

## INVESTMENT SECTION

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## Report on Investment Activity

Prepared by Jeffrey Barnette, Chief Investment Officer

### Introduction

The District of Columbia Retirement Board (the “Board”) is charged with the responsibility to prudently manage the assets of the District of Columbia Teachers’ Retirement Fund and the District of Columbia Police Officers and Firefighters’ Retirement Fund, two defined benefit pension plans (the “Fund”). The Board works with an independent investment consultant who possesses specialized experience and resources in asset allocation, investment manager selection, and performance evaluation. The Board’s investment consultant and traditional investment managers acknowledge their fiduciary responsibility in writing. Investment managers are accorded full discretion within general and specific investment manager policy guidelines.

### Investment Objectives and Policies

The Board targets investment returns that meet or exceed the actuarial investment return at a level of risk commensurate with the expected return level and consistent with prudent investment practices. The current actuarial investment return target is 6.5%, net of investment management fees and administrative expenses. In addition to meeting or exceeding the actuarial return target over the long-term, a secondary return objective is to exceed the annualized total return of the Board’s strategic asset allocation benchmarks, which include the “Long-Term Policy Benchmark” and the “Interim Policy Benchmark.”

As of September 30, 2018, the Long-Term Policy Benchmark and actual allocation weights were as follows:

Asset Class	Performance Benchmark	Target	Weight
Cash & Fixed Income	Fixed Income Benchmark <sup>1</sup>	30%	32%
U.S. Equities	Russell 3000 Index	20%	22%
Developed Int’l. Markets Equities	MSCI World Index ex-U.S. (net)	16%	18%
Real Assets	CPI-U + 5.5%	11%	9%
Emerging Markets Equities	MSCI Emerging Markets Index (net)	10%	11%
Private Equity	MSCI All-Country World Index + 3% (quarter lag)	9%	5%
Absolute Return	3-Month LIBOR + 5%	4%	4%

As a long-term investor, the Board believes it can generate the highest risk-adjusted returns through a diversified portfolio with an emphasis on equity investments. Although equities are generally more volatile in the short-term than other asset classes, if properly diversified, they are expected to yield higher total returns over the Fund’s multi-decade time horizon. In addition, while the Board generally believes in the value of active management, it utilizes lower-cost passive investment strategies (e.g., index funds) in more efficient markets where active managers have a lower likelihood of generating excess returns.

<sup>1</sup> The Fixed Income Benchmark is a composite of 36.7% Bloomberg Barclays (BB) U.S. Aggregate Index, 20.0% BB U.S. TIPS Index, 13.3% BB U.S. High-Yield Constrained Index, 10.0% Credit Suisse Levered Loan Index; 6.7% BB Global Aggregate ex U.S. Index, and 13.3% JPM GBI-EM Global Diversified Index.

## Report on Investment Activity

### Fiscal Year 2018 Global Market Review

U.S. equity markets, as represented by the Russell 3000 Index<sup>2</sup>, rose 6.3% during the first quarter of the fiscal year<sup>3</sup> driven by strong corporate earnings and an anticipated boost from tax cuts. Developed international equity markets, as represented by the MSCI World ex U.S. Index<sup>4</sup>, increased by 4.2% and emerging markets equities, as represented by the MSCI Emerging Markets Index<sup>5</sup>, gained 7.4%, driven by improving global economic data and a depreciating U.S. dollar.<sup>6</sup>

Increased tightening by central banks around the world, coupled with the announcement of U.S. trade sanctions, fueled investor fear and led to a sharp increase in market volatility during the second quarter. U.S. equities declined by 0.8% (despite a +5.7% return in January), developed international equity markets fell by -1.5%, and emerging markets equities appreciated +1.4%. The U.S. dollar continued to depreciate, boosting returns for U.S. investors with unhedged foreign currency exposure.

In the third quarter, U.S. equities and developed international equities proved resilient considering escalating trade tensions, and generated returns of 3.4% and -1.2% (+3.5% in local currency terms), respectively. U.S. markets were led higher by large-cap growth companies, including Netflix, Facebook, and Amazon, among others. In emerging markets, the increasing trade war rhetoric led to a sell-off in bonds and equities, with equities falling -8.0%. A strengthening U.S. dollar also caused a deterioration in developed international and emerging market equity returns during the quarter.

During the final quarter of the fiscal year, U.S. consumer confidence reached its highest level since 2000, corporate earnings and economic growth remained strong, the unemployment rate declined to 3.9%, and Apple and Amazon both reached unprecedented \$1 trillion valuations. U.S. stocks finished the quarter near record highs, with the Russell 3000 Index up 7.1%. Outside the U.S., developed market stocks returned 1.3%. In emerging markets, concerns about the potential impact of global trade tensions, rising Fed funds rate expectations, and a strong U.S. dollar acted as headwinds as emerging markets equities declined by -1.1%.

