Agenda

Marin County Employees' Retirement Association (MCERA)
Retirement Board Strategic Workshop

One McInnis Parkway, First Floor
San Rafael, CA
October 15, 2024

This meeting will be held at the address listed above and, absent technological disruption, will be accessible via videoconference and conducted in accordance with Government Code section 54953 and 54954.2 through December 31, 2025.

Instructions for watching the meeting and/or providing public comment, as well as the links for access, are available on the How to Watch Meetings page of MCERA's website. Please visit https://www.mcera.org/retirementboard/agendas-minutes/watchmeetings for more information.

The Board of Retirement encourages a respectful presentation of public views to the Board. The Board, staff and public are expected to be polite and courteous, and refrain from questioning the character or motives of others. Please help create an atmosphere of respect during Board meetings.

Please note that the times certain provided for agenda items herein are estimates only, and that scheduled items may last longer, or shorter, than stated herein. Agendized topics will not commence earlier than as stated on the agenda; however, they may start later than is agendized.

Meeting Chair Daniel Vasquez

9:00 a.m.
Call to Order/Roll Call

CONSIDER ANY BOARD MEMBER REQUESTS TO TELECONFERENCE FOR "JUST CAUSE" OR "EMERGENCY," AS SET FORTH ON THIS AGENDA BELOW

Open Time for Public Expression
Open time for public expression, from three to five minutes per speaker, on items not on the Board Agenda. While members of the public are welcome to address the Board during this time on matters within the Board's jurisdiction, except as otherwise permitted by the Ralph M. Brown Act (Government Code Sections 54950 et seq.), no deliberation or action may be taken by the Board concerning a non-agenda item. Members of the Board may (1) briefly respond to statements made or questions posed by persons addressing the Board, (2) ask a question for clarification, or (3) provide a reference to staff for factual information.

9:00 a.m. – 10:00 a.m.
Public Real Assets – Market Structure and Investment Options
Jim Callahan, President
Callan LLC

10:00 a.m. – 11:00 a.m.
How U.S. Financial Market History Informs Future Markets & Investment Decisions
Mark J. Higgins, CFA, CFP®, Senior Vice President, Institutional Advisor
Index Fund Advisors, Inc.

11:00 a.m. – 12:00 p.m.
Risk of Passive Investment Concentration in Financial Market Structure & Performance
Michael Green, Managing Director, Chief Strategist and Portfolio Manager
Simplify Asset Management

12:00 p.m. – 1:15 p.m.
Lunch Break

1:15 p.m. – 2:15 p.m.
Fixed Income Manager Replacement Search Candidates (Action)
Jim Callahan, President
Callan LLC

2:15 p.m. – 3:15 p.m.
Modern Monetary Theory
Jay V. Kloepfer, Executive Vice President and Director of Capital Markets Research
Callan LLC

3:15 p.m. – 3:30 p.m.
Closing and Follow-up Items from Today's Agenda

Note on Process: Items designated for information are appropriate for Board action if the Board wishes to take action. Any agenda item from a properly noticed Committee meeting held prior to this Board meeting may be considered by the Board. Any agenda item set for a time certain may be considered by the Board before, or after, such time; provided, however, that the timing of any agenda item regarding a named MCERA member or beneficiary will not be considered earlier than the agendized time certain without prior agreement of such individual or their legal counsel, if represented.

Note on Voting: As provided by statute, the Alternate Safety Member votes in the absence of the Elected General or Safety Member, and in the absence of both the Retired and Alternate Retired Members. The Alternate Retired Member votes in the absence of the Elected Retired Member. If both Elected General Members, or the Safety Member and an Elected General Member, are absent, then the Elected Alternate Retired Member may vote in place of one absent Elected General Member.

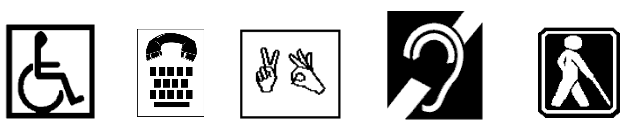
Note on Board Member requests to participate by teleconference under Government Code section 54953, subdiv. (f): At least a quorum of the Board must be present together physically at the meeting to invoke this provision. The provision is limited to "just cause" and "emergency" circumstances, as follows:

“Just cause” is only: (1) a childcare or caregiving need of a child, parent, grandparent, grandchild, sibling, spouse or domestic partner that requires them to participate remotely; (2) a contagious illness that prevents a member from attending in person; (3) a need related to a physical or mental disability, as defined; or (4) travel while on official business of MCERA or another state or local agency. A Board member invoking “just cause” must provide a general description of the circumstances relating to their need to appear remotely at a given meeting, and it may not be invoked by a Board member for more than two meetings in a calendar year.

“Emergency circumstances” is only: “a physical or family medical emergency that prevents a member from attending in person.” The Board member invoking this provision must provide a general description of the basis for the request, which shall not require the member to disclose personal medical information. Unlike with “just cause,” the Board must by majority vote affirm that an “emergency circumstance” situation exists.

As to both of the above circumstances, the Board member “shall publicly disclose at the meeting before any action is taken whether any other individuals 18 years of age or older are present in the room at the remote location with the member and the general nature of the member’s relationship with any such individuals.” Also, the Board member “shall participate through both audio and visual technology,” and thus be both audible and visible to those attending. Finally, no Board member may invoke these teleconference rules for more than three consecutive months or 20 percent of the regular meetings of the Board.

Note on teleconference disruption that interrupts the live stream: In the event of a technological or similar disruption, and provided no Board/committee members are attending by teleconference, the meeting will continue in person.



Agenda material is provided upon request. Requests may be submitted by email to MCERABoard@marincounty.gov, or by phone at (415) 473-6147.

MCERA is committed to assuring that its public meetings are accessible to persons with disabilities. If you are a person with a disability and require an accommodation to participate in a County program, service, or activity, requests may be made by calling (415) 473-4381 (Voice), Dial 711 for CA Relay, or by email at least five business days in advance of the event. We will do our best to fulfill requests received with less than five business days’ notice. Copies of documents are available in alternative formats upon request.

The agenda is available on the Internet at http://www.mcera.org

Callan

October 15, 2024

Public Real Assets Structure

Jim Callahan, CFA
President

David Zee, CFA
Fixed Income Global Manager Research

Real Assets Defined

What are they and how are they accessed?

Definition: Real assets are a material or tangible investment in which value is derived from the asset's existence or use.

- Generally include real estate, timberland, farmland, and infrastructure
- May also include other types of physical assets such as commodities or precious metals
- Exist in both the private and public market spheres
- Investment can be through both equity and debt
- Many similarities to private equity and private credit in terms of implementation considerations

Why Invest in Real Assets?

They offer several benefits, with some considerations

- Inflation protection
  - Ability to adjust lease and contract rates on a periodic basis in response to market dynamics
- Diversification
  - Historically has exhibited low correlation with other traditional asset classes
- Return profile
  - More stable, predictable cash flows from lease structures and contracted revenue
  - Can also be used for return enhancement and can exhibit absolute return characteristics
- Asset class considerations
  - Cyclical asset class
  - Illiquid structures
  - Monthly or quarterly pricing
  - Higher fees than other traditional asset classes
  - Lack of investable indices; benchmarking issues

Callan

Current Structure

Executive Summary

The case for a diversified real asset (DRA) allocation in the MCERA portfolio

- Provide diversification – relative to equities, fixed income, and the Consumer Price Index (CPI)
- Inflation hedging is a secondary objective
- Allocation to fixed income strategies, such as TIPS or floating rate bank loans, typically defines risk posture for a DRA fund;

MCERA implementation of public diversified real assets

- Complement to private real estate
- Current MCERA implementation includes traditional and simple structure comprised of 25% exposure to each of commodities, US REITs, TIPS and natural resource equity
- Combined active/passive implementation results in management fee of 41bps
- Strong performance to benchmark as well as Callan real asset peer group

Alternative DRA structures worth considering

- It was decided that commodities would be removed.
- MCERA has 8% allocated to private real estate. Do you need an additional 2% in public real estate investment trusts (REITs)?
- Should new components be added, such as global infrastructure and floating rate bank loans (leveraged loans)?
- Should the fixed income exposure within real assets be increased (lower return, lower risk) or decreased (higher return, higher risk)?

MCERA Real Assets Structure

MCERA has a 15% target allocation to Real Assets:

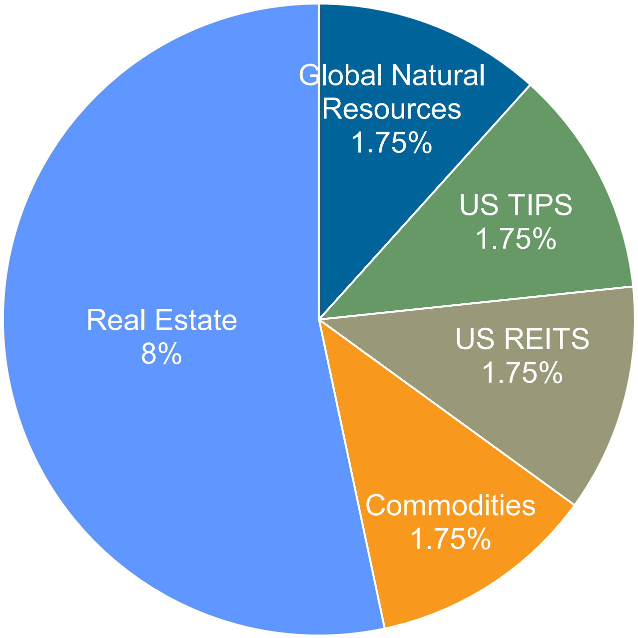
- 7% Public Real Assets
- 8% Private Core Real Estate

History

- In 2015, The Board elected to diversify its 15% target to real assets, which was exclusively in private real estate
- Liquidity and diversification benefits of public real assets was appealing
- Current public real assets targets were adopted in 2015

Considerations & Objectives

- Is the Board still committed to 8% real estate and 7% public real assets targets?
- If the 7% public real assets target is retained, is the current structure still appropriate?
  - It was decided at a prior meeting to remove the commodities exposure
- Discuss the merits and considerations of various real asset implementation structures



Treasury Inflation-Protected Securities (TIPS)

TIPS are a treasury security that is indexed to inflation in order to protect investors from the negative effects of inflation. Their par value rises with inflation as measured by CPI, while their interest rate remains fixed. They are considered low risk since they are backed by the US Government.

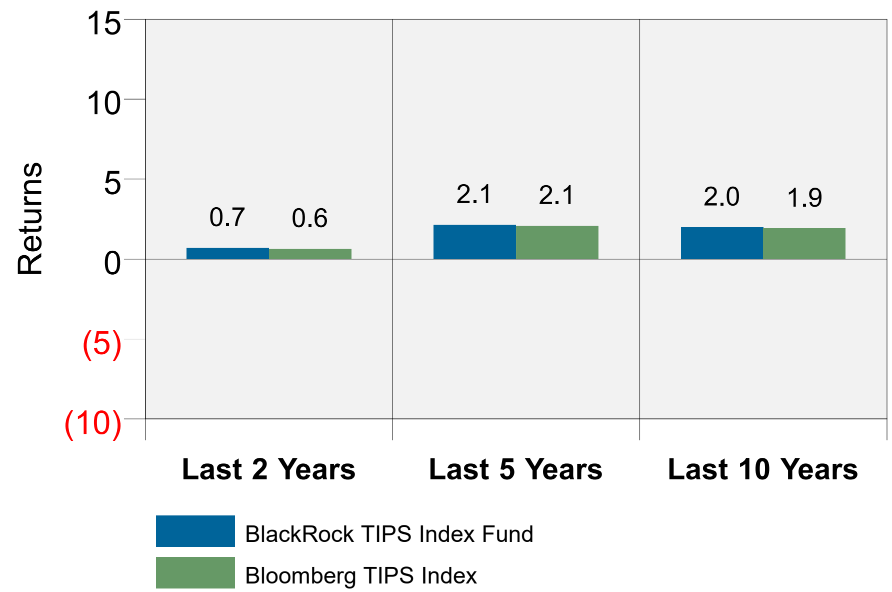
Features:

- Considered the risk-free real return available in the marketplace
- Respond positively to unexpected inflation
- Lower duration and standard deviation than a nominal Treasury with the same maturity

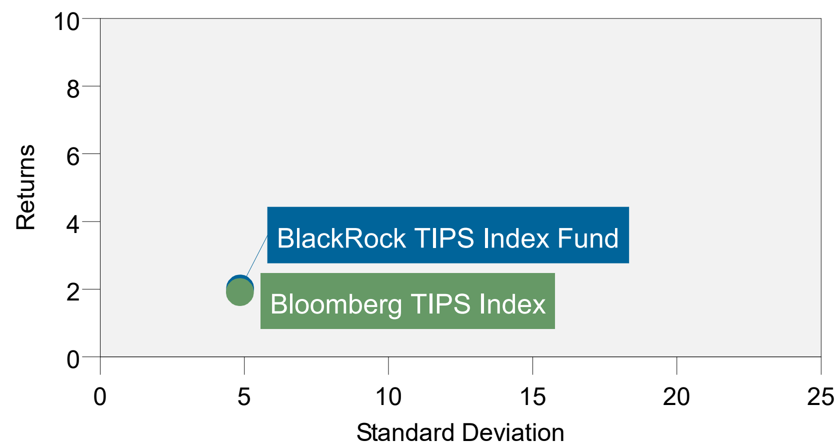
MCERA

- Invests in a passively managed strategy: BlackRock TIPS Index Fund
- The fund tracks the Bloomberg US TIPS Index
- Fees: 3 bps

Net of Fee Returns as of June 30, 2024



Risk/Reward Chart for 10 Years Ended June 30, 2024



Real Estate Investment Trusts (REITs)

REITs are publicly traded real estate securities that provide liquidity not found in private real estate. Invest in sectors such as: apartments, industrials, health care, self-storage, hotels, data centers, and telecom towers. Returns stem from dividend income and capital appreciation.

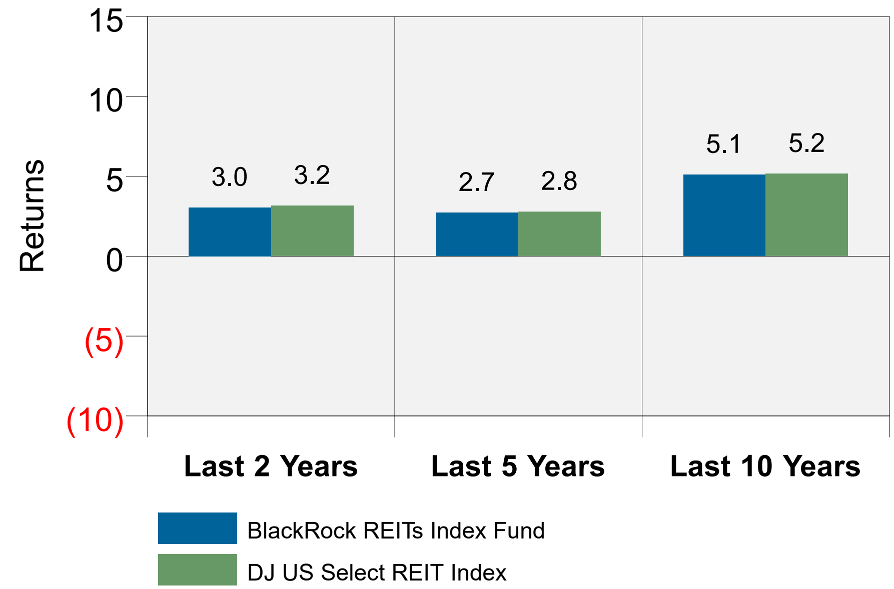
Features:

- Inflation-sensitivity is derived from the characteristics of the underlying private real estate assets
- Generally perform well in periods of high growth and inflation as rents and values tend to increase
- Dividend growth typically outpaces inflation
- Sensitive to interest rates and management
- Highly correlated to small and mid cap equities; highly volatile

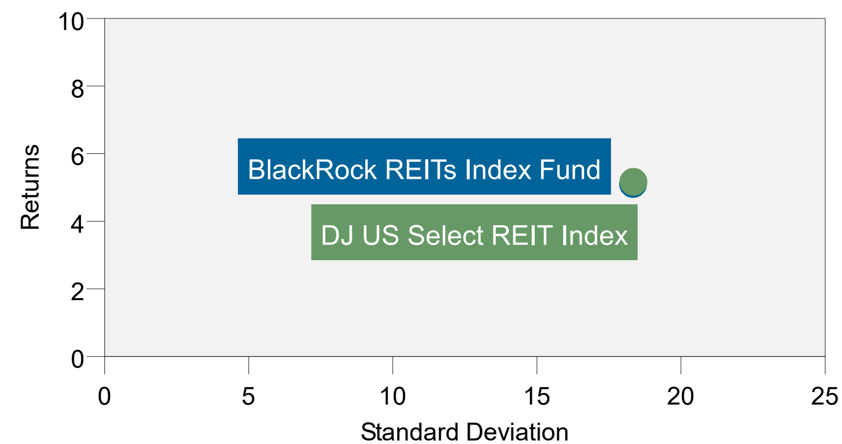
MCERA

- Invests in a passively managed strategy: BlackRock REITs Index Fund
- The fund tracks the Dow Jones US Select REIT Index
- Fees: 6 bps

Net of Fee Returns as of June 30, 2024



Risk/Reward Chart for 10 Years Ended June 30, 2024



Natural Resource Equities

Natural resource equities are the equity securities of commodity producers, generating returns from two sources: dividend income and capital appreciation. Industries can include: energy producers, metals, mining, agriculture, forestry, and renewables.

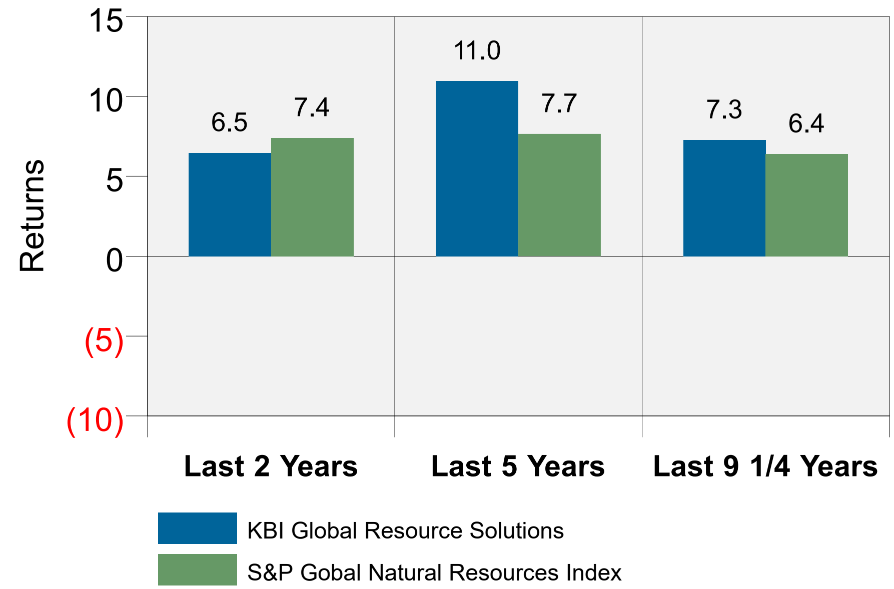
Features:

- Offer broader exposure to natural resources where commodities futures are not available
- Generally positive correlation with inflation while having equity-like risk/reward characteristics
- More correlated with equity markets, at times, than direct commodity exposure

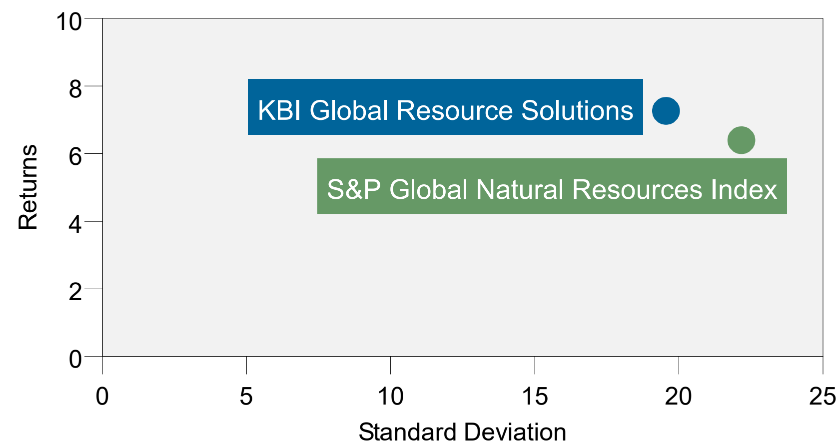
MCERA

- Invests in an actively managed strategy: KBI Global Resource Solutions Fund
- The strategy takes a unique approach to natural resource equities by integrating an ESG philosophy and investing in companies providing sustainable solutions to resource scarcity across water, food, and clean energy. The index, however, is comprised of more traditional natural resource companies within oil and gas, metals and mining, and agriculture.
- Fees: 85 bps

Net of Fee Returns as of June 30, 2024



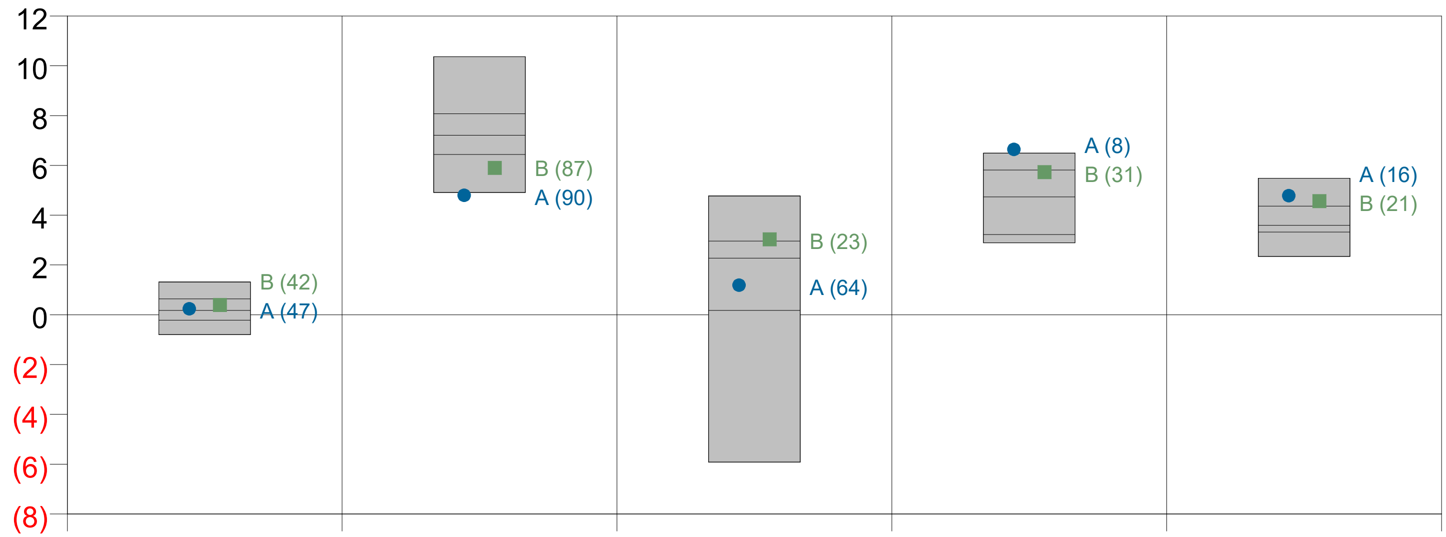
Risk/Reward Chart for 9 1/4 Years Ended June 30, 2024



MCERA Public Real Assets Structure

Performance

Net of Fee Returns for Periods Ended June 30, 2024
Group: Callan Real Assets Mutual Funds

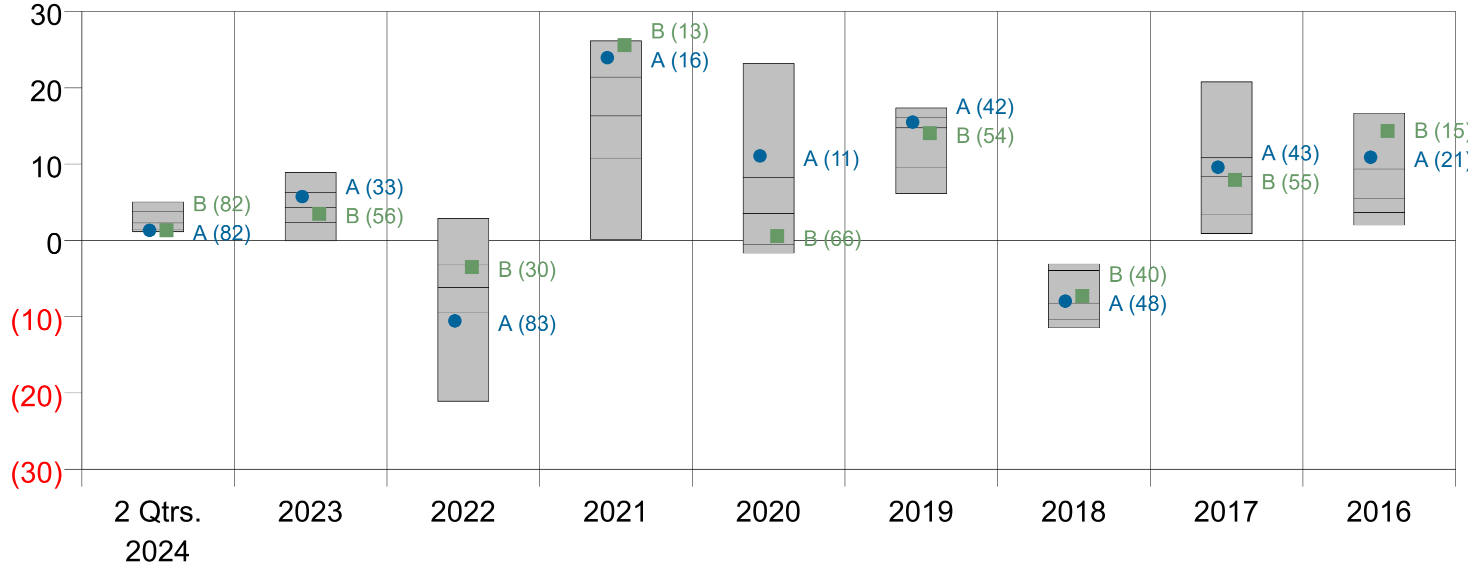


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
10th Percentile	1.32	10.37	4.77	6.50	5.49
25th Percentile	0.64	8.08	2.96	5.82	4.36
Median	0.18	7.21	2.28	4.74	3.60
75th Percentile	(0.21)	6.44	0.18	3.23	3.33
90th Percentile	(0.79)	4.91	(5.91)	2.90	2.34
Marin-Public Real Assets ● A	0.24	4.80	1.19	6.65	4.79
Marin-Public Real Assets Target ■ B	0.40	5.90	3.03	5.74	4.57

MCERA Public Real Assets Structure

Performance

Net of Fee Returns for Periods Ended June 30, 2024
Group: Callan Real Assets Mutual Funds



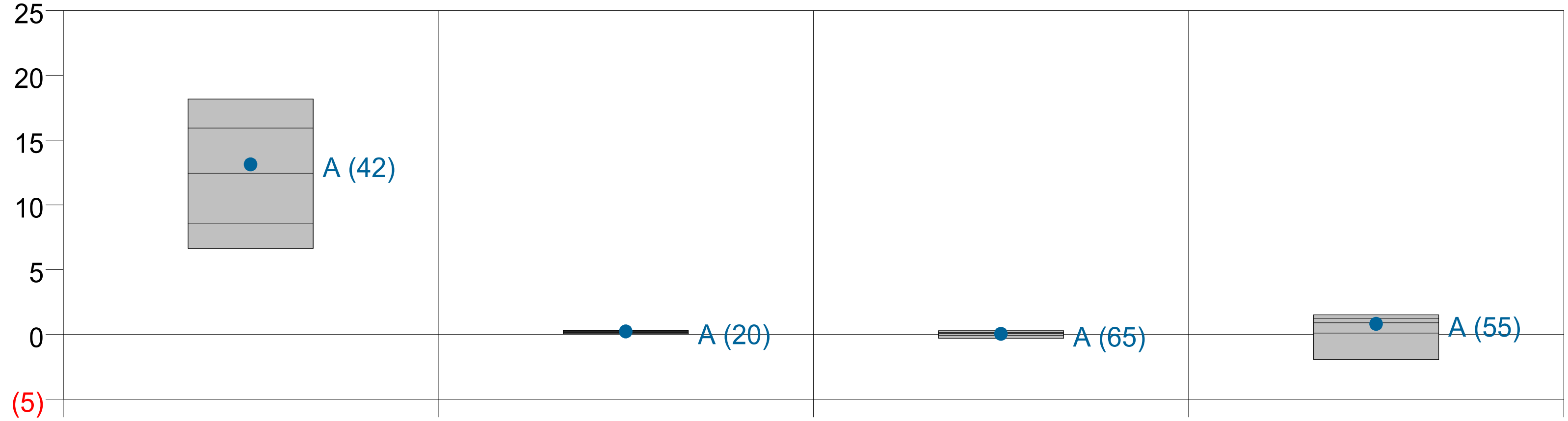
	2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017	2016
10th Percentile	5.04	8.91	2.90	26.16	23.20	17.37	(3.08)	20.79	16.68
25th Percentile	3.83	6.31	(3.21)	21.41	8.26	16.16	(3.93)	10.86	9.37
Median	2.30	4.33	(6.17)	16.34	3.54	14.76	(8.20)	8.40	5.54
75th Percentile	1.49	2.37	(9.49)	10.80	(0.48)	9.62	(10.41)	3.46	3.66
90th Percentile	1.15	(0.03)	(21.05)	0.18	(1.64)	6.17	(11.44)	0.91	2.04
Marin-Public Real Assets ● A	1.33	5.75	(10.54)	23.96	11.08	15.51	(7.97)	9.59	10.90
Marin-Public Real Assets Target ■ B	1.33	3.52	(3.52)	25.60	0.57	14.08	(7.27)	7.95	14.37

MCERA Public Real Assets Structure

Various Statistics

Statistics for 9 Years Ended June 30, 2024
Group: Callan Real Assets Mutual Funds

Correlation and Beta Relative to CPI-U



	Standard Deviation	Sharpe Ratio	Correlation	Beta
10th Percentile	18.19	0.31	0.30	1.52
25th Percentile	15.94	0.23	0.16	1.25
Median	12.46	0.16	0.08	0.90
75th Percentile	8.55	0.12	(0.08)	0.11
90th Percentile	6.66	0.07	(0.29)	(1.93)
Marin-Public Real Assets ● A	13.13	0.24	0.05	0.82

Definitions

Standard deviation - variability in returns from the mean portfolio return. A higher standard deviation equates to higher portfolio risk.

Sharpe ratio – represents the return gained per unit of risk taken. Generally, a higher Sharpe ratio is better.

Correlation – measures how the portfolio moves in relation to the benchmark. Correlations range from -1 to +1, where -1 indicates perfect negative correlation and +1 indicates perfect positive correlation.

Beta – measures the portfolio's sensitivity to the market. The market beta is 1.0. A portfolio with a beta above 1.0 has greater volatility than the market. A portfolio with a beta below 1.0 has lower volatility than the market.

Callan

Global Listed Infrastructure Overview

Global Listed Infrastructure

Global listed infrastructure investments consist of publicly traded stocks of companies engaged in infrastructure-related activities. These activities are focused on economic infrastructure rather than social infrastructure such as airports, toll roads, ports, railways, cell towers, and utilities. There is an emphasis on appreciation.

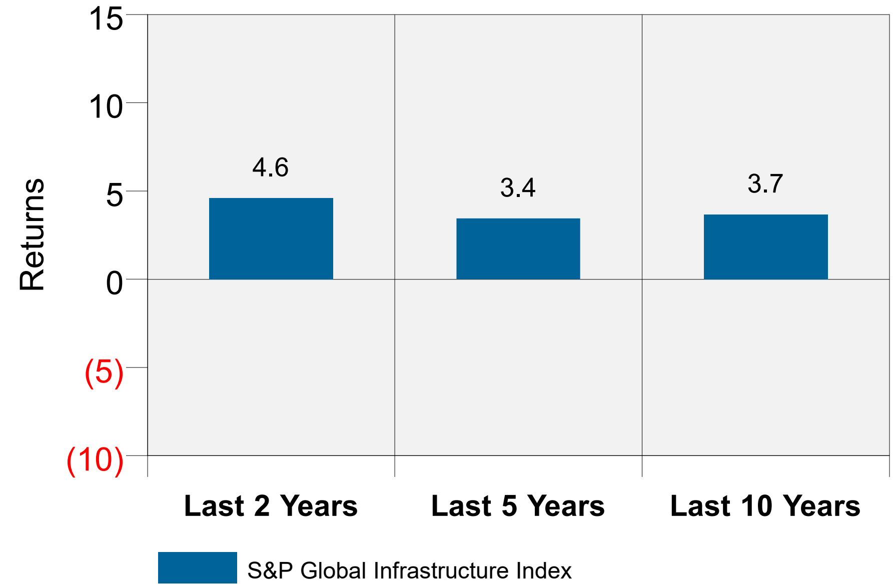
Features:

- Generally monopolistic and regulated business structures with high barriers to entry
- Regulated or contracted pricing that often adjusts with inflation
- Shares the volatility of equity markets although can be more defensive in nature

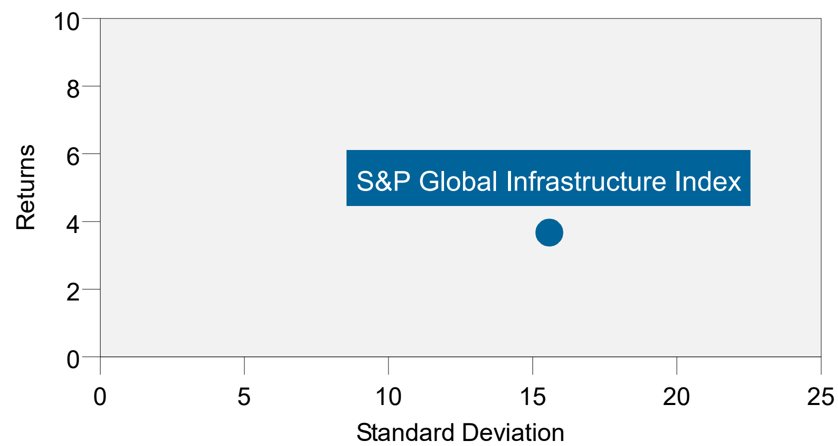
MCERA

- Does not currently have a direct investment in global listed infrastructure
- Could invest passively or actively, but Callan prefers active
  - Opportunity set is idiosyncratic enough to benefit active management; passive products are limited primarily to ETFs with high fees (~30 to 70 bps)
- Active fees can vary widely, but a reasonable estimate is about 75 bps

Returns as of June 30, 2024



Risk/Reward Chart for 10 Years Ended June 30, 2024



Why Global Listed Infrastructure?

Characteristics

"The basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, hospitals and post offices" (Dictionary.com)

- Provides essential economic or social services
- Monopolistic or near-monopolistic in nature
- High barriers to entry
- Low demand elasticity
- Long-life assets
- Stable cash flow
- Illiquidity
- High leverage

Economic Infrastructure			Social Infrastructure
Transportation	**Utilities**	**Communications**	Educational facilities
Bridges	Gas pipelines	Cable systems	Hospitals
Toll Roads	Electricity works	Wireless towers	Correctional facilities
Tunnels	Power generation	Broadcast towers	Public transportation
Airports	Water and sewage	Satellites	
Seaports	Renewable energy		
Rail			

S&P Global Infrastructure Index Composition

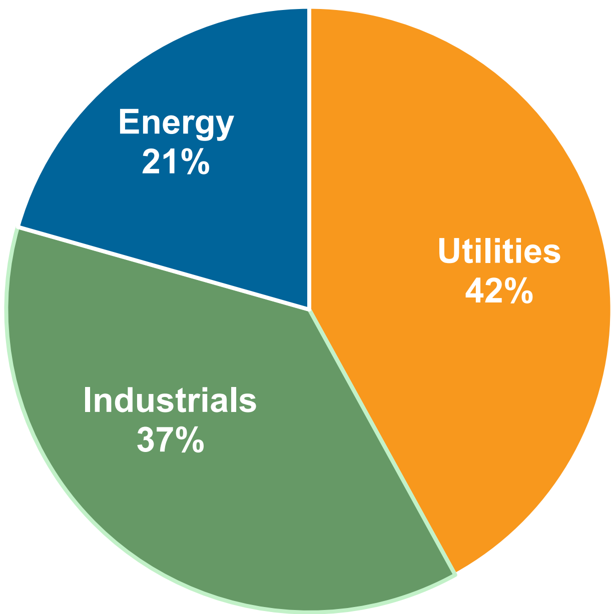
Index Characteristics	
Number of Constituents	74
Constituent Market Cap	
Mean Total Market Cap	$24.0B
Largest Total Market Cap	$171.5B
Smallest Total Market Cap	$259.4M
Median Total Market Cap	$7.0B
Weight Largest Constituent	5.9%
Weight Top 10 Constituents	38.2%
Est. 3-5 Year EPS Growth	7.8%
P/E	17.8
Dividend Yield	3.9%

Top 10 Constituents	Sector	Weight
NextEra Energy Inc.	Utilities	5.9%
Aena SME SA	Industrials	5.0%
Transurban Group Ltd.	Industrials	4.7%
Enbridge Inc.	Energy	4.2%
Southern Company	Utilities	3.5%
Iberdrola SA	Utilities	3.2%
Duke Enery Corporation	Utilities	3.2%
Grupo Aeroportuario del Pacifico SAB de CV Sponsored ADR Cl B	Industrials	3.0%
Constellation Energy Corporation	Utilities	3.0%
Williams Companies Inc.	Energy	2.6%

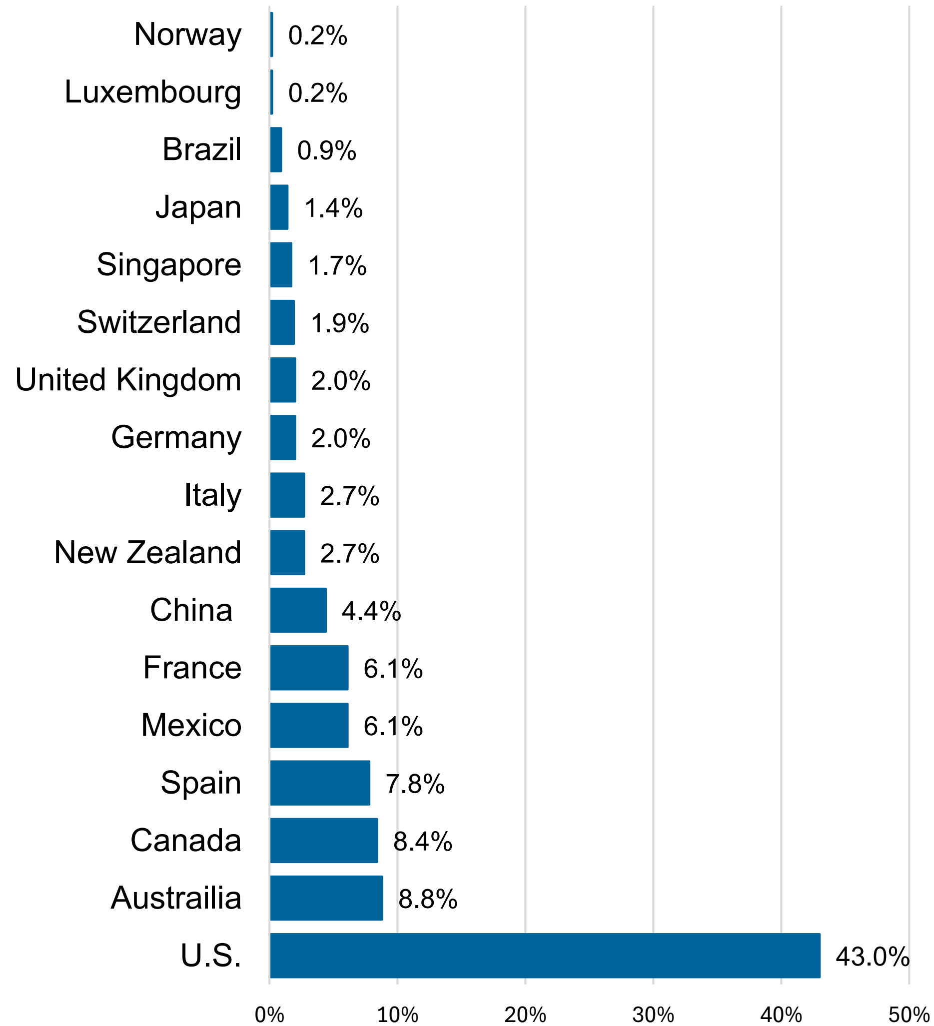
Source S&P; as of September 26, 2024

S&P Global Infrastructure Index Composition

Sector Breakdown



Country Breakdown



Source: S&P; as of August 30, 2024

Callan

Floating Rate Bank Loans Overview

Floating Rate Bank Loans (Leveraged Loans)

Floating Rate Bank Loan portfolios are typically comprised of leveraged loans, which are loans made by banks or other financial institutions to corporations which are typically rated below-investment grade. Bank loans have floating rate coupons, and return is generated through income and credit risk.

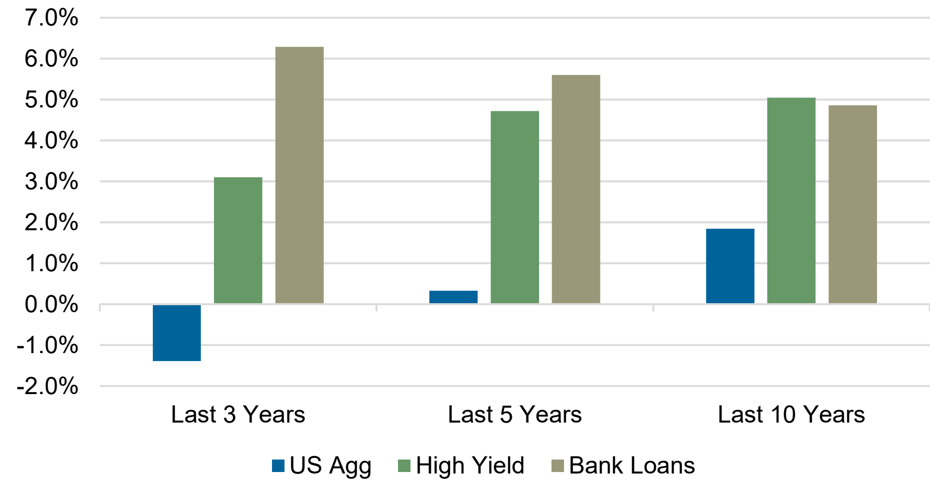
Features:

- Floating rate structure mitigates the risk of rising interest rates, which typically occurs with inflation
- Senior position in the capital structure and security of collateral may cushion against credit risk
- Provides higher yield relative to publicly traded investment-grade corporate bonds
- High volatility and correlation to stocks relative to traditional bonds as well as default risks could lead to underperformance in unfavorable environments such as recessions

MCERA

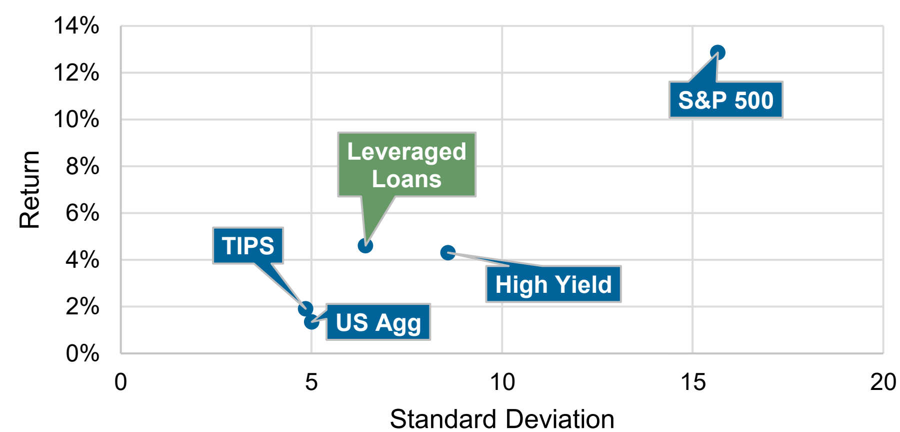
- Does not currently have a direct investment in floating rate bank loans
- Could invest passively or actively, but Callan prefers active
  - Opportunity set is idiosyncratic enough to benefit active management; limited passive products are available
  - Reasonable expected fee range for an active strategy is around 50-90 bps for a mutual fund and 40-60 bps for a commingled fund

Returns as of September 30, 2024



Risk vs. Return

10 years ended September 30, 2024

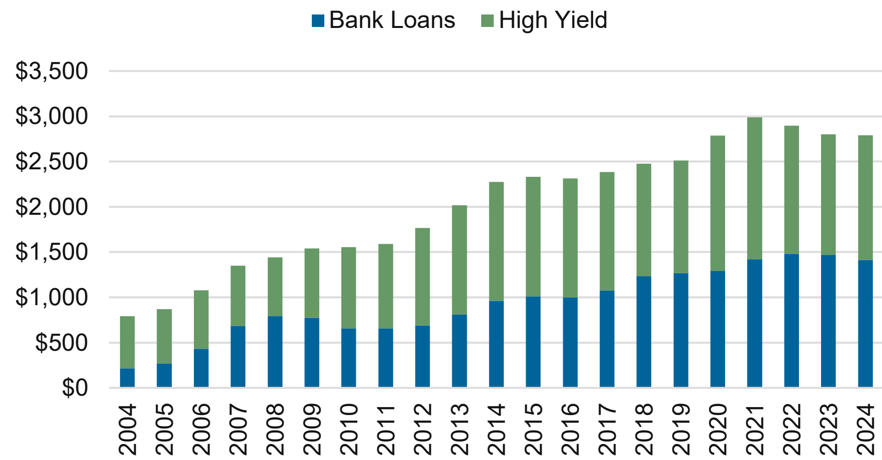


Source: Credit Suisse Leveraged Loan Index, Bloomberg US High Yield Index, Bloomberg US Aggregate Index, Bloomberg US TIPS Index, S&P 500 Index.

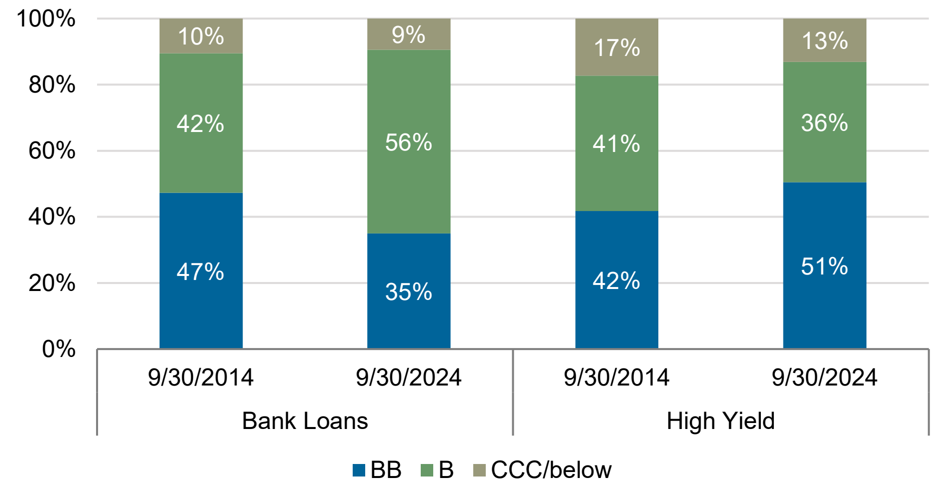
Bank Loans – Market Trends

- The bank loan market grew considerably between 2012 and 2021, more than doubling in size. Since then, the market has remained relatively stable at around $1.4 trillion.
- As the bank loan market has grown, the credit quality of the market has decreased in contrast to the high yield bond market, where credit quality has increased.
- Bank loans initially carried full covenants, but the market has since trended towards “cov lite” structures. Today, more than 80% of bank loans fall under the latter, which provide more flexibility to issuers but fewer protections for investors.
- Although corporate capital structures once commonly included both bank loans and high yield bonds, they are now more often holding only one or the other. The trend toward loan-only structures has resulted in less junior debt, contributing to a decline in recovery rates.
  - Historically, loan-only issuer recovery rates have averaged 52%, significantly lower than issuers with both loans and bonds in the capital structure, which have averaged 68%.

High Yield and Leveraged Loans Outstanding



Bank Loan and High Yield by Quality



Source: Credit Suisse Leveraged Loan Index, Bloomberg US High Yield Index.

Bank Loans vs. High Yield

	Bank Loans	High Yield
Capital Structure	Senior Secured	Mostly Senior Unsecured
Coupon	Floating Rate	Fixed Rate
Market Size (par)	$1.4 Trillion	$1.4 Trillion
# Issues	1,416	1,936
Largest Industries	Technology (16%), Service (13%), Healthcare (11%), Media/Telecom (10%)	Consumer Cyclicals (20%), Media/Telecom (14%), Financial (12%), Energy (12%)
Average Quality	B	BB-/B+
Duration Range	0 – 0.25 years	3.5 – 4.5 years
Credit Spread Range	400 – 750 bps*	300 – 750 bps
Typical Call Protection	0 – 2 years	3 – 5 years
Settlement	T+7 or longer	T+1
Long-Term Default Rate**	3.00%	3.50%
Long-Term Recovery Rate**	64%	40%

*Bank loan credit spread range based on typical 3-year discount margins.
**Long-term rates represent the annual average between 1999 and 2023. Bank loan recovery rates represent first-lien loans.
Source: Credit Suisse Leveraged Loan Index, Bloomberg US High Yield Index, J.P. Morgan.

Index Comparison: Credit Suisse Leveraged Loans, Bloomberg US Aggregate, and Bloomberg US TIPS

	CS Lev Loans	Bloomberg US Agg	Bloomberg US TIPS
Security Types	Corporate Credit (non-investment grade)	Government, Securitized, Corporate Credit (investment grade)	US Treasuries
Coupon	Floating Rate	Fixed Rate	Fixed Rate
Market Size (par)	$1.4 Trillion	$30.3 Trillion	$1.4 Trillion
# Issues	1,416	13,657	48
Average Quality	B	AA/AA-	AA+
Duration Range	0.25 years	4 – 6 years	3 – 7 years
Credit Spread Range	400 – 700 bps	40 - 60 bps	0 - 10 bps
Correlation to Investment Grade Bonds (Agg)*	0.08	1.00	0.85
Correlation to Equity*	0.80	0.32	0.54

*Correlations represent the trailing 10-year period through 9/30/2024.
Source: Credit Suisse Leveraged Loan Index, Bloomberg US Aggregate Index, Bloomberg US TIPS Index, S&P 500 Index.

