, municipal securities dealer, or government securities broker or dealer (registered or unregistered)
- ☒ (2) other investment adviser (including financial planners)
- ☐ (3) registered municipal advisor
- ☐ (4) registered security-based swap dealer
- ☐ (5) major security-based swap participant
- ☐ (6) commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- ☐ (7) futures commission merchant
- ☐ (8) banking or thrift institution
- ☐ (9) trust company
- ☐ (10) accountant or accounting firm
- ☐ (11) lawyer or law firm
- ☐ (12) insurance company or agency
- ☐ (13) pension consultant
- ☐ (14) real estate broker or dealer
- ☐ (15) sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
- ☒ (16) sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

Note that Item 7.A. should not be used to disclose that some of your employees perform investment advisory functions or are registered representatives of a broker-dealer. The number of your firm's employees who perform investment advisory functions should be disclosed under Item 5.B.(1). The number of your firm's employees who are registered representatives of a broker-dealer should be disclosed under Item 5.B.(2).

Note that if you are filing an umbrella registration, you should not check Item 7.A.(2) with respect to your relying advisers, and you do not have to complete Section 7.A. in Schedule D for your relying advisers. You should complete a Schedule R for each relying adviser.

For each related person, including foreign affiliates that may not be registered or required to be registered in the United States, complete Section 7.A. of Schedule D.

You do not need to complete Section 7.A. of Schedule D for any related person if: (1) you have no business dealings with the related person in connection with advisory services you provide to your clients; (2) you do not conduct shared operations with the related person; (3) you do not refer clients or business to the related person, and the related person does not refer prospective clients or business to you; (4) you do not share supervised persons or premises with the related person; and (5) you have no reason to believe that your relationship with the related person otherwise creates a conflict of interest with your clients.

You must complete Section 7.A. of Schedule D for each related person acting as qualified custodian in connection with advisory services you provide to your clients (other than

SECTION 7.A. Financial Industry Affiliations

Complete a separate Schedule D Section 7.A. for each *related person* listed in Item 7.A.

1. Legal Name of *Related Person*:
AKSIA JAPAN CO., LTD.
2. Primary Business Name of *Related Person*:
AKSIA ASIA
3. *Related Person's* SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)
-
or
Other
4. *Related Person's*
(a) CRD Number (if any):

(b) CIK Number(s) (if any):

No Information Filed
5. *Related Person* is: (check all that apply)
- (a) ☐ broker-dealer, municipal securities dealer, or government securities broker or dealer
- (b) ☒ other investment adviser (including financial planners)
- (c) ☐ registered municipal advisor
- (d) ☐ registered security-based swap dealer
- (e) ☐ major security-based swap participant
- (f) ☐ commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- (g) ☐ futures commission merchant
- (h) ☐ banking or thrift institution
- (i) ☐ trust company
- (j) ☐ accountant or accounting firm
- (k) ☐ lawyer or law firm
- (l) ☐ insurance company or agency
- (m) ☐ pension consultant
- (n) ☐ real estate broker or dealer
- (o) ☐ sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
- (p) ☐ sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

No Information Filed

6. Do you *control* or are you *controlled* by the *related person*? Yes ☐ No ☐

7. Are you and the *related person* under common *control*? Yes ☐ No ☐

8. (a) Does the *related person* act as a qualified custodian for your *clients* in connection with advisory services you provide to *clients*? Yes ☐ No ☒

(b) If you are registering or registered with the SEC and you have answered "yes," to question 8.(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-2(d)(5)) from the *related person* and thus are not required to obtain a surprise examination for your *clients'* funds or securities that are maintained at the *related person*? Yes ☐ No ☒

(c) If you have answered "yes" to question 8.(a) above, provide the location of the *related person's* office responsible for *custody* of your *clients'* assets:

Number and Street 1:		Number and Street 2:	
City:	State:	Country:	ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

9. (a) If the *related person* is an investment adviser, is it exempt from registration? Yes ☐ No ☒

(b) If the answer is yes, under what exemption?
203(B)(3)

10. (a) Is the *related person* registered with a *foreign financial regulatory authority*? Yes ☐ No ☒

(b) If the answer is yes, list the name and country, in English of each *foreign financial regulatory authority* with which the *related person* is registered.

Name of Country/English Name of Foreign Financial Regulatory Authority
Japan - Financial Services Agency

11. Do you and the *related person* share any *supervised persons*? Yes ☐ No ☒

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12. Do you and the *related person* share the same physical location? Yes ☐ No ☒

1. Legal Name of *Related Person*:
AKSIA HONG KONG LIMITED

2. Primary Business Name of *Related Person*:
AKSIA HONG KONG

3. *Related Person's* SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)
-
or
Other

4. *Related Person's*
(a) *CRD* Number (if any):

(b) CIK Number(s) (if any):

No Information Filed

5. *Related Person* is: (check all that apply)
(a) ☐ broker-dealer, municipal securities dealer, or government securities broker or dealer
(b) ☒ other investment adviser (including financial planners)
(c) ☐ registered municipal advisor
(d) ☐ registered security-based swap dealer
(e) ☐ major security-based swap participant
(f) ☐ commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
(g) ☐ futures commission merchant
(h) ☐ banking or thrift institution
(i) ☐ trust company
(j) ☐ accountant or accounting firm
(k) ☐ lawyer or law firm
(l) ☐ insurance company or agency
(m) ☐ pension consultant
(n) ☐ real estate broker or dealer
(o) ☐ sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
(p) ☐ sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

6. Do you *control* or are you *controlled* by the *related person*?

7. Are you and the *related person* under common *control*?

8. (a) Does the *related person* act as a qualified custodian for your *clients* in connection with advisory services you provide to *clients*?
(b) If you are registering or registered with the SEC and you have answered "yes," to question 8.(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-2(d)(5)) from the *related person* and thus are not required to obtain a surprise examination for your *clients'* funds or securities that are maintained at the *related person*?
(c) If you have answered "yes" to question 8.(a) above, provide the location of the *related person's* office responsible for *custody* of your *clients'* assets:
Number and Street 1: Number and Street 2:
City: State: Country: ZIP+4/Postal Code:
If this address is a private residence, check this box: ☐

9. (a) If the *related person* is an investment adviser, is it exempt from registration?
(b) If the answer is yes, under what exemption?
203(B)(3)

10. (a) Is the *related person* registered with a *foreign financial regulatory authority* ?
(b) If the answer is yes, list the name and country, in English of each *foreign financial regulatory authority* with which the *related person* is registered.

Name of Country/English Name of <i>Foreign Financial Regulatory Authority</i>
Hong Kong - Securities and Futures Commission

11. Do you and the *related person* share any *supervised persons*?

12. Do you and the *related person* share the same physical location?

Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

1. Legal Name of *Related Person*:
AKSIA EUROPE LIMITED

2. Primary Business Name of *Related Person*:
AKSIA EUROPE

3. *Related Person's* SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)
-
or
Other

4. *Related Person's*
(a) CRD Number (if any):

(b) CIK Number(s) (if any):

No Information Filed

5. *Related Person* is: (check all that apply)
(a) ☐ broker-dealer, municipal securities dealer, or government securities broker or dealer
(b) ☒ other investment adviser (including financial planners)
(c) ☐ registered municipal advisor
(d) ☐ registered security-based swap dealer
(e) ☐ major security-based swap participant
(f) ☐ commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
(g) ☐ futures commission merchant
(h) ☐ banking or thrift institution
(i) ☐ trust company
(j) ☐ accountant or accounting firm
(k) ☐ lawyer or law firm
(l) ☐ insurance company or agency
(m) ☐ pension consultant
(n) ☐ real estate broker or dealer
(o) ☐ sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
(p) ☐ sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

6. Do you *control* or are you *controlled* by the *related person*?

7. Are you and the *related person* under common *control*?

8. (a) Does the *related person* act as a qualified custodian for your *clients* in connection with advisory services you provide to *clients*?
(b) If you are registering or registered with the SEC and you have answered "yes," to question 8.(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-2(d)(5)) from the *related person* and thus are not required to obtain a surprise examination for your *clients'* funds or securities that are maintained at the *related person*?
(c) If you have answered "yes" to question 8.(a) above, provide the location of the *related person's* office responsible for *custody* of your *clients'* assets:
Number and Street 1: Number and Street 2:
City: State: Country: ZIP+4/Postal Code:
If this address is a private residence, check this box: ☐

9. (a) If the *related person* is an investment adviser, is it exempt from registration?
(b) If the answer is yes, under what exemption?
203(B)(3)

10. (a) Is the *related person* registered with a *foreign financial regulatory authority* ?
(b) If the answer is yes, list the name and country, in English of each *foreign financial regulatory authority* with which the *related person* is registered.

Name of Country/English Name of Foreign Financial Regulatory Authority
United Kingdom - Financial Conduct Authority

11. Do you and the *related person* share any *supervised persons*?

12. Do you and the *related person* share the same physical location?

1. Legal Name of *Related Person*:
AKSIA GP LTD.

Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

2. Primary Business Name of *Related Person*:

3. Related Person's SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)
-
or
Other

4. Related Person's
(a) CRD Number (if any):

(b) CIK Number(s) (if any):

No Information Filed

5. Related Person is: (check all that apply)
(a) ☐ broker-dealer, municipal securities dealer, or government securities broker or dealer
(b) ☐ other investment adviser (including financial planners)
(c) ☐ registered municipal advisor
(d) ☐ registered security-based swap dealer
(e) ☐ major security-based swap participant
(f) ☐ commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
(g) ☐ futures commission merchant
(h) ☐ banking or thrift institution
(i) ☐ trust company
(j) ☐ accountant or accounting firm
(k) ☐ lawyer or law firm
(l) ☐ insurance company or agency
(m) ☐ pension consultant
(n) ☐ real estate broker or dealer
(o) ☐ sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
(p) ☒ sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

6. Do you control or are you controlled by the related person?

7. Are you and the related person under common control?

8. (a) Does the related person act as a qualified custodian for your clients in connection with advisory services you provide to clients?
(b) If you are registering or registered with the SEC and you have answered "yes," to question 8.(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-2(d)(5)) from the related person and thus are not required to obtain a surprise examination for your clients' funds or securities that are maintained at the related person?
(c) If you have answered "yes" to question 8.(a) above, provide the location of the related person's office responsible for custody of your clients' assets:
Number and Street 1: Number and Street 2:
City: State: Country: ZIP+4/Postal Code:
If this address is a private residence, check this box: ☐

9. (a) If the related person is an investment adviser, is it exempt from registration?
(b) If the answer is yes, under what exemption?
203(B)(3)

10. (a) Is the related person registered with a foreign financial regulatory authority ?
(b) If the answer is yes, list the name and country, in English of each foreign financial regulatory authority with which the related person is registered.
No Information Filed

11. Do you and the related person share any supervised persons?

12. Do you and the related person share the same physical location?

1. Legal Name of Related Person:
AKSIA ALFA ADVISORY LTD.

2. Primary Business Name of Related Person:
AKSIA ALFA

3. Related Person's SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)
-
or

Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

Other

4. Related Person's

- (a) CRD Number (if any):
- (b) CIK Number(s) (if any):

No Information Filed

5. Related Person is: (check all that apply)

- (a) ☐ broker-dealer, municipal securities dealer, or government securities broker or dealer
- (b) ☐ other investment adviser (including financial planners)
- (c) ☐ registered municipal advisor
- (d) ☐ registered security-based swap dealer
- (e) ☐ major security-based swap participant
- (f) ☐ commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- (g) ☐ futures commission merchant
- (h) ☐ banking or thrift institution
- (i) ☐ trust company
- (j) ☐ accountant or accounting firm
- (k) ☐ lawyer or law firm
- (l) ☐ insurance company or agency
- (m) ☐ pension consultant
- (n) ☐ real estate broker or dealer
- (o) ☐ sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
- (p) ☒ sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

Yes No

6. Do you control or are you controlled by the related person?

☒ ☐

7. Are you and the related person under common control?

☒ ☐

8. (a) Does the related person act as a qualified custodian for your clients in connection with advisory services you provide to clients?

☐ ☒

(b) If you are registering or registered with the SEC and you have answered "yes," to question 8.(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-2(d)(5)) from the related person and thus are not required to obtain a surprise examination for your clients' funds or securities that are maintained at the related person?

☐ ☐

(c) If you have answered "yes" to question 8.(a) above, provide the location of the related person's office responsible for custody of your clients' assets:

Number and Street 1:City:State:If this address is a private residence, check this box: ☐

Number and Street 2:Country:ZIP+4/Postal Code:

Yes No

9. (a) If the related person is an investment adviser, is it exempt from registration?

☒ ☐

(b) If the answer is yes, under what exemption?
203(B)(3)

10. (a) Is the related person registered with a foreign financial regulatory authority ?

☐ ☒

(b) If the answer is yes, list the name and country, in English of each foreign financial regulatory authority with which the related person is registered.

No Information Filed

11. Do you and the related person share any supervised persons?

☒ ☐

12. Do you and the related person share the same physical location?

☐ ☒

1. Legal Name of Related Person:

AKSIA BRAVO ADVISORY LTD.

2. Primary Business Name of Related Person:

AKSIA BRAVO

3. Related Person's SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)

-

or

Other

4. Related Person's

- (a) CRD Number (if any):

5. *Related Person* is: (check all that apply)

- (a)

☐

broker-dealer, municipal securities dealer, or government securities broker or dealer
- (b)

☐

other investment adviser (including financial planners)
- (c)

☐

registered municipal advisor
- (d)

☐

registered security-based swap dealer
- (e)

☐

major security-based swap participant
- (f)

☐

commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- (g)

☐

futures commission merchant
- (h)

☐

banking or thrift institution
- (i)

☐

trust company
- (j)

☐

accountant or accounting firm
- (k)

☐

lawyer or law firm
- (l)

☐

insurance company or agency
- (m)

☐

pension consultant
- (n)

☐

real estate broker or dealer
- (o)

☐

sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
- (p)

☒

sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

Yes No

6. Do you *control* or are you *controlled* by the *related person*?

☒ ☐

7. Are you and the *related person* under common *control*?

☒ ☐

8. (a) Does the *related person* act as a qualified custodian for your *clients* in connection with advisory services you provide to *clients*?

☐ ☒

(b) If you are registering or registered with the SEC and you have answered "yes," to question 8.(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-2(d)(5)) from the *related person* and thus are not required to obtain a surprise examination for your *clients'* funds or securities that are maintained at the *related person*?

☐ ☐

(c) If you have answered "yes" to question 8.(a) above, provide the location of the *related person's* office responsible for *custody* of your *clients'* assets:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

Yes No

9. (a) If the *related person* is an investment adviser, is it exempt from registration?

☒ ☐

(b) If the answer is yes, under what exemption?
203(B)(3)

10. (a) Is the *related person* registered with a *foreign financial regulatory authority* ?

☐ ☒

(b) If the answer is yes, list the name and country, in English of each *foreign financial regulatory authority* with which the *related person* is registered.

No Information Filed

11. Do you and the *related person* share any *supervised persons*?

☒ ☐

12. Do you and the *related person* share the same physical location?

☐ ☒

Item 7 Private Fund Reporting

Yes No

B. Are you an adviser to any *private fund*?

☒ ☐

If "yes," then for each private fund that you advise, you must complete a Section 7.B.(1) of Schedule D, except in certain circumstances described in the next sentence and in Instruction 6 of the Instructions to Part 1A. If you are registered or applying for registration with the SEC or reporting as an SEC exempt reporting adviser, and another SEC-registered adviser or SEC exempt reporting adviser reports this information with respect to any such private fund in Section 7.B.(1) of Schedule D of its Form ADV (e.g., if you are a subadviser), do not complete Section 7.B.(1) of Schedule D with respect to that private fund. You must, instead, complete Section 7.B.(2) of Schedule D.

In either case, if you seek to preserve the anonymity of a private fund client by maintaining its identity in your books and records in numerical or alphabetical code, or similar designation, pursuant to rule 204-2(d), you may identify the private fund in Section 7.B.(1) or 7.B.(2) of Schedule D using the same code or designation in place of the fund's name.

SECTION 7.B.(1) Private Fund Reporting

A. PRIVATE FUND

Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

1. (a) Name of the private fund:
1788 PAUMANOK FUND A LLC
- (b) Private fund identification number:
(include the "805-" prefix also)
805-7976719398

2. Under the laws of what state or country is the private fund organized:
- State: DelawareCountry: United States

3. (a) Name(s) of General Partner, Manager, Trustee, or Directors (or persons serving in a similar capacity):

Name of General Partner, Manager, Trustee, or Director
AKSIA LLC

- (b) If filing an umbrella registration, identify the filing adviser and/or relying adviser(s) that sponsor(s) or manage(s) this private fund.

No Information Filed

4. The private fund (check all that apply; you must check at least one):

- ☐ (1) qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940
- ☒ (2) qualifies for the exclusion from the definition of investment company under section 3(c)(7) of the Investment Company Act of 1940

5. List the name and country, in English, of each foreign financial regulatory authority with which the private fund is registered.

No Information Filed

6. (a) Is this a "master fund" in a master-feeder arrangement?

Yes No

- (b) If yes, what is the name and private fund identification number (if any) of the feeder funds investing in this private fund?
- No Information Filed

- (c) Is this a "feeder fund" in a master-feeder arrangement?

Yes No

- (d) If yes, what is the name and private fund identification number (if any) of the master fund in which this private fund invests?

Name of private fund:

Private fund identification number:
(include the "805-" prefix also)

NOTE: You must complete question 6 for each master-feeder arrangement regardless of whether you are filing a single Schedule D, Section 7.B.(1) for the master-feeder arrangement or reporting on the funds separately.

7. If you are filing a single Schedule D, Section 7.B.(1) for a master-feeder arrangement according to the instructions to this Section 7.B.(1), for each of the feeder funds answer the following questions:

No Information Filed

NOTE: For purposes of questions 6 and 7, in a master-feeder arrangement, one or more funds ("feeder funds") invest all or substantially all of their assets in a single fund ("master fund"). A fund would also be a "feeder fund" investing in a "master fund" for purposes of this question if it issued multiple classes (or series) of shares or interests, and each class (or series) invests substantially all of its assets in a single master fund.

8. (a) Is this private fund a "fund of funds"?

Yes No

NOTE: For purposes of this question only, answer "yes" if the fund invests 10 percent or more of its total assets in other pooled investment vehicles, regardless of whether they are also private funds or registered investment companies.

- (b) If yes, does the private fund invest in funds managed by you or by a related person?

Yes No

9. During your last fiscal year, did the private fund invest in securities issued by investment companies registered under the Investment Company Act of 1940 (other

Yes No

10. What type of fund is the *private fund*?

- ☒ hedge fund ☐ liquidity fund ☐ private equity fund ☐ real estate fund ☐ securitized asset fund ☐ venture capital fund ☐ Other *private fund*:

NOTE: For definitions of these fund types, please see Instruction 6 of the Instructions to Part 1A.

11. Current gross asset value of the *private fund*:

\$ 232,909,011

Ownership

12. Minimum investment commitment required of an investor in the *private fund*:

\$ 5,000,000

NOTE: Report the amount routinely required of investors who are not your *related persons* (even if different from the amount set forth in the organizational documents of the fund).

13. Approximate number of the *private fund's* beneficial owners:

2

14. What is the approximate percentage of the *private fund* beneficially owned by you and your *related persons*:

0%

15. (a) What is the approximate percentage of the *private fund* beneficially owned (in the aggregate) by funds of funds:

0%

Yes No

(b) If the private fund qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940, are sales of the fund limited to *qualified clients*? ☐ ☐

16. What is the approximate percentage of the *private fund* beneficially owned by non-*United States persons*:

0%

Your Advisory Services

Yes No

17. (a) Are you a subadviser to this *private fund*? ☐ ☒

(b) If the answer to question 17.(a) is "yes," provide the name and SEC file number, if any, of the adviser of the *private fund*. If the answer to question 17.(a) is "no," leave this question blank.

No Information Filed

Yes No

18. (a) Do any investment advisers (other than the investment advisers listed in Section 7.B.(1).A.3.(b)) advise the *private fund*? ☐ ☒

(b) If the answer to question 18.(a) is "yes," provide the name and SEC file number, if any, of the other advisers to the *private fund*. If the answer to question 18.(a) is "no," leave this question blank.

No Information Filed

Yes No

19. Are your *clients* solicited to invest in the *private fund*? ☐ ☒

NOTE: For purposes of this question, do not consider feeder funds of the *private fund*.

20. Approximately what percentage of your *clients* has invested in the *private fund*?

2%

Private Offering

Yes No

21. Has the *private fund* ever relied on an exemption from registration of its securities under Regulation D of the Securities Act of 1933? ☒ ☐

22. If yes, provide the *private fund's* Form D file number (if any):

No Information Filed

23. (a) (1) Are the *private fund*'s financial statements subject to an annual audit?
- (2) If the answer to question 23.(a)(1) is "yes," are the financial statements prepared in accordance with U.S. GAAP?

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

Additional Auditor Information : 1 Record(s) Filed.

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

(b) Name of the auditing firm:
EISNERAMPER LLP

(c) The location of the auditing firm's office responsible for the *private fund*'s audit (city, state and country):

City:	State:	Country:
NEW YORK	New York	United States

(d) Is the auditing firm an *independent public accountant*? Yes No

(e) Is the auditing firm registered with the Public Company Accounting Oversight Board? Yes No

If yes, Public Company Accounting Oversight Board-Assigned Number:
274

(f) If "yes" to (e) above, is the auditing firm subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules? Yes No

(g) Are the *private fund*'s audited financial statements for the most recently completed fiscal year distributed to the *private fund*'s investors? Yes No

(h) Do all of the reports prepared by the auditing firm for the *private fund* since your last *annual updating amendment* contain unqualified opinions?

☒ Yes ☐ No ☐ Report Not Yet Received

If you check "Report Not Yet Received," you must promptly file an amendment to your Form ADV to update your response when the report is available.

Prime Broker

24. (a) Does the *private fund* use one or more prime brokers? Yes No

If the answer to question 24.(a) is "yes," respond to questions (b) through (e) below for each prime broker the *private fund* uses. If the *private fund* uses more than one prime broker, you must complete questions (b) through (e) separately for each prime broker.

No Information Filed

Custodian

25. (a) Does the *private fund* use any custodians (including the prime brokers listed above) to hold some or all of its assets? Yes No

If the answer to question 25.(a) is "yes," respond to questions (b) through (g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

Additional Custodian Information : 1 Record(s) Filed.

If the answer to question 25.(a) is "yes," respond to questions (b) through (g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

(b) Legal name of custodian:
THE BANK OF NEW YORK MELLON CORPORATION

(c) Primary business name of custodian: Intended Recipient: Pennsylvania School Employees' Retirement System
THE BANK OF NEW YORK MELLON CORPORATION PRIVATE & CONFIDENTIAL

(d) The location of the custodian's office responsible for *custody* of the *private fund's* assets (city, state and country):

City:NEW YORK

State:New York

Country:United States

Yes No

(e) Is the custodian a *related person* of your firm?

☐ ☒

(f) If the custodian is a broker-dealer, provide its SEC registration number (if any):

-

CRD Number (if any):

(g) If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its *legal entity identifier* (if any)

Administrator

Yes No

26. (a) Does the *private fund* use an administrator other than your firm?

☒ ☐

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

Additional Administrator Information : 1 Record(s) Filed.

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

(b) Name of administrator:

THE BANK OF NEW YORK MELLON CORPORATION

(c) Location of administrator (city, state and country):

City:NEW YORK

State:New York

Country:United States

Yes No

(d) Is the administrator a *related person* of your firm?

☐ ☒

(e) Does the administrator prepare and send investor account statements to the *private fund's* investors?

☒ Yes (provided to all investors) ☐ Some (provided to some but not all investors) ☐ No (provided to no investors)

(f) If the answer to question 26.(e) is "no" or "some," who sends the investor account statements to the (rest of the) *private fund's* investors? If investor account statements are not sent to the (rest of the) *private fund's* investors, respond "not applicable."

27. During your last fiscal year, what percentage of the *private fund's* assets (by value) was valued by a *person*, such as an administrator, that is not your *related person*?

100%

Include only those assets where (i) such *person* carried out the valuation procedure established for that asset, if any, including obtaining any relevant quotes, and (ii) the valuation used for purposes of investor subscriptions, redemptions or distributions, and fee calculations (including allocations) was the valuation determined by such *person*.

Marketers

Yes No

28. (a) Does the *private fund* use the services of someone other than you or your *employees* for marketing purposes?

☐ ☒

You must answer "yes" whether the *person* acts as a placement agent, consultant, finder, introducer, municipal advisor or other solicitor, or similar *person*. If the answer to question 28.(a) is "yes," respond to questions (b) through (g) below for each such marketer the *private fund* uses. If the *private fund* uses more than one marketer you must complete questions (b) through (g) separately for each marketer.

No Information Filed

1. (a) Name of the *private fund*:
1788 PAUMANOK FUND B LLC
- (b) *Private fund* identification number:
(include the "805-" prefix also)
805-6129170497

2. Under the laws of what state or country is the *private fund* organized:
- State: DelawareCountry: United States

3. (a) Name(s) of General Partner, Manager, Trustee, or Directors (or *persons* serving in a similar capacity):
- | Name of General Partner, Manager, Trustee, or Director |
|--|
| AKSIA LLC |

- (b) If filing an *umbrella registration*, identify the *filing adviser* and/or *relying adviser(s)* that sponsor(s) or manage(s) this *private fund*.
- No Information Filed

4. The *private fund* (check all that apply; you must check at least one):
- ☐ (1) qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940
- ☒ (2) qualifies for the exclusion from the definition of investment company under section 3(c)(7) of the Investment Company Act of 1940

5. List the name and country, in English, of each *foreign financial regulatory authority* with which the *private fund* is registered.
- No Information Filed

6. (a) Is this a "master fund" in a master-feeder arrangement?
- Yes No
- (b) If yes, what is the name and *private fund* identification number (if any) of the feeder funds investing in this *private fund*?
- No Information Filed

- (c) Is this a "feeder fund" in a master-feeder arrangement?
- Yes No
- (d) If yes, what is the name and *private fund* identification number (if any) of the master fund in which this *private fund* invests?
- Name of *private fund*:
- Private fund* identification number:
(include the "805-" prefix also)

NOTE: You must complete question 6 for each master-feeder arrangement regardless of whether you are filing a single Schedule D, Section 7.B.(1) for the master-feeder arrangement or reporting on the funds separately.

7. If you are filing a single Schedule D, Section 7.B.(1) for a master-feeder arrangement according to the instructions to this Section 7.B.(1), for each of the feeder funds answer the following questions:
- No Information Filed

NOTE: For purposes of questions 6 and 7, in a master-feeder arrangement, one or more funds ("feeder funds") invest all or substantially all of their assets in a single fund ("master fund"). A fund would also be a "feeder fund" investing in a "master fund" for purposes of this question if it issued multiple classes (or series) of shares or interests, and each class (or series) invests substantially all of its assets in a single master fund.

8. (a) Is this *private fund* a "fund of funds"?
- Yes No
- NOTE: For purposes of this question only, answer "yes" if the fund invests 10 percent or more of its total assets in other pooled investment vehicles, regardless of whether they are also *private funds* or registered investment companies.
- (b) If yes, does the *private fund* invest in funds managed by you or by a *related person*?
- Yes No

9. During your last fiscal year, did the *private fund* invest in securities issued by investment companies registered under the Investment Company Act of 1940 (other than "money market funds," to the extent provided in Instruction 6.e.)?
- Yes No
- Intended Recipient: Pennsylvania School Employees' Retirement System

NOTE: For definitions of these fund types, please see Instruction 6 of the Instructions to Part 1A.

11. Current gross asset value of the *private fund*:

\$ 204,759,643

Ownership

12. Minimum investment commitment required of an investor in the *private fund*:

\$ 5,000,000

NOTE: Report the amount routinely required of investors who are not your *related persons* (even if different from the amount set forth in the organizational documents of the fund).

13. Approximate number of the *private fund's* beneficial owners:

2

14. What is the approximate percentage of the *private fund* beneficially owned by you and your *related persons*:

0%

15. (a) What is the approximate percentage of the *private fund* beneficially owned (in the aggregate) by funds of funds:

0%

Yes No

(b) If the private fund qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940, are sales of the fund limited to *qualified clients*?

16. What is the approximate percentage of the *private fund* beneficially owned by non-United States persons:

0%

Your Advisory Services

Yes No

17. (a) Are you a subadviser to this *private fund*?



(b) If the answer to question 17.(a) is "yes," provide the name and SEC file number, if any, of the adviser of the *private fund*. If the answer to question 17.(a) is "no," leave this question blank.

No Information Filed

Yes No

18. (a) Do any investment advisers (other than the investment advisers listed in Section 7.B.(1).A.3.(b)) advise the *private fund*?

(b) If the answer to question 18.(a) is "yes," provide the name and SEC file number, if any, of the other advisers to the *private fund*. If the answer to question 18.(a) is "no," leave this question blank.

No Information Filed

Yes No

19. Are your *clients* solicited to invest in the *private fund*?

NOTE: For purposes of this question, do not consider feeder funds of the private fund.

20. Approximately what percentage of your *clients* has invested in the *private fund*?

2%

Private Offering

Yes No

21. Has the *private fund* ever relied on an exemption from registration of its securities under Regulation D of the Securities Act of 1933?

22. If yes, provide the *private fund's* Form D file number (if any):

No Information Filed

B. SERVICE PROVIDERS

23. (a) (1) Are the *private fund*'s financial statements subject to an annual audit?
- (2) If the answer to question 23.(a)(1) is "yes," are the financial statements prepared in accordance with U.S. GAAP?

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

Additional Auditor Information : 1 Record(s) Filed.

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

(b) Name of the auditing firm:
EISNERAMPER LLP

(c) The location of the auditing firm's office responsible for the *private fund*'s audit (city, state and country):

City:	State:	Country:
NEW YORK	New York	United States

(d) Is the auditing firm an *independent public accountant*?

Yes No

☒ ☐

(e) Is the auditing firm registered with the Public Company Accounting Oversight Board?

☒ ☐

If yes, Public Company Accounting Oversight Board-Assigned Number:
274

(f) If "yes" to (e) above, is the auditing firm subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?

☒ ☐

(g) Are the *private fund*'s audited financial statements for the most recently completed fiscal year distributed to the *private fund*'s investors?

Yes No

☒ ☐

(h) Do all of the reports prepared by the auditing firm for the *private fund* since your last *annual updating amendment* contain unqualified opinions?

☒ Yes ☐ No ☐ Report Not Yet Received

If you check "Report Not Yet Received," you must promptly file an amendment to your Form ADV to update your response when the report is available.

Prime Broker

24. (a) Does the *private fund* use one or more prime brokers?

Yes No

☐ ☒

If the answer to question 24.(a) is "yes," respond to questions (b) through (e) below for each prime broker the *private fund* uses. If the *private fund* uses more than one prime broker, you must complete questions (b) through (e) separately for each prime broker.

No Information Filed

Custodian

25. (a) Does the *private fund* use any custodians (including the prime brokers listed above) to hold some or all of its assets?

Yes No

☒ ☐

If the answer to question 25.(a) is "yes," respond to questions (b) through (g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

Additional Custodian Information : 1 Record(s) Filed.

If the answer to question 25.(a) is "yes," respond to questions (b) through g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

(b) Legal name of custodian:
THE BANK OF NEW YORK MELLON CORPORATION

(c) Primary business name of custodian:
THE BANK OF NEW YORK MELLON CORPORATION
Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

(d) The location of the custodian's office responsible for custody of the private fund's assets (city, state and country):

City:
NEW YORK

State:
New York

Country:
United States

Yes No

(e) Is the custodian a related person of your firm?

☐ ☒

(f) If the custodian is a broker-dealer, provide its SEC registration number (if any):

-

CRD Number (if any):

(g) If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its legal entity identifier (if any)

Administrator

Yes No

26. (a) Does the private fund use an administrator other than your firm?

☒ ☐

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the private fund uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

Additional Administrator Information : 1 Record(s) Filed.

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the private fund uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

(b) Name of administrator:

THE BANK OF NEW YORK MELLON

(c) Location of administrator (city, state and country):

City:
NEW YORK

State:
New York

Country:
United States

Yes No

(d) Is the administrator a related person of your firm?

☐ ☒

(e) Does the administrator prepare and send investor account statements to the private fund's investors?

☒ Yes (provided to all investors) ☐ Some (provided to some but not all investors) ☐ No (provided to no investors)

(f) If the answer to question 26.(e) is "no" or "some," who sends the investor account statements to the (rest of the) private fund's investors? If investor account statements are not sent to the (rest of the) private fund's investors, respond "not applicable."

27. During your last fiscal year, what percentage of the private fund's assets (by value) was valued by a person, such as an administrator, that is not your related person?

100%

Include only those assets where (i) such person carried out the valuation procedure established for that asset, if any, including obtaining any relevant quotes, and (ii) the valuation used for purposes of investor subscriptions, redemptions or distributions, and fee calculations (including allocations) was the valuation determined by such person.

Marketers

Yes No

28. (a) Does the private fund use the services of someone other than you or your employees for marketing purposes?

☐ ☒

You must answer "yes" whether the person acts as a placement agent, consultant, finder, introducer, municipal advisor or other solicitor, or similar person. If the answer to question 28.(a) is "yes," respond to questions (b) through (g) below for each such marketer the private fund uses. If the private fund uses more than one marketer you must complete questions (b) through (g) separately for each marketer.

No Information Filed

1. (a) Name of the *private fund*:
COPA 529 LP
- (b) *Private fund* identification number:
(include the "805-" prefix also)
805-5995183977
2. Under the laws of what state or country is the *private fund* organized:

State:Country:
Cayman Islands

3. (a) Name(s) of General Partner, Manager, Trustee, or Directors (or *persons* serving in a similar capacity):

Name of General Partner, Manager, Trustee, or Director
AKSIA GP LTD.
AKSIA LLC

- (b) If filing an *umbrella registration*, identify the *filing adviser* and/or *relying adviser(s)* that sponsor(s) or manage(s) this *private fund*.

No Information Filed

4. The *private fund* (check all that apply; you must check at least one):
- ☐ (1) qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940
- ☒ (2) qualifies for the exclusion from the definition of investment company under section 3(c)(7) of the Investment Company Act of 1940

5. List the name and country, in English, of each *foreign financial regulatory authority* with which the *private fund* is registered.

No Information Filed

6. (a) Is this a "master fund" in a master-feeder arrangement?

YesNo
- (b) If yes, what is the name and *private fund* identification number (if any) of the feeder funds investing in this *private fund*?

No Information Filed

- (c) Is this a "feeder fund" in a master-feeder arrangement?

YesNo
- (d) If yes, what is the name and *private fund* identification number (if any) of the master fund in which this *private fund* invests?
Name of *private fund*:

Private fund identification number:
(include the "805-" prefix also)

NOTE: You must complete question 6 for each master-feeder arrangement regardless of whether you are filing a single Schedule D, Section 7.B.(1) for the master-feeder arrangement or reporting on the funds separately.

7. If you are filing a single Schedule D, Section 7.B.(1) for a master-feeder arrangement according to the instructions to this Section 7.B.(1), for each of the feeder funds answer the following questions:
- | |
|----------------------|
| No Information Filed |
|----------------------|

NOTE: For purposes of questions 6 and 7, in a master-feeder arrangement, one or more funds ("feeder funds") invest all or substantially all of their assets in a single fund ("master fund"). A fund would also be a "feeder fund" investing in a "master fund" for purposes of this question if it issued multiple classes (or series) of shares or interests, and each class (or series) invests substantially all of its assets in a single master fund.

8. (a) Is this *private fund* a "fund of funds"?

YesNo
- NOTE: For purposes of this question only, answer "yes" if the fund invests 10 percent or more of its total assets in other pooled investment vehicles, regardless of whether they are also *private funds* or registered investment companies.
- (b) If yes, does the *private fund* invest in funds managed by you or by a *related person*?

YesNo

9. During your last fiscal year, did the *private fund* invest in securities issued by investment companies registered under the Investment Company Act of 1940 (other

YesNo

10. What type of fund is the *private fund*?
- ☒ hedge fund ☐ liquidity fund ☐ private equity fund ☐ real estate fund ☐ securitized asset fund ☐ venture capital fund ☐ Other *private fund*:

NOTE: For definitions of these fund types, please see Instruction 6 of the Instructions to Part 1A.

11. Current gross asset value of the *private fund*:
- \$ 143,106,671

Ownership

12. Minimum investment commitment required of an investor in the *private fund*:
- \$ 100,000,000
- NOTE: Report the amount routinely required of investors who are not your *related persons* (even if different from the amount set forth in the organizational documents of the fund).

13. Approximate number of the *private fund's* beneficial owners:
- 1

14. What is the approximate percentage of the *private fund* beneficially owned by you and your *related persons*:
- 0%

15. (a) What is the approximate percentage of the *private fund* beneficially owned (in the aggregate) by funds of funds:
- 0%

- (b) If the private fund qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940, are sales of the fund limited to *qualified clients*?
- Yes

No

☐

☐

16. What is the approximate percentage of the *private fund* beneficially owned by non-*United States persons*:
- 0%

Your Advisory Services

- (a) Are you a subadviser to this *private fund*?
- Yes

No

☐

☒
- (b) If the answer to question 17.(a) is "yes," provide the name and SEC file number, if any, of the adviser of the *private fund*. If the answer to question 17.(a) is "no," leave this question blank.

No Information Filed

18. (a) Do any investment advisers (other than the investment advisers listed in Section 7.B.(1).A.3.(b)) advise the *private fund*?
- Yes

No

☐

☒
- (b) If the answer to question 18.(a) is "yes," provide the name and SEC file number, if any, of the other advisers to the *private fund*. If the answer to question 18.(a) is "no," leave this question blank.

No Information Filed

19. Are your *clients* solicited to invest in the *private fund*?
- Yes

No

☐

☒
- NOTE: For purposes of this question, do not consider feeder funds of the *private fund*.

20. Approximately what percentage of your *clients* has invested in the *private fund*?
- 2%

Private Offering

21. Has the *private fund* ever relied on an exemption from registration of its securities under Regulation D of the Securities Act of 1933?
- Yes

No

☒

☐

22. If yes, provide the *private fund's* Form D file number (if any):

No Information Filed

23. (a) (1) Are the *private fund's* financial statements subject to an annual audit?
- (2) If the answer to question 23.(a)(1) is "yes," are the financial statements prepared in accordance with U.S. GAAP?

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

Additional Auditor Information : 1 Record(s) Filed.

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

(b) Name of the auditing firm:
EISNERAMPER LLP

(c) The location of the auditing firm's office responsible for the *private fund's* audit (city, state and country):
City:NEW YORKState:New YorkCountry:United States

(d) Is the auditing firm an *independent public accountant*?

(e) Is the auditing firm registered with the Public Company Accounting Oversight Board?

If yes, Public Company Accounting Oversight Board-Assigned Number:
274

(f) If "yes" to (e) above, is the auditing firm subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?

- (g) Are the *private fund's* audited financial statements for the most recently completed fiscal year distributed to the *private fund's* investors?
- (h) Do all of the reports prepared by the auditing firm for the *private fund* since your last *annual updating amendment* contain unqualified opinions?
- ☒ Yes ☐ No ☐ Report Not Yet Received

If you check "Report Not Yet Received," you must promptly file an amendment to your Form ADV to update your response when the report is available.

Prime Broker

24. (a) Does the *private fund* use one or more prime brokers?

If the answer to question 24.(a) is "yes," respond to questions (b) through (e) below for each prime broker the *private fund* uses. If the *private fund* uses more than one prime broker, you must complete questions (b) through (e) separately for each prime broker.

No Information Filed

Custodian

25. (a) Does the *private fund* use any custodians (including the prime brokers listed above) to hold some or all of its assets?

If the answer to question 25.(a) is "yes," respond to questions (b) through (g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

Additional Custodian Information : 1 Record(s) Filed.

If the answer to question 25.(a) is "yes," respond to questions (b) through (g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

(b) Legal name of custodian:
THE BANK OF NEW YORK MELLON CORPORATION

(c) Primary business name of custodian:THE BANK OF NEW YORK MELLONIntended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

(d) The location of the custodian's office responsible for *custody* of the *private fund's* assets (city, state and country):

City:NEW YORK

State:New York

Country:United States

Yes No

(e) Is the custodian a *related person* of your firm?

☐ ☒

(f) If the custodian is a broker-dealer, provide its SEC registration number (if any):

-

CRD Number (if any):

(g) If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its *legal entity identifier* (if any)

Administrator

Yes No

26. (a) Does the *private fund* use an administrator other than your firm?

☒ ☐

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

Additional Administrator Information : 1 Record(s) Filed.

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

(b) Name of administrator:

THE BANK OF NEW YORK MELLON CORPORATION

(c) Location of administrator (city, state and country):

City:NEW YORK

State:New York

Country:United States

Yes No

(d) Is the administrator a *related person* of your firm?

☐ ☒

(e) Does the administrator prepare and send investor account statements to the *private fund's* investors?

☒ Yes (provided to all investors) ☐ Some (provided to some but not all investors) ☐ No (provided to no investors)

(f) If the answer to question 26.(e) is "no" or "some," who sends the investor account statements to the (rest of the) *private fund's* investors? If investor account statements are not sent to the (rest of the) *private fund's* investors, respond "not applicable."

27. During your last fiscal year, what percentage of the *private fund's* assets (by value) was valued by a *person*, such as an administrator, that is not your *related person*?

100%

Include only those assets where (i) such *person* carried out the valuation procedure established for that asset, if any, including obtaining any relevant quotes, and (ii) the valuation used for purposes of investor subscriptions, redemptions or distributions, and fee calculations (including allocations) was the valuation determined by such *person*.

Marketers

Yes No

28. (a) Does the *private fund* use the services of someone other than you or your *employees* for marketing purposes?

☐ ☒

You must answer "yes" whether the *person* acts as a placement agent, consultant, finder, introducer, municipal advisor or other solicitor, or similar *person*. If the answer to question 28.(a) is "yes," respond to questions (b) through (g) below for each such marketer the *private fund* uses. If the *private fund* uses more than one marketer you must complete questions (b) through (g) separately for each marketer.

No Information Filed

1. (a) Name of the *private fund*:
COPA KEYSTONE LP
- (b) *Private fund* identification number:
(include the "805-" prefix also)
805-4240043755

2. Under the laws of what state or country is the *private fund* organized:
- State:Country:
Cayman Islands

3. (a) Name(s) of General Partner, Manager, Trustee, or Directors (or *persons* serving in a similar capacity):

Name of General Partner, Manager, Trustee, or Director
AKSIA GP LTD.
AKSIA LLC

- (b) If filing an *umbrella registration*, identify the *filing adviser* and/or *relying adviser(s)* that sponsor(s) or manage(s) this *private fund*.

No Information Filed

4. The *private fund* (check all that apply; you must check at least one):
- ☐ (1) qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940
- ☒ (2) qualifies for the exclusion from the definition of investment company under section 3(c)(7) of the Investment Company Act of 1940

5. List the name and country, in English, of each *foreign financial regulatory authority* with which the *private fund* is registered.

No Information Filed

6. (a) Is this a "master fund" in a master-feeder arrangement?

YesNo
- (b) If yes, what is the name and *private fund* identification number (if any) of the feeder funds investing in this *private fund*?

No Information Filed

- (c) Is this a "feeder fund" in a master-feeder arrangement?

YesNo
- (d) If yes, what is the name and *private fund* identification number (if any) of the master fund in which this *private fund* invests?

Name of *private fund*:

Private fund identification number:
(include the "805-" prefix also)

NOTE: You must complete question 6 for each master-feeder arrangement regardless of whether you are filing a single Schedule D, Section 7.B.(1) for the master-feeder arrangement or reporting on the funds separately.

7. If you are filing a single Schedule D, Section 7.B.(1) for a master-feeder arrangement according to the instructions to this Section 7.B.(1), for each of the feeder funds answer the following questions:

No Information Filed

NOTE: For purposes of questions 6 and 7, in a master-feeder arrangement, one or more funds ("feeder funds") invest all or substantially all of their assets in a single fund ("master fund"). A fund would also be a "feeder fund" investing in a "master fund" for purposes of this question if it issued multiple classes (or series) of shares or interests, and each class (or series) invests substantially all of its assets in a single master fund.

8. (a) Is this *private fund* a "fund of funds"?

YesNo
- NOTE: For purposes of this question only, answer "yes" if the fund invests 10 percent or more of its total assets in other pooled investment vehicles, regardless of whether they are also *private funds* or registered investment companies.
- (b) If yes, does the *private fund* invest in funds managed by you or by a *related person*?

YesNo

9. During your last fiscal year, did the *private fund* invest in securities issued by investment companies registered under the Investment Company Act of 1940 (other than "money market funds," to the extent provided in Instruction 6.e.)?

10. What type of fund is the *private fund*?

☒ hedge fund ☐ liquidity fund ☐ private equity fund ☐ real estate fund ☐ securitized asset fund ☐ venture capital fund ☐ Other *private fund*:

NOTE: For definitions of these fund types, please see Instruction 6 of the Instructions to Part 1A.

11. Current gross asset value of the *private fund*:

\$ 134,847,145

Ownership

12. Minimum investment commitment required of an investor in the *private fund*:

\$ 100,000,000

NOTE: Report the amount routinely required of investors who are not your *related persons* (even if different from the amount set forth in the organizational documents of the fund).

13. Approximate number of the *private fund's* beneficial owners:

1

14. What is the approximate percentage of the *private fund* beneficially owned by you and your *related persons*:

0%

15. (a) What is the approximate percentage of the *private fund* beneficially owned (in the aggregate) by funds of funds:

0%

Yes No

(b) If the private fund qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940, are sales of the fund limited to *qualified clients*? ☐ ☐

16. What is the approximate percentage of the *private fund* beneficially owned by non-*United States persons*:

0%

Your Advisory Services

Yes No

17. (a) Are you a subadviser to this *private fund*? ☐ ☒

(b) If the answer to question 17.(a) is "yes," provide the name and SEC file number, if any, of the adviser of the *private fund*. If the answer to question 17.(a) is "no," leave this question blank.

No Information Filed

Yes No

18. (a) Do any investment advisers (other than the investment advisers listed in Section 7.B.(1).A.3.(b)) advise the *private fund*? ☐ ☒

(b) If the answer to question 18.(a) is "yes," provide the name and SEC file number, if any, of the other advisers to the *private fund*. If the answer to question 18.(a) is "no," leave this question blank.

No Information Filed

Yes No

19. Are your *clients* solicited to invest in the *private fund*? ☐ ☒

NOTE: For purposes of this question, do not consider feeder funds of the *private fund*.

20. Approximately what percentage of your *clients* has invested in the *private fund*?

2%

Private Offering

Yes No

21. Has the *private fund* ever relied on an exemption from registration of its securities under Regulation D of the Securities Act of 1933? ☒ ☐

22. If yes, provide the *private fund's* Form D file number (if any):

No Information Filed

Yes No

23. (a) (1) Are the *private fund*'s financial statements subject to an annual audit?

☒ ☐
- (2) If the answer to question 23.(a)(1) is "yes," are the financial statements prepared in accordance with U.S. GAAP?

☒ ☐

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

Additional Auditor Information : 1 Record(s) Filed.

If the answer to question 23.(a)(1) is "yes," respond to questions (b) through (h) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

(b) Name of the auditing firm:
EISNERAMPER LLP

(c) The location of the auditing firm's office responsible for the *private fund*'s audit (city, state and country):
City: NEW YORK State: New York Country: United States

Yes No

- (d) Is the auditing firm an *independent public accountant*?

☒ ☐
- (e) Is the auditing firm registered with the Public Company Accounting Oversight Board?

☒ ☐

If yes, Public Company Accounting Oversight Board-Assigned Number:
274
- (f) If "yes" to (e) above, is the auditing firm subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?

☒ ☐

Yes No

- (g) Are the *private fund*'s audited financial statements for the most recently completed fiscal year distributed to the *private fund*'s investors?

☒ ☐
- (h) Do all of the reports prepared by the auditing firm for the *private fund* since your last *annual updating amendment* contain unqualified opinions?

☒ Yes ☐ No ☐ Report Not Yet Received

If you check "Report Not Yet Received," you must promptly file an amendment to your Form ADV to update your response when the report is available.

Prime Broker

Yes No

24. (a) Does the *private fund* use one or more prime brokers?

☐ ☒
- If the answer to question 24.(a) is "yes," respond to questions (b) through (e) below for each prime broker the *private fund* uses. If the *private fund* uses more than one prime broker, you must complete questions (b) through (e) separately for each prime broker.

No Information Filed

Custodian

Yes No

25. (a) Does the *private fund* use any custodians (including the prime brokers listed above) to hold some or all of its assets?

☒ ☐
- If the answer to question 25.(a) is "yes," respond to questions (b) through (g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

Additional Custodian Information : 1 Record(s) Filed.

If the answer to question 25.(a) is "yes," respond to questions (b) through g) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (g) separately for each custodian.

(b) Legal name of custodian:
THE BANK OF NEW YORK MELLON CORPORATION

(c) Primary business name of custodian: THE BANK OF NEW YORK MELLON Intended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

(d) The location of the custodian's office responsible for *custody* of the *private fund's* assets (city, state and country):

City:
NEW YORK

State:
New York

Country:
United States

Yes No

(e) Is the custodian a *related person* of your firm?

☐ ☒

(f) If the custodian is a broker-dealer, provide its SEC registration number (if any):

-

CRD Number (if any):

(g) If the custodian is not a broker-dealer, or is a broker-dealer but does not have an SEC registration number, provide its *legal entity identifier* (if any)

Administrator

Yes No

26. (a) Does the *private fund* use an administrator other than your firm?

☒ ☐

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

Additional Administrator Information : 1 Record(s) Filed.

If the answer to question 26.(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

(b) Name of administrator:

THE BANK OF NEW YORK MELLON CORPORATION

(c) Location of administrator (city, state and country):

City:
NEW YORK

State:
New York

Country:
United States

Yes No

(d) Is the administrator a *related person* of your firm?

☐ ☒

(e) Does the administrator prepare and send investor account statements to the *private fund's* investors?

☒ Yes (provided to all investors) ☐ Some (provided to some but not all investors) ☐ No (provided to no investors)

(f) If the answer to question 26.(e) is "no" or "some," who sends the investor account statements to the (rest of the) *private fund's* investors? If investor account statements are not sent to the (rest of the) *private fund's* investors, respond "not applicable."

27. During your last fiscal year, what percentage of the *private fund's* assets (by value) was valued by a *person*, such as an administrator, that is not your *related person*?

100%

Include only those assets where (i) such *person* carried out the valuation procedure established for that asset, if any, including obtaining any relevant quotes, and (ii) the valuation used for purposes of investor subscriptions, redemptions or distributions, and fee calculations (including allocations) was the valuation determined by such *person*.

Marketers

Yes No

28. (a) Does the *private fund* use the services of someone other than you or your *employees* for marketing purposes?

☐ ☒

You must answer "yes" whether the *person* acts as a placement agent, consultant, finder, introducer, municipal advisor or other solicitor, or similar *person*. If the answer to question 28.(a) is "yes," respond to questions (b) through (g) below for each such marketer the *private fund* uses. If the *private fund* uses more than one marketer you must complete questions (b) through (g) separately for each marketer.

No Information Filed

No Information Filed

Item 8 Participation or Interest in Client Transactions

In this Item, we request information about your participation and interest in your *clients'* transactions. This information identifies additional areas in which conflicts of interest may occur between you and your *clients*. Newly-formed advisers should base responses to these questions on the types of participation and interest that you expect to engage in during the next year.

Like Item 7, Item 8 requires you to provide information about you and your *related persons*, including foreign affiliates.

Proprietary Interest in Client Transactions

- A. Do you or any *related person*:

Yes

No

(1) buy securities for yourself from advisory *clients*, or sell securities you own to advisory *clients* (principal transactions)?

☐

☒

(2) buy or sell for yourself securities (other than shares of mutual funds) that you also recommend to advisory *clients*?

☐

☒

(3) recommend securities (or other investment products) to advisory *clients* in which you or any *related person* has some other proprietary (ownership) interest (other than those mentioned in Items 8.A.(1) or (2))?

☐

☒

Sales Interest in Client Transactions

- B. Do you or any *related person*:

Yes

No

(1) as a broker-dealer or registered representative of a broker-dealer, execute securities trades for brokerage customers in which advisory *client* securities are sold to or bought from the brokerage customer (agency cross transactions)?

☐

☒

(2) recommend to advisory *clients*, or act as a purchaser representative for advisory *clients* with respect to, the purchase of securities for which you or any *related person* serves as underwriter or general or managing partner?

☐

☒

(3) recommend purchase or sale of securities to advisory *clients* for which you or any *related person* has any other sales interest (other than the receipt of sales commissions as a broker or registered representative of a broker-dealer)?

☐

☒

Investment or Brokerage Discretion

- C. Do you or any *related person* have *discretionary authority* to determine the:

Yes

No

(1) securities to be bought or sold for a *client's* account?

☒

☐

(2) amount of securities to be bought or sold for a *client's* account?

☒

☐

(3) broker or dealer to be used for a purchase or sale of securities for a *client's* account?

☒

☐

(4) commission rates to be paid to a broker or dealer for a *client's* securities transactions?

☒

☐
- D. If you answer "yes" to C.(3) above, are any of the brokers or dealers *related persons*?
- ☐

☒
- E. Do you or any *related person* recommend brokers or dealers to *clients*?
- ☒

☐
- F. If you answer "yes" to E. above, are any of the brokers or dealers *related persons*?
- ☐

☒
- G. (1) Do you or any *related person* receive research or other products or services other than execution from a broker-dealer or a third party ("soft dollar benefits") in connection with *client* securities transactions?
- ☐

☒
- (2) If "yes" to G.(1) above, are all the "soft dollar benefits" you or any *related persons* receive eligible "research or brokerage services" under section 28(e) of the Securities Exchange Act of 1934?
- ☐

☐
- H. (1) Do you or any *related person*, directly or indirectly, compensate any *person* that is not an *employee* for *client* referrals?
- ☒

☐
- (2) Do you or any *related person*, directly or indirectly, provide any *employee* compensation that is specifically related to obtaining *clients* for the firm (cash or non-cash compensation in addition to the *employee's* regular salary)?
- ☐

☒
- I. Do you or any *related person*, including any *employee*, directly or indirectly, receive compensation from any *person* (other than you or any *related person*) for *client* referrals?
- ☐

☒

In your response to Item 8.I., do not include the regular salary you pay to an employee.

In responding to Items 8.H. and 8.I., consider all cash and non-cash compensation that you or a related person gave to (in answering Item 8.H.) or received from (in answering Item 8.I.) any person in exchange for client referrals, including any bonus that is based, at least in part, on the number or amount of client referrals.

Item 9 Custody

In this Item, we ask you whether you or a *related person* has *custody* of *client* (other than *clients* that are investment companies registered under the Investment Company Act of 1940) assets and about your custodial practices.

- A. (1) Do you have *custody* of any advisory *clients'*:

Yes

No

(a) cash or bank accounts?

☒

☐

(b) securities?

☒

☐

If you are registering or registered with the SEC, answer "No" to Item 9.A.(1)(a) and (b) if you have custody solely because (i) you deduct your advisory fees directly from your clients' accounts, or (ii) a related person has custody of client assets in connection with advisory services you provide to clients, but you have overcome the presumption that you are not operationally independent (pursuant to Advisers Act rule 206(4)-2(d)(5)) from the related person.