On a cumulative basis, during the fiscal year U.S. equities rose by 17.6%, developed international equities increased by 2.7%, and emerging markets equities declined -0.8%. The Bloomberg Barclays U.S. Aggregate Bond Index, a broad measure of U.S. fixed income markets, declined -1.2%.

### Fiscal Year 2018 Investment Results

As of September 30, 2018, the Fund's total assets stood at \$8.2 billion after the payment of all benefits and administrative expenses, a \$400 million increase from the end of the prior fiscal year. The Fund generated a gross return of 5.4%, underperforming the Interim Policy Benchmark by 0.2%. The Interim Policy Benchmark is the best gauge for relative performance over time periods of up to ten years.

Since inception (October 1982), the Fund's 8.8% gross return has exceeded current actuarial return target of 6.5% by more than 2.0% per year but underperformed the Long-Term Policy Benchmark by 0.8% per year. The Long-Term Policy Benchmark is most appropriate for time periods exceeding ten years.

The majority of the Fund's underperformance during the fiscal year was driven by the Fund's asset allocation, especially an underweight to U.S. equities and overweight to developed international and emerging markets equities. In addition, the Fund's private equity and infrastructure managers contributed to the underperformance by lagging their benchmarks.

Exhibit 1 shows the gross returns for the Fund and each asset class over the one, three, five, and ten-year time periods ending September 30, 2018. The returns were calculated by the Board's custodial bank, The Northern Trust Company ("Northern Trust") and are time-weighted returns computed in compliance with the CFA Institute's Global Investment Performance Standards (GIPS). Benchmark returns for each asset class are presented for relative performance comparison purposes.

<sup>2</sup> The Russell 3000 Index is designed to measure the performance of the 3,000 largest public U.S. companies and represents ~98% of the U.S. equity market.

<sup>3</sup> The fiscal year 2018 runs from October 1, 2017, to September 30, 2018.

<sup>4</sup> The MSCI World ex U.S. Index is designed to measure the equity market performance of 22 developed markets outside the U.S.

<sup>5</sup> The MSCI Emerging Markets Index is designed to measure the equity market performance of 23 emerging markets.

<sup>6</sup> All developed international and emerging markets equity returns are in U.S. dollar terms, i.e., reflect the experience of a U.S. dollar-based investor, such as the District of Columbia Retirement Board.

## Report on Investment Activity

### Exhibit 1: Investment Performance (Gross of Fees)

as of September 30, 2018

Asset Class	1-Year	3-Year	5-Year	10-Year
<b>Total Fund</b>	5.4%	9.3%	6.3%	6.8%
<i>Interim Policy Benchmark<sup>1</sup></i>	5.6%	9.6%	6.5%	6.6%
<i>Long-Term Policy Benchmark<sup>2</sup></i>	-	-	-	6.9%
<b>Cash and Cash Equivalents</b>	1.7%	1.1%	0.8%	0.7%
<i>3-month U.S. Treasury Bills</i>	1.6%	0.8%	0.5%	0.3%
<b>Fixed Income</b>	0.0%	3.3%	2.1%	4.3%
<i>Fixed Income Benchmark<sup>3</sup></i>	-0.6%	3.2%	2.2%	4.0%
<b>U.S. Equities</b>	17.9%	17.2%	13.4%	12.2%
<i>Russell 3000 Index</i>	17.6%	17.1%	13.5%	12.0%
<b>International Developed Markets Equities</b>	3.3%	9.8%	5.1%	6.7%
<i>MSCI World Index ex U.S.(net)</i>	2.7%	9.3%	4.2%	5.8%
<b>Emerging Markets Equities</b>	-1.1%	12.2%	3.6%	-
<i>MSCI Emerging Markets Index (net)</i>	-0.8%	12.4%	3.6%	-
<b>Absolute Return</b>	4.6%	2.2%	2.6%	7.1%
<i>HFR Fund-Weighted Composite</i>	4.0%	5.4%	4.1%	4.6%
<i>3-Month LIBOR+5%<sup>4</sup></i>	-	-	-	3.0%
<b>Private Equity</b>	12.4%	9.2%	10.7%	8.3%
<i>Cambridge Associates Global PE &amp; VC Index<sup>5</sup></i>	18.3%	12.1%	13.8%	9.7%
<i>MSCI All Country World Index+3% (quarter lag)<sup>6</sup></i>	-	-	-	9.0%
<b>Real Assets</b>	4.9%	9.4%	9.0%	-
<i>Real Assets Interim<sup>7</sup></i>	8.4%	9.2%	8.0%	-
<i>CPI+5.5% (quarter lag)</i>	-	-	-	-