Bank Loans: Pros & Cons

Pros

- Diversifies a public real asset structure with low correlations to traditional investment grade fixed income and higher expected yields
- Floating rate structure reduces interest rate risk and enhances inflation correlation relative to the Aggregate Bond index
- Secured by assets and positioned higher in the capital structure than high yield bonds, offering lower default rates and higher recovery rates
- Reduces volatility in diversified real asset programs through higher use of debt relative to equity

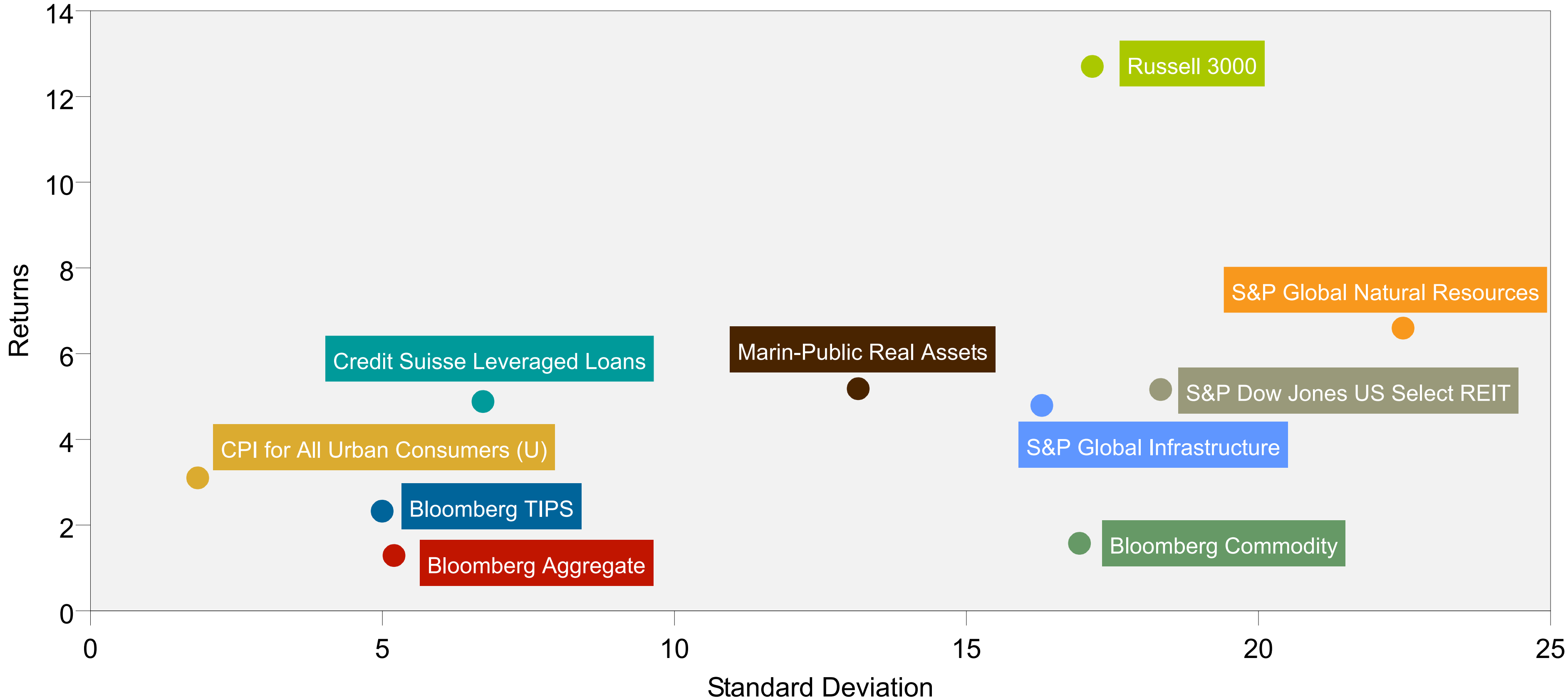
Cons

- Higher correlation to equity than traditional investment-grade fixed income with lower average quality compared to Core/Core Plus and High Yield
- Highly levered issuers carry greater credit risk and potential for default
- Offers lower liquidity and less transparency than traditional corporate bond securities
- Limited call protection and a trend toward fewer covenants increases risk for investors

Returns, Correlations, and Beta of Real Assets

Risk/Return of Real Assets

Risk/Reward Chart for 9 Years Ended June 30, 2024

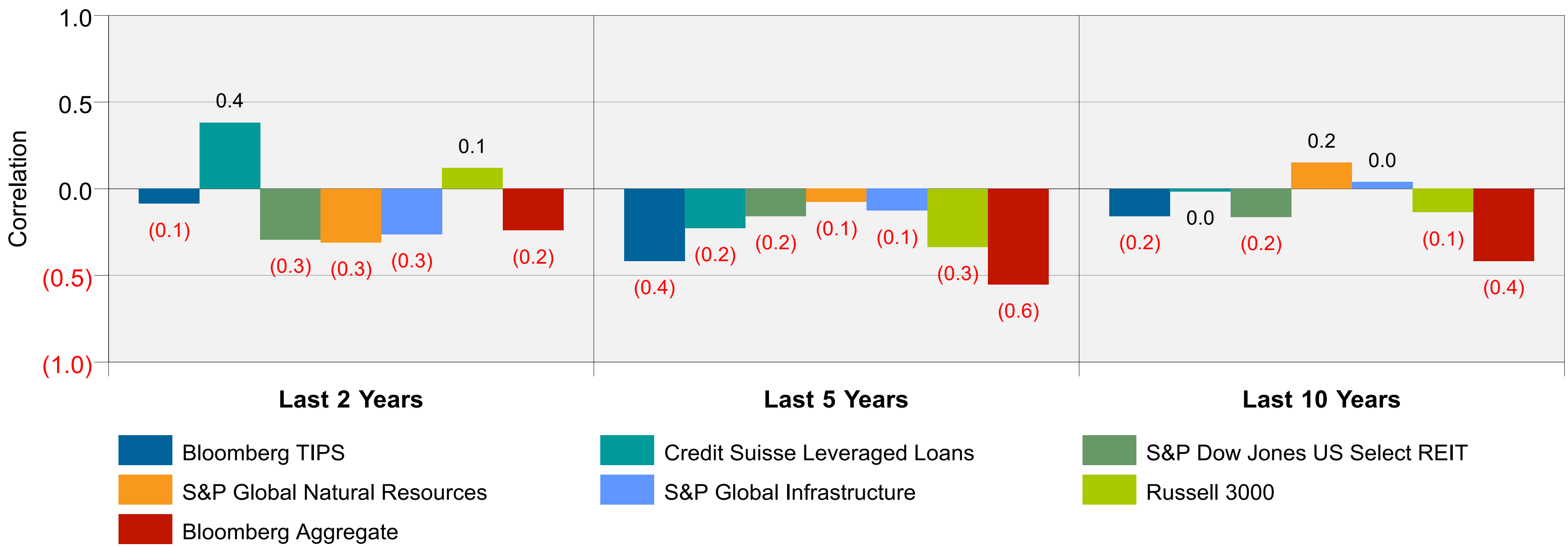


Historically, many of the underlying asset classes in real assets have substantially higher volatility in returns than TIPS.

While constructing a real assets portfolio balancing the inflation hedging characteristics with the volatility of the real asset sectors is key to maximizing return per unit of risk.

Correlation of Real Assets to Inflation (CPI-U)

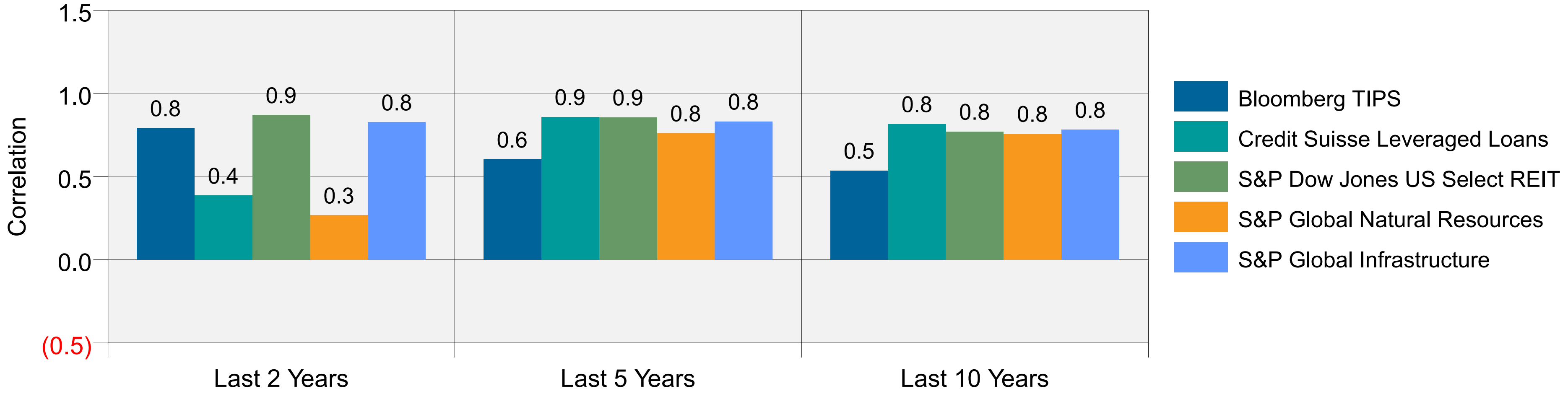
Correlation relative to CPI All Urban Consumers as of June 30, 2024



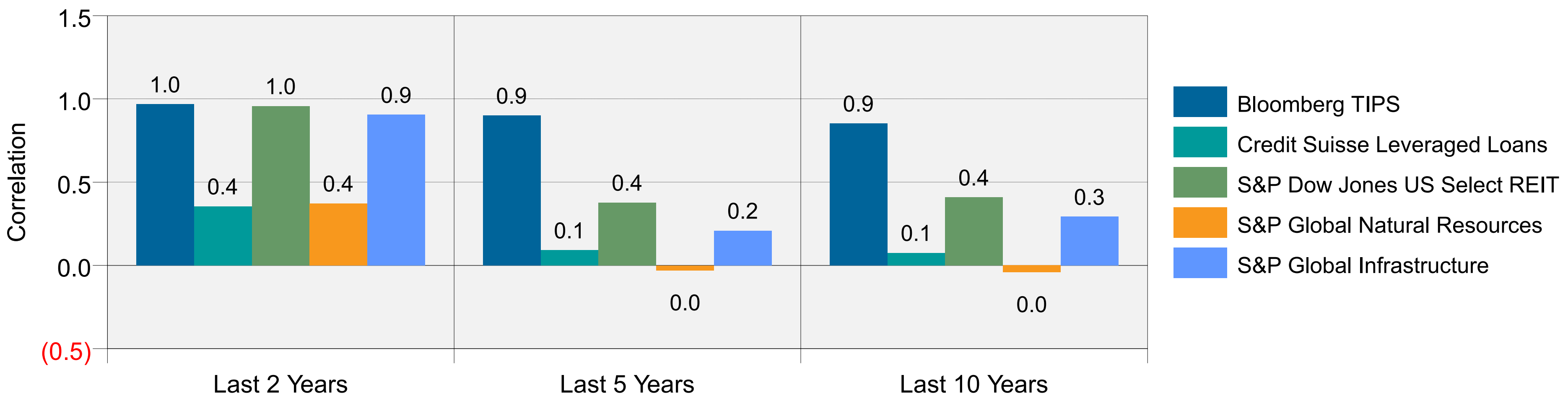
Over longer periods, global natural resource equities and global infrastructure offer positive correlations to inflation, indicating a potential hedge against inflation.

Correlation of Real Assets to Traditional Asset Classes

Correlation relative to Russell 3000 Index as of June 30, 2024

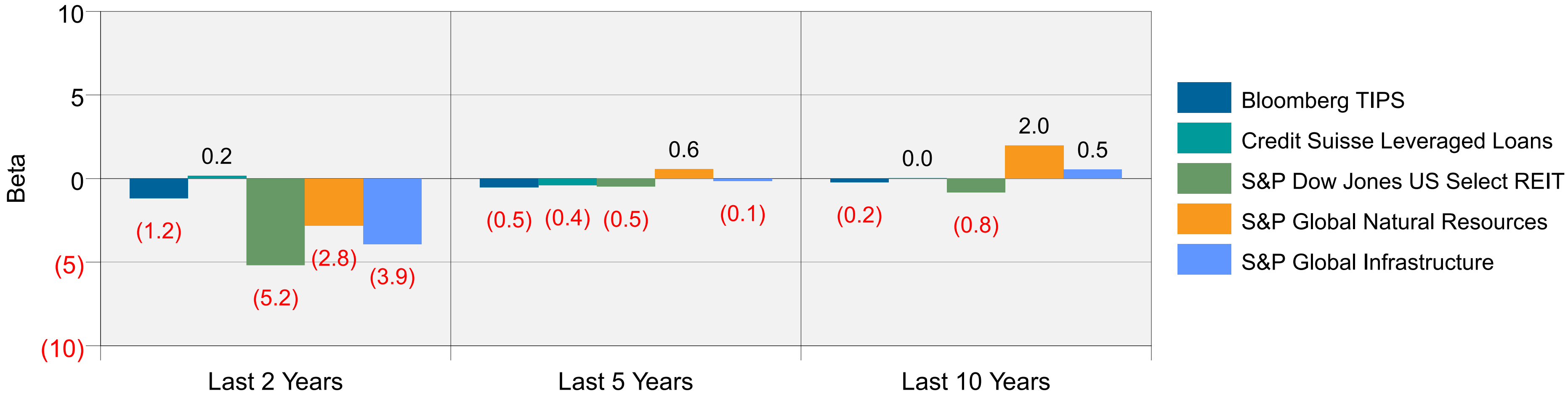


Correlation relative to Bloomberg Aggregate Index as of June 30, 2024

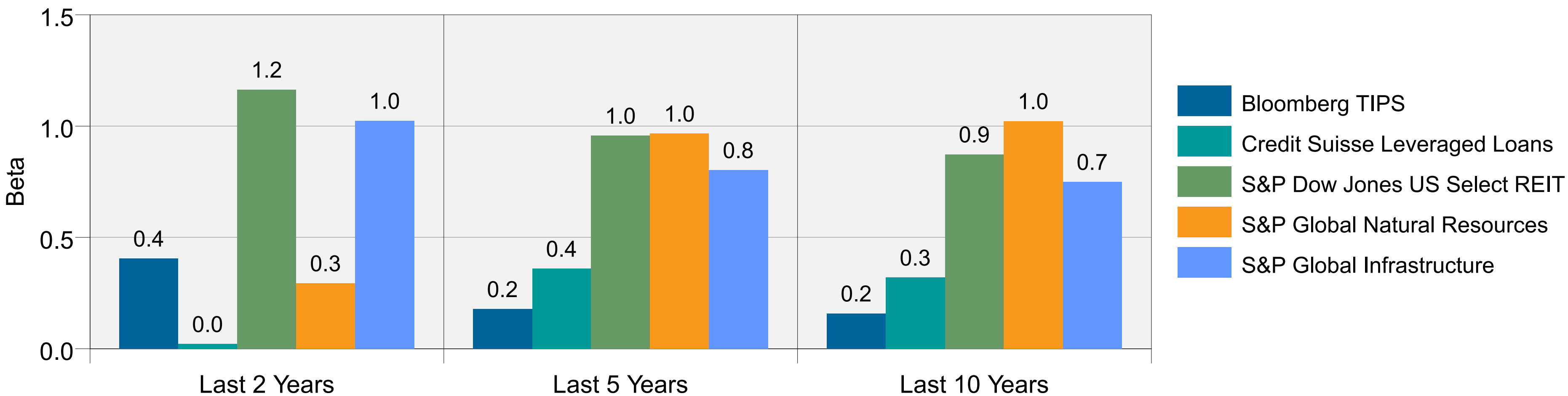


Beta of Real Assets to Inflation and Equities

Beta relative to CPI-U as of June 30, 2024



Beta relative to Russell 3000 Index as of June 30, 2024



Alternative Structures

Common Components of a Diversified Public Real Assets Portfolio

A Diversified Approach Is Beneficial

No single asset class has proven to be a perfect inflation hedge over various market conditions.

To provide protection over various inflation scenarios, it is recommended to invest in multiple inflation-sensitive asset classes.

Shorter term inflation sensitivity:

- Treasury Inflation-Protected Securities (TIPS)
- Floating Rate Bank Loans

Positive long term real returns - Equity with inflation sensitive underlying assets are:

- Real Estate Investment Trusts (REITs)
- Natural Resources Equity
- Global Listed Infrastructure

Alternative Portfolio Structures to Consider

The objective of MCERA's public real assets allocation is diversification to the total fund, inflation protection, and to be a complement to the private real assets allocation.

Portfolio construction is critical to delivering on these three objectives:

- Infrastructure and natural resources equity provide inflation sensitivity, but equity market correlation is high
- TIPS and floating rate bank loans are fixed income instruments that will reduce risk
- The beta of the portfolio to inflation is a critical factor; highest historical beta comes from natural resources and infrastructure

Below are some potential alternative portfolio structures to consider as a starting point:

		Current Mix	Mix 1	Mix 2	Mix 3	Mix 4
	Fees	0.24%	0.46%	0.51%	0.44%	0.56%
	Sector Weights:					
Fixed Income	TIPS	25%	20%	10%	30%	25%
Fixed Income	Floating Rate Bank Loans	-	20%	15%	30%	25%
Equities	REITs	25%	20%	25%	10%	-
Equities	Global Natural Resources Equities	25%	20%	25%	15%	25%
Equities	Global Listed Infrastructure	-	20%	25%	15%	25%
Removing	Commodities	25%	-	-	-	-

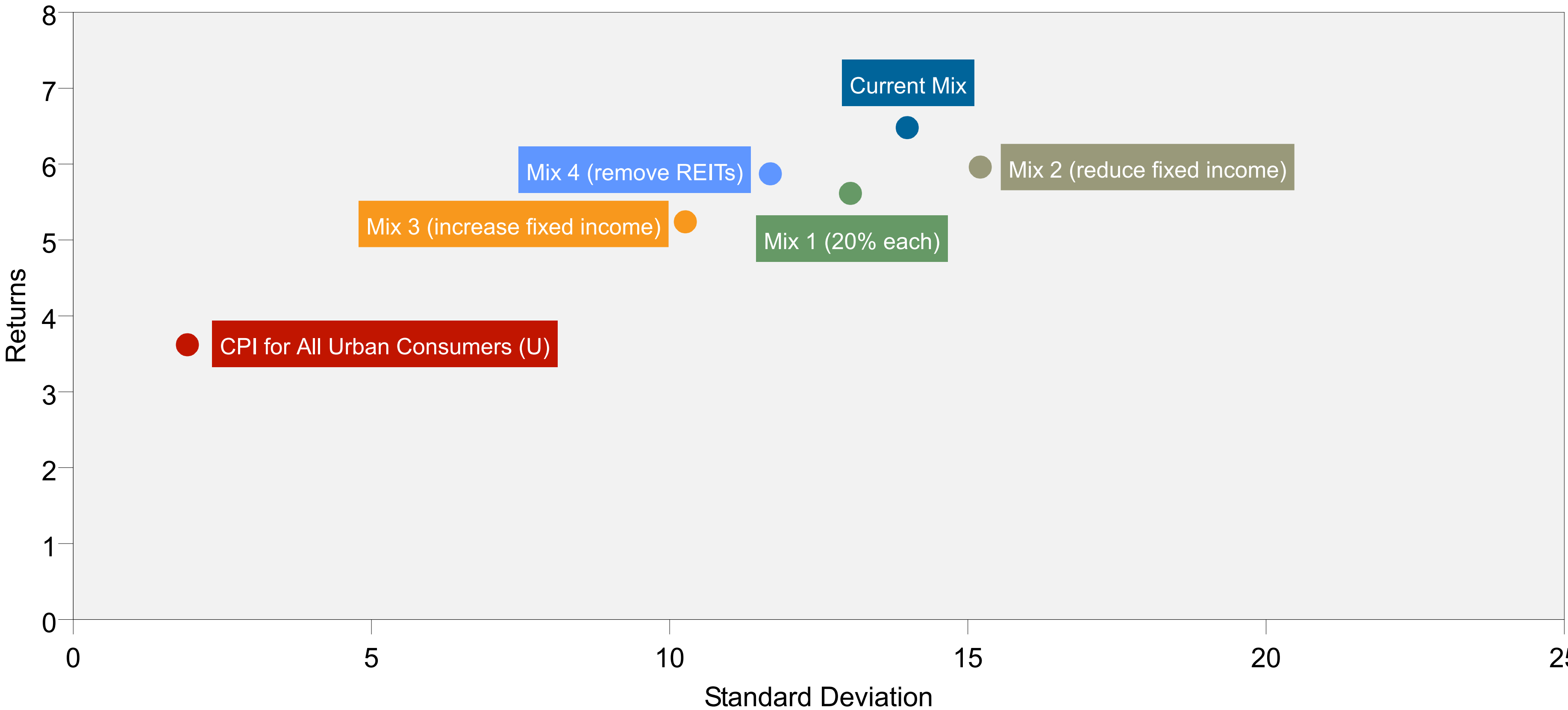
- Mix 1 – removes commodities and reallocates evenly to the 5 remaining sectors
- Mix 2 – removes commodities, reduces overall fixed income exposure (TIPS and floating rate bank loans)
- Mix 3 – removes commodities, increases overall fixed income exposure (TIPS and floating rate bank loans)
- Mix 4 – removes commodities and REITs, reallocates evenly to the 4 remaining sectors

Fees for Global Listed Infrastructure (75 bps) and Floating Rate Bank Loans (60 bps) represent estimated average fees for actively managed strategies.

Alternative Portfolio Structures

Risk/Reward

Risk/Reward Chart for 7 Years Ended June 30, 2024

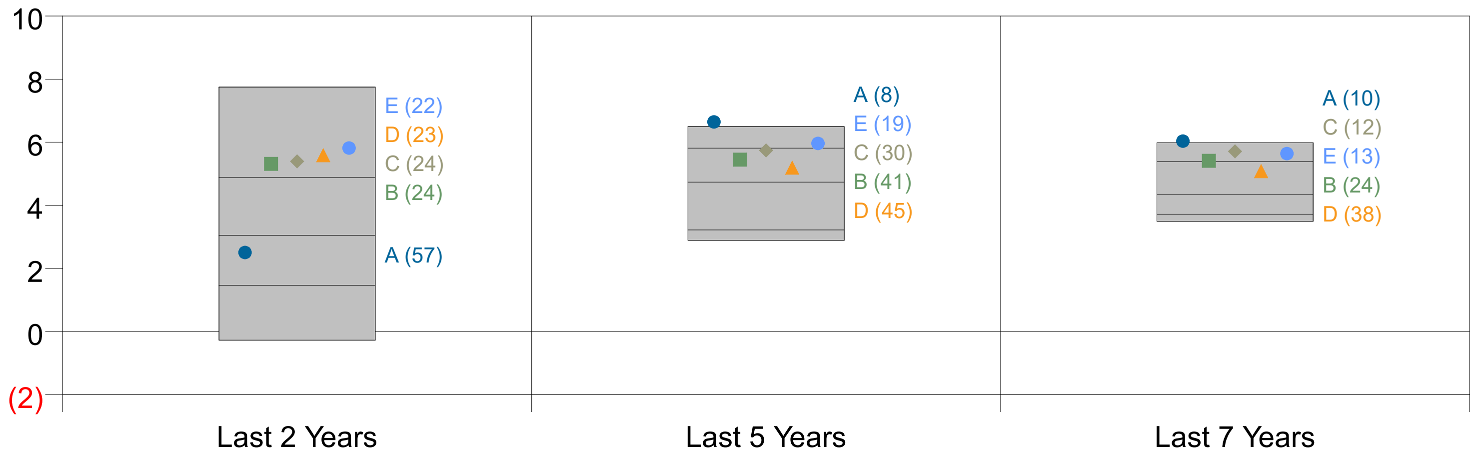


Performance for Infrastructure represented by the S&P Global Listed Infrastructure Index, and performance for Floating Rate Bank Loans represented by the Credit Suisse Leveraged Loans Index. Mixes are rebalanced quarterly.

Alternative Portfolio Structures

Performance

Net of Fee Returns for Periods Ended June 30, 2024
Group: Callan Real Assets Mutual Funds



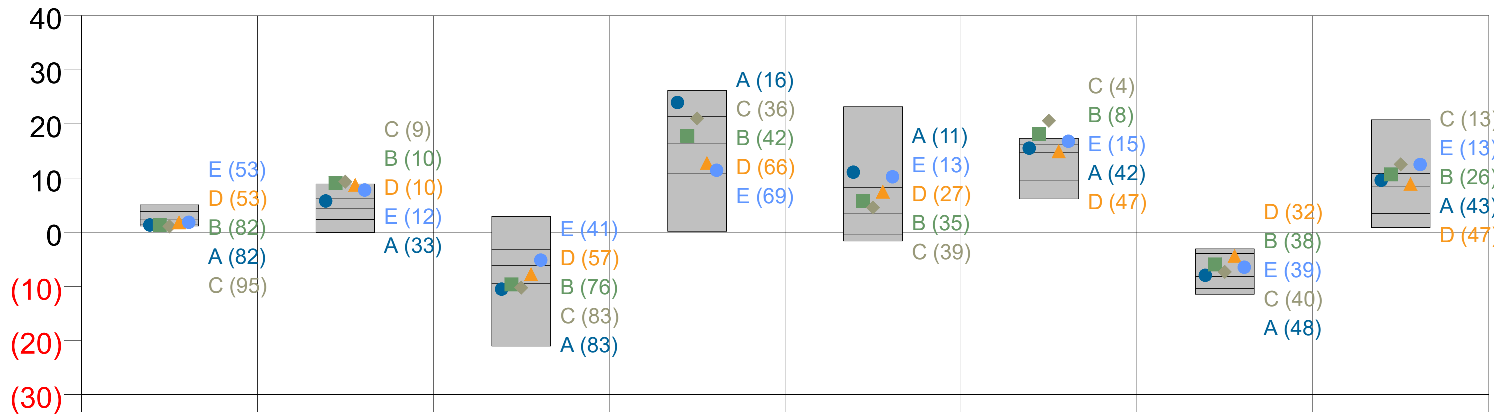
		Last 2 Years	Last 5 Years	Last 7 Years
10th Percentile		7.75	6.50	5.99
25th Percentile		4.89	5.82	5.39
Median		3.05	4.74	4.34
75th Percentile		1.47	3.23	3.72
90th Percentile		(0.27)	2.90	3.50
Current Mix	● A	2.51	6.65	6.04
Mix 1 (20% each)	■ B	5.31	5.45	5.42
Mix 2 (reduce fixed income)	◆ C	5.40	5.74	5.72
Mix 3 (increase fixed income)	▲ D	5.59	5.19	5.09
Mix 4 (remove REITs)	● E	5.82	5.96	5.64

Performance for Infrastructure represented by the S&P Global Listed Infrastructure Index, and performance for Floating Rate Bank Loans represented by the Credit Suisse Leveraged Loans Index. Mixes are rebalanced quarterly.

Alternative Portfolio Structures

Performance

Net of Fee Returns for Calendar Years
Group: Callan Real Assets Mutual Funds



		2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
10th Percentile		5.04	8.91	2.90	26.16	23.20	17.37	(3.08)	20.79
25th Percentile		3.83	6.31	(3.21)	21.41	8.26	16.16	(3.93)	10.86
Median		2.30	4.33	(6.17)	16.34	3.54	14.76	(8.20)	8.40
75th Percentile		1.49	2.37	(9.49)	10.80	(0.48)	9.62	(10.41)	3.46
90th Percentile		1.15	(0.03)	(21.05)	0.18	(1.64)	6.17	(11.44)	0.91
Current Mix	A	1.33	5.75	(10.54)	23.96	11.08	15.51	(7.97)	9.59
Mix 1 (20% each)	B	1.33	9.07	(9.65)	17.84	5.80	18.13	(5.96)	10.71
Mix 2 (reduce fixed income)	C	1.09	9.34	(10.24)	21.01	4.56	20.59	(7.32)	12.55
Mix 3 (increase fixed income)	D	1.83	8.74	(7.76)	12.80	7.50	14.96	(4.38)	8.91
Mix 4 (remove REITs)	E	1.83	7.78	(5.19)	11.44	10.24	16.79	(6.49)	12.49

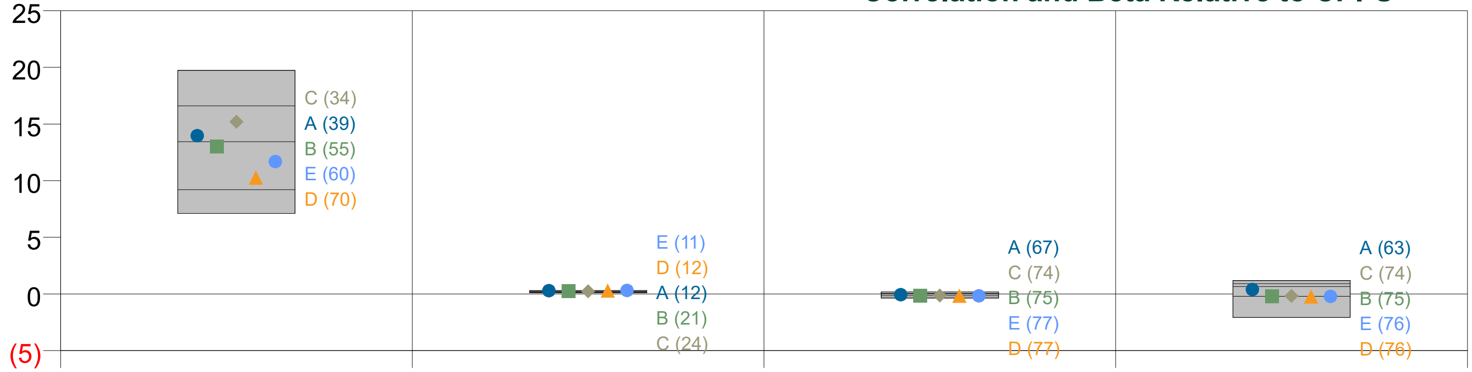
Performance for Infrastructure represented by the S&P Global Listed Infrastructure Index, and performance for Floating Rate Bank Loans represented by the Credit Suisse Leveraged Loans Index. Mixes are rebalanced quarterly.

Alternative Portfolio Structures

Various Statistics

Statistics for 7 Years Ended June 30, 2024
Group: Callan Real Assets Mutual Funds

Correlation and Beta Relative to CPI-U



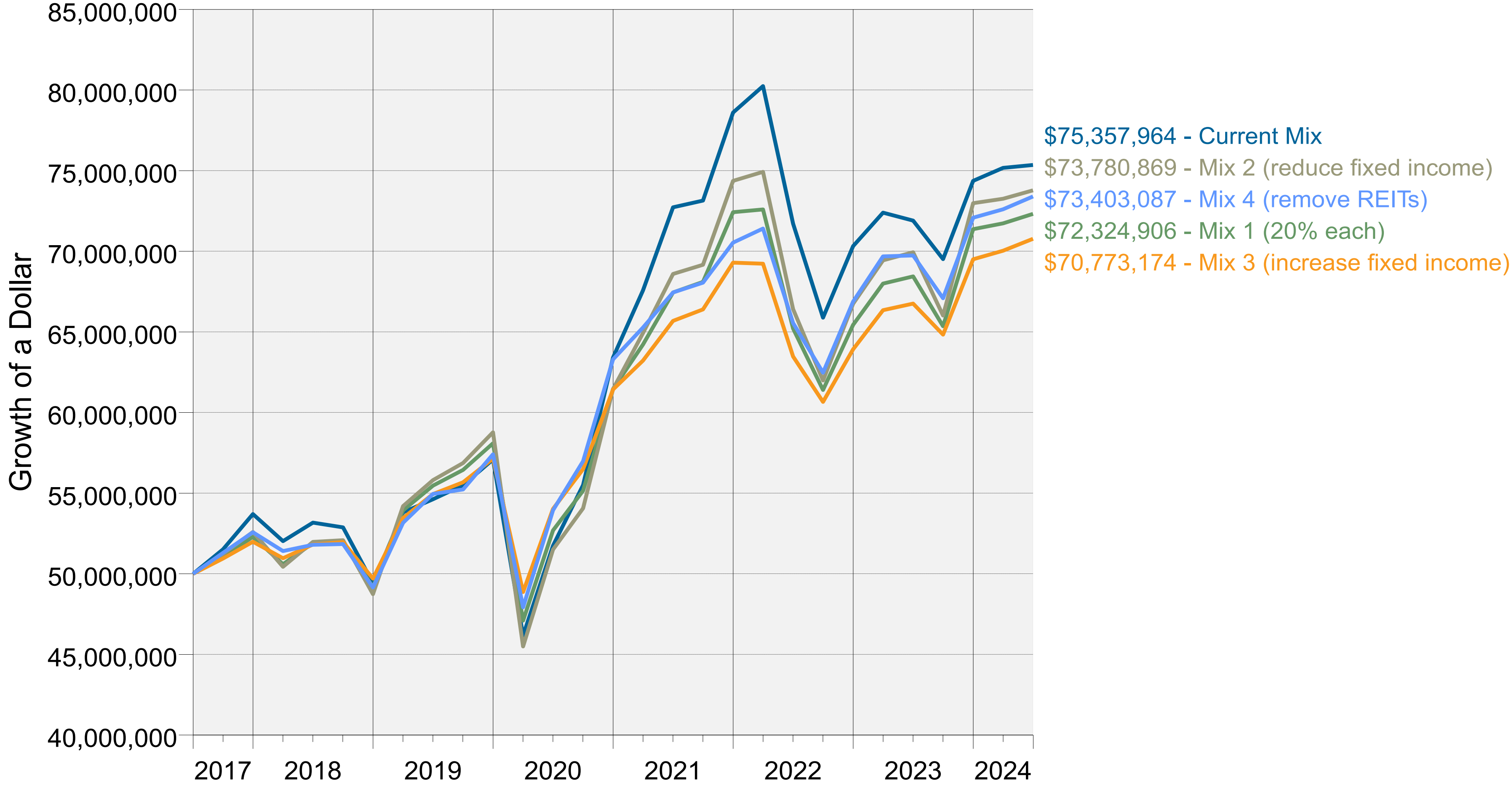
	Standard Deviation	Sharpe Ratio	Correlation	Beta
10th Percentile	19.75	0.32	0.19	1.19
25th Percentile	16.61	0.24	0.05	0.92
Median	13.45	0.21	0.00	0.66
75th Percentile	9.21	0.14	(0.14)	(0.19)
90th Percentile	7.12	0.10	(0.36)	(2.06)
Current Mix ● A	13.97	0.28	(0.07)	0.38
Mix 1 (20% each) ■ B	13.03	0.26	(0.14)	(0.19)
Mix 2 (reduce fixed income) ◆ C	15.20	0.24	(0.13)	(0.16)
Mix 3 (increase fixed income) ▲ D	10.26	0.29	(0.17)	(0.23)
Mix 4 (remove REITs) ● E	11.68	0.31	(0.16)	(0.21)

Performance for Infrastructure represented by the S&P Global Listed Infrastructure Index, and performance for Floating Rate Bank Loans represented by the Credit Suisse Leveraged Loans Index. Mixes are rebalanced quarterly.

Alternative Portfolio Structures

Growth of a Dollar

Net of Fee Growth of a Dollar for a $50,000,000 Mandate
for 7 Years Ended June 30, 2024



Summary

- MCERA’s public real assets allocation employs a traditional static allocation to TIPS, commodities, REITs and global natural resources. TIPS and REITs are implemented passively, while commodities and natural resources employ active management.

- Current portfolio reflects moderate risk due to the diversification benefit of half of the portfolio in TIPS and commodities.

- Allocations to REITs, natural resources equity, and infrastructure will increase the overall correlation to equities.

- Floating rate bank loans along with TIPS can be used to reduce volatility.

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Using U.S. Financial History to Inform Investment Decisions

Mark J. Higgins, CFA, CFP® | Presentation to MCERA | October 15, 2024

IFA .com Institutional
a division of Index Fund Advisors, Inc.

IFA Corporate Office | 19200 Von Karman Avenue, Suite 150 | Irvine, CA 92612 | 949-502-0050 | www.ifa.com

Presenter Bio

Mark J. Higgins, CFA, CFP®

Senior Vice President, Institutional Advisor

Mark serves as a senior vice president for IFA Institutional. Mark focuses on providing advisory services to institutional plans, such as endowments, foundations, pension plans, defined contribution plans, and select high-net-worth individuals. In this role, he leverages more than fourteen years of relevant experience consulting for both small and multi-billion plans.

Mark is also the author of the book, *Investing in U.S. Financial History: Understanding the Past to Forecast the Future*. The book recounts the financial history of the United States, beginning with the innovative financial programs of Alexander Hamilton in 1790 and ending with the Federal Reserve's ongoing battle to contain inflation. In March 2024, Investing in U.S. Financial History was awarded a bronze medal in the prestigious 2024 Axiom Book Awards under the category of "Personal Finance/Retirement Planning/Investing."*

Mark is a member of the Editorial Board of the Museum of American Finance, and he is a frequent writer for the Museum's *Financial History* magazine. Insights from his writing and experiences as a consultant to institutional investment plans have been quoted by journalists at CNBC, the Wall Street Journal, Morningstar, and many other financial publications throughout the world.

Mark graduated from Georgetown University Phi Beta Kappa and Magna Cum Laude with a bachelor's degree in English and Psychology. He received an MBA from the Darden School of Business at the University of Virginia. He is a CFA charterholder and CFP® professional. Mark resides in Portland, Oregon with his wife, Katie, and two children, Jack and Lila.

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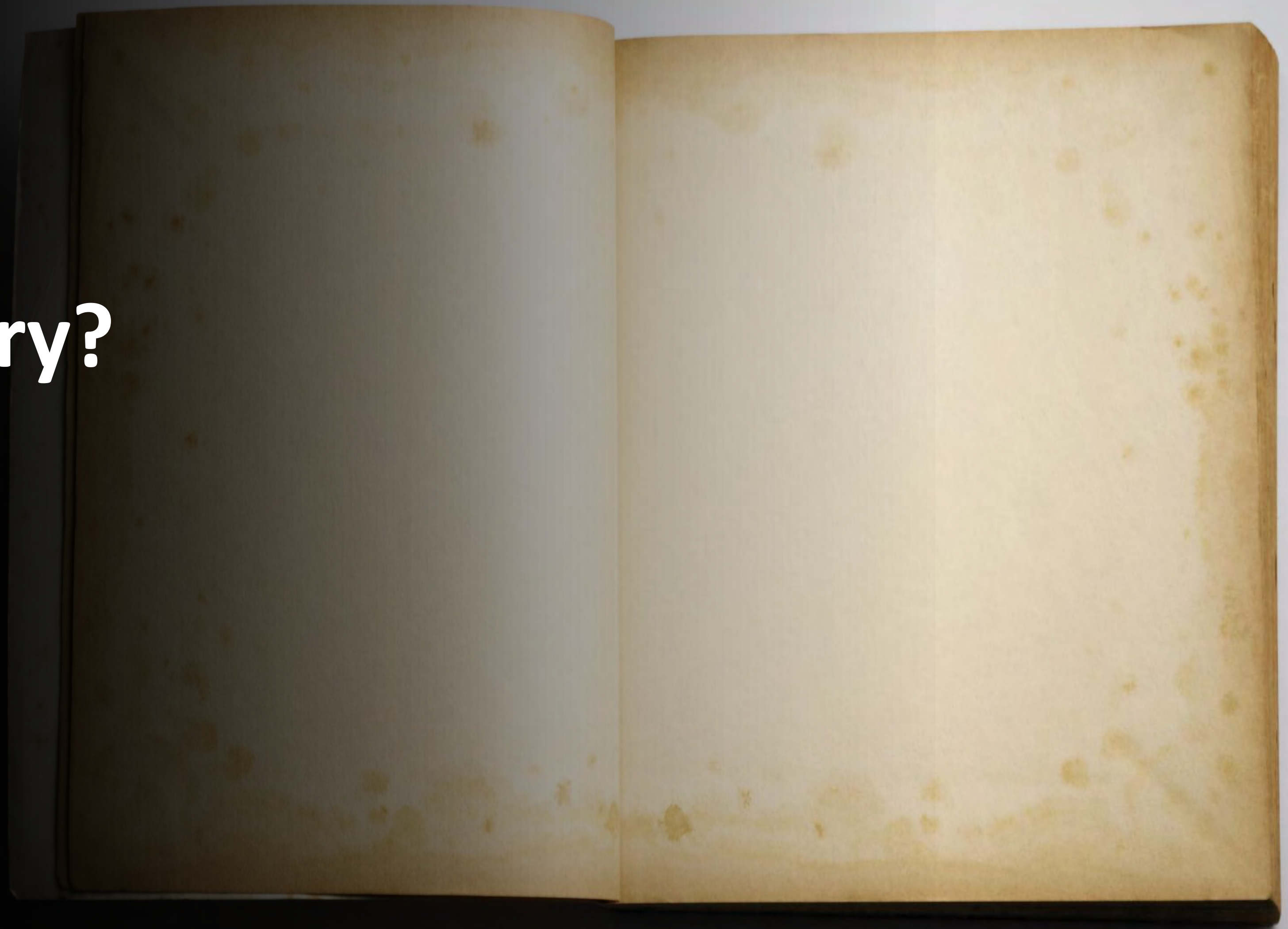
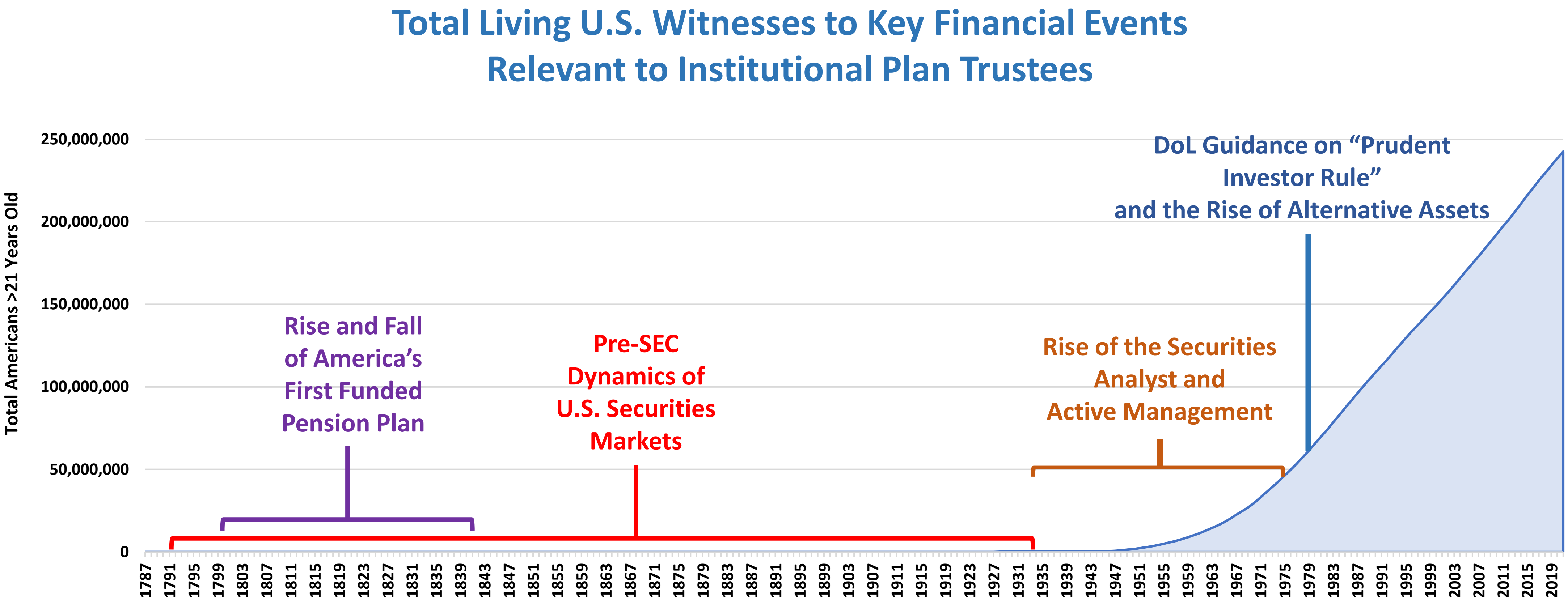
[*] Participation in a book contest typically requires an entrance fee. This fee is intended to cover administrative expenses and is not material in amount.

AGENDA

Why study financial history?



Financial History Reveals Invaluable, but Long-Forgotten, Lessons



Note: The number of living witnesses includes all Americans living today who were at least 22 years-old during the year in which an event occurred. For example, there are currently approximately 150 million Americans who were at least 22 years-old during the Dot-Com Mania of 1999.

Source: U.S. Census Bureau

A Microcosm of Modern-Day, Institutional Plan Governance Challenges

A Pirate's Pension: The Rise and Fall of the U.S. Navy Pension Plan

America's First Funded Pension Plan – Key Events

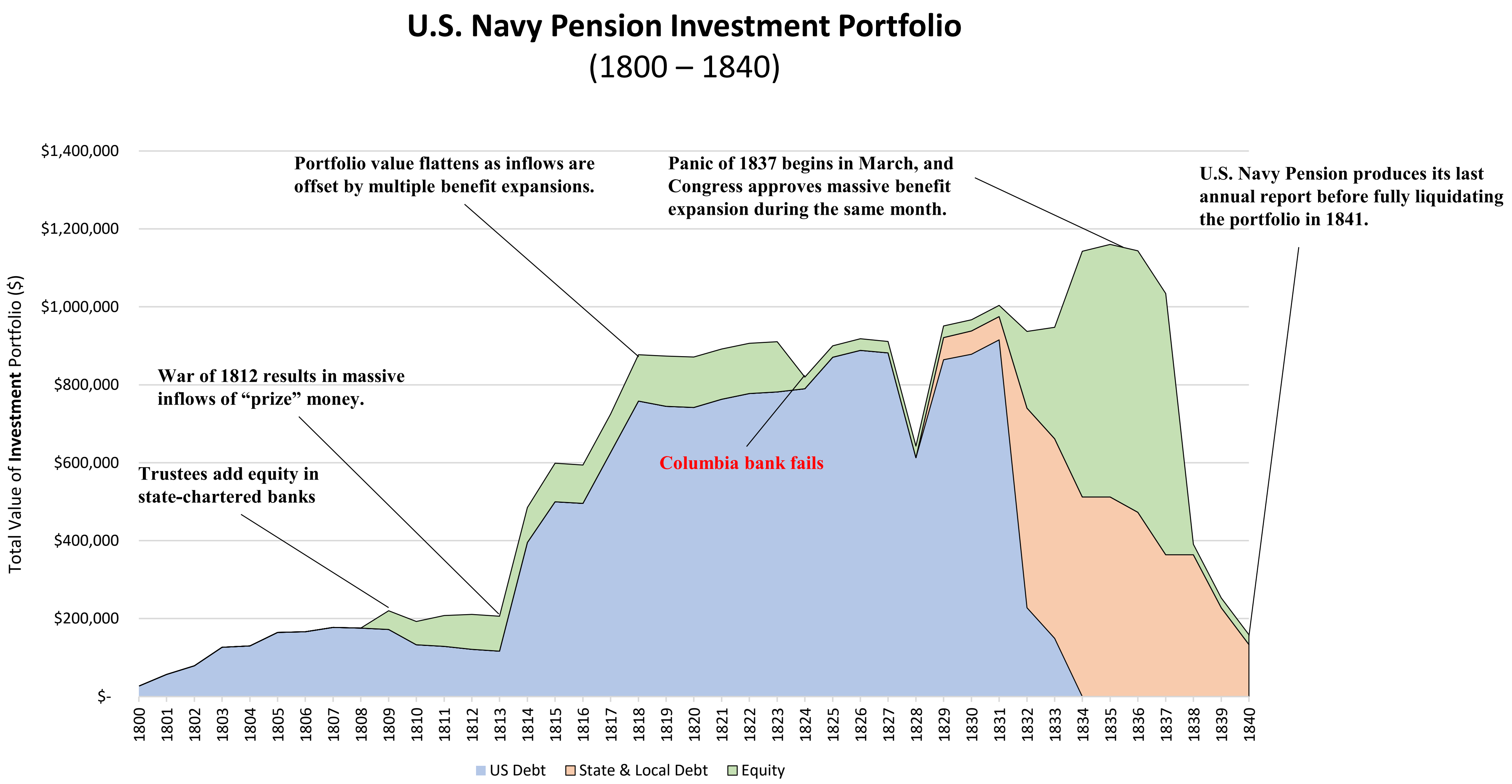
1800	U.S. Navy begins funding a disability benefit using "prizes" captured at sea. Eligible participants are limited to veterans injured in the line of duty.
1809	Trustees invest in three state-chartered banks (Columbia Bank, Union Bank, and Washington Bank).
1812	War of 1812 drives sharp increase in prize money.
1813	Congress expands benefits for widows and orphans.
1816	Congress increases benefits for more severe injuries.
1817	Congress further expands benefits for widows and orphans.
1819	Panic of 1819 triggers deep depression in the United States.
1823	Columbia bank fails, and Congress repeals several benefit expansions.
1835	U.S. Navy Pension Plan portfolio reaches its peak value of $1.2 million.
1837	Congress approves retroactive lump sum payments to compensate veterans from "time of disability," rather than from the time the claim was filed. During the same month, the Panic of 1837 triggers one of the worst depressions in U.S. history.
1841	Massive outflows to pay retroactive claims, combined with bank failures, forces the U.S. Navy portfolio to liquidate its entire portfolio. The plan converts to pay-as-you-go.

Timeless Lessons

- **Governance Challenges** – Trustees experienced multiple challenges that are nearly identical to those faced by trustees today.
- **Benefit Expansion Dynamics** – The Navy Pension experienced several, costly benefit expansions during election years—especially those that coincided with strong cash inflows.
- **Danger of Political Influence** – Avoidance of an investment in Alexander Hamilton's First Bank of the United States was likely due to the political influence of President Thomas Jefferson.
- **Investment Errors** – Among many missteps, the costliest were ill-advised investments in four state-chartered banks, all of which eventually failed.
- **Misplaced Faith in Agents** – Time constraints forced trustees to rely on agents for execution. Many agents placed their own interests above those of plan beneficiaries.

Sources: Mark J. Higgins, "A Pirate Looks at Forty-One: Lessons from the Rise and Fall of America's First Funded Pension Plan." Working Paper. (December 15, 2021); Clark, Robert L., et. al., *A History of Public Sector Pensions in the United States.* (Philadelphia: University of Pennsylvania Press, 2003).

The Rise and Fall of the U.S. Navy Pension Plan



Sources: Mark J. Higgins, "A Pirate Looks at Forty-One: Lessons from the Rise and Fall of America's First Funded Pension Plan." Working Paper. (December 15, 2021); Clark, Robert L., et. al., *A History of Public Sector Pensions in the United States.* (Philadelphia: University of Pennsylvania Press, 2003).

Structural governance challenges have changed little since the early 1800s

Source of Governance Challenges

❶

Governance Instability

- Frequent committee member turnover
- Limited control over the appointment of future decision makers

❸

Time Constraints

- Infrequent meetings (typically quarterly)
- Limited meeting time (typically 1-2 hours)
- Frequent committee member absences

❷

Variable Levels of Investment Experience

- Many trustees have limited investment experience and knowledge
- Some trustees have narrow experience with specific asset classes, which may introduce biases.

Using Financial History to Decipher Slow Motion Trends

“Cognition, misled by tiny changes involving low contrast, will often miss a trend that is destiny.”

—CHARLIE MUNGER, late vice chairman of Berkshire Hathaway

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Few investors know why Wall Street belatedly embraced active management

U.S. Securities Markets: Key Milestones

1792	Buttonwood Agreement establishes the foundation of the New York Stock Exchange.
1817	The first constitution of the New York Stock Exchange is signed.
1835	Jacob Little corners the stock of the Morris Canal and Banking Company, marking the beginning of an era defined by market manipulation and insider trading.
1929	Crash of 1929 and subsequent depression prompts federal securities reforms.
1934	Securities Exchange Act of 1934 outlaws market manipulation and insider trading; securities analysis is the only remaining option for Wall Street.
1940	Under pressure from investment company executives, Congress unexpectedly passes the Investment Company Act of 1940. Investment company executives correctly forecast that SEC regulation would attract rather than repel investors; meanwhile, the SEC quietly publishes a study revealing that most investment companies fail to outperform a comparable index.
1970	Eugene Fama publishes seminal paper on efficient markets.
1970s	Formation of the first investment consulting firms, which initially limit their services to independent investment performance reporting.
1976	Vanguard launches the first equity index mutual fund.
1980s	Investment consulting firms encourage trustees to abandon bank asset management departments and hire “best of breed” active fund managers.
2000	David Swensen publishes *Pioneering Portfolio Management*

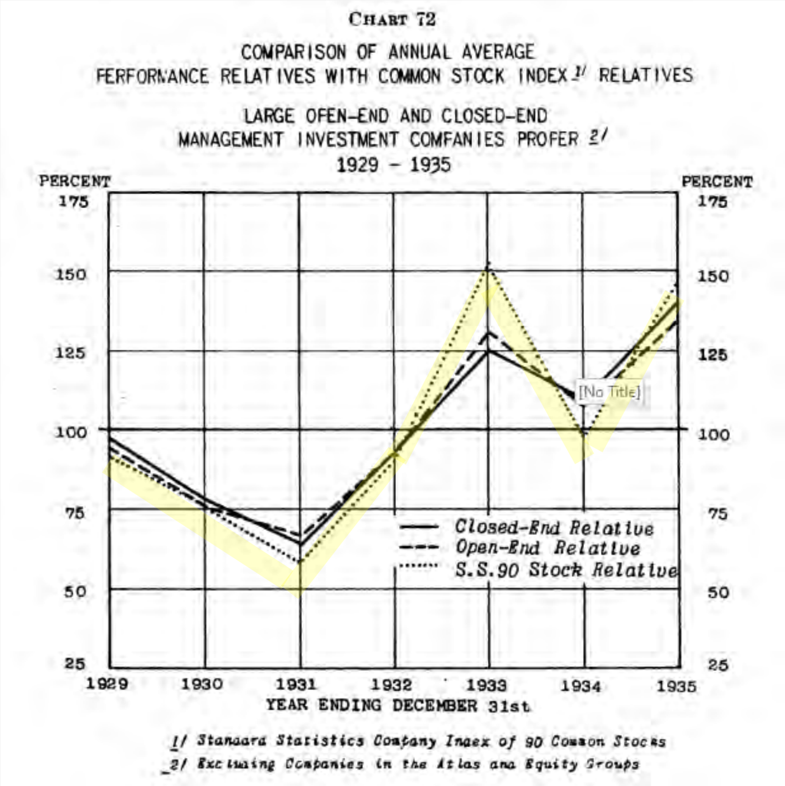
Gilded age stock operators shun securities analysis in favor of market manipulation and insider trading

Despite unattractive prospects, Wall Street embraces and refuses to abandon the only remaining option: **active management**

The prospects for active managers have changed little over the past century

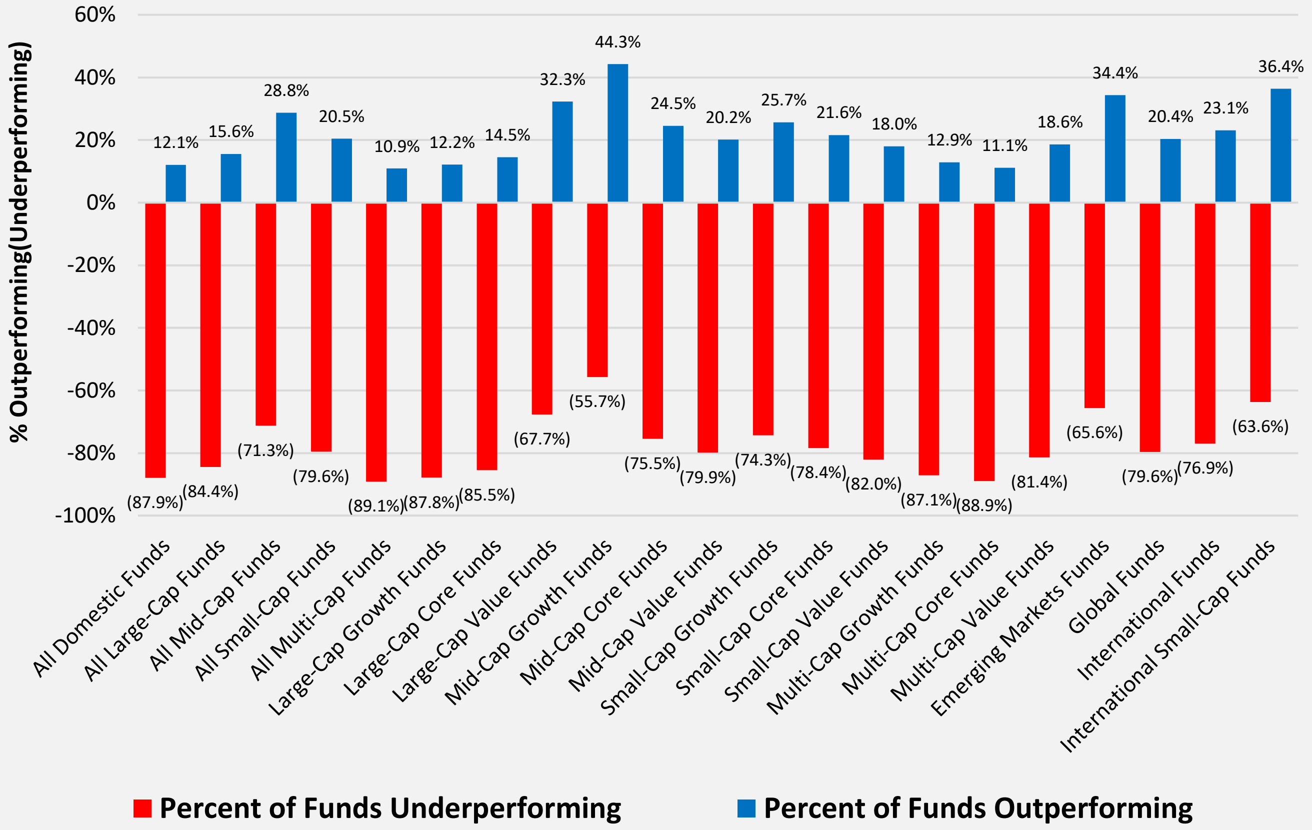
Relative Performance of Open- and Closed- Ended U.S. Investment Companies

(1929 – 1935)



Percentage of Institutional Equity Accounts Underperforming Index over 10-Years (Net of Fees)

(Period Ending December 31, 2022)



Source: *Report of the Securities Exchange Commission, Investment Trusts and Investment Companies, Part Two, Appendix J* (1940); Tim Edwards, et. al. "SPIVA Institutional Scorecard." *S&P Global.* (December 31, 2022).

