

APPROVED

**INVESTMENT ADVISORY BOARD REGULAR MEETING
CITY OF FORT LAUDERDALE
7th Floor Conference Room
Monday, April 22, 2019, 9:30 AM**

| <u>Board Member</u> | <u>Attendance</u> | Cumulative Attendance | |
|----------------------------|--------------------------|------------------------------|----------------------|
| | | <u>Present</u> | <u>Absent</u> |
| Pamela Winston, Chair | P | 2 | 0 |
| June D. Page | P | 2 | 0 |
| Indraneel Chakraborty | P | 2 | 0 |

Staff Present

Kirk Buffington, Director, Finance
Linda Logan-Short, Interim Assistant City Manager / CFO
John Herbst, City Auditor
Laura Garcia, Acting Deputy Director, Finance
Linda Picciolo, Accounts Payable Supervisor, Finance
Debra Conyers, Board Liaison

Other Attendees

Richard Pengelly, PFM Asset Management, LLC
Jason Human, PFM Asset Management, LLC
Khalid Yasin, PFM Asset Management, LLC (via telephone conference)
Steven Alexander, PFM Asset Management, LLC

Call to Order

Chair Pamela Winston called the meeting to order at 9:34 AM.

Roll Call

At the time of roll call, all three appointed members to the Board were present, allowing for a quorum.

Review of Meeting Minutes for Approval

Chair Winston deferred the approval of minutes until the next meeting.

Floor Open for Public Input

No members of the general public were in attendance.

Review of Proposed Updates to City's Investment Policy- PFM Asset Management LLC

Steven Alexander (PFM Asset Management, LLC) had no further suggestions on the City's fixed income policy and inquired if the Board had any concerns or questions regarding the previous handouts.

Linda Short explained one purpose of PFM Asset Management, LLC investment charts is to compare larger cities to our city and analyze other entities asset investments. She also, stated the board is here to take a look at the recommendations and to help determine whether the City should be that diversified.

Dr. Indraneel Chakaborty had concerns regarding the Investment Policy. Richard Pengelly (PFM Asset Management, LLC) addressed his concerns.

Discussion continued between PFM Asset Management, LLC representatives and the Board and City staff present on each investment category.

For detailed information, see attached presentation.

Internal Controls Update

Steven Alexander (PFM Asset Management, LLC) spoke briefly about his approach regarding internal controls. He met with Audrey Henfield (Senior Accountant, Treasury) to watch her conduct her daily procedures, which includes, but is not limited to bank balances, cash flows, spreadsheets etc. Steven then discussed the matrix with Chair Winston, which outlines job functions and individuals within the organization to understand what each individual does.

Short Term Funds Discussion – Local Government Investment Pools

Richard Pengelly (PFM Asset Management, LLC) stated after looking at the different portfolios and monthly balances it has helped to construct the spending pattern of cash flows. Based on that it drives what funds go into each bucket.

Dr. Indradreel Chakaborty had further questions, of which Richard addressed in a detailed discussion.

OPEB Fund

Khalid Yasin, spoke about the handouts given by PFM Asset Management, LLC regarding passive versus active investments.

Linda Short explained that the OPEB Fund is not used to pay benefits, such as pensions, it is used to earn dollars, as well as, to offset liabilities on the books.

Extensive discussion between PFM Asset Management, LLC, Board members and City officials ensued with questions and concerns regarding the OPEB Fund.

For detailed information, see attached Active versus Passive Investment Cost handouts.

Other Business

N/A

Communication to the City Commission

N/A

Adjournment

The next regular meeting of the Investment Advisory Board is May 13, 2019 at 2:00 PM.

The meeting adjourned at 11:32 AM.

[Minutes prepared by Debra Conyers, Board Liaison]



City of Fort Lauderdale OPEB Trust

Asset Allocation / Historical Modeling

Khalid Yasin, CIMA[®], CHP, *Director*

April 22, 2019

PFM Asset
Management LLC

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Asset Allocation Comparison

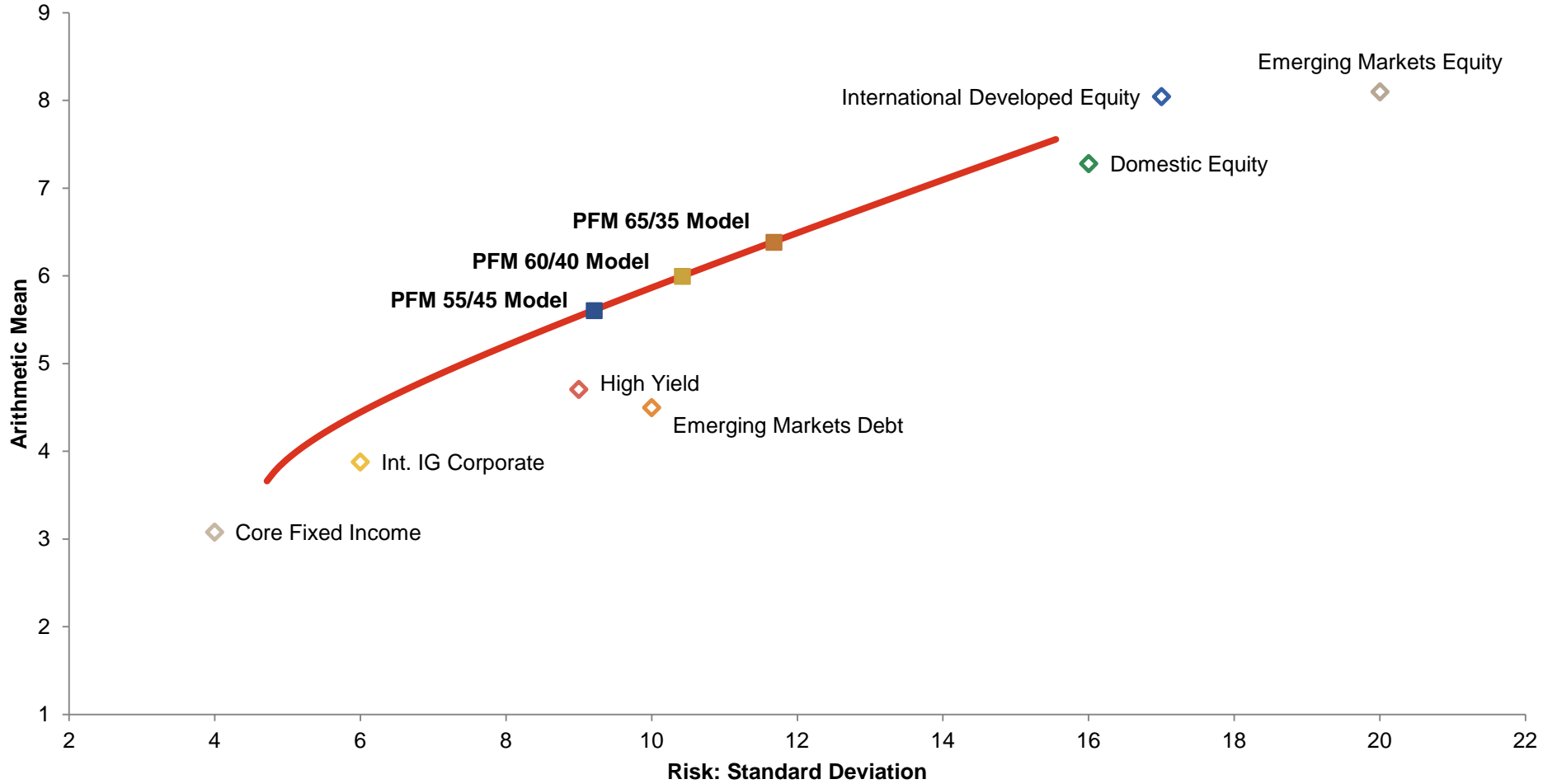
| | PFM 55/45 Model | PFM 60/40 Model | PFM 65/35 Model |
|--------------------------------|-----------------|-----------------|-----------------|
| Equity | 50.0% | 60.0% | 70.0% |
| Domestic Equity | 33.0% | 39.0% | 46.0% |
| International Developed Equity | 12.0% | 15.0% | 16.5% |
| Emerging Markets Equity | 5.0% | 6.0% | 7.5% |
| Fixed Income | 50.0% | 40.0% | 30.0% |
| Core Fixed Income | 25.0% | 20.0% | 15.0% |
| Investment Grade Corporate | 12.5% | 10.0% | 7.5% |
| Emerging Markets Debt | 6.3% | 5.0% | 3.8% |
| High Yield | 6.3% | 5.0% | 3.8% |