(2) If you checked "yes" to Item 9.A.(1)(a) or (b), what is the approximate amount of *client* funds and securities and total number of *clients* for which you have *custody*:

U.S. Dollar Amount	Total Number of <i>Clients</i>
(a) \$ 1,537,106,904	(b) 13

If you are registering or registered with the SEC and you have custody solely because you deduct your advisory fees directly from your clients' accounts, do not include the amount of those assets and the number of those clients in your response to Item 9.A.(2). If your related person has custody of client assets in connection with advisory services you provide to clients, do not include the amount of those assets and number of those clients in your response to 9.A.(2). Instead, include that information in your response to Item 9.B.(2).

- B. (1) In connection with advisory services you provide to *clients*, do any of your *related persons* have *custody* of any of your advisory *clients*:

(a) cash or bank accounts?

(b) securities?
- You are required to answer this item regardless of how you answered Item 9.A.(1)(a) or (b).
- (2) If you checked "yes" to Item 9.B.(1)(a) or (b), what is the approximate amount of *client* funds and securities and total number of *clients* for which your *related persons* have *custody*:
- | | |
|----------------------|--------------------------------|
| U.S. Dollar Amount | Total Number of <i>Clients</i> |
| (a) \$ 6,422,111,037 | (b) 4 |
- C. If you or your *related persons* have *custody* of *client* funds or securities in connection with advisory services you provide to *clients*, check all the following that apply:

(1) A qualified custodian(s) sends account statements at least quarterly to the investors in the pooled investment vehicle(s) you manage.

(2) An *independent public accountant* audits annually the pooled investment vehicle(s) that you manage and the audited financial statements are distributed to the investors in the pools.

(3) An *independent public accountant* conducts an annual surprise examination of *client* funds and securities.

(4) An *independent public accountant* prepares an internal control report with respect to custodial services when you or your *related persons* are qualified custodians for *client* funds and securities.

If you checked Item 9.C.(2), C.(3) or C.(4), list in Section 9.C. of Schedule D the accountants that are engaged to perform the audit or examination or prepare an internal control report. (If you checked Item 9.C.(2), you do not have to list auditor information in Section 9.C. of Schedule D if you already provided this information with respect to the private funds you advise in Section 7.B.(1) of Schedule D).

D. Do you or your *related person(s)* act as qualified custodians for your *clients* in connection with advisory services you provide to *clients*?

(1) you act as a qualified custodian

(2) your *related person(s)* act as qualified custodian(s)

If you checked "yes" to Item 9.D.(2), all related persons that act as qualified custodians (other than any mutual fund transfer agent pursuant to rule 206(4)-2(b)(1)) must be identified in Section 7.A. of Schedule D, regardless of whether you have determined the related person to be operationally independent under rule 206(4)-2 of the Advisers Act.

E. If you are filing your *annual updating amendment* and you were subject to a surprise examination by an *independent public accountant* during your last fiscal year, provide the date (MM/YYYY) the examination commenced:

05/2019

F. If you or your *related persons* have *custody* of *client* funds or securities, how many *persons*, including, but not limited to, you and your *related persons*, act as qualified custodians for your *clients* in connection with advisory services you provide to *clients*?

5

SECTION 9.C. Independent Public Accountant

You must complete the following information for each *independent public accountant* engaged to perform a surprise examination, perform an audit of a pooled investment vehicle that you manage, or prepare an internal control report. You must complete a separate Schedule D Section 9.C. for each *independent public accountant*.

(1) Name of the *independent public accountant*:

COHNREZNICK

(2) The location of the *independent public accountant's* office responsible for the services provided:

Number and Street 1:	Number and Street 2:
4 BECKER FARM ROAD	P.O. BOX 954
City:	Intended Recipient: Pennsylvania School Employees' Retirement System
State:	Country: PRIVATE & CONFIDENTIAL
	ZIP+4/Postal Code:

ROSELAND

New Jersey

United States

07068-0954

APPENDIX 1A

YesNo

(3) Is the *independent public accountant* registered with the Public Company Accounting Oversight Board?

If "yes," Public Company Accounting Oversight Board-Assigned Number:
596

(4) If "yes" to (3) above, is the *independent public accountant* subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?

(5) The *independent public accountant* is engaged to:

A. ☐ audit a pooled investment vehicle

B. ☒ perform a surprise examination of *clients'* assets

C. ☐ prepare an internal control report

(6) Since your last *annual updating amendment*, did all of the reports prepared by the *independent public accountant* that audited the pooled investment vehicle or that examined internal controls contain unqualified opinions?

☐ Yes

☐ No

☐ Report Not Yet Received

If you check "Report Not Yet Received", you must promptly file an amendment to your Form ADV to update your response when the accountant's report is available.

Item 10 Control Persons

In this Item, we ask you to identify every *person* that, directly or indirectly, *controls* you. If you are filing an *umbrella registration*, the information in Item 10 should be provided for the *filing adviser* only.

If you are submitting an initial application or report, you must complete Schedule A and Schedule B. Schedule A asks for information about your direct owners and executive officers. Schedule B asks for information about your indirect owners. If this is an amendment and you are updating information you reported on either Schedule A or Schedule B (or both) that you filed with your initial application or report, you must complete Schedule C.

A. Does any *person* not named in Item 1.A. or Schedules A, B, or C, directly or indirectly, *control* your management or policies?

If yes, complete Section 10.A. of Schedule D.

B. If any *person* named in Schedules A, B, or C or in Section 10.A. of Schedule D is a public reporting company under Sections 12 or 15(d) of the Securities Exchange Act of 1934, please complete Section 10.B. of Schedule D.

SECTION 10.A. Control Persons

No Information Filed

SECTION 10.B. Control Person Public Reporting Companies

No Information Filed

Item 11 Disclosure Information

In this Item, we ask for information about your disciplinary history and the disciplinary history of all your *advisory affiliates*. We use this information to determine whether to grant your application for registration, to decide whether to revoke your registration or to place limitations on your activities as an investment adviser, and to identify potential problem areas to focus on during our on-site examinations. One event may result in "yes" answers to more than one of the questions below. In accordance with General Instruction 5 to Form ADV, "you" and "your" include the *filing adviser* and all *relying advisers* under an *umbrella registration*.

Your *advisory affiliates* are: (1) all of your current *employees* (other than *employees* performing only clerical, administrative, support or similar functions); (2) all of your officers, partners, or directors (or any *person* performing similar functions); and (3) all *persons* directly or indirectly *controlling* you or *controlled* by you. If you are a "separately identifiable department or division" (SID) of a bank, see the Glossary of Terms to determine who your *advisory affiliates* are.

If you are registered or registering with the SEC or if you are an exempt reporting adviser, you may limit your disclosure of any event listed in Item 11 to ten years following the date of the event. If you are registered or registering with a state, you must respond to the questions as posed; you may, therefore, limit your disclosure to ten years following the date of an event only in responding to Items 11.A.(1), 11.A.(2), 11.B.(1), 11.B.(2), 11.D.(4), and 11.H.(1)(a). For purposes of calculating this ten-year period, the date of an event is the date the final order, judgment, or decree was entered, or the date any rights of appeal from preliminary orders, judgments, or decrees lapsed.

You must complete the appropriate Disclosure Reporting Page ("DRP") for "yes" answers to the questions in this Item 11.

ATTENDED RECIPIENT Pennsylvania School Employees Retirement System

PRIVATE & CONFIDENTIAL

YesNo

For "yes" answers to the following questions, complete a Criminal Action DRP:

A.	In the past ten years, have you or any <i>advisory affiliate</i> :	Yes	No
	(1) been convicted of or pled guilty or nolo contendere ("no contest") in a domestic, foreign, or military court to any <i>felony</i> ?	<input type="radio"/>	<input checked="" type="radio"/>
	(2) been <i>charged</i> with any <i>felony</i> ?	<input type="radio"/>	<input checked="" type="radio"/>
<i>If you are registered or registering with the SEC, or if you are reporting as an exempt reporting adviser, you may limit your response to Item 11.A.(2) to charges that are currently pending.</i>			
B.	In the past ten years, have you or any <i>advisory affiliate</i> :		
	(1) been convicted of or pled guilty or nolo contendere ("no contest") in a domestic, foreign, or military court to a <i>misdemeanor</i> involving: investments or an <i>investment-related</i> business, or any fraud, false statements, or omissions, wrongful taking of property, bribery, perjury, forgery, counterfeiting, extortion, or a conspiracy to commit any of these offenses?	<input type="radio"/>	<input checked="" type="radio"/>
	(2) been <i>charged</i> with a <i>misdemeanor</i> listed in Item 11.B.(1)?	<input type="radio"/>	<input checked="" type="radio"/>
<i>If you are registered or registering with the SEC, or if you are reporting as an exempt reporting adviser, you may limit your response to Item 11.B.(2) to charges that are currently pending.</i>			

For "yes" answers to the following questions, complete a Regulatory Action DRP:

C.	Has the SEC or the Commodity Futures Trading Commission (CFTC) ever:	Yes	No
	(1) <i>found</i> you or any <i>advisory affiliate</i> to have made a false statement or omission?	<input type="radio"/>	<input checked="" type="radio"/>
	(2) <i>found</i> you or any <i>advisory affiliate</i> to have been <i>involved</i> in a violation of SEC or CFTC regulations or statutes?	<input type="radio"/>	<input checked="" type="radio"/>
	(3) <i>found</i> you or any <i>advisory affiliate</i> to have been a cause of an <i>investment-related</i> business having its authorization to do business denied, suspended, revoked, or restricted?	<input type="radio"/>	<input checked="" type="radio"/>
	(4) entered an <i>order</i> against you or any <i>advisory affiliate</i> in connection with <i>investment-related</i> activity?	<input type="radio"/>	<input checked="" type="radio"/>
	(5) imposed a civil money penalty on you or any <i>advisory affiliate</i> , or <i>ordered</i> you or any <i>advisory affiliate</i> to cease and desist from any activity?	<input type="radio"/>	<input checked="" type="radio"/>
D.	Has any other federal regulatory agency, any state regulatory agency, or any <i>foreign financial regulatory authority</i> :		
	(1) ever <i>found</i> you or any <i>advisory affiliate</i> to have made a false statement or omission, or been dishonest, unfair, or unethical?	<input type="radio"/>	<input checked="" type="radio"/>
	(2) ever <i>found</i> you or any <i>advisory affiliate</i> to have been <i>involved</i> in a violation of <i>investment-related</i> regulations or statutes?	<input type="radio"/>	<input checked="" type="radio"/>
	(3) ever <i>found</i> you or any <i>advisory affiliate</i> to have been a cause of an <i>investment-related</i> business having its authorization to do business denied, suspended, revoked, or restricted?	<input type="radio"/>	<input checked="" type="radio"/>
	(4) in the past ten years, entered an <i>order</i> against you or any <i>advisory affiliate</i> in connection with an <i>investment-related</i> activity?	<input type="radio"/>	<input checked="" type="radio"/>
	(5) ever denied, suspended, or revoked your or any <i>advisory affiliate's</i> registration or license, or otherwise prevented you or any <i>advisory affiliate</i> , by <i>order</i> , from associating with an <i>investment-related</i> business or restricted your or any <i>advisory affiliate's</i> activity?	<input type="radio"/>	<input checked="" type="radio"/>
E.	Has any <i>self-regulatory organization</i> or commodities exchange ever:		
	(1) <i>found</i> you or any <i>advisory affiliate</i> to have made a false statement or omission?	<input type="radio"/>	<input checked="" type="radio"/>
	(2) <i>found</i> you or any <i>advisory affiliate</i> to have been <i>involved</i> in a violation of its rules (other than a violation designated as a " <i>minor rule violation</i> " under a plan approved by the SEC)?	<input type="radio"/>	<input checked="" type="radio"/>
	(3) <i>found</i> you or any <i>advisory affiliate</i> to have been the cause of an <i>investment-related</i> business having its authorization to do business denied, suspended, revoked, or restricted?	<input type="radio"/>	<input checked="" type="radio"/>
	(4) disciplined you or any <i>advisory affiliate</i> by expelling or suspending you or the <i>advisory affiliate</i> from membership, barring or suspending you or the <i>advisory affiliate</i> from association with other members, or otherwise restricting your or the <i>advisory affiliate's</i> activities?	<input type="radio"/>	<input checked="" type="radio"/>
F.	Has an authorization to act as an attorney, accountant, or federal contractor granted to you or any <i>advisory affiliate</i> ever been revoked or suspended?	<input type="radio"/>	<input checked="" type="radio"/>
G.	Are you or any <i>advisory affiliate</i> now the subject of any regulatory <i>proceeding</i> that could result in a "yes" answer to any part of Item 11.C., 11.D., or 11.E.?	<input type="radio"/>	<input checked="" type="radio"/>

For "yes" answers to the following questions, complete a Civil Judicial Action DRP:

H.	(1) Has any domestic or foreign court:	Yes	No
	(a) in the past ten years, <i>enjoined</i> you or any <i>advisory affiliate</i> in connection with any <i>investment-related</i> activity?	<input type="radio"/>	<input checked="" type="radio"/>
	(b) ever <i>found</i> that you or any <i>advisory affiliate</i> were <i>involved</i> in a violation of <i>investment-related</i> statutes or regulations?	<input type="radio"/>	<input checked="" type="radio"/>
	(c) ever dismissed, pursuant to a settlement agreement, an <i>investment-related</i> civil action brought against you or any <i>advisory affiliate</i> by a state or <i>foreign financial regulatory authority</i> ?	<input type="radio"/>	<input checked="" type="radio"/>
	(2) Are you or any <i>advisory affiliate</i> now the subject of any civil <i>proceeding</i> that could result in a "yes" answer to any part of Item 11.H.(1)?	<input type="radio"/>	<input checked="" type="radio"/>

small business" or "small organization" under rule 0-7.

APPENDIX 1A

Answer this Item 12 only if you are registered or registering with the SEC **and** you indicated in response to Item 5.F.(2)(c) that you have regulatory assets under management of less than \$25 million. You are not required to answer this Item 12 if you are filing for initial registration as a state adviser, amending a current state registration, or switching from SEC to state registration.

For purposes of this Item 12 only:

Total Assets refers to the total assets of a firm, rather than the assets managed on behalf of *clients*. In determining your or another *person's* total assets, you may use the total assets shown on a current balance sheet (but use total assets reported on a consolidated balance sheet with subsidiaries included, if that amount is larger).

Control means the power to direct or cause the direction of the management or policies of a *person*, whether through ownership of securities, by contract, or otherwise. Any *person* that directly or indirectly has the right to vote 25 percent or more of the voting securities, or is entitled to 25 percent or more of the profits, of another *person* is presumed to *control* the other *person*.

YesNo

A. Did you have total assets of \$5 million or more on the last day of your most recent fiscal year?

If "yes," you do not need to answer Items 12.B. and 12.C.

B. Do you:

(1) control another investment adviser that had regulatory assets under management (calculated in response to Item 5.F.(2)(c) of Form ADV) of \$25 million or more on the last day of its most recent fiscal year?

(2) control another person (other than a natural person) that had total assets of \$5 million or more on the last day of its most recent fiscal year?

C. Are you:

(1) controlled by or under common control with another investment adviser that had regulatory assets under management (calculated in response to Item 5.F.(2)(c) of Form ADV) of \$25 million or more on the last day of its most recent fiscal year?

(2) controlled by or under common control with another person (other than a natural person) that had total assets of \$5 million or more on the last day of its most recent fiscal year?

Schedule A

Direct Owners and Executive Officers

1. Complete Schedule A only if you are submitting an initial application or report. Schedule A asks for information about your direct owners and executive officers. Use Schedule C to amend this information.

2. Direct Owners and Executive Officers. List below the names of:

(a) each Chief Executive Officer, Chief Financial Officer, Chief Operations Officer, Chief Legal Officer, Chief Compliance Officer(Chief Compliance Officer is required if you are registered or applying for registration and cannot be more than one individual), director, and any other individuals with similar status or functions;

(b) if you are organized as a corporation, each shareholder that is a direct owner of 5% or more of a class of your voting securities, unless you are a public reporting company (a company subject to Section 12 or 15(d) of the Exchange Act);

Direct owners include any person that owns, beneficially owns, has the right to vote, or has the power to sell or direct the sale of, 5% or more of a class of your voting securities. For purposes of this Schedule, a person beneficially owns any securities: (i) owned by his/her child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, sharing the same residence; or (ii) that he/she has the right to acquire, within 60 days, through the exercise of any option, warrant, or right to purchase the security.

(c) if you are organized as a partnership, all general partners and those limited and special partners that have the right to receive upon dissolution, or have contributed, 5% or more of your capital;

(d) in the case of a trust that directly owns 5% or more of a class of your voting securities, or that has the right to receive upon dissolution, or has contributed, 5% or more of your capital, the trust and each trustee; and

(e) if you are organized as a limited liability company ("LLC"), (i) those members that have the right to receive upon dissolution, or have contributed, 5% or more of your capital, and (ii) if managed by elected managers, all elected managers.

3. Do you have any indirect owners to be reported on Schedule B?

YesNo

4. In the DE/FE/I column below, enter "DE" if the owner is a domestic entity, "FE" if the owner is an entity incorporated or domiciled in a foreign country, or "I" if the owner or executive officer is an individual.

5. Complete the Title or Status column by entering board/management titles; status as partner, trustee, sole proprietor, elected manager, shareholder, or member; and for shareholders or members, the class of securities owned (if more than one is issued).

6. Ownership codes are:

NA - less than 5%

B - 10% but less than 25%

D - 50% but less than 75%

A - 5% but less than 10%

C - 25% but less than 50%

E - 75% or more

7. (a) In the Control Person column, enter "Yes" if the person has control as defined in the Glossary of Terms to Form ADV, and enter "No" if the person does not have control. Note that under this definition, most executive officers and all 25% owners, general partners, elected managers, and trustees are control persons.

(b) In the PR column, enter "PR" if the owner is a public reporting company under Sections 12 or 15(d) of the Exchange Act.

(c) Complete each column.

FULL LEGAL NAME (Individuals: Last Name, First Name, Middle Name)	DE/FE/I	Title or Status	Date Title or Status Acquired MM/YYYY	Ownership Code	Control Person	PR	CRD No. If None: S.S. No. and Date of Birth, IRS Tax No. or Employer ID No.
VOS, JAMES, HAYDEN	I	CEO, MANAGING MEMBER	10/2006	B	Y	N	1689839
FLUDGATE, SIMON, ALEXANDER	I	MEMBER	10/2006	NA	N	N	2753373
KILARJIAN, NORMAN, SEROP	I	MEMBER	10/2006	A	N	N	2059732
ADELSBACH, PATRICK, RICHARD	I	MEMBER	10/2006	A	N	N	4268945
LARUCCI, JOSEPH, P	I	MEMBER	10/2006	A	N	N	2438686
WASHIO, MANABU	I	MEMBER	02/2007	NA	N	N	2787001
PANAGIOTIDIS, ALEXANDROS	I	MEMBER	10/2006	C	Y	N	5065634
BENARD, VALERIE	I	MEMBER	09/2009	NA	N	N	5710255

Intended Recipient: Pennsylvania School Employees' Retirement System

PRIVATE & CONFIDENTIAL

FISHMAN, MAYA	I	MEMBER, GENERAL COUNSEL, CHIEF COMPLIANCE OFFICER	01/2014	NA	N	N	6178107	APPENDIX 1A
NEWTON, OLIVER, PETER	I	MEMBER	01/2016	NA	N	N	6626761	
MULLARKEY, MATTHEW, MICHAEL	I	MEMBER	01/2019	NA	N	N	7091403	

Schedule B

Indirect Owners

1. Complete Schedule B only if you are submitting an initial application or report. Schedule B asks for information about your indirect owners; you must first complete Schedule A, which asks for information about your direct owners. Use Schedule C to amend this information.

2. Indirect Owners. With respect to each owner listed on Schedule A (except individual owners), list below:

(a) in the case of an owner that is a corporation, each of its shareholders that beneficially owns, has the right to vote, or has the power to sell or direct the sale of, 25% or more of a class of a voting security of that corporation;

For purposes of this Schedule, a *person* beneficially owns any securities: (i) owned by his/her child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, sharing the same residence; or (ii) that he/she has the right to acquire, within 60 days, through the exercise of any option, warrant, or right to purchase the security.

(b) in the case of an owner that is a partnership, all general partners and those limited and special partners that have the right to receive upon dissolution, or have contributed, 25% or more of the partnership's capital;

(c) in the case of an owner that is a trust, the trust and each trustee; and

(d) in the case of an owner that is a limited liability company ("LLC"), (i) those members that have the right to receive upon dissolution, or have contributed, 25% or more of the LLC's capital, and (ii) if managed by elected managers, all elected managers.

3. Continue up the chain of ownership listing all 25% owners at each level. Once a public reporting company (a company subject to Sections 12 or 15(d) of the Exchange Act) is reached, no further ownership information need be given.

4. In the DE/FE/I column below, enter "DE" if the owner is a domestic entity, "FE" if the owner is an entity incorporated or domiciled in a foreign country, or "I" if the owner is an individual.

5. Complete the Status column by entering the owner's status as partner, trustee, elected manager, shareholder, or member; and for shareholders or members, the class of securities owned (if more than one is issued).

6. Ownership codes are: C - 25% but less than 50% E - 75% or more
D - 50% but less than 75% F - Other (general partner, trustee, or elected manager)

7. (a) In the *Control Person* column, enter "Yes" if the *person* has *control* as defined in the Glossary of Terms to Form ADV, and enter "No" if the *person* does not have *control*. Note that under this definition, most executive officers and all 25% owners, general partners, elected managers, and trustees are *control persons*.
(b) In the PR column, enter "PR" if the owner is a public reporting company under Sections 12 or 15(d) of the Exchange Act.
(c) Complete each column.

No Information Filed

Schedule D - Miscellaneous

You may use the space below to explain a response to an Item or to provide any other information.

For security purposes and protection of data, Aksia has chosen not to disclose the location of our data backup center and storage facility in Section 1.L. of this Form ADV.

Schedule R

No Information Filed

DRP Pages

CRIMINAL DISCLOSURE REPORTING PAGE (ADV)

No Information Filed

REGULATORY ACTION DISCLOSURE REPORTING PAGE (ADV)

No Information Filed

CIVIL JUDICIAL ACTION DISCLOSURE REPORTING PAGE (ADV)

No Information Filed

Intended Recipient: Pennsylvania School Employees' Retirement System

PRIVATE & CONFIDENTIAL

Part 2

APPENDIX 1A

Exemption from brochure delivery requirements for SEC-registered advisers

SEC rules exempt SEC-registered advisers from delivering a firm brochure to some kinds of clients. If these exemptions excuse you from delivering a brochure to *all* of your advisory clients, you do not have to prepare a brochure.

Yes

No

Are you exempt from delivering a brochure to all of your clients under these rules?

If no, complete the ADV Part 2 filing below.

Amend, retire or file new brochures:

Brochure ID	Brochure Name	Brochure Type(s)
294524	AKSIA LLC - FORM ADV PART 2A - 03/26/2020	Pension plans/profit sharing plans, Pension consulting, Foundations/charities, Government/municipal, Private funds or pools, Selection of Other Advisers/Solicitors

Execution Pages

DOMESTIC INVESTMENT ADVISER EXECUTION PAGE

You must complete the following Execution Page to Form ADV. This execution page must be signed and attached to your initial submission of Form ADV to the SEC and all amendments.

Appointment of Agent for Service of Process

By signing this Form ADV Execution Page, you, the undersigned adviser, irrevocably appoint the Secretary of State or other legally designated officer, of the state in which you maintain your *principal office and place of business* and any other state in which you are submitting a *notice filing*, as your agents to receive service, and agree that such *persons* may accept service on your behalf, of any notice, subpoena, summons, *order* instituting *proceedings*, demand for arbitration, or other process or papers, and you further agree that such service may be made by registered or certified mail, in any federal or state action, administrative *proceeding* or arbitration brought against you in any place subject to the jurisdiction of the United States, if the action, *proceeding*, or arbitration (a) arises out of any activity in connection with your investment advisory business that is subject to the jurisdiction of the United States, and (b) is *founded*, directly or indirectly, upon the provisions of: (i) the Securities Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act of 1939, the Investment Company Act of 1940, or the Investment Advisers Act of 1940, or any rule or regulation under any of these acts, or (ii) the laws of the state in which you maintain your *principal office and place of business* or of any state in which you are submitting a *notice filing*.

Signature

I, the undersigned, sign this Form ADV on behalf of, and with the authority of, the investment adviser. The investment adviser and I both certify, under penalty of perjury under the laws of the United States of America, that the information and statements made in this ADV, including exhibits and any other information submitted, are true and correct, and that I am signing this Form ADV Execution Page as a free and voluntary act.

I certify that the adviser's books and records will be preserved and available for inspection as required by law. Finally, I authorize any *person* having *custody* or possession of these books and records to make them available to federal and state regulatory representatives.

Signature: MAYA FISHMAN

Date: MM/DD/YYYY 03/26/2020

Printed Name: MAYA FISHMAN

Title: CHIEF COMPLIANCE OFFICER

Adviser *CRD* Number: 143422

NON-RESIDENT INVESTMENT ADVISER EXECUTION PAGE

You must complete the following Execution Page to Form ADV. This execution page must be signed and attached to your initial submission of Form ADV to the SEC and all amendments.

1. Appointment of Agent for Service of Process

By signing this Form ADV Execution Page, you, the undersigned adviser, irrevocably appoint each of the Secretary of the SEC, and the Secretary of State or other legally designated officer, of any other state in which you are submitting a *notice filing*, as your agents to receive service, and agree that such persons may accept service on your behalf, of any notice, subpoena, summons, *order* instituting *proceedings*, demand for arbitration, or other process or papers, and you further agree that such service may be made by registered or certified mail, in any federal or state action, administrative *proceeding* or arbitration brought against you in any place subject to the jurisdiction of the United States, if the action, *proceeding* or arbitration (a) arises out of any activity in connection with your investment advisory business that is subject to the jurisdiction of the United States, and (b) is *founded*, directly or indirectly, upon the provisions of: (i) the Securities Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act of 1939, the Investment Company Act of 1940, or the Investment Advisers Act of 1940, or any rule or regulation under any of these acts, or (ii) the laws of any state in which you are submitting a *notice filing*.

2. Appointment and Consent: Effect on Partnerships

Intended Recipient: Pennsylvania School Employees' Retirement System

PRIVATE & CONFIDENTIAL

If you are organized as a partnership, this irrevocable power of attorney and consent to service of process will continue in effect if any partner withdraws from or is admitted to the

3. *Non-Resident* Investment Adviser Undertaking Regarding Books and Records

By signing this Form ADV, you also agree to provide, at your own expense, to the U.S. Securities and Exchange Commission at its principal office in Washington D.C., at any Regional or District Office of the Commission, or at any one of its offices in the United States, as specified by the Commission, correct, current, and complete copies of any or all records that you are required to maintain under Rule 204-2 under the Investment Advisers Act of 1940. This undertaking shall be binding upon you, your heirs, successors and assigns, and any *person* subject to your written irrevocable consents or powers of attorney or any of your general partners and *managing agents*.

Signature

I, the undersigned, sign this Form ADV on behalf of, and with the authority of, the *non-resident* investment adviser. The investment adviser and I both certify, under penalty of perjury under the laws of the United States of America, that the information and statements made in this ADV, including exhibits and any other information submitted, are true and correct, and that I am signing this Form ADV Execution Page as a free and voluntary act.

I certify that the adviser's books and records will be preserved and available for inspection as required by law. Finally, I authorize any *person* having *custody* or possession of these books and records to make them available to federal and state regulatory representatives.

Signature:

Date: MM/DD/YYYY

Printed Name:

Title:

Adviser *CRD* Number:

143422

Pennsylvania Public School Employees' Retirement System

Item 1: Cover Page

AKSIA LLC

FIRM BROCHURE

Aksia LLC
599 Lexington Avenue, 37th Floor
New York, NY 10022
Tel: (212) 710-5710
Fax: (212) 710-5711
Website: www.aksia.com

March 26, 2020

This brochure provides information about the qualifications and business practices of Aksia LLC (“Aksia”), an investment adviser registered with the United States Securities and Exchange Commission (“SEC”). If you have any questions about the contents of this brochure, please contact Maya Fishman at (212) 710-5771 or maya.fishman@aksia.com. This information has not been approved or verified by the SEC or by any state securities authority.

Additional information about Aksia is also available on the SEC’s website at www.adviserinfo.sec.gov.

Registration with the SEC or with any state securities authority does not imply a certain level of skill or training.

Item 2: Material Changes

This Item 2 only discloses material changes made to Aksia's Disclosure Brochure since the last annual amendment of the Disclosure Brochure, which was filed on March 29, 2019. There are no material changes to disclose in this Item 2 of the Disclosure Brochure.

Pennsylvania Public School Employees' Retirement System

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Item 4: Advisory Business

A. General Description of Advisory Firm.

Aksia LLC (“Aksia”), a Delaware limited liability company, is a research and advisory firm with its principal place of business in New York, New York. Aksia commenced operations as an investment advisor in October 2006 and has been registered with the SEC since March 22, 2007. Aksia has 11 principals, including all of the original six founding principals. The firm is 100% owned and controlled by its 11 equity principals who are identified on Schedule A of Form ADV.

B. Description of Advisory Services (including any specializations).

Aksia provides institutional investors with portfolio advisory services on alternative investment strategies. Aksia also provides certain clients (“Research Clients”) with non-advisory research services.

For purposes of this brochure, the term “Clients” shall mean Aksia’s (i) general advisory clients to which Aksia does not provide “continuous and regular supervisory or management services” as such term is defined in the instructions to Form ADV (collectively, the “Advisory Clients”) and (ii) discretionary and non-discretionary advisory clients to which Aksia provides continuous and regular supervisory or management services (collectively, the “Investment Management Clients”). Aksia tailors its advisory services to each Client’s specific guidelines. For the sake of clarity, the term “Clients,” as used in this brochure, does not include Research Clients.

C. Availability of Tailored Services for Individual Clients.

Aksia views each Client relationship as unique and therefore seeks to customize its services to address each Client’s individual investment objectives, guidelines and constraints. As such, Aksia provides advice that is tailored to a Client’s respective investment policy statement, advisory agreement, investment management agreement, or customized private placement memorandum. For example, some Clients have liquidity constraints, diversification constraints, mandated sector allocation ranges, and/or prohibitions from investing in certain types of securities. Aksia considers such restrictions prior to making any recommendations or decisions.

D. Wrap Fee Programs.

Not applicable.

E. Client Assets Under Management.

As of December 31, 2019, Aksia had approximately \$10,687,442,633 of Investment Management Client regulatory assets under management, of which \$8,147,886,946 was managed on a discretionary basis and \$2,539,555,687 was managed on a non-discretionary basis. For purposes of calculating regulatory assets under management, Aksia excluded the assets of its Advisory Clients and Research Clients.

In addition, Aksia has approximately \$81 billion in assets under advisement, attributable to Aksia’s Advisory Clients.

Item 5: Fees and Compensation

A. Advisory Fees and Compensation.

Aksia's fee schedule for its advisory services is omitted because this brochure will be delivered only to qualified purchasers as defined in section 2(a)(51)(A) of the Investment Company Act of 1940.

B. Payment of Fees.

Aksia generally charges its Advisory Clients a flat, fixed fee, although certain Advisory Clients pay an asset-based fee. Aksia generally charges its Investment Management Clients a percentage of assets under management. Some Investment Management Clients also pay performance-based fees. Clients may select the method by which to pay Aksia's fees. Aksia typically bills Clients for fees incurred on a quarterly basis.

C. Other Fees and Expenses.

In addition to paying investment management or advisory fees, and, potentially, performance-based fees, Client assets that are invested in pooled investment vehicles will bear their pro rata share of the underlying fund's operating and other expenses, including legal expenses, internal and external accounting expenses, audit and tax preparation expenses, and organizational expenses. In addition, during the course of Aksia's due diligence process on underlying private investment funds, Aksia engages specialized third parties to conduct investigations on key personnel of the funds' managers. Clients may incur a one-time fee associated with an investigation on a new fund; Aksia does not retain any such fees. Aksia may also charge a Client for expenses related to travel outside of standard industry coverage specifically requested by the Client.

D. Prepayment of Fees.

Some Clients pay Aksia's fees in advance. In the event that the contract is terminated before the end of a billing period, such Clients may obtain a prorated rebate for the pre-paid fee attributable to the period between the termination date and the last day of the billing period.

E. Additional Compensation and Conflicts of Interest.

Not applicable.

Item 6: Performance-Based Fees and Side-by-Side Management

Aksia and its investment personnel manage both (i) Investment Management Client accounts that are charged an asset-based fee and in some cases performance-based compensation and (ii) Advisory Client accounts that are charged a fixed fee or, in some cases, an asset-based fee. Certain Client accounts pay higher asset-based fees or flat fees than other accounts. Aksia and its investment personnel manage multiple Client accounts, which creates a conflict of interest because Aksia may have an incentive to favor Client accounts that pay Aksia performance-based compensation or higher fees. Aksia has adopted and implemented policies and procedures intended to address conflicts of interest relating to the management of multiple Client accounts. In particular, Aksia's procedures relating to the allocation of investment opportunities require the objective allocation of general investment opportunities to ensure fair and equitable allocation among accounts, and Aksia has implemented procedures to document and review such allocations, as described in Item 16.

Item 7: Types of Clients

Aksia's Clients are U.S. and non-U.S. institutional investors that primarily include pension plans, government-affiliated funds, superannuation funds, endowments, foundations, financial institutions, charitable organizations, and customized trusts/funds, each set up on behalf of Aksia's Clients. Aksia is not precluded from advising types of clients that are not listed above.

Item 8: Methods of Analysis, Investment Strategies and Risk of Loss

A. Methods of Analysis and Investment Strategies.

Aksia provides investment advice and management services to its Clients on underlying portfolio managers (each, a “Portfolio Manager”) utilizing alternative investment strategies. Aksia’s method of analysis focuses on extensive due diligence from an investment and operational standpoint on such Portfolio Managers presented in consistent, opinionated reports. Aksia endeavors to analyze a Portfolio Manager’s strategy, risk management process, quality of investment professionals, operations and infrastructure, regulatory compliance, and ability to produce attractive long-term, risk-adjusted investment results, among other factors.

For more specific disclosure pertaining to the investment strategy of a particular Portfolio Manager, please refer to the private placement memorandum of such Portfolio Manager.

B. Material Risks (Including Significant or Unusual Risks) Relating to Investment Strategies.

While Aksia advises multiple Client accounts that each face different risks depending on the investment strategies utilized by the Portfolio Managers managing the Client assets, all such investments risk the loss of capital. Aksia’s extensive due diligence process seeks to address and mitigate such risk; however, there is no guarantee or assurance that Aksia’s investment advice or recommendations will be successful. Aksia itself may face the following risks:

Effects of Health Crises and Other Catastrophic Events. Health crises, such as pandemic and epidemic diseases, as well as other catastrophic events that interrupt the expected course of events, such as natural disasters, war or civil disturbance, acts of terrorism, power outages and other unforeseeable and external events, and the public response to or fear of such diseases or events, have and may in the future have an adverse effect on Clients’ investments and Aksia’s operations. For example, any preventative or protective actions that governments may take in respect of such diseases or events may result in periods of business disruption and inability to conduct in person diligence, and reduced or disrupted operations for underlying Portfolio Managers. In addition, under such circumstances Aksia’s operations and those of other service providers could be reduced, delayed, or otherwise disrupted. Further, the occurrence and pendency of such diseases or events could adversely affect the economies and financial markets either in specific countries or worldwide.

In addition, subject to compliance with a Client’s particular investment guidelines and restrictions, Aksia may recommend a Portfolio Manager’s investment program that includes the following potential risks:

Lack of Diversification. Depending on a Client’s investment mandate, the Client’s portfolio may not be diversified among a wide range of types of securities, countries or industry sectors. Accordingly, such Client portfolio may be subject to more rapid change in value than would be the case if Client’s portfolio was more diversified and if each underlying Portfolio Manager was required to maintain a wider diversification among types of securities, other instruments, geographic areas or sectors.

Illiquid Investments. Portfolio Managers may invest in companies the securities of which are not at the time of investment, and may never be, publicly traded. These investments may be difficult to value and sell, or otherwise liquidate, and the risk of investing in such companies is generally much greater than the risk of investing in publicly traded companies. Companies whose securities are not publicly traded are not subject to the same disclosure and reporting requirements that are generally applicable to companies with publicly traded securities, nor is the trading of such non-publicly traded securities regulated by any government agency. Accordingly, the protections accorded by such regulation are not available in making such investments. To the extent that there is no liquid trading market for particular investments, a Portfolio

Manager may be unable to liquidate such investments or may be unable to do so at a profit. In addition, in certain circumstances governmental or regulatory approvals may be required for a Portfolio Manager's funds to dispose of an investment, or the Portfolio Manager may be prohibited by contract or for legal or regulatory reasons from selling an illiquid investment for a period of time.

International Investing. Investing outside the United States may involve greater risks than investing in the United States. These risks include: (i) less publicly available information; (ii) potential lack of uniform accounting, auditing and financial reporting standards; (iii) varying levels of governmental regulation and supervision; and (iv) the difficulty of enforcing legal rights in a non-U.S. jurisdiction and uncertainties as to the status, interpretation and application of laws. The transaction costs of buying and selling non-U.S. securities, including brokerage, tax and custody costs, may be higher than those involved in U.S. transactions. Furthermore, many non-U.S. financial markets, while generally growing in volume, have, for the most part, substantially less volume than U.S. markets, and securities of many non-U.S. companies are historically less liquid and their prices historically more volatile than securities of comparable U.S. companies. The economies of individual non-U.S. countries may also differ favorably or unfavorably from the U.S. economy.

Short Selling. Short selling transactions expose a Portfolio Manager to the risk of loss in an amount greater than the initial investment, and such losses can increase rapidly and without effective limit. There is the risk that the securities borrowed by such Portfolio Manager in connection with a short sale would need to be returned to the securities lender on short notice. If such request for return of securities occurs at a time when other short sellers of the subject security are receiving similar requests, a "short squeeze" can occur, wherein the Portfolio Manager may be compelled, at the most disadvantageous time, to replace the borrowed securities previously sold short with purchases on the open market, possibly at prices significantly in excess of the proceeds received earlier.

C. Risks Associated With Types of Securities that are Primarily Recommended (Including Significant, or Unusual Risks).

The securities recommended by Aksia are investments in investment vehicles managed by Portfolio Managers and such securities are not registered under the Securities Act of 1933, as amended. Accordingly, the securities recommended by Aksia are restricted as to their transferability. Such investments may also have exposure to esoteric securities, which may carry additional risks such as:

Illiquid Instruments. Certain instruments in which Portfolio Managers invest may have no readily available market or third-party pricing. Reduced liquidity may have an adverse impact on market price and the Portfolio Manager's ability to sell particular securities when necessary to meet liquidity needs or in response to a specific economic event, such as the deterioration of creditworthiness of an issuer. In some cases, the relevant portfolio may be contractually prohibited from disposing of certain securities for a specified period of time. Reduced liquidity in the secondary market for certain securities may also make it more difficult for the Portfolio Manager to obtain market quotations based on actual trades for the purpose of valuing a fund's portfolio.

Non-U.S. Securities. Portfolio Managers may invest in foreign securities, foreign currencies, and securities issued by U.S. entities with substantial foreign operations, which can involve additional risks relating to political, economic, or regulatory conditions in foreign countries. These risks include fluctuations in foreign currencies; withholding or other taxes; trading, settlement, custodial, and other operational risks; and the less stringent investor protection and disclosure standards of some foreign markets. One or more of these factors can make foreign investments, especially those in emerging markets, more volatile and potentially less liquid than U.S. investments. In addition, foreign markets can perform differently from the U.S. market.

Emerging Markets. There are greater risks associated with investments by Portfolio Managers in securities of issuers located in less developed countries than investments in securities of issuers located in the U.S. and other developed markets. Political risk for many developing countries is a significant factor. During certain social and political circumstances, governments may be involved in policies of expropriation, confiscatory taxation, nationalization, intervention in the securities market and trade settlement, and imposition of foreign investment restrictions and exchange controls. In comparison to more developed markets, trading volumes in emerging markets may be lower, which can result in a lack of liquidity and greater price volatility.

Equity Securities. Portfolio Managers may invest in equity securities, the value of which fluctuates in response to issuer, political, market, and economic developments. Fluctuations can be dramatic over the short as well as long term, and different parts of the market and different types of equity securities can react differently to these developments. For example, large cap stocks can react differently from small cap stocks, and "growth" stocks can react differently from "value" stocks. Issuer, political, or economic developments can affect a single issuer, issuers within an industry or economic sector or geographic region, or the market as a whole. Changes in the financial condition of a single issuer can impact the market as a whole. Terrorism and related geo-political risks have led, and may in the future lead, to increased short-term market volatility and may have adverse long-term effects on world economies and markets generally.

Asset-Backed Securities. Portfolio Managers that invest in asset-backed securities are subject to interest rate risk and, to a lesser degree, prepayment risk. Asset-backed securities are subject to additional risks in that, unlike mortgage-backed securities, asset-backed securities generally do not have the benefit of a security interest in the related collateral. Each type of asset-backed security also entails unique risks depending on the type of assets involved and the legal structure used. In addition, asset-backed securities are subject to credit risk. There is also the possibility that recoveries on repossessed collateral may not be available to support payments on these securities because of the inability to perfect a security interest in such collateral.

Commodity Futures and Options. Portfolio Managers that invest in commodity futures and options face the risk of highly volatile markets, which are influenced by factors such as changing supply and demand relationships, governmental programs and policies, national and international political and economic events and changes in interest rates. In addition, because of the low margin deposits normally required in commodity futures trading, a high degree of leverage may be typical of a pooled investment vehicle engaging in commodity futures trading. As a result, a relatively small price movement in a commodity futures contract may result in substantial losses to such a pooled investment vehicle. Commodity options, like commodity futures contracts, are speculative, and their use involves risk. Specific market movements of the cash commodity or futures contract underlying an option cannot be predicted, and no assurance can be given that a liquid offset market will exist for any particular futures option at any particular time.

Derivatives. Portfolio Managers that invest in swaps, and certain options and other custom derivative or synthetic instruments, are subject to the risk of nonperformance by the counterparty to such instrument, including risks relating to the financial soundness and creditworthiness of the counterparty. In addition, investments in derivative instruments require a high degree of leverage, meaning the overall contract value (and, accordingly, the potential for profits or losses in that value) is much greater than the modest deposit used to buy the position in the derivative contract. Derivative securities can also be highly volatile. The prices of derivative instruments and the investments underlying the derivative instruments may fluctuate rapidly and over wide ranges and may reflect unforeseeable events or changes in conditions, none of which can be controlled by the Client or the Portfolio Manager. Further, transactions in derivative instruments are not undertaken on recognized exchanges, and will expose the Client's account to greater risks than regulated exchange transactions that provide greater liquidity and more accurate valuation of securities.

Distressed Securities. Portfolio Managers that make investments in unrated or low grade debt securities of distressed companies are subject to greater risk of loss of principal and interest than higher-rated debt securities. Also, securities of distressed companies are generally more likely to become worthless than the securities of more financially stable companies. Distressed securities include those of a company currently in, or expected to be subject to, bankruptcy, restructuring, an operational turn-around or other similar events. There is substantial uncertainty concerning the outcome of transactions involving such issuers. In addition, evaluating credit risk for foreign debt securities involves greater uncertainty because credit rating agencies throughout the world have different standards, making comparison across countries difficult.

Fixed-Income and Debt Securities. Investment by a Portfolio Manager in fixed-income and debt securities such as bonds, notes and asset-backed securities residential mortgage backed securities, commercial mortgage backed securities, investment grade corporate bonds, non-investment grade corporate bonds, loans, sovereign bonds and U.S. government debt securities and financial instruments that reference the price or interest rate associated with these fixed income securities, subject a Client's portfolio to the risk that the value of these securities overall will decline because of rising interest rates. Similarly, portfolios that hold such securities are subject to the risk that the portfolio's income will decline because of falling interest rates. Investments in these types of securities will also be subject to the credit risk created when a debt issuer fails to pay interest and principal in a timely manner, or that negative perceptions of the issuer's ability to make such payments will cause the price of that debt to decline. Aksia may also invest in debt securities which are not protected by financial covenants or limitations on additional indebtedness. Most fixed income instruments trade in over-the-counter transactions and lack the benefit of transparent exchange pricing. Bid and asks for these instruments are generally wider than equity securities, and trading is less frequent. These factors may cause distortions and/or volatility in the prices of fixed income-related instruments. Lastly, investments in debt securities will also subject the investments to the risk that the securities may fluctuate more in price, and are less liquid than higher-rated securities because issuers of such lower-rated debt securities are not as strong financially, and are more likely to encounter financial difficulties and be more vulnerable to adverse changes in the economy.

Forward Contracts. A Portfolio Manager may engage in the trading of forward contracts, which are not traded on any exchange. Forward contracts are therefore not guaranteed by any exchange or clearinghouse and are subject to the creditworthiness of the counterparty of the trade. There have been periods during which certain counterparties have refused to continue to quote prices for forward contracts or have quoted prices with an unusually widespread. The Portfolio Manager may trade forward contracts with only one or a few counterparties, which may create more liquidity problems than if such arrangements were made with numerous counterparties. The risk of market illiquidity or disruption could result in major losses.

Exchange Traded Funds ("ETFs"). A Portfolio Manager may invest in ETFs, which represent shares of ownership in either funds or unit investment trusts that hold portfolios of common stocks, bonds or other instruments, which are designed to generally correspond to the price and yield performance of an underlying index. A primary risk factor relating to ETFs is that the general level of stock or bond prices may decline, thus affecting the value of an equity or fixed income ETF, respectively. An ETF may also be adversely affected by the performance of the specific sector or group of industries on which it is based. Moreover, although ETFs are designed to provide investment results that generally correspond to the price and yield performance of their underlying indices, ETFs may not be able to exactly replicate the performance of the indices because of various sources of tracking error, including their expenses and a number of other factors.

LIBOR Affected Instruments. A Portfolio Manager may invest in debt securities, derivatives and other financial instruments, and employs investment strategies, that utilize the London Interbank Offered Rate ("LIBOR") as a "benchmark" or "reference rate" for various interest rate calculations. The United Kingdom Financial Conduct Authority, which regulates LIBOR, has announced a desire to phase out the use of LIBOR by the end of 2021. The elimination of LIBOR or changes to other reference rates or any other changes or reforms to the determination or supervision of reference rates could have an adverse impact on

the market for, or value of, any securities or payments linked to those reference rates, which may have an adverse impact on the value of client accounts. Uncertainty and risk also remain regarding the willingness and ability of issuers and lenders to include revised provisions in new and existing contracts or instruments. Consequently, the transition away from LIBOR to other reference rates may lead to increased volatility and illiquidity in markets that are tied to LIBOR, fluctuations in values of LIBOR-related investments or investments in issuers that utilize LIBOR, increased difficulty in borrowing or refinancing and diminished effectiveness of hedging strategies, adversely impacting the performance of client accounts.

REITs. REITs in which a Portfolio Manager may invest are affected by underlying real estate values, which may have an exaggerated effect to the extent that REITs in which the Portfolio Manager invests concentrate investments in particular geographic regions or property types. Investments in REITs are also subject to the risk of interest rate volatility. Further, rising interest rates will cause investors in REITs to demand a higher annual yield from future distributions, which will in turn decrease market prices for equity securities issued by REITs. REITs are subject to risks inherent in operating and financing a limited number of projects because they are dependent upon specialized management skills, and have limited diversification. REITs depend generally on their ability to generate cash flow to make distributions to investors.

Sovereign Debt. A Portfolio Manager may invest in sovereign debt issued by governments, their agencies and instrumentalities either in the currency of their domicile or in a foreign currency. Investors in sovereign debt may be asked to participate in debt restructuring, including the deferral of interest and principal payments, and may also be requested by the issuer to extend additional loans. It is impossible to predict whether the strategies will be able to successfully avoid losses relating to sovereign default. There is no current means of collecting on defaulted sovereign debt as part of bankruptcy or other proceedings. In addition to general default risk relating to sovereign debt, if the Portfolio Manager invests in sovereign debt denominated in a currency other than the subscription currency (or in respect of which payments of principal or interest are paid in a currency other than the subscription currency) the Portfolio Manager will be exposed to the risk that one or more jurisdictions may impose currency controls that would limit the Portfolio Manager's ability to convert such payments of principal or interest to the subscription currency. It is impossible to predict whether any such currency controls will be imposed.

Risk Arbitrage Securities. A merger, other restructuring, tender, or exchange offer proposed at the time the Portfolio Manager invests in risk arbitrage securities may not be completed on the terms or within the time frame contemplated, resulting in losses.

Security Futures and Options. In connection with a Portfolio Manager's use of futures contracts and options, there may be an imperfect correlation between the change in market value of a security and the prices of the futures contracts and options in the Client's account. In addition, the Portfolio Manager's investments in security futures and options may encounter a lack of a liquid secondary market for a futures contract and the resulting inability to close a futures position prior to its maturity date.

Item 9: Disciplinary Information

Not applicable.

Pennsylvania Public School Employees' Retirement System

Item 10: Other Financial Industry Activities and Affiliations

A. Broker-Dealer Registration Status.

Not applicable.

B. Commodities-Related Registration.

Aksia is registered with the U.S. Commodity Futures Trading Commission as a Commodity Pool Operator. In connection with Aksia's registration as a Commodity Pool Operator, certain of Aksia's management persons are registered as associated persons and/or principals of Aksia.

C. Material Relationships or Arrangements with Industry Participants.

Aksia LLC and six of its wholly owned subsidiaries, Aksia Japan Co., Ltd., Aksia Europe Limited, Aksia Hong Kong Limited, Aksia GP Ltd., Aksia Alfa Advisory Ltd., and Aksia Bravo Advisory Ltd., located in Tokyo, London, Hong Kong, and the Cayman Islands, respectively, assist Aksia in providing investment advisory services to Clients on private investment funds. Aksia Japan Co., Ltd. is registered with the Japanese Financial Services Agency, Aksia Europe Limited is authorized by the U.K. Financial Conduct Authority, and Aksia Hong Kong Limited is registered with the Hong Kong Securities and Futures Commission. Aksia GP Ltd., Aksia Alfa Advisory Ltd., and Aksia Bravo Advisory Ltd., serve solely as the general partner of private investment funds and each is registered as an exempted company in the Cayman Islands. All three entities delegate all investment management authority to Aksia LLC. Aksia Information Technology PC, located in Athens, Greece, provides information technology, research, advisory and other support services to Aksia LLC and its affiliates. Lastly, Manager Portal, LLC, a wholly-owned subsidiary of Aksia LLC, is a technology platform designed for investment managers to share information directly with current and prospective investors.

D. Material Conflicts of Interest Relating to Other Investment Advisers.

Not applicable.

Item 11: Code of Ethics, Participation or Interest in Client Transactions and Personal Trading

A. Code of Ethics.

Aksia has adopted a Code of Ethics (the “Code”) that obligates Aksia and its supervised persons to put the interests of Aksia’s Clients before their own interests and to act honestly and fairly in all respects in their dealings with Clients. All of Aksia’s personnel are also required to comply with applicable federal securities laws. Clients or prospective clients may obtain a copy of the Code by contacting Maya Fishman at (212) 710-5771 or maya.fishman@aksia.com.

Aksia and its Supervised Persons may give and/or receive gifts, services or other items to/from any person or entity that does business with or potentially could conduct business with or on behalf of Aksia. Aksia has adopted policies and procedures governing gifts and business entertainment which includes pre-clearance of gifts and business entertainment in excess of certain de minimis thresholds and pre-clearance by the CCO or her delegate prior to giving/receiving gifts above a certain de minimis threshold.

In the course of its business activities, Aksia may come into possession of confidential or material nonpublic information about issuers. Aksia is prohibited from improperly disclosing or using such information for its own benefit or for the benefit of any other person, regardless of whether such other person is a Client. Aksia maintains and enforces written policies and procedures that prohibit the communication of such information to persons who do not have a legitimate need to know such information and to assure that Aksia is meeting its obligations to Clients and remains in compliance with applicable law. In certain circumstances, Aksia may possess certain confidential or material, nonpublic information that, if disclosed, may be material to a decision to buy, sell or hold a security, however, Aksia will be prohibited from communicating such information to Clients or using such information for Clients’ benefit. In such circumstances, Aksia will have no responsibility or liability to Clients for not disclosing such information to Clients (or the fact that Aksia possesses such information), or not using such information for Client’s benefit, as a result of following Aksia’s policies and procedures designed to provide reasonable assurances that it is complying with applicable law.

B. Client Transactions in Securities where Adviser has a Material Financial Interest.

While Aksia does not invest for its own account and as such does not invest in any securities that Aksia or a related person recommends to Clients, there are certain circumstances where Aksia may recommend, purchase or sell for its Clients funds managed by Portfolio Managers that are affiliated with Clients of Aksia. This can create the perception that Aksia is recommending a Portfolio Manager because of its affiliation with a Client of Aksia. Aksia addresses this potential conflict of interest via policies and procedures reasonably designed to ensure that its activities are carried out in compliance with applicable regulatory requirements and with the best interests of Clients in mind. Such policies and procedures include a screening of such potential investment through Aksia’s extensive due diligence process comprised of multiple layers of review by multiple individuals.

C. Investing in Securities Recommended to Clients.

Aksia’s Code prohibits Aksia or its supervised persons from executing personal securities transactions of any kind in any securities on a restricted securities list maintained by the compliance department. All of Aksia’s supervised persons are required to enable the compliance department to monitor their personal accounts upon becoming an employee. In addition, supervised persons must provide quarterly attestations of their complete disclosure of their personal accounts.

D. Conflicts of Interest Created by Contemporaneous Trading.

Not applicable.

Pennsylvania Public School Employees' Retirement System

Item 12: Brokerage Practices

Aksia makes or recommends direct investments in private investment funds for its Advisory Clients, which does not require the use of a broker-dealer. Typically, all brokers and custodians are selected by underlying managers, and Aksia does not execute transactions on behalf of Advisory Clients. However, in the event the Firm does so in the future, Aksia will follow the below procedures.

Certain of Aksia's Advisory Clients may direct that Aksia execute all or a portion of the transactions for such client's account through a specific broker, in return for such broker providing the client with various services. This direction restricts Aksia's discretion to select brokers and negotiate commission rates and may adversely affect Aksia's ability to obtain best price and execution. Accordingly, when a client directs brokerage to a specific broker, Aksia requires that (i) the client provides such direction in writing to Aksia and (ii) Aksia provide the client with appropriate written disclosure, which will be acknowledged by the client.

In certain limited circumstances, Aksia may receive a distribution in kind and need to dispose of such investment. In such circumstance, Aksia would consider a number of factors in selecting a broker-dealer to execute such transaction and determine the reasonableness of the broker-dealer's compensation. Such factors include reputation, financial strength and stability, net price, and efficiency of execution. Aksia is not obligated to solicit competitive bids and does not have an obligation to seek the lowest available commission cost. Aksia would not receive research or other products or services other than execution from a broker-dealer in connection with an Advisory Client's securities transaction, and as such would not use "soft dollars."

Item 13: Review of Accounts

A. Frequency and Nature of Review.

Each Client account is reviewed on a monthly basis by the heads of each sector research team together with the advisory team responsible for the account. Matters reviewed include specific positions held, adherence to each Client's investment guidelines, and the performance of each account. In addition, Aksia's sector research teams generally meet on a bi-weekly basis to discuss market trends, manager performance, recently completed due diligence, and any changes to their outlooks.

Aksia's Chief Compliance Officer ("CCO") or her delegate reviews the Client portfolios on a quarterly basis to determine whether such portfolios adhere to their stated guidelines and constraints, as applicable.

