



INVESTMENT COMMITTEE MEETING
SENATOR FABIAN CHAVEZ JR. BOARD ROOM
PERA BUILDING

April 11, 2023
 Immediately Following Audit & Budget Committee

COMMITTEE MEMBERS

Francis Page, Chair
 Paula Fisher, Vice-Chair
 Claudia Armijo
 Roberto Ramirez
 Tony Garcia

AGENDA

- 1. Roll Call**
- 2. Approval of Agenda**
- 3. Approval of Consent Agenda**
- 4. New Business**

ITEM		PRESENTER
A	<u>Information Item</u> : Structured Credit Overview	Michael Shackelford Chief Investment Officer
		Andrew Vranos, Ellington Management Group
B	<u>Information Item</u> : 2022 Continuation Memo	Michael Shackelford Chief Investment Officer
		Francis Page IC Chair
C	<u>Information Item</u> : Performance & Market Review	Michael Shackelford Chief Investment Officer
	1. Q4 2022 Market Review	Steve DiGirolamo
	2. Q4 2022 Total Fund Performance Review	Joanna Bewick
	3. Benchmark Overview	Leah Emkin Wilshire
	4. Q4 2022 Portable Alpha Review	James Walsh Albourne
D	<u>Action Item</u> : Annual Work Plan Adoption	Michael Shackelford Chief Investment Officer
E	<u>Action Item</u> : Review of General Consultant changes	Michael Shackelford, Chief Investment Officer
F	<u>Information Item</u> : Investment Division Compliance Update	LeAnne Larrañaga-Ruffly Deputy CIO
	1. Custody Bank RFP Update	

	2. Manager Selection Activity Report 3. Q4 2022 Cash Activity & Rebalance Update 4. Q4 2022 Securities Lending Update	Sara Hume Senior Portfolio Manager
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5. Adjournment

Consent Agenda

Approval of minutes of December 13, 2022 Investments Committee meeting.

Any person with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Trish Winter at (505) 795-0712 or patricab.winter@state.nm.us at least one week prior to the meeting, or as soon as possible. Public documents, including the agenda and minutes, can be provided in various accessible formats. Please contact Trish Winter if a summary or other type of accessible format is needed.



Ellington
Management Group

March 2023

NM PERA

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Some of the information used in preparing these materials may have been obtained from or through public or third party sources. Ellington assumes no responsibility for independent verification of such information and has relied on such information being complete and accurate in all material respects. To the extent such information includes estimates or forecasts obtained from public or third party sources, we have assumed that such estimates and forecasts have been reasonably prepared. In addition, certain information used in preparing these materials may include cached or stored information generated and stored by Ellington's systems at a prior date. In some cases, such information may differ from information that would result were the data re-generated on a subsequent date for the same as-of date. Included analyses may, consequently, differ from those that would be presented if no cached information was used or relied upon.

AN INVESTMENT IN VEHICLES AND INSTRUMENTS OF THE KIND DESCRIBED HEREIN, INCLUDING INVESTMENT IN COMMODITY INTERESTS, IS SPECULATIVE AND INVOLVES SUBSTANTIAL RISKS, INCLUDING, WITHOUT LIMITATION, RISK OF LOSS. YOU SHOULD CAREFULLY REVIEW THE DISCUSSION OF RISK FACTORS IN THE RELEVANT OFFERING DOCUMENT, SUBSCRIPTION MATERIALS, OR MANAGEMENT AGREEMENT BEFORE DECIDING TO INVEST.

Example Analyses and Portfolios

Example analyses and portfolios included herein are for illustrative purposes only and are intended to illustrate Ellington's analytic approach and approach to portfolio construction. They are not and should not be considered a recommendation to purchase or sell any security. The example analyses are only as of the date specified and do not reflect changes since that time. There is no assurance that Ellington will be able to secure investment in securities substantially like those discussed, construct a portfolio substantially like that discussed, or that the composition of any portfolio will resemble discussed examples at any future date.

Yields, Scenario Responses, and Other Factors

The strategies discussed herein invest in non-agency Collateralized Mortgage Obligations (CMOs), Collateralized Loan Obligations (CLOs) and other asset-backed securities or related loans (together with CMOs and CLOs, "ABS"). The yield and average life of ABS can fluctuate depending upon, among other factors, (i) the actual rate at which borrowers prepay or default upon the mortgages or other loans underlying the ABS, (ii) changes in interest rates, and (iii) the severity of losses on defaulted mortgages or other loans.

Yields, spreads, prepayment and default rates, average life, and responses to interest rate, credit, or other scenarios for CMOs, ABS, and loans as discussed herein are based upon a number of assumptions, including as to prepayment, default and interest rates, and changes in home prices or other market factors. These assumptions may or may not be met. They are derived from or based upon proprietary, analytic models developed by Ellington. Such models are inherently imperfect and subject to a number of risks, including that the underlying data used by the models is incorrect, inaccurate, or incomplete, or that the model rely upon assumptions that may prove to be incorrect. The utility of such information is highly limited. Certain models make use of discretionary settings or parameters which can have a material effect on the output of the model. Ellington exercises discretion as to which settings or parameters to use in different situations, including using different settings or parameters to model different securities.

CMO, ABS, and loan yields, spreads, prepayment and default rates, scenario responses and other factors discussed herein are presented for the purposes of (i) detailing anticipated risk and reward characteristics in order to facilitate comparisons with other investments, (ii) illustrating relevant mathematical principles, including the sensitivity of certain parameters to a variety of assumptions, (iii) illustrating Ellington's current views and expectations, and (iv) aiding future evaluations of performance. They are not a guarantee of future performance. They are based upon assumptions regarding future events and conditions, which may not prove to be accurate. There can be no assurance that any discussed yields or spreads will be realized.

Hypothetical Performance

Hypothetical performance has been provided for illustrative purposes only, and is not necessarily indicative or a guarantee of future results. Hypothetical performance includes any performance targets, projections, pro forma returns adjustments or other similar presentations, and represents performance results that no individual fund, portfolio or investor has actually achieved. The preparation of such information is based on underlying assumptions, and because it does not represent the actual performance of any fund, portfolio or investor, it is subject to various risks and limitations that are not applicable to non-hypothetical performance presentations. Although Ellington believes any hypothetical performance calculations described herein are based on reasonable assumptions, the use of different assumptions would produce different results. For the foregoing and other similar reasons, the comparability of hypothetical performance to the prior (or future) actual performance of a fund is limited, and prospective investors should not unduly rely on any such information in making an investment decision.



PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. INVESTMENTS AND COMMODITY INTEREST TRADING INVOLVE SUBSTANTIAL RISKS, INCLUDING RISK OF LOSS.

EEI + Predecessor Fund

Performance information included herein for the periods prior to the first full month following the July 29, 2016 inception of Ellington Enhanced Income Master Fund (the "Fund"), is performance of a predecessor fund following a strategy substantially similar to that of the Fund. July net performance of the Fund in the one-business-day period beginning July 29, 2016 was approximately -0.07%. Personnel managing the Fund are substantially the same personnel responsible for managing the predecessor fund. There can, however, be no assurance that future performance of the Fund will be the same as or substantially similar to that of the predecessor fund. Performance following inception of the Fund is performance of the Fund. The predecessor fund has continued to operate following inception of EEI, and its performance may diverge materially from that of EEI.

Unleveraged and Traditional Mandate Index-Relative MBS/ABS Composite

Ellington's Unleveraged and Traditional Index-Relative MBS/ABS Composite is an unaudited composite of Ellington-managed funds and accounts employing a mark-to-market fixed income strategy which primarily invests in mortgage-backed, asset-backed, and other fixed income securities, and which, by mandate, targets returns relative to a formal index or benchmark, or which invests in such securities on an unleveraged basis. The composite excludes (i) funds and accounts included in Ellington's Leveraged Fixed Income Composite, (ii) funds and accounts whose primary mandate is to liquidate or unwind an existing portfolio, and (iii) funds whose shares are not normally redeemable and which are typically purchased and sold in and at prices determined by a secondary market. Ellington manages other funds with different strategies whose performance is not included in the Composite and results would differ if performance for such funds were included. Composite performance represents the weighted average performance of those funds included in the composite (based on each fund's relative share of aggregate beginning capital).

Indices

Indices are provided for illustrative purposes only, are unmanaged, reflect reinvestment of income and dividends and do not reflect the impact of advisory fees. Investors cannot invest directly in an index. Comparisons to indexes have limitations because indexes have volatility and other material characteristics that may differ from an Ellington funds or account. Ellington funds or accounts may hold substantially fewer securities than are contained in an index. Indices also may contain securities or types of securities that are not comparable to those traded by an Ellington fund or account. An Ellington fund's or account's performance may differ substantially from the performance of an index. Because of these differences, indices should not be relied upon as an accurate measure of comparison. Data used in the benchmarks are obtained from sources considered to be reliable, but Ellington makes no representations or guarantees with regard to the accuracy of such data.

S&P 500 Index is a free-float capitalization-weighted index published since 1957 of the prices of 500 large-cap common stocks actively traded in the United States. The index does not include reinvestment of dividends.

Barclays IG Corporate Index consists of publicly issued U.S. corporate and specified foreign debentures that are registered with the Securities and Exchange Commission and meet specific maturity, liquidity, and quality requirements.

Barclays HY Corporate Index covers the universe of fixed-rate, non-investment grade corporate debt of issuers in non-emerging market countries. Eurobonds and debt issues from countries designated as emerging markets are excluded.

Barclays Aggregate is a broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS, and CMBS.

S&P 500 Leveraged Loan Index seeks to mirror the market-weighted performance of the largest institutional leveraged loans.

The Hedge MBS denotes the returns of the Barclay's MBS Index with returns leveraged 2.5 to 1, and hedged with a weighted blend of the Barclay's U.S. Treasury Index, the Barclay's U.S. Treasury (Intermediate) Index and the Barclay's US Treasury (Short) Index to offset duration.

Forward-Looking Statements

Some of the statements in this Presentation constitute forward-looking statements. Forward-looking statements relate to expectations, beliefs, projections, estimates, future plans and strategies, anticipated events or trends and similar expressions concerning matters that are not historical facts. The forward-looking statements in this Presentation are subject to inherent qualifications and are based on a number of assumptions. The forward-looking statements in this presentation involve risks and uncertainties, including statements as to: (i) general volatility of the securities markets in which we plan to trade; (ii) changes in strategy; (iii) availability, terms, and deployment of capital; (iv) availability of qualified personnel; (v) changes in interest rates, the debt securities markets or the general economy; (vi) increased rates of default and/or decreased recovery rates on our investments; (vii) increased prepayments of the mortgage and other loans underlying our mortgage-backed or other asset-backed securities; (viii) changes in governmental regulations, tax rates, and similar matters; (ix) changes in generally accepted accounting principles by standard-setting bodies; (x) availability of trading opportunities in mortgage-backed, asset-backed, and other securities; (xi) changes in the customer base for our business; (xii) changes in the competitive landscape within our industry and (xiii) the continued availability to the business of the Ellington resources described herein on reasonable terms.

The forward-looking statements are based on our beliefs, assumptions, and expectations, taking into account all information currently available to us. These beliefs, assumptions, and expectations can change as a result of many possible events or factors, not all of which are known to us or are within our control. If a change occurs, the performance of instruments and business discussed herein may vary materially from those expressed, anticipated or contemplated in our forward-looking statements.



Investments discussed in this presentation are subject to risks, including:

Credit Risk

Issuers of debt securities and loan borrowers may not make scheduled interest and principal payments, resulting in losses. The credit quality (and/or credit rating) of debt securities may decline if the applicable issuer's financial condition changes, which may lead to a decline in the market price of such investments.

Subordinated and Lower-Rated Securities Risk

Certain securities in the strategy may be deemed by rating agencies to have substantial vulnerability to default in payment of interest and/or principal. Other securities in the strategy may have the lowest quality ratings or are unrated. Such securities may be subordinated in cash flow priority to other more "senior" securities of the same securitization. Accordingly, the subordinated and lower-rated (or unrated) securities may experience significant price and performance volatility relative to more senior or higher-rated securities, and they are subject to greater risk of loss than more senior or higher-rated securities.

Prepayment Risk and Extension Risk

Fixed income securities and loans with uncertain principal repayment schedules can be subject to prepayment risk and/or extension risk. If the strategy invests in a debt instrument with a higher interest rate than the then-prevailing market interest rate for similar instruments, and such investment prepays (or is anticipated to prepay), the strategy could suffer losses. Similarly, if the strategy holds a debt instrument with a lower interest rate than the then-prevailing market interest rate for similar instruments, and the expected life of such investment extends (or is anticipated to extend), the strategy could suffer losses.

Interest Rate Risk

Typically, a rise in interest rates causes a decline in the value of fixed income securities.

Leveraging Risk

The use of leverage, such as borrowing money to purchase investments, will produce additional expenses and magnify the strategy's gains or losses.

Investment Liquidity Risk

Investment liquidity risk exists when particular investments are difficult to sell, possibly preventing the strategy from selling such illiquid investments at an advantageous time or price, or possibly requiring the strategy to dispose of other investments at unfavorable times or prices. Most of the loan assets are illiquid. This includes, without limitation, investments in syndicated loans, residential mortgage loans, consumer loans, and commercial mortgage loans. Many of the strategy's investments, including its investments in RMBS, CMBS, ABS, high yield bonds and CLOs may also be illiquid. Many of the strategy's investments in derivative contracts, and in foreign investments, may be illiquid.

Equity Risk

Equity securities are susceptible to general stock market fluctuations and to volatile increases and decreases in value and may experience sudden, unpredictable drops in value or long periods of decline in value. Investments in companies with small market capitalizations are subject to unique risks. The earnings and prospects of small sized companies are more volatile than larger companies and may experience higher failure rates than larger companies. Small sized companies normally have a lower trading volume than larger companies, which may tend to make their market price fall more disproportionately than larger companies in response to selling pressures and may have limited markets, product lines, or financial resources and lack management experience.



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Ellington Overview



Ellington
Management Group



Ellington is an established investment and advisory firm managing a diverse credit platform across the liquidity spectrum »

Founded in 1994 by Michael Vranos, a pioneer in the mortgage markets

\$8.8 bn AUM	3 Offices: New York Connecticut & London	PRI Signatory of United Nations Principles of Responsible Investment (PRI)
75 Investment professionals	27 Years average industry experience of senior portfolio managers	9 Employee-partners own the firm ¹

Offers a flexible array of commingled and bespoke investment solutions that span risk / liquidity mandates

Long-Only Solutions

- Interest Rate Neutral
- Benchmark Plus
- SMAs

Absolute Return

- Single Strategy
- Multi-Strategy
- SMAs

Private Debt

- Single Strategy
- Multi-Strategy
- SMAs

Public Vehicles

- REITs
- 40 Act
- UCITS

As of January 31, 2023. \$8.8 billion AUM includes approximately \$1.0 billion of Ellington-sponsored CLO equity and notes. Ellington-sponsored CLO AUM includes the face amount of CLO notes and market value of CLO equity, excluding amounts of notes and equity held by other Ellington-managed funds and accounts. AUM includes uncalled capital commitments, if any

¹ Does not include partners formerly employed by Ellington who may have residual capital balances but who no longer have voting rights in the partnership.



Ellington Profile As of January 2023		\$8.8 Billion in assets under management as of January 2023 ¹	3 Global offices: New York Connecticut and London	9 Employee-partners own the firm ²	27 Years average industry experience of senior portfolio managers
Founded:	1994				
Employees:	>150				
Investment Professionals:	75				
Permanent Capital Vehicles:	EFC, EARN				

Strategy	Multi-Strategy Credit	Traditional Mandate	Prepayment and Related Relative Value	Bank Advisory & Other Managed Vehicles
Strategy AUM	\$3.3 billion	\$3.3 billion	\$0.4 billion	\$1.8 billion
Sectors	Systematic Credit Structured Credit Loans <div> <div>9.9%</div> <div>2.8%</div> </div> <div>ECOBarclays Aggregate Index</div>	Structured Credit <div> <div>5.6%</div> <div>2.0%</div> </div> <div>EElBarclays Aggregate Index</div>	Residential MBS Prepayment <div> <div>8.9%</div> <div>4.5%</div> </div> <div>EMOHedged Levered MBS</div>	Fixed Income Portfolio Solutions Agency-Oriented REIT Ellington Sponsored CLO
Flagship Vehicle	Ellington Credit Opportunities	Ellington Enhanced Income ³	Ellington Mortgage Opportunities	N/A

As of January 31, 2023. Past performance is not necessarily indicative of future results. Please see the Performance Information and Indices sections in the Important Notice for important further disclosure regarding the presentation of performance. ECO, EEI, and EMO returns are annualized, net returns for the period commencing the respective fund's inception.

¹ \$8.8 billion AUM includes approximately \$1.0 billion of Ellington-sponsored CLO equity and notes. Ellington-sponsored CLO AUM includes the face amount of CLO notes and market value of CLO equity, excluding amounts of notes and equity held by other Ellington-managed funds and accounts. AUM includes uncalled capital commitments, if any.

² Does not include partners formerly employed by Ellington who may have residual capital balances but who no longer have voting rights in the partnership

³ EEI performance is the performance of EEI and its predecessor fund. Please see EEI + Predecessor Fund in the Important Notice for important further disclosure.



Credit

	Ellington Enhanced Income	Ellington Credit Opportunities	Ellington Private Opportunities
Description	Traditional Mandate ¹	Multi-Strat Credit	Private Debt
Sectors	Senior RMBS, CMBS, CLO	RMBS, Corporate, CLO, European, Consumer, CMBS, Whole Loan	Commercial & Residential NPLs, CMBS B-Pieces, Consumer Loans
AUM Strategy	\$3.3 billion	\$3.3 billion	\$0.6 billion
ITD Annualized Net Return ²	5.55%	9.95%	EPO I: 10.47% ³ EPO II: 9.27% ³ EPO III: 2.57% ³
Annualized Volatility	3.6%	6.3%	-
Management Fee	0.65%	1.5%	1.5%
Incentive Fee	None	20%	20%, 8% Hurdle, 60% GP/40% LP Catch-up
Liquidity	Monthly	Annual or 25% Quarterly	4-Year Term

More  Less

¹ May include interest rate hedges and some credit hedges. ² Inception dates: EEI + Predecessor Fund, September 2010; Ellington Credit Opportunities, May 2008; Ellington Private Opportunities, May 2016; Ellington Mortgage Opportunities, February 2009. Ellington Enhanced Income ("EEI") performance for periods prior to the first full month following inception of EEI in July 29, 2016 is performance of EEI's predecessor fund. Please see EEI + Predecessor Fund in the Important Notice for important further disclosure. Please see the Appendix for additional performance information, including composite performance information. Past performance is not necessarily indicative of future results. Please see Performance Information in the Important Notice for important further disclosure regarding presentation of performance. ³ Ellington Private Opportunities Fund ("EPO I") launched in 2016 and Ellington Private Opportunities Fund II ("EPO II") launched in 2018. EPO I and EPO II commitment periods have closed and funds are not open to new investments. Ellington Private Opportunities Fund III had its final close in October 2022.





Large, Cohesive Team of Specialized Sector Experts

- Ability to value complex securities at the underlying borrower / loan level
- Reputation as a sophisticated, trusted investor and access to deal flow
- Participation in both primary and secondary markets
- Firmwide culture of information-sharing



Cutting-Edge Analytic / Trading Technologies

- Robust investment in unique data streams and research
- Proprietary modeling / valuation analytics
- Active trading



Time-Tested Risk Oversight and Governance

- CEO, Portfolio Management Committee and Risk Oversight Committee oversee integrated systems and processes
- Compliance, Technology, and Valuation Committees provide additional oversight
- Calibration of portfolio management and trading systems



Access to Attractive Opportunities

- Actively seek investment opportunities overlooked or misunderstood by other market players
- Real time pricing and evaluation of complex securities to try to permit PMs to react quickly
- New investment strategies are natural evolution of core competencies

Seeking Pure Alpha Across Market Cycles

- Attempt to generate attractive risk-adjusted returns
- Capital preservation in down markets
- Low correlation and beta to equity and credit markets



NM PERA Performance Update

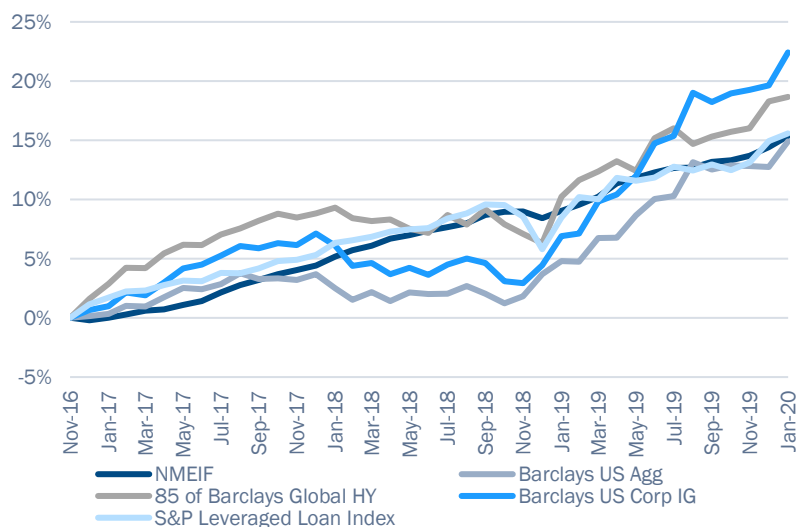
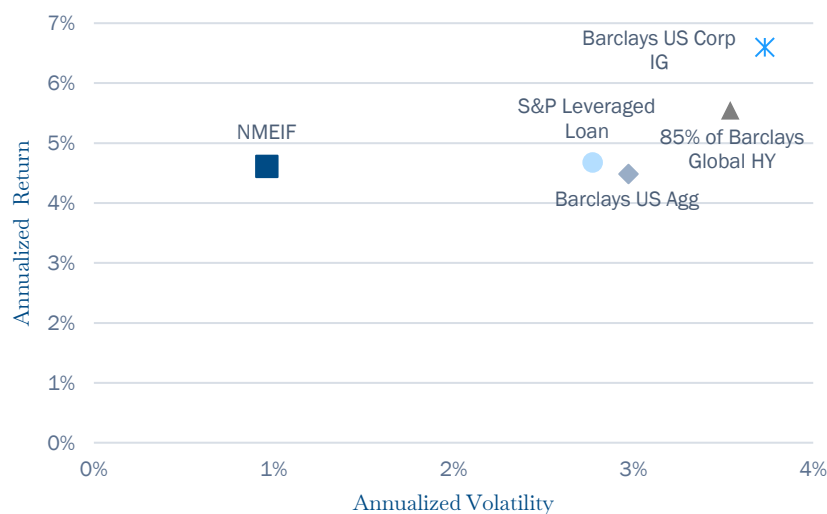


NM PERA Ellington Enhanced Income Fund A Update

Performance: Inception to January 2020

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NMEIF vs. Indices



NMEIF Statistics

Index	Correlation	Excess Return	Sharpe Ratio	Annualized Return	Annualized Volatility
Barclays US Agg	-0.25	0.13%	0.83	4.49%	2.97%
85% of Barclays Global HY	0.27	-0.94%	0.99	5.55%	3.54%
Barclays US Corp IG	-0.11	-1.99%	1.21	6.60%	3.73%
S&P Leveraged Loan	0.61	-0.06%	0.95	4.68%	2.77%
NMEIF	1.00		2.65	4.61%	0.96%

- Initially, the fund was designed as a Libor Plus vehicle, meant to provide stability to PERA's overall portfolio
- The fund exhibited low volatility and minimal drawdowns during this period

Returns of NM PERA Ellington Enhanced Income Fund A LLC as of January 31, 2023, net of fees and expenses. Please see the Important Notes for further information. Estimates subject to revision are italicized. **Past performance is not necessarily indicative of future results.** Indices are provided for illustrative purposes only, are unmanaged, reflect reinvestment of income and dividends and do not reflect the impact of advisory fees. NMEIF's performance may differ substantially from the performance of an index. Please see the Important Notice for important disclosure regarding the presentation of performance, including index performance, and regarding above indices. See NMEIF returns since inception on Page 56.

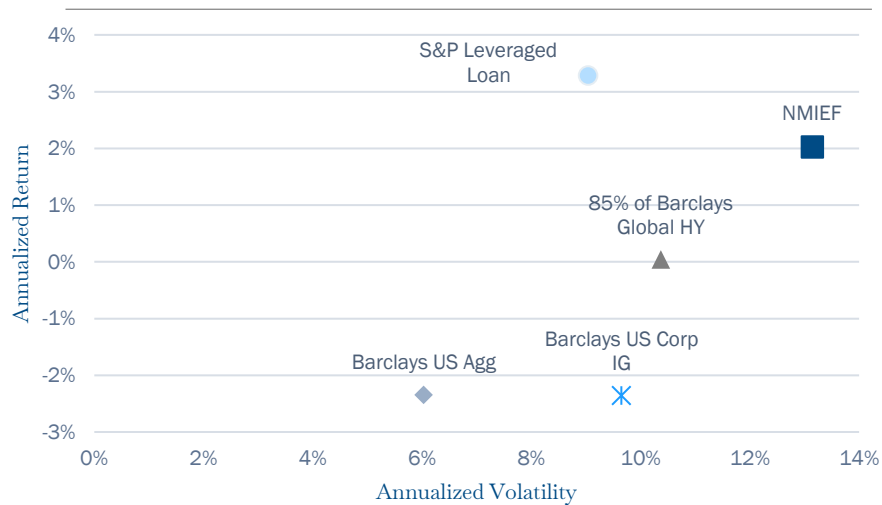


NM PERA Ellington Enhanced Income Fund A Update

Performance: February 2020 to Present

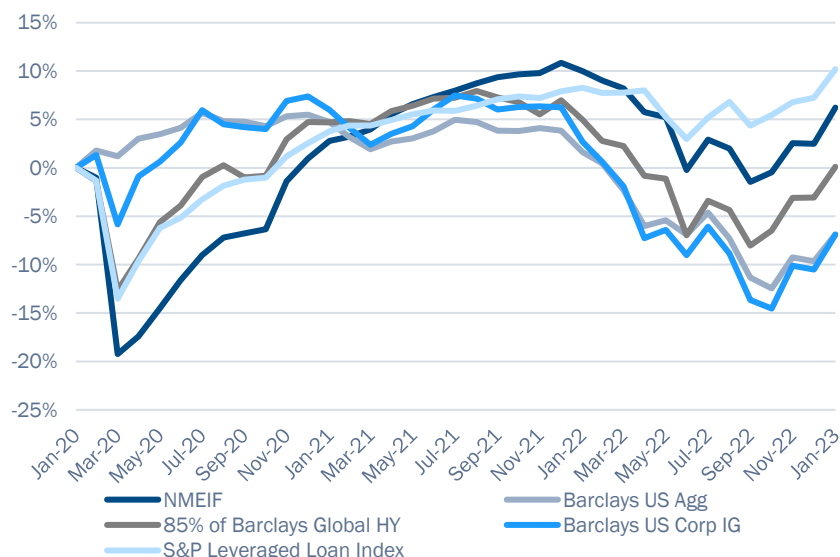
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NMEIF vs. Indices



NMEIF Statistics

Index	Correlation	Excess Return	Sharpe Ratio	Annualized Return	Annualized Volatility
Barclays US Agg	0.40	4.38%	-0.56	-2.35%	6.03%
85% of Barclays Global HY	0.94	1.99%	-0.06	0.04%	10.37%
Barclays US Corp IG	0.73	4.39%	-0.32	-2.36%	9.65%
S&P Leveraged Loan	0.93	-1.25%	0.27	3.28%	9.04%
NMEIF	1.00		0.13	2.03%	13.14%



- In February 2020, the fund shifted to its current mandate, which is to outperform 85% of the Bloomberg Global High Yield Index
 - The fund can use a variety of tools to better track and outperform the index including, but not limited to, synthetic overlays and repo leverage
- Since inception of the new mandate, the fund has outperformed its benchmark by approximately 200 basis points on an annualized basis

Returns of NM PERA Ellington Enhanced Income Fund A LLC as of January 31, 2023, net of fees and expenses. Please see the Important Notes for further information. Estimates subject to revision are italicized. **Past performance is not necessarily indicative of future results.** Indices are provided for illustrative purposes only, are unmanaged, reflect reinvestment of income and dividends and do not reflect the impact of advisory fees. NMEIF's performance may differ substantially from the performance of an index. Please see the Important Notice for important disclosure regarding the presentation of performance, including index performance, and regarding above indices. See NMEIF returns since inception on Page 56.



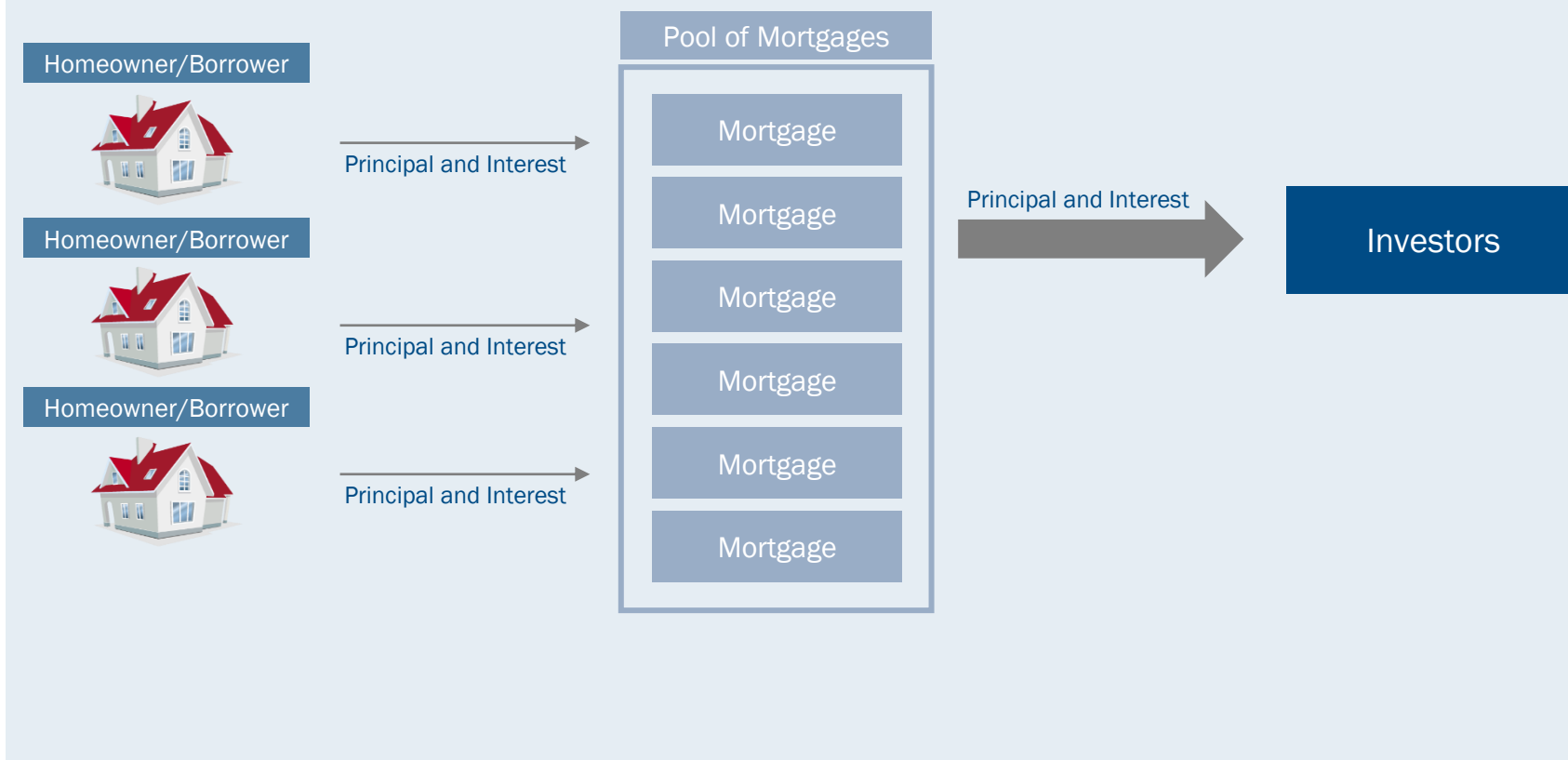
Introduction to Structured Credit



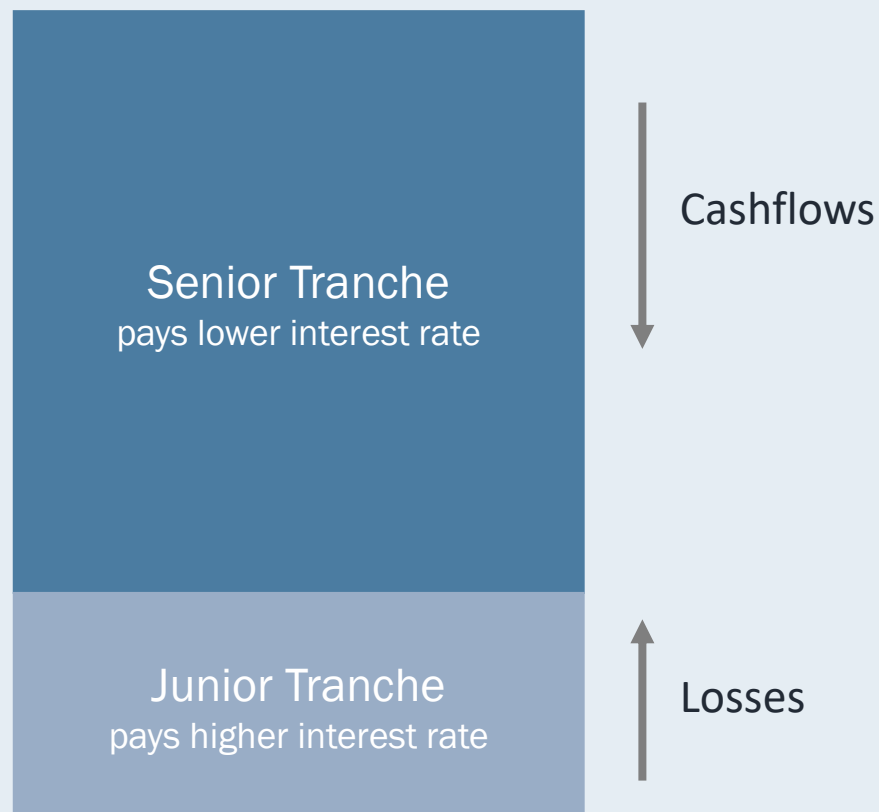
	RMBS	CMBS	CLO
Collateral			
Borrower			



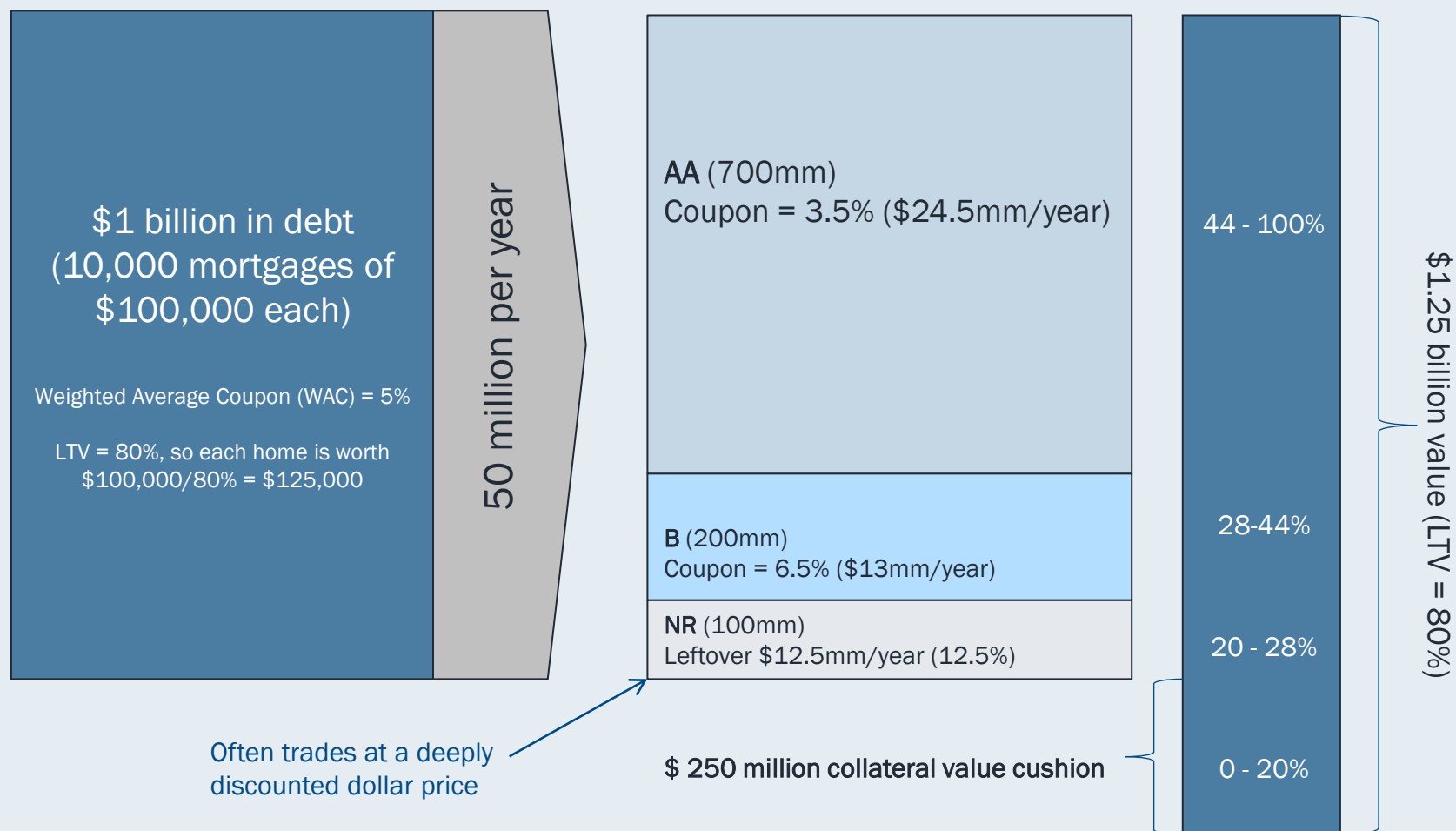
Securitization



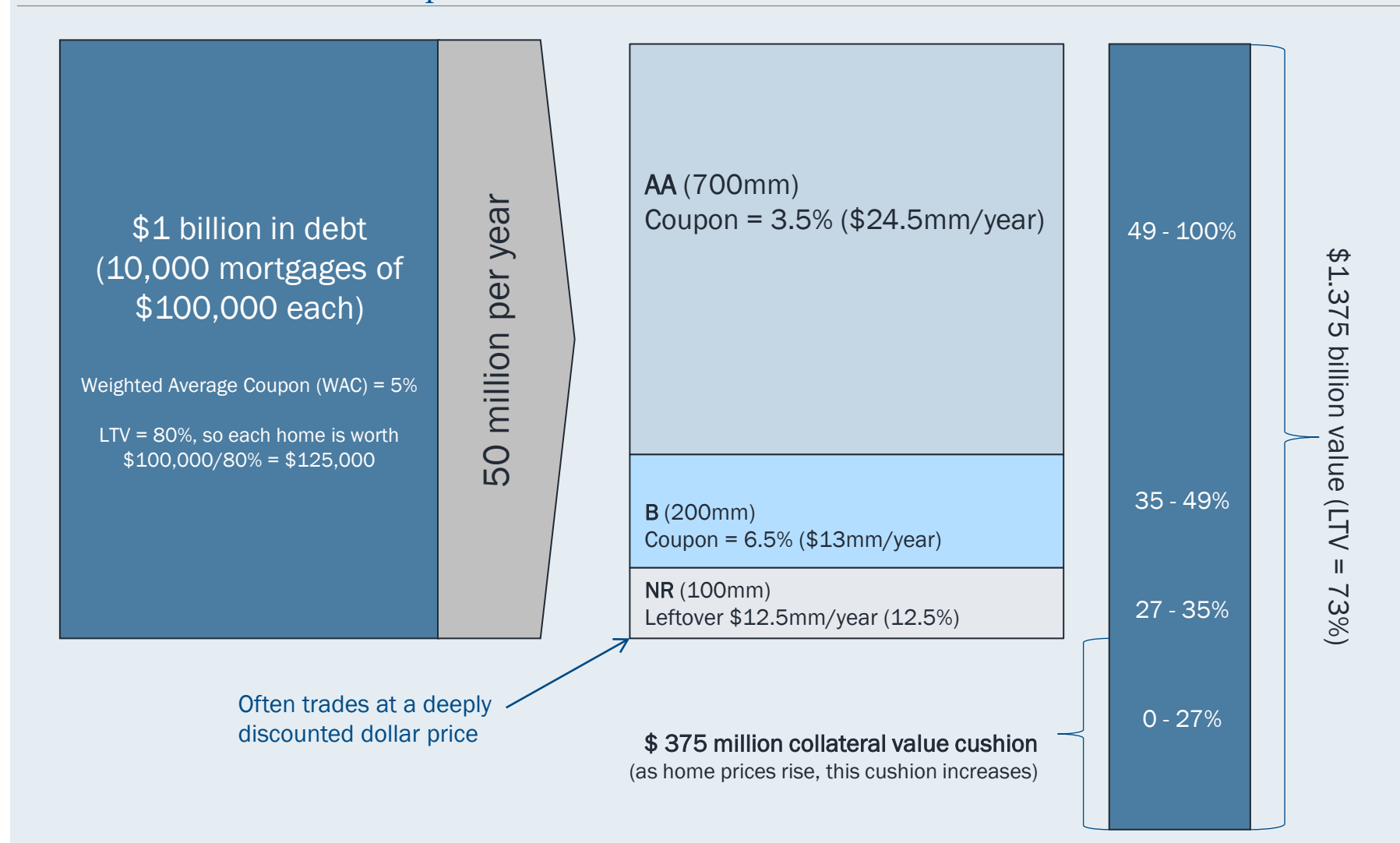
Risk of Default (Non-Agency Mortgages)



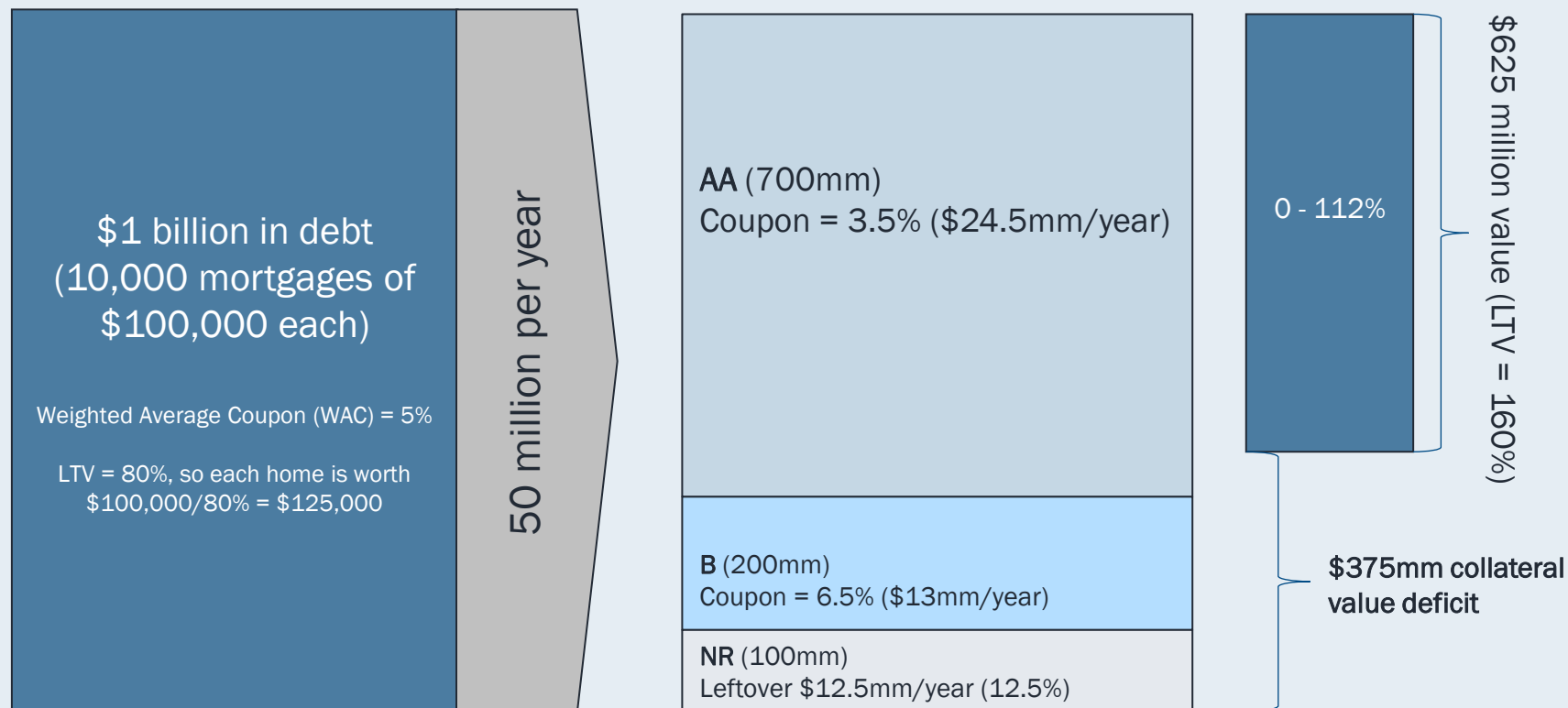
Mortgage-Backed Security



Scenario #1: Home Prices up 10% - collateral value rises from \$1.25bn to \$1.375bn



Scenario #2: Home Prices down 50%



50% of the pool now defaults, in addition to home prices down 50%, what are the losses?

5,000 borrowers default on \$100,000 each → \$500 million of balance

- What is the recovery?
 - Assume you liquidate the homes
 - Value was \$125,000 initially
 - Now value is only \$62,500
 - Assume fixed cost of \$10,000 for liquidating each house
 - $(\$62,500 - \$10,000) / \$100,000 = 52.5\%$ recovery (or 47.5% severity)
- What are my losses?
 - $500\text{mm} \times 47.5\% = \237.5mm

- For AA to be hit, losses must be more than \$300 million
 - With severity of 47.5%, $300\text{mm} / 47.5\% = \631.5mm of defaulted balance
 - Or, over 63% must default, in addition to home prices dropping 50%



Investing in Structured Credit



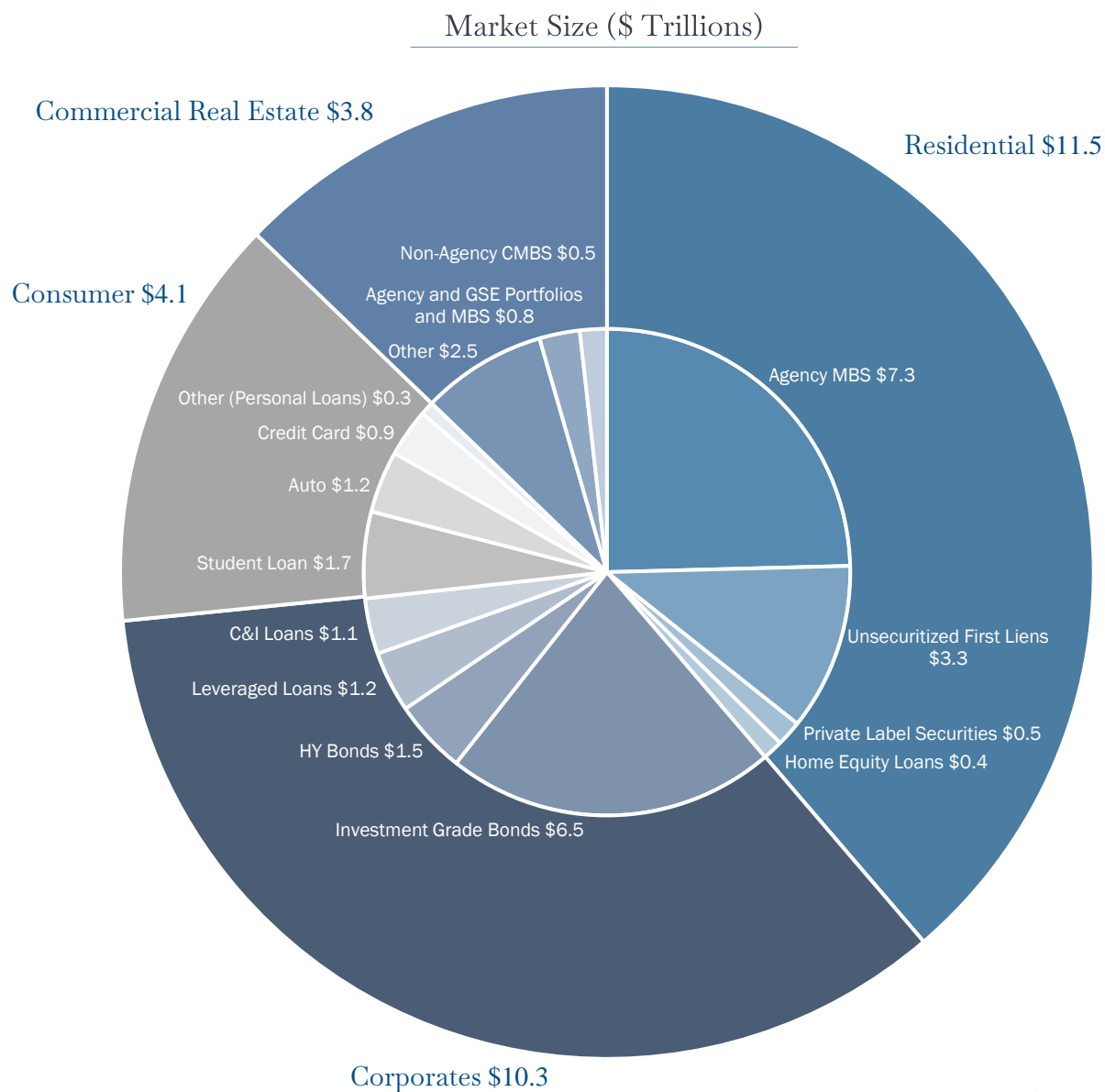
Why Now?



Ellington
Management Group



Debt markets
expand far
beyond the
corporate
sector



Source: St. Louis Federal Reserve, S&P LCD, SIFMA, Urban Institute, JP Morgan Research.

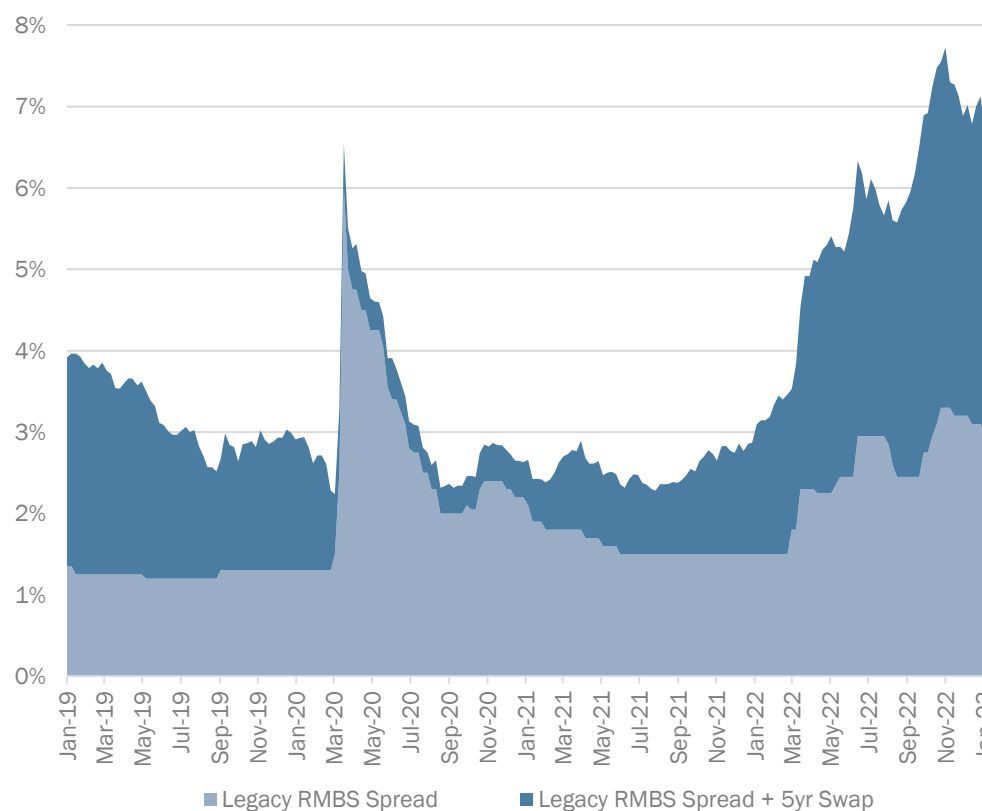
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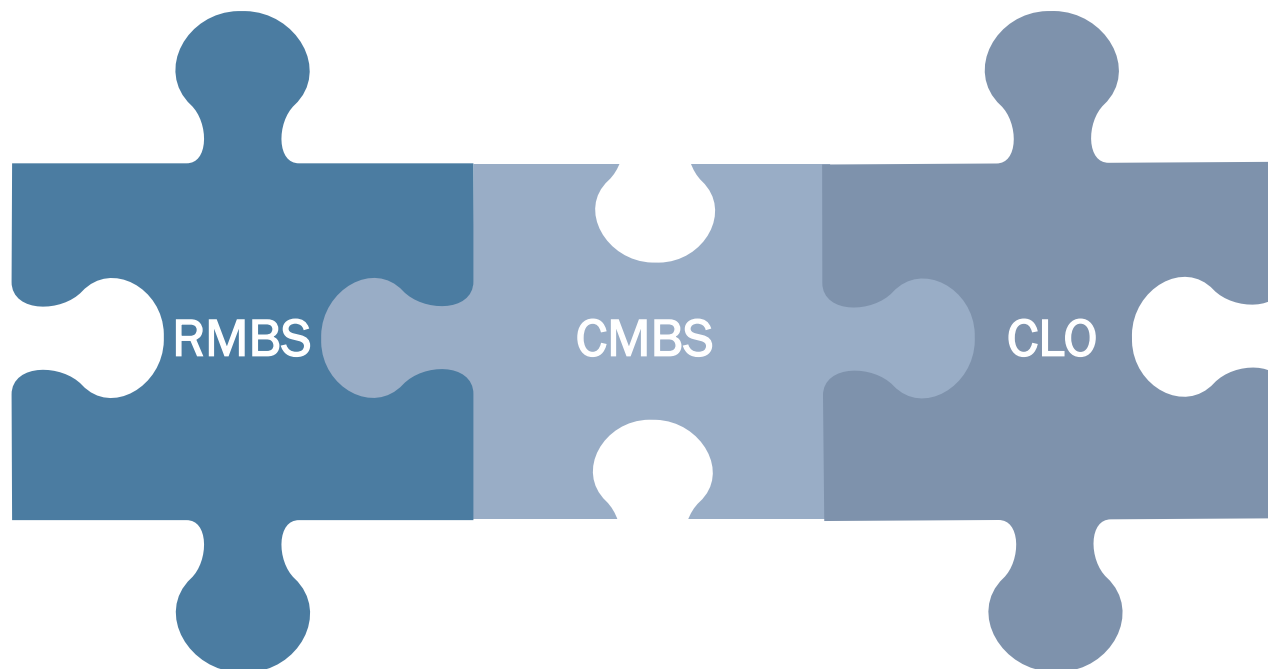


For the first time in recent history, money-good fixed-income assets can be sourced at equity-like yields through seasoned structured credit assets

- Structured credit assets have cheapened significantly because of technical events
- This spread widening in conjunction with the general increase in interest rates has driven the absolute yields on these products to the high single-digits and in some cases low double-digits
- Yields are now higher than in previous crisis periods such as March 2020 and are at levels not seen in over a decade
- While yields are higher across all fixed income products, the situation in structured credit assets is especially appealing

Legacy RMBS Proxy Yield





The fund's targeted asset classes share a common theme in the current market

- Outflow-related selling has driven sector yields to levels not seen in over a decade
- While technical pressures have weighed on these particular asset classes, fundamentals remain strong especially versus other parts of the credit markets

These security types have added features such as structural enhancement and performance triggers

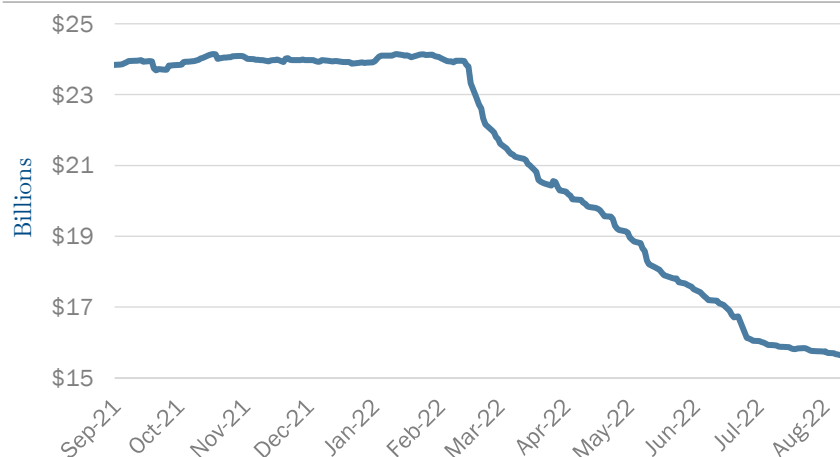
- As a result, these assets should have lower downside risk should the economy enter a severe recession
- We think investors are well-compensated for this downside protection with significant upside should sentiment improve



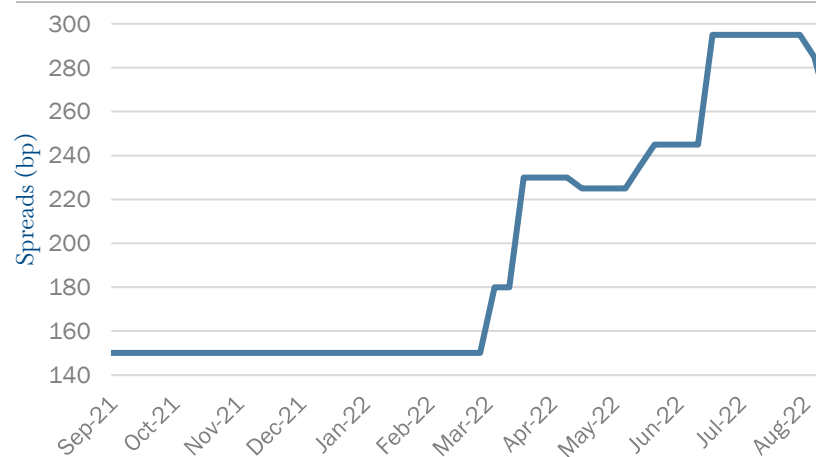
Redemption-driven selling has weighed on structured credit performance

- Certain funds have lost as much as 75% of AUM, flooding the market with securities
 - Weak performance from other funds has removed once-dominant bidders in the market
- Excess new issue supply has also driven spreads steadily wider
 - Supply has been heavy in sectors such as CRT, as Fannie Mae and Freddie Mac work through the backlog of mortgage issuance since COVID
 - Other sectors, such as non-QM RMBS, experienced high supply early in the year during the beginning of the interest rate sell-off and subsequent extension of bond profiles
- These market dynamics have been occurring despite a strong housing market, leading us to believe it is a good buying opportunity

Structured Credit-Focused Publicly Traded Funds – Total AUM



Legacy RMBS Proxy Spreads



Source: Bloomberg, Bank of America Research.