| Intermediate-Term Assump. (5 Years) | | | |
|--|-------|-------|-------|
| Expected Return | 5.1% | 5.4% | 5.6% |
| Standard Deviation | 9.2% | 10.4% | 11.7% |
| Probability of 7.0% Return | 32.5% | 35.9% | 39.0% |
| Long-Term Assump. (30 Years) | | | |
| Expected Return | 7.1% | 7.2% | 7.4% |
| Standard Deviation | 9.2% | 10.4% | 11.7% |
| Probability of 7.0% Return | 51.7% | 55.8% | 58.9% |



Efficient Frontier

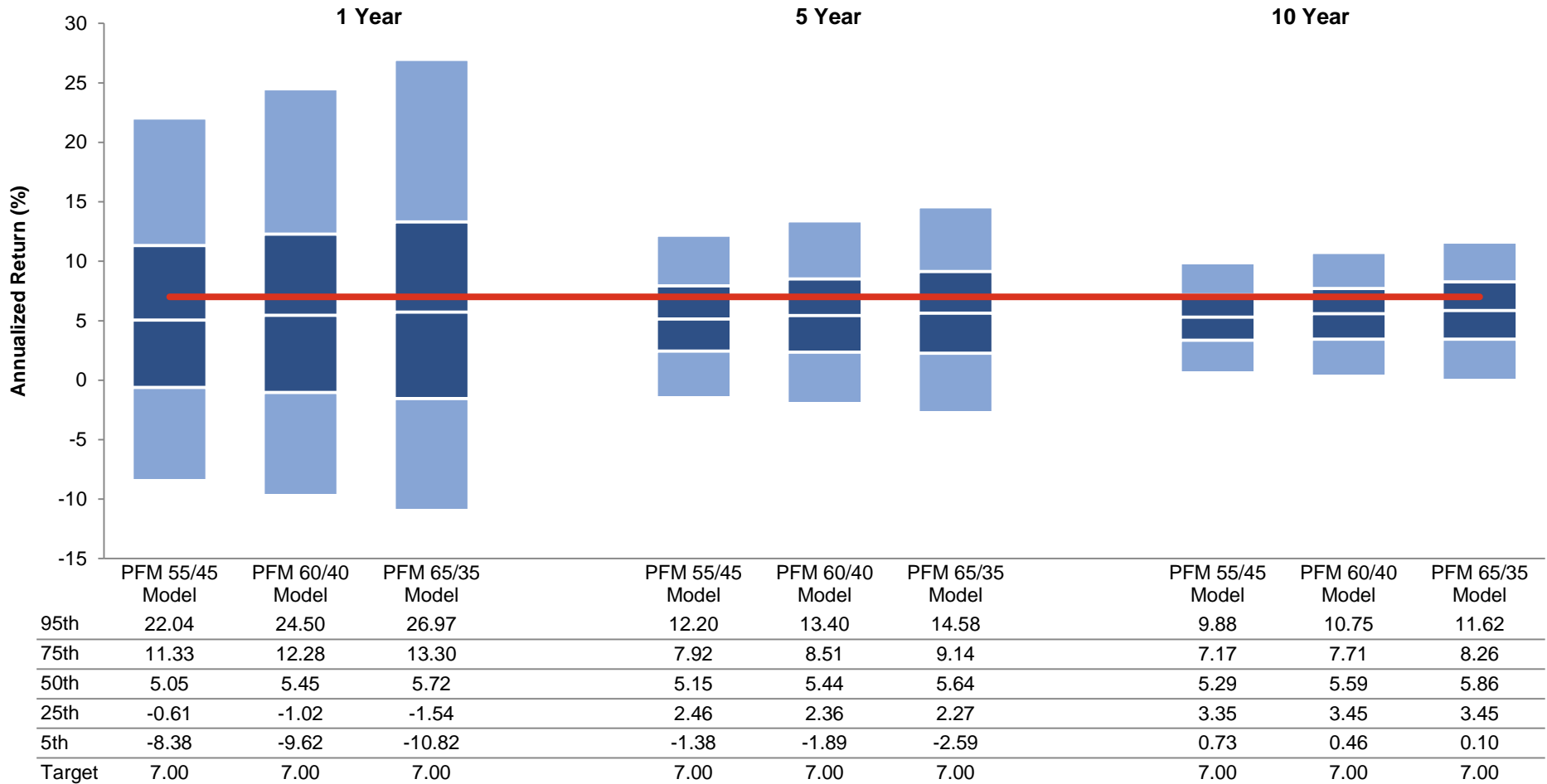
Based on PFM's Intermediate-Term Assumptions