B. Factors Prompting a Non-Periodic Review of Accounts.

Significant market events affecting underlying funds in Client accounts, changes in the investment objectives or guidelines of a particular Client, or specific arrangements with particular Clients may trigger reviews of Client accounts on other than a periodic basis, including weekly or bi-weekly.

C. Content and Frequency of Regular Account Reports.

For Clients that subscribe to Aksia's operations and accounting services, each Client (or the investor in each customized vehicle) receives written reports pursuant to the terms of each Client's agreement, but in any event at least monthly.

Aksia's Clients also have ongoing access to research, analytics, portfolio tools, and reporting through Aksia's password protected website. Frequency of reports depends on certain triggering events which may occur intra-month, monthly, quarterly and annually.

Item 14: Client Referrals and Other Compensation

A. Economic Benefits Received from Non-Clients for Providing Services to Clients.

Aksia does not receive any economic benefit from any third party who is not a Client for providing investment advice or advisory services to a Client.

B. Compensation to Non-Supervised Persons for Client Referrals.

Aksia makes payments to a third-party solicitor for Client referrals outside of the U.S., provided that, to the extent required, such solicitor has entered into a written agreement with Aksia pursuant to which the solicitor will provide each prospective client with a copy of Aksia's Form ADV Part 2, and a disclosure document setting forth the terms of the solicitation arrangement, including the nature of the relationship between the solicitor and Aksia and any fees to be paid to the solicitor. Where applicable, payments for Client solicitations will be structured to comply fully with the requirements of Rule 206(4)-3 under the Advisers Act and related SEC staff interpretations.

Item 15: Custody

Neither Aksia nor any of its affiliates have physical custody of Investment Management Client assets. Investment Management Client assets are held by qualified custodians. However, Aksia and certain of its affiliates, in acting as investment adviser to or general partner of certain Investment Management Client fund entities (the “Client Funds”), are deemed to have custody, as defined by Advisers Act Rule 206(4)- 2, of such Client Fund’s assets.

With respect to certain Client Funds, Aksia has availed itself of the audit exception to Rule 206(4)-2. Such Client Funds are subject to an annual audit conducted in accordance with U.S. GAAP by an accounting firm that is a member of the Public Company Accounting Oversight Board. Investors in these Client Funds receive audited financial statements within 180 days of the end of the Client Fund’s fiscal year. Client Fund investors that have not received audited financial statements in a timely manner should contact Aksia immediately. With respect to other Client funds, Aksia has engaged an independent auditor to perform an actual examination once during each calendar year, in order to verify the funds and securities of such Client Funds.

Item 16: Investment Discretion

Aksia provides investment advisory services on a discretionary basis to some of its Investment Management Clients. Please see Item 4 for a description of limitations such Investment Management Clients may place on Aksia's discretionary authority.

Prior to assuming full or limited discretion in managing an Investment Management Client's assets, Aksia enters into an investment management agreement or other agreement that sets forth the scope of Aksia's discretion. Any limitations on such discretion are individually agreed to between the Investment Management Client and Aksia and memorialized in the respective agreement with Aksia. Such limitations may include: diversification constraints, mandated sector allocation ranges, prohibitions from investing in certain types of strategies, liquidity constraints, and limits on Aksia's ability to purchase or sell securities without the Investment Management Client's prior written consent.

Aksia's procedures require the objective allocation of general investment opportunities to ensure fair and equitable allocation among accounts. In the event there is limited capacity in a general investment opportunity in which multiple Clients are interested, Aksia will first evaluate the opportunity in light of the investment guidelines and restrictions relevant to each Client, in order to determine whether the opportunity could be suitable for the Client. Once Aksia has identified the Clients for which the opportunity may be suitable, Aksia will reach out to each Client to gauge such client's interest in investing. When Aksia has received responses from all of the identified Clients, Aksia will advise the underlying manager offering the general investment opportunity which of Aksia's Clients are interested in investing in its vehicle and request that the manager determine the allocations.

Aksia will first recommend co-investment opportunities ("Co-Investments") to certain Investment Management Clients that have elected in their investment management agreement with Aksia or that have otherwise contracted with Aksia to provide services regarding Co-Investments. If there is an excess allocation above the amount that Aksia determines will be allocated to Investment Management Clients, the excess allocation may be offered to any client of Aksia or to any third party, in each case selected by Aksia in its sole discretion. In allocating Co-Investment opportunities across Investment Management Clients, Aksia will first evaluate whether a Co-Investment opportunity is suitable for a particular Investment Management Client in light of a variety of factors including any investment guidelines and restrictions relevant to the Investment Management Client. Once Aksia has determined which Investment Management Clients are eligible to participate in a Co-Investment opportunity as described above, Aksia will generally allocate the opportunity pro rata among such eligible Investment Management Clients, subject to any limitations imposed by the manager such as a minimum investment amount or limitation to existing investors.

The foregoing allocation policy with respect to Co-Investments does not apply to client-sourced opportunities which may be preserved by the client to the extent Aksia is not also allocated or offered the opportunity directly by the manager.

Item 17: Voting Client Securities

A. Policies and Procedures Relating to Authority to Vote Client Securities.

To the extent Aksia has been delegated proxy voting authority on behalf of an Investment Management Client, Aksia complies with its proxy voting policies and procedures that are designed to ensure that such proxies are voted in the best interests of such Investment Management Client.

An Investment Management Client that wishes to direct its vote in a particular solicitation shall give reasonable prior written notice to Aksia indicating such intention and provide written instructions directing Aksia's vote in regard to the particular solicitation. Where such prior written notice is received, Aksia will vote proxies in accordance with such written instructions received from the Investment Management Client, provided that such instructions are provided to Aksia in a timely manner.

If a material conflict of interest between Aksia and an Investment Management Client exists, Aksia will determine whether voting in accordance with the guidelines set forth in the proxy voting policies and procedures is in the best interests of the Investment Management Client or take some other appropriate action.

Aksia does not have proxy voting authority with respect to the Advisory Clients or Research Clients.

Clients may obtain a copy of Aksia's proxy voting policies and procedures and information about how Aksia voted an Investment Management Client's proxies by contacting Maya Fishman at (212) 710-5771 or maya.fishman@aksia.com.

Item 18: Financial Information

Not applicable.

Pennsylvania Public School Employees' Retirement System

Item 19: Requirements for State-Registered Advisers

Not applicable.

Pennsylvania Public School Employees' Retirement System

- A [REDACTED] A [REDACTED] may rely on obtaining a copy of proxy statements from the SEC's EDGAR system [REDACTED]
- A [REDACTED] A [REDACTED]
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- A [REDACTED] [REDACTED] [REDACTED] [REDACTED] A [REDACTED] [REDACTED] client's proxies, and a copy of any written response to any (written or oral) [REDACTED] A [REDACTED]

I. Review

1. The first part of the document is a title page. It contains the title of the document, the author's name, and the date of the document.

2. The second part of the document is an abstract. It provides a brief summary of the main points of the document.

3. The third part of the document is the main body. It contains the detailed discussion of the topic.

4. The fourth part of the document is a conclusion. It summarizes the findings of the study and provides recommendations.

5. The fifth part of the document is a bibliography. It lists the sources used in the study.

6. The sixth part of the document is an appendix. It contains additional information that is not included in the main body of the document.

























7. The seventh part of the document is a glossary. It defines the key terms used in the document.

8. The eighth part of the document is a list of figures. It provides a brief description of each figure.

9. The ninth part of the document is a list of tables. It provides a brief description of each table.

10. The tenth part of the document is a list of references. It lists the sources used in the study.

XX. IDENTIFICATION OF CONFLICTS OF INTEREST

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Aksia's business practices at least annually to

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XXI.BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN

A 

This Business Continuity and Disaster Recovery Plan (the “**Continuity Plan**”) of A

A. Communications

1. Supervised Persons

Aksia will notify the user of the availability of the Compliance Site (the “Compliance Site”) and the user will be able to access the Compliance Site using the user’s MAX credentials. Aksia will notify the user of the availability of the Compliance Site and the user will be able to access the Compliance Site using the user’s MAX credentials.

2. Clients

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Aksia's offices, all personnel should be notified that no one is to access Aksia's email system from any computer, mobile device, or other electronic device.

Murphy's Pub & Restaurant at 977 2nd Ave

Aksia's Information Technology team manages the company's information technology infrastructure, including the company's computer systems, networks, and data centers. The team is responsible for ensuring the security, reliability, and availability of the company's information technology systems. The team also manages the company's information technology budget and oversees the implementation of new information technology systems.

A

Email data is retained within Microsoft's Exchange Online cloud platform for seven years.

- **Aksia's servers and user desktops.**
 The servers are located in a data center in the United States. The user desktops are located in the United States and Europe.
- **Customer data.**
 The customer data is stored in a database in the United States.
- **Aksia's servers and user desktops.**
 The servers are located in a data center in the United States. The user desktops are located in the United States and Europe.

External traffic into Aksia's internal network is restricted to ports used for internet traffic

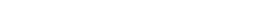
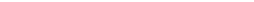
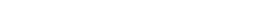
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A company's ability to deliver on its promises is a key factor in its success. This is because customers are more likely to do business with a company that they trust. Trust is built through consistent communication and delivery of what was promised. This is why it is important for a company to have a strong reputation for reliability. One way to build this reputation is by using a company like UPS, which is known for its reliability and delivery services.

As Virtual Private Network access (“VPN”) is required to access the Company’s internal systems, the Company’s information security policy requires that all employees use the Company’s VPN to access the Company’s internal systems. The Company’s information security policy also requires that all employees use the Company’s VPN to access the Company’s internal systems. The Company’s information security policy also requires that all employees use the Company’s VPN to access the Company’s internal systems.

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requirement. Aksia's policies concerning electronic communication

A _____ confidential nature (all of such information hereinafter referred to as “Confidential Information”), the
A _____
A _____ A _____



Compliance Manual

May 2019

Effective February 2007

Revised as of May 2019

Aksia is a commercial entity whose internal governance and business practices are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a "trade secret" as defined in 65 P.S. § 67.102.

[REDACTED]

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The chart displays the percentage of respondents who answered 'Yes' to various questions. The data is as follows:

Question	Yes (%)	No (%)	Don't know (%)
1. Are you satisfied with the way the government is handling the situation?	85	10	5
2. Do you think the government is doing enough to protect the people?	75	20	5
3. Are you confident in the government's leadership?	65	30	5
4. Do you believe the government is being honest with you?	55	40	5
5. Are you satisfied with the government's communication?	45	50	5
6. Do you think the government is taking the right steps?	35	60	5
7. Are you happy with the government's actions?	25	70	5
8. Do you feel the government is listening to the people?	15	80	5
9. Are you satisfied with the government's policies?	10	85	5
10. Do you think the government is working for the people?	5	90	5

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Responsibility	Percentage
Current government	90%
Previous government	10%

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A horizontal bar chart titled 'U.S. responsible for 9/11 attacks?' showing the percentage of respondents who believe the U.S. is responsible for the 9/11 attacks. The chart is broken down by age group (18-29, 30-49, 50-69, 70+) and gender (Male, Female). The bars are black, and the percentages are indicated by the length of the bars and the numbers in the boxes at the end of each bar.

Age Group	Gender	Percentage
18-29	Male	92%
	Female	92%
30-49	Male	92%
	Female	92%
50-69	Male	92%
	Female	92%
70+	Male	92%
	Female	92%
18-29	Male	92%
	Female	92%
30-49	Male	92%
	Female	92%
50-69	Male	92%
	Female	92%
70+	Male	92%
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18-29	Male	92%
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30-49	Male	92%
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50-69	Male	92%
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	Female	92%
18-29	Male	92%
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30-49	Male	92%
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50-69	Male	92%
	Female	92%
70+	Male	92%
	Female	92%

Category	Believe responsible	Do not believe responsible
Current government	85%	15%
Previous governments	85%	15%

Country	Number of Publications
USA	10
Canada	2
UK	8
France	9
Germany	10
Italy	3
Spain	10
Japan	10
South Korea	10
Australia	10
India	10
China	10
Russia	10
Brazil	10
Mexico	10
Argentina	10
Colombia	10
Venezuela	10
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Response	Percentage
Yes, the current administration is responsible	85%
No, the current administration is not responsible	15%

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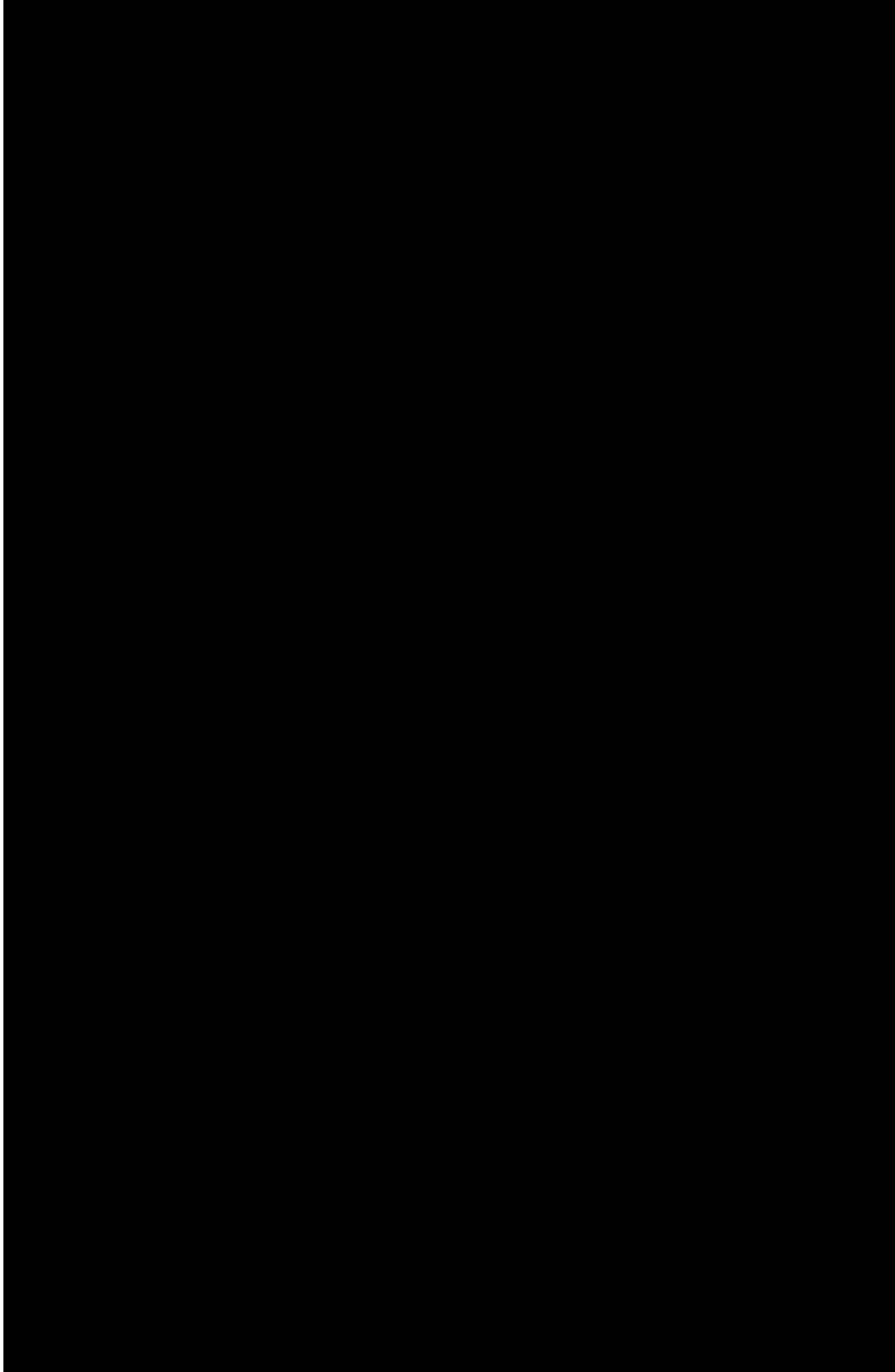
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Our Professionals

Jim Vos, ¹ CEO			
Investment Research			
Patrick Adelsbach ¹	Norm Kilarjian ¹	Joseph Larucci ¹	
Brian Goldberg	Joshua Hemley	Maiko Nanao	Timothy Nest
Lawrence Cinamon	Farhad Dalvi	George Evans	Leo Fletcher-Smith
Keith Morgan	Amit Patel	Ping Xu	Andreas Charisiadis
Gordon Chen	Tim Dooley	Allison Hayford	Hariklia Kanari
Filip Malaric	Glen Morisano Jr.	Louie Nam	Alex Ring
Ilya Riskin	Katerina Zampouki	Luke Andriuk	Dimitris Antoniou
Andrew Arbeeney	Joe Beach	George Binas	Samuel Cravo
Benjamin Crossman	Hallam Dixon	Maria Doukidou	Dimitris Drosos
Marina Filkin	Ashini Ganesalingam	James Koehne	Kelly Konstantinidi
Antonis Koutsouvas	Alexandros Kyparissis	George Maniotas	Colin Moody
Aaron Nessel	Alexandros Papadatos	Emily Pritchett	Logan Seghi
Nicholas Sery	Thanos Skarmoutsos	Eleni Skarmoutsou	Kevin Tlusty
Stella Vakenti	Rohan Yadav		
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Konstantinos Passas	Konstantinos Retzilas	Ergian Xhokola	
Operational Due Diligence			
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Michelle Perry	Siddhya Mukerjee ³	Aaron Schechter	Elena Gkova
Charles Gullion	Ryan Hawthorn	Steve Iguchi	Erika Lehmer
Dimitra Lianou	Dawn Norris	Afolabi Oliver	Zeke Pariser
Kaitlin Spillane	Charles Thompson	Emma Wong	Alexis Allen
Janay Anderson	Becca Bonini	Carvell Conduah	Nilsu Derici
Konstantinos Dervisiotis	Emmanouil Diakogiannakis	Franziska Doerr	Will Friedlander
Nikos Giakoumis	Charilaos Kalyvas	Vasilis Mitropoulos	Kourtney Mize
Elaine Ng	Elizabeth O'Connor	Jaimin Patel	Edward Royall
Katerina Vasilopoulou	Androniki Vlachou	Agni Zeriti	Donald Zheng
Portfolio Advisory		Legal & Compliance	
Valerie Benard, ¹ EMEA	Matt Mullarkey, ¹ Americas	Maya Fishman, ¹ GC, CCO	
Oliver Newton, ¹ EMEA	Manabu Washio, ¹ Asia	Bailey Somers	
Simon Garfield	Sylvia Owens ²	Maria Roli	
Yoshikoto Tamura	Taishi Kawakami	Rachel Tishler	
Kathryn Klebacha	Rebecca Levy ²	Kimberly Jachimek	
Brett Minarik	Tzveta Petrov ²	Matate Kuwahara	
Harry Seplowitz	David Sheng	Domi Christodouloupoulou	
Jennifer Wildeman	Federica Cazzaniga	Treasury & Hedging	
Rahul Desai	Christina Giannakaki	Thomas Boychuk	
Lynn O'Connell	Zaiki Yasuyama	Client Operations	
Vasilis Barlas	Raul Barnes	Thomas Hamel	
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Courtney Kirschbaum ²	Susanna Morton	Daisy Da	
Evaggelia Panagioteri ²	Marios Papageorgiou	Ellen Lu	
Toni Razzagone ²	Brian Shushkovsky	Chris Cipolla	
Panayiotis Thanopoulos	Elizabeth Wu	Constantinos Kotsogiannis	
Operations & Admin.	Technology	Vasiliki Pouliasi	
Alex Panagiotidis, ¹ EU Ops	Clifton Ramsundar	Grigoris Angelopoulos	
Matt McDonough, Controller	Eleni Flerianou	Antonis Batris	
Kaori Sugimoto	Anthanasios Kakarios	Irene Daras	
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Alba Arredondo	Giorgos Andrianopoulos	Stamatia Tsante	
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Katerina Fragkou	Theodosia Ekonomou		
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Anastasia Louka	Vangelis Makrynikolas		
Zoi Sofologi	Ourania Papadopoulos		
Theodora Stamati	Andreas Xiarchos		
Miho Takaya	Alexandros Syranidis		
Abby Wylan	Erik Duran		
	Michalis Economou		
Professionals by Region		Professionals by Function	
North America		Research & Risk	100
Europe		Portfolio Advisory	33
Asia		Client Ops, Trsy & Hedging	13
Total		Tech, Legal, Admin	35
		Total	181

As of January 31, 2020

¹ Partner² Also spend substantial time on Business Development³ Split their time between ODD and Legal & ComplianceIntended Recipient: Pennsylvania School Employees' Retirement System
PRIVATE & CONFIDENTIAL

2. ☐ Appendix 2 – Financial Information

****CONFIDENTIAL****

Aksia's financial information is highly confidential and subject to efforts to maintain its secrecy. Therefore, these documents are exempt from disclosure per 65 P.S. § 67.708(b)(26).

Note that these appendices have been provided as separate PDF files as part of the electronic submittal and removed entirely from the redacted electronic submittal required for public disclosure.

Appendix 2A – 2016 Audited Financial Statements

Appendix 2B – 2017 Audited Financial Statements

Appendix 2C – 2018 Audited Financial Statements

3. □ Appendix 3– Consulting

****CONFIDENTIAL****

Aksia is a commercial entity whose reports and services offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 3A – Sample Hedge Fund Investment Policy Considerations
Appendix 3B – Sample Private Credit Investment Policy Considerations
Appendix 3C – Cash Flow Projection Report
Appendix 3D – Sample Liquidity Report
Appendix 3E – Private Credit Pacing Report

4. ☐ Appendix 4 – Industry Research

Appendix 4A – Q1 2020 Hedge Fund Strategy Outlook

Appendix 4B – 2019 Private Credit Strategy Outlook

Appendix 4C – Private Credit Monthly Email

Appendix 4D – Additional Aksia Whitepapers

Hedge Fund Strategy Outlook

January 2020



599 Lexington Avenue, 37th Floor
New York, New York 10022

HEDGE FUND STRATEGY OUTLOOK

Report as of January 31, 2020

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HEDGE FUND INDUSTRY COMMENTARY

Performance & Perspectives

Event Driven

Q4 was a continuation of the choppy performance that came from event driven managers in 2019. Despite strong equity and credit markets, performance within the event sector for both the quarter and the year tended to be driven by idiosyncratic trades and the biases within manager's portfolio. For example, during the year IG credit performed very strongly on the back of both rate moves and credit spread tightening. Within HY, higher rated HY outperformed, and towards the end of the year, certain sectors, like energy, were all but shunned by investors. Managers who had a bias towards higher quality credits and "in-favor" equities (which unfortunately, did not include much in the re-org equity space) tended to outperform while those whose portfolio had a more typical "long low quality, short high quality/IG" orientation struggled to perform.

Long/Short Equity

Long/Short Equity managers posted noteworthy gains in Q4 +4.8% and 2019 +12.6%, per Aksia's Long/Short Equity Monitored Fund Composite ("MFC").¹ As broad markets surpassed Q3 highs, long books drove most of the Q4's contributions. We saw some short book performance dispersion throughout the quarter, with headwinds from market beta and varying degrees of short alpha. As expected, Opportunistic (long biased) and Fundamental Growth were the stronger performers followed by Fundamental Value and Multi-PM. From a geographic perspective, U.S. focused managers tended to outpace European and Asian focused ones.

Relative Value

Performance for Fixed Income Arbitrage managers was positive in Q4, with Aksia's Fixed Income Arbitrage MFC returning +3.2%. Key funding rates remained contained through year end after the liquidity event back in September and U.S. cash futures basis strategies continued to be the primary driver of performance amongst the peer group.

The second half of the year was generally a letdown for Quantitative Strategies managers. The lack of idiosyncratic return drivers (refer to chart in Quantitative Strategies section) was largely a drag on funds in Q4. Within Insurance Linked strategies, portfolios were impacted by events in Japan (Typhoon Hagibis in October, which followed Faxai in September).

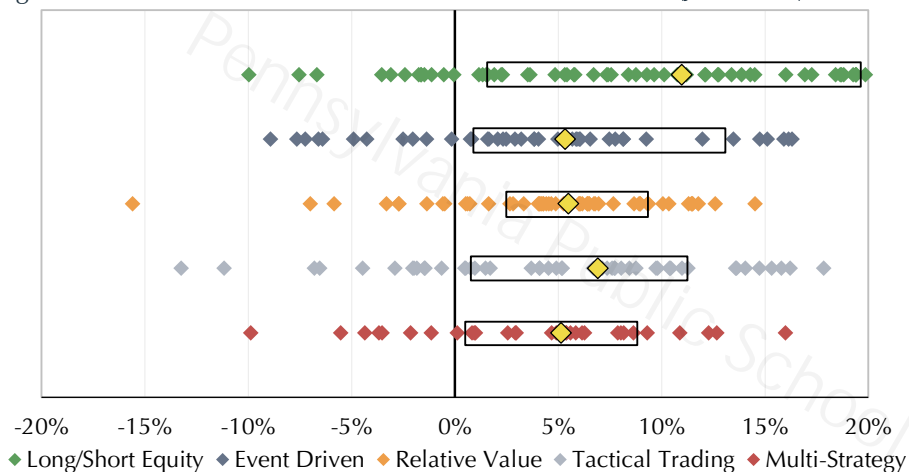
Tactical Trading

G10 macro funds generally had a good Q4 with widely held curve steepener trades and long equity biases working out for managers. EM macro managers had an unambiguously strong end to the year, with most managers posting positive performance in Q4. In local fixed income markets, managers generally benefitted from expectations of lower EM policy rates, as well as the risk-on move in both EM credit and equity. The managers who outperformed in Q4 were those with significant Argentina exposure: positivity around the approach of incoming government in December drove expectations of a more creditor-friendly outcome than had been feared and bond prices adjusted accordingly.

¹ Please refer to the disclosures following this report for additional detail on Aksia's MFCs.

HEDGE FUND INDUSTRY COMMENTARY

Figure 1: Aksia Monitored Funds – 2019 YTD Performance (Jan – Nov)



Source: Aksia Monitored Fund Composite (MFC)

Note: Each point represents one fund's cumulative performance as a constituent of the MFC in the referenced time period. Rectangles span the middle 50% of individual constituent returns, with the yellow diamond representing the overall sector median. Returns outside of -20% to 20% range are not pictured. Funds without complete return profiles have been excluded from the chart.

Past performance is not indicative of future results and should not be taken as an indication or guarantee of any future performance or prediction.

HEDGE FUND INDUSTRY COMMENTARY

Hedge Fund Performance Perspectives

Hedge funds remain under scrutiny given varied performance over the past few years, and there have been high-profile manager closures (or family office conversions) from once large, seemingly stable firms, such as Appaloosa, Arrowgrass, BlueMountain, Highbridge, and Moore.

The question of whether hedge funds underperformed in 2019 largely comes back to what an investor is using their hedge fund allocation for and the pre-defined objectives. A large portion of institutions deploy hedge funds in their portfolios in a diversification role and are typically targeting a portfolio beta of less than 0.2 to equity markets.

In a CAPM context, hedge funds performed in-line to above the expected return when you factor in the risk-free rate (ranging from negative in Europe to flat in Asia/UK to 2% in the US). As such, one could argue that hedge funds outperformed their objectives for 2019.

Even for portfolios where hedge funds are used as an equity substitute, many strategies used in these portfolios (e.g., higher net Equity Long/Short and Activist strategies) have kept pace with global equity markets in 2019 after outperforming on a relative basis in 2018.

While we agree that investors should continually assess the performance of their hedge fund portfolios, it needs to be done when considering the objectives of this part of the portfolio rather than as an absolute comparison with broader markets.

Recent CIO Perspectives

Aksia's CIO Symposium took place in New York in December,² and included dozens of CIOs across a wide variety of global investment plans. There were many interesting observations and discussions resulting from the gathering (and

from the PC Palooza event that followed) – thanks to everyone who contributed.

What we found when speaking with the CIOs was a similar message – alternatives remain a core focus of their time and resources and remain an important and often growing part of their overall portfolios.

Private Equity remains core to most (though not all) portfolios. Private Credit is now well established as an asset class and typically growing towards target allocations. Perhaps most surprisingly (given the media), hedge funds remain of interest to the majority of large institutions and there were even a number of institutions planning to increase allocations, given valuations in other asset classes.

Other discussions highlighted areas that CIOs are focused on:

- **ESG** – no longer a side project or box-ticking exercise but is integrated into investment/due diligence processes for many (although not all) investors.
- **Transparency** – of particular focus in private markets strategies to ensure consistency of metrics and allow aggregation of data.
- **Alignment** – investors are more sophisticated in thinking about alignment, considering not just fees (although this is still a large challenge across alternatives), but also other factors such as business stability, resources, fund structure, investor terms, etc.
- **Co-invests / Secondaries** – increasingly common across private market portfolio allocations, though investors pointed to challenges of sourcing and evaluating numerous GP-led opportunities.
- **Emerging Managers** – several investors outlined the evolution of their formalized programs targeting emerging or diverse managers, which are increasingly becoming intertwined with impact investing and ESG issues.
- **In-Sourcing** – some large allocators have already or are seeking to move trading of certain asset classes and strategies in-house to increase control/customisation and reduce costs.
- **Partnerships** – a common theme across investors was the desire to extract more benefits out of their relationships with managers, administrators, custodians, consultants and advisors.

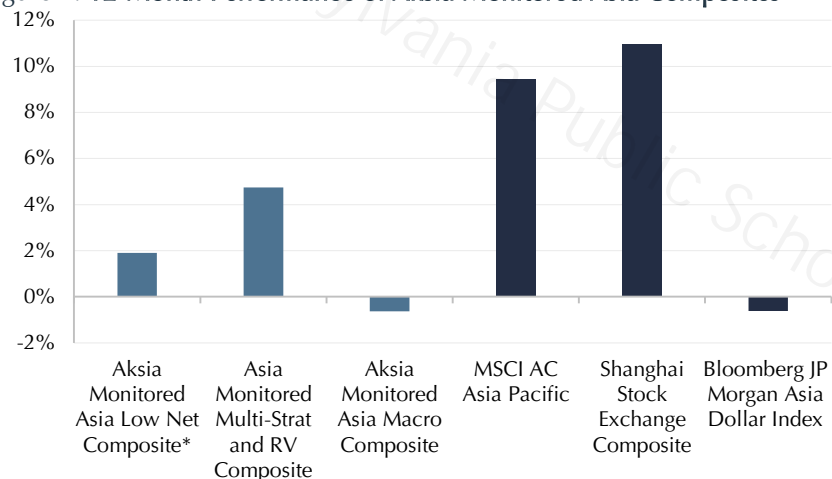
² *Shameless plug:* this year's Aksia CIO Symposium in NY will be on Monday, November 30th, 2020 (with the PC Palooza on the 1st and 2nd of December). Additionally, the next London Investor Event will be March 31- April 2, 2020. We hope to see you there.

HEDGE FUND INDUSTRY COMMENTARY

Aksia Top Down Themes

Theme #1 – Asia Low Net / Trading Against Retail

Figure 2: 12 Month Performance of Aksia Monitored Asia Composites



Source: Aksia Monitored Funds, Bloomberg, as of November 30, 2019

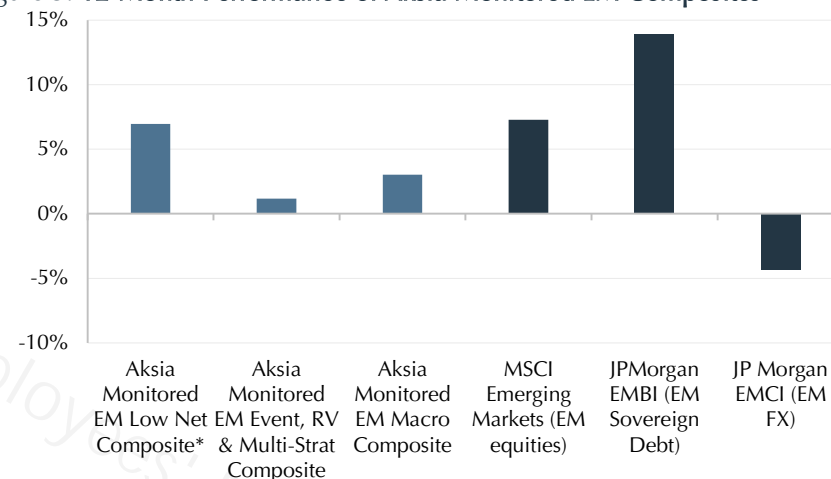
*Aksia Monitored Asia Low Net Composite also includes two Asia Multi-PM managers with net exposures averaging between +/-15%.

The Asia RV theme had muted performance over the past 12 months, with losses from short books hurting the lower net equity managers and macro strategies producing muted returns.

Although the theme is not designed to keep up with the equity markets in a bull market (as we saw in 2019), we have higher return expectations for the Asia strategies moving into 2020.

Theme #2 - Spread Out into Emerging Markets

Figure 3: 12 Month Performance of Aksia Monitored EM Composites



Source: Aksia Monitored Funds, Bloomberg, as of November 30, 2019

*Aksia Monitored EM Low Net Composite also includes two Asia Multi-PM managers with net exposures averaging between +/-15%.

The Spread Out into EM theme performed well over the last year, generating firm single digit returns despite a volatile market backdrop, with a lower volatility profile than public markets. The EM Event, RV and Multi-Strat composite was brought down by a couple of managers with large exposures to Argentina, which sold off aggressively in August, but may present an attractive opportunity set going forward.

We continue to deepen our universe of high conviction managers in EM and the research teams have been focused on sourcing long/short strategies in India in addition to strategies focused on Eastern Europe and LatAm.

HEDGE FUND INDUSTRY COMMENTARY

Theme #3 - Diversify Your Diversifiers

Given the importance of portfolio diversification from an asset allocation perspective, we revisit the diversifying properties of Diversifiers which we first introduced as a theme back in Q3 2018.

Convexity is an often sought-after property for diversifying strategies, and while qualitative assessment of underlying managers' nuanced trade construction is vital, many convexity metrics (e.g., down capture ratio, up diversifier score) correspond closely to a strategy's beta and generally point to a similar conclusion – the lower the strategy beta, the more reliable the strategy is to protect capital in stressed markets.

We highlight several convexity metrics using our MFC data, focusing on the Diversifier strategies, alongside the broader hedge fund sector composites which are wholly inclusive of the Diversifiers. Unsurprisingly, the Relative Value and Tactical Trading sectors, which generally represent the lowest beta strategies, tend to limit down participation when equity markets are down and also have the highest frequency of up months in those instances.

Figure 4: MFC Composite Diversifier Impact

MFC Composite	Up Diversifier	Down Capture	Beta (MSCI ACWI)
Multi-PM (LSE) - MFC	55%	1%	0.08
L/S Credit (RV) - MFC	42%	7%	0.06
FI Arbitrage (RV) - MFC	70%	-7%	0.06
Insurance Linked (RV) - MFC	80%	-16%	-0.02
Quant. Strategies (RV) - MFC	70%	-19%	0.00
Volatility (RV) - MFC	50%	0.2%	0.08
Global Macro (TT) - MFC	42%	9%	0.11
CTA (TT) - MFC	55%	-4%	0.07
RV Multi-Strat (MS) - MFC	65%	-5%	0.06
L/S Equity (Sector) - MFC	20%	41%	0.37
Event Driven (Sector) - MFC	20%	49%	0.38
Relative Value (Sector) - MFC	65%	-4%	0.05
Tactical Trading (Sector) - MFC	50%	2%	0.06
Multi-Strat. (Sector) - MFC	35%	13%	0.15

Source: Aksia, 5y historical data, as of November 30, 2019

Note: Up Diversifier is defined as the percentage of up months when MSCI ACWI was down and Down Capture is calculated by dividing the composite return by the MSCI ACWI return when the benchmark is down.

HEDGE FUND INDUSTRY COMMENTARY

Proposed Changes to Proxy Voting – Lobbyist Meddling in Corporate Governance

One recent development that we want to highlight and urge action on relates to recent proposals by the U.S. Securities and Exchange Commission (SEC). Their proposals will require proxy adviser firms to give companies two chances to review proxy voting materials before they are sent to shareholders and increase thresholds required for certain shareholder actions.

Aksia views the proposed changes as adverse to the investor community. We believe the proposals inhibit shareholders' voices and impede the independence of proxy advisory firms, while reducing the accountability of boards and management. We strongly favor preserving the existing framework.

To be perfectly candid, we are also concerned by the possibility that someday alternative asset managers will try to lobby the SEC to allow them to review (or block if they don't like the results) our due diligence before publishing to clients." Aksia (and many other concerned investors) signed the PRI's letter to the SEC opposing the proposed changes to the proxy voting process and Rule 14a-8.³

TorreyCove Capital Partners Acquisition

As you are aware, we announced on January 8, 2020 that we have entered into an agreement to acquire private equity and real assets consultant TorreyCove Capital Partners LLC. The transaction is expected to close in the first half of 2020. Following the successful completion of the acquisition, our clients should benefit from larger and deeper research teams, broader geographic reach, pan-alternatives expertise, and continued focus on technology solutions.

There are also more specific benefits we expect to see in our hedge fund research due to a more in-depth understanding of the private equity markets, given the growth in their size and importance. We believe that a deeper understanding of the private equity markets could help across an array of hedge fund strategies, including long/short equity, event (particularly merger arbitrage), distressed and co-invests.

... Oliver Newton & Jim Vos

³ The PRI letter can be found at <https://www.unpri.org/sustainable-markets/sec-sign-on-letter>.

HEDGE FUND INDUSTRY COMMENTARY

Fund Flows Update

Figure 5: 12 Month Aksia Tracked Fund Changes in AUM (excluding performance) by Sector and Strategy

	% Change (Median)	\$ Change (Avg.)
Long/Short Equity	-5%	-42
Fundamental Growth	-6%	-55
Fundamental Value	-5%	-71
Low Net	-3%	-28
Multi-PM	-2%	-150
Opportunistic	-4%	-18
Specialist	-5%	-14
Event Driven	-2%	-112
Activist	1%	-216
Event & Merger	-7%	-167
Event Credit	-1%	-52
Relative Value	-1%	16
Fixed Income Arbitrage	1%	52
Insurance Linked	4%	21
Long/Short Credit	-6%	30
Quantitative Strategies	-5%	-16
Structured Credit	4%	22
Volatility	1%	11
Tactical Trading	-5%	-190
CTA	-4%	-124
Discretionary Commodities	-10%	-64
Global Macro	-6%	-262
Risk Mitigators	6%	-79
Multi-Strategy	-4%	-133
Multi Risk Premia	-10%	-37
Directional Multi-Strategy	-19%	-656
Relative Value Multi-Strategy	-1%	19
Asia Multi-Strategy	5%	59

Source: Aksia tracked universe, as of November 30, 2019

Note: Aksia tracked universe is defined as all funds in Aksia's database for which we collect performance information

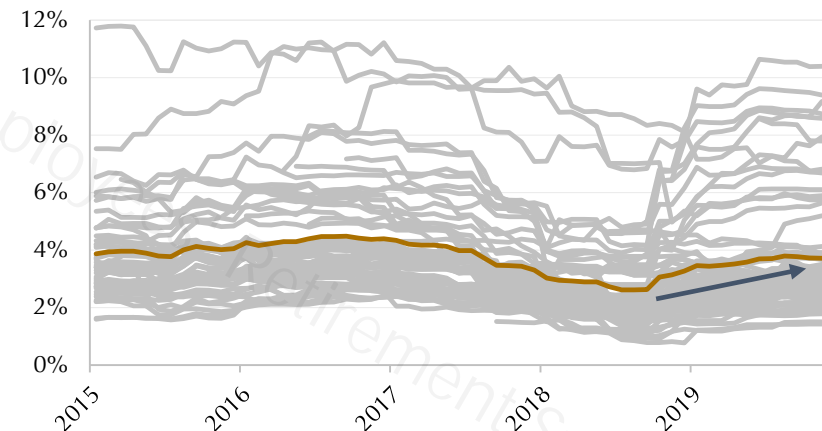
Portfolio Perspectives

Portfolio Volatility

The chart below provides an update on the realized volatility in a sampling of institutional investor portfolios.

Steps that investors and managers have taken over the past year as well as increased market volatility is starting to flow through to increases in portfolio volatility – and this has generally come along with increases in returns.

Figure 6: Rolling 24 Month Volatility for Institutional Investor Portfolios



Source: Aksia aggregated and anonymized advisory client portfolio data, as of November 30, 2019

Note: Data includes actively managed hedge fund-specific portfolios for which the client provides transparency. Past performance is not indicative of future results. The gold line represents the average.

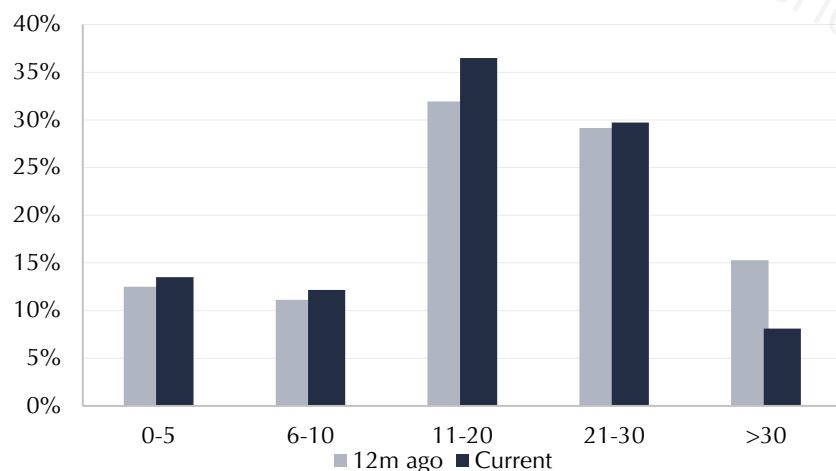
HEDGE FUND INDUSTRY COMMENTARY

Portfolio Line Items

Additionally, we have observed that some investors looking to increase volatility (and potentially returns) have been concentrating the number of line items in their portfolio and again this shows up in the data.

The chart below shows a comparison of the number of line items in certain Aksia Advisory Client hedge fund portfolios and there is a clear trend of concentration, with the most notable moves being a reduction in the number of portfolios with over 30 line items and an increase in the number of portfolios with 11-20 line items.

Figure 7: Investor Portfolios – Number of Line Items



Source: Aksia aggregated and anonymized advisory client portfolio data, as of November 30, 2019

Note: Data includes actively managed hedge fund-specific portfolios for which the client provides transparency. Past performance is not indicative of future results. The gold line represents the average.

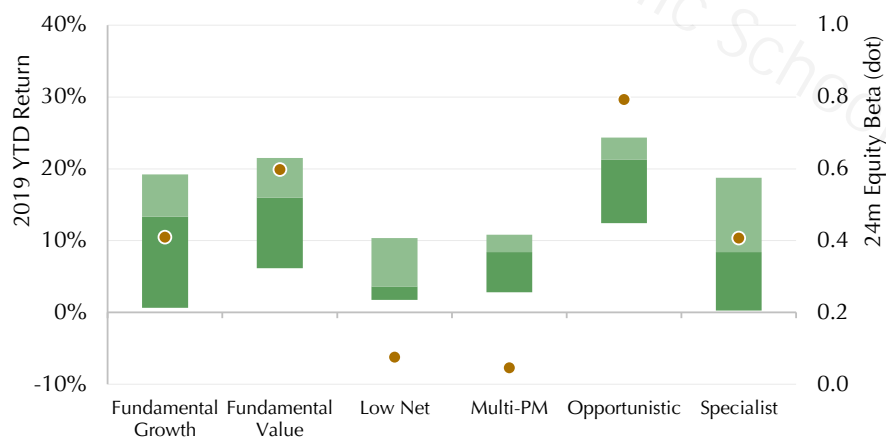
HEDGE FUND INDUSTRY COMMENTARY

2019 Performance Summary

The following sections of the outlook, as always, will delve into greater detail on each sector and strategy, but we include a top-level summary here of 2019 performance, with all data as of November 2019.

Long/Short Equity

Figure 8: Aksia MFC – 2019 Equity Long/Short Average Strategy Performance & Beta



Source: Aksia Monitored Funds Composite, as of November 30, 2019

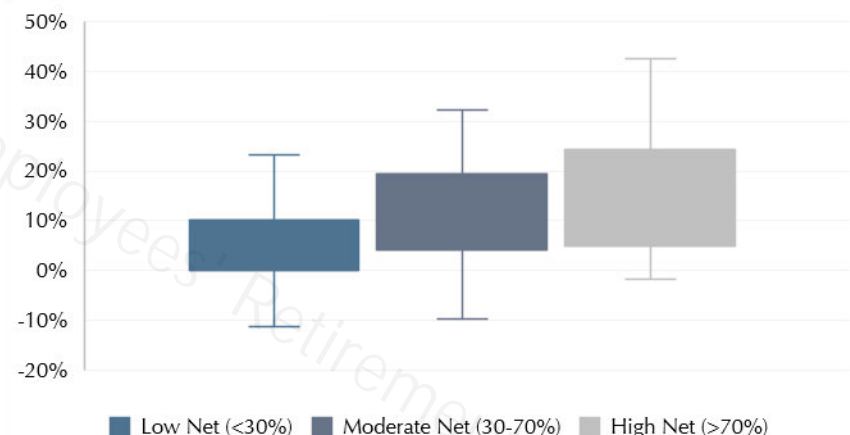
Note: Rectangles span the middle 50% of individual strategy constituent returns, with the midline representing the overall strategy median.

- Equity Long/Short strategies were among the strongest performers in 2019, more than offsetting losses in 2018, though with significant dispersion across the strategies, regions and styles.
- Strategies that performed best, unsurprisingly, were those with the highest net exposure, including Opportunistic and Fundamental Growth, while diversified Low Net and Multi- PM strategies (with lower beta) lagged.

In 2019, there was a clear relationship between the net exposure run by a manager and the return for the year. The market exposure dominated other factors.

At this point, investors may need to consider focusing on alpha and taking profits from higher net managers that excelled in 2019 and look to add to their more balanced managers that have greater capabilities on the short side.

Figure 9: 2019 YTD Equity Performance by Net Exposure



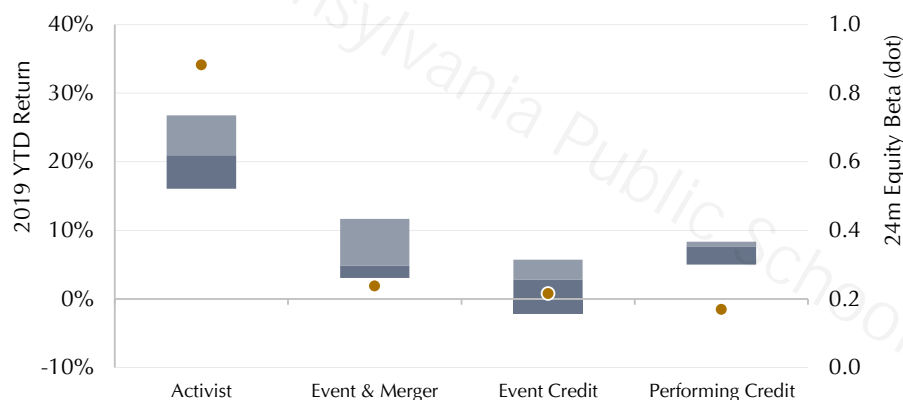
Source: Aksia Monitored Funds Composite, as of November 30, 2019

Note: Charts show simple average return for Long/Short Equity split into the following 2019 average net exposure buckets: Low Net = <30%, Moderate Net = 30-70%, High Net = >70%, all measured as of November 2019.

HEDGE FUND INDUSTRY COMMENTARY

Event Driven

Figure 10: Aksia MFC – 2019 Event Driven Average Strategy Performance & Beta



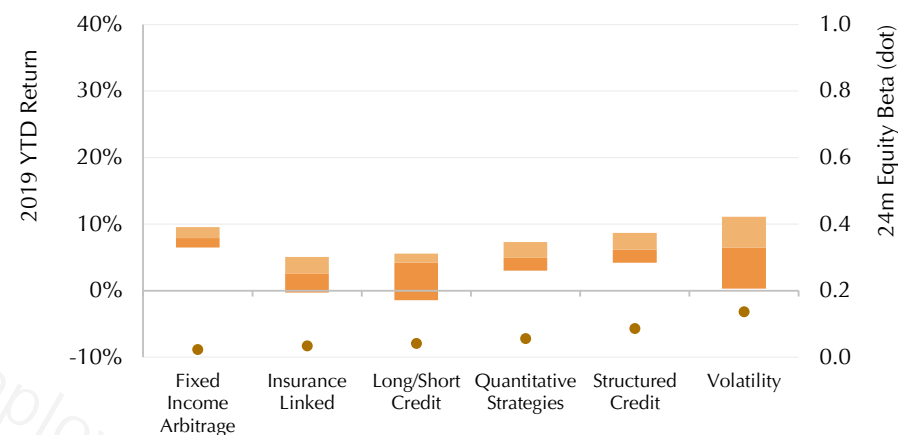
Source: Aksia Monitored Funds Composite, as of November 30, 2019

Note: Rectangles span the middle 50% of individual strategy constituent returns, with the midline representing the overall strategy median.

- Event Driven strategies had a more mixed year, although all strategies finished with positive average returns for 2019.
- Activist was the best performing strategy, with nearly all Aksia monitored managers returning in the double digits YTD, and some upwards of +30%. Accommodative monetary policy, positive growth developments and broad shareholder activism posed as tailwinds for activists, as managers gained on portfolio holdings across industrials, financials, and tech.
- Merger arbitrage and Event Credit strategies were more mixed, with a few individual trades/themes detracting from returns for many of the managers in the space (PG&E, Argentina, energy/drillers, etc.).

Relative Value

Figure 11: Aksia MFC – 2019 Relative Value Sector & Strategy Performance & Beta



Source: Aksia Monitored Funds Composite, as of November 30, 2019

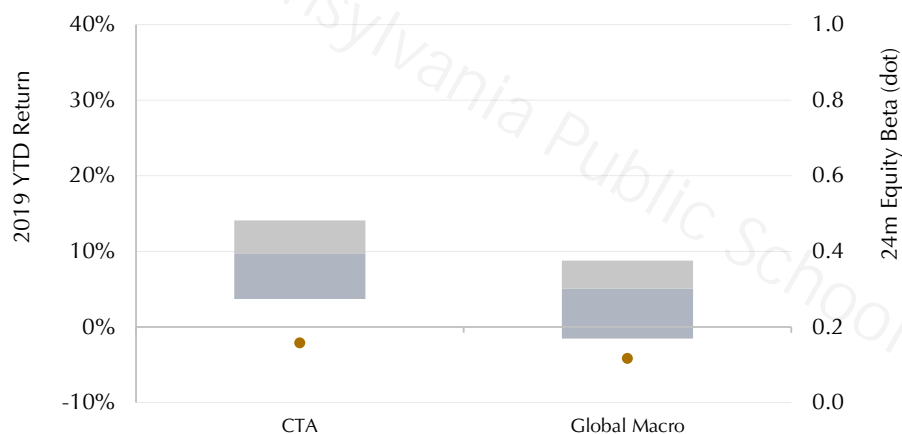
Note: Rectangles span the middle 50% of individual strategy constituent returns, with the midline representing the overall strategy median.

- Relative Value strategies overall had the tightest range of strategy performance (and the lowest equity beta) and produced reasonable positive returns.
- Fixed Income Arbitrage strategies delivered strong performance during the year as the opportunity set across U.S. and European micro RV remained robust, and managers weathered the repo market spikes in Q3/Q4.
- Quant Strategies also performed solidly YTD, with the September momentum reversal (which hit CTAs particularly hard) largely a non-factor for quant firms.
- Insurance Linked strategies struggled, particularly early in the year, as natural disaster activity remained high and losses from 2018 came through worse than expected (although this has perhaps created a stronger opportunity set for 2020).

HEDGE FUND INDUSTRY COMMENTARY

Tactical Trading

Figure 12: Aksia MFC – 2019 Tactical Trading Sector & Strategy Performance & Beta



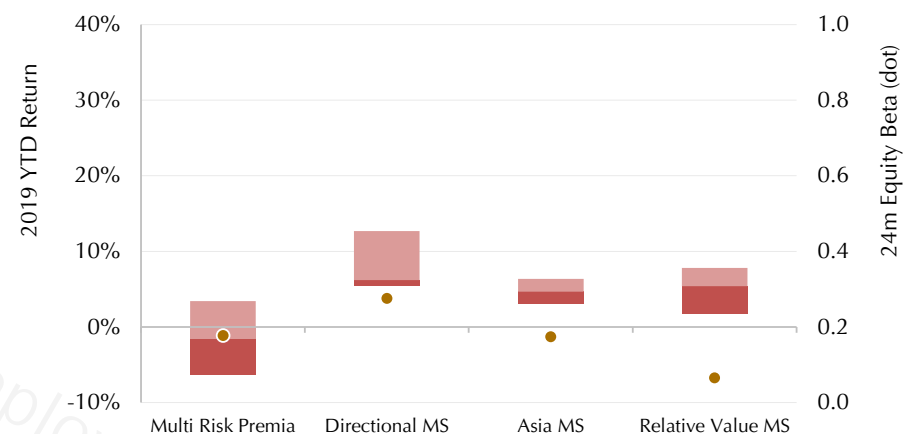
Source: Aksia Monitored Funds Composite, as of November 30, 2019

Note: Rectangles span the middle 50% of individual strategy constituent returns, with the midline representing the overall strategy median.

- Tactical Trading strategies exhibited solid positive performance overall, with reasonable dispersion particularly within Global Macro.
- As a result of the strong bull market in 2019 led by equities, many CTAs exhibited a “risk on” profile throughout the year which resulted in a strong momentum reversal in late Q3, paring back YTD returns.
- Global Macro strategies broadly captured some of the significant DM themes on the year – e.g., U.S. fixed income rally, though many EM managers were caught offside by the surprise election results in Argentina.

Multi-Strategy

Figure 13: Aksia MFC – 2019 Multi-Strategy Sector & Strategy Performance & Beta



Source: Aksia Monitored Funds Composite, as of November 30, 2019

Note: Rectangles span the middle 50% of individual strategy constituent returns, with the midline representing the overall strategy median.

- Multi-Strategy managers performed reasonably well during the year given their generally modest beta profile.
- Unsurprisingly, Directional Multi-Strategy managers outperformed as they captured more of the market rally, although their correlation to the momentum factor dropped into negative territory through the year.
- Asia and RV Multis also performed relatively well, with a notable increase in macro and quant capital allocations.
- Low fee Multi-Risk Premia strategies exhibited the weakest performance across all sectors, finishing slightly up on average, but with considerable dispersion.

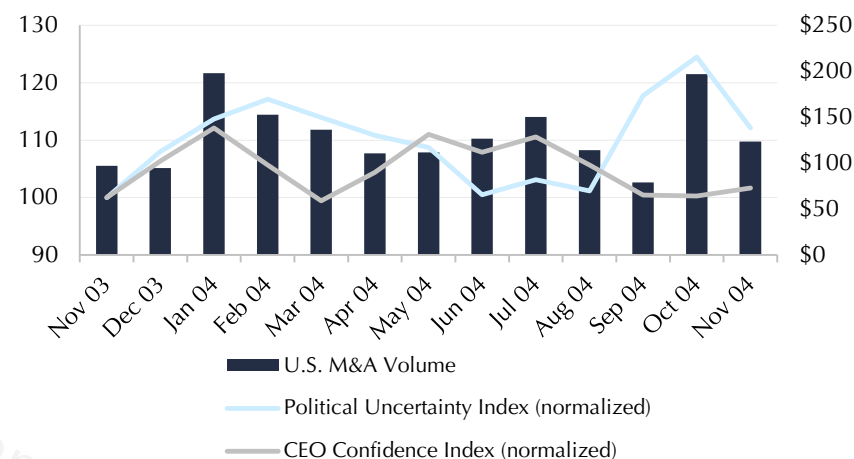
EVENT DRIVEN

Event & Merger

The political environment typically plays a big role in merger activity – CEOs and boards pay close attention to the current and prospective political backdrop and regulatory regime when considering making transformative acquisitions, not just to gauge the likelihood of approval but also to estimate the probability of success once the deal is complete.