Voices from the past on active management…

"The evidence supports the view that the average investor in investment companies would be better off if a representative market average were followed. The perplexing question that must be raised is why has the unmanaged investment company never come into being?"

—EDWARD F. RENSHAW AND PAUL J. FELDSTEIN (January 1960)

"My basic point here is that neither the Financial Analysts as a whole nor the investment funds as a whole can expect to 'beat the market,' because in a significant sense they (or you) are the market."

—BEN GRAHAM, founder of the value investment philosophy (1963)

"More often (alas), the conclusions can only be justified by assuming that the laws of arithmetic have been suspended for the convenience of those who choose to pursue careers as active managers."

—WILLIAM F. SHARPE, Nobel laureate (1991)

Sources: Edward F. Renshaw and Paul J. Feldstein. *The Analysts Journal,* (January 1960); Benjamin Graham, *Financial Analysts Journal* (May/Jun 1963) William F. Sharpe, *Financial Analysts Journal.* (Jan/Feb 1991).

Quotes are utilized for illustrative purposes only and should not be construed as an endorsement, recommendation, or guarantee of any particular financial product, service, or advisor.

Few investors see the cycle of flooding that affects alternative asset classes

Alternative Asset Classes: Key Milestones

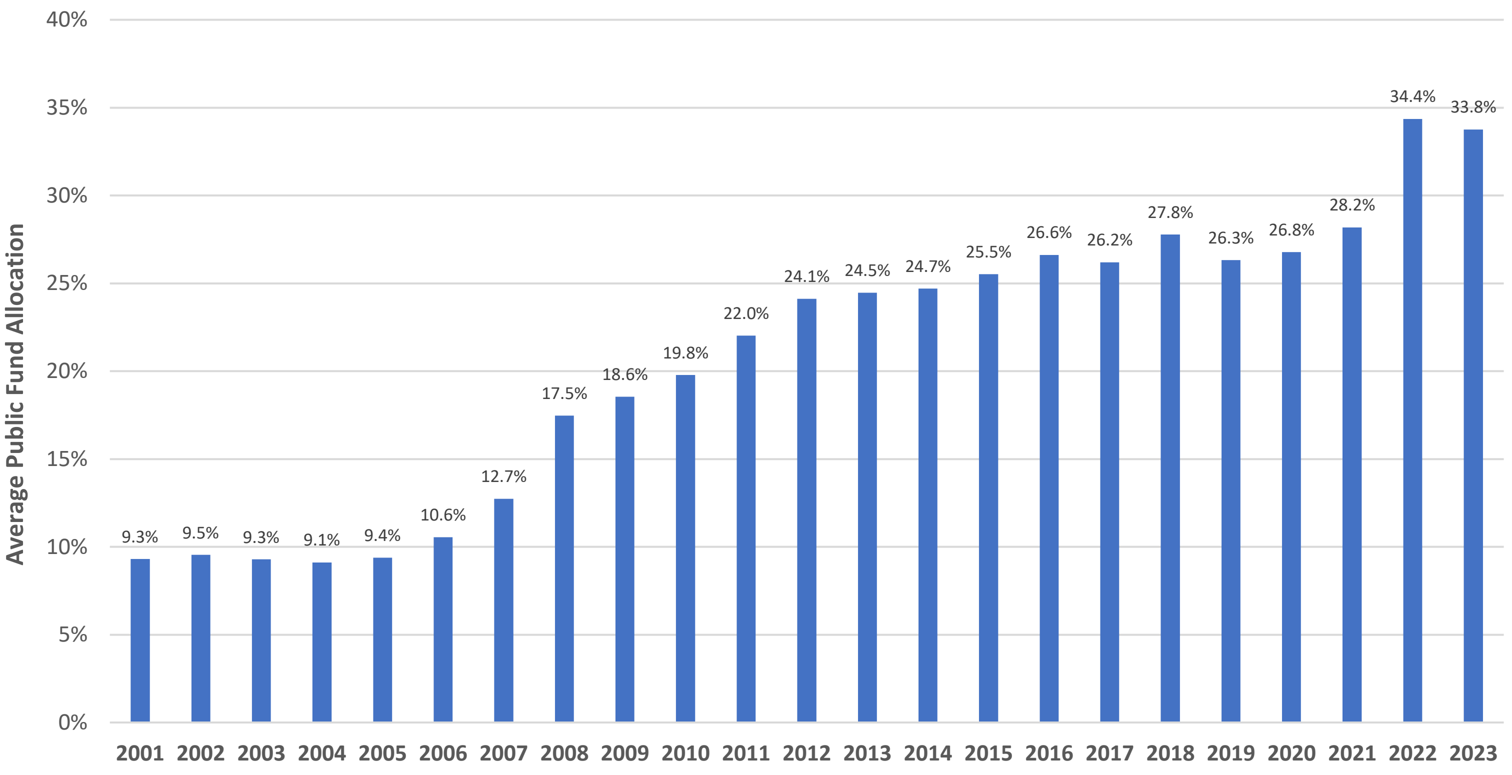
1946	Leading academics, industrialists, and financiers establish the first private venture capital (VC) firm (Advanced Research and Development) to fund promising start up companies.
1966	IPO of Digital Equipment Corporation validates the VC funding model.
1974	Thomas H. Lee establishes the first buyout fund.
1979	The Department of Labor (DoL) alters its guidance on the Prudent Man Rule under ERISA, which provides institutional plans the flexibility to invest in VC and other alternative asset classes.
1982	VC and buyout funds begin producing gargantuan returns, as they benefit from multiple, gale-force tailwinds at the end of the Great Inflation.
1985	David Swensen leaves Wall Street to lead the Yale University Endowment.
1992	The Quantum Fund co-founders, George Soros and Stanley Druckenmiller, assemble a virtual stock pool to short the pound sterling. The successful effort prompts a flood of capital into hedge funds.
2000	David Swensen publishes *Pioneering Portfolio Management;* OCIOs and consultants rush to replicate the "Yale Model."
2009	Commercial banks tighten lending standards, creating a void for companies seeking debt capital; demand for private credit increases rapidly.
2020	Institutional investors flood into direct lending, clearly demarking the asset class's transition into the "flood phase."

The Hidden Cycle of Alternative Asset Classes

Formation	**A legitimate void appears in capital markets.** *Example: Commercialization of post-World War II technologies creates massive demand for "venture" capital.*
Early Phase	**Early capital providers generate exceptional returns as the demand for capital far exceeds supply.** *Example: Yale University Endowment benefits from early exposure to VC, buyouts, and hedge funds during the last fifteen years of the twentieth century.*
Flood Phase	**In pursuit of higher returns, a herd of followers floods the new asset class with capital, thereby compressing future returns.** *Examples: In 2024, all major alternative asset classes (e.g., buyouts, venture capital, private real estate, hedge funds, and private credit) have attributes that are squarely consistent with the flood phase.*

The Floodwaters in Public Pension Plans are High but Still Rising

Average Public Pension Plan Allocation to Alternative Investments (2001-2023)



Notes: (1) Alternative asset classes include real estate, private equity, hedge funds, commodities, and other miscellaneous alternative assets.

Avoid Wipeout: How to Ride the Wave of Private Markets

August 21, 2024

BOSTON—August 21, 2024—Private market assets under management (AuM) will grow more than twice the rate of public assets, reaching $60 to $65 trillion by 2032, according to new research by Bain & Company.

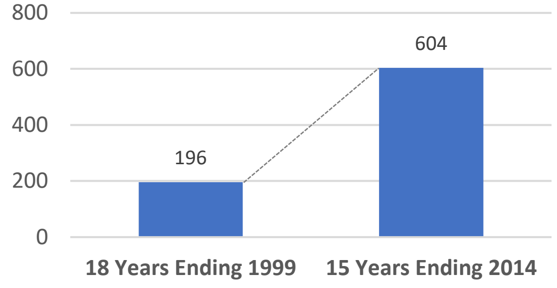
Bain's analysis, *Avoiding Wipeout: How to Ride the Wave of Private Markets*, shows by 2032, private assets will grow by a 9% to 10% compound annual growth rate (CAGR), accounting for 30% of all AUM.

Sources: *Equable (2024); "Private market assets to grow at more than twice the rate of public assets, reaching up to $65 trillion by 2032, Bain & Company finds." Bain & Company Press Release (August 21, 2024).*

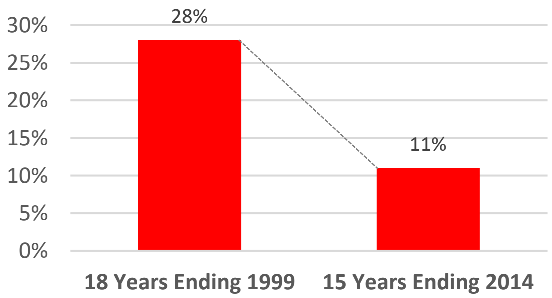
The average public plan’s results are consistent with expectations

Only the most talented investors thrive in a crowded sea…

Total U.S. Venture Capital Firms Making New Investments
(1981 - 2014)

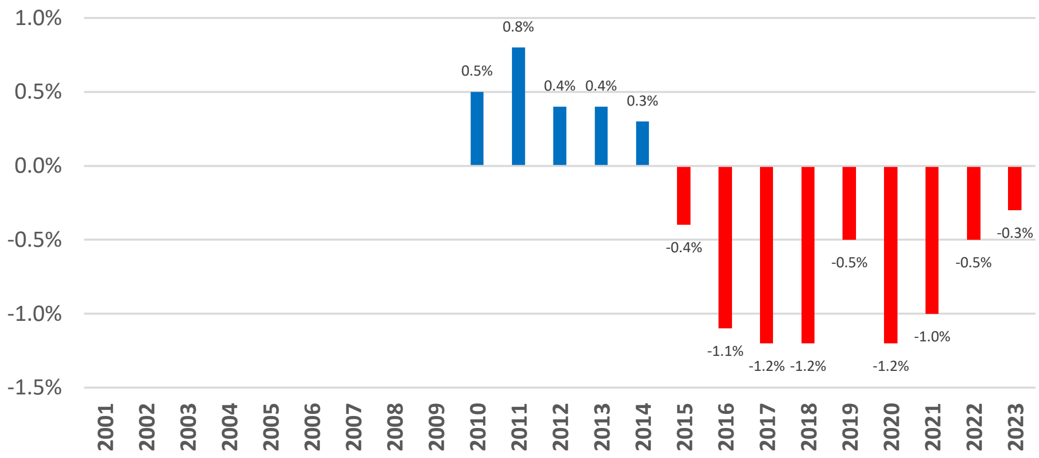


Average Equal-Weighted IRR for U.S. Venture Capital Firms
(1981 - 2014)



…the rest are pulled under by the weight of fees and disappointing returns from new market entrants.

Rolling 10-Year Return of Public Pension Plans Relative to Passive Index
(2010 - 2023)



Sources: Mark Higgins. “A Whale of a Tale: The History of Venture Investing in the United States.” *Financial History*. (Fall 2023); Nicholas, Tom. VC: An American History. Cambridge: Harvard University Press. 2019. 2015 National Venture Capital Association Yearbook. Thomson Reuters (205). Aubry, Jean-Pierre and Yimeng Yin. 2024. "How Do Public Pension Plan Returns Compare to Simple Index Investing?" Issue in Brief 24-13. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Witnessing an Industry Come Full Circle: The History of Investment Consulting

A Brief History of the Investment Consulting and OCIO Business Models

(1970 – 2024)

1970s (Performance Reporting)
First consulting firms provide only performance reporting to gauge the returns of bank asset management departments.

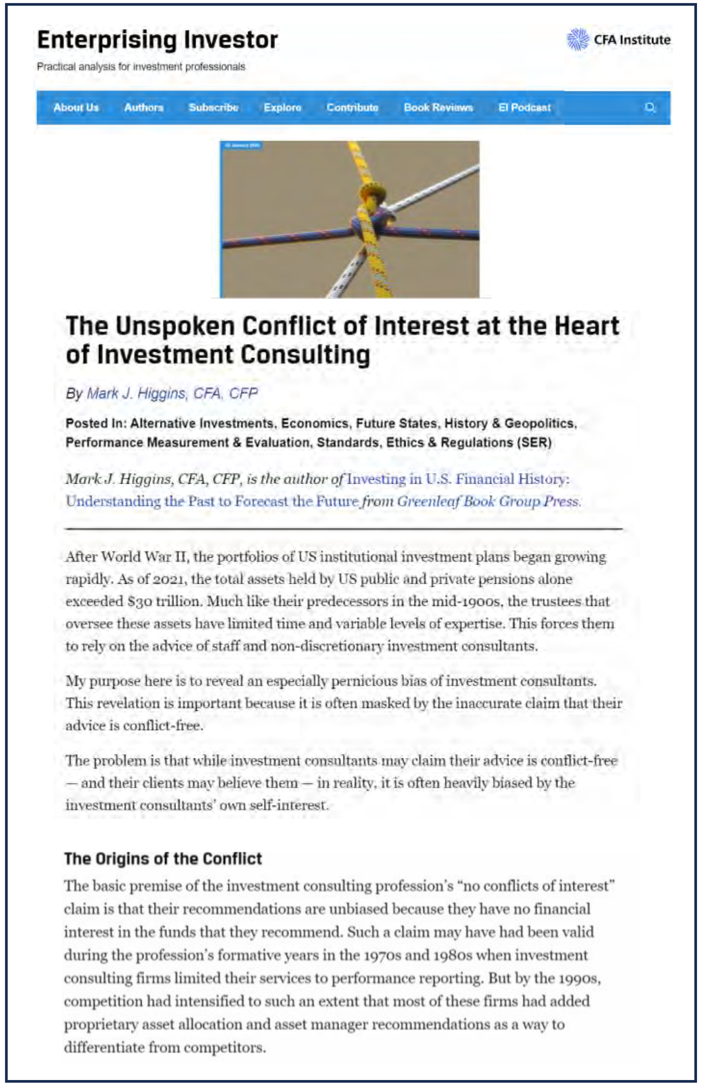
1980s (Manager Search)
Consultants begin offering "manager search" to migrate institutions away from bank asset management departments.

1990s (Diversification and Equity Migration)
Consultants embrace modern portfolio theory and aggressively move institutions into public equities.

2000s (Alternative Assets)
Consulting firms seek to emulate the Yale University Endowment by moving aggressively into alternatives.

2010s (OCIO)
Consultants offer "OCIO" services that outsource the management of complex, actively managed portfolios, thus returning trustees to the model they abandoned in the 1970s.

Never discount the fact that investment consultants have a strong incentive to preserve the status quo



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The Unspoken Conflict of Interest at the Heart of Investment Consulting

By Mark J. Higgins, CFA, CFP

Posted In: Alternative Investments, Economics, Future States, History & Geopolitics, Performance Measurement & Evaluation, Standards, Ethics & Regulations (SER)

Mark J. Higgins, CFA, CFP, is the author of Investing in U.S. Financial History: Understanding the Past to Forecast the Future from Greenleaf Book Group Press.

After World War II, the portfolios of US institutional investment plans began growing rapidly. As of 2021, the total assets held by US public and private pensions alone exceeded $30 trillion. Much like their predecessors in the mid-1900s, the trustees that oversee these assets have limited time and variable levels of expertise. This forces them to rely on the advice of staff and non-discretionary investment consultants.

My purpose here is to reveal an especially pernicious bias of investment consultants. This revelation is important because it is often masked by the inaccurate claim that their advice is conflict-free.

The problem is that while investment consultants may claim their advice is conflict-free — and their clients may believe them — in reality, it is often heavily biased by the investment consultants' own self-interest.

The Origins of the Conflict

The basic premise of the investment consulting profession's "no conflicts of interest" claim is that their recommendations are unbiased because they have no financial interest in the funds that they recommend. Such a claim may have had been valid during the profession's formative years in the 1970s and 1980s when investment consulting firms limited their services to performance reporting. But by the 1990s, competition had intensified to such an extent that most of these firms had added proprietary asset allocation and asset manager recommendations as a way to differentiate from competitors.

Non-Discretionary Consultants' Structural Conflicts of Interest

- **Business models depend on the encouragement of strategies that are unlikely to add value in aggregate:**
  - Excessive asset class diversification
  - Excessive investment manager diversification
  - Chronic underperformance of active managers
  - Disappointing returns from alternative investments
- **Consultants usually serve as both advisors and performance reporters (just like the bank asset management departments that they replaced).**
- **Regulatory gap allows non-discretionary consultants to refrain from reporting the aggregate results of their own recommendations.**

Source: Mark J. Higgins. "The Unspoken Conflict of Interest at the Heart of Investment Consulting." *Enterprising Investor*. (CFA Institute: January 2024).

In 2024, the most unconventional strategy is also the simplest and least expensive

Excerpt from "*Denying the Odds: The History of Active Management in U.S. Securities Markets*"

Employees and Taxpayers in the State of Nevada Benefit From a Bold Decision to Refrain from Gambling

Investment committees that oversee institutional investment plans suffer from governance vulnerabilities that have existed since the US Navy established the first funded pension plan in 1800. The vulnerabilities derive from the fact that committees meet infrequently, trustees bring variable levels of investment expertise and chronic turnover of trustees often leads to strategic and tactical errors. This forces trustees to rely heavily on advice provided by agents, such as investment consultants, outsourced chief investment officers (OCIOs) and full-time staff.

The problem is that agents have strong incentives to recommend active managers (not to mention expensive alternative asset classes), because the viability of their business models and careers depends on the claim that their advice adds value. Trustees are, therefore, led to believe that the use of active managers has a positive expected value, even though a preponderance of evidence reveals otherwise. For example, each year the S&P Dow Jones Indices, LLC reports the aggregate performance of institutional accounts. The results are depressingly consistent. In the latest report, issued in July 2023, 78% of equity institutional accounts and 59% of fixed income institutional accounts underperformed comparable indices on a net-of-fees basis over the trailing 10-year period.

According to the previously explained rule of thumb, it is only by deviating from the pack that investors can hope to produce relative outperformance—provided, of course, that their strategy is sensible. In the early 2000s, the investment leadership at Nevada PERS decided to leave the pack.

Abiding by the Law of Large Numbers

Steve Edmundson joined the Nevada PERS in 2005 and was appointed to the position of deputy CIO in 2006. Prior to his arrival, the portfolio was roughly divided equally between actively managed funds and index funds. Over the next seven years, Edmundson and the CIO, Kenneth Lambert, steadily migrated the portfolio to a heavier index orientation. In 2012, Lambert departed and Edmundson was promoted to CIO. At the time, 75% of publicly traded securities were allocated to index funds, but Edmundson continued the transition until 100% of publicly traded securities were allocated to index funds by 2014. The remaining 12% of the total portfolio remained in private assets. Edmundson's simple rationale was that, in the long-run, gross-of-fees returns of index funds would differ little from active funds, but net-of-fees returns would be considerably higher.

For nearly 20 years, the performance of Nevada PERS has validated their unconventional approach. The table below shows the annualized gross-of-fees returns relative to public pension plans with greater than $1 billion in assets, as well as the percentile ranking of Nevada PERS in a peer universe provided by the investment consulting firm Callan Associates. It is also worth noting that this analysis substantially underestimates Nevada's performance advantage because it does not account for the fact that their fees are much lower than those of their peers.

Annualized Gross-of-Fees Returns of Nevada PERS
Period Ending March 31, 2024

	5- Year	7-Year	10-Year	15-Year	20-Year
Nevada PERS	10.12	9.59	8.59	10.49	7.79
Median Plan (>$1 Billion)	8.40	8.20	7.40	9.74	7.21
Relative Outperformance	1.72	1.39	1.19	0.75	0.58
Nevada PERS Percentile Ranking	2nd	2nd	4th	10th	11th

www.MoAF.org | **Summer 2024** | FINANCIAL HISTORY 27

Nevada PERS – Key Metrics

Investment Staff Members	**2**
Allocation to Index Funds	**~88%**
Annual Investment Management Fees	**~0.13%**

Relative Performance

Time Period	Peer Rank	Annualized Relative Outperformance vs. Peer Median
5-Year	2nd	172 bps
7-Year	2nd	139 bps
10-Year	4th	119 bps
15-Year	10th	75 bps
20-Year	11th	58 bps

Source: Mark J. Higgins. "Denying the Odds: The History of Active Management in U.S. Securities Markets." *Financial History*. Summer 2024.

Quotes for Trustees to Live By

Misleading Claims of Financial Innovation

"As to new financial instruments, however, experience establishes a firm rule, and on few economic matters is understanding more important…The rule is that financial operations do not lend themselves to innovation. What is recurrently so described is, without exception, a small variation on an established design, one that owes its distinctive character to the aforementioned brevity of the financial memory. The world of finance hails the invention of the wheel over and over again, often in a slightly more unstable version."

—JOHN KENNETH GALBRAITH (1990)

The Limits of Economic Forecasting

"There is a prudent maxim of the economic forecaster's trade that is too often ignored: Pick a number or pick a date, but never both."

—PAUL A. VOLCKER (1980s)

The Curse of Overconfidence

"When a speculator wins, he don't stop till he loses."

—GEORGE HORACE LORIMER (1903)

The Danger of Excess Complexity

"As a general rule of thumb, the more complexity in a Wall Street creation, the faster and further investors should run."

—DAVID SWENSEN (2000)

Danger of Following Peers

"Once a majority of players adopts a heretofore contrarian position, the minority view becomes the widely held perspective."

—DAVID SWENSEN (2000)

The Price of Envy

"Nothing so undermines your financial judgment as the sight of your neighbor getting rich."

—J. PIERPONT MORGAN (late 1800s)

Quotes are utilized for illustrative purposes only and should not be construed as an endorsement, recommendation, or guarantee of any particular financial product, service, or advisor.

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IFA Corporate Office | 19200 Von Karman Avenue, Suite 150 | Irvine, CA 92612
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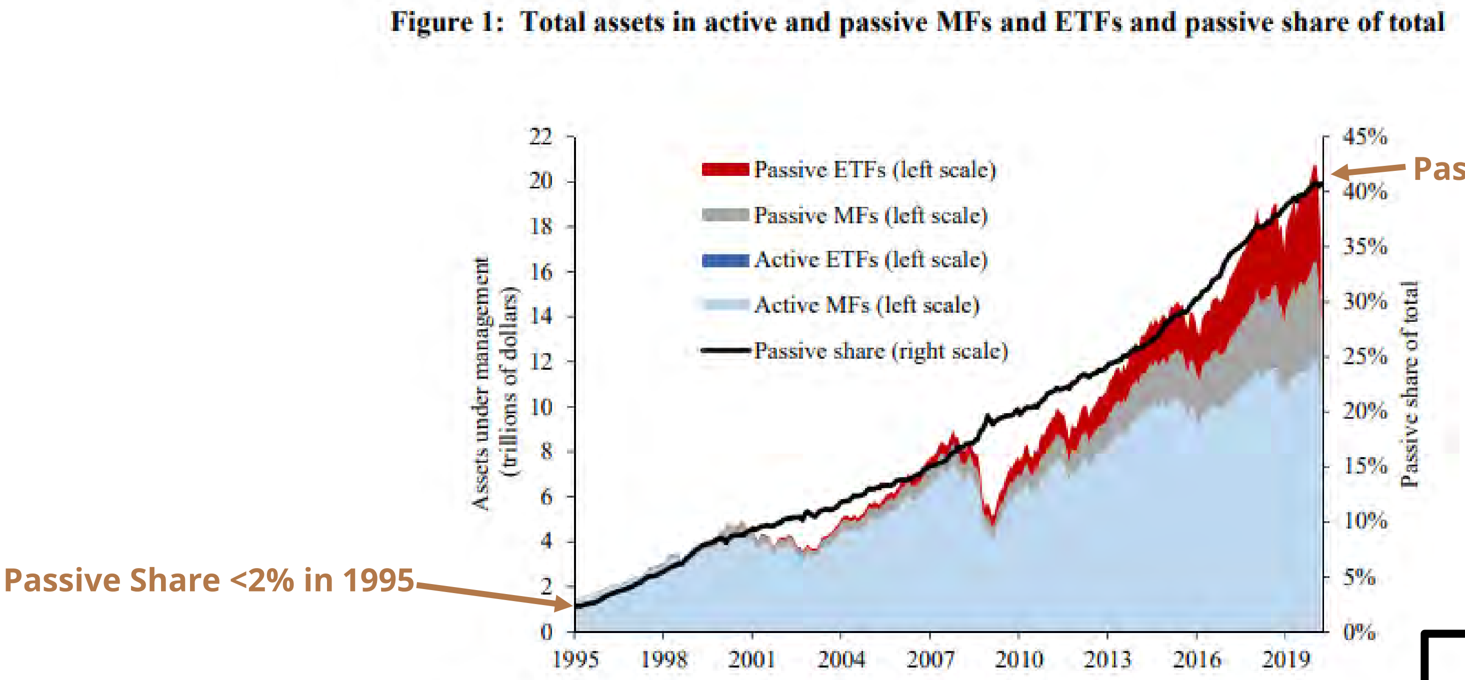
SIMPLIFY

The Greatest Story Ever Sold:

The Impact of Passive Investment on Markets

Michael Green, CFA
Simplify Asset Management

Total Assets in Active and Passive MFs and ETFs

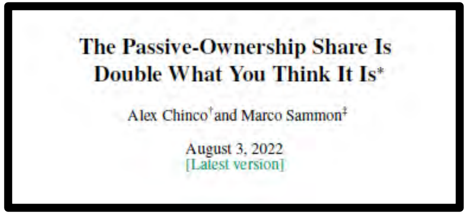


Source: Federal Reserve Boston, Anadu et al May 2020

Key regulatory events

Pension Protection Act 2006

DoL Fiduciary Rule



The Passive-Ownership Share Is Double What You Think It Is*

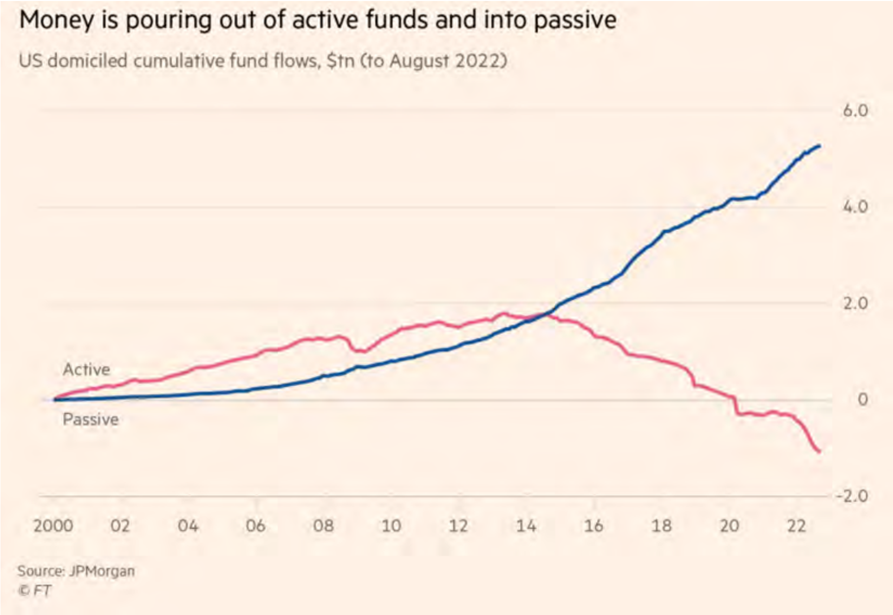
Alex Chinco[†] and Marco Sammon[‡]

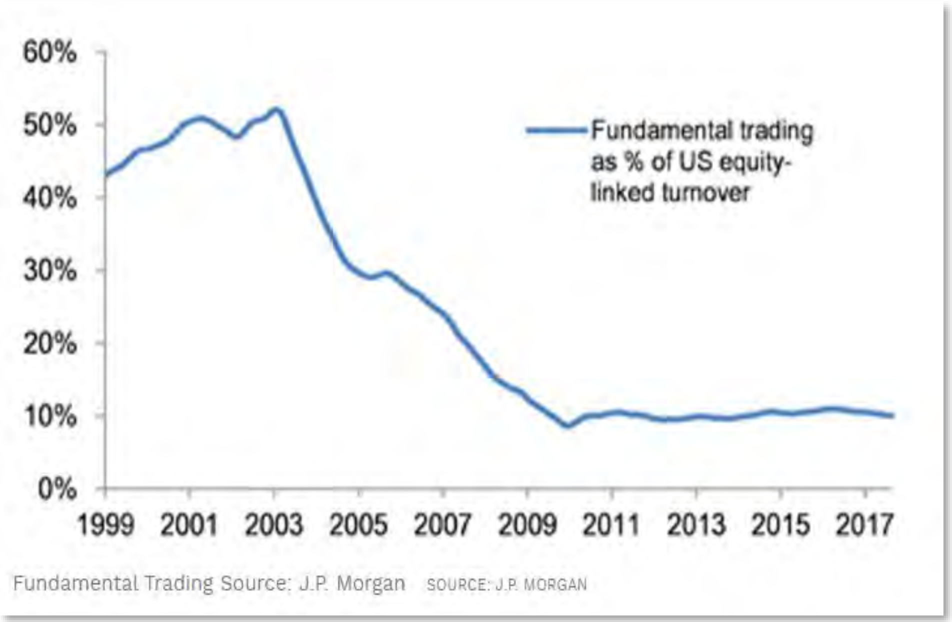
August 3, 2022

[Latest version]

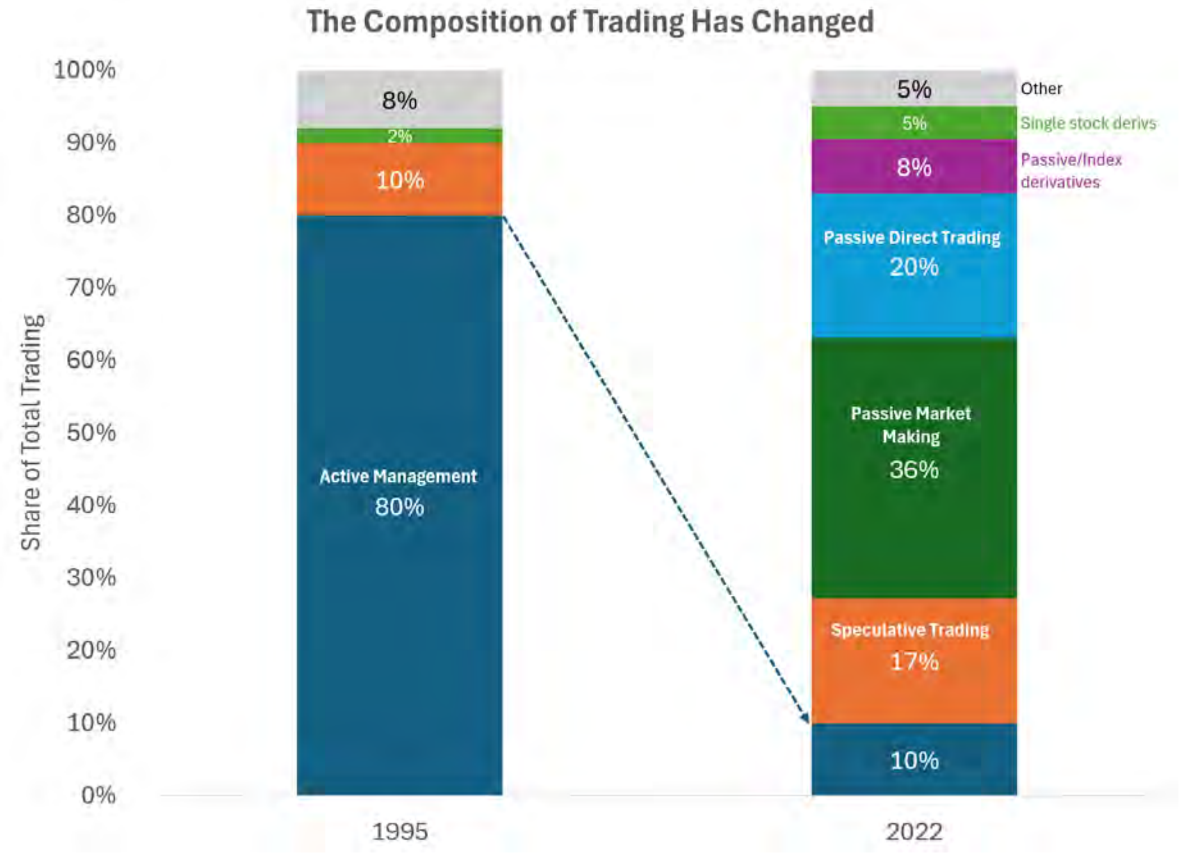
"If everybody indexed, the only word you could use is chaos, catastrophe…The markets would fail."

~ John Bogle, May 2017





The Composition of Trading Has Changed



Source: Market Structure Edge, CBOE, Hagstrom 2013, Simplify calculations

When Passive Strategies Become Too Large

Michael Green: *"Do you think this product survives a 1987-type event?"*
Nick Cherney *(XIV Creator): "I absolutely do."*
Michael Green: *"I strongly disagree."*

~ EQD Derivatives Conference, Keynote Q&A, May 2017

VelocityShares Daily Inverse VIX ST ETN: **XIV**

Source: Bloomberg

Markets

Peter Thiel Had $244 Million Bet on Volatility Jump at Year-End

By Miles Weiss
February 16, 2018, 8:16 AM PST

- Billionaire's macro firm held put options on short VIX ETF
- ProShares ETF that Thiel wagered against plunged this month

On February 5th, 2018, the inverse VIX product XIV collapsed more than 95% in a single day, losing investors nearly $2B. The product was delisted.

What is Passive Investing?

How does a passive investor get into the market?

"Magic"

Of course, certain definitions of the key terms are necessary. First, a *market* must be selected -- the stocks in the S&P 500, for example, or a set of "small" stocks. Then each investor who holds securities from the market must be classified as either *active* or *passive*.

- A *passive investor* always **holds** every security from the market, with each represented in the same manner as in the market. Thus if security X represents 3 percent of the value of the securities in the market, a passive investor's portfolio will have 3 percent of its value invested in X. Equivalently, a passive manager will hold the same percentage of the total outstanding amount of each security in the market.

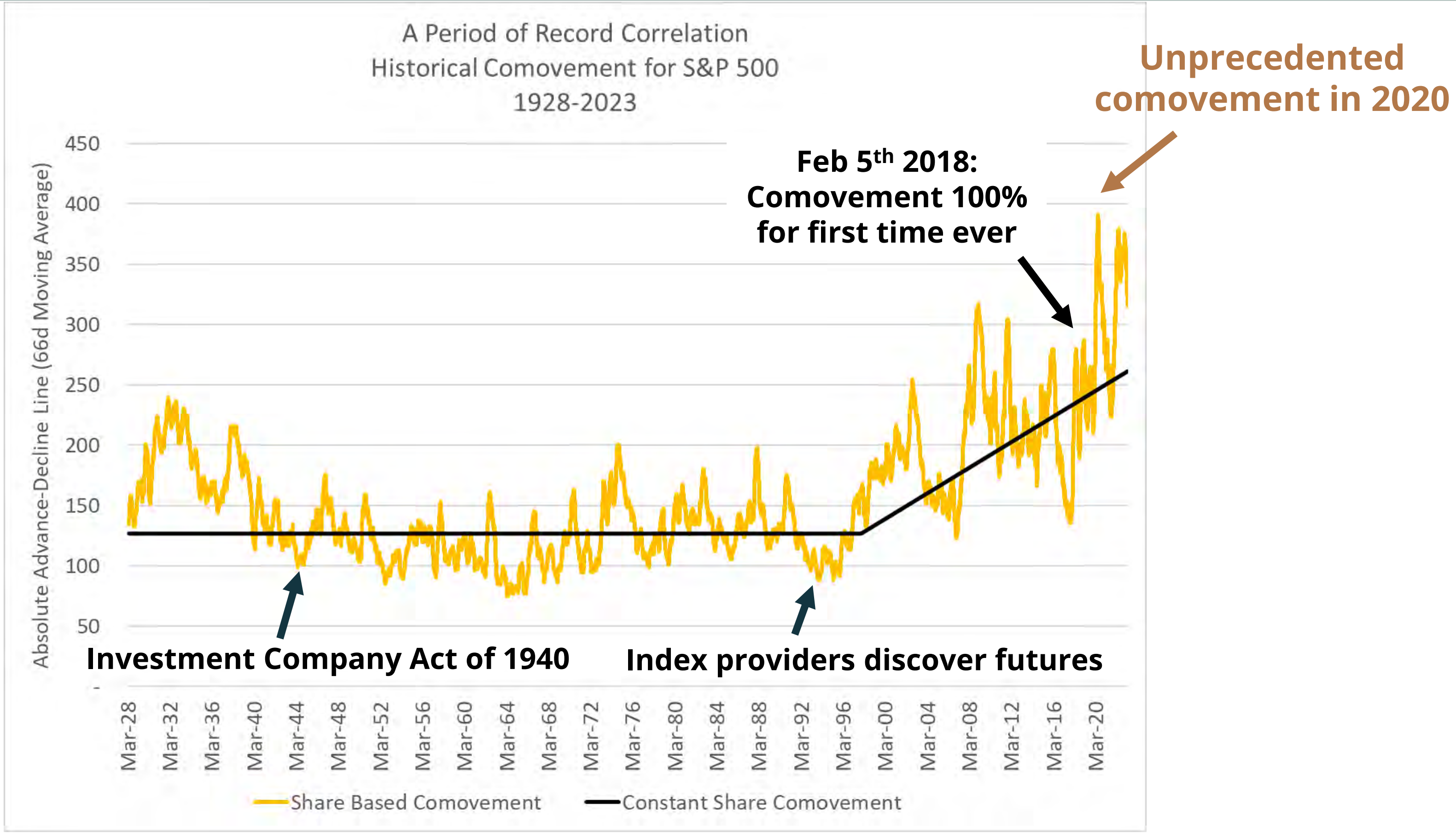
- **An *active investor* is one who is not passive**. His or her portfolio will differ from that of the passive managers at some or all times. Because active managers usually act on perceptions of mispricing, and because such misperceptions change relatively frequently, such managers tend to trade fairly frequently -- hence the term "active."

~ William Sharpe, The Arithmetic of Active Management, 1991

Passive Investing Impacts on Markets

How Does Passive Investing Impact Markets?	Risk
• Increase in correlation between securities	↑
• Increase in valuations of securities, regardless of fundamentals, as passive share grows	↑
• Reduced market elasticity raises risks of extraordinary price movements	↑
• Increase in market concentration as momentum bias leads to the largest companies becoming larger	↑
• Reduced ability for new companies to become public	↑
• Portfolio effects dominate cash flow and discounting effects	↑

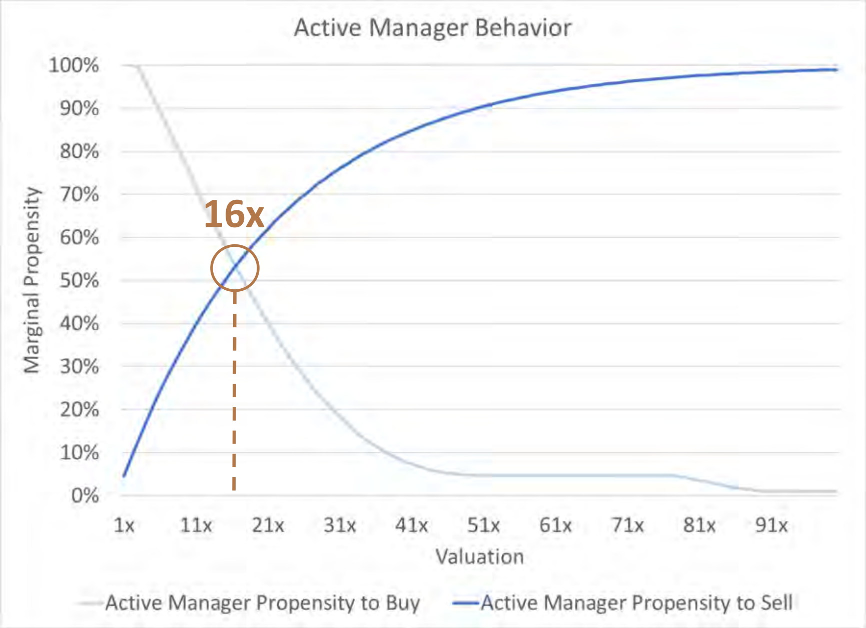
A Period of Record Correlation

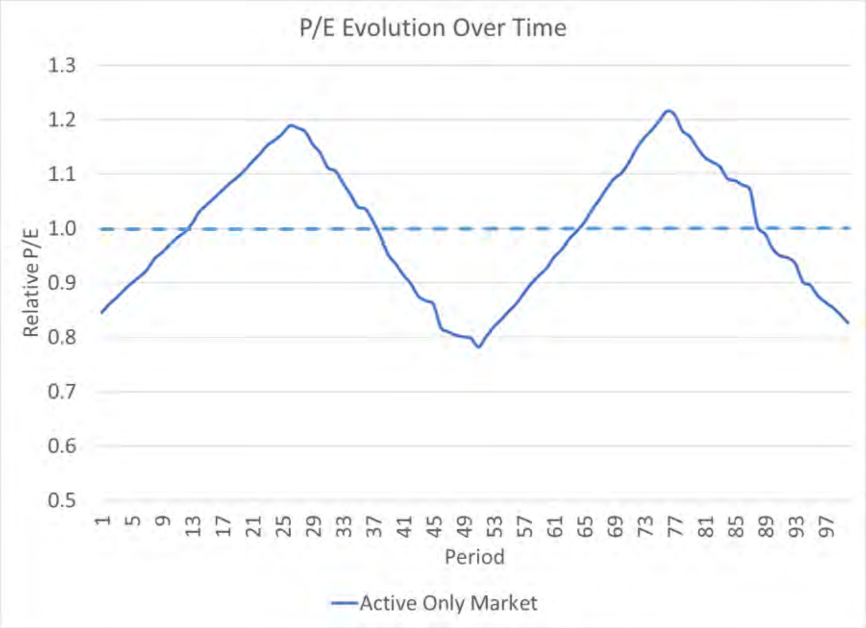


Source: Bloomberg, author calculations

How Do Active Managers Behave?

Q: You are a Portfolio Manager with 5% cash in your portfolio and you receive a 1% new inflow/(outflow)… what is the likelihood that you will immediately deploy the funds (or sell securities to meet redemption) given normalized (Shiller-type) valuation?

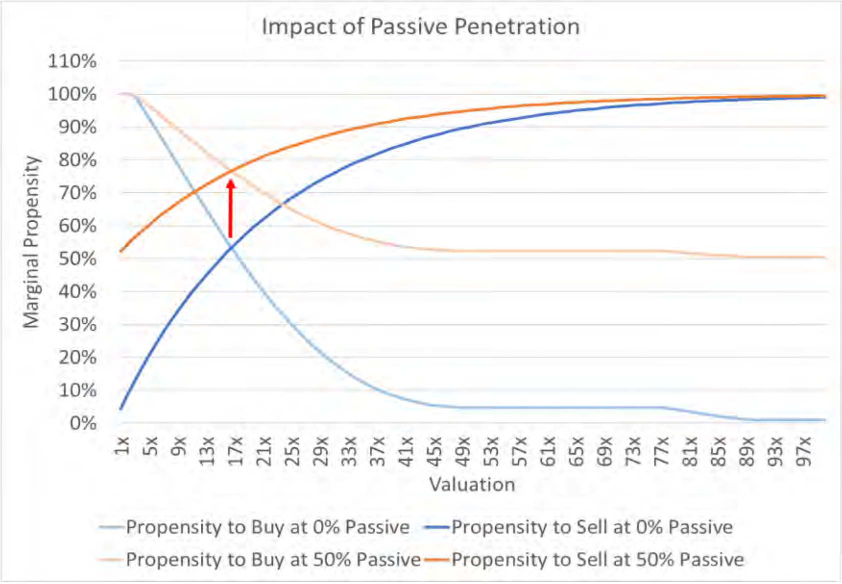


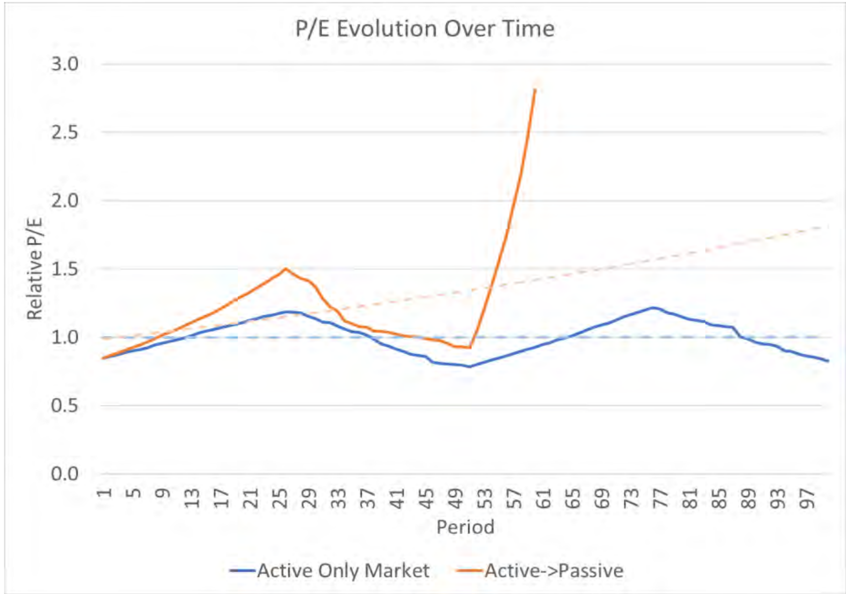


Source: Proprietary survey of 452 investors subscribing to RealVision, author calculations

How Does a Market Transitioning from Active to Passive Behave?

Passive managers have a 100% propensity to buy or sell on flows.
As they grow in share, they change the market.

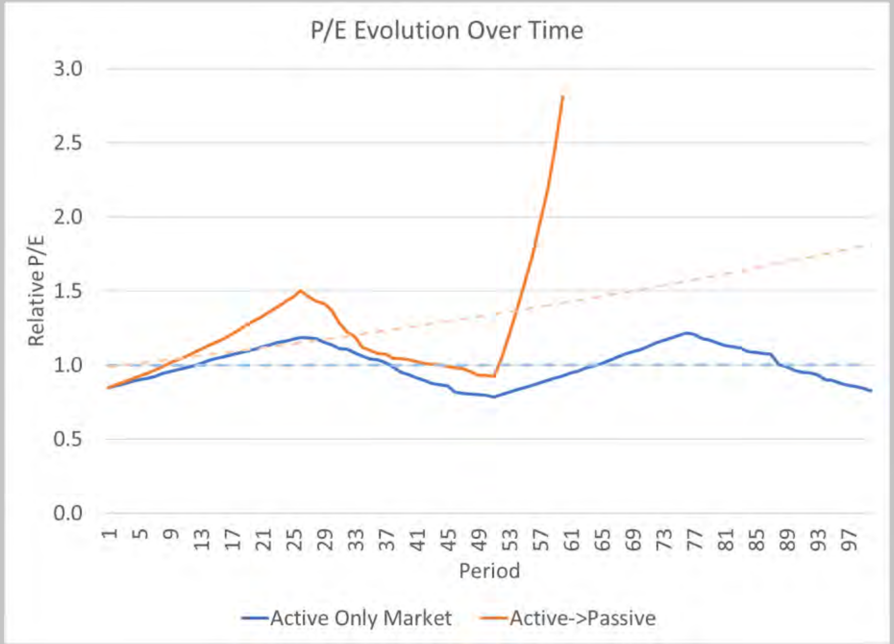




Source: Proprietary survey of 452 investors subscribing to RealVision, author calculations

How Does a Market Transitioning from Active to Passive Behave?

A theoretical model of Active-to-Passive transition shows rising valuations over time. Empirical results show the same.



Source: Proprietary survey of 452 investors subscribing to RealVision, author calculations, Compustat

How Does a Market Transitioning from Active to Passive Behave?

When you can't hold cash, the value of non-cash assets MUST rise

Not only does passive have a higher marginal propensity to transact, it hates cash…

		Equity	Cash	Cash %
Start: time=0	Active	$ 950	$ 50	5.0%
	Passive	-	-	
	Total	$ 950	$ 50	5.0%

Step 1: Mike Green wants to move $10 (1%) from Active to Passive

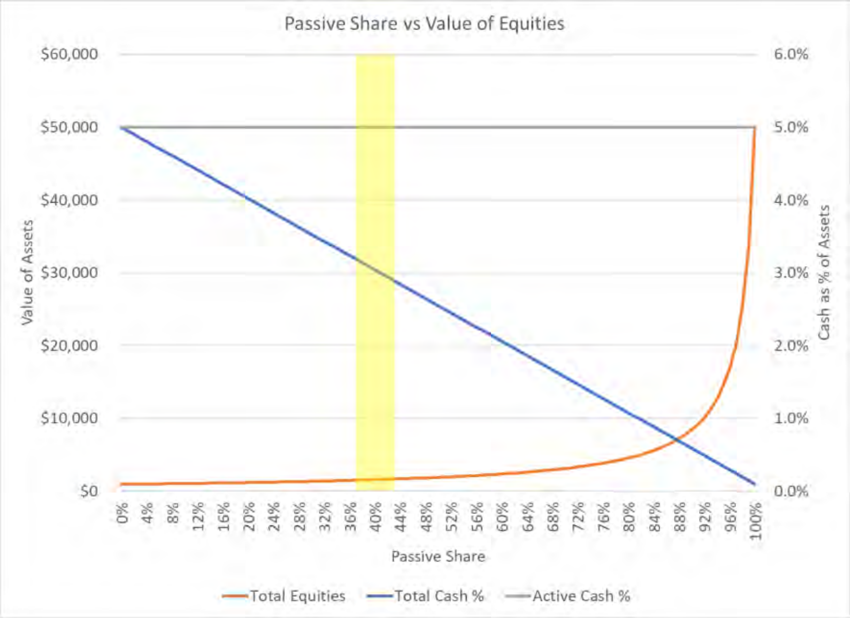
		Equity	Cash	Cash %
time=1a	Active	$ 950	$ 40	4.04%
	Mike Green	-	10	100.0%
	Passive	-	-	
	Total	$ 950	$ 50	5.0%

		Equity	Cash	Cash %
time=1b	Active	$ 950	$ 40	4.04%
	Mike Green	-	-	
	Passive	-	10	100.0%
	Total	$ 950	$ 50	5.0%

Step 2: Active wants to get back to 5% cash and Passive needs to get to 0.1% cash
Active must sell $9.50 (1% of 950)
Passive must buy $9.99 (99.99% of $10)
Buying more aggressive than selling as Passive must get to 0.1% while Active prefers 5%
Solve iteratively.

		Equity	Cash	Cash %
time=2	Active	$ 949.81	$ 49.99	5.00%
	Passive	10.09	0.01	0.10%
	Total	$ 959.90	$ 50.00	4.95%

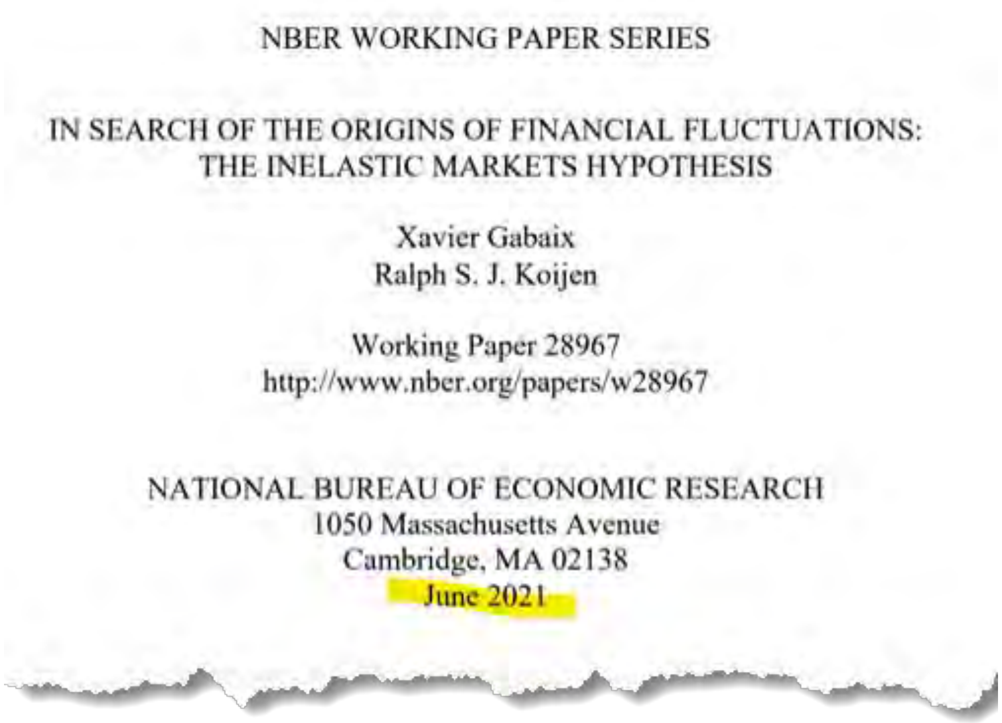
Since cash has zero variance, the only "flex" is in equity prices… we are still too low to see most effects clearly



Source: Author calculations

Are Markets Inelastic?