<sup>1</sup> As of 9/30/18, the Interim Policy Benchmark is a composite of 22.1% Russell 3000 Index, 17.7% MSCI World Index ex U.S. (net), 11.0% MSCI Emerging Markets (net); 11.6% Barclays U.S. Aggregate Index, 4.2% Barclays U.S. Corporate High Yield Index, 3.1% Credit Suisse Leveraged Loan Index, 2.1% Barclays Global Aggregate ex US Index, 4.2% JPM GBI-EM Global Diversified Index, 7.3% Barclays U.S. TIPS Index, 3.7% HFR Fund-Weighted Composite, 4.5% Cambridge Associates Global Private Equity and Venture Capital Index (1Q lag), 5.4% Real Estate Interim; 1.4% Cambridge Associates Upstream Energy & Royalties and Private Equity Energy Index (1Q lag), 1.6% Cambridge Associates Infrastructure Index (1Q lag).

<sup>2</sup> As of 9/30/18, the Long-Term Policy Benchmark is a composite of 20% Russell 3000 Index, 16% MSCI World Index ex U.S. (net), 10% MSCI Emerging Markets (net); 11% Barclays U.S. Aggregate Index, 4% Barclays U.S. Corporate High Yield Index, 3% Credit Suisse Leveraged Loan Index, 2% Barclays Global Aggregate ex US Index, 4% JPM GBI-EM Global Diversified Index, 6% Barclays U.S. TIPS Index, 4% 3-Month LIBOR+5%, 9% MSCI ACWI + 3%, 11% CPI + 5.5%.

<sup>3</sup> The Fixed Income Benchmark is a composite of 36.7% Barclays U.S. Aggregate Index, 20.0% Barclays U.S. TIPS Index, 13.3% Barclays U.S. High-Yield Constrained Index, 10.0% Credit Suisse Levered Loan Index; 6.7% Barclays Global Aggregate ex U.S. Index, and 13.3% JPM GBI-EM Global Diversified Index.

<sup>4</sup> Prior to 9/30/13, 3-month LIBOR.

<sup>5</sup> Prior to 12/31/07, Cambridge Associates U.S. Private Equity & Venture Capital Index (1Q lag).

<sup>6</sup> Prior to 12/31/07, Russell 3000 + 3% (quarter lag).

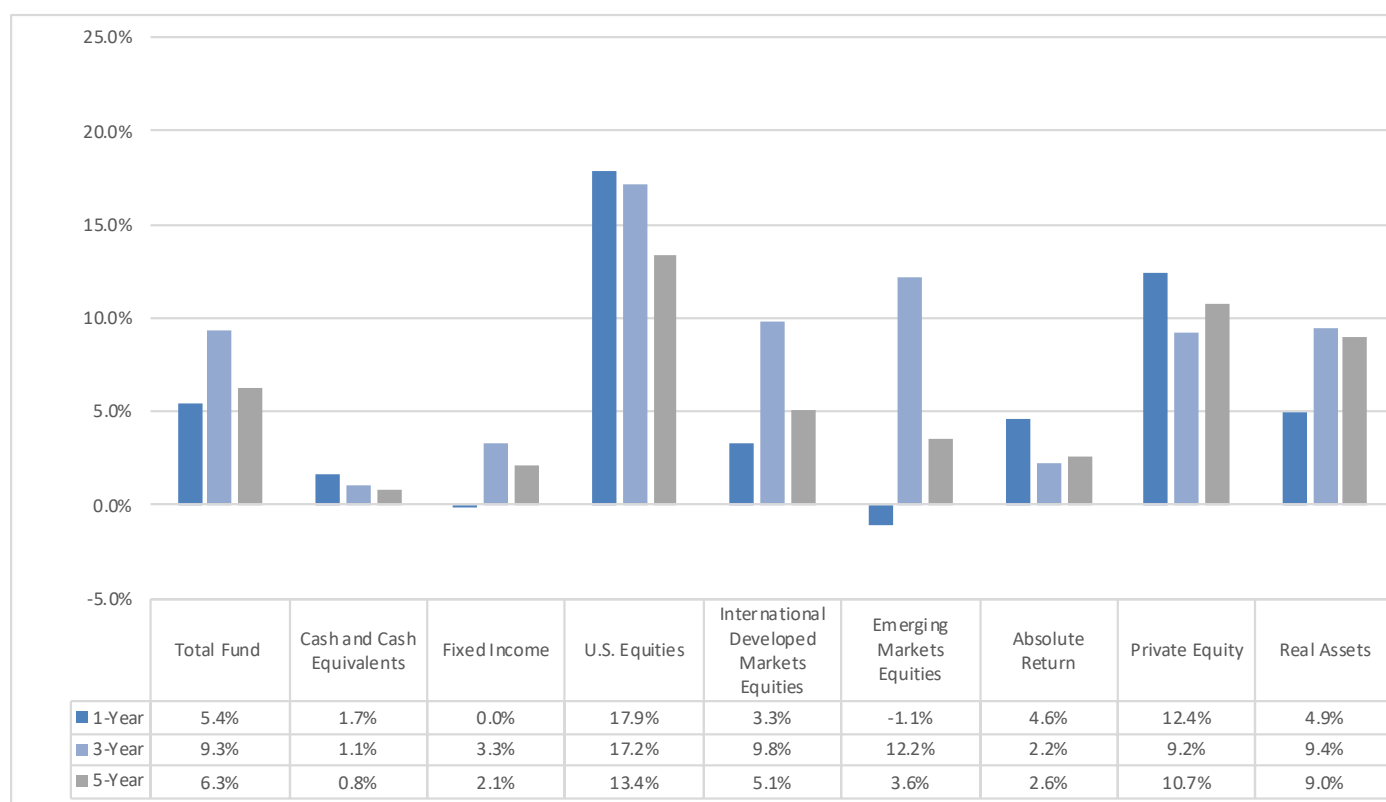
<sup>7</sup> As of 9/30/18, the Real Assets Interim Benchmark is a composite of 36.5% FTSE EPRA/NAREIT Global Net, 20.6% Cambridge Associates Real Estate Index (1Q lag), 28.6% Cambridge Associates Infrastructure Index (1Q lag), and 14.3% Cambridge Associates Upstream Energy & Royalties and Private Equity Energy Index (1Q lag).