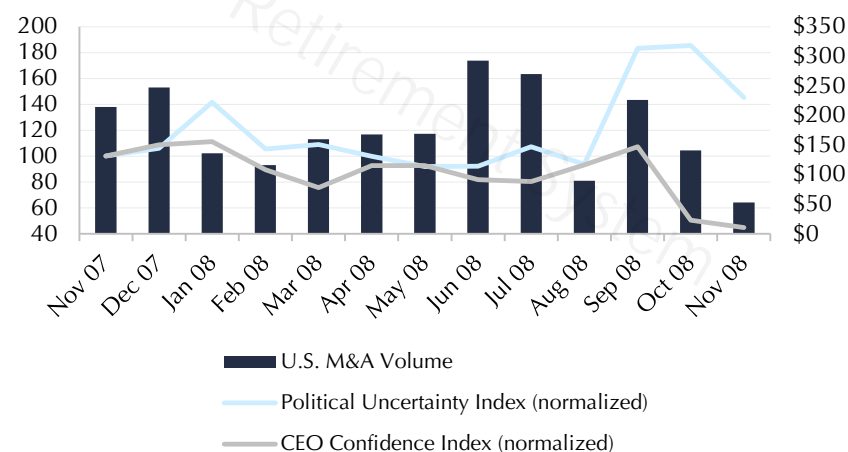
We have looked at the recent past to see what happens to deal activity leading up to a presidential election in the U.S. We also compared merger activity with proxies for political uncertainty and CEO confidence. We consider all M&A activity cataloged by Bloomberg where either the target or acquirer are in the United States. As a proxy for political uncertainty we use the Economic Political Uncertainty index developed by Baker, Bloom and Davis (commonly referred to as the BBD index). The index is constructed using a weighted average of three components: newspaper coverage of policy-related economic uncertainty, federal tax code provisions set to expire in future years and disagreement amongst economic forecasters. As a proxy for CEO confidence we benchmark Chief Executive Group's monthly survey results. The survey essentially asks CEOs about their confidence in current and future business conditions. We normalize the BBD and CEO Indices to start at 100 one year before a presidential election takes place.

Figure 14: 2004 Election Political Uncertainty, CEO Confidence and M&A Volume (\$bn)



Source: 'Economic Policy Uncertainty Index' by Baker, Bloom and Davis; Bloomberg

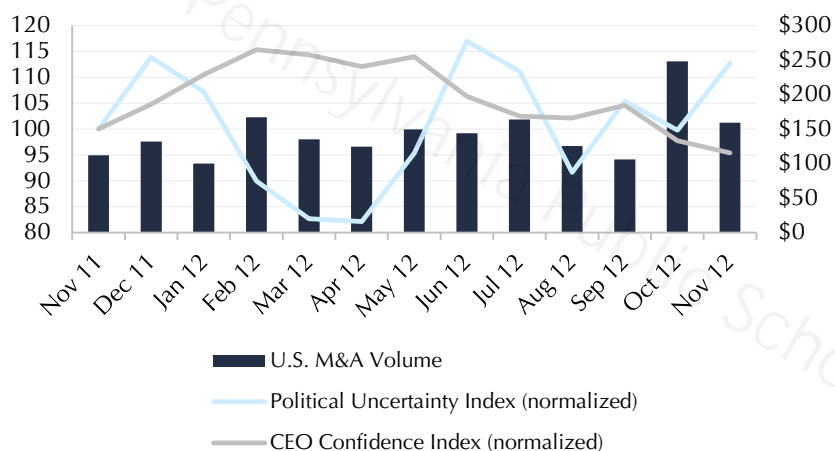
Figure 15: 2008 Election Political Uncertainty, CEO Confidence and M&A Volume (\$bn)



Source: 'Economic Policy Uncertainty Index' by Baker, Bloom and Davis; Bloomberg

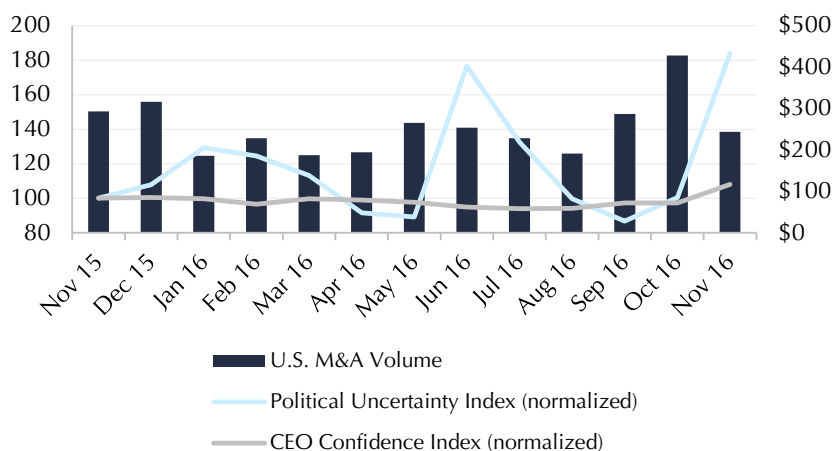
EVENT DRIVEN

Figure 16: 2012 Election Political Uncertainty, CEO Confidence and M&A Volume (\$bn)



Source: 'Economic Policy Uncertainty Index' by Baker, Bloom and Davis; Bloomberg

Figure 17: 2016 Election Political Uncertainty, CEO Confidence and M&A Volume (\$bn)



Source: 'Economic Policy Uncertainty Index' by Baker, Bloom and Davis; Bloomberg

While we expect generally that political uncertainty and CEO confidence (unsurprisingly) should impact M&A activity, the prior charts show little relationship between these factors and deal volumes.

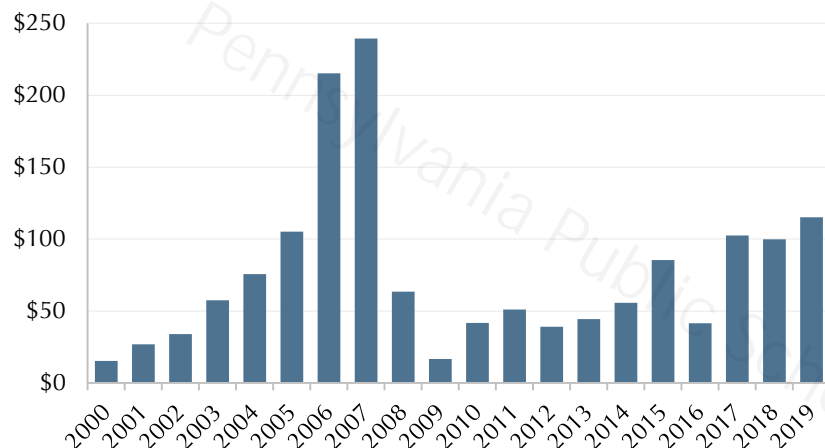
Nevertheless, as we approach the 2020 U.S. Presidential Election with uncertainty around who is the likely challenger to President Trump, it is not a stretch to imagine that dealmakers may take a pause given the unpredictable and disparate outcomes we may see between now and then. Would a more centrist candidate coming from the Democratic side put CEOs minds at ease and lead to deal activity continuing regardless of outcome in the general election? Would a left leaning candidate put a brake on all deal activity because of what it might mean in November? There are certain candidates who have very unfavorable views of large technology companies, while some have focused on healthcare as an industry ripe for re-making. What happens between now and the election with respect to tariffs and trade? Would a second term President Trump become more protectionist?

One thing we do know at this point is that large, complicated deals, are taking longer to close, are being reviewed more thoroughly and have a higher risk of breaking under those reviews. If the average typical large deal takes 9-12 months to complete, is it already too late to announce anything truly transformative? This type of activity already decreased YoY (2019 vs. 2018) and we would not be surprised to see that continue in 2020 (or until better clarity emerges on the political front). For that reason, we continue to believe that merger arb is best accessed through a diversified event driven manager that can flex in and out as the opportunity set dictates.

One bright spot on the M&A front seems to be private equity activity. We observe a steady increase in the presence of private equity firms targeting European companies (see following chart). Several high-profile deals in Europe were announced last year, largely involving U.S. private equity firms targeting European companies. In the case of UK aerospace and defense firm, Cobham, U.S. private equity buyer, Advent International, seemed to be taking advantage of what some hedge fund managers have characterized as the "triple discount": low relative valuations in Europe vs. U.S., a weaker Pound, and an attractive funding environment. Despite private firms traditionally being required to pay a premium to take a listed company private, in many cases, the discount factors outlined above provide sufficient compensation to make deal-making economical, which is evidenced by the steady growth in PE buyout volumes.

EVENT DRIVEN

Figure 18: Western Europe M&A Volume – PE Buyouts (\$bn)



Source: Bloomberg, as of January 7, 2020

We expect this trend to continue as PE managers have amassed record levels of capital that has yet to be deployed.

Event & Performing Credit

On the back of significant moves in rates, IG had a remarkable run in 2019. IG bonds edged out HY bonds, and within the HY universe, a quality bias led to higher-rated credit outperforming lower-rated credit to the tune of several hundred basis points (BB-rated loans returned +15.7% at the top, CCCs at the bottom returned +11.3%).

We have observed that weakening loan documents, low expected recoveries, and shifting behavior of CLOs have caused some big price movements in the loan space recently. In tandem, a lack of liquidity compounded these movements.

Figure 19: End of Year Gaps in Loan Pricing

	2018 # of Loans (Oct-Dec)	2019 # of Loans (Sep-Nov)
Fell by 10+ points	43	89
Fell by 20+ points	11	25
Fell by 30+ points	3	11

Source: Canyon Partners Investor Letter, November 15, 2019

Whereas credit market illiquidity in 2018 was exemplified by its ending with the first month in history without a single new HY bond issue, 2019 was characterized by skepticism in the form of significant air gaps in pricing across an otherwise relatively calm high yield market.

The price action tends to favor for a total return style credit manager, one who has the duration of capital to capitalize on choppy markets, and can perform fundamental analysis to identify upside/downside. We believe it may make sense to access this in drawdown fund format, or to wait until market level spreads are wider to invest in a fully invested open-ended fund.

As we highlighted last quarter, energy continues to be a challenging area as post re-organization energy names have struggled due to credits pressured by technicals, forced selling related to downgrades within the sector, and certain fund unwinds and outflows. The energy sector's default rate was 11.8% in 2019 and though an elevated level of defaults might lead to more opportunities for Distressed managers, the energy space has been particularly tricky of late; most managers are simply avoiding the space altogether (and allowing whatever small exposure they have to run off). For patient managers with long duration capital, it is possible that opportunities emerge, but for now there is little bid for small cap, value-oriented, private (or public) energy names.

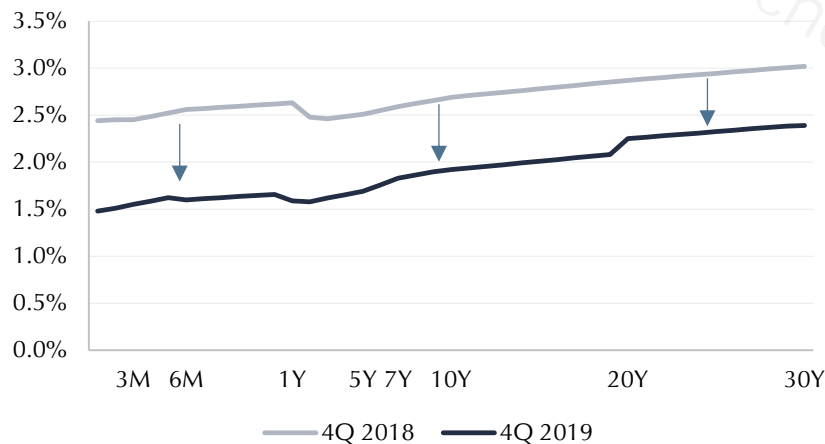
Absent energy, there are few observable trends in the distressed market. Most distressed is idiosyncratic in nature, and the market is highly reactionary to changes in thesis as we recently saw in the spectrum space. We believe managers that can underwrite their own rescue financings or do more special situations style lending, may be in a more favorable position in this environment as they generally appear after distress emerges and can typically name the terms under which they are comfortable investing.

EVENT DRIVEN

Long/Short Credit

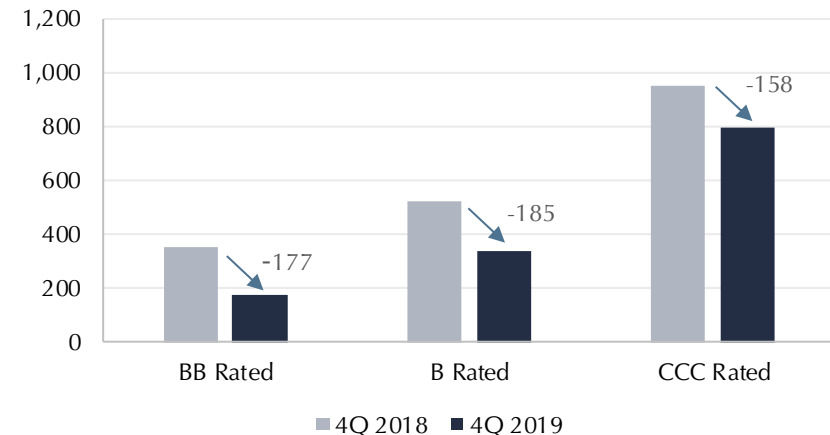
While shorting credit often enjoys the structural benefit of defined par values, maturity dates, and call premiums, there is no protection from the strong market beta such as that experienced over 2019. Both spread and rate duration provided tailwinds for long credit positions, making 2019 a litmus test for a manager's shorting capabilities. Although U.S. high yield had one of its better return years within the last 20 years, central bank easing and a demand for yield continue to support lending, meaning this cycle may extend for longer than one might suspect.

Figure 20: Treasury Yield Curve 4Q18 and 4Q19 (Yield and Tenor)



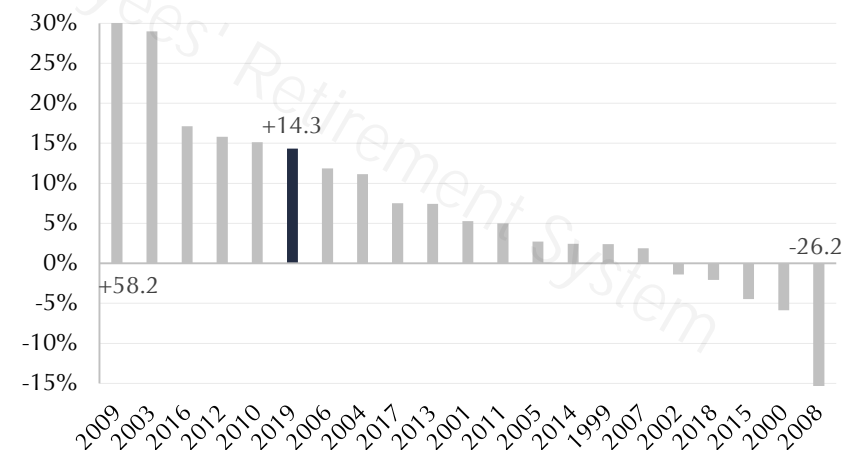
Source: Bloomberg, as of December 31, 2019

Figure 21: High Yield OAS (bps) by Rating



Source: Bloomberg, as of December 31, 2019

Figure 22: Ranked U.S Corporate High Yield Calendar Year Return (1999-2019)



Source: Bloomberg, as of December 31, 2019

In this context, short alpha becomes more valuable. Managers that have exhibited skill on the short side in such adverse conditions should be favored since the skill can work in both environments.

EVENT DRIVEN

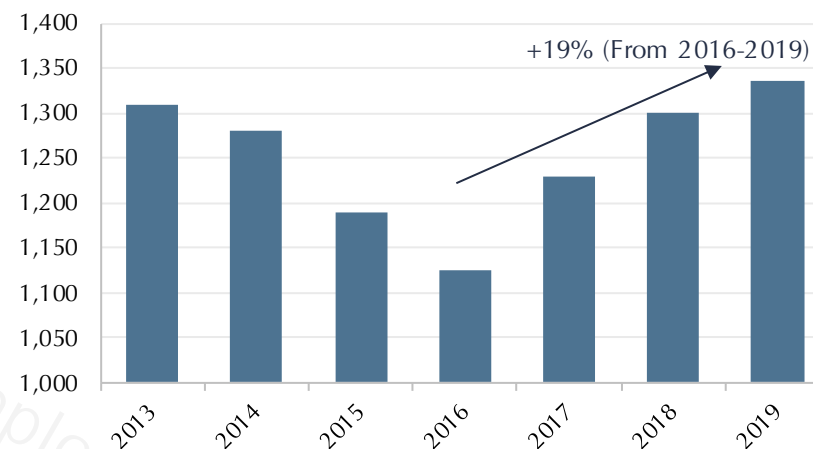
Convertible Arbitrage

Compared to the “traditional” areas of the levered credit markets, convertible debt can be viewed as a somewhat limited opportunity set. The U.S. market is approximately \$230 billion of paper, compared to roughly \$1+ trillion market values of each U.S. High Yield and Leveraged Loans indices according to Bloomberg. With such a relatively confined space, manager size and liquidity become more important, especially given the sizable participation of outright investors (managers generally estimate these investors to be approximately 70% of market participation) and the levered nature of convert arb, where an arbitrageur could manage assets 2-4x their equity capital. However, while many convert managers have grown in size (through performance and inflows), the market has grown alongside them.

According to Barclays Research, new issuance in 2019 was robust, topping \$57 billion (U.S.), for one of the busiest years of the past decade. While the bulk of the gross supply comes from refinancing activity, net supply is still firmly positive (approximately \$12 billion). Further, an encouraging sign of market liquidity lies in trading data. According to FINRA, average daily trading volume (by par value) has increased by 19% since the start of 2016 to \$1.33 billion at the end of 2019. Part of this trend is supported by issuers coming to market with larger deals. Barclays data suggests approximately 58% of the underlying market cap in 2019 was large cap issuers, compared to 36% in 2008. This increase may facilitate more efficient buying and selling, faster price discovery, and improved market liquidity.

Of course, not all borrowers are of high quality and managers must first and foremost maintain expertise in credit underwriting (protecting the bond floor) and market acumen (gamma trading). However, we do not view the recent growth in some of these managers as particularly problematic given the aforementioned market trends.

Figure 23: U.S. Convertible Bond Volume (Par Value, \$mm)



Source: FINRA Volume Reports, as of December 31, 2019

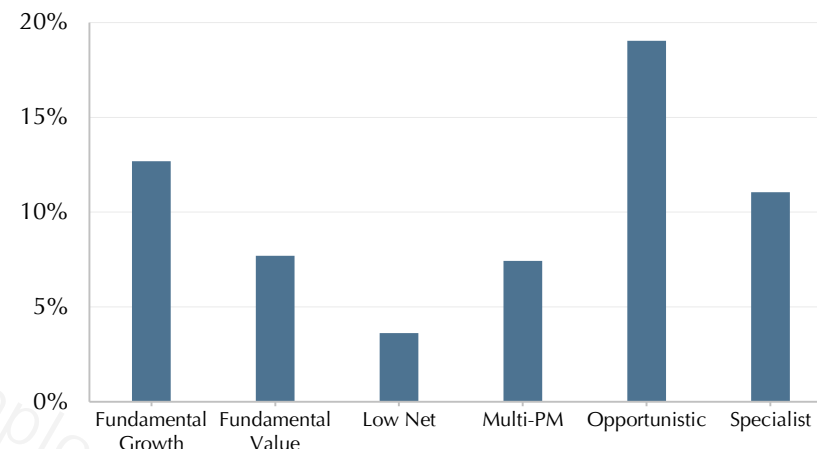
LONG/SHORT EQUITY

Long/Short Equity: Look Back and Look Ahead

In our outlook one year ago, we wrote of the opportunity on the long side of fundamentally oriented managers (low entry valuations, high underwritten prospective IRRs) following the multiple de-rating in Q4 of 2018. Long books indeed drove performance in 2019, but what may be more notable is the significant alpha generated by fundamental manager short books. As such, many long/short managers posted relatively strong absolute returns despite running modest nets.

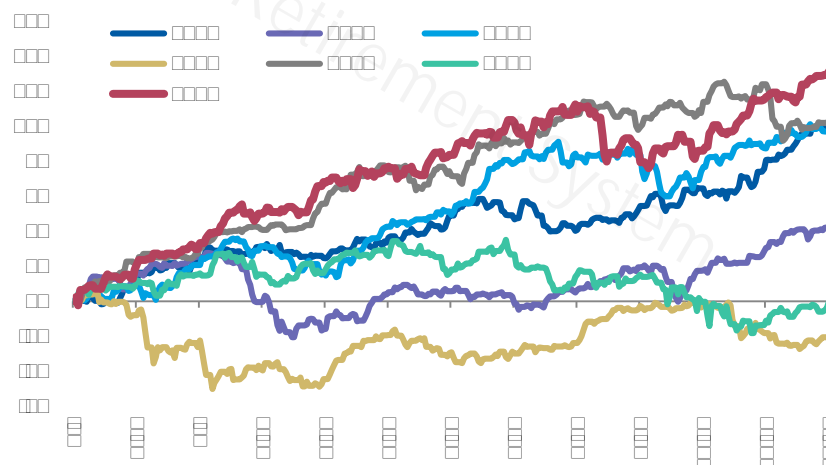
Despite a U.S. market up about 30% at the end of 2019, a number of managers generated modest long alpha. A factor rotation within value/growth/momentum in the second half of the year created some bifurcation in returns by style on the long side. Perhaps most notably, short alpha was significant and widespread. Despite a headwind of strong rising markets, managers largely limited short detraction finding strong underperformers and stocks that broke, while dedicating resources to finding new opportunities. Long/short spread generated was significant. There remain pockets of the market that are inexpensive on a relative and absolute basis, but with markets at highs, these are fewer. As multiples have stretched and prospective IRRs may have come down in some long books, it may be worth revisiting managers who bulked up shorting efforts in 2019.

Figure 24: 2019 Sub-Sector Composite Returns Through November



Source: Aksia Monitored Funds Composite, as of November 30, 2019

Figure 25: Long/Short Equity Global YTD Total Alpha



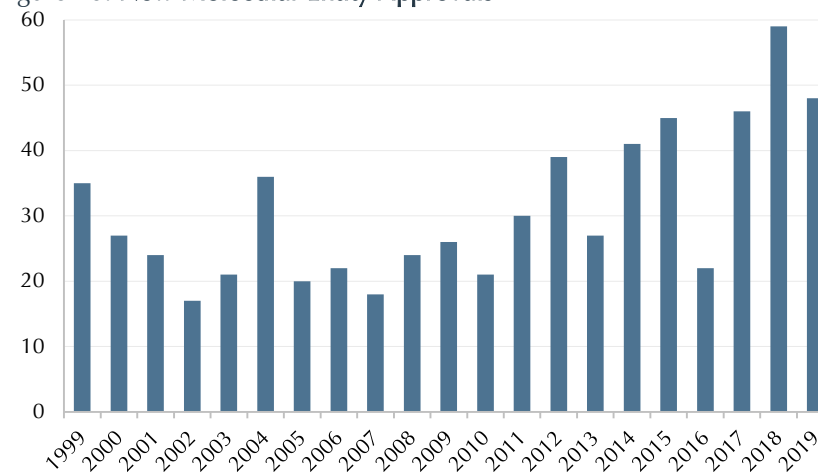
Source: Bloomberg, Morgan Stanley Prime Brokerage, January 9, 2020

LONG/SHORT EQUITY

U.S. Healthcare

During the fourth quarter, several U.S. Democratic Presidential candidates walked back their support for more aggressive healthcare reform policies like Medicare-for-All, which would amount to a wholesale overhaul of the U.S. healthcare system, and as we highlighted in our previous quarterly outlook, had been pressuring healthcare stocks broadly. The alleviation of this overhang as well as a number of M&A transactions (ALDR, MDCO, BOLD, ARQL, THOR) proved broadly supportive for healthcare stocks, particularly biotechnology, in Q4 and highlights some of the key themes being monitored by healthcare specialists heading into 2020. Despite this, healthcare/biotechnology fund flows continue to be negative and biotech companies are trading at a discount to the broader market on a forward PE basis, which provides an attractive backdrop for biotechnology specialists in combination with the scientific and clinical advances we have seen. Innovation should continue to be a key driver and is reliant to an extent on successful clinical outcomes. The regulatory environment remains favorable for new approvals with the U.S. FDA approving 48 new molecular entities (“NMEs”) in 2019, which is down from a record of 59 in 2018, but still the third highest total in the past 25 years. To the extent the pace of innovation is confirmed by positive data from upcoming high profile readouts, this should continue to put pressure on large cap pharma companies who are sitting on large cash hoards to engage in strategic transactions in order to fuel future growth engines. Outside of therapeutics, there is still the potential for political rhetoric to ramp up heading into the election and may favor managers with a more tactical approach. While drug pricing continues to be an area receiving scrutiny from both sides of the political aisle, it is notable that it seems the industry has taken steps to proactively address these concerns as evidenced by the recent flatlining in the U.S. Prescription Drug CPI.

Figure 26: New Molecular Entity Approvals



Source: U.S. FDA New Molecular Entity (NME) Drug and New Biologic Approvals, as of January 14, 2020

Asian Healthcare

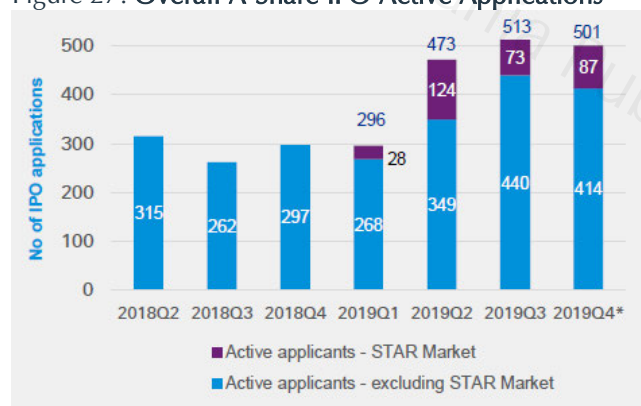
Healthcare has also been an increasing area of focus for hedge funds in Asia. Recently, we have seen several managers hire analysts with scientific backgrounds in order to acquire expertise in this sector. On the long side, the focus has been on China and the developments needed to service an aging population. On the short side, there has also been interest in less proven therapies, particularly within Korea and Japan.

As the result of the past one-child policy, China's population is on pace to rapidly age. The current healthcare system and technologies may not be sufficient to meet this new demand. The Chinese government has implemented an expedited drug approval process, improved the reimbursement model (China is a single payer system) and made it easier for pre-revenue companies to IPO with the STAR Market, another driver of increasing IPO volume. At the same time, we believe there appears to be talent to take advantage of the opportunity set with Chinese nationals who were trained at big US/EU pharma now looking to move back to China and start new ventures. Global healthcare players are also increasingly willing to partner with local firms, given the growth in China and pricing pressures in developed markets. Additionally,

LONG/SHORT EQUITY

PE/VC investments have ramped up. These companies are now beginning to IPO and the pool of investable equities continues to grow. Outside of China, several Asian biotechnology companies have reached extraordinary valuations and been popular shorts. Innovation is not a linear process and there are likely to be opportunities on the short side for hedge funds as well.

Figure 27: Overall A-Share IPO Active Applications

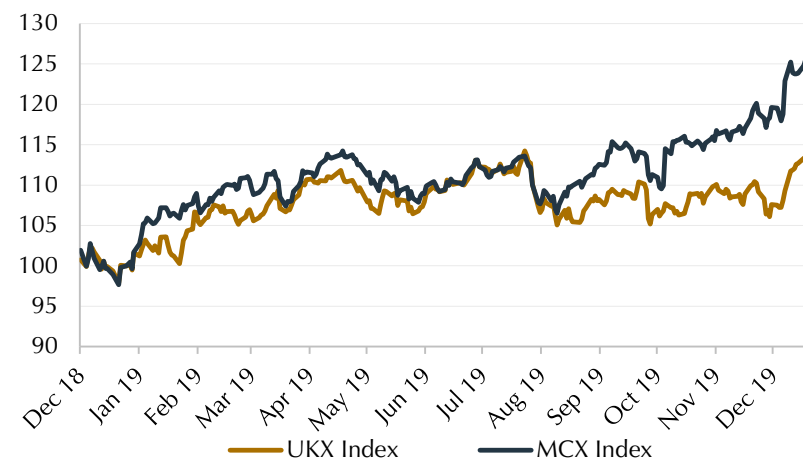


Source: Wind and KPMG Analysis, December 8, 2019

Brexit

U.K. domestic stocks, which we previously highlighted as viewed as undervalued by some European equity L/S managers, finished the year with a strong rally relative to U.K. export driven companies. Investors started to turn more bullish on the U.K. economy in Q4 after three years of Brexit related uncertainty. Prime Minister Boris Johnson reached a deal with the European Union and sought a December election to consolidate power and resolve the Brexit-related deadlock in parliament. The conservative mandate was clear on leaving the EU, and victory in the election was a significant event that increased domestic stock sentiment as a clear pathway to exit was revealed, and additionally removed fears of labor party nationalization. Domestic outperformance is illustrated in the following chart.

Figure 28: Performance of the FTSE 250 Index (MCX) vs. FTSE 100 Index (UKX)

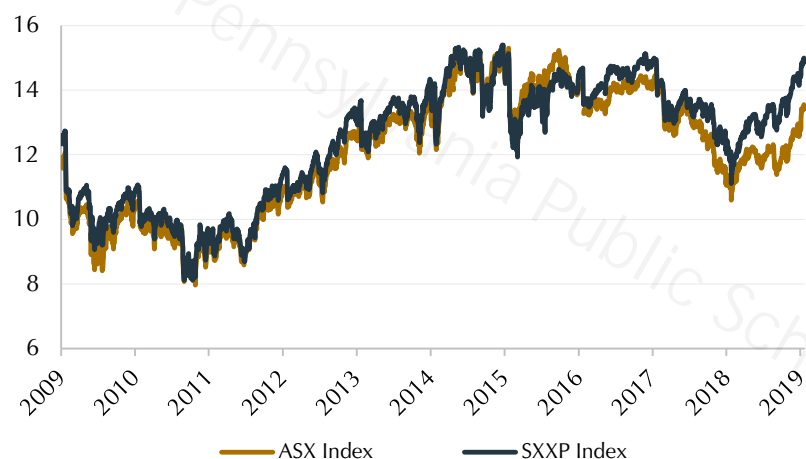


Source: Bloomberg, as of December 31, 2019

Moving into 2020, more managers appear to have become increasingly optimistic on U.K. prospects. A lot of this optimism now hinges on the prime minister's ability to negotiate the future of the relationship. U.K. stock multiples remain notably discounted relative to European equities, highlighted in the next graph. Should the process move ahead as planned, we would expect this gap to shrink as uncertainty dissipates.

LONG/SHORT EQUITY

Figure 29: FTSE All Share Index (ASX) vs. STOXX Europe 600 Index (SXXP) One Year Forward PE



Source: Bloomberg, as of December 31, 2019

Equity Opportunities in LatAm

In a year where news of political unrest in Venezuela, Chile and Argentina seemed to dominate headlines coming from Latin America, economic reforms in Brazil skated under the radar but spurred the BOVESPA index to a gain of 26.7% in 2019. In contrast, Mexico, which has historically been viewed as a defensive area for Latin American exposure because of its ties to the U.S., struggled due to stagnant GDP and declining industrial production.

Institutional investors looking for exposure in Latin America are generally able to choose from two strategies. Option one is country specific, long-only investing and option two is a pan-LatAm, long/short strategy. While the first strategy offers regional expertise and avoids the risks of shorting in illiquid securities, the second strategy can reduce the risks of these more fragile markets through either index hedged or short positions in the few companies that are liquid enough to short. The lack of large cap and high trading volume companies has limited the number of institutional quality managers in Latin America and restricted the size of a fund that a long/short manager can run.

Brazil has seen decreased unemployment (from 12.7% to 11.2%), a new pension reform bill and a drop in inflation (from 4.94% to 3.27%). In addition to these promising economic indicators, momentum for a tax reform bill and a rotation out of fixed income and into equities by local investors has led to bullish projections for the Brazilian stock market.

Investors should still proceed with caution with respect to Brazil, as the strong performance in 2019 has driven up valuations and foreign investors have been slower to accept the Brazilian rally. Offshore investors pulled out a total of \$1.2 billion from Brazilian equities in 2019,⁴ but the aforementioned rotation from local investor has more than made up for that loss of capital. The surge in local equity investing has contributed to a fear that these new investors will flee the equity markets at the first signs of market turmoil, while others believe this increase of “less sophisticated” capital presents an opportunity for market inefficiencies that benefit long/short managers.

While our focus has been economic changes in Brazil and Mexico, Colombia, Peru, and even Chile offer interesting investment opportunities if investors can get comfortable with the relative illiquidity of those markets.

Figure 30: Average Daily Trading Volume (Trailing 3 months)

	Total # of Stocks Trading over \$1m/day	Avg. Daily Liquidity (\$m)
Argentina	15	548
Brazil	168	6488
Chile	32	228
Colombia	14	87
Mexico	44	455
Peru	4	257
Total	277	8063

Source: Bloomberg, as of December 10, 2019

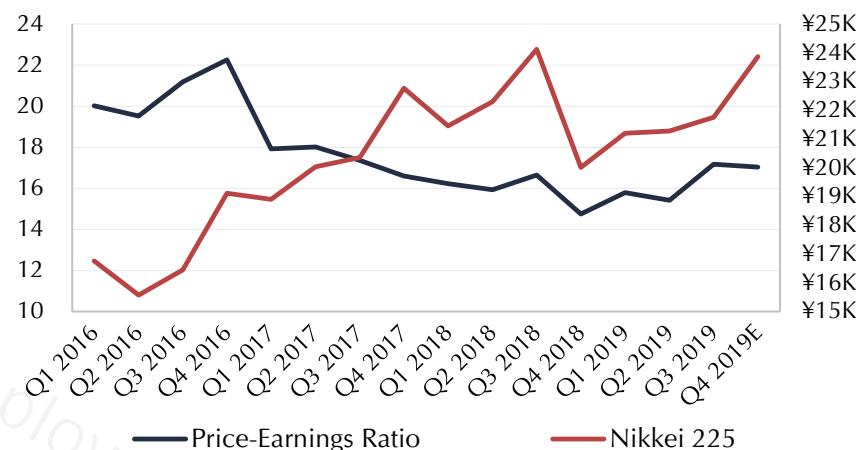
⁴ Bloomberg, *Brazil's Record-Setting Stocks Are Testing Foreigners' Appetite, Employees' Retention*, 2020

LONG/SHORT EQUITY

Japan

In 2H 2019, markets have advanced on macro optimism surrounding the U.S.-China trade negotiations and earnings recovery expectations for Japanese companies despite corporate fundamentals not showing such a clear sign. Today, Japan is no longer attractively valued compared to other developed markets (2020 P/E at 17.0x for Nikkei vs. 17.9x for S&P 500 vs. 14.5 for Eurostoxx 50) according to Bloomberg. Japan may offer more shorting opportunities to capitalize on a potential return reversal but getting the timing right has become even trickier due to a lack of active investor participation. According to Japanese Exchange Group, Japanese equity trading volume has been falling over the past year and average daily trading value MoM has fallen below the JPY 3 trillion mark (\$27bn) since January 2019. Higher foreign investor participation (72.8% of total brokerage trading as of November 2019) in a reducing volume environment has made Japanese equity markets more reactive to macro events, while fundamental factors like value, growth and quality have been poor predictors of performance. Managers that are more focused on quarterly earnings catalysts have been struggling to generate performance, noting that price reactions of stocks have become less predictable. Yet, M&A activities, including dissolution of parent subsidiary dual listing situations and a rise in unsolicited tender offers have been creating pockets of investment opportunities for hedge fund managers. According to Bloomberg, the total value of M&A deals has surged +39.3% YoY reaching ~\$146bn across over 3,100 deals. With the announced FSA plan for the Tokyo Stock Exchange reform into three markets provisionally named "Prime," "Standard" and "Growth" and applying stricter inclusion conditions for TOPIX, we see companies coming under more pressure to improve governance and shareholder returns which may lead to more corporate actions. In addition, small-and-mid-caps continue to be under-covered by most institutional investors and managers who can invest nimbly in these less liquid but long-term value and growth creators may have the chance to generate a differentiated alpha over time.

Figure 31: Nikkei Price-Earnings Ratio and Price History



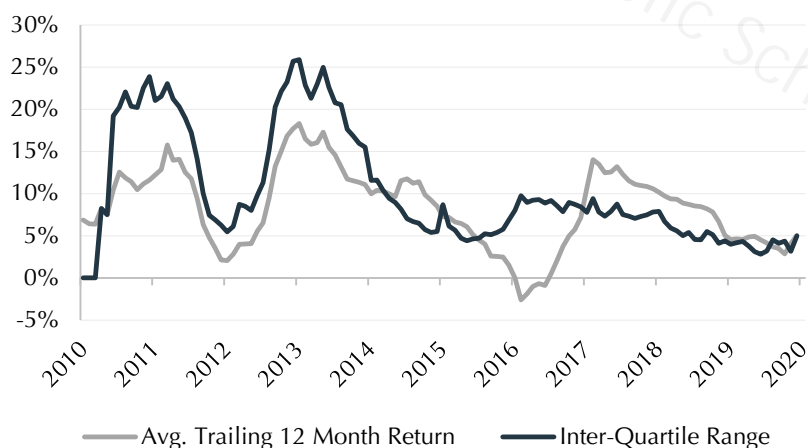
Source: Bloomberg, as of December 27, 2019

RELATIVE VALUE

Structured Credit

Based on Aksia tracked funds that have reported through December 2019, trailing 12-month returns range from -2.7% to positive 13.6% with a median of 3.9%, a testament to the tight spread conditions in the structured credit markets throughout 2019. Structured credit tracked fund dispersion has similarly been suppressed below 5%, with broadly tightening spreads and muted defaults helping HY assets across the board.

Figure 32: Aksia Tracked Funds Return and Dispersion



Source: Aksia tracked funds, as of December 31, 2019

A notable exception was CLO Mezz, a sector that has been volatile in the back half of the year and has generally detracted from performance, despite retracing some of its weakness in late December. Increased CLO liability costs have eroded CLO arbitrage, making new issue CLO equity less compelling, especially when existing CLO BB Libor spreads briefly exceeded 750bps late 2019, offering equity-like returns with significant additional subordination.

While this year has generally been one that has favored higher market exposure, with most higher yielding sectors tightening on YTD basis, there has also been a degree of differentiation across structured credit asset classes (e.g.,

CMBS vs. CLO debt). Furthermore, the recent bout of interest rate volatility created opportunity for more tactical strategies, as well as those with significant agency (GSE) exposure, often highly sensitive to prepayment expectations. Managers that combine credit and rate exposures have been among the best performers in our tracked manager universe recently, a trend we expect to continue into 2020.

CMBX 6 – Revisiting an Old Friend

The dour sentiment around retail generally, and particularly malls, has been a consistent theme in the national conversation in recent years. Storied retailers, among them ToysRUs, Payless, and Barneys filed for bankruptcy liquidation. A number of hedge funds came to see the CMBX 6 index, a 2012 vintage with outsized exposure to malls, as a compelling way of profiting from the mall owners' troubles.

The trade was, for a time, pitched as the next "big short" in some corners of the structured markets. Now, with the benefit of hindsight, even true believers will admit that the deterioration, if any, has been less precipitous than expected. In fact, with robust liquidity in the financing markets, low interest costs, and creative property repositioning/re-leasing, mall owners have largely been able to avoid defaults, driving CMBX 6 spread tightening and by extension, mark to market losses for shorts. The market seemed to have capitulated in mid-2019, marked by the reported shuttering of Alder Hill, a HF whose strategy had been publicly known to be heavily weighted to the short CMBX 6 trade.

RELATIVE VALUE

Figure 33: CMBX 6 BBB- Price



Source: Bloomberg, as of December 31, 2019

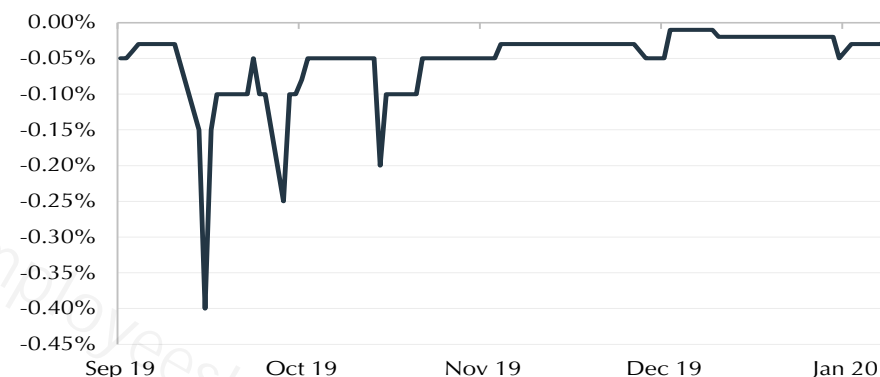
Carl Icahn's highly publicized foray into the trade, reported by the WSJ in late November,⁵ along with the price increases of the index, have revived interest in the short side of the trade. While there is certainly more convexity to the short at higher prices, we note the 2022 maturity of the CMBX 6, as well as significant sponsor equity capital cushions (low current LTVs) and the cost of carrying the position (upfront payment of 100 less the price and 500bps running) as headwinds for a short position. Recent research as well as corroborating views from several structured credit managers, seem to support that notion as well.

Fixed Income Arbitrage

2019 was a strong year for fixed income relative value strategies ('FIRV'), with cash futures basis in the U.S. leading the way despite a significant hiccup in U.S. funding in September 2019. While there were seasonal concerns around year-end funding pressure / balance sheet availability, as Global Systemically Important Banks window dressed their balance sheets, FIRV managers largely thought the market was well prepared. It has become increasingly common for

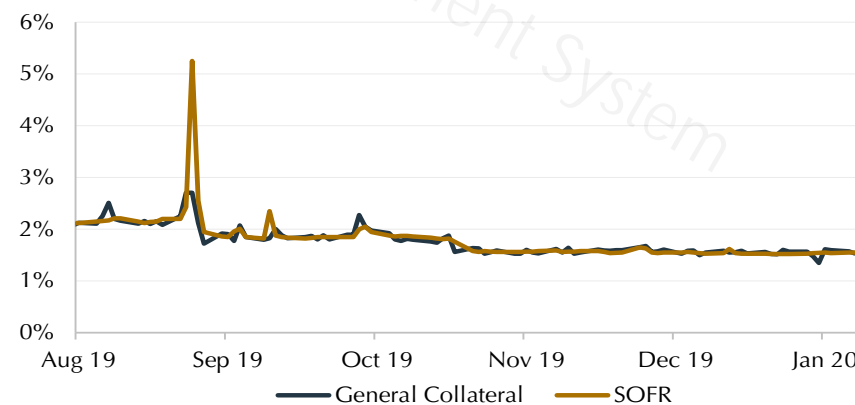
FIRV managers to term out their funding requirements over key periods, calendar roll dates and year-end, reducing the risk of unforeseen events negatively impacting their ability to finance the portfolio. At the headline level, year-end was mostly calm with key funding rates in the U.S. (Overnight General Collateral & Secured Overnight Funding Rate) remaining contained, keeping interest on excess reserves (IOER) close to Federal Funds Rate (FFR).

Figure 34: Interest on Excess Reserves vs. Fed Funds Rate (Ask Price)



Source: Bloomberg, as of January 8, 2020

Figure 35: U.S. Overnight General Collateral Government Repo vs. SOFR Overnight Financing Rate



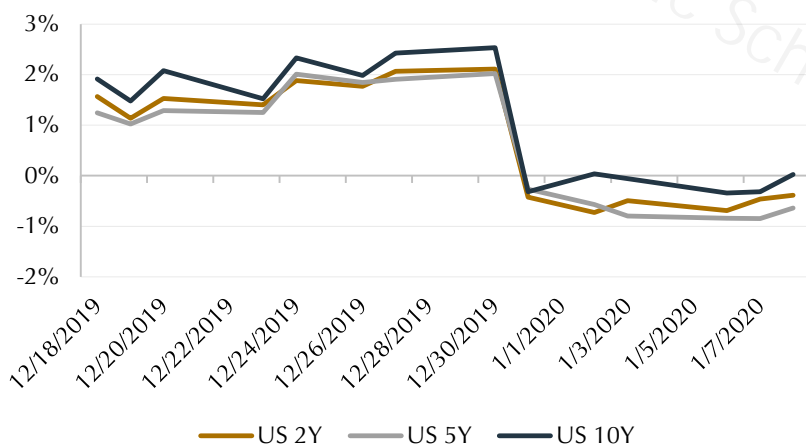
Source: Bloomberg, as of January 8, 2020

⁵ WSJ, Carl Icahn Placing a Big Bet Against Mall Ownership, Intended Recipient: Pennsylvania School Employees' Retirement System

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The outlook remains positive, with a high level of dispersion across sub-strategies. Managers remain generally concentrated in U.S. cash futures basis, where heavy positioning in government bond futures and uncertainty around U.S. funding continues to drive the opportunity. Despite headline numbers showing no signs of immediate stress in U.S. funding markets, year-end uncertainty did impact market pricing with the implied repo (from the Mar-20 basis) increasing to circa 1.90-1.95% into year-end before falling back in line with headline rates (1.60-1.65%) soon before the turn of the year according to Bloomberg.

Figure 36: March 2020 Basis: US Treasury Bonds vs. Futures



Source: Bloomberg, as of January 8, 2020

FIRV managers had a stronger than expected December, with the Mar-20 basis in the U.S. converging much sooner than expected. Managers would have expected to crystallize performance from the Mar-20 basis in Q1 2020 (February or March) but given the Mar-20 basis has already converged to fair value, the risk reward in that trade has reduced. In Europe, opportunities in cash futures basis are less attractive on a relative basis. Basis strategies in the UK are offering attractive absolute returns, but elevated political risk continues to dampen risk appetite in the region. In general, risk continues to be concentrated in U.S. micro relative value strategies.

Managers have started to scale back exposure to relative value strategies that require gross balance sheet, such as bond versus bond relative value, where the availability of balance sheet is ample and where spreads have largely compressed. The appointment of Christine Lagarde as President of the ECB could lead to volatility, in turn interesting opportunities, as she provides more color on the ECB's fiscal easing plans through Q1 2020 and beyond.

Overall capacity discipline remains good, with net balance sheet availability generally the driving force behind decisions to close to new subscriptions. While we are not of the view that the strategy is 'crowded' per se, we are of the view that current demand for the strategy is at risk of exceeding near-term supply. In Q1 2020 we expect to receive more data points from the ECB with respect to Christine Lagarde's long term plans, which will set the tone for the opportunity set in Europe, and we may get some more color from the Fed with respect to the plans for open market operations while we expect very little by way of updates from the Bank of Japan.

Mortgage Derivatives: Opportunity in Agency MBS

Since 2009, the Agency MBS market has been dominated by two large somewhat noneconomic participants (with active investors, including hedge funds, representing a small portion of the AMBS market). These noneconomic participants are:

- Banks that get credit for holding government backed "risk-free" securities
- The Fed's Quantitative Easing program

Mortgage spreads widened through 2018/2019, despite most other asset class spreads trading to new all-time narrows, for several reasons:

- In 2017, the Fed announced plans to shrink the size of its balance sheet by allowing AMBS holdings to roll off. With the Fed no longer buying, ~\$200-300bn of new supply per annum would have to be absorbed by the market.
- In mid-2018, an off-the-shelf provider of prepayment modelling (Yield Book) flipped their OAS assumption from -100bps to +300-400bps for mortgage derivatives (IO / IIO). Prepayments far exceed expectations

RELATIVE VALUE

through that period with home price appreciation (HPA) strength (positive incentive for cash-out refinancing) overwhelming the impact of rising rates.

- In early 2019, there was a change at the FHFA with the appointment of Director Mark Calabria. Director Calabria has proposed several legislative and administrative changes aimed at reducing the role of the GSEs in certain parts of the AMBS market.

With mortgage-derivatives having become somewhat of an orphaned asset class, we are looking into a potential structural shift in the market that could result in a compelling opportunity.

Mortgage-derivatives appear cheap both on an absolute and relative basis. If Director Calabria delivers on proposed administrative changes, which are typically easier and quicker to implement than legislative changes, it may create a structural opportunity to purchase mortgage derivatives that benefit from slower than expected prepayments.

There are several risks to the thesis, with the most prominent being:

- Director Calabria could reverse course on his GSE reform agenda.
- The Fed could restart QE, including MBS purchases as part of the program.

Mortgage-derivatives could also act as diversifiers and providers of uncorrelated return streams in the event of an economic-downturn, particularly if accompanied by weakness in HPA. This is where security selection is of paramount importance, given in this scenario the primary risks become both prepayment and default risk.

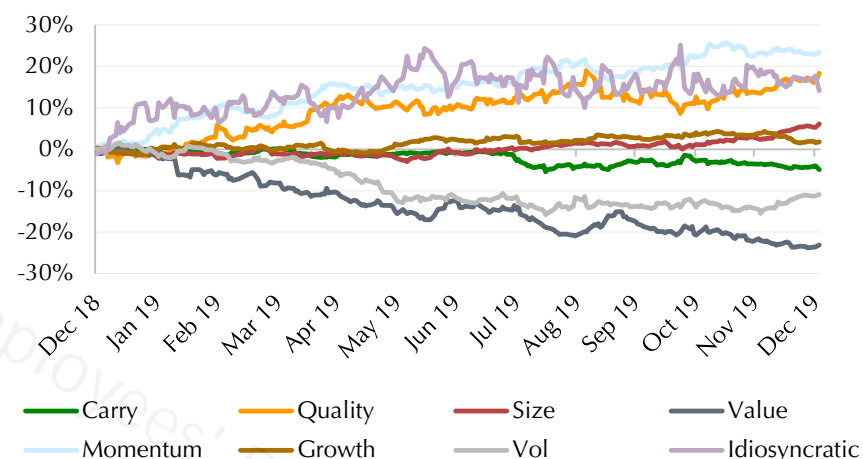
Our research team have been working with managers in the space and we'd be happy to speak to you further on the theme if you have interest.

Quantitative Strategies

The opportunity set for quantitative strategies that are tightly hedged to common factors is largely premised on the unexplained, idiosyncratic drivers. To that end, based on Aksia's proxy for drivers of single-stock returns (factors

vs. idiosyncratic), the latter half of 2019 was a disappointing return year for idiosyncratic drivers. Please note the analysis serves more as an ex-post confirmation as opposed to having potential ex-ante viability in timing quant allocations.

Figure 37: Idiosyncratic and Factor Performance in 2019



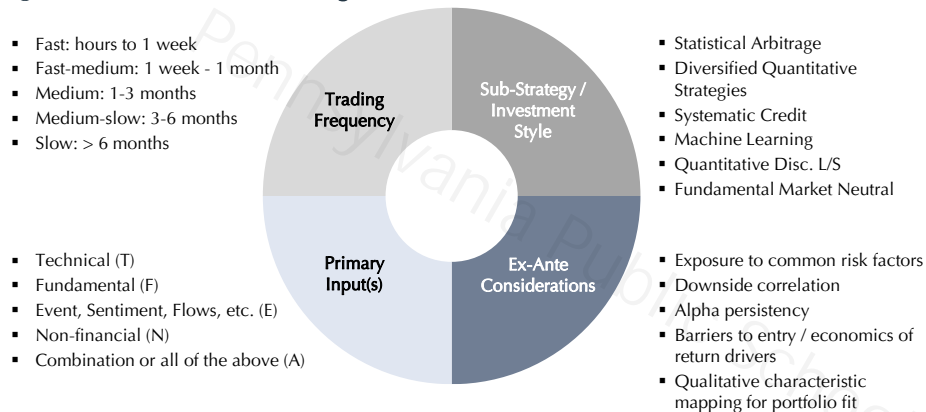
Source: Aksia tracked Funds, as of December 31, 2019

Note: To calculate idiosyncratic returns, we started with the S&P500 universe of single-stock equities between Dec 2018 – Dec 2019 and ran factor regressions on a cross-section of daily returns. The process mirrors that of a Barra Factor analysis in which a select number of fundamental and price-based indicators are bucketed into different factor groupings. At the beginning of each day, the indicators in each of the factor groupings are recalculated for each stock in the universe and aggregated. Thus, for each day, the model output is a vector of regression coefficients measuring the average S&P500 company's 'sensitivity' to each of the grouped factors. The sum of average normalized factor values crossed with calculated spread between upper quartile and lower quartile normalized factor 'sensitivities' produces an estimate for the daily factor premia for that day. The resulting residual between this is the average daily performance of equities and the model's estimated performance generates a value for daily idiosyncratic return.

LPs may want to build quant exposure that extracts different market inefficiencies in any given market environment, not rely solely on a specific type of process (e.g., stat arb would be more adversely impacted by a lack of idiosyncratic drivers). There are various vectors to consider on a qualitative and quantitative basis when constructing a portfolio of quants.

RELATIVE VALUE

Figure 38: Aksia Quant Manager Considerations

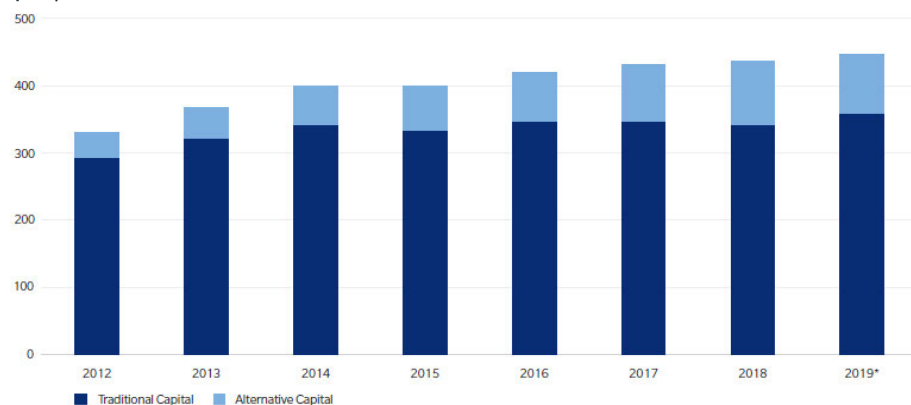


Source: Aksia

Reinsurance

While we are still waiting on final portfolio metrics as of this writing, the 2020 pricing environment generally turned out to be attractive for managers. The sector remains well capitalized, with Guy Carpenter estimating a net increase of 2%.

