

AGENDA ITEM DETAILS

Subject: Educational Presentation – Valuation Practices in Private Markets

BACKGROUND

The purpose of this educational agenda item is to provide insight into the underwriting and monitoring procedures related to private market valuations at ERS. Private market investments (which includes private equity, private real estate, private infrastructure, and private credit) currently represent 39.5% of the Trust as compared to an aggregate target of 33%.

PRESENTATION

Operating Environment

Investment managers within private markets typically assign value to their portfolios on a quarterly basis, though some within private credit will do so monthly. As private markets have grown in recent years to more than \$12 trillion in assets under management, the approach that managers use to value assets has matured significantly and become much more consistent as a result. In fact, investors in private markets today are supported by a robust ecosystem and infrastructure very similar to that which provides assurance to investors in public markets.

- **Accounting Boards.** Valuation standards for private investment managers are most commonly based on the accounting guidance in Financial Accounting Standards Board (FASB) ASC 820. ASC 820 stands for Accounting Standards Codification 820, which requires investments to be reported at fair value to conform with Generally Accepted Accounting Principles. ASC 820 was introduced in 2008 and adopted by FASB in 2018. It is the first standard to explicitly require that illiquid investments be fairly valued using the methodologies detailed in the standard. Some investment managers based outside of the US abide by a similar standard, International Fund Reporting Standards 13.
- **Industry Organizations.** Many asset classes have supplementary standards that include nonauthoritative guidance and illustrations regarding the accounting for and valuation of portfolio investments. For example, within Private Equity such guidance is provided by the American Institute of Certified Public Accountants Valuation Guide for Private Equity and Venture Funds and The International Private Equity and Venture Capital Valuation Valuation Guidelines, both of which are updated on an annual basis to account for any changes to accounting standards.
- **Independent Auditors.** Most private funds use Big 4 accounting firms to audit their financial statements, and in many cases are contractually required to do so by their limited partners. The independent auditor's role in auditing funds is focused on, but not limited to, company valuations, the statement of investments, the financial statements, and the capital accounts of the partners. Auditors of pooled investment funds are subject to stringent guidelines issued by the Public Company Accounting Board in key matters such as auditor independence.
- **Government Regulators.** Regulatory oversight in the US is provided primarily by the Securities and Exchange Commission (SEC), which periodically examines Registered Investment Advisors (RIAs). The Dodd-Frank legislation passed in 2010 required all private fund managers with more than \$150 million in assets to file as an RIA with the SEC under the Investment Advisers Act of 1940. Since 2017, the SEC has indicated that the valuation of

illiquid securities is included among its enforcement priorities. Failure to follow written valuation policies that were previously disclosed to investors can represent a significant finding, and deliberate valuation misstatement can represent a violation of the Investment Advisers Act. Securities fraud can result in criminal prosecution, bans from the industry, investor lawsuits, damaged reputations, and inability to raise another fund.

- **Fund counsel.** Fund counsel typically advises fund managers to value companies using methods commonly used by other market participants that have been demonstrated to provide reliable estimates of value. Such methods require that valuations be objectively validated, consider the risks inherent in the investment, and be sensitive to changes in key variables and market conditions.

The adoption of fair value accounting more than a decade ago has significantly increased the accuracy of the valuations provided by fund managers within private markets according to academic studies. For example, a recent study by Onur Sefiloglu of the University of London found that the adoption of ASC 820 marked a watershed moment for private market valuations. The study found that before ASC 820, the book value of the average buyout investment at the time of its sale was 50% of its sales price. That figure reportedly jumped to 86% after the adoption of ASC 820, which the authors called a statistically significant convergence toward the fair values for those investments.

Such improvements in accuracy are quite beneficial to government entities such as ERS, whose own accounting standards allow the use of the net asset value (NAV) per share calculated by fund managers to establish the fair value for private market investments. Those standards include Government Accounting Standards Board Statement No. 72, which requires that the NAV must be calculated in a manner consistent with the measurement principles for investment companies set forth by FASB. As such, it is incumbent upon the government entity to verify and ensure that the manager is following those principles. Fulfillment of this responsibility is why ERS diligence activities are centered on providing that assurance of a robust valuation process for investment funds both initially and on an ongoing basis.