Note: All returns are time-weighted and gross of fees.

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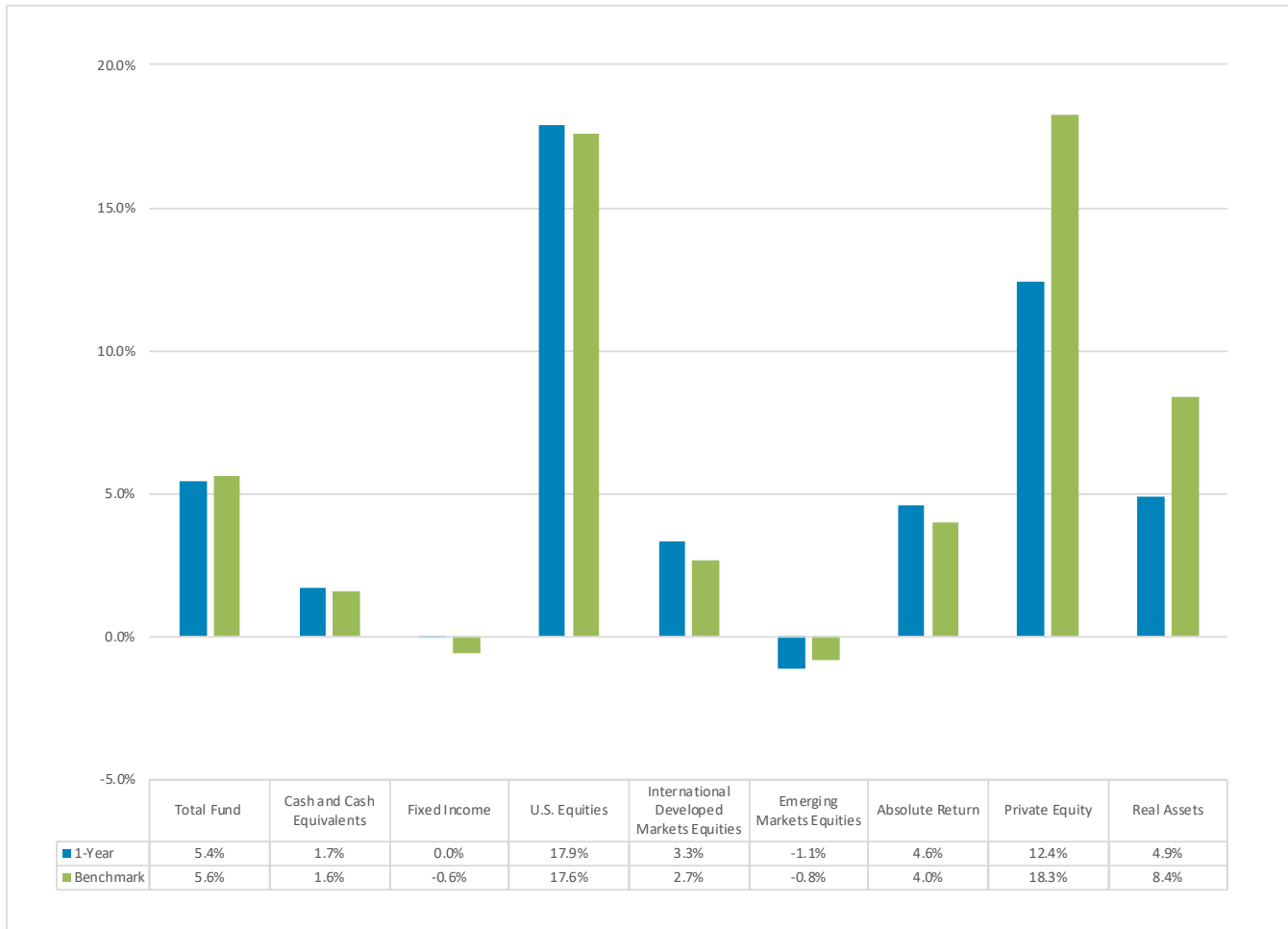
### Exhibit 2: Historical Investment Performance