The Academics Are Coming!


NBER WORKING PAPER SERIES

IN SEARCH OF THE ORIGINS OF FINANCIAL FLUCTUATIONS:
THE INELASTIC MARKETS HYPOTHESIS

Xavier Gabaix
Ralph S. J. Koijen

Working Paper 28967
http://www.nber.org/papers/w28967

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
June 2021

"…the price elasticity of demand of the aggregate stock market is small, and flows in and out of the stock market have large impacts on prices"

~ Gabaix & Koijen

How Does a Market Transitioning from Active to Passive Behave?

The World's Largest Active Fund…

FCNTX US Equity Alert Settings

Fidelity Contrafund Latest Available Portfolio Filing Portfolio Filing Look-Through Creation Unit

Type Fund: Open-End Fund Asset Class Equity Cash Pos 2.36B USD

Historical View Periodicity Quarterly 2022 Q3 2023 Q2 Field Position

Group By None Show Asset Type All Currency USD Total Curr Mkt Val 96.6B Num of Holdings 351

	Security	Ticker	Source	Position	Pos Chg	% Out	% Net	Curr MV↓	Rpt MV	Filing Da…
			All							All
1)	Berkshire Hathaway Inc CLASS A	BRK/A US	MF-USA	18,890	-19	3.20	9.37	9.28BLN	8.76BLN	02/28/23
2)	Meta Platforms Inc Class A	META US	MF-USA	41,730,065	-42,212	1.88	7.81	8.74BLN	7.30BLN	02/28/23
3)	Microsoft Corp	MSFT US	MF-USA	22,004,642	-271,710	.30	5.87	6.50BLN	5.49BLN	02/28/23
4)	Amazon.com Inc	AMZN US	MF-USA	51,216,126	-1.71MLN	.50	5.16	5.38BLN	4.83BLN	02/28/23

The World's Largest Passive Fund…

VTSMX US Equity Settings Alert Holder Ownership

Vanguard Total Stock Market Index Fund Latest Available

Type Fund: Open-End Fund Asset Class Equity Cash Pos 84.68M USD

Historical View Periodicity Quarterly 2021 Q4 2022 Q3 Field Position

Group By None Show Asset Type All Currency USD Total Curr Mkt Val 885.7B Num of Holdings 4,094

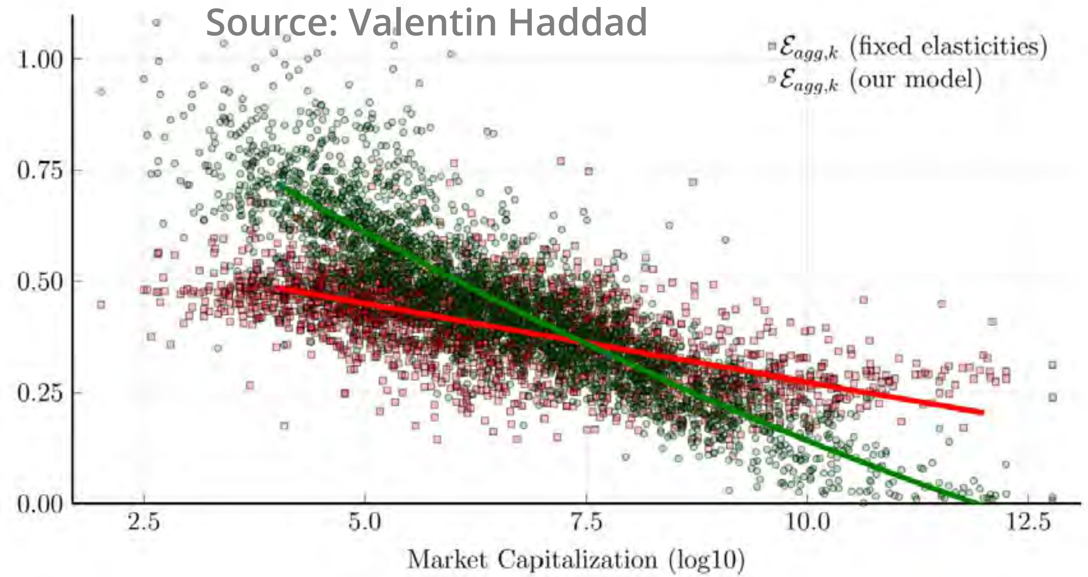
	Security	Ticker	Source	Position	Pos Chg	% Out	% Net	Curr MV↓	Rpt MV	Filing Date
			All							All
1)	Apple Inc	AAPL US	MF-USA	354,304,792	-216,371	2.20	6.10	53.39BLN	55.70BLN	08/31/22
2)	Microsoft Corp	MSFT US	MF-USA	172,339,725	-102,882	2.31	4.94	42.18BLN	45.06BLN	08/31/22
3)	Amazon.com Inc	AMZN US	MF-USA	199,295,083	-109,619	1.96	2.77	24.62BLN	25.26BLN	08/31/22
4)	Tesla Inc	TSLA US	MF-USA	60,880,683	-32,639	1.94	1.84	18.47BLN	16.78BLN	08/31/22
5)	Alphabet Inc Class A	GOOGL US	MF-USA	139,284,557	-90,473	2.32	1.65	14.32BLN	15.07BLN	08/31/22
6)	Alphabet Inc Class C	GOOG US	MF-USA	122,113,490	-36,394	1.98	1.46	12.65BLN	13.33BLN	08/31/22
7)	UnitedHealth Group Inc	UNH US	MF-USA	21,613,729	-16,369	2.31	1.23	11.26BLN	11.22BLN	08/31/22
8)	Berkshire Hathaway Inc CLASS B	BRK/B US	MF-USA	38,587,642	-28,149	2.97	1.19	10.60BLN	10.84BLN	08/31/22
9)	Johnson & Johnson	JNJ US	MF-USA	60,625,681	-45,929	2.31	1.07	10.16BLN	9.78BLN	08/31/22
10)	Exxon Mobil Corp	XOM US	MF-USA	97,045,399	-74,125	2.33	1.02	9.05BLN	9.28BLN	08/31/22

Source: Author calculations

Volatility on fundamental events, like earnings announcements, is rising as passive holders do not react to those events

Source: Bloomberg, Goldman Sachs Global Investment Research

The Bigger the Company, the LESS Elastic the Demand Response



Source: Valentin Haddad

Figure 3. Aggregate elasticity at the stock level: $\mathcal{E}_{agg,k}$. Figure 3 represents estimates of the aggregate elasticity $\mathcal{E}_{agg,k}$ as a function of their market capitalization (in logarithm) for the date 2011Q3. Each point represents a stock; green circles are our estimates, while red squares correspond to a model where elasticities are fixed.

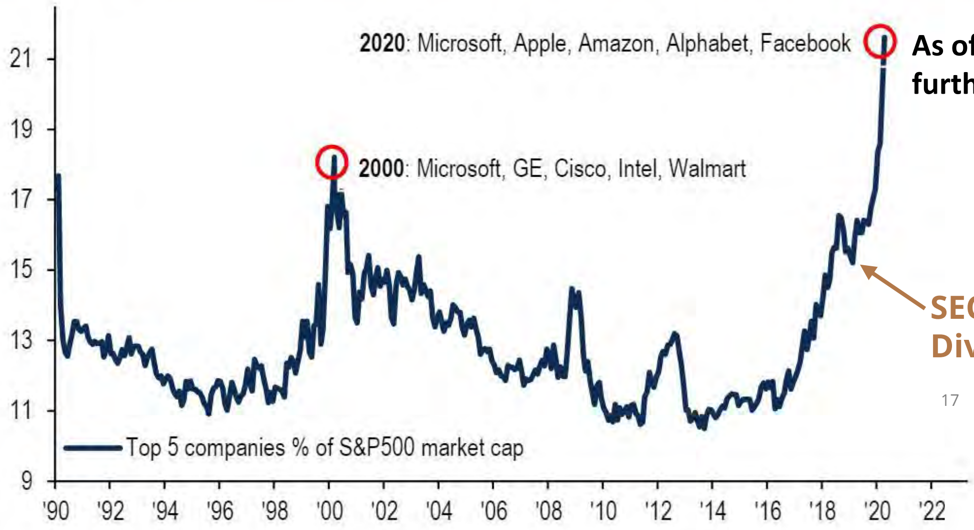
"The large increase in passive investing over the last 20 years has led to substantially more inelastic aggregate demand curves for individual stocks… when demand is more inelastic, small changes in the market structure can have a large effect on prices, because investors are unwilling to change their positions."

– Haddad et al, 2021

Source: https://www.youtube.com/watch?v=K8siASXfeyU&ab_channel=RealVisionFinance

The Passive model allocates more money to the largest stocks, driving them ever higher… and regulators are helping

Chart 2: S&P500 now more concentrated in the 5 largest stocks than ever



As of February 2024, this had risen further to 26%.. From 22% in Sep 2022

SEC Issues No-Action Relief for Diversified Index Funds

17

Source: BofA Global Investment Strategy, Bloomberg

Bonds… Who was buying all the negative-yielding bonds? American retirees.

German 10-Year Bond

Largest Target Date Fund providers

	Holder Name	Portfolio Name	Source	Opt	Position	% Out	Latest Chg
			All	All			
1.	Vanguard Group Inc/The		ULT-AGG		934,737	4.25	101,432
2.	BlackRock Inc		ULT-AGG		92,839	0.42	-117,808
3.	Capital Group Cos Inc/The		ULT-AGG		77,405	0.35	68,165
4.	DekaBank Deutsche Girozentrale	Multiple Portfolios	MF-AGG		71,951	0.33	2,579
5.	Intesa Sanpaolo SpA	Multiple Portfolios	MF-AGG		47,481	0.22	7,211
6.	FIL Ltd		ULT-AGG		46,025	0.21	32,214
7.	Credit Agricole Group		ULT-AGG		41,333	0.19	29,093
8.	CPR Asset Management SA/France	Multiple Portfolios	MF-AGG		30,900	0.14	30,900
9.	Natixis SA		ULT-AGG		26,000	0.12	24,000
10.	Deutsche Bank AG		ULT-AGG		25,026	0.11	-14,031
11.	Societe Generale SA		ULT-AGG		25,000	0.11	0
12.	Union Investment Luxembourg SA		ULT-AGG		23,313	0.11	21,307
13.	STANDARD LIFE INVESTMENTS	Multiple Portfolios	MF-AGG		20,241	0.09	16,941
14.	Frank Russell Co	Multiple Portfolios	MF-AGG		17,327	0.08	2,363
15.	Van Lanschot Bankiers Belgie	Multiple Portfolios	MF-AGG		16,800	0.08	0
16.	RAIFFEISEN BANK INTERNATIONAL		ULT-AGG		16,200	0.07	6,400
17.	Waddell & Reed Financial Inc		ULT-AGG		15,127	0.07	15,127
18.	BancoPosta Fondi SpA SGR	Multiple Portfolios	MF-AGG		13,207	0.06	13,207
19.	BNP Paribas SA		ULT-AGG		13,130	0.06	13,130
20.	Power Corp of Canada		ULT-AGG		12,339	0.06	683
21.	Allianz SE		ULT-AGG		12,243	0.06	5,143

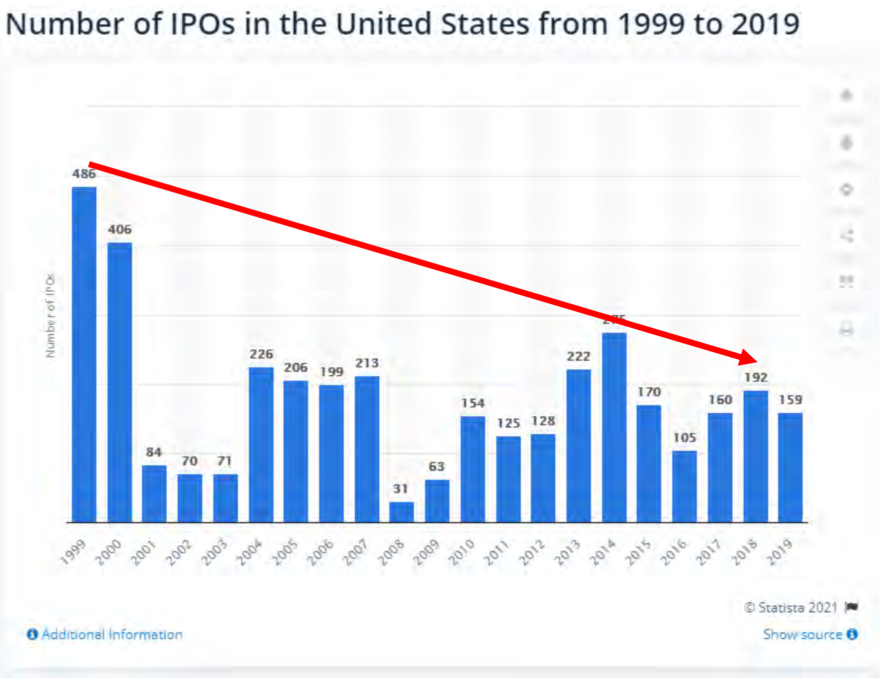
Vanguard 10x the size of the next owner

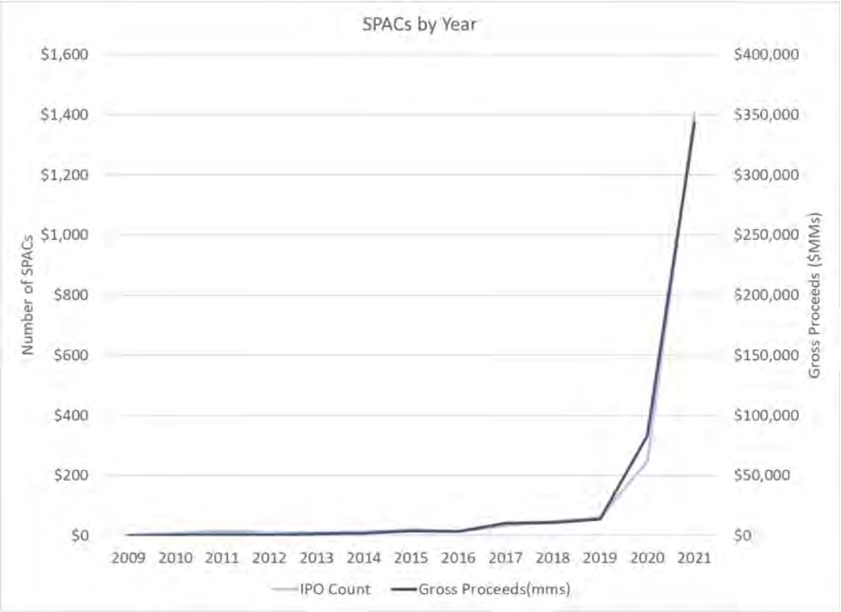
Source: Bloomberg

Passive Investing Impacts on Markets

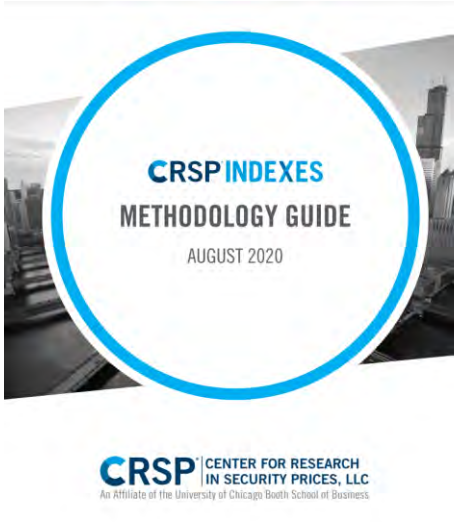
How Does Passive Investing Impact Markets?	Risk
• Increase in correlation between securities	⬆
• Increase in valuations of securities, regardless of fundamentals, as passive share grows	⬆
• Reduced market elasticity raises risks of extraordinary price movements	⬆
• Increase in market concentration as momentum bias leads to largest companies becoming larger	⬆
• Reduced ability for new companies to become public	⬆

Fewer IPOs…More SPACs…Why?





Fewer IPOs…More SPACs…Why?



Universe Category	CRSP Index Eligible	Eligible for Market Capitalization Assignment
Primary Exchange Listing		
NYSE	Y	Y
NYSE American	Y	Y
NYSE ARCA	Y	Y
NASDAQ	Y	Y
Cboe Global Markets	Y	Y
The Investors Exchange	Y	Y
OTCCBB	N	Y*
Pink Sheets	N	Y*
Unlisted	N	Y*
Other Consolidated US	N	Y*
International	N	Y*
Organization Types		
Corporation	Y	Y
Real Estate Investment Trust (REIT)	Y	Y
Berkshire Hathaway A & B	Y	Y
Business Development Company (BDC)	N	N
Closed-End Investment Company	N	N
Exchange Traded Fund (ETF) / Exchange Traded Note (ETN)	N	N
Limited Liability Company (LLC)	N	N
Limited Partnership (LP)	N	N
Royalty Trust	N	N
Special Purpose Acquisition Company (SPAC or Blank Check Company)	N	N
Special Purpose Vehicle (SPV)	N	N
Share Types		
Common Shares	Y	Y
American Depository Receipt (ADR)	N	N
Preferred and Convertible Preferred Stock	N	N
Convertible Class B Common Stock	N	Y*
Shares of Beneficial Interest (SBI)	Y (unless a fund)	Y (unless a fund)
Rights	N	N
Warrants	N	N
Participating Preferred Stock	N	N
Redeemable Shares	N	N
Trust Receipts	N	N
Units	N (even if the only trading form of an otherwise eligible share type)	N (even if the only trading form of an otherwise eligible share type)
Non-Restricted Fully Convertible/Exchangeable LLC Partnership Units/Interests	N	Y*

* Only if representing additional common equity of a company already represented as an index-eligible security.

Source: http://www.crsp.org/files/Equity-Indexes-Methodology-Guide_0.pdf

Seasoning of New Securities:

New securities are eligible for index inclusion if they fulfill at least one of the two following conditions:

- The first day of regular way trading on a CRSP exchange of interest was at least 20 trading days before the ranking day.
- The first day of regular way trading on a CRSP exchange of interest was at least **five trading days** before the ranking day **and the company's capitalization is greater than or equal to the lower breakpoint of the CRPS US Small Cap Index** determined at the last ranking. **These companies are considered to be fast-track IPOs.**

Fewer IPOs…More SPACs…Why?

	Holder Name	Portfolio Name	Source	Opt	Position	% Out	Latest Chg	File Dt
			All	All				
1.	Milton Trevor R		Form 4		52,297,726	12.06	3,000,000	08/24/22
2.	T&M RESIDUAL LLC		Proxy		39,876,497	9.20	0	04/04/22
3.	IVECO		Proxy		25,661,448	5.92	0	04/04/22
4.	Vanguard Group Inc/The		ULT-AGG		23,062,018	5.32	3,958,162	06/30/22
5.	Norges Bank		424B		20,879,125	4.82	3,840,262	03/02/22
6.	Green Nikola Holdings LLC		13D		19,227,033	4.44	0	06/28/21
7.	Nimbus Atlas LLC		13D		18,820,296	4.34	0	12/01/20
8.	BlackRock Inc		ULT-AGG		17,695,210	4.08	3,461,062	06/30/22

Source: Bloomberg

Niedermeyer? Dead! Private Equity? Dead!!

DE-SPAC TRANSACTIONS

New corporations (C-corps) created via de-SPAC transactions (e.g., a Blank Check Company (SPAC) merges with a private company) will be considered for index inclusion at the next regularly scheduled quarterly ranking.

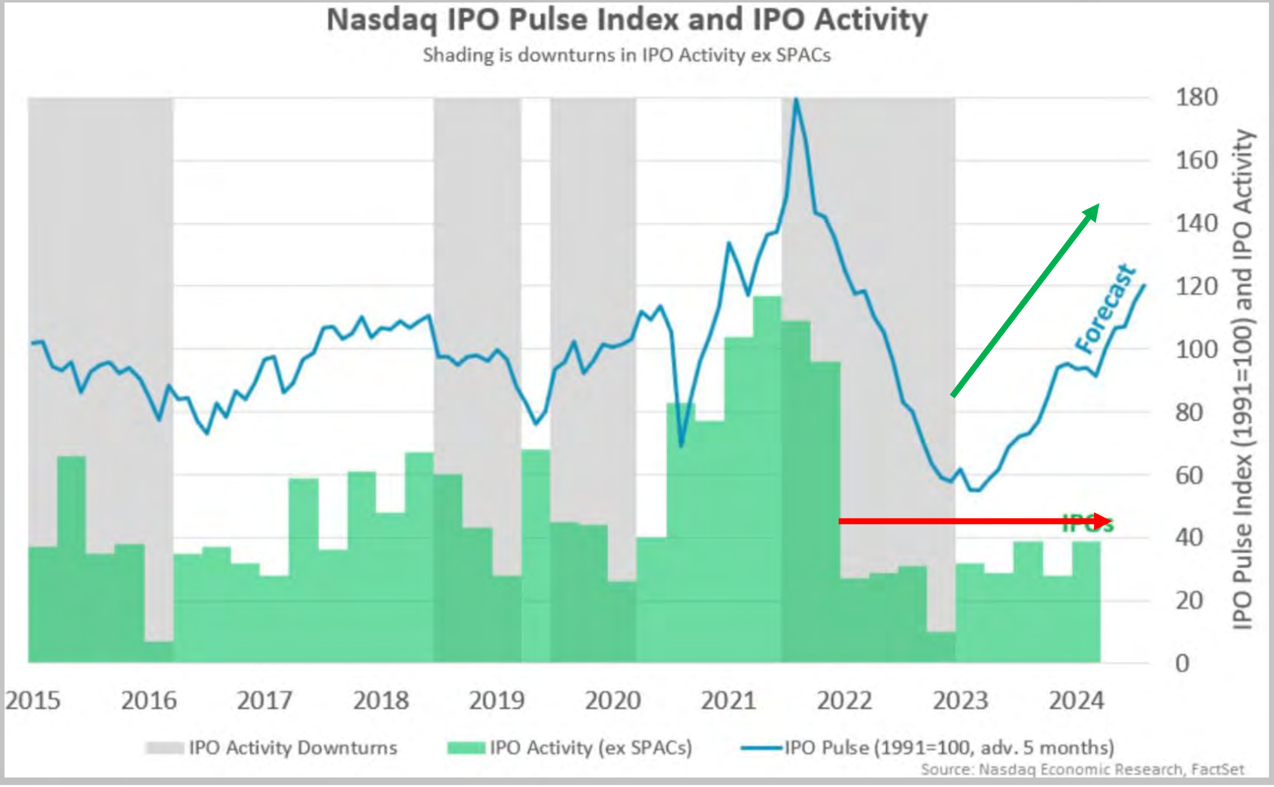
Private Equity Payouts at Major Firms Plummet 49% in Two Years

- Distributions to fund investors falling amid deal drought
- Fund investors zeroing in on a new metric for PE investments

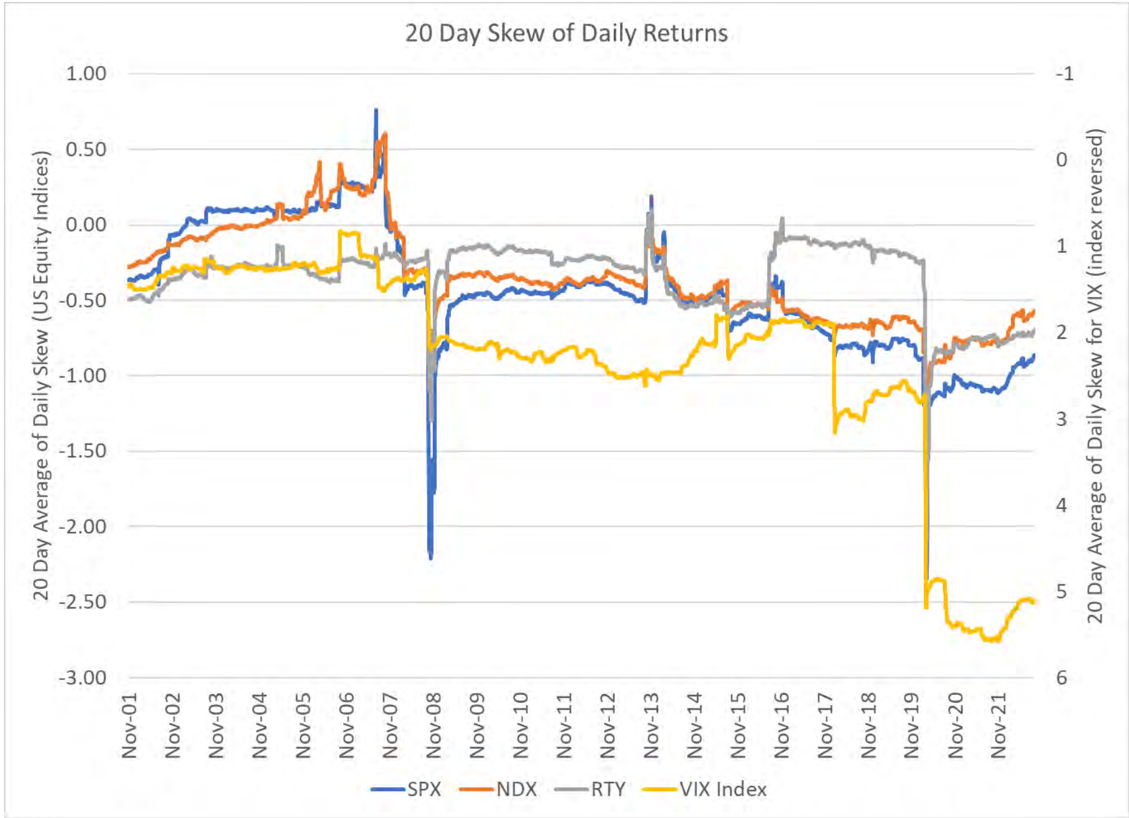
By Layan Odeh, Matthew Griffin, and Gillian Tan
February 21, 2024 at 7:00 AM EST

Source: https://www.crsp.org/wp-content/uploads/2023/09/market-indexes-methodology-guide.pdf

What We Have Here Is a Failure to Communicate…



How Does a Market Transitioning from Active to Passive Behave?

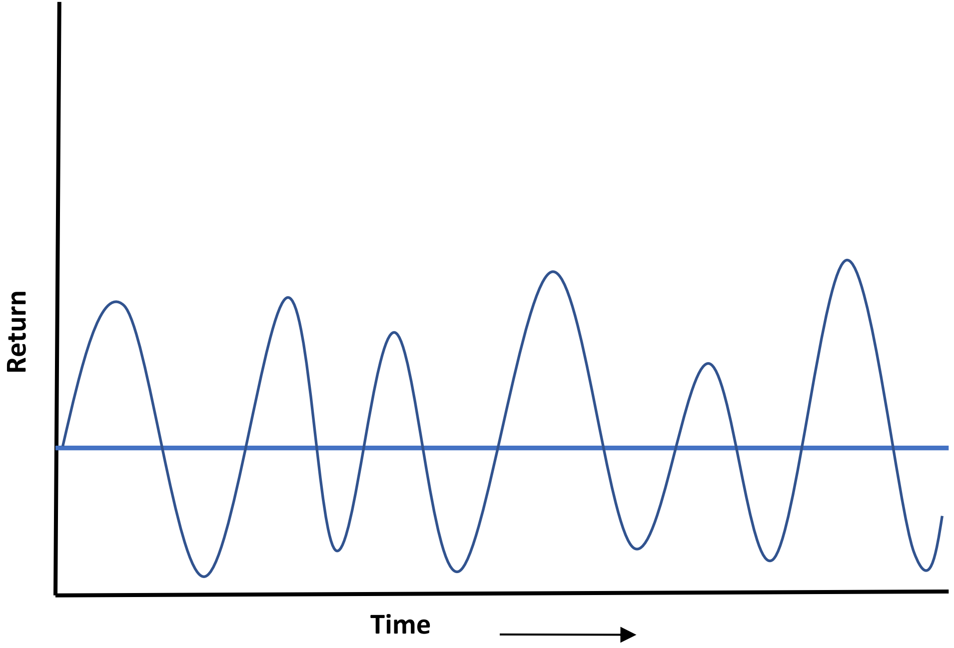


Source: Bloomberg, Calculations by the author

Passive managers have a 100% propensity to buy or sell on flows. As they grow in share, they change the market.

The Real "Loser's Game"

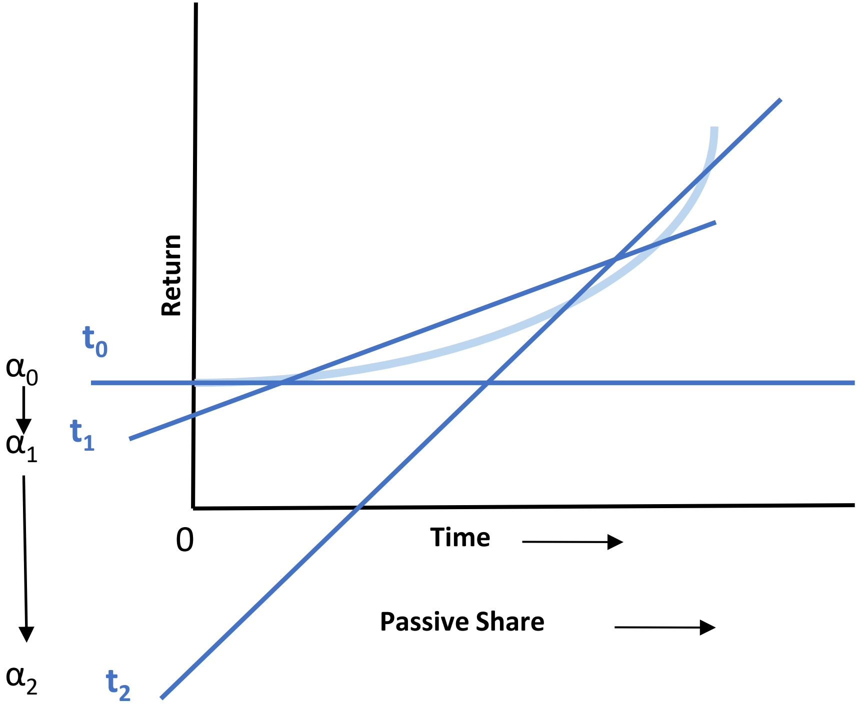
One of the core assumptions in finance is "Modern Portfolio Theory" which holds that asset returns can be modeled as "normally distributed" around an "expected" return



"When I was first getting started (in investment management), back in the early 60s… 90% of (trading) was done by individuals who did a trade every year or two or three," says Ellis. "Now, 99% of trading is done by institutional investors."

~ Charlie Ellis

When **Time** Becomes a **Proxy** for Passive Penetration, **Alpha** Vanishes for Active Management

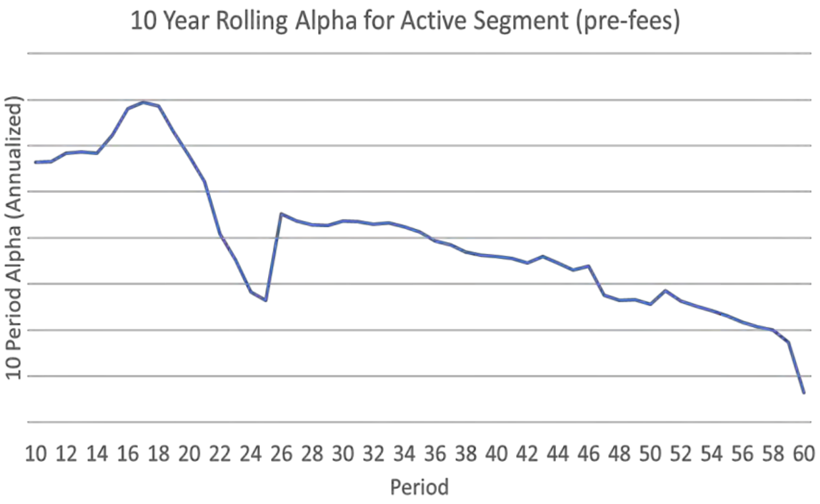


y = m(x) + b

R_p **= Beta(Market) + Alpha**

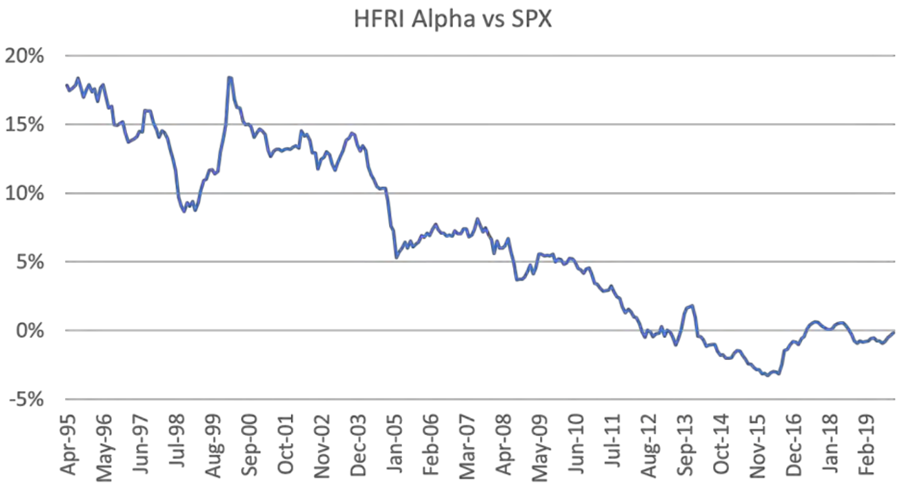
Again, Little Difference Between Theory and Practice

Theory



Source: Bloomberg, Proprietary survey of 452 investors subscribing to RealVision, author calculations

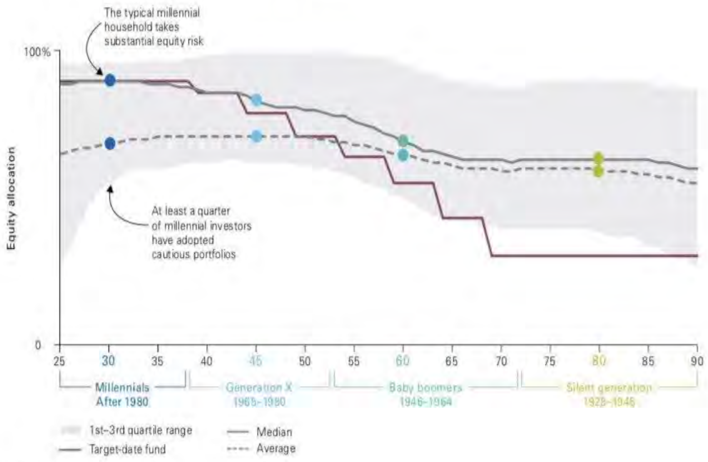
Practice



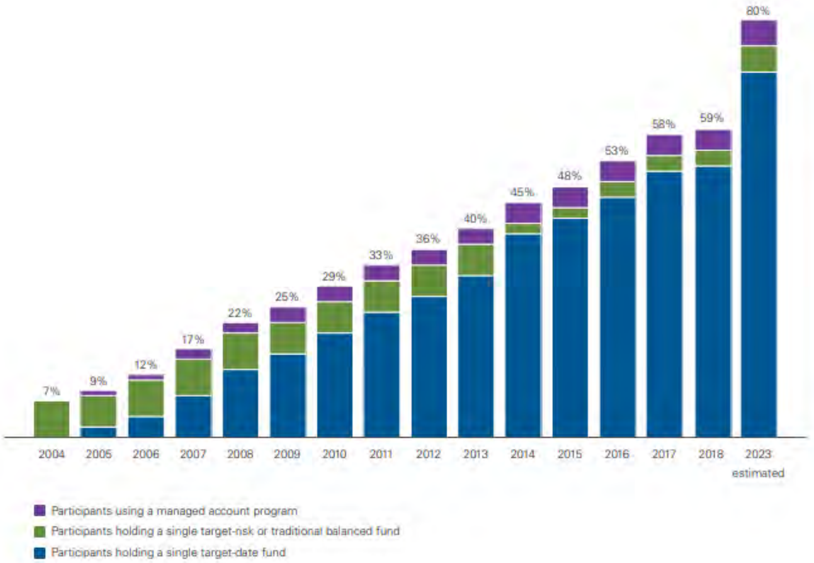
Retirement Investment Options Are Increasingly on Autopilot…

Figure 1. Age-based equity allocations among Vanguard retail investors

Taxable-account and/or IRA investors as of December 31, 2017



Source: Vanguard, 2018.

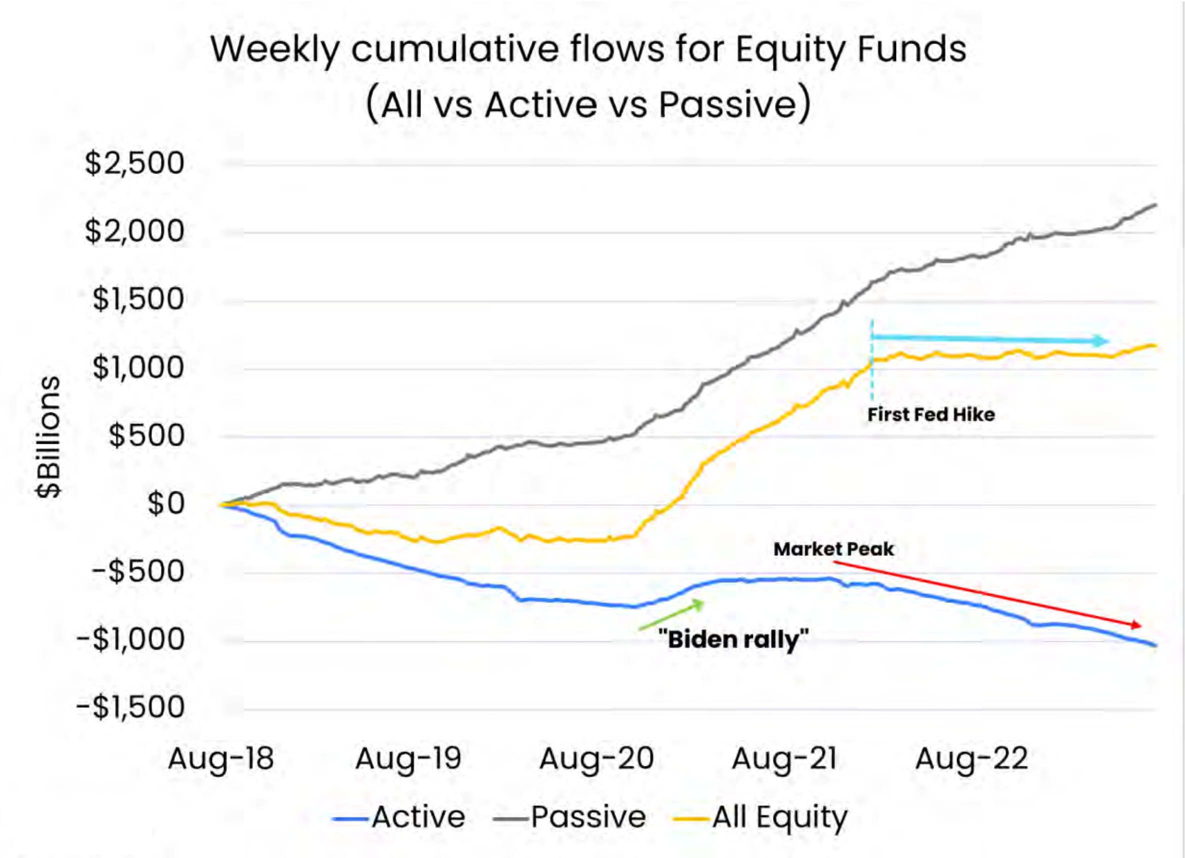


Slightly more than 60% of all contributing participants in 2018 were in plans with automatic enrollment.

Two-thirds of automatic enrollment plans have implemented automatic annual deferral rate increases.

Source: Vanguard

OK, So Why Did We Go Down in 2022?



Source: EPFR

OK, So Why Did We Go Down in 2022?

Monetary Transmission and Portfolio Rebalancing: A Cross-Sectional Approach

102 Pages • Posted: 19 Apr 2023 • Last revised: 23 Apr 2023

Xu Lu
Stanford Graduate School of Business

Lingxuan Wu
Department of Economics, Harvard University

Date Written: April 7, 2023

Abstract

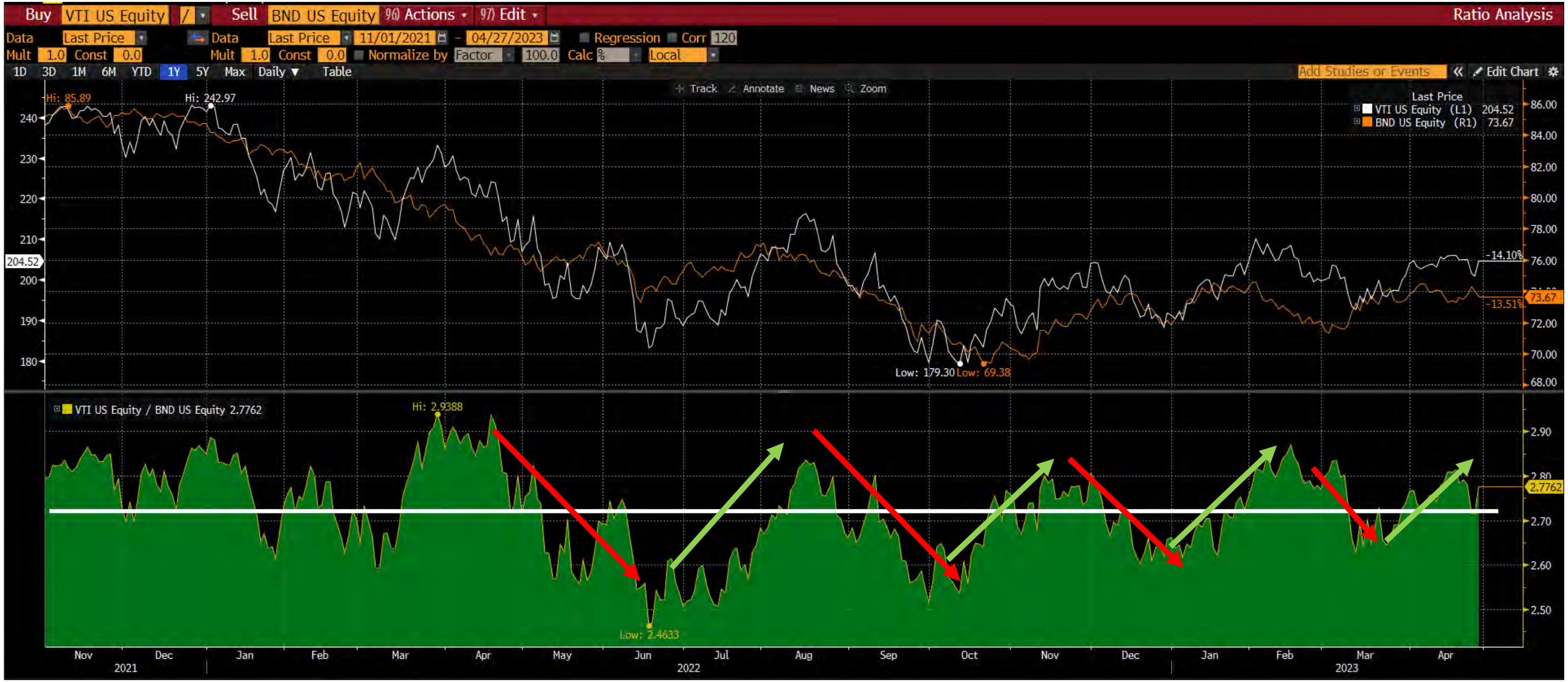
We propose that institutional investors' portfolio rebalancing across asset classes contributes to the stock market's puzzlingly large response to monetary shocks. We identify this channel through a cross-sectional approach and find that, ceteris paribus, a stock with 10% higher ownership by "rebalancers" experiences a 3.7bp larger loss to a 10bp positive monetary shock of Nakamura and Steinsson (2018) over the same estimation window. Our model shows that the aggregate market reaction relates to cross-sectional return differences due to rebalancing via two demand elasticities. Rebalancing demand accounts for about one-third to two-thirds of the market reaction attributed to expected excess returns.

Keywords: monetary transmission, portfolio rebalancing, asset prices, inelastic markets

JEL Classification: E52, G11, G12, G23.

Source: Bloomberg

The Portfolio Rebalance Channel at Work



Source: Bloomberg

What Can We Do?

- There is no passive investing! We have been sold a lie.

- Fiduciary – a duty to understand and be informed. Realize that backtests of historical return records are now horribly skewed by the influence of passive and this will eventually be unwound, possibly violently. Clients relying on historical returns will under-save.

- Education – the CFA, clients, policymakers

Policy

1. Create diseconomies of scale – larger cash holdings required to provide internal liquidity
2. End PREFERENTIAL treatment of quantitative strategies – no "index returns" or backtest exceptions for index products
3. Enforce diversification rules!
4. Enforce antitrust! No more "bundling" in retirement plans, end QDIA above an income threshold
5. End open market buyback operations and accelerated share repurchases
6. Markets are NOT designed to "deliver" retirements; by linking the two we have bound policy

“Those who can make you believe absurdities can make you commit atrocities.”

-Voltaire

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Past performance is no guarantee of future returns. Investing involves risk and possible loss of principal capital.

APPENDIX

Michael Green Introduction

Hello and thank you for inviting me to address this forum.

My name is Michael Green, I am Managing Director, Chief Strategist and Portfolio Manager for Simplify Asset Management, an asset management firm based in New York, NY. In this presentation, I am presenting my personal work. These materials do not necessarily represent the views of Simplify or the other partners of the firm.

By way of expertise, I have been a student of markets and market structure, for nearly 30 years.
For Simplify, I manage multiple ETF products available to retail investors. Prior to Simplify, I managed hedge funds for Logica Capital and served as one of two portfolio managers for Thiel Macro, LLC, an investment firm that manages the liquid personal capital of Peter Thiel. Prior to Thiel, I founded Ice Farm Capital, a discretionary global macro hedge fund seeded by George Soros. From 2006-2014, I founded and managed the New York office of Canyon Capital Advisors, a $23B multi-strategy hedge fund based in Los Angeles, CA, where I established their global macro strategies, managing in excess of $5B of exposure across equity, credit, FX, commodity and derivative markets.

I have managed ETFs, hedge funds, mutual funds and separate accounts across equity, credit, commodity and fixed income markets dating back to the early 1990s.

In addition to my work as a portfolio manager, I am an active public speaker and financial media participant.
Finally, I am a graduate of the Wharton School at the University of Pennsylvania and a CFA holder. [37]

It's also worth highlighting that versions of the proprietary research we will discuss today on the topic of the shift from actively managed portfolios and investment funds to systematic passive investment strategies have been presented to the Federal Reserve, the BIS, the IMF and numerous other industry groups and associations.

Passive References

- “The Silent Road to Serfdom: Why Passive Investing is Worse Than Marxism”, Inigo Fraser-Jenkins, Sanford Bernstein (2016)
- “On the ETF divide”, James Grant & Steven Bregman, Grant’s Interest Rate Observer, Oct 2016
- “The Passive Aggressive Agg, Revisited -- Passive investing in bonds today turns prudence on its head”, Peter Chiappinelli, GMO Feb 2020
- “The implications of passive investing for securities markets”, BIS Quarterly Review, Mar 2018
- “The Perils of Passive Indexation”, Michael Green, RealVision, Dec 2019
- “Policy in a World of Pandemics, Social Media and Passive Investing”, Logica Capital Advisers, Mar 2020
- “Peter Thiel ‘Makes A Killing’ With Massive Vol-Spike Bet”, Zerohedge, Feb 2018
- “What is Water in Markets? Volatility and the Fragility of the Medium”, Artemis Capital, Jul 2018
- “Sharpening the Arithmetic of Active Management”, Lasse Pedersen, Oct 2016
- “Swimming With The Target-Date Whale”, Vincent Deluard, Sep 2020
- “In Search of the Origins of Financial Fluctuations: The Inelastic Markets Hypothesis”, Gabaix & Koijen, Oct 2020 38
- “Tracking Biased Weights: Asset Pricing Implications of Value-Weighted Indexing”, Jiang et al, Jan 2021
- “How Competitive is the Stock Market? Theory, Evidence from Portfolios, and Implications for the Rise of Passive Investing”, Haddad et al, April 2021

THANK YOU!

SIMPLIFY

Callan

October 2024

Marin County Employees' Retirement Association

Investment Manager Search
Core Plus

Core Plus Bond Manager Evaluation

The following investment manager organizations have submitted information to Callan regarding their investment management capabilities. The information has been summarized in this report for the consideration of Marin County Employees' Retirement Association.

Investment Manager	Strategy
BlackRock	BlackRock Total Return Fund
Dodge & Cox	Dodge & Cox Discretionary Core Fixed Income
Fidelity Institutional Asset Management	FIAM Core Plus
Loomis, Sayles & Company, L.P.	Core Plus
PGIM Fixed Income	PGIM Fixed Income Core Plus Fixed Income
Pacific Investment Management Company	Total Return - Core Plus

The investment manager organizations contained herein have submitted information to Callan regarding their investment management capabilities, for which information Callan has not necessarily verified the accuracy or completeness of or updated. The information provided to Callan has been summarized in this report for your consideration. Unless otherwise noted, performance figures reflect a commingled fund or a composite of discretionary accounts. All written comments in this report are based on Callan's standard evaluation procedures which are designed to provide objective comments based upon facts provided to Callan. The appropriateness of the candidate investment vehicle(s) discussed herein is based on Callan’s understanding of the client’s portfolio as of the date hereof. Certain operational topics may be addressed in this investment evaluation for information purposes. Unless Callan has been specifically engaged to do so, Callan has not conducted due diligence of the operations of the candidate or investment vehicle(s), as may be typically performed in an operational due diligence evaluation assignment. The investment evaluation and any related due diligence questionnaire completed by the candidate may contain highly confidential information that is covered by a non-disclosure or other related agreement with the candidate which must be respected by the client and its representatives. The client agrees to adhere to the conditions of any applicable confidentiality or non-disclosure agreement.

Table of Contents

Search Process, Profile & Summary

Search Process

Steps in the Manager Search Process

1. Client & Candidate Profiles
2. Quantitative Analysis
3. Qualitative Assessment
4. Manager Search Committee
5. Semi-Finalist Review

Finalists

Manager Summary Matrix

	Organization/Team	Strategy/Portfolio	Summary Opinion
BlackRock BlackRock Total Return Fund	- Publicly traded company (NYSE ticker: BLK), headquartered in New York, NY. - The Portfolio Management Group "PMG" includes seven "portfolio management businesses" alongside four existing units: ETF and Index Investments, Global Trading & Transition Management, the BlackRock Investment Institute and BlackRock Sustainable Investing. The business lines under PMG are: Fundamental Fixed Income; Municipals and Financial Institutions; Index Fixed Income and Liability Driven Investments; Fundamental Equities; Systematic Investments; Multi-Asset Strategies & Solutions business; Global Lending, Liquidity and the Private Investors business. - Multi-Sector PM team underwent changes in March 2023 after Bob Miller retired. Rick Rieder will remain as head of the team, with David Rogal taking on increased responsibilities and Chi Chen being promoted to PM on Total Return. - Team leverages broad sector and trading resources within the Fundamental Fixed Income platform.	- Team managed process starts with macro views (chaired by CIO Rick Rieder), followed by sector/sub-sector outlook and active risk budgeting perspectives. - PMs seek risk factor diversification, emphasizing sector allocation and macro duration/yield curve positioning, and delegate security selection to sector specialist teams . - Strong portfolio risk management; BLK's Aladdin risk system is deeply integrated into its investment process to provide attributes for both investors and compliance oversight. - Plus sectors include HY, bank loans, non-agency RMBS, linkers, CLOs, and non-$. - Managed to the Bloomberg Aggregate Index; seeks 125-200 bps of excess return with 60-150 bps of TE. - Duration is managed to +/- 40% of the Index.	- Stable organization. - BlackRock's fundamental fixed income team is well resourced, and its investor bench is fairly deep, mitigating continuity concerns related to Bob Miller's retirement. - Conviction in robust investment process that leverages large sector teams, and risk management team.

Manager Summary Matrix

	Organization/Team	Strategy/Portfolio	Summary Opinion
Dodge & Cox Dodge & Cox Discretionary Core Fixed Income	- Established in 1930 and 100% independent and employee-owned. - Ownership is limited to active employees. Shareholders must begin selling back equity at the age of 65. Mandatory retirement goes into effect for employees at the age of 70. - CEO and President Dana Emery succeeded Charles Pohl as chairman and Associate CIO David Hoeft became CIO when Pohl retired in June, 2022; Roger Kuo became President. - Portfolio overseen by seven-person investment committee. - Former Director of Fixed Income Tom Dugan retired at the end of 2023. Lucy Johns took over as the new Director. - Team has exhibited remarkable stability; retirements have generally been the reason for investor departures.	- Focused on constructing a well-diversified, high quality credit portfolio through intensive fundamental credit research. - Security selection within corporate credit sector has been a significant source of value-add. Allocation to structured products has historically been an expression of that sector beta. - Fund allows up to 20% in high yield though historically ranged up to 15%, and typically held fallen angels rather than original issuers of below IG. - Strategy seeks to outperform the Bloomberg Aggregate Index with less volatility and does not have explicit excess return targets or ex-ante tracking error budgets. - Duration is managed to +/- 25% of its benchmark.	- Leadership changes continue to be monitored despite being well-telegraphed. - Firm underwent a limited-scope SEC exam related to CIO David Hoeft's alleged personal trading violations. In July 2024, the SEC sent a letter noting no deficiencies, comments, or requests for further action. - Strategic underweight to portfolio duration has been a benchmark mismatch, though security selection has more than made up any deficit. - Concentrated holdings relative to peers reflecting team's conviction on investment thesis. - May exhibit high tracking error as team holds onto issuers despite short-term market dislocations or management challenges.