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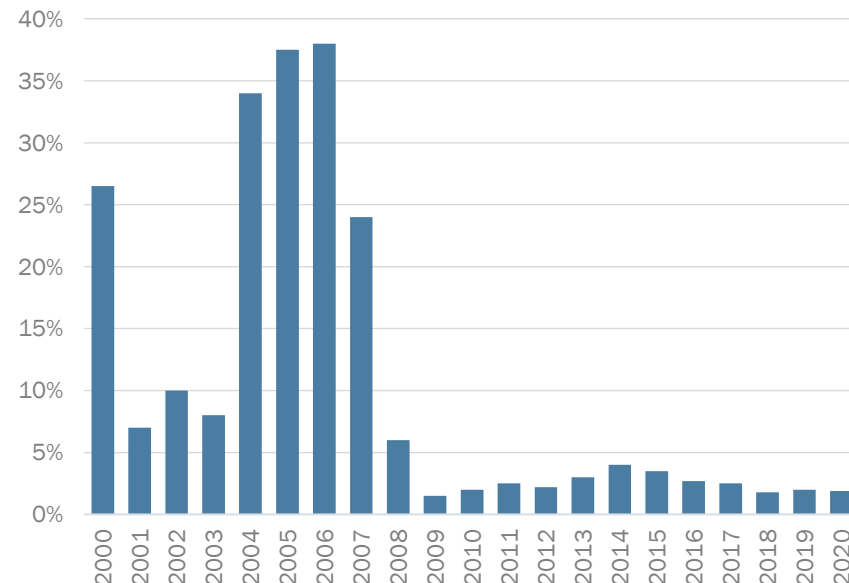
Rate Lock-In Effect Supportive of Mortgage Credit

- While challenging for first-time homebuyers, current borrowers locked into historically low rates is constructive for the credit of outstanding mortgages, both in willingness and ability to pay
- During the financial crisis, most homeowners could significantly lower their shelter costs by mailing in their keys, with home prices and rents depressed and rates sharply lower
 - Furthermore, adjustable-rate mortgages, many of which had exploding rate resets, helped trigger the crisis as many borrowers were unable to their higher monthly payments upon reset
- Today, nearly all outstanding homeowners have fixed-rate mortgages and would face higher shelter costs by mailing in their keys, in many cases even if they moved to a less expensive home
 - Transitioning from owning to renting would not provide relief either, with rent indices rising over 15% over the past year

Lending standards are dramatically tighter than in the mid-2000s



Affordability products decreased from more than 1/3 of production to 2%



Source: Mortgage Bankers Association. Black Knight, Morgan Stanley Research.

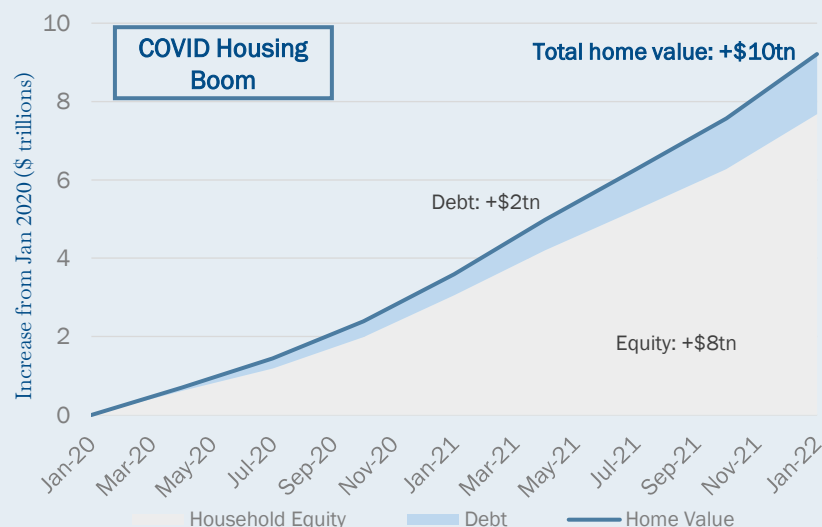
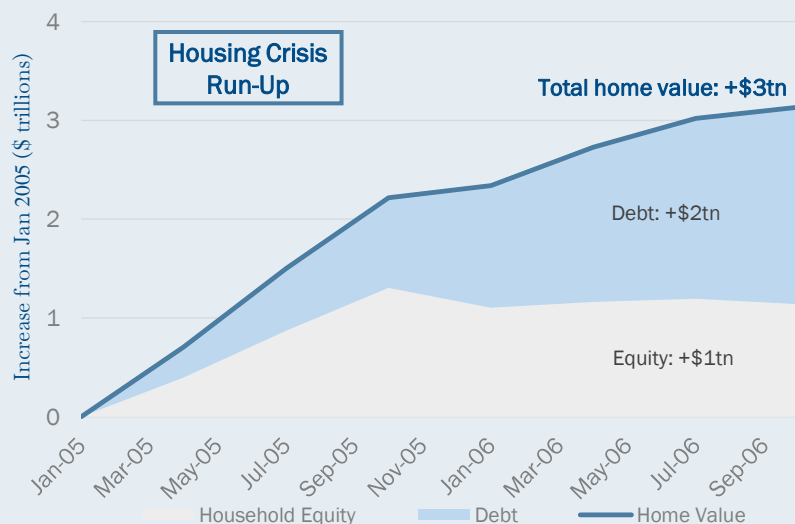
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U.S. Housing Resiliency: Substantial Homeowner Equity

- Homeowners have significant embedded equity and wealth in their homes, the exact opposite backdrop to 2008's strategic defaults
 - Aggregate home price-adjusted loan-to-value ratio sits around 30%, a level not seen since the late 1980s
- In 2005-2006, home prices were still increasing, but household equity remarkably declined
 - Borrowers were cashing out home equity in excess of the price gains
 - Aggressive equity extraction shows the pre-2008 housing bubble was fueled by a credit boom, notably in the face of rising rates, that expanded homeownership through increasingly irresponsible underwriting and affordability products
- In contrast, home price gains over recent years have been accompanied by analogous home equity gains
 - Elevated home price cushion offers the potential to tap into home equity to increase cashflow if necessary

Before the housing crisis, equity rose modestly and then declined while prices rose, as borrowers cashed out equity. Since 2020, equity has risen with prices. Borrowers refinanced to lock in lower rates rather than tap equity.



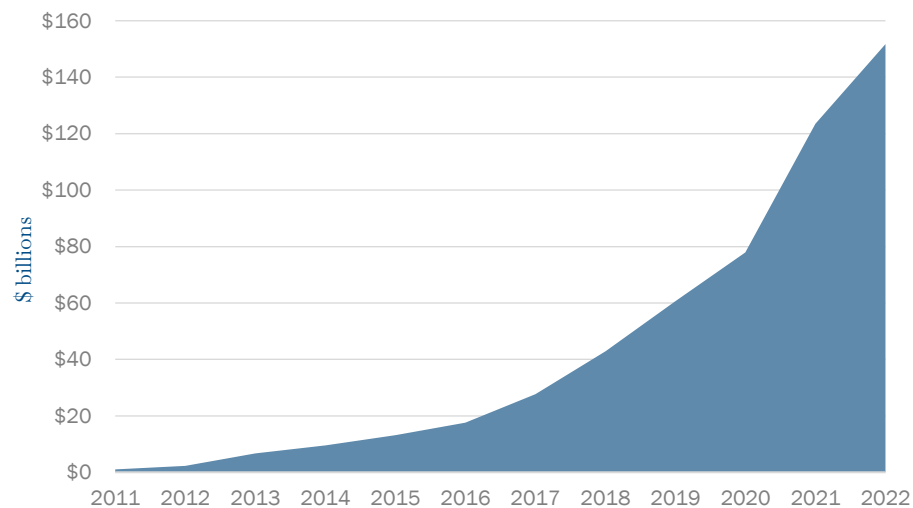
- CRE CLOs are a rapidly growing segment of the CMBS universe, with over \$29 billion of issuance in 2022

- Backed by shorter, floating rate commercial loans on properties typically with some renovation/upgrade plan
- Deal sponsors include a range of private equity firms, real estate funds, REITs, and national/local private owners

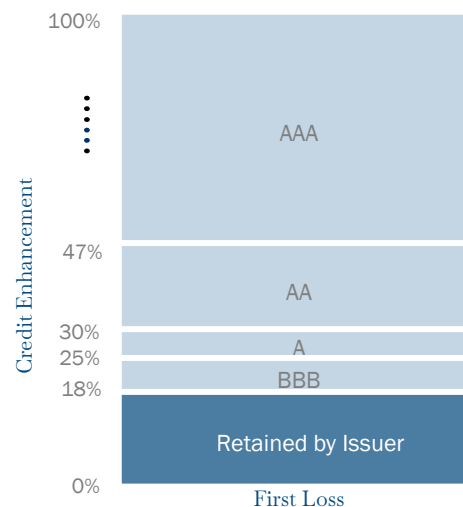
- CRE CLO structures have significant levels of credit enhancement

- Today's structures can easily withstand the historical loss levels of conduit CMBS during the financial crisis
- In addition, a large first loss piece is retained by the deal issuer, creating alignment of interest with investors

Total CRE CLO Issuance



CRE CLO Structure



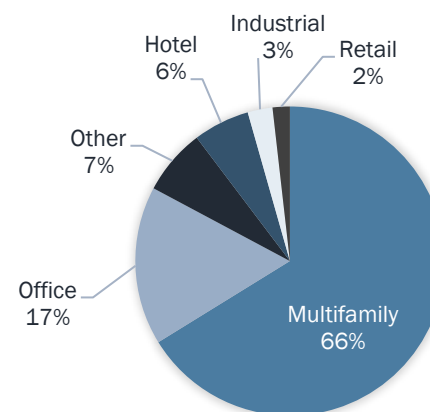
Commercial Real Estate CLO Market Has Other Distinct Advantages

Commercial Real Estate CLO securities generally offer a number of advantages over other Investment-Grade CMBS and an attractive yield profile relative to corporate credit

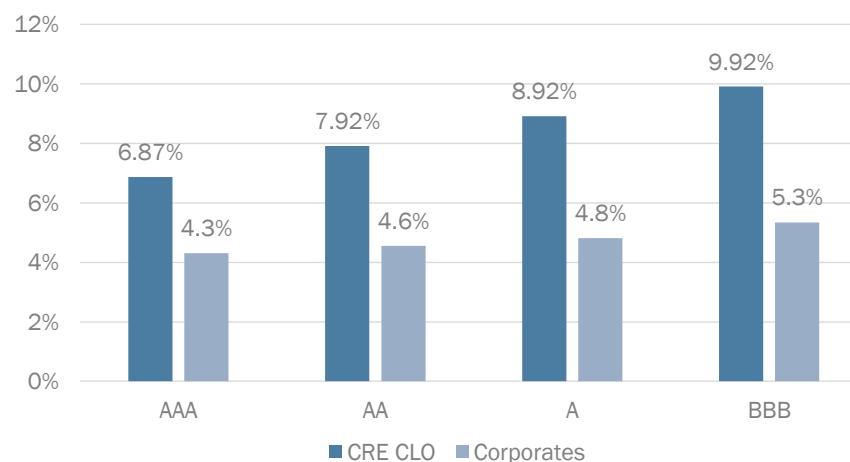
Short Duration	Provides less rate sensitivity
Floating Rate Coupons	These bonds provide protection in a rising rate environment
High Multifamily Concentration	We favor pools with low hotel and retail exposure
Attractive Yield Profile	Relative to similarly rated corporate credits
Significant Credit Enhancement	Structures can withstand historical loss levels

- Issuance is at record levels providing significant opportunities
 - 2022 issuance of over \$29 billion, outpacing conduit (fixed rate stabilized loans) at \$23 billion¹
 - We continue to see regular loan payoffs in our seasoned CRE CLO holdings
- CMBS demonstrates low relative correlations to other fixed income asset classes because CMBS is secured by real estate diversified across property type, geography, and borrower type.

CRE CLO Exposure by Property Type²



CRE CLO vs. Corporate Bond Yields³



Source: ¹ JP Morgan Research, as of February 21, 2023. ² JP Morgan Research, as of October 13, 2022. ³ JP Morgan as of February 3, 2023.

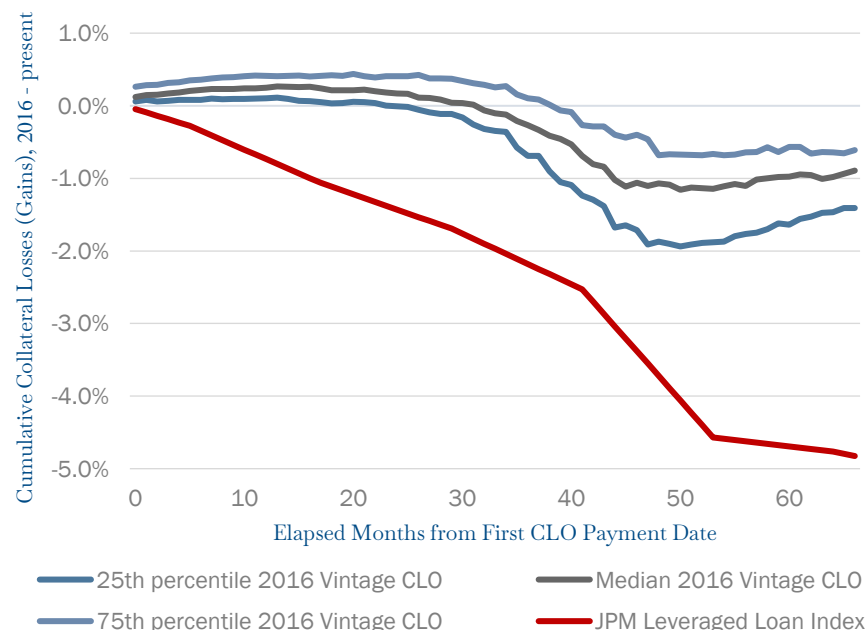


- We believe collateralized loan obligations (CLOs) present a compelling, well diversified way to access the bank loan market, a seasoned, \$1.7 trillion¹ market with over \$350 billion in net issuance in 2021²
- CLOs are the largest asset class within the private-label securitized products universe, eclipsing \$100 billion in issuance every year since 2016³ and totaling over \$1.1 trillion⁴ in outstanding notional
- Historically, CLO debt tranches have demonstrated resiliency to corporate defaults due to structural features that preserve cash flows in times of stress, such as:
 - Floating rate notes with excess spread
 - Credit enhancement in the form of subordinate securities and overcollateralization
 - Deal triggers that divert excess interest to protect senior tranches
- Attractive opportunities exist in delevering CLO debt tranches, which now trade to maturity as opposed to a near term call
 - Mispriced call option can offer meaningful upside in scenarios where loans rebound even slightly
 - Delevering tranches are more likely to obtain credit rating upgrades, enhancing total return by improving liquidity

CLO vs. Corporate Bond Annualized Downgrade Rates, 2016 – present⁵

	July 2019-2020	5-year Avg.
Global CLOs	1.73%	2.35%
Global Corporates	16.16%	10.31%

CLOs have historically experienced meaningfully lower collateral losses than the benchmark leveraged loan index⁶



Source: ¹SIFMA, ^{2,3}LCD, ⁴Citi, ⁵Moody's Investor Service, ⁶BofA Global Research, J.P. Morgan



Leveraged loans have been resilient historically and continue to enjoy protections in the current market environment

Trailing Twelve Month Morningstar/LSTA Leveraged Loan Default Rate: 0.83%¹



Loan issuance remains low relative to CLO issuance, providing technical support for loan spreads²



Source: ^{1,2}Morningstar/LCD

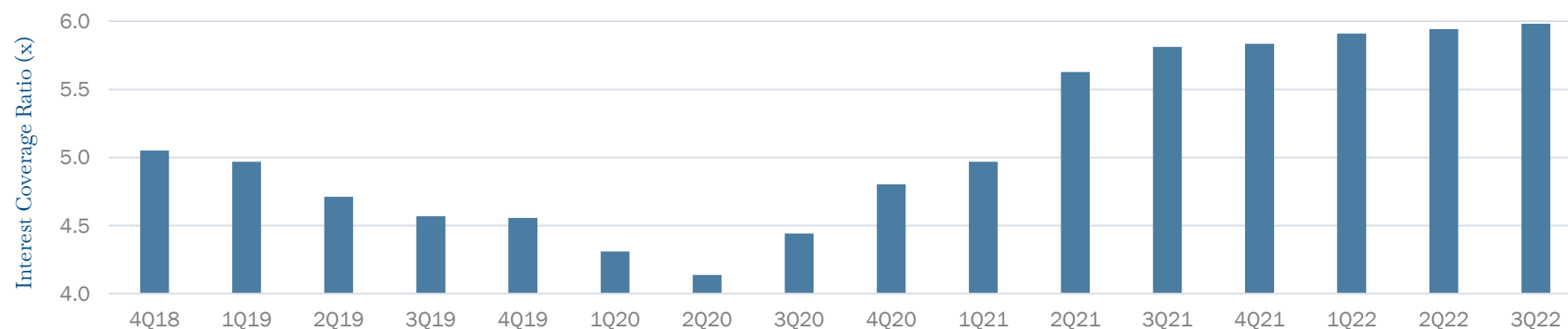
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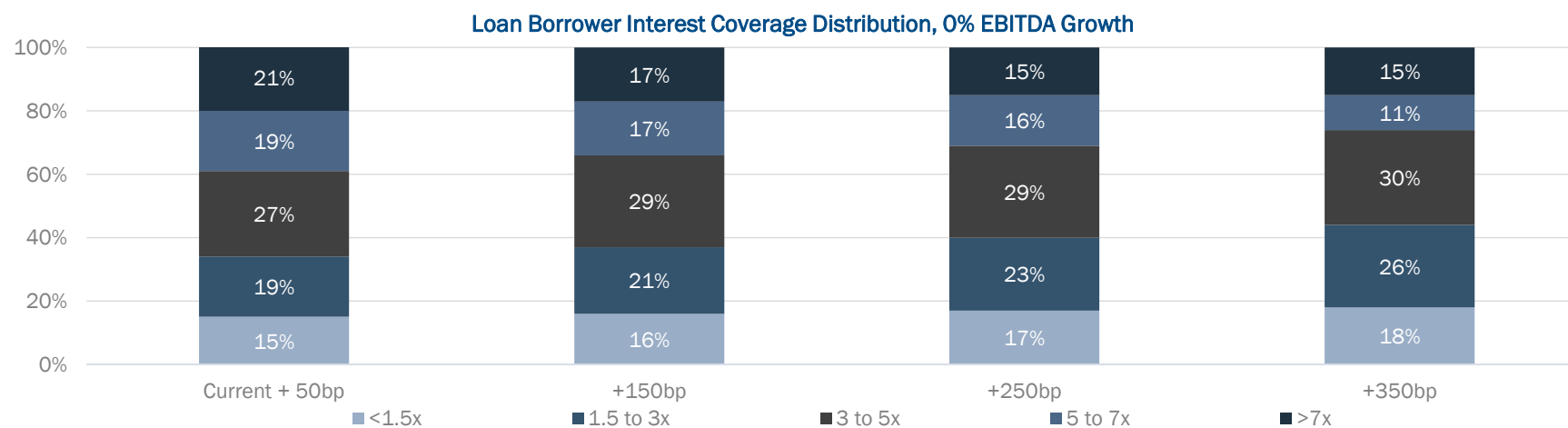
Leveraged Loan Performance and Resiliency Over Time (cont.)

Even in a rapidly rising interest rate environment, leveraged loan issuers remain well positioned to service their interest expenses

Current interest coverage ratios remain strong on average across the Morningstar/LSTA Leveraged Loan Index...¹



... and even in more extreme rate shock scenarios, projected transitions into the lowest interest coverage ratio bucket remain limited²



Source: ¹Morningstar/LCD, ²Bloomberg, S&P LCD, S&P Capital IQ, Morgan Stanley Research

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PERA

Public Employees
Retirement Association
of New Mexico

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Chair, State Member
Greg Trujillo
Executive Director

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Website: www.nmpera.org

INVESTED IN TOMORROW.

MEMORANDUM

DATE: December 13, 2022

TO: Investment Committee Chair for 2023

FROM: Michael Shackelford, CIO and LeAnne Larrañaga-Ruffy, Deputy CIO

SUBJECT: Memo of Continuity

The following items were completed by the Investment Committee in 2022:

- Total Fund Quarterly Performance and Market Review
 - Q4 2021
 - Q1 2022
 - Q2 2022
 - Q3 2022
- Reviewed Investment Division Compliance Update Quarterly
 - Manager Selection Activity Report
 - Cash Activity & Rebalance Update
 - Securities Lending Update
- Bi-annual Illiquid Asset Class Performance Reporting
 - Q4 2021 – inclusive of private asset primer
 - Q2 2022
- Bi-annual Bonds Plus Portable Alpha Review
 - Q4 2021
 - Q2 2022
- Reviewed and Approved 2022 Work Plan (March 2022)
- Reviewed and Approved 2022 Active Risk & Return Target (March 2022)
- Participated in Asset Allocation Education (July 2022)
- Reviewed and Approved New SAA Targets (September 2022)
- Reviewed and Approved Benchmarks (September 2022)
- Reviewed and Approved Investment Policy Statement Appendix Amendment (September 2022)
- Reviewed Investment Policy Statement- no additional changes (December 2022)
- Reviewed Investment Committee Charter – no changes (December 2022)

The following items are currently in progress for 2023 completion:

- Custody Bank RFP



Wilshire

Prepared for



Public Employees Retirement Association of New Mexico

Investment Performance Review

Stephen DiGirolamo, CFA, CAIA – Managing Director
Joanna Bewick, CFA – Senior Vice President

Q2 FY23

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- [Additional Information](#)

Scorecard

Scorecard: Strategic Asset Allocation

- As of December 31, 2022, PERA is below the assumed rate of return for most time periods, but above the assumed rate of return since inception.
- The 20-year period includes the Great Recession and Dotcom era bust. Returns are at 6.65%.

PERA Investment Goal	Measurement	Total Fund Results	Assumed Return	Excess Return	Scorecard
Set Strategic Asset Allocation (Policy Portfolio) to meet the assumed return and funding goals over the long-term (10 years and longer)	•FYTD	-0.70%	3.56%	-4.26%	Below
	•1 year	-8.36%	7.25%	-15.61%	Below
	•3 years	4.51%	7.25%	-2.74%	Below
	•5 Years	5.00%	7.25%	-2.25%	Below
	•7 years	6.55%	7.29%	-0.74%	Below
	•10 years	6.62%	7.43%	-0.81%	Below
	•20 years	6.65%	7.59%	-0.94%	Below
	•30 years	7.61%	7.64%	-0.03%	Below
	NOTE: 7.25 Annual (7.75 before July 2016)				
	•ITD	8.56%	7.66%	0.90%	Meets

Scorecard: Strategic Asset Allocation, continued

- ✓ PERA's capital allocations were in line with SAA targets:

Capital Allocation				
Asset Class	Target %	Actuals %	Difference Δ	IPS Ranges %
Global Equity	35.5%	37.5%	2.0%	+/- 5%
Credit	15.0%	18.9%	3.9%	+/- 4%
Risk Mitigation	19.5%	17.1%	-2.4%	+/- 3%
Real Assets	20.0%	18.1%	-2.0%	+/- 4%
Multi-Risk	10.0%	8.5%	-1.5%	+/- 4%
Total Fund	100.0%	100.0%		

- PERA's 4-year tracking error was outside of ranges, while excess return was within ranges:

Active Risk Allocation versus Policy Portfolio			
	4-Year Results	Target	Range
Ex-Post Actionable Total Fund Tracking Error	0.97%	1.25%	1.0% - 2.0%
Ex-Post Total Fund Tracking Error	5.25%	2.50%	2.0% - 3.0%
Ex-Post Excess Return	0.10%	1.0%	0.0% - 2.0%
Source: Board Risk Report (BNYM) / Calculations are based on NOF figures.			

- ✓ PERA's liquidity allocations were in line with liquidity guidelines:

Liquidity Allocation			
Tier	Actuals \$M	Actuals %	Guideline
Tier 1 (1-5 Days)	\$2,329	14%	Tier 1 Assets ≥ 10% Fund NAV
Tier 2 (5-90 Days)	\$6,516	40%	
Tier 3 (90-365 Days)	\$1,076	7%	
Tier 4 (1 Year +)	\$6,264	39%	
	\$16,185	100%	

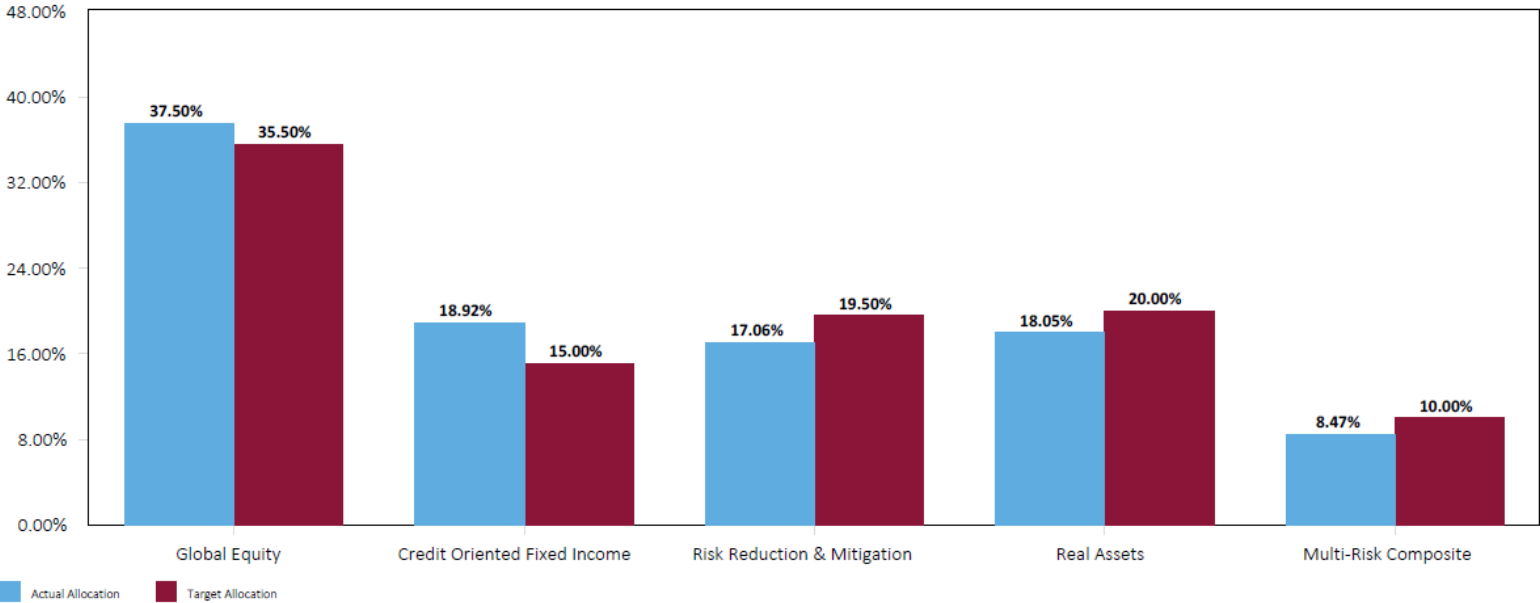
Scorecard: Market Performance

PERA Investment Goal	Measurement	Total Fund Results	Benchmark Return	Excess Return	Scorecard
Produce returns that meet or exceed Board approved Total Fund benchmarks:	Policy Portfolio:				
	•FYTD	-0.70%	-0.01%	-0.69%	Below
	•1 Year	-8.36%	-14.17%	5.81%	Meets
	•3 years	4.51%	1.18%	3.33%	Meets
	•5 Years	5.00%	3.04%	1.96%	Meets
	•7 years	6.55%	5.24%	1.31%	Meets
	•10 years	6.62%	5.67%	0.95%	Meets
	•20 years	6.65%	6.54%	0.11%	Meets
	•30 years	7.61%	6.88%	0.73%	Meets
	•ITD	8.56%	8.13%	0.43%	Meets
Meet or exceed the Policy Portfolio over the long-term	Peer Rankings				
	Fund Sharpe	Fund Ranking	No. of Funds		
	•1 Year	-1.13	67	59	Below
	•3 years	0.45	26	57	Meets
	•5 Years	0.50	25	57	Meets
	•7 Years	0.77	25	57	Meets
Median risk adjusted peer performance ranking over the long-term (InvestMetrics)	•10 years	0.84	36	54	Meets
	ITD Reference Portfolio Benchmark Return: 58% MSCI ACWIIMI (\$n), 42% Bloomberg Barclays U.S. Aggregate 12/31/08 - Present, 62% MSCI ACWIIMI (\$n), 38% Bloomberg Barclays U.S. Aggregate from 05/31/94 - 12/31/08, 62% Russell 3000 Index, 38% Bloomberg Barclays U.S. Aggregate from Inception - 05/31/94.				

Total Fund

Total Fund Asset Allocation

December 31, 2022

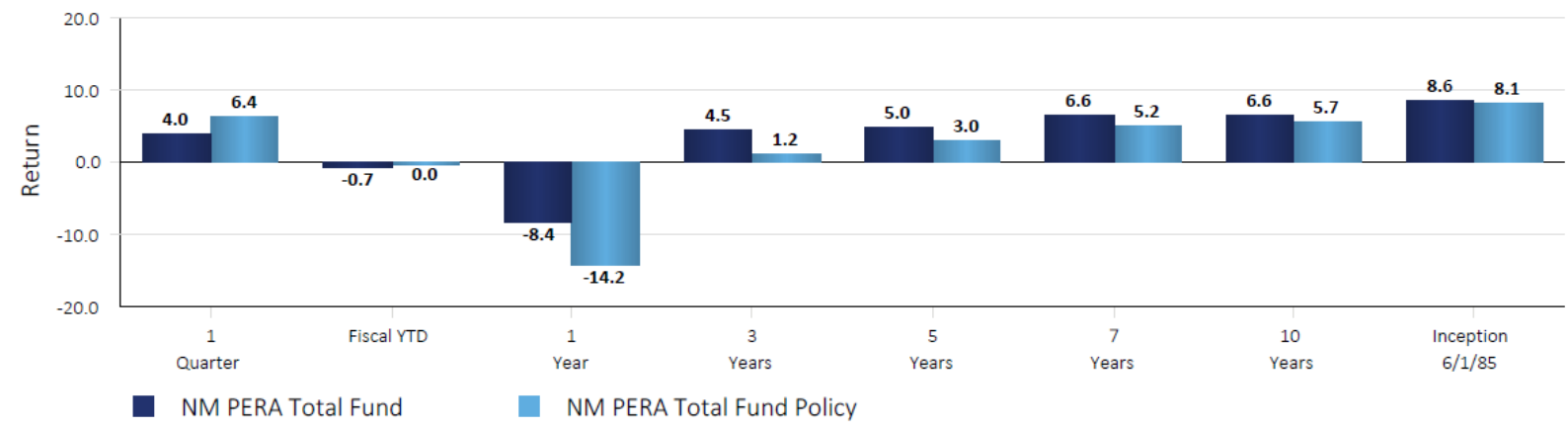


December 31, 2022			
	Market Value \$	Allocation (%)	Target (%)
Global Equity	6,069,195,632	37.50	35.50
Credit Oriented Fixed Income	3,062,175,227	18.92	15.00
Risk Reduction & Mitigation	2,761,045,148	17.06	19.50
Real Assets	2,921,193,295	18.05	20.00
Multi-Risk Composite	1,371,033,202	8.47	10.00
Total Fund	16,184,642,503	100.00	100.00

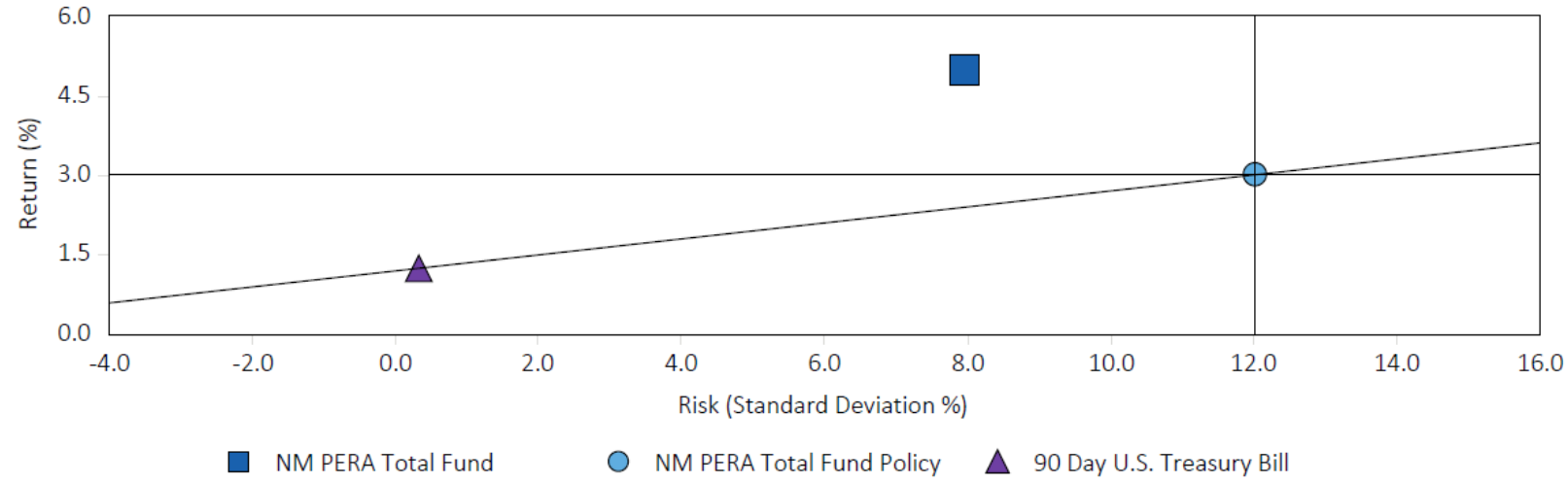
STO Balance as of 12/31/22 is \$24,402,091; Total Market Value with STO is \$16,209,044,594

Total Fund Performance Summary as of December 31, 2022

Comparative Performance



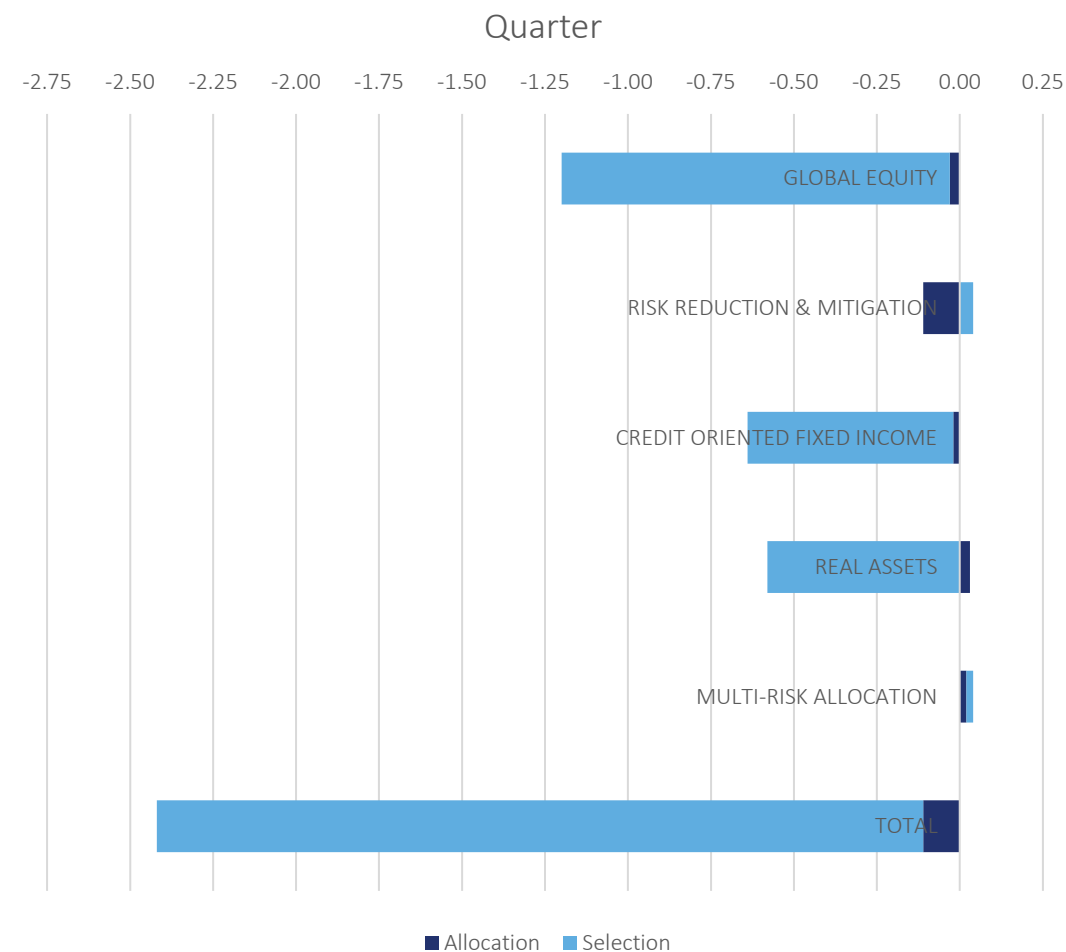
Risk vs. Return - 5 Years



Total Fund Composites

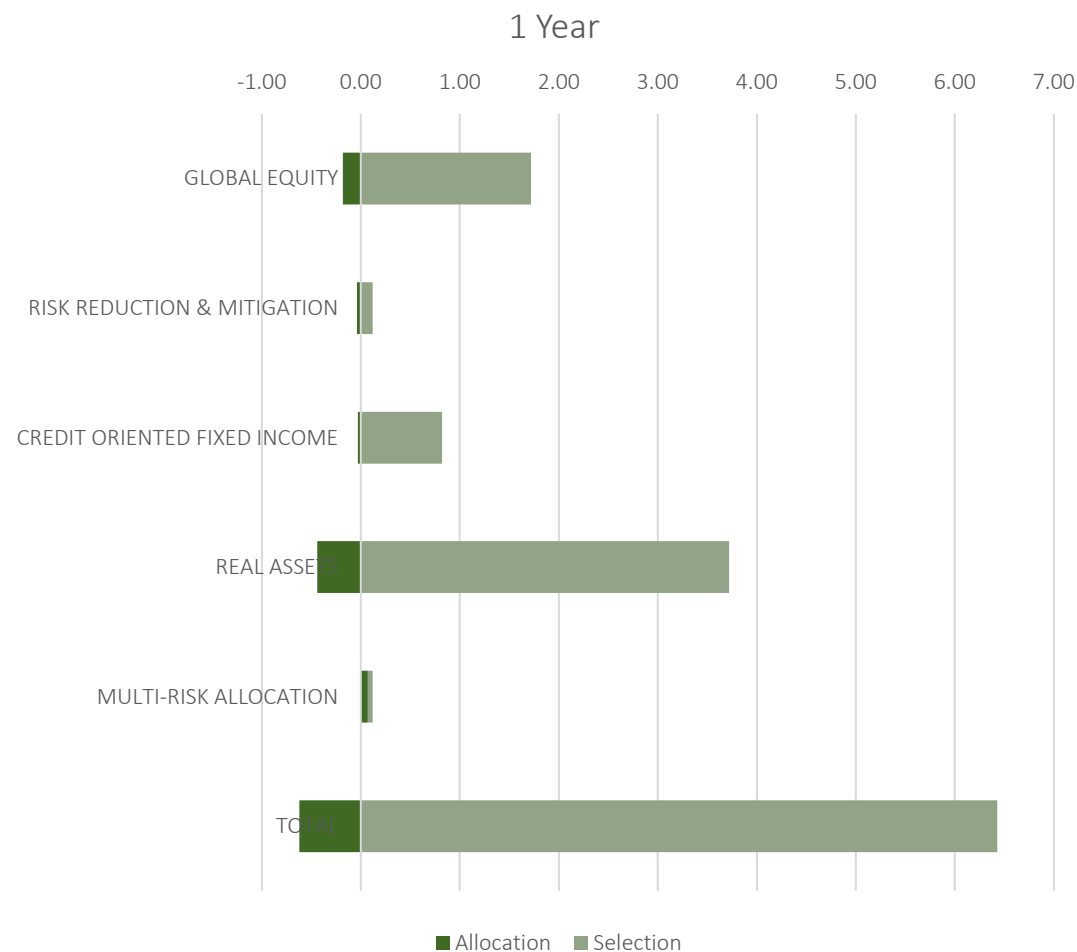
COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
NEW MEXICO PERA TOTAL FUND	3.99	-0.70	-8.36	-8.36	4.51	5.00	6.55	8.56	6/1/1985	\$ 16,184,642,503	100.00
Total Policy Benchmark	6.41	-0.01	-14.17	-14.17	1.18	3.04	5.24	8.13			
Excess Return	-2.42	-0.69	5.81	5.81	3.33	1.96	1.31	0.43			
7.25 Annual (7.75 before 7/16)	1.77	3.56	7.25	7.25	7.25	7.25	7.29	7.66			
Excess Return	2.23	-4.26	-15.61	-15.61	-2.74	-2.25	-0.74	0.90			
GLOBAL EQUITY	6.21	-0.71	-12.37	-12.37	7.95	7.71	10.06	9.11	4/1/2013	\$ 6,069,195,632	37.50
80.28% MSCI ACWI IMI (\$N)/19.72% MSCI ACWI Min Vol	9.58	2.46	-16.82	-16.82	3.47	5.07	8.13	8.20			
Excess Return	-3.37	-3.17	4.44	4.44	4.48	2.64	1.93	0.91			
CREDIT ORIENTED FIXED INCOME	1.84	0.03	-6.82	-6.82	2.75	3.16	4.53	4.05	4/1/2013	\$ 3,062,175,227	18.92
80% BBG Global HY Hdg/20% JPM EMD Blend	6.77	4.62	-11.77	-11.77	-2.09	0.40	3.27	3.01			
Excess Return	-4.93	-4.59	4.94	4.94	4.85	2.76	1.26	1.04			
RISK REDUCTION & MITIGATION	1.64	-3.03	-12.02	-12.02	-2.10	0.46	1.40	1.45	4/1/2013	\$ 2,761,045,148	17.06
87.18% Bloomberg US Agg/12.82% Bloomberg Global Agg Hdg	1.76	-2.89	-12.78	-12.78	-2.69	0.07	0.93	1.15			
Excess Return	-0.12	-0.14	0.76	0.76	0.60	0.39	0.47	0.30			
REAL ASSETS	3.76	3.44	10.70	10.70	8.72	7.17	6.90	6.13	4/1/2013	\$ 2,921,193,295	18.05
10% Alerian MLP/15%US TIPS/20%DJ Global Infra/20% Commodity	5.82	-1.51	-6.98	-6.98	4.34	4.36	5.15	4.84			
Excess Return VS Real Assets BM	-2.05	4.95	17.68	17.68	4.38	2.82	1.75	1.29			
MULTI-RISK ALLOCATION	4.93	-6.87	-25.55	-25.55	-3.57			0.85	5/1/2019	\$ 1,371,033,202	8.47
Wilshire Risk Parity 15% Target Volatility Index	4.65	-7.65	-26.06	-26.06	-3.73			1.05			
Excess Return	0.28	0.78	0.51	0.51	0.15			-0.20			

Total Fund Attribution – Quarter



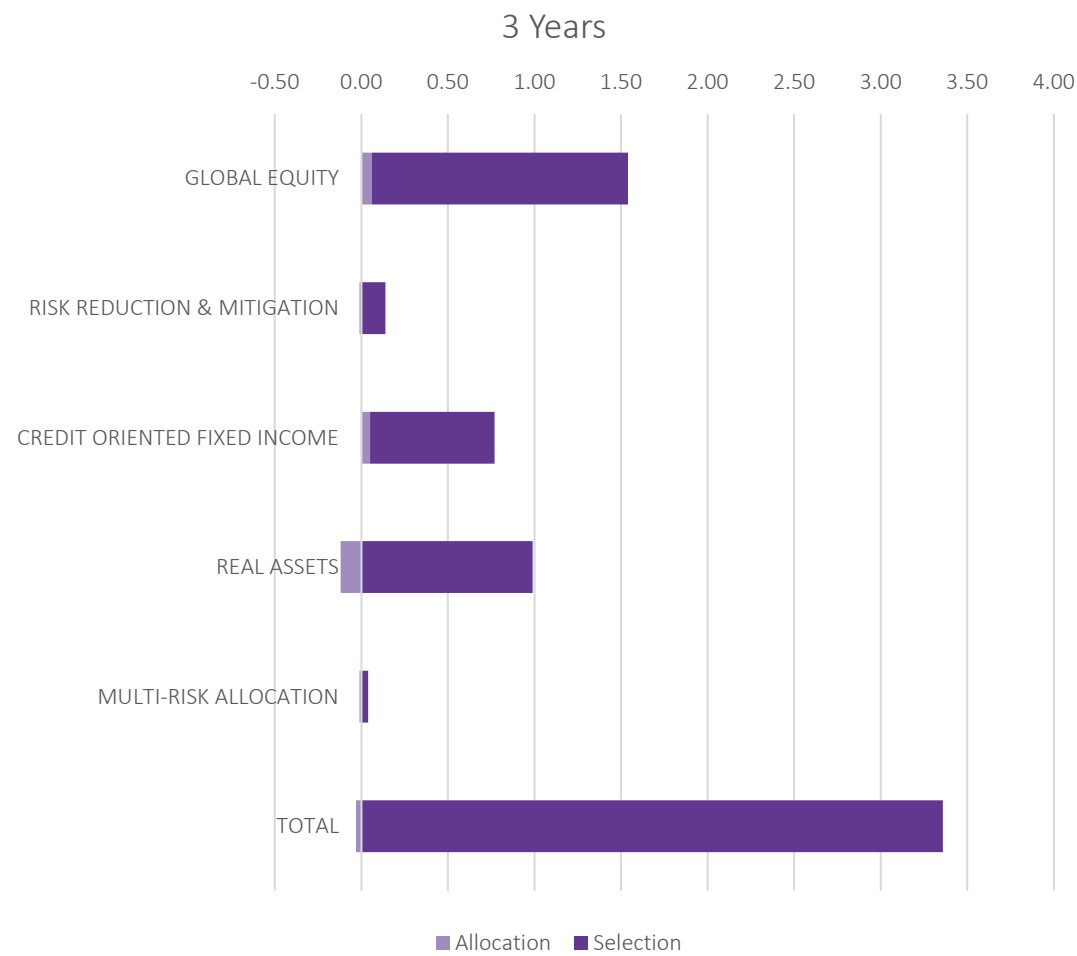
Quarter - 12/31/2022	NM PERA		Policy		Net Management Effects		
	Weight	Return	Weight	Return	Allocation	Selection	Total
COMPOSITE							
GLOBAL EQUITY	35.25	6.22	35.50	9.58	-0.03	-1.17	-1.20
Global Public Stock	15.96	10.37	19.50	9.84	-0.17	0.08	-0.10
Global Low Volatility	5.24	8.53	7.00	8.48	-0.04	0.00	-0.03
Private Equity	14.05	1.08	9.00	9.84	0.18	-1.25	-1.06
RISK REDUCTION & MITIGATION	19.50	1.64	19.50	1.73	-0.11	0.04	-0.07
Domestic Core Fixed Income	11.19	1.89	12.00	1.87	0.03	0.00	0.03
Bonds Plus	5.15	1.72	5.00	1.87	-0.02	-0.01	-0.03
Global Core Fixed Income	2.05	4.71	2.50	0.99	-0.02	0.04	0.02
Cash	1.10	-2.71	0.00	0.00	-0.09	0.00	-0.09
CREDIT ORIENTED FIXED INCOME	14.91	1.84	15.00	6.77	-0.02	-0.62	-0.65
Liquid Credit	4.55	8.41	2.00	6.38	0.11	0.05	0.16
Emerging Market Debt	1.28	0.12	3.00	8.29	-0.12	-0.10	-0.22
Illiquid Credit	2.32	2.67	6.00	6.38	0.00	-0.09	-0.09
Alt Liquid Credit	6.77	-0.66	4.00	6.38	-0.01	-0.49	-0.50
REAL ASSETS	21.80	3.76	20.00	5.82	0.03	-0.58	-0.54
Liquid Real Estate	0.56	2.60	2.00	5.81	0.02	-0.01	0.00
Illiquid Real Estate	9.21	2.85	5.00	5.81	-0.02	-0.29	-0.31
Liquid Real Assets	4.26	3.19	5.00	5.40	0.03	-0.16	-0.12
Illiquid Real Assets	7.76	4.50	8.00	6.01	0.00	-0.12	-0.12
Market Neutral HF	0.00	0.66	0.00	0.00	0.00	0.00	0.00
MULTI-RISK ALLOCATION	8.54	4.93	10.00	4.65	0.02	0.02	0.04
TOTAL	100.00	3.99	100.00	6.41	-0.11	-2.31	-2.42

Total Fund Attribution – 1 Year



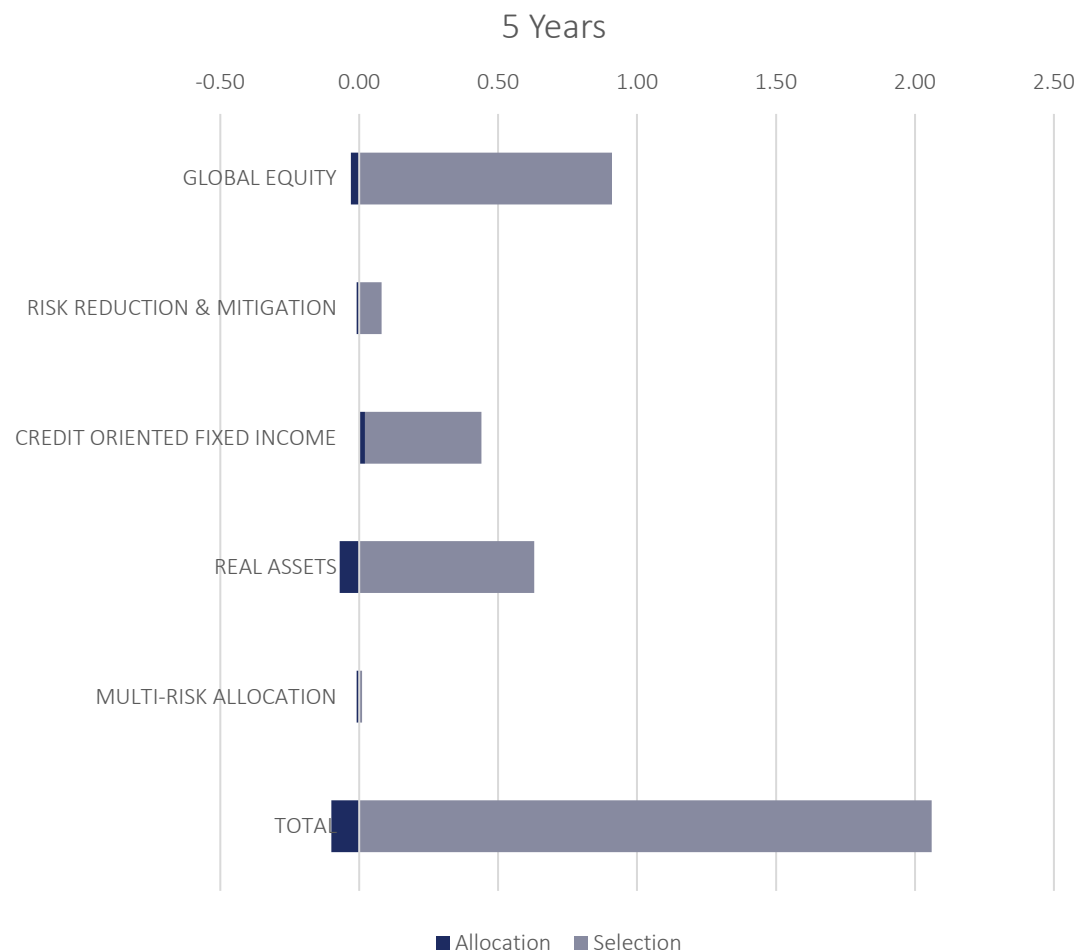
1 year -12/31/2022	NM PERA		Policy		Net Management Effects		
	Weight	Return	Weight	Return	Allocation	Selection	Total
COMPOSITE							
GLOBAL EQUITY	35.12	-12.37	35.50	-16.82	-0.18	1.72	1.53
Global Public Stock	16.48	-20.41	19.50	-18.40	0.01	-0.38	-0.37
Global Low Volatility	5.16	-9.98	7.00	-10.31	-0.08	0.02	-0.06
Private Equity	13.48	-1.43	9.00	-18.40	-0.12	2.08	1.97
RISK REDUCTION & MITIGATION	19.44	-12.02	19.50	-12.78	-0.04	0.12	0.08
Domestic Core Fixed Income	11.27	-13.76	12.00	-13.01	-0.04	-0.09	-0.12
Bonds Plus	5.09	-9.67	5.00	-13.01	-0.01	0.17	0.16
Global Core Fixed Income	2.35	-7.81	2.50	-11.22	-0.02	0.04	0.02
Cash	0.75	-9.45	0.00	0.00	0.01	0.00	0.01
CREDIT ORIENTED FIXED INCOME	14.89	-6.83	15.00	-11.77	-0.03	0.82	0.80
Liquid Credit	3.39	-9.62	2.00	-11.05	0.14	0.02	0.16
Emerging Market Debt	2.23	-23.56	3.00	-14.75	-0.11	-0.15	-0.25
Illiquid Credit	2.29	9.34	6.00	-11.05	-0.12	0.43	0.31
Alt Liquid Credit	6.97	-4.09	4.00	-11.05	0.06	0.52	0.58
REAL ASSETS	21.30	10.70	20.00	-6.98	-0.44	3.72	3.28
Liquid Real Estate	0.92	-21.97	2.00	-26.13	0.16	0.05	0.20
Illiquid Real Estate	8.13	20.70	5.00	-26.13	-0.39	3.35	2.96
Liquid Real Assets	5.49	-3.77	5.00	4.09	0.21	-0.45	-0.24
Illiquid Real Assets	6.76	17.56	8.00	4.98	-0.42	0.77	0.35
Market Neutral HF	0.01	-24.32	0.00	0.00	0.00	0.00	0.00
MULTI-RISK ALLOCATION	9.25	-25.54	10.00	-26.06	0.07	0.05	0.12
TOTAL	100.0	-8.36	100.0	-14.17	-0.62	6.43	5.81