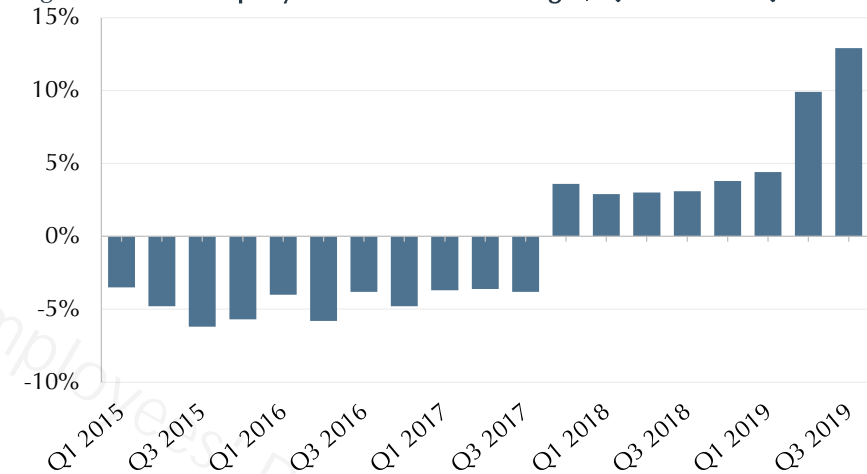
Figure 39: Estimated Dedicated Reinsurance Sector Capital 2012-2019 (USD \$bn)



Source: Guy Carpenter, A.M. Best, January 1, 2020

The decrease in alternative capital did result in pockets of opportunity in more price sensitive areas such as retro, in addition to loss impacted reinsurance. Continued uplift in U.S. property insurance rates likely partly drives these dynamics.

Figure 40: U.S. Property Insurance Price Changes, Quarter over Quarter



Source: Marsh & McLennan Companies, Global Insurance Market Index, Q3 2019

The 2020 allocation decision was generally an easier proposition than prior points in the cycle due to market dynamics. However, we are continually brainstorming means for LPs to more efficiently access exposure to insurance. As such, a goal for 2020 is to source GPs that allow more streamlined access points to prop cat (insurance, reinsurance retro) and specialty / casualty lines.

TACTICAL TRADING

Macro

We view the near-term opportunity set in G10 rates as a little less interesting with the Fed on hold, which should be reinforced by a reluctance to adjust policy rates in the midst of a presidential election. With the curve largely priced as such, there may at least be room to generate returns on a negative surprise in the data. Longs in the front end appear to be an asymmetric trade, as hikes are only a remote possibility. FX implied volatility continued to reach new all-time lows during Q4, with the announced closure of the most prominent FX specialist hedge fund perhaps marking a bottom. We continue to favor G10 macro managers that fit into at least one of the following themes:

- Man & Machine
- Long gamma bias
- Diversified exposure to niche PMs

It feels like the easiest money in EM interest rates trades has now been made following broad repricing in 2019, as EM central banks adjusted to Fed's dovish shift in policy earlier in the year. There is still room to ease in some countries, especially given the generally disinflationary global picture, but these are more idiosyncratic country-specific opportunities. EM credit spreads have come in, by some measures towards at the tightest levels in the past decade. Similarly, EM equities have followed general reduction in global equity market risk premium, and earnings are likely to be held back by the continuing weak growth picture.

Despite these challenges for EM markets, we think the alpha opportunity set remains strong, with a mixture of countries in different stages of cycle. There are worsening stories in countries struggling to adapt to softening external demand, weaker capital flows and deglobalisation, and, on the positive side, those countries either recovering from crises (Argentina the biggest and most topical example) and frontier markets which are developing on the path towards investment grade.

CTAs

Short Term CTAs and Tail Risk

Short term CTAs have come into focus once again as investors seek to hedge equity risks without incurring the negative carry associated with simply buying options. We typically discourage LPs from tactically investing in short-term CTA products in an attempt to time equity market downturns.

Since returns for these products tend to be poor at the mean, such trades also contain an embedded market timing perspective. Moreover, the timing element of these trades requires investors to properly balance any potential upside of the trade with inherent downsides, most notably being the increased portfolio-level risk exposures to market betas realized as time passes from the initial investment. Last, mis-timing the trade also entails the prospect of a continual re-underwriting of the original timing thesis and bearing costs – monetary and opportunistic – incurred by subsequent portfolio repositioning.

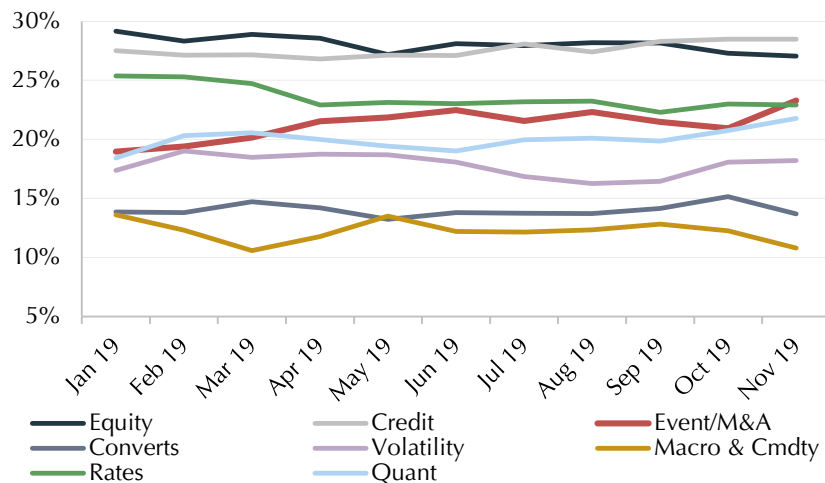
MULTI-STRATEGY

Multi-Strategy

We wanted to wrap up 2019 with a review of performance and allocation changes among multi-strategy managers over the course of 2019. Through November, performance among monitored multi-strategy managers ranged from -8.8% to +22.2% with the vast majority of managers performing positively, averaging a return of ~5.7%. RV multis returned on average ~4.3% while Directional multis returned on average 10.3% (as would be expected in a largely directional market).

Changes in average allocations across monitored managers looked as follows. On the margin, allocations to Quant and Event/M&A increased while managers tightened in their allocations to Equity and Macro.

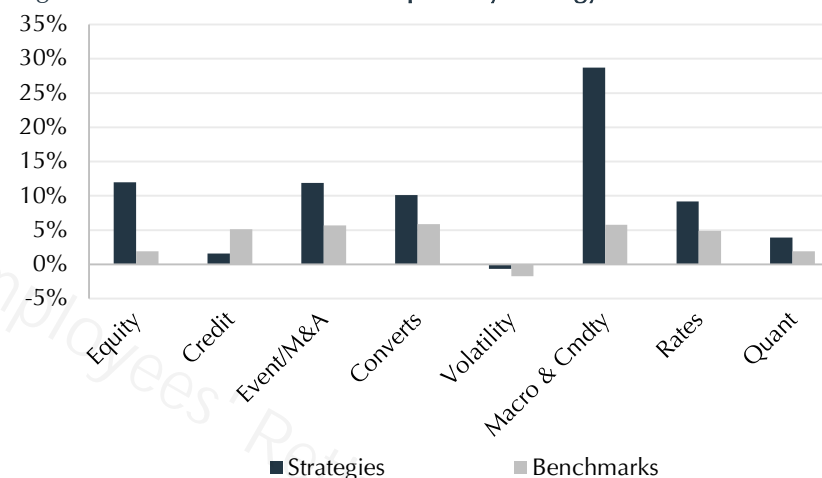
Figure 41: Average Allocation Changes



Source: Aksia Monitored Funds, as of November 30, 2019

From a return on capital perspective (attribution/allocation), all strategies within multi-strategy portfolios, with one exception (Credit), outperformed their benchmarks.

Figure 42: Return on Allocated Capital (By Strategy) vs. Benchmark Return



Source: Aksia Monitored Funds, as of November 30, 2019

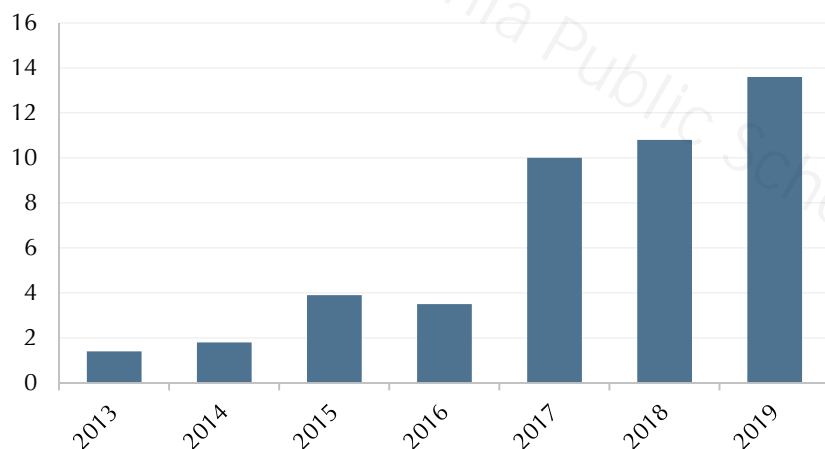
Sub-strategy Highlight – SPACs

It is not a secret that multi-strategy managers tend to run various sub-strategies, not all of which appear on generalized, high-level risk reports. Oftentimes, a relatively small, capacity constrained sub-strategy is hidden within a broader category such as “Event Driven.” Through recent conversations with a number of managers, we find that SPAC (Special Purpose Acquisition Companies) Arb is one of these strategies, though few break out the strategy into a separate line item. SPACs can get bucketed into Event Driven, Structured Products, or Equity Arb, not getting the credit where due. Yet, we believe the strategy can be a compelling piece of a multi-strategy portfolio (and on a standalone basis) from a risk/reward standpoint and warrants a highlight.

MULTI-STRATEGY

According to SPAC Research, SPAC issuance has grown quite a bit in recent years, increasing from ~\$3.5bn raised through SPAC IPOs in 2016 to ~\$13.6bn raised in 2019. The number of IPOs increased from 13 in 2016 to 59 in 2019. As the market becomes a more attractive one for sponsors and companies alike, the opportunity for investors also grows and liquidity improves.

Figure 43: SPAC New Issuance (\$bn)



Source: SPAC Research, as of December 31, 2019

In general, there are two types of investors in SPACS: (1) fundamental investors and (2) arbitrageurs. Fundamental investors typically analyze SPACs in a similar manner to a regular stock, assessing management teams, merger candidates, availability of financing, etc., and often buy into the SPAC post-IPO. Meanwhile, arbs often invest at the IPO (at which point they receive SPAC units which later split into common shares and warrants). Arbs find the structure compelling due to the downside protection, upside potential, and the optionality associated with the warrant. Arbs usually hold onto the units until they split into common shares and warrants, each of which trade separately. At this point, there is an opportunity to trade around the value of the unit versus the sum of the parts and/or sell the common at market price and keep the warrant. Arbs do not generally hold the SPAC post-merger announcement, as they are generally unwilling to take on the operational/execution risks associated with the transaction.

So why do we like the strategy as both a piece of a multi-strat and on a standalone basis? (1) SPAC units generally IPO at \$10 and any cash raised through the IPO goes into a trust account, which means that investors' downside is protected by cash in the trust. (2) On the upside, once a merger is announced, SPACs tend to trade up, generally to the tune of 4-8%. (3) The warrant provides additional upside potential should a merger go through.

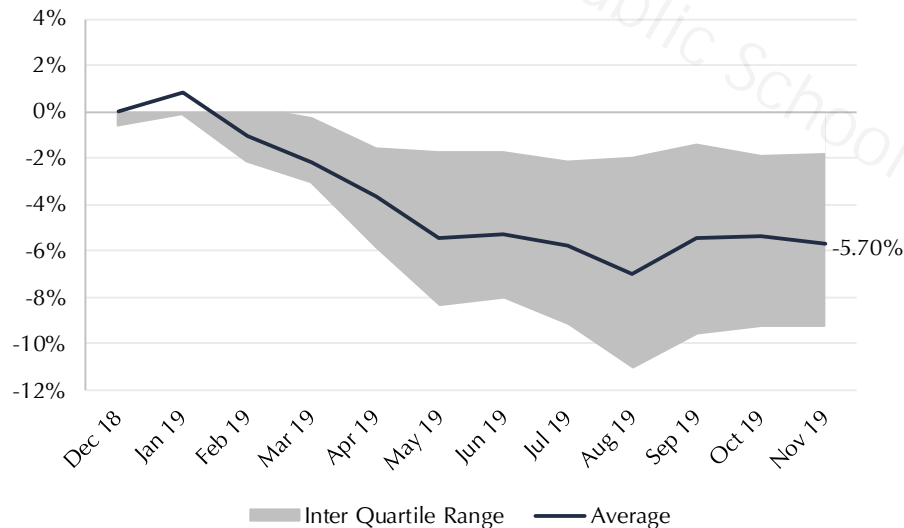
The major risk associated with SPACs is operational, though this is less pertinent for SPAC arbs. Liquidity is another concern, mitigated in part by the increasing issuance in recent years. And, given the size of the SPAC market according to SPAC Research (~\$22bn in trust) and ~97 active SPACs, the strategy is still certainly capacity constrained. We have found that smaller multi-strat managers tend to be more active in this space, as SPACs can actually move the needle in their portfolios. Some of these managers are also willing to carve-out dedicated SPAC arb vehicles for interested investors, which makes sense for investors seeking a certain risk/return profile.

MULTI-STRATEGY

Multi Risk Premia

Across our monitored universe of ARP managers, those trading single name equity Value signals saw their Value books detract 5.7%, on average (headline attribution figure, not an individual book's drawdown), from topline gross performance.

Figure 44: Cumulative Single Name Equity – Value Attribution (Dec 2018-Nov 2019)



Source: Aksia Monitored Funds, as of November 30, 2019

OPERATIONAL DUE DILIGENCE

Not Every Cloud has a Silver Lining

Businesses globally have demonstrated a growing appetite for cloud-based storage services. According to a study conducted by Gartner, Inc., Amazon's cloud infrastructure business generated \$15.5 billion of revenue in 2018 (up 27% from 2017) and controlled nearly 48% of the global cloud storage market, outpacing rival Microsoft, whose Azure business generated \$5 billion of revenue (up 61% from 2017) and controlled 16% of the market.⁶ Companies worldwide appear eager to take advantage of the economies of scale offered by the major cloud storage providers in an effort to increase security, reduce IT costs and outsource an often laborious chore.

The alternative asset management industry has followed the burgeoning cloud trend. During Aksia's operational due diligence meetings with managers, we discuss IT infrastructure, noting whether managers use traditional on-premises servers to host data and applications or cloud-based providers. An internal analysis conducted among actively monitored managers indicates a growing use of cloud providers: in 2017, approximately 31% of managers covered by Aksia's operational due diligence team were either utilizing cloud-based infrastructures or in the process of migrating to a cloud-based solution. That figure has been on the rise, up to 41% in 2018 and 44% in 2019. The migration from on-premises servers to cloud-based providers has seemingly been catalyzed by a desire to cut costs, save time and increase security. A growing cohort of managers are quick to point out that outsourcing data storage eliminates the need to maintain and update expensive hardware and their requisite cooling systems, which also reduces energy costs and frees CTOs and IT staff to focus on other tasks. Moreover, reputable cloud storage providers have the resources to provide extra layers of security than may be available for internal data storage systems. On its face, outsourcing data and application storage to the Microsofts and Amazons of the world seems like a no-brainer.

Still, though, there are skeptics. We continue to encounter CTOs from established managers that have bucked the cloud trend, preferring on-site servers for housing their firms' critical data and applications. CTOs of the on-site server camp tend to argue that the ostensible benefits of outsourcing

storage are outweighed by the associated risks – often noting that household names like Microsoft and Amazon are more likely targets of cybersecurity attacks than a 'sleepy' hedge fund manager. This point is not without merit – in December 2018, the FBI charged two Chinese nationals who are believed to be the masterminds of "Cloud Hopper," an espionage hacking tool that has gained access to a growing number of large Western companies' data via phishing campaigns and contractors' systems. A Wall Street Journal investigation reported that Cloud Hopper gained access to "at least a dozen cloud providers."⁷

Control is another sticking point for those who have veered away from the cloud trend – these CTOs beat the drum about how it is their chief responsibility to protect the data of their firms, and they are reticent to share that responsibility. Only a select few employees typically have access to on-site server rooms, whereas hordes of engineers maintain acres of data farms utilized by large cloud storage providers. Such expansive access may have contributed to the notorious Capital One data breach in July 2019, perpetrated by a rogue actor who was formerly employed as a software engineer for Amazon Web Services ("AWS").⁸

Unsurprisingly, there are pros and cons to each of the different setups; the approach that makes most sense for a particular firm depends on factors such as internal resources and the scale of the business. In the case of cloud-based solutions, it is vital that users understand that responsibility for the security of their data and applications does not rest solely on the shoulders of cloud storage providers. Amazon's "shared responsibility model" notes that while they are responsible for the security of their cloud infrastructure, the customer is responsible for the security of their data stored *within* it.⁹ It is critical that consumers of cloud security storage implement robust cybersecurity measures around their data, and not rely exclusively on their outsourced providers. These measures include utilizing identity management software to help control who

⁷ WSJ, *Ghosts in the Cloud*, December 30, 2019

⁸ CNN, *A Hacker Gained Access to 100 Million Capital One Credit Card Applications and Accounts*, July 30, 2019

⁶ Gartner Press Release, July 29, 2019

OPERATIONAL DUE DILIGENCE

has access to the data and monitor when and from where the network is accessed, conducting regular patching and penetration testing to help identify potential vulnerabilities in the network, and using firewalls to help prevent hackers from gaining access. Moreover, proactive steps such as deactivating USB ports and providing phishing training for employees creates a culture of security and sets a tone that cybersecurity is of paramount importance.

As for smaller firms without dedicated CTOs, Aksia does not necessarily expect management to be IT experts; however, we do expect them to be able to, at a minimum, demonstrate a basic understanding of where their data is housed and articulate their security responsibilities. Regardless of the size of the business, it is important that managers view cloud-based storage providers not as a one-stop shop for all their IT needs, but rather as a complementary partner in maintaining safe storage and security of their data.

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Private Credit Annual Strategy Outlook

March 2020



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Intended Recipient: Pennsylvania School Employees' Retirement System
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PRIVATE CREDIT ANNUAL STRATEGY OUTLOOK

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INTRODUCTION

A note to the reader

This outlook was written as COVID-19 was beginning to spread, with the scope of the health effects and financial effects still highly uncertain. First and foremost, our hearts go out to all of those who are suffering as the result of this pandemic. As a firm, we are doing what we can to keep our employees safe and to avoid contributing to the problem. As this humanitarian crisis unfolds, we are compelled to recognize the tremendous knock-on effects in the financial markets. After over a decade of relative calm, market volatility has returned with a vengeance. This volatility has begun to rearrange the investment landscape. Public markets are regularly moving 5% a day (more often down than up), there is a rush for cash in the lending markets, and whole corporate sectors are staring into a revenue abyss. All this is suddenly creating stressed and distressed opportunities where they were non-existent even a few weeks ago.

Without 20/20 hindsight it is impossible to know when any crisis will run its course. Decisions made during this period could have ramifications on portfolio performance for years to come. Some LPs will stop all new allocations just when entry levels are cheapest, others will jump in too early, most will sit on their hands, and some will hit the mark and make adjustments that help returns for years to come.

Aksia's research team is focusing on both opportunities (stressed, distressed and NPLs) and risks (troubled companies/ industries, market disruptions and forced selling). Over the coming weeks we will be sharing additional thoughts on these risks, but here are a few initial thoughts:

Valuation of legacy portfolios: Public market assets have repriced by 10-50%, but private market valuations have (predictably) not moved yet. As you contemplate new investments, we suggest being hyper-vigilant about the risks of investing into legacy portfolios with NAVs that are likely inflated. Late investors that make investments at an inflated NAV are essentially giving a gift to the early investors in the fund by socializing previous losses. As a preemptive measure, Aksia has placed most private credit funds on our watchlist if they are in the fundraising period and had drawn >10% prior to the GCC.

Revolvers are being drawn: Most loans include a term facility and a revolving credit facility ("RCF"). In the broadly syndicated loan ("BSL") market, banks typically syndicate most of the term loan and hold the RCF on balance sheet because banks would typically have to pay counterparties to assume the short optionality associated with the undrawn liability. RCFs are not as ubiquitous in the middle market, but they are still common. In most cases, they are bundled into comingled funds and separately managed accounts ("SMAs") with the expectation that they will not all be drawn at once. Over the past week many sponsors have been pushing their portfolio companies to draw their RCFs to lock in liquidity. Thus far, this phenomenon has been much more prevalent among sponsor-owned companies.

Anecdotally these lines have gone from <25% drawn to >70% drawn, leading to an unexpected reliance on subscription lines and sooner-than-expected capital calls. No doubt some GPs may have over-allocated under the premise that they would never be fully drawn which would create a quandary as the GP tries to make good on its commitments.



INTRODUCTION

Margin calls may lead to forced selling of illiquid assets: Subscription facilities and NAV-based facilities (together “Fund Leverage”) are governed by long, complex agreements (a “simple” subscription facility agreement can be well over 100 pages). Since the lender (typically a large bank) controls the initial draft of Fund Leverage agreements, the standard contracts are riddled with clauses that give lenders rights and covenants that allow them to call the facility into “technical default” even if the underlying loans are performing. Some borrowers (typically GPs representing funds and SMAs) heavily negotiate these agreements and others accept them as is. In either case, but particularly in the latter, the resulting agreements contain lender-friendly “outs” buried in complex, nuanced clauses. Ironically, these lender protections did not disappear in the same way that lender protections were watered down in the corporate credit markets due to a lack of competition (the Fund Leverage market is dominated by a few large banks) and ever-increasing demand.

With NAV-based fund leverage facilities, the most important controls involve valuation. Can the lender mark down a loan (or kick it out of the borrower base entirely) if the company underperforms or if the BSL market reprices? What are the borrower’s rights to challenge a new mark before a portfolio is liquidated? For subscription facilities, can the lender exclude LP commitments if the LP experiences financial issues or a rating-downgrade or if the LP defaults on a capital call? We recently reviewed a subscription facility – an innocuous clause on p. 95 indicates that GPs have the obligation to report the leverage of underlying LPs, and if the LPs’ leverage exceeds a certain level, then they can be kicked out of the borrowing base. If this is a GP reporting obligation, then they should be asking this information regularly from LPs - when was the last time a GP asked you about your leverage so that they can report it back to the lender?

Given the broad latitude in many of these agreements, we expect different outcomes between loans from banks that care about long term relationships (because they may overlook technical shortcomings) vs. banks where Fund Leverage is a non-core business that can be jettisoned if necessary (because they may try to find technicalities that allow them to get out of their agreements). In the US, we expect the large US banks to be more stable sources of financing but are more concerned about loans from European and Japanese institutions (and similar dynamics in other countries). We also expect different outcomes between groups that had allocated resources to negotiating these documents.

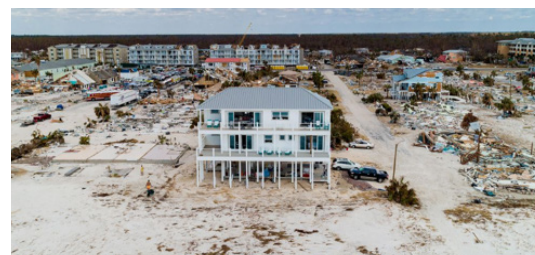
Over the past week we have heard several cases where lenders have marked down illiquid assets (or threatened to mark down assets), leaving investors scrambling to cure in order to avoid forced selling. In one case the fund levered semi-liquid securities using repo financing, but when liquidity dried up, the GP was at the mercy of the dealer’s marks on the underlying collateral. In another case, a private credit fund was using fund level leverage where the lender had liberal rights to re-mark the portfolio. If situations such as these lead to forced selling, it could begin a domino effect that could lead to additional selling. We will learn more in the coming weeks.

Each of these issues is fluidly changing day-by-day. We look forward to working with you to determine the best course of actions for your portfolio.

INTRODUCTION

Our core Private Credit Themes

Aksia has been walking a tightrope for the past several years with respect to our allocation advice. On one hand, we believe in the value of private credit versus other asset classes, but we are aware of the cascade of challenges that crept into loan markets as the economic cycle progressed. At the highest level, our advice has followed two primary tenets.



1. Build your house of bricks: Within “on-the-run” strategies such as upper middle market corporate credit and large loan CRE lending, we have been focusing on identifying solid credits by partnering with established GPs – GPs with sourcing channels (so that they are more likely to get the “first call” from borrowers), strong underwriting standards and sufficient resources. Like this hurricane-proof home that survived the Category 4 winds of Hurricane Michael in 2018, we were working to try to position our clients to survive the inevitable storm.

2. Spread out: For yield enhancement, we focused on capacity-constrained, niche strategies that relied on a GP’s effort to unlock value (a.k.a. “low return on effort”). We worked to find strategies and invest in regions where the pressures from liquid markets were less and GPs could extract illiquidity and complexity premiums.

Introducing a new theme

Distressed debt has been a tough strategy recently. The economy moved in a straight line, up and to the right, so few companies experienced financial trouble. Companies that defaulted were less likely to be “good companies with bad balance sheets”. Instead they tended to suffer from challenged business models, often because of technological disruption, making them less attractive for distressed investors. Rescue finance was almost as hard. When companies stumbled, credit investors were tripping over themselves to help them back up again. These tidy, pre-negotiated restructurings tended to favor the equity owners rather than the distressed community (that thrives on long, messy workouts).



The current crisis is threatening to upend that calm. Volatility is creating an unevenness where some companies are being punished more than others. Amid this change, we continue to stand by our existing themes, but are laying the groundwork for a third. It may prove to be premature (the dust may settle before substantial distress emerges or things may get much worse before they get better), but given the long-term nature of our business, we think it’s time to start increasing allocations to strategies that can profit when others are panicking, per our new theme:

Tiptoe into distressed: We are not in the business of predicting the outcome of global health crises. Nor can we predict whether current challenges may snowball into a larger global economic collapse. We do know that past health crises have proven to be temporary when it comes to financial consequences. The Spanish Flu of 1918-1919 was a terrible humanitarian crisis, but once it ran its course, GDP recovered, and the world carried on. On a much smaller scale, almost every world epidemic in the past 40 years (including SARS, Avian Flu, Swine Flu and MERS)



INTRODUCTION

has been followed by a substantial equity rally over the next 6 months.

The current situation may prove to be different for any number of reasons, but history tells us that even a devastating global pandemic does not necessarily lead to a global recession. Ironically, a deep disruption and quick recovery could create a good environment for credit investors, whereby financial conditions are challenging enough to force widespread defaults, but recoveries are rapid enough to preserve equity value for the restructured equity (though defaults may be limited due to a lack of covenants).

Although there is a lot that we do not know, we do know that assets are a lot cheaper now than they were a few months ago. After a long period of calm, this crisis threatens to expose many of the weaknesses that had been masked by the buoyant markets and could lead a wave of financial distress. We expect that existing PE dry powder and HF cash will be sufficient for the initial wave of distress, but we expect to see 1) pockets of distress that existing funds are not positioned to take advantage of, and 2) periodic entry points after much of this “war chest” money has been spent.

With this in mind, we think that investors should “tiptoe” into stressed debt, distressed debt, rescue finance, and (for LPs with substantial internal resources) private credit secondaries. Not all at once and not into a single strategy - but start to build positions across the distressed landscape so that the capital can be invested over the next 2-3 years, preferably after much of the existing pile of distressed capital has been invested. It is impossible to time the cycle perfectly, but after a decade of calm, the probability of an extended default cycle is finally real.

A guide to the outlook

In the following pages, we will explore 1) portfolio construction & the role that private credit is playing in LP portfolios, 2) an analysis of fund term evolution & related governance risks, and 3) detailed reviews of private credit strategies. Each of these sections are informed by Aksia’s proprietary data sources:

- **Loan performance and underwriting trends** were sourced from our transaction dataset that includes >500,000 data points from ~12,000 middle market loans, representing \$311bn of loan level data from 142 funds.
- **Fundraising info and terms** were sourced from our fund database that contains fundraising information of over 1,200 private credit investment programs, representing \$1.3 trillion of capital raise activity.
- **LP sentiment** was sourced from ~200 LP surveys that we conducted at Aksia events since 2018.

The following provides a summary for our views on each strategy and how we suggest implementing them in the current market.



INTRODUCTION

Ratings are tactical recommendations and assume a portfolio with a stable strategic asset allocation

OUTLOOK

Direct Lending (page 17)**Neutral**

- Market norms for U.S. and European loan structures broadly converged in recent years
- Deal flow activity across both markets is likely to slow in 2020 and performance issues to emerge, testing capabilities and resources of many new market entrants
- Near-term credit stress is likely to be concentrated in a few specific sectors; the broader impact of COVID-19 on supply chains and business models is yet to be fully understood
- Asian direct lending deal flow can be sporadic but challenges in banking system(s) and regulations should drive new private capital activity

Mezzanine (page 24)**Neutral**

- Mezzanine opportunity in the U.S. and Europe has been challenging as unitranche structures and late cycle lending behaviors present stiff competition for disciplined junior capital GPs
- Cross capital structure capabilities (senior to preferred) may be valuable as credit issues emerge

Distressed & Special Situations (page 27)**Overweight**

- COVID-19 catalyzing credit global issues across both large cap and middle market sectors
- Large corporate opportunity set is developing in the U.S. levered loan and HY space
- Activity in Europe has centered on bank sales of NPLs but the opportunity has shifted as banks have already sold many of those troubled assets. Meanwhile corporate stress is quickly emerging
- Asia, especially India, is now a focal point for distressed investors

Specialty Finance (page 34)**Neutral**

- Specialty Finance has been the “hot” sector to talk about with LPs seeking less correlated credit opportunities
- Addressable market and accessibility vary widely across various market niches

Structured Credit (page 39)**Neutral**

- Private structured credit opportunities to provide liquidity emerge as banks curtail secured lending
- Challenged arbitrage and weak loan fundamentals reducing near-term primary CLO equity attractiveness
- Recent (COVID-19 driven) spread widening will lead to secondary market opportunities

Real Estate Credit (page 42)**Neutral**

- The opportunity set in U.S. CRE lending favors well-capitalized sponsor backed, major markets-focused, large loan strategies, though we note that we anticipate lending volume to decline sharply in the coming quarters and LPs should be mindful of GPs with issues in existing portfolios
- We are constructive on U.S. residential fundamentals and believe this view is best expressed through reperforming residential acquisition strategies; we note that the significant decline in rates is likely to slow non-agency volumes substantially
- In recent years, the private European CRE lending market experienced significant growth as banks and insurance companies retreated, though the opportunity set differed considerably by region
- The ongoing COVID-19 pandemic warrants extreme caution on hospitality, retail and leisure focused performing credit strategies as well as those lenders with high levels of exposure to these sectors. Conversely, we expect to see a significant wave of distressed opportunities in these sectors across coming months

Real Assets Credit (page 50)**Overweight**

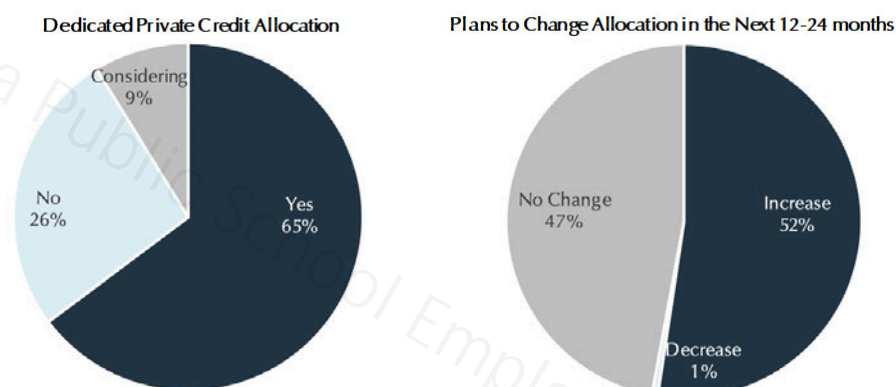
- Huge infrastructure capital needs but narrow addressable market for high yield private credit given compressed equity returns and accommodating debt capital markets for core/core+ assets
- Distress in the oil patch opening new opportunities for private capital and secondary trading

Aksia recognizes the importance of GP skill and the nuances of each fund's strategy. As such, bottom-up investment decisions will often override these broad sector-level guidelines.

PRIVATE CREDIT INVESTOR TRENDS

It should be no surprise that an increasing number of LPs have been allocating to the private credit asset class, driven by a focus on “enhanced” yield over public fixed income markets and a desire to incorporate opportunities which are “less correlated” to their investment programs. Of the nearly 200 global institutional investors who have taken Aksia’s proprietary LP survey at our Private Credit roundtable events since 2018¹, ~2/3 already have a dedicated allocation to Private Credit and more than half plan to increase their allocations in the next 12-24 months (However, we admit this may be a skewed sample as the folks answering the survey tend to be private credit focused professionals at LPs that are involved in private credit).

Figure 1: Aksia Private Credit Survey Results – Private Credit Allocations



Source: Aksia

For those that have a dedicated private credit/debt, opportunistic, illiquid credit or a similarly named allocation (referred throughout as Private Credit or PC), targets vary considerably, driven by different goals and mandates. Overall, our survey results show that the median target allocation is around 7% of overall program assets, with a range of 4-10%.

Figure 2: Aksia Private Credit Survey Results – Private Credit Target Allocation



Source: Aksia

This growing trend of allocators viewing private credit as a stand-alone asset class has brought with it long-term strategic planning considerations along with the desire to establish best practices with regards to top-down portfolio construction, pacing and risk management.

1. Aggregated results presented in the following pages are based on the survey responses received from 195 institutional investors that have attended Aksia’s PC-centric roundtables, 142 of which are based in North America, 37 in Europe, and 16 in the Middle East.

PRIVATE CREDIT INVESTOR TRENDS

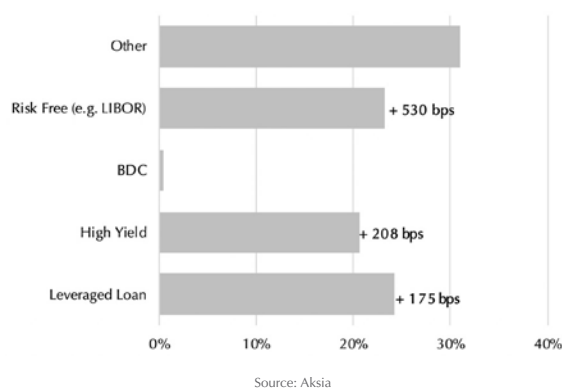
Throughout the course of the last several years, we were fortunate to meet with numerous LPs across the globe who are implementing or planning to implement private credit programs. Below we highlight a few of the most common questions and considerations:

Where should the capital come from? While historically from Private Equity, and comprised of higher return Private Credit such as distressed, we have seen a noticeable shift where the majority of new Private Credit programs are being funded by a reduction in public fixed income (e.g., high yield, investment grade, bank loans) and are represented by lower returning, lower risk strategies.

Should we create a dedicated allocation? We have observed that there are often challenges in creating dedicated Private Credit allocations, including establishing governance processes, hiring of dedicated investment staff and consultants in addition to forming risk management framework and oversight. Many investors, however, are finding that the upfront cost of developing a dedicated Private Credit program is outweighed by the long-term advantage of housing all private credit strategies within one portfolio. A consolidated approach may allow for improved relative value comparisons across strategy and collateral type, more effective portfolio construction, improved investment level transparency and heightened investment staff accountability.

How should my PC allocation be benchmarked? This is perhaps the most debated topic facing investors today given the wide diversity of collateral types, seniority and geography of Private Credit investments. Because of these factors, benchmarking Private Credit investments can be challenging and there are a variety of approaches, with no real consensus across institutions as illustrated below from our LP survey:

Figure 3: Aksia Private Credit Survey Results – Private Credit Benchmark



A risk free + premium benchmark is more prevalent in Europe (~51%), where investors are eager to find solutions in a zero rate environment, while HY or Lev Loans + premium is more common in the Middle East (~67%). There is not a 'typical' approach in North America.

We are seeing increasing acceptance among investors for a "opportunity cost" benchmark – i.e. if capital was not invested in Private Credit, what is the cost of being invested in an alternative asset class. The typical opportunity cost benchmark consists of a risk-free rate (i.e. LIBOR, T-Bills etc.) plus a reasonable spread over the risk-free rate that compensates for the risk, illiquidity and expense of investing in a more complex 'asset class'.

PRIVATE CREDIT INVESTOR TRENDS

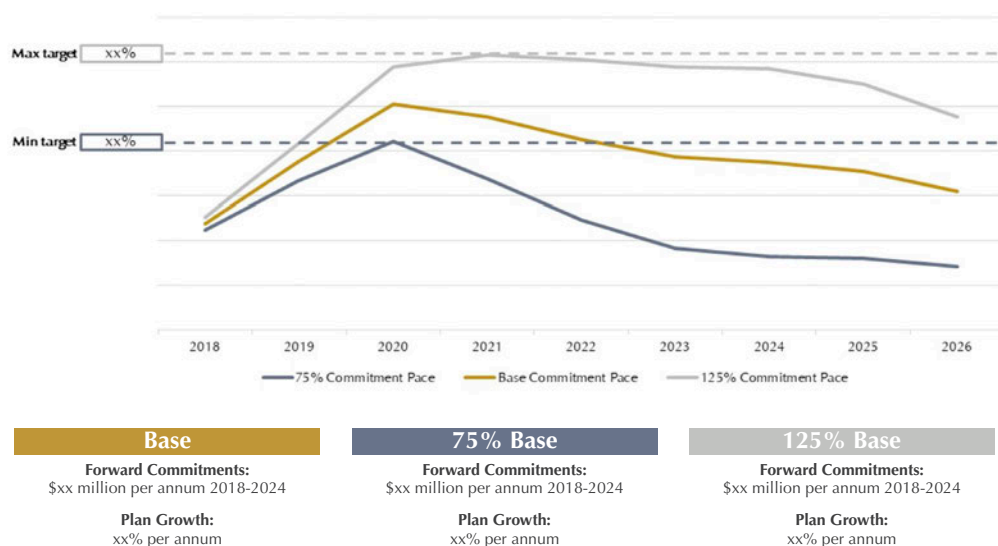
Below we delineate various pros and cons to the commonly used components of performance benchmarking, with the caveat that Aksia leans towards opportunity cost benchmarking as providing the most reasonable measure of private credit performance today.

	Leveraged Loan Indices	High Yield Indices	BDC Index	Benchmarking by Strategy
Problem	Mark-to-market Corporate vs. distressed Risk (company size)	Mark-to-market Fixed vs. floating Risk (company size) Risk (severity)	Mark-to-market Risk (leverage) Risk (severity)	Time-consuming to administer
Good for	Direct lending portfolios	Mezzanine and opportunistic portfolios	Higher risk, corporate-focused portfolios	Not ideal for most portfolios; the costs of this approach probably outweigh the benefits.
Not good for	Diverse asset type portfolios	Senior focused PC portfolios	Not ideal for most PC benchmarking	

How should I think about PC portfolio pacing? We believe that portfolio implementation should be guided by a pacing plan that targets approximate annual commitment levels, the optimal number of “line items”, GP relationships and vintage year diversification. Aksia has developed a pacing model specific to private credit which models NAV growth, capital draws and distributions specific to each Private Credit sector (e.g. direct lending vs. specialty finance).

Following is a high-level summary of output from our model:

Figure 4: Aksia Pacing Model Sample Output – NAV As Percent of Total Plan Assets

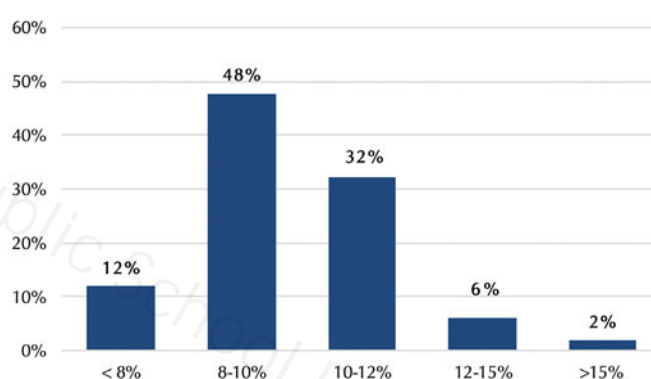


Source: Aksia

PRIVATE CREDIT INVESTOR TRENDS

What target net returns should I target? Nearly half of surveyed investors are seeking PC investments with an 8-10% net return. We have observed that these investors often reach their targets through a barbell of higher risk/higher return and lower risk/lower return strategies. For those with higher return targets (e.g. 10% +) leverage at the fund level and/or structural asset leverage is usually an integral component in the portfolio. Aksia has developed a capital assumption framework detailing our expected net return and volatility by each of our seven PC sectors (Direct Lending, Mezzanine, Distressed/Special Sits, Specialty Finance, Structured Credit, Real Estate Lending, Real Assets Lending).

Figure 5: Aksia Private Credit Survey Results – Target Net Return Expectations



Source: Aksia, Private Credit Investor Surveys

How do you think about Risk Management for PC portfolios? Risk monitoring is of increasing importance to allocators as PC commitments grow and as dedicated PC allocations are established, with LPs demanding heightened loan-level risk transparency and reporting. In addition, we have observed that allocators are increasingly seeking ways to compare return/volatility across PC sectors and each sectors' respective correlation to equity and fixed income asset classes.



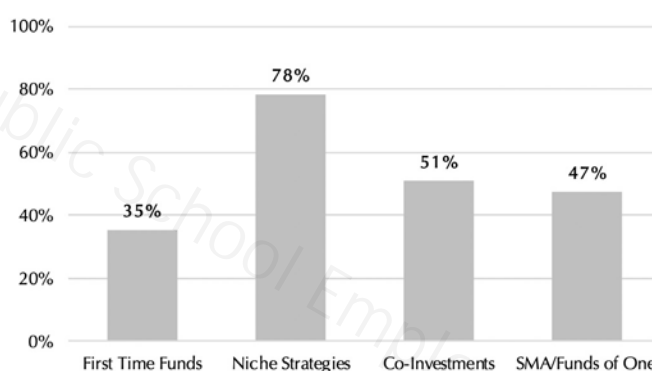
PRIVATE CREDIT INVESTOR TRENDS

Looking Forward to 2020: LP Areas of Focus

As illustrated below, more than 75% of LPs indicated that niche strategies were an area of interest. We anticipate that for 2020, LPs will seek to capitalize on the present market stresses through a variety of broad based and niche distressed strategies.

More than half are interested in co-investments, though our observation is that many LPs are early in determining their governance and resourcing to efficiently implement a PC co-investment program that can “move the needle” in their overall program.

Figure 6: Aksia Private Credit Survey Results – Areas of Focus



Source: Aksia, Private Credit Investor Surveys

Regarding niche exposures, commonly mentioned areas of interest include: Aviation, Healthcare Lending, Royalties, Specialty Finance (catch all for many off the run strategies), Transportation and Trade Finance. This is particularly the case for more mature portfolios, where a “core” exposure of direct lending and/or cross asset GPs has already been established. Scalability can often be a challenge as many niche strategies have natural limitations around the size of the opportunity set. In a few cases we’ve seen LPs overcome these size constraints by negotiating co-investment capacity alongside a fund investment that on a standalone basis would otherwise be considered too small.

Aksia is continually seeking out credit and income-oriented opportunities across geographies, underlying strategies and size of GPs. Below are our current “areas of focus,” sub-strategies with favorable market conditions and where we have actionable investment ideas. This is not meant to be an exhaustive list of target investments, but it does provide a roadmap for where to find some of our most compelling ideas, and it is dynamically updated. **As always, we are happy to discuss any of these areas in detail.**

PRIVATE CREDIT INVESTOR TRENDS

Figure 7: Aksia Private Credit Areas of Focus, March 2020

DIRECT LENDING	DISTRESSED & SPECIAL SITUATIONS	SPECIALTY FINANCE	STRUCTURED CREDIT	REAL ESTATE CREDIT	REAL ASSETS CREDIT
U.S. Direct Lending Senior Opportunistic LMM (sponsored) LMM (non-sponsored) Private BDCs Industry Focused SBIC Revolvers European Direct Lending Senior Opportunistic Lower Middle Market Country-Specific Funds Emerging Markets Lending Asian African CEE/Middle East Latin American Pan-EM Global Direct Lending Global	Corporate Distressed U.S. European Emerging Markets Global Single Trade Real Estate Distressed U.S. European Global Special Situations U.S. European Emerging Markets Global MEZZANINE U.S. Mezzanine Upper Middle Market Middle Market Lower Middle Market European Mezzanine European Mezzanine Structured Equity Structured Equity	Consumer & SME Lending Marketplace Finance Lender/Platform Finance Factoring & Receivables Factoring & Receivables Regulatory Capital Relief Regulatory Capital Relief Royalties Healthcare Music/Film/Media Energy & Minerals Royalties Healthcare Lending Healthcare Lending Venture Lending Venture Lending Insurance Linked Diversified Life Non-Life Litigation Finance Litigation Finance Merger Appraisal Rights Merger Appraisal Rights PE Portfolio Finance PE Portfolio Finance	CLO CLO Debt CLO Multi Captive CLO Equity 3 rd Party CLO Equity CRE Non-Agency CRE B-Piece Agency CRE B-Piece CMBS/CRE RMBS RMBS Consumer ABS Consumer ABS Esoteric ABS Esoteric ABS Europe Structured Credit European Structured Credit Structured Credit Multi-Sector Structured Credit Multi-Sector	U.S. CRE Core Lending U.S. CRE Core Lending U.S. CRE Transitional Lending Large Loan Middle Market Small Balance Opportunistic U.S. CRE Bridge Lending Large Loan Middle Market Small Balance European CRE Lending Bridge Transitional Core EM CRE Lending EM CRE Lending Residential Mortgages Residential NPLs Single Family Rental Mortgage Servicing Rights Residential Origination	Infrastructure Lending Senior Focus Sub-IG Focus Mezz Focus Energy Credit Energy Lending Energy Mezzanine Lending Opportunistic Trade Finance Trade Finance Metals & Mining Finance Metals & Mining Finance Agricultural Credit Agricultural Credit Transportation Aviation Lending Maritime Lending Road & Rail Lending Diversified Transportation Lending

Source: Aksia

Note: Includes higher conviction sub-strategies with relevant offerings currently in-market with >2 months to final close OR coming to market in the next twelve months.

PRIVATE CREDIT LEGAL DOCUMENT TRENDS

Significant Variability of PC Fund Terms

Each year we collect legal terms from hundreds of PC funds and our internal legal team conducts document reviews across a broader range of PC strategies. Key fund information is stored and searchable in our client portal MAX. Following is an excerpt of a PC fund profile.

Figure 8: MAX PC Fund Profile

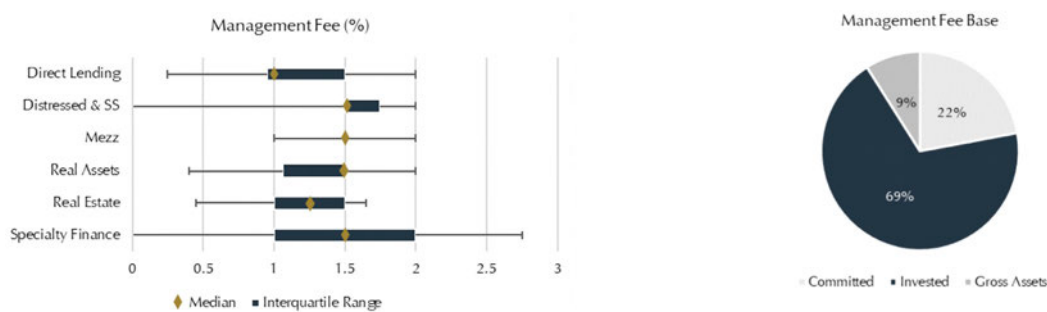
Summary					
Capital Raise		Fund Duration		Stated Fees	
Program Status:	Not Fundraising	Investment Period:	5 years (Final Close)	Management Fee - Investment Period:	1.25% (Committed)
Target Capital Raise (Equity):	1 billion (No Cap)	Maximum Extension (Investment):	0 years	Management Fee - Harvest Period:	1.25% (Invested)
Total Capital Raised (Equity):	1 billion	Harvest Period:	5 years	Carried Interest:	20%
Expected First Close Date:	2020-01-01	Maximum Extension (Harvest):	2 years	Hurdle:	8% (100% Catch-Up)
Expected Final Close Date:	2020-01-01	Recycling:	Yes	Waterfall:	European
Minimum GP Commitment:	1.0%			Co-Investment Policy:	Yes - No Fee
Separate Accounts:	Yes			Late Commitment Penalty:	Not Specified
Minimum SMA Amount:	Not Specified			Fee Flexibility:	First Close: Yes Size: Yes
Minimum Investment:	N/A				

Source: Aksia

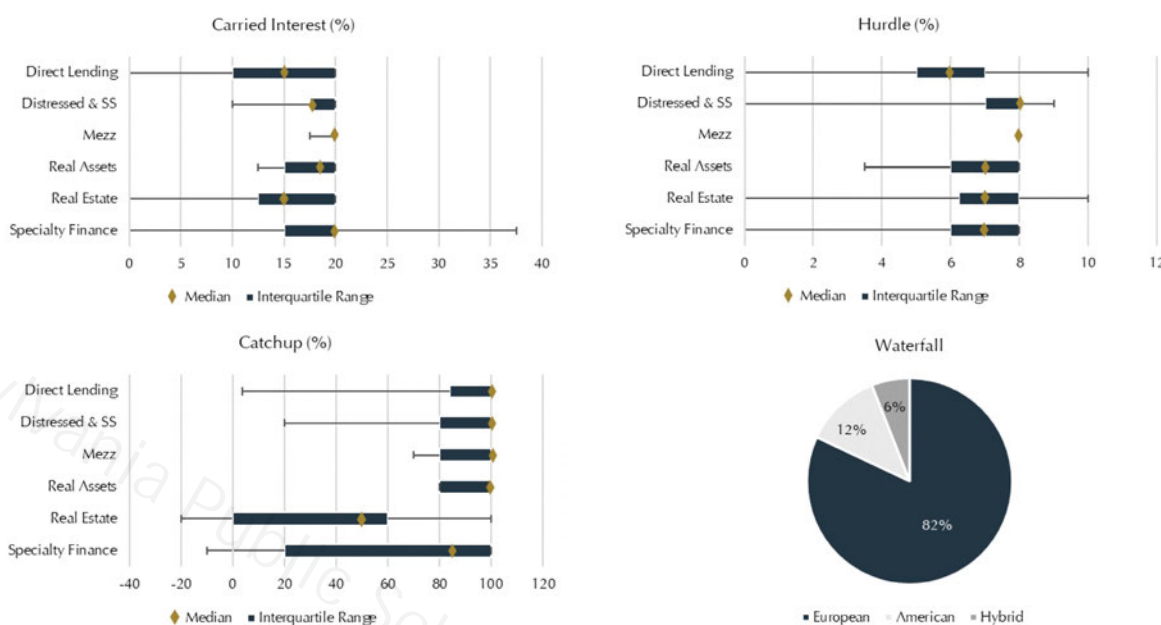
Over time, we've observed several high-level trends impacting PC legal documentation. On the positive side, there appears to be some fee compression as new GPs enter the space seeking to capture market share. This factor is most pronounced in lower barriers to entry strategies like direct lending but we'd note that the "devil is in the details" as numerous factors will determine the total fee load paid by LPs including the propensity of some GPs to "skim" some upfront economics from LPs, along with differences in strategy (origination vs. participation) and in the costs associated with fund-level debt facilities. In some cases, we've even seen GPs utilize forms of deal-by-deal carry with varied mechanisms for LPs to claw-back fees if a fund underperforms later in its life.

The following is a brief snapshot of fee terms that we've observed over the year for the asset class, based on data collected from over 300 private credit funds in 2019.

Figure 9: Fee Term Observations



PRIVATE CREDIT LEGAL DOCUMENT TRENDS



Source: Aksia, as of March 4, 2020

Late Cycle Fund Terms Could Catalyze Future PC ‘Zombies’

Our lawyers and analysts are observing subtle risks being slipped into private credit fund documentation that could impact LPs if things don’t go as planned with a fund investment. PC fund terms are often less standardized than their HF counterparts and small differences in seemingly innocuous legal terms may meaningfully impact the fees an LP pays over the course of an investment and their ability to control their destiny at the end of a fund’s term. The phenomenon of “zombie funds” is well-established in the PE world and many LPs continue to deal with very old vintage funds and assets that have lasted well beyond their anticipated lives. While PC funds have natural liquidation features given the contractual nature of the underlying loans, some underlying loan restructurings are inevitable, leading to fund extensions and potentially worse, inappropriate behavior by the GPs. The latter risk is magnified by the glut of new entrants into the PC space with insufficient resources, limited experience managing through a downturn and in some cases, a questionable commitment to the asset class. As a result, we are already beginning to see the formation of a secondary market for private credit funds².

We’ve identified certain fund terms that LPs should consider when assessing and mitigating the risk of PC zombie fund(s) cluttering LP portfolios and creating headaches years from now. Extension rights (both to the investment and harvest periods), management fee payments during fund term extensions, valuation process integrity, no fault divorce clauses, GP claw-backs, just to name a few, could all impact an LP’s leverage in dealing with GPs at the (expected) end of a fund’s life.

Let’s take management fees as an example to highlight some of the risks we’re tracking. As noted above, management fees for PC funds may be based upon invested capital, gross assets (incl. fund-level debt utilized) or committed capital. Invested capital or gross assets, may mean the cost basis of investments, or it may mean the fair value of investments as

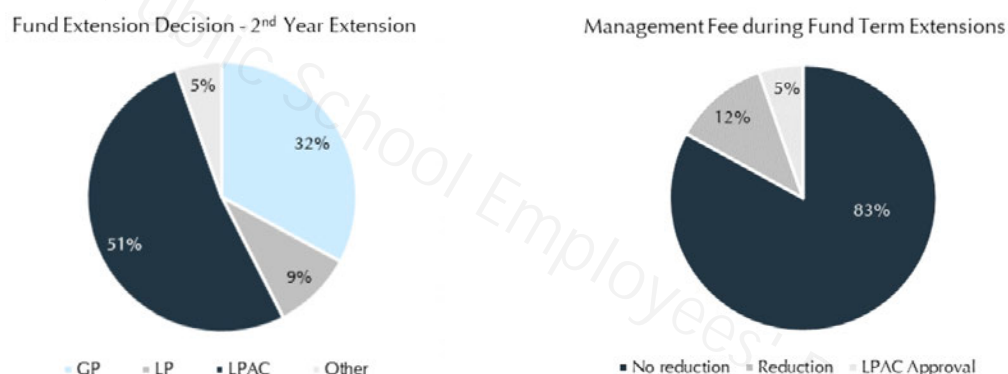
2. “Why secondaries deals are sparking to life”, Private Debt Investor, December 2019.

PRIVATE CREDIT LEGAL DOCUMENT TRENDS

determined by the GP, an external appraiser or some other method. Importantly and often overlooked, **private credit LPs often pay the GP a management fee up through the date of a fund's final liquidation, even if the total term has been exceeded.** This means that the GP will continue to earn a fee until the very last investment held by the fund is divested. Such a set-up can create a misalignment of interests whereby GPs may elect to hold onto an investment and continue to earn a management fee instead of exiting at little or no profit. Misalignment of interests is further enhanced if the GP retains meaningful latitude to ascribe values to remaining positions.

Indeed, our data suggests that market standards could stand some change when it comes to the above protections. Our data suggests most GPs are reluctant to provide for a reduction in the management fee or submit it for LPAC or LP approval during such period. A whopping 83% of private credit funds allowed the GP to continue to earn management fees at the exact same rate and basis after a Fund's expected term as during the investment period.

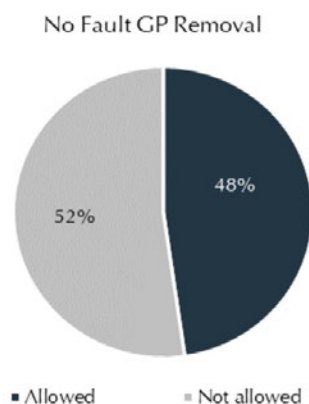
Figure 10: Additional Fee Term Observations



Source: Aksia, as of March 4, 2020

Further, it's typically unlikely that LPs maintain the latitude to remove GPs without some level of cause. In the cases where a no-fault removal is possible, the LP voting threshold is often quite high (75% in-interest of LPs or more).