Manager Summary Matrix

	Organization/Team	Strategy/Portfolio	Summary Opinion
Fidelity Institutional Asset Management FIAM Core Plus	- Wholly-owned subsidiary of FMR LLC, also known as Fidelity Investments, launched in 2005. - Fidelity Investments was founded by Edward Johnson II in 1946. - Privately held, headquartered in Boston, and controlled by the Johnson family with 49% ownership, and the remaining 51% is owned by employees. - Investment grade fixed income team is based in Merrimack, NH, while below investment grade credit team is based in Boston, MA. - Head of Fixed Income Robin Foley succeeded Jamie Pagliocco who will retire at the end of 2023. Foley previously served as co-CIO of Bonds alongside co-CIO Catriona Martin and began her career at Fidelity in 1986. - Firm has emphasized grooming next generation of talent from within. - PM team comprised of Ford O'Neill, Celso Munoz, Jeff Moore and Michael Plage. O'Neill and Munoz are focused on core and core plus, while Moore and Plage are responsible for Tactical Bond. - Deeply resourced firm with analysts across fixed income spectrum.	- Fundamental bottom-up research drives process through security selection, sector rotation, and yield curve positioning. - Deeply resourced research team drives alpha generation via security selection within corporate credit. - Strategy consistently overweights spread sectors, primarily IG and HY/bank loans, resulting in heightened volatility during periods of market dislocation. - Plus sectors represent sleeves to below-investment grade corporate bonds, bank loans, non-IG emerging markets debt, and HY CMBS. - Mutual fund vehicles are more constrained with 20% max plus sectors, while separate accounts/CITs can be up to 30% max. - Managed to Bloomberg Aggregate Index; seeks 100-125 bps of excess return with 150-250 bps of TE. Total Bond Fund targets 60-85 bps of alpha and 120 -170 bps of tracking error. - Duration is managed closely to the benchmark (+/- 5%).	- Stable organization enabled by the ownership structure. - Callan maintains conviction in long-tenured team/process that has exhibited consistent outperformance over time. - The firm's leadership has done a great job duplicating senior investor roles for succession planning. - The Core Plus team has been relatively stable and Fidelity has been conscious about maintaining team continuity by adding "junior" PMs in 2016. - PM Jeff Moore announced he will be retiring, effective at the end of 2024. Although Moore historically focused on Tactical Bond portfolios rather than Core Plus, he is part of the core investment grade PM team. As such, Callan is monitoring any tangential disruptions. - The strategy has been consistent in implementing top-down, but bottom-up fundamentally driven approach.

Manager Summary Matrix

	Organization/Team	Strategy/Portfolio	Summary Opinion
Loomis, Sayles & Company, L.P. Core Plus	- Loomis, Sayles & Co ("LS") was founded as a partnership in 1926 by Robert H. Loomis and Ralph T. Sayles. Today, LS is wholly owned subsidiary of Natixis Global Asset Management, which is a combined entity of Groupe Caisse d'Epargne and Groupe Banque Populaire (since 2007). - Majority of the firm's investment professionals are headquartered in Boston; the firm has offices in London, Singapore, San Francisco, Chicago, and Detroit. - CIO transition from Jae Park to David Waldman in March 2021 was smooth; all PMs now report to Waldman. - Strategy led by Peter Palfrey and Rick Raczkowski, both based in Boston headquarters. - Team/process is differentiated from Core Disciplined Alpha team, based in Walnut Creek, CA. - PMs leverage firm's deep central research analyst pool, macro and market-sector teams.	- Combination of top-down sector rotation and bottom-up security selection to add alpha through sector rotation, security selection, curve positioning, and duration management. - Draws upon the centralized resources of Loomis' global fixed income platform. These resources include macro teams, sector teams, credit analysts and traders. - PMs leverage the macro teams' top down framework in setting the strategy's risk profile, and work with dedicated resources in identifying best names from an internal buy list. - Utilizes full fixed income opportunity set including TIPS, high yield, emerging markets, non-dollar, convertibles, bank loans, and CLOs. - Managed to Bloomberg Aggregate Index; seeks 100-175 bps of excess return with 125-300 bps of tracking error. - Duration is managed to +/- 1.50 yrs of the benchmark for institutional pooled vehicles and separate accounts, and +/- 2 yrs for the mutual fund.	- Carol Embree, longtime investment grade bond PM on the relative return team, retired in March 2024. She was succeeded by Devon McKenna. Concerns are mitigated due to long transition time (retirement was announced in July 2023) and consistent leadership at the helm of the strategy in Raczkowski and Palfrey. - Callan maintains conviction in the Relative Return team's Core Plus strategy. - Bottom-up fundamental credit analysis is a focus of strategy, leading to bias toward spread sectors. - Heavier focus on risk management after 2015 underperformance appears to have been additive; however, strategy remains sensitive to periods of market dislocation given focus on spread sectors and use of currency exposure. - Loomis now has the ability to invest in a no-fee fund of CLOs (managed by the structured products team), up to 10% of the Core Plus Fund; prior exposures were achieved through individual securities.

Manager Summary Matrix

	Organization/Team	Strategy/Portfolio	Summary Opinion
PGIM Fixed Income PGIM Fixed Income Core Plus Fixed Income	- Parent is publicly traded insurance company Prudential (ticker NYSE: PRU). - Mike Lillard, head of fixed income, retired in April 2024; at which time John Vibert, president, assumed the role of CEO of PGIM Fixed Income. - In 2021, the firm began succession plans with Mike Lillard transitioning the role of CIO to co-CIOs Craig Dewling , head of liquidity, and Greg Peters, head of multi-sector. John Vibert, head of securitized, was appointed the role of president and transitioned away from PM responsibilities. - Well-resourced and stable investment team with significant experience. - Broad coverage of fixed income sectors. - Core Plus strategies led by Greg Peters and Rich Piccirillo. - Originally set for April 2024, Mike Collins' retirement was postponed indefinitely due to PM Lindsay Rosner's departure in June 2023 and his desire to remain in the industry but at a reduced capacity. His new role is that of a client PM with no active risk taking.	- Top-down approach where PMs allocate active risk budgets to sector specialist teams who are responsible for security selection. - Proprietary risk management system allows for tightly controlled risk exposure. PMs review daily risk reports to verify exposures are consistent with risk/return objectives established by clients. Each risk measure is broken down into principal component measures such as contribution to tracking error or decomposition by sector and/or quality. - Broad and fairly extensive use of plus sectors - HY, CLOs, non-agency MBS, bank loans, non-USD. - Strategy has maintained overweights to structured credit, which has been consistently high relative to peers. - Managed to Bloomberg Aggregate Index; seeks 150 bps of excess return with 250 bps of tracking error; duration is managed to +/- 20% of the benchmark.	- PGIM provided ample notice of Mike Lillard's retirement and was transparent about John Vibert's transition to CEO. - PGIM announced a slew of retirements in April 2024, most of which will take effect in early 2025. These include the retirement of Head of Credit Richard Greenwood. - Callan maintains conviction in the core plus team and PGIM's fixed income platform, despite upcoming retirements which were well-telegraphed. - Deep bench of investors leverages a robust risk management process to implement portfolios. - The team, without Collins, is well-resourced and should provide continuity for the investment process. Having Collins on staff is beneficial for imparting overall institutional knowledge to the team, considering his tenure with PGIM since 1986. - Has maintained exposure to structured credit, particularly CLOs with a focus at the top of the capital structure.

Manager Summary Matrix

	Organization/Team	Strategy/Portfolio	Summary Opinion
Pacific Investment Management Company Total Return - Core Plus	- Founded in 1971 as a subsidiary of Pacific Life and headquartered in Newport Beach, CA. In 2000, Allianz purchased a majority stake in PIMCO's parent, PIMCO Advisors L.P. PIMCO operates as a separate and autonomous subsidiary of Allianz. - Emmanuel ("Manny") Roman was named CEO of PIMCO in 2016. Dan Ivascyn was named Group CIO following the departure of Bill Gross in 2014. - Total Return - Core Plus is led by PM Mohitt Mittal, and includes CIO of Portfolio Implementation Qi Wang, CIO of Global Credit Mark Kiesel, and Group CIO Dan Ivescyn. - In January '23, Scott Mather retired after announcing a leave of absence for personal reasons in Sep. '22; Qi Wang and Dan Ivascyn were subsequently added to the team . - Mihir Worah retired at the end of March '20, and Mohit Mittal subsequently joined Total Return and also serves as a Long Duration PM. - Broad coverage of fixed income sectors.	- Process is driven by Secular and Cyclical forum where investment themes are developed around global economic developments. - Top-down elements guided by macro-economic forecasts, are supplemented by bottom-up resources around the globe. - The fund invests primarily in investment grade fixed income securities, but can invest up to 20% of its assets in high yield. - Duration and curve bets have tended to be major sources of active risk; broad utilization of plus sectors - HY, non-agency MBS, non-USD denominated debt. - Managed to Bloomberg Aggregate Index; seeks 100-150 bps of excess return with 150-250 bps of tracking error. - Duration is managed to +/- 40% of the benchmark. - There are no limitations on the use of derivatives.	- Callan maintains conviction in the Total Return strategy. - Substantial core plus assets under management may limit ability to add value through security selection in some sectors. - Long-term performance relative to the benchmark has been solid, however, risk-adjusted performance has been less compelling relative to peers.

Proposed Vehicle Information

	Product / Vehicle AUM ($mm)	Minimum Account Size ($mm)	Proposed Fee for $336mm (%)	Comments
BlackRock CIT	34,512 / 4,711	0	0.18 (mgmt) 0.19 (all-in)	- daily valuation & liquidity
Dodge & Cox Sep Acc	110,028 / 31,197	150	0.18 (all-in)	- daily valuation & liquidity - fee schedule: 35bps on the first $25 million 25bps on the next $75 million 15bps on the next $150 million 12bps on the next $750 million 11bps thereafter - also offering a mutual fund (DODIX) @ 41bps
Fidelity Sep Acc	81,571 / 3,482	0	0.17 (mgmt) 0.20 (all-in)	- daily valuation & liquidity - fee schedule: 20bps on the first $100 million 16bps on the next $200 million 12bps on the next $200 million 10bps on assets over $500 million - also offering a CIT with identical fee schedule
Loomis Sep Acc	35,739 / 13,836	200	0.24 (all-in)	- daily valuation & liquidity - fee schedule: 27.5bps on the first $200 million 20bps on the next $200 million 15bps on the value over $400 million - also offering a CIT @ 25bps for all assets
PGIM CIT	94,418 / 15,972	5	0.16 (mgmt) 0.17 (all-in)	- daily valuation & liquidity
PIMCO CIT	108,183 / 2,834	0	0.20 (all-in)	- daily valuation & liquidity

Candidate Firm Information

Candidate Firm Summary

	BlackRock	Dodge & Cox	Fidelity Institutional Asset Management	Loomis, Sayles & Company, L.P.	PGIM Fixed Income	Pacific Investment Management Company
Headquarters	New York, NY	San Francisco, CA	Smithfield, RI	Boston, MA	Newark, NJ	Newport Beach, CA
Ownership / Parent	Publicly Owned / None	Employee Owned / N/A	Other / Fidelity Investments	Subsidiary / Natixis Investment Managers, L.P.	Publicly Owned / Prudential Financial, Inc	Subsidiary / Allianz Asset Management ("AAM")
Minority / Women / Disabled - Owned	No	No	No	No	No	No
Total Firm Assets ($mm)	10,645,721	383,803	435,976	359,679	805,414	1,879,766
Have any open regulatory exams/investigations been escalated to enforcement?	No	No	No	No	No	Yes
Date of Last SEC Exam	*	05/11/2022	09/01/2018	03/29/2017	12/31/2009	11/28/2023
GIPS Compliant	Yes	Yes	Yes	Yes	Yes	Yes
E&O Insurance	Yes	Yes	Yes	Yes	Yes	Yes
Disaster Recovery Plan in Place	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Wide ESG Policy in Place	Yes	Yes	Yes	Yes	Yes	Yes
Publishes quarterly or annual sustainability or responsible investing report	Yes	No	Yes	Yes	Yes	Yes
UNPRI Signatory	Yes	Yes	Yes	Yes	Yes	Yes

*Language provided by BlackRock indicates they are are routinely subject to regulatory inquiries, but did not provide an exact date.

Candidate Firm Summary
Diversity, Equity & Inclusion (DEI)

	BlackRock	Dodge & Cox	Fidelity Institutional Asset Management	Loomis, Sayles & Company, L.P.	PGIM Fixed Income	Pacific Investment Management Company
Formal Diversity, Equity and Inclusion policy	Yes	Yes	Yes	Yes	Yes	Yes
Recruitment initiatives for women and people of color	Yes	Yes	Yes	Yes	Yes	Yes
Policies to increase gender and racial diversity within leadership and investment teams	Yes	No	Yes	Yes	Yes	Yes
Mentoring of women, people of color and other under-represented groups	Yes	Yes	Yes	Yes	Yes	Yes
Offer firm-wide training programs on DEI and/or unconscious biases	Yes	Yes	Yes	Yes	Yes	Yes
Formal pay-parity policy	Yes	Yes	No	Yes	Yes	Yes

Candidate Firm Summary
Race, Ethnicity and Gender Profile

The data below shows the breakdown of each firm by both race/ethnicity and gender. The weights are calculated based on the total number of employees who have disclosed their information. The gray columns show the percentage of employees that have disclosed race and/or gender as well as each firm's total employee count. Low disclosure rates could render the corresponding weights less meaningful.

	Race/Ethnicity								Gender			Total Firm Employees		
	Asian	Black or African American	Hispanic or Latinx	Middle Eastern or N. African	Native Amer/ Alaskan Native/ Indigenous	Native Hawaiian/ Pac. Islander	White/ Caucasian	Two or more races	Male	Female	Non-binary/ Third Gender	*Race Disclosed*	*Gender Disclosed*	*Total Firm Count*
BlackRock	28%	8%	9%	0%	0%	0%	53%	2%	58%	42%	0%	*100%*	*100%*	*8,303*
Dodge & Cox	--	--	--	--	--	--	--	--	52%	48%	0%	*--*	*100%*	*--*
Fidelity Institutional Asset Management	--	--	--	--	--	--	--	--	--	--	--	*0%*	*0%*	*874*
Loomis, Sayles & Company, L.P.	13%	4%	5%	0%	0%	0%	76%	1%	62%	38%	0%	*94%*	*100%*	*816*
PGIM Fixed Income	16%	6%	6%	0%	0%	0%	44%	1%	63%	37%	0%	*98%*	*100%*	*1,154*
Pacific Investment Management Company	31%	4%	10%	0%	0%	0%	51%	3%	63%	37%	0%	*100%*	*100%*	*2,166*

Managers not reporting DEI information chose not to report due to internal privacy policies, laws governing the countries they operate in or due to lack of granular data.

Total Firm Assets Under Management

Total Firm Assets by Type ($mm) as of June 30, 2024

	Corporate	Public(Govt)	Sub-Advised	Other	Total Org Assets
BlackRock	2,603,704	1,697,635	237,176	6,107,207	10,645,721
Dodge & Cox	50,523	19,793		313,487	383,803
Fidelity Institutional Asset Management	175,203	25,772	110,674	124,326	435,976
Loomis, Sayles & Company, L.P.	50,897	49,617	132,782	126,382	359,679
PGIM Fixed Income	214,881	67,604		522,929	805,414
Pacific Investment Management Company	151,439	115,379	442,064	1,170,884	1,879,766

Candidate Product Information

Candidate Product Summary

	BlackRock	Dodge & Cox	Fidelity Institutional Asset Management	Loomis, Sayles & Company, L.P.	PGIM Fixed Income	Pacific Investment Management Company
Product Name	BlackRock Total Return Fund	Dodge & Cox Discretionary Core Fixed Income	FIAM Core Plus	Core Plus	PGIM Fixed Income Core Plus Fixed Income	Total Return - Core Plus
Product Benchmark	Blmbg:Aggregate	Blmbg:Aggregate	Blmbg:Aggregate	Blmbg:Aggregate	Blmbg:Aggregate	Blmbg:Aggregate
Proposed Vehicle	CIT	Sep Acc	Sep Acc	Sep Acc	CIT	CIT
Product / Vehicle Inception	1996 / 2016	1989 / 1983	2000 / 2000	1973 / 1989	1995 / 2009	1987 / 2003
Product / Vehicle AUM ($mm)	34,512 / 4,711	110,028 / 31,197	81,571 / 3,482	35,739 / 13,836	94,418 / 15,972	108,183 / 2,834
Quality*	A+	A+	A+	A+	A	AA-
Number of Holdings	3869	331	5552	409	2474	683
Annual Turnover	171%	22%	12%	121%	35%	45%
Value Add (Sector/ Security/Duration/Yield)	30 / 30 / 20 / 20	25 / 50 / 10 / 10	60 / 30 / -- / 10	50 / 30 / 10 / 10	50 / 40 / 5 / 5	35 / 25 / 15 / 15
Excess Return Target (bps)	125 - 200	N/A**	100 - 125	100 - 175	150 - 150	100 - 150
Tracking Error Target (bps)	60 - 150	N/A**	150 - 250	125 - 300	250 - 250	150 - 250
Duration Target Around Index (+/-%)	40% / 40%	25% / 25%	5% / 5%	1.5yrs / 1.5yrs	20% / 20%	40% / 40%

*Average of trailing 5 years or since inception.
**Dodge & Cox Income Fund does not have tracking error or excess return guidelines.

Candidate Product Summary
ESG Integration

	BlackRock	Dodge & Cox	Fidelity Institutional Asset Management	Loomis, Sayles & Company, L.P.	PGIM Fixed Income	Pacific Investment Management Company
Product Name	BlackRock Total Return Fund	Dodge & Cox Discretionary Core Fixed Income	FIAM Core Plus	Core Plus	PGIM Fixed Income Core Plus Fixed Income	Total Return - Core Plus
Dedicated ESG strategy; ESG considerations are primary objective	No	No	No	No	No	No
Not a dedicated ESG strategy; ESG considerations are part of investment framework	Yes	Yes	Yes	Yes	Yes	Yes
Strategy utilizes proprietary scoring (or metrics) for ESG research	Yes	No	Yes	Yes	Yes	Yes
Reports provided to clients that highlight holdings' ESG metrics (impact, scoring, etc)	Yes	No	No	Yes	Yes	No

Product Level Investment Professionals

	Product Level Resources				Gained (5 Yr)		Lost (5 Yr)	
	Portfolio Managers	Central Research Analysts	Dedicated Fundamental Analysts	Quantitative Analysts	Portfolio Managers	Dedicated Fundamental Analysts	Portfolio Managers	Dedicated Fundamental Analysts
BlackRock	39			44	6 (15%)	0	2 (5%)	0
Dodge & Cox	7		47		0 (0%)	10 (21%)	3 (38%)	2 (4%)
Fidelity	4	74			0 (0%)	0	0 (0%)	0
Loomis	2	95			0 (0%)	0	0 (0%)	0
PGIM	31	71	124	23	0 (0%)	12 (10%)	2 (6%)	8 (6%)
PIMCO	271	223			137 (48%)	0	131 (46%)	0

Key Investment Professionals

BlackRock

Key Professionals	Started with Product	Joined Firm	Investment Experience
Rick Rieder - PM	2010	2009	1986
David Rogal - PM	2017	2006	2006
Chi Chen - PM	2022	2012	2012

Loomis

Key Professionals	Started with Product	Joined Firm	Investment Experience
Peter Palfrey - PM	2001	2001	1983
Rick Raczkowski - PM	2001	2001	1984

Dodge & Cox

Key Professionals	Started with Product	Joined Firm	Investment Experience
Dana Emery - PM	1986	1983	1983
James Dignan - PM	2002	1999	1992
Anthony Brekke - PM	2008	2003	2003
Adam Rubinson - PM	2010	2002	1997
Lucinda Johns - PM	2012	2004	1998
Michael Kiedel - PM	2018	2008	2003
Nils Reuter - PM	2018	2003	2003

PGIM

Key Professionals	Started with Product	Joined Firm	Investment Experience
Robert Tipp - PM	1991	1991	1984
Koushiki Bose - PM	1996	2018	2018
Richard Piccirillo - PM	1996	1993	1991
Gregory Peters - PM	2014	2014	1993
Tom McCarten - PM	2022	2015	2010
Matthew Angelucci - PM	2023	2005	2005
Tyler Thorn - PM	2023	2015	2015

Fidelity

Key Professionals	Started with Product	Joined Firm	Investment Experience
Jeff Moore - PM	2000	1995	1990
Ford O'Neil - PM	2000	1990	1985
Celso Munoz - PM	2016	2005	1999
Michael Plage - PM	2016	2005	1998

PIMCO

Key Professionals	Started with Product	Joined Firm	Investment Experience
Mark Kiesel - PM	1996	1995	1992
Mohit Mittal - PM	2007	2007	2000
Daniel Ivascyn - PM	2022	1998	1990
Qi Wang - PM	2022	2010	1995

Candidate Product Summary
Race, Ethnicity and Gender Profile

The data below shows the breakdown of each product team by both race/ethnicity and gender. The weights are calculated based on the total number of employees who have disclosed their information. The gray columns show the percentage of team employees that have disclosed race and/or gender as well as each product's total employee count. Low disclosure rates could render the corresponding weights less meaningful.

	Race/Ethnicity								Gender			Total Product Employees		
	Asian	Black or African American	Hispanic or Latinx	Middle Eastern or N. African	Native Amer/ Alaskan Native/ Indigenous	Native Hawaiian/ Pac. Islander	White/ Caucasian	Two or more races	Male	Female	Non-binary/ Third Gender	*Race Disclosed*	*Gender Disclosed*	*Total Product Count*
BlackRock	22%	4%	9%	0%	0%	0%	64%	2%	60%	40%	0%	*100%*	*100%*	*105*
Dodge & Cox	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fidelity Institutional Asset Management	--	--	--	--	--	--	--	--	--	--	--	*0%*	*0%*	*65*
Loomis, Sayles & Company, L.P.	--	--	--	--	--	--	--	--	--	--	--	*0%*	*0%*	*2*
PGIM Fixed Income	18%	3%	4%	0%	0%	0%	51%	2%	73%	27%	0%	*97%*	*99%*	*247*
Pacific Investment Management Company	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Managers not reporting DEI information chose not to report due to internal privacy policies, laws governing the countries they operate in or due to lack of granular data.

Product Assets Under Management

Product Assets by Vehicle ($mm) as of June 30, 2024

	Separate Account	Commingled	MF Institutional	MF Retail	Total
BlackRock	11,278	4,711		18,524	34,512
Dodge & Cox	31,197		63,065	15,766	110,028
Fidelity	3,482	6,979		71,111	81,571
Loomis	13,836	11,643	936	9,324	35,739
PGIM	12,878	17,230		64,310	94,418
PIMCO	28,844	9,243	56,571	13,526	108,183

Product Asset Turnover

Product Asset Turnover ($mm) as of June 30, 2024

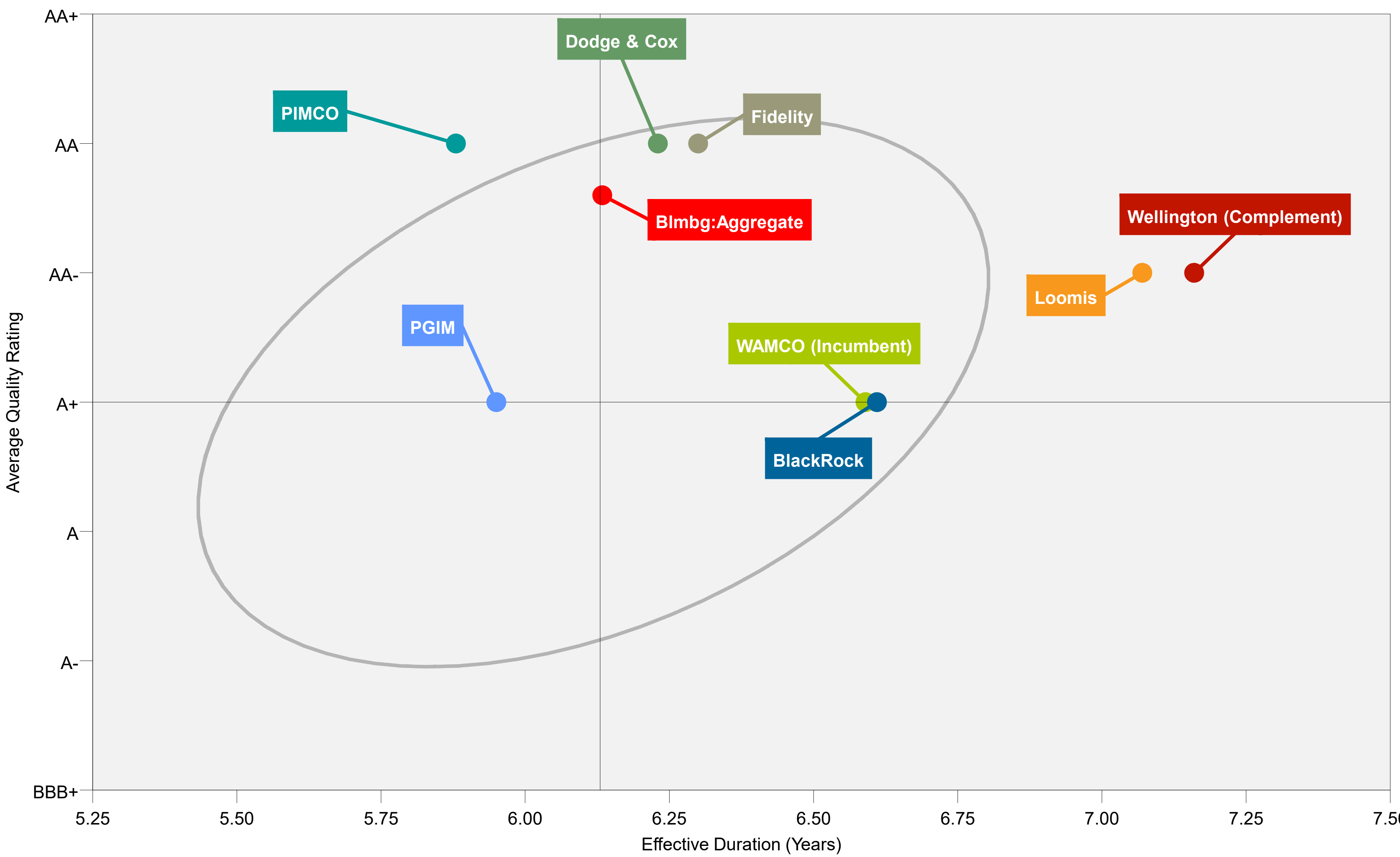
	Total Product Assets	Largest Account	Total Accounts	5-Year Net Asset Growth*	2023 Assets	2022 Assets	2021 Assets	2020 Assets	2019 Assets
BlackRock	34,512	17,169	121	11,459	37,497	32,369	42,275	31,260	25,509
Dodge & Cox	110,028	2,743	113	11,135	99,478	83,792	104,049	100,928	94,010
Fidelity	81,571	37,129	378	32,744	74,008	59,148	65,918	60,305	49,932
Loomis	35,739	4,788	335	9,481	31,848	25,429	31,657	30,836	25,329
PGIM	94,418	18,633	372	19,399	88,868	80,038	109,973	104,133	84,457
PIMCO	108,183	5,550	138	-32,562	112,804	109,256	143,351	145,629	139,662

** Net Asset Growth measures net asset flows by removing the performance impact on reported asset growth, thereby isolating growth due to net asset flows into or out of the product. This calculation is based upon each product's beginning and ending assets as well as the representative product return.*

Candidate Portfolio Characteristics

Average Quality Rating vs. Effective Duration

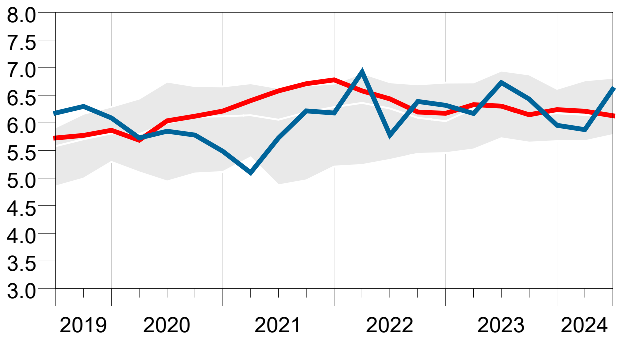
Average Quality Rating vs. Effective Duration for Quarter Ended June 30, 2024
Group: Callan Core Plus FI (Ellipse with Median at Central Axis)



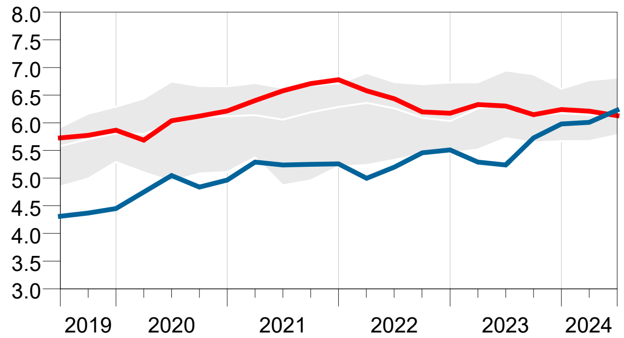
Effective Duration

The charts below illustrate Effective Duration (Years) for different managers over time. As a backdrop, the range (from 10th to 90th percentile) is shown for the Callan Core Plus Fixed Income group. The Bloomberg Aggregate index is shown in red for comparison.

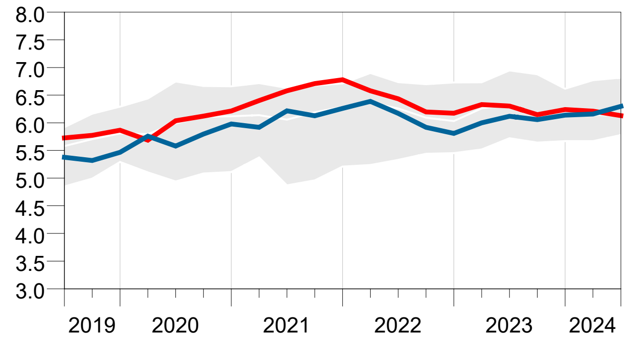
BlackRock



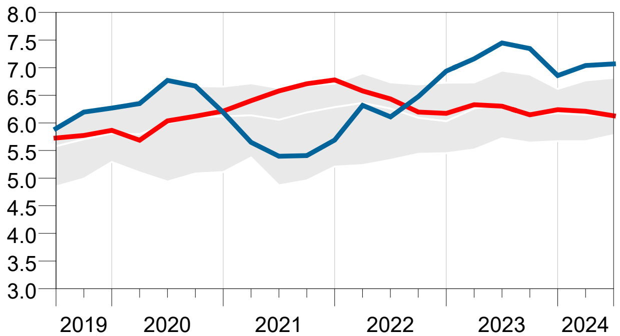
Dodge & Cox



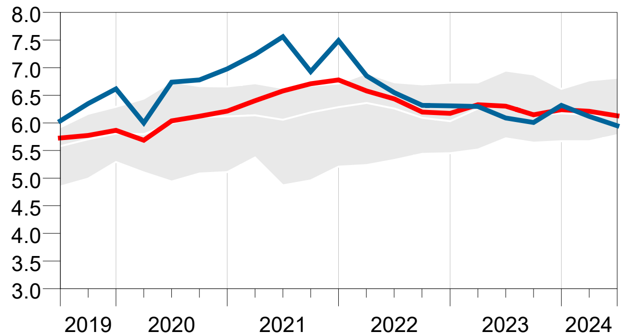
Fidelity



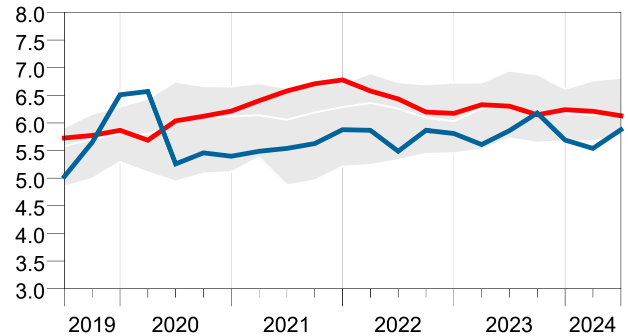
Loomis



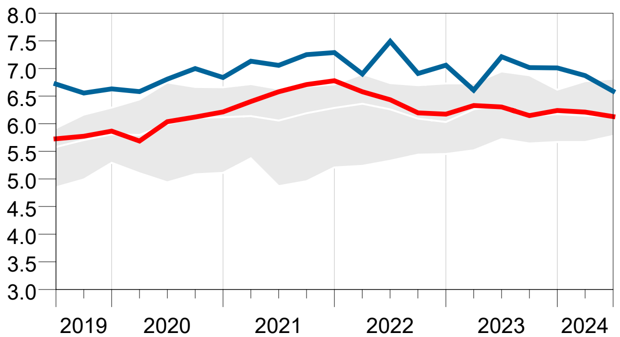
PGIM



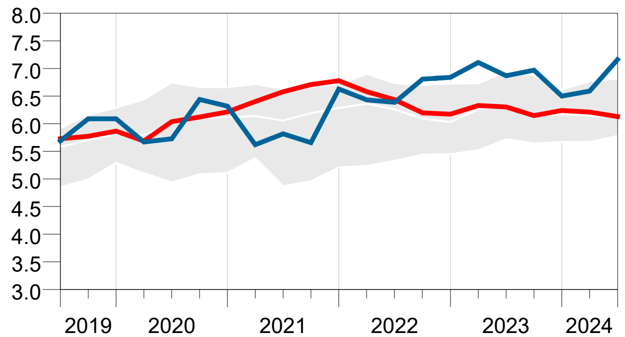
PIMCO



WAMCO (Incumbent)



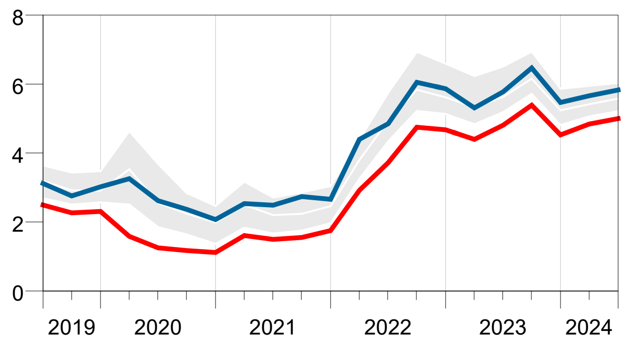
Wellington (Complement)



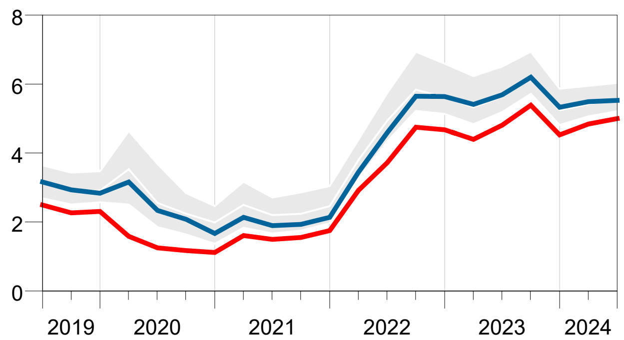
Effective Yield

The charts below illustrate Effective Yield (%) for different managers over time. As a backdrop, the range (from 10th to 90th percentile) is shown for the Callan Core Plus Fixed Income group. The Bloomberg Aggregate index is shown in red for comparison.

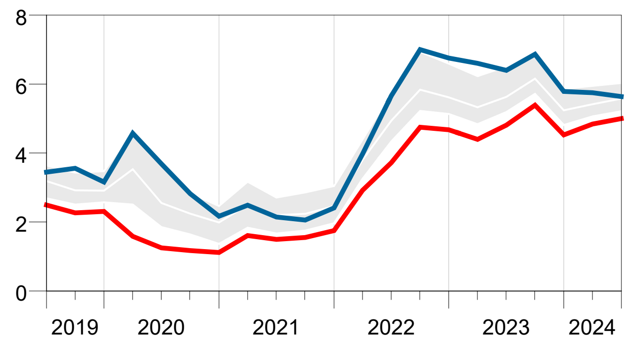
BlackRock



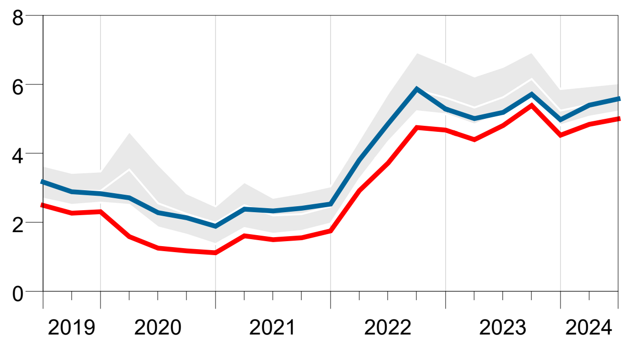
Dodge & Cox



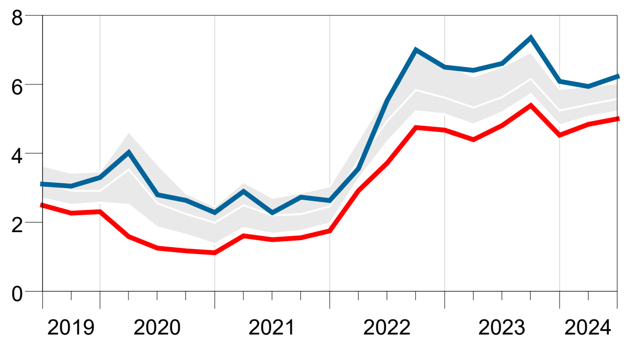
Fidelity



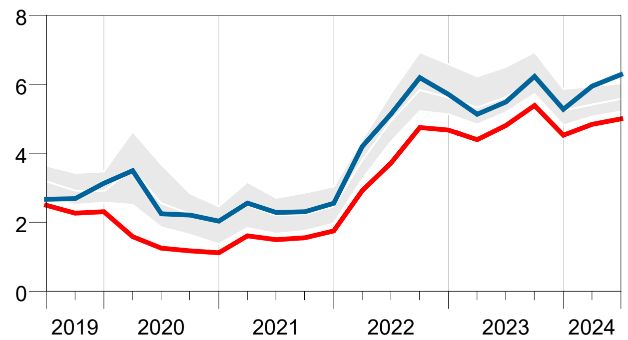
Loomis



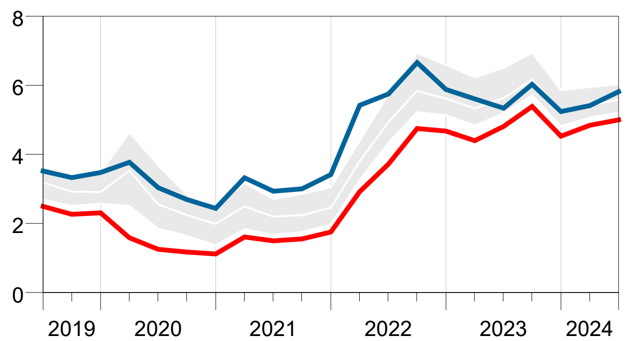
PGIM



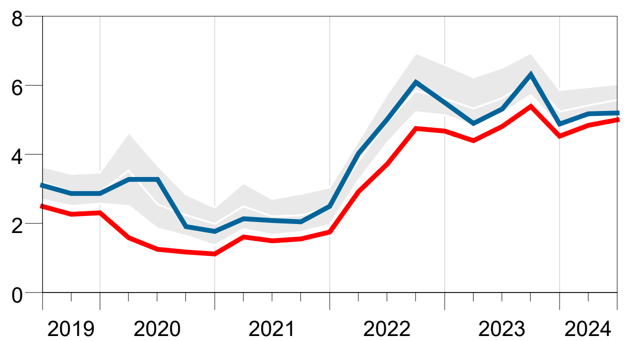
PIMCO



WAMCO (Incumbent)

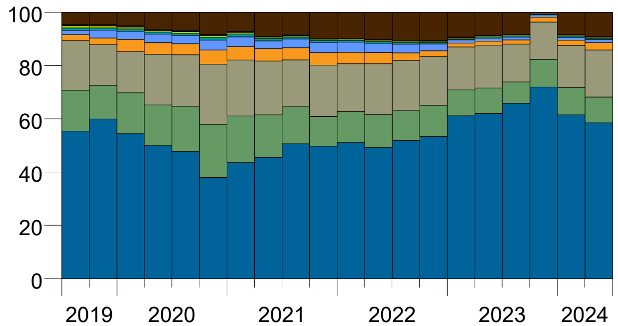


Wellington (Complement)

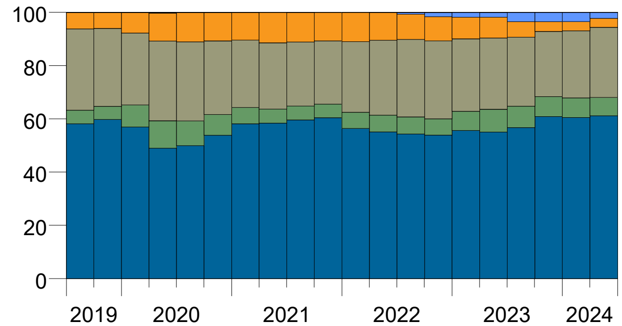


Quality Exposure

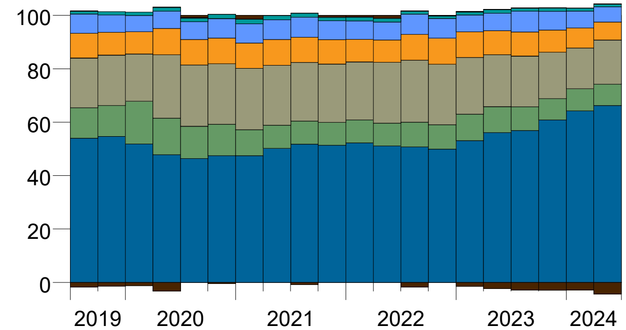
BlackRock



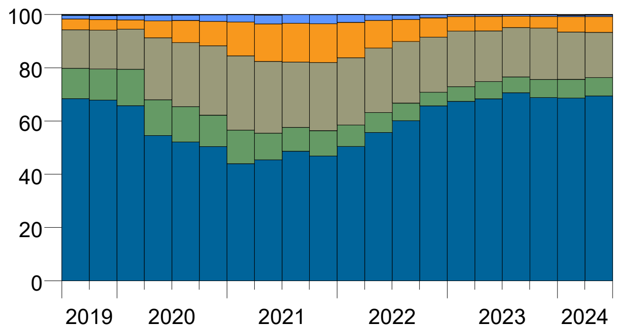
Dodge & Cox



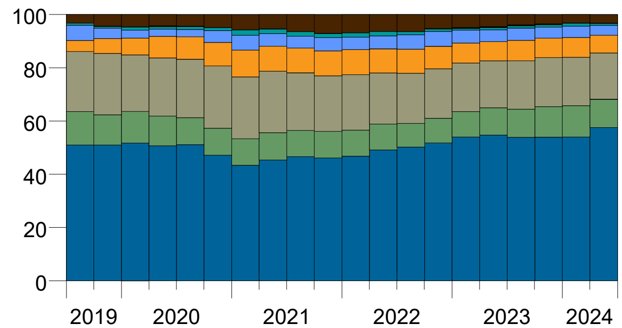
Fidelity



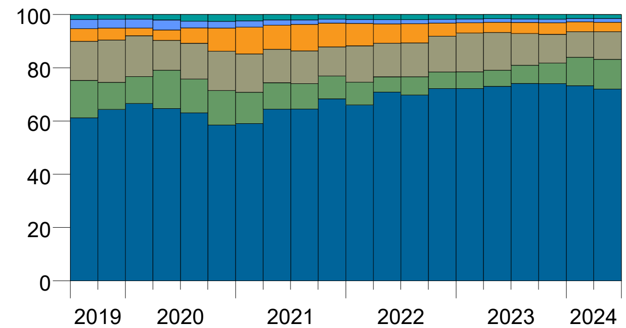
Loomis



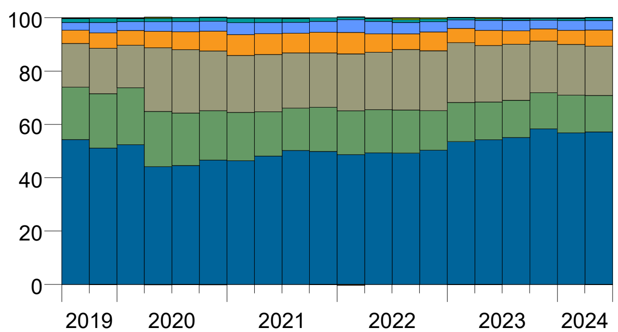
PGIM



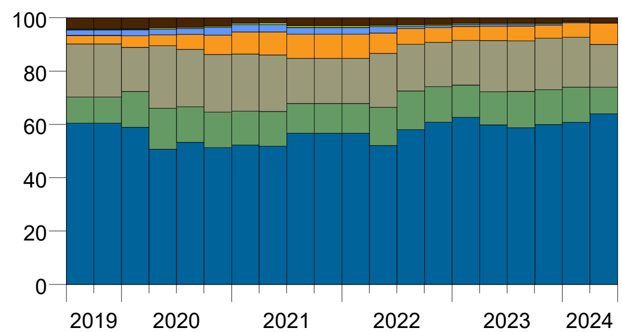
PIMCO



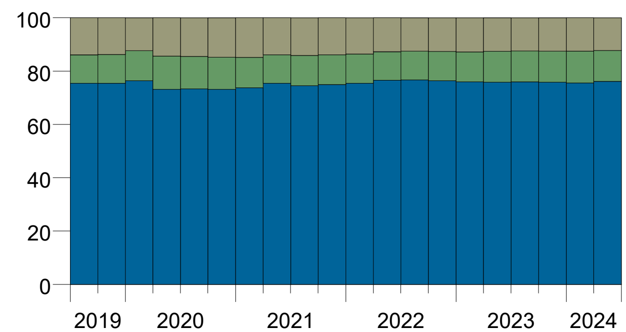
WAMCO (Incumbent)



Wellington (Complement)



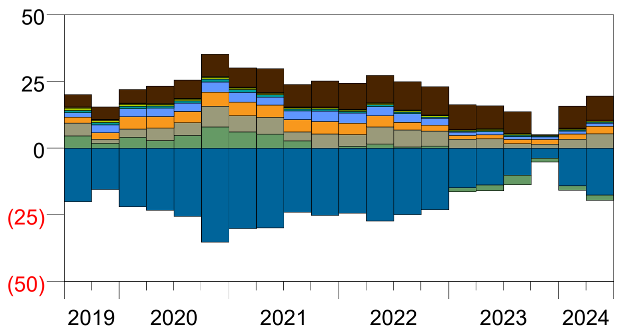
Index: Bloomberg Aggregate



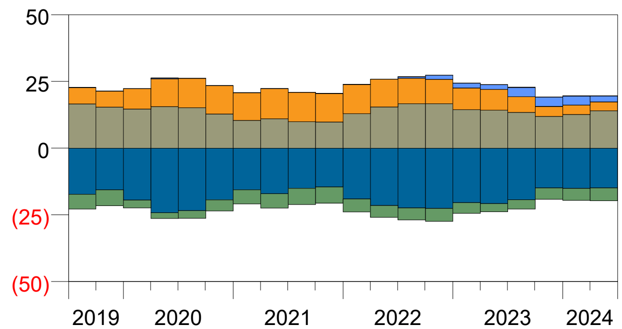
AAA/AA | A | BBB | BB | B | CCC | CC | C | D | N/A

Quality Exposure Relative to Blmbg:Aggregate

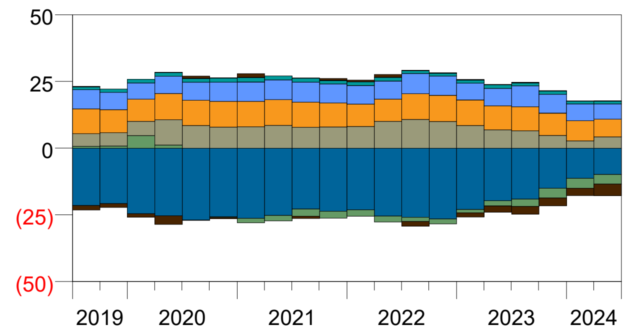
BlackRock



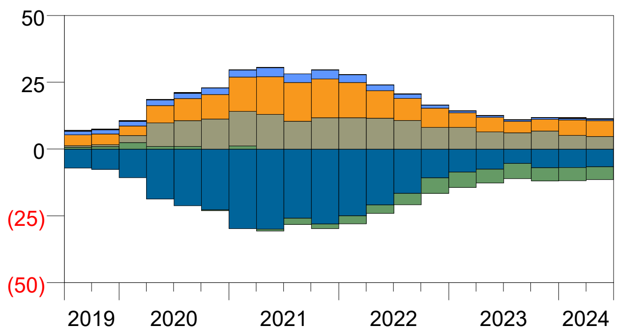
Dodge & Cox



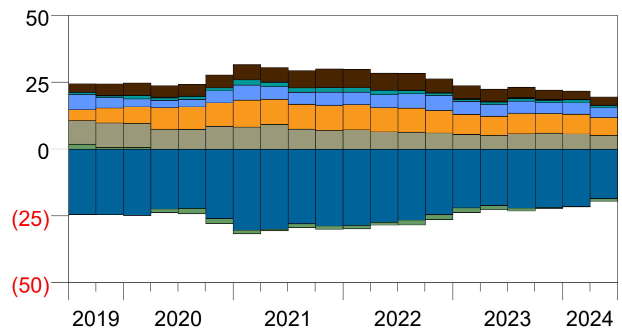
Fidelity



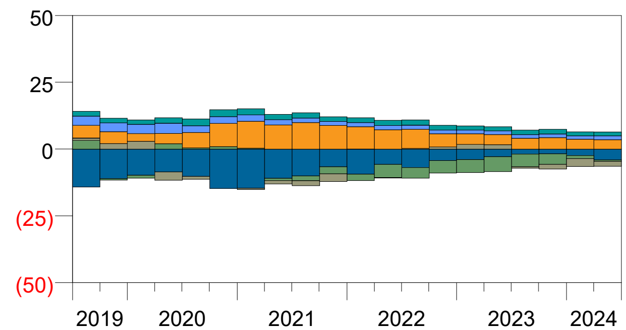
Loomis



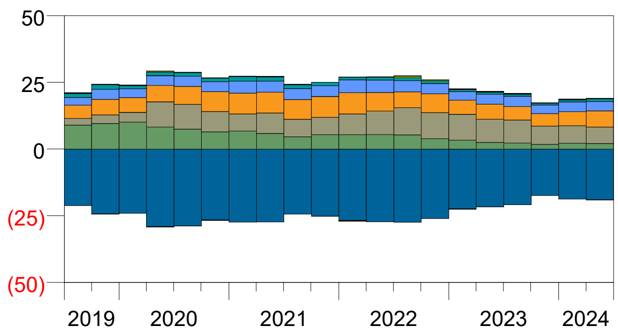
PGIM



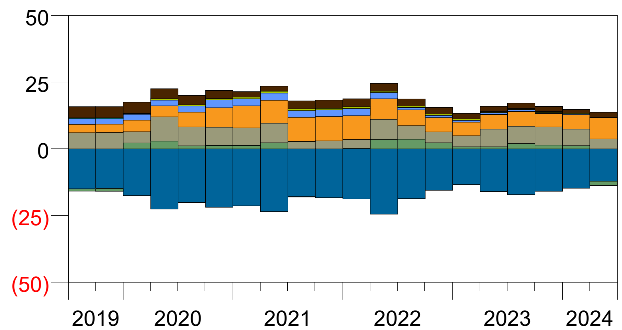
PIMCO



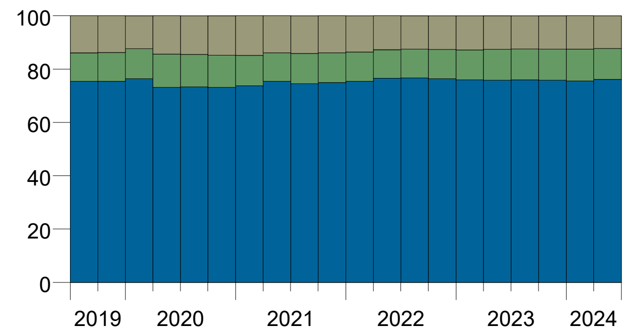
WAMCO (Incumbent)



Wellington (Complement)