Total Fund Attribution – 3 Years



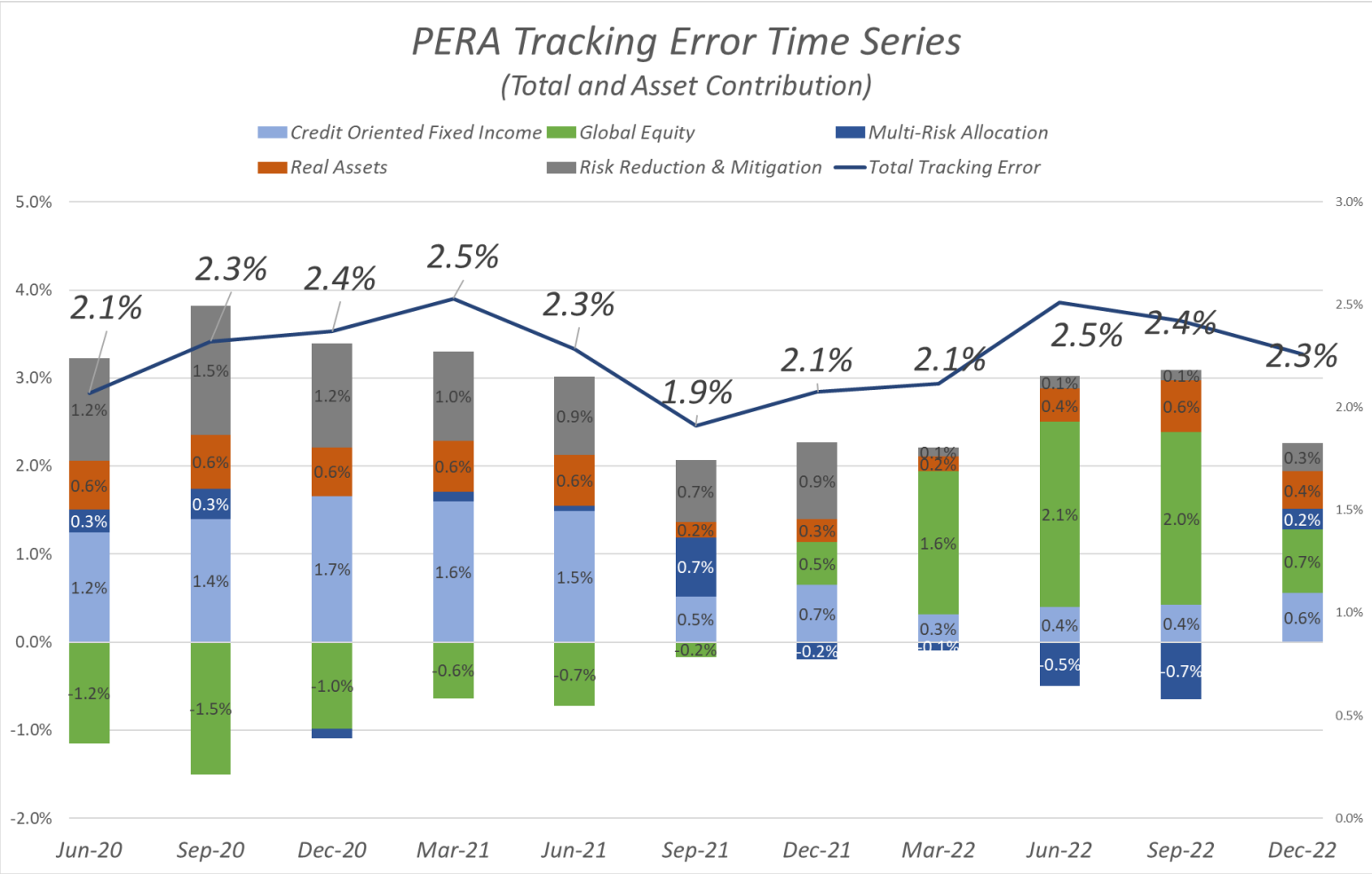
3 Years - 12/31/2022	NM PERA		Policy		Net Management Effects		
	Weight	Return	Weight	Return	Allocation	Selection	Total
COMPOSITE							
GLOBAL EQUITY	36.11	7.95	35.68	3.47	0.06	1.48	1.54
Global Public Stock	19.02	1.69	19.68	3.89	0.05	-0.41	-0.35
Global Low Volatility	6.38	1.87	7.00	1.62	-0.04	0.02	-0.03
Private Equity	10.70	23.11	9.00	3.89	-0.03	1.87	1.84
RISK REDUCTION & MITIGATION	19.15	-2.10	19.55	-2.69	-0.01	0.14	0.13
Domestic Core Fixed Income	11.48	-3.35	12.88	-2.71	0.27	-0.12	0.14
Bonds Plus	3.77	4.29	4.17	-2.71	-0.09	0.24	0.15
Global Core Fixed Income	2.51	-1.38	2.50	-2.59	-0.02	0.02	0.00
Cash	1.07	-1.26	0.00	0.00	-0.10	0.00	-0.10
CREDIT ORIENTED FIXED INCOME	14.72	2.76	15.00	-2.09	0.05	0.72	0.77
Liquid Credit	3.34	-1.40	2.44	-1.21	0.04	0.04	0.08
Emerging Market Debt	2.37	-6.34	3.00	-5.66	-0.01	0.01	0.01
Illiquid Credit	3.64	7.15	6.00	-1.21	0.02	0.16	0.19
Alt Liquid Credit	5.30	0.00	3.56	0.00	-0.06	0.52	0.46
REAL ASSETS	20.59	8.72	20.00	4.34	-0.12	0.99	0.86
Liquid Real Estate	1.57	0.59	2.00	-2.45	0.06	0.04	0.11
Illiquid Real Estate	6.45	11.58	5.00	-2.45	-0.09	1.04	0.96
Liquid Real Assets	6.81	4.11	5.00	7.53	0.05	-0.24	-0.18
Illiquid Real Assets	5.76	9.73	8.00	7.71	-0.14	0.16	0.02
Market Neutral HF	0.01	-1.03	0.00	0.00	0.00	0.00	0.00
MULTI-RISK ALLOCATION	9.44	-3.28	9.77	-3.73	-0.01	0.04	0.03
TOTAL	100.00	4.51	100.00	1.18	-0.03	3.36	3.33

Total Fund Attribution – 5 Years



5 Years - 12/31/2022	NM PERA		Policy		Net Management Effects		
	Weight	Return	Weight	Return	Allocation	Selection	Total
COMPOSITE							
GLOBAL EQUITY	38.76	7.71	38.48	5.07	-0.03	0.91	0.88
Global Public Stock	23.48	3.37	22.63	4.97	0.02	-0.33	-0.31
Global Low Volatility	6.24	4.89	6.07	4.57	-0.01	0.02	0.01
Private Equity	8.92	19.37	8.94	6.07	-0.06	1.22	1.16
RISK REDUCTION & MITIGATION	19.94	0.46	20.26	0.07	-0.01	0.08	0.07
Domestic Core Fixed Income	13.85	-0.34	15.16	0.02	0.16	-0.07	0.09
Bonds Plus	2.26	0.00	2.50	0.00	-0.05	0.15	0.09
Global Core Fixed Income	2.62	0.67	2.52	0.36	-0.01	0.01	0.01
Cash	1.01	2.01	0.08	0.00	-0.07	0.00	-0.07
CREDIT ORIENTED FIXED INCOME	14.81	3.17	15.00	0.40	0.02	0.42	0.44
Liquid Credit	4.13	0.53	2.67	0.95	0.01	0.02	0.02
Emerging Market Debt	2.55	-3.27	3.00	-1.86	-0.02	-0.02	-0.04
Illiquid Credit	3.74	7.07	6.00	0.95	0.02	0.12	0.14
Alt Liquid Credit	3.18	0.00	2.13	0.00	-0.04	0.31	0.28
REAL ASSETS	20.41	7.17	20.00	4.36	-0.07	0.63	0.57
Liquid Real Estate	2.21	3.81	2.00	1.96	0.05	0.02	0.07
Illiquid Real Estate	5.34	11.93	5.00	1.96	-0.07	0.65	0.58
Liquid Real Assets	7.56	3.24	6.20	5.35	0.03	-0.16	-0.13
Illiquid Real Assets	5.28	7.24	6.80	5.12	-0.08	0.13	0.05
Market Neutral HF	0.02	1.63	0.00	0.00	0.00	0.00	0.00
MULTI-RISK ALLOCATION	6.08		6.26		-0.01	0.01	0.01
TOTAL	100.0	5.00	100.0	3.04	-0.10	2.06	1.96

Forecasted Risk Snapshot

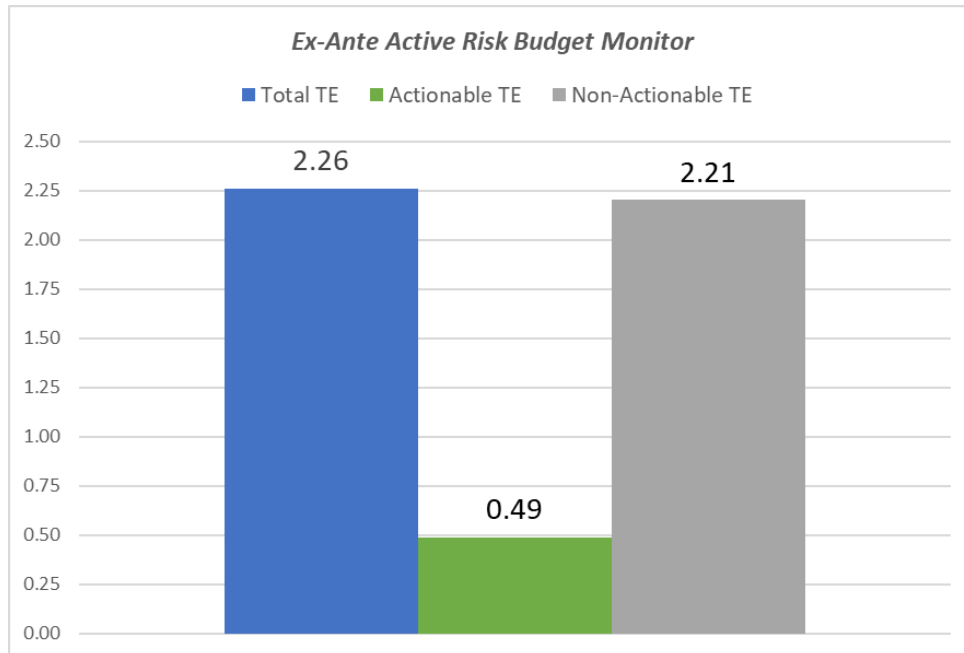


- ***This chart tracks the time series of total plan ex-ante tracking error (line) and contribution to tracking error by composite (bars)***
- *Ex-Ante risk measurement is forward looking and is based on the portfolio holdings on the date of analysis*
- *This tracking error analysis over time should help provide the board additional context for the range of TE over time and provide perspective for any potential reaction to a higher or lower level of TE relative to history*

Tracking Error and Contributions are calculated using factor exposures, asset class allocations, and utilizes Wilshire’s factor risk covariance matrix

PERA Ex-Ante Risk Dashboard Snapshot

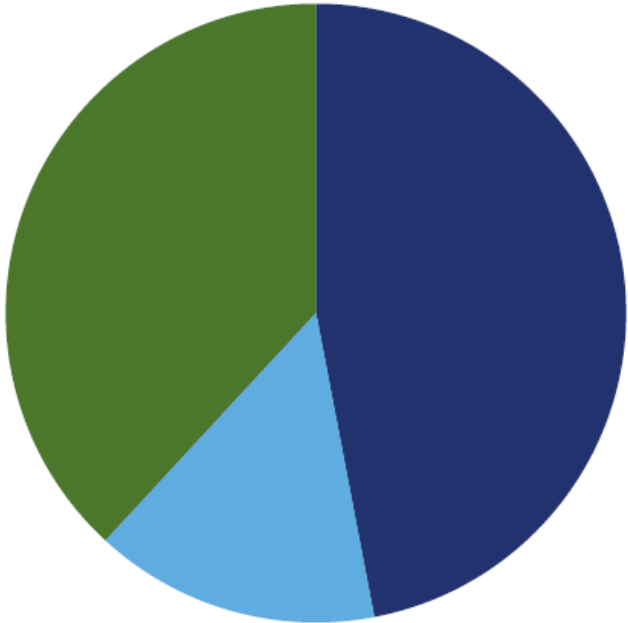
Composite	Benchmark	Weight	Tracking Error vs Composite Benchmark	Total Plan Tracking Error Contribution	Total Plan Tracking Error Contribution(%)	Total Portfolio Absolute Risk Contribution(%)
Credit Oriented FI	TOT CREDIT POLICY	18.87%	3.59	0.56	24.65%	1.75%
Global Equity	TOT GLB EQ POLICY	37.44%	5.50	0.72	31.83%	72.75%
Multi Risk	Risk Parity	8.46%	0.00	0.23	10.00%	4.35%
Real Assets	TOT REAL ASTS POLICY	18.05%	10.73	0.43	19.19%	16.18%
Risk Reduction	TOT RISKMIT POLICY	17.18%	0.65	0.32	14.33%	4.96%
Total		100.00%	2.26	2.26	100.00%	100.00%



- **Ex-Ante Tracking Error (TE) Target is 2.5% (Range 2-3%)**
- **Actionable Ex-Ante TE Target is 1.25%**
 - Current measured actionable is well below that (0.49%)
 - Over the last 4 years the realized actionable risk is also well below the target (0.97%)
- Actionable Tracking Error is defined as the portion of tracking error in the plan/composite attributable to the public market segments of the plan
- Non-Actionable Tracking Error is defined as the remaining portion of overall tracking error in the plan/composite
 - This is the inherent tracking error risk in the plan vs. the policy. Largely, this portion comes from the overall nature of private markets, the difficulty in rebalancing these assets, and their benchmarking to public market assets

Global Equity

Global Equity Composite

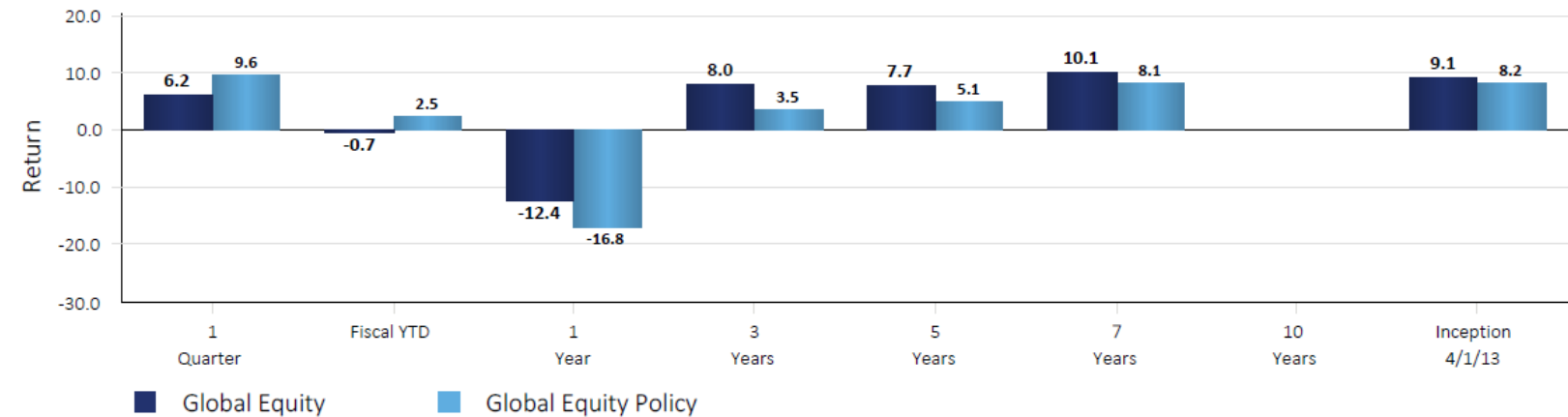


Dec-2022 : 6,069,195,632

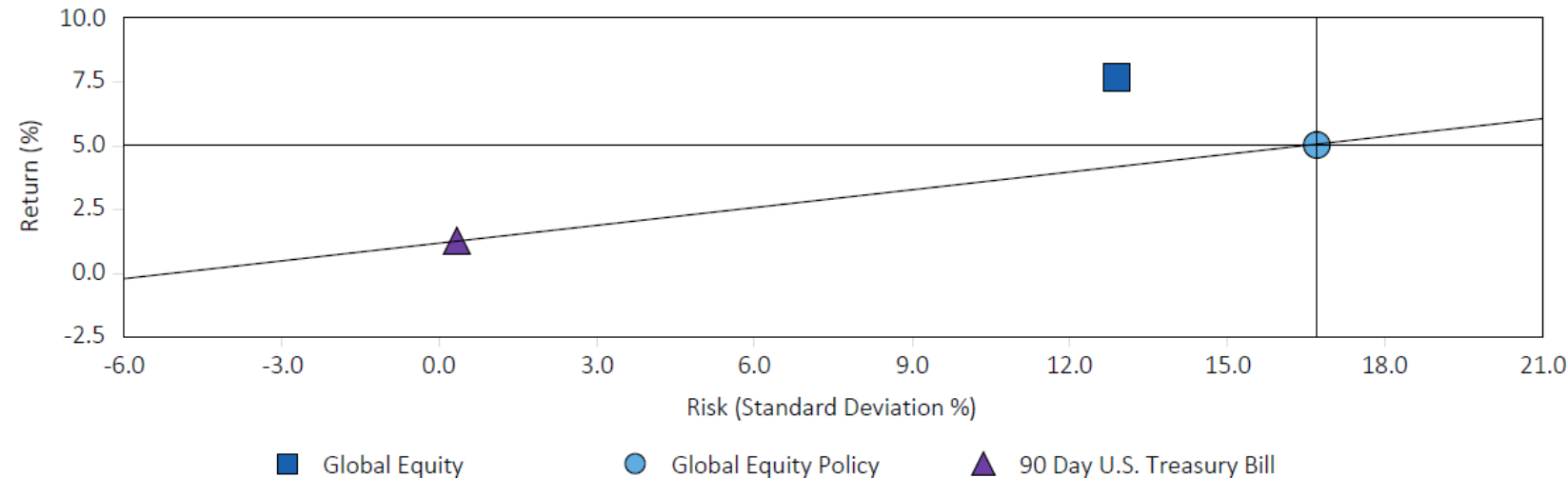
	Market Value	Allocation
	\$	(%)
Global Public Stock	2,852,347,577	47.0
Global Low Volatility Equity	902,376,311	14.9
Hedged Equity Comp	635,739	0.0
Private Equity Comp	2,313,836,004	38.1

Global Equity Composite Performance Summary

Comparative Performance



Risk vs. Return - 5 Years



Global Equity Performance – Composites

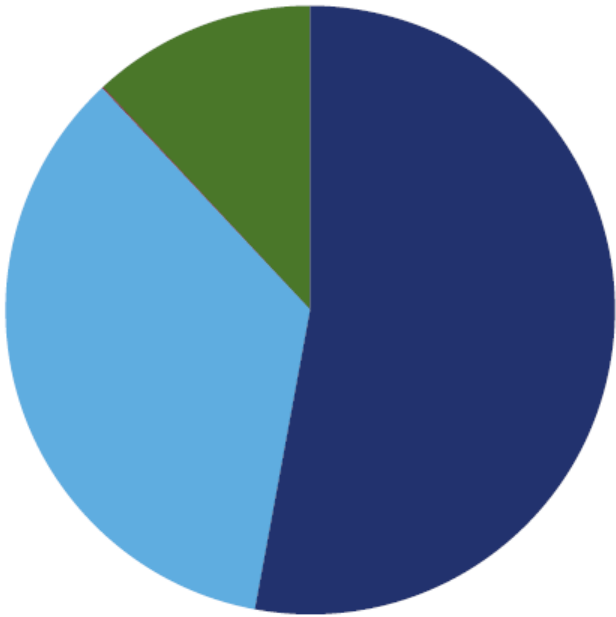
COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
GLOBAL EQUITY	6.21	-0.71	-12.37	-12.37	7.95	7.71	10.06	9.11	4/1/2013	\$ 6,069,195,632	37.50
80.28% MSCI ACWI IMI (\$N)/19.72% MSCI ACWI Min Vol	9.58	2.46	-16.82	-16.82	3.47	5.07	8.13	8.20			
Excess Return	-3.37	-3.17	4.44	4.44	4.48	2.64	1.93	0.91			
Global Public Stock	10.37	2.53	-20.41	-20.41	1.69	3.37	7.18	6.90	10/1/2004	\$ 2,852,347,577	17.62
MSCI ACWI IMI (\$N) Index	9.84	2.56	-18.40	-18.40	3.89	4.96	8.00				
Excess Return	0.52	-0.03	-2.00	-2.00	-2.20	-1.59	-0.82				
Global Low Volatility Equity	8.53	1.90	-9.98	-9.98	1.87	4.92		6.93	11/1/2016	\$ 902,376,311	5.58
MSCI ACWI Min Vol (\$N)	8.48	1.93	-10.31	-10.31	1.62	4.57		6.52			
Excess Return VS MSCI ACWI Min Vol (\$N)	0.05	-0.03	0.33	0.33	0.25	0.35		0.41			
Hedged Equity	-2.10	-8.52	-4.84	-4.84	-5.53	0.12	1.09	2.09	4/1/2013	\$ 635,739	0.00
MSCI ACWI Min Vol (\$N)	8.48	1.93	-10.31	-10.31	1.62	4.57	6.80	6.75			
Excess Return VS MSCI ACWI Min Vol (\$N)	-10.57	-10.45	5.47	5.47	-7.16	-4.45	-5.70	-4.65			
Private Equity	1.08	-5.08	-1.43	-1.43	23.11	19.40	17.72	8.98	12/1/2006	\$ 2,313,836,004	14.30
MSCI ACWI IMI (\$N) Index	9.84	2.56	-18.40	-18.40	3.89	6.07	9.83				
Excess Return	-8.76	-7.63	16.98	16.98	19.21	13.33	7.89				

Global Equity Performance – Managers

COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
SSGA ACWI IMI	10.05	2.84	-17.32	-17.32	4.43	5.46		8.27	10/1/2016	\$ 606,463,622	3.75
MSCI ACWI IMI (\$N) Index	9.84	2.56	-18.40	-18.40	3.89	4.96		7.80			
Excess Return VS MSCI ACWI IMI (\$N) Index	0.21	0.28	1.09	1.09	0.54	0.50		0.47			
SSGA R1000 Index	7.34	2.39	-19.01	-19.01				-16.11	11/1/2021	\$ 936,014,299	5.78
R1000 Benchmark	7.24	2.30	-19.13	-19.13				-16.20			
Excess Return VS R1000 Benchmark	0.10	0.09	0.11	0.11				0.09			
Kayne Anderson SCC	8.22	5.48	-11.19	-11.19	8.06			8.43	9/1/2018	\$ 242,741,786	1.50
Russell 2000 Index	6.23	3.91	-20.44	-20.44	3.10			1.60			
Excess Return VS Russell 2000 Index	1.99	1.57	9.25	9.25	4.96			6.83			
Acadian Intl Equity	14.85	5.28	-18.48	-18.48	2.80			2.27	5/1/2018	\$ 256,301,654	1.58
MSCI EAFE (\$N)	17.34	6.36	-14.45	-14.45	0.87			1.50			
Excess Return VS MSCI EAFE (\$N)	-2.49	-1.08	-4.03	-4.03	1.94			0.78			
Alliance Bernstein	11.90	2.42						-5.17	6/1/2022	\$ 244,007,491	1.51
MSCI ACWI IMI (\$N) Index	9.84	2.56						-6.29			
Excess Return VS MSCI ACWI IMI (\$N) Index	2.06	-0.14						1.13			
MFS	11.85	3.62	-24.76	-24.76	-1.23	1.85	4.75	7.23	4/1/2010	\$ 199,798,052	1.23
MSCI EAFE (\$N)	17.34	6.36	-14.45	-14.45	0.87	1.54	4.53	4.43			
Excess Return VS MSCI EAFE (\$N)	-5.49	-2.74	-10.31	-10.31	-2.10	0.31	0.22	2.80			
AXIOM INVESTORS	6.44	-8.30	-30.53	-30.53	-4.97			1.95	1/1/2019	\$ 244,455,635	1.51
MSCI Emg Mkts (\$N)	9.70	-2.99	-20.09	-20.09	-2.69			2.20			
Excess Return VS MSCI Emg Mkts (\$N)	-3.26	-5.30	-10.44	-10.44	-2.28			-0.25			
Parametric Gbl Equity Overlay	10.19	2.27	-17.04	-17.04	-14.44	-5.67		-0.40	7/1/2016	\$ 116,963,641	0.72
MSCI ACWI IMI (\$N) Index	9.84	2.56	-18.40	-18.40	-15.57	-7.32		-1.50			
Excess Return VS MSCI ACWI IMI (\$N) Index	0.35	-0.28	1.36	1.36	1.12	1.65		1.11			
Portable Alpha	-2.01	-7.72	-11.61	-11.61	-0.18	4.12	6.44	5.39	10/1/2007	\$ 2,681,659	0.02
S&P 500 - Total Return + 1%	7.87	2.92	-17.11	-17.11	8.68	10.44	12.49	9.43			
Excess Return VS S&P 500 - Total Return + 1%	-9.88	-10.64	5.50	5.50	-8.87	-6.32	-6.06	-4.04			

Credit Oriented Fixed Income

Credit Oriented Fixed Income Composite

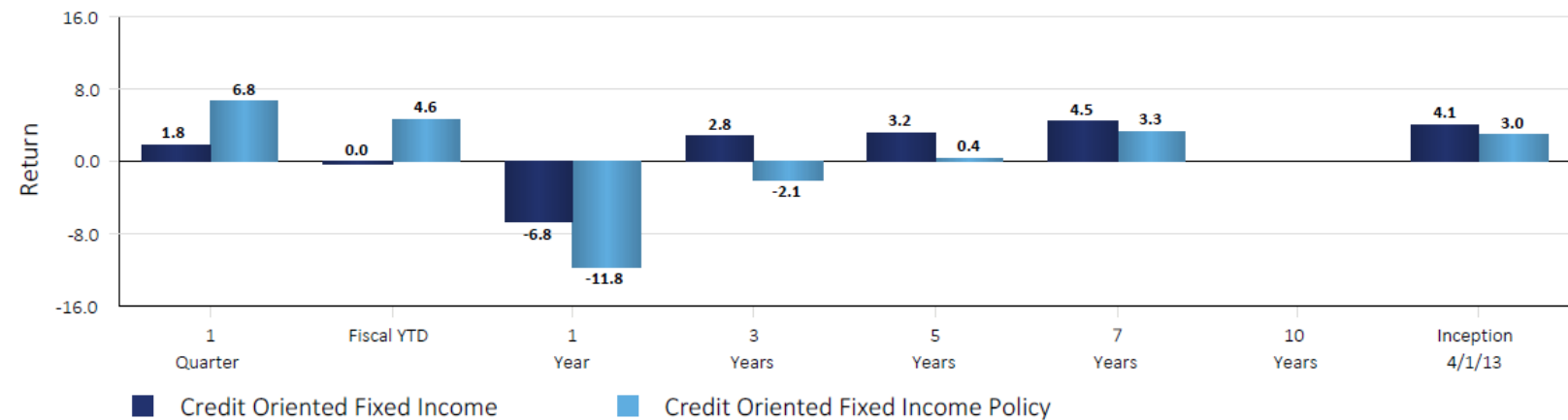


Dec-2022 : 3,062,175,227

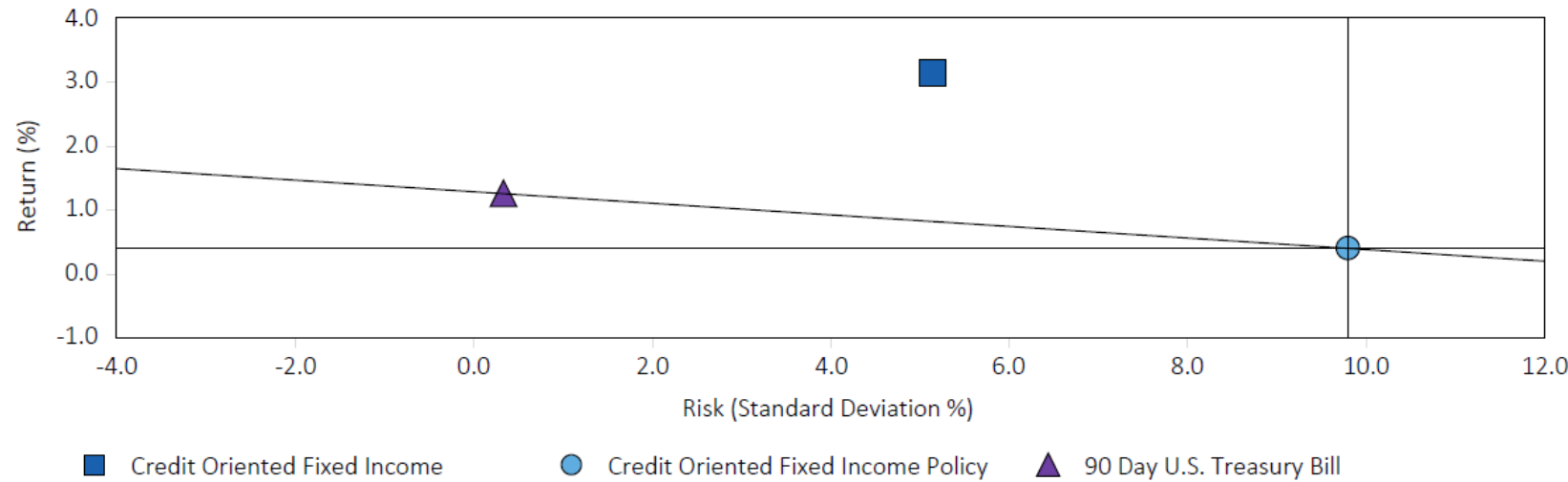
	Market Value \$	Allocation (%)
Liquid Credit	1,620,057,151	52.9
Alternative Liquid Credit	1,075,054,643	35.1
Emerging Markets Debt Composite	2,030,852	0.1
Illiquid Credit Comp	365,032,582	11.9

Credit Oriented Fixed Income Composite Performance Summary

Comparative Performance



Risk vs. Return - 5 Years



Credit Oriented Fixed Income Performance – Composites

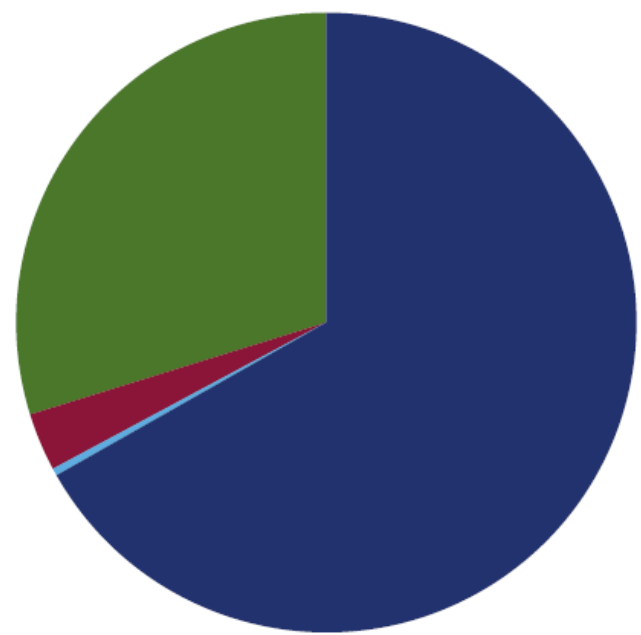
COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
CREDIT ORIENTED FIXED INCOME	1.84	0.03	-6.82	-6.82	2.75	3.16	4.53	4.05	4/1/2013	\$ 3,062,175,227	18.92
80% BBG Global HY Hdg/20% JPM EMD Blend	6.77	4.62	-11.77	-11.77	-2.09	0.40	3.27	3.01			
Excess Return VS Credit Oriented FI BM	-4.93	-4.59	4.94	4.94	4.85	2.76	1.26	1.04			
Liquid Credit	8.41	5.21	-9.61	-9.61	-1.40	0.53	2.74	1.59	4/1/2013	\$ 1,620,057,151	10.01
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20	1.23	4.19	3.63			
Excess Return VS Bloomberg Global High Yield (USDH)	2.03	0.28	1.44	1.44	-0.19	-0.71	-1.45	-2.04			
Alternative Liquid Credit	-0.66	-1.95	-4.09	-4.09				13.66	5/1/2020	\$ 1,075,054,643	6.64
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05				2.96			
Excess Return VS Bloomberg Global High Yield (USDH)	-7.03	-6.88	6.96	6.96				10.70			
Emerging Markets Debt	0.12	-5.25	-23.56	-23.56	-6.34	-3.27	-0.23	-0.59	8/1/2015	\$ 2,030,852	0.01
JPM EMD Blend (S0v50/LM50)~	8.29	3.27	-14.75	-14.75	-5.66	-1.86	1.77	1.02			
Excess Return VS JPM EMD Blend (S0v50/LM50)~	-8.17	-8.52	-8.81	-8.81	-0.68	-1.41	-2.00	-1.62			
Illiquid Credit	2.67	5.32	9.34	9.34	7.15	7.07	7.72	7.53	12/1/2006	\$ 365,032,582	2.26
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20	0.95	4.09				
Excess Return VS Illiquid Credit BM	-3.71	0.39	20.39	20.39	8.35	6.12	3.63				

Credit Oriented Fixed Income Performance – Managers

COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
PINEBRIDGE HY	7.05	4.66	-12.38	-12.38	-1.53			1.06	10/1/2018	\$ 1,448,182,090	8.95
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20			1.36			
Excess Return VS Bloomberg Global High Yield (USDH)	0.68	-0.27	-1.33	-1.33	-0.32			-0.31			
EAGLE POINT	0.00	-12.15	25.82	25.82	18.02	10.08		9.74	11/1/2017	\$ 9,281,171	0.06
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20	1.23		1.20			
Excess Return VS Bloomberg Global High Yield (USDH)	-6.38	-17.08	36.87	36.87	19.23	8.85		8.54			
Eagle Point Credit PRT	-7.23	-1.84	-10.51	-10.51				-10.51	1/1/2022	\$ 85,132,382	0.53
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05				-11.05			
Excess Return VS Bloomberg Global High Yield (USDH)	-13.60	-6.77	0.54	0.54				0.54			
Ellington HF	0.56	-2.54	-6.85	-6.85	1.24	2.58		2.79	1/1/2017	\$ 155,696,945	0.96
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20	1.23		2.40			
Excess Return VS Bloomberg Global High Yield (USDH)	-5.82	-7.47	4.20	4.20	2.45	1.35		0.40			
Mudrick Stressed CR FKA CVC	-1.60	-1.20	0.27	0.27	8.22	4.29	5.18	4.84	11/1/2015	\$ 162,153,014	1.00
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20	1.23	4.19	3.60			
Excess Return VS Bloomberg Global High Yield (USDH)	-7.98	-6.13	11.32	11.32	9.42	3.06	1.00	1.25			
NAPIER PARK CLASS A	2.72	2.66	1.75	1.75				11.04	8/1/2020	\$ 150,175,308	0.93
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05				-1.10			
Excess Return VS Bloomberg Global High Yield (USDH)	-3.65	-2.27	12.80	12.80				12.14			
NAPIER PARK CLASS B	-2.53	-3.14	-11.17	-11.17	-1.49			-1.49	1/1/2020	\$ 200,557,039	1.24
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05	-1.20			-1.20			
Excess Return VS Bloomberg Global High Yield (USDH)	-8.91	-8.07	-0.12	-0.12	-0.29			-0.29			
Wheeler Peak Rotational Credit	-0.01	-8.15	-6.92	-6.92				5.67	4/1/2020	\$ 144,428,384	0.89
Bloomberg Global High Yield (USDH)	6.38	4.93	-11.05	-11.05				4.48			
Excess Return VS Bloomberg Global High Yield (USDH)	-6.39	-13.08	4.13	4.13				1.19			
Parametric Credit Cash Overlay	6.00	5.50	-9.19	-9.19	-1.26			0.38	5/1/2019	\$ 171,879,798	1.06
Bloomberg Global High Yield TR Value Index Hedged	9.95	6.47	-12.36	-12.36	-2.06			-0.22			
Excess Return	-3.95	-0.96	3.17	3.17	0.80			0.60			

Risk Reduction & Mitigation

Risk Reduction & Mitigation Composite

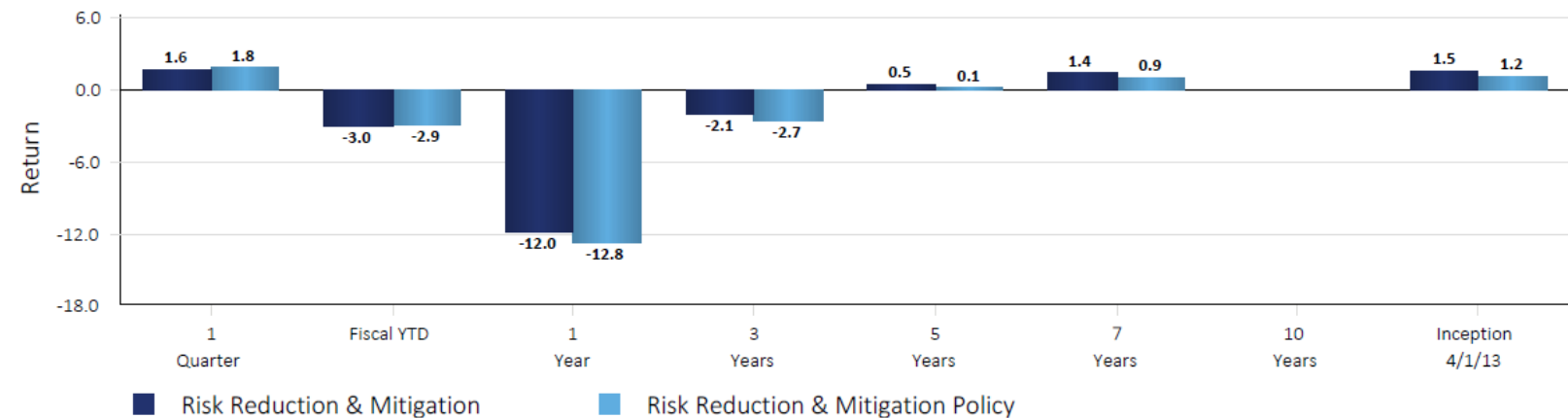


Dec-2022 : 2,761,045,148

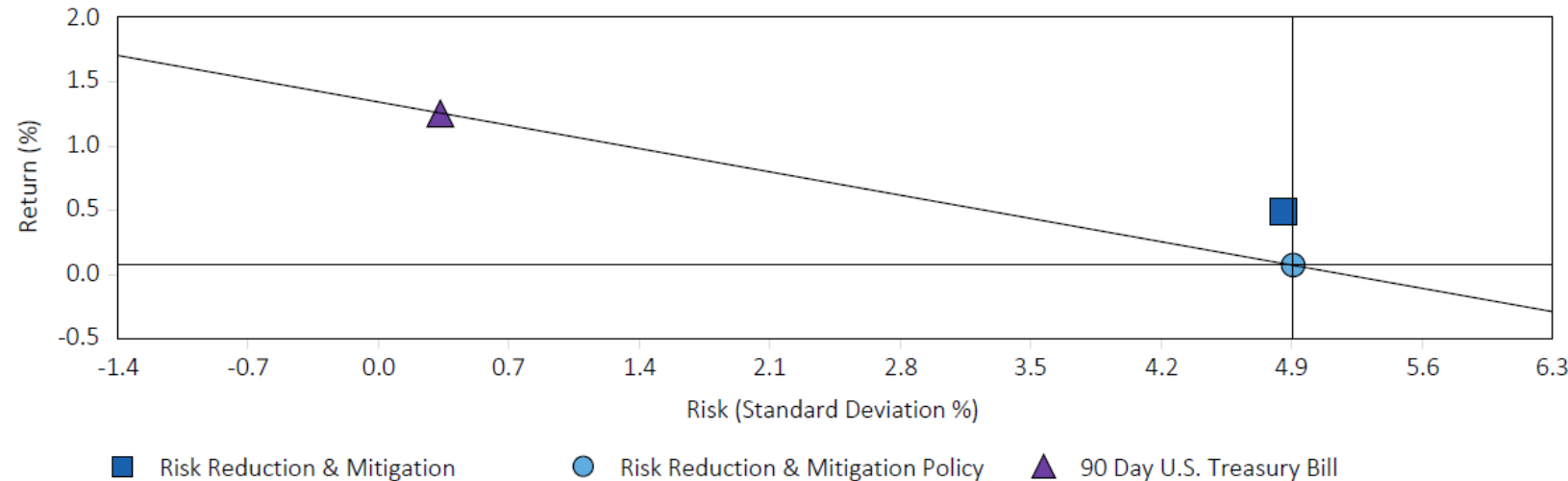
	Market Value \$	Allocation (%)
Domestic Core Fixed Income	1,844,111,249	66.8
Global Core Fixed Income	10,396,775	0.4
Cash Composite	83,893,490	3.0
Bonds Plus Composite	822,643,633	29.8

Risk Reduction & Mitigation Composite Performance Summary

Comparative Performance



Risk vs. Return - 5 Years



Risk Reduction & Mitigation Performance – Composites

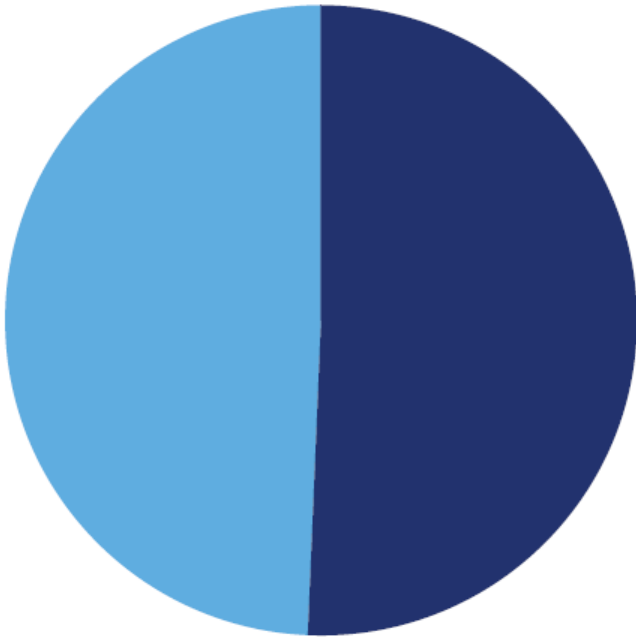
COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
RISK REDUCTION & MITIGATION	1.64	-3.03	-12.02	-12.02	-2.10	0.46	1.40	1.45	4/1/2013	\$ 2,761,045,148	17.06
87.18% Bloomberg US Agg/12.82% Bloomberg Global Agg Hdg	1.76	-2.89	-12.78	-12.78	-2.69	0.07	0.93	1.15			
Excess Return VS Risk Reduction & Mitigation BM	-0.12	-0.14	0.76	0.76	0.60	0.39	0.47	0.30			
Domestic Core Fixed Income	1.33	-3.89	-14.23	-14.23	-2.91	-0.03	0.89	6.21	6/1/1985	\$ 1,844,111,249	11.39
Bloomberg U.S. Aggregate Bond Index	1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	5.82			
Excess Return VS Bloomberg U.S. Aggregate Bond Index	-0.54	-0.92	-1.22	-1.22	-0.19	-0.06	0.00	0.38			
Bonds Plus	1.72	-2.47	-9.67	-9.67	-0.67			-0.67	1/1/2020	\$ 822,643,633	5.08
Bloomberg U.S. Aggregate Bond Index	1.87	-2.97	-13.01	-13.01	-2.71			-2.71			
Excess Return VS Bloomberg U.S. Aggregate Bond Index	-0.15	0.50	3.34	3.34	2.04			2.04			
Global Core Fixed Income	4.71	1.11	-7.81	-7.81	-1.37	0.60	1.51	2.77	5/1/2011	\$ 10,396,775	0.06
Bloomberg Global Aggregate (USDH)	0.99	-2.38	-11.22	-11.22	-2.59	0.36	1.24	2.34			
Excess Return VS Bloomberg Global Aggregate (USDH)	3.72	3.48	3.41	3.41	1.21	0.24	0.26	0.44			
Cash	3.84	4.32	8.23	8.23	5.04	5.27	4.38	4.77	3/1/1989	\$ 83,893,490	0.52
ICE BofA 3-Mo T-Bill	0.85	1.32	1.47	1.47	0.73	1.27	1.07	2.88			
Excess Return VS ICE BofA 3-Mo T-Bill	2.99	3.00	6.76	6.76	4.31	4.01	3.31	1.89			

Risk Reduction & Mitigation Performance – Managers

COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
BlackRock Core	1.77	-3.38	-14.14	-14.14	-2.37	0.36	1.20	4.69	7/1/1995	\$ 1,257,354,308	7.77
Bloomberg U.S. Aggregate Bond Index	1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	4.32			
Excess Return VS Bloomberg U.S. Aggregate Bond Index	-0.10	-0.41	-1.13	-1.13	0.34	0.33	0.31	0.37			
Prudential	2.17	-2.99	-13.06	-13.06	-2.73	0.01	0.89	1.80	6/1/2012	\$ 541,821,742	3.35
Bloomberg U.S. Aggregate Bond Index	1.87	-2.97	-13.01	-13.01	-2.71	0.02	0.89	1.17			
Excess Return VS Bloomberg U.S. Aggregate Bond Index	0.30	-0.02	-0.05	-0.05	-0.02	-0.01	0.00	0.63			
Dorsal	0.05	-1.97	-2.83	-2.83				2.48	6/1/2020	\$ 89,157,556	0.55
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.12			
Excess Return VS Libor + 30 bps 1 MA	-0.96	-3.61	-4.92	-4.92				1.36			
ELLIOTT	1.12	1.02	10.38	10.38	10.60			10.60	1/1/2020	\$ 136,531,269	0.84
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09	1.24			1.24			
Excess Return VS Libor + 30 bps 1 MA	0.12	-0.62	8.29	8.29	9.37			9.37			
Garda	3.28	6.05	13.74	13.74				8.57	7/1/2020	\$ 61,415,997	0.38
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.13			
Excess Return VS Libor + 30 bps 1 MA	2.28	4.41	11.65	11.65				7.44			
Glazer	3.14	5.11	1.89	1.89				19.43	6/1/2020	\$ 105,586,625	0.65
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.12			
Excess Return VS Libor + 30 bps 1 MA	2.14	3.47	-0.20	-0.20				18.31			
Marshall Wace Eureka	0.93	2.18	5.09	5.09				10.37	8/1/2020	\$ -	0.00
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.15			
Excess Return VS Libor + 30 bps 1 MA	-0.07	0.54	3.00	3.00				9.22			
Millenium	1.66	4.90	11.71	11.71				12.70	10/1/2020	\$ 113,689,934	0.70
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.19			
Excess Return VS Libor + 30 bps 1 MA	0.65	3.26	9.62	9.62				11.50			
Pacific AA	-0.69	-1.10	-0.23	-0.23				2.79	6/1/2020	\$ 104,709,837	0.65
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.12			
Excess Return VS Libor + 30 bps 1 MA	-1.69	-2.74	-2.32	-2.32				1.67			
Pharo Gaia Fund	-4.11	-6.50	-18.55	-18.55				-7.70	6/1/2020	\$ 32,516,810	0.20
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.12			
Excess Return VS Libor + 30 bps 1 MA	-5.11	-8.14	-20.64	-20.64				-8.83			
SYSTEMATICA	0.11	5.25	20.61	20.61				17.13	6/1/2020	\$ 89,249,967	0.55
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.12			
Excess Return VS Libor + 30 bps 1 MA	-0.89	3.61	18.52	18.52				16.01			
TWO SIGMA	0.78	5.02	12.92	12.92				9.20	5/1/2021	\$ 46,321,615	0.29
Libor + 30 bps 1 MA	1.00	1.64	2.09	2.09				1.43			
Excess Return VS Libor + 30 bps 1 MA	-0.22	3.38	10.83	10.83				7.77			
Parametric Bonds Plus	0.88	-4.51	-14.65	-14.65	-3.76			-3.76	1/1/2020	\$ 43,464,023	0.27
Blackrock Glb Fixed Income										\$ 10,396,775	0.06

Real Assets

Real Assets Composite

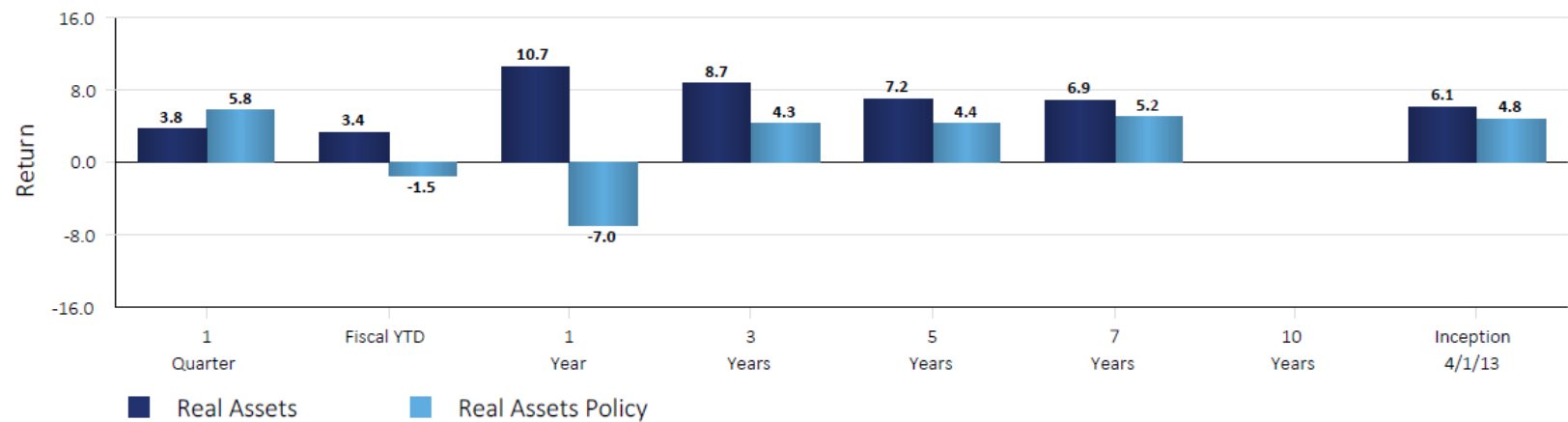


Dec-2022 : 2,921,193,295

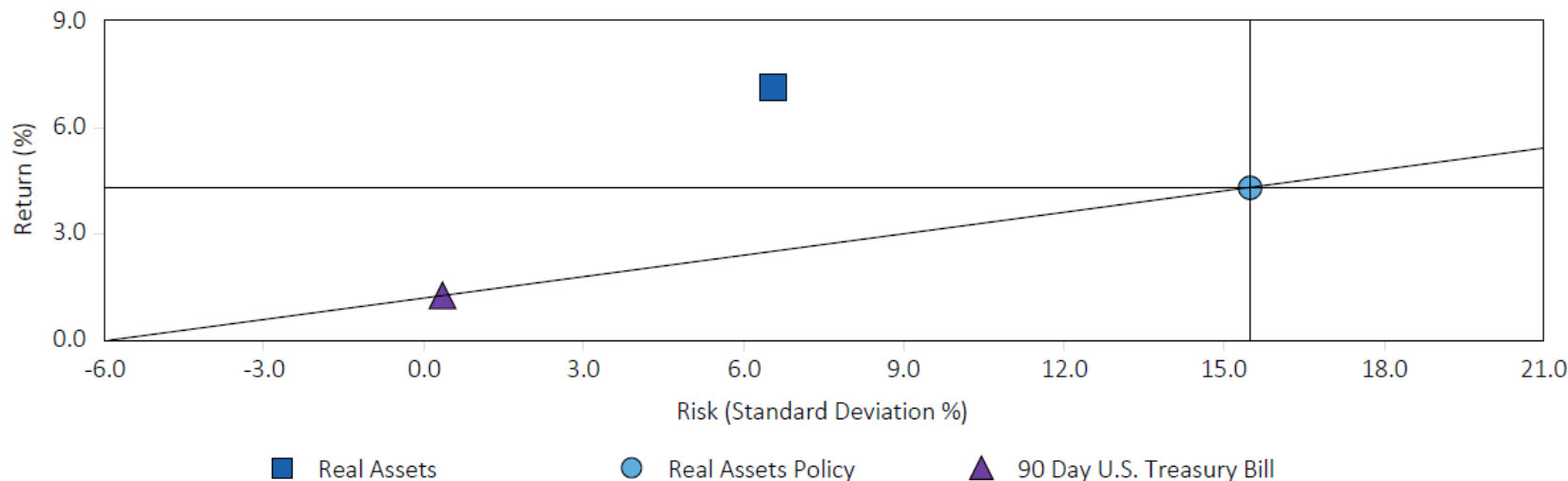
	Market Value \$	Allocation (%)
Real Estate Only Comp	1,480,201,121	50.7
Real Assets Only Comp	1,440,331,506	49.3
Market Neutral Hedge Fund Comp	660,668	0.0

Real Assets Composite Performance Summary

Comparative Performance



Risk vs. Return - 5 Years

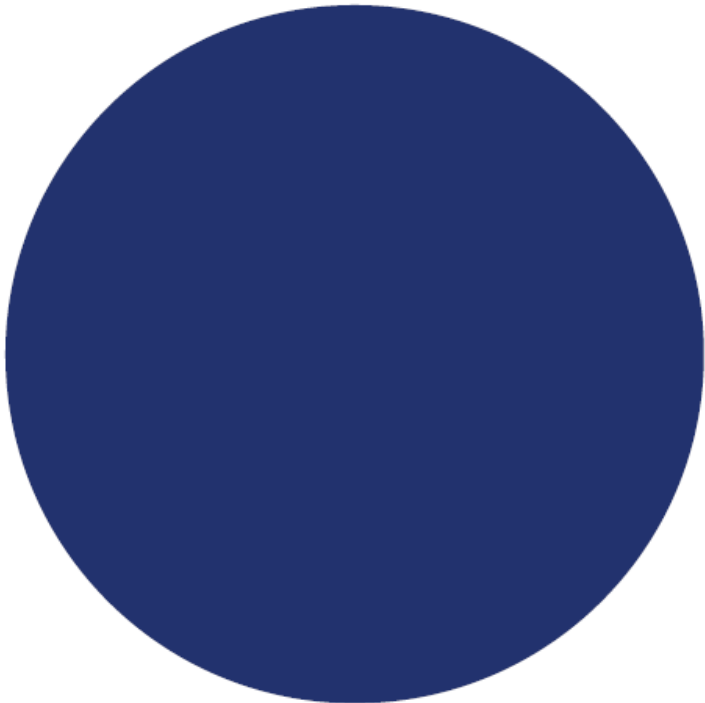


Real Assets Performance – Composites

COMPOSITE/MANAGER	Quarter	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	ITD	Inception Date	Market Value	% of Total
REAL ASSETS	3.76	3.44	10.70	10.70	8.72	7.17	6.90	6.13	4/1/2013	\$ 2,921,193,295	18.05
10% Alerian MLP/15%US TIPS/20%DJ Global Infra/20% Commodity	5.82	-1.51	-6.98	-6.98	4.34	4.36	5.15	4.84			
Excess Return VS Real Assets BM	-2.05	4.95	17.68	17.68	4.38	2.82	1.75	1.29			
Liquid Real Estate	2.60	-5.50	-21.97	-21.97	0.59	3.80	4.87	9.26	12/1/2008	\$ 446,867	0.00
Liquid Real Estate Dyn BM	4.77	-6.10	-25.96	-25.96	-2.33	2.02	3.24				
Excess Return VS Liquid Real Estate Dyn BM	-2.17	0.60	3.98	3.98	2.92	1.78	1.63				
Illiquid Real Estate	2.85	4.54	20.70	20.70	11.58	11.93	10.64	7.82	5/1/2007	\$ 1,479,754,255	9.14
Wilshire Global REIT TR Index	5.81	-5.99	-26.13	-26.13	-2.45	1.96	3.31	2.97			
Excess Return VS Wilshire Global REIT TR Index	-2.95	10.53	46.83	46.83	14.03	9.97	7.33	4.86			
Liquid Real Assets	3.19	-3.17	-3.77	-3.77	4.11	3.24	3.86	0.47	9/1/2009	\$ 162,404,131	1.00
60% Bloomberg US TIPS/40% Alerian MLP	5.40	5.45	4.09	4.09	7.53	5.35	5.30				
Excess Return	-2.21	-8.63	-7.87	-7.87	-3.42	-2.11	-1.43				
Illiquid Real Assets	4.50	7.23	17.56	17.56	9.73	7.24	6.93	-7.18	1/1/2007	\$ 1,277,927,375	7.90
50% DJ Global Infra/50% Bloomberg Commoity TR	6.01	-1.98	4.98	4.98	7.71	5.12	5.11				
Excess Return	-1.52	9.21	12.58	12.58	2.02	2.12	1.83				
Market Neutral Hedge Fund	0.66	0.20	-24.32	-24.32	-1.03	1.62	0.84	1.76	4/1/2013	\$ 660,668	0.00
Libor + 2% 1 MA	1.40	2.45	3.79	3.79	2.94	3.48	3.32	3.02			
Excess Return VS Libor + 2% 1 MA	-0.74	-2.25	-28.11	-28.11	-3.97	-1.86	-2.48	-1.26			