Expected Returns

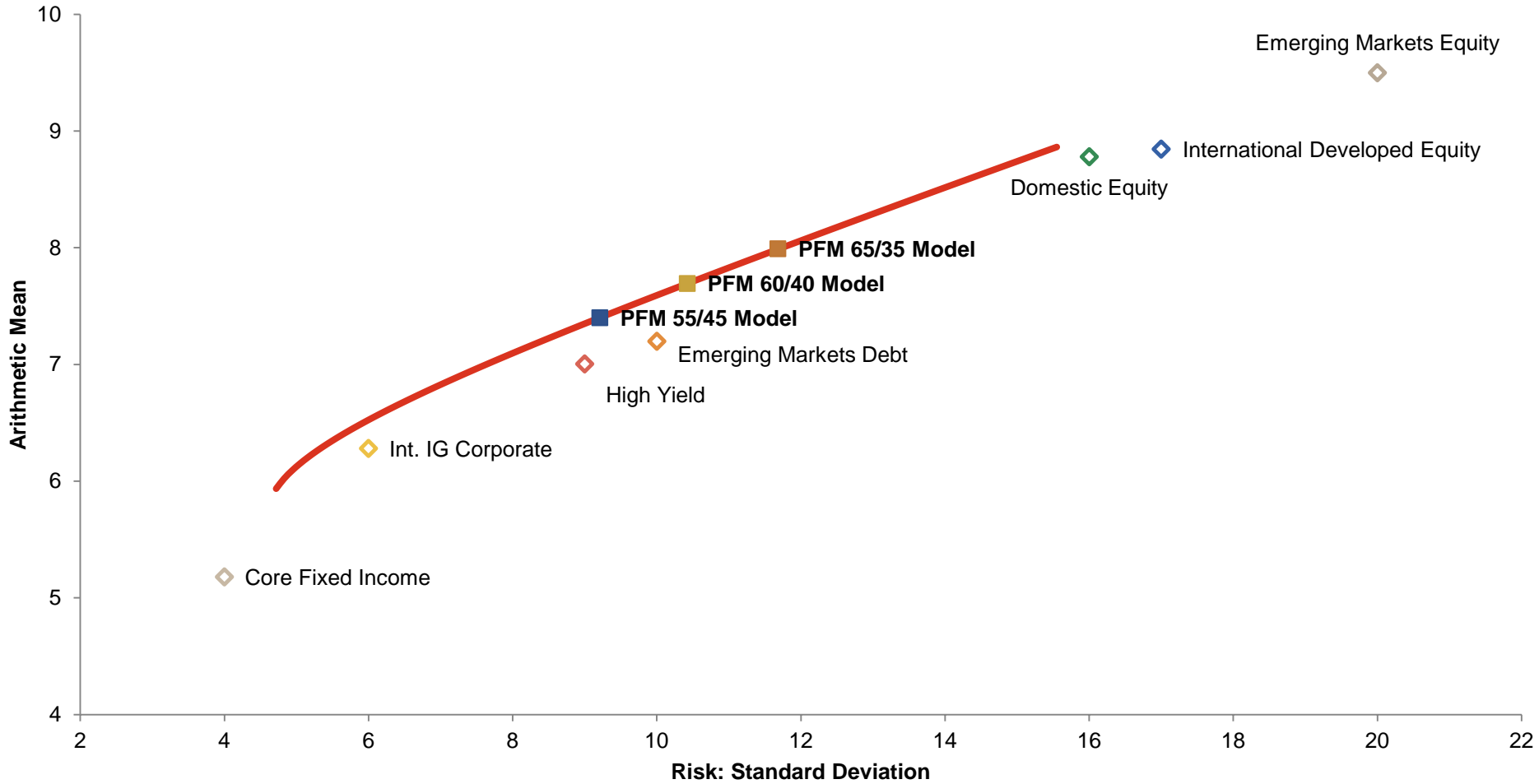
Based on PFM's Intermediate-Term Assumptions