Figure 11: Rate of No-Fault GP Removal



Source: Aksia, as of March 4, 2020

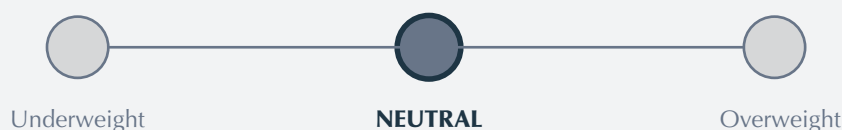


PRIVATE CREDIT LEGAL DOCUMENT TRENDS

Investors have multiple tools at their disposal to improve management fee terms (both during a fund's anticipated lifespan and during extensions) and better protect against GP manipulation for underperforming funds. One way is to insist upon a reduced management fee during any fund term extensions. While some level of management fee might be warranted to enable the GP to maintain operations, we do not believe that the sticker price should be the same. Payment of management fees could also be subject to LPAC approval as a check against brazen mismanagement. Special attention should also be paid to the management fee base. While we often find that the base "steps down" during the investment period, some GPs only allow for the complete write-offs in the value of underlying investments to impact (reduce) the invested capital amount. This means that the **value of an underlying portfolio investment could plummet, but GP fees will be unaffected.** Furthermore, we believe that LPs and the GP should have a common understanding of what constitutes a write-down or a write-off. Often, fund documents grant management fee reductions on "permanent" write downs and write-offs but this term is neither described or defined. This leaves room for the GP to interpret its obligation in a way that favors itself, not LPs. A GP could decide that even year-long write-downs are not "permanent." Finally, we think the valuation process should be clearly spelled out, transparently reported, and that the investor base should be provided an avenue to challenge valuations including allowing for the use of a third-party derived mark.

In an ideal world, all of these LP protections would exist in every PC fund investment, but this is rarely the case. Thankfully, these are not winner-take-all scenarios. Successful negotiation of even one or two of these protections can impact the overall alignment of interests between a sponsor and its fiduciaries. Knowing what to look out for is therefore important.

OUTLOOK – DIRECT LENDING



- Market norms for U.S. and European loan structures broadly converged in recent years
- Deal flow activity across both markets is likely to slow in 2020 and performance issues to emerge, testing capabilities and resources of many new market entrants
- Near-term credit stress is likely to be concentrated in a few specific sectors; the broader impact of COVID-19 on supply chains and business models is yet to be fully understood
- Asian direct lending deal flow can be sporadic but challenges in banking system(s) and regulations should drive new private capital activity

In the aggregate, performance of many direct lending funds has been solid though our loan-level data suggests increasing dispersion across GPs and worsening conditions for lenders in the future. Similar to the syndicated loan markets, reported payment defaults have been at cyclical lows against a resilient economic environment in the U.S. and Europe, but this measure can be misleading for middle market credits where lenders can often quietly modify loans ahead of a credit event. The stresses brought about from the COVID-19 virus threaten to meaningfully derail the global economic picture. As of this writing, the breadth of economic ramifications are unknown but the impacts will be sure to be felt across numerous sectors such as travel, entertainment/restaurants, energy, just to name a few. Time will tell if the virus outbreak leads to a broad-based economic downturn which infiltrates a wider universe of middle market borrowers. The implications of market stresses will result in varied impacts on direct lending portfolios as certain groups have actively avoided high beta borrowers and maintained credit standards, while others have taken a less disciplined approach in an effort to quickly gain market share. In many cases, direct lending teams will be faced with a range of portfolio issues for the first time, possibly creating team bandwidth challenges, as well as stresses on their businesses. As we've communicated previously, we expect consolidation in the space to continue, eventually leading to a rationalization of sub-scale and undifferentiated teams and platforms.

2019 was another prolific year for direct lending fundraising in the U.S. and Europe. The size of capital raises and speed by which lenders deploy capital and return to the fundraise trail continues at unseen levels. By comparison, 2019 was a relatively slow year for Asia direct lending capital raising, with PAG Loan Fund IV being by far the largest close registered. Preqin estimates that total capital raised in 2019 direct lending strategies totaled approximately \$61.5 billion while Aksia is currently tracking **close to 130 direct lending funds currently in-market targeting over \$135 billion of new equity capital**. These figures do not account for the vast number of SMAs that go unreported, along with nearly ubiquitous fund level leverage facilities offered by banks and the CLO market.

DIRECT LENDING

Figure 12: Direct Lending Fundraising by Region and Sub-strategy



Source: Aksia, as of December 31, 2019

In the near-term, PE deal flow, the lifeblood of direct lending activity is likely to be constrained, reducing the opportunity set for lenders despite large stockpiles of undrawn capital. Deals that are completed, should feature wider spreads and more attractive leverage profiles and credit documentation as direct lenders shift to a more defensive posture. We believe that issues in the syndicated loan markets should catalyze further opportunities for direct lenders to disintermediate leverage finance desks of Wall Street banks. Just like the Street, the direct lenders may offer a full loan commitment and capital markets distribution capabilities but also an anchor commitment to support the syndication process, if necessary. This capability could be particularly valuable if the syndicated markets are under stress for some period of time.

Overall, we recommend avoiding direct lending platforms with constrained origination capabilities (deal participants), inadequate restructuring resources and limited differentiation of their strategies, especially teams targeting the easiest to access strategies (e.g. club loans to sponsor backed borrowers). Points of distinction may include (i) scale – ability to control transactions, especially in the upper middle market, (ii) sector-focused capabilities including hard assets, (iii) maintaining the ability to underwrite more complex deals, non-sponsored companies or storied credits, as well as (iv) “rescue finance” capabilities. Within the U.S. and Europe, we recommend staying clear of generalist GPs focused on cyclical sectors such as apparel, energy, restaurants, etc. as well as avoiding aggressive bifurcated unitranche (FO/LO) structures. In all regions, the non-sponsored deal market remains less trafficked than sponsored transactions with strategies spanning from sector specific offerings (software, energy and healthcare) to middle market generalists. The lower-end of the middle market provides diversification and generally less competitive dynamics than those witnessed in the larger cap space.

Below we compare the investment profiles of three “direct lending” GPs that we completed work on during the past year versus the syndicated loan market. The results illustrate how the “illiquidity premium,” competitive dynamics and risk profiles can vary widely.



DIRECT LENDING

Figure 13: Comparison of Broadly Syndicated Loans and Middle Market Credit

*Based upon 2019 Metrics

		Broadly Syndicated Loans ⁽¹⁾	Senior Sponsor Focused ⁽²⁾	Senior Focus but More Complex Situations ⁽²⁾	LMM Sponsored ⁽²⁾
Return Profile	Liquidity	Liquid (Syndicated)	Club (Private)	Illiquid (Private)	Illiquid (Private)
	Coupon / Spread	300-475 bps	400-525 bps	625-800 bps	425-600 bps
	Est. Fees / OID to Investor	1.0%	1.8%	2.5%	1.5%
	Calculated Gross Yield to 3-Year Payback	4.5%-6%	5.5%-7%	10+%	7.0+%
Risk Profile	1st Lien Leverage	4+x	4.2x	3.3x	4.1x
	Covenant-Lite (est.)	75+%	~33%	Rare	Rare
	Typical Covenant Headroom	n/m	30+%	~20%	~20%
	Net Loss (Weighted Avg)(3)	87 bps	45 bps	110 bps	Insufficient Track Record
Other	Competitors	Numerous Credit GPs / CLOs / MFs	Banks / DL Funds / Commercial Fin Cos	DL / Special Sits Funds	DL mostly
	Avg. Borrower Size (EBITDA \$mm)	\$75mm+	\$20-50mm+	\$20-50mm+	\$10-\$20mm
	Typical EBITDA Adj.	Significant	Significant	Mixed	Mixed
	Typical Financial Reporting	Quarterly	Monthly / Quarterly	Monthly	Monthly
	Typical Diligence Timeframe	1-2 weeks	2 weeks-3 months	1-3 months	1-3 months

Source: Aksia, as of December 31, 2019

1. Based upon approximately 700 transactions from Aksia's direct lending database representing over \$11 billion of transaction volume across four representative GPs in each sub-strategy.

2. Based upon historical averages of losses rates of the specific representative GPs and syndicated loan markets.

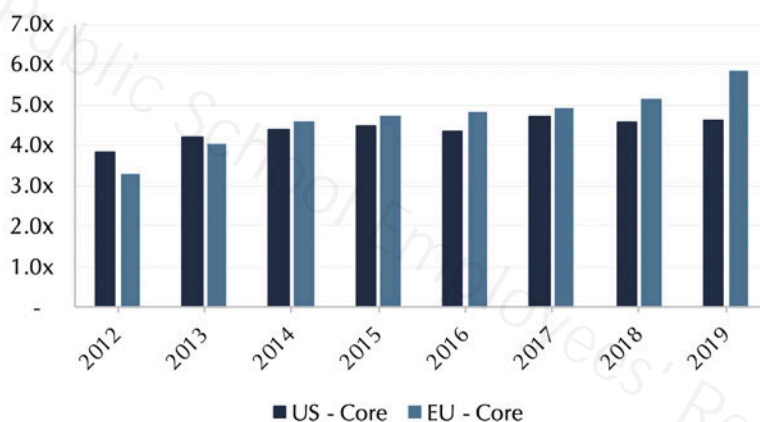
As illustrated in the table above, low barrier to entry strategies such as lending to plain-vanilla PE deals have generally featured the highest leverage, lowest spreads and worst documentation and lender protections. By comparison, the lower middle market and more complex deals (e.g. non-sponsor deals, "storied" credits, rescue finance deals, loans to growth stage companies, asset-based loans, etc.) often feature a more meaningful premium, lesser leverage profiles and tighter documentation. Despite the highly competitive market dynamics, there certainly is room for sponsor lending focused strategies in an LP portfolio, especially with longstanding platforms with scale and access to cheap fund level leverage. Often these senior lenders are focused on better middle market companies with more valuable assets, potentially limited cyclicity and are managed by best in class sponsors and workout teams. We believe that it is best to avoid new teams seeking to capitalize on the "flavor of the day" and **believe that a purge of new entrant direct lending platforms is inevitable in the coming years.**

DIRECT LENDING

Solid Headline Credit Performance in the U.S. and Europe Provided Cover for Lax Lending Standards

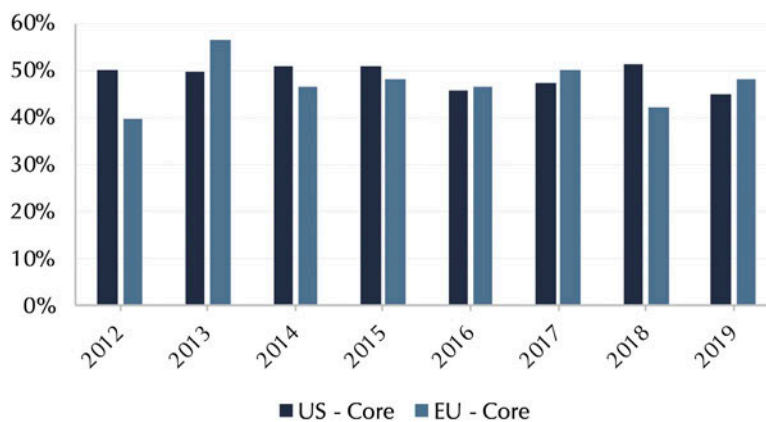
As illustrated in the charts below, which were sourced from Aksia's direct lending database, broad leverage levels in the middle market have been elevated while spreads have tightened, but remain relatively range bound with some periods of volatility. Record purchase multiples paid by middle market PE sponsors have provided stability to stated LTV figures, but we would caution that LTV can easily be gamed, especially for recapitalization or refinancing transactions that lack an observable valuation. As we have mentioned in prior outlooks, documentation issues such as aggressive EBITDA adjustments, covenant deterioration and other borrower friendly provisions remain the major concern across the corporate credit space, particularly for syndicated and upper middle market loans. While the U.S. market has tended to 'set the bar' when it comes to progressively more borrower-friendly loan structures, Europe has been quick to follow-suit and the two markets are now broadly aligned.

Figure 14: Leverage



Source: Aksia, as of December 31, 2019

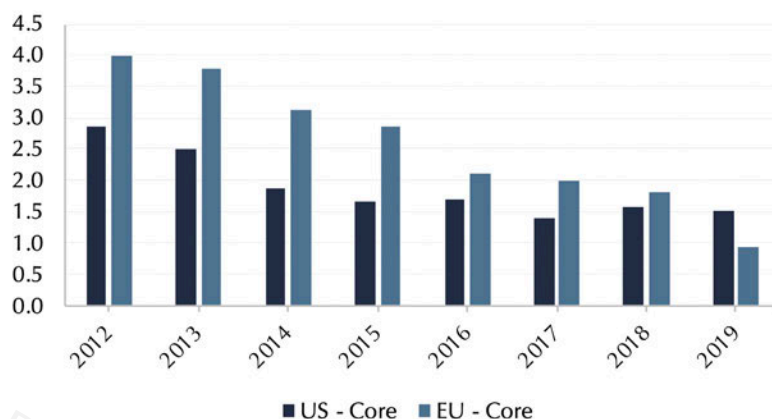
Figure 15: LTV



Source: Aksia, as of December 31, 2019

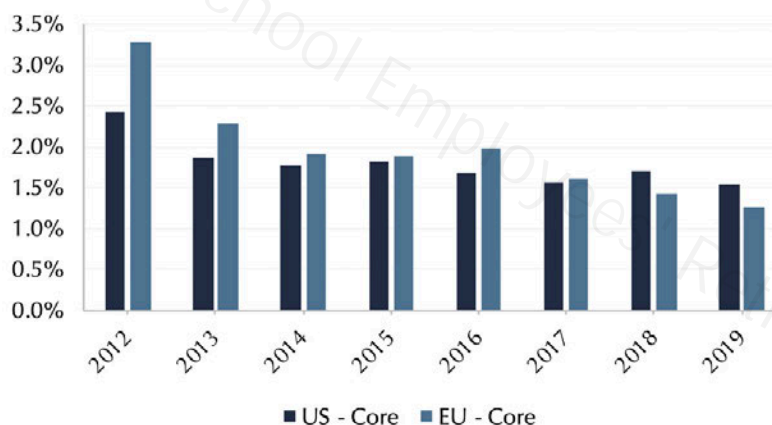
DIRECT LENDING

Figure 16: Covenants



Source: Aksia, as of December 31, 2019

Figure 17: Spread per Turn of Leverage



Source: Aksia, as of December 31, 2019

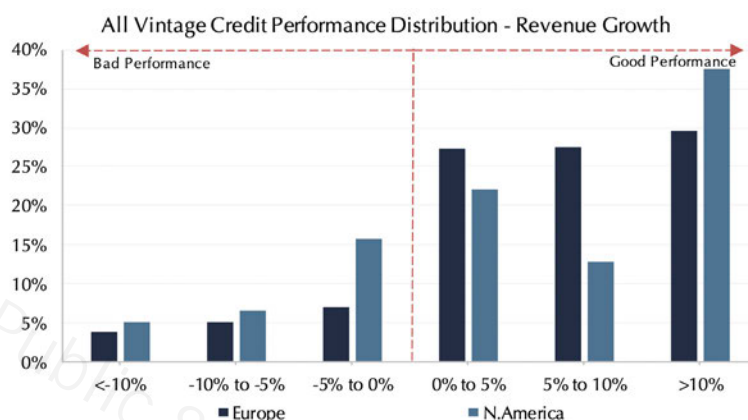
Spread per turn of leverage can be helpful for evaluating risk adjusted return expectations in direct lending. The metric has gradually compressed over the past year and the U.S. market has become relatively more attractive in recent years. **Despite these declining trends in direct lending, the mid-market illiquidity premium appears to be holding up well, with a spread per turn of leverage almost double that of the U.S. levered loan market.**

DIRECT LENDING

Even During the Good Times, Middle Market Business Performance Varied...

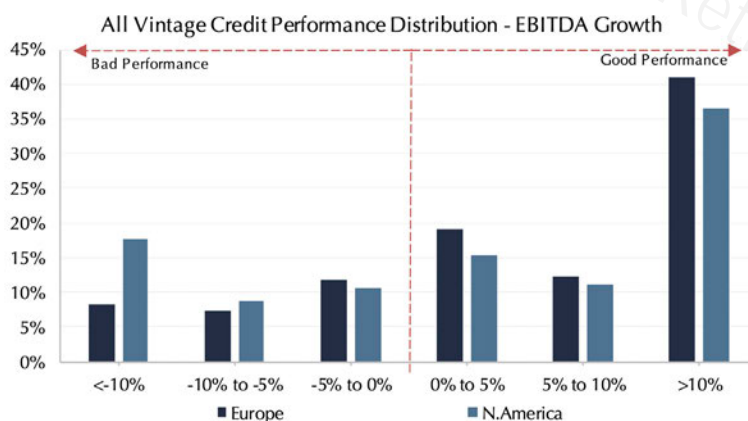
From a revenue perspective, borrower performance has been solid (pre-COVID-19 impact).

Figure 18: U.S. and European Credit Performance Metrics, 2019



EBITDA, however, is a better indicator of borrower health and this metric suggests that things are looking less rosy, although not immediately concerning (pre-COVID-19). Credits which we would classify in a 'stressed' category (with post-investment declines in EBITDA of greater than 10%) remain relatively contained at 10-12% of the overall market.

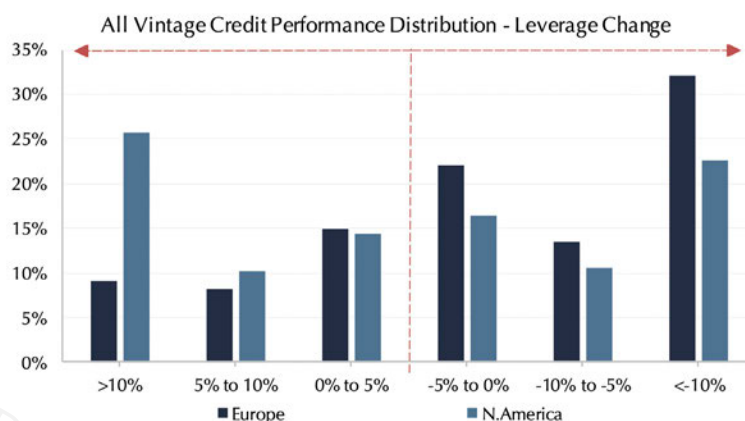
Figure 19: U.S. and European Credit Performance Metrics, 2019



Borrower leverage performance shows an interesting degree of variability, particularly on the left tail of our distribution mapping (specifically, the far-left category representing greater than 10% increase in leverage post-investment). This will likely be a function of the increasing permissiveness of loan documentation for borrower re-leveraging through a range of corporate actions (Permitted Acquisitions, Permitted Indebtedness etc.). The U.S. adopted this trend earlier than Europe and, as a result, features greater instances of borrower re-leveraging post-investment.

DIRECT LENDING

Figure 20: U.S. and European Credit Performance Metrics, 2019

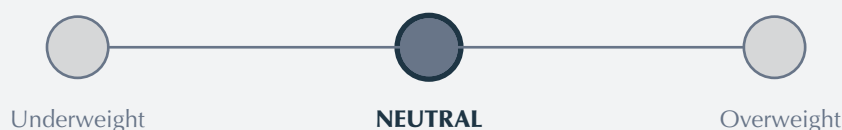


Overall, while pre COVID-19 there were some early indications of stress creeping into the market, corporates have generally delivered stable, if unspectacular, EBITDA growth (typically in the 0-5% range). An equity investor targeting 15% to 20% IRRs would probably find this pretty concerning, but it's not a bad thing from a credit investor's perspective.

Looking Forward

Generally, there is a lag of 45-90 days before borrowers report their financial results. **In the coming months, our risk team and investment analysts will be closely monitoring borrower performance to observe trends and stress that will be infiltrating lender portfolios, along with tracking GP responses to mitigate these issues.**

OUTLOOK – MEZZANINE



- Mezzanine opportunity in the U.S. and Europe has been challenging as unitranche structures and late cycle lending behaviors present stiff competition for disciplined junior capital GPs
- Cross capital structure capabilities (senior to preferred) may be valuable as credit issues emerge

In the past several years, no sector in private credit has faced greater headwinds than corporate mezzanine lending strategies in the U.S. and Europe. The traditional 1st lien and 2nd lien/mezz structures commonly featured in LBOs and other levered transactions have been increasingly displaced by a one (uni)tranche solution. The prevalence of unitranche deals in the middle market has been driven not only by sponsors' preference for the simplicity of these structures, but also the stockpile of capital raised for senior debt funds. In response to current market dynamics, we have seen some mezz teams re-position their strategy toward senior/unitranche lending or offer a new unitranche product to improve their relevance with sponsors. In the latter case, we wonder if the added workload from managing an additional business line and increased deal flow may dilute the overall performance of the team ... time will tell. Furthermore, given strong competition in the space, we have seen some traditional mezz and buyout players introduce structured equity strategies to capitalize on opportunities where either a traditional mezz tranche or a control equity investment doesn't fit a borrower's needs. These hybrid securities will often lack the contractual maturity and cash pay features of debt but can offer greater upside via equity participation, especially if underwritten at a distressed valuation and/or provided to an attractive growth-oriented business.

Currently, Aksia is tracking ~\$25 billion of capital raises for mezzanine strategies in the U.S. and Europe, not including sector specialists (e.g. energy or healthcare). While the headline figures sound robust, the mezz market is bifurcated between a few very large platforms capable of raising \$5+ billion funds and numerous middle market and lower middle market peers that often struggle to achieve any real differentiation and fundraising traction. In this environment, many LPs would "simply" stay senior and utilize cheap bank leverage to grind out a high single-digit return making the mezz pitch an uphill battle. Accordingly, HPS, GSO and Park Square are targeting \$8 billion, \$7.5 billion and €2 billion mezzanine funds this year while the tally of sub \$500 million funds (including SBIC managers) is quite long.

Pricing in typical mezzanine deals has been fairly range bound with average cash coupons of 10%-11% and 1%-2% PIK, often fixed rate, with attachment and detachment often around 5x and 6x, respectively. Document terms have been equally challenging for mezzanine investors as their senior counterparts with features like aggressive EBITDA adjustments, loose covenants, collateral trap doors and leaky restricted payments all being issues that will diminish lender's rights for underperforming credits. The good news for LPs is that most mezzanine lenders have caught up with the times and reduced their fees, with most changing to fees on invested capital with preferred returns remaining at 8%.

MEZZANINE

Pre-2008 crisis Mezz Fund Performance Presents a Mixed Picture

A cursory review of 2005/2006 vintage mezzanine funds sized >\$150mm presents a mixed picture with few GPs exceeding their preferred return. Some pre-2008 crisis teams have left the market altogether or were sold, some having rebranded themselves as senior direct lenders, with the teams that continued returning single digit IRRs according to Preqin data.

Figure 21: Pre-2008 Crisis Mezzanine Fund Performance

Fund Name	Vintage	Still Active?	DPI (%)	Net IRR (%)	Last Date Reported	Primary Geographical Coverage	Country	Fund Size (USD MN)
Fund 1	2006	Yes	120	3.0	30-Jun-2019	North America	US	5,250
Fund 2	2006	Yes	149	8.6	30-Sep-2019	Europe	UK	4,671
Fund 3	2006	Yes	114	3.1	30-Jun-2019	North America	US	1,704
Fund 4	2006	No	141	8.3	30-Sep-2019	North America	US	1,530
Fund 5	2005	Yes	154	7.2	30-Sep-2019	North America	US	1,251
Fund 6	2005	No	n/a	4.7	31-Dec-2017	Europe	Europe Various	1,214
Fund 7	2005	Yes	135	7.6	31-Mar-2019	North America	US	1,000
Fund 8	2006	No	135	8.0	31-Mar-2019	North America	US	983
Fund 9	2006	-	127	n/a	Stopped Reporting	North America	US	865
Fund 10	2006	Yes	126	7.0	30-Jun-2018	North America	US	800
Fund 11	2006	Yes	130	8.3	30-Jun-2019	North America	US	778
Fund 12	2005	Yes	140	8.7	30-Sep-2019	North America	US	775
Fund 13	2006	Yes	128	8.0	30-Jun-2019	North America	US	707
Fund 14	2005	Yes	136	5.5	31-Mar-2019	Europe	Europe Various	650
Fund 15	2005	Yes	194	11.4	30-Sep-2019	North America	US	455
Fund 16	2005	No	88	-3.0	31-Dec-2017	North America	US	436
Fund 17	2005	Yes	155	7.2	31-Dec-2018	North America	US	360
Fund 18	2006	Yes	124	9.0	31-Dec-2018	North America	US	338
Fund 19	2005	Yes	149	9.7	31-Mar-2019	North America	US	335
Fund 20	2006	-	102	0.8	31-Dec-2018	Europe	Europe Various	327
Fund 21	2005	Yes	128	4.0	30-Sep-2019	Europe	Europe Various	323
Fund 22	2006	No	134	6.1	30-Sep-2019	Europe	France	273
Fund 23	2006	Yes	141	9.1	30-Jun-2019	North America	US	211
Fund 24	2005	Yes	149	7.5	30-Jun-2019	North America	US	195
Fund 25	2006	No	199	12.2	30-Sep-2019	North America	US	161
Fund 26	2005	No	137	6.7	30-Sep-2019	North America	Canada, US	157
Fund 27	2005	-	75	-1.6	31-Mar-2019	North America	US	156

Total Funds	27
>8% Net	9
>8% Net + >\$500m Fund Size	4
>10% Net	2

Source: Preqin, Aksia, as of December 31, 2019

Given the challenging lending environment, along with the increased presence of competition from unitranche lenders, it's likely that recent vintages of mezzanine returns lags 2006. As noted above, relaxed underwriting standards and weaker lender protections do not bode well for the junior debt tranche if a downturn materializes over the next few years. Further, structural changes in the middle market, with non-bank direct lenders now holding the senior debt versus banks and commercial finance companies, could lead to more contentious workout processes and more adverse consequences for the junior debtholders. Finally, a meaningful driver of mezzanine returns in recent years has been



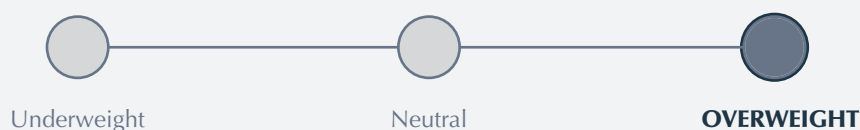
MEZZANINE

equity co-investments alongside the PE sponsor (usually 10%-15% of invested capital in a mezz fund). Accordingly, we do not think that mezz investors will achieve the same level of returns enhancement from the equity co-investment as they've enjoyed over the past several years.

Of course, mezzanine is all about credit selection and there remain some very good GPs on this front with strong platform synergies and experience, helping to inform underwriting decisions and navigate inter-capital structure issues. For example, 2020 will see a few long-standing middle market mezz teams on the fundraising trail that managed to see the other side of the GFC with limited scars and are worth consideration.

Overall, we've taken a cautious approach toward mezzanine lending strategies. While there do exist some highly seasoned and capable teams, the risks associated with occupying a highly subordinated position in the capital structure at such a tenuous point in the credit cycle are significant. **That said, the stress associated with the recent COVID-19 market volatility may quickly increase the attractiveness for mezzanine as pricing improves, capital structures need right-sizing and equity participations offered.** Of note, rescue lending strategies, whereby expensive junior (or senior) debt is provided to help recapitalize or refinance stressed balance sheets, could also soon be interesting as many EBITDA adjustments do not materialize and capital structure issues emerge. Rescue strategies are typically pursued by distressed GPs, but traditional mezzanine GPs could also be well positioned to capitalize on this opportunity set. Finally, there do exist a few interesting teams focused on providing junior capital to non-sponsored companies or "non-traditional" sponsors. These deals often include some typical debt features, but also meaningful attached equity upside.

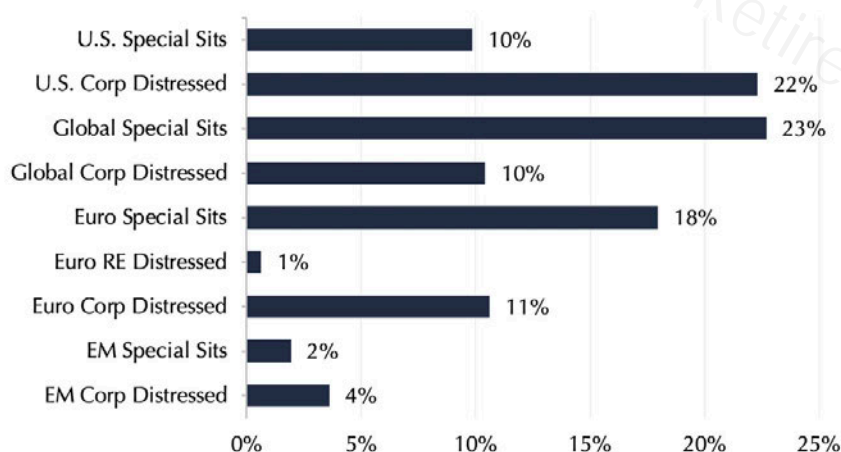
OUTLOOK – DISTRESSED & SPECIAL SITUATIONS



- COVID-19 catalyzing credit global issues across both large cap and middle market sectors
- Large corporate opportunity set is developing in the U.S. levered loan and HY space
- Activity in Europe has centered on bank sales of NPLs but the opportunity has shifted as banks have already sold many of those troubled assets. Meanwhile corporate stress is quickly emerging
- Asia, especially India, is now a focal point for distressed investors

We are tracking over 90 active capital raises focused on Distressed and Special Situations strategies representing close to \$80 billion. As illustrated in the chart below, capital raising has been mostly focused on Global and European opportunities as many GPs concede that distressed and special situations have been limited in the U.S.

Figure 22: Distressed & Special Situations Fundraising by Sub-strategy



Source: Aksia, as of December 31, 2019

U.S. Corporate Distressed Outlook – Is The Dam About to Break?

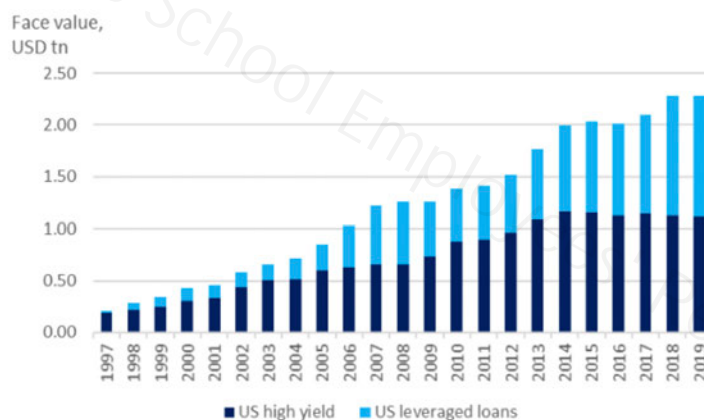
Just a month ago, the consensus was that a recession in the U.S. was highly unlikely in 2020, but now investors are trying to find their footing as COVID-19 wreaks havoc on the economic and financial landscape. As of mid-March, the impact on equity markets has already been extreme and pricing of credit instruments has quickly followed, with the leveraged loan market experiencing some of its largest declines in history during this period. The financial results of

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most corporate borrowers and resulting impact on borrower capital structures will follow in the months ahead. Many borrowers are drawing on revolvers in an effort to brace for meaningful near-term liquidity issues. Over the past several years, default rates have remained at cyclical lows but 2020 should see a significant increase in defaults across both the middle market and larger cap loan and high yield space.

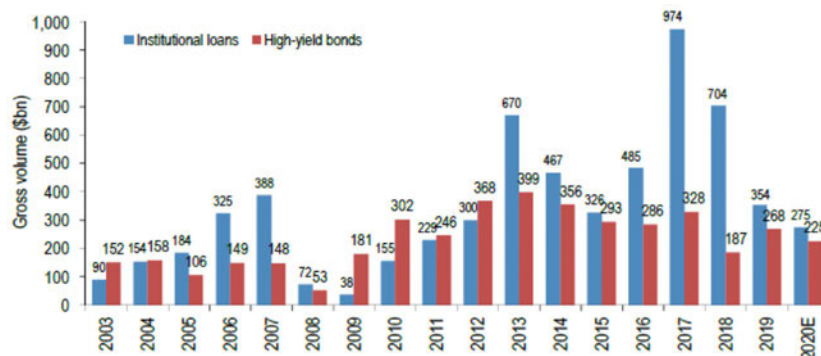
Today, the non-IG credit markets total over \$2 trillion. The levered loan market in particular has witnessed massive growth and remains the key debt financing source for PE sponsored buyout transactions. At the same time, BBB rated debt continues to balloon and now totals over \$2.5 trillion of outstanding debt (up over 2.5x since 2010!) dwarfing the overall size of the HY, making for a potentially overwhelming pool of “fallen angels.” A presenter at our December Private Credit event coined the pervasive widespread acceptance of lax underwriting practices in recent years, especially in the loan markets, to be the “normalization of deviance.” It appears that the moment has come, where a wide variety of credit GPs and vehicles will be tested as the economy faces its greatest challenge in over a decade but also create a whole new source of investment opportunities for distressed GPs.

Figure 23: Growth of US high yield bond and leveraged loan markets



Source: Invesco, Should high yield investors be concerned about ‘fallen angels’?, March 14, 2019

Figure 24: High Yield Bond and Loan Gross New Issue Volume



Source: J.P. Morgan, 2020 High-Yield Bond and Leveraged Loan Outlook, December 9, 2019



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As stresses begin to take hold, across the non-IG sector, we believe that technical selling from CLOs will be the greatest potential opportunity as presently, approximately 50% of \$700 billion CLO market is comprised of credits rated B or B- that could lead to big problems for CLO managers given that CCC buckets are generally limited to 7.5%. During 2019, we saw an uptick in ratings agencies actions, and these are likely to continue and spark selling activity by CLO managers. Even before the virus outbreak, we had seen the impact on new issuance B-/B3 spreads given CLO concerns about future downgrades. On the HY side, the selling of fallen angels from IG fund GPs could significantly proliferate in the face of an economic downturn, ratings movements and other credit events.

Against this backdrop, we'd recommend focusing on trading-oriented corporate (di)stressed strategies (lower multiple and likely pull-to-par exits) to take advantage of bouts of volatility in the leveraged loan and HY markets. Recently, we've seen some draw-down offerings from top credit hedge fund GPs and other non-IG platforms as well as a range of "contingent" capital (delayed investment periods) that are worth a look and stand a high probability of being utilized. In some cases, these vehicles may be initiated at the discretion of the GP whereas others require certain market-based events to trigger the start of the fund's investment period. Contingent vehicles may have an opportunity cost but should more effectively avoid the risk of being too early at non-distressed prices and should have a higher margin of safety than all-weather distressed strategies.

Challenges in the energy and retail sectors should present opportunities for specialist teams (e.g. ABL lending to stressed retailers or capital relief deals from energy bank groups). Further, we would expect "rescue" lenders to be able to exploit weak loan documents and CLO investors' inability to offer new capital in the face of liquidity challenges. This should be an interesting space in the years ahead, but opportunities may be fairly episodic.

Finally, we do not expect meaningful selling of credits from "middle market" (direct) lenders, a potentially \$500+ billion market currently and area that many GPs pitch as an opportunity given some of the aggressive lending tactics. It is hard to envision a scenario where DL GPs willingly crystallize losses and reduce their fees through secondary loan sales. That said, fund liquidity issues and ultimately forced asset sales could surely arise from poorly designed or mismanaged fund-level leverage facilities. Further, we also believe that a secondary market will develop for sales of private credit fund interests. During October, we wrote a Spotlight on this topic.³

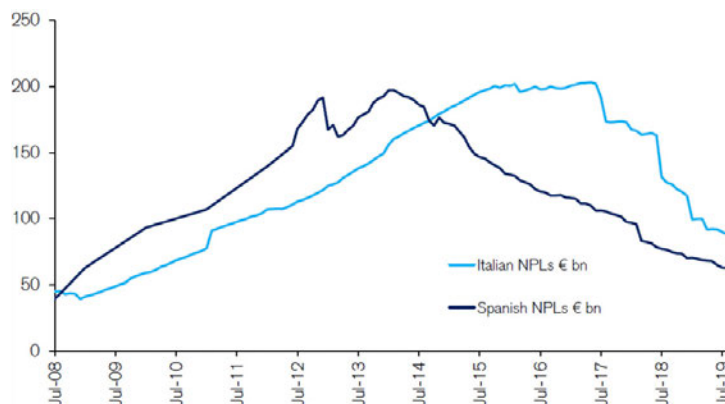
European NPL Disposal Activity Remains Strong but Opportunities are Limited

The stock of legacy post-GFC NPLs within Europe continues to decline in recent years as banks have continued to clean up legacy balance sheets. While this market was characterized by broad-based investment opportunities across geographies and collateral types in the years after the GFC, it is now one which is becoming increasingly focused on a small number of Southern European geographies.

3. Our Private Credit October Update included a white paper titled "Second Hand, First Class" detailing the potential for growth of the private credit secondary market

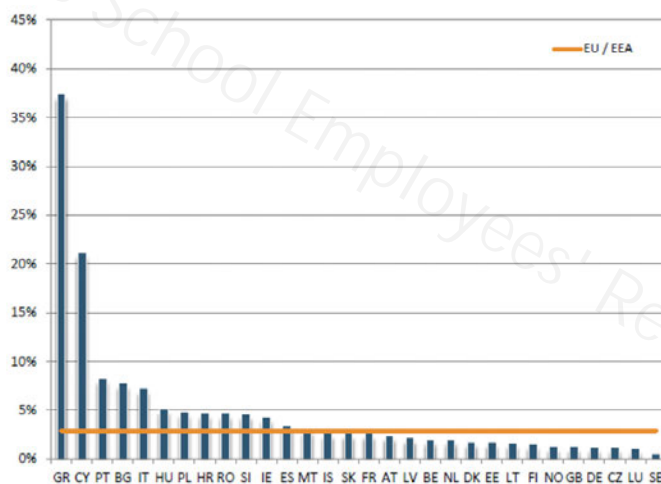
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Figure 25: Italian and Spanish NPLs (€ Bn)



Source: Credit Suisse, 2020 in Pictures: Our Annual Outlook, December 9, 2019

Figure 26: European NPL Ratios (weighted average by country)



Source: European Banking Authority, Risk Dashboard, as of September 30, 2019

Italy and Spain were the primary markets for post-GFC disposal activity over the past four to six years and while banks are still net sellers in each market, the opportunity sets are dwindling. Spanish banks in particular have all but declared victory in the NPL disposal game, with a country-wide NPL ratio now well below 5% and broadly in-line with the EU average. The Spanish market is now characterized as relatively well-bid, benefiting from a clear auction framework and high-quality asset data.

Outside of legacy-GFC assets, many European banks are now taking a more proactive / systematic approach to selling off new books of challenging or underperforming portfolios, typically comprising consumer / unsecured loan collateral. While historically, they may have retained these assets on balance sheet and looked to service in-house, regulatory pressures (and experiences in the aftermath of the GFC) have led many to putting in place structured, annual disposal programs which provides opportunities for specialist platforms (typically those in unsecured collateral).

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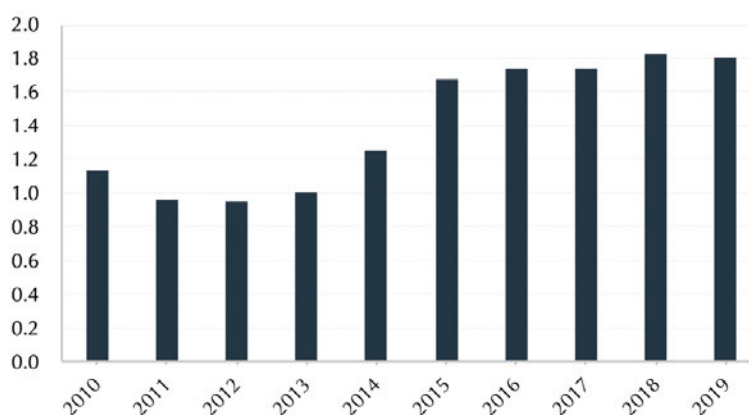
Regulatory pressures have also been a contributing factor behind the continued emergence of performing portfolio sales, including leasing and asset-backed portfolios. In some instances, underlying collateral can be attractive and provide access to risk/return profiles which were formerly only available to European commercial banks.

The impact of COVID-19 on the European NPL landscape remains unclear. Possible economic stresses imposed on various European countries including Italy, Germany and Spain could quickly lead to a renewed wave of bad debt issues for already fragile banks. In the near-term, we expect to see a sharp drop off in both disposal activity by banks and in collection activity by GPs. Extension risk is likely to be most pronounced for strategies predicated on short recovery timelines. Some form of market value impact on the underlying collateral values is also likely, but this will be largely dependent on the extent and severity of any post-Covid economic downturn.

Asian NPLs have become a New Focal Point for Global Distressed GPs

Even before the challenges presented by COVID-19, the official NPL balance in China had reached RMB2.24 trillion (~\$320bn) as of Q2 2019. The bank regulator, the China Banking and Insurance Regulatory Commission ("CBIRC"), had initiated efforts to recognize and dispose of the NPLs at a managed pace. With the outbreak of COVID-19 in Wuhan and the unprecedented measures by the Chinese government to combat the spread of the pandemic, the country's economic activities are expected to be impacted severely which may lead to further stress and distressed situations. Historically, the big four state-owned asset management companies ("AMCs") established by the Chinese government in 1999 were the major players in the Chinese NPL market. In recent years, with the regulators' greater push to manage and dispose of the NPLs, this market has gradually opened up to foreign investors. The common practice for foreign investors to purchase NPLs is via a bulk sale auction (i.e. 3 or more loans at a time) from AMCs. Since June 2017, foreign investors are also permitted to acquire NPLs directly from the Chinese banks under a pilot program which is currently only applicable to banks in Shenzhen but is expected to be extended to commercial banks nationwide. Foreign institutional investors that can directly invest in China's inter-bank bond market or trade through the "Bond Connect Program" can purchase NPL-backed securities issued in the China bond market as well, but this pilot NPL securitization program is not a mainstream practice yet. Another relatively popular approach employed by foreign investors is to incorporate an investment entity in China either through a Joint Venture ("JV") with the AMCs, or in the form of Wholly Foreign Owned Enterprise ("WFOE") to invest in NPLs.

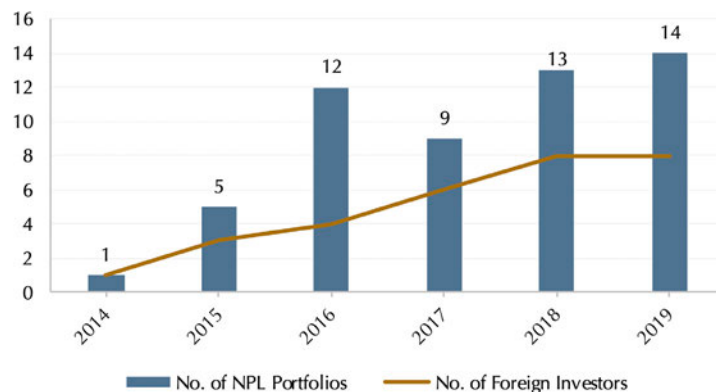
Figure 27: China NPL Ratio, Commercial Banks (%)



Source: The World Bank, as of October 28, 2019

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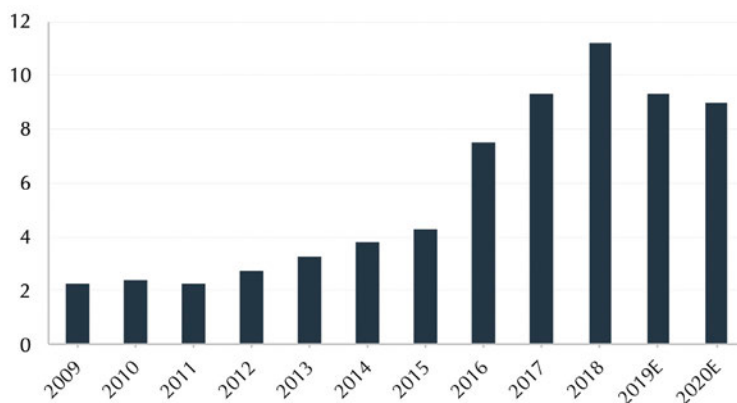
Figure 28: Chinese NPL Portfolio Sales to Foreign Investors



Source: PWC, The Chinese NPL market in 2020, February 2020

In **India**, the country's GDP growth declined to a six-year low of 5% in Q2 2019. The widespread non-banking financial company (NBFC) liquidity crisis triggered by the default of IL&FS Group in late 2018 continued to create an overhang in 2019, with more NBFC defaults seen in late 2019. According to the Reserve Bank of India ("RBI"), Indian banks' gross NPA ratio stood at 9.3% as of Q3 2019 and may increase to 9.9% by Q3 2020 given the continued economic slowdown. As the Insolvency & Bankruptcy Code ("IBC") continues to mature, clarity around the implementation of the insolvency law seems to be improving transparency for distressed GPs. Similar to China's AMC concept, there are asset reconstruction companies (ARC) in India, which are regulated asset management companies with the principal objective to act as distressed debt consolidation vehicles. The cap on foreign ownership has been raised to allow foreign investors to own a majority stake, thus enabling the ARC route to be a more practical method for foreign investors to acquire bank-owned NPAs. The other common way of participating in India distressed is by directly lending to corporates in the form of non-convertible debentures (NCD) as a means to refinance existing debt often at a discount in a so-called onetime settlement (OTS). The latest opportunities we are seeing surrounding NBFCs have two main access points. The first way is to acquire pools of loans from NBFCs in need of immediate liquidity. NBFC loan secondaries is a new opportunity and due to its nascent stage, transactions appear to be largely negotiation driven in regard to the construct of the underlying portfolio and bidding process. The second strategy, which is more strategic and could be of scale, is sponsorship financing or equity participation including takeover of troubled NBFCs.

Figure 29: India NPL Ratio, Scheduled Commercial Banks (%)



Source: CEIC Data, Reserve Bank of India, as of February 21, 2020

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Accessing these Asian Distressed Opportunities Remains a Challenge

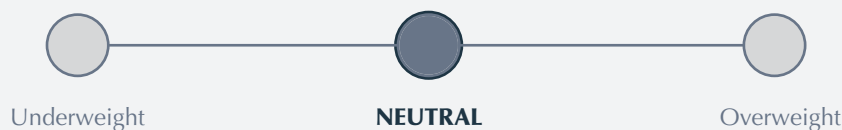
In 2020, India and China will continue to be large and active markets for Asian distressed & special situations GPs, while other regions, mainly Southeast Asia, Australia and Korea tend to be more opportunistic. For institutional investors, accessibility to on-the-ground resources and information are keys to establish creative relationships with different GPs in Asia.

For non-Asia based LPs, global GPs may be the easiest way to overcome the distance and time zone obstacles that often hinder swift communication with the local team. Among the global GPs, we prefer those that maintain at least a few offices in Asia, have standalone funds focused on Asia and a well-resourced team with the discretion to make most investment decisions locally. Global GPs often utilize JVs and partnerships with local asset managers, servicers and AMCs in order to gain local access (especially with regard to NPL purchases), but Aksia has a mixed view on these relationships, as they may create conflicts of interests, add layers of fees and complicate the investment process.

Alternatively, LPs may invest in the region via local GPs that often maintain better key local relationships and offer track records spanning different market cycles. At the same time, there are certain issues when choosing a local GP such as mixed information quality, track record limitations, along with normal challenges associated with working with smaller asset managers. Aksia believes a portfolio approach by combining different types of GPs (global vs regional, special situations vs direct lending, pan-Asia vs single country) may offer a better approach due to diversification benefits across countries and strategies.

More experienced LPs may try to create strategic relationships such as setting up an SMA(s) with local GPs or even local servicers or participating in overflow or co-investment vehicles with different Asia GPs to extract value from their highest conviction deals at lower fees. In Asia, however, co-investment opportunity is generally limited for new LPs, making direct sourcing of co-investments difficult unless investors are already allocated to commingled funds. There remains a mismatch between GPs in need of capital and LPs in search of investment opportunities when it comes to private credit deals in Asia. The first step is usually the most difficult and time consuming, but after this is cleared, the chances for LPs to be shown deals with attractive fee terms are expected to rise based on the reported pipeline of high probability deals the GPs are working on.

OUTLOOK – SPECIALTY FINANCE

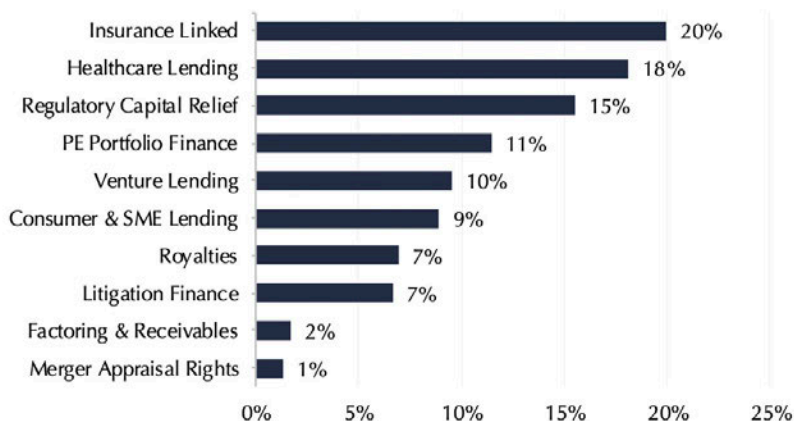


- Specialty Finance has been the “hot” sector to talk about with LPs seeking less correlated credit opportunities
- Addressable market and accessibility vary widely across various market niches

Interest in specialty finance continues to grow as LPs seek new ways to diversify their portfolios and identify investments with low market correlation and favorable supply/demand dynamics. According to Aksia’s survey of private credit LPs, upwards of 80% of respondents are considering “niche” strategies as part of their broader credit allocation, with the most common areas of interest noted as healthcare, aviation and trade finance. We also believe that specialty finance strategies often warrant consideration for LPs’ portfolios as they complement existing exposures and spread out portfolio risk factors. An added benefit of many specialty finance strategies is the heightened specialization and strategy complexities which often form barriers to entry and a path to more defensive yields than easier to access sectors. However, many of these strategies are not scalable, limiting the opportunity for large institutional investors lacking the ability to commit to smaller, niche GPs (<\$500 million funds). Further, we would caution LPs from earmarking too large an allocation to specialty finance. Not all specialty finance asset classes and GPs have time-tested track records, making predictions about performance and downside loss potentially difficult to assess.

Below is a breakdown of active investment offerings classified as Specialty Finance.

Figure 30: Specialty Finance Fundraising by Sub-Strategy



Source: Aksia, as of December 31, 2019



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Following is the outlook for various sub-strategies within the broader Specialty Finance market, as this is a more heterogeneous market. Similar to other sectors, our assessment takes into account not only the attractiveness of the specific opportunity sets and relevance for a “typical” LP portfolio, but also the accessibility of the opportunity over the coming year.

Insurance Linked (ILS)

The opportunity set across the range of insurance-linked strategies has tightened compared to 2019. Significant capital was raised last year to pursue life run-off with no meaningful capital raises anticipated for 2020. It was also one of the few areas in ILS that doesn’t offer predominantly uncorrelated sources of returns, which tempered our overall view of the opportunity set, although there were some unique access points. Other areas of ILS, such as longevity (i.e., life settlements), are richly priced, given the high level of capital targeting the sector.

We envision there will continue to be pockets of opportunity throughout 2020, related to the technological disintermediation theme in (re)insurance. Most of the traditional insurance / reinsurance marketplace (e.g, homeowners’, auto, health, specialty lines such as cyber) is fragmented and inefficient from an origination (and subsequent cost incurred) standpoint. Tech-enabled origination and underwriting should drive shifts across different sectors with changes being driven in the aforementioned lines of business. The typical access point for LPs is via capitalizing the regulatory balance sheet required to underwrite, which tends to offer 3 to 5-year liquidity (at best).

Healthcare Lending

We have seen a noticeable increase in institutional interest in healthcare lending over the last 12 to 18 months. Healthcare has historically been a more defensive sector and less subject to macroeconomic cycle risks. Typically, GPs focused on healthcare lending work with companies that are cash flow negative or neutral but achieved FDA approval for one or more drugs which are in the pre-commercialization stage (thereby de-emphasizing binary risk). Lenders in the space often differentiate their business models through a variety of debt and hybrid structures. Healthcare lenders will typically attain greater security and covenant protections than traditional direct lenders, often including revenue and liquidity covenants. The universe of non-bank healthcare lenders has expanded in the last few years. Competition for deals may also come from venture lenders, the convertible debt markets for larger borrowers, more traditional direct lenders, and venture equity. Despite the growth of the space, accessibility has been a challenge given the lack of experience or performance issues of some specialists in this area. Finally, heightened risks around reimbursements could present a headwind for the space that should be considered.

Regulatory Capital Relief

We view the nature of the underlying collateral as an important differentiator between higher quality and more defensible reg cap strategies versus easier to access strategies with greater competitive tension. Investment-grade corporate risk is the easiest collateral type to analyze and price, subjecting the segment to increased competition, while the analysis of consumer and SME collateral requires significant proprietary data (provides for strong barriers to entry). In general, there continues to be solid deal flow in reg cap out of European banks though spreads have trended lower in recent years as regulatory pressures have led to a thickening of tranche structures. In turn, GPs have been forced to increasingly utilize leverage to generate the economic return profiles in-line with typical fund targets. Specifically, due to the requirement for thicker tranches, the market has increasingly made mezzanine tranches available, behind which some GPs have raised specific pools of levered capital using repo. We actively avoid players that utilize short-



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term repo leverage, especially on first loss or subordinated tranches, as there is a significant asset-liability mismatch, mark-to-market risk, and repo counterparty control over the asset valuation (remember 2008?), all of which present increased downside risk.

The COVID-19 impact on reg cap will vary depending on underlying collateral exposures. Transactions with significant shipping, consumer and SME exposure more generally will be more susceptible to deterioration on collateral pool quality relative to investment grade corporates, although it may not be overly surprising if a dislocation between collateral quality and tranche performance appears in the consumer and SME segment as banks may be unwilling or unable to crystalize losses against these borrowers in light of potential governmental pressures. Groups able to underwrite more complex collateral may be able to capture value during the current dislocation as reg cap portfolios are likely to trade down and experience losses in excess of base case underwriting. Players utilizing short-term repo could experience pressure if fundamentals continue to deteriorate in affected sectors.

PE Portfolio Finance

Lending strategies (secured debt and preferred structures) secured by interests in private equity funds are being increasingly utilized by GPs. These strategies provide non-dilutive means to meet various liquidity needs outside of bank financing channels and/or traditional secondary transactions. An Aksia reference at a specialist secondary advisory firm estimated that less than 5% of the large PE secondary market consisted of debt/preferred-oriented fund finance deals. However, with ongoing education in the marketplace and persistent industry tailwinds, we believe transaction volumes are poised to grow. We believe first-movers are poised to capture market share and offer a diversifying investment opportunity to outside investors.

One prominent borrowing group includes private equity GPs, as a record volume of private equity funds raised prior to the financial crisis are now well beyond their investment periods and reaching the end of their structural lives. To illustrate the scale of the asset backlog, analysis of industry data from Preqin suggests that the NAVs of mature, in-carry PE funds is greater than \$800 billion. Traditional LPs, fund of funds, and secondary PE portfolio sellers also have liquidity needs. For example, many institutions and other asset managers have been seeking to consolidate portfolios to monetize smaller tail assets and/or non-core positions in private market funds. They too can turn to the fund finance market for liquidity, more so now as typical debt/preferred deals avoid relinquishing significant upsides or crystalizing discounts in secondary sales.