Multi-Risk Allocation

Multi-Risk Allocation Composite

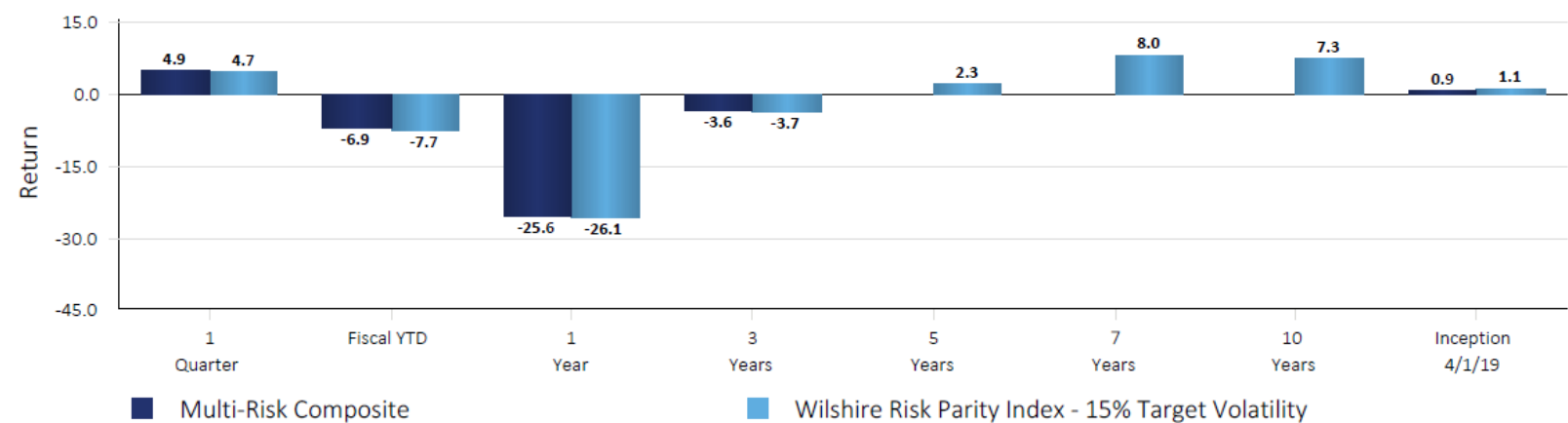


Dec-2022 : 1,371,033,202

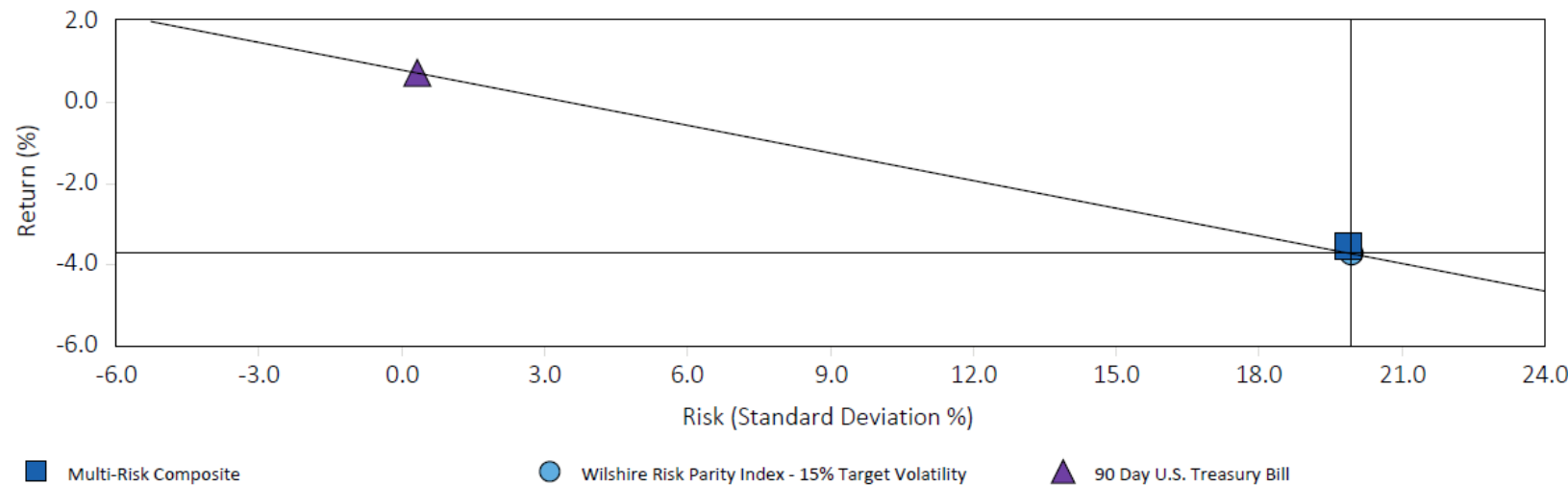
	Market Value \$	Allocation (%)
■ Zia Risk Parity Fund	1,371,033,202	100.0

Multi-Risk Allocation Composite Performance Summary

Comparative Performance

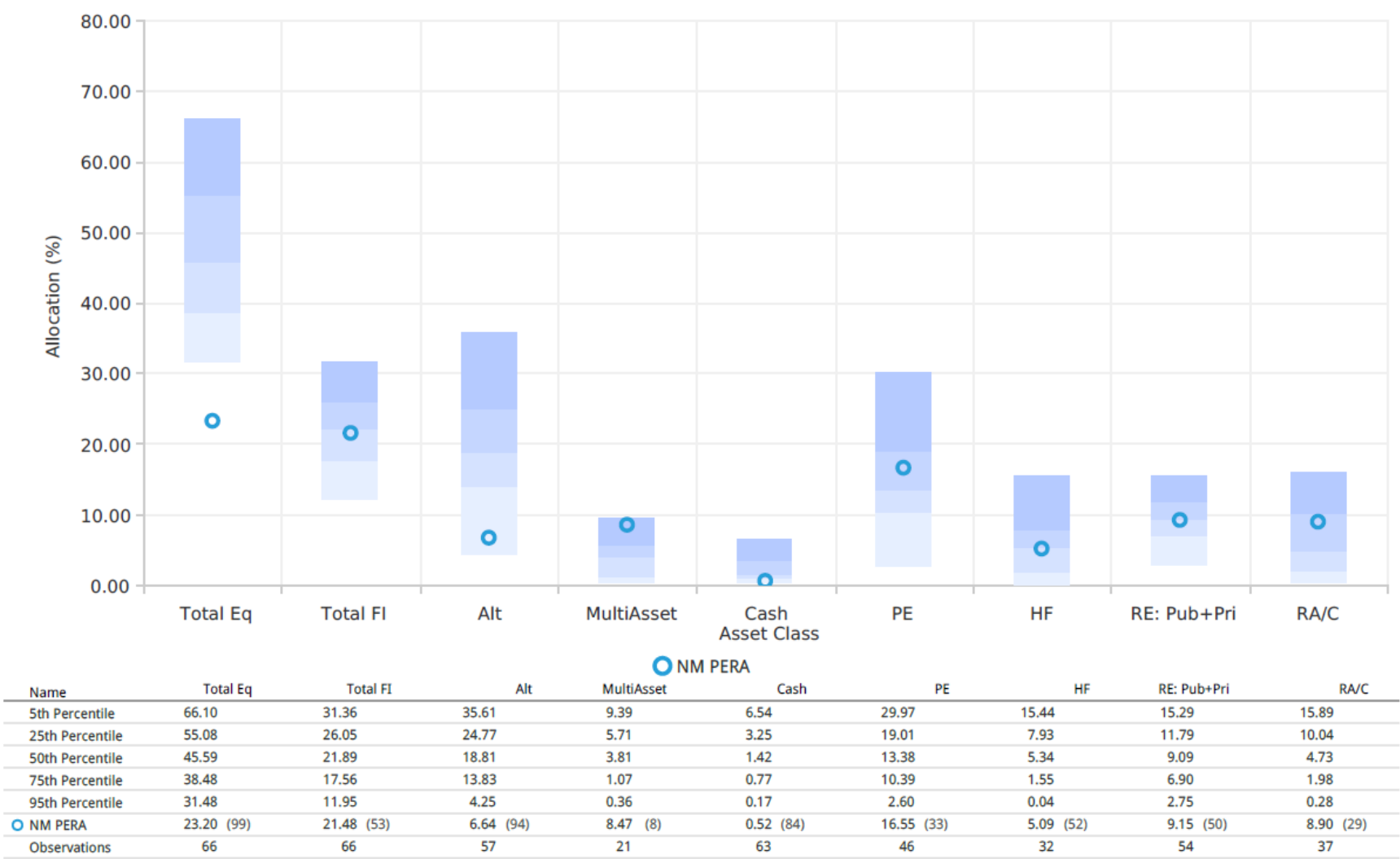


Risk vs. Return - 3 Years



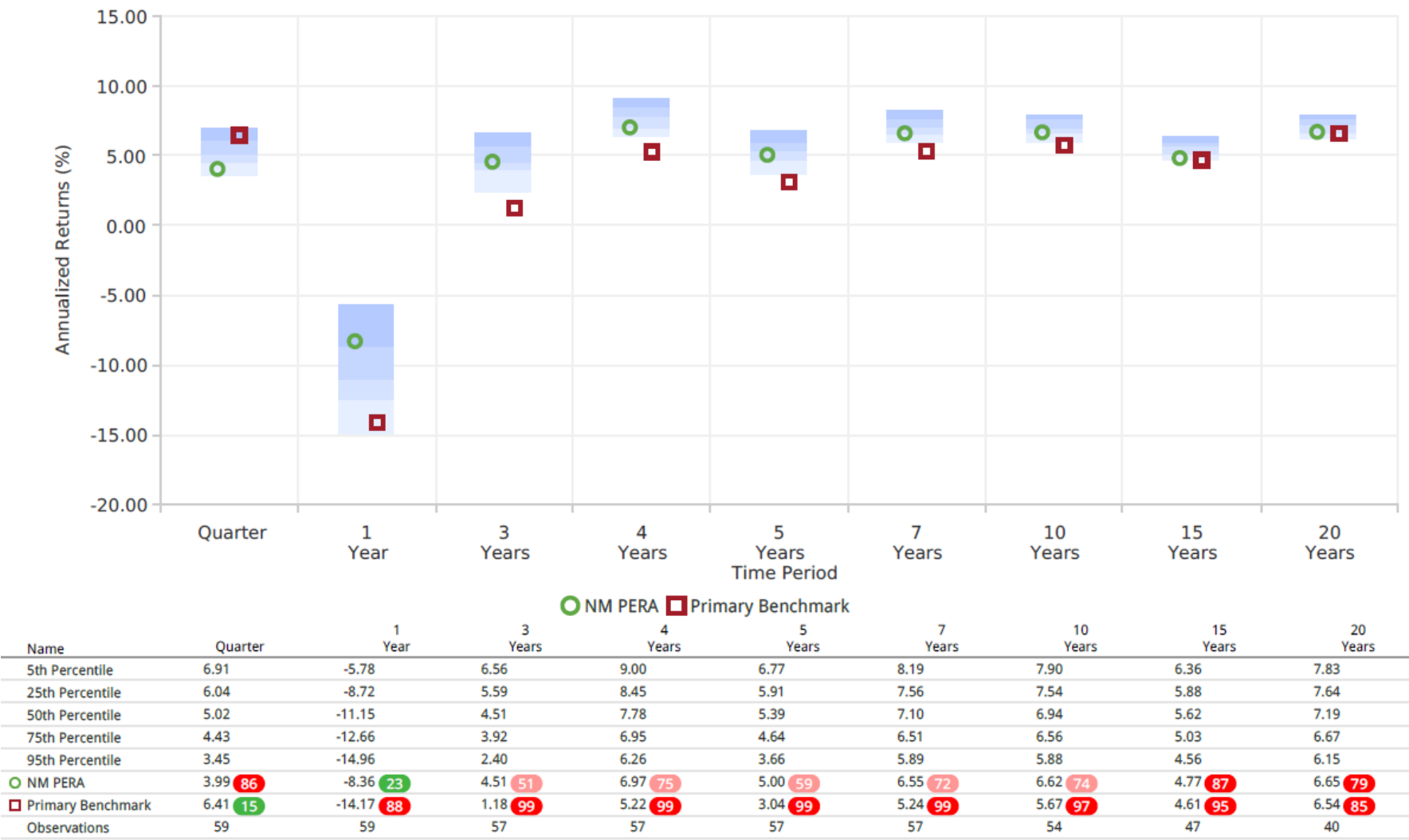
Peer Review

Asset Allocation Comparison



Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics, Public >\$1B.

Total Fund – Return Comparison



Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics. , Public >\$1B.

Total Fund – Sharpe Ratio Comparison



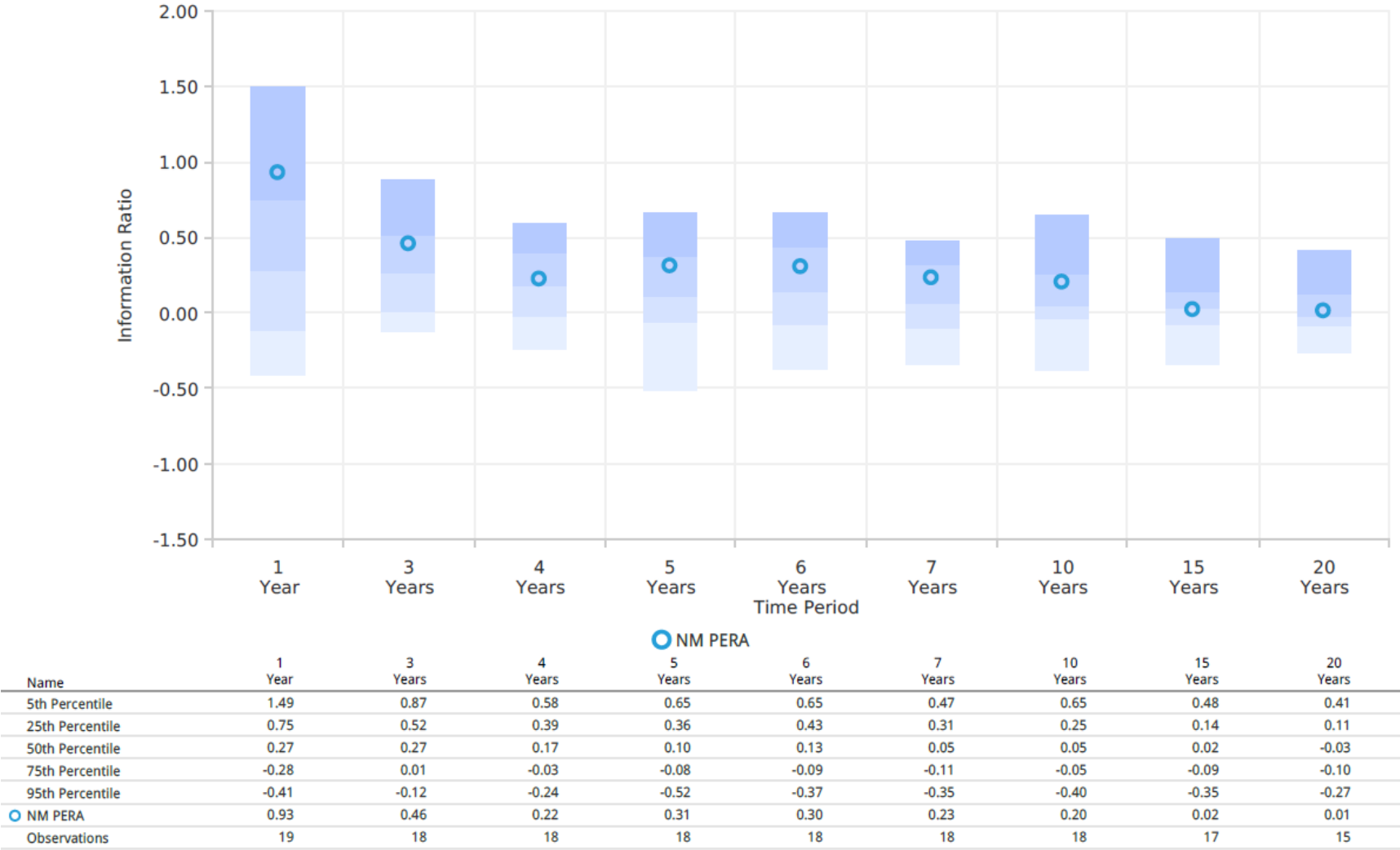
Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics. , Public >\$1B.

Total Fund – Standard Deviation Comparison



Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics , Public >\$1B.

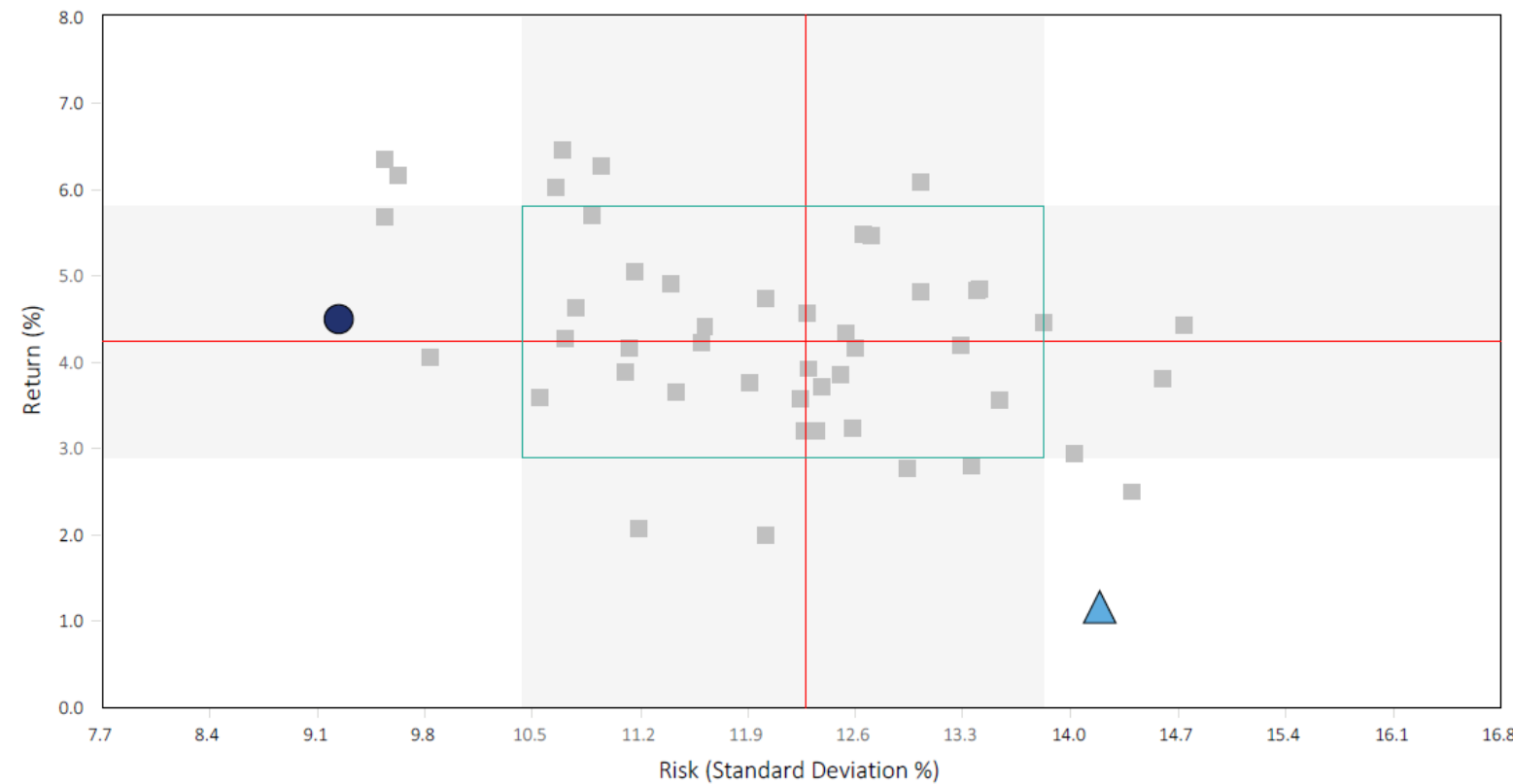
Total Fund – Information Ratio Comparison



Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics , Public >\$1B.

Total Fund – Scattergram (3-year)

NM PERA Total Fund vs All Public Plans > \$1B-Total Fund
Periods Ended 3 Years Ending December 31, 2022

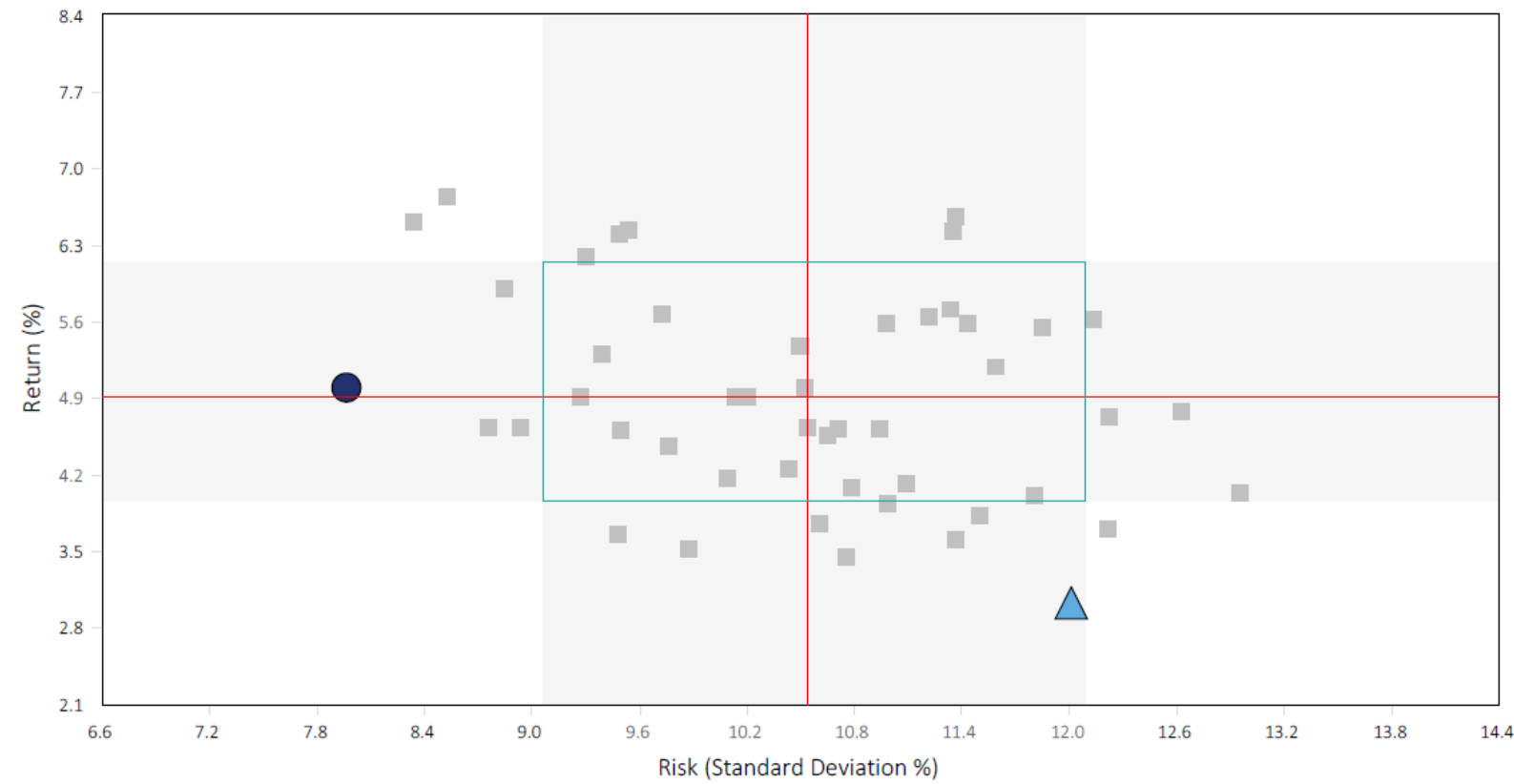


	Return	Standard Deviation
● NM PERA Total Fund	4.51	9.24
▲ NM PERA Total Fund Policy	1.18	14.19
— Median	4.25	12.28

Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics. , Public >\$1B.

Total Fund – Scattergram (5-year)

NM PERA Total Fund vs All Public Plans > \$1B-Total Fund
Periods Ended 5 Years Ending December 31, 2022



	Return	Standard Deviation
● NM PERA Total Fund	5.00	7.97
▲ NM PERA Total Fund Policy	3.04	12.01
— Median	4.91	10.54

Performance is NOF, calculated and provided by BNY Mellon. Universe source: InvestmentMetrics. , Public >\$1B.

Manager Listing

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
NM PERA Total Fund	16,184,642,503	100.00
Global Equity	6,069,195,632	37.50
Global Public Stock	2,852,347,577	17.62
BlackRock Equity Transition	14,285	0.00
NT MSCI ACWI X US Index Fund	267,252	0.00
SSgA ACWI IMI Index Fund	606,463,622	3.75
Active US Equity	245,423,714	1.52
DFA US Target Value	269	0.00
Kayne Anderson SCC	242,741,786	1.50
TimesSquare Capital SMID Cap Growth		0.00
Portable Alpha Composite	2,681,659	0.02
Portable Alpha	2,681,659	0.02
Active Non-US Developed Equity	701,146,092	4.33
Alliance Bernstein	244,007,491	1.51
Acadian International Equity	256,301,654	1.58
KBI Global Investors EAFE Developed	371,646	0.00
MFS International Value Equity	199,798,052	1.23
Principal Intl Small Cap Equity	495,691	0.00
Schroder Intl Small Composite	171,558	0.00
Active Emerging Markets Equity	246,054,671	1.52
Axiom Investors	244,455,635	1.51
Russell Transition	1,599,036	0.01
Global Equity Overlay	116,963,641	0.72
SSGA Russell 1000 Index Fund	936,014,299	5.78
Global Low Volatility Equity	902,376,311	5.58
BlackRock MSCI ACWI Minimum Volatility	902,376,311	5.58
Hedged Equity Comp	635,739	0.00
TPG-Axon Partners, LP	635,739	0.00

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Private Equity Comp	2,313,836,004	14.30
Altaris Con Partners IV	24,165,380	0.15
Altaris Health Partners IV	37,822,484	0.23
CVC European Equity Partners V	807,156	0.00
CVC VII	178,096,523	1.10
Carlyle Partners VI LP	21,061,702	0.13
Carlyle Partners V, L.P.	1,922,906	0.01
Century Focused Fund IV	32,341,039	0.20
Charterhouse Capital Partners IX	885,486	0.01
Charterhouse Capital Partners X	83,189,599	0.51
Collier International Partners V, L.P.	78,918	0.00
DFJ Fund XII LP	67,615,567	0.42
Draper Fisher Jurveston X, LP	16,250,562	0.10
FountainVest Fund II	76,699,491	0.47
GTCR XI, L.P.	46,594,712	0.29
GTCR X, L.P.	188,908	0.00
Hellman & Friedman Cap. Partners VII	3,854,190	0.02
Hellman & Friedman Cap. Part. VI		0.00
Glide Buy-Out Fund IV	1,432,853	0.01
Institutional Venture Partners XIV LP	23,667,136	0.15
Institutional Venture Partners XIII	3,820,746	0.02
JMI Equity Fund VII, L.P.	2,434,915	0.02
JMI Equity Fund VI, L.P.	386,178	0.00
KRG Capital Fund IV, L.P.	1,255,778	0.01
Kelso Investment Associates IX	11,008,668	0.07
Kelso Investment Advisors IX	30,924,682	0.19
Kelso Investments Assoc. VIII, L.P.	1,431,605	0.01
Kelso Investment Associates X	85,714,145	0.53
Helm & Frid Spock 1	11,243,673	0.07

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Lincolnshire Equity Fund IV, L.P.	6,496,932	0.04
Linsalata Capital Partners Fund VI, LP		0.00
Madison Dearburn Cap. Partners VI, LP	2,904,220	0.02
New Enterprise Associates 13	5,134,404	0.03
New Enterprise Associates 14	40,370,584	0.25
Nordic Capital Fund VII	1	0.00
Onex Partners IV L.P.	28,193,973	0.17
Onex Partners V, L.P.	72,241,548	0.45
Onex Partners III, L.P.	3,892,557	0.02
Patria PE Fund VI	38,684,093	0.24
Petershill	88,351,067	0.55
Pine Bridge Passport I	128,251,939	0.79
Providence Equity Partners VI, L.P.	670,043	0.00
RCP Fund of One	92,381,510	0.57
RRJ Capital Master Fund III LP	16,823,162	0.10
Ristra MDP Co Invest	10,148,323	0.06
Sun Capital Partners V, L.P.	1,880,334	0.01
TPG Asia V, L.P.	3,030,862	0.02
TPG Partners VI, LP	1,720,163	0.01
Technology Crossover Ventures VII, L.P	1,807,569	0.01
Technology Crossover Ventures IX, LP	51,646,300	0.32
Technology Crossover Ventures X, LP	85,197,901	0.53
The Resolute Fund II,L.P.		0.00
The Resolute Fund III, L.P.	21,042,615	0.13
The Resolute Fund IV, L.P.	98,531,172	0.61
Trident IX LP	9,126,550	0.06
Trinity Ventures XII	60,579,717	0.37
Warburg Pincus PE XII	107,309,869	0.66
Warburg Pincus 14	19,324,372	0.12

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Warburg Pincus GG	134,359,544	0.83
Petershill IV	15,025,863	0.09
Enchantment PH Co-Invest	24,801,783	0.15
Hellman Arrow 1	6,207,076	0.04
ON Dearborn VIII	43,034,213	0.27
Hellman Samsn Hcky 1	5,464,096	0.03
Hellman Samsn Shield	9,939,818	0.06
Montagu VI	47,638,889	0.29
Altaris Health Partners V	40,199,604	0.25
Hellman Samson Brunello SPV	3,701,191	0.02
Madison Dearborn Patriot SPV	6,096,978	0.04
Tenex Capital Partners III	26,068,381	0.16
White Sands Tenex Co-Inv	17,573,684	0.11
General Catalyst Endurance	27,345,328	0.17
General Catalyst Ignition	11,518,153	0.07
The Resolute Fund V, L.P.	85,135,175	0.53
Hellman X	24,529,419	0.15
Orchid Asia	8,178,441	0.05
1912 Orchid Asia Coinvest	1,325,505	0.01
Montagu Petroglyph Coinvest	10,856,568	0.07
General Catalyst XI CRTN	4,199,516	0.03
LGIMA Global Equity Overlay		0.00
Credit Oriented Fixed Income	3,062,175,227	18.92
Liquid Credit	1,620,057,151	10.01
High Yield Debt Composite	1,448,177,353	8.95
Guggenheim Global High Yield	-4,737	0.00
PineBridge High Yield	1,448,182,090	8.95
Parametric Credit Cash Overlay	171,879,798	1.06

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Alternative Liquid Credit	1,075,054,643	6.64
Leveraged Loans/Structured Credit	757,248,935	4.68
Mudrick Stressed CR FKA CVC	162,153,014	1.00
Ellington HF	155,696,945	0.96
Eagle Point	9,281,171	0.06
Eagle Point Credit PRT	85,132,382	0.53
Napier Park Class B	200,557,039	1.24
Wheeler Peak Rotational Credit	144,428,384	0.89
Credit Oriented Hedge Funds	317,805,707	1.96
Canyon Value Realization Fund, L.P.	41,634,571	0.26
King Street Capital, L.P.	2,804,519	0.02
Silver Point Capital Fund, L.P.	51,962,823	0.32
Anchorage	71,228,487	0.44
Napier Park Class A	150,175,308	0.93
LGIMA Credit Overlay		0.00
Emerging Markets Debt Composite	2,030,852	0.01
Lazard Emerging Markets Debt	2,030,852	0.01
Illiquid Credit Comp	365,032,582	2.26
Atalaya SOF VI	5,362,719	0.03
Athyrium Opportunities Fund II, L.P.	15,589,624	0.10
Cerberus Global RPL	160,625,077	0.99
Cerberus Inst. Partners L.P.- Series 4	525,138	0.00
Cheyne V	49,287,669	0.30
European Real Estate Debt Fund III	43,270,777	0.27
European Real Estate Debt Fund II	2,014,723	0.01
Garrison Opportunity Fund IV A LLC	22,081,675	0.14
Madison Real Estate Debt	41,470,596	0.26
OCM Opportunities Fund VII, L.P.	161,071	0.00
OCM Opportunities Fund VIIb, L.P.	9,837	0.00

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
OCM Opportunities Fund VIII, L.P.	140,337	0.00
Oaktree Eur. Prin. Fund III(US), LP	7,158,149	0.04
Selene Res. Mortgage Opp. Fund II LP		0.00
Sixth Street Ops III	11,276,662	0.07
Wayzata Opportunities Fund II, L.P.		0.00
Wayzata Opportunities Fund III, L.P.	4,465,163	0.03
HIG Bayside Loan Opportunity Fund II	1,593,365	0.01
Risk Reduction & Mitigation	2,761,045,148	17.06
Domestic Core Fixed Income	1,844,111,249	11.39
BlackRock Core Active	1,257,354,308	7.77
MacKay Shields Core Investment Grade	-1	0.00
Prudential Core Conservative	541,821,742	3.35
Risk Mitigation Overlay	44,935,201	0.28
Global Core Fixed Income	10,396,775	0.06
Manulife Core Global Agg. Fixed Income		0.00
BlackRock Global FI	10,396,775	0.06
Cash Composite	83,893,490	0.52
Cash Account	79,000,270	0.49
Cash-Corporate Action	4,893,220	0.03
LGIMA Overlay		0.00
LGIMA TAA Overlay		0.00
Bonds Plus Composite	822,643,633	5.08
Elliot	136,531,269	0.84
Parametric Bonds Plus	43,464,023	0.27
Pharo Gaia Fund	32,516,810	0.20
Dorsal	89,157,556	0.55
Garda	61,415,997	0.38
Glazer	105,586,625	0.65

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Pacific AA	104,709,837	0.65
Systematica	89,249,967	0.55
Marshall Wace Eureka		0.00
Millenium	113,689,934	0.70
Two Sigma	46,321,615	0.29
Real Assets	2,921,193,295	18.05
Real Estate Only Comp	1,480,201,121	9.15
Liquid Real Estate Comp	446,867	0.00
DFA Real Estate Securities	288,122	0.00
Security Capital Alpha	158,742	0.00
Security Capital Beta	2	0.00
Illiquid Real Estate Comp	1,479,754,255	9.14
Aermont Cap RE Fund IV	34,400,874	0.21
BPG Investment Partnership VIII		0.00
Blackstone Real Estate Partners VII	8,490,408	0.05
Blackstone Real Estat Part Euro III LP	1,794,928	0.01
Carlyle Realty Partners VI, L.P.	1,701,238	0.01
Carlyle Realty Partners V L.P.	58,204	0.00
Harrison Street Real Estate Partners V	26,010,519	0.16
Harrison Street Real Estate Partners VII	64,480,082	0.40
KSL Capital Partners IV	64,383,050	0.40
North Haven VII	210,431	0.00
Rockwood Cap. Real Estate Part. IX, LP	6,158,250	0.04
Rockwood Cap. Real Estate Part. X, LP	39,354,039	0.24
Starwood Global Opportunity VIII, LP	1,660,841	0.01
Starwood Opportunity Fund X	13,406,757	0.08
Starwood Global Opportunity XI	64,084,680	0.40
Starwood Distressed Opportunity IX, LP	1,915,368	0.01

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Walton Street Real Estate Fund VI	12,225,168	0.08
Wheelock Street Real Estate Fund II	18,444,403	0.11
Rockpoint Fund II	63,071,577	0.39
Perella Weinberg III	27,240,302	0.17
Harrison Street Real Estate Partners VI	49,845,667	0.31
Sarofim		0.00
NEW ROCK CORE FUND	280,126,781	1.73
GEM RLTY EVERGREEN	131,429,994	0.81
Rockwood Cap. Real Estate XI	39,437,919	0.24
Rockpoint Fund III	24,177,021	0.15
Rockwood MultiFamily PT LP	108,894,862	0.67
Stockbridge NLF	274,743,887	1.70
Harrison Street Real Estate VIII	49,062,546	0.30
Stockbridge Value Fund IV	61,625,080	0.38
Starwood XII	11,319,378	0.07
Real Assets Only Comp	1,440,331,506	8.90
Liquid Real Assets Comp	162,404,131	1.00
PIMCO Commodities	705,747	0.00
PIMCO TIPS	1,246,199	0.01
Deutsche Listed Infrastructure	53,754,104	0.33
Harvest MLP Alpha	435,916	0.00
Real Assets Cash Overlay	106,262,166	0.66
Pavilion Global Transition		0.00
Illiquid Real Assets Comp	1,277,927,375	7.90
ACM II	27,384,063	0.17
Antin III	84,124,766	0.52
Ardian V	49,308,245	0.30
Ardian Infrastructure IV	43,012,657	0.27
BEP Legacy A LP	36,681	0.00

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Brookfield Infrastructure Fund II LP	34,685,966	0.21
Brookfield Infrastructure Fund III	65,615,811	0.41
Carlyle Power Partners II	72,717,329	0.45
Denham Cap. Part. VI Coinvestment	49,127	0.00
Denham Commodity Partners Fund VI, LP	10,682,650	0.07
Encap Energy Capital VIII, L.P.	10,457,786	0.06
Encap Energy Capital Fund IX, L.P.	10,909,340	0.07
EnCap Flatrock Midstream Fund III	22,871,363	0.14
EnCap Energy Capital XI, L.P.	104,492,091	0.65
Encap Energy Capital VII, L.P.	1	0.00
First Reserve Fund XII, LP	49,172	0.00
IFM Global Infrastructure Fund, L.P.	191,119,079	1.18
KKR Global Infrastructure Investors II	25,323,896	0.16
Kayne Anderson Energy Fund V, LP	4,722,275	0.03
Lime Rock Partners VI, L.P.		0.00
Lime Rock Resources III	34,404,272	0.21
Lime Rock Partners V, L.P.	1,523,157	0.01
MINA III	55,293,618	0.34
Natural Gas Partners Fund IX	103,625	0.00
Natural Gas Partners X	3,547,385	0.02
NGP Natural Resources XI, L.P.	40,482,556	0.25
NGP XII	61,272,040	0.38
Paine and Partners Capital Fund IV	36,244,366	0.22
Quantum Energy Partners IV, L.P.		0.00
Quantum Energy Partners V, L.P.	1,926,051	0.01
R/C Renewable and Alt. Energy II	209,602	0.00
Riverstone Global Energy & Power Fd V	11,852,287	0.07
R/C Global Energy & Power Fund IV	49,625	0.00
Tillridge	35,036,174	0.22

Manager Listing

As of December 31, 2022

	Total Fund	
	\$	%
Mass Ascension Co-Invest	141,093,929	0.87
Four Corners FF	88,981,607	0.55
Ardian Americas V	5,996,832	0.04
Market Neutral Hedge Fund Comp	660,668	0.00
Farallon Capital Inst. Partners, LP	121,541	0.00
AG Super Fund L.P.		0.00
Stark Investments	539,127	0.00
Multi-Risk Composite	1,371,033,202	8.47
Zia Risk Parity Fund	1,371,033,202	8.47

Placement Agent Disclosure

Pursuant to New Mexico statute PERA shall not make any investment, other than investments in publicly traded equities or publicly traded fixed-income securities, unless the recipient of the investment discloses the identity of any third-party marketer who rendered services on behalf of the recipient in obtaining the investment and discloses the amount of any fee, commission or retainer paid to the third-party marketer for the services rendered. “Third-party marketer” means a person who, on behalf of an investment fund manager or other person seeking an investment from the fund and under a written or implied agreement, receives a fee, commission, or retainer for such services from the person seeking an investment from the fund.

The following investments were approved during the quarter, with disclosures made under the policy:

Kelso Chimayo Co-Invest – NM PERA committed \$15 million to PERA Chimayo Kelso Co-Invest, a 2022 vintage year in the Private Equity allocation. Kelso Investment Associates has stated that they did not use a placement agent while soliciting PERAs investment.

Investments approved prior to the current quarter for which the fund engaged a placement agent follow:

Antin Infrastructure Partners Fund V – NM PERA committed €100 million to Antin Infrastructure Partners Fund V, a 2022 vintage year in the Real Asset allocation. Antin Infrastructure Partners has confirmed that Evercore Group LLC was engaged as placement agent for Fund V. NM PERA will not be liable for any placement agent fees in relation to its commitment to Antin Fund V. Neither Evercore nor Antin has compensated or agreed to compensate, directly or indirectly, any Person or entity to act as a placement agent in connection with any commitment by NM PERA.

Warburg Pincus Global Growth 14 – NM PERA committed \$100 million to Warburg Pincus LLC a 2022 vintage year in the Equity allocation. Warburg Pincus has engaged and expects to engage placement agents and/or feeder sponsors in certain jurisdictions, including outside of the United States. In connection with these engagements, the firm expects to pay placement fees that it believes are customary in each respective jurisdiction. Warburg Pincus Global Growth 14, L.P. will not be responsible for placement fees payable to any placement agents. The firm has also engaged and expects to engage financial institutions to sponsor or arrange feeder funds that target high net worth individuals. In connection with the engagements, the firm may pay placement fees to such financial institutions. Any placement fees paid to such financial institutions would be borne by Warburg Pincus and/or the respective feeder fund.

JMI Equity Fund XI, L.P. – NM PERA committed \$50 million to JMI Equity Fund XI, L.P., a 2022 vintage year in the Equity allocation. JMI Equity Fund XI, L.P. has stated that they did use a placement agent, however, no placement agent has provided any services or is expected to provide any services related to PERA’s commitment, thus no fees will be paid in relation to PERA’s commitment.

Rockwood Multifamily Partners, L.P. Fund – NMPERA committed \$100 million to Rockwood Multifamily Partners Fund, a 2021 vintage year in the Real Estate allocation. Rockwood Multifamily Partners, L.P. Fund has stated that they did not use a placement agent while soliciting PERAs investment.

Placement Agent Disclosure

As provided by PERA of New Mexico

Stockbridge Niche Logistics Fund – NM PERA committed an additional \$100 million to Stockbridge Niche Logistics Fund, a 2020 vintage year in the Real Estate allocation. Stockbridge Niche Logistics Fund has stated that they did not use a placement agent while soliciting PERAs investment.

General Catalyst XI; Creation, Endurance, Ignition – NMPERA committed \$85 million to General Catalyst XI, a 2021 vintage year in the Equity allocation. General Catalyst XI has stated that they did not use a placement agent while soliciting PERAs investment.

Kelso Investment Associates XI– NM PERA committed \$60 million to Kelso Investment Associates XI, a 2021 vintage year in the Equity allocation. Kelso Investment Associates has stated that they did not use a placement agent while soliciting PERAs investment.

Trident IX– NM PERA committed \$50 million to Trident IX, a 2021 vintage year in the Equity allocation. Trident has stated that they did not use a placement agent while soliciting PERAs investment.

Orchid Asia VIII– NM PERA committed \$75 million to Orchid Asia VIII, a 2021 vintage year in the Equity allocation. Orchid Asia has stated that they did not use a placement agent while soliciting PERAs investment.

Hellman & Freidman X– NM PERA committed \$50 million to Hellman & Freidman X, a 2021 vintage year in the Equity allocation. Hellman & Freidman has stated that they did not use a placement agent while soliciting PERAs investment.

Ristra MDP Co-Invest– NM PERA committed \$20 million to Ristra MDP Co-Invest, a 2021 vintage year in the Equity allocation. MDP has stated that they did not use a placement agent while soliciting PERAs investment.

Ardian Americas Infrastructure Fund V– NM PERA committed \$75 million to Ardian Americas Infrastructure Fund V, a 2021 vintage year in the infrastructure allocation. Ardian Americas has stated that they did not use a placement agent while soliciting PERAs investment.

D.E. Shaw – NM PERA committed u\$120 million to D.E. Shaw Composite Fund and/or Multi-Asset Fund, diversified multi-strategy fund. This is a portable alpha allocation. D.E. Shaw & Co. has stated that they did not use a placement agent while soliciting PERAs investment.

Starwood XIII – NM PERA committed \$50 million to Starwood XIII a 2020 vintage year in the Real Estate allocation. Starwood XIII has stated that they did not use a placement agent while soliciting PERAs investment.

Harrison Street Real Estate Fund VIII – NM PERA has committed \$75 million to Harrison Street Real Estate Fund VIII a 2020 vintage year in the Real Estate allocation. Harrison Street Real Estate has stated that they did not use a placement agent while soliciting PERAs investment.

Stockbridge Niche Logistics Fund – NM PERA committed \$100 million to Stockbridge Niche Logistics Fund a 2020 vintage year in the Real Estate allocation. Stockbridge Niche Logistics Fund has stated that they did not use a placement agent while soliciting PERAs investment.

Two Sigma – NM PERA has committed \$75 million to Two Sigma a Portable Alpha allocation. Two Sigma has stated that they did not use a

Placement Agent Disclosure

As provided by PERA of New Mexico

placement agent while soliciting PERAs investment.

Millennium USA Fund – NM PERA increased commitment by \$50 million to Millennium USA Fund in the Portable Alpha allocation. Millennium has stated that they did not use a placement agent while soliciting PERAs investment.

Stockbridge Value Fund IV, LP – NM PERA committed \$75 million to Stockbridge Value Fund IV, LP's 2020 vintage year in the Real Estate allocation. Stockbridge Core and Value-Add Advisors, LLC ("CVA") stated that they did not use placement agents during the fundraising period.

Montagu VI, LP – NM PERA increased commitment by \$25 million to Montagu VI in the Equity allocation. Montagu Private Equity LLP has stated that it did not use placement agents during the fundraising period.

Millennium USA Fund – NM PERA committed \$100 million to Millennium USA Fund a Portable Alpha allocation. Millennium has stated that they did not use a placement agent while soliciting PERAs investment.

Marshall Wace Fund – NM PERA committed \$50 million to Marshall Wace Fund a Portable Alpha allocation. Marshall Wace has stated that they did not use a placement agent while soliciting PERAs investment.

Tenex Capital Partners III L.P. & PERA White Sands Tenex Co-Invest – NM PERA committed \$45 million to Tenex Capital Partners III L.P. & PERA White Sands Tenex Co-Invest a 2020 vintage year in the Private Equity allocation. The Tenex Capital has stated that they did not use a placement agent while soliciting PERAs investment.

Jordan Resolute V, L.P. – NM PERA committed \$75 million to Jordan Resolute V, L.P. a 2020 vintage year in the Private Equity allocation. The Jordan Company, LP has stated that they did not use a placement agent while soliciting PERAs investment.

Garda FIRVO Fund – NM PERA committed \$50 million to Garda FIRVO Fund a Portable Alpha allocation. Garda Capital Partners has stated that they did not use a placement agent during fundraising.

Ardian NM Co-Invest (Mass Ascension), L.P. – NM PERA committed \$125 million to Ardian NM Co-invest a 2020 vintage year in the Real Assets allocation. Ardian FRANCE has stated that they may use placement agents in certain geographies where they do not have a presence. However, in any case, placement fees would not be payable by the fund.

AgIS Club Fund (Four Corners), L.P. – NM PERA committed \$150 million to Agis Club Fund a 2020 vintage year in the Real Asset allocation. AgIS Capital LLC has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Altaris Health Partners V, L.P. – NM PERA committed \$75 million to Altaris Health Partners V, L.P. a 2020 vintage year in the Private Equity allocation. Altaris Capital Partners, LLC has stated that they did not use a placement agent during fundraising, however in any case, placement

Placement Agent Disclosure

As provided by PERA of New Mexico

fees would not be payable by the fund.

Systematica Alternative Markets Fund – NM PERA committed \$75 million to Systematica Alternative Markets Fund a Portable Alpha allocation. Systematica has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Pharo Gaia Fund – NM PERA committed \$40 million to Pharo Gaia Fund a Portable Alpha allocation. Pharo Management has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Pacific Alliance Asia Opportunity Fund – NM PERA committed \$70 million to Pacific Alliance Asia Opportunity Fund a 2020 vintage year in the Portable Alpha allocation. PAG has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Glazer Enhanced Fund – NM PERA committed \$40 million to Dorsal Enhanced Fund a Portable Alpha allocation. Glazer Capital Management has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Dorsal Fund – NM PERA committed \$70 million to The Dorsal Fund a Portable Alpha allocation. Dorsal Capital Management has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Madison Dearborn Capital Partners VIII, L.P. – NM PERA committed \$75 million to Madison Dearborn Capital Partners VIII, L.P. a 2019 vintage year in the Equity allocation. Madison Dearborn Capital Partners has stated that a placement agent was used for certain funds, but these fees are offset 100% by managements fees.

TSSP NM Contingent Capital Fund NM PERA committed \$150 million to TSSP NM Contingent Capital Funs a 2019 vintage year in the Private Credit allocation. TPG Sixth Street Partners Group has stated that they did not use a placement agent during fundraising, however in any case, placement fees would not be payable by the fund.

Petershill IV, L.P. – NM PERA committed \$70 million to Petershill IV, L.P. a 2019 vintage year in the Equity allocation. The Goldman Sachs Group, Inc. AIMS Group has stated that it did not use placement agents during the fundraising period.

Rockwood Capital Real Estate Partners Fund XI, L.P. – NM PERA committed \$50 million to Rockwood Capital a 2019 vintage year in the Real Estate allocation. Rockwood Capital has stated that it does use placement agent fees in some situations. However, all placement agent fees are incurred by the General Partner or its affiliates and not by the Fund.

Montagu VI, LP – NM PERA committed \$75 million to Montagu Private Equity LLP a 2019 vintage year in the Real Estate allocation. Montagu

Placement Agent Disclosure

As provided by PERA of New Mexico

Private Equity LLP has stated that it did not use placement agents during the fundraising period.

Ardian Infrastructure V, L.P. – NM PERA committed €60 million to Ardian Group a 2018 vintage year Real Assets allocation. Ardian Group has stated that it does use placement agent fees in some situations. However, all placement agent fees are incurred by the General Partner or its affiliates and not by the Fund. Axiom Emerging Markets Equity Fund. – Axiom Investors received final approval in the quarter for an investment of \$215 million in the Liquid Equity Assets allocation. Axiom Investors did not use placement agents for our investment in the fund.

Aermont Capital Real Estate Fund IV SCPs –NM PERA committed €50 million to Aermont Capital LLP a 2018 vintage year in the Real Estate allocation. Aermont Capital LLP has stated that the Fund will pay all fees, costs and expenses relating to the formation and launch of the Fund, the General Partner and any Feeder Fund provided that the amount of such costs and expenses will not exceed 0.15% of Total Commitments (inclusive of VAT). Any fees, costs and expenses in excess of such amount will be borne by Aermont

Harrison Real Estate Partners VII, L.P. – NM PERA committed \$75 million to Harrison Street Real Estate Capital, LLC a 2018 vintage year in the Real Estate allocation. Harrison Street Real Estate Capital, LLC has confirmed that no placement agents were used for this commitment.

TCV X, L.P. – NM PERA has committed \$70 million to Technology Crossover Ventures a 2018 vintage year in the Equity allocation. Technology Crossover Ventures has stated that all placement agent fees will be borne by the GP.

Kayne Anderson Rudnick Investment Management LLC – NM PERA committed up to \$350 million to Kayne Anderson Rudnick Investment Management LLC a 2018 vintage year in the Equity allocation. Kayne Anderson Rudnick Investment Management LLC has confirmed that no placement agents were used for this commitment.

Pine Bridge High Yield Fixed Income – NM PERA committed \$350 million to PineBridge Investments a 2018 vintage year in the Risk Mitigation allocation. PineBridge Investments has confirmed that no placement agents were used for this commitment.

Rock Point Growth and Income Real Estate Fund III, L.P. – NM PERA committed \$60 million to Rockpoint Group LLC a 2018 vintage year in the Equity allocation. Rockpoint Group LLC may engage one or more placement agents on a limited basis for engagement solely with a small number of investors outside of the United States. If a placement agent fee is paid in connection with Growth and Income Fund III, the General Partner will be responsible for all such fees and expenses.

Warburg Pincus Global Growth, L.P. – NM PERA committed \$115 million to Warburg Pincus LLC a 2018 vintage year in the Equity allocation. Warburg Pincus LLC does not expect to engage a placement agent in the U.S., although the firm has engaged financial institutions to sponsor or arrange feeder funds that target high net worth individuals to invest in WPGG. In connection with the engagements, the firm may pay customary fees to such financial institutions. Any fees paid to such financial institutions would be borne by Warburg Pincus and/or the respective feeder fund.

Placement Agent Disclosure

As provided by PERA of New Mexico

Kelso Investment Associates X, L.P. – NM PERA committed \$60 million to Kelso Investment Associates X, L.P. a 2018 vintage year Equity allocation. Kelso & Company has confirmed that it did use placement agents for this commitment. It was stated that “Kelso will bear the economic burden of all placement agent fees.”

Acadian Asset Management LLC – NM PERA committed \$285 million to Acadian Asset Management LLC a 2018 vintage year in the Equity allocation. Acadian Asset Management has confirmed that no placement agents were used for this commitment.

Patria Private Equity VI, L.P. – NM PERA committed \$50 million to Patria Finance Limited a 2018 vintage year Real Assets allocation. Patria Finance Limited has confirmed that no placement agents were used for this commitment.

Jordan Resolute IV, L.P. – NM PERA committed \$65 million to The Jordan Company a 2018 vintage year in the Real Assets allocation. The Jordan Company has confirmed that no placement agents were used for this commitment.

PIMCO Liquid Real Assets Completion Portfolio – NM PERA committed \$300 million to Pacific Investment Management Company a 2017 vintage year in the Real Assets allocation. There was no placement agent was engaged.

NGP Natural Resources XII, L.P. – NM PERA committed \$75 million to Natural Gas Partners a 2017 vintage year in the Real Assets allocation. Natural Gas Partners has confirmed that placement fees will be paid by the fund. However, all placement agent fees paid by the fund will be offset.

Altaris Health Partners IV, L.P. – NM PERA committed \$50 million to Altaris Health Partners a 2017 vintage year in the Private Equity allocation. Altaris Health Partners has confirmed that no placement agent was engaged.

Altaris Constellation Partners IV, L.P. – NM PERA committed \$25 million to Altaris Health Partners a 2017 vintage year in the Private Equity allocation. Altaris Constellation Partners has that there was no placement agent used for fundraising

CVC Capital Partners VII, L.P. – NM PERA committed €100 million to CVC Capital Partners a 2017 vintage year in the Real Estate allocation. CVC Capital Partners has confirmed that CVC Funding, LLC is to conduct activities as a distributor and/or placement agent for private funds managed by or otherwise affiliated with CVC Credit Partners or a CVC Entity. The Distributor does not sit within the same corporate group as the General Partner. No placement agent fees, or expenses will be borne by the Fund.

EnCap Energy Capital Fund XI, L.P. – NM PERA committed \$100 million to EnCap Investments. L.P. a 2017 vintage year in the Private Equity allocation. EnCap Investments. L.P. has confirmed that there was no placement agent used for fundraising.

Placement Agent Disclosure

As provided by PERA of New Mexico

Cerberus Global Residential Mortgage Opportunity Fund, L.P. – NM PERA committed \$100 million to Cerberus Capital Management a 2017 vintage year in the Credit allocation. Cerberus Capital Management has confirmed that there was no placement agent used for fundraising.

Eagle Point Credit Partners, L.P. – NM PERA committed \$100 million to Eagle Point Credit Partners, L.P. a 2017 vintage year in the Credit allocation. Eagle Point Credit Partners, L.P. has confirmed that there was no placement agent used for fundraising.

Meridiam Infrastructure North America Fund III, LP. – NM PERA committed \$75 million to Meridiam Infrastructure Partners a 2017 vintage year in the Real Assets allocation. Meridiam Infrastructure Partners has confirmed that they have used CL to act as placement agent for the Fund. Meridiam or its affiliates will bear the cost of all placement fees.

Onex Partners V, L.P. – NM PERA committed \$75 million to Onex Partners Manager LP a 2017 vintage year in the Private Equity allocation. Onex Partners Manager LP Partners has confirmed that Credit Suisse to act as placement agent for the Fund. Meridiam or its affiliates will bear the cost of all placement fees. 100% of any advisory, monitoring, transaction, topping, break-up, or directors' fees and other fees received, including placement agent fees will be offset by management fees.

Cheyne Real Estate Credit Fund V –Opportunistic L.P. – NM PERA committed \$90 million to Cheyne Real Estate Credit Fund V –Opportunistic L.P. a 2016 vintage year in the Credit allocation. Cheyne Capital has communicated that there was no placement agent used for fundraising

Rockpoint Growth and Income Real Estate Fund II – NM PERA committed \$75 million to Rockpoint Growth and Income Real Estate Fund II, L.P a 2017 vintage year in the Real Estate allocation. Rockpoint Group, L.L.C. has confirmed that Hodes Weill UK LLP on a limited basis for engagement solely with a small number of investors outside of the United States. If a placement agent fee is paid in connection with Growth and Income Fund II, the General Partner will be responsible for all such fees and expenses.

NewRock Core Real Estate (Rockwood Capital) – NM PERA committed \$150 million to NewRock a 2017 vintage year in the Real Estate allocation. Rockwood Capital, L.L.C. has communicated that there was no placement agent used for fundraising.

GEM Realty Evergreen Fund, L.P. –NM PERA committed \$100 million to GEM Realty Evergreen Fund, L.P. a 2017 vintage year in the Real Estate allocation. GEM Realty Capital, Inc. has confirmed that they have not engaged a private placement agent to assist with its current fundraising efforts.

Petershill Private Equity L.P. – NM PERA committed \$150 million to Petershill Private Equity LP. a 2017 vintage year in the illiquid Private Equity allocation. GSAM –Petershill Alternative Investments & Manager Selection (AIMS) has communicated that there was no placement agent used for fundraising.

Antin Infrastructure Partners III, L.P. – NM PERA committed \$76 million to Antin Infrastructure Partners III, L.P. a 2017 vintage year in the

Placement Agent Disclosure

As provided by PERA of New Mexico

Real Assets allocation. Antin Infrastructure Partners has confirmed that Campbell Lutyens & Co. Ltd are engaged as placement agent. The fee terms are as follows: GP will incur all costs associated with the hiring of said placement agent.

Tennenbaum Capital Partners, Direct Lending Fund of One – NM PERA committed \$200 million to Tennenbaum Capital Partners, Direct Lending Fund of One a 2017 vintage year the Credit allocation. Tennenbaum Capital Partners has they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

RCP Small & Emerging Manager Fund of One – NM PERA committed \$75 million to RCP Small & Emerging Manager Fund of One a 2017 vintage year in the Global Equity allocation. RCP Advisors has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Napier Park Global Capital Specialized & Complex Credit – NM PERA committed \$300 million to Napier Park Global Capital Specialized & Complex Credit a 2016 vintage year in the Credit allocation. Napier Park Global Capital (US) has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

FountainVest China Capital Partners III, L.P. – NM PERA committed \$83 million to FountainVest China Capital Partners III, L.P. a 2016 vintage year in the Global Equity allocation. FountainVest Advisors Ltd. has confirmed that UBS are engaged as placement agent. The fee terms are as follows: FountainVest believes that the amount that will be paid to UBS which relates to NM PERA's investment is between 0.3% and 1.75% of NM PERA's commitment. The actual dollar amount of placement fees payable being US\$685,201. As per the LPA, as the entire placement agent fee is not treated as a fund expense but a GP expense, NM PERA will in effect be paying US\$0 to the placement agent.