Efficient Frontier

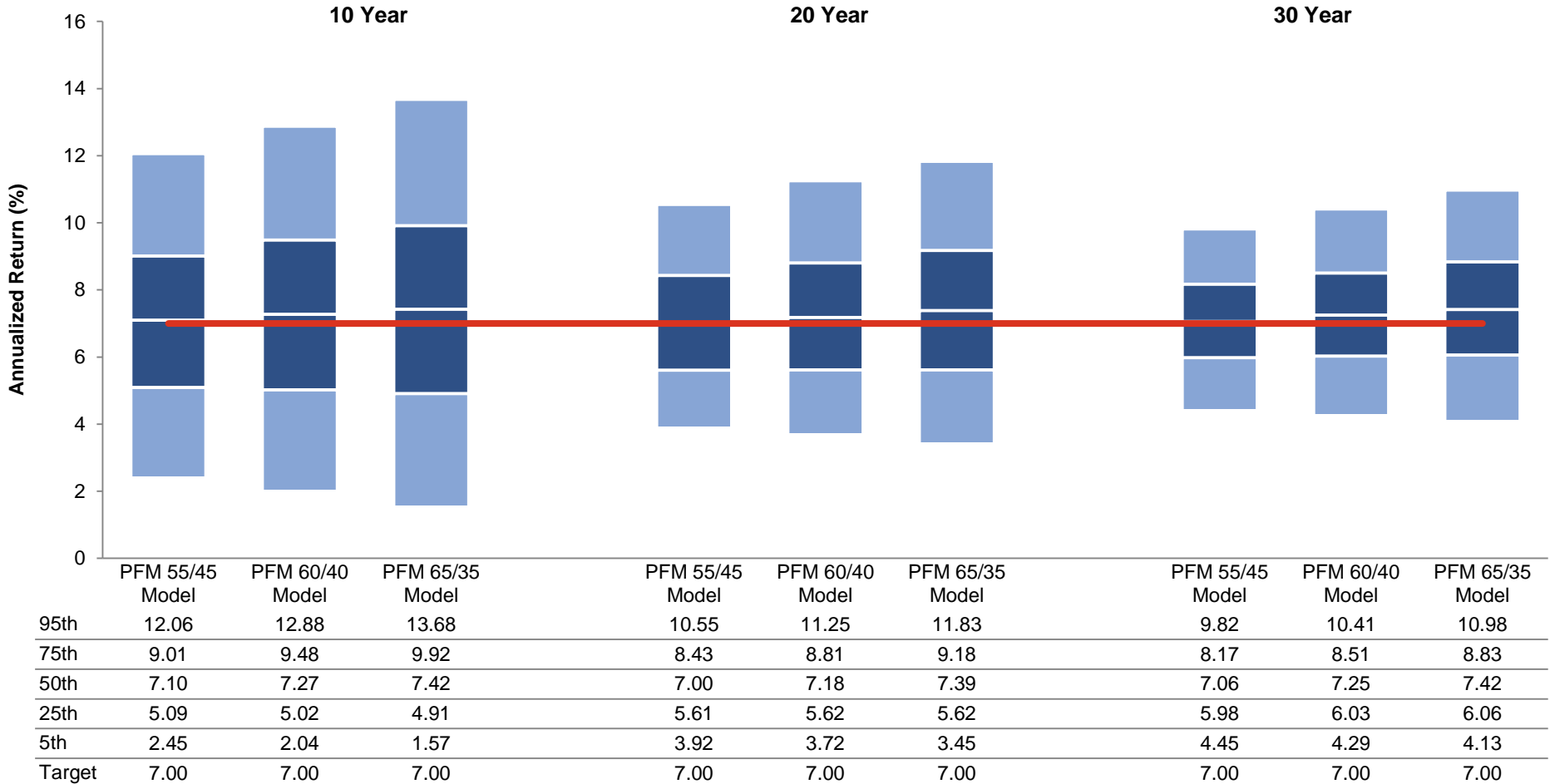
Based on PFM's Long-Term Assumptions





Expected Returns

Based on PFM's Long-Term Assumptions



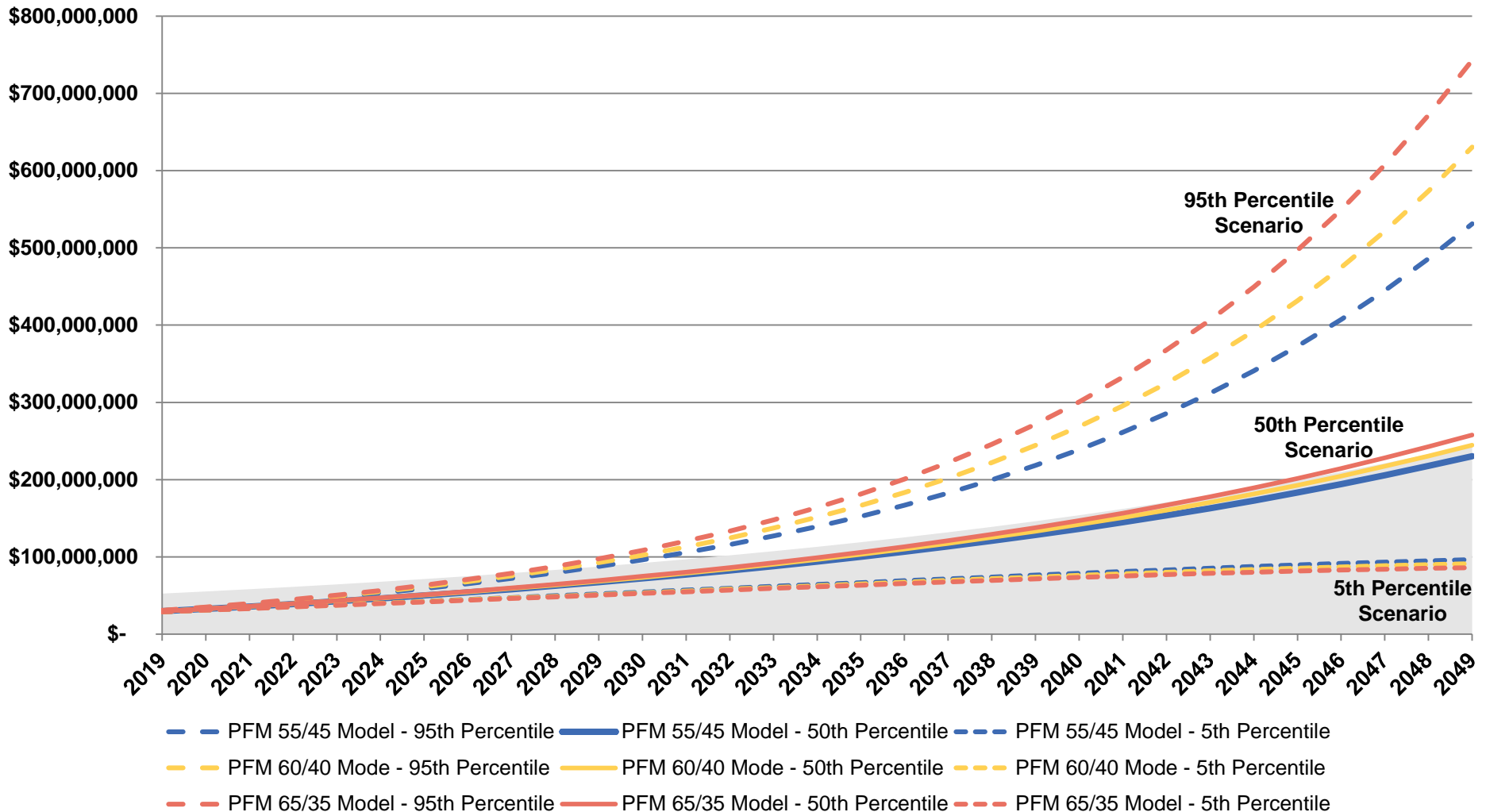


Summary of Actuarial Data

- Total OPEB Liability: \$49,793,974
- Fiduciary Net Position: \$26,672,110
- Funded Ratio: 53.6%
- Discount Rate: 7.0%
- Service Cost: \$1,547,033
- Interest Cost: \$3,159,142
- Benefit Payments: \$2,318,660
- Health Care Trend: 8.0% decreasing to 5.0%