Given the rising risk around COVID-19, portfolios with exposure to cyclical and energy-related private equity strategies will likely be the worst performers. Overall, many of the larger players in the portfolio financing space tend to avoid overly cyclical assets except at the margin. We expect secondary discounts in the space to increase and LTVs to fall in general, though the overall impact for diversified portfolios is difficult to tell at this point. In the case of material spread widening and volatility, a number of players may be well positioned to take advantage of improved pricing as secondary holders or GPs look to partially monetize assets.

Venture Lending

Venture lending (or “growth debt”) has been an active area on the capital raise front. Although the prospect of lending to highly volatile growth companies may seem irresponsible, the risk of lending to early-stage companies can be partially offset with proper structuring and controls. An important development in the venture-backed community has



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been the tendency of companies to stay private longer before a public listing. This phenomenon could perhaps be attributed to a desire by management teams to continue operating with a limited number of long-term minded backers as opposed to the quarterly scrutiny of public shareholders. Regardless of the reasoning, it has created a heightened need for capital from the venture lending community and GPs have followed suit by increasing maximum loan sizes or explicitly targeting late stage venture-backed companies.

Consumer & SME Lending

Consumer and SME lending strategies (sometimes called rediscount lending) often focus on partnering with or lending to niche asset managers, such as consumer and SME origination platforms. The origination platforms may be a high growth “fintech” or “market platform finance” companies or more established players, operating in mature market segments (e.g. merchant cash advance). Private capital solutions are often most applicable for early-stage borrowers that are too small for banks and commercial finance companies to focus on. In other cases, there may be some heightened regulatory concerns that may deter a traditional financial lender from working with the borrower (ESG-sensitive LPs please keep this point in mind when evaluating opportunities in this area). In many cases, GPs will look to take equity stakes or may set up forward-flow agreements to purchase overflow volume from their origination partner.

European consumer and SME exposure is likely to struggle in the face of COVID-19 concerns as is, to a lesser extent, North American exposure. Given the spread of the virus, shutdowns across both regions are becoming commonplace which should lead to lost revenue and wages. Given that many of the consumers in this segment are below prime borrowers and businesses are generally on the smaller end, they could both be more susceptible to shocks of this nature.

Royalties

Over the past year, our work in the royalties sub-strategy has been focused on healthcare issuers. Of late, yields have compressed as groups with low costs of capital have entered the space and generalists have allocated significant capital to what they believe is an uncorrelated asset. Returns have been lackluster in general outside of the largest and highest quality deals. From our discussions with industry participants, there continues to be a lack of deal flow and an inability to scale traditional royalty and, to a lesser extent, structured royalty investments. GPs have sought to combat these issues by either going out on the risk spectrum in a bid for yield (e.g. targeting pre-approval drugs), employing more creative structures, and/or by incorporating synergistic investments within credit or other areas in order to enhance deal flow.

Outside of healthcare royalties, a number of groups focus on entertainment intellectual property and content both in TV/film and music. These assets are generally less correlated to economic activity and are high cash flowing. Though traditional forms of distribution continue to decline, streaming growth has contributed significant revenue to the media industry and currently represents a tailwind to the industry. Concerns in this space largely revolve around the ability to scale offerings in addition to downside scenarios associated with slowing paid streaming growth.

Litigation Finance

Litigation finance remains a popular topic for investors looking for uncorrelated strategies. Litigation finance has been around in Europe and Australia for quite some time, but is a burgeoning industry in the U.S. (largely on the commercial



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end), having attracted significant interest from investors in the last several years. Third-party funders are increasingly looking to partner with law firms, often to fund entire portfolios of cases with the majority expected to settle within the first few years.

Some important hurdles exist when evaluating the standalone strategy offerings available to investors. Litigation funding is done in phases which limits visibility into the timing and overall value of capital calls over a fund's life. In fact, many offerings allow the GP to call additional capital to support existing cases well past the investment period. Coupled with the fact that the industry tends to charge on committed capital, there can be a significant drag on an investor's multiple and gross-to-net spread. Tail risk is another important consideration for investors given the lack of realizations within the space. A large portion of the track records we see are dependent on the successful completion of outstanding cases which are likely to go to trial or are on appeal. Generally, debt-oriented strategies can typically reduce some of the tail risks associated with the regular way case funding market.

Factoring & Receivables

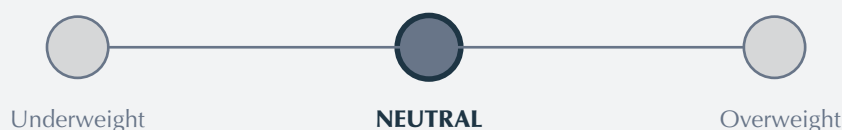
Our recent work in the factoring and receivables space has largely focused on asset-based lending strategies whereby the primary collateral is working capital (inventory and A/R) often of businesses in the retail sector. This strategy is sometimes referred to as "Stretch ABL" whereby private capital will provide debt packages at a deeper LTV or 2nd lien, behind a more conservative ABL lender such as BofA or Wells Fargo, two behemoths in this area. This has been an interesting specialist area whereby non-bank lenders have been able to capitalize on stress in the retail market to earn high returns and tightly structured debt packages. Scalability is a challenge here, as is the asset management experience of some platforms marketing this capability.

Shutdowns resulting from COVID-19 could significantly affect retail businesses which could lead to stress and/or spread widening in the factoring and receivables space, depending on how deep a lender is willing to go and the quality of the collateral. Weak underwriting could place some groups in trouble as retail topline growth is likely to be materially affected. This could open up an opportunity for lenders willing to step into a dislocation.

Merger Appraisal Rights

After decisions by the Delaware Supreme Court in 2017 and 2019, the number of merger appraisal opportunities continues to fall. According to Cornerstone Research, 26 appraisal petitions were filed in Delaware in 2018, declining significantly from the 60 petitions filed in 2017 and the 76 petitions filed in 2016. Specifically, for public companies, five of the seven appraisal awards in 2017 and 2018 were below the deal price, while the only award above the deal price saw appreciation of just 2.8%. We do not believe that the market will recover given the recent decisions though we think there may still be one-off opportunities to pursue appraisals in the future through co-investments or within a broader fund format.

OUTLOOK – STRUCTURED CREDIT



- Private structured credit opportunities to provide liquidity emerge as banks curtail secured lending
- Challenged arbitrage and weak loan fundamentals reducing near-term primary CLO equity attractiveness
- Recent (COVID-19 driven) spread widening will lead to secondary market opportunities

The persistent hunt for yield by credit investors, combined with unrelenting appetite for differentiated return streams, has broadly driven the structured credit markets tighter in the last several years, with 2019 largely following the same pattern. Nevertheless, there has been some differentiation among sectors, with investors showing strong preference for non-corporate exposures. Benefitting from low default rates, HY Auto ABS, Agency Risk Transfer, credit card ABS, as well as equipment lending, have all witnessed increased investor appetite and interest. Primary volumes in the ABS space should plummet in 1H 2020 as investors look for clarity with respect to varying exposure profiles to the real economy. Total return dispersion will increase and we are looking for indiscriminate selling in the secondary market by holders that are leveraged, unsophisticated, or both.

In the CLO space, investors' concerns about leveraged loan underwriting trends have impacted both equity valuations and new issue mezzanine spreads. Increased CLO liability costs have eroded CLO arbitrage, making new issue CLO equity decidedly less compelling. This dynamic was particularly apparent when CLO BB Libor spreads briefly exceeded 750bps in late 2019, offering equity like returns with significant additional subordination. Amid the COVID-19 sell off, spreads are again bumping up against the same level, and we would look for seasoned portfolios with all in mezzanine yields in the 10-12% range.

Combined with the expiration of "Risk Retention" captive CLO equity vehicles, collateral managers have been forced to spend more resources, and offer more compelling economics, in order to secure CLO equity commitments. We have seen a number of permutations of fee share economics offered to prospective CLO equity investors, bringing effective management fees below 30bps. Expect this dynamic to continue as market uncertainty makes first loss corporate risk securities an increasingly challenging product to place.

STRUCTURED CREDIT

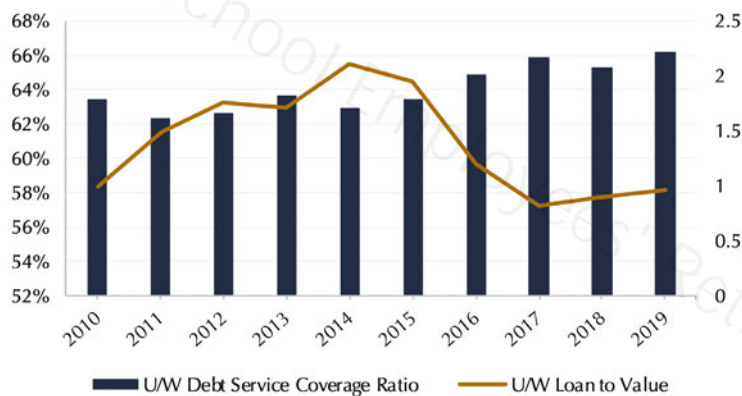
Figure 31: Palmer Square CLO BB Index Discount Margin



Source: Bloomberg, Aksia, as of March 4, 2020

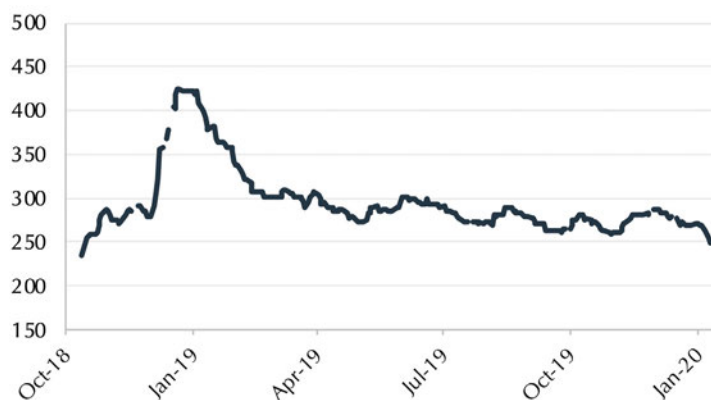
Some sectors, such as CMBS, have been able to hold the line on deal terms (e.g. LTV) but have nevertheless seen spread tightening on new issue paper.

Figure 32: Conduit CMBS Underwriting Quality



Source: J.P. Morgan, CMBS Weekly, November 1, 2019

Figure 33: New Issue CMBS On the Run BBB Spread to Treasuries



Source: J.P. Morgan DataQuery, as of January 14, 2020

Note: Data has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The data is used with permission. The data may not be copied, used, or distributed without J.P. Morgan's prior written approval. Copyright 2020, J.P. Morgan Chase & Co. All rights reserved.

**STRUCTURED CREDIT**

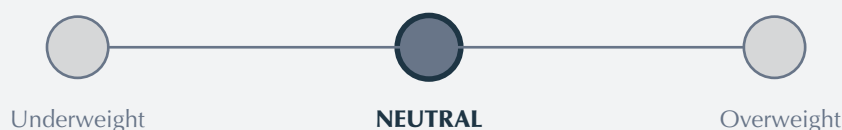
Agency B-piece (e.g. Freddie Mac's K program) are no exception as low default rates and an inherent positive convexity (low dollar price) have seen the market tighten with new groups joining the purchaser pool. The most recent fixed coupon deal, K-105, priced at historical tights with the junior-most X-3 tranche yielding just 4.07%.

GPs that made their name in the liquid structured credit space have been seeking out non-CUSIP assets and esoteric ABS to bolster yields, sacrificing liquidity at the altar of returns and effectively backfilling sectors where traditional bank lending has become capital inefficient. Whole loan purchases, as well as creative pool financing solutions have allowed GPs to customize risk return profiles in the private markets. Aksia pays particular attention to new entrants in the private credit markets, especially given the lack of track record and light resource commitment, at least at the initial stages.

From a diligence standpoint, we are focused on GPs that can demonstrate thoughtful credit analysis (along with adequate analyst staffing), differentiated sourcing channels such as agency relationships and originator offtake arrangements, along with the ability to rotate across structured credit sectors. In some instances, the ability to arbitrage the public and private market by effecting, or conversely, breaking up and liquidating, securitization structures, will allow a GP to amplify risk adjusted returns.

While asset/liability mismatch is typically less of a concern in the PC arena, managing duration and credit risk will separate prudent risk/return GPs in this correction, as the long-end has proven volatile during times of macro uncertainty.

OUTLOOK – REAL ESTATE CREDIT



- The opportunity set in U.S. CRE lending favors well-capitalized sponsor backed, major markets-focused, large loan strategies, though we note that we anticipate lending volume to decline sharply in the coming quarters and LPs should be mindful of GPs with issues in existing portfolios
- We are constructive on U.S. residential fundamentals and believe this view is best expressed through reperforming residential acquisition strategies; we note that the significant decline in rates is likely to slow non-agency volumes substantially
- In recent years, the private European CRE lending market experienced significant growth as banks and insurance companies retreated, though the opportunity set differed considerably by region.
- The ongoing COVID-19 pandemic warrants extreme caution on hospitality, retail and leisure focused performing credit strategies as well as those lenders with high levels of exposure to these sectors. Conversely, we expect to see a significant wave of distressed opportunities in these sectors across coming months.

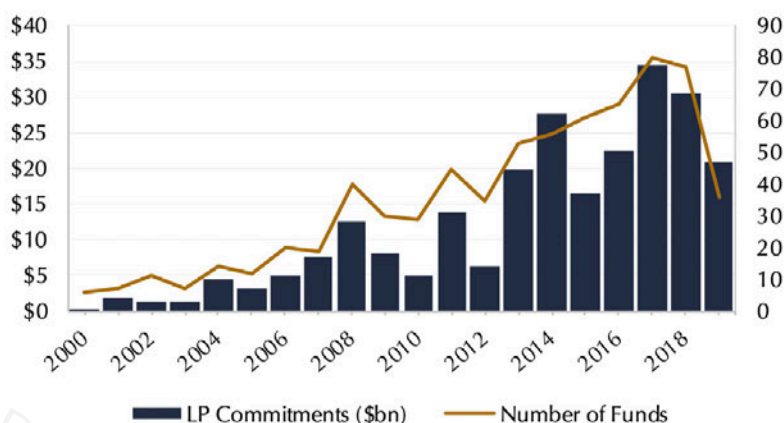
2019 Saw Fundraising Continue Across All Corners of the Real Estate Debt Market

Throughout 2019, we observed significant fundraising volume for non-bank lenders focused on transitional real estate in the U.S. Aksia's database of U.S.-focused real estate credit funds contains 14 transitional lending funds actively fundraising with an aggregate target capital raise of \$12.8 billion. We are also tracking an additional \$4.6 billion of fundraises focused on bridge lending, loans typically backed by properties undergoing development or significant transition requiring new capital expenditures.

We anticipate several large and high-profile fundraises in 2020. Blackstone is expected to close fundraising for its flagship Real Estate Debt Fund IV in Q1 with a \$5 billion target. Oaktree's broad commercial and residential real estate credit strategy, Real Estate Debt III, is in market with a \$3 billion target, and PIMCO BRAVO IV, while not purely real estate debt, has a large allocation to the space and is expected to come to market in 2020. Transitional lenders Goldman Sachs Real Estate Credit and Brookfield Real Estate Finance are launching the next vintage of their strategies, and development lenders TCI Real Estate Partners IV and Madison Realty Capital Debt Fund IV are looking to raise \$3 billion and \$2 billion, respectively. That said, in light of recent market weakness surrounding COVID-19, we expect 2020 fundraising to materially slow in 2020.

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Figure 34: Global Real Estate Debt Fund Fundraising (2000 – 2019)

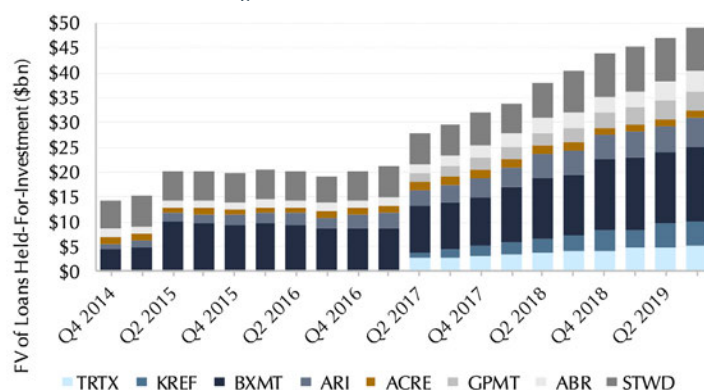


Source: Preqin, as of February 18, 2020

Fundraising statistics in the chart above are likely understated, as they only include fundraising for closed-end funds, historically the fund structure of choice for real estate debt GPs and LPs. However, this has started to change with the rise of open-ended fund structures in the market, which contributed considerably to the growth of private real estate debt capital in 2019. Notable open-ended fundraises in 2019 included JP Morgan US Real Estate Core Mezzanine Debt, Ares Real Estate Income, Brookfield Senior Mezzanine Real Estate Finance Fund, and Voya Commercial Mortgage Lending. The growth of open-ended funds is likely the result of declines in core real estate equity returns driving those investors to consider debt investing, as well as investors gaining increased comfort with the underlying assets and the benefits to GPs from such a structure. While we are generally skeptical of open-ended funds holding less liquid and more complex assets, we recognize that the open-ended fund structure is well-accepted in the core and core-plus markets and does provide LPs with the benefit of greater flexibility in capital deployment. In contrast to Core and Core+ funds, however, we note that open-ended debt funds may have an additional level of complexity as it relates to leverage, re-investment, pricing, and fees.

Public mortgage REITs also continue to grow as a significant provider of capital, especially in the large loan segment of the market. Loan balances among the largest REITs have continued to grow at a steady pace.

Figure 35: REIT Loan Balances



Source: Aksia, 10-Q and 10-K filings, as of September 30, 2019



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Additionally, the increase in fundraising and deployment has been supported by the resurrection of the CRE CLO market, which can be an attractive source of financing for some lenders. In 2019, 29 CLOs came to market issuing a total of \$19.2 billion, up from \$14.2 billion in 2018. Wells Fargo expects volumes to remain high in 2020, forecasting issuance of \$22 billion.

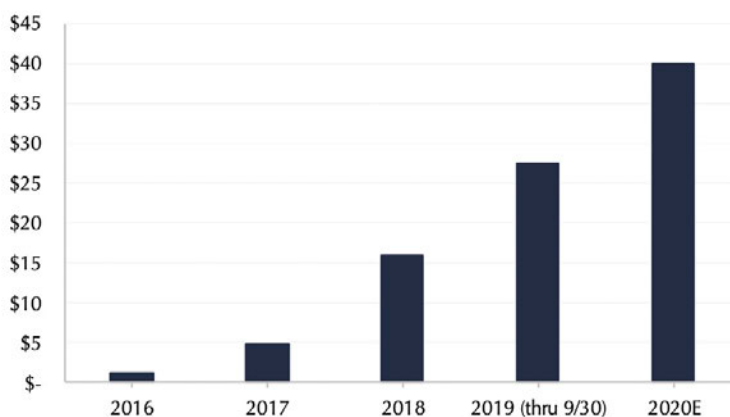
U.S. Real Estate Credit Outlook

Overall, we expect fundraising and deployment trends across the real estate debt space to continue at a similar pace into 2020, with several large, notable fundraises coming to market. In this context, there has been no change to our overall views on positioning which **continue to favor transitional large loan strategies targeting institutional sponsors primarily in major markets**. In addition, we have seen several opportunities in the **agency lending** space, particularly **bridge-to-agency strategies**, which target short term loans backed by multifamily and healthcare properties looking to obtain agency (e.g. HUD) financing. This strategy is potentially attractive given the defensive nature of multifamily and healthcare assets and visibility of exit through agency takeout, though the opportunity is not very scalable.

As the ongoing COVID-19 pandemic continues to develop in the U.S., we have seen the commercial real estate lending market grind to a halt and anticipate delays in construction activity. Hospitality assets are likely to suffer the worst as occupancy levels and RevPAR continue to fall, and student housing may also face weakness in the near term. Given the level of uncertainty in the market, any strategies with high levels of such exposures warrant extreme caution.

We continue to be constructive on **U.S. residential loans** given a healthy U.S. consumer and housing market in addition to no evidence of significant loosening of residential credit underwriting standards. **There are two primary ways to invest in the U.S. residential loan segment in private markets (at a 10%+ gross return expectation on a levered basis): non-prime lending and re-performing loans**. The non-prime market has seen considerable growth over the past 12-18 months, reaching over \$27 billion of issuance in 2019.

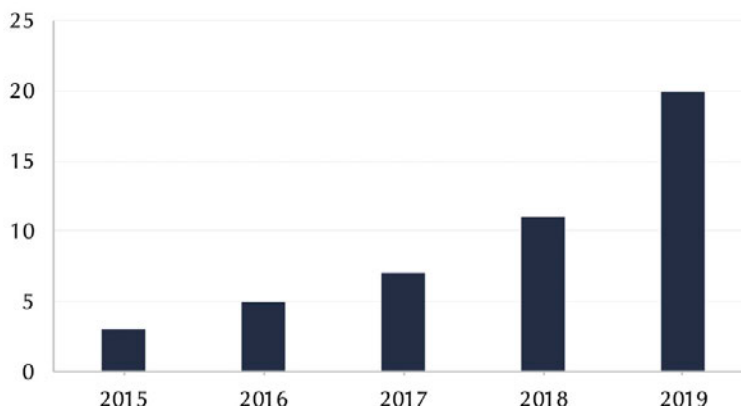
Figure 36: Non-Qualified Mortgage Issuance (\$bn)



Source: Citi Research, The 2020 Securitized Markets Outlook, December 12, 2019

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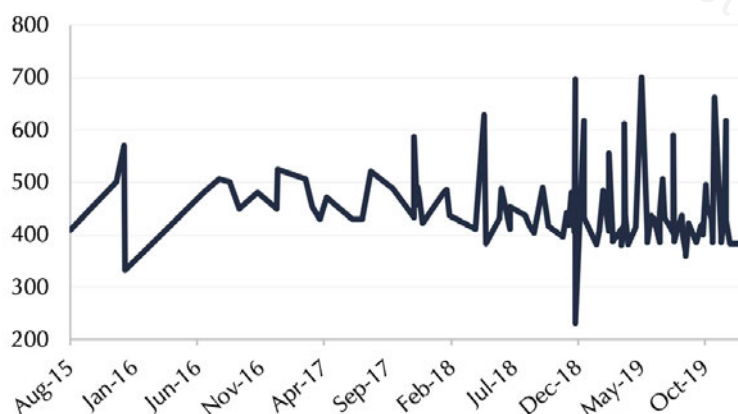
Figure 37: Unique U.S. Non-Prime Shelves



Source: Kroll Bond Rating Agency, Inc., as of January 17, 2020

With the Qualified Mortgage Patch, which has allowed for certain exceptions for a loan to be considered qualified, set to expire in 2021 and housing reform expected to curb the GSEs' overall footprint in the market, we expect the non-QM market to continue growing. In addition, we note a number of lenders are preparing to launch private-to-public REIT strategies which could lead to additional IRR uplift. We analyzed a group of notable hybrid residential mortgage REITs, which reached a peak average price-to-book ratio of 1.03x (January 2019). Peak price-to-book for any individual REIT was 1.31x (Two Harbors Investment Corp., December 2015). While we are constructive on the space, we note that the increase in competition and broader acceptance of a wider set of non-agency loan products appears to have put some pressure on returns, as well as in some cases credit quality.

Figure 38: Average Gross Weighted Average Spread – Non-Prime (%)



Source: Kroll Bond Rating Agency, Inc., as of January 17, 2020

We are also constructive on the opportunity set in **reperforming loans ("RPL")**, mostly mortgages issued prior to the financial crisis that became delinquent, but which are currently performing, and were typically modified through rate reduction, principal forgiveness, or term extension. Market estimates place the total outstanding stock of RPLs at over \$200 billion, which are held by Fannie Mae, Freddie Mac, HUD, banks, and private funds. Financing for RPLs has grown over time with approximately \$15 billion in securities outstanding and the repo market providing a multiple

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of that number in financing. As is the case in non-prime lending, we have seen returns come down over the past five years, though we believe that the RPL market remains less competitive due to the higher cost of entry, many hedge funds' poor experience with RPLs/NPLs post-crisis, and a potentially higher cost to sourcing. In addition, relative to newly originated non-prime loans, we believe that there may be a lower degree of prepayment and default uncertainty for RPLs given significant seasoning. While investors are giving up some potential net spread in RPLs relative to non-prime lending, we have seen a relatively volatile history of non-prime returns due to execution challenges and higher than modeled prepayments. Furthermore, as we note above, a number of non-prime shelves have begun to include tails that may be higher credit risk (e.g. second homes, 12 months or fewer bank statements, etc.).

Figure 39: RPL vs. Non-Prime Comparison – Example Terms

	RPL	Non-Prime
COLLATERAL CHARACTERISTICS		
Loan Purchase Price	~90% UPB	~102% UPB
WAC (MV adjusted)	5.2%	6.3%
LTV (MV adjusted)	72%	72%
FICO	698	721
Seasoning	~150 months	~6 months
ESTIMATED MARKET ASSUMPTIONS		
CPR	10%	25%
CDR	1%	0.50%
Severity	30%	30%
FUNDING		
Notional Advance Rate	80%	90%+
Estimated Funding Cost	2.5%	2.7%
Net Spread (Gross of CPR, CDR)	2.8%	3.5%

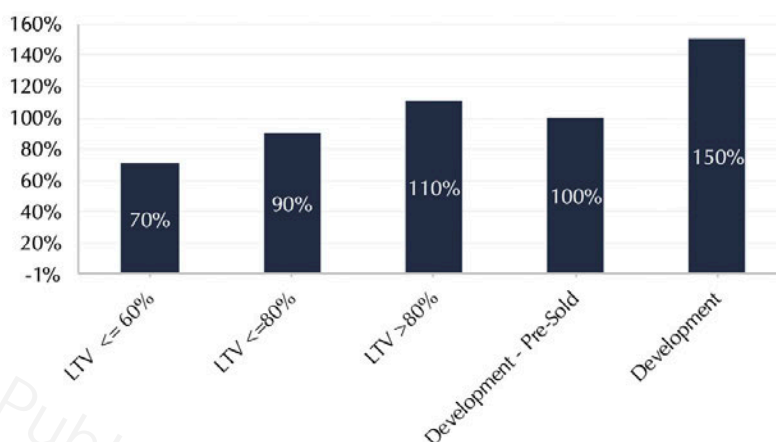
Source: Bloomberg, Aksia, as of January 14, 2020

European Real Estate Credit Outlook

Regulation remains a key driver of CRE lending within Europe. Basel Accord and Solvency III regulations have had a significant impact on European banks and insurance companies by constraining lending activities into lower LTV, senior structures with limited to no development risk. Fund activity (at least in the high single digit / double digit target return space), therefore, has tended to mirror these regulatory distortions (in the inverse) and most European CRE lending strategies tend to involve either stretching LTVs (through mezzanine or whole loan strategies) or taking on elements of asset risk (through bridge, development or transitional lending strategies).

REAL ESTATE CREDIT

Figure 40: Basel III: Risk Weights on Commercial Real Estate Loans



Source: KPMG, Basel Committee revised standards on the output floor, credit risk and operational risk, December 2017

In terms of mezzanine-focused strategies, particularly those which target prime or mature assets, we have some concerns over the ability of these strategies to generate deleveraging (i.e. reducing risk profiles). For mature properties, asset value appreciation tends to be the only driver of deleveraging and LTVs are often broadly constant through the life of an investment. This can leave mature-asset mezzanine strategies exposed in the event of a market correction and largely reliant on the apathy of senior lenders towards enforcing control and taking ownership of real estate assets.

We have also seen subordination or tranching appear in strategies which purport to pursue senior loans, by back-leveraging senior tranche investments through loan-level facilities (typically repo contracts) or portfolio-level facilities. There can be some merits in comparing the differing risk profiles of levered senior and mezzanine strategies, however, the quality of leverage is often the defining criteria of any strategy involving subordination. Repo-financing structures, in particular, can be towards the lower quality end of the spectrum by introducing short-dated, not term-matched leverage often with some form of mark-to-market risk.

Unlike tranching or subordinated strategies, whole loan strategies typically replace financing risk / complexity with asset-risk in the form of asset repositioning, transition or development (in extremis). Provided this is well diligenced and controlled, such strategies can deliver significant deleveraging through life, with the potential to create markedly different risk profiles compared to equivalent mature-asset / mezzanine focused strategies.

Triple net lease / sale and leaseback strategies also continue to be an emerging theme in the European market. While investments typically involve levered equity exposures in real estate assets, (very) long dated and inflation-adjusted lease structures can provide a material offset against the potential volatility associated with property values. The European triple-net market remains relatively nascent, with some evidence of pricing inefficiencies compared to the more established U.S. equivalent.

In terms of debt structures and pricing, most primary markets look to be relatively well aligned (after adjusting for the impact of differing £ and € swap rates). Mezzanine tranche structures, in particular, have remained largely stable over

REAL ESTATE CREDIT

the past few years, with tranche thicknesses of 15-20% and reasonable LTV levels of ~75%. In this context, the current mezzanine market remains distinctly different to pre-GFC vintage structures, which often featured much narrower mezzanine tranches (sometimes down to 5%) and higher overall LTVs (up to 85-90%).

The exception to this trend of stable structuring dynamics is the Netherlands, where senior and mezzanine structures remain more aggressive than peer countries. This is a reflection of the idiosyncrasies of the Netherlands market which have resulted in a significant inflow of institutional capital (particularly from the insurance sector), somewhat distorting market terms.

Figure 41: Senior Debt Lending Terms – Prime Offices, Primary Markets



Source: CBRE Research, European Valuation Monitor, Q3 2019

Figure 42: Mezzanine Debt Lending Terms – Prime Offices, Primary Markets

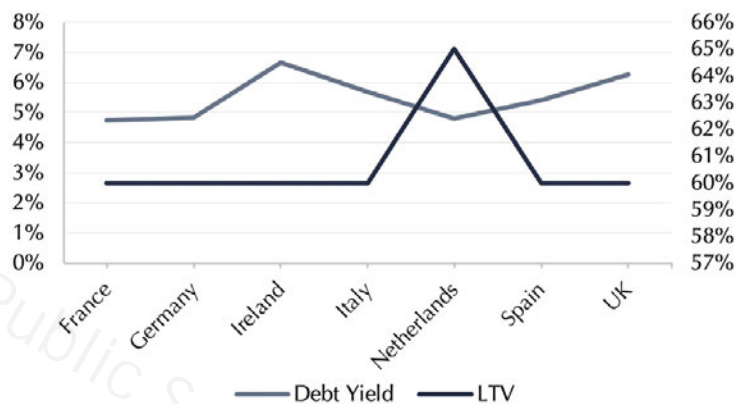


Source: CBRE Research, European Valuation Monitor, Q3 2019

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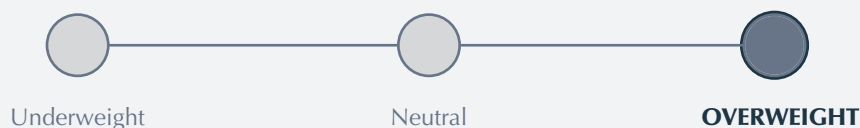
In terms of debt yields, the UK and Irish markets appear to be somewhat cheap compared to peer geographies, although it is unclear at this point whether Brexit-related downsides have been appropriately baked into property values, or if there is still room to run in each market.

Figure 43: Senior Debt LTV vs Debt Yield



Source: CBRE Research, European Valuation Monitor, Q3 2019

OUTLOOK – REAL ASSETS CREDIT



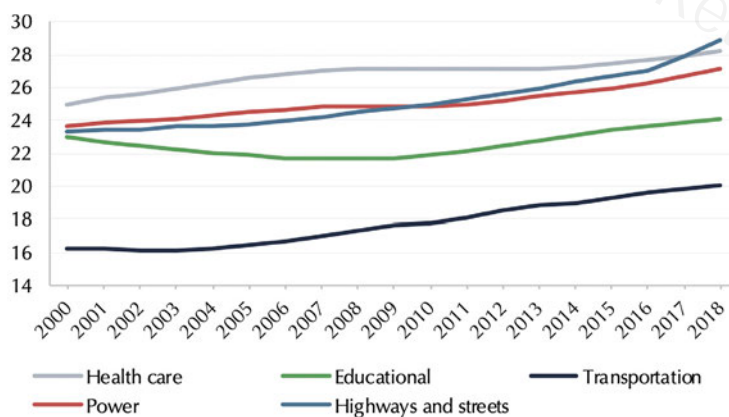
- Huge infrastructure capital needs but narrow addressable market for high yield private credit
- Distress in the oil patch opening new opportunities for private capital and secondary trading

Real Assets continue to be an active segment of the private credit universe, offering investors diversification from corporate exposure and often having reasonable downside protection due to more predictable cash flows and hard collateral. The most active strategies have been infrastructure and energy as well as transportation. In addition, some investors have invested in niche real asset sectors such as mining and agriculture. Due to their capital intensity and scale we have found infrastructure and energy to offer significant co-investment opportunities.

Huge Capital Needs but Narrow Addressable Market for Infrastructure Credit

The fundraising environment in infrastructure lending has been active and we expect that the sector will continue to require robust private capital formation driven by strained public budgets and aging infrastructure.

Figure 44: Average Age of U.S. Government Infrastructure

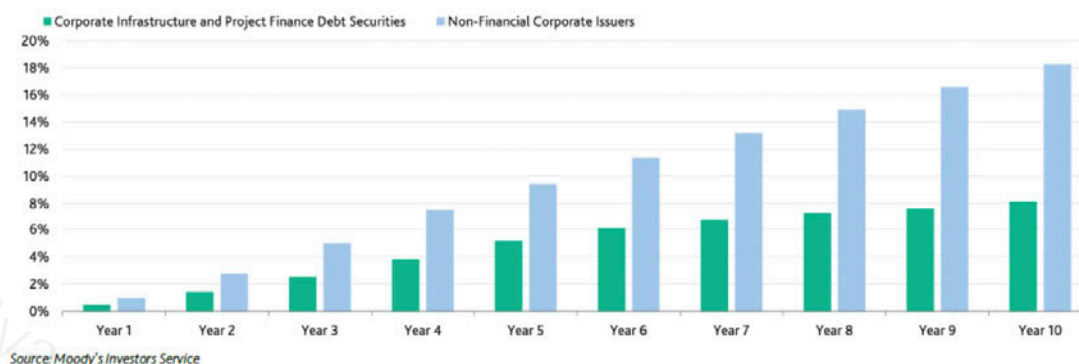


Source: Bureau of Economic Analysis, Aksia, as of February 18, 2020

There is ample debt capital available from both public capital markets and banks for high quality core and core-plus infrastructure assets. Demand to offer debt finance for these projects has remained robust, in part from liability-driven investors such as insurance companies. We note that both Moody's and S&P have demonstrated infrastructure debt's favorable credit performance in past cycles (see following two charts). Based on this quality and to encourage investment, European regulators now afford qualifying infrastructure debt favorable capital treatment under the Solvency framework which bolstered demand from insurance investors. With declining yields, we have seen insurance-affiliated asset managers increasingly expand their mandates from investment grade to sub-IG debt.

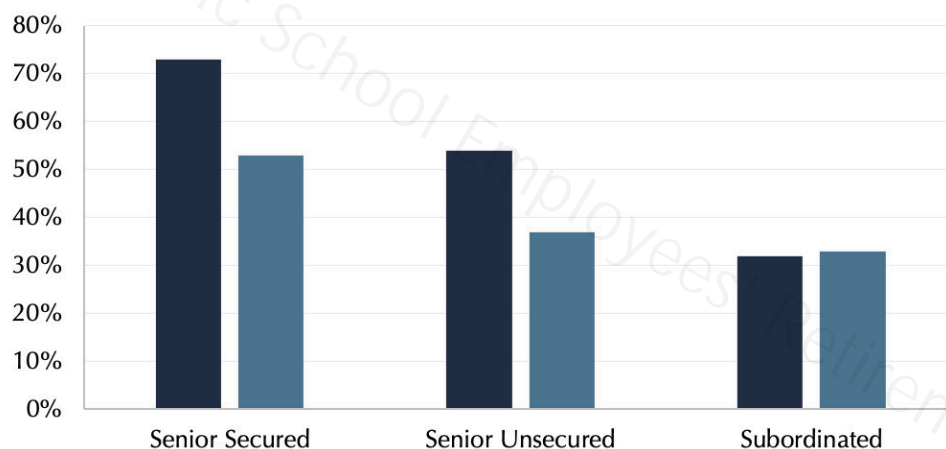
REAL ASSETS CREDIT

Figure 45: Infrastructure vs. Corporate Default Rates (Average Ba Rated, 1983-2016)



Source: Moody's Investor Service, Infrastructure Default and Recovery Rates, 1983-2016, July 27, 2017

Figure 46: Infrastructure vs. Corporate Average Recovery Rates (1983-2016)

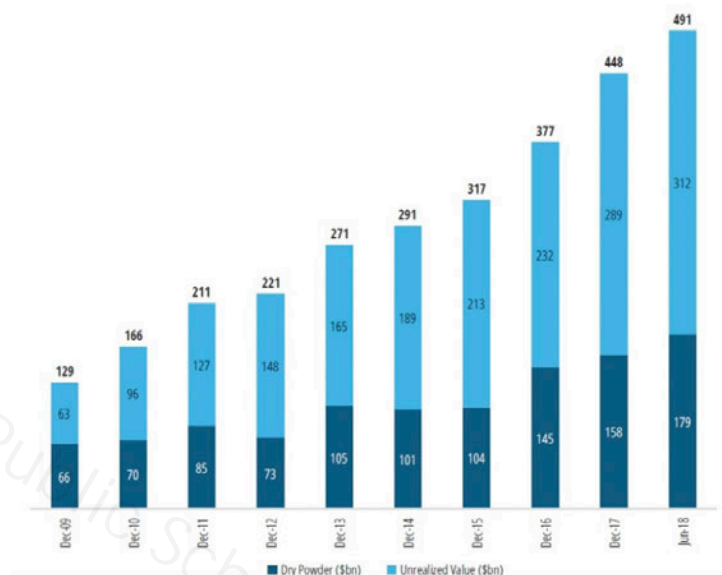


Source: Moody's Investor Service, Infrastructure Default and Recovery Rates, 1983-2016, July 27, 2017

Following the rapid growth of private infrastructure equity AUM over the past decade, we believe the need for flexible private debt solutions will increase. We expect this not to be too dissimilar from the development of direct lending following growth in middle market buyouts. We see private lenders as important players in funding the development and acquisition of core plus and opportunistic infrastructure assets, particularly for off-the-run and complex deals, companies with increasingly complex capital structures, or private equity transactions. The current valuation disconnect of public and private infrastructure may lead to more take private activity where the speed, flexibility, and certainty of close afforded by private credit firms can prove to be valuable.

REAL ASSETS CREDIT

Figure 47: Unlisted Infrastructure Debt and Equity Funds Assets Under Management(\$bn)



Source: 2019 Preqin Global Infrastructure Report, February 1, 2019

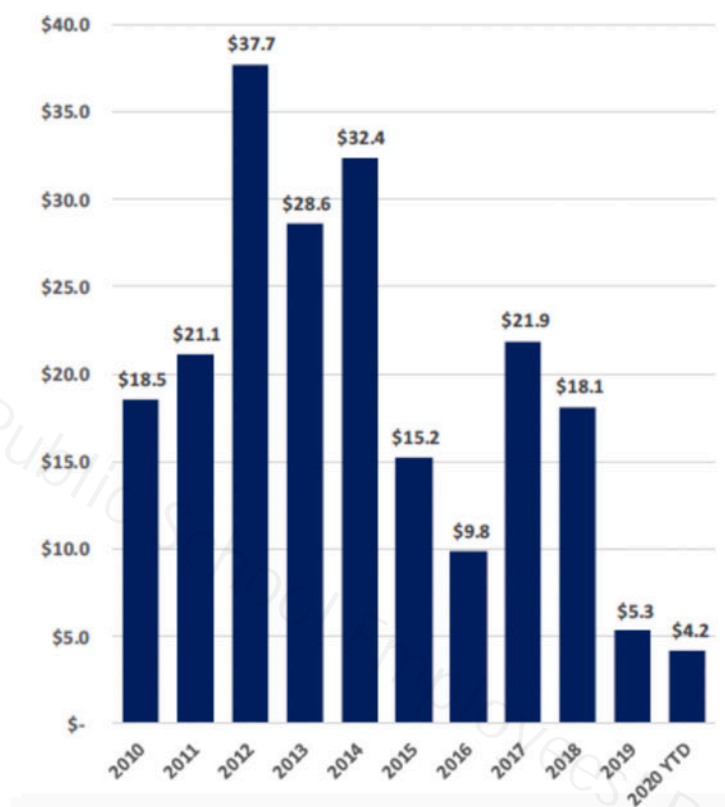
Generally, we have seen private infrastructure debt funds find opportunity in two areas: higher quality 6-8% yielding debt, perhaps in combination with fund-level leverage, or 8-11% yielding mezzanine debt. To achieve mezzanine-type returns, GPs are underwriting loans with high LTVs, highly complex capital structures with significant structural subordination, or other risks related to construction, sponsor, or asset quality. We worry about elevated valuations for marquee assets in the private markets. In the event of a dislocation and contraction in valuation or cash flows, these loans could turn out to have a negligible equity cushion, leaving the lender to assume equity-like risk.

Distress in the Oil Patch Opening New Opportunities for Energy Credit

By contrast, 2019 and early 2020 was devastating for the energy sector, marked by rising cost of capital, rising defaults, and a lack of liquidity. High yield and public equity issuance declined severely and the weight of the energy sector in the S&P 500 plummeted to 4% from 12% in 2010. Even before the major sell off in March, banks reportedly had been pulling back lending after experiencing losses and anecdotally, some are willing to sell RBL exposure at discounts to par. Facing hostile public markets and an exit of generalist lenders, the energy sector is setting up for another prolonged dislocation. While this could offer opportunity to the remaining specialist credit players, we note that those same lenders may be facing liquidity-driven workout situations in their existing portfolios that will require attention and capital.

REAL ASSETS CREDIT

Figure 48: Upstream High Yield Issuance, 2010 – 2020



Source: EIG, Upstream Market Fundamentals, March 11, 2020

Several energy credit GPs are currently in market but sentiment among LPs has been prolonging these capital raises. We believe the liquidity-constrained environment could provide an attractive opportunity set for the remaining specialist lenders who have generally been able to drive better terms and covenant packages and achieve protection coverage from producing reserves. Furthermore, the fallout within the credit space from commodity price volatility is expected to be severe and broad-based, leading to secondary trading opportunities for informed energy investors. It is likely that the sector will face another wave of restructurings, as the macro backdrop worsens, and the maturity wall materializes. But a change in energy prices, for example due to rising geopolitical tensions, could quickly bring about a more supportive liquidity environment.



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Private Credit – November Update

PC Palooza

Aksia's Private Credit Palooza – the biggest Private Credit show on earth – will descend upon New York from December 2nd through December 5th. We have assembled over 170 LPs along with a few external speakers and GPs to create an experience that is all about education and networking in the fastest growing asset class in alternative investments WITHOUT having to fight off aggressive marketers or listen to speakers that paid to present!

The events on December 4th (strategy deep dives and Asia spotlight) and December 5th (ILPA Private Credit specialist course) are completely SOLD OUT, but we still have a few spaces open on December 2nd (CIO-only symposium) and December 3rd (Main Session – this is the one you should not miss!).

A special thank you to everyone that contributed to Aksia's first ever **Private Credit Cookbook**. It is definitely worth a read, not just for all the delicious sounding recipes, but also because each recipe includes a short note on why the recipe was meaningful to the contributor. Hard copies of the book will be made available at the December events for a suggested donation of \$20 to Aksia's MS 582 chess charity. Quantities are limited so please [click here](#) if you are interested in reserving a copy ahead of time.

If you have not already, please contact Rebecca Levy or Sylvia Owens at Events@aksia.com to RSVP/with any questions.

Aksia Research Spotlight – Indi-and-her-loans: The Last Crusade or Temple of Doom? ([full whitepaper attached](#))

On one hand, it feels like India is one of the best markets in the world for distressed and direct lending. The economy is growing, regulation is improving, and bank activity is limited. On the other hand the regulatory changes are nascent, growth is slowing and a lack of transparency favors local investors. This month's spotlight highlights these cross-currents as they pertain to NPLs.

PC Coverage

We now have 24¹ investment research and risk professionals that we leverage for PC due diligence. This does not include the Operational Due Diligence team of 37 and Portfolio Advisory team of 31 who cover more than one asset class (including PC) and whose insight we regularly utilize when considering PC investments. And the team continues to grow. Needless to say, we have a lot of folks thinking about and working on PC!

¹ The variation from the number quoted in the September newsletter is due to an update in our methodology

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Research Highlights

Cerberus Levered Loan Opportunities Fund IV. As with previous vintages, this fund will focus on senior lending to businesses that are a bit too complicated for many of the other large private lenders.

Perhaps the biggest knock against Cerberus is that its head of US Lending, Kevin Genda, left in 2016 to start his Blue Torch. He is back in the market with **Blue Torch Credit Opportunities Fund II**, which will continue to focus on "storied" credits at the higher end of the risk/return spectrum amongst senior lenders.

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Bridgepoint is a well-respected PE sponsor that is newer to the credit space. **Bridgepoint Credit II** is really a first fund since the initial vintage was more of a proof of concept. This fund creates a balance between primary deals and secondary, stressed deals that should help it take advantage of changing credit environment, but it will wrestle with conflicts of interest since it plans to participate in credits from its own equity deals.

Silver Point is a well-established distressed debt firm. It historically has focused on publicly traded credit, but at various times in its history has lent to private companies across a range of situations. **Silver Point Specialty Credit Fund II** is a differentiated strategy that is well positioned to capitalize on the firm's distressed and workout capabilities. Further, the team has signaled its intention to deploy the capital slowly to preserve capacity to capitalize on opportunities to lend to stressed companies.

AION, a joint venture between Apollo and ICICI, incorporates a mix of equity, lending and distressed debt strategies in India. **AION Capital Partners II** is well-positioned to take advantage of the changing investment landscape in India, but with a wide gross/net spread and many unrealized deals, they are still proving that they can execute the game plan.

Cross Ocean was launched in 2015 as a distressed debt strategy focused on capital structures that were too small for the largest distressed funds. As the firm looks to launch **Cross Ocean European Special Situations Fund III**, the manager is still proving out the thesis. Returns in the first two funds have been ok, but below expectations. We are monitoring the outcomes in several challenged investments before drawing too many conclusions.

There are few pockets of distressed debt in the world, but the Italian banks remain flush with non-performing loans. **GWM Italian Real Estate Special Situations II** is a highly credible operator that is attempting to profit from the situation. But this investment is not for the faint of heart; in addition to the ordinary risks of investing in NPLs, GWM must navigate a challenging regulatory/political environment and an uncertain macro outlook.

Carlyle Aviation (previously Apollo Aviation, also known as Sciens Aviation) is perhaps the most established manager focusing on mid-life aviation leasing. In addition to a history of successful purchases and sales, the firm has been a leader in utilizing the securitization markets for driving early exits and improving IRRs. **SASOF V** will follow the same strategy as its predecessors but will have to navigate and increasingly crowded universe.

In addition to funds, this month we helped to structure two SMAs with a large European non-IG credit platform, allowing the LPs to tailor mandates to their unique situations.

Aksia Event Calendar

Date and Location	Event	Topic	Speaker
December 2 <i>New York</i>	Aksia Global CIO Symposium	CIO Roundtable and Investment Spotlights	Various
December 3-4 <i>New York</i>	Aksia's 3rd Annual Private Credit Investor Forum	Topics in Private Credit	Various
December 5 <i>New York</i>	ILPA Private Credit Specialist Course Taught by Aksia	Private Credit Course	Patrick Adelsbach & Sylvia Owens

Notable Funds In Market*

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Fund	Strategy	Report Type	Expected Final Close
17Capital V (London)	PE Portfolio Finance	Insight Report	Dec 2019
Castlelake Income Opportunities (Minneapolis)	Cross Asset	Insight Report	Dec 2019
Cerberus Real Estate Debt (New York)	U.S. CRE Transitional Lending	Due Diligence Review	Dec 2019
EIG Global Project Fund V (Washington)	Energy Credit	Due Diligence Review	Dec 2019
Fortress Lending Fund I (New York)	Special Situations	Due Diligence Review	Dec 2019
GWM Italian Real Estate Special Situations II (London)	Special Situations	Due Diligence Review	Dec 2019
Hayfin Direct Lending III (London)	European Direct Lending	ODD Review	Dec 2019
HPS European Asset Value II (New York)	Cross Asset	Due Diligence Review	Dec 2019
MML Partnership Capital VII (London)	Structured Equity	Insight Report	Dec 2019
Balbec InSolve Global Credit IV (Scottsdale)	Cross Asset	Due Diligence Review	Mar 2020
LBC Credit V (Philadelphia)	U.S. Direct Lending	Insight Report	Jun 2020
Cerberus Unlevered Loan Opportunities IV (New York)	U.S. Direct Lending	Due Diligence Review	Jul 2020

**High conviction and/or approved funds with a final close expected up to 12 months from now where Aksia has performed some level of due diligence (either an insight report or full work)*

Aksia Research Pipeline*

Fund	Strategy	Report Type	Expected Final Close
ORIX Growth Capital (New York)	Venture Lending	Due Diligence Review	Dec 2019
AGL Core Fund Vintage 2019 (New York)	CLO	Insight Report	Mar 2020
Chambers Energy Capital Fund IV (Houston)	Energy Credit	Insight Report	Mar 2020
Acore Credit Partners II Fund (New York)	U.S. CRE Lending	Insight Report	Jun 2020
Acore Partners' Special Situations Fund (New York)	U.S. CRE Lending	Insight Report	Jun 2020
Cowen Sustainable Investments I (New York)	Renewables	Due Diligence Review	Jun 2020
Varde Mortgage Fund III (Minneapolis)	U.S. CRE Transitional Lending	Due Diligence Review	Oct 2020
Canyon Distressed Opportunity Fund III	Corporate Distressed	Insight Report	Nov 2020

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(Los Angeles)

European Direct Lending Fund (London)	European Direct Lending	Due Diligence Review	Feb 2021
HPS Specialty Loan International Fund V (New York)	Global Direct Lending	Due Diligence Review	Mar 2021
Orchard Taiga Special Opportunities DAC (London)	Regulatory Capital Relief	Due Diligence Review	Open Ended
Avante Mezzanine Partners SBIC II (Los Angeles)	U.S. Direct Lending	Insight Report	TBD
Brightwood Capital Fund V (New York)	U.S. Direct Lending	Due Diligence Review	TBD
Burford Strategic Value Fund II (Chicago)	Merger Appraisal Rights	ODD Review	TBD
Corporate Distressed Fund (Sydney)	Corporate Distressed	Due Diligence Review	TBD
Crescent European Specialty Lending II Fund (Los Angeles)	U.S. Direct Lending	Due Diligence Review	TBD
CRG Partners IV (Houston)	Healthcare Lending	Due Diligence Review	TBD
ELG Energy Transition Fund (Washington)	Energy Infrastructure	Insight Report	TBD
MGG SF Evergreen Fund II (New York)	U.S. Direct Lending	Due Diligence Review	TBD
Neuberger Berman Loan Advisers Holdings II (New York)	CLO	Due Diligence Review	TBD
TerraCotta Credit Fund (California)	U.S. CRE Transitional Lending	Due Diligence Review	TBD
Tor Asia Credit Opportunity (Cayman) Fund II (Hong Kong)	Special Situations	Insight Report	TBD
ITE Rail Fund (New York)	Road & Rail	Due Diligence Review	Evergreen
U.S. Direct Lending SMA (Chicago)	U.S. Direct Lending	Due Diligence Report	N/A
U.S. Direct Lending SMA (London)	U.S. Direct Lending	Due Diligence Report	N/A
Emerging Markets Lending SMA (London)	Emerging Markets Lending	Due Diligence Report	N/A

*Reports with expected completion dates within the next four months

Recently Completed Reports

Fund	Strategy	Report Type	Expected Final Close
GWM Italian Real Estate Special Situations II	Special Situations	Due Diligence Review	Dec 2019

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(London)

GWM Capital Advisors LLP is an Italian-focused asset manager. The GP originally started life in 2000 as a multi-family office and wealth manager before subsequently evolving into a more traditional asset manager focused on alternative strategies, with investment activity primarily focused towards real estate investments, both performing and distressed / special situations. Investment activity to date has largely involved partnering alongside a limited number of large institutional clients in the capacity of an Italian-market expert to provide local sourcing, diligence and asset management expertise. These partners include Elliott Management Corporation ("Elliott"), Pacific Investment Management Company ("PIMCO") and M&G Real Estate ("M&G"). GWM Fund II – Italian Real Estate Special Situations, (the "Fund") is the first true commingled fund raised by the GP to broaden its investor base, albeit with a significant anchor commitment from Elliott. Although GWM's marketing materials mention a prior fund in the investment series, this was effectively a fund of one for a large Italian investor with a broad investment mandate. Notionally there are two limbs to the Fund's investment strategy – distressed non-performing loans and stressed special situations investments. In practice there will be significant overlap between the two and target investments will comprise stressed or distressed real estate assets located across mid / northern Italy. Investments will be acquired either through single name / concentrated NPL portfolios, or through opportunistic special situations transactions. The Fund's investment strategy is relatively differentiated to that of many peer strategies which target the Italian NPL opportunity set. Acquisitions will typically comprise either individual assets or small portfolios, which allows a bottoms-up approach to due diligence and should largely limit the risks associated with statistical-led pricing / risk analysis which many larger peers are exposed to. The GP also intends to take a relatively activist role with respect to asset turnarounds. Where traditional NPL strategies are largely focused towards recovering value through often passive judicial / court processes, the Fund will focus on a consensual approach to work-outs, by providing follow-on capex / development capital to improve and rejuvenate underlying assets in return for accelerated lender enforcement rights in a downside scenario. This approach has the potential to create an element of downside protection through senior risk exposures and by avoiding the bottlenecks / extension risks associated with recovering value solely through the Italian courts. It also has the potential to capture more of the upside associated asset value recovery post-redevelopment / repositioning. Whilst the Fund's specific investment strategy is somewhat more complex than many peers, the GP has a credible track record of executing and monetizing similar investments in the recent past and benefits from a related party servicer, AREC, which is specifically focused on the types of investments which are expected to feature in the fund. Although the related party nature of the servicer does raise some concerns with respect to potential conflicts of interest, it should, however, create a high degree of control over both servicing costs as well as asset business plan progress, which are critical value-driver given the nature of the Fund's investment strategy. Overall, gross investment performance to date across relevant investments appears to be compelling.

[Cerberus Levered Loan Opportunities Fund IV](#)

(New York)

U.S. Direct Lending

Due Diligence
Review – *Focus

Mar 2020

Cerberus Capital Management operates one of the industry's oldest direct lending programs with a track record dating back to 1997. After the financial crisis, Cerberus consolidated its direct lending businesses under the Cerberus Business Finance brand. Cerberus has a reputation for being willing to underwrite riskier borrowers, sectors, and complex transactions. The Fund focuses primarily on senior loans to sponsor-backed middle market companies and is an experienced CLO issuer. In addition to the levered onshore and offshore funds, Cerberus also offers a new unlevered offshore version, Cerberus Offshore Unlevered Opportunities Fund IV. We view Cerberus as a high-quality, large-scale private lending platform with strong market coverage, underwriting experience, and proven workout capabilities. While the portfolio shows lower leverage than some senior lending peers, we note that this is somewhat offset by the riskiness of the underlying borrowers which could lead to higher portfolio volatility in a downturn.