ERS Framework

The ERS due diligence framework requires each new fund investment to undergo a thorough review performed by two ERS internal teams as well as the applicable private markets consultant. These reviews include a high degree of scrutiny of the firm's valuation procedures, both as it relates to the assessment of the firm's historical track record, as well as the implications for the firm's operational approach.

Each new proposed investment within private markets is presented to and approved by an Asset Class Investment Committee (ACIC) for potential inclusion in the portfolio as required by the Investment Policy Statement. Within private equity, for example, the ERS Private Equity (ERS PE) and ERS Operational & Financial Diligence (ERS OFD) teams are both responsible for the initial underwriting and ongoing monitoring of each investment. The results of these diligence reviews are presented and discussed at the ACIC meeting.

Initial Underwriting

The ERS OFD team conducts an operational due diligence (ODD) review, which focuses on the firm's non-investment risks and includes a review of the valuation process associated with the proposed investment. The ODD review aims to ensure the firm has adequate valuation policies and procedures to calculate NAV accurately and includes an assessment of the parties responsible for determining the inputs and overseeing the process.

Each asset class PE team completes an investment due diligence (IDD) review, which is typically a multi-month process when underwriting a new firm or fund. Analyzing the firm's performance track record (i.e. the value of its investments) is one of the most important aspects of this due diligence process.

A firm's track record within private markets can be separated into realized and unrealized investments:

- **Realized Investments:** The investment has been sold, redeemed or otherwise exited, typically at a market price set by the acquirer, and the capital has typically been returned to investors.

- Unrealized Investments: The investment remains in the portfolio at its cost basis plus any unrealized gain or loss, where the value of the asset is typically determined by a mark-to-model methodology. The three primary methodologies include a relative company analysis using comparable publicly traded assets, a relative company valuation analysis using precedent transactions for comparable assets, or an intrinsic valuation analysis that relies on a discounted cash flow (DCF) analysis.

This analysis takes into careful consideration both realized and unrealized investments, with greater weight given to a firm's realized track record. Staff also analyzes the value creation process to understand how the private equity firm exits its portfolio companies. ERS also evaluates numerous aspects of a firm's unrealized track record, including acquisition multiples, company operating performance, and its valuations over time.

Academic papers and other industry research help inform evaluations. For example, Gregory Brown from the University of North Carolina at Chapel Hill and colleagues published a paper exploring whether private equity managers inflate their returns. The authors found that such behavior was most prominent among underperforming managers who were unlikely to raise a future fund, and that institutional allocators are able to look through such tactics. In contrast, the authors found that top-performing funds are likely to understate their valuations, a conclusion that is consistent with the professional experience of ERS staff.

Asset class consultants also serve as an extension of ERS staff by using their greater scale to cover a much wider universe of managers. Within the ERS governance framework, asset class consultants also function as an additional control structure by conducting parallel due diligence on proposed investments. Each consultant submits a separate report to Asset Class Investment Committees for review as they consider approving a potential investment. The reports identify key investment and operational risks and help clients such as ERS understand the significance and meaning of those risks:

- Back-office Infrastructure
- Conflicts of Interest
- Reliance on Third-Party Providers (e.g., servicers) and Secondary Due Diligence
- Valuation and NAV Calculation
- Financial Statement Review
- Fund Legal Terms
- Expenses and Calculation of Fees
- Co-investment and Investment Allocation Procedures
- Background Checks and Biography Verification
- Advisory Board and Power of Limited Partners
- Compliance Culture
- Business Continuity, Disaster Recovery, and Cybersecurity

ERS also co-invests directly alongside its investment managers in select assets. These investments are typically completed with low/no economics paid to the sponsor in the form of a management fee or profit sharing mechanism (e.g., no-fee, no-carry). Along with the economic benefits, ERS is able to work alongside its investment managers to analyze how they value potential investments as part of their broader due diligence process. Similar to the investment manager, ERS will independently review the merits of the investment, including the valuation of the target asset.

Ongoing Monitoring

The Investment Policy Statement requires that staff review the valuations applied to all investments for reasonableness at least annually and that procedures to do so be set forth in the Investment Implementation Plan (IIP). The IIP approved by the Risk Committee requires the CIO to create an Investment Valuation Committee (IVC) to oversee the valuation review process for the Trust.