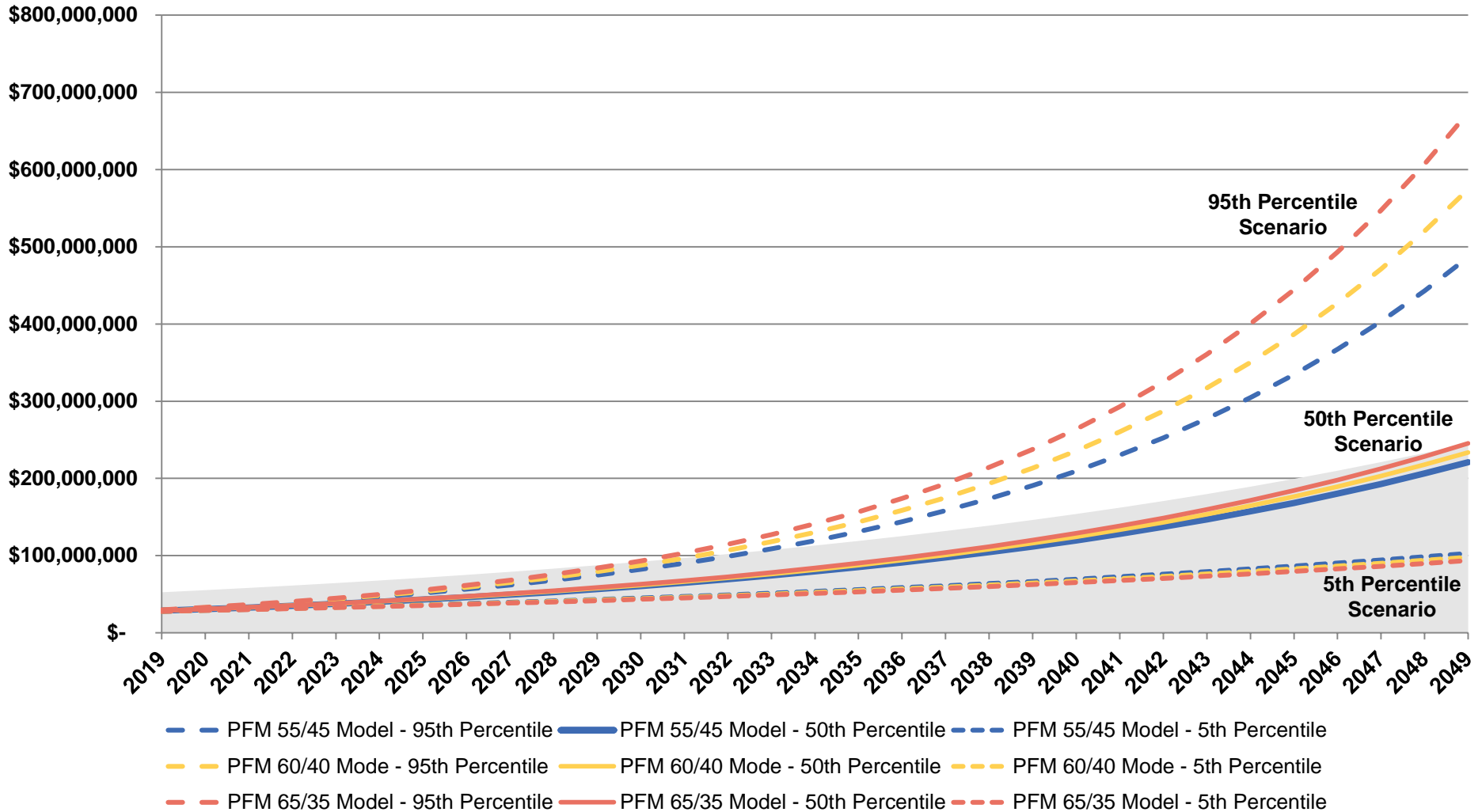


Asset / Liability Projections – Fully Fund ARC & Benefits Paid from Trust



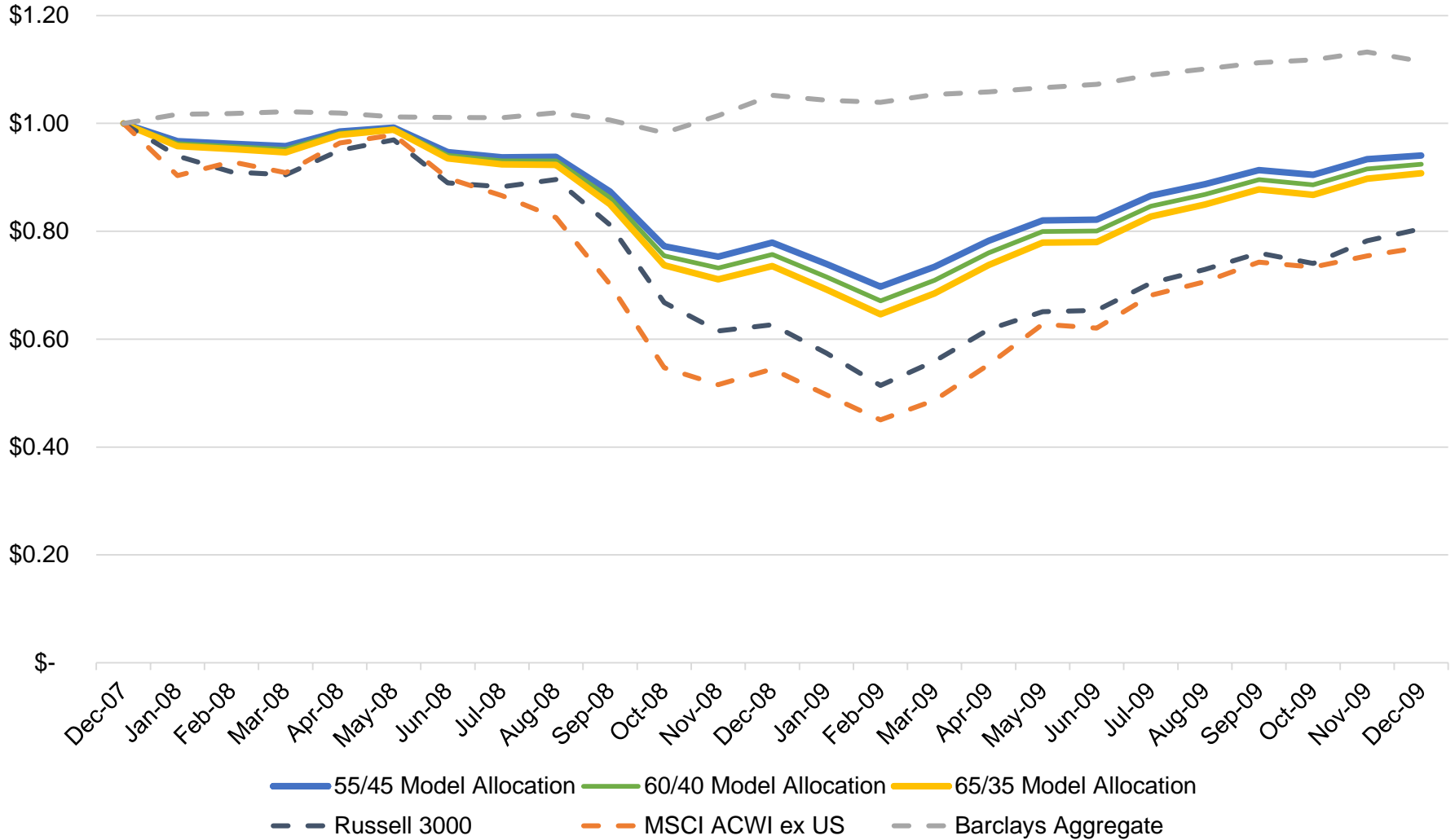


Asset / Liability Projections – No Cash Flows





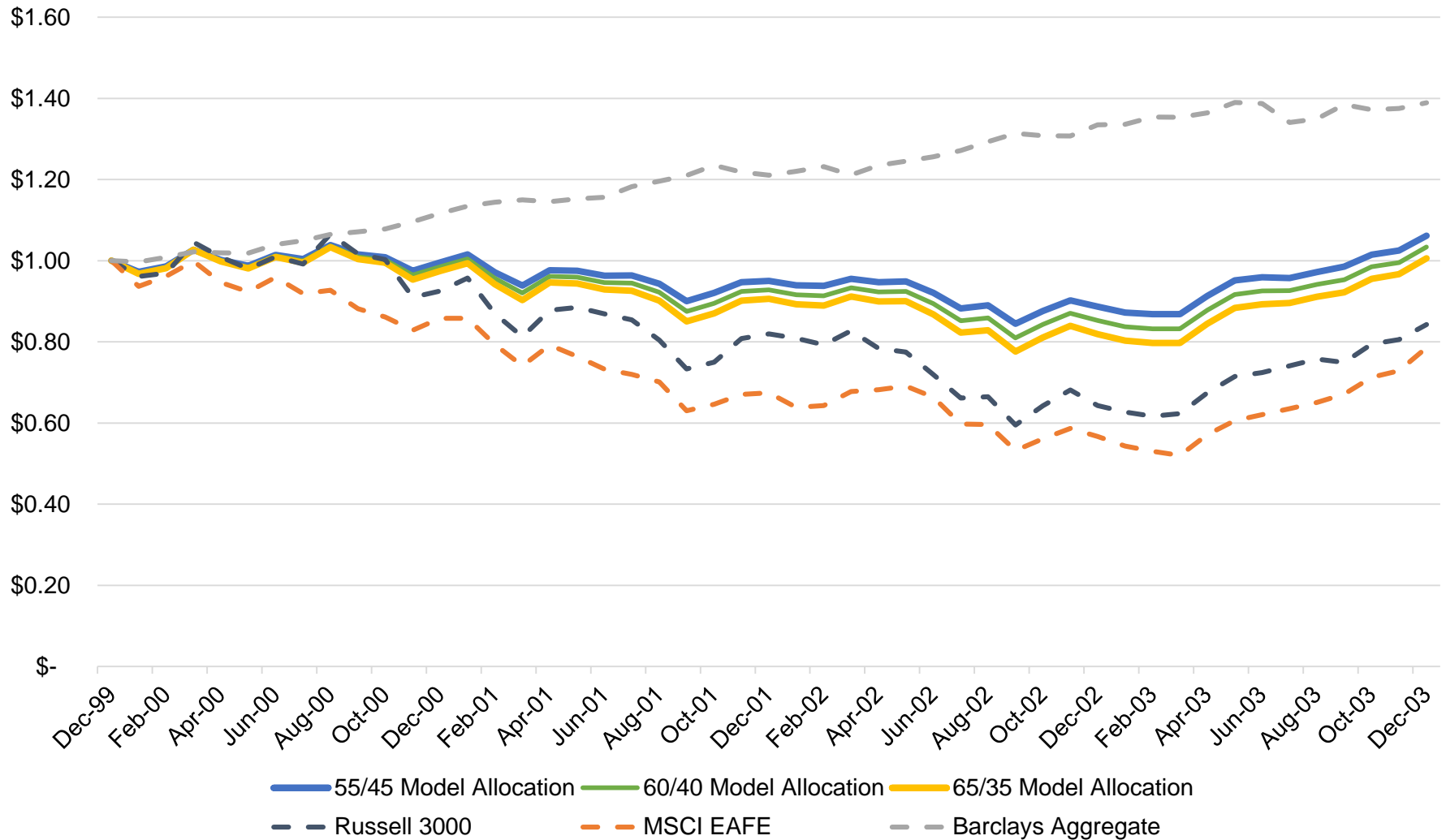
Historical Analysis – 2008 Financial Crisis