Harrison Street Real Estate Partners VI, L.P. – NM PERA committed \$75 million to Harrison Street Real Estate Partners VI, L.P. a 2016 vintage year in the Real Estate allocation. Harrison Street Real Estate Capital, LLC has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Tillridge Global Agribusiness Partners II, L.P. – NM PERA committed \$75 million to Tillridge Global Agribusiness Partners II, L.P. a 2016 vintage year in the Real Assets allocation. Tillridge is a NGP affiliate, a 35% owner. Tillridge Capital Partners, LLC has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Charterhouse Capital Partners X, L.P. – NM PERA committed \$117 million to Charterhouse Capital Partners X, L.P. a 2016 vintage year in the Illiquid Credit allocation Charterhouse Capital Partners LLP LLC has confirmed that they did not engage a placement agent or third party marketer with respect to the NM PERA commitment.

ACM Fund II, LLC. – NM PERA committed \$40 million to ACM Fund II, LLC. a 2016 vintage year in the Real Assets allocation. ACM Management Company, LLC. ACM is working with Equilibrium Capital to fundraise for Fund II. Equilibrium Capital is a founding member of ACM, a significant

Placement Agent Disclosure

As provided by PERA of New Mexico

minority shareholder and a member of the Investment and Management Committees. For the current Fund, ECS will receive 1.5 percent of total committed capital paid over two years, as compensation for these services. For Fund I, ECS was also paid 1.5 percent of total committed capital, paid over three years, for these services. No placement fees will be paid by the Fund. The GP will pay placement costs out of its management fee. The amount relating to NM PERA commitment of \$40 million is therefore \$600,000.

DRC European Real Estate Debt Fund III, L.P. – NM PERA committed \$73 million to DRC European Real Estate Debt Fund III, L.P. a 2016 vintage year in the Private Credit allocation. DRC Capital Partners has confirmed that Evercore Partners International are engaged as placement agent. The fee terms are as follows: “New” Capital Commitments (new investors & element of re-ups exceeding Fund II commitment level) – 1.5%. “Existing” Capital Commitments (existing investors with re-ups up to Fund II commitment level) – 1.0%

Starwood XI Management, L.P. – NM PERA committed \$75 million to Starwood XI Management, L.P. a 2016 vintage year in the Real Estate allocation. Starwood Capital has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Brookfield Infrastructure Fund III, L.P. – NM PERA committed \$75 million to Brookfield Infrastructure Fund III, L.P. a 2016 vintage year in the Real Assets allocation. Brookfield Asset Management Inc. has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

TCV IX Fund – NM PERA committed \$65 million to TCV IX Fund, L.P. a 2016 vintage year in the Private Equity allocation. Technology Crossover Ventures has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

PineBridge Passport I, L.P. – NM PERA committed \$150 million to PineBridge Passport I, L.P. a 2016 vintage year in the Private Equity allocation. PineBridge has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Carlyle Power Partners II, L.P. – NM PERA committed \$65 million to Carlyle Power Partners II, L.P. a 2015 vintage year in the Private Equity allocation. Carlyle has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Warburg Pincus Private Equity XII, L.P. – NM PERA committed \$85 million to Warburg Pincus Private Equity XII, L.P. a 2015 vintage year in the Private Equity allocation. Warburg Pincus has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Madison Realty Capital Debt Fund III, L.P. – NM PERA committed \$50 million to Madison Realty Capital Debt Fund III, L.P. a 2015 vintage year in the Real Estate allocation. Madison has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Placement Agent Disclosure

As provided by PERA of New Mexico

Century Focused Fund IV, L.P. – NM PERA committed \$30 million to Century Focused Fund IV, L.P. a 2015 vintage year in the Private Equity allocation. Century Capital Management has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Trinity Ventures XII, L.P. – NM PERA committed \$30 million to Trinity Ventures XII, L.P. a 2015 vintage year in the Private Equity allocation. Trinity Ventures has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

RRJ Capital Master Fund III, L.P. – NM PERA committed \$65 million to RRJ Capital Master Fund III, L.P. a 2015 vintage year in the Private Equity allocation. RRJ Capital III Ltd. has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Rockwood X, L.P. – NM PERA committed \$60 million to Rockwood X, L.P. a 2015 vintage year in the Real Estate allocation. Rockwood Capital has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Ardian Infrastructure IV, L.P. – NM PERA committed \$69 million to Ardan Infrastructure IV, L.P. a 2015 vintage year in the Real Assets allocation. Ardan has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Atalaya Special Opportunities Fund VI, L.P. – NM PERA committed \$50 million to Atalaya Special Opportunities Fund VI, L.P. a 2015 vintage year in the Private Equity-Credit allocation. Atalaya Capital Management has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Charterhouse Capital Partners X, L.P. – NM PERA committed \$117 million to Charterhouse Capital Partners X, L.P. a 2015 vintage year in the Private Equity allocation. Charterhouse Capital Partners LLP has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Athyrium Opportunities Fund II, L.P. – NM PERA committed \$57.9 million to Athyrium Opportunities Fund II, L.P. a 2015 vintage year in the Private Equity allocation. Neuberger Berman Alternatives Advisers LLC and its affiliates (“Neuberger Berman”) provide sub-advisory services and other ancillary services to Athyrium Capital Management LLC, including assistance with fundraising and marketing of the Fund. For investors introduced by Neuberger Berman, Neuberger Berman typically receives approximately 60% of one year’s management fee, paid out over a three-year period. Such fees are not paid by the fund, rather out of the management fee collected by Athyrium Capital Management, LLC. Neuberger Berman, LLC. is a FINRA regulated broker dealer.

KSL Capital Partners IV, L.P. – NM PERA committed \$60 million to KSL Capital Partners IV, L.P. a 2015 vintage year in the Real Estate allocation. KSL Capital Partners, LLC has confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Placement Agent Disclosure

As provided by PERA of New Mexico

Garrison Opportunity Fund IV-A, LLC – NM PERA committed \$60 million to Garrison Opportunity Fund IV-A, LLC a 2014 vintage year in the Private Equity allocation. Garrison Investment Group confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Harrison Street Real Estate Partners V, L.P. – NM PERA committed \$45 million to Harrison Street Real Estate Partners V, L.P. a 2014 vintage year in the Real Estate allocation. Harrison Street confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Paine & Partners Capital Fund IV, L.P. – NM PERA committed \$45 million to Paine & Partners Capital Fund IV, L.P. a 2014 vintage year in the Real Assets allocation. Paine & Partners confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Kelso Investments Associates IX – NM PERA committed \$60 million to Kelso Investment Associates IX a 2014 vintage year in the Private Equity allocation. Kelso disclosed that TransPacific Group LLC and TransPacific Group (Asia) Ltd will act as a placement agent in relation to the targeted marketing of limited partner interests in KIA IX to certain specified prospective investors in East Asia and Hong Kong & China respectively. Kelso was introduced to Mark Mason, the founder of the TransPacific companies, by a former executive of a limited partner. KTB Investment & Securities Co., Ltd. is the sub-agent in Korea. The placement agent fee is 100% offset to management fees.

KKR Global Infrastructure Fund II – NM PERA committed \$50 million KKR Global Infrastructure Fund a 2014 vintage year in the Real Assets allocation. KKR confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Natural Gas Partners XI – NM PERA committed \$50 million to Natural Gas Partners XI a 2014 vintage year in the Real Assets allocation. NGP confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

Starwood Global Opportunity X – NM PERA committed \$60 million to Starwood Global Opportunity X a 2014 vintage year for the Real Estate allocation. Starwood confirmed that they did not engage a placement agent or third-party marketer with respect to the NM PERA commitment.

EnCap Flatrock Midstream Energy III – NM PERA committed \$30 million to EnCap Flatrock III a 2014 vintage year for the Real Asset allocation. EnCap disclosed that no placement agent or third-party marketer was used.

Harvest MLP – NM PERA committed \$140 million a 2014 vintage year in the Real Assets allocation. Harvest disclosed that no placement agent or third-party marketer was used.

Placement Agent Disclosure

As provided by PERA of New Mexico

DRC European Real Estate Debt Fund II – NM PERA committed £26 million to DRC a 2013 vintage year fund in the Real Estate allocation. DRC engaged EverCore Private Funds Group for the marketing of ERED II in North America. The GP pays up to 2% on amounts raised by Evercore payable in installments over 3 years, or up to 520,000 on PERA’s £26 million commitment. The GP pays the placement fee.

Onex Partners IV, LP – NM PERA committed \$45 million to Onex IV a 2013 vintage year fund in the US buyout allocation. Onex engage Credit Suisse for the marketing of Fund IV. Onex pays a flat fee. The GP pays the placement fee.

Blackstone Real Estate Partners VII – NM PERA committed \$35 million to Blackstone VII a 2012 vintage year fund in the Real Estate allocation. Blackstone engaged Park Hill Group LLC for the marketing of BREP VII. Although Blackstone engaged Park Hill in connection for certain clients, Park Hill was not used in connection with PERA’s commitment, thus PERA did not pay any placement fees.

Gilde Buyout Fund IV – NM PERA committed €15 million Euro to Gilde IV a 2011 vintage year fund in the non-US buyout allocation. Gilde engaged MVision for the marketing of Fund IV. Gilde pays a 0.35% fee on aggregate commitments, or €52,500 on PERA’s €15 million commitment. The GP pays the placement fee.

Selene Residential Mortgage Opportunity Fund II – NM PERA committed \$20 million to Selene II a 2011 vintage year fund in the Real Estate allocation. Selene engaged Capstone Partners for the marketing of Fund II. Selene pays a 1% fee, or \$200,000 on PERA’s \$20 million commitment. The fee is offset by the management fee.

Blackstone Real Estate Partners Europe III – NM PERA committed \$25 million to BREP Europe III a 2008 vintage year fund in the Real Estate allocation. Blackstone engaged Park Hill Group LLC for the marketing of BREP Europe III. BREP’s agreement is to pay Park Hill 1% on aggregate commitments, or \$250,000 on PERA’s \$25 million commitment.

Onex Partners III – NM PERA committed \$25 million to Onex III a 2008 vintage year fund in the Private Equity buyout allocation. Onex engaged Credit Suisse for the marketing of Fund III. The approximate fee paid on PERA’s \$25 million commitment was \$325,000.

Selene Residential Mortgage Opportunity Fund I – NM PERA committed \$30 million to Selene I, a 2008 vintage year fund in the Real Estate allocation. Selene engaged Capstone Partners for the marketing of Fund II. Selene pays a 1% fee, or \$300,000 on PERA’s \$30 million commitment. The fee is offset by the management fee.

Jordan Resolute Fund II – NM PERA committed \$25 million to Jordan Resolute II a 2007 vintage year fund in the Private Equity buyout allocation. Jordan engaged Credit Suisse for the marketing of Fund II. Jordan pays Credit Suisse 0.5%, or \$113,354 on PERA’s \$25 million commitment.

Kelso Investment Associates VIII, L.P. – NM PERA committed \$30 million to Kelso III a 2007 vintage year fund in the Private Equity buyout

Placement Agent Disclosure

As provided by PERA of New Mexico

allocation. Kelso engaged Credit Suisse for the marketing of Fund VIII. Kelso pays Credit Suisse 0.143%, or \$43,045 on PERA's \$30 million commitment.

Wayzata Opportunities Fund II, L.P. – NM PERA committed \$30 million to Wayzata II a 2007 vintage year fund in the distressed private equity allocation. Wayzata engaged Park Hill Group LLC for the marketing of Fund II. Wayzata pays a fee of 0.35% on aggregate commitments, or \$105,000 on PERA's \$30 million commitment. Wayzata II is now classified as an Illiquid Credit manager.

Cerberus Institutional Partners Series IV, L.P. – NM PERA committed \$25 million to Cerberus IV a 2006 vintage year fund in the distressed Private Equity allocation. Cerberus engaged Monument Group for the marketing of Fund IV.

Coller International Partners V, L.P. – NM PERA committed \$25 million to Coller V a 2006 vintage year fund in the Private Equity portfolio. Coller engaged Credit Suisse for the marketing of Fund V.

Placement Agent Disclosure

As provided by PERA of New Mexico

Additional Information

Benchmarks

2022 - 2023 SAA changes											
Composites	4/1/2021 - 12/31/2022						Composites	12/31/2022 - Present			
	SAA	Policy Portfolio Targets	Composite %	Custom Benchmark Membership %				SAA	Policy Portfolio Targets	Composite %	Custom Benchmark Membership %
Global Equity	35.50%	35.50%	100.00%	100.00%			Global Equity	38.00%	38.00%	100.00%	100.00%
Global Public Stock	19.50%	28.50%	54.93%	80.28%		MSCI ACWI IMI (\$net)	Global Public Stock	16.00%	33.00%	42.11%	86.84%
Global Low Volatility Equity	7.00%	7.00%	19.72%	19.72%		MSCI ACWI Minimum Volatility (\$net)	Global Low Volatility Equity	5.00%	5.00%	13.16%	13.16%
Private Equity	9.00%		25.35%				Private Equity	17.00%		44.74%	
Risk Reduction & Mitigation	19.50%	19.50%	100.00%	100.00%			Risk Reduction & Mitigation	17.00%		100.00%	100.00%
Core Fixed Income	12.00%	17.00%	61.54%	87.18%		Barclays U.S. Aggregate	Core Fixed Income	17.00%		100.00%	100.00%
BONDS PLUS	5.00%		25.64%	12.82%		Barclays Global Aggregate (Hedged)					
Global Core Fixed Income	2.50%	2.50%	12.82%								
Credit Oriented Fixed Income	15.00%	15.00%	100.00%	100.00%			Credit Oriented Fixed Income	19.00%	19.00%	100.00%	100.00%
Liquid Credit	2.00%	12.00%	13.33%	80.00%		Barclays Global High Yield (Hedged)	Liquid Credit	4.00%	19.00%	21.05%	100.00%
ALT LIQUID CREDIT	4.00%		26.67%	20.00%		50% JP Morgan EMBI Global Diversified (\$), 50% JPM GBI (\$)	ALT LIQUID CREDIT	7.00%		36.84%	
Emerging Market Debt (\$)	3.00%	3.00%	20.00%								
Illiquid Credit	6.00%		40.00%				Illiquid Credit	8.00%		42.11%	
Real Assets	20.00%	20.00%	100.00%	100.00%	100.00%		Real Assets	18.00%	18.00%	100.00%	100.00%
Liquid Real Estate	2.00%		10.00%	10.00%	35.00%	Wilshire Global REIT					
Illiquid Real Estate	5.00%	7.00%	25.00%	25.00%		Wilshire Global REIT	Illiquid Real Estate	7.00%	7.00%	38.89%	38.89%
Liquid Real Assets	5.00%	5.00%	25.00%	10.00%	10.00%	40% Alerian - MLP Index	Liquid Real Assets	3.00%	3.00%	16.67%	16.67%
				15.00%	15.00%	60% Bloomberg Barclays - U.S. TIPS					
Illiquid Real Assets	8.00%	8.00%	40.00%	20.00%	20.00%	50% Dow Jones - Brookfield Global Infrastructure Index	Illiquid Real Assets	8.00%	8.00%	44.44%	22.22%
				20.00%	20.00%	50% Bloomberg Commodity - Commodity Index (Total Return)				22.22%	50% Dow Jones - Brookfield Global Infrastructure Index 50% Bloomberg Commodity - Commodity Index (Total Return)
Multi Risk	10.00%						Multi Risk	8.00%		100.00%	100.00%
											Wilshire Risk Parity 15%

Glossary

Term	Definition
Absolute Return	An investment in a fund with a goal of consistent positive returns, one sub-category is referred to as "market neutral"
Actual Allocation	The actual current percentage weightings of a portfolio
Alpha	A measure of performance on risk-adjusted basis. Alpha takes the volatility of a fund and compares its risk-adjusted performance to a benchmark index. The excess return of the fund relative to the return of the benchmark index is a fund's alpha.
Arithmetic Excess	Excess return calculated by simply subtracting manager's return from index return for same period
Asset Allocation Effect (Group Weight)	Variance attributable to asset allocation decisions, deviations from target policy.
Beta	Volatility of portfolio versus market. Beta = 1: portfolio will move with the market. Beta < 1: portfolio will be less volatile than market.
Duration	Duration is a measure of the price volatility of fixed income securities. The greater the duration of the product, the greater its percentage value volatility. Options include: 1) short/cash duration focus of 0-3 years; 2) intermediate duration focus of 3-5 years; 3) core/market duration focus of 5-7 years; 4) long duration focus of 7+ years.
Geometric Excess	Excess return calculated using the following formula: $(1 + \text{Manager}) / (1 + \text{Index}) - 1$
Holdings-based Attribution	US Equity, Non-US Equity, and Fixed Income tables are holdings-based. The table details various attribution subcategories which impacted each manager's performance such as: selection, weighting, duration, yield, quality, etc.
Information Ratio	A ratio of portfolio returns above the returns of a benchmark (usually an index) to the volatility of those returns. The information ratio (IR) measures a portfolio manager's ability to generate excess returns relative to a benchmark, but also attempts to identify the consistency of the investor. In other words, a measure of risk-adjusted return of actively managed portfolio. This ratio will identify if a manager has beaten the benchmark by a lot in a few months or a little every month. The higher the IR, the more consistent a manager is and consistency is an ideal trait. Defined as amount of excess return per unit of excess risk taken, as in $IR = \text{excess return ("alpha")} / \text{tracking error (excess risk)}$.
Interaction Effect (Selection)	Part of return variance that cannot be attributed solely to Asset Allocation Effect or Manager Performance. Mathematically, Interaction is the product of each group's active weight (i.e., over/underweight) and active return (i.e., out/underperformance). For example, a group with an overweight that outperformed its benchmark would contribute positively to Interaction.
Internal Rate of Return (IRR)	The discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero. A preferred method of calculating Private Equity performance
R-squared	A statistical measure that describes how much of the fund's movements are explained by movements in an index. Its value ranges from 0 to 1.00. An R-squared of 1.00 means that all movements of a fund are completely explained by movements in the index. A fund with a low R-squared does not act much like the index.

Glossary

Term	Definition
Semi-Variance	Measure of variability (or dispersion) of all returns that fall <u>below</u> mean. Measures only downside risk, or negative asset class or alpha returns. Estimates average loss that portfolio could incur.
Sharpe Ratio	A risk-adjusted measure calculated by using standard deviation and excess return to determine reward per unit of risk. The higher the Sharpe Ratio, the better the fund's historical risk-adjusted performance. For example, the one-year Sharpe Ratio, defined as the one-year return of the product minus the risk-free rate (90 day T-Bill), divided by the standard deviation of the product returns.
Standard Deviation	A measure of variability (or dispersion) of returns around mean return. A low standard deviation (e.g., 5%) indicates returns tend to be very close to mean return, whereas high standard deviation (e.g., 20%) indicates returns can be far from mean return. A manager with a one-year return of 5% and a standard deviation of 5 indicates the range of returns for this manager will likely fall between 0% and 10% during most annual time periods.
Time Weighted Return	The actual rate of return or earnings for the particular period, adjusted for cash flow additions or deletions
Total Alpha	Total Variance: sum of Asset Allocation, Interaction, Manager Performance, and Trading.
Total Return	The return of a particular portfolio that includes both increases or decreases in asset values as well as dividends received
Tracking Error	Standard deviation of excess return. Measure of closely portfolio follows index to which it is benchmarked. Traditional actively managed portfolio has higher tracking error (i.e., >4%). Passively managed portfolio has tracking error close to zero. / A measure of the difference between returns of the portfolio and that of the benchmark it was attempting to imitate; reported as a "standard deviation percentage" difference.
Trading Effect	Difference between buy/hold and total return.
TUCS (Trust Universe Comparison Service)	A collaborative effort between Wilshire Associates and custodial organizations. Custodians submit asset positions and performance data to be pooled into universes of managed tax-exempt portfolios. TUCS is a widely accepted benchmark for the performance of institutional assets.
Variance	Refers to the amount of movement in prices of a particular portfolio; a portfolio that moves a lot has a higher variance

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Wilshire

Quarterly Market Review

December 31, 2022

Market Commentary

U.S. Equity

The U.S. stock market was up 7.1% for the fourth quarter but was down -19.0% for all of 2022. A majority of sectors were up for the quarter. The best performing were Energy (+19.9%), Industrials (+16.6%) and Materials (+14.6%). Consumer Discretionary was down -8.0%. From a size perspective, small-cap outperformed large-cap by 86 basis points. Growth stocks underperformed value for the quarter and also trailed meaningfully for the year.

The Federal Reserve's aggressive action to combat unacceptably high inflation is the story of 2022 with uncertainty around Fed policy poised to drive market volatility in 2023. The FOMC raised rates 4.25%, with increases becoming more dramatic in May. This marks the largest 12-month increase since 1981 (also a period of inflation near or above double-digits). Unsurprisingly, fixed income suffered but so did equities as investors repriced off a higher risk-free rate. The Fed is currently forecasting a rate 0.75% higher by the end of 2023. The open market does not agree – or perhaps doubts their credibility to continue tightening, with a modest change forecasted for the next year. How this disagreement plays out is likely to be a primary market driver this year.

Non-U.S. Equity

Europe faced similar headwinds as the United States in 2022 – surging inflation and aggressive central bank tightening – but also had to more directly contend with the ongoing war in Ukraine. The labor market remains tight in the eurozone and many businesses report that a labor shortage is limiting production. Despite China's zero-COVID policies, including lockdowns, infections continued to surge intermittently. Tension among the country's citizens continued to rise and led to protests not seen in decades. In early December, the central government took definitive steps to ease restrictions.

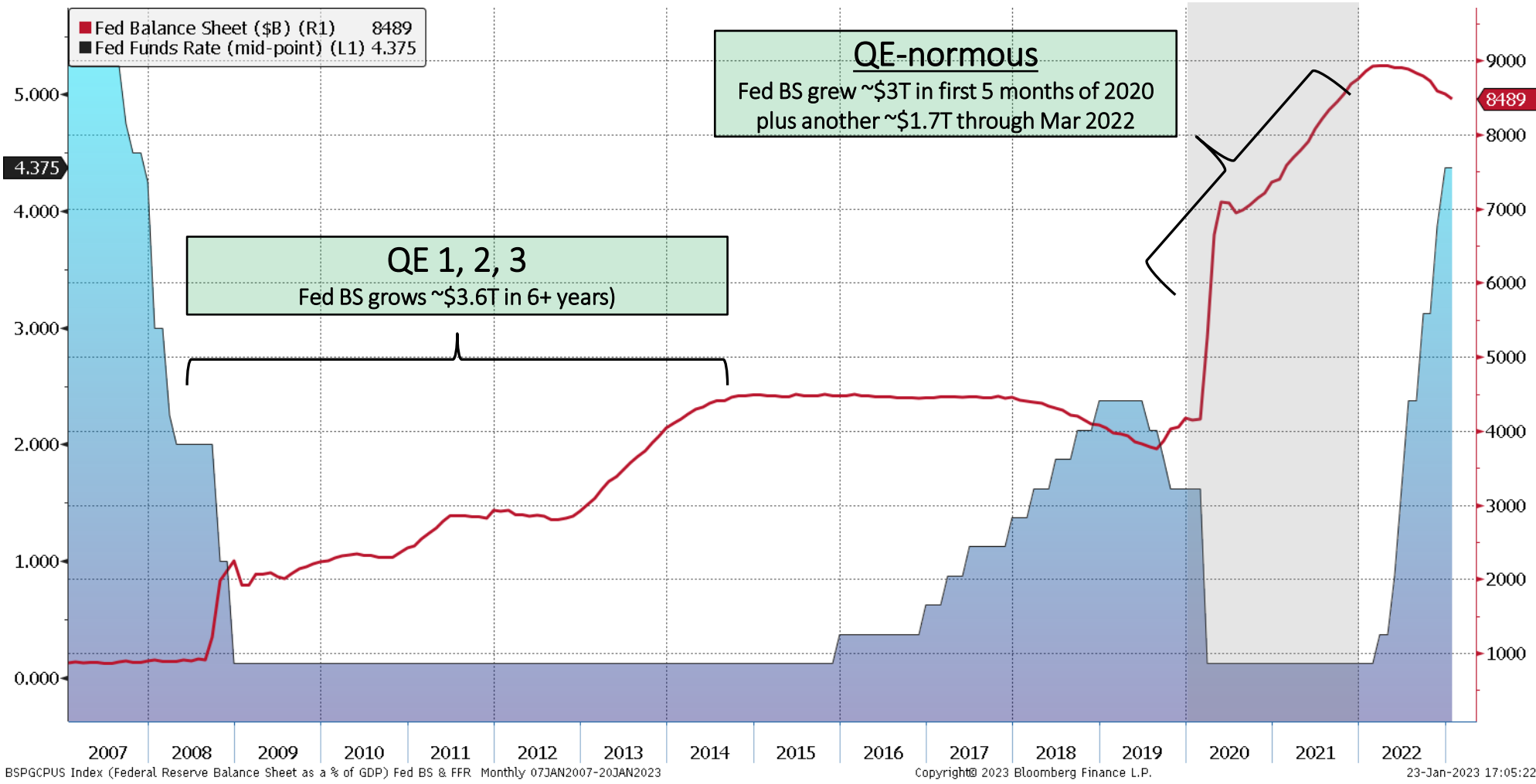
Fixed Income

The U.S. Treasury yield curve was up in the short-end (below 3-years) by 50-135 basis points but largely unchanged across the remainder of the curve. The 10-year Treasury yield ended the quarter at 3.88%, up just 5 basis points from September. The Fed increased the overnight rate by 0.75% in November and 0.50% in December, targeting a range of 4.25% to 4.50%. The Fed's "dot plot" is messaging that the current intent is for another 75 basis points in increases before the end of 2023.

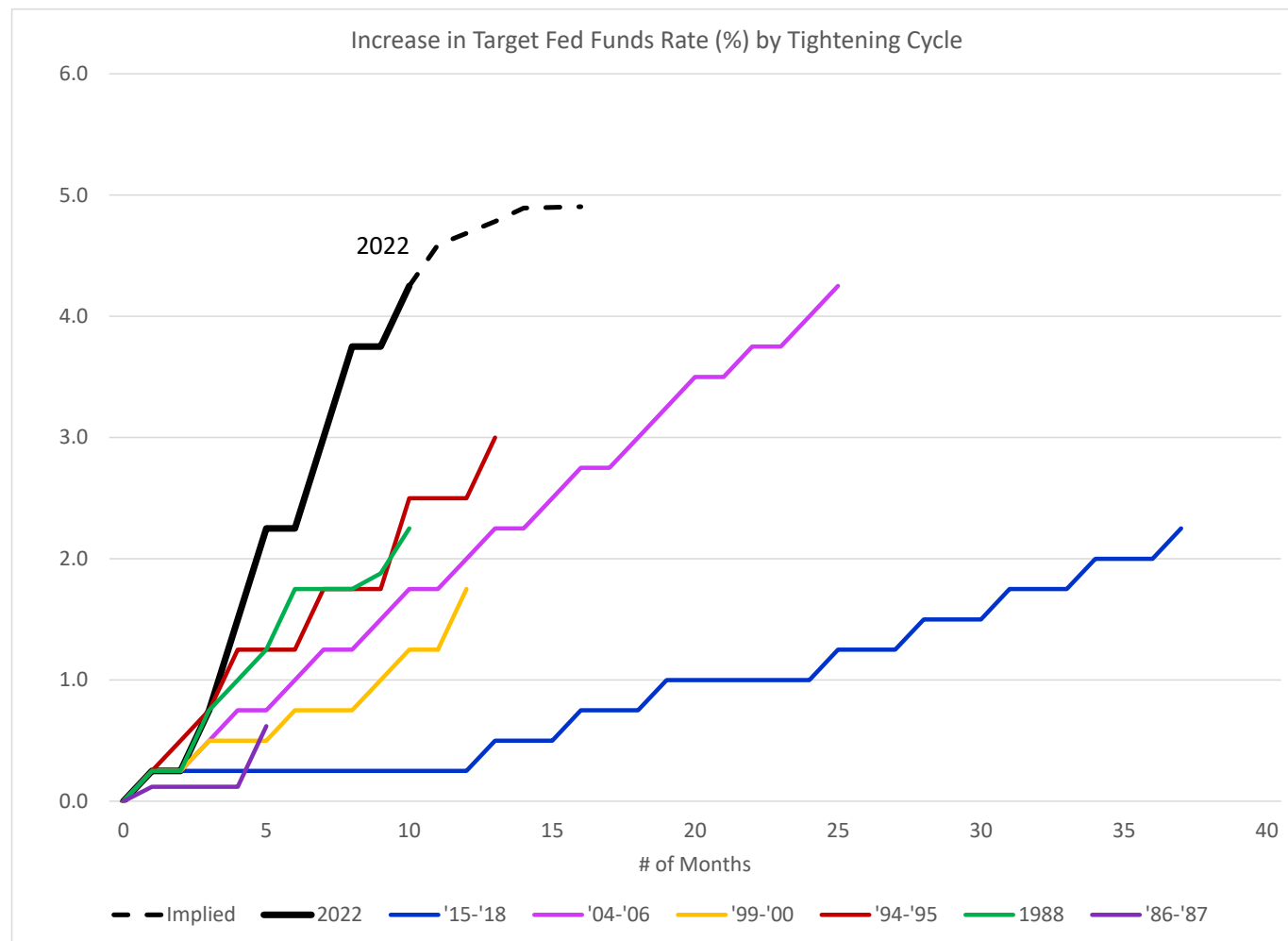
December 2022 Asset Class Assumptions

	Equity						Fixed Income						Real Assets					
	US	Dev		Global				Core	LT			Private	Dev ex-	Real Estate				
	Stock	ex-US	Emg	ex-US	Global	Private	Cash	Bond	Core	TIPS	High	Credit	US Bond	US	Global	Private	Cmdty	Real
		Stock	Stock	Stock	Stock	Equity			Bond		Yield		(Hdg)	RES	RES	RE		Assets
																		US
																		CPI
Compound Return (%)	6.50	7.25	7.50	7.60	7.05	9.90	4.00	4.90	4.90	3.95	6.55	8.85	3.05	5.65	5.80	6.20	6.25	6.65
Expected Risk (%)	17.00	18.00	26.00	19.10	17.10	29.00	0.75	4.70	9.80	6.00	10.00	12.75	4.00	17.50	16.45	14.00	16.00	12.35
Cash Yield (%)	1.75	3.25	2.80	3.10	2.25	0.00	4.00	5.10	5.25	4.40	9.65	5.10	3.75	3.95	3.95	2.25	4.00	3.15
Growth Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.95	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70
Inflation Exposure	-3.00	0.00	5.00	1.45	-1.30	-3.75	0.00	-2.50	-6.80	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25
Correlations																		
US Stock	1.00																	
Dev ex-US Stock (USD)	0.81	1.00																
Emerging Mkt Stock	0.74	0.74	1.00															
Global ex-US Stock	0.84	0.95	0.89	1.00														
Global Stock	0.95	0.91	0.84	0.94	1.00													
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00												
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00											
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00										
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00									
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00								
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00							
Private Credit	0.68	0.55	0.58	0.60	0.68	0.44	0.00	0.24	0.30	0.00	0.76	1.00						
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.68	0.66	0.39	0.26	0.22	1.00					
US RE Securities	0.58	0.47	0.44	0.49	0.57	0.49	-0.05	0.17	0.22	0.10	0.56	0.62	0.05	1.00				
Global RE Securities	0.64	0.57	0.54	0.60	0.65	0.55	-0.05	0.17	0.21	0.11	0.61	0.68	0.04	0.96	1.00			
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.58	0.63	0.05	0.79	0.78	1.00		
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00	
Real Assets	0.62	0.63	0.65	0.69	0.67	0.57	-0.03	0.22	0.24	0.30	0.64	0.69	0.04	0.78	0.84	0.76	0.64	1.00
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	0.00	-0.08	0.05	0.04	0.05	0.44	0.22

The Fed: Zero Rates & QE to \$8T and Beyond...



The Shift to Tightening: Most Aggressive in Modern Era: Will “Bring Some Pain”



Data Source: Bloomberg

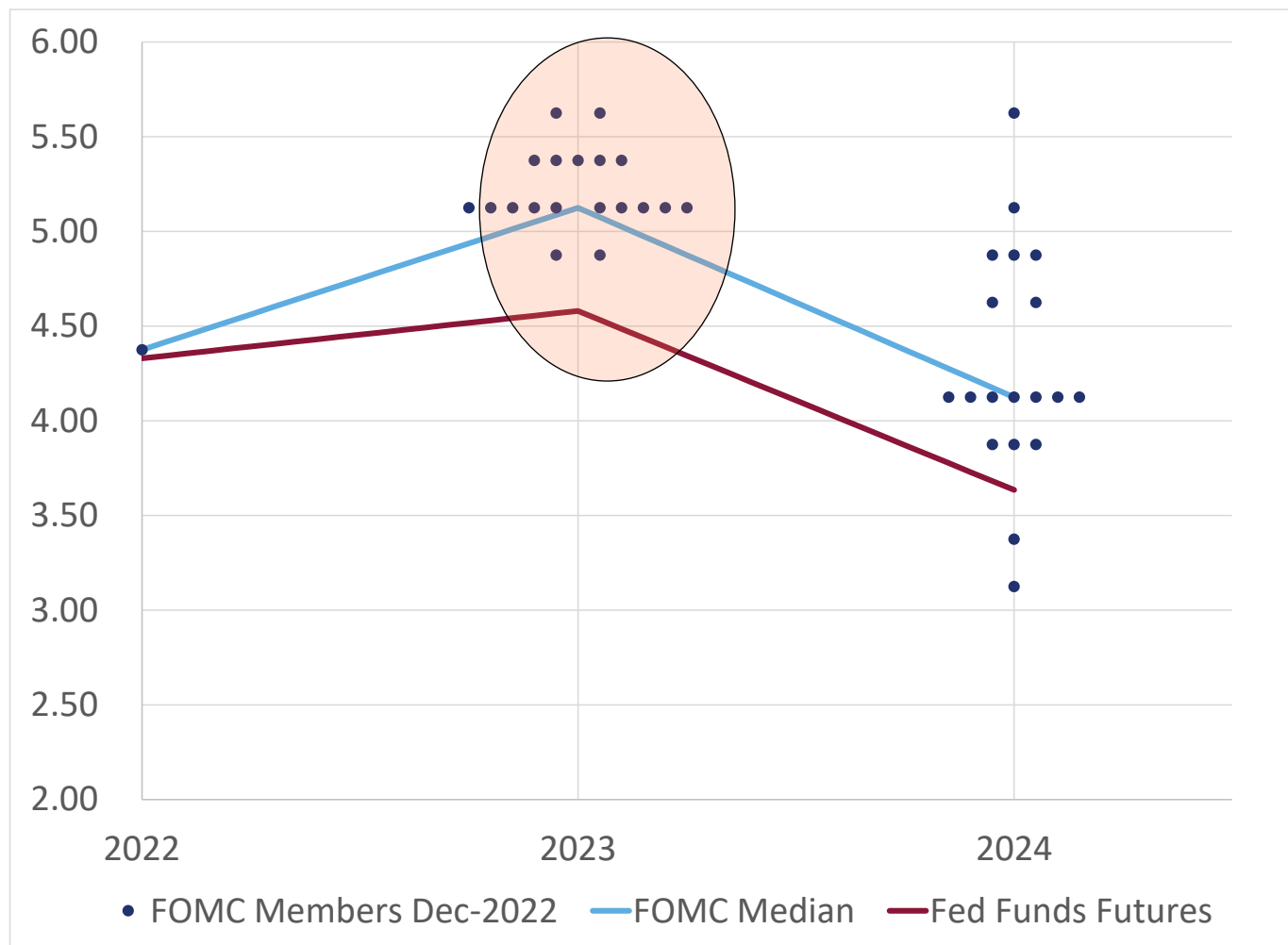
*“While **higher interest rates, slower growth, and softer labor market conditions** will bring down inflation, **they will also bring some pain** to households and businesses. **These are the unfortunate costs of reducing inflation.** But a failure to restore price stability would mean far greater pain.”*



Jerome Powell

August 2022, Jackson Hole

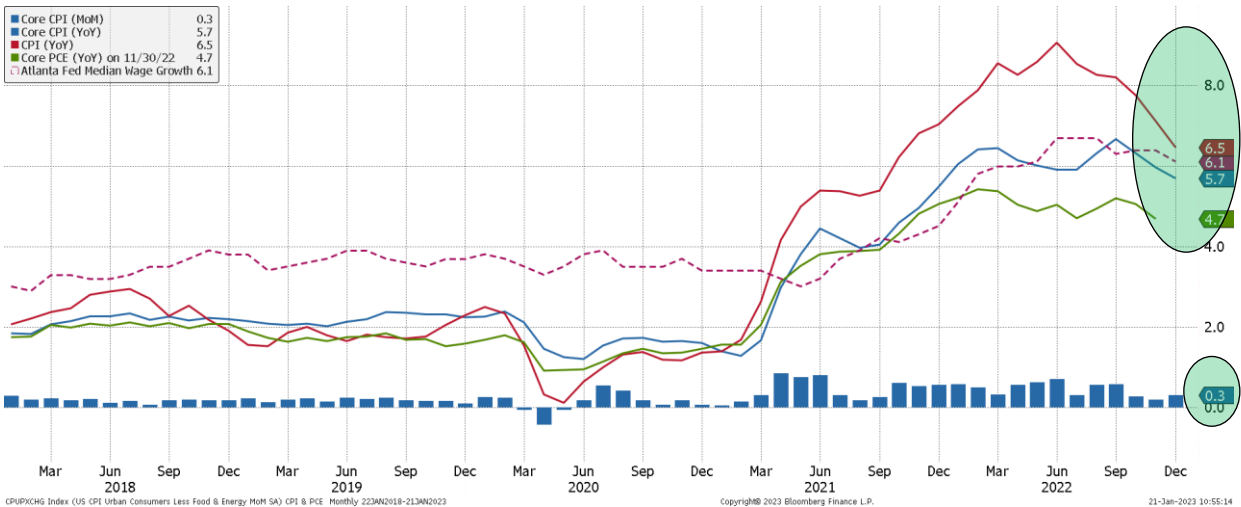
The Fed Outlook vs. Market Consensus



Data Source: Bloomberg

- The market's Dec 2023 implied Fed Funds Rate is below every FOMC member's forecast
- Why the divergence: A Fed credibility issue or just a difference in view?
- How might this play out?
 - What if the Fed's wrong?
 - What if the market is wrong?

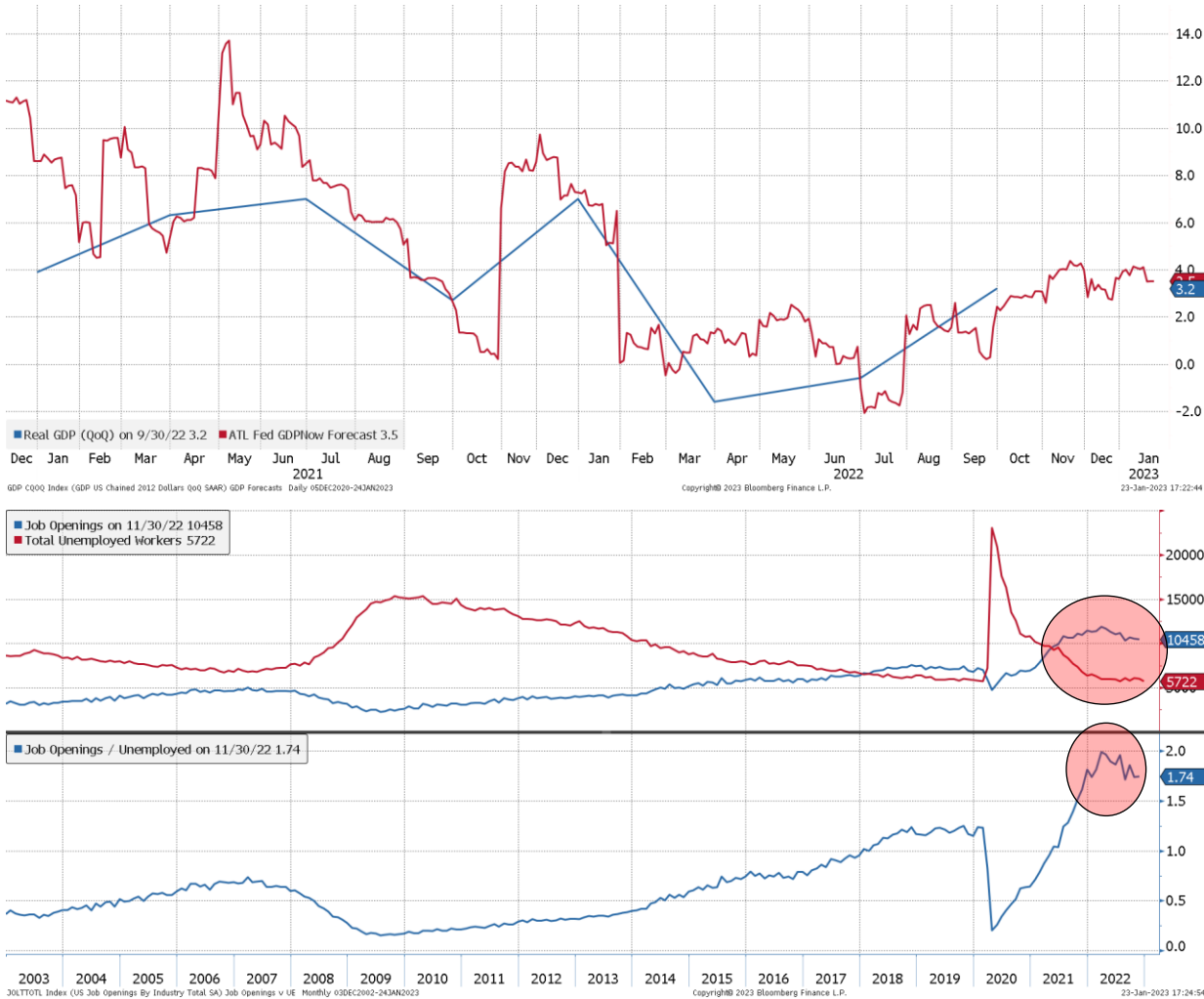
The Fed's Dashboard: Realized & Expected Inflation



Data Source: Bloomberg

- Realized inflation has begun to ease off extreme levels
 - CPI 6.5% v. 9.1% in June 2022
 - Core CPI stabilizing ~5%
 - Wage inflation remains elevated (~6%)
- Inflation expectations remain well-anchored
 - Expectational anchoring at higher levels would make the Fed's job even more challenging
 - These expectations are likely at the heart of the divergence between market and Fed outlooks (i.e., the Fed would likely pause now if they believed these expectations would be realized)

The Fed's Dashboard: Economic Growth & Labor Market



Data Source: Bloomberg

The market seems a bit more confident in the prospects of a “soft landing” as inflation has subsided in recent months

- However, lots more liquidity to be drained
- Powell’s “Sully” Sullenberger moment...



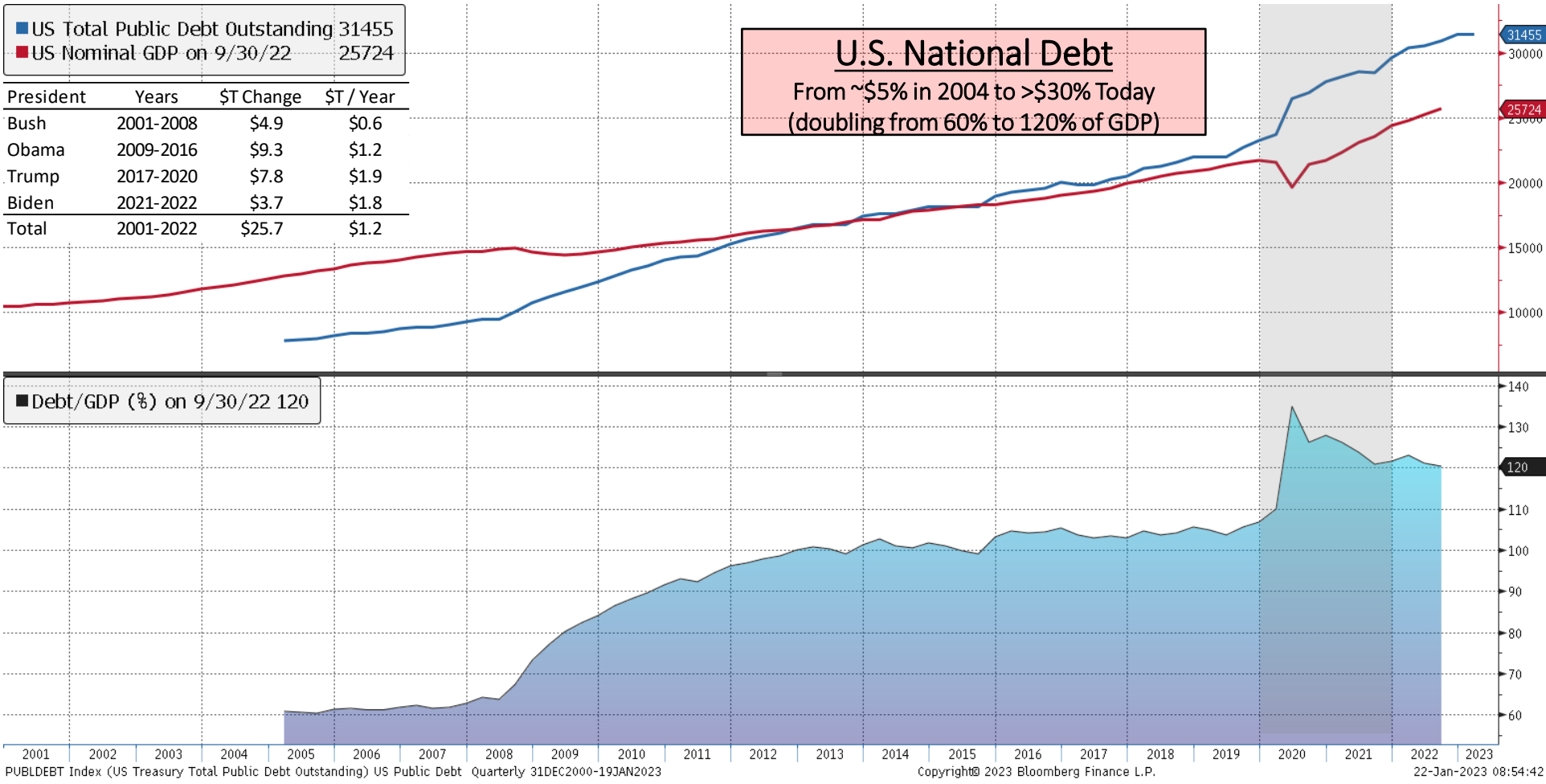
“We’re going to be in the Hudson”

Chesley Burnett "Sully" Sullenberger III
Pilot of US Airways 1549, January 15, 2009

Labor markets remain tight

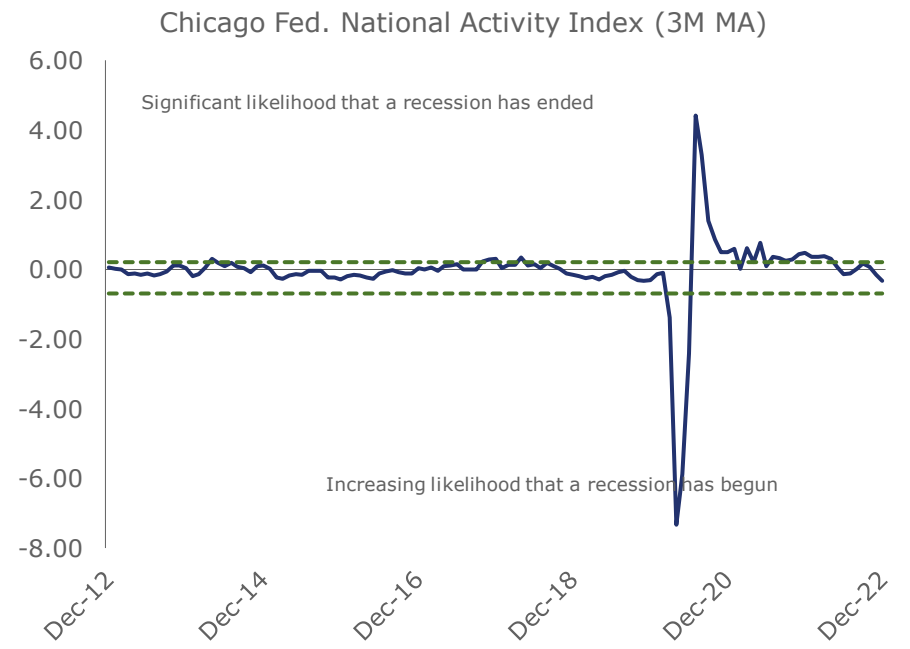
- Difficult to see inflation pressures return to Fed target without these tensions reversing
- Recent jobs reports remain strong (good news for economic resilience but challenges the market’s benign inflation expectations)

A Secular Explosion in National Debt: “We’re Not in Kansas Anymore”



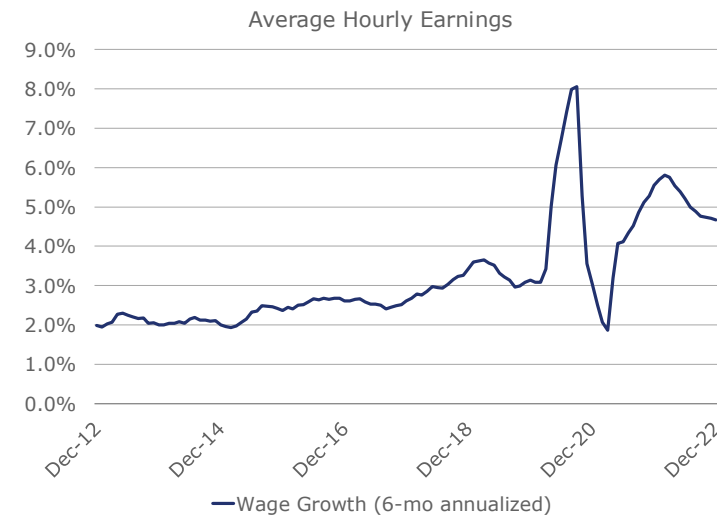
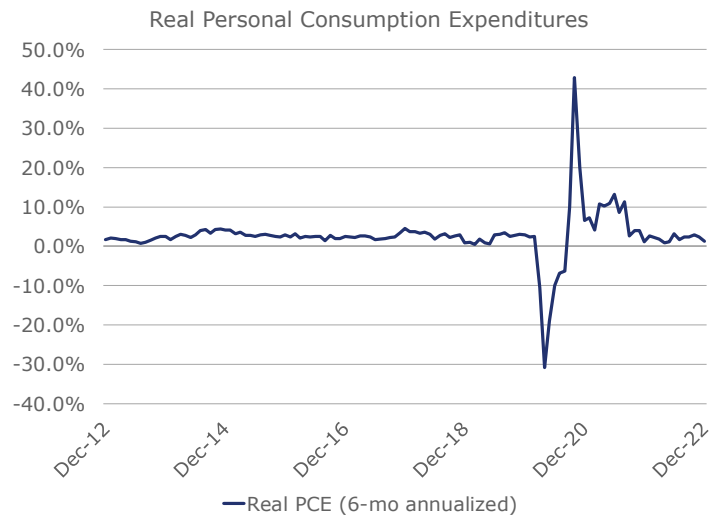
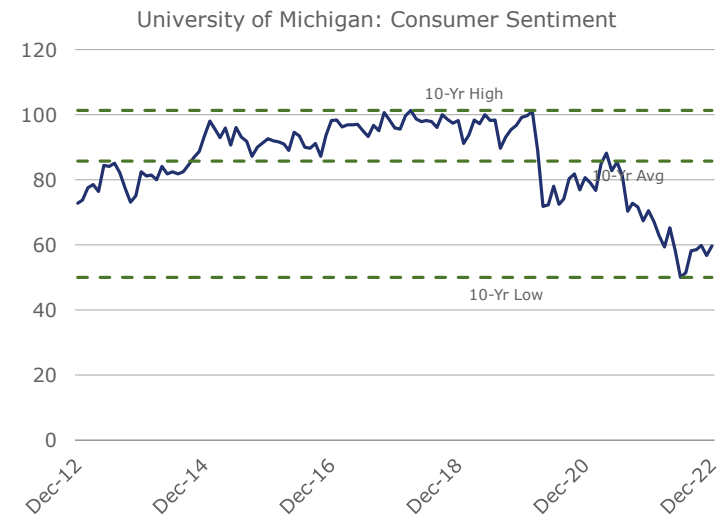
Economic/Market Activity

Economic Growth



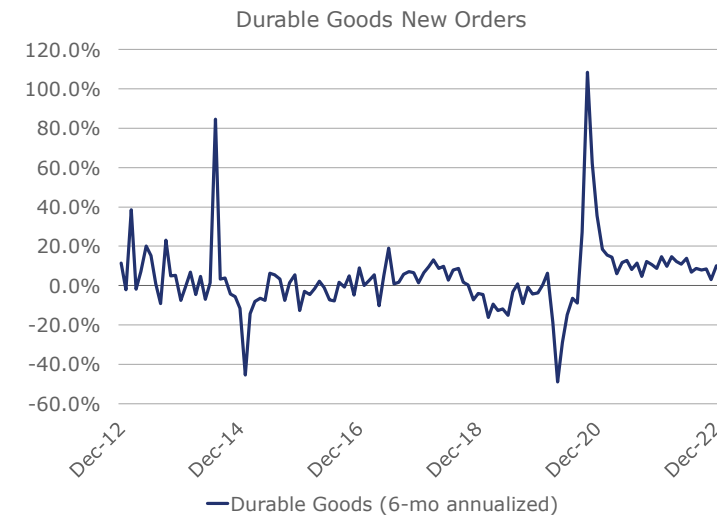
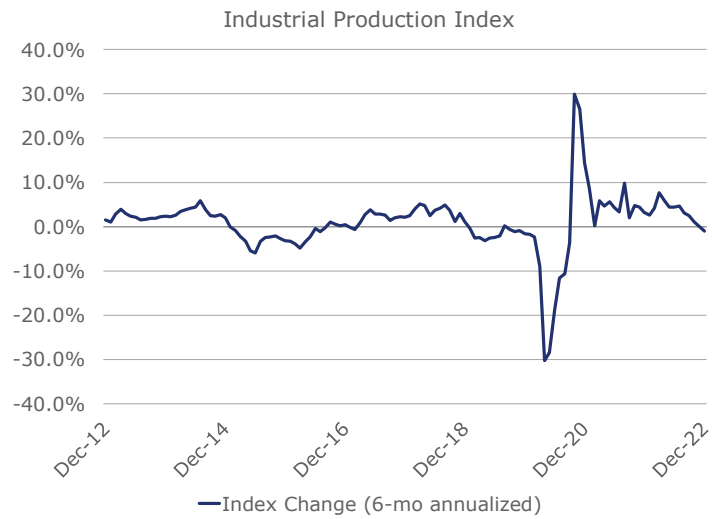
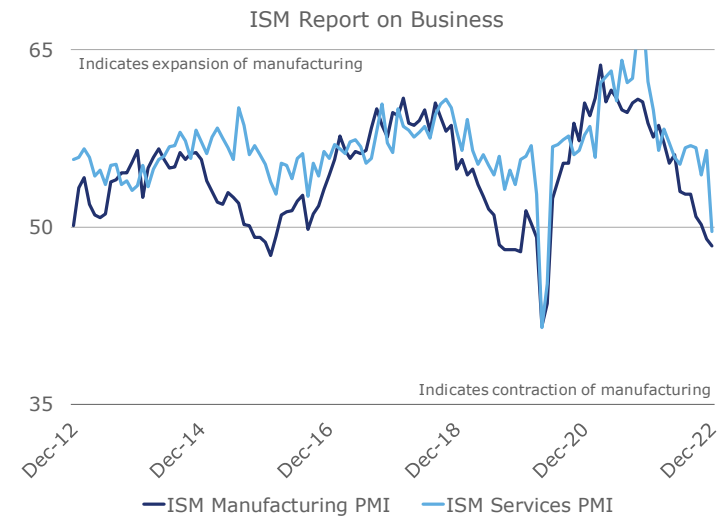
Data Sources: Bloomberg