An internal IVC exists to conduct regular reviews of the pricing and valuations of investments within the Trust for reliability and reasonableness. Such reviews include a particular focus on changes to private market valuations given the illiquid nature of those investments. The IVC convenes on a quarterly basis or more frequently as circumstances dictate. Members of the IVC include the Director of Operational & Financial Diligence (Chair), Chief Investment Officer, Deputy Chief Investment Officer, and a Portfolio Manager from both private equity and public equity.

As part of the ERS ongoing monitoring framework, the team maintains continuing dialogue with its investment managers to remain current on the portfolio. Typically, an investment manager communicates the valuations of its investments within quarterly reports for each of its funds, though as noted earlier some private credit funds will report monthly. These reports highlight the overall fund's performance and the value for each underlying investment. ERS also receives capital account statements from these managers, which are entered into its internal data system for analysis and archiving.

Each ERS team conducts an in-depth review of its portfolio after each quarter to assess the status of its investment managers and their underlying investments. The teams analyze any material changes in the underlying valuations of the portfolio, also noting any new investments or exited investments. Each quarter, the ERS teams also conduct an exposure analysis, such as the review by the ERS PE team of the portfolio's top 50 positions by NAV. In carrying out this diligence, ERS relies on audited financial reports that investment managers are obligated to provide on an annual basis in accordance with the Limited Partnership Agreement.

Portfolio Reporting

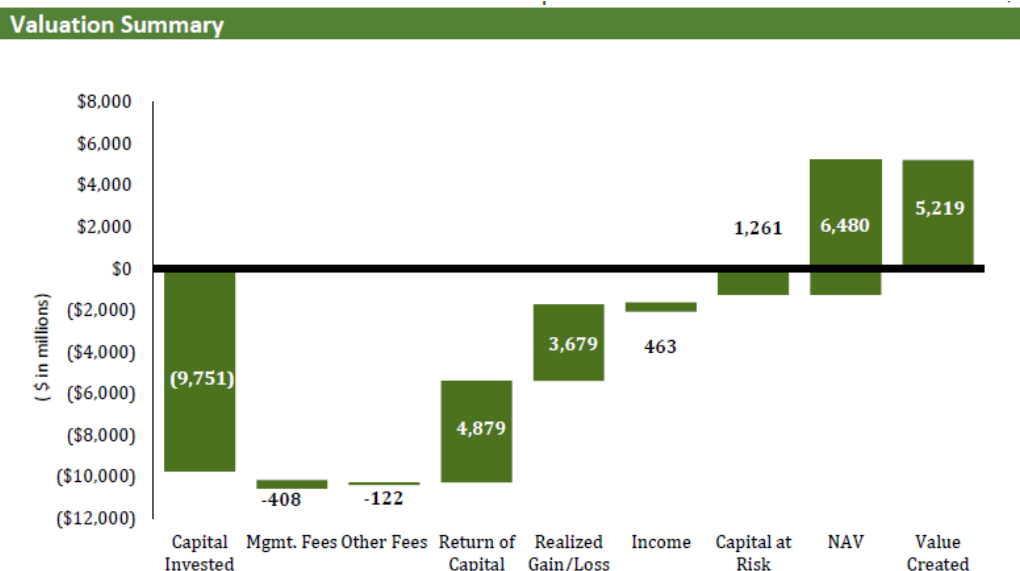
Private market valuations are received by ERS much later than those in public markets due to the quarterly reporting process. These lags can be more impactful during periods of significant rises or falls in market values. The private market teams closely monitor portfolio performance on an ongoing basis by evaluating the following performance metrics:

- TVPI: Total Value to Paid in Capital, which is equal to (Net Asset Value + Distributions ÷ Paid in Capital);
- DPI: Distributions to Paid in Capital (equal to Distributions ÷ Paid in Capital);
- IRR: Internal Rate of Return (equal to the discount rate that will bring a series of cash outflows and inflows to a net present value of zero).