As of September 30, 2018



## Report on Investment Activity

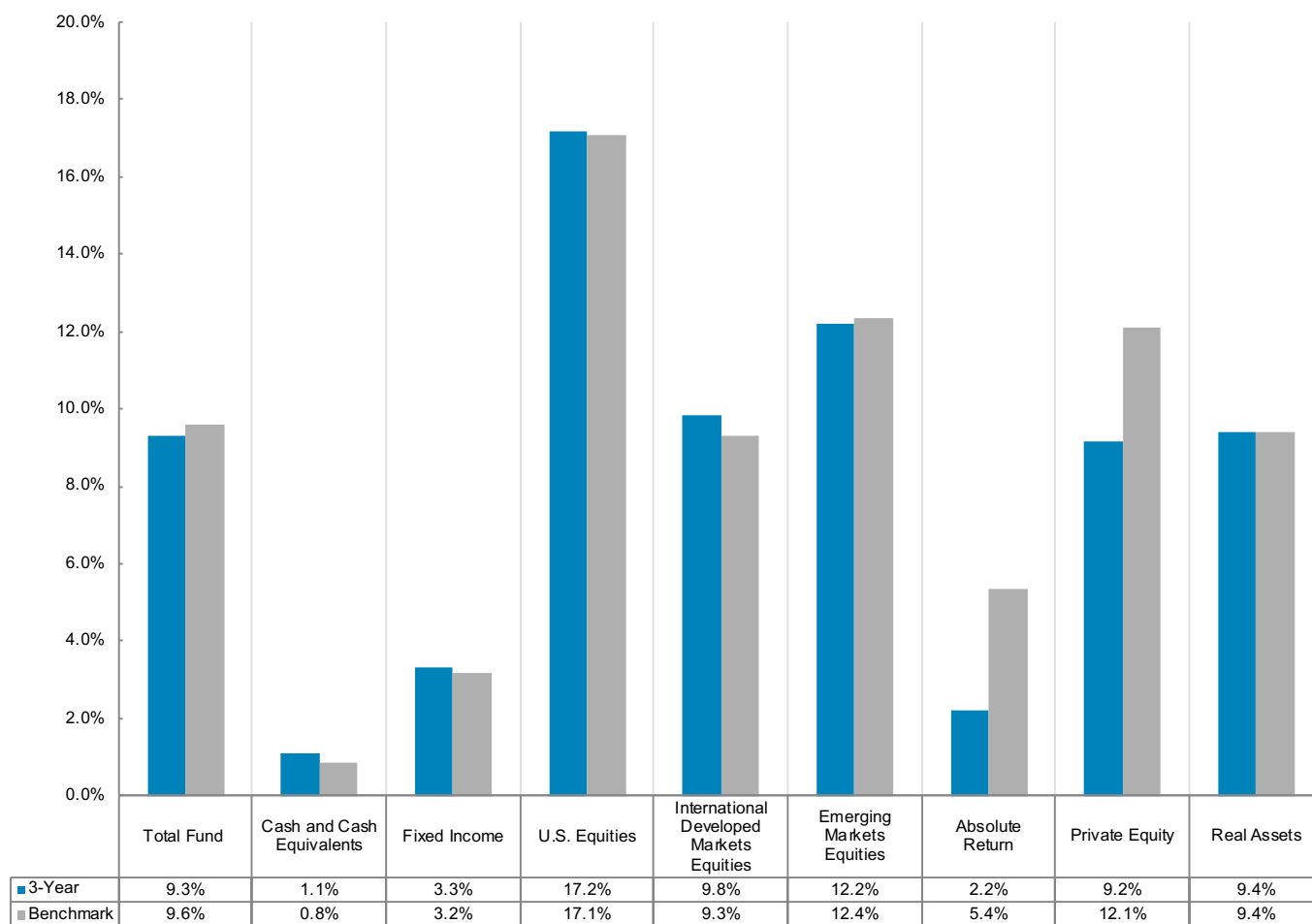
**Exhibit 3: 1-Year Performance vs. Benchmark**  
As of September 30, 2018