Consumer Activity



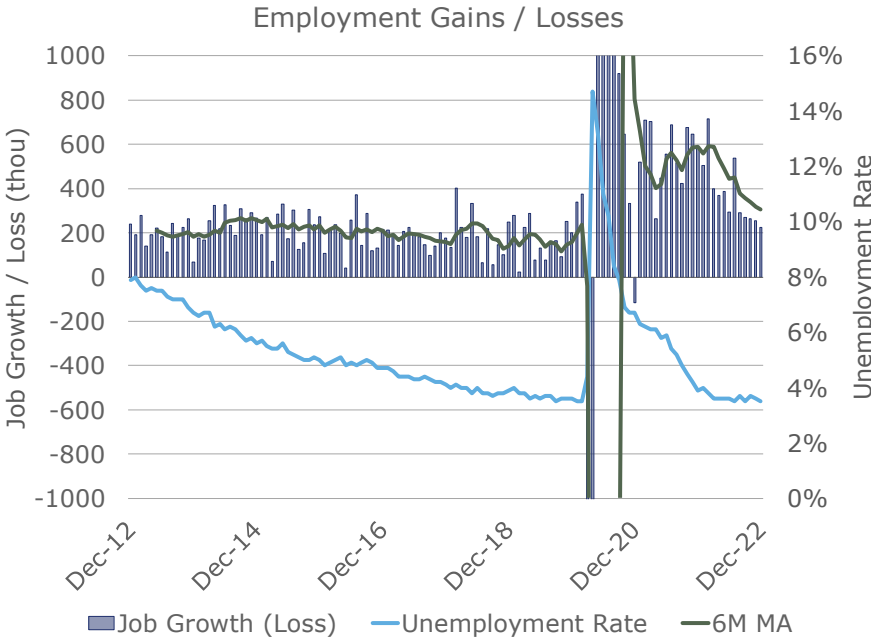
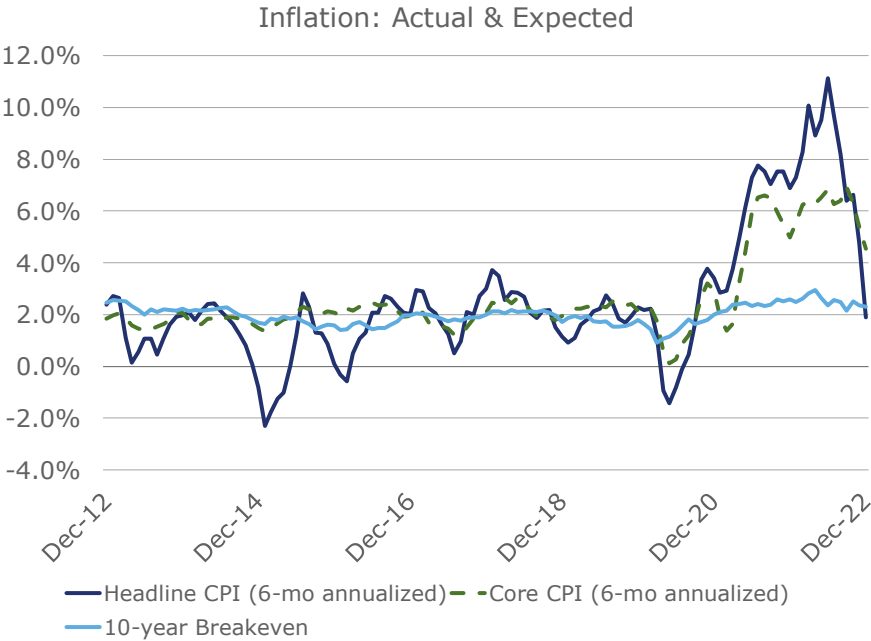
Data Sources: Bloomberg

Business Activity



Data Sources: Bloomberg

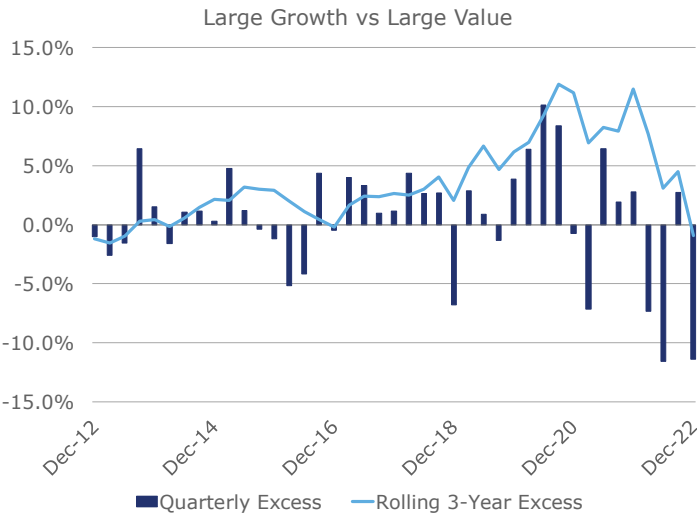
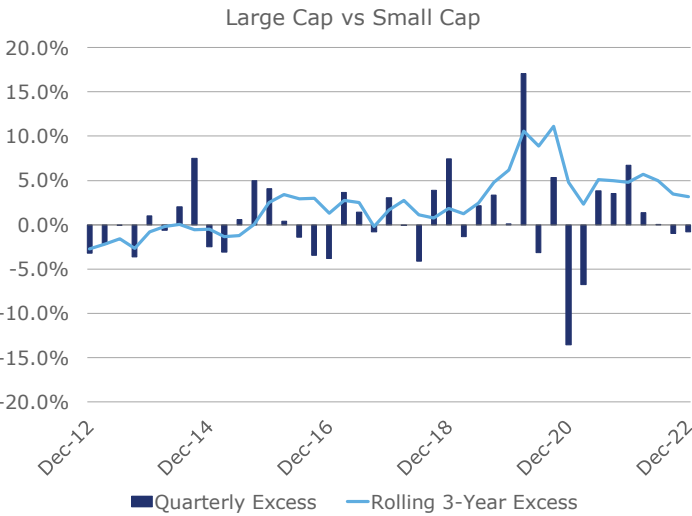
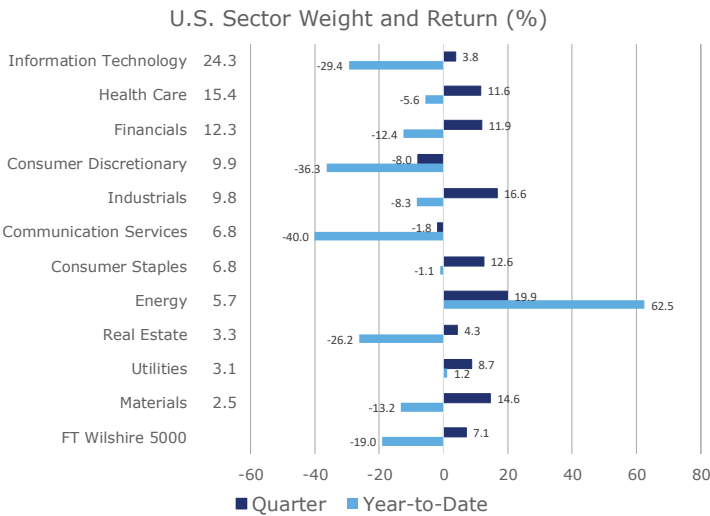
Inflation and Employment



Data Sources: Bloomberg

U.S. Equity Market

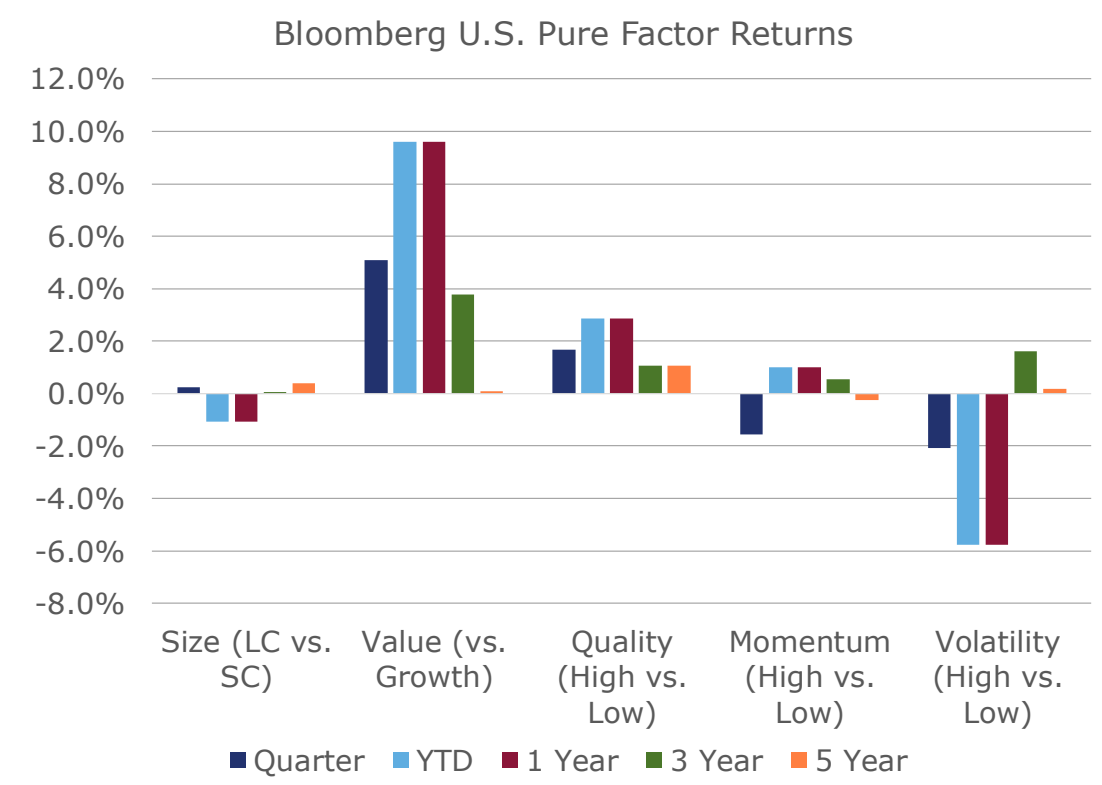
As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	7.1	-19.0	-19.0	7.4	9.0	12.3
Wilshire U.S. Large Cap	7.1	-19.0	-19.0	7.7	9.4	12.6
Wilshire U.S. Small Cap	7.9	-18.7	-18.7	4.4	5.1	9.7
Wilshire U.S. Large Growth	0.8	-29.5	-29.5	7.1	10.0	13.6
Wilshire U.S. Large Value	13.8	-5.5	-5.5	8.1	8.7	11.5
Wilshire U.S. Small Growth	7.1	-23.1	-23.1	3.2	5.1	9.9
Wilshire U.S. Small Value	8.7	-14.2	-14.2	5.6	5.0	9.3
Wilshire REIT Index	4.0	-26.8	-26.8	-0.5	3.4	6.3
MSCI USA Min. Vol. Index	9.8	-9.2	-9.2	5.1	8.6	11.9
FTSE RAFI U.S. 1000 Index	12.5	-7.4	-7.4	9.6	9.1	12.2



Data Sources: Bloomberg, Wilshire Atlas

U.S. Factor Returns

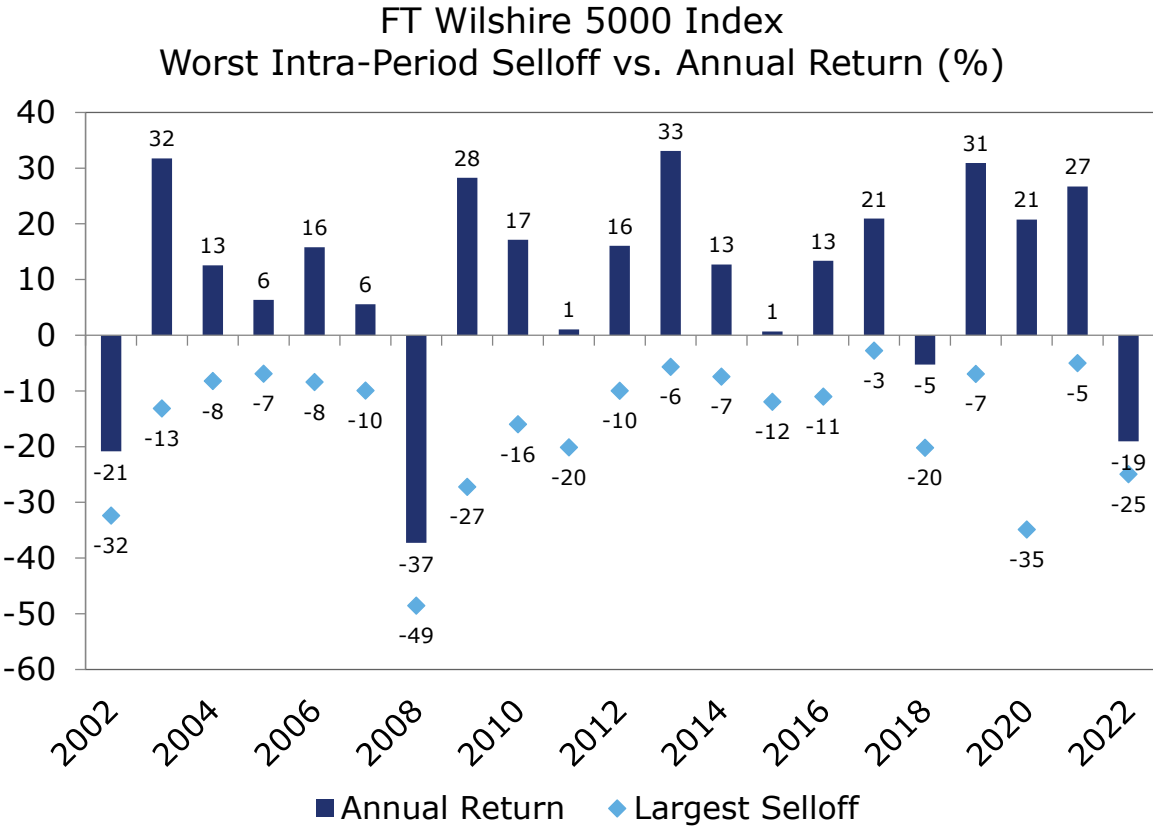
- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg’s Portfolio & Risk Analytics module
- Value and low volatility have mostly outperformed this year



Data Sources: Bloomberg

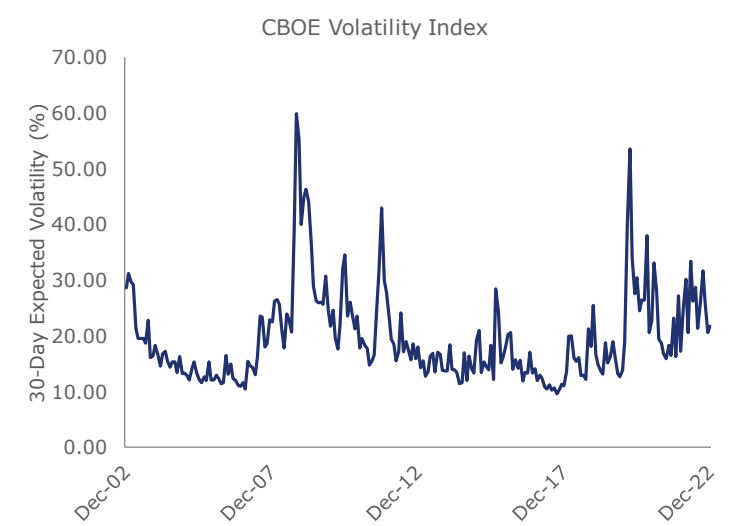
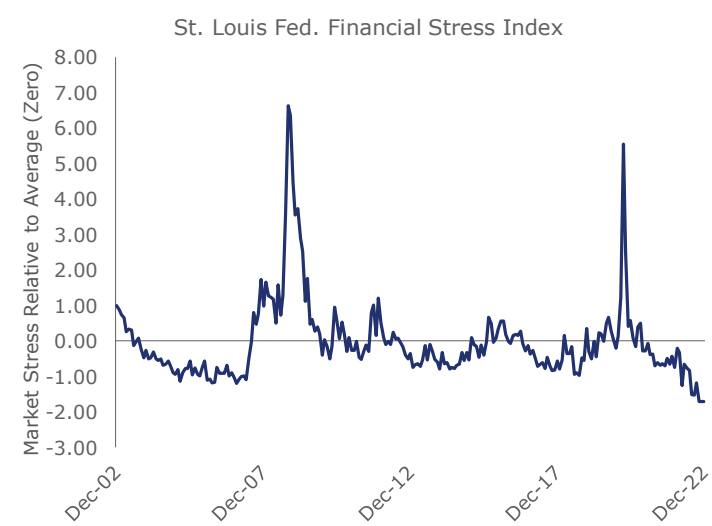
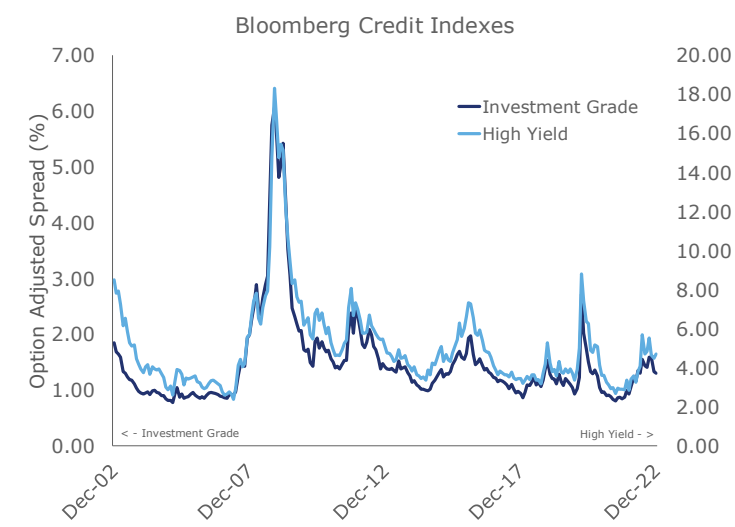
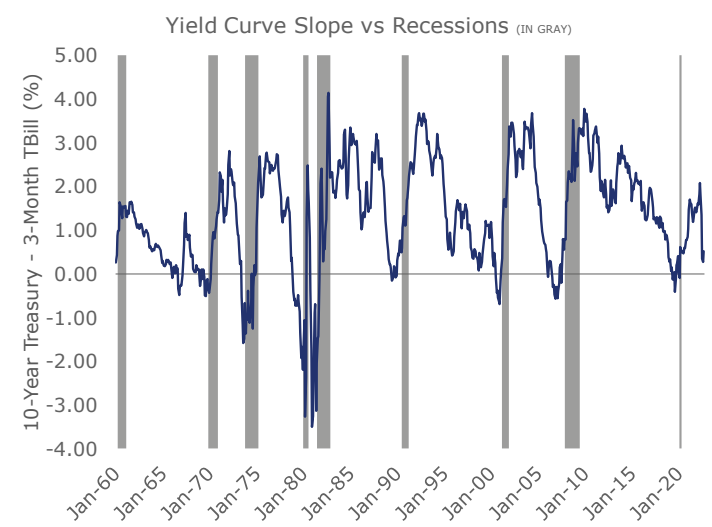
Annual Equity Market Selloffs

U.S. equity suffered its worse year since the 2008 global financial crisis



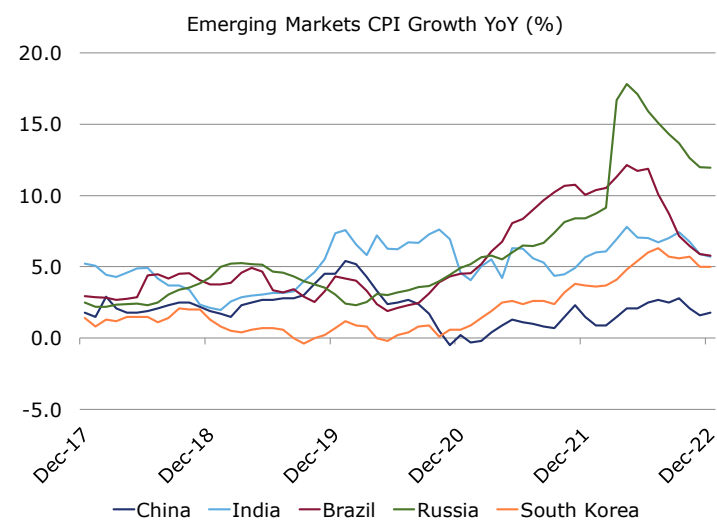
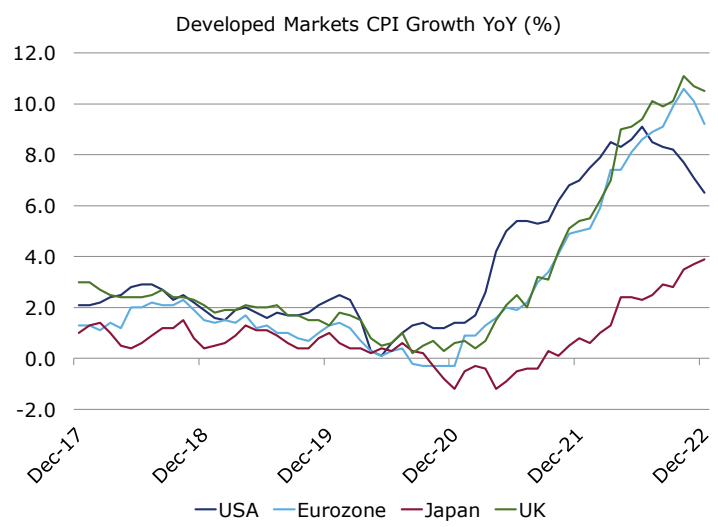
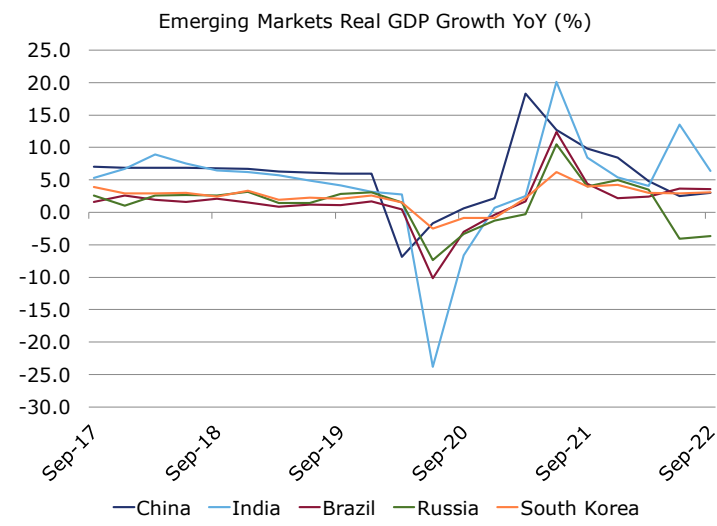
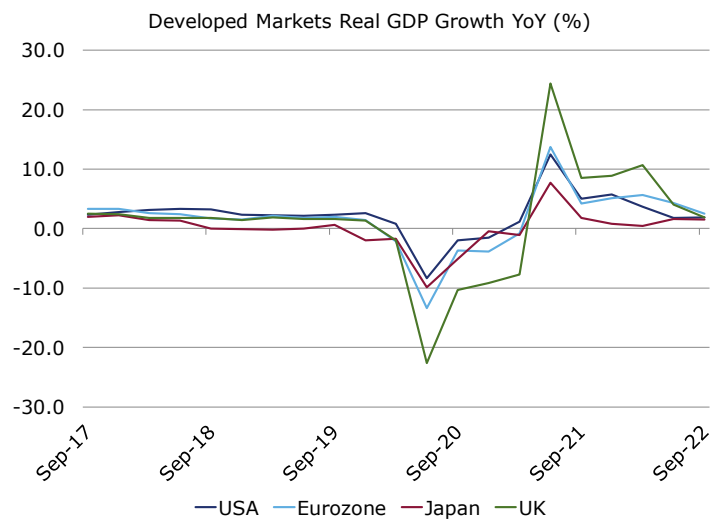
Data Sources: Wilshire Web, Bloomberg

Risk Monitor



Data Sources: Bloomberg

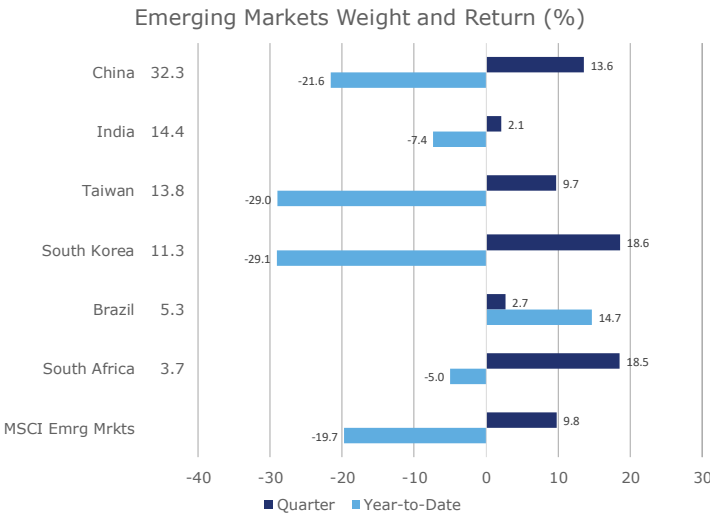
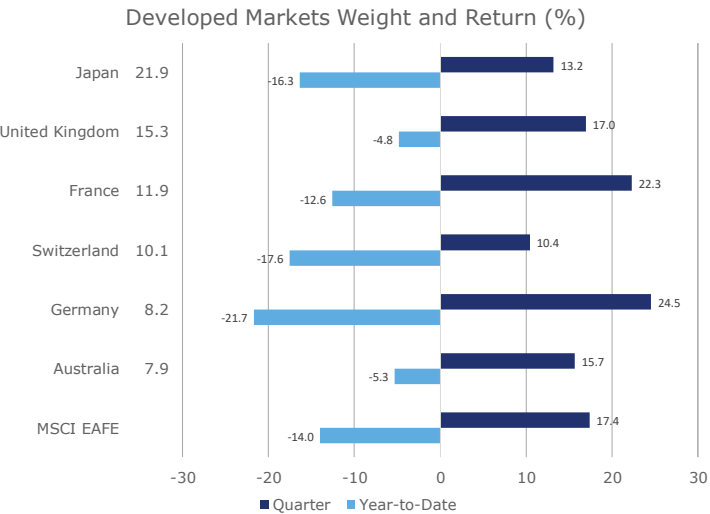
Non-U.S. Growth and Inflation



Data Sources: Bloomberg

Non-U.S. Equity Market

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	14.4	-15.6	-15.6	0.5	1.4	4.3
MSCI EAFE (\$G)	17.4	-14.0	-14.0	1.3	2.0	5.2
MSCI Emerging Markets (\$G)	9.8	-19.7	-19.7	-2.3	-1.0	1.8
MSCI Frontier Markets (\$G)	9.2	-17.8	-17.8	-5.7	-3.8	0.2
MSCI ACWI ex-US Growth (\$G)	12.9	-22.8	-22.8	-0.1	1.8	5.0
MSCI ACWI ex-US Value (\$G)	15.7	-8.7	-8.7	0.8	0.6	3.6
MSCI ACWI ex-US Small (\$G)	13.4	-19.6	-19.6	1.5	1.1	5.6
MSCI ACWI Minimum Volatility	8.6	-9.8	-9.8	2.2	5.2	8.4
MSCI EAFE Minimum Volatility	12.5	-14.6	-14.6	-2.6	0.6	5.1
FTSE RAFI Developed ex-US	18.3	-9.0	-9.0	2.7	1.7	4.9
MSCI EAFE LC (G)	8.8	-6.5	-6.5	4.1	4.3	8.1
MSCI Emerging Markets LC (G)	6.7	-15.2	-15.2	0.5	1.7	5.0

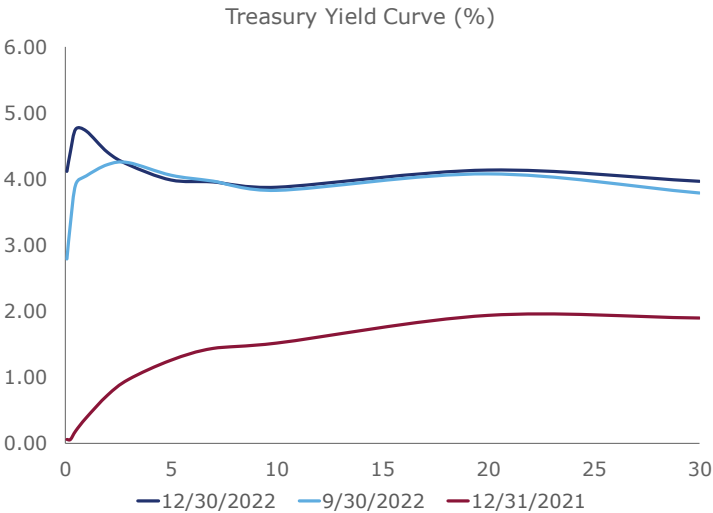
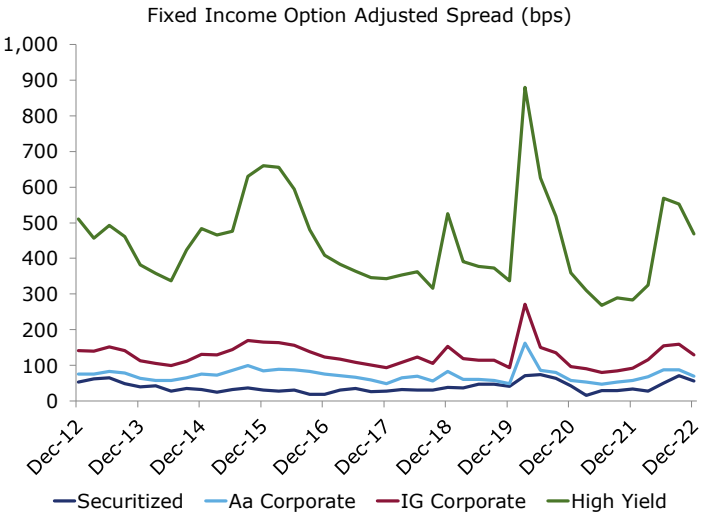


Data Sources: Bloomberg

U.S. Fixed Income

As of 12/30/2022	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.7	6.2	1.9	-13.0	-13.0	-2.7	0.0	1.1
Bloomberg Treasury	4.2	6.1	0.7	-12.5	-12.5	-2.6	-0.1	0.6
Bloomberg Gov't-Rel.	4.8	5.2	1.9	-11.1	-11.1	-2.4	0.3	1.1
Bloomberg Securitized	4.8	5.7	2.0	-11.7	-11.7	-3.1	-0.4	0.8
Bloomberg Corporate	5.4	7.1	3.6	-15.8	-15.8	-2.9	0.5	2.0
Bloomberg LT Gov't/Credit	4.9	14.3	2.6	-27.1	-27.1	-6.2	-1.2	1.6
Bloomberg LT Treasury	4.1	16.2	-0.6	-29.3	-29.3	-7.4	-2.2	0.6
Bloomberg LT Gov't-Rel.	5.5	11.6	4.2	-22.7	-22.7	-5.9	-0.8	1.6
Bloomberg LT Corporate	5.6	13.0	5.4	-25.6	-25.6	-5.7	-0.8	2.2
Bloomberg U.S. TIPS *	3.8	7.6	2.0	-11.8	-11.8	1.2	2.1	1.1
Bloomberg High Yield	9.0	3.9	4.2	-11.2	-11.2	0.0	2.3	4.0
S&P/LSTA Leveraged Loan	9.1	0.3	2.7	-0.6	-0.6	2.5	3.3	3.7
Treasury Bills	4.4	0.3	0.9	1.3	1.3	0.7	1.2	0.8

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

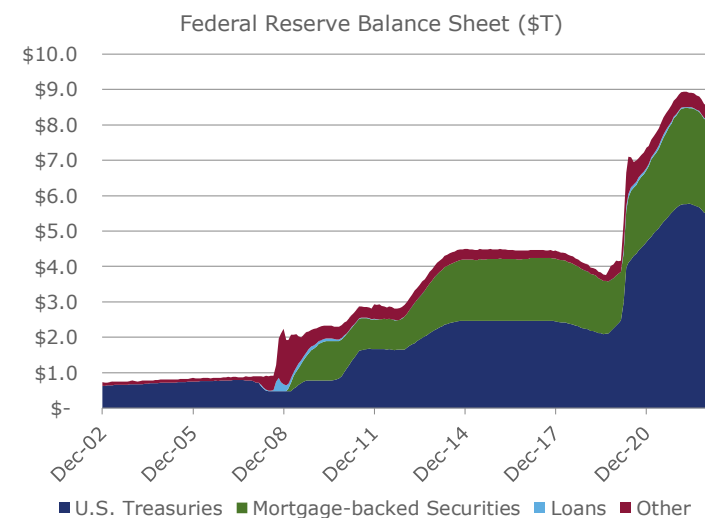
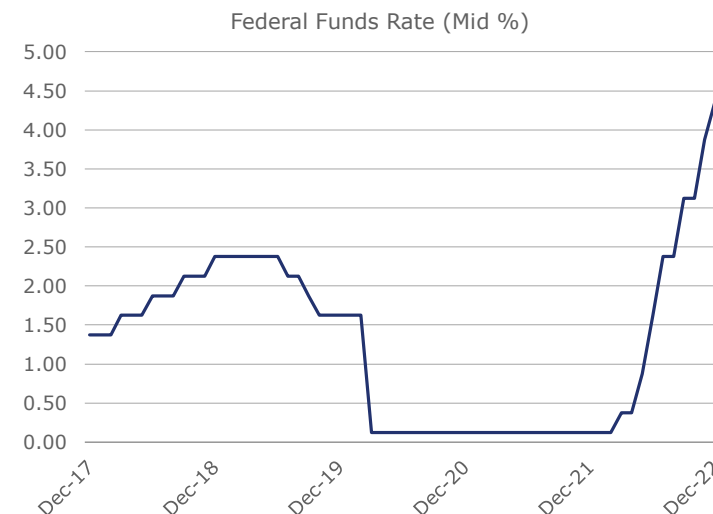


Data Sources: Bloomberg

Federal Reserve

- After 300 basis point increase in the Fed-funds rate through September, the FOMC increased the rate an additional 125 basis points during Q4
- Federal Reserve has added more than \$4.5 trillion in assets to their balance sheet during the past two years
- QE4 was larger than the 3 phases of quantitative easing – combined – following the global financial crisis

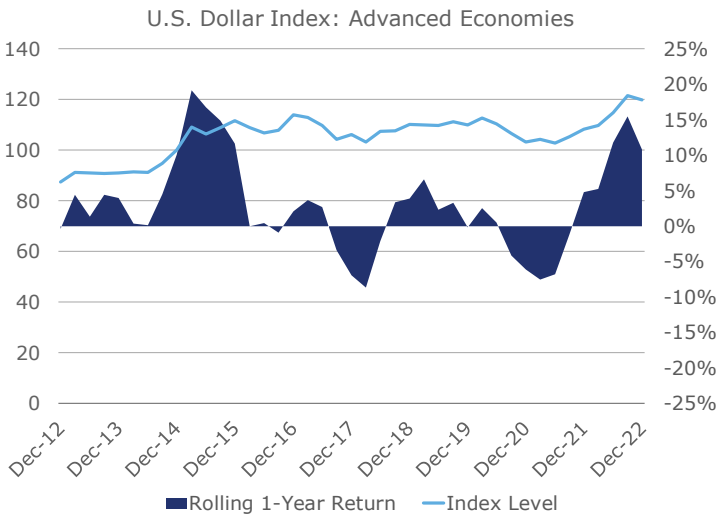
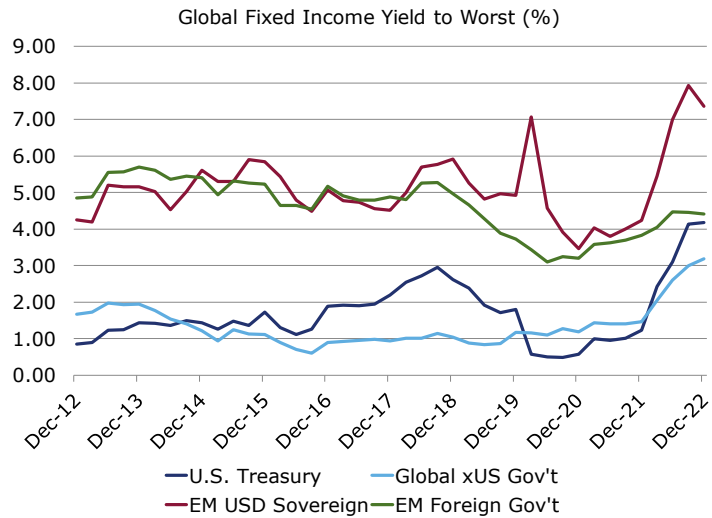
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779



Non-U.S. Fixed Income

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	6.8	-18.7	-18.7	-5.9	-3.1	-1.6
Bloomberg Global Aggregate xUS *	0.2	-9.8	-9.8	-2.6	0.5	2.1
Bloomberg Global Inflation Linked xUS	5.8	-29.6	-29.6	-7.0	-4.0	-0.9
Bloomberg Global Inflation Linked xUS *	-1.7	-21.1	-21.1	-3.5	-0.4	2.7
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	6.6	-15.3	-15.3	-3.9	-0.4	1.7
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	5.9	-8.4	-8.4	-1.7	0.1	0.2
Bloomberg EM Local Currency Gov't *	1.9	-2.7	-2.7	-0.3	2.0	1.9
Euro vs. Dollar	9.2	-5.8	-5.8	-1.5	-2.3	-2.1
Yen vs. Dollar	10.4	-12.2	-12.2	-6.1	-3.0	-4.0
Pound vs. Dollar	8.2	-10.7	-10.7	-3.0	-2.2	-2.9

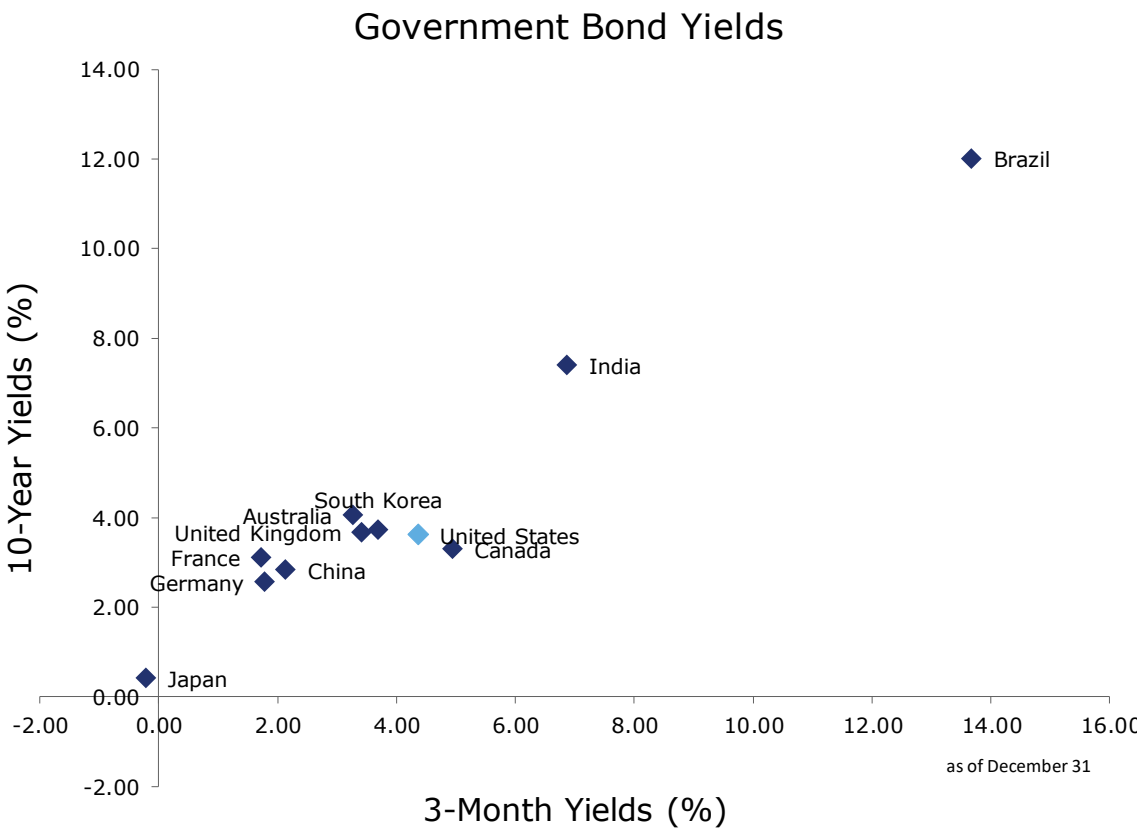
* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

Global Interest Rates

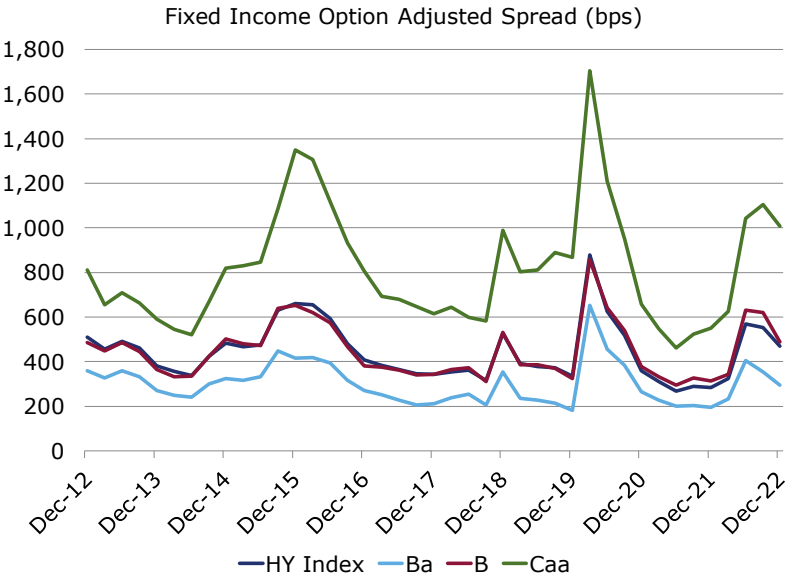
Short-term rates have turned positive in most larger countries; longer-term rates around 4% in the U.K., Australia, South Korea and the U.S.



Data Sources: Bloomberg

High Yield Bond Market

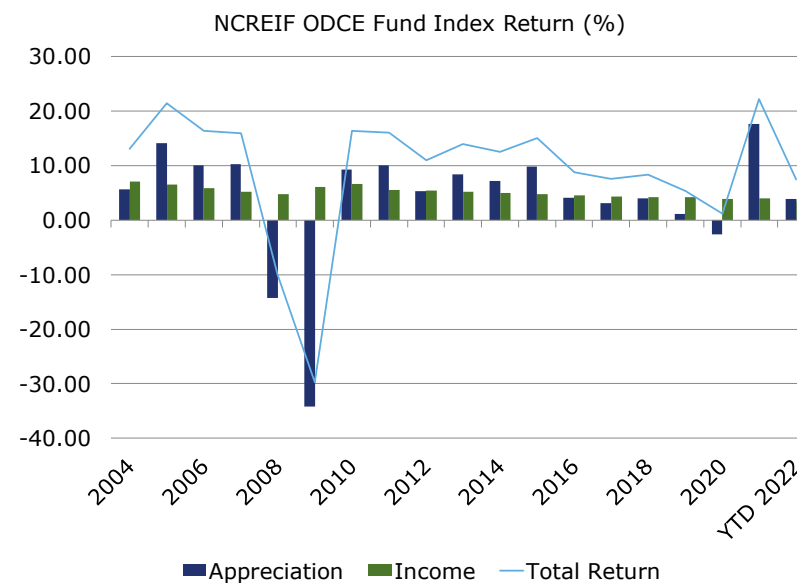
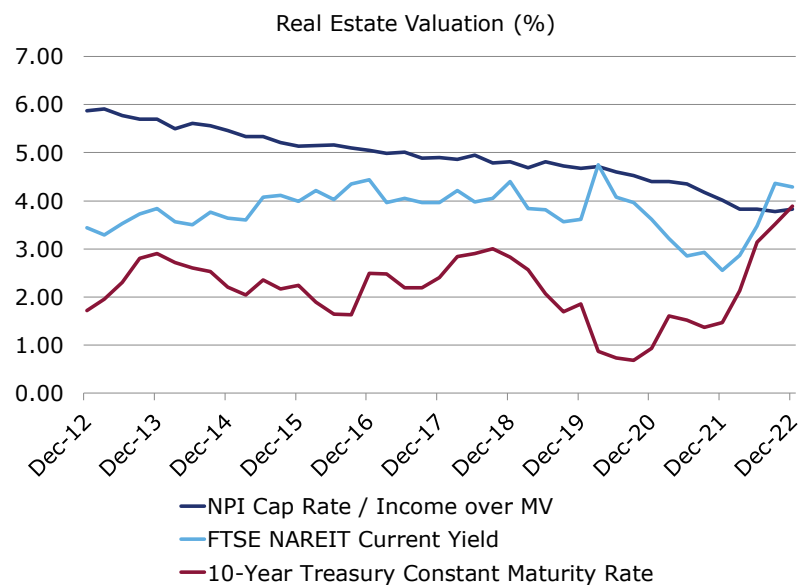
As of 12/31/2022		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		9.0	4.2	-11.2	-11.2	0.0	2.3	4.0
S&P LSTA Leveraged Loan		9.1	3.8	-0.6	-0.6	1.9	3.1	3.2
High Yield Quality Distribution		Weight						
Ba U.S. High Yield	49.9%	7.2	4.3	-10.8	-10.8	0.9	3.0	4.4
B U.S. High Yield	38.6%	9.2	4.9	-10.3	-10.3	-0.5	2.2	3.6
Caa U.S. High Yield	10.7%	14.3	0.5	-16.3	-16.3	-2.4	-0.4	3.5
Ca to D U.S. High Yield	0.7%	36.3	13.8	-10.4	-10.4	1.1	0.4	-5.0



Data Sources: Bloomberg

Real Assets

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	2.0	-11.8	-11.8	1.2	2.1	1.1
Bloomberg Commodity Index	2.2	16.1	16.1	12.7	6.4	-1.3
Bloomberg Gold Index	9.5	-0.7	-0.7	4.7	5.7	0.0
Wilshire Global RESI Index	6.4	-24.9	-24.9	-2.7	1.6	4.8
NCREIF ODCE Fund Index	-5.0	7.5	7.5	9.9	8.7	10.1
NCREIF Timberland Index	4.9	12.9	12.9	7.5	5.4	5.8
FTSE Global Core Infrastructure 50/50	9.2	-4.1	-4.1	2.3	5.5	7.9
Alerian Midstream Energy	8.4	21.5	21.5	8.8	6.8	n.a.
Bitcoin	-14.9	-64.3	-64.3	32.2	3.3	103.6



Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

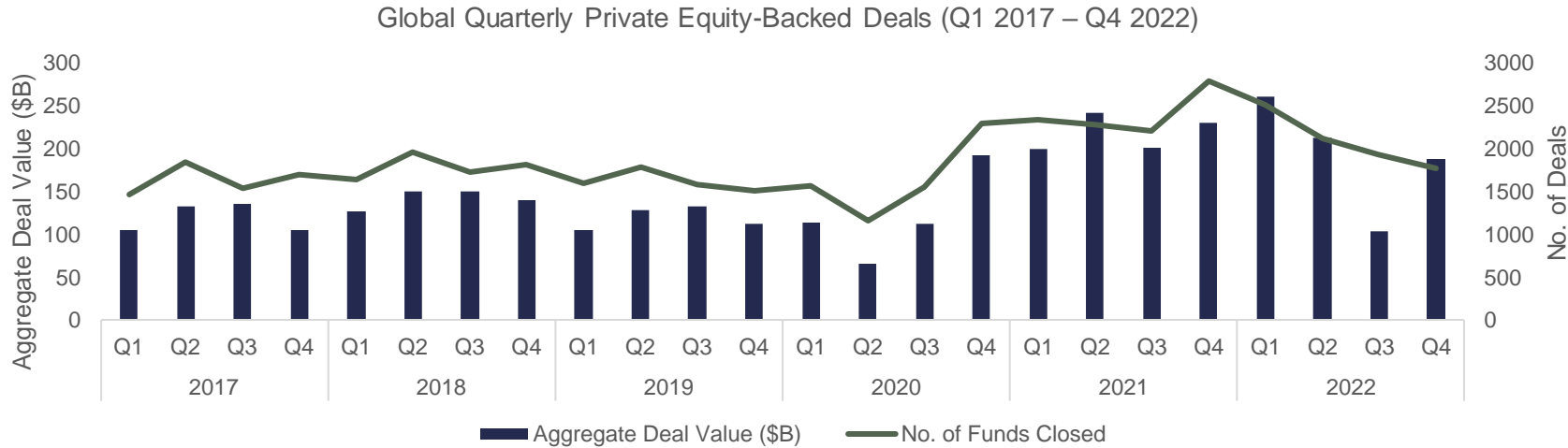
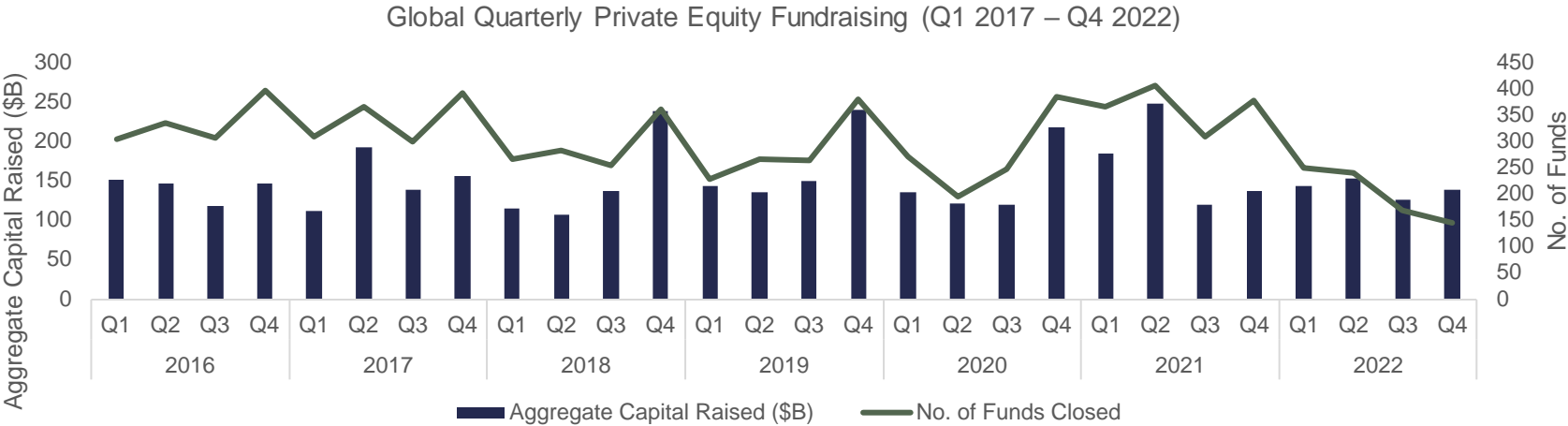
Asset Class Performance

Asset Class Returns - Best to Worst						Annualized 5-Year as of 12/22
2017	2018	2019	2020	2021	2022 YTD	
Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 16.1%	U.S. Equity 9.0%
Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 1.3%	Commodities 6.4%
U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	High Yield -11.2%	REITs 3.4%
High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	U.S. TIPS -11.8%	High Yield 2.3%
REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	Core Bond -13.0%	U.S. TIPS 2.1%
Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Developed -14.0%	Developed 2.0%
U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. Equity -19.0%	T-Bills 1.2%
Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -19.7%	Core Bond 0.0%
T-Bills 0.8%	Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -26.8%	Emrg Mrkts -1.0%

Data Sources: Bloomberg Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

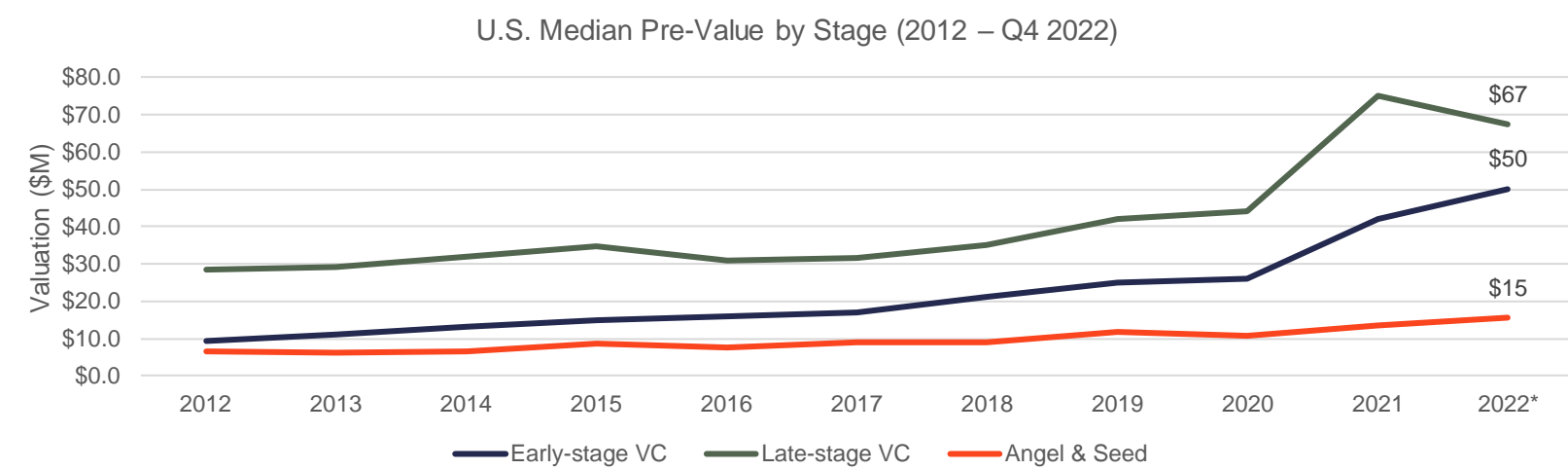
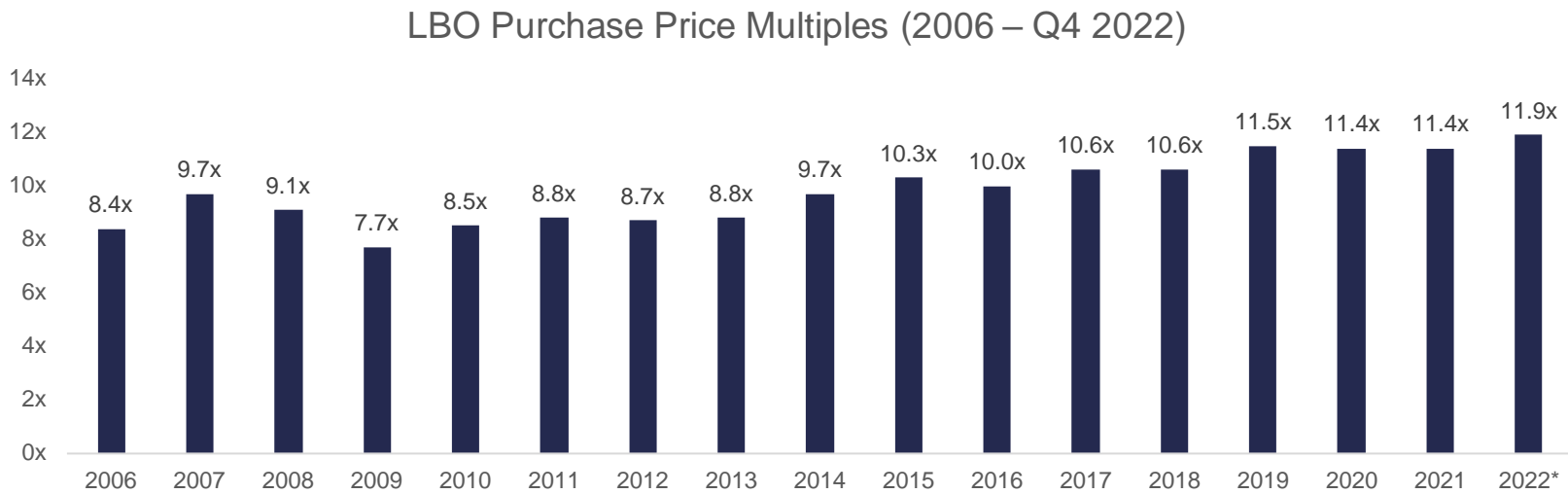
Appendix: Private Market Trends

Private Equity – Fundraising & Investment Activity



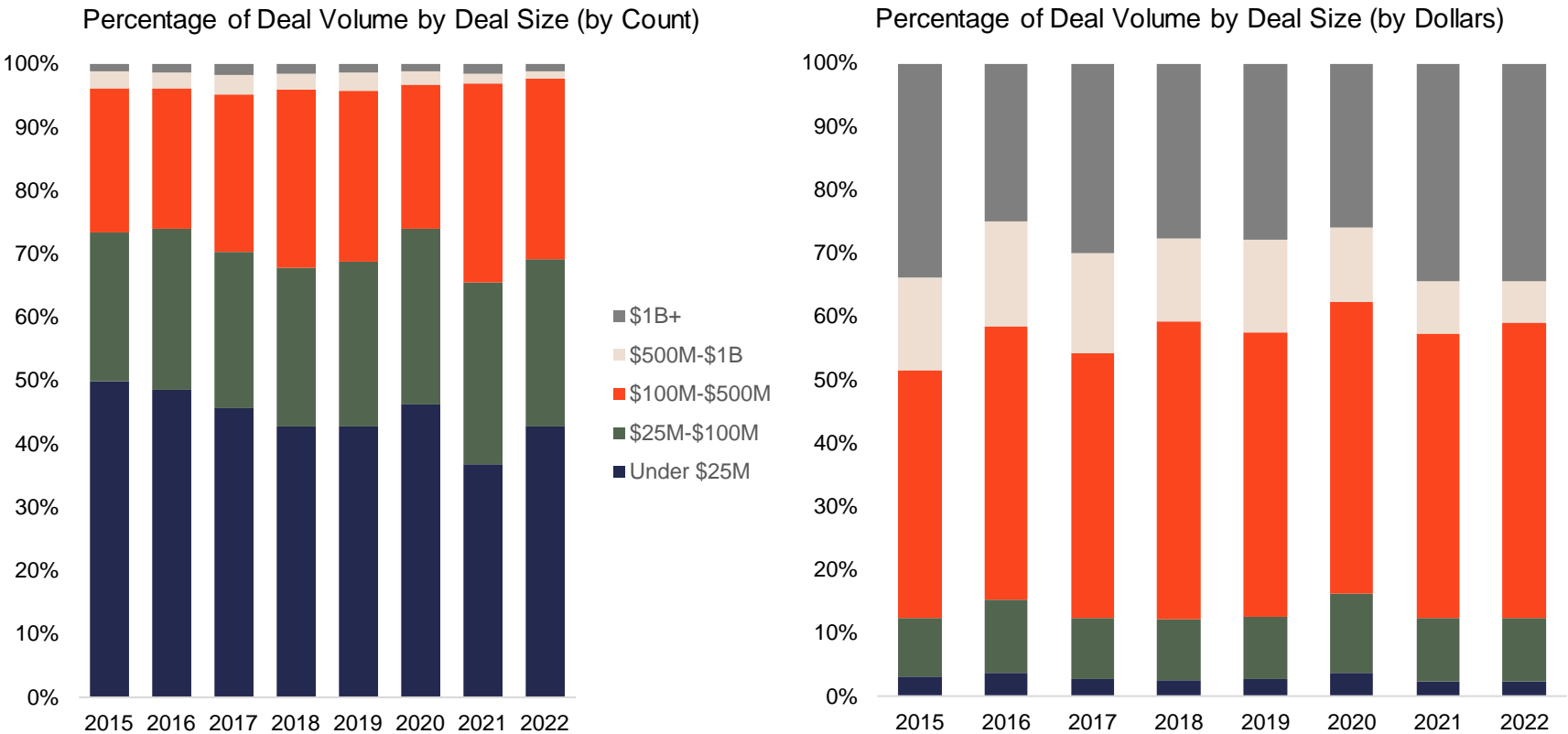
Source: Preqin, as of December 31, 2022.