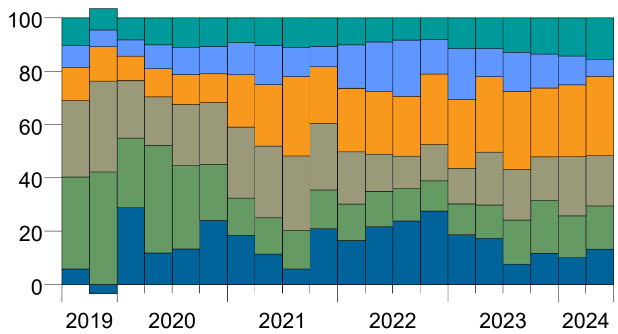
Index: Bloomberg Aggregate



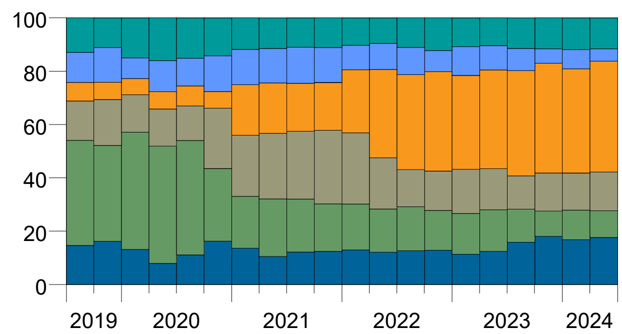
AAA/AA A BBB BB B CCC CC C D N/A

Duration Exposure

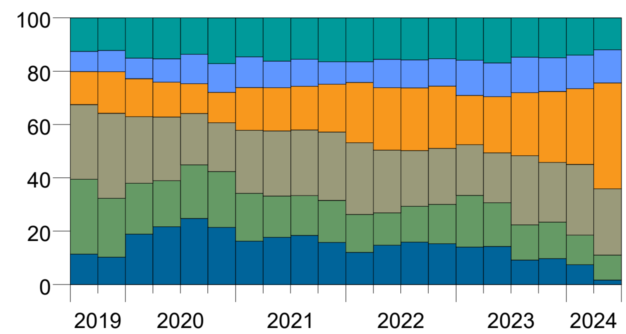
BlackRock



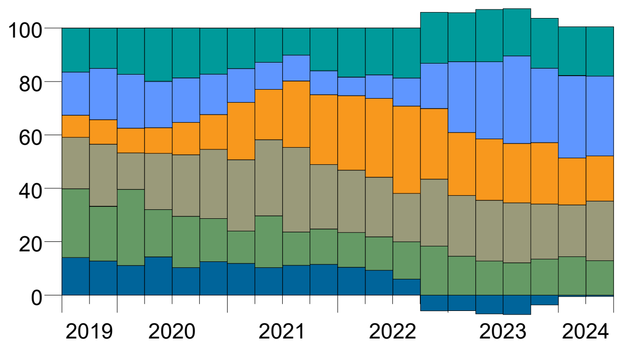
Dodge & Cox



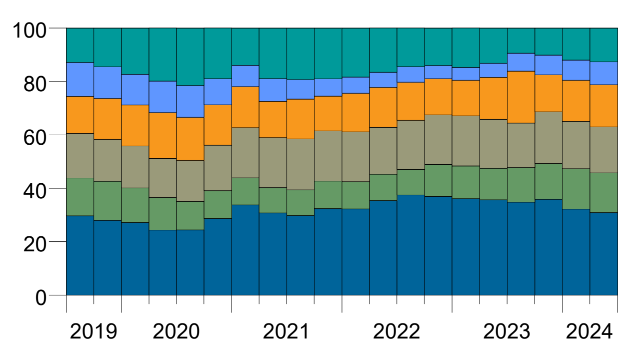
Fidelity



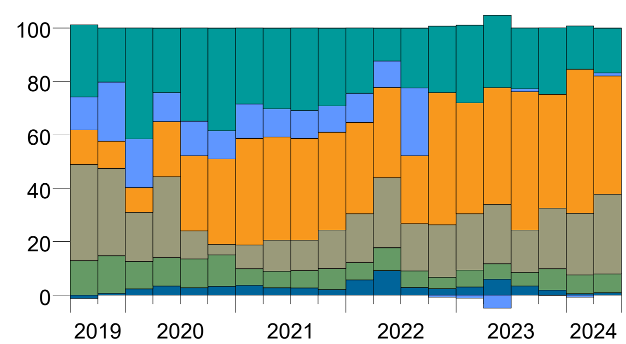
Loomis



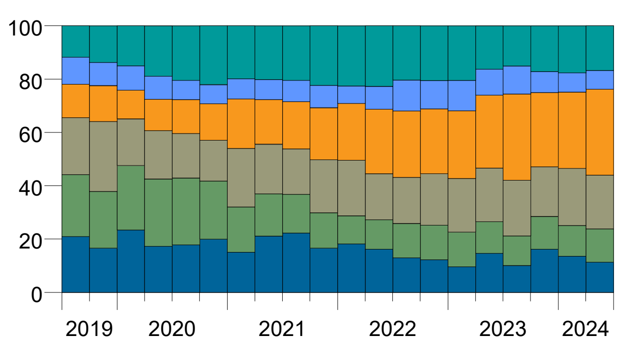
PGIM



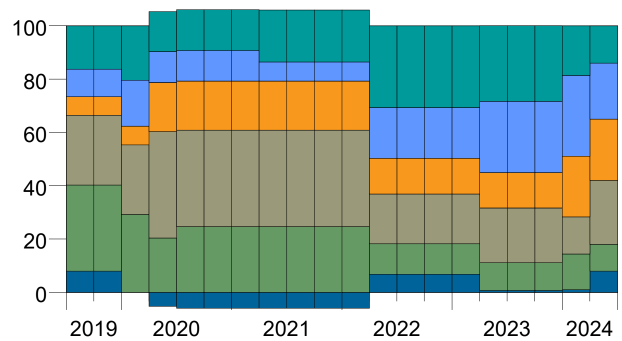
PIMCO



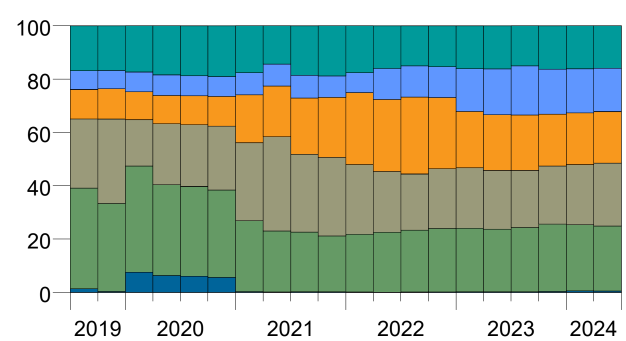
WAMCO (Incumbent)



Wellington (Complement)



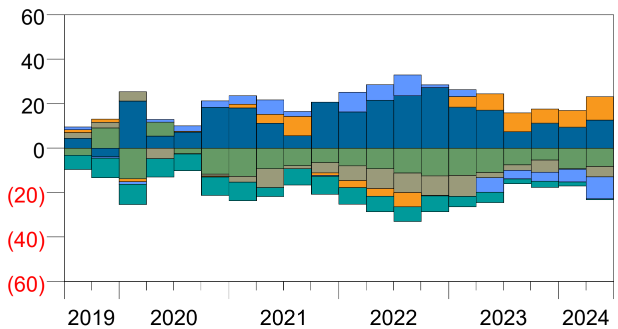
Index: Bloomberg Aggregate



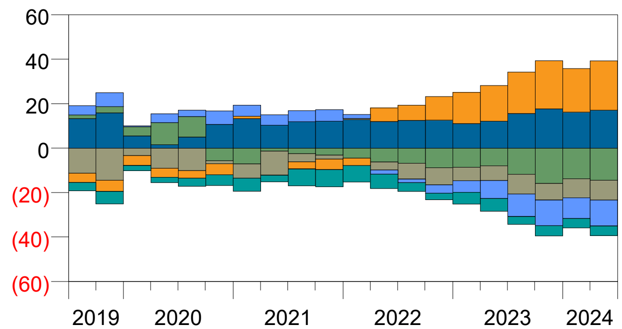
<1 Years | 1-3 Years | 3-5 Years | 5-7 Years | 7-10 Years | >10 Years

Duration Exposure Relative to Blmbg:Aggregate

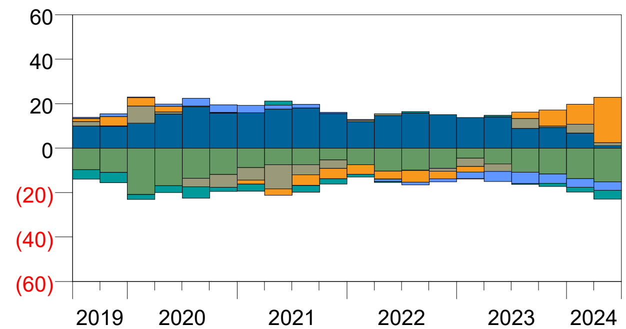
BlackRock



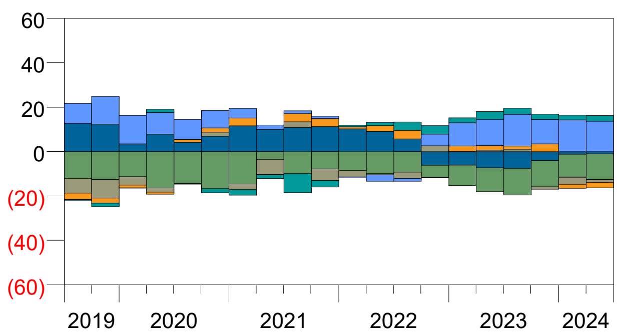
Dodge & Cox



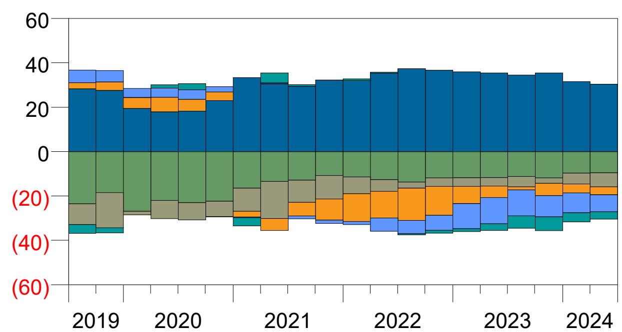
Fidelity



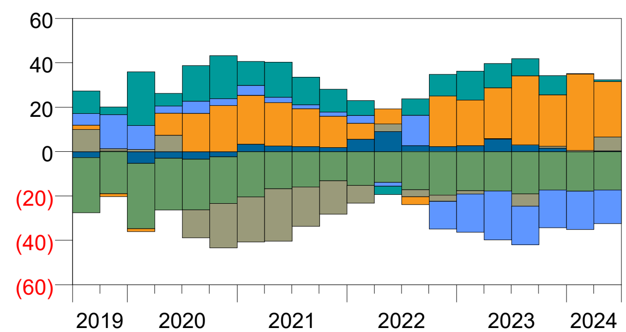
Loomis



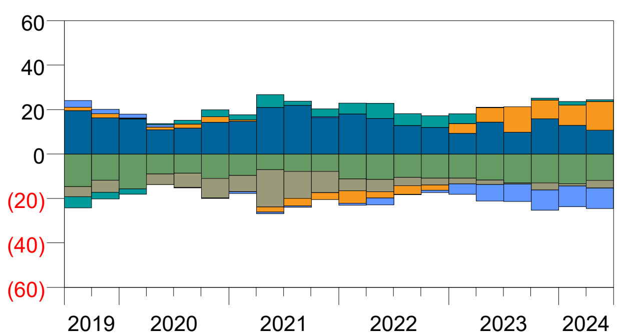
PGIM



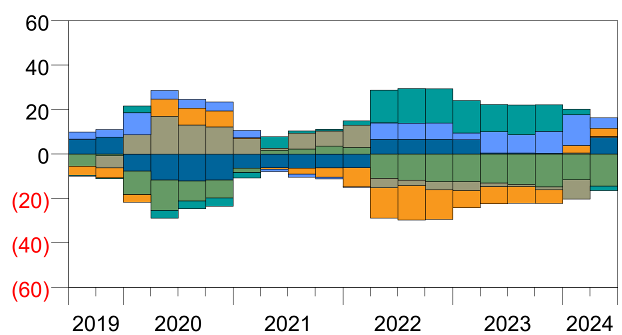
PIMCO



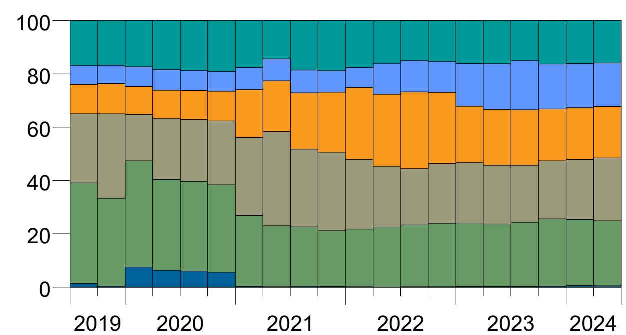
WAMCO (Incumbent)



Wellington (Complement)



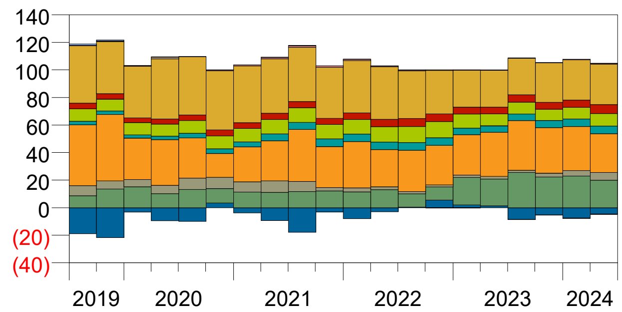
Index: Bloomberg Aggregate



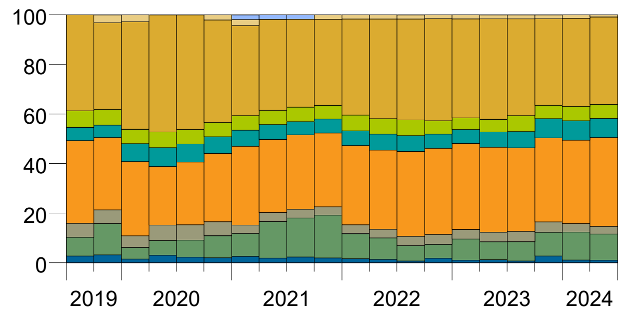
<1 Years | 1-3 Years | 3-5 Years | 5-7 Years | 7-10 Years | >10 Years

Sector Allocation

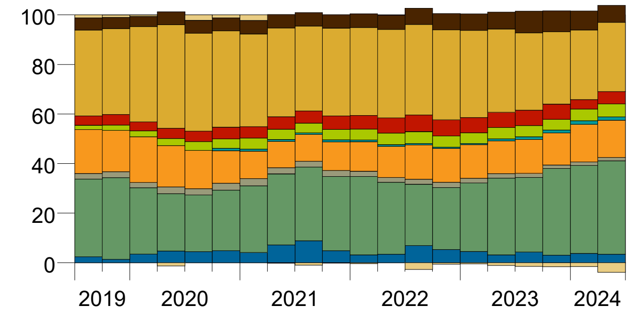
BlackRock



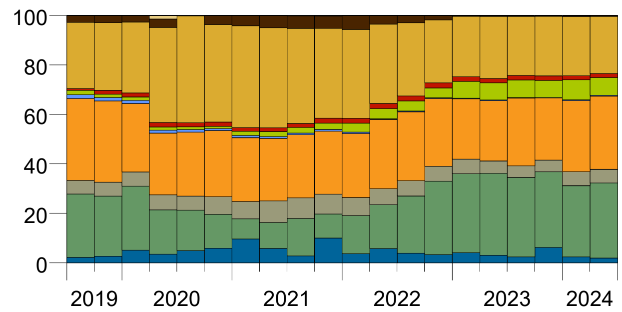
Dodge & Cox



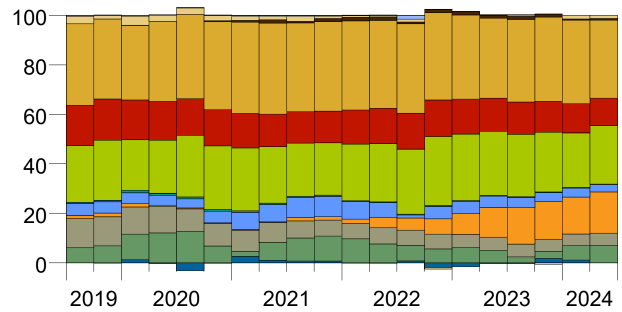
Fidelity



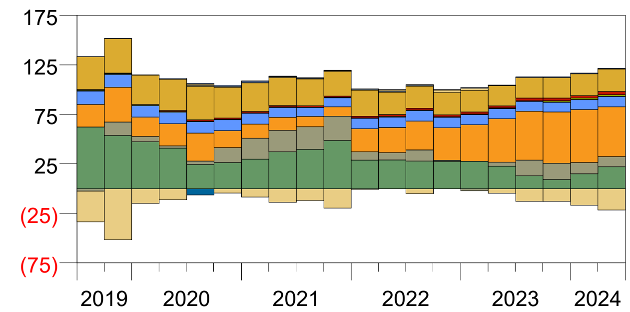
Loomis



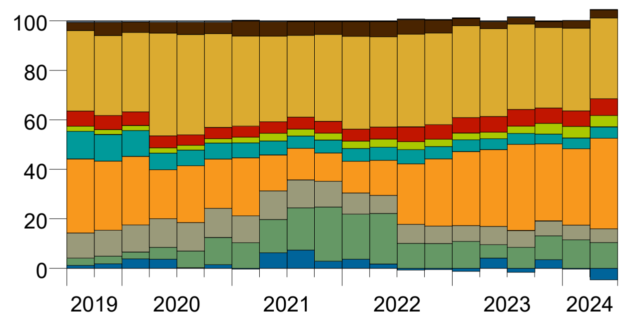
PGIM



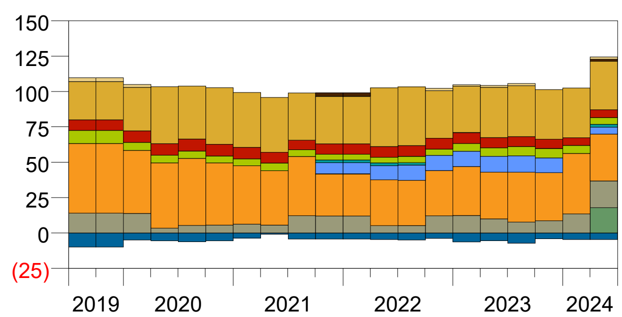
PIMCO



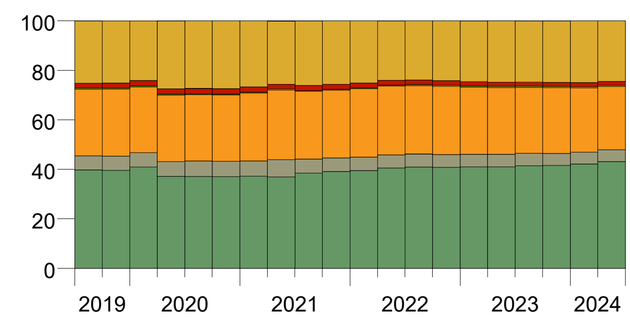
WAMCO (Incumbent)



Wellington (Complement)



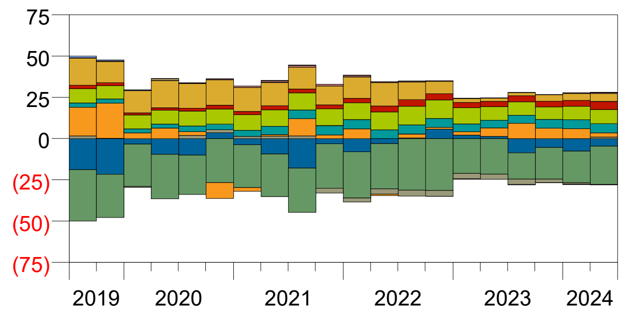
Index: Bloomberg Aggregate



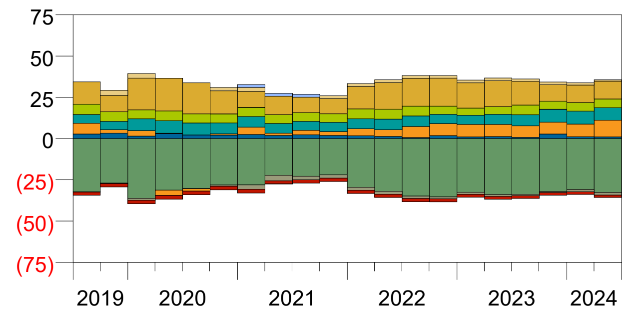
- Cash
- US Treasuries
- Gov't Related
- Agency RMBS
- Non-Agency RMBS
- CMOs
- Asset Backed
- CMBS
- Corporate
- Bank Loans
- Non-Convert Prefd
- Convertibles
- Common Stock
- Other/Misc
- Tax-Exempt Muni

Sector Allocation Relative to Blmbg:Aggregate

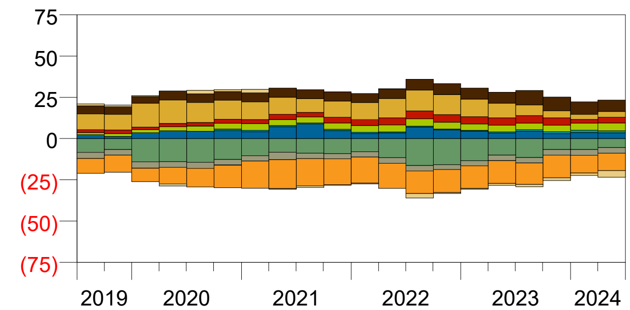
BlackRock



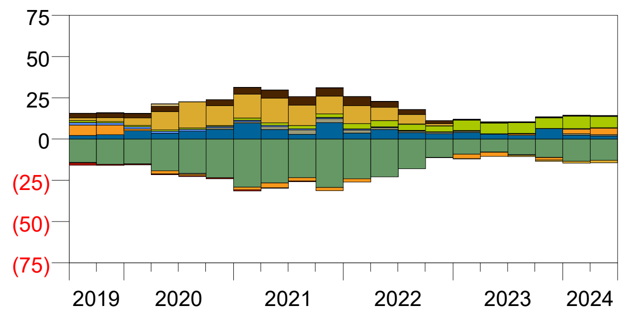
Dodge & Cox



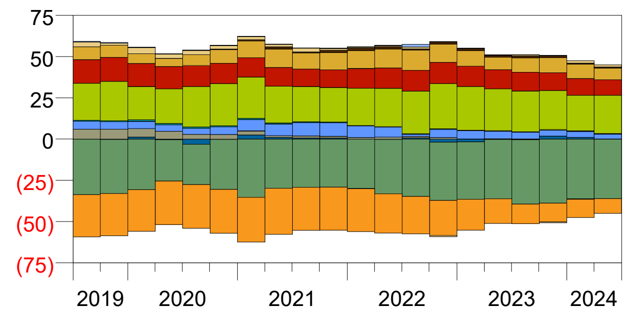
Fidelity



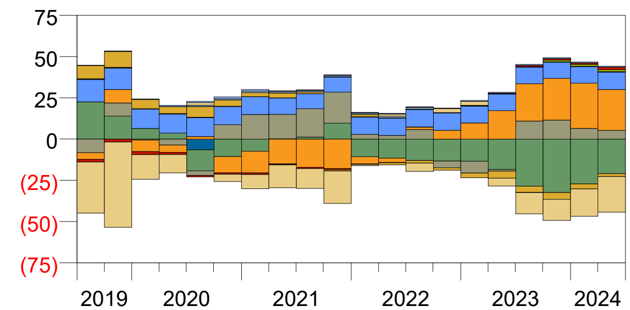
Loomis



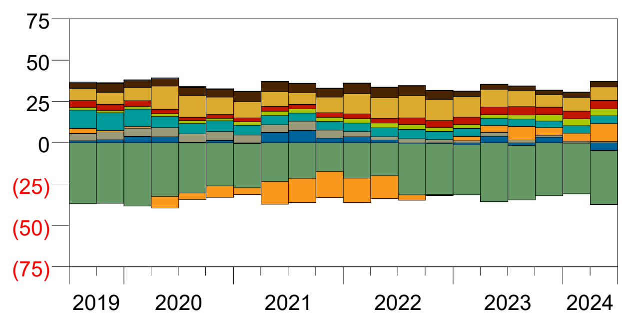
PGIM



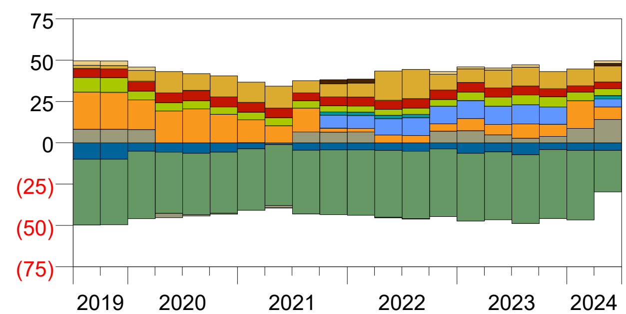
PIMCO



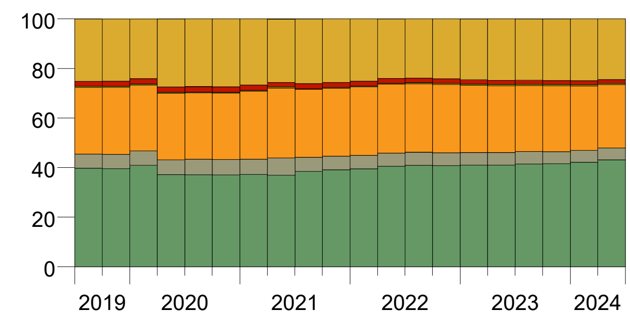
WAMCO (Incumbent)



Wellington (Complement)



Index: Bloomberg Aggregate



Cash | US Treasuries | Gov't Related | Agency RMBS | Non-Agency RMBS | CMOs | Asset Backed | CMBS | Corporate | Bank Loans | Non-Convert Prefd | Convertibles | Common Stock | Other/Misc | Tax-Exempt Muni

Candidate Performance

Returns and Peer Group Rankings - Trailing Periods

Returns for Periods Ended June 30, 2024
Group: Callan Core Plus FI (Percentile Rankings in Parentheses)

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 7 Years		Last 10 Years	
BlackRock*	0.26	(77)	3.19	(86)	(2.84)	(85)	0.42	(79)	1.48	(82)	1.95	(82)
Dodge & Cox	0.61	(18)	5.09	(22)	(1.08)	(9)	1.82	(9)	2.50	(11)	2.75	(14)
Fidelity	0.46	(39)	4.53	(42)	(1.65)	(15)	1.38	(16)	2.22	(21)	2.61	(21)
Loomis	(0.22)	(97)	2.82	(95)	(2.33)	(50)	1.11	(32)	2.03	(30)	2.19	(56)
PGIM	0.50	(31)	5.51	(14)	(2.08)	(32)	0.98	(39)	2.19	(22)	2.73	(16)
PIMCO**	0.44	(45)	4.62	(38)	(2.43)	(58)	0.60	(70)	1.61	(70)	2.05	(71)
Marin-Western Asset	(0.43)	(99)	2.96	(91)	(2.18)	(41)	1.21	(25)	2.10	(25)	2.43	(28)
Wellington (Complement)	0.40	(51)	4.30	(50)	(2.34)	(53)	0.90	(51)	1.85	(50)	2.31	(43)
Callan Core Plus FI* **	**0.42**		**4.31**		**(2.33)**		**0.91**		**1.85**		**2.25**	
Blmbg:Aggregate	**0.07**	**(96)**	**2.63**	**(95)**	**(3.02)**	**(90)**	**(0.23)**	**(98)**	**0.86**	**(99)**	**1.35**	**(100)**

*Gross returns prior to 3Q16 represent the performance composite.
** Gross returns represent the performance composite.
***Results reflect group median.
Manager candidate performance shown is gross-of-fees unless otherwise noted.

Returns and Peer Group Rankings - Calendar Years

Returns for Periods Ended June 30, 2024

Group: Callan Core Plus FI (Percentile Rankings in Parentheses)

	2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
BlackRock	0.00 (72)	6.44 (72)	(14.06) (81)	(0.54) (64)	9.09 (57)	10.15 (44)	(0.07) (37)	4.29 (82)	2.67 (99)	0.94 (18)
Dodge & Cox	0.39 (38)	8.21 (5)	(10.78) (10)	(0.58) (71)	10.19 (26)	9.95 (52)	0.07 (26)	4.69 (67)	5.67 (20)	0.03 (65)
Fidelity	0.38 (39)	7.61 (22)	(12.47) (26)	0.38 (21)	9.64 (41)	10.35 (38)	(0.24) (50)	4.71 (65)	6.35 (12)	0.00 (66)
Loomis	(0.44) (92)	6.52 (66)	(12.23) (21)	(0.85) (82)	11.49 (7)	9.66 (71)	(0.25) (52)	5.62 (18)	7.29 (5)	(2.82) (98)
PGIM	0.69 (20)	8.24 (4)	(14.31) (87)	(0.65) (73)	9.54 (43)	11.66 (3)	(0.14) (42)	6.90 (3)	6.06 (15)	0.21 (55)
PIMCO	0.45 (34)	6.72 (61)	(13.65) (67)	(0.52) (63)	9.29 (48)	8.92 (91)	0.18 (20)	5.48 (23)	3.32 (84)	1.05 (10)
Marin-Western Asset	(1.15) (97)	7.53 (26)	(11.50) (13)	(0.19) (48)	10.28 (22)	10.11 (47)	(0.07) (37)	4.43 (75)	5.21 (34)	1.25 (3)
Wellington (Complement)	0.38 (41)	6.85 (55)	(13.52) (62)	(0.53) (64)	10.13 (26)	10.16 (43)	(0.17) (43)	5.12 (41)	4.93 (44)	0.30 (52)
Callan Core Plus FI*	**0.31**	**6.90**	**(13.27)**	**(0.27)**	**9.27**	**10.01**	**(0.24)**	**4.93**	**4.67**	**0.38**
Blmbg:Aggregate	**(0.71) (96)**	**5.53 (96)**	**(13.01) (41)**	**(1.54) (97)**	**7.51 (93)**	**8.72 (93)**	**0.01 (31)**	**3.54 (95)**	**2.65 (99)**	**0.55 (40)**

*Results reflect group median.
Manager candidate performance shown is gross-of-fees unless otherwise noted.

Returns and Peer Group Rankings - Rolling Three-Year Periods

Returns for Rolling Three-Year Periods Ended June 30, 2024

Group: Callan Core Plus FI (Percentile Rankings in Parentheses)

	Last 3 Yrs.	3 Yrs. Ending 6/30/23	3 Yrs. Ending 6/30/22	3 Yrs. Ending 6/30/21	3 Yrs. Ending 6/30/20
BlackRock	(2.84) (85)	(3.06) (72)	(0.45) (67)	6.42 (58)	5.64 (53)
Dodge & Cox	(1.08) (9)	(1.53) (13)	0.61 (16)	6.88 (26)	5.82 (31)
Fidelity	(1.65) (15)	(1.86) (16)	0.29 (21)	6.80 (33)	5.67 (48)
Loomis	(2.33) (50)	(2.23) (33)	0.45 (18)	6.84 (31)	6.19 (7)
PGIM	(2.08) (32)	(2.67) (57)	(0.50) (74)	7.04 (18)	6.14 (8)
PIMCO	(2.43) (58)	(3.29) (83)	(0.39) (61)	6.25 (70)	5.73 (44)
Marin-Western Asset	(2.18) (41)	(1.58) (13)	0.77 (11)	7.32 (12)	5.62 (55)
Wellington (Complement)	(2.34) (53)	(3.07) (73)	(0.22) (51)	6.75 (37)	6.18 (8)
Callan Core Plus FI*	**(2.33)**	**(2.59)**	**(0.19)**	**6.54**	**5.67**
Blmbg:Aggregate	**(3.02) (90)**	**(3.96) (98)**	**(0.93) (95)**	**5.34 (92)**	**5.32 (66)**

*Results reflect group median.
Manager candidate performance shown is gross-of-fees unless otherwise noted.

Statistics and Peer Group Rankings - Up & Down Market Capture

The table below illustrates Up Market Capture and Down Market Capture for five years versus the Callan Core Plus FI group. A manager with an up-market capture greater than 100 has outperformed the index during the up market and a manager with a down-market capture less than 100 has outperformed the index during the down market. The Down Market Capture rankings are inverted.

Up Market Capture and Down Market Capture Relative to the Blmbg:Aggregate for Five Years Ended June 30, 2024

Group: Callan Core Plus FI (Percentile Rankings in Parentheses)

	Up Market Capture (%)	Down Market Capture (%)
BlackRock	117.81 (58)	101.25 (15)
Dodge & Cox	127.10 (30)	82.05 (88)
Fidelity	123.73 (39)	87.87 (80)
Loomis	129.30 (23)	96.99 (38)
PGIM	132.41 (13)	101.47 (14)
PIMCO	114.68 (68)	95.72 (46)
Marin-Western Asset	111.30 (81)	81.73 (88)
Wellington (Complement)	129.16 (23)	100.68 (18)
Callan Core Plus FI*	**121.15**	**95.13**

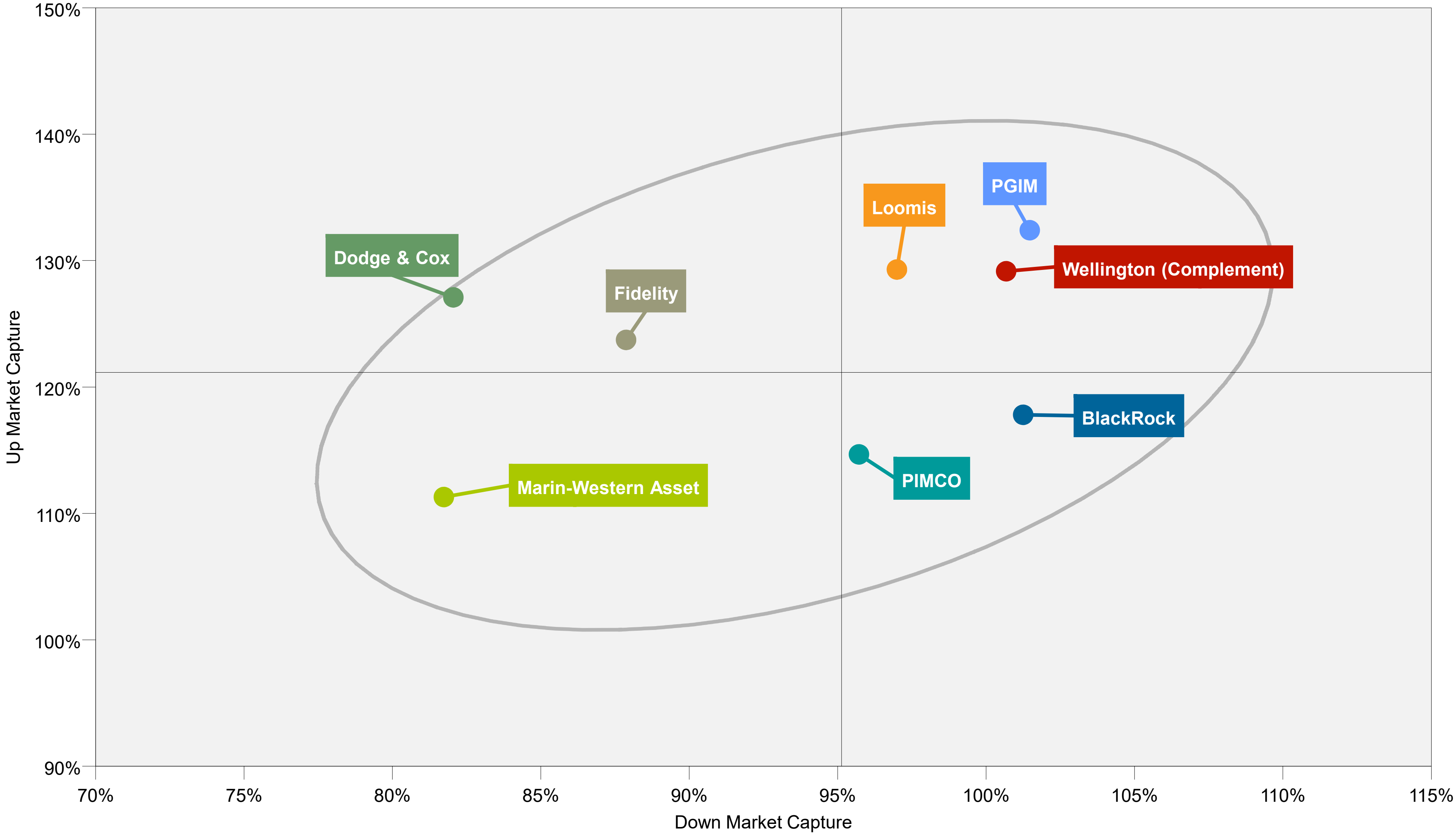
*Results reflect group median.
Manager candidate performance shown is gross-of-fees unless otherwise noted.

Up Market Capture vs. Down Market Capture

The chart below illustrates Up Market Capture and Down Market Capture for five years versus the Callan Core Plus FI group. A manager with an up-market capture greater than 100 has outperformed the index during the up market and a manager with a down-market capture less than 100 has outperformed the index during the down market.

Up Market Capture vs. Down Market Capture for Five Years Ended June 30, 2024

Group: Callan Core Plus FI (Ellipse with Median at Central Axis)



Manager candidate performance shown is gross-of-fees unless otherwise noted.

Excess Correlation Table

This excess correlation table shows the correlation of one portfolio's excess return to another portfolio's excess return. Excess return is the return minus a benchmark. For instance, Excess Correlation could measure the correlation of Manager A's return in excess of a benchmark with Manager B's return in excess of the same benchmark. Excess Correlation is used to indicate whether different managers outperform a market index at the same time.

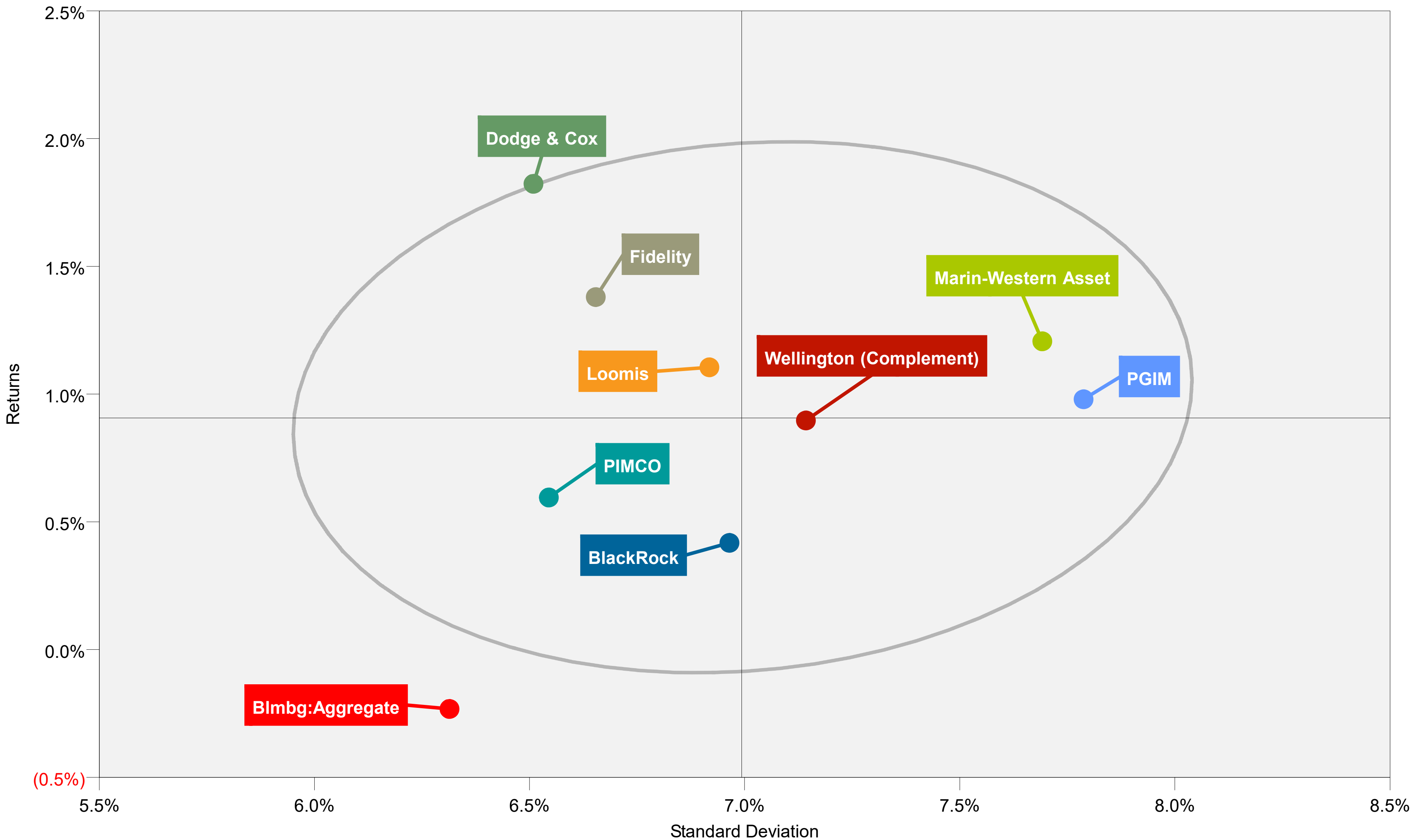
Benchmark: Bloomberg Aggregate for Five Years Ended June 30, 2024

	BlackRock	Dodge & Cox	Fidelity	Loomis	PGIM	PIMCO	Marin-Western Asset	Wellington (Complement)
BlackRock	**1.00**							
Dodge & Cox	0.91	**1.00**						
Fidelity	0.96	0.95	**1.00**					
Loomis	0.89	0.85	0.88	**1.00**				
PGIM	0.94	0.89	0.94	0.82	**1.00**			
PIMCO	0.85	0.77	0.86	0.76	0.86	**1.00**		
Marin-Western Asset	0.89	0.91	0.89	0.84	0.81	0.67	**1.00**	
Wellington (Complement)	0.94	0.87	0.91	0.92	0.91	0.85	0.83	**1.00**

Manager candidate performance shown is gross-of-fees unless otherwise noted.

Risk/Reward Structure

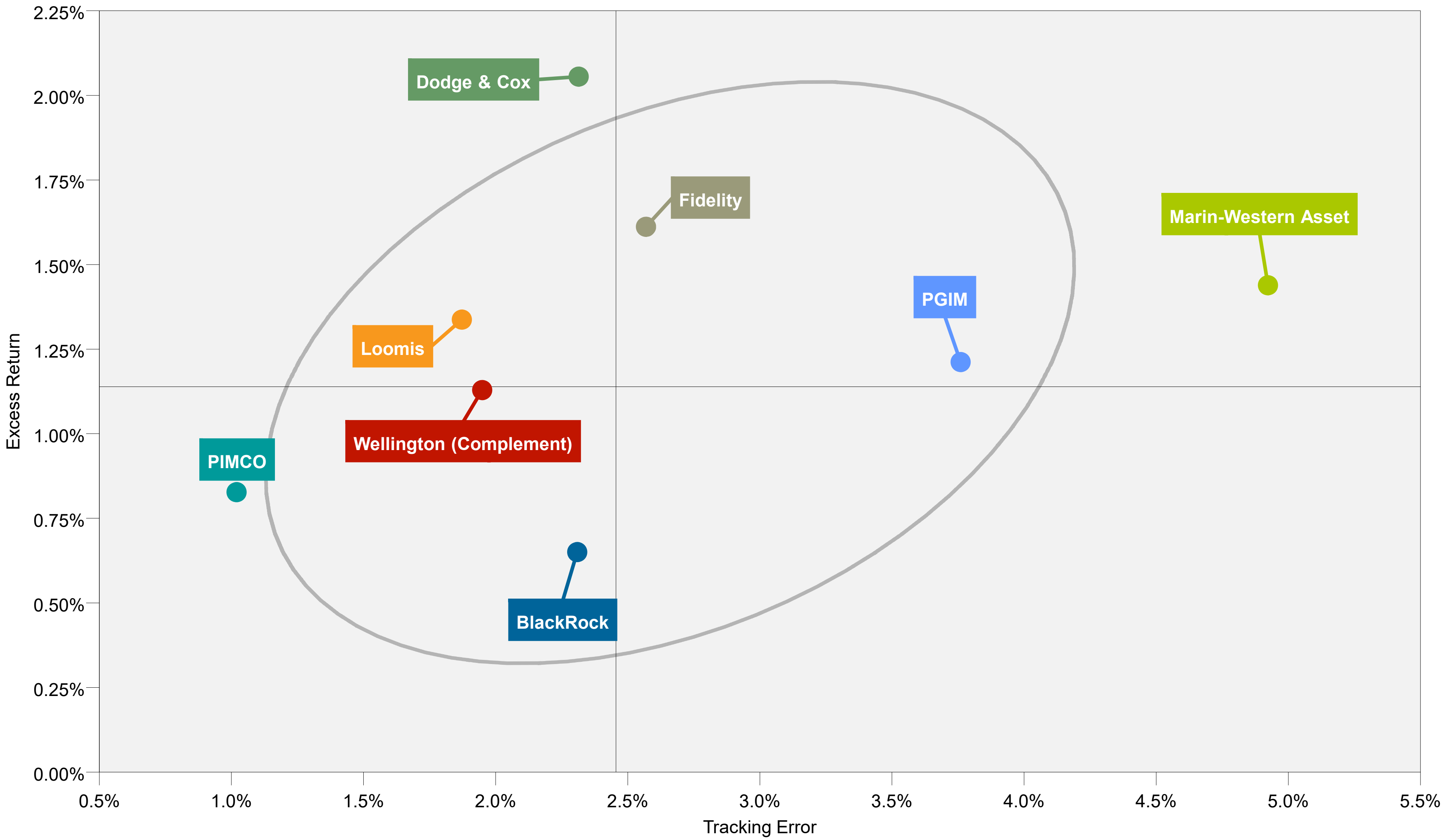
Risk/Reward for Five Years Ended June 30, 2024
Group: Callan Core Plus FI (Ellipse with Median at Central Axis)



Manager candidate performance shown is gross-of-fees unless otherwise noted.

Excess Return vs. Tracking Error

Excess Return vs Tracking Error for Five Years Ended June 30, 2024
Benchmark: Bloomberg Aggregate
Group: Callan Core Plus FI (Ellipse with Median at Central Axis)



Manager candidate performance shown is gross-of-fees unless otherwise noted.

Risk Statistics

Return-Based Risk Statistics Relative to Blmbg:Aggregate for Five Years Ended June 30, 2024
Group: Callan Core Plus FI (Percentile Ranking in Parentheses)

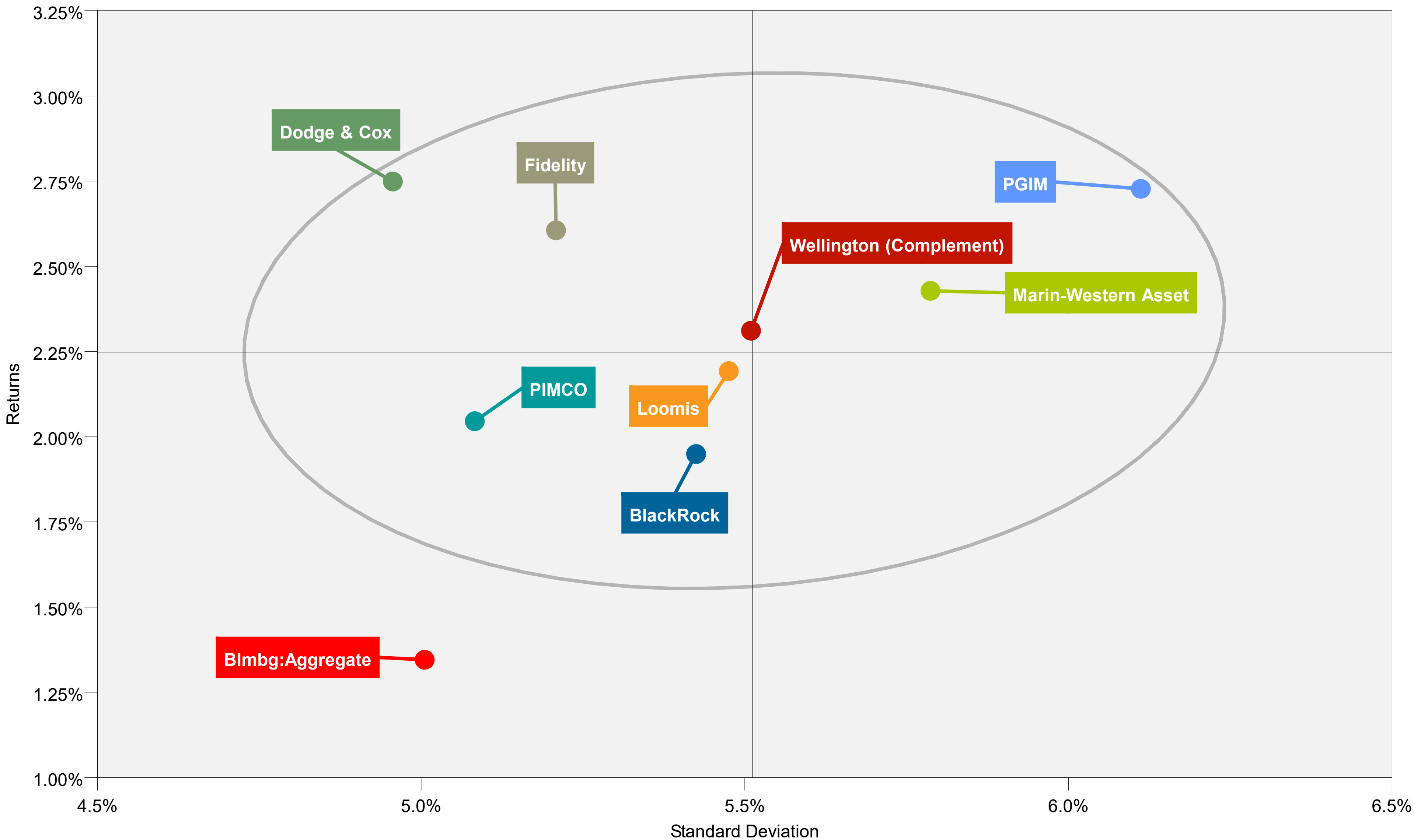
	Standard Deviation	Downside Risk	Sharpe Ratio	Information Ratio	Alpha	Beta	Correlation
BlackRock	6.96 (52)	1.62 (55)	(0.25) (74)	0.34 (75)	0.81 (71)	1.05 (30)	0.94 (40)
Dodge & Cox	6.51 (82)	1.47 (61)	(0.05) (9)	0.84 (9)	2.00 (14)	0.97 (74)	0.94 (51)
Fidelity	6.65 (69)	1.80 (49)	(0.12) (19)	0.60 (31)	1.59 (22)	0.98 (69)	0.92 (55)
Loomis	6.92 (54)	0.97 (84)	(0.15) (32)	0.82 (11)	1.54 (26)	1.07 (20)	0.96 (22)
PGIM	7.79 (11)	2.74 (17)	(0.15) (32)	0.40 (66)	1.52 (28)	1.09 (12)	0.88 (81)
PIMCO	6.55 (78)	0.57 (92)	(0.24) (72)	0.87 (7)	0.90 (69)	1.02 (45)	0.99 (4)
Marin-Western Asset	7.69 (13)	3.26 (9)	(0.12) (24)	0.29 (86)	1.46 (30)	0.97 (74)	0.77 (96)
Wellington (Complement)	7.14 (34)	1.14 (73)	(0.18) (45)	0.74 (16)	1.40 (35)	1.10 (11)	0.97 (21)
Callan Core Plus FI*	**6.99**	**1.76**	**(0.18)**	**0.47**	**1.18**	**1.02**	**0.94**
Blmbg:Aggregate	**6.31 (91)**	**0.00 (100)**	**(0.38) (99)**	**0.00 (98)**	**0.00 (98)**	**1.00 (62)**	**1.00 (1)**

*Results reflect group median.
Manager candidate performance shown is gross-of-fees unless otherwise noted.

Risk/Reward Structure

Risk/Reward for Ten Years Ended June 30, 2024

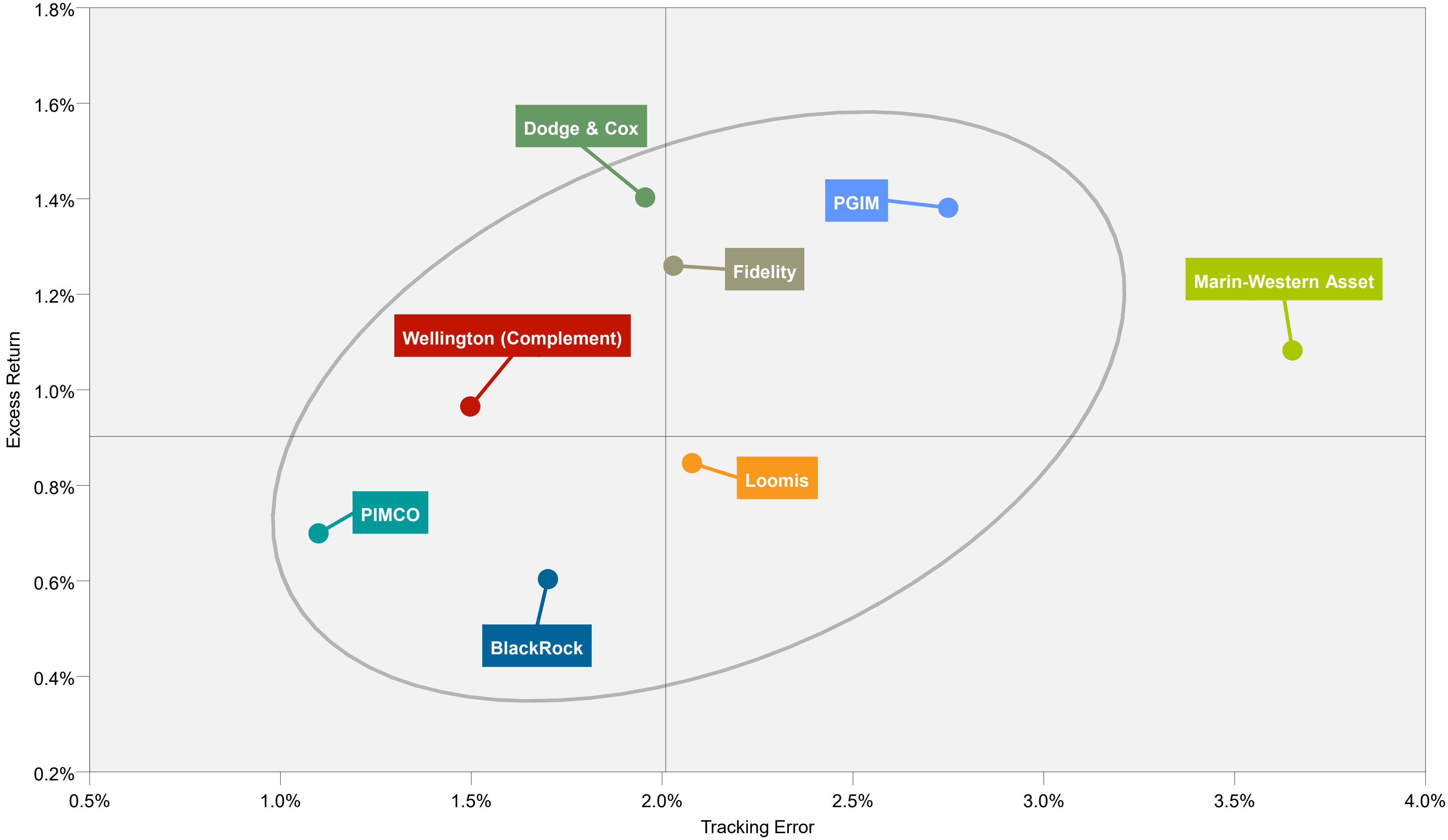
Group: Callan Core Plus FI (Ellipse with Median at Central Axis)



Manager candidate performance shown is gross-of-fees unless otherwise noted.