## Report on Investment Activity

### Exhibit 4: 3-Year Performance vs. Benchmark

As of September 30, 2018

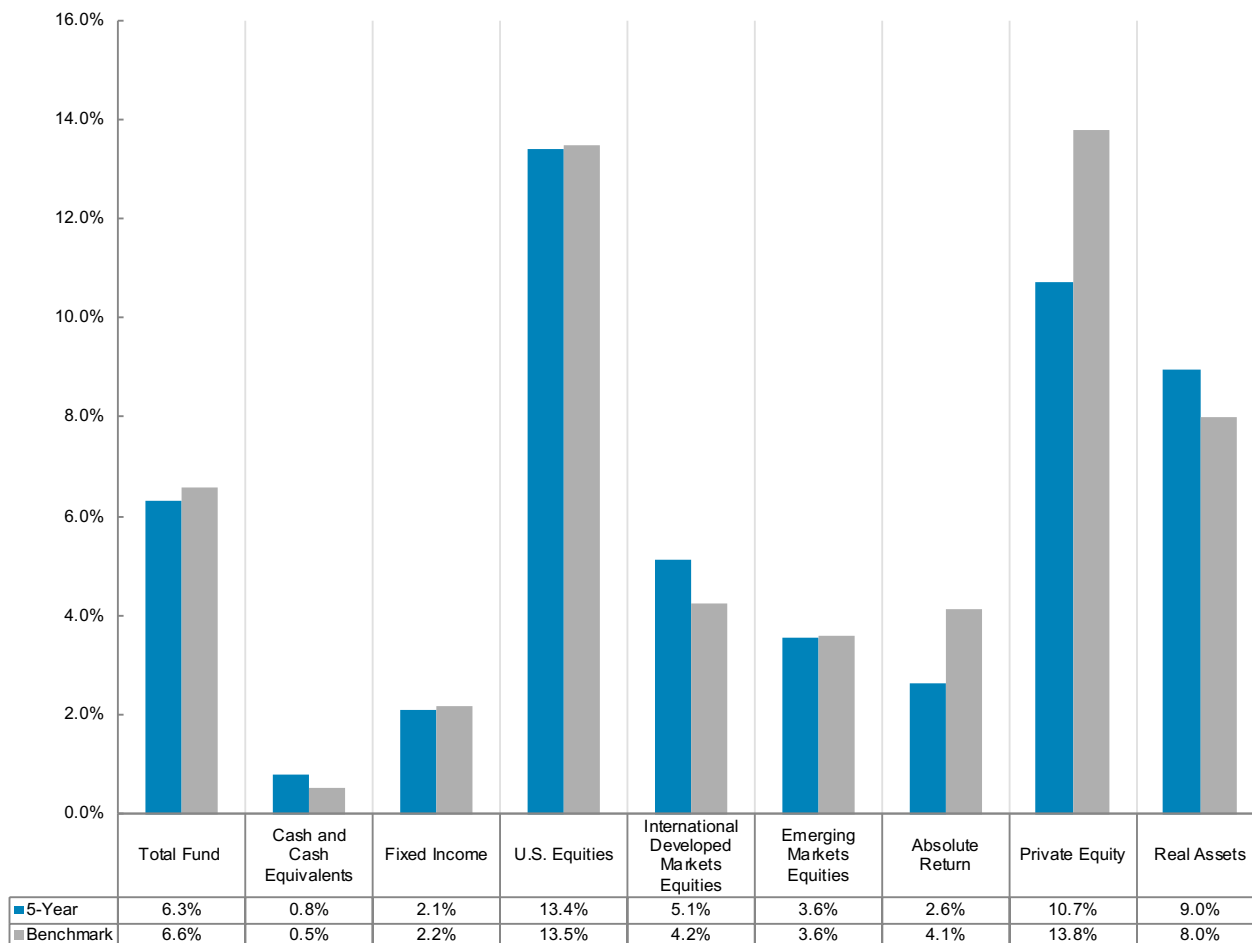




## Report on Investment Activity

### Exhibit 5: 5-Year Performance vs. Benchmark

As of September 30, 2018



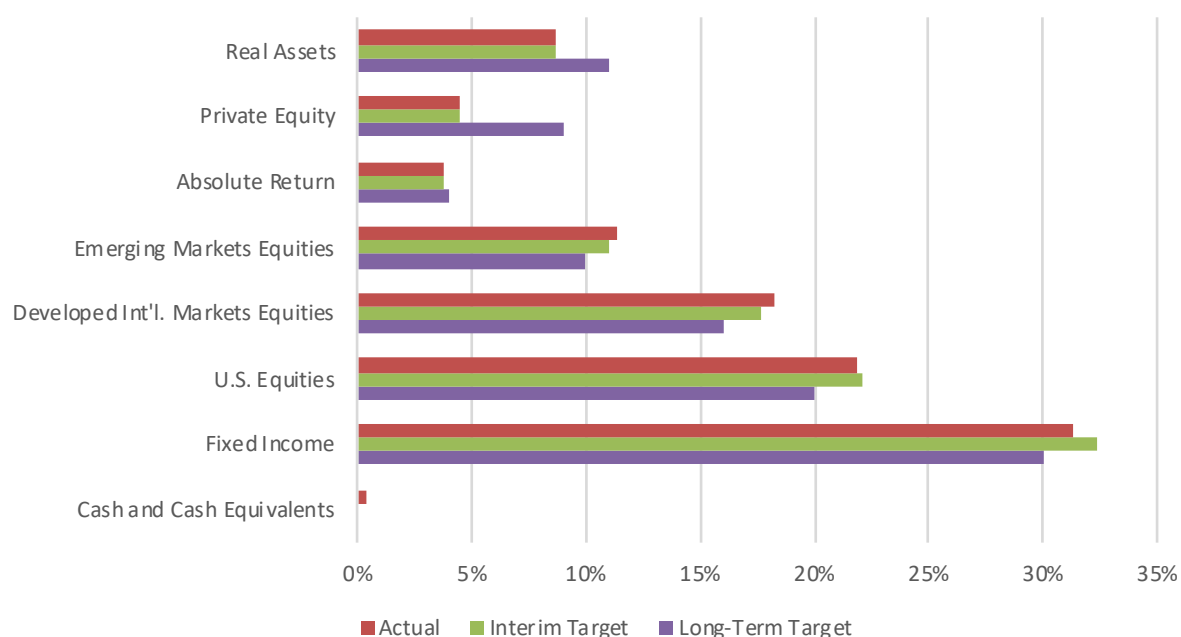


## Report on Investment Activity

### Asset Allocation

As of September 30, 2018, all the Fund's asset classes were within their respective target allocation ranges. Exhibit 6 shows the Fund's Actual, Interim, and Long-Term Asset Allocation targets. The Interim Policy target distributes the underweight to alternative investments (absolute return, private equity, and real assets) across the traditional investments (fixed income and public equities) in line with the Fund's Long-Term Policy target.

**Exhibit 6: Actual, Interim Target and Policy Asset Allocations as of September 30, 2018**



The underweight in private equity is driven by a deliberate pace of new commitments and a high volume of realizations from more mature funds over the last few years. The current underweight should moderate by 2021-2022, as new funds draw capital and mature funds reduce distributions. In the meantime, the Board is focused on a consistent pace of new commitments, subject to the availability of compelling opportunities, strong fit with the existing investment program, and attractive market characteristics.

## Report on Investment Activity

### Other Updates

During the fiscal year, the Board did not make any strategic asset allocation changes. In a volatile year, Staff and Meketa Investment Group (“Meketa”) focused on monitoring and rebalancing the Fund’s asset allocation. In addition, Staff worked with Meketa on monitoring the Board’s investment managers and renegotiating fee structures to improve net investment returns.

In fiscal year 2019, the Board will focus on reviewing the long-term asset allocation and building out its investment and operational due diligence framework, among other activities.

### Environmental, Social, and Governance (ESG)

The Staff and consultant also continued the incorporation of the Board’s ESG policy, adopted in November 2013, into the investment and operational due diligence processes. This area continues to be a focus when evaluating prospective and existing investment managers.

### Private Market Commitments

Within the alternative investments program, the Board committed a total of \$325 million to eight private equity and real assets limited partnerships. In private equity, this included funds focused on U.S. buyouts, Western European buyouts, and U.S. growth equity. In real assets, the Board committed to an opportunistic U.S. infrastructure fund.

### Investment Activity Summary

In March 2018, the Board terminated its investment in the Copper Rock International Small Cap Fund. Staff worked with Copper Rock on an orderly liquidation.

