



**AUDIT COMMITTEE MEMBERS**

**John C. Speakman**  
Chairman

**Kevin R. Traylor**  
Member

**Vacant**  
Member

**Retirement Unit**  
**150 Frank H. Ogawa Plaza**  
**Oakland, California 94612**

# **AGENDA**

## **MEETING CANCELED**

The meeting of the Audit Committee of the Board of the Oakland Police and Fire Retirement System scheduled for Wednesday, August 26, 2020 has been canceled.

The next scheduled meetings of the Committees and the Board of the Oakland Police and Fire Retirement System are scheduled for Wednesday, September 30, 2020.

Please contact the Retirement Unit office at 510-238-7295 if you have any questions. Thank you.

Pursuant to the Governor's Executive Order N-29-20, all members of the City Council, as well as the City Administrator, City Attorney and City Clerk will join the meeting via phone/video conference and no teleconference locations are required

Oakland Police and Fire Retirement Board meetings are being held via Tele-Conference. Please see the agenda to participate in the meeting. For additional information, contact the Retirement Unit by calling (510) 238-6481.



# AGENDA

## INVESTMENT COMMITTEE MEMBERS

**Jaime T. Godfrey**  
Chairman

**R. Steve Wilkinson**  
Member

**Robert W. Nichelini**  
Member

*"In the event a quorum of the Board participates in the Committee meeting, the meeting is noticed as a Special Meeting of the Board; however, no final Board action can be taken. In the event that the Investment Committee does not reach quorum, this meeting is noticed as an informational meeting between staff and the Chair of the Investment Committee."*

## REGULAR MEETING of the INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

**Wednesday, August 26, 2020 – 10:00 am**  
**Tele-Conference Board Meeting**  
**via Zoom**

### OBSERVE:

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
- To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
- iPhone one-tap: US: +16699006833,,83665111281# or +13462487799,,83665111281#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 828 8049 3983.  
If asked for a participant ID or code, press #.

### PUBLIC COMMENTS There are three ways to submit public comments.

- eComment. To send your comment directly to staff BEFORE the meeting starts, please email to [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov) with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time.**

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR INVESTMENT COMMITTEE MEETING  
AUGUST 26, 2020**

- To comment by Zoom video conference, click the “Raise Your Hand” button to request to speak when Public Comment is being taken on an eligible agenda item at the beginning of the meeting. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Instructions on how to “Raise Your Hand” is available at: <https://support.zoom.us/hc/en-us/articles/205566129> - Raise-Hand-In-Webinar.
- To comment by phone, please call on one of the above listed phone numbers. You will be prompted to “Raise Your Hand” by pressing “\*9” to speak when Public Comment is taken. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Please unmute yourself by pressing \*6.

If you have any questions, please email Maxine Visaya, Administrative Assistant at [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov).

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- - - ORDER OF BUSINESS - - -

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|------------------------|---|
| <b>1. Subject:</b>     | <b>PFRS Investment Committee Meeting Minutes</b>  |
| <b>From:</b>           | Staff of the PFRS Board   |
| <b>Recommendation:</b> | <b>APPROVE</b> July 29, 2020 Investment Committee meeting minutes.  |
| <b>2. Subject:</b>     | <b>Investment Market Overview</b>   |
| <b>From:</b>           | Meketa Investment Group   |
| <b>Recommendation:</b> | <b>ACCEPT</b> an informational report on the global investment markets through July 31, 2020.                   |
| <b>3. Subject:</b>     | <b>Investment Fund Performance Report for the Quarter Ending June 30, 2020</b>                                  |
| <b>From:</b>           | Meketa Investment Group   |
| <b>Recommendation:</b> | <b>RECOMMEND BOARD APPROVAL</b> of the Investment Fund Performance Report for the Quarter Ending June 30, 2020. |
| <b>4. Subject:</b>     | <b>Preliminary Investment Fund Performance Update as Of July 31, 2020</b>                                       |
| <b>From:</b>           | Meketa Investment Group   |
| <b>Recommendation:</b> | <b>APPROVE</b> a Preliminary Investment Fund Performance Update as of July 31, 2020.                            |

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR INVESTMENT COMMITTEE MEETING  
AUGUST 26, 2020

5. **Subject:** **Prospective Core Fixed Income Investments Portfolio Manager Presentations**  
**From:** Meketa Investment Group
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- Recommendation:** **RECEIVE** finalists' presentations from Investment Firms seeking to serve as PFRS's new Core Fixed Income Investment Manager
- **Income Research & Management**  
IR+M Aggregate
  - **Longfellow Investment Management Co.**  
Core
  - **Wellington Management Company LLP**  
Core Bond
6. **Subject:** **Select Core Fixed Income Investments Portfolio Manager**  
**From:** Meketa Investment Group
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- Recommendation:** **DISCUSS** Investment Firm Presentations, **SELECT** Investment Firm to Serve as PFRS's New Core Fixed Income Investment Manager and **RECOMMEND BOARD APPROVAL** of Committee's Selection
7. **Subject:** **Resolution No. 7098 Hiring Brown Advisory as PFRS New Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio**  
**From:** Staff of PFRS Board
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- Recommendation:** **RECOMMEND BOARD APPROVAL** of Resolution 7098 Hiring Brown Advisory to Serve as PFRS's New Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio
8. **Subject:** **Resolution No. 7099 Hiring BlackRock Investment Management Company as PFRS New Passive International Equity Asset Class Investment Manager**  
**From:** Staff of PFRS Board
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- Recommendation:** **RECOMMEND BOARD APPROVAL** of Resolution 7099 Hiring BlackRock Investment Management Company as PFRS New Passive International Equity Asset Class Investment Manager.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR INVESTMENT COMMITTEE MEETING  
AUGUST 26, 2020**