Excess Return vs. Tracking Error

Excess Return vs Tracking Error for Ten Years Ended June 30, 2024
Benchmark: Bloomberg Aggregate
Group: Callan Core Plus FI (Ellipse with Median at Central Axis)



Manager candidate performance shown is gross-of-fees unless otherwise noted.

Risk Statistics

Return-Based Risk Statistics Relative to Blmbg:Aggregate for Ten Years Ended June 30, 2024

Group: Callan Core Plus FI (Percentile Rankings in Parentheses)

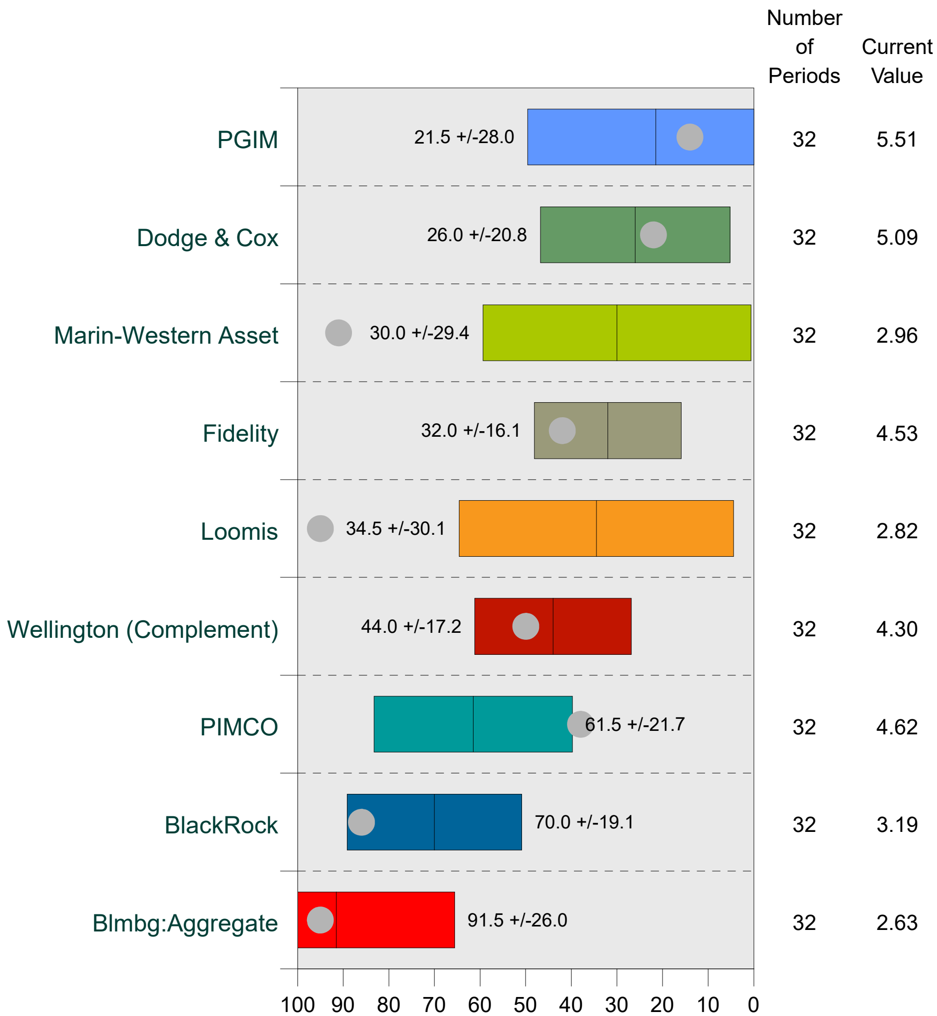
	Standard Deviation	Downside Risk	Sharpe Ratio	Information Ratio	Alpha	Beta	Correlation
BlackRock	5.42 (54)	1.19 (62)	0.08 (83)	0.36 (75)	0.62 (80)	1.04 (22)	0.95 (29)
Dodge & Cox	4.96 (93)	1.24 (56)	0.25 (9)	0.72 (11)	1.38 (16)	0.91 (86)	0.92 (54)
Fidelity	5.21 (73)	1.40 (51)	0.21 (19)	0.61 (21)	1.26 (21)	0.96 (66)	0.92 (57)
Loomis	5.48 (52)	1.45 (49)	0.12 (56)	0.41 (64)	0.86 (54)	1.02 (37)	0.93 (49)
PGIM	6.11 (8)	1.96 (21)	0.20 (20)	0.52 (36)	1.43 (13)	1.10 (5)	0.90 (77)
PIMCO	5.08 (84)	0.66 (90)	0.10 (69)	0.63 (17)	0.70 (73)	0.99 (59)	0.98 (9)
Marin-Western Asset	5.79 (22)	2.44 (10)	0.16 (36)	0.30 (87)	1.11 (27)	0.92 (82)	0.78 (96)
Wellington (Complement)	5.51 (50)	0.89 (78)	0.15 (43)	0.66 (13)	0.98 (40)	1.06 (8)	0.96 (19)
Callan Core Plus FI*	**5.51**	**1.44**	**0.14**	**0.46**	**0.92**	**1.01**	**0.92**
Blmbg:Aggregate	**5.01 (92)**	**0.00 (100)**	**(0.03) (100)**	**0.00 (100)**	**0.00 (100)**	**1.00 (55)**	**1.00 (1)**

*Results reflect group median.
Manager candidate performance shown is gross-of-fees unless otherwise noted.

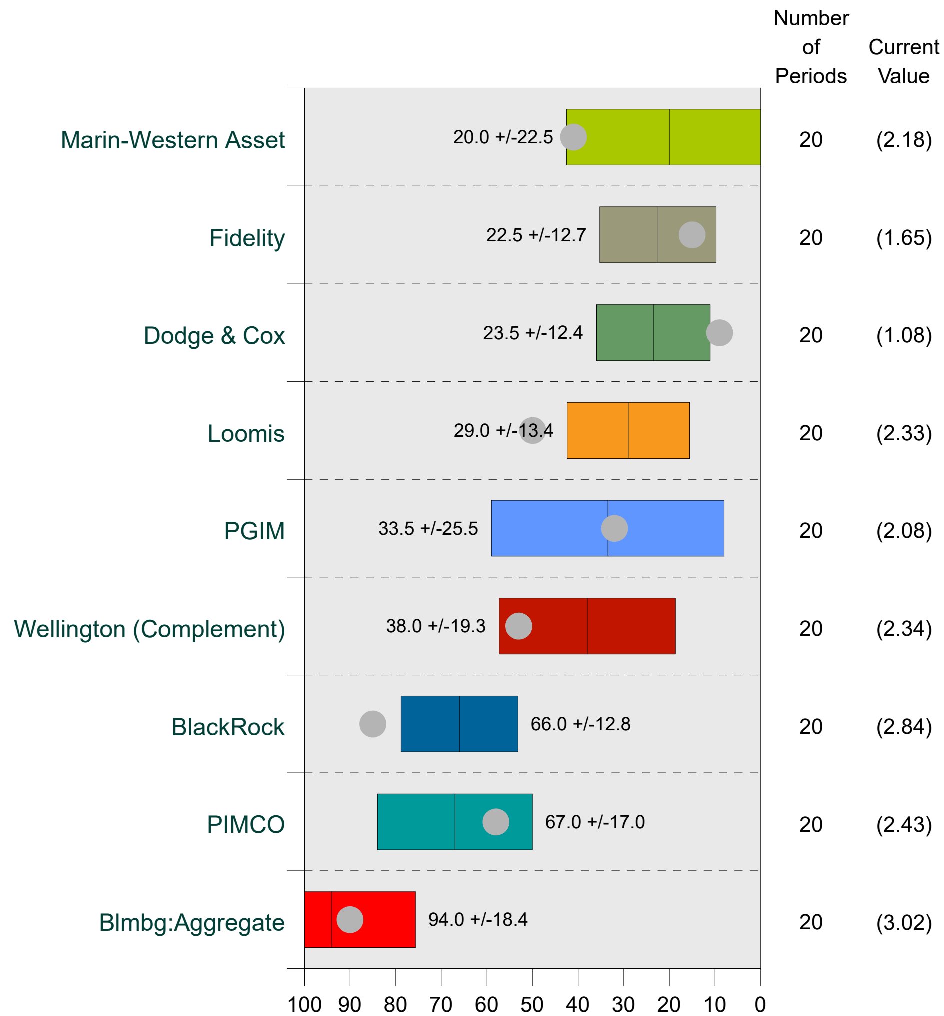
Historical Rankings - Returns

This page compares multiple portfolios to each other by analyzing both the historical median ranking for a given metric versus a relevant peer group, and the consistency and range (standard deviation) of that ranking over time. The midpoint of each sideways bar represents the median ranking of a given portfolio over time, and the width of the bar represents the consistency and range of that ranking (+/- 1 standard deviation). The slash-separated numbers show the median and standard deviation, respectively, of the portfolios' ranking. The current ranking of each portfolio is demarcated by a dot, while the corresponding current value of the metric is displayed on the far right.

Rolling One-Year Returns Against Callan Core Plus FI for Eight Years Ended June 30, 2024



Rolling Three-Year Returns Against Callan Core Plus FI for Five Years Ended June 30, 2024

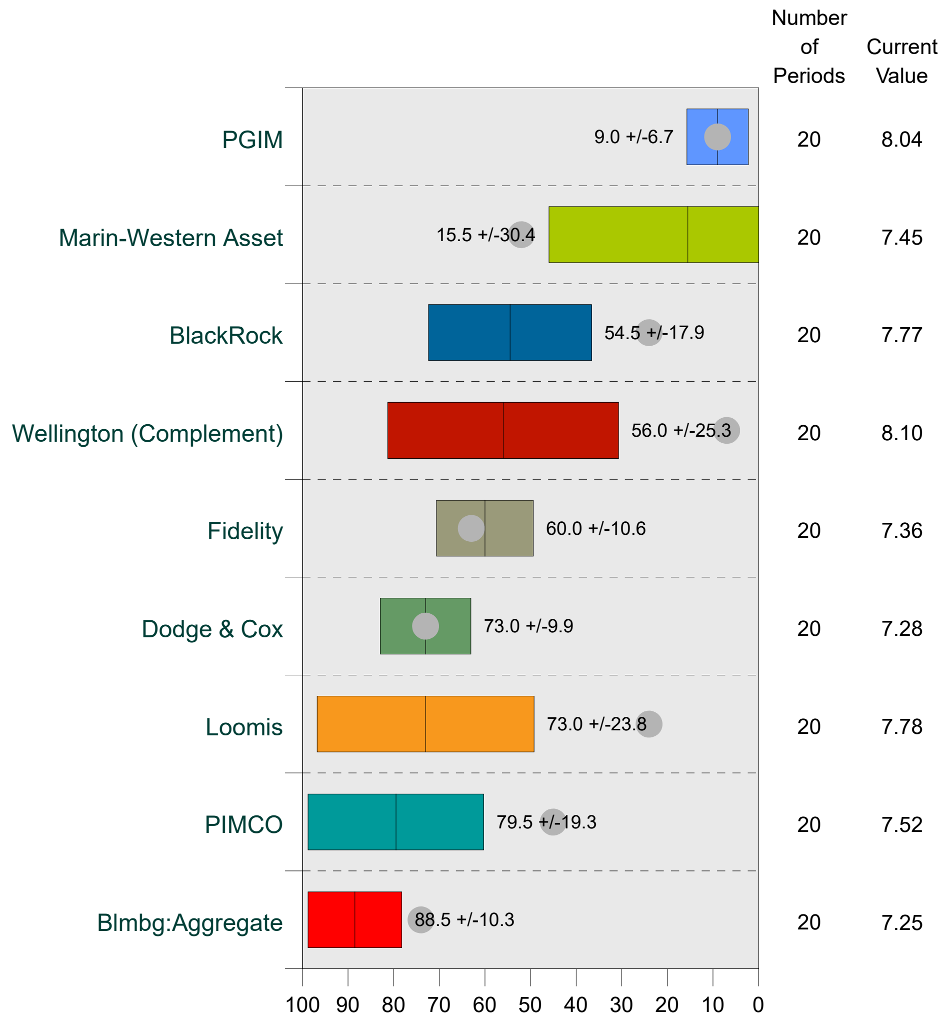


Manager candidate performance shown is gross-of-fees unless otherwise noted.

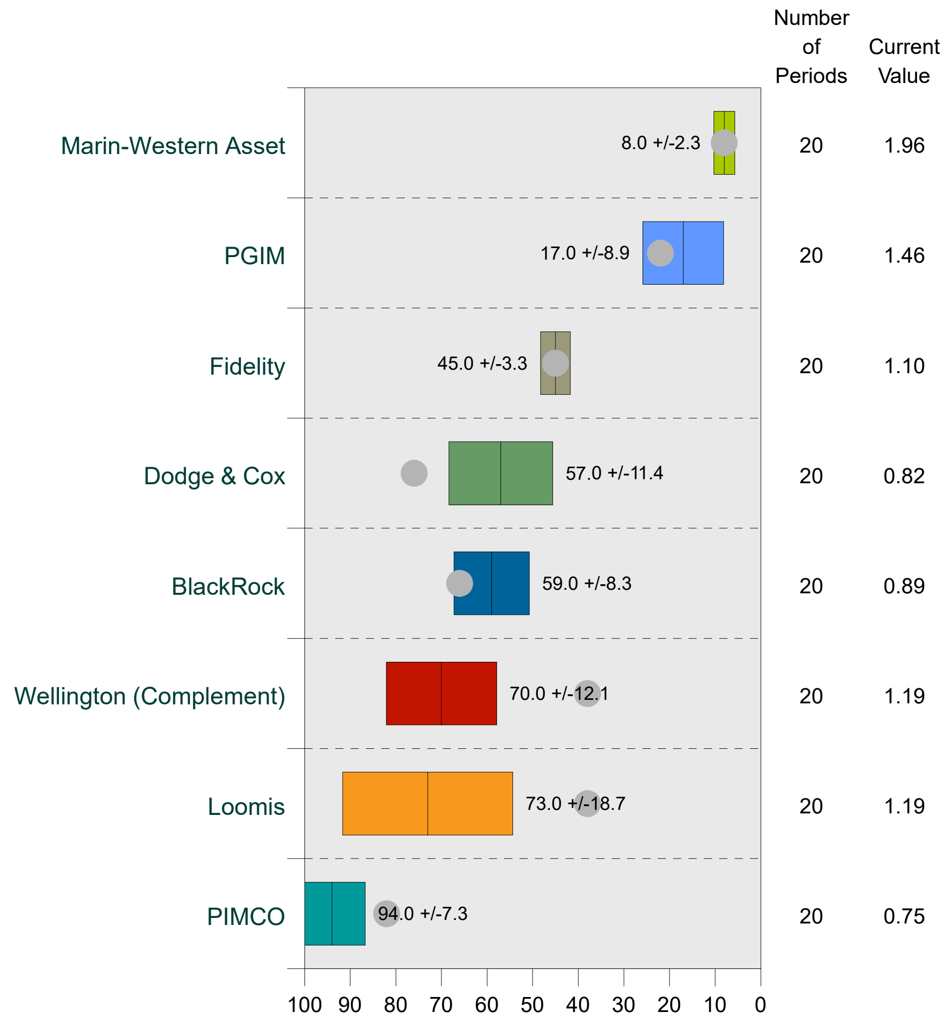
Historical Rankings - Standard Deviation & Tracking Error

This page compares multiple portfolios to each other by analyzing both the historical median ranking for a given metric versus a relevant peer group, and the consistency and range (standard deviation) of that ranking over time. The midpoint of each sideways bar represents the median ranking of a given portfolio over time, and the width of the bar represents the consistency and range of that ranking (+/- 1 standard deviation). The slash-separated numbers show the median and standard deviation, respectively, of the portfolios' ranking. The current ranking of each portfolio is demarcated by a dot, while the corresponding current value of the metric is displayed on the far right.

Rolling Three-Year Standard Deviation Against Callan Core Plus FI for Five Years Ended June 30, 2024



Rolling Three-Year Tracking Error Against Callan Core Plus FI for Five Years Ended June 30, 2024

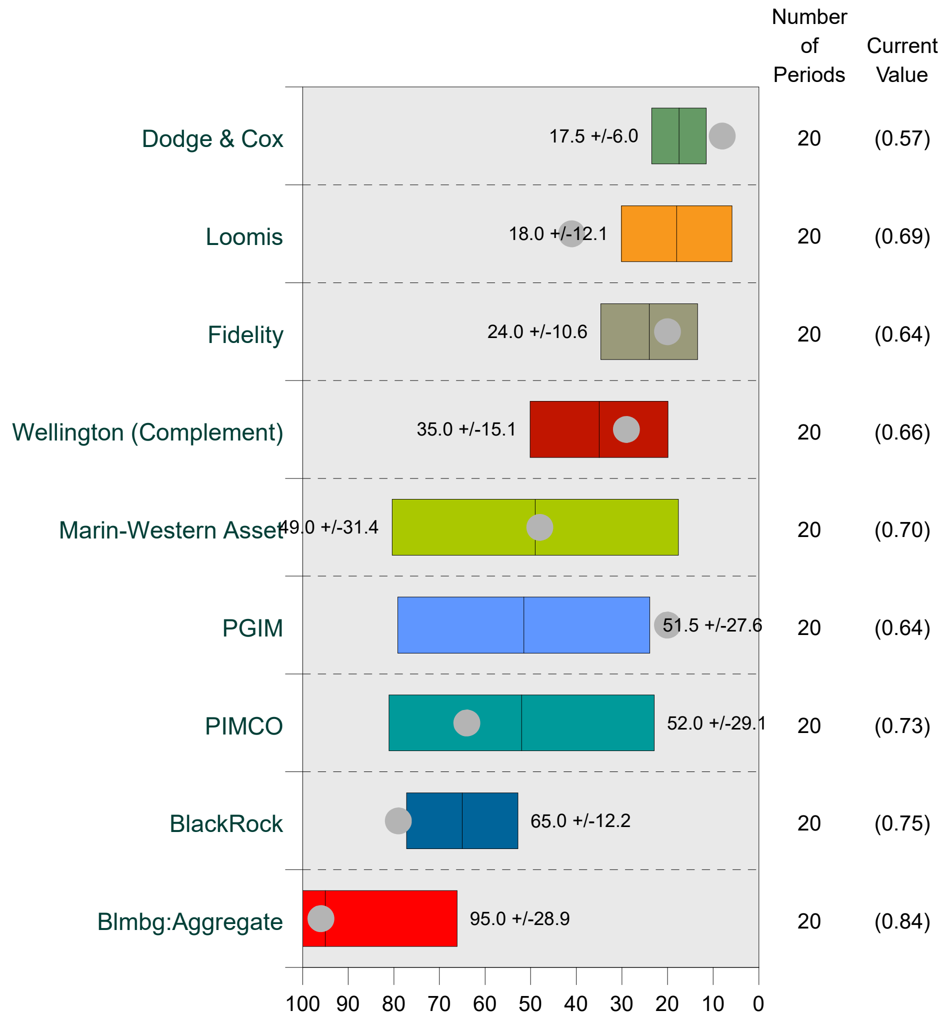


Manager candidate performance shown is gross-of-fees unless otherwise noted.

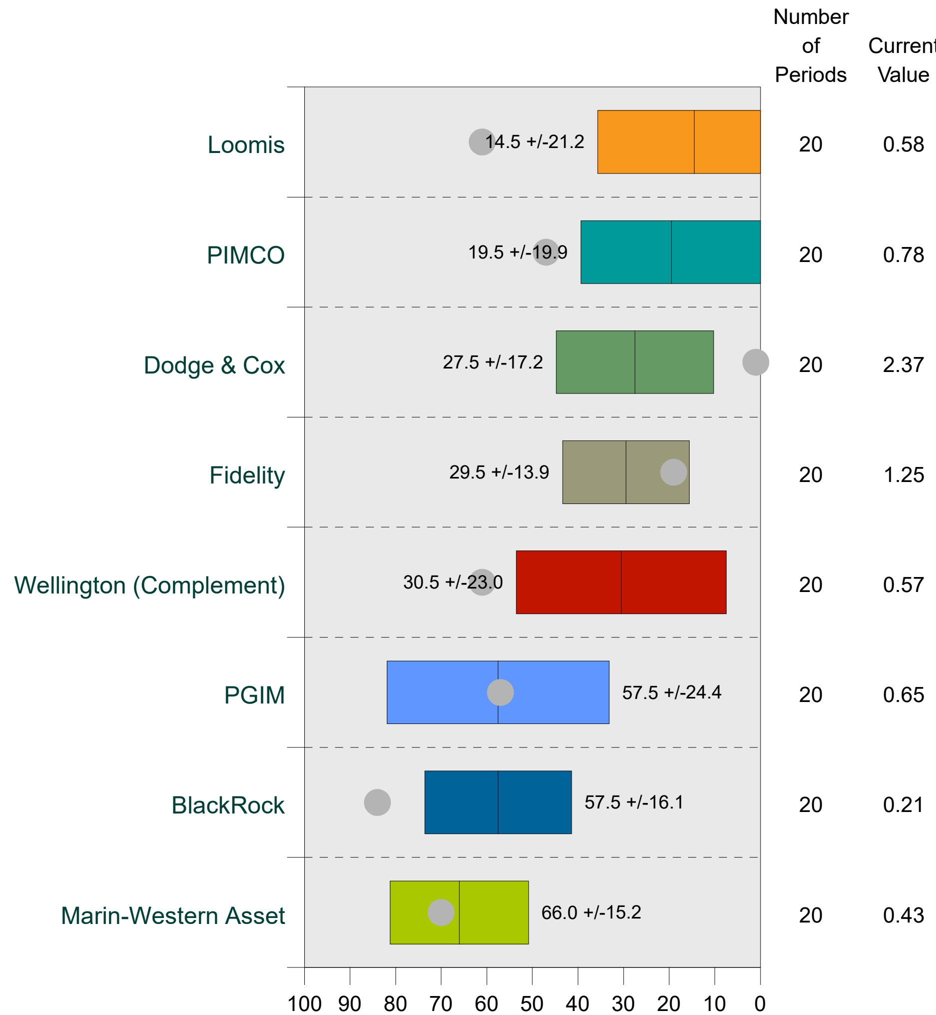
Historical Rankings - Sharpe Ratio & Excess Return Ratio

This page compares multiple portfolios to each other by analyzing both the historical median ranking for a given metric versus a relevant peer group, and the consistency and range (standard deviation) of that ranking over time. The midpoint of each sideways bar represents the median ranking of a given portfolio over time, and the width of the bar represents the consistency and range of that ranking (+/- 1 standard deviation). The slash-separated numbers show the median and standard deviation, respectively, of the portfolios' ranking. The current ranking of each portfolio is demarcated by a dot, while the corresponding current value of the metric is displayed on the far right.

Rolling Three-Year Sharpe Ratio Against Callan Core Plus FI for Five Years Ended June 30, 2024



Rolling Three-Year Excess Return Ratio Against Callan Core Plus FI for Five Years Ended June 30, 2024



Manager candidate performance shown is gross-of-fees unless otherwise noted.

Appendix

Proposed Vehicle Information

	Product / Vehicle AUM ($mm)	Minimum Account Size ($mm)	Proposed Fee for $336mm (%)	Proposed Fee for $225mm (%)	Comments
BlackRock CIT	34,512 / 4,711	0	0.18 (mgmt) 0.19 (all-in)	0.18 (mgmt) 0.19 (all-in)	- daily valuation & liquidity
Dodge & Cox Sep Acc	110,028 / 31,197	150	0.18 (all-in)	0.21 (all-in)	- daily valuation & liquidity - fee schedule: 35bps on the first $25 million 25bps on the next $75 million 15bps on the next $150 million 12bps on the next $750 million 11bps thereafter - also offering a mutual fund (DODIX) @ 41bps
Fidelity Sep Acc	81,571 / 3,482	0	0.17 (mgmt) 0.20 (all-in)	0.18 (mgmt) 0.21 (all-in)	- daily valuation & liquidity - fee schedule: 20bps on the first $100 million 16bps on the next $200 million 12bps on the next $200 million 10bps on assets over $500 million - also offering a CIT with identical fee schedule
Loomis Sep Acc	35,739 / 13,836	200	0.24 (all-in)	0.27 (all-in)	- daily valuation & liquidity - fee schedule: 27.5bps on the first $200 million 20bps on the next $200 million 15bps on the value over $400 million - also offering a CIT at 25bps for all assets
PGIM CIT	94,418 / 15,972	5	0.16 (mgmt) 0.17 (all-in)	0.19 (mgmt) 0.20 (all-in)	- daily valuation & liquidity
PIMCO CIT	108,183 / 2,834	0	0.20 (all-in)	0.20 (all-in)	- daily valuation & liquidity

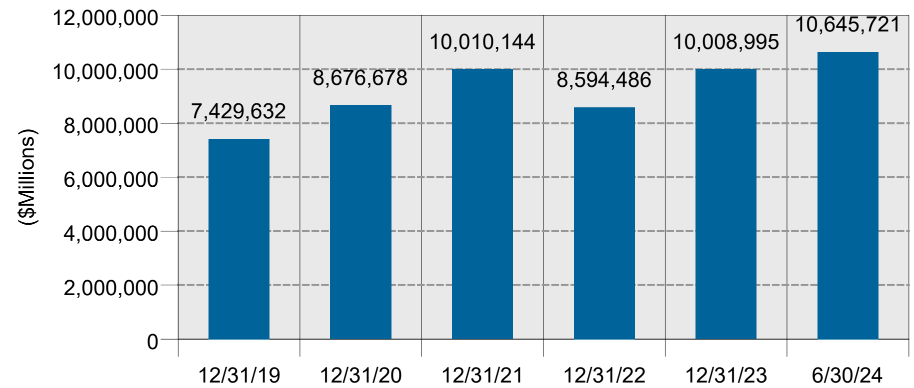
Firm Overview: BlackRock

BlackRock was founded in 1988. In February 1995, BlackRock became a wholly-owned subsidiary of The PNC Financial Services Group, Inc. and a member of the PNC Asset Mgmt. Group. In 1998, PNC consolidated its asset management subsidiary names under BlackRock. BlackRock completed an IPO in 1999 for 16% of its equity. In 2005, BlackRock acquired SSRM Holdings Inc., the holding company of State Street Research and Management and State Street Realty. In 2006, BlackRock, Inc. and Merrill Lynch Investment Managers merged to create an independent company operating under the BlackRock name. In October 2007, BlackRock acquired Quellos Group. In December 2009, BlackRock completed the acquisition of Barclays Global Investors (BGI) including its iShares exchange-traded funds.

Firm	Contact
BlackRock	Delal Ali
50 Hudson Yards	(415) 369-5523
New York, NY 10001	delal.ali@blackrock.com

Ownership	Founded	Portfolio Managers	Analysts
Publicly Owned	1988	1,295	705

Total Firm Asset Growth ($mm) as of June 30, 2024



Total Firm Asset Breakdown

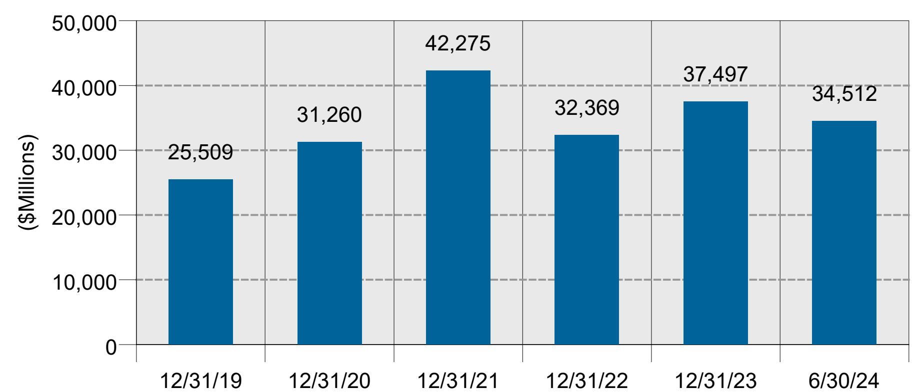
Domestic	$(mm)
Equity	3,912,040
Fixed Income	1,620,402
Balanced	616,932
Alternatives	152,529
Other	532,354
Total	**6,834,257**

Global	$(mm)
Equity	1,915,093
Fixed Income	1,195,482
Balanced	304,481
Alternatives	150,719
Other	245,688
Total	**3,811,464**

Client Type AUM Total does not include DC assets.

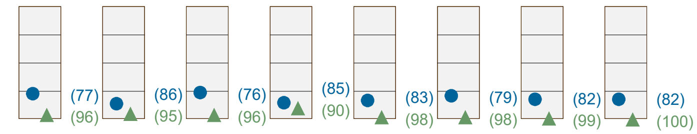
Client Type	$(mm)
Corporate	2,603,704
Public(Govt)	1,697,635
Union/Multi-Employer	166,300
Superannuation	22,034
Foundation/Endowment	37,052
Health Care	36,177
Insurance	538,061
High Net Worth	43,085
Wrap Account	222,766
Sub-Advised	237,176
Superanationals	14,728
Sovereign Wealth Funds	109,401
Other	4,917,603
Total Org Assets	**10,645,721**
Total Defined Contribution	**872,395**

Total Product Asset Growth ($mm) as of June 30, 2024



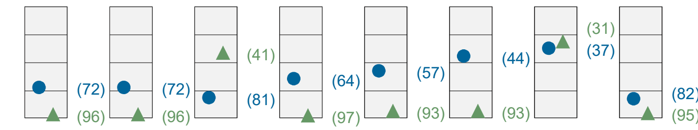
Product Overview: BlackRock

Returns vs. Callan Core Plus FI



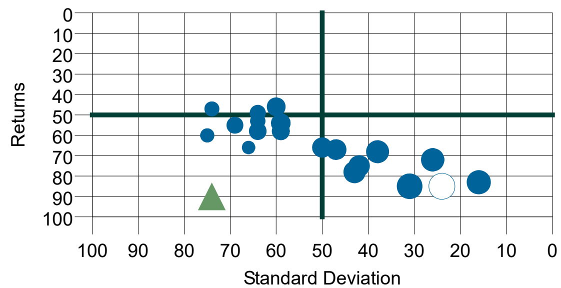
		Last Quarter	Last Year	Last 2 Yrs.	Last 3 Yrs.	Last 4 Yrs.	Last 5 Yrs.	Last 7 Yrs.	Last 10 Yrs.
BlackRock	●	0.3	3.2	1.7	-2.8	-1.5	0.4	1.5	1.9
Blmbg:Aggregate	▲	0.1	2.6	0.8	-3.0	-2.4	-0.2	0.9	1.3

Calendar Year Returns

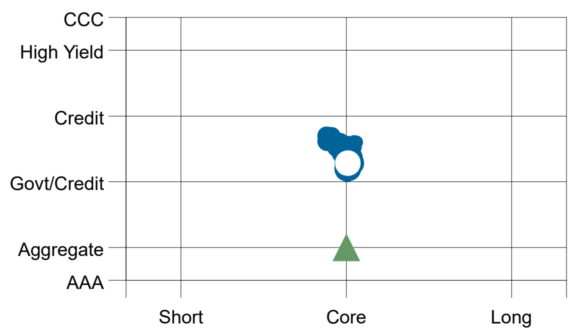


		2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
BlackRock	●	0.0	6.4	-14.1	-0.5	9.1	10.1	-0.1	4.3
Blmbg:Aggregate	▲	-0.7	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5

Return and Risk Rankings vs. Callan Core Plus FI Group Rolling 3 Year for 5 Years



Style Map Rolling 1 Year for 5 Years



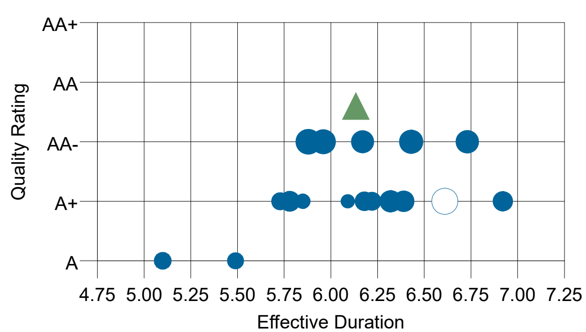
Portfolio Characteristics

	BlackRock	Blmbg:Aggregate
Effective Duration	6.6	6.1
Effective Yield	5.8	5.0
Coupon Rate	4.1	3.3
Wtd. Average Life	8.9	8.4

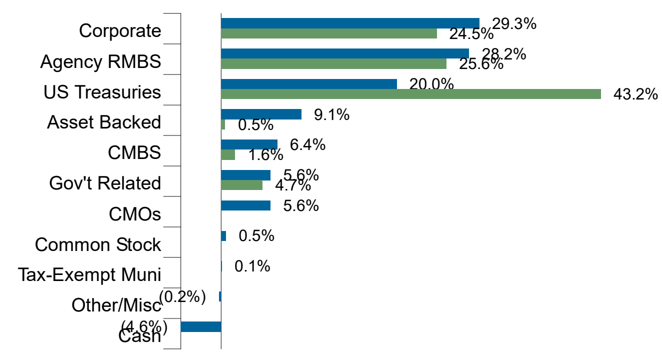
Quality Distribution (%)

	BlackRock	Blmbg:Aggregate
AAA	9	4
AA	50	73
A	10	12
BBB	18	12
BB	3	0
B	1	0
CCC	0	0
Not Rated	9	0

Quality vs. Duration Rolling 1 Year for 5 Years



Fixed Income Sector Exposure vs Blmbg:Aggregate



Performance shown is gross-of-fees unless otherwise noted.

Firm Overview: Dodge & Cox

Dodge & Cox was established in 1930 in San Francisco, CA, which continues to serve as the firm's only office location. Dodge & Cox is an independent organization with ownership limited to active employees of the firm. Investment management is the firm's only business. Dodge & Cox provides equity, fixed income, and balanced account management services for its clients.

Firm

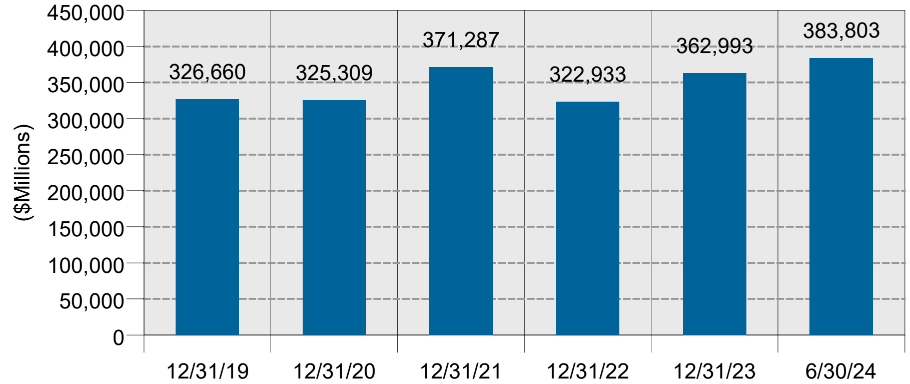
Dodge & Cox
555 California Street
40th Floor
San Francisco, CA 94104

Contact

Katie Fast
(415) 274-9468
katie.fast@dodgeandcox.com

Ownership	Founded	Portfolio Managers	Analysts
Employee Owned	1930	29	27

Total Firm Asset Growth ($mm) as of June 30, 2024



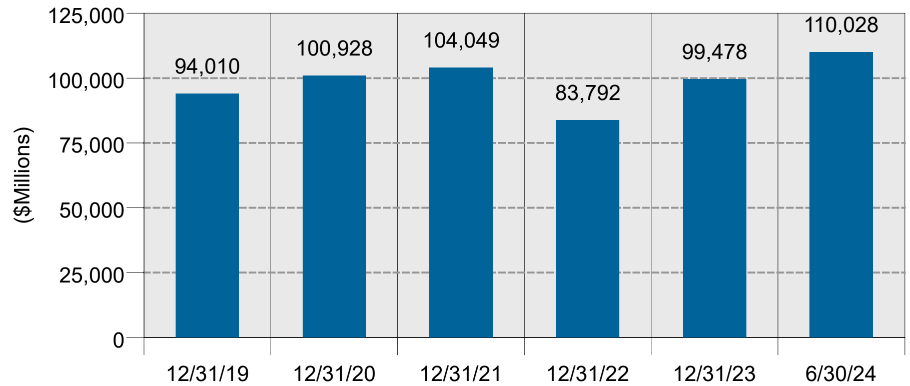
Total Firm Asset Breakdown

Domestic	$(mm)
Equity	137,206
Fixed Income	154,167
Balanced	18,776
Total	**310,148**

Global	$(mm)
Equity	70,216
Fixed Income	3,439
Total	**73,655**

Client Type	$(mm)
Corporate	50,523
Public(Govt)	19,793
Union/Multi-Employer	8,694
Foundation/Endowment	2,824
Insurance	3,754
High Net Worth	6,974
Other	291,241
Total Org Assets	**383,803**

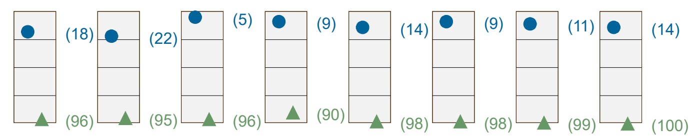
Total Product Asset Growth ($mm) as of June 30, 2024



Client Type AUM Total does not include DC assets.

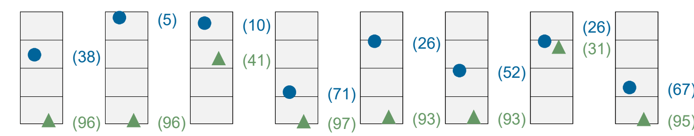
Product Overview: Dodge & Cox

Returns vs. Callan Core Plus FI



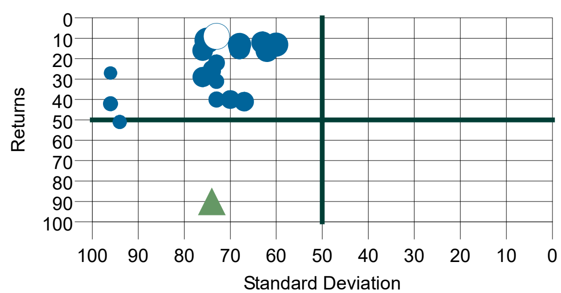
	Last Quarter	Last Year	Last 2 Yrs.	Last 3 Yrs.	Last 4 Yrs.	Last 5 Yrs.	Last 7 Yrs.	Last 10 Yrs.
Dodge & Cox ●	0.6	5.1	3.7	-1.1	0.1	1.8	2.5	2.7
Blmbg:Aggregate ▲	0.1	2.6	0.8	-3.0	-2.4	-0.2	0.9	1.3

Calendar Year Returns

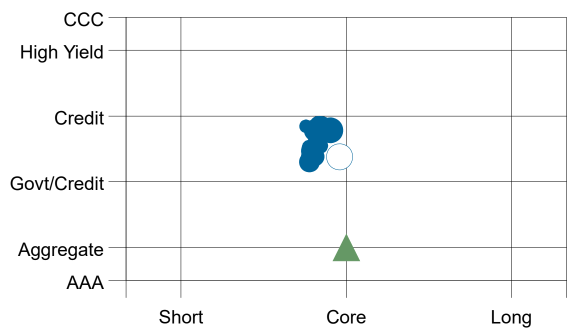


	2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
Dodge & Cox ●	0.4	8.2	-10.8	-0.6	10.2	10.0	0.1	4.7
Blmbg:Aggregate ▲	-0.7	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5

Return and Risk Rankings vs. Callan Core Plus FI Group Rolling 3 Year for 5 Years



Style Map Rolling 1 Year for 5 Years



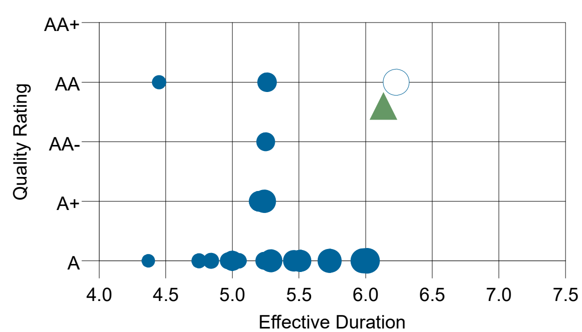
Portfolio Characteristics

	Dodge & Cox	Blmbg:Aggregate
Effective Duration	6.2	6.1
Effective Yield	5.5	5.0
Coupon Rate	4.4	3.3
Wtd. Average Life	10.2	8.4

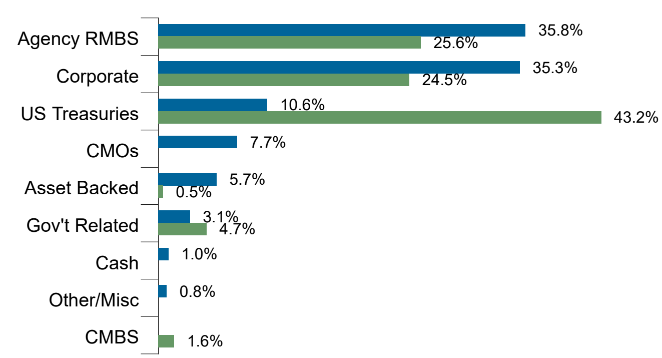
Quality Distribution (%)

	Dodge & Cox	Blmbg:Aggregate
AAA	2	4
AA	59	73
A	7	12
BBB	26	12
BB	3	0
B	2	0
CCC	0	0
Not Rated	0	0

Quality vs. Duration Rolling 1 Year for 5 Years



Fixed Income Sector Exposure vs Blmbg:Aggregate



Performance shown is gross-of-fees unless otherwise noted.

Firm Overview: Fidelity Institutional Asset Management

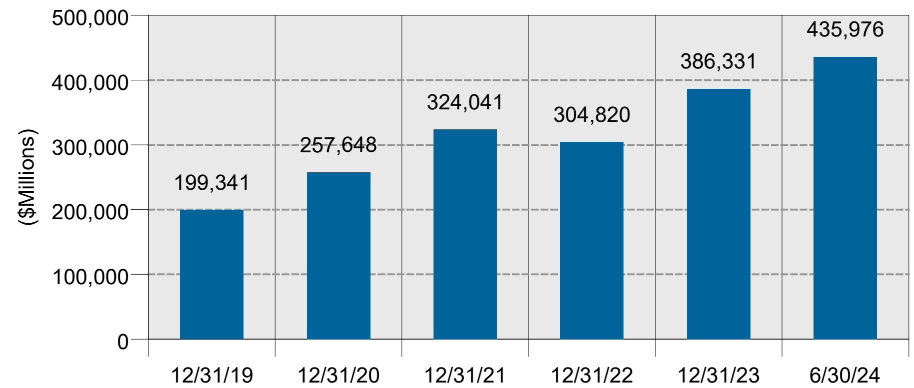
In 2005, FMR Corp., commonly known as Fidelity Investments, established Pyramis Global Advisors as a wholly owned subsidiary to focus on institutional clients and non-Investment Company Act of 1940 business. Pyramis' equity investment team was initially formed through the migration of investment professionals from Fidelity Management & Research Company (FMR Co.), the mutual fund division of Fidelity. Fidelity's fixed income investment team continues to manage both FMR Co. and Pyramis client assets. Fidelity Management & Research Company remains the mutual fund asset management division of Fidelity Investments. In October 2015, Pyramis Global Advisors rebranded as Fidelity Institutional Asset Management (FIAM), bringing together the distribution and client service teams from Pyramis and Fidelity Financial Advisor Solutions to create a single, integrated distribution and service organization.

Firm
Fidelity Institutional Asset Management
900 Salem Street
Smithfield, RI 02917

Contact
David Burke
(312) 529-2324
david.j.burke@fmr.com

Ownership	Founded	Portfolio Managers	Analysts
Other	2005	214	440

Total Firm Asset Growth ($mm) as of June 30, 2024



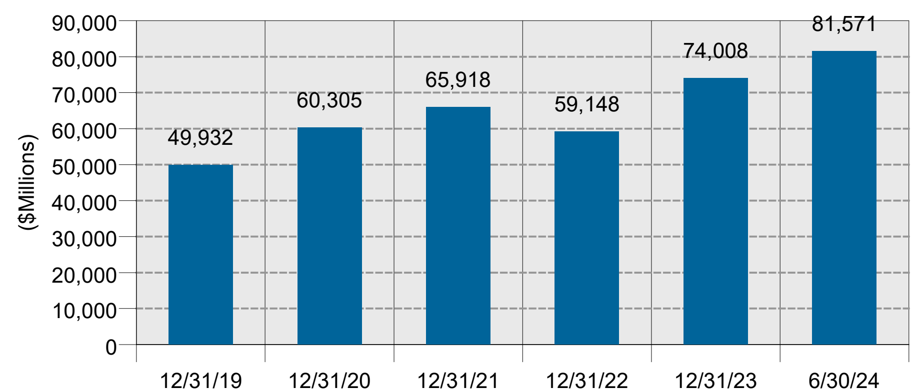
Total Firm Asset Breakdown

Domestic	$(mm)
Equity	105,498
Fixed Income	113,084
Balanced	176,961
Alternatives	748
Other	4,180
Total	**400,471**

Global	$(mm)
Equity	34,155
Fixed Income	1,350
Total	**35,505**

Client Type	$(mm)
Corporate	175,203
Public(Govt)	25,772
Union/Multi-Employer	3,990
Foundation/Endowment	8,039
Insurance	21,450
Sub-Advised	110,674
Other	90,847
Total Org Assets	**435,976**
Total Defined Contribution	**173,247**

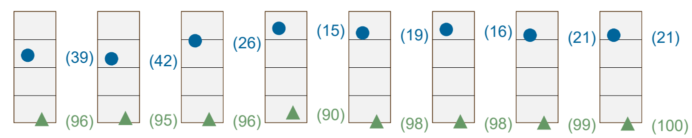
Total Product Asset Growth ($mm) as of June 30, 2024



Client Type AUM Total does not include DC assets.

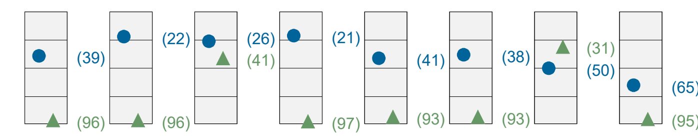
Product Overview: Fidelity

Returns vs. Callan Core Plus FI



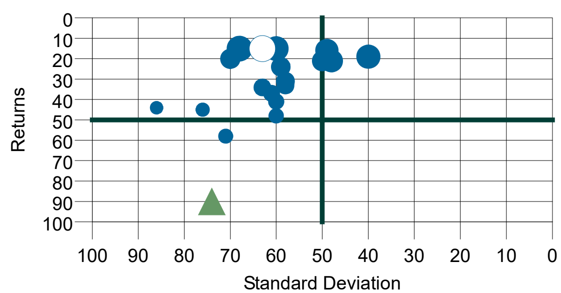
		Last Quarter	Last Year	Last 2 Yrs.	Last 3 Yrs.	Last 4 Yrs.	Last 5 Yrs.	Last 7 Yrs.	Last 10 Yrs.
Fidelity	●	0.5	4.5	3.0	-1.7	-0.3	1.4	2.2	2.6
Blmbg:Aggregate	▲	0.1	2.6	0.8	-3.0	-2.4	-0.2	0.9	1.3

Calendar Year Returns

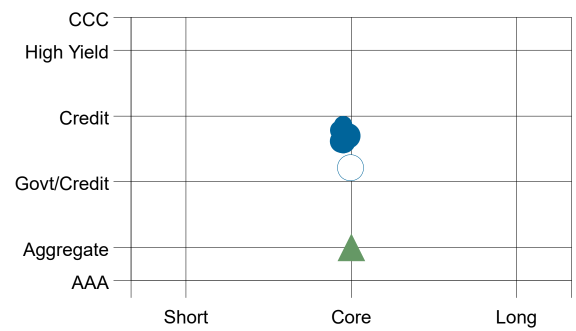


		2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
Fidelity	●	0.4	7.6	-12.5	0.4	9.6	10.4	-0.2	4.7
Blmbg:Aggregate	▲	-0.7	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5

Return and Risk Rankings vs. Callan Core Plus FI Group Rolling 3 Year for 5 Years



Style Map Rolling 1 Year for 5 Years



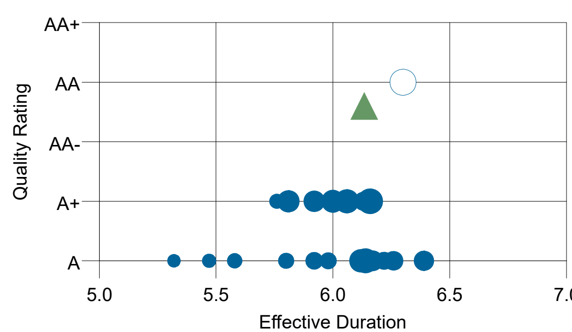
Portfolio Characteristics

	Fidelity	Blmbg:Aggregate
Effective Duration	6.3	6.1
Effective Yield	5.6	5.0
Coupon Rate	3.4	3.3
Wtd. Average Life	10.3	8.4

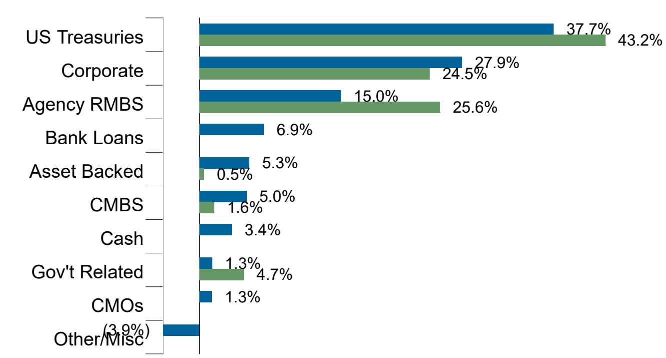
Quality Distribution (%)

	Fidelity	Blmbg:Aggregate
AAA	0	4
AA	66	73
A	8	12
BBB	17	12
BB	7	0
B	6	0
CCC	1	0
Not Rated	(4)	0

Quality vs. Duration Rolling 1 Year for 5 Years



Fixed Income Sector Exposure vs Blmbg:Aggregate



Performance shown is gross-of-fees unless otherwise noted.

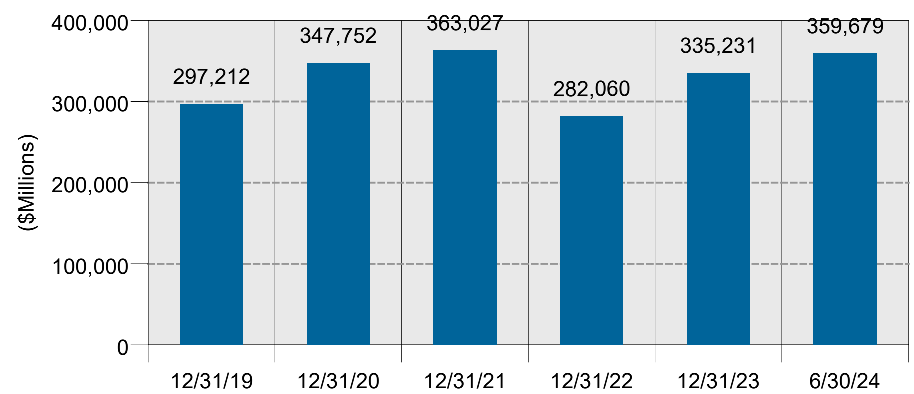
Firm Overview: Loomis, Sayles & Company, L.P.

Loomis, Sayles was founded as a partnership in 1926 and incorporated in 1936. The firm has been registered with the SEC as an investment advisor since November 1, 1940 and began managing tax-exempt funds in 1950. In 1968, a majority interest of the firm was sold to New England Mutual Life Insurance Co. Since September 1993, Loomis Sayles has been structured as a limited partnership. All shares of the corporate general partner and all of the limited partnership interests are owned by New England Investment Companies, L.P. ("NVEST"). NVEST is a registered investment advisor and was a subsidiary of Metropolitan Life Insurance Co. until NVEST was purchased by CDC IXIS Asset Management (now Natixis Global Asset Management) in June 2000.

Firm	Contact
Loomis, Sayles & Company, L.P.	Neil McKenna
One Financial Center	(415) 364-5351
Boston, MA 02111	nmckenna@loomissayles.com

Ownership	Founded	Portfolio Managers	Analysts
Subsidiary	1926	64	188

Total Firm Asset Growth ($mm) as of June 30, 2024



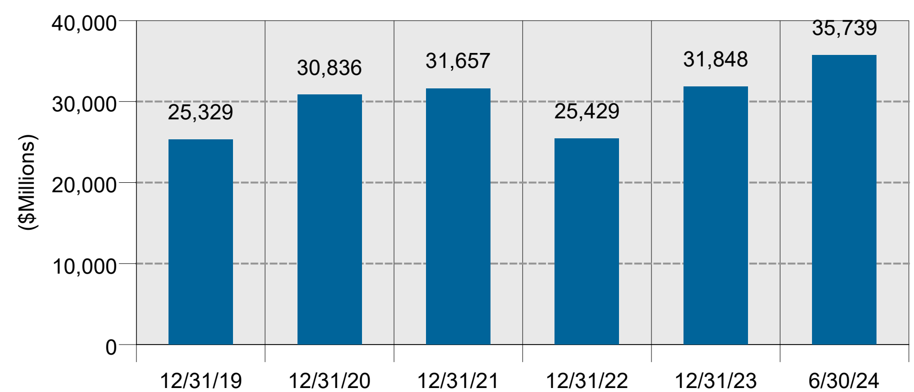
Total Firm Asset Breakdown

Domestic	$(mm)
Equity	79,575
Fixed Income	204,978
Total	**284,554**

Global	$(mm)
Equity	19,900
Fixed Income	55,226
Total	**75,125**

Client Type	$(mm)
Corporate	50,897
Public(Govt)	49,617
Union/Multi-Employer	28,302
Foundation/Endowment	2,720
Health Care	10,948
Insurance	17,831
High Net Worth	1,720
Sub-Advised	132,782
Superanationals	146
Sovereign Wealth Funds	7,348
Other	57,367
Total Org Assets	**359,679**
Total Defined Contribution	**26,360**

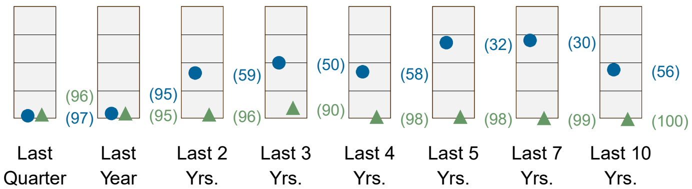
Total Product Asset Growth ($mm) as of June 30, 2024



Client Type AUM Total does not include DC assets.