## Report on Investment Activity

### List of Largest Holdings

Top 10 Fixed Income Holdings (Dollar amounts in thousands)						
Rank	Security Name	Moody's Quality Rating	Par Value	Interest Rate (%)	Maturity Date	Market Value
1	UNITED STATES OF AMER TREAS NOTES 0.125%	Aaa	\$ 33,195	0.13	04/15/2020	\$ 32,754
2	UNITED STATES TREAS NTS DTD 04/15/2017	Aaa	\$ 30,045	0.13	04/15/2022	\$ 29,182
3	UNITED STATES OF AMER TREAS NOTES 0.125%	Aaa	\$ 28,747	0.13	04/15/2021	\$ 28,146
4	UNITED STATES TREAS INFL NTS 0.375% DTD	Aaa	\$ 28,959	0.40	07/15/2025	\$ 28,022
5	UNITED STATES OF AMER TREAS NOTES NTS	Aaa	\$ 28,589	0.13	07/15/2026	\$ 26,960
6	UNITED STATES TSY INFL IX TREAS BOND	Aaa	\$ 25,556	0.68	01/15/2024	\$ 25,185
7	UNITED STATES TREAS INFL INDEXED NTS .12	Aaa	\$ 23,314	0.14	07/15/2022	\$ 22,747
8	UNITED STATES TREAS INFL INDEXED NTS .12	Aaa	\$ 23,490	0.14	01/15/2023	\$ 22,737
9	UNITED STATES OF AMER INFL INDXD TREAS N	Aaa	\$ 23,270	0.27	01/15/2025	\$ 22,326
10	UNITED STATES OF AMER TREAS NOTES	Aaa	\$ 22,980	0.13	07/15/2024	\$ 22,078

Top 10 Public Equity Holdings (Dollar amounts in thousands)			
Rank	Security Name	Shares	Market Value
1	Samsung Electronics Co Ltd	920,835	\$39,289,956
2	Alibaba Group Holding Limited	212,929	\$35,082,175
3	Tencent Holdings Limited	802,006	\$33,126,110
4	Amazon.com, Inc.	15,637	\$31,321,561
5	Taiwan Semiconductor Manufacturing Co Lt	3,408,793	\$29,306,261
6	Apple Inc.	118,158	\$26,672,900
7	Nestle S.A.	299,049	\$25,049,336
8	Alphabet Inc.	20,710	\$24,886,459
9	Royal Dutch Shell PLC	687,007	\$23,831,346
10	Microsoft Corporation	185,268	\$21,189,145

A complete list of portfolio holdings is available upon request.

## Report on Investment Activity

### Schedule of Fees and Commissions

During fiscal year 2018, the Board paid the following fees and commissions:

Expense Category	Amount (Dollars in thousands)	Percent of Fund
Investment Managers*	\$12,417,567	0.151%
Investment Consultants	\$882,058	0.011%
Investment Administrative Expense	\$753,088	0.009%
Custodian	\$338,166	0.004%
Brokerage Commissions**	820,445	0.010%
<b>Total</b>	<b>\$15,211,324</b>	<b>0.185%</b>

\* Includes fees paid to traditional investment managers only. Traditional investment managers are those that invest primarily in public equity and fixed income securities.

\*\* Includes separate account and commingled fund relationships.

Total	Total Shares Traded	Total Commission (Dollar Value)	Commission (Cost Per Share)	Commission (Basis Points)	Number of Trades	Trade Value (Dollars in millions)
Channing Capital Management	4,163,478	-109,985	-2.6	-8	932	145
Sands Capital Management	895,859	-17,395	-1.9	-2	280	86
Altrinsic	6,411,520	-156,373	-2.4	-16	590	100
Copper Rock International	17,270,545	-162,170	-0.9	-13	1,578	127
LSV Emerging Markets	27,107,957	-21,563	-0.1	-5	1,855	42
Northern Truist Global REIT	32,273,166	-12,604	0.0	-2	2,059	69
Northern Trust R3000	60,881,027	-81,983	-0.1	0	19,558	2,302
State Street Global Advisors-CAD	923,602	-2,857	-0.3	-1	1,549	25
State Street Global Advisors-EAFE	39,658,527	-57,951	-0.2	-1	18,011	570
State Street Global Advisors-EM	229,518,407	-197,563	-0.1	-4	17,145	451
<b>Total</b>	<b>419,104,089</b>	<b>-820,445</b>	<b>-0.2</b>	<b>-2</b>	<b>63,557</b>	<b>3,918</b>

## Report on Investment Activity

### Investment Summary

(Dollar amounts in thousands)

Asset Class	Market Value \$(000)	% of Fund
Cash and Cash Equivalents	\$ 40,617	0.8%
Fixed Income	2,570,191	30.4%
U.S. Equities	1,788,120	22.2%
International Developed Markets Equities	1,494,513	19.2%
Emerging Markets Equities	930,505	11.6%
Absolute Return	305,956	3.8%
Private Equity	365,614	4.0%
Real Assets	708,054	8.1%
<b>Total</b>	<b>\$ 8,203,569</b>	<b>100.0%</b>

Note: Transition Account balance of \$8,769 included in Fixed Income.