**9. Subject:** Resolution No. 8000 Hiring BlackRock Investment Management Company as PFRS New Manager of the Long Duration Treasury Plan Component of The Crisis Risk Offset Investment Strategy Portfolio

**From:** Staff of PFRS Board

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**Recommendation:** **RECOMMEND BOARD APPROVAL** of Resolution 8000 Hiring BlackRock Investment Management Company as PFRS New Manager of the Long Duration Treasury Plan Component of The Crisis Risk Offset Investment Strategy Portfolio.

**10. Schedule of Pending Investment Committee Meeting Agenda Items**

**11. Open Forum**

**12. Future Scheduling**

**13. Adjournment**

**AN INVESTMENT AND FINANCIAL MATTERS COMMITTEE MEETING** of the Oakland Police and Fire Retirement System (“PFRS”) was held July 29, 2020 via Zoom Tele-Conference

Committee Members:

- Jaime T. Godfrey, Chairperson
- R. Steven Wilkinson, Member
- Robert W. Nichelini, Member (Excused)

Additional Attendees:

- David Jones, Plan Administrator
- Jennifer Logue, PFRS Legal Counsel
- Teir Jenkins, Staff Member
- Maxine Visaya, Staff Member
- David Sancewich, Meketa Investment Group
- Paola Nealon, Meketa Investment Group
- Sidney Kawanguzi, Meketa Investment Group
- Jonathan Alden, BlackRock Investment Management Group
- Scott Dohemann, BlackRock Investment Management Group
- Kit Donovan, BlackRock Investment Management Group

The meeting was called to order at 10:06 am.

1. **Approval of Investment Committee meeting minutes** – Member Wilkinson made a motion to approve the February 26, 2020 Investment Committee meeting minutes, second by Chairperson Godfrey. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED/ WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

2. **Preliminary June 2020 Investment Fund Performance Update** – David Sancewich reported on the details of the Preliminary Investment Fund Performance as of June 30, 2020.

**MOTION:** Chairperson Godfrey made a motion to accept and move the informational report from Meketa regarding the Preliminary Investment Fund Performance as of June 30, 2020 to the Full Board, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED/ WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

3. **Review of the Finalists for a New Active Small Cap Domestic Equities Asset Class Investment Manager** – Mr. Sancewich presented a review and summary of the following finalists seeking to serve as PFRS’s new Active Small Cap Domestic Equities Asset Class Investment Manager. The firms were interviewed by the committee in February 2020 and the Board asked Meketa to compile additional information on firm and organizational diversity for each of the finalists, which this summary addresses.

- Brown Advisory
- Phocas Financial Corp.
- Systematic Financial Management
- Vaughan Nelson Investment Management

**MOTION:** Chairperson Godfrey made a motion to accept the informational report and forward to the Full Board for consideration of the finalists for the New Small Cap Domestic Equities Asset Class Investment Manager presented by Meketa, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED/ WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

4. **Selection of a New Active Small Cap Domestic Equities Asset Class Investment Manager** – After discussion, the committee selected Brown Advisory to serve as PFRS’s New Active Small Cap Domestic Equities Asset Class Manager and recommended advancing this matter to the Full Board for approval.

**MOTION:** Member Wilkinson made a motion to select and recommend to the Full Board the approval of Brown Advisory as the New Small Cap Domestic Equities Asset Class Investment Manager, second by Chairperson Godfrey. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED/ WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

5. **Investment Market Overview** – Paola Nealon provided an informational report on the global economic factors affecting the PFRS Fund through June 2020, including the impact of the Coronavirus on the world investment markets.

**MOTION:** Chairperson Godfrey made a motion to accept the informational report of the Investment Market Overview by Meketa Investment Group, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED / WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

6. **Prospective Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager Presentations** – Chairperson Godfrey noted it is unusual only one management firm will be presenting today. Mr. Sancewich explained only two firms, BlackRock Investment and Northern Trust, responded to the RFP. Northern Trust Company currently invests a significant portion of the PFRS portfolio.

The Investment Committee received presentations from a prospective Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager . The manager presentations were made by:

- **BlackRock Investment Management Company** (Jonathan Alden, Scott Dohemann, and Kit Donovan)
  - **Passive International Equity Asset Class Investments.** (Scott Dohemann)
  - **PFRS Crisis Risk Offset (Long Duration Treasury) Investments** (Kit Donovan)

**MOTION:** After discussion, Chairperson Godfrey made a motion to accept the informational presentation from BlackRock Investment Management Company, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED / WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

7. **Selection of New Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager** – The committee will vote on the item, as noticed, to select BlackRock Investment Management Company to be the New Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager .