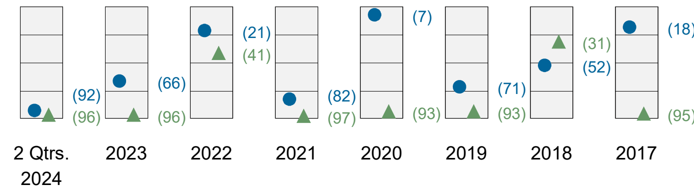
Product Overview: Loomis

Returns vs. Callan Core Plus FI



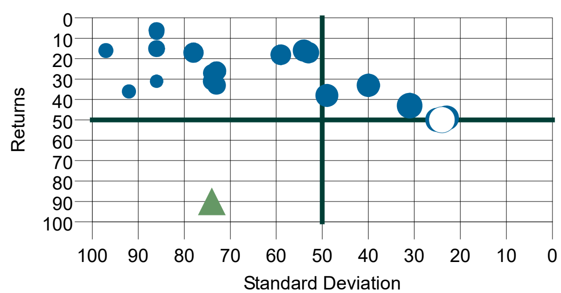
		Last Quarter	Last Year	Last 2 Yrs.	Last 3 Yrs.	Last 4 Yrs.	Last 5 Yrs.	Last 7 Yrs.	Last 10 Yrs.
Loomis	●	-0.2	2.8	2.1	-2.3	-1.0	1.1	2.0	2.2
Blmbg:Aggregate	▲	0.1	2.6	0.8	-3.0	-2.4	-0.2	0.9	1.3

Calendar Year Returns

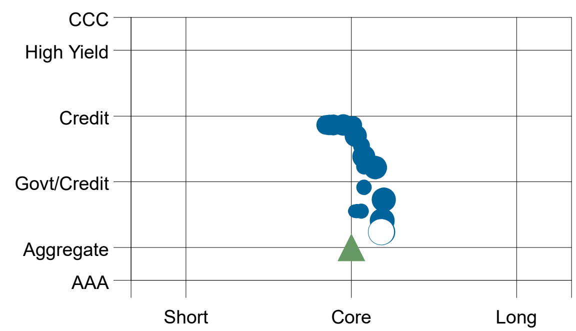


		2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
Loomis	●	-0.4	6.5	-12.2	-0.9	11.5	9.7	-0.2	5.6
Blmbg:Aggregate	▲	-0.7	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5

Return and Risk Rankings vs. Callan Core Plus FI Group Rolling 3 Year for 5 Years



Style Map Rolling 1 Year for 5 Years



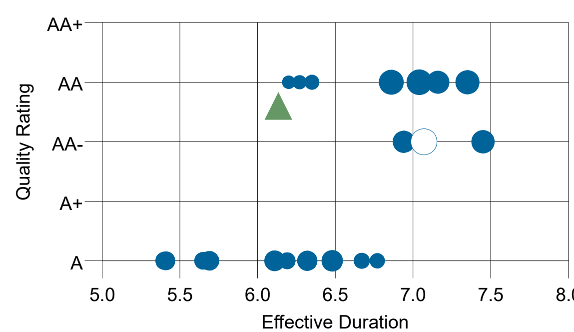
Portfolio Characteristics

	Loomis	Blmbg:Aggregate
Effective Duration	7.1	6.1
Effective Yield	5.6	5.0
Coupon Rate	3.3	3.3
Wtd. Average Life	9.9	8.4

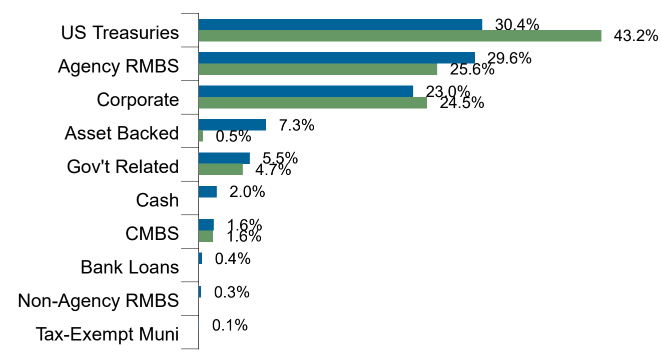
Quality Distribution (%)

	Loomis	Blmbg:Aggregate
AAA	35	4
AA	35	73
A	7	12
BBB	17	12
BB	6	0
B	1	0
CCC	0	0
Not Rated	0	0

Quality vs. Duration Rolling 1 Year for 5 Years



Fixed Income Sector Exposure vs Blmbg:Aggregate



Performance shown is gross-of-fees unless otherwise noted.

Firm Overview: PGIM Fixed Income

PGIM Fixed Income is the public fixed income asset management business of PGIM Investments ("PGIM"). PGIM is a subsidiary and the global investment management business of Prudential Financial, Inc. (NYSE: PRU). PGIM has been a registered investment advisor since 1984, but the firm and its predecessors have been managing institutional fixed income since 1928. PGIM manages assets for more than 350 institutional clients worldwide. The firm's investment operations are located primarily in Newark, New Jersey, with additional offices in Singapore and London.

Firm	Contact
PGIM Fixed Income	Thomas Raftery
655 Broad Street, 8th Floor	(973) 270-4721
Newark, NJ 07102	thomas.raftery@pgim.com

Ownership	Founded	Portfolio Managers	Analysts
Publicly Owned	1875	120	214

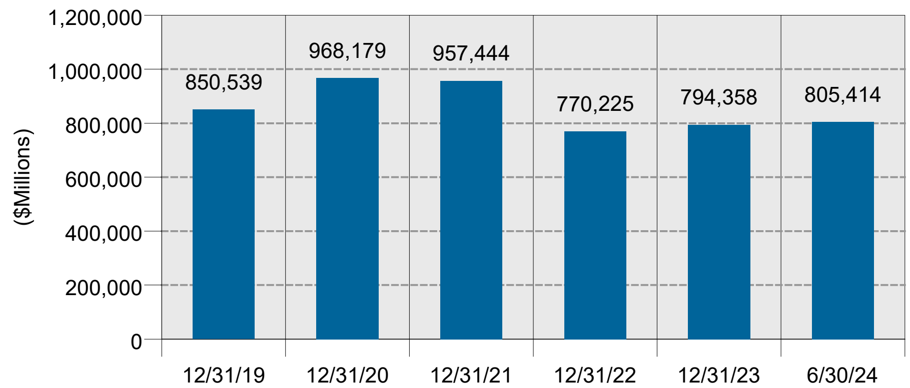
Total Firm Asset Breakdown

Domestic	**$(mm)**
Fixed Income	604,700
Alternatives	161
Total	**604,860**

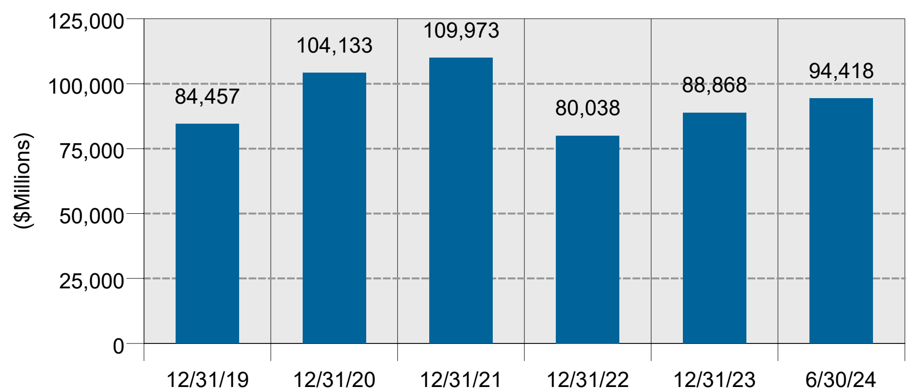
Global	**$(mm)**
Equity	1,371
Fixed Income	196,213
Alternatives	2,970
Total	**200,553**

Client Type	**$(mm)**
Corporate	214,881
Public(Govt)	67,604
Union/Multi-Employer	41,207
Foundation/Endowment	2,550
Insurance	288,552
Sovereign Wealth Funds	14,902
Other	175,719
Total Org Assets	**805,414**
Total Defined Contribution	**65,841**

Total Firm Asset Growth ($mm) as of June 30, 2024



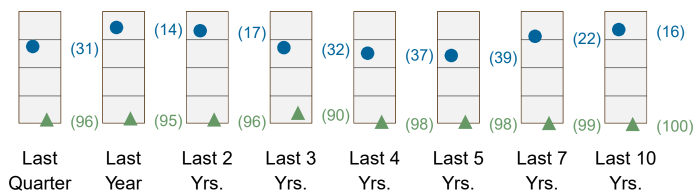
Total Product Asset Growth ($mm) as of June 30, 2024



Client Type AUM Total does not include DC assets.

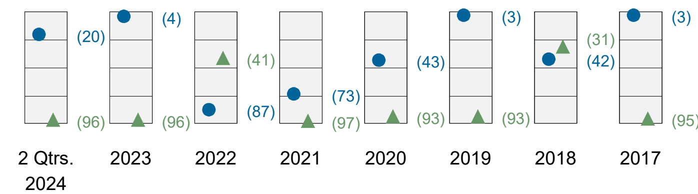
Product Overview: PGIM

Returns vs. Callan Core Plus FI



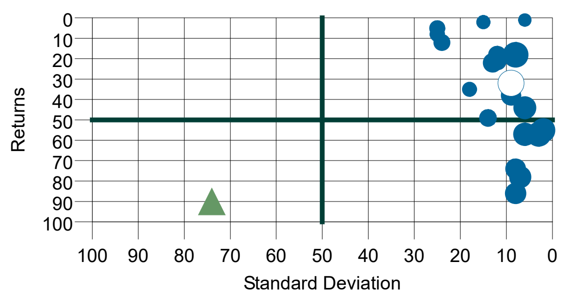
		Last Quarter	Last Year	Last 2 Yrs.	Last 3 Yrs.	Last 4 Yrs.	Last 5 Yrs.	Last 7 Yrs.	Last 10 Yrs.
PGIM	●	0.5	5.5	3.2	-2.1	-0.7	1.0	2.2	2.7
Blmbg:Aggregate	▲	0.1	2.6	0.8	-3.0	-2.4	-0.2	0.9	1.3

Calendar Year Returns

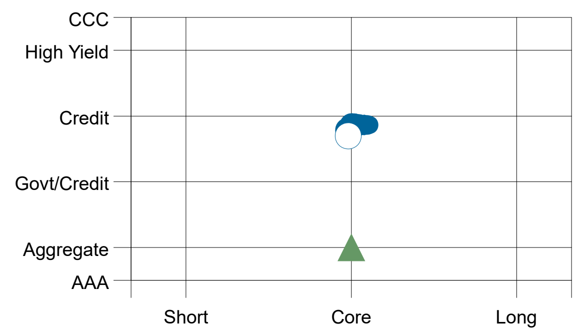


		2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
PGIM	●	0.7	8.2	-14.3	-0.7	9.5	11.7	-0.1	6.9
Blmbg:Aggregate	▲	-0.7	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5

Return and Risk Rankings vs. Callan Core Plus FI Group Rolling 3 Year for 5 Years



Style Map Rolling 1 Year for 5 Years



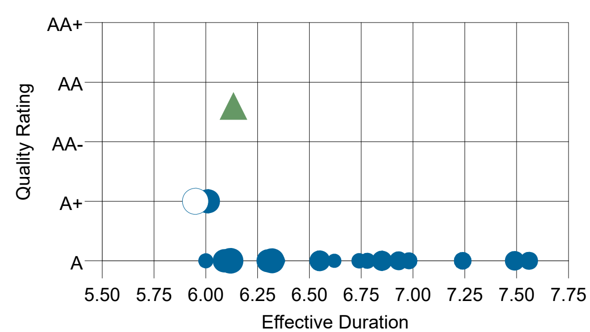
Portfolio Characteristics

	PGIM	Blmbg:Aggregate
Effective Duration	6.0	6.1
Effective Yield	6.2	5.0
Coupon Rate	4.5	3.3
Wtd. Average Life	7.5	8.4

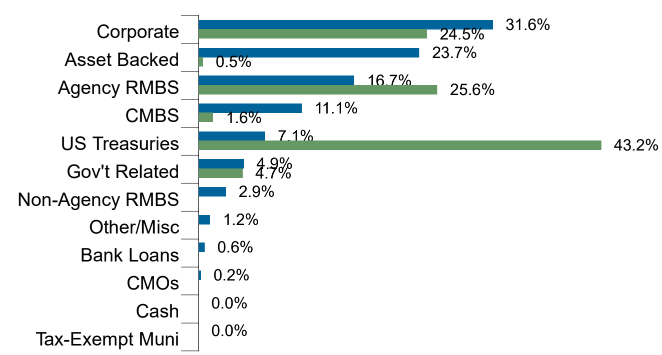
Quality Distribution (%)

	PGIM	Blmbg:Aggregate
AAA	32	4
AA	26	73
A	11	12
BBB	17	12
BB	7	0
B	4	0
CCC	1	0
Not Rated	3	0

Quality vs. Duration Rolling 1 Year for 5 Years



Fixed Income Sector Exposure vs Blmbg:Aggregate



Performance shown is gross-of-fees unless otherwise noted.

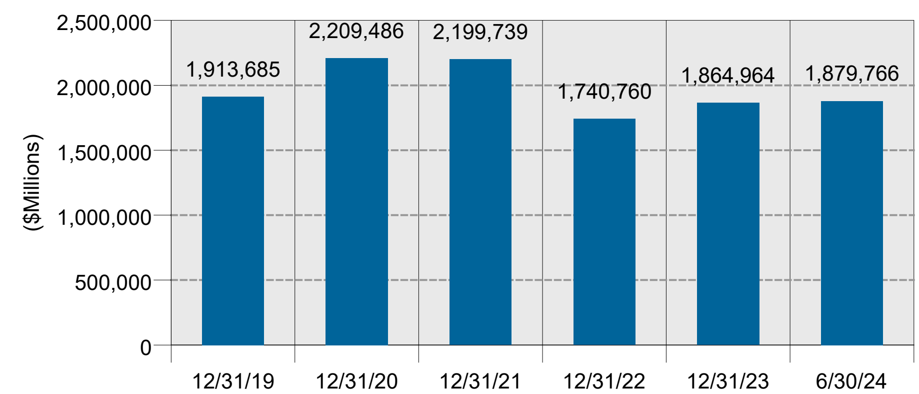
Firm Overview: Pacific Investment Management Company

Pacific Investment Management Company (PIMCO) was established in 1971 as a subsidiary of Pacific Mutual Life Insurance Company (now known as Pacific Life). By 1982, PIMCO was operating independently from Pacific Mutual. On May 5, 2000, Allianz of Munich, Germany purchased a majority stake in PIMCO's parent, PIMCO Advisors L.P., today known as Allianz Global Investors of America L.P. ("AGI"), leaving Pacific Life with a minority interest. PIMCO operates as a separate and autonomous subsidiary of Allianz.

Firm	**Contact**
Pacific Investment Management Company	Vernon Edler
650 Newport Center Drive	949-720-6460
Newport Beach, CA 92660	vernon.edler@pimco.com

Ownership	**Founded**	**Portfolio Managers**	**Analysts**
Subsidiary	1971	285	223

Total Firm Asset Growth ($mm) as of June 30, 2024



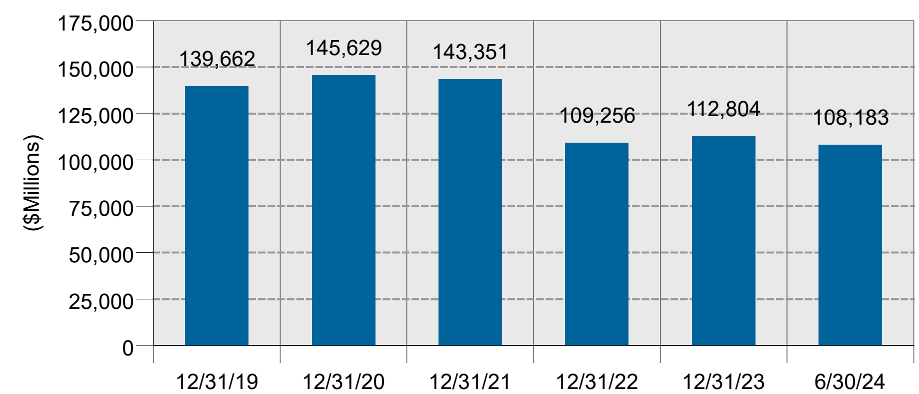
Total Firm Asset Breakdown

Domestic	**$(mm)**
Equity	33,543
Fixed Income	1,103,884
Balanced	16,628
Alternatives	16,945
Other	2,785
Total	**1,173,785**

Global	**$(mm)**
Equity	11,340
Fixed Income	598,110
Balanced	8,436
Alternatives	86,434
Other	1,661
Total	**705,981**

Client Type	**$(mm)**
Corporate	151,439
Public(Govt)	115,379
Union/Multi-Employer	6,309
Foundation/Endowment	7,258
Health Care	18,400
Insurance	79,050
High Net Worth	1,608
Wrap Account	24,280
Sub-Advised	442,064
Sovereign Wealth Funds	45,794
Other	988,185
Total Org Assets	**1,879,766**
Total Defined Contribution	**32,476**

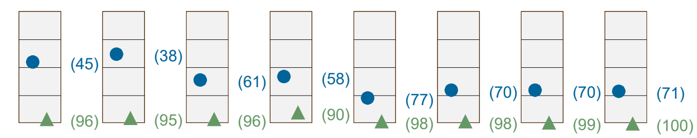
Total Product Asset Growth ($mm) as of June 30, 2024



Client Type AUM Total does not include DC assets.

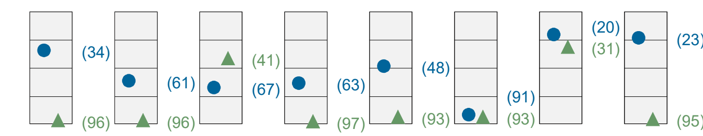
Product Overview: PIMCO

Returns vs. Callan Core Plus FI



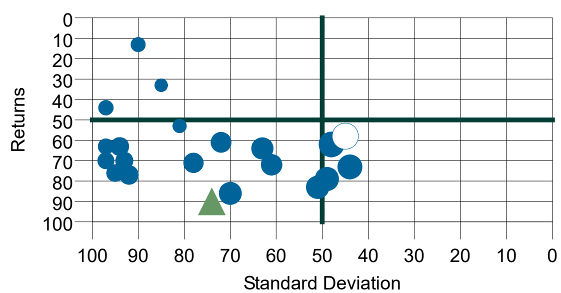
		Last Quarter	Last Year	Last 2 Yrs.	Last 3 Yrs.	Last 4 Yrs.	Last 5 Yrs.	Last 7 Yrs.	Last 10 Yrs.
PIMCO	●	0.4	4.6	2.1	-2.4	-1.4	0.6	1.6	2.0
Blmbg:Aggregate	▲	0.1	2.6	0.8	-3.0	-2.4	-0.2	0.9	1.3

Calendar Year Returns

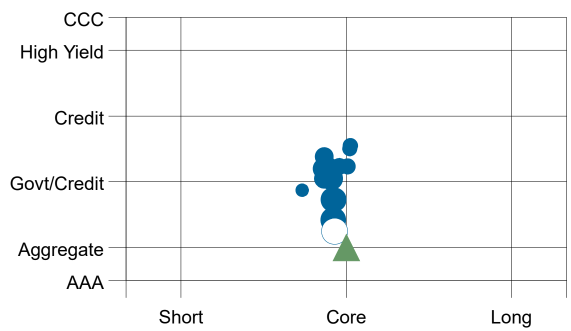


		2 Qtrs. 2024	2023	2022	2021	2020	2019	2018	2017
PIMCO	●	0.4	6.7	-13.7	-0.5	9.3	8.9	0.2	5.5
Blmbg:Aggregate	▲	-0.7	5.5	-13.0	-1.5	7.5	8.7	0.0	3.5

Return and Risk Rankings vs. Callan Core Plus FI Group Rolling 3 Year for 5 Years



Style Map Rolling 1 Year for 5 Years



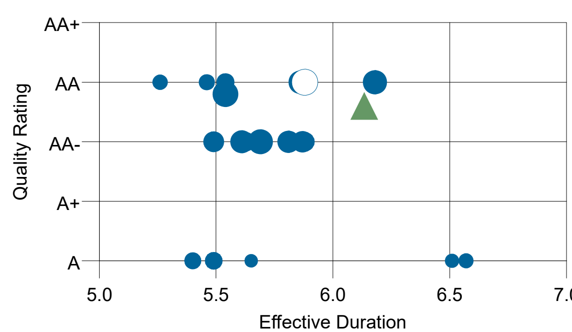
Portfolio Characteristics

	PIMCO	Blmbg:Aggregate
Effective Duration	5.9	6.1
Effective Yield	6.3	5.0
Coupon Rate	4.2	3.3
Wtd. Average Life	8.0	8.4

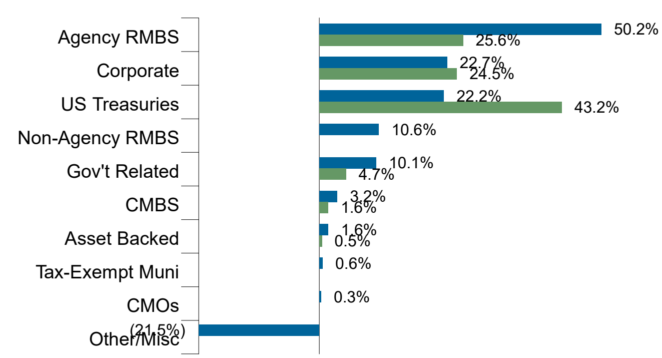
Quality Distribution (%)

	PIMCO	Blmbg:Aggregate
AAA	68	4
AA	4	73
A	11	12
BBB	10	12
BB	4	0
B	1	0
CCC	1	0
Not Rated	0	0

Quality vs. Duration Rolling 1 Year for 5 Years



Fixed Income Sector Exposure vs Blmbg:Aggregate



Performance shown is gross-of-fees unless otherwise noted.

Definitions

Alpha measures a portfolio's return in excess of the market return adjusted for risk. It is a measure of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk which was taken for that level of market exposure.

Beta measures the sensitivity of rates of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the return on the market. If a beta of a portfolio is 1.5, a 1 percent increase in the return on the market will result, on average, in a 1.5 percent increase in the return on the portfolio. The converse would also be true.

Combined Z Score is the difference between the MSCI Growth Z Score and the MSCI Value Z Score (Growth - Value). A significant positive Combined Z Score implies significant "growthyness" in the stock or portfolio. A Combined Z Score close to 0.00 (positive or negative) implies "core-like" style characteristics, and a significantly negative Combined Z Score implies more "valueyness" in the stock or portfolio.

Correlation measures the degree to which two variables are associated. Correlation is a commonly used tool for constructing a well-diversified portfolio. Traditionally, equities and fixed-income asset returns have not moved closely together. The asset returns are not strongly correlated. A balanced fund with equities and fixed-income assets represents a diversified portfolio that attempts to take advantage of the low Correlation between the two asset classes. The value for Correlation ranges from +1.0 to -1.0. A positive Correlation means that the two variables move, to a degree, in the same manner or direction, and a negative Correlation means that the variables move, to a degree, in the opposite manner or direction. A Correlation of +1.0 (-1.0) means the two variables move in exactly the same (opposite) direction.

Coupon Rate is the market value weighted average coupon of all securities in the portfolio. The total coupon payments per year are divided by the total portfolio par value.

Dividend Yield reflects the total amount of dividends paid out for a stock over the proceeding twelve months divided by the closing price of a share of the common stock.

Downside Risk differentiates between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation captures both upside and downside volatility, downside risk measures only the volatility of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

Effective Yield is the actual total annualized return that would be realized if all securities in the portfolio were held to their expected maturities. Effective yield is calculated as the internal rate of return, using the current market value and all expected future interest and principal cash flows.

Effective Duration is one measure of the portfolio's exposure to interest rate risk. Generally, the higher a portfolio's duration, the more that its value will change in response to interest rate changes. The option adjusted duration for each security in the portfolio is calculated using models which determine the expected stream of cash-flows for the security based on various interest rate scenarios.

Definitions (continued)

Excess Correlation is the correlation of a portfolio's excess return to another portfolio's excess return. Excess return is the portfolio return minus the benchmark return. For instance Excess Correlation could measure the correlation of Manager A's return in excess of a benchmark with Manager B's return in excess of the same benchmark. Excess Correlation is used to indicate whether different managers outperform a market index at the same time.

Excess Return is the portfolio return minus the benchmark return.

Excess Return Ratio is a measure of risk adjusted relative return. This ratio captures the amount of active management performance (value added relative to an index) per unit of active management risk (tracking error against the index.) It is calculated by dividing the manager's annualized cumulative excess return relative to the index by the standard deviation of the individual quarterly excess returns. The Excess Return Ratio can be interpreted as the manager's active risk/reward tradeoff for diverging from the index when the index is mandated to be the "riskless" market position.

Forecasted Growth in Earnings is a measure of a company's expected long-term success in generating future year-over-year earnings growth. This growth rate is a market value weighted average of the consensus (mean) analysts' long-term earnings growth rate forecast for each company in the portfolio. The definition of long-term varies by analyst but is limited to a 3-8 year range. This value is expressed as the expected average annual growth of earnings in percent.

Forecasted P/E is a forward-looking valuation measure of a company's common stock. It encapsulates the amount of earnings estimated for next year per dollar of current share price. This value is calculated by dividing the present stock price of each company in the portfolio by the consensus (mean) analysts' earnings forecasts for the next year. These earnings estimates are for recurring, non-extraordinary earnings per primary common share. The individual P/E stock ratios are then weighted by their respective portfolio market values in order to calculate a weighted average representative of the portfolio as a whole.

Growth Z Score is a holdings-based measure of the "growthyness" of an individual stock or portfolio of stocks based on fundamental financial ratio analysis. The MSCI Growth Z Score is an aggregate score based on the growth score of five separate financial fundamentals: Long Term Forward Earnings Growth, Short Term Forward Earnings Growth, Current Internal Growth (ROE * (1-payout ratio)), Long Term Historical Earnings Growth, and Long Term Historical Sales Growth.

Information Ratio measures the manager's market risk-adjusted excess return per unit of residual risk relative to a benchmark. It is computed by dividing alpha by the residual risk over a given time period. Assuming all other factors being equal, managers with lower residual risk achieve higher values in the information ratio. Managers with higher information ratios will add value relative to the benchmark more reliably and consistently.

Issue Diversification is the number of stocks (largest holdings) making up half of the market value of the total portfolio.

Market Capitalization (Weighted Median / Weighted Average) - Market capitalization is the market value of a company's outstanding shares. This figure is found by taking the stock price and multiplying it by the total number of shares outstanding. The weighted median market cap is the point at which half of the market value of the portfolio is invested in stocks with a greater market cap, and consequently the other half is invested in stocks with a lower market cap. Weighted average market cap for a portfolio is defined as the sum of each of the security's weight in the portfolio multiplied by its intrinsic market capitalization.

Definitions (continued)

Price to Earnings Ratio (P/E) is a measure of value for a company. It is equal to the price of a share of common stock divided by the earnings per share for a twelve-month period.

Price to Book Value (P/B) is a measure of value for a company. It is equal to the market value of all the shares of common stock divided by the book value of the company. The book value is the sum of capital surplus, common stock, and retained earnings.

Quality Rating is a way to measure the credit quality as determined by the individual security ratings. The ratings for each security are compiled into a composite rating for the whole portfolio. Quality symbols range from AAA (highest investment quality and lowest credit risk) to D (lowest investment quality and highest credit risk).

R-Squared (R2) is a statistical measure that indicates the extent to which the variability of a security or portfolio's returns is explained by the variability of the market. The value will be between 0 and 1. The higher the number, the greater the extent to which portfolio returns are related to market return.

Residual Risk is the unsystematic, firm-specific, or diversifiable risk of a security or portfolio that can be reduced by including assets that do not have similar unique risk. It is the portion of the total risk of a security or portfolio that is unique to the security or portfolio itself and is not related to the overall market.

Return on Equity (ROE) is a measure of a company's profitability, specifically relating profits to the equity investment employed to achieve the profits. Return on Equity focuses on the returns accruing to the residual owners of a company, the equity holders. It is equal to income divided by total common equity. Income is after all expenses, including income taxes and minority interest, but before provision for dividends, extraordinary items, and discontinued operations. Common equity includes common stock outstanding, capital surplus, and retained earnings.

Rising/Declining Periods is determined by evaluating the cumulative relative sub-asset class index performance to that of the broader asset class index. For example, in determining the Growth Style cycle, the S&P 500 Growth Index (sub-asset class) performance is compared to that of the S&P 500 Index (broader asset class). The analysis determines if a significant "cycle reversal" has occurred over a period. If the magnitude of the cumulative relative return is greater than one standard deviation when the number of periods is four or more quarters-or two standard deviations for periods less than 4 quarters-a significant reversal has occurred. The process is repeated until all the different combinations of recent periods are evaluated, and a break point is determined.

Sharpe Ratio is a measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

Stability Score is calculated as the difference between the Defensive and Dynamic scores and can range from -1 to +1. A stability score of +1 indicates a Low Risk and High Quality portfolio (or stock), whereas, a stability score of -1 indicates a High Risk and Low Quality portfolio (or stock). The underlying variables that drive the stability scores are Total Return Volatility, Debt/Equity Ratio, Earnings Volatility and Return on Assets and together encompass both observed price risk and current balance sheet risk.

Definitions (continued)

Standard Deviation is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (i.e., has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

Style Map (Holdings Based) - Morgan Stanley Capital International (MSCI) has developed security-level style scores which are based on multiple fundamental ratios that classify stocks as "value" or "growth." On a relative basis we can match these to a manager's portfolio holdings to get a score for the portfolio that is more reliable and current than traditional returns-based regression analysis. Using the combined Z score and weighted median market cap, the holdings based style map allows for viewing manager style in a two dimensional space.

Tracking Error is a statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

Up Market (Down Market) Capture is a measure of relative performance in up-markets (down-markets). It is determined by the index which has an Up Capture (Down Capture) ratio of 100% when the index is performing positively (negatively). If a manager captures more than 100% of the rising (declining) market it is said to be "offensive" ("defensive").

Value Z Score is a holdings-based measure of the "valueyness" of an individual stock or portfolio of stocks based on fundamental financial ratio analysis. The MSCI Value Z Score is an aggregate score based on the value scores of three separate financial fundamentals: Price/Book, Price/Forward Earnings, and Dividend Yield.

Weighted Average Life is the weighted average time remaining until the principal is paid off for all securities in a portfolio.

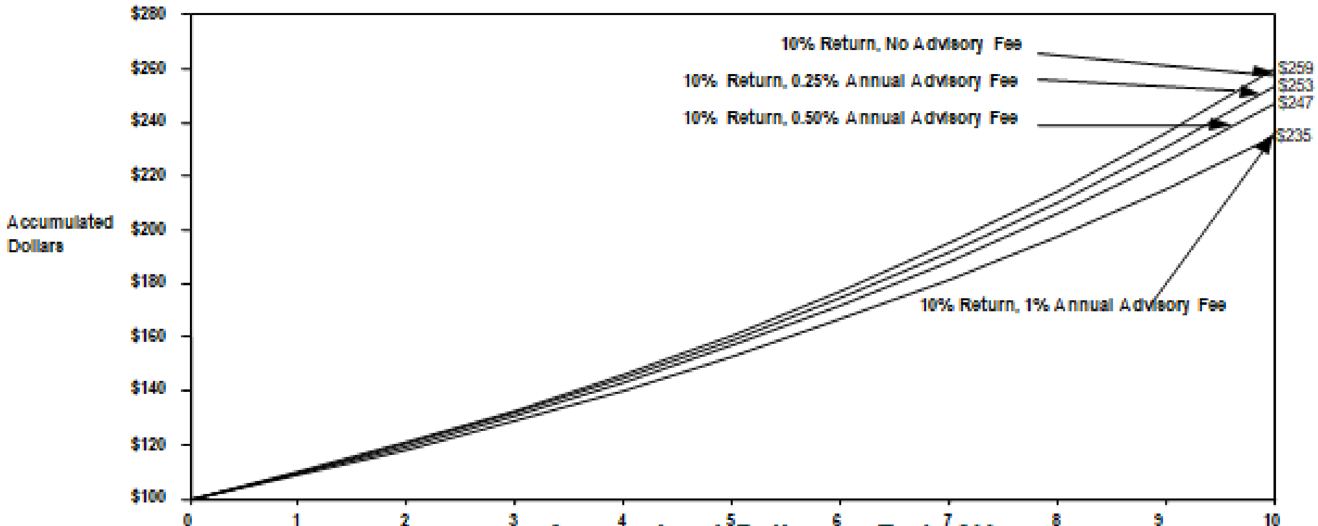
Disclosure Statement

The preceding report has been prepared for the exclusive use of the Marin County Employees' Retirement Association. Unless otherwise noted, performance returns contained in this report do not reflect the deduction of investment advisory fees. The returns in this report will be reduced by the advisory fees and any other expenses incurred in the management of an investment account. The investment advisory fees applicable to the advisors listed in this report are described in Part II of each advisor’s form ADV.

The following graphical and tabular example illustrates the cumulative effect of investment advisory fees on a $100 investment growing at 10% over ten years.
Fees are assumed to be paid monthly.

In addition to asset-based investment advisory fees, some strategies may include performance-based fees ("carry") that may further lower the returns realized by investors. These performance-based fees can be substantial, are most prevalent in "Alternative" strategies like hedge funds and many types of private markets, but can occur elsewhere. The effects of performance-based fees are dependent on investment outcomes and are not included in the example below.

The Cumulative Effect of Advisory Fees



Accumulated Dollars at End of Years

	1	2	3	4	5	6	7	8	9	10
No Fee	110.0	121.0	133.1	146.4	161.1	177.2	194.9	214.4	235.8	259.4
25 Basis Points	109.7	120.4	132.1	145.0	159.1	174.5	191.5	210.1	230.6	253.0
50 Basis Points	109.5	119.8	131.1	143.5	157.1	172.0	188.2	206.0	225.5	246.8
100 Basis Points	108.9	118.6	129.2	140.7	153.3	166.9	181.8	198.0	215.6	234.9

10% Annual Return Compounded Monthly, Annual Fees Paid Monthly.

Callan

Quarterly List as of
June 30, 2024

List of Callan's Investment Manager Clients

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Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry, and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor, and disclose potential conflicts on an ongoing basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database, or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g., attending an educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group, and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan's Compliance department.

Manager Name
abrdn
Acadian Asset Management LLC
ACR Alpine Capital Research
Adams Street Partners, LLC
Aegon Asset Management
AEW Capital Management, L.P.
AllianceBernstein
Allspring Global Investments, LLC
Altrinsic Global Advisors, LLC
American Century Investments
Amundi US, Inc.
Antares Capital LP
Apollo Global Management, Inc.

Manager Name
AQR Capital Management
Ares Management LLC
ARGA Investment Management, LP
Ariel Investments, LLC
Aristotle Capital Management, LLC
Atlanta Capital Management Co., LLC
Audax Private Debt
AXA Investment Managers
Baillie Gifford International, LLC
Baird Advisors
Barings LLC
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC

Manager Name
BentallGreenOak
Beutel, Goodman & Company Ltd.
BlackRock
Blackstone Group (The)
Blue Owl Capital, Inc.
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
Brookfield Asset Management Inc.
Brown Brothers Harriman & Company
Brown Investment Advisory & Trust Company
Capital Group
CastleArk Management, LLC
Cercano Management LLC
Champlain Investment Partners, LLC
CIBC Asset Management Inc.
CIM Group, LP
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Comvest Partners
Cooke & Bieler, L.P.
Crescent Capital Group LP
Dana Investment Advisors, Inc.
D.E. Shaw Investment Management, LLC
DePrince, Race & Zollo, Inc.
Dimensional Fund Advisors L.P.
Doubleline
DWS

Manager Name
EARNEST Partners, LLC
Fayez Sarofim & Company
Federated Hermes, Inc.
Fidelity Institutional Asset Management
Fiera Capital Corporation
First Eagle Investment Management, LLC
First Hawaiian Bank Wealth Management Division
Fisher Investments
Franklin Templeton
Fred Alger Management, LLC
GAMCO Investors, Inc.
Glenmeade Investment Management, LP
GlobeFlex Capital, L.P.
Goldman Sachs
Golub Capital
GW&K Investment Management
Harbor Capital Group Trust
HarbourVest Partners, LLC
Hardman Johnston Global Advisors LLC
Heitman LLC
Hotchkis & Wiley Capital Management, LLC
HPS Investment Partners, LLC
IFM Investors
Impax Asset Management LLC
Income Research + Management
Insight Investment
Intercontinental Real Estate Corporation
Invesco
J.P. Morgan
Janus

Manager Name
Jennison Associates LLC
Jobs Peak Advisors
Kayne Anderson Rudnick Investment Management, LLC
King Street Capital Management, L.P.
Kohlberg Kravis Roberts & Co. L.P. (KKR)
Lazard Asset Management
LGIM America
Lincoln National Corporation
Longview Partners
Loomis, Sayles & Company, L.P.
Lord, Abbett & Company
LSV Asset Management
MacKay Shields LLC
Macquarie Asset Management
Manulife Investment Management
Manulife | CQS Investment Management
Marathon Asset Management, L.P.
Maverick Real Estate Partners
Mawer Investment Management Ltd.
MetLife Investment Management
MFS Investment Management
Mondrian Investment Partners Limited
Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mount Lucas Management LP
MUFG Bank, Ltd.
Natixis Investment Managers
Neuberger Berman
Newmarket Capital
Newton Investment Management

Manager Name
Nipun Capital, L.P.
NISA Investment Advisors LLC
Northern Trust Asset Management
Nuveen
Oaktree Capital Management, L.P.
Orbis Investment Management Limited
P/E Investments
Pacific Investment Management Company
Parametric Portfolio Associates LLC
Partners Group (USA) Inc.
Pathway Capital Management, LP
Peavine Capital
Peregrine Capital Management, LLC
PGIM DC Solutions
PGIM Fixed Income
PGIM Quantitative Solutions LLC
Pictet Asset Management
PineBridge Investments
Polen Capital Management, LLC
PPM America, Inc.
Pretium Partners, LLC
Principal Asset Management
Raymond James Investment Management
RBC Global Asset Management
Red Cedar Investment Management
Regions Financial Corporation
S&P Dow Jones Indices
Sands Capital Management
Schroder Investment Management North America Inc.
Segall Bryant & Hamill

Manager Name
SLC Management
Star Mountain Capital, LLC
State Street Global Advisors
Strategic Global Advisors, LLC
T. Rowe Price Associates, Inc.
TD Global Investment Solutions – TD Epoch
The TCW Group, Inc.
Thompson, Siegel & Walmsley LLC
TPG Angelo Gordon
Tweedy, Browne Company LLC
UBS Asset Management
VanEck
Vaughan Nelson Investment Management
Versus Capital Group
Victory Capital Management Inc.
Virtus Investment Partners, Inc.
Vontobel Asset Management
Voya
Walter Scott & Partners Limited
WCM Investment Management
Wellington Management Company LLP
Western Asset Management Company LLC
Westfield Capital Management Company, LP
William Blair & Company LLC
Xponance, Inc.

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Firm	Is an Investment Manager Client of Callan*	Is not an Investment Manager Client of Callan
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Dodge & Cox		X
Fidelity Institutional Asset Management	X	
Loomis, Sayles & Company, L.P.	X	
PGIM Fixed Income	X	
Pacific Investment Management Company	X	

*Based upon Callan manager clients as of the most recent quarter end.

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Past performance is no guarantee of future results.

Callan

October 15, 2024

Modern Monetary Theory

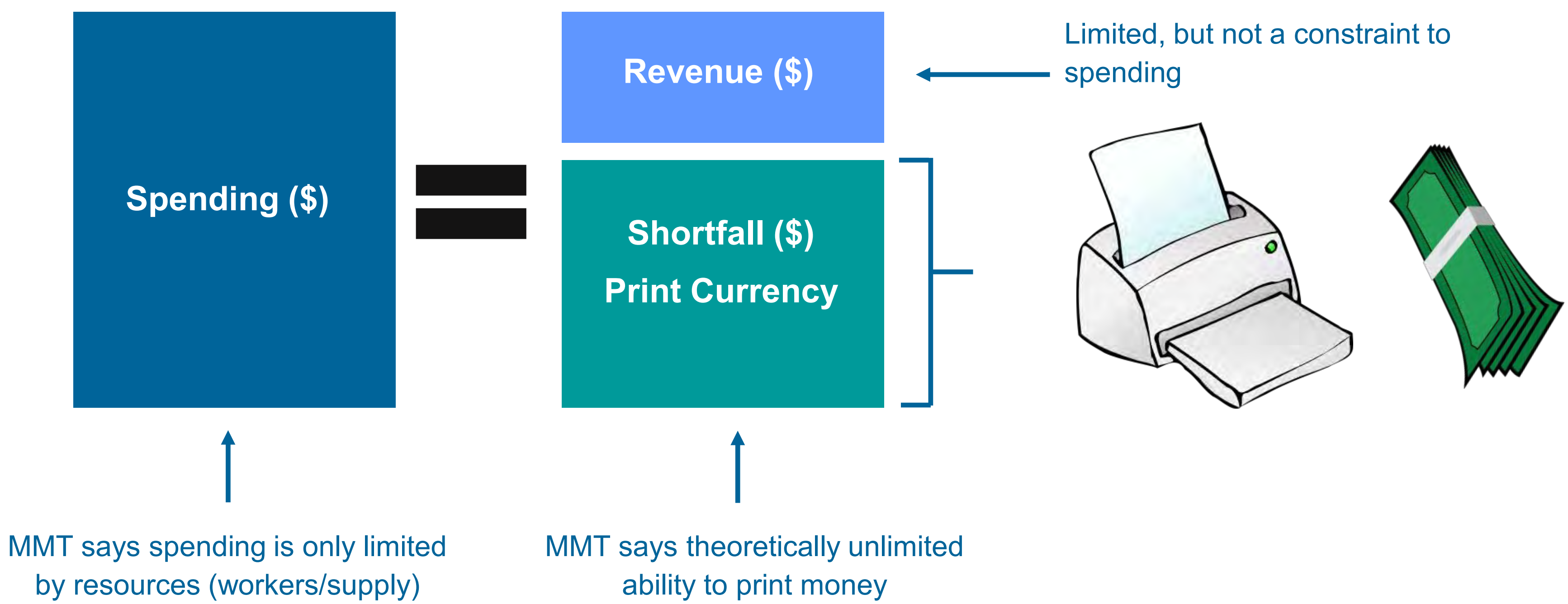
Jay Kloepfer
Capital Market Research

Modern Monetary Theory (MMT)

What is it?

MMT is a macroeconomic theory asserting that sovereign countries that control their own fiat currency (such as the U.S.), and spend, tax, and borrow in that currency, are not constrained by revenues when it comes to federal government spending. As monopolistic issuers of the currency, a country can print as much money as they need and therefore policies should not be shaped by concerns over rising debt.

Sovereign Budget



Tenets of MMT

Governments that issue their own fiat money:

1. Can pay for spending without a need to first collect money from taxes or to issue debt

2. Cannot be forced to default on debt denominated in its own currency

3. The only limit to money creation and purchases is inflation, which accelerates when the resources of the economy are utilized at full employment. **A key feature of full employment in MMT is that the private markets cannot be trusted to get the economy to full employment, so there must be a government guaranteed job available to all.** The number of these guaranteed jobs will expand or contract depending on the economic cycle. This idea predates Keynesian economics and has been referred to as "workfare" by some viewers, where the unemployed must work in government jobs to receive income and benefits, rather than the current system of unemployment insurance.

4. Governments that issue currency should rely on automatic stabilizers to control demand-pull inflation

These first four tenets are not in conflict with mainstream macroeconomics and the understanding of how money creation and inflation work. The following two tenets are where MMT separates from the economic orthodoxy.

5. **Governments issue bonds as a monetary device**, rather than a funding device. Under "unlimited" ability to issue currency to cover spending, governments don't really need to issue debt. MMT also asserts that government deficits do not "crowd out" private economic activity, and in fact do the opposite, as government deficit = private surplus. MMT also asserts that deficits have no influence on interest rates. As a side note, the desired interest rate among many influential MMT proponents is zero. This part of the tenets is the most controversial, as it completely ignores the economics of lending and borrowing in a competitive economy.

6. **Taxation is not meant to fund spending,** but to provide the fiscal space to spend while controlling inflation and to give value to the currency. If inflation risk rises as spending at full employment becomes too much, taxation is used to quell private demand. In essence MMT believes fiscal policy, not monetary policy (using interest rates to spur or slow growth) should be the primary tool for managing what has been the province of monetary policy – inflation and employment

Modern Monetary Theory (MMT)

Economic Implications

MMT suggests that countries can and should print as much money as they need to spend because they cannot go broke. Eliminate the revenue constraint through the ability to print currency to fund the deficit. In other words, policies should not be shaped by fears of rising debt.

Traditional Economic Theory

- Large deficits are fiscally irresponsible
- Excess spending leads to inflation
- Printing currency leads to inflation
- Deficits represent future burden on taxpayers
- Spending is constrained by revenue
- Bonds must be sold to fund the deficit to avoid inflation
- Raising taxes to reduce inflation does not work as it increases unemployment and worsens the downturn

MMT

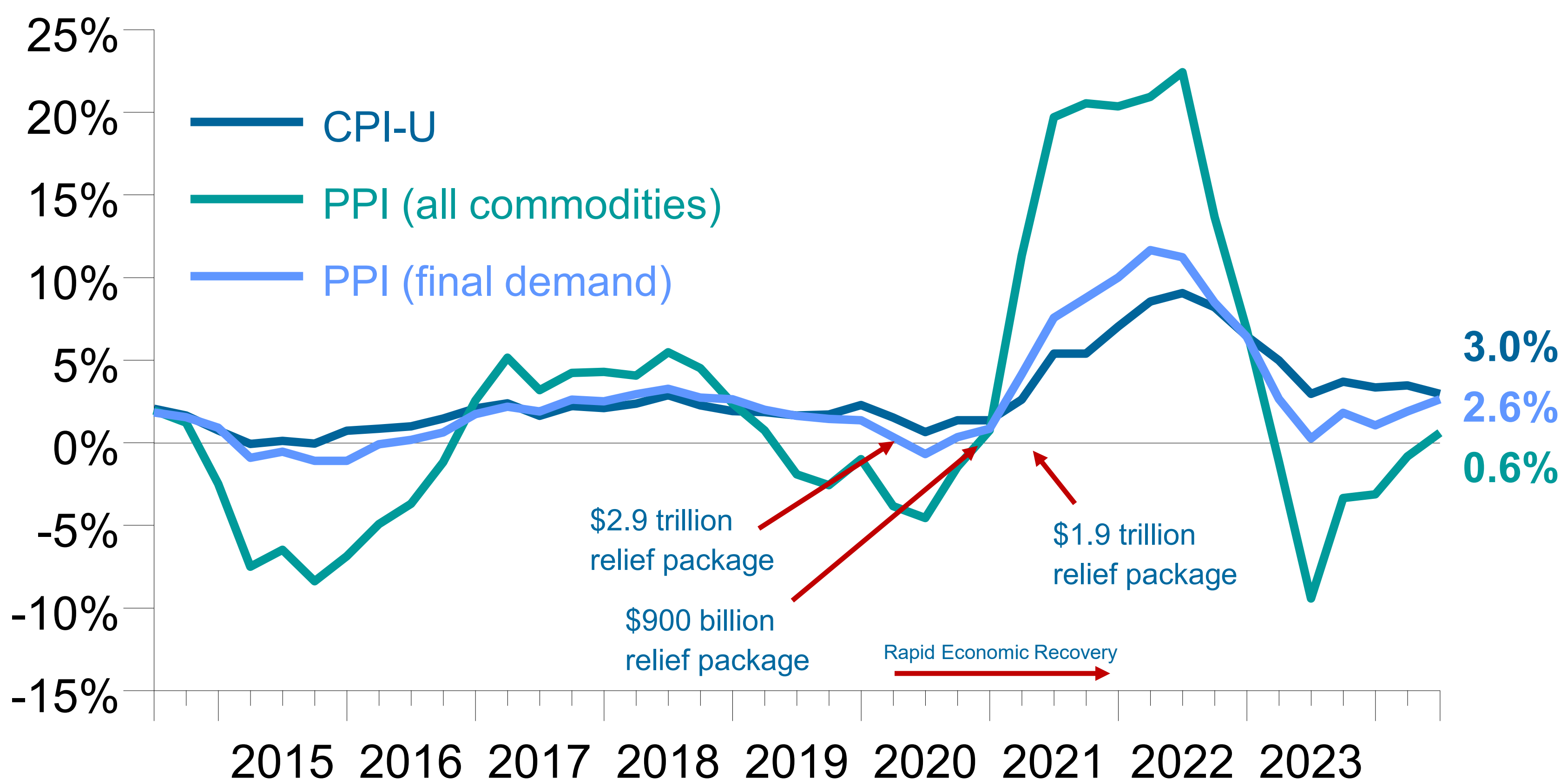
- Excess government debt is not a precursor to collapse
- Countries can sustain much greater deficits without cause for concern
- Small deficits or surpluses can be harmful and cause recession
- Deficit spending builds individual's savings
- Debt is money the government put into the economy and didn't tax back
- Spending is constrained by resources available
- Spending is not a "problem" if new money keeps employment, inflation and continued investment in production healthy

Modern Monetary Theory (MMT)

Case Study: Post COVID Inflation

The biggest deterrent to mainstream adoption of MMT is the expected inflationary impact of funding excess spending through printing currency. MMT was popularized in a period of low inflation and growing fiscal deficits. The COVID pandemic was a period of unprecedented government spending with little regard for offsetting revenues, policy that aligns with MMT.

Inflation Year-Over-Year



Source: U.S. Bureau of Labor Statistics

Modern Monetary Theory (MMT)

Case Study: Post COVID Inflation

Proponents - MMT “Worked”

- Economic recovery was historically fast
- Spending boosted consumer savings to stimulate the economy
- Resource constraints were not considered before the relief packages, and this was the root cause of inflation
- A key tenant of MMT is that inflation can be fought with policy decisions in the future
- Raising taxes and reducing spending should be used to combat inflation
- The Federal Reserve should not be the only tool for fighting inflation, as rising rates can cool investment in key areas (constraints)
- MMT took a victory lap in 2020 and 2021

Adversaries - MMT Failed

- Inflation skyrocketed because of spending
- Inflation proved to be sticky and not easily combatted with policy
- Ballooning deficit is a concern, especially as debt servicing costs go up with interest rates
- Consumer demand was difficult to predict, and stabilization measures could not be put in place to fortify the supply chain and labor markets to prevent inflation
- Intervention through taxes and spending policy changes require legislation and take time to implement – these are not tools for rapid response to inflation
- After its victory lap in 2020 and 2021, MMT backed away from its claims once inflation skyrocketed. MMT then argued that the deficit spending to counter the pandemic decline in 2020 and 2021 did not adhere to MMT prescriptions, namely that inflation potential should have been more fully considered in sizing the spending. Note that MMT lauded all three major stimulus packages when they came out and in fact argued for a larger dollar amount.

Modern Monetary Theory (MMT)

Case Study: U.S. Deficit

Policies On How To Fund The Deficit

Traditional

- Future tax liability
- Bond issuance
- Increased fiscal responsibility
- Inflationary

MMT

- Continue spending
- Print currency if needed
- Use future policy, taxes, etc. to combat inflation
- Monitor resource constraints

MMT – Challenges to Implementation

Impractical to Impossible

MMT has received considerable coverage in the media and the popular political conversations and has been lauded by proponents of universal employment and the Green New Deal.

- There are few adherents within economics, however, and in response, MMT proponents complain their theories have been misrepresented.
- Note that very few, if any, of the MMT ideas are new or "modern", and are often characterized as Keynesian economics pushed to the extreme. Note, too, that Keynesian economists may support the goals of MMT (deficit spending to aid the economy, seeking full employment) but do NOT support MMT.
- One frustration for mainstream economists is the lack of any modeling to support the theory or new insight on how the economy, money creation, and inflation work. Assertion alone does not stand up to academic economic scrutiny.
- The works written in support of MMT clearly advance political and societal agendas.

Most, if not all, of MMT's policy proposals are not implementable in the political environment in which we live in the U.S.

- To move tax policy around to manage economic growth, rather than raise interest rates, suggests strong confidence in the agility and political will of the US Government to act. Who will be making these decisions? The US Treasury, which is run by appointees of a sitting President. We have spent decades separating fiscal policy from monetary policy, with autonomy granted to monetary policy, to ensure against the abuse of monetary tools to meet political policy goals. The devastation that rocked many developing countries who pursued deficit spending to meet short term political goals reverberates today. In fact, MMT would argue that the very countries that practiced a version of it do not qualify under their specification of who employ MMT.
- Universal guaranteed employment, universal health care, and the Green New Deal all cannot be funded under current ideas that taxation funds spending, so MMT has been embraced by their proponents. The logic is very similar to that used on the conservative end of the spectrum to assert that tax cuts pay for themselves by spurring sufficient economic growth to offset lower tax rates.
- Pundits speculate that MMT is being embraced by some Democrats as a response to Republican moves to increase spending on their policies (like defense) without any regard to paying for them with taxes – why don't we just join the fight and advocate for deficit spending on our policies?

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