Source: Investment Metrics



Historical Analysis – 2000 – 2002 Dot-Com Crash



Source: Investment Metrics



PFM's Capital Market Assumptions



2019 Capital Market Assumptions

| | Intermediate: Next 5 Years | | Long Term Projections | |
|---------------------------------------|----------------------------|---------------|-----------------------|---------------|
| | Expected Return | Expected Risk | Expected Return | Expected Risk |
| US Equity | 6.0% | 16% | 7.5% | 16% |
| International Developed Equity | 6.6% | 17% | 7.4% | 17% |
| Emerging Markets Equity | 6.1% | 20% | 7.5% | 20% |
| Core Fixed Income | 3.0% | 4% | 5.1% | 4% |
| Intermediate Investment Grade | 3.7% | 6% | 6.1% | 6% |
| Emerging Markets Debt | 4.0% | 10% | 6.7% | 10% |
| High Yield | 4.3% | 9% | 6.6% | 9% |
| Bank Loans | 4.4% | 6% | 5.4% | 6% |
| REITs | 5.7% | 12% | 6.5% | 12% |
| Private Equity Real Estate | 6.5% | 15% | 7.8% | 15% |
| Commodities | 5.2% | 16% | 5.5% | 16% |
| Hedge Funds | 5.5% | 15% | 7.2% | 15% |
| Private Equity | 7.1% | 25% | 9.5% | 25% |
| Cash | 3.2% | 1% | 3.5% | 1% |

For the intermediate term (up to 5 years), our capital market assumptions derive from our assessment of current economic conditions, including corporate profits, balance sheets, etc., and current valuations for various asset classes. Our long-term assumptions are derived using an economic building block approach that projects economic and corporate profit growth and takes into consideration the fundamental factors driving long-term real economic growth, our expectation for inflation, productivity and labor force growth.



2019 Capital Market Assumptions, Correlations

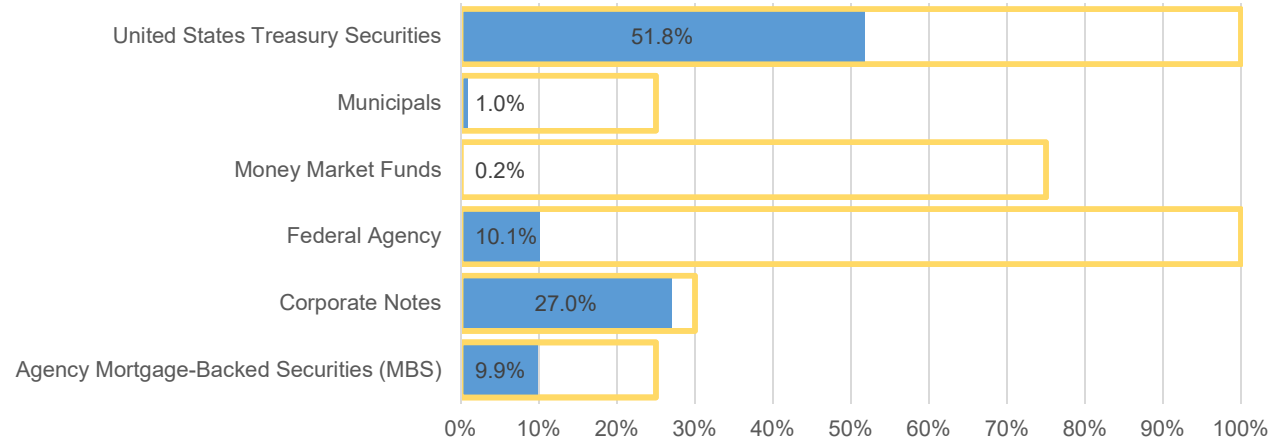
| Correlations | | | | | | | | | | | | | | |
|---------------------------------------|-----------|--------------------------------|-------------------------|------------|------------------------------------|-----------------------|------------|------------|-------|----------------------------|-------------|-------------|----------------|------|
| | US Equity | International Developed Equity | Emerging Markets Equity | Core Bonds | Intermediate Investment Grade Corp | Emerging Markets Debt | High Yield | Bank Loans | REITs | Private Equity Real Estate | Commodities | Hedge Funds | Private Equity | Cash |
| US Equity | 1 | | | | | | | | | | | | | |
| International Developed Equity | 0.8 | 1 | | | | | | | | | | | | |
| Emerging Markets Equity | 0.7 | 0.7 | 1 | | | | | | | | | | | |
| Core Bonds | 0.3 | 0.2 | 0.2 | 1 | | | | | | | | | | |
| Intermediate Investment Grade | 0.3 | 0.2 | 0.2 | 0.9 | 1 | | | | | | | | | |
| Emerging Markets Debt | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 1 | | | | | | | | |
| High Yield | 0.7 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 1 | | | | | | | |
| Bank Loans | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.7 | 0.7 | 1 | | | | | | |
| REITs | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 1 | | | | | |
| Private Equity Real Estate | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.4 | 0.2 | 0.8 | 1 | | | | |
| Commodities | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 1 | | | |
| Hedge Funds | 0.6 | 0.5 | 0.5 | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.2 | 1 | | |
| Private Equity | 0.7 | 0.6 | 0.6 | 0.3 | 0.3 | 0.3 | 0.5 | 0.2 | 0.4 | 0.4 | 0.1 | 0.5 | 1 | |
| Cash | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 1 |

Please refer to PFM's 2019 Capital Market Assumptions for a complete description of the methodology used to develop these assumptions and important disclosures.