Public Market Equivalent (PME) calculations also provide a useful comparison of the returns on private market assets to those that would have been earned had the capital been invested at the same time in public markets. PME metrics allow for the benchmarking of performance for a fund or a group of funds against any public market index while accounting for the timings of the fund cash flows. That is, PME measures allow investors to answer the question "What would my return have been if I invested the same cash in the public market?" in a rigorous way.

Reports to the Board that encompass these types of performance information include:

- Staff private markets quarterly reporting to the Board provided confidentially via the Board portal;



- The ERS Annual Comprehensive Financial Report, which includes the classification of assets according to the GASB 72 classification. These reports employ a methodology that was recently audited by Cheiron, Inc. at the behest of the State Auditor's Office.

**Figure 8
Alternative Investments (Note A)**

Currency	No. of Funds	Commitment	Remaining Commitment	Adjusted Funded Amount	Fair Value	Redemption Frequency	Redemption Notice	Redemption Restrictions
		\$	\$	\$	\$			
Private Equity:								
US Dollar	178	9,091,398,887	2,752,218,810	6,339,180,077	5,964,801,492	N/A	N/A	N/A
Euro Dollar	14	468,237,638	122,991,621	345,246,017	405,543,692	N/A	N/A	N/A
British Pound	3	90,760,800	9,959,214	80,801,586	118,723,671	N/A	N/A	N/A
Korean Won	1	21,305,215	0	21,305,215	27,784	N/A	N/A	N/A
Sub-total	196	9,671,702,540	2,885,169,645	6,786,532,895	6,489,096,639			
Private Real Estate:								
US Dollar	91	5,667,795,870	1,766,423,364	3,901,372,506	3,547,513,442	N/A, Monthly/ Quarterly	N/A, 45-90 Days	N/A
Euro Dollar	3	187,566,011	29,610,765	157,955,246	144,460,727	N/A, Monthly/ Quarterly	N/A, 45-90 Days	N/A
British Pound	1	49,246,483	2,597,880	46,648,603	493,847	N/A	N/A	N/A
Sub-total	95	5,904,608,364	1,798,632,009	4,105,976,355	3,692,468,016			
Private Infrastructure:								
US Dollar	45	2,458,163,622	887,750,988	1,570,412,634	1,624,672,787	N/A	N/A	N/A
Australian Dollar	2	88,491,892	6020348	82,471,544	104,440,264	N/A	N/A	N/A
Euro Dollar	4	210,139,437	129,577,746	80,561,691	98,806,125	N/A	N/A	N/A
Sub-total	51	2,756,794,951	1,023,349,082	1,733,445,869	1,827,919,176			
Private Fixed Income:								
US Dollar	13	1,767,000,000	768,095,153	998,904,847	1,036,539,271	N/A	Days	N/A

- Asset class consultant reports, which provide an overview of the key trends within the portfolio.

Other areas of ERS also play important roles in these valuation and reporting processes. Alternative investment processes are periodically audited by ERS Internal Audit including internal audits over Private Equity, Private Real Estate and Infrastructure to ensure investments are made and monitored in accordance with ERS Investment Policy. As part of ERS' annual financial audit, ERS' independent financial opinion auditor will perform extensive audit work related to alternative investment valuations including reviews of due-diligence, ongoing monitoring and financial reporting. Financials auditors will also perform confirmations with fund managers and review associated audited fund financial statements to obtain reasonable assurance over reported valuations are materially stated. Lastly, a separate investment accounting function within ERS' Finance Division is responsible for reporting final valuation in ERS' Annual Comprehensive Financial Report. To maintain separation of duties, this section reports to ERS' Chief Financial Officer.

This agenda item is presented for informational purposes only. No action is necessary.

**ERS is accredited by the State Pension Review Board (PRB) as a Minimum Educational Training (MET) sponsor for Texas public retirement systems. This accreditation does not constitute an endorsement by the PRB as to the quality of our MET program. This agenda item may be considered in-house training provided by ERS to board trustees and the system administrator for purposes of fulfilling the MET program requirements. ERS is an accredited sponsor of MET for its system administrator and trustees for continuing education.*

ATTACHMENTS:

1. Exhibit A - Aksia Private Equity Consultant Report
2. Exhibit B - Meketa Private Real Estate Consultant Report
3. Exhibit C - CBRE Infrastructure Consultant Report
4. Slides – Educational Presentation on Private Market Valuations