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[Bridgepoint Credit II](#)
(London)

European Direct Lending

Due Diligence
Review

Apr 2020

Bridgepoint Advisers Ltd is a pan-European Private Equity asset manager established in 1984 as the captive PE arm of National Westminster Bank. Bridgepoint Credit was effectively launched in 2018 as a standalone credit platform within the broader Bridgepoint business. Bridgepoint Credit II is the first externally marketed commingled fund managed by the GP - its predecessor, BC I, was entirely funded with internal GP capital to demonstrate proof of concept and establish an investment track record for BC II. In addition to the above, the Fund will also have some flexibility to invest into the broadly syndicated market in times of market dislocation. Whilst an obvious element of conflict of interest is inherent in the investment strategy, the GP does appear to be attuned to the issue and has structured the Fund's investment mandate and its position within the overall Bridgepoint business in an attempt to mitigate this risk. Based on prior experience with both Hamish and Bridgepoint's private equity business, our initial view is that the BC platform has some real potential and the GP appears to be building a credible platform. Notwithstanding this, its ability to manage conflicts effectively and, importantly, to demonstrate successful external origination will be critical to its success over the near term.

[Avenue Sustainable Solutions Fund](#)
(New York)

Renewables

Due Diligence
Review

Jun 2020

Avenue Sustainable Investments is Avenue Capital Group's first impact-focused private credit fund. Avenue is a New York-based alternative asset manager with roots in distressed credit. Reportedly, the fund concept was developed in 2017 and in 2018 Avenue hired Peter Pulkkinen as the PM. The Fund's mandate is to make senior and junior credit investments in projects and companies offering sustainable solutions in a variety of sectors, including waste and recycling, water and agriculture, renewables, energy efficiency, and resilience. The Manager will target mid-teens unlevered gross returns with relatively short duration bridge loans to support a borrower's organic growth or project finance capex. Target investments include holding company debt supporting the construction of a waste to fuel facility, asset-backed senior debt for the roll-out of food safety equipment, and senior debt to a developer of wind energy projects. The loans are viewed as an alternative to equity capital. The dedicated three-person investment team has a background in project finance, renewables, and venture capital. This complementary experience should support the sourcing and underwriting of the targeted special situation-like loans. The credit market for renewables and infrastructure assets is highly competitive and we note that in order to achieve the targeted mid-teens unlevered returns, the Fund will target complex transactions and take on some equity-like risk by lending to thinly capitalized borrowers or companies with negative cash flow. We would also highlight that Avenue has yet to secure an anchor investor for the Fund after an extended fundraising period. A continued lack of investor commitments could lead to challenges such as talent retention.

[Cross Ocean European Special Situations Fund III](#)
(London)

Corporate Distressed

Insight Report

Jun 2020

Cross Ocean Partners is a special situations asset management platform. This GP was established following an MBO of the former Capula Investment Management business in 2015, with the backing of Stone Point Capital, a financial services focused PE firm. The GP manages two investment strategies, the primary one being a corporate stressed / distressed-focused Special Situations strategy which focuses on mid and upper mid-market borrowers which are experiencing some form of operational or financing stress. Whilst not control-oriented, the GP will aim to take an active role in restructuring negotiations, albeit any such influence is likely to be somewhat limited reflecting the minority position which the GP will tend to occupy in invested debt structures. Underlying funds across the Special Situations series are bifurcated on a geographical basis, but all follow a broadly similar investment strategy. The GP is currently marketing the third fund in its European Special Situations series. Recent investment activity across the ESS Series points to a preference for well-diversified portfolios with an

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emphasis on senior risk exposures. This approach should help to smooth portfolio performance and reduce any excessive volatility associated with concentrated positions and / or junior risk exposures. Notwithstanding the above, the performance to-date of ESS I and ESS II has been lacklustre and below target, although driven by different factors in each instance. The ESS I portfolio featured a relatively high degree of position concentration and a number of larger positions have experienced extended hold periods which have dragged down overall fund returns. ESS II performance is somewhat less mature than its predecessor, and as a result, the range of potential outturns remains somewhat broad. However, current performance is being negatively impacted by concentrated sector exposures, primarily maritime and energy, and the negative movements in marks of invested credits, although we do recognise that the GP is unlikely to monetise underperforming positions at current marks and currently has a certain amount of flexibility to time exits around periods of market or credit recovery. Whilst the GP's senior team and some elements of its approach to special sits investing appears highly credible, we would suggest an element of caution given the current return profile of each prior ESS Series fund, although it is likely that we would arrive at a more positive conclusion to the extent the GP is able to successfully exit the positions which are currently responsible for overall ESS I and ESS II underperformance.

[Cerberus Offshore Unlevered Loan Opportunities Fund IV](#)

(New York)

U.S. Direct Lending

Due Diligence
Review

Jul 2020

Cerberus Capital Management operates one of the industry's oldest direct lending programs with a track record dating back to 1997. After the financial crisis, Cerberus consolidated its direct lending businesses under the Cerberus Business Finance brand. Cerberus has a reputation for being willing to underwrite riskier borrowers, sectors, and complex transactions. The Fund focuses primarily on senior loans to sponsor-backed middle market companies and is an experienced CLO issuer. In addition to the levered onshore and offshore funds, Cerberus also offers a new unlevered offshore version, Cerberus Offshore Unlevered Opportunities Fund IV. We view Cerberus as a high-quality, large-scale private lending platform with strong market coverage, underwriting experience, and proven workout capabilities. While the portfolio shows lower leverage than some senior lending peers, we note that this is somewhat offset by the riskiness of the underlying borrowers which could lead to higher portfolio volatility in a downturn.

[Blue Torch Credit Opportunities Fund II](#)

(New York)

U.S. Direct Lending

Insight Report

Aug 2020

Blue Torch Capital is a direct lending firm established in 2017. The Fund is focusing on originations in a market niche that is less trafficked by direct lending peers, complemented by opportunistic investments in secondary markets, loans to sponsor-backed companies, and hung syndications. Our initial review of Fund I transactions reveals highly risky situations, including new debt capital to highly cyclical and, in some cases, stressed businesses within the energy and materials sectors, companies with significant legal and accounting issues, and technology businesses that are facing declining growth and structural challenges among others. We view Blue Torch as one of the more credible entrants in the middle market direct lending space. In addition, Blue Torch expects to offer relatively consistent co-investment opportunities.

[Silver Point Specialty Credit Fund II](#)

(Greenwich)

U.S. Direct Lending

Insight Report

Aug 2020

Silver Point is a distressed and specialty lending firm, launching its second Specialty Credit Fund. During the financial crisis, the Firm experienced material losses from credit positions in its flagship hedge fund and chose to streamline the business by, amongst other things, winding down its direct lending effort. Despite the harsh effects of the financial crisis, their historical track record in direct lending looks strong and the Firm has begun to re-enter the space through dedicated vehicles. The investment team has a history of investing in special situations, stressed and distressed markets across

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several cycles and boasts impressive in-house restructuring expertise. Against the current competitive market backdrop, the team intends to hold back 60% of Fund II capital for opportunistic investments in the case of a downturn, showing caution in what seems to be a crowded area. We believe this optionality could prove to be valuable if an economic downturn transpires and/or meaningful volatility hits the credit markets. Based on early indications from the manager, Fund II will likely have an unlevered sleeve as well as onshore and offshore options.

AION Capital Partners II
(New York)

Corporate Distressed

Insight Report

Nov 2020

AION Capital Management II Limited is launching its second dedicated India private equity/credit fund AION Capital Partners II Limited. Founded in 2011, AION is a strategic partnership between Apollo Global Management and ICICI Bank's affiliate ICICI Venture Funds Management. The AION strategy is an extension of Apollo's strategy focusing on value-oriented special situations investing through opportunistic buyouts, direct lending with equity upside and distressed investments. ICICI is one of the largest non-government owned banks in India that has a strong footprint in India private investing since 2002 through the I-Ven platform. For AION II, the GP expects the gross-to-net spread will narrow given strong pipeline with increased allocation to Distressed and efficient capital management utilizing credit facilities. AION is the pioneer of a global-India strategic partnership and is more than a few years ahead of other global managers that have followed the same path in recent years. The strategy is a mix of equity and credit and falls under Apollo's PE business segment, but avoids expensive growth-equity. The credit investments are either hybrid capital or distressed, which are both structurally not that different from other private credit funds but AION's track record proves the execution capability. With the rise in corporate leverage/NPLs and the mini Non-Banking Finance Company crisis of 2018, India's stressed & distressed opportunities appear to be fertile. AION's investment team appears competent and has experienced no material turnover. The key team members have been working together at ICICI since 2008 and other senior investment professionals have mostly joined from Apollo. One of the key advantages of the team is that it can leverage Apollo's global industry research and risk management infrastructure as well as ICICI's local relationships and other licensed onshore entities. Reference checks, however, commented that while the team is well regarded in PE type deals, questioned their capabilities to execute distressed transactions, particularly secondary transactions.

SASOF V
(Miami)

Aviation

Due Diligence
Review

Dec 2020

Carlyle Aviation, formerly Apollo Aviation Group, is a leading aviation investment organization specializing in the ownership and management of mid-life commercial aircraft across a geographically diverse footprint. The Firm was one of the first groups to invest third party capital in the asset class and used its first mover advantage to build one of the most prominent mid-life aviation leasing platforms. The Fund has demonstrable scale, expertise and execution capabilities in the aviation segment of the transportation market. The team has extensive experience with mid-life and part-out strategies, employing numerous experts in the technical aspects of active fleet due diligence and management, and has established a large set of relationships with industry players including airlines, other lessors and third-party vendors. The Fund also stands out as a leader in the ABS market, with a track record of reducing financing costs and executing exits. That said, portfolio composition is a concern given SASOF V will primarily be exposed to emerging market and unrated/speculative grade lessees. Coupled with increased competition in the aviation segment due to an influx of capital and new entrants as well as falling lease rate factors in the market in general, we view the probability of asset impairment and write-downs in the case of a macroeconomic downturn as elevated. Despite the present challenging market conditions, the team exhibits an attractive mix of operating capabilities and industry experience that stands out relative to newer entrants that lack the size, expertise, relationships or access to financing to compete in the segment.

European Direct Lending SMA
(London)

European Direct Lending

Due Diligence
Review

N/A

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The GP is a European-focused credit and alternatives manager, headquartered in London, UK. Founded in 2009, the GP's private credit platform focuses on two core investment strategies, the lower risk / return Direct Lending Fund series and the higher risk / return Special Opportunities Fund series. Both series pursue broad-based strategies with investment activity encompassing large-cap and mid-market corporates, healthcare, maritime and offshore as well as real estate sectors. An additional 'Relative Value Deployment' component is built into the Separate Account which represents a flexible sidecar structure and is expected to be used over the mid to longer-term for both liquid and illiquid credit investments. The precise framework for Relative Value Deployment component is currently under discussion but is expected to feature a collaborative approach between the LP and GP to agree appropriate investments. Aksia's prior experience with the GP suggests that investments typically benefit from a high degree of rigour with respect to risk tolerance and underwriting. Investments typically reflect a preference for senior attachment points and loan structures are typically well-negotiated and structured. The GP's in-house legal team both participates on investment teams to provide an additional layer of rigour with respect to loan structuring / documentation, as well as playing lead roles in work-out processes for under-performing investments. Their investment team is one of the largest in the European market and is structured across a diverse range of different verticals / industry sectors. This platform breadth is evident in the historical performance across the SOF Series which, although not quite as high as some peers from absolute IRR perspective, does tend to reflect both robust investment performance and well constructed portfolios with relatively low loss rates. Arguably, this creates a better quality return profile compared to many peers with somewhat more narrow investment platforms. Whilst some elements of the Separate Account remained under discussion at the time of writing, overall the Separate Account appears to provide access to a high quality investment platform combined with an element of in-built flexibility to capitalise on periods of market dislocation as well as non-traditional investments which don't typically feature in private credit portfolios.

European Direct Lending SMA (London)	European Direct Lending	ODD	N/A
Operational due diligence only.			

**Higher conviction, in-market funds with full due diligence completed*

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Indi-and-her-loans: The Last Crusade or Temple of Doom?

Author: Maiko Nanao

Date: November 2019

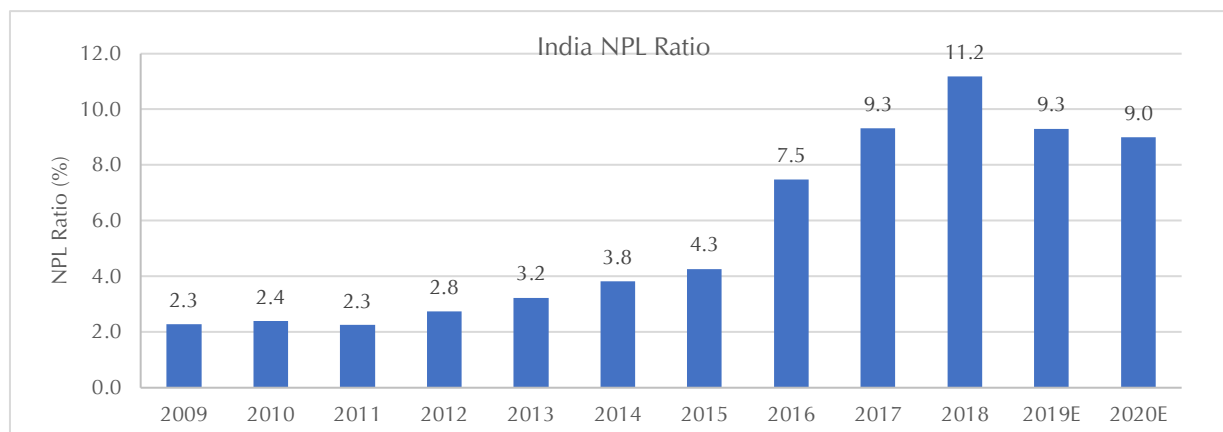
For the last 4-5 years, Indian distressed & special situations opportunities have been an increasing focus among dedicated and global distressed debt managers largely driven by the Modi government led reforms on bankruptcy related laws, deregulation and financial liberalizations on tax and foreign direct investments.

Key timelines surrounding distressed debt investing in India:

- o□ 2014 – Narendra Modi elected as PM of India
- o□ 2016 – Insolvency & Bankruptcy Code (“IBC”) enacted
- o□ 2017 – Reserve Bank of India (“RBI”) initiates Prompt Corrective Action (“PCA”) to restrict banks from lending unless they are healthy. Banking Regulation Act amended giving RBI powers to direct banks to resolve non-performing assets (“NPAs”).
- o□ 2018 – Infrastructure Leasing and Financial Services (“IL&FS”) Group defaults with total debt of \$13bn; widespread non-banking financial company (“NBFC”) liquidity crisis triggered
- o□ May 2019 – Modi and his Bharatiya Janata Party wins landslide victory in the general elections
- o□ August 2019 – IBC amended the overall time limit of Corporate Insolvency Resolution Processes (“CIRP”) from 270 days to 330 days

We estimate the country’s total NPA to be approximately \$150 billion or ~9-10% of total bank loans (chart), and over \$200bn after including restructured and unrecognized stressed loans. The recent estimates by the RBI shows NPA ratios have declined, driven by aggregate credit growth particularly from recapitalized public sector banks and improved capital adequacy ratios, but the recent slowdown in growth threatens to impede this improvement. India reported real GDP growth of 5.0% in Q2 2019, down from 5.8% the previous quarter and from 8.0% the previous year.

Source: Reserve Bank of India



The Insolvency and Bankruptcy Code, implemented by the Modi government to address the NPA crisis in India was touted as a creditor-friendly, time-bound process that enforced a timeline of “resolution within 270 days or liquidation”. In reality, the new code is still proving its efficacy; resolution timelines have been extended due to legal proceedings initiated against stakeholders including borrowers, creditor committees, operational creditors and resolution professionals. Due to these delays, the government passed an amendment to extend the time limit of the process from 270 days to 330 days.

In 2017, twelve of the largest non-performing loans representing ~25% of system wide NPLs were subjected to the new IBC. More than 2 years later, only 7 of these “Dirty Dozen” cases have been resolved, despite the supposed 270-day rule. More broadly, 2,542 cases have been admitted since IBC came into effect, according to data published by the Insolvency & Bankruptcy Board of India (“IBBI”). The majority are still in progress including 535 cases that have been outstanding for more than 270 days (table).

CIRP (Corporate Insolvency Resolution Process) Status		
(Jan 2017- Sep 2019)		% of Admitted
Admitted	2,542	
Closed on Appeal/Review/Settled	186	8.6%
Closed by Withdrawal	116	5.4%
Closed by Resolution	156	7.2%
Closed by Liquidation	587	27.2%
Ongoing CIRP	1,497	69.2%
Breakdown of ongoing CIRP		
>270 days	535	
>180-270 days	324	
>90-180 days	276	

≤90 days	362
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Source: IBBI September 2019 Quarterly Letter

Another way to look at the data is to exclude the 962 cases that are still within the original 270-day time limit. Of the remaining 1,580 cases, 29% have been closed by some method other than liquidation, 37% have entered liquidation, and 34% are still outstanding with delay - a relatively successful outcome for such an ambitious new initiative. Some skeptics point to low recovery rates on the forced liquidations as a flaw in the system, but they also create a strong incentive for parties to work together towards an amicable resolution.

Implementing a fair and equitable bankruptcy process is particularly ambitious in India, where “promoter-centric” business customs and a reputation for corruption threaten to stifle the implementation of more a transparent process. Indeed, these challenges seem to be limiting the outcomes under the IBC, with foreign investors struggling to achieve control. Observing the resolution plans approved for large IBC cases, all of the Resolution Applicants (i.e. the sponsors) have been strategic (i.e. local) investors with only a couple financial sponsors included as a joint applicant. From this, we believe pure foreign/financial investor led restructurings are going to be rare in the near future and non-Indian investors are more likely to find success by gaining financial control through:

1. ☐ Sponsorship Financing: Providing acquisition financing to Resolution Applicants seeking to take out the borrowers from IBC procedures. Structures may include direct equity or equity-linked investment in the borrowers to gain additional equity upside and downside protection mechanism obtained by partial/full recourse from the Resolution Applicant (e.g. put option on sponsor).
2. ☐ Pre-Packaged Restructuring: As above, legal proceedings take longer time. GPs who can source deals from promoters outside of the court by offering attractive pre-packaged restructuring strategies may execute a more time-efficient and flexible restructuring, but the key is consolidation of the existing debt at discount. For this, India currently allows two methods for foreign investors, which are to invest in stressed assets through the ARCs or directly invest in non-convertible debentures issued by borrowers to repay existing debt. ARCs, which are regulated asset management companies with principal objective to act as distressed debt consolidation vehicles, is becoming a more practical method for foreigners since the cap on foreign ownership has been raised by the current government. From traditional NPL secondaries investing, we are starting to see ARC structures used more for turnaround situations including potential upside participation rights.

Case Study: Essar Steel

- ☐ August 2017 – Admitted into the new IBC proceedings
- ☐ October 2018 – Committee of Creditors (“CoC”) approves Arcelor Mittal’s plan
- ☐ March 2019 – The lowest court, the National Company Law Tribunal (“NCLT”) approves the plan but makes non-binding suggestions about the value the CoC should pay to unsecured creditors

- o□ July 2019 – The second court, the National Company Law Appellate Tribunal (“NCLAT”) approves the plan but makes material modifications, most troubling that unsecured creditors should rank equally with secured creditors, “there should be no creditor hierarchy among different kind of creditors”
- o□ November 2019 – The Supreme Court rules in favor of secured creditors and overturns NCLAT’s modifications

Essar Steel, one of the Dirty Dozen, had approximately \$7bn of debt when it was taken into administration. Post IBC the loans traded to around 50 cents on the dollar, then gradually moved to the 60s while negotiations were progressing. Loans traded to the low-mid 80s when a resolution was announced by the CoC, dictating that senior creditors would receive a 92 cent recovery. The CoC result was challenged and overruled by the first and second courts (NCLT, NCLAT), who claimed that that unsecured creditors should rank *pari passu* to secured creditors and that the CoC is not empowered to decide how the distribution was to be made between secured and unsecured creditors. Under the rulings of the NCLT and NCLAT, senior creditors would only receive about 60 cents and trading in the loans basically vanished. In November 2019, the Supreme court ruled in favor of the CoC and upheld the distinction between various classes of creditors and announced the approval of the original takeover plan by Arcelor Mittal. These rulings provide an important precedent that secured creditors and junior/operational creditors do not require equal treatment and that the appellate court cannot interfere major CoC decisions.

Key Takeaways

With ~\$200bn of NPLs and a government that appears dedicated to cleaning up its financial institutions, India has an enormous potential as a haven for distressed investing. At the same time, the nascent bankruptcy code has yet to see meaningfully successful case precedents. There are numerous commercial disputes surrounding NCLT or NCLAT’s interpretation of law and amendments, which may be detrimental to creditors or extend investment timelines. But some of these uncertainties are being ironed out by the courts. Essar Steel’s case took over 2 years but set a key precedent that should help to expedite similar cases in the future; in any case, this seemingly straightforward issue highlights the type of risk inherent when investing in Indian distressed debt despite the new code which was a big step in the right direction. Furthermore, historic constructs and customs create additional speedbumps for foreign investors. This uncertainty shouldn’t prevent investors from allocating to the region, but should influence their choice of partner, strategy, diversification and volatility expectation.



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Technology and quantitative investing



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There is little debate that technological advancements have and will continue to transform our world – from smart phones to self-driving cars, new developments challenge the existing status quo and, in turn, propel a shift towards novel, more efficient approaches. Financial markets are no exception.

As investors, we have seen this first-hand – information has become more broadly accessible to professional and non-professional investors alike, the decimalization of trading has made transacting faster and pricing more efficient, and continued electrification of markets has enabled the emergence of cheaper, systematic implementations of once actively managed strategies.

Change however, is two sided – where technology has eroded the investment edge of some legacy investment styles, it has also created a new and expanding opportunity set through increased processing power and storage, exponential rise in data creation, including alternative datasets beyond traditional financial metrics, and improved methods for analysis such as machine learning.

In the same way that the Blackberry moved towards obsolescence while the iPhone flourished, we believe that investment managers that can capitalize on technological enhancements and harness the new-found breadth of information, can be poised for success.

Quantitative investment strategies (“quant”) have and continue to be a leader in marrying traditional active management with the rise of technology.

In this article, we focus on a seemingly narrow segment of the alternative investment industry to dissect what is “quant” (and what it is not), some of the factors that may make these managers and strategies compelling for an investor’s

portfolio, and what are some of the approaches (and challenges) to implementation.

What is quant?

Quant is certainly not a new strategy but has been gaining popularity in recent years – in some ways, the frequency with which we hear “quant” in manager pitches could qualify it as the newest fad in investing.

There’s even a growing list of related buzzwords – machine learning, big data, neural networks, quantamental. It is to this end that we believe it important to first start with level-setting the definition of what quant is... and what it is not.

We tend to be skeptical of the proliferation of “quant” as part of managers’ pitches.

When discussing the edge or investment opportunity of these strategies, we should be clear that we are not referring to the managers with fancy marketing books and simulated track records, or the businesses where the quant capabilities feel more like an afterthought than a core area of expertise, or the increasingly popular liquid alternatives and hedge fund replication strategies (yes, they employ quantitative trading techniques but they are also usually cheap because they are simplistic).

We instead focus on the well-resourced quant (as well as multi-strategy) firms that have invested substantially into their businesses, including:

- Having a large research staff heavy with PhDs
- Collecting and cleaning time-stamped data daily from disparate sources

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- Using natural language processing and other means to capture unstructured data
- Having substantial computing power
- Trading just about any electronic market with adequate liquidity
- Optimizing diverse portfolios of different model approaches, generally targeting zero beta to broader risk assets

To this end, we are currently seeing an arms race for top talent as investment firms recognize the importance of technology in their future success.

Diverse set of strategies

At a high level, quantitative alternative strategies, in contrast to discretionary strategies, employ rules-based, systematic trading models rather than human discretion in generating investment decisions. That said, even within this definition, there is a diverse set of differentiated and complementary strategies.

Broad categorizations

- Micro-based strategies: typically consist of single

stock equities in liquid regions (e.g., statistical arbitrage, fundamental market neutral)

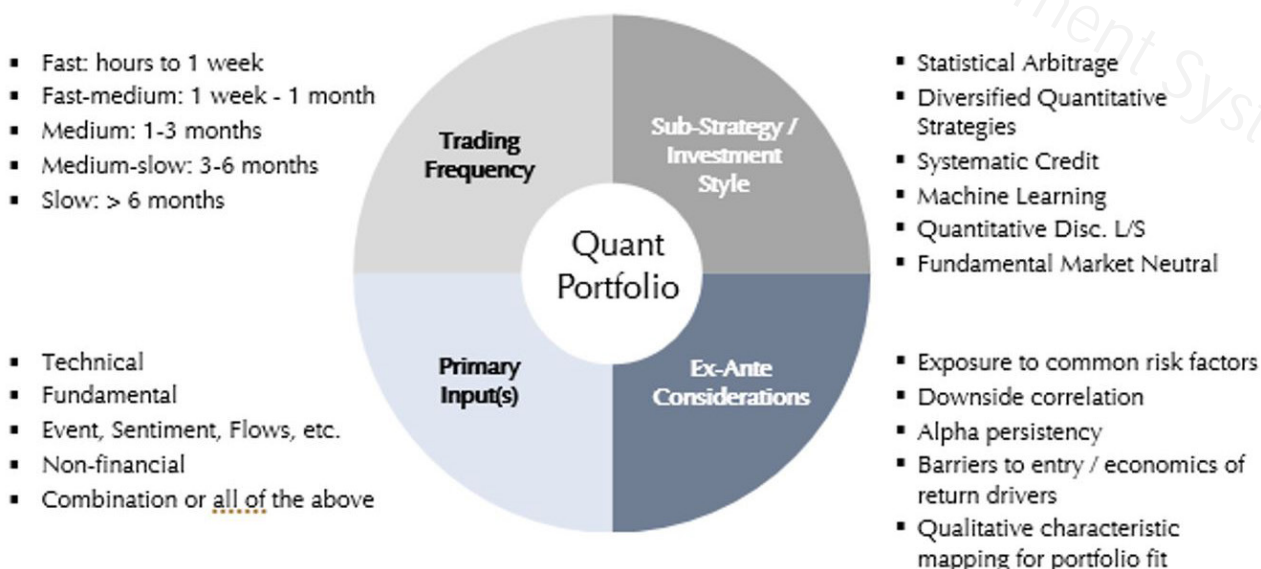
- Macro-based strategies: traffic more in global futures markets (e.g., CTAs, managed futures, systematic macro)
- Machine learning and AI / big data techniques: dynamic and data driven, often targeting nonlinear residual relationships. Compared to micro- and macro-based, these are typically not hypothesis-based

Within these buckets, individual funds are further diversified in terms of style, inputs, and trading frequencies.

For instance, most traditional statistical arbitrage strategies operate at fast trading frequencies, often hours to weeks, while fundamental market neutral strategies are typically slower moving with signal lookbacks of over 6 months. The item below provides a framework for contextualizing quantitative funds along four primary vectors.

It is important to recognize that quant is not monolithic; rather, it offers a broad set of investment profiles which allow investors to potentially allocate to a variety of complementary quant managers.

Components of Quantitative Funds:



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Why quant?

90% of available data was produced in the last 2 years.

Every day the world creates 2,500 quintillion bytes of new data and that pace is only expected to accelerate.¹

And yet most asset managers' investment decisions are still informed by only the tiny subset of financial data (dotted red box in the chart below).

The more scientific quant managers have instead positioned themselves to benefit from this expanding opportunity set by:

- Integrating alternative data beyond traditional financial sources
- Attracting and retaining top talent (PhDs, data scientists)
- Building the infrastructure to absorb, analyze, manipulate, and monetize this information
- Creating systematic approaches to investing with algorithms able to adapt to changing information

Additionally, based on our experience quant strategies have shown to be generally additive to portfolio construction, providing a differentiated risk/return profile. Qualitatively, quant managers apply a differentiated investment approach as compared to other strategies. Quantitatively, the historical realized performance, as evidenced by our quant strategies MFC³ (following page) shows diversification to a typical portfolio's greatest risk – equity.

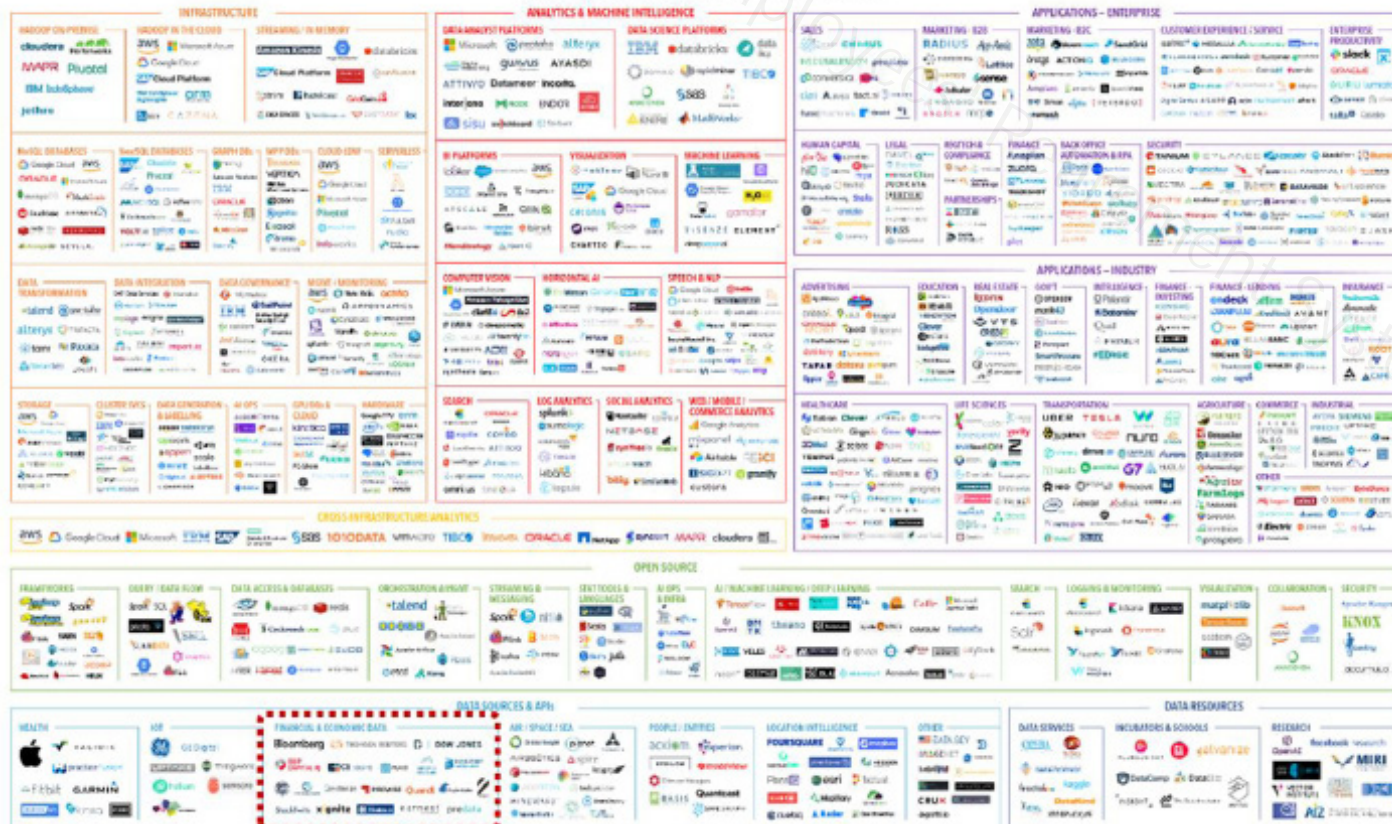
The potential for alpha generation and diversification provided by quant strategies can be attractive to investors, but we also find the potential for the creation of a sustainable investment edge appealing. Given the development of unique intellectual property as well as the personnel and infrastructure investment required, there are real barriers to entry, creating moats around these businesses which can limit competition.

¹ www.forbes.com article “How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read, May 2018

² https://mattturck.com/data2019/; “A Turbulent Year: The 2019

Data & AI Landscape”, June 2019

Big Data & AI Landscape 2019²



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Incorporating quant into portfolios - challenges and approaches

Although quant may have gained popularity as a topic of conference roundtable discussions, investors still face obstacles when it comes to implementation within their portfolios.

- “Black Box” – quant funds are often criticized for being a “black box”, both because they may be hesitant to share too much information and because it may be difficult to fully understand their complex combination of strategies
- Capacity Limitations: many established, top quant funds are currently closed to new capital

While these challenges are real, we have found that investors have been able to gain traction through:

- Education – whether internally or with the goal of seeking investment committee approval, we find that focusing on educating stakeholders early in the diligence process on elements of quant strategies, including the competitive landscape, algorithmic trading, and differentiation between peers, etc., can both ease the implementation process and may also expedite investment decisions when coveted capacity becomes available.

- Building Relationships Early – establishing a long-term dialogue and partnership with top managers early on can be an effective way to both:

- Improve transparency: while the proprietary nature of a quant’s algorithms, signals, and investment decisions will probably continue to (and maybe should) restrict investors’ ability to have full visibility into a quant’s inner-workings, in our experience, managers actually can offer reasonable transparency into details about their research philosophy, trading and execution edge, and risk management approach.

³ Beta profile for quant strategies uses Aksia’s Monitored Fund Composite (MFC) for quantitative strategies, which is an equal-weighted average monthly performances of all Aksia monitored funds in a given month. Aksia monitored funds are generally those in which Aksia’s advisory clients are invested and for which Aksia provides monthly monitoring. If a fund is being monitored by Aksia, its returns are included in the quant composite beginning on the month it is first monitored (i.e. the composite does not include backfill returns). Returns are net of all management and incentive fees and expenses charged by the constituent funds and reflect the reinvestment of all interest, dividends and other earnings. Composites are provided for informational purposes only. Past performance is not indicative of future results and should not be taken as an indication or guarantee of any future performance or prediction.

Quant Strategies 36m Rolling Beta to MSCI ACWI TR Net³



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- Capture toe-hold positions: investors can benefit from exercising patience and seizing small scarce capacity opportunities, with the goal of building full-sized positions over time

- Broadening Sourcing Beyond Established Names – we believe there exists a universe of smaller, promising emerging quant managers. Investors can build their quant exposure through a basket approach of niche, growing funds and potentially benefit from:

Diversification: Emerging funds may offer concentrated, niche, and/or complementary exposure to the larger, more internally diversified quant funds, offering investors the ability to access differentiated return streams

Avoiding Sitting on the Sidelines: Building a portfolio of emerging managers does not preclude investors from also accepting capacity opportunities at more established funds, but it can help to access quants' alpha creation more quickly while capacity elsewhere becomes available

Securing Future Capacity Rights: If we look at today's top quant managers' early years, most were not widely accepting capital for long before they soft closed. Investors that are looking for five years of a proven operational track record may find themselves playing catch up whereas investing early can offer the ability to secure future capacity rights and size up positions as manager conviction increases.

Conclusion

While technology is creating efficiencies, it is also creating opportunities. We believe that investors would be prudent to take an opportunistic approach to understanding and evaluating strategies that capture these technological advancements. We believe many quant strategies to be at the forefront of harnessing these sources of alpha and capitalizing on the exponential rise of data creation. Though not without its challenges, we expect quant strategies to continue having a more prominent role in LPs' portfolios due to quant's historic diversification benefits and forward-looking opportunity set. 🍁

Second Hand, First Class

Author: Tim Nest

Date: October 2019

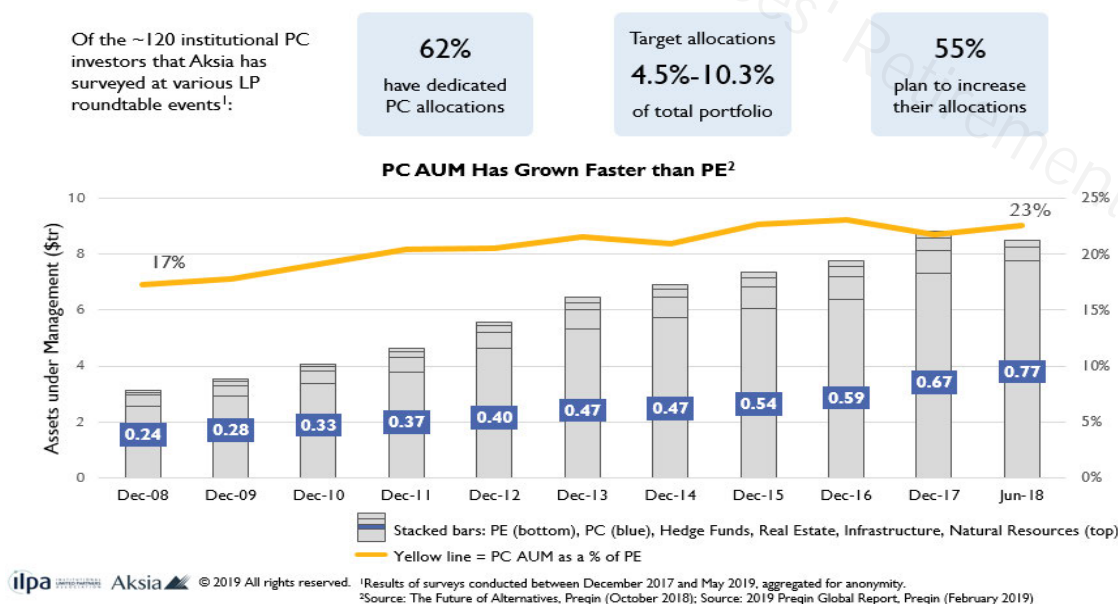
Summary Thesis

- Private credit is already a large and growing asset class with a burgeoning secondaries market
- The pressure to deploy assets will lead some PC funds to underperform expectations in the next few years
- We expect PC secondary opportunities to balloon as fund extensions mount and transient LPs become motivated sellers
- Investors with access to information, relationships, and creative capital should be positioned to take advantage of this opportunity set

Private credit is already a large and growing asset class with a burgeoning secondaries market

It is no secret that the private credit (PC) market has experienced exponential growth over the past decade. An area that was once an opportunistic investment driven by stresses and new regulations created in the wake of the GFC has become a standard, and in many cases very meaningful, component of most institutional portfolios. While direct lending and corporate distressed strategies encompass a material proportion of these assets, private credit now includes a diverse collection of income-oriented strategies spanning various asset classes, geographies and risk profiles. Furthermore, we have seen significant dispersion of collateral quality, underwriting rigor and LP governance controls that should result in varied results in the years ahead.

As illustrated in the chart below, Preqin estimates the size of the PC market to exceed \$800 billion of global assets under management. However, market estimates vary widely and often do not account for fund-level leverage, as well as separate account mandates. For example, Ares estimates the size of the U.S. direct lending market to be over \$900 billion¹ alone while Carlyle Group's founder David Rubenstein was quoted predicting that PC AUM could exceed private equity in the coming decade².



¹ "Opportunities in Global Direct Lending," Ares Management, April 2018.

² "David Rubenstein's five predictions for the future of private equity," Financial News, November 17, 2017.



Secondaries are estimated to be a smaller part of the PC market than they are in PE. PE secondary selling activity has averaged around 2%-3% of outstanding AUM per annum, with another year of record activity expected in 2019, totaling over \$100 billion in sales. By contrast, discussions with placement agents suggest that the annual volume of PC secondaries is a few billion dollars per annum but is anticipated to grow as LPs look to utilize the secondary market for liquidity management, portfolio rebalancing and line item consolidation of older vintage positions. Anecdotally, we understand that some secondary (sell-side) brokers are already building their credit capabilities in anticipation of increased activity.

Discussions with market constituents suggest that the lack of credit-focused secondary market investors has been a constraint to a more robust PC secondary market materializing. Most traditional PE secondaries buyers maintain little granular information on private credit portfolios required to gain comfort with potential stressed credits and exit timeframes, especially for disparate deal types (etc. private mid-market loans, NPLs, special finance assets, energy credit, aircraft portfolios, among others). Transparency issues can be particularly tricky for groups without a large primary PC investment platform given the diversity and granular nature of many PC portfolios and GPs' reluctance to share portfolio information with non-investors. Furthermore, the target returns (MOIC/IRR) of traditional PE secondaries funds are often too high a hurdle for an allocation to credit secondaries thereby limiting demand.

Despite a healthy credit market, indicative pricing for PC secondaries is estimated to average around 90% of NAV³, with underwritten IRRs ranging from 10%-20% depending upon the strategy (performing credit to special situations and distressed). Purchase discounts are likely driven by the lack of dedicated credit-focused secondaries funds and are not necessarily an indication of problems in a portfolio. Discounts are often determined more by the type of strategy rather than a fundamental evaluation of the quality and current valuations of the underlying credits; senior lending strategies with brand name GPs trade at smaller discounts than special situations strategies with lesser known GPs.

The secondary market could offer an attractive entry point for sophisticated PC investors to access seasoned PC portfolios across a variety of strategies. Secondary purchases offer greater visibility into the portfolio composition, shorter duration investments, the potential for vintage diversification and access to attractive yielding and seasoned credits relative to primary fund commitments. Further, secondary purchases could offer offshore investors a means to invest in primary (direct origination) lending strategies with fewer adverse effects from typical season and sell tax mitigation approaches.

The pressure to deploy assets will lead some PC funds to underperform expectations in the next few years

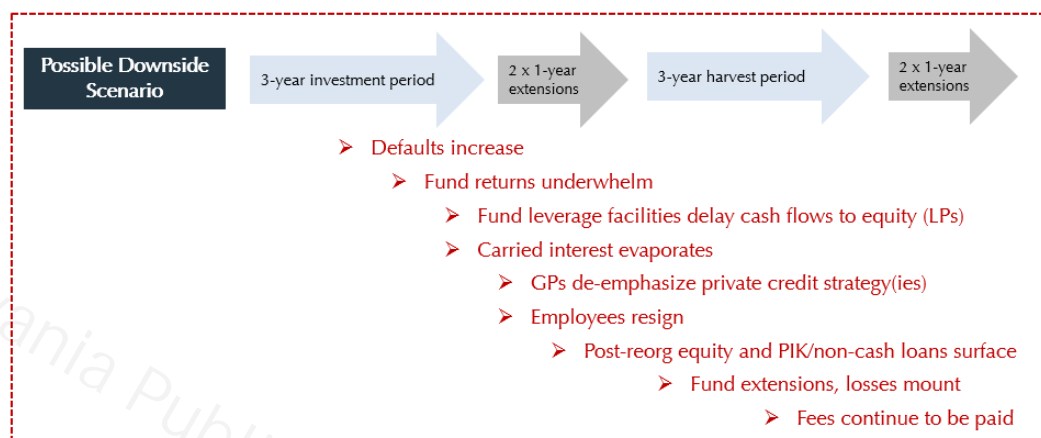
As we have pointed out in previous communications, there are numerous signs that increasingly frothy activity in some private credits niches (especially the easier to access strategies) and very aggressive behavior by some platforms will likely lead to a dispersion of returns and manager attrition from the space, especially around inferior teams and platforms. Such issues could be particularly relevant for platforms (perhaps many) with inadequate resources to handle an increase in restructurings or those lacking the conviction to support their PC business if returns are underwhelming.

PC GPs have generally marketed relatively short duration vehicles, a purported advantage of PC versus PE strategies. Thus far, distributions from PC funds have been steady in the form of current income and refinancings fueled by the seemingly endless sources of available debt capital. While credit funds offer some natural liquidity due to the contractual maturities of loans, realizations may be delayed for a multitude of reasons, whether it be investment driven (e.g. PIK-ing or equity restructurings) or even improper behavior by the GP. Even today, we occasionally see investment or harvest period extensions utilized as investment pacing or disposals do not always proceed as planned.

³ Source: Setter Capital

So, what could the world look like if the economy (finally) starts to sputter, defaults increase and new capital for private credit strategies dries up...?

The following illustration highlights how an underperforming fund investment could experience a downward spiral. The rapid pace of fundraising and larger fund sizes in recent years offer the potential to exacerbate this dynamic.



As defaults and restructurings within private credit inevitably increase and GP performance begins to diverge, we expect fund harvest periods to more routinely extend beyond the contractual term, layoffs or voluntary departures to occur and some GPs to exit the business altogether. Downside scenarios may be further complicated for credit funds that utilize leverage, which would cause LP equity distributions to be deferred in favor of the bank facilities.

It is worth noting, that many fund documentation terms have been compromised in recent years. In some cases, the GP retains significant controls over fund extensions, valuation (and thus fees), key person events and other LP governance rights and controls. As a result, GPs may maintain latitude to impact the timing of fund disposals, leading to extended investment time horizons and the proliferation of PC fund holdings in LP portfolios. The notion of “zombies”, a well-established phenomenon in the PE markets, could be an issue that spreads to the PC market in the next downturn. We work with our clients to seek to avoid these situations through our due diligence!

We expect PC secondary opportunities to balloon as fund extensions mount and transient LPs become motivated sellers

Given the absolute growth of the private credit markets, it is certainly conceivable that the market for credit secondaries will grow meaningfully even if no market stresses emerge. The secondary market has been a well-established tool for LPs to dispose of non-core or tail-end fund stakes and portfolios for many years now.

But, if the market does turn, we expect many LPs to turn to secondary sales, especially for older vintage funds that are at or beyond their expected investment terms. Despite the potential glut of supply, we have seen few private credit-focused secondaries investors emerge, which leads us to believe that the supply would not be met with commensurate demand, leading to a unique buying opportunity.



Meanwhile, numerous managers have been touting the emerging opportunity to purchase distressed middle market credits⁴ in a downturn, positing that they could buy loans directly from private credit funds that are “forced sellers.” The catalysts to this “non-economic” selling are not clear to us – we do not see the circumstances that will compel private credit managers to sell credits on a secondary basis at a meaningful discount to fair value, especially if a sale will reduce their overall management fee and crystallize a loss. We suspect that most private credit managers would rather hold onto a position in the hopes of realizing potential upside from a restructuring and turnaround of a business. Further, senior lenders may be weary of selling their positions given the reputational harm with middle market sponsors and borrowers, especially if the transaction introduces distressed investor(s) into the company’s capital structure.

By comparison, it is not difficult to envision a variety of circumstances under which LPs may wish to dispose of non-core or underperforming private credit LP interests, creating a robust opportunity set for specialized secondary investors. Acquiring private credits through fund structures at a sizeable discount to NAV in a “stressed” / motivated seller scenario could offer attractive returns profiles, especially if GPs properly mark-down watchlist positions providing significant “pull to par” upside. Transparency issues encountered by generalist investors could help to create a barrier to entry and drive purchase discounts.

We expect that the types of opportunities should vary and may include:

- Opportunistic purchases of single name LP interests across a range of PC strategy types;
- Cherry picking PC positions from a broader private markets portfolio sale;
- GP-led liquidity solutions for end-of-life funds;
- Tail-end “clean-up” trades including direct secondaries;
- Direct secondaries in partnership with partner GP (e.g. CLO mezzanine tranches);
- Preferred equity structures with a contractual return; and
- Credit-oriented side pocket investments, among other transaction types.

The opportunity set could expand beyond commingled funds to include bespoke separate accounts or funds-of-one containing private credit assets. We are already seeing some of these transactions from secondaries market intermediaries and in our day-to-day interactions with LPs and GPs.

Investors with access to information, relationships, and creative capital should be positioned to take advantage of this opportunity set

We believe that private credit secondaries will be best executed by teams with an integrated PC platform including primary fund investing along with secondaries and direct credit transactional experience. Maintaining the ability to access sufficient information to properly evaluate diverse credit portfolios at the deal level and project the expected cash flow profile of a fund, especially if a fund-level debt facility remains outstanding, is paramount. Older vintage PC funds are likely to include some stressed and other “outlier” transactions, thus insight into the health, potential paths to liquidity and current valuations of these situations will likely drive outperformance or failure within this strategy.

⁴ “Middle market” assumes directly originated loans to borrowers with EBITDA <\$75mm. We do however anticipate that stress and distressed opportunities will be significant within the liquid credit markets (syndicated loans and high yield) upon a downturn.

Current Credit Portfolio
Direct Lending Fund 2013

	<u>Par</u> <u>(\$mm)</u>	<u>% of Total</u>	<u>Fair Value</u> <u>(%)</u>	<u>Fair Value</u> <u>(\$mm)</u>	<u>Purchase \$</u> <u>(\$mm)</u>
Stressed	\$20	9%	65%	\$13	52%
Watchlist	\$45	20%	87%	\$39	70%
Performing	\$160	71%	97%	\$155	78%
Totals	\$225	100%	92%	\$207	\$166

*Key to effectively evaluate any at-risk credits. Not all troubled positions will be apparent from standard GP furnished materials.

% of fair value	80%
% of par	74%
pull to par upside	\$59

LP-sellers and GPs prefer to work with known, reputable counterparties to maintain discretion. LPs may not share deal flow with newcomers and GPs may not facilitate secondary diligence efforts or approve transfers if they do not have a longstanding and continued relationship with the buyer (or the possibility of building a new relationship). Secondary PC investors with preexisting knowledge of GP portfolios and potential governance issues should be at a competitive advantage, especially when evaluating and pricing relatively quick sale processes. Similarly, buyers with extensive relationships with global private credit institutional investors can derive a sourcing advantage and potentially uncover off-market deal flow. Finally, we believe the opportunity will be wide ranging and evolve over time, thus flexible capital to capitalize on a range of transaction types in an efficient manner should further differentiate prospective buyers.



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RESPONSIBILITY FOR INVESTMENT DECISIONS: The Intended Recipient is responsible for performing his, her or its own reviews of any funds or other investment vehicles or opportunities described herein including, but not limited to, a thorough review and understanding of each vehicle's or opportunity's offering materials. The Intended Recipient is advised to consult his, her or its tax, legal and compliance professionals to assist in such reviews. For clients who receive only research services or non-discretionary advisory services from Aksia: the Intended Recipient acknowledges that he, she or it (and not Aksia) is responsible for his, her or its investment decisions with respect to any investment vehicles or opportunities described herein.

No assurances can be given that a particular investment or portfolio will meet its investment objectives. Any projections, forecasts or market outlooks provided herein should not be relied upon as events which will occur. Past performance is not indicative of future results. Use of advanced portfolio construction processes, risk management techniques and proprietary technology does not assure any level of performance or guarantee against loss of capital.

PERFORMANCE DATA: In cases where an investment manager or general partner implements an investment strategy through multiple investment vehicles (for tax purposes, participation in side pockets and new issues, domicile, currency denomination, etc.,) Aksia may use the returns of one class or series of an investment vehicle in a particular program in its reports to represent the returns of all the investment vehicles in such investment program. The returns for the particular class or series used in Aksia's reports may be different from the returns of the class or series in which the Intended Recipient is invested. To obtain the actual performance



of the particular class or series in the Intended Recipient's portfolio, the Intended Recipient should contact the investment manager or general partner directly.

RELIANCE ON THIRD PARTY DATA: These materials reflect and rely upon information provided by fund managers and other third parties which Aksia reasonably believes to be accurate and reliable. Such information may be used by Aksia without independent verification of accuracy or completeness, and Aksia makes no representations as to its accuracy and completeness. For the avoidance of doubt, these materials have not been produced, reviewed, verified or approved by the fund managers and other third parties to which the materials relate. As such, they do not necessarily reflect the views or opinions of such fund managers and third parties. Furthermore, any reference to EBITDA (or ratios using EBITDA as a component) included in the report, reflect Adjusted EBITDA provided by the fund manager as defined in the loan agreements. Adjusted EBITDA may be higher than EBITDA figures calculated based on GAAP or IFRS compliant financial statements, which may result in relatively lower debt/EBITDA and higher interest coverage ratios.

RATING DOWNGRADES: Aksia client assets, in aggregate, may represent a large percentage of a manager's or fund's assets under management, and, as such, a rating downgrade by Aksia's research teams could result in redemptions or withdrawals that may have an adverse effect on the performance of a fund.

CONFLICTS OF INTEREST DISCLOSURE: Family members of Aksia personnel may from time to time be employed by managers that Aksia recommends to its clients. While this may pose a potential conflict of interest, we monitor such relationships to seek to minimize any impact of such potential conflict.

PRIVATE INVESTMENT FUND DISCLOSURE: Investments in private investment funds and other similar investment opportunities involve a high degree of risk and you could lose all or substantially all of your investment. Any person or institution making such investments must fully understand and be willing to assume the risks involved. Some private investment funds and opportunities described herein may not be suitable for all investors. Such investments or investment vehicles may use leverage, hold significant illiquid positions, provide no opportunity to redeem, modify investment strategy and documentation without notice, incur high fees and contain conflicts of interests. Such private investment funds or opportunities may also have limited operating history, lack transparency, manage concentrated portfolios, exhibit high volatility, depend on a concentrated group or individual for investment management or portfolio management and lack any regulatory oversight.

For a description of the risks associated with a specific private investment fund or investment opportunity, investors and prospective investors are strongly encouraged to review each private investment fund or opportunity's offering materials which contain a more specific description of the risks associated with each investment. Offering materials may be obtained from the fund manager.

FOR RECIPIENTS OF REPORTS DISTRIBUTED BY AKSIA EUROPE LIMITED: Aksia Europe Limited is authorized and regulated by the Financial Conduct Authority; such authorization does not indicate endorsement or approval by the FCA of the services offered by Aksia.

5. ☐ Appendix 5 – Manager Research

****CONFIDENTIAL****

Aksia is a commercial entity whose investment and operational due diligence processes and reports structure and content are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 5A – Hedge Fund Investment and Operational Due Diligence Report
Appendix 5B – Private Credit Investment and Operational Due Diligence Report
Appendix 5C – Hedge Fund DDQ Manager Data Request
Appendix 4E – Private Credit DDQ Manager Data Request

6. ☐ Appendix 6 – Performance Reporting & Monitoring

****CONFIDENTIAL****

Aksia is a commercial entity whose reports and services offerings are highly proprietary and confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 6A – Private Credit Portfolio Performance Report
Appendix 6B – Private Credit Portfolio Risk Transparency Report
Appendix 6C – Private Credit Fund Risk Transparency Report
Appendix 6D – Private Credit Track Record Analysis
Appendix 6E – Hedge Fund Portfolio Performance Report
Appendix 6F – Hedge Fund Risk Report
Appendix 6G – MAX Overview Presentation

7. Appendix 7 – Aksia Amendments to Appendix A

****CONFIDENTIAL****

Aksia is a commercial entity whose internal governance and business practices are highly confidential in nature and derive independent economic value from not being generally known to and not being readily ascertainable by other persons and is deemed critical to the firm which, if disclosed, would cause substantial injury to its competitive position. Aksia has taken a number of steps to maintain the confidentiality of this information including limiting the individuals who have access to the information and subjecting third parties with access to the information to nondisclosure agreements (subject to regulation or law). Therefore, Aksia requests exemption from disclosure per 65 P.S. § 67.708(b)(11) on the grounds the information contained in this response constitutes a “trade secret” as defined in 65 P.S. § 67.102.

Note that these appendices have been removed from the redacted electronic submittal required for public disclosure.

Appendix 7A – Aksia Amendments to Appendix A, *Sample Rider Including Terms and Conditions*