Disclosures

This material is based on information obtained from sources generally believed to be reliable, however, PFM Asset Management LLC cannot guarantee its accuracy, completeness or suitability. This material is for general information purposes only and is not intended to provide specific advice or a specific recommendation. The returns presented are not actual returns, but rather simulated returns based on PFMAM's Capital Market Assumptions and the asset allocations shown. All statements as to what will or may happen under certain circumstances are based on assumptions, some but not all of which are noted in the presentation. Assumptions may or may not be proven correct as actual events occur, and results may depend on events outside of your or our control. Changes in assumptions may have a material effect on results. Past performance does not necessarily reflect and is not a guarantee of future results. The information contained in this presentation is not an offer to purchase or sell any securities.



| Security Type | Amortized Cost (Includes Interest) | Allocation Percentage | Permitted by Policy | In Compliance |
|--|---------------------------------------|--------------------------|------------------------|---------------|
| Florida Prime (SBA) | - | 0.00% | 25% | YES |
| United States Treasury Securities | 150,361,384.66 | 51.77% | 100% | YES |
| Federal Agency | 29,462,482.34 | 10.14% | 100% | YES |
| Corporate Notes | 78,518,976.38 | 27.03% | 30% | YES |
| Municipals | 2,812,630.88 | 0.97% | 25% | YES |
| Agency Mortgage-Backed Securities (MBS) | 28,611,092.10 | 9.85% | 25% | YES |
| Certificates of Deposit and Savings Accounts | - | 0.00% | 10% | YES |
| Commercial Paper | - | 0.00% | 25% | YES |
| Bankers' Acceptances | - | 0.00% | 10% | YES |
| Repurchase Agreements | - | 0.00% | 20% | YES |
| Money Market Funds | 668,043.86 | 0.23% | 75% | YES |
| Intergovernmental Pools | - | 0.00% | 25% | YES |

End of month trade-date amortized cost of portfolio holdings, including accrued interest.

| Sector | Individual Issuer Breakdown | Amortized Cost (Includes Interest) | Allocation Percentage | Permitted by Policy | In Compliance |
|--------------------|-------------------------------------|---------------------------------------|--------------------------|------------------------|---------------|
| Us Tsy Bond/Note | UNITED STATES TREASURY | 150,361,384.66 | 51.77% | 100% | YES |
| Muni Bond/Note | NASSAU CNTY NY | 509,380.21 | 0.18% | 10% | YES |
| Muni Bond/Note | NEW YORK ST DORM AUTH ST PERSO | 2,303,250.67 | 0.79% | 10% | YES |
| Mny Mkt/Mutual Fnd | MONEY MARKET FUND | 668,043.86 | 0.23% | 25% | YES |
| Mbs / Cmo | FANNIE MAE | 13,149,728.42 | 4.53% | 15% | YES |
| Mbs / Cmo | FREDDIE MAC | 5,688,546.48 | 1.96% | 15% | YES |
| Mbs / Cmo | FHLMC MULTIFAMILY STRUCTURED P | 6,810,530.18 | 2.34% | 15% | YES |
| Mbs / Cmo | GOVERNMENT NATIONAL MORTGAGE ASSOC | 2,962,287.02 | 1.02% | 15% | YES |
| Fed Agy Bond/Note | FANNIE MAE | 13,197,304.01 | 4.54% | 25% | YES |
| Fed Agy Bond/Note | FEDERAL HOME LOAN BANKS | 12,017,231.87 | 4.14% | 25% | YES |
| Fed Agy Bond/Note | FREDDIE MAC | 4,247,946.46 | 1.46% | 25% | YES |
| Corporate Note | AMERICAN EXPRESS CREDIT CORP | 1,542,488.20 | 0.53% | 5% | YES |
| Corporate Note | AMERICAN HONDA FINANCE | 2,680,727.30 | 0.92% | 5% | YES |
| Corporate Note | CHEVRON CORP | 657,957.00 | 0.23% | 5% | YES |
| Corporate Note | CISCO SYSTEMS | 4,439,755.13 | 1.53% | 5% | YES |
| Corporate Note | GOLDMAN SACHS GROUP INC | 2,859,006.72 | 0.98% | 5% | YES |
| Corporate Note | IBM CORP | 864,275.55 | 0.30% | 5% | YES |
| Corporate Note | JOHN DEERE CAPITAL CORP | 2,678,496.76 | 0.92% | 5% | YES |
| Corporate Note | MELLON BANK | 2,519,852.22 | 0.87% | 5% | YES |
| Corporate Note | TOYOTA MOTOR CREDIT CORP | 5,582,074.45 | 1.92% | 5% | YES |
| Corporate Note | WELLS FARGO & COMPANY | 958,072.17 | 0.33% | 5% | YES |
| Corporate Note | WALT DISNEY COMPANY/THE | 2,214,282.32 | 0.76% | 5% | YES |
| Corporate Note | INTEL CORP | 1,833,260.27 | 0.63% | 5% | YES |
| Corporate Note | WELLS FARGO BANK NA | 4,152,336.57 | 1.43% | 5% | YES |
| Corporate Note | BRANCH BANKING & TRUST | 2,876,919.34 | 0.99% | 5% | YES |
| Corporate Note | CITIGROUP INC | 1,120,344.71 | 0.39% | 5% | YES |
| Corporate Note | MORGAN STANLEY | 2,756,567.98 | 0.95% | 5% | YES |
| Corporate Note | STATE STREET CORPORATION | 246,695.88 | 0.08% | 5% | YES |
| Corporate Note | PNC BANK NA | 601,363.72 | 0.21% | 5% | YES |
| Corporate Note | US BANK NA CINCINNATI | 5,225,593.43 | 1.80% | 5% | YES |
| Corporate Note | UNILEVER CAPITAL CORP | 1,481,894.54 | 0.51% | 5% | YES |
| Corporate Note | GENERAL ELEC CAP CORP | 586,977.86 | 0.20% | 5% | YES |
| Corporate Note | ORACLE CORP | 488,631.53 | 0.17% | 5% | YES |
| Corporate Note | CATERPILLAR FINANCIAL SERVICES CORP | 1,437,109.51 | 0.49% | 5% | YES |
| Corporate Note | VISA INC | 1,542,598.98 | 0.53% | 5% | YES |
| Corporate Note | HOME DEPOT INC | 1,400,274.74 | 0.48% | 5% | YES |
| Corporate Note | BANK OF AMERICA CORP | 3,190,000.38 | 1.10% | 5% | YES |
| Corporate Note | WAL-MART STORES INC | 908,483.71 | 0.31% | 5% | YES |
| Corporate Note | PROCTER & GAMBLE CO/THE | 759,071.91 | 0.26% | 5% | YES |
| Corporate Note | PACCAR FINANCIAL CORP | 1,051,594.51 | 0.36% | 5% | YES |
| Corporate Note | JPMORGAN CHASE & CO | 4,793,801.04 | 1.65% | 5% | YES |

| Sector | Individual Issuer Breakdown | Amortized Cost (Includes Interest) | Allocation Percentage | Permitted by Policy | In Compliance |
|----------------|------------------------------------|---|----------------------------------|--------------------------------|----------------------|
| Corporate Note | CHARLES SCHWAB CORP | 1,294,689.55 | 0.45% | 5% | YES |
| Corporate Note | UNITEDHEALTH GROUP INC | 1,714,021.20 | 0.59% | 5% | YES |
| Corporate Note | 3M COMPANY | 1,119,694.22 | 0.39% | 5% | YES |
| Corporate Note | GOOGLE INC | 813,912.97 | 0.28% | 5% | YES |
| Corporate Note | BLACKROCK INC | 3,098,567.58 | 1.07% | 5% | YES |
| Corporate Note | COSTCO WHOLESALE CORP | 756,427.71 | 0.26% | 5% | YES |
| Corporate Note | EMERSON ELECTRIC COMPANY | 907,641.53 | 0.31% | 5% | YES |
| Corporate Note | FIFTH THIRD BANK | 2,094,974.50 | 0.72% | 5% | YES |
| Corporate Note | KEY BANK NA | 1,012,126.99 | 0.35% | 5% | YES |
| Corporate Note | MANUF & TRADERS TRUST CO | 1,703,698.53 | 0.59% | 5% | YES |
| Corporate Note | STATE STREET BANK & TR | 552,713.17 | 0.19% | 5% | YES |

End of month trade-date amortized cost of portfolio holdings, including accrued interest.