Private Equity – Pricing & Valuations



Source: S&P LBO; Pitchbook, *as of December 31, 2022.

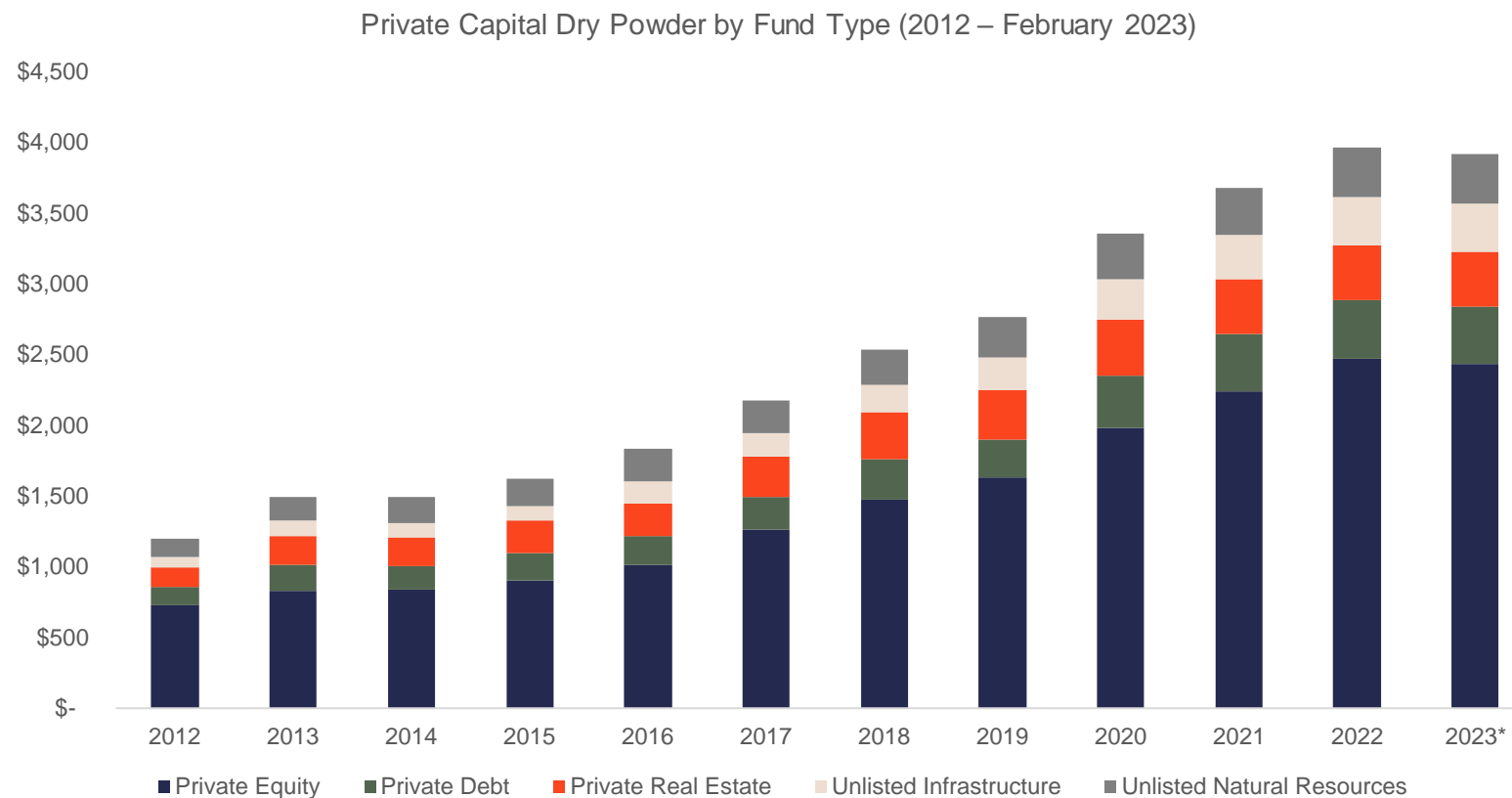
U.S. Investment Activity by Deal Size



- Deal volume has shifted to be dominated by middle-market deals with investment sizes between \$100-500 million through the end of 2022
- Deals with below \$100 million check sizes comprised only 12% of all deal volume by amount of capital invested during 2022

Source: Pitchbook, *as of December 31, 2022.

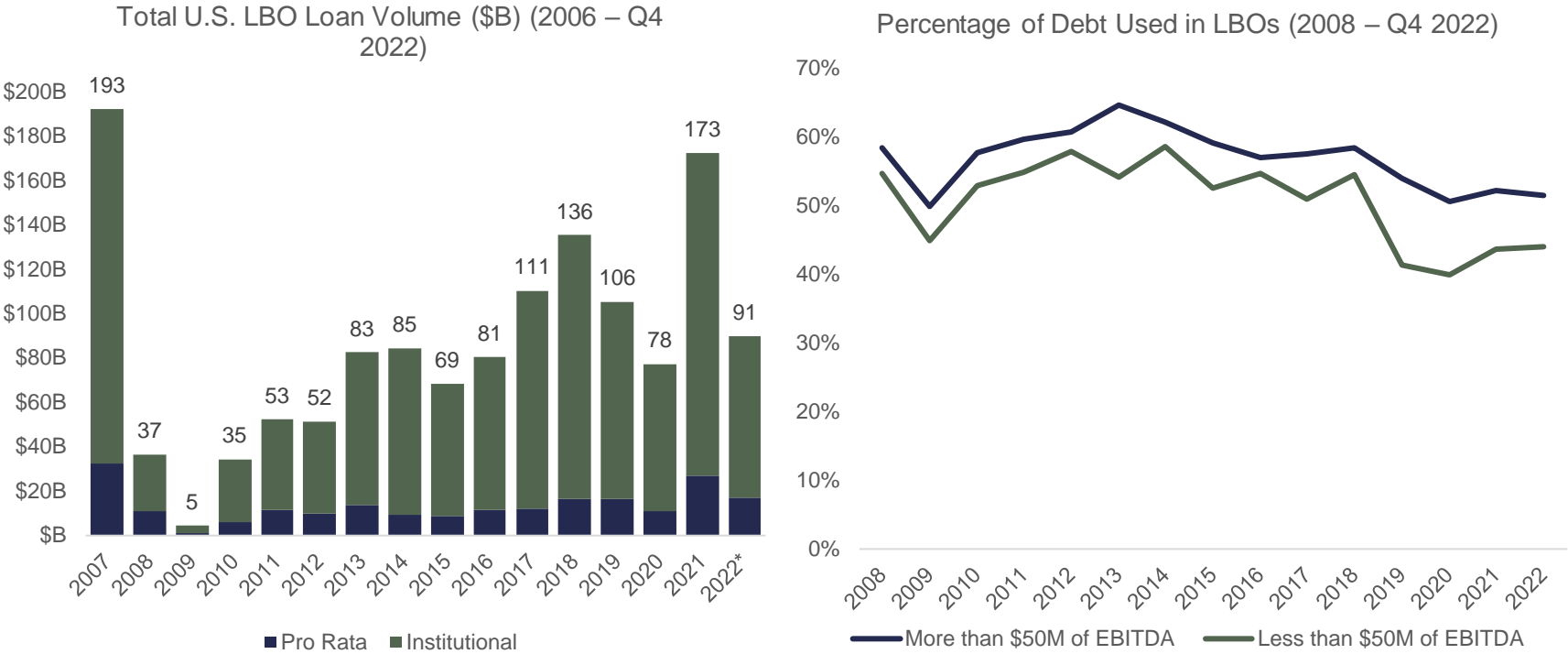
Private Capital Dry Powder



- Global private capital dry power continues to increase, topping \$3.9 trillion across all fund types
- Private equity comprises just under 62% of total dry powder in the market as of February 2023

Source: Preqin, *as of February 2, 2022.

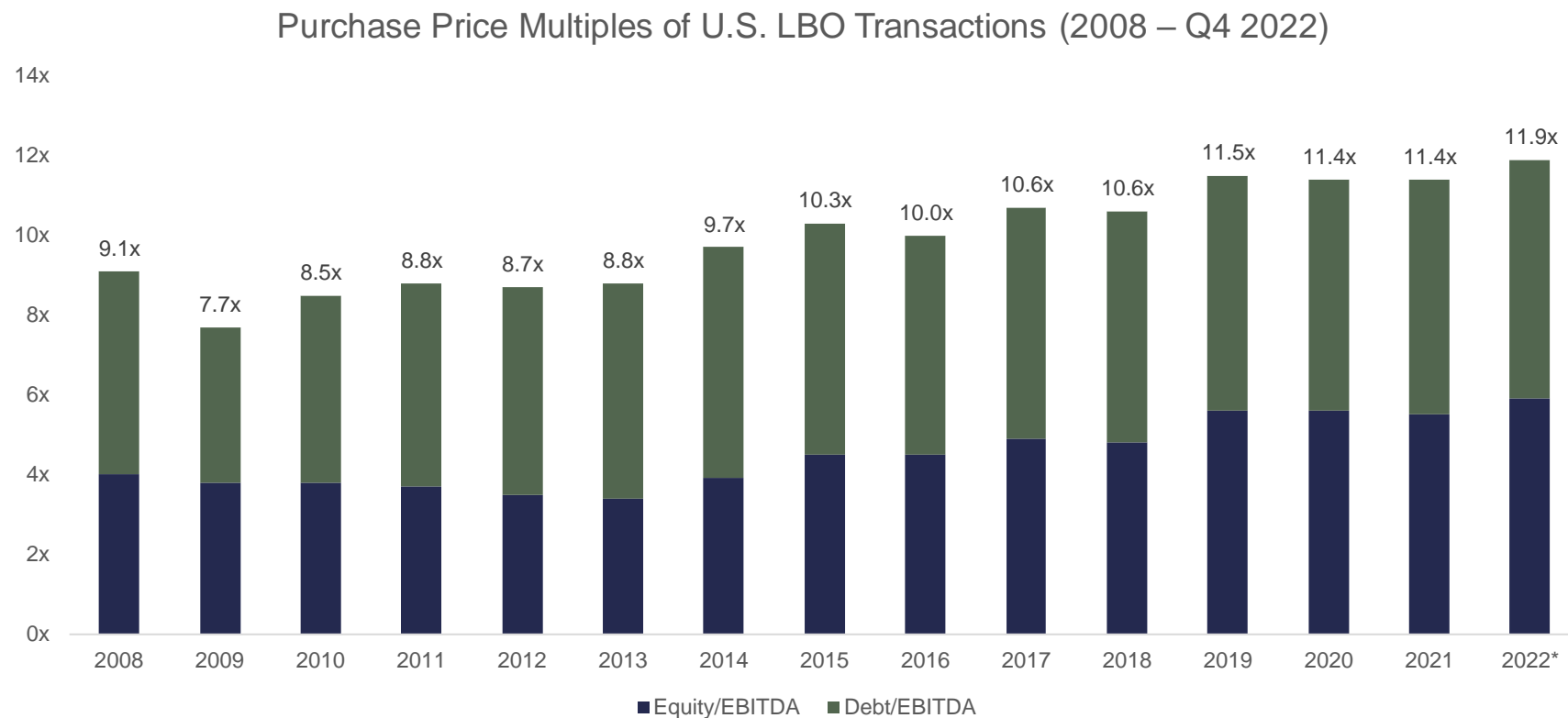
Private Equity – U.S. Debt Markets



- 2022 has generated approximately \$91 billion in loan volume as of Q4 2022, which has slowed down comparatively to the 2021 pace of \$173 billion
- As debt multiples have increased, the percentage of debt used to finance leveraged buyouts through Q4 2022 has increased from the 2021 marks

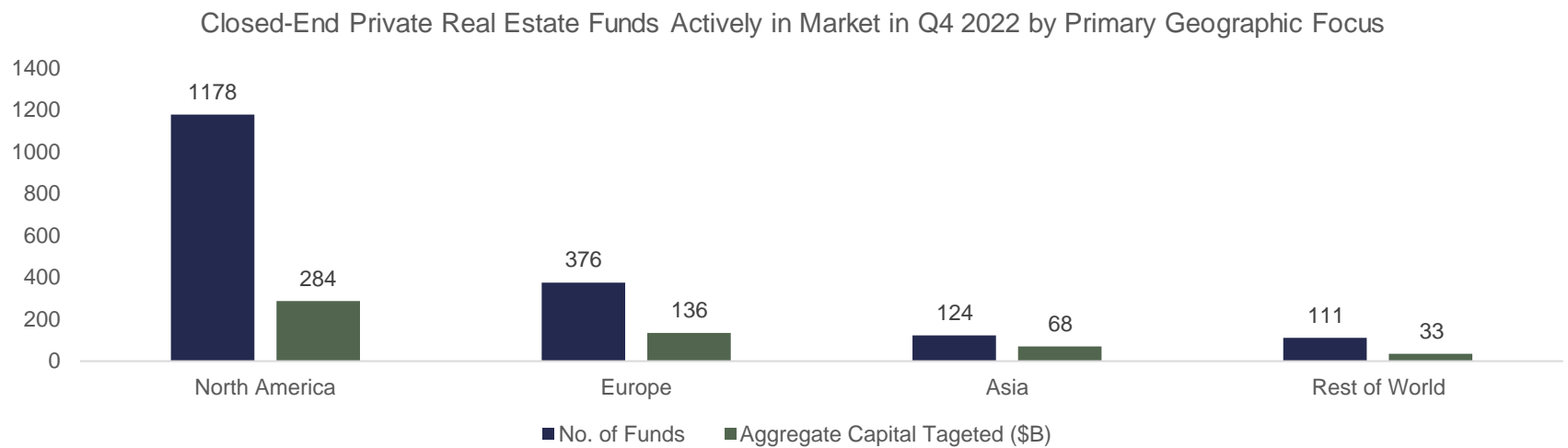
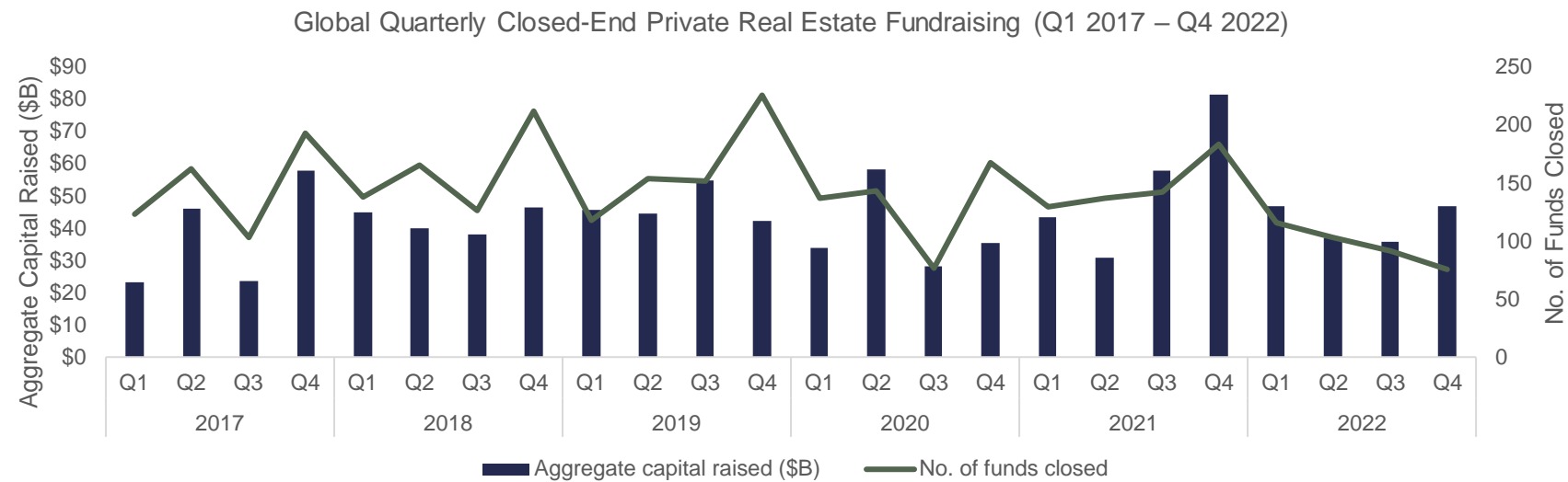
Source: S&P LBO, *as of December 31, 2022. “Less than \$50M of EBITDA” data for 2020 and 2022 not yet available.

Private Equity – U.S. LBO Purchase Price Multiples



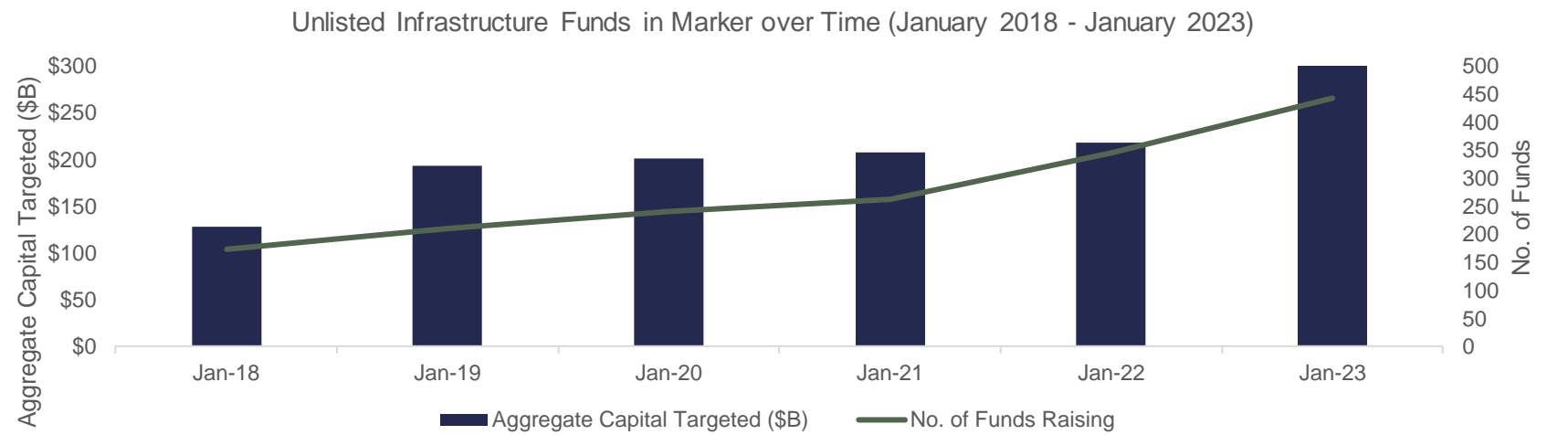
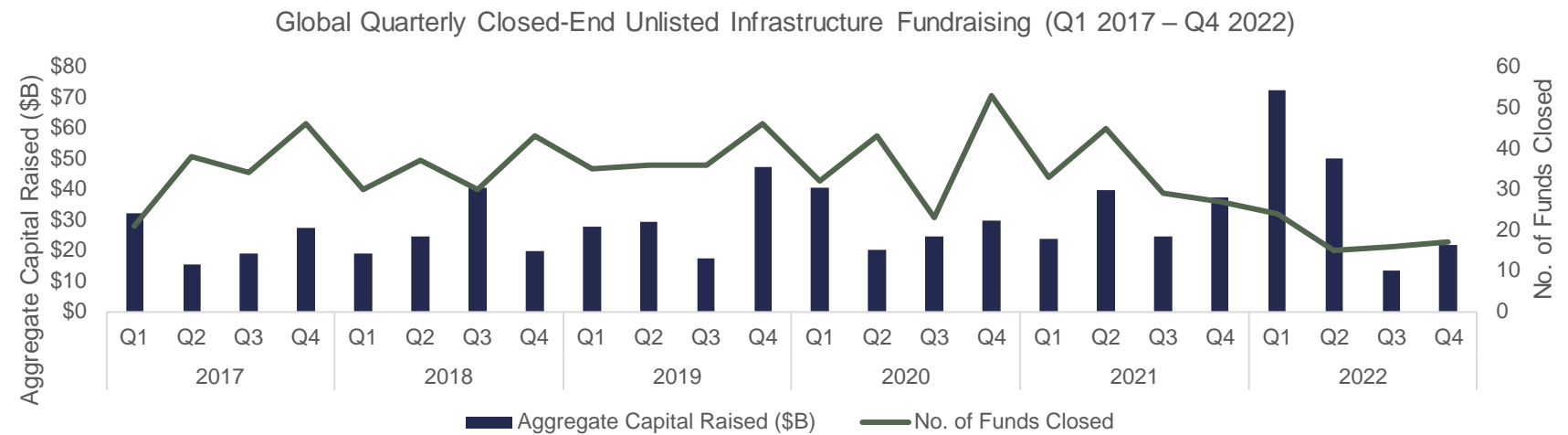
- Purchase price multiples for U.S. LBOs have remained steady from 2019 to 2021 and have increased through Q4 2022 compared to previous years.

Private Real Estate – Fundraising Activity



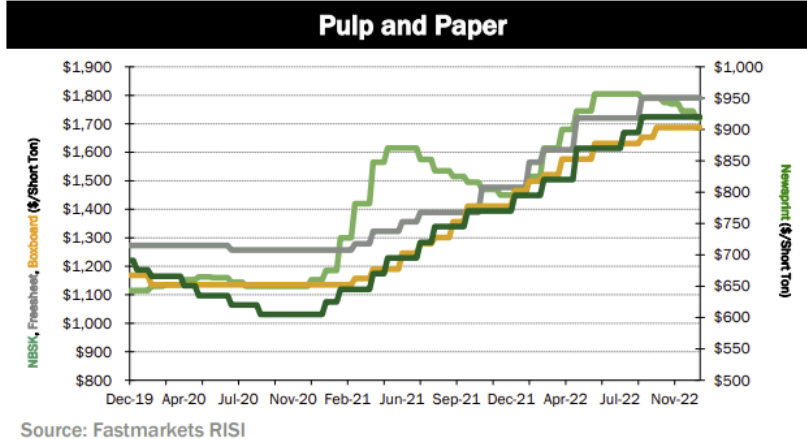
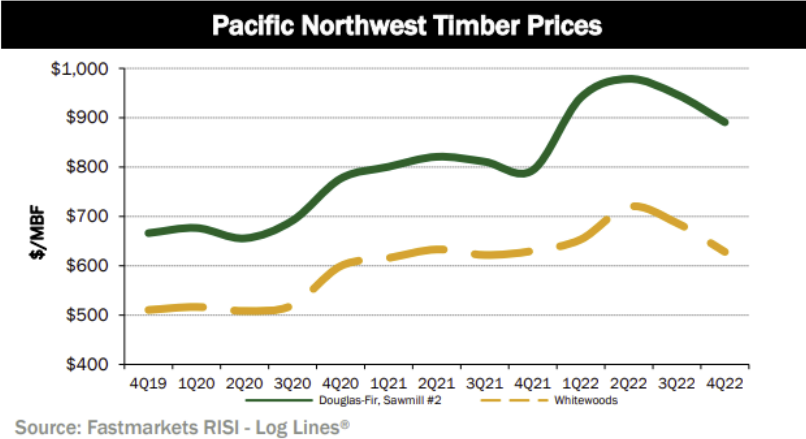
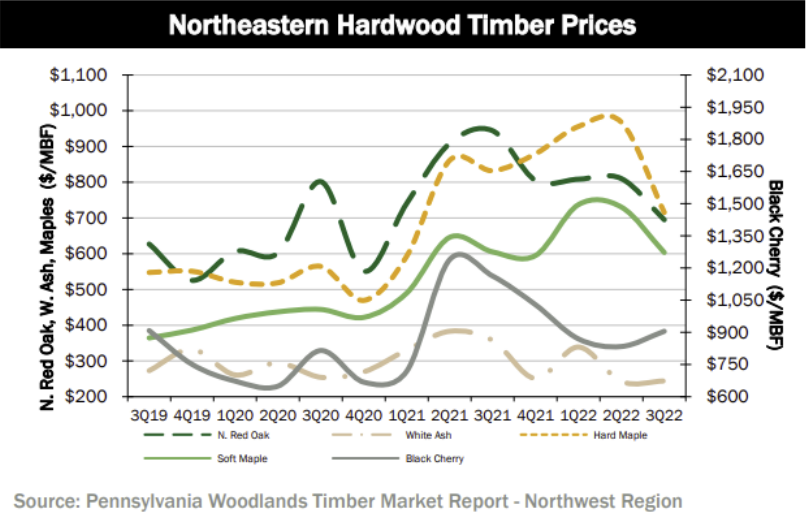
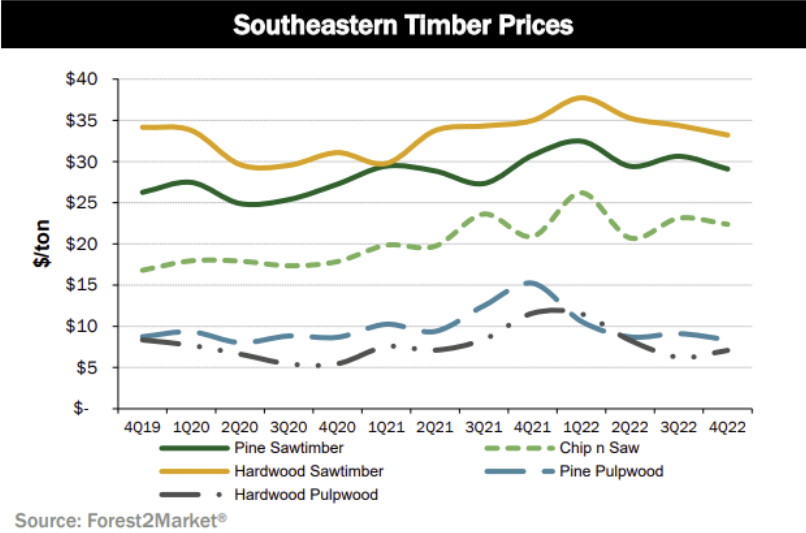
Source: Preqin, as of December 31, 2022.

Unlisted Infrastructure – Fundraising & Investment Activity



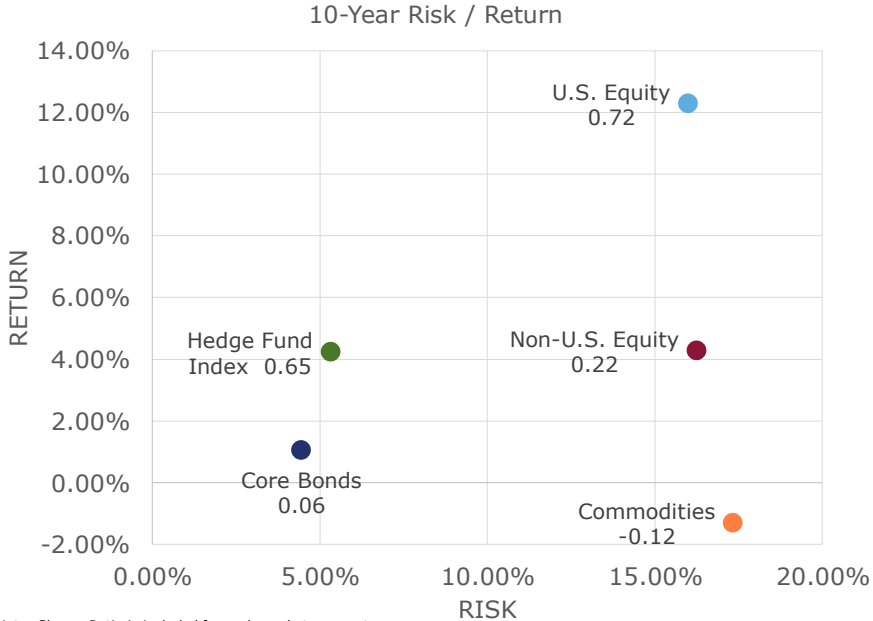
Source: Preqin, as of January 31, 2023.

Timber Investments



Hedge Fund Performance

As of 12/31/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Credit Suisse Hedge Fund Index	0.9	1.1	1.1	5.2	4.2	4.2
Event Driven	1.7	-6.8	-6.8	4.0	3.2	3.4
Global Macro	-6.8	15.9	15.9	10.6	8.3	5.5
Long/Short Equity	5.6	-5.8	-5.8	3.3	3.3	5.2
Multi-Strategy	2.1	1.3	1.3	4.6	4.0	5.2
FT Wilshire 5000	7.1	-19.0	-19.0	7.4	9.0	12.3
MSCI ACWI ex-US (\$G)	14.4	-15.6	-15.6	0.5	1.4	4.3
Bloomberg Aggregate	1.9	-13.0	-13.0	-2.7	0.0	1.1
Bloomberg Commodity Index	2.2	16.1	16.1	12.7	6.4	-1.3



Data Source: Bloomberg

Wilshire

Public Employees Retirement Association of New Mexico

Benchmark Update

April 2023

Purpose of Benchmarking

Serves as a clear and objective means of evaluating performance

Benchmarks provide investors a realistic and achievable starting point – i.e., the passive portfolio held in the absence of a view on any given security

The purpose of benchmarking can be summarized as follows:

Performance Attribution

Decomposition of sources of return, such as asset allocation, active vs. passive management, manager skill, etc.

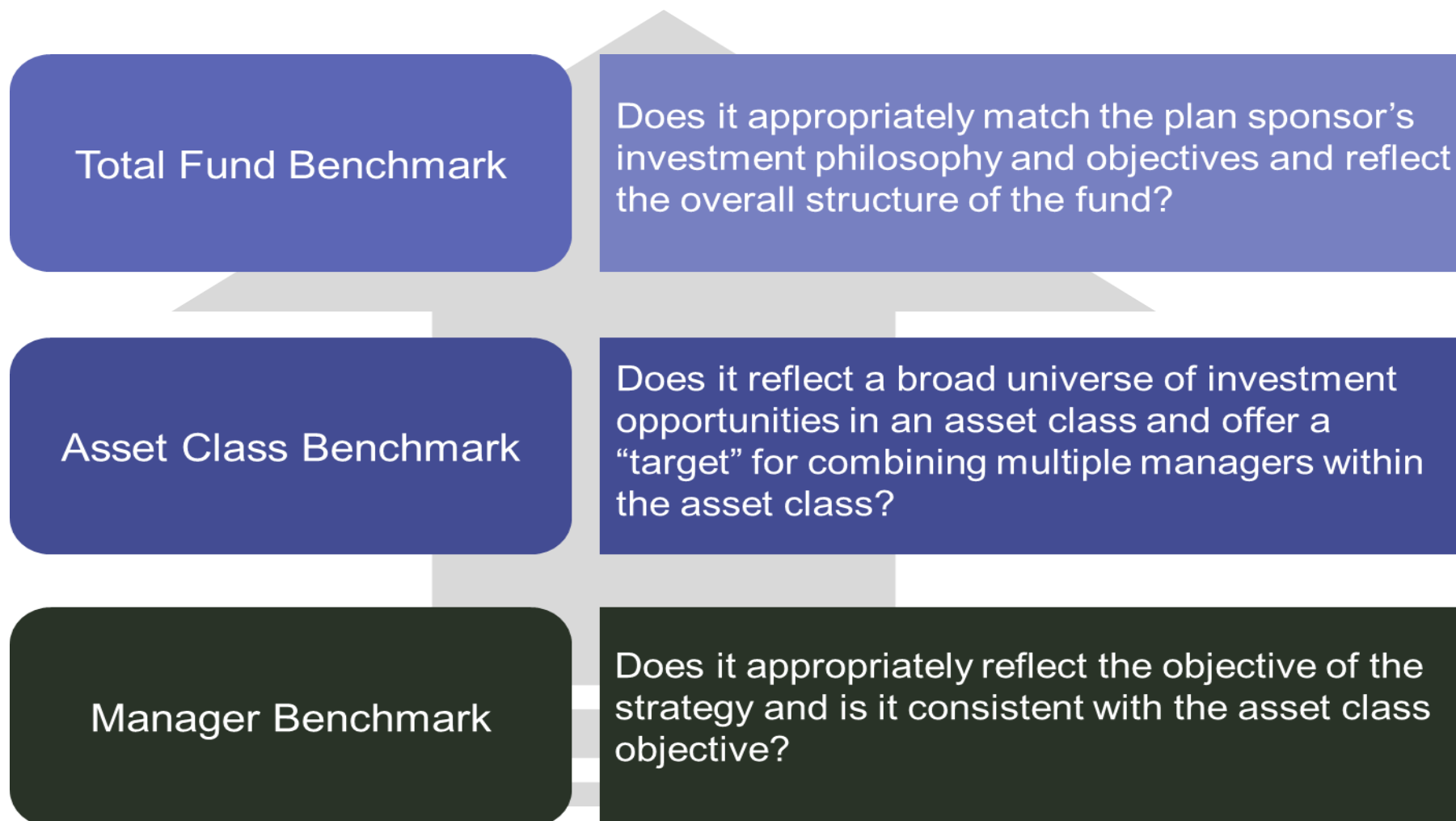
Insight on Risk/Returns

Insight into level of risk being taken to generate return and the volatility of return over time

Manager Evaluation

Measure against which manager performance can be evaluated to assist in retention / termination decisions

Benchmark Selection Considerations



Total Fund Benchmarking – Changes Implemented 12/31/2022

Policy Portfolio Benchmark Changes:

- **Global Equity composite increases from 35.5% to 38.0%**
 - MSCI ACWI IMI Index increases from 28.5% to 33.0%
 - MSCI ACWI Minimum Volatility Index decreases from 7.0% to 5.0%
- **Risk Reduction & Mitigation composite decreases from 19.5% to 17.0%**
 - Bloomberg Global Aggregate Hedged Index decreases from 2.5% to 0.0%
- **Credit Oriented Fixed Income composite increases from 15.0% to 19.0%**
 - Bloomberg Global High Yield Index increases from 12.0% to 19.0%
 - Custom Emerging Market Debt Blended Index decreases from 3.0% to 0.0%
- **Real Assets composite decreases from 20.0% to 18.0%**
 - DJ Brookfield Global Infrastructure Index increases from 4.0% to 7.0%
 - Alerian MLP Index decreases from 2.0% to 0.0%
 - Bloomberg U.S. TIPS Index decreases from 3.0% to 0.0%
- **Multi Risk composite decreases from 10.0% to 8.0%**
 - Wilshire Risk Parity (15%) Index decreases from 10.0% to 8.0%

Policy Portfolio Benchmark	Previous Target	Target as of 12/31/22
Global Equity	35.50%	38.00%
MSCI ACWI IMI (\$N)	28.50%	33.00%
MSCI ACWI Minimum Volatility (\$N)	7.00%	5.00%
Risk Reduction & Mitigation	19.50%	17.00%
Bloomberg U.S. Aggregate	17.00%	17.00%
Bloomberg Global Aggregate (Hedged)	2.50%	0.00%
Credit Oriented Fixed Income	15.00%	19.00%
Bloomberg Global High Yield (Hedged)	12.00%	19.00%
50% JPM EMBI (\$) / 50% JPM GBI (\$)	3.00%	0.00%
Real Assets	20.00%	18.00%
Wilshire Global REITs	7.00%	7.00%
Dow Jones - Brookfield Global Infrastructure Index	4.00%	7.00%
Bloomberg Commodity Index (TR)	4.00%	4.00%
Alerian MLP Index	2.00%	0.00%
Bloomberg - U.S. TIPS	3.00%	0.00%
Multi-Risk Allocation	10.00%	8.00%
Wilshire Risk Parity - 15%	10.00%	8.00%

Appendix

Ideal Benchmark Characteristics

Unambiguous

Benchmark components and construction methodology are clearly identifiable.

Investable

It is possible to replicate and simply hold the benchmark.

Measurable

The benchmark's return is readily calculable on an on-going basis.

Appropriate

The benchmark is consistent with the composite's objective or manager's investment style.

Reflective of current investment options

The manager is knowledgeable of the securities or factor exposures within the benchmark.

Pre-specified

The benchmark is agreed upon prior to the start of the monitoring period.

Appropriate Benchmarks

- The appropriate benchmark is a function of the return and risk characteristics of the asset class or portfolio being measured
- Benchmarks may be published market benchmarks or custom benchmarks
 - Published benchmarks are preferable; however, custom benchmarks may be optimal for some portfolio strategies such as Multi-Asset Risk Allocation
 - Generally, asset class benchmarks are published market indices which represent a broad investment opportunity set
 - E.g., Wilshire 5000, Bloomberg U.S. Aggregate
- Objective of benchmark selection process is to minimize benchmark “misfit” risk, which is uncompensated risk
 - “Misfit” risk is the return difference attributable to the benchmark characteristics that are not reflected in the portfolio and vice versa
 - E.g., All cap equity portfolio benchmarked to the S&P 500 Index or a Core Plus bond portfolio benchmarked to the Bloomberg U.S. Aggregate

Benchmarking Private Assets

Benchmarking private assets is not as straightforward as public assets

- Available private asset “benchmarks” from multiple providers are actually universe comparisons, either of private market funds or other plan sponsor private programs
 - Not Investable in the same manner as public indexes
 - Underlying constituents can shift depending on data availability
 - Data availability is limited to quarterly periodicity

Considerations:

- PERA currently utilizes public market benchmarks to most appropriately define investable market beta. Benchmarking challenges include:
 - Valuation and pricing of private assets occurs quarterly vs. daily for public assets
 - Timing mismatch leads to higher levels of measured active risk (tracking error) on a short-term basis; will normalize over longer-term periods
 - Valuation availability lags that of public assets, typically by one to three months, due to the time it takes to compile and translate financial statement information into an estimate of fair market value
 - Public market appraisals adjust much more quickly (both up and down) than private market appraisals
 - Potential future enhancement could include adjustment to index timing to align with the valuation of less liquid assets (i.e., quarterly lagged)

Benchmarking Portable Alpha

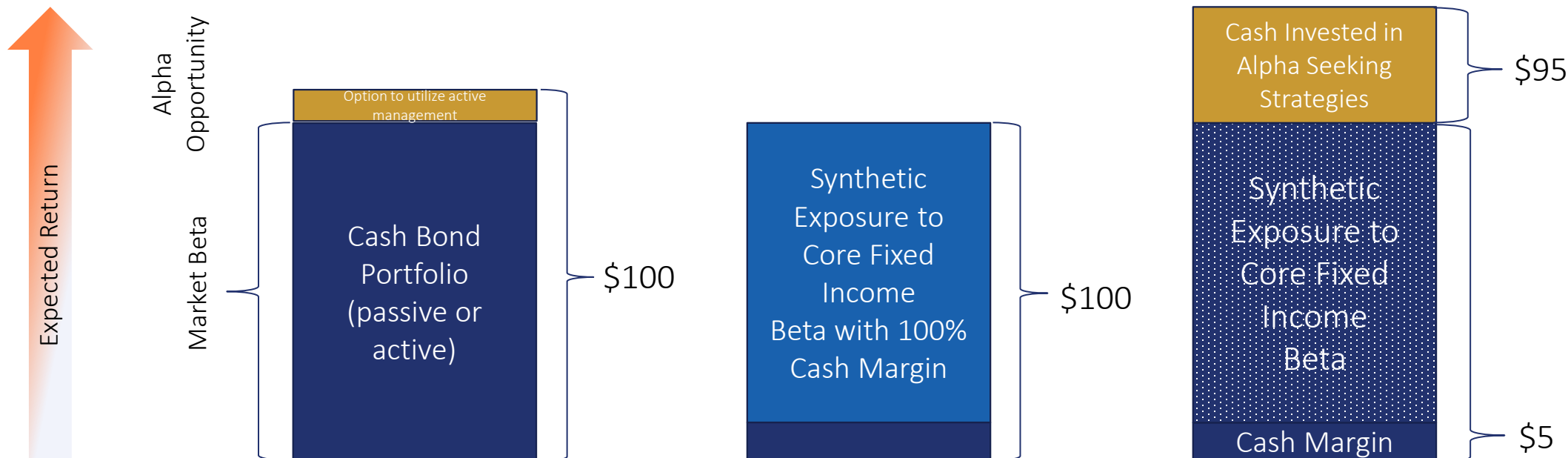
Portable Alpha benchmark is based on the market beta over which the alpha portfolio is ported

- PERA Bonds Plus portfolio asset class benchmark is the Bloomberg U.S. Aggregate, which is the most widely used U.S. investment grade bond index

Differentiate between the strategy's benchmark index and the active return target over and above that benchmark

- PERA risk budget sets active risk budgets for Actionable (Public Markets) and Non-Actionable (Private Markets) assets
- Actionable (Public Markets) Active Risk: 1.25%
- Non-Actionable (Private Markets) Active Risk: 2.25%

Portable Alpha Program Components of Return



Considerations

- Straightforward investment structure
- Reasonably liquid
- Low to moderate management fees
- Market exposure
- Passive or active implementation

- More complex structuring with derivative counterparties
- Cash margin enhances liquidity of Total Fund
- Lower management fees
- Market only exposure

- Most complex with derivative counterparties and hedge fund structures
- Least liquid
- Higher management fees
- Market exposure
- Potential alpha generation

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NMPERA Bonds + Alpha Portfolio 2022 Review

April 2023

Outline



Philosophy



Portfolio Construction & Guidelines

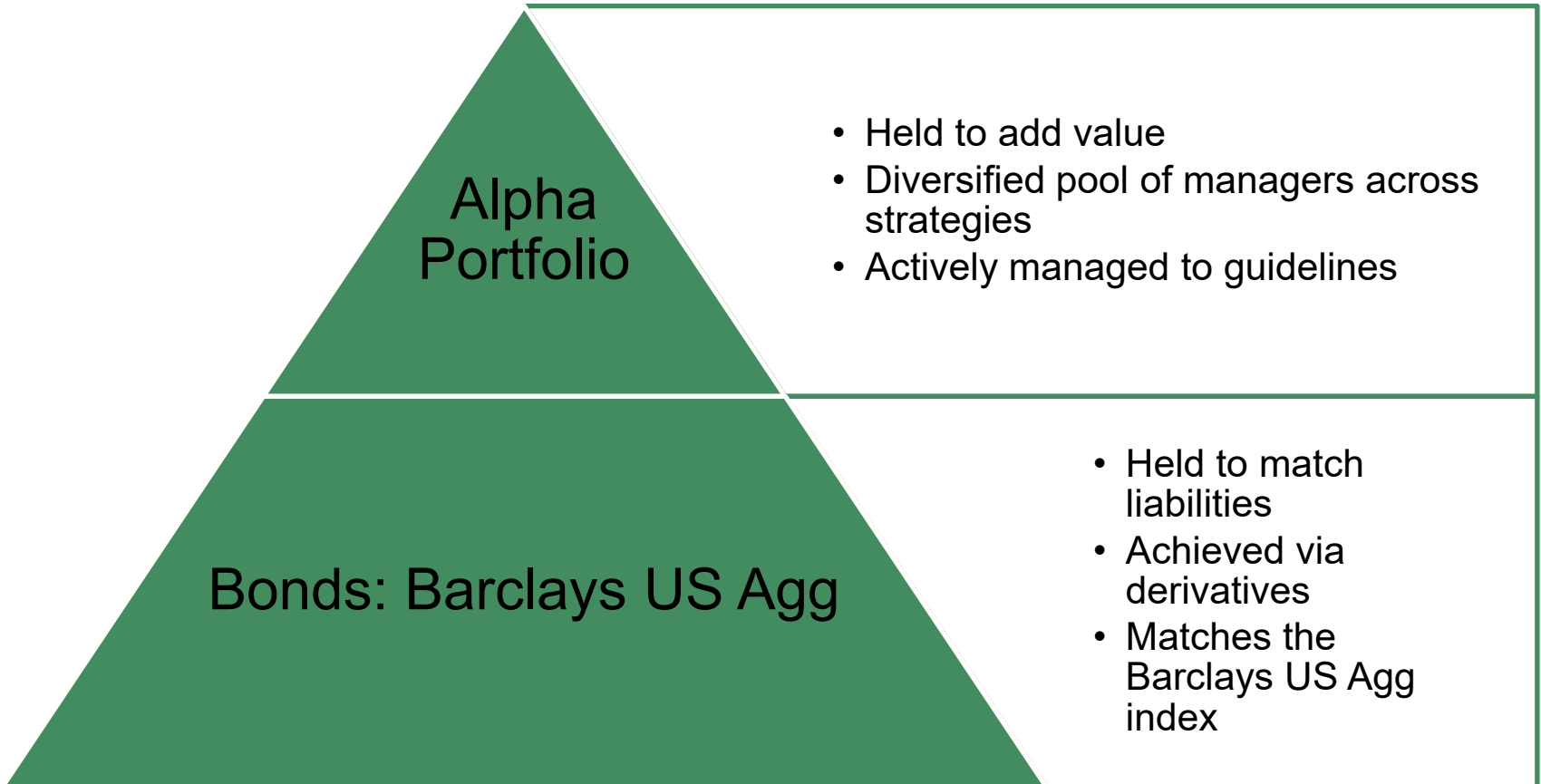


Performance

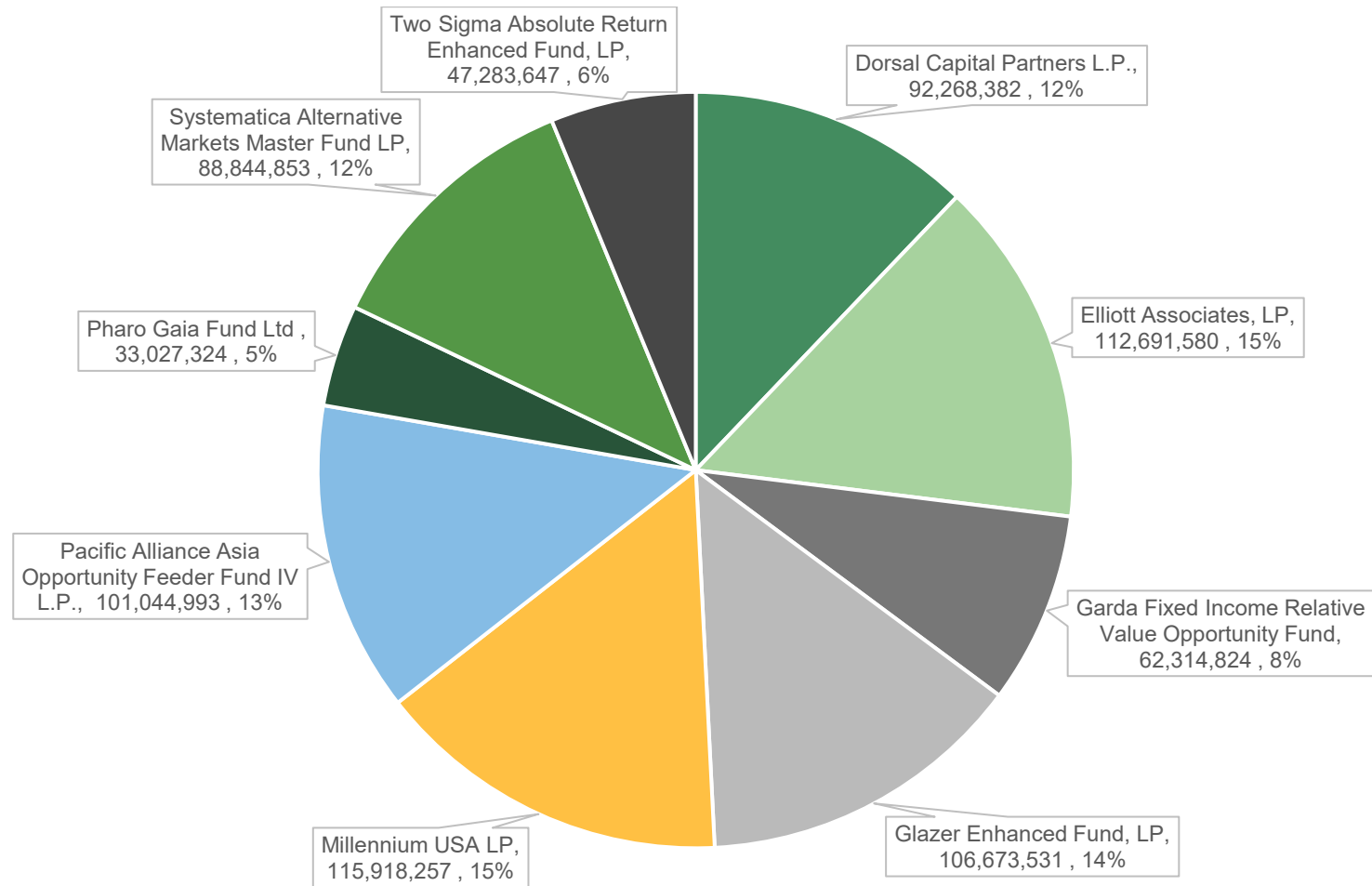
Why PERA uses portable alpha

- Generate excess return v policy portfolio
 - 4.8% in 2022, equal to \$39m
 - 6.6% annualized over 2-years
 - 4.3% annualized since inception
- Separates:
 - Beta, which is cheap
 - Alpha, which is costly to access but diversifying
- A very efficient use of active risk
 - it increases excess return per unit of risk

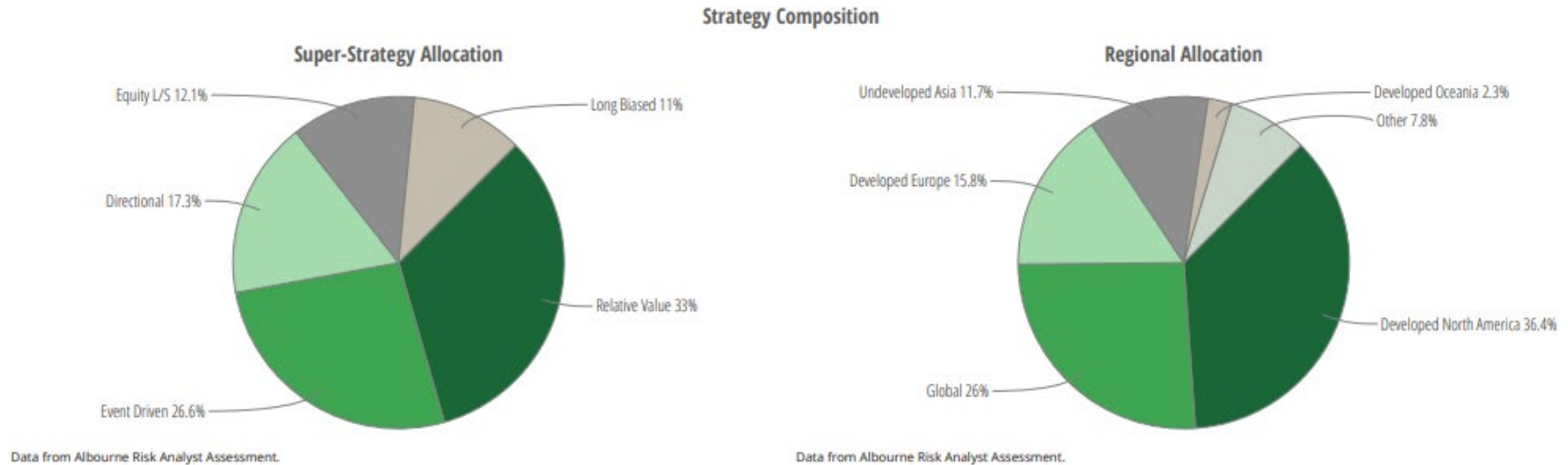
PERA's approach to portable alpha



PERA's fund allocations



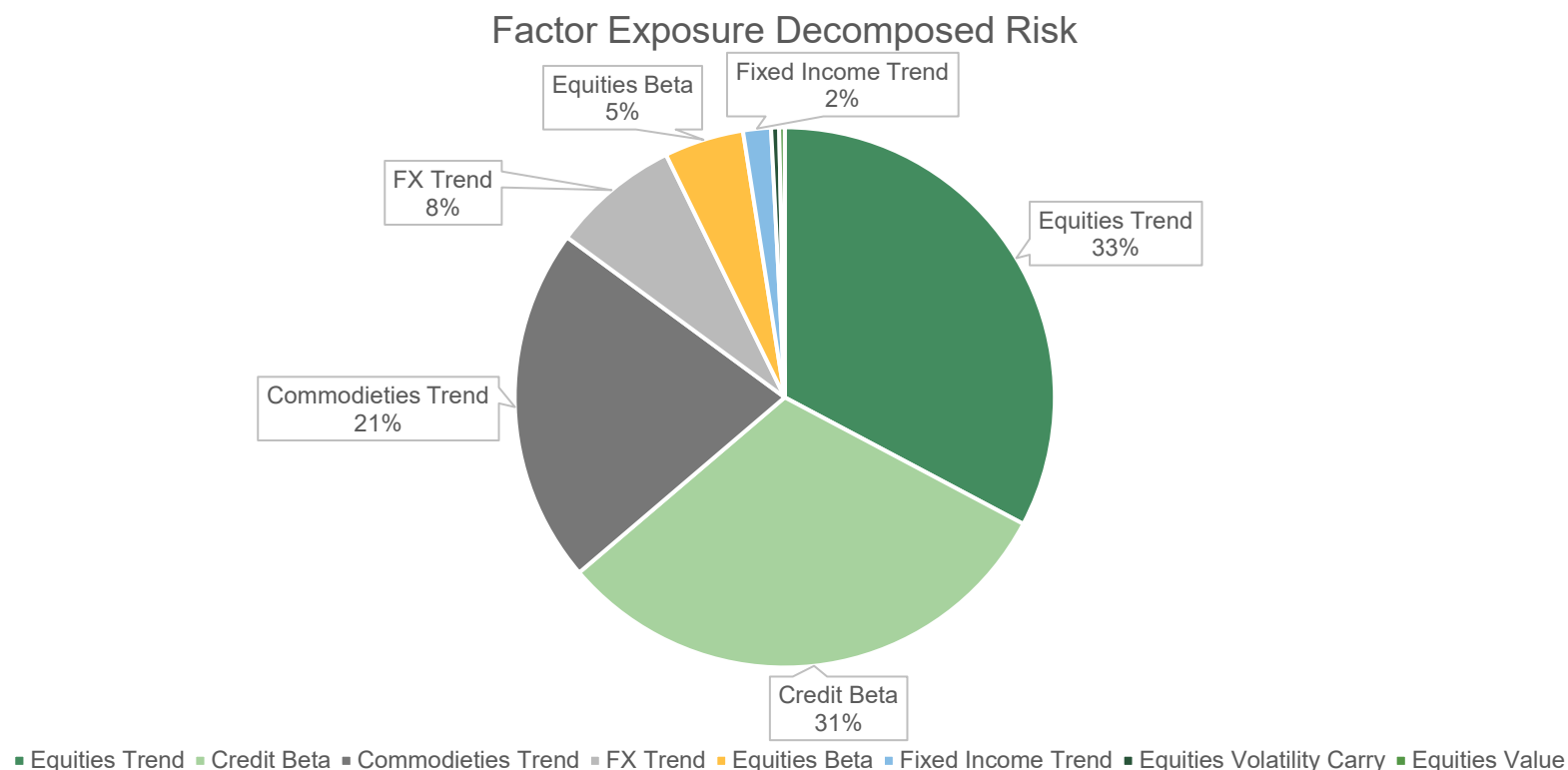
PERA's exposure by strategy and region



- The Portable Alpha portfolio is well diversified by strategy & region
- PERA holds funds with low beta to credit and equity

Factor exposure in PERA's portfolio

- The systematic risk of the Alpha portfolio includes diversifying sources of alternative risk premia including Trend, Carry and Value, which will vary over time.



PERA portfolio risk

	Time Period	Alpha Engine	Bonds Overlay	Bonds + Alpha	Barclays US Agg. TR UH
Volatility	1 Year	1.9%	7.8%	6.7%	8.3%
	Since Inception	9.0%	5.6%	10.4%	5.8%
Beta to Barclays US Agg. TR UH	1 Year	-0.15			
	Since Inception	0.03			
Beta to MSCI ACWI IMI TR Net	1 Year	-0.03			
	Since Inception	0.22			

- 1 Year portfolio volatility for the Bonds + Alpha portfolio is 6.7%, compared with the benchmark of 8.3% (Barclays US Agg)
- Since inception volatility for the Bonds + Alpha portfolio is 10.4% (annualized).