City of Fort Lauderdale OPEB Trust

Active versus Passive Investment Cost

Khalid Yasin, CIMA[®], CHP, *Director*

April 22, 2019

PFM Asset
Management LLC

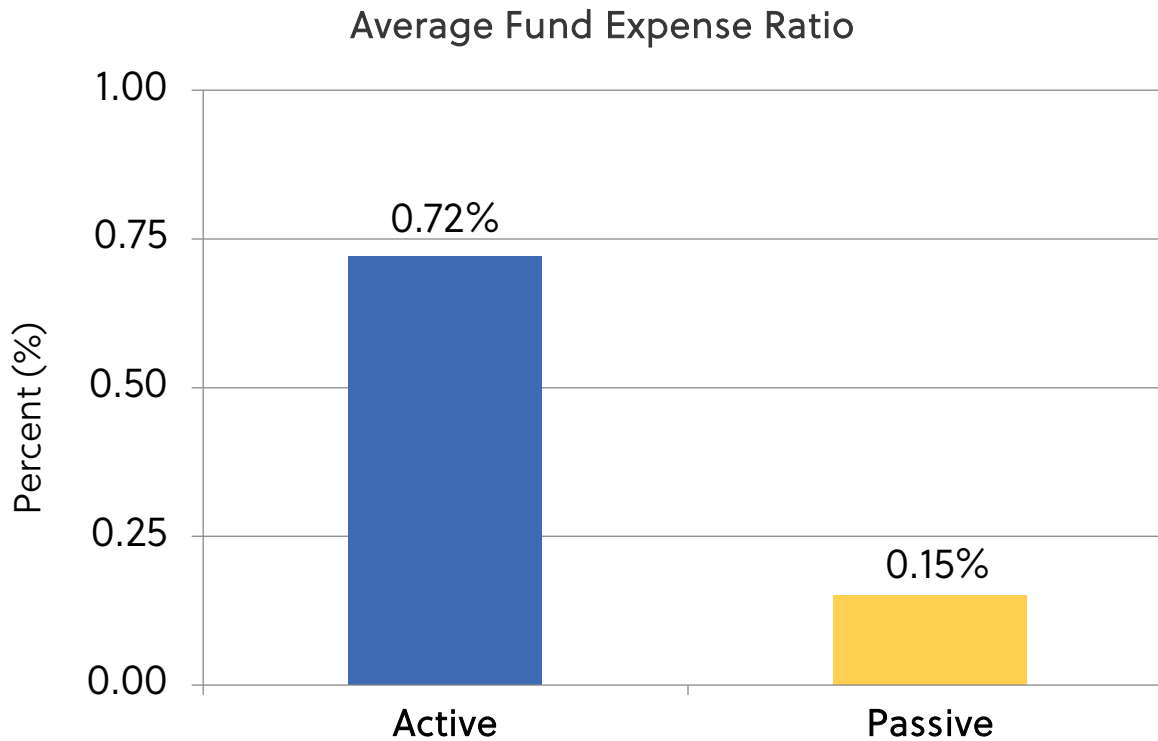
300 South Orange Ave.
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Passive Management (“Index Funds”) Reduces Costs

- Passive management can save 0.57% in fees annually, on average



Source: Morningstar Inc. U.S Fund Fee Study, published April 26, 2018 (2017 data)



Passive vs. Active Fees by Asset Class

Asset-Weighted Average Fees (%)
(Year 2017)

| Asset Class | Active | Passive |
|----------------------|--------|---------|
| U.S. Equity | 0.73 | 0.11 |
| International Equity | 0.88 | 0.23 |
| Taxable Fixed Income | 0.56 | 0.13 |
| Alternative | 1.36 | 0.86 |
| All Funds | 0.72 | 0.15 |

Source: Morningstar Inc. U.S Fund Fee Study, published April 26, 2018 (12/31/2017 data)



Passive Management Has Outperformed Especially in U.S. Equity

Percentage of Active Funds Beaten By Index

| Fund Category | Benchmark | 1-Year | 3-Years | 5-Years | 10-Years | 15-Years |
|---------------------|-----------|--------|---------|---------|----------|----------|
| All Domestic Equity | S&P 1500 | 58% | 82% | 80% | 86% | 84% |
| Large-Cap Equity | S&P 500 | 63% | 79% | 76% | 89% | 92% |
| Mid-Cap Equity | S&P 400 | 54% | 83% | 82% | 93% | 95% |
| Small-Cap Equity | S&P 600 | 73% | 94% | 93% | 93% | 98% |
| Multi-Cap Equity | S&P 1500 | 61% | 82% | 81% | 89% | 88% |

Source: S&P, as of June 30, 2018.



Passive U.S. Equity Has Outperformed in Bear Markets

Percentage of Active Funds Beaten by Index
During 2008 Financial Crisis and 2000 "Tech Bubble"

| Fund Category | Benchmark | 2008 | 2000 to 2002 |
|---------------------|---------------|------|--------------|
| Large Cap Funds | S&P 500 | 54% | 53% |
| All Mid-cap Funds | S&P Mid-cap | 74% | 77% |
| All Small-cap Funds | S&P Small-cap | 83% | 71% |

Source: S&P Indices and CRSP Database as of December 31, 2008.



Top Quartile U.S. Equity Active Managers Lack Persistence

None of "Top Quartile" Active Managers Remain in Top Quartile

| Top Quartile Funds | # of Funds | % of Funds Remaining | | | |
|---------------------|------------|----------------------|---------|---------|-------------|
| | Sep-2014 | 1-Year | 2-Years | 3-Years | 4-Years |
| All Domestic Equity | 561 | 21.03 | 3.57 | 1.60 | 1.43 |
| Large-Cap Equity | 220 | 21.36 | 2.27 | 0.91 | 0.91 |
| Mid-Cap Equity | 83 | 15.66 | 2.41 | 0.00 | 0.00 |
| Small-Cap Equity | 128 | 17.19 | 3.12 | 0.78 | 0.00 |
| Multi-Cap Equity | 130 | 25.38 | 6.15 | 4.62 | 3.08 |

Source: S&P, March 2018.



Yield by Sector

| Sector | Yield to Maturity at Cost |
|-------------------------------------|---------------------------|
| U.S. Treasury Bonds | 2.47% |
| Municipal Bonds | 2.93% |
| Federal Agency/MBS | 2.77% |
| Federal Agency/CMO | 2.92% |
| Federal Agency Bonds | 2.41% |
| Corporate Notes | 2.90% |
| Bank Notes | 2.62% |
| Weighted Average YTM at Cost | 2.62% |