Breakdown of expected risk

- The annualized expected volatility for the Alpha portfolio is 3.79%, which can be broken down as 84% manager specific (idiosyncratic) and 16% market risk (systematic)

Risk Summary

	Total		Contribution to Risk From			
			Systematic		Residual	
	Value	Change ¹	Value	Change ¹	Value	Change ¹
Annualised Expected Volatility	3.79%	0.04%	1.54%	0.02%	3.46%	0.03%
Monthly Expected 95% VaR	1.80%	0.02%	0.73%	0.01%	1.64%	0.01%
Monthly Expected 99% VaR	2.54%	0.02%	1.04%	0.02%	2.32%	0.02%
95% VaR Violation Frequency ²	2.78%	-0.08%				
Monthly Historical 95% CVaR	2.37%	0.00%				
Monthly Modified 95% VaR	1.20%	0.00%				
Monte Carlo 95% VaR, MSCI ACWI IMI TR Net Stress Period	1.03%	0.01%				
Monte Carlo 95% VaR, ICE BofAML US Broad Market Stress Period	0.82%	-0.01%				
Monthly Expected 95% VaR Assuming Cross-Correlation=1	3.75%	0.09%				

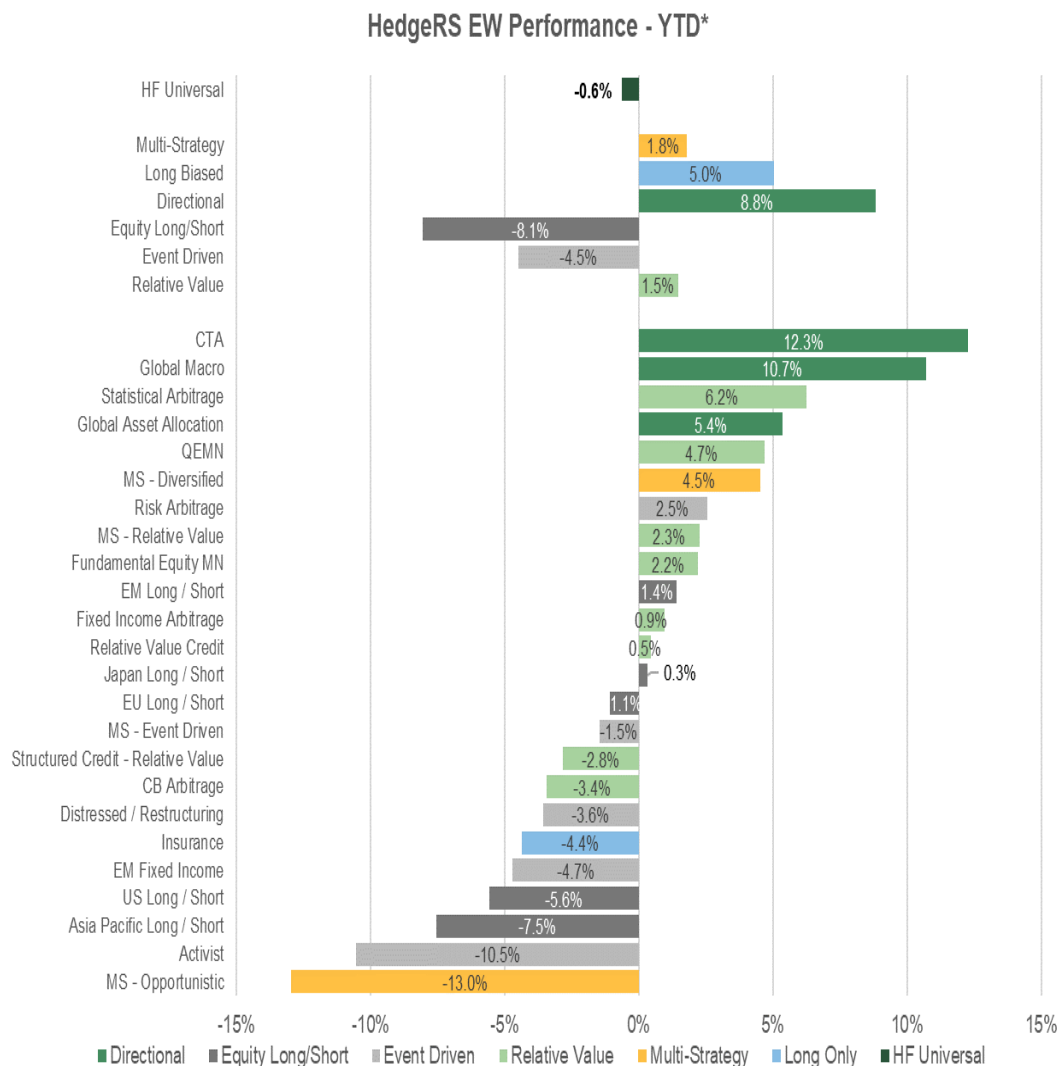
Risk calculated over period from Feb 2000 to Dec 2022 ¹Change from previous month ²Computed over 36 months. Change is relative to previous value, computed over 35 months.

PERA Guideline Exceptions

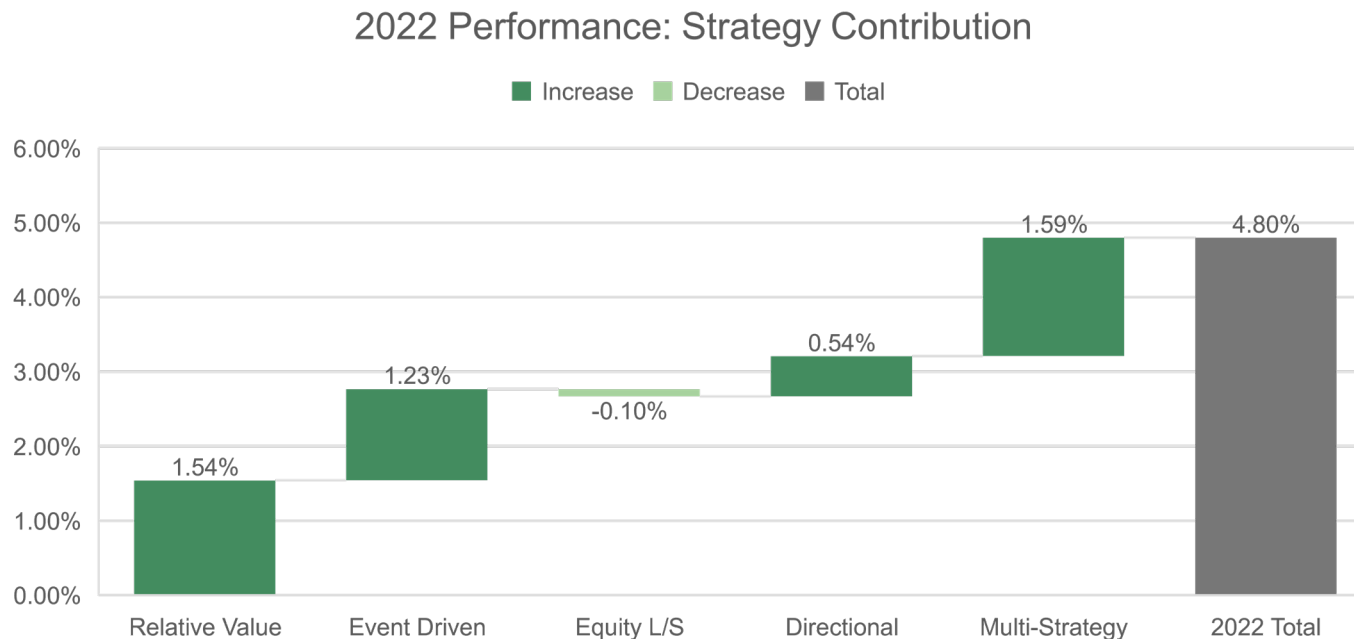
Guideline	Target	As of February 2023
Manager Risk Contribution	<ul style="list-style-type: none"> < 20% of expected risk Rebalance if breached for more than 6 months 	<ul style="list-style-type: none"> Glazer: 37.22%
Strategy Exposure	<ul style="list-style-type: none"> Relative Value: Range 20-45%, Target 30% Event Driven: Range 10-30%, Target 20% Equity Long/Short: Range 10-30%, Target 20% Directional: Range 20-45%, Target 30% Other: Range 0-15%, Target 0% 	<ul style="list-style-type: none"> Directional: 17.3%

Hedge Fund Industry Performance in 2022

- 2022 has been a strong year for Directional strategies (Macro & Macro Systematic)
- Relative Value Strategies generally held up despite a down market for equities and bonds over the course of the year
- Macro and Macro Systematic showed considerable defensive characteristics in a market with both equities and bonds down for the year
- High equity beta strategies have done poorly in 2022 partially due to growth oriented long books fairing worse than value especially in US ELS
- Insurance suffered after Hurricane Ian



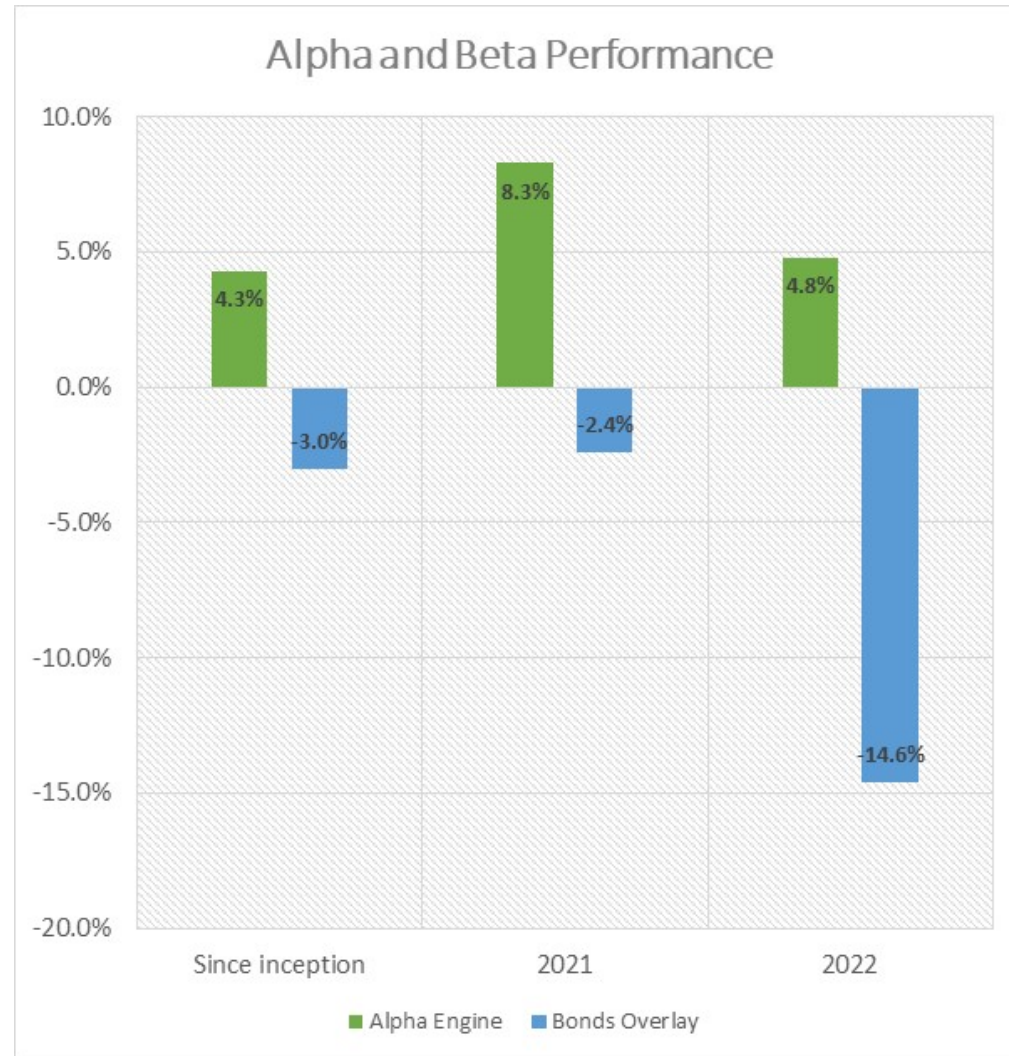
Alpha Strategy Contribution



- Multi- Strategy had been the strongest contributor to performance in 2022, followed by Relative Value, Event Driven, and Directional. Equity L/S strategies have been a slight detractor.

PERA's alpha portfolio performance

- Alpha Engine returned **4.8%** in 2022
 - **4.3% since inception**
- Bonds returned **-14.6%** in 2022
 - **-3.0% since inception**
- Combined Alpha + Beta returned **1.1% since inception**
 - **benchmark: -2.7%**



Manager Performance Summary

Fund Name	2022	2 Year	Since Investment (annualized)	Investment Date
Dorsal Capital Partners L.P.	-0.86%	1.57%	4.28%	May-20
Elliott Associates, LP	5.92%	10.37%	10.79%	Dec-19
Garda Fixed Income Relative Value Opportunity Fund	13.44%	7.64%	9.21%	Jun-20
Glazer Enhanced Fund, LP	3.61%	7.19%	20.33%	May-20
Millennium USA LP	12.48%	13.00%	16.02%	Sep-20
Pacific Alliance Asia Opportunity Feeder Fund IV L.P.	-3.72%	-1.27%	1.52%	May-20
Pharo Gaia Fund Ltd	-19.00%	-14.87%	-7.12%	May-20
Systematica Alternative Markets Master Fund LP	15.94%	21.94%	17.45%	May-20
Two Sigma Absolute Return Enhanced Fund, LP	12.43%	N/A	10.56%	Apr-21

Summary

- 2022 was a year where bonds sold off dramatically, hence a significantly test to portfolio construction.
- The portfolio performed well against this test
- Portfolio operates to clear and specific guideline
- We continue to work to enhance its robustness and performance

	2022	2Y	Since Inception (annualized)
Alpha Engine	4.8%	6.6%	4.3%
Bonds Overlay	-14.6%	-8.7%	-3.0%
Bonds + Alpha	-10.3%	-2.6%	1.1%
Barclays US Agg. TR UH	-13.0%	-7.5%	-2.7%
Bonds + Alpha Excess Return	2.7%	4.9%	3.8%



Appendix

Portable Alpha Timeline

The Portable Alpha Portfolio has been built out over the past few years

Phase I

- 7 managers added April-June 2020
- 1 existing manager maintained (Elliott)
- 3 managers removed (Anchorage, AQR, Napier Park)

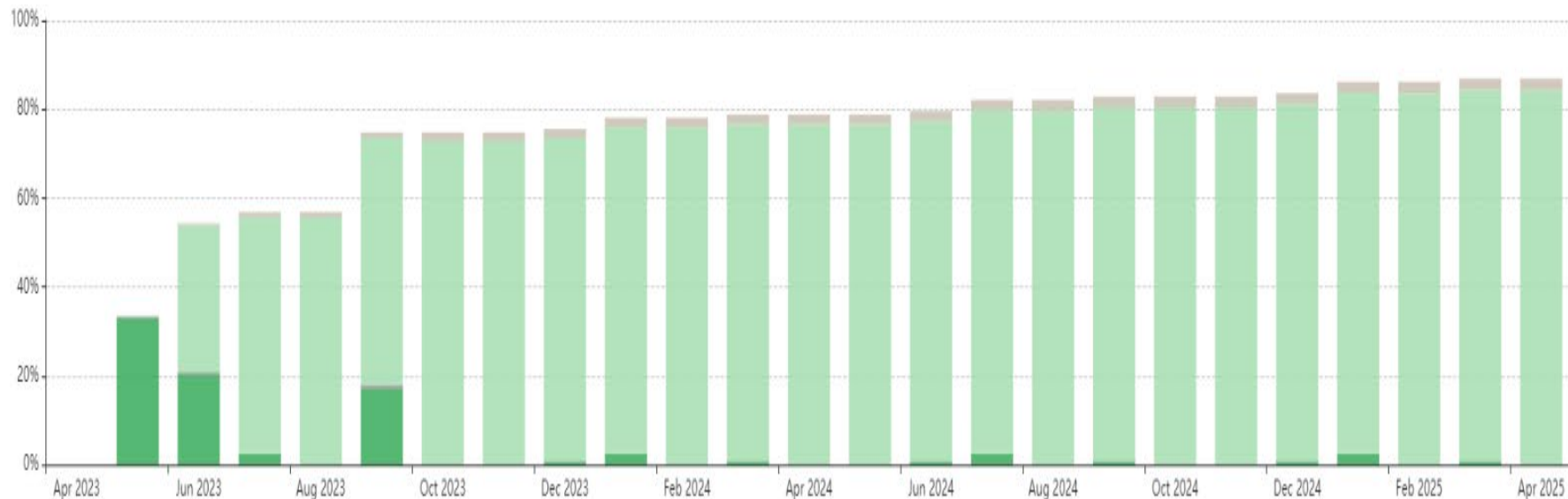
Phase II

- 2 managers added Dec 2020 and Apr 2021
- Additional subscriptions to existing managers in April 2021 and July 2021
- Capital calls from Millennium and Elliott

Looking Forward

- Focus on ongoing monitoring and management
- Rebalancing trades planned to bring portfolio in line with risk targets
- Enhance portfolio diversification with an allocation to a Direction Macro Manager and contemplate an additional allocation to a Multi-Strategy Manager

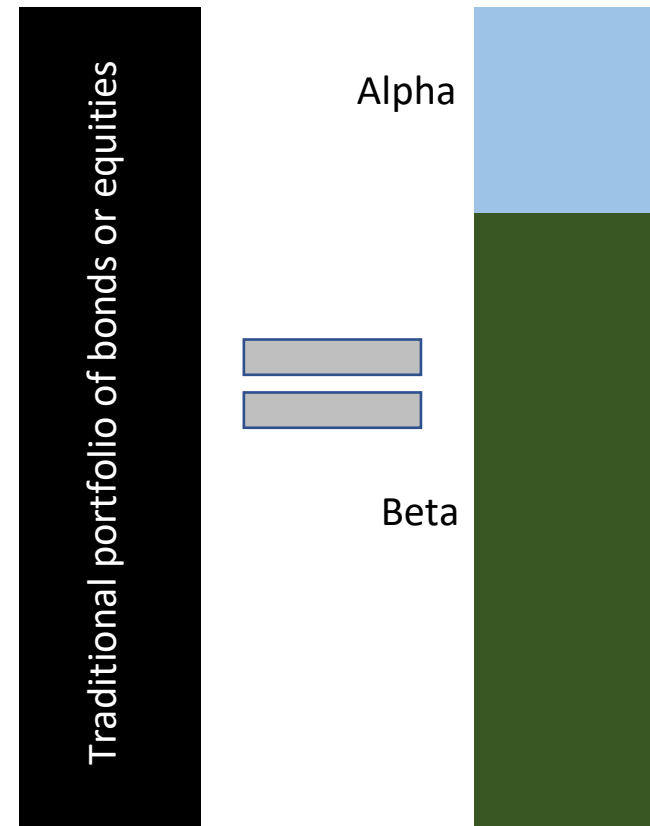
Liquidity Breakdown



Date	July 1, 2023	Oct 1, 2023	April 1, 2024	April 1, 2025
Percentage of portfolio that can be liquidated between April 2023 and April 2025	53%	73%	77%	84%

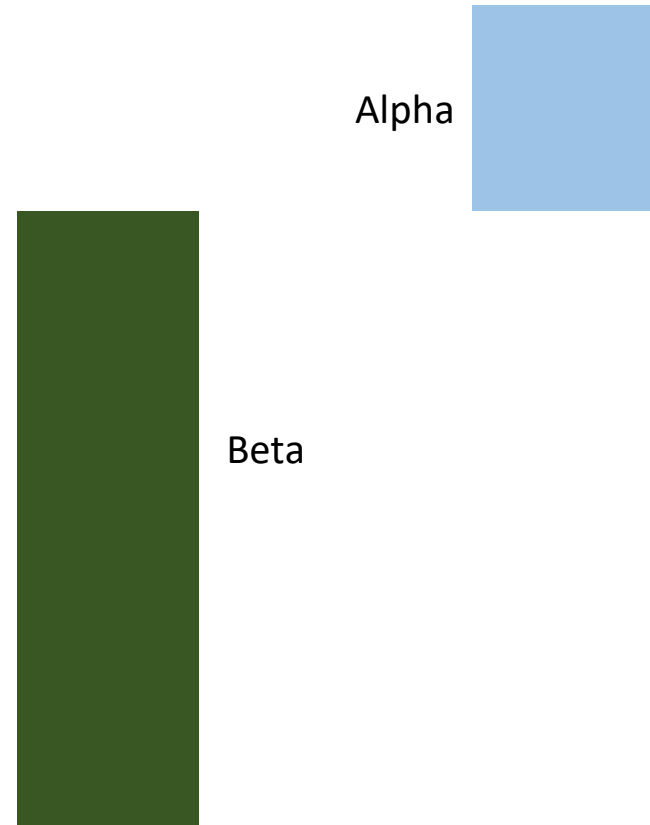
Understanding Portable Alpha

- Alpha and beta are “bundled” when accessing most investment products
 - e.g. an active bond manager will deliver a beta to a benchmark plus alpha
- Alpha is often constrained by long only constraint
- Where the beta can be accessed independently and cheaply you can unbundle alpha from beta



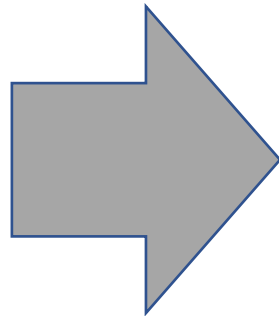
Unbundling Alpha and Beta

- Beta is cheap
 - US Global Aggregates benchmark costs 5bp
 - S&P500 costs 4bp
- Accessing alpha is harder
 - Skill is scarce
 - Cost of search
 - Capacity is limited
- Traditional portfolio managers can usually only access alpha within their asset class
- Unbundling alpha also untethers it from the underlying asset

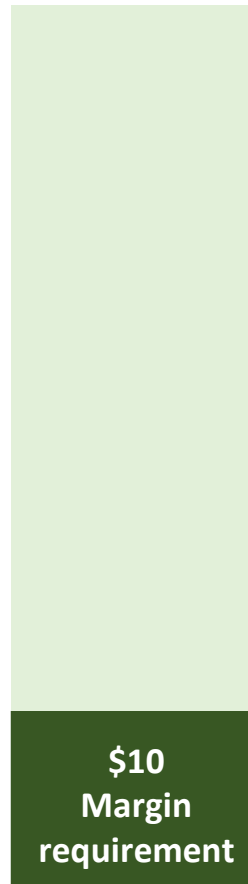


Mechanics* of Separating Alpha from Beta - I

Physical exposure



Exposure to bonds through futures or swap



\$100 economic exposure

Synthetic exposure plus cash

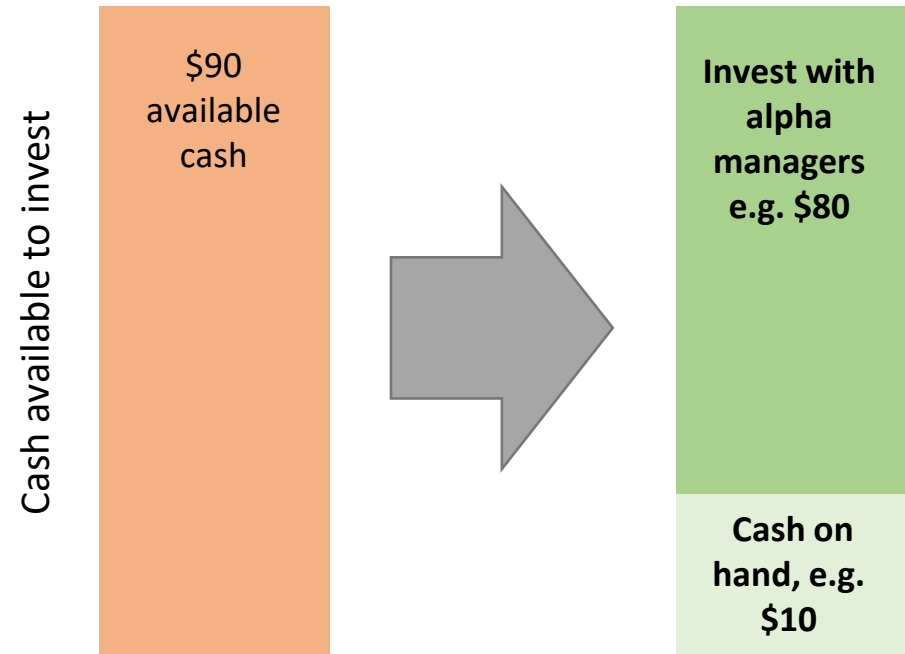
Cash available to invest



* Note this is a stylized example

Mechanics* of Separating Alpha from Beta - II

- Instead of \$100 invested with a traditional bond or equity manager:
 - Beta exposure is achieved synthetically which requires \$10 of margin
 - Remaining \$90 is split between alpha managers and cash on hand



* Note this is a stylized example

Investment Guidelines for New Mexico Alpha Engine portfolio

Checklist

Metric	Target Range	February 2023 Status
Portfolio Risk/Return		
Target Return for Bonds+ program	Barclays US Agg + 3.8% (over 5 years)	Since Inception (Dec 2019) Bonds+ Alpha: 1.4% Barclays US Agg + 3.8%: 1.01%
Benchmark for Alpha Engine	1-month LIBOR + 30bps	Since Inception (Dec 2019) Alpha: 4.5% Benchmark: 1.37%
Absolute Risk for Alpha Engine	Range 3%-6%, Target 4.5%, (over 5 years)	Vol Since Inception (Dec 2019): 8.7% Expected Annualized Vol: 2.0
Beta to Barclays US Agg TR (Realized and Expected)	< 0.3	Realized Beta past 12 months: -0.14 Expected Beta: 0.02
Beta to Equity (Realized and Expected)	< 0.3	Realized Beta past 12 months: -0.04 Expected Beta: 0.21
Idiosyncratic Risk (as % of Total Expected Risk)	> 50%	Idiosyncratic risk: 3.77% Idiosyncratic risk % of total risk: 83%
Portfolio Liquidity		
All capital that can be liquidated without a fee		n-months after the start of 2Q2023:
Liquidity:		
Within 3-months	30%	3 (April 1, 2023- July 1, 2023): 53%
Within 6-months	40%	6 (April 1, 2023- Oct 1, 2023): 73%
Within 12-months	50%	12 (April 1, 2023- April 1, 2024): 77%
Within 24-months	75%	24 (April 1, 2023- April 1, 2025): 84%
Fund Level		
Investor Profit Retention	At least 60%	
Manager Size	< 15% of portfolio	
Manager Risk Contribution	< 20% of expected risk Rebalance if breached for more than 6 months	Glazer: 37.22%
Risk Factor Exposure	Avoid concentrated exposure to single factor	APP Equities Trend: 38.24% decomposed risk. 18.76% weight. APP Credit Beta: 24.66% decomposed risk. 9.02% weight.
Strategy Exposure:		
Relative Value	Range 20-45%, Target 30%	RV: 34.5%
Event Driven	Range 10-30%, Target 20%	ED: 26%
Equity Long/Short	Range 10-30%, Target 20%	E L/S: 11.9%
Directional	Range 20-45%, Target 30%	Directional: 17.3%
Other	Range 0-15%, Target 0%	Long Biased: 10.3%

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PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

1/1/2023

2023 Investment Committee Work Plan

2023 Investment Committee Work Plan

All Committee Meetings will occur on Committee Day or before PERA Board Meetings, unless otherwise noted.

All items in this work plan are subject to change at the direction of the Investment Committee.

April 2023

- Recurring Quarterly Informational Items (as of Q4 CY22)
 - Performance & Risk Review
 - Cash & Rebalancing Activity Update
 - Manager Selection Activity Review
 - Securities Lending Review
- Rotating Bi-Annual Informational Items (as of Q4 CY22)
 - Portable Alpha Review
- Annual Action Items
 - Annual Workplan Adoption
- Educational Items
 - Manager Education Presentation – Structured Credit
 - Benchmark Overview

June 2023

- Recurring Quarterly Informational Items (as of Q1 CY23)
 - Performance & Risk Review
 - Cash & Rebalancing Activity Update
 - Manager Selection Activity Review
 - Securities Lending Review
- Rotating Bi-Annual Informational Items (as of Q4 CY23)
 - Illiquid Asset Class Review
- Annual Action Items
 - Annual Active Risk & Active Return Target
- Educational Items
 - Educational Topic TBD
 - Manager – Education presentation TBD

Summer Board Retreat - July 2023

- Investment Planning
 - Strategic: Total Fund Targeted Risk
 - Strategic: Total Fund Strategic Asset Allocation

- Strategic: Total Fund Liquidity Review
- Strategic: Benchmarking Review
- Educational Items
 - ⊖ Educational Topic TBD
- Annual Board Action Items (if necessary)
 - ⊖ ~~Adoption of SAA changes~~
 - ⊖ ~~Adoption of Benchmark Changes~~
 - ⊖ ~~Adoption of Liquidity Guideline Changes~~

October 2023

- Recurring Quarterly Informational Items (as of Q2 CY23)
 - Performance & Risk Review
 - Cash & Rebalancing Activity Update
 - Manager Selection Activity Review
 - Securities Lending Review
- Rotating Bi-Annual Informational Items (as of Q2 CY23)
 - Portable Alpha Review
- Annual Action Items
 - None
- Educational Items
 - Fiscal year end universe review
 - Manager- Education Presentation TBD

December 2023

- Recurring Quarterly Informational Items (as of Q3 CY23)
 - Performance & Risk Review
 - Cash & Rebalancing Activity Update
 - Manager Selection Activity Review
 - Securities Lending Review
- Rotating Bi-Annual Informational Items (as of Q2 CY23)
 - Illiquid Asset Class Review
- Annual Action Items
 - Annual Investment Committee Charter Review
 - Annual Investment Policy Review
- Educational Items
 - Fiscal year end fee review
 - Manager Education Presentation - TBD

- IC Chair
 - Continuation memo



PERA

General Investment Consultant Recommendation:

Michael Shackelford, Chief Investment Officer

LeAnne Larrañaga-Ruffy, Deputy CIO

April 11, 2023

Recommendation

Issue an RFI to review respondents from the 2020 RFP due to departure of lead consultant at Wilshire:

Request updates from RFP respondents, due to award of contract was less than 3 years ago (July 1, 2020)

Respondents to inquire:

- Wilshire
- NEPC
- Verus
- Callan

Request from Respondents

- Request respondents provide analysis on the following items and reactions to New Mexico PERA's strategic investment direction:
 - Provide forward investment environment outlook and forecasted asset returns over the next 3 years, 5 years, and 10 years as of December 31, 2022.
 - Provide firm's updated risk and return assumptions on PERA's portfolio and for active return/risk as described in PERA's framework for the next 10 years as of December 31, 2022.
 - Given investment environment outlook, PERA's funding status challenge, and PERA's 7.25% actuarial return assumption, propose a prudent enhancement to PERA's investment strategy.
 - Provide an overview of firm's view and framework for allocating and assessing long-only liquid active risk.
 - Provide competitive fee bid and consultants to be assigned to PERA's account.

Background

Reasons for Review

Wilshire Update

- On March 21st Wilshire notified PERA of Rose Dean's departure effective March 30
- Review of Organizational Chart showed many departures since 2021
- Provides opportunity to review Wilshire's capabilities and competitiveness of fees

RFI Focus for all Respondents

- Total Fund Policy and Asset Allocation Review
- Liquid Investment Manager Search/Selection
- Performance Reporting and Monitoring
- Consultant Relations
- Competitive Fee

Request for Information Process

RFI Evaluation Committee

PERA Board Members

- Selection by Board Chair

PERA Staff Members

- Selection by Board Chair
- Request Executive Director, CIO and DCIO

RFI Evaluation Timeline

Board Approval of RFI
April 27, 2023

Issuance of RFI
May, 2023

Submission Deadline:
4 Respondents
TBD

Evaluation Committee Meeting:
Select Respondents for Semi-
Finalist Consideration
TBD

Semi-Finalist Interviews:
TBD

Finalist Onsite Interview:
TBD

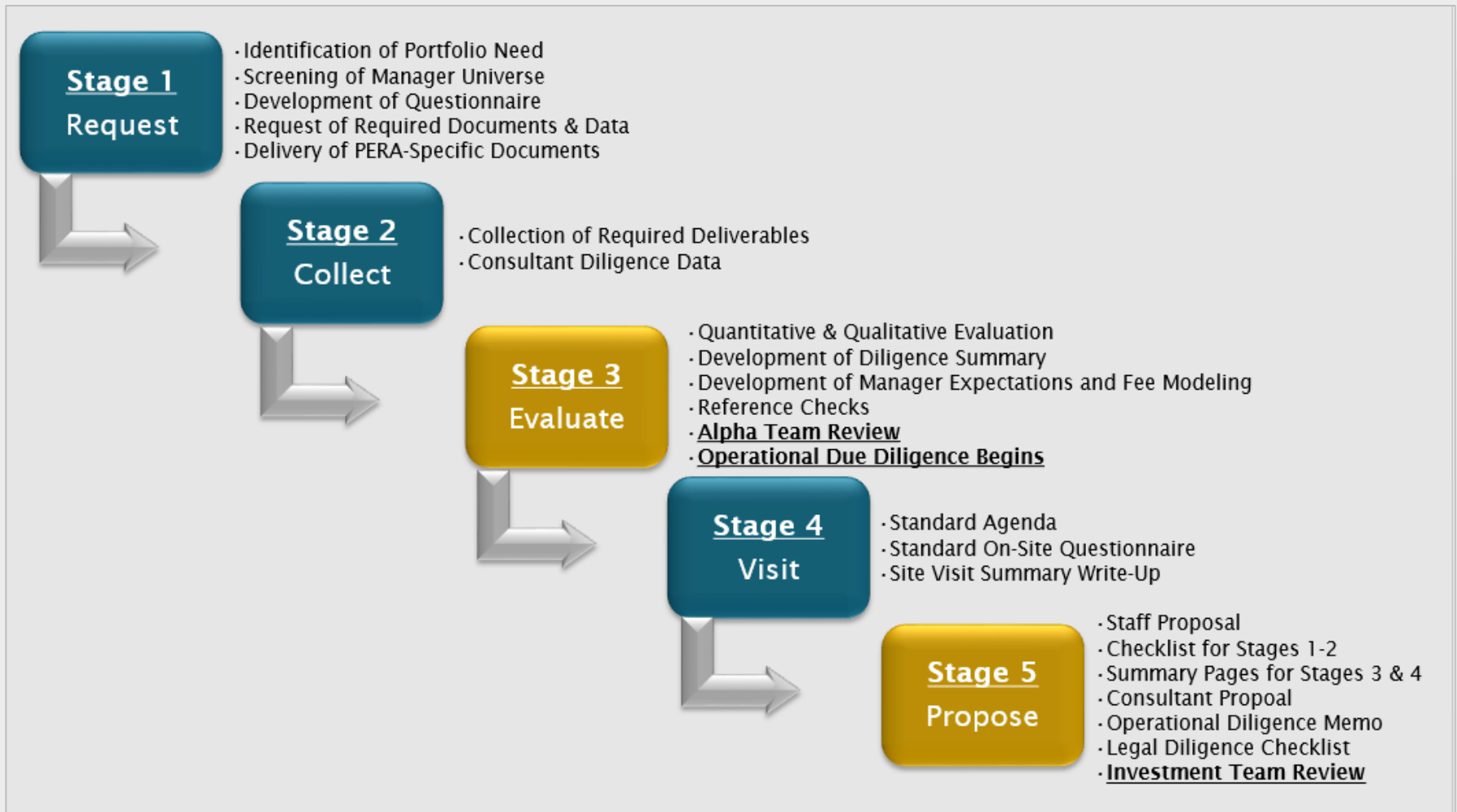


PERA

Manager Selection Activity Report

April 11, 2023

Overview: Manager Selection Process



Manager Selection Pipeline

Illiquid	Allocation	Commitment	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<u>Middle Market Lending</u> Summary: Credit Oriented Fixed Income (New)	Credit	-	Complete	In Process			
<u>Opportunistic Credit - Evergreen</u> Summary: Credit Oriented Fixed Income (New)	Credit	-	Complete	In Process			
<u>Asset Focused Evergreen Income Fund</u> Summary: Credit Oriented Fixed Income (New)	Credit	-	Complete	In Process			
<u>Middle Market European Buyout</u> Summary: Private Equity (Follow on)	Global Equity	-	Complete	In Process			
<u>Infrastructure - Evergreen</u> Summary: Real Assets (New)	Real Assets	-	Complete	In Process			
<u>Large Buyout</u> Summary: Private Equity (Follow on)	Global Equity	-	Complete	Complete	Complete	Complete	In Process
<u>Middle Market Buyout</u> Summary: Private Equity (Follow on)	Global Equity	-	Completed	Completed	Completed	Completed	In Process
<u>Hellman & Friedman Capital Partners XI, L.P.</u> Summary: Private Equity(Follow on)	Global Equity	\$75m	Completed	Completed	Completed	Completed	Completed

Total Fund	Allocation	Commitment	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<u>Custody Bank RFP</u> Summary: Issuance due to contract expiration	Total Fund	N/A	Completed	Completed	In Process		

Bonds Plus Alpha	Allocation	Commitment	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<u>Multi-Strat Hedge Fund</u> Summary: Portable Alpha (New Mandate)	Risk Mitigation	-	In process				

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.

Slide 3



Portfolio Fit and Process Review Team

Opportunities Reviewed	Date	Members	IC Observer	Agreement
<u>Blackrock Mandate Change</u> Summary: Change from Active to Passive	December 21, 2022	Michael Shackelford; Greg Trujillo LeAnne Larrañaga-Ruffy	Claudia Armijo	Yes
<u>Prudential termination</u> Summary: Change from 2 managers to 1	December 21, 2022	Michael Shackelford; Greg Trujillo; LeAnne Larrañaga-Ruffy	Claudia Armijo	Yes
<u>Custody Bank RFP issuance</u> Summary: Issued due to contract expiration	January 10, 2023	Michael Shackelford; Greg Trujillo; LeAnne Larrañaga-Ruffy	*	Yes
<u>Hellman & Friedman Capital Partners XI</u> Summary: Private Equity (Follow on)	January 31, 2023	Michael Shackelford; Greg Trujillo; LeAnne Larrañaga-Ruffy	**	Yes

*Francis Page was invited but did not attend.

** Paula Fisher was invited but did not attend.

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.



PERA

**Risk Reduction and Mitigation
Domestic Core Bond Passive Mandate**

December 14, 2022

Proposal:

Passive US Aggregate Bond Index

Staff proposes transitioning US Agg Bond Index strategies from active management to passive management with the following actions:

- (1) Termination of Prudential US Core mandate and manager with 30-day notice
- (2) Termination of Blackrock US Core active mandate (not manager), negotiate new guidelines and fee agreement within existing Investment Management Agreement (IMA)
- (3) Move combined assets, approximately \$1.8 billion, into Blackrock US Aggregate Bond Index separately managed account (SMA) by end of January.

Proposal:

Blackrock Separately Managed Account (SMA)

Staff proposes transitioning US Agg Bond Index active strategies into a passive separately managed account with Blackrock because they have the following advantages:

- (1) Longer track record
- (2) More assets under management
- (3) Superior tracking error management
- (4) Avoids excessive manager concentration risk
- (5) Competitive fee

The SMA structure also gives the advantage of holding custody of assets.

Implementation:

Passive US Aggregate Bond Index

(1) Transfer out the following actively managed accounts:

Manager	Balance as of Dec 9, 2022
Blackrock US Core	\$1,288,372,363
Prudential US Core	\$550,225,235

(2) Receive funds in-kind to new passive separately managed account:

Manager	Balance
Blackrock US Agg Index SMA	\$1,838,597,598



Custody Bank RFP 2023

Presented by Isaac Olaoye

01/09/2023

Background Information

- Custody Bank RFP issued in 2014
- Four Responders (Northern Trust, BNYM, State Street and JP Morgan)
- BNYM selected
- Contract effective July 1, 2015
- Contract expires June 30, 2023

Scope of Work - Services

- Accounting & Auditing (Market valuation, pricing system, Capital changes etc)
- Settlement, Securities Processing & Custody (Settling & Safekeeping, Execution of Forex)
- Income Settlement & Income Crediting
- Investment Manager Liason (Communicate and Inform)
- Cash Management (Daily sweep, Transfers, Wires and Cash projections)
- Foreign Trade & Foreign Exchange processing (Best execution and monthly report.)

Scope of Work - Services

- Sub-Custodian network management
- Alternative Investment Processing
- Report Rendition
- Corporate Actions, Class Actions & Proxy Votings (Advance notice, Claim filing & Reports)
- Performance Measurements (Monthly audited Reports, Daily performance reports and Composite Portfolios etc)
- Compliance Monitoring & Reporting (Investment Compliance reporting, Creation of initial tests, daily, weekly & monthly monitoring)

Scope of Work - Services

- Risk Analytics – (Total risk, active risk, value at Risk, Support scenario analysis and stress testing)
- Securities Lending (Indemnify NM PERA of possible losses, accept & manage existing portfolio, provide customized reporting etc)

Scope of Work – System & Technology

- Online real time access to data
- Access Management & Accounting Information System
- State of the Art backup system
- Protection against unauthorized access
- Training
- Record Retention
- Technology updates

Scope of Work – Others

- Transition & Conversion
- Assist with Annual Audits
- Personnel Meetings

MINIMUM QUALIFICATIONS

- Unimpaired Capital & surplus as a Tier 1 Bank as defined by Federal regulations
- Banker's bond of \$75m and additional \$50m for Electronic Computer crime losses
- Must be ready to fully indemnify the State of all loss, damage, costs resulting from omissions, errors and embezzlements
- Must agree to provide minimum services as contained in the scope of work
- Must be ready to serve as a fiduciary
- No conflict of Interest
- As of July 2022, must have been in business for 10 years serving domestic and global custody
- Must have at least 5 institutional tax-exempt clients, each having an asset base in excess of \$10 billion

MINIMUM QUALIFICATIONS

- Must be a US domiciled trust Company and a member of the Federal reserve.
- Must comply with the generally accepted accounting principles
- As of June 2022, the offeror must be providing global custody services with international assets market value of at least \$500 billion
- The offeror must have sub custodian operations in all current & Future countries in Morgan Stanley Capital International all country world index
- Must be able to backload PERS's historic performance data
- The client services manager must have at least 5 years of asset servicing experience with at least 3 years servicing clients with minimum \$10 billion asset value
- Client service manager must have experience with at least 3 prior major conversions of accounts, with market values in excess of \$5 billion.
- Offeror must agree to incorporate the warranties proposed by NM PERA into their contract
- The offeror must be ready to keep the contract open for 180 days.
- The must agree to submit a detailed financial proposal for all custody and securities lending services.

TIMELINES

<u>Action</u>	<u>Responsibility</u>	<u>Date</u>
1. Release of RFP	PERA	01-23-2023
2. Return Acknowledgment of Compliance with Minimum Qualifications (Appendix A) Only the RFP responses of the Offerors meeting the MQs will be considered. Offerors must address their Acknowledgement to PERA-RFP-PA@state.nm.us & newmexicopera@wilshire.com	Offerors	02-03-2023 5pm MT
3. Deadline for Submission of Written Questions Written questions should be submitted by E-MAIL ONLY to PERA-RFP-PA@state.nm.us & newmexicopera@wilshire.com . Please clearly label your questions by referring to the appropriate section (and/or paragraph) and page of the RFP. PERA is not obligated to answer questions of the firms not meeting the MQs and questions received after the stated deadline.	Offerors	02-03-2023 5pm MT
4. Response to Written Questions In order to obtain copies of PERA's answers to written questions, Offerors shall submit the Acknowledgment of Minimum Qualifications Compliance (Appendix "A") by February 3, 2023. No written response to the questions shall be construed as a modification of the RFP unless PERA amends the RFP in accordance with New Mexico PERA's Investment-Related Services Procurement Policy.	PERA	02-10-2023 5 pm MT
5. Deadline for Submission of Proposals Please refer to the instructions in Part I, above. Include Appendix B, Signature Page with full proposal.	Offerors	02-17-2023 5 pm MT
6. Evaluation of Proposals of Oral presentations of Finalists Short-listed Offerors may be requested to make a formal presentation to the Evaluation Committee, as is more fully described in Part IV of this RFP.	Evaluation Committee	To be set
7. On-site due diligence PERA staff, or other PERA representatives may make on-site due diligence visits to the offices of short-listed Offerors.	PERA	To be set
8. Contract Award(s) PERA intends to make the contract award on or before May 1, 2023, subject to negotiation of a final contract on terms acceptable to PERA/	Evaluation Committee	To be set
9. New contract(s) proposed effective date		July 1, 2023





Private Equity Investment Proposal: Hellman & Friedman XI, L.P.

January 18, 2023

Kate Brassington, Investment Associate

Proposal

The Team proposes committing up to \$75 million to Hellman & Friedman LP's ("H&F") next fund, Hellman & Friedman Capital Partners XI, L.P. ("HFCP XI"), an illiquid private equity fund with a buyout strategy that focuses on building a concentrated portfolio of high quality and growing companies in five sectors (Technology, Healthcare, Consumer Services & Retail, Financial Services, Information Content & Business Services).

H&F was founded in 1984 and raised its first institutional partnership in 1987. H&F focuses on a single private equity strategy, which helps to ensure alignment, discipline, and accountability within the investment team. Additionally, H&F has a significant GP commitment to further align interests and ensure appropriate "skin in the game." H&F has a relatively concentrated portfolio of 9-15 investments built out of "best ideas." HFCP XI will pursue control-oriented investments in large and mega cap North American and European businesses.

The performance of H&F's funds, both absolute and relative (Direct Alpha), is above PERA's PE expectations. Based on historical analysis and internal expectations, PERA expects to achieve a 20% gross IRR, 2.5x MOIC, >2% Direct Alpha against ACWI IMI (net), with the goal of a >60% capture ratio of that alpha.

This will be a follow-on investment for PERA. There are currently commitments in HFCP VI (2006, \$21.75 million), HFCP VII (2011, \$20 million), and HFCP X (2021, \$50 million). Additionally, NM PERA has participated in five SPV vehicles (Spock, Arrow, Samson Brunello, Samson Hockey, and Samson Shield). The Direct Alpha for the current NM PERA funds (excluding SPVs) is 9.96 with a KS-PME of 1.44 as of 9/30/22.

This recommendation is based on due diligence material and data obtained by PERA investment division and consultant directly from the fund and focuses on the strategy of the recommended fund as it fits within the current portfolio. PERA defers to the consultant's primary diligence on matters relating to the quality and sufficiency of the fund's back office, compliance, and other operational matters.

Reasons to Invest

Asset Allocation

- Per the SAA, PE should constitute 17% of the total portfolio. This recommendation would increase the PE committed allocation, bringing the total portfolio closer to approved SAA targets. H&F is a core partner for NM PERA, and an investment in HFCEP XI will provide vintage year diversification and differentiated exposure to the large cap buyout space to the PE portfolio.

Alpha Generation & Capital Preservation/Downside Protection

- H&F has consistently produced risk-adjusted returns for investors across market cycles. For Funds VI, VII, and X, respectively, the net excess return over MSCI ACWI IMI approximates 871 bps, 1,181 bps, and 1,504 bp as of 9/30/22.
- H&F has a low loss ratio of approximately 2.2% since inception for the fully invested funds, largely attributable to the firm's focus on investing in high quality businesses in industries in which H&F has extensive experience.

Firm Pedigree

- H&F is a highly seasoned PE investor. The firm has undergone four leadership transitions since inception and experienced many economic cycles.
- H&F has an average tenure of 16 years for the H&F's 22 partners and an average tenure of 27 years for the Investment Committee.
- H&F has a clearly defined investment strategy. H&F generally seeks to invest in high quality and growing businesses. H&F evaluates quality across three distinct categories: business quality, quality of growth, and company quality.

Edge

- **Focused Approach:** H&F has a concentrated portfolio in each fund of 9-15 high conviction "best ideas." The concentrated portfolio allows the investment team to devote significant time, energy, and resources to each investment.
- **Singular PE Strategy:** Increasingly, PE managers continue to add strategies, while H&F has remained focused on private equity-related investments in the developed markets, primarily North America and Europe.
- **LP Alignment:** H&F has been among the five largest investors in HFCEP IV-X and accounted for over 5% of capital in each of HFCEP VIII, IX and X.

	Actuals					Projected							Month's Activity			
	July	August	September	October	November	December	January	February	March	April	May	June				
Month Beginning Cash, BNYM	\$45	\$22	\$24	\$39	\$17	\$121	\$126	\$131	\$136	\$141	\$146	\$151	Liquidity: Credit PE, RA, RE, Capital Calls			
Uses of Cash																
Asset Class Purchases																
Liquid Asset Purchases	22	13	36	67	365											
Illiquid Asset Capital Calls	40	57	74	86	66	80	80	80	80	80	80	80				
Alt./Hedged Asset Purchases																
Total Benefit Payments	136	117	117	116	118	110	110	110	110	110	110	110				
Benefit Payments (BNYM)	63	36	61	73	46	60	60	60	60	60	60	60				
Benefit Payments (STO)	73	81	56	43	72	50	50	50	50	50	50	50				
Refunds	5	5	5	5	4	5	5	5	5	5	5	5				
Operational Expense	1	1	1	2	1	5	5	5	5	5	5	5				
Other		0	2	0	0											
Sources of Cash																
Asset Class Sales																
Liquid Asset Redemptions	15	38	143	147	449	60	60	60	60	60	60	60				
Illiquid Asset Distributions	74	51	45	58	132	80	80	80	80	80	80	80				
Alt./Hedged Asset Redemptions	13	18		0												
Employee / Employer Contributions	78	68	65	63	66	60	60	60	60	60	60	60				
Other	0	1	0	0	1	5	5	5	5	5	5	5				
Month Ending Cash, BNYM	22	24	39	17	121	126	131	136	141	146	151	156				
Corporate Action/Suspense	3	3	2	2	5	2	2	2	2	2	2	2				
Month Ending Cash, STO	26	7	9	22	10	30	30	30	30	30	30	30				
Month-End Capital Allocations																
Global Equity	5,981	5,748	5,372	5,566	5,861	5,854	6,266	6,266	6,266	6,266	6,266	6,266				
Risk Reduction & Mitigation	3,300	3,207	3,126	3,077	3,287	3,215	2,803	2,803	2,803	2,803	2,803	2,803				
Credit Oriented Fixed Income	2,475	2,444	2,287	2,244	2,275	2,473	3,133	3,133	3,133	3,133	3,133	3,133				
Real Assets	3,694	3,711	3,635	3,666	3,580	3,298	2,968	2,968	2,968	2,968	2,968	2,968				
Multi-Risk Allocation	1,586	1,467	1,307	1,363	1,438	1,649	1,319	1,319	1,319	1,319	1,319	1,319				
STO Cash	26	7	9	22	10	30	30	30	30	30	30	30				
Total (net of cash flows)	\$17,062	\$16,584	\$15,736	\$15,938	\$16,452	\$16,520	\$16,520	\$16,520	\$16,520	\$16,520	\$16,520	\$16,520				
Month-End Percentage Allocations																
Fund Balance (less STO)	\$17,036	\$16,577	\$15,727	\$15,916	\$16,441	\$16,490	\$16,490	\$16,490	\$16,490	\$16,490	\$16,490	\$16,490				
Global Equity	35.1%	34.7%	34.2%	35.0%	35.7%	35.5%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%				
Risk Reduction & Mitigation	19.4%	19.3%	19.9%	19.3%	20.0%	19.5%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%				
Credit Oriented Fixed Income	14.5%	14.8%	14.5%	14.1%	13.8%	15.0%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%				
Real Assets	21.7%	22.4%	23.1%	23.0%	21.8%	20.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%				
Multi-Risk Allocation	9.3%	8.9%	8.3%	8.6%	8.8%	10.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%				
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%				
Nov. Change in Value		Current Month's Weights														
		Actual	Target	Var.	Range											
295		35.6%	35.5%	0.1%	+/-5%											
210		20														

	Actuals					Projected							Month's Activity				
	July	August	September	October	November	December	January	February	March	April	May	June					
Month Beginning Cash, BNYM	\$45	\$22	\$24	\$39	\$17	\$121	\$79	\$84	\$89	\$94	\$99	\$104	YE Rebalance / SAA Update - Credit, GE PE, RA, RE, Credit Capital Calls				
Uses of Cash																	
Asset Class Purchases																	
Liquid Asset Purchases	22	13	36	67	365	1,310											
Illiquid Asset Capital Calls	40	57	74	86	66	77	80	80	80	80	80	80					
Alt./Hedged Asset Purchases																	
Total Benefit Payments	136	117	117	116	118	118	110	110	110	110	110	110					
Benefit Payments (BNYM)	63	36	61	73	46	53	60	60	60	60	60	60					
Benefit Payments (STO)	73	81	56	43	72	65	50	50	50	50	50	50					
Refunds	5	5	5	5	4	4	5	5	5	5	5	5					
Operational Expense	1	1	1	2	1	3	5	5	5	5	5	5					
Other		0	2	0	0	0											
Sources of Cash																	
Asset Class Sales																	
Liquid Asset Redemptions	15	38	143	147	449	1,239	60	60	60	60	60	60	Credit - YE Rebalance / SAA Update - RA, RRM				
Illiquid Asset Distributions	74	51	45	58	132	48	80	80	80	80	80	80	PE, RA, RE, Credit Distributions				
Alt./Hedged Asset Redemptions	13	18		0													
Employee / Employer Contributions	78	68	65	63	66	86	60	60	60	60	60	60					
Other	0	1	0	0	1	1	5	5	5	5	5	5	Securities Lending / Class Action Proceeds				
Month Ending Cash, BNYM	22	24	39	17	121	79	84	89	94	99	104	109					
Corporate Action/Suspense	3	3	2	2	5	5	2	2	2	2	2	2					
Month Ending Cash, STO	26	7	9	22	10	24	30	30	30	30	30	30					
Month-End Capital Allocations																	
Global Equity	5,981	5,748	5,372	5,566	5,861	6,069	6,148	6,148	6,148	6,148	6,148	6,148	Dec. Change in Value	Current Month's Weights			
Risk Reduction & Mitigation	3,300	3,207	3,126	3,077	3,287	2,761	2,750	2,750	2,750	2,750	2,750	2,750	208	Actual	Target	Var.	Range
Credit Oriented Fixed Income	2,475	2,444	2,287	2,244	2,275	3,062	3,074	3,074	3,074	3,074	3,074	3,074	(525)				
Real Assets	3,694	3,711	3,635	3,666	3,580	2,921	2,912	2,912	2,912	2,912	2,912	2,912	787				
Multi-Risk Allocation	1,586	1,467	1,307	1,363	1,438	1,371	1,294	1,294	1,294	1,294	1,294	1,294	(659)				
STO Cash	26	7	9	22	10	24	30	30	30	30	30	30	(67)				
Total (net of cash flows)	\$17,062	\$16,584	\$15,736	\$15,938	\$16,452	\$16,209	\$16,209	\$16,209	\$16,209	\$16,209	\$16,209	\$16,209	14				
													(243)	100.0%	100.0%		
Month-End Percentage Allocations																	
Fund Balance (less STO)	\$17,036	\$16,577	\$15,727	\$15,916	\$16,441	\$16,185	\$16,179	\$16,179	\$16,179	\$16,179	\$16,179	\$16,179	Tier	Liquidity Summary			
Global Equity	35.1%	34.7%	34.2%	35.0%	35.7%	37.5%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%		\$ (M) Allocation		% Allocation	
Risk Reduction & Mitigation	19.4%	19.3%	19.9%	19.3%	20.0%	18.9%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%	Tier 1 (1-5 days)	\$	2,329	14%	
Credit Oriented Fixed Income	14.5%	14.8%	14.5%	14.1%	13.8%	17.1%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	Tier 2 (5-90 days)	\$	6,516	40%	
Real Assets	21.7%	22.4%	23.1%	23.0%	21.8%	18.1%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	Tier 3 (90-365 days)	\$	1,076	7%	
Multi-Risk Allocation	9.3%	8.9%	8.3%	8.6%	8.8%	8.5%	8.0%	8.0%	8.0%	8.							

YTD Monthly History - Volume

For the month ending 12/31/2022



BNY MELLON

Securities Lending

Public Employees Retirement of New Mexico
LEI: HPFHU00Q28E4N0NFVK49 | USD | GSL203

ENDING BALANCES FOR THE MONTH

AVERAGE BALANCES FOR THE MONTH

PERFORMANCE

Month	Market Value Lendable Securities	Market Value Lendable on Loan	Percent of Portfolio on Loan	Monthly Gross Client Earnings	Market Value Lendable Securities	Market Value Securities on Loan	Percent of Portfolio on Loan	Return on Available Assets for Lending	Return on Loaned Assets
July	4,602,175,255.34	537,379,811.16	11.68%	136,010.88	4,505,754,258.85	550,795,301.19	12.22%	3.62 bp	29.63 bp
August	4,523,260,156.27	563,079,959.94	12.45%	158,159.58	4,659,196,671.13	567,868,151.80	12.19%	4.07 bp	33.42 bp
September	4,252,164,854.77	525,572,035.55	12.36%	144,904.16	4,413,012,557.64	560,679,779.16	12.71%	3.94 bp	31.01 bp
October	4,356,692,992.75	559,476,181.56	12.84%	173,048.92	4,285,609,812.45	559,665,759.04	13.06%	4.85 bp	37.10 bp
November	4,477,230,850.97	537,545,230.97	12.01%	164,640.04	4,452,975,516.39	555,061,963.98	12.46%	4.44 bp	35.59 bp
December	5,054,170,871.75	566,820,832.21	11.21%	180,080.63	4,576,609,892.95	535,139,462.65	11.69%	4.72 bp	40.38 bp
AVERAGE	4,544,282,496.98	548,312,341.90	12.07%	159,474.04	4,482,193,118.24	554,868,402.97	12.38%	4.27 bp	34.49 bp

Loan volumes are calculated using month end exchange rates. Earnings calculations use exchange rates that are based on final earnings reconciliation date.

Reporting values for Mortgage Backed Securities have been reflected as current face.

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