**MOTION:** Chairperson Godfrey made a motion to recommend the Full Board approval of the selection of BlackRock Investment Management Company to be the New Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager for the PFRS fund, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED / WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

8. **Investment Manager Overview Parametric Portfolio Associates** – David Sancewich from Meketa presented its review of Parametric Portfolio Associates. Parametric’s performance was below median and in the negative category. It is not recommended at this time to terminate them, but it does warrant placing them on watch status. Meketa will come back to the committee in three to four months with a recommendation to either continue on watch status or make a decision to move in another direction.

**MOTION:** Chairperson Godfrey made a motion to accept the review of Parametric Portfolio Associates and recommend Board approval to place Parametric Portfolio Associates on watch status, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – EXCUSED / WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

9. **Scheduling of Pending Investment Committee Meeting Agenda Items** – Mr. Sancewich reported the agenda items scheduled for the upcoming Investment Committee meeting. Chairperson Godfrey suggested to move the Educational Item from September 2020 to October 2020.

10. **Open Forum** – David Sancewich of Meketa brought attention to the media coverage of Meketa taking a (Paycheck Protection Program) PPP Loan. Chairperson Godfrey proposed making a future agenda item for further discussion.

David Jones introduced and welcomed new staff member Maxine Visaya.

11. **Future Scheduling** – The next Investment Committee meeting was scheduled for August 26, 2020 at 10:00 am.

12. **Adjournment of Meeting** – Chairperson Godfrey made a motion to adjourn the meeting, second by Member Wilkinson.

[GODFREY – Y/ NICHELINI – EXCUSED / WILKINSON – Y]  
(AYES: 2/ NOES: 0/ ABSTAIN: 0)

The meeting adjourned at 11:37 am.

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JAIME T. GODFREY, COMMITTEE CHAIRMAN

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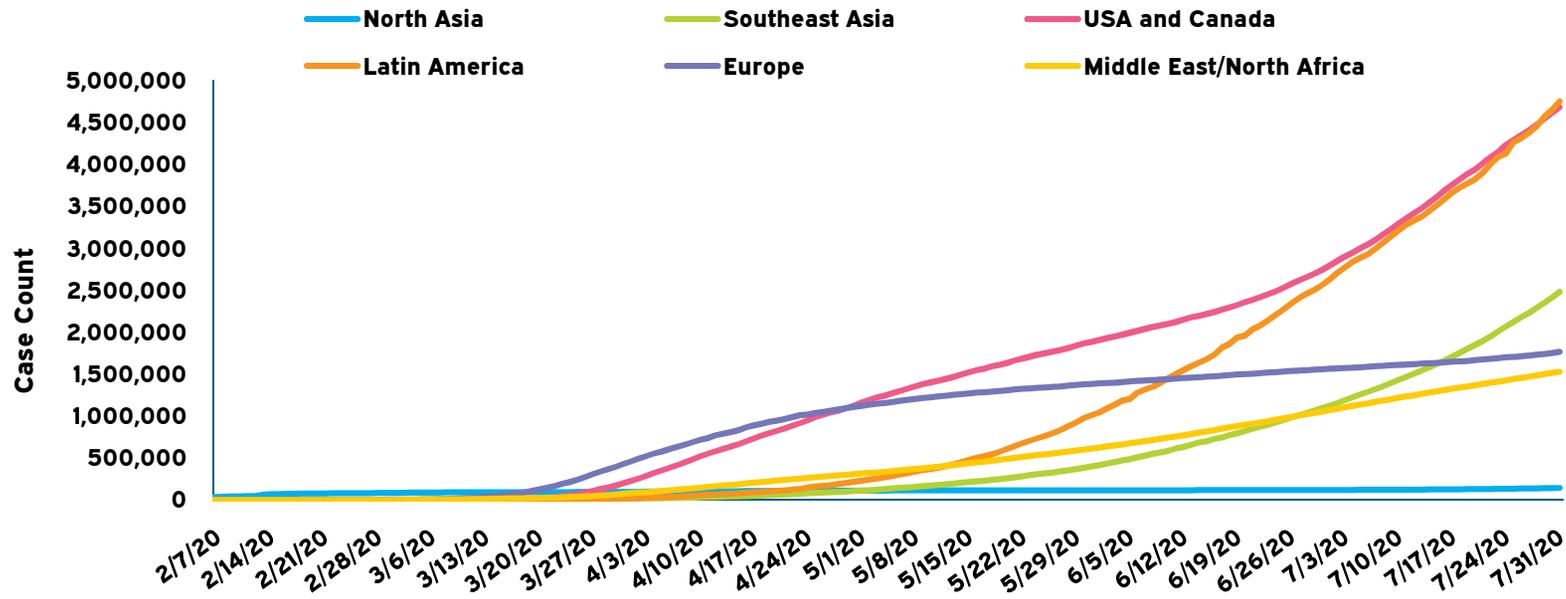
DATE

## Economic and Market Update

Data as of July 31, 2020



### Case Count by Select Region<sup>1,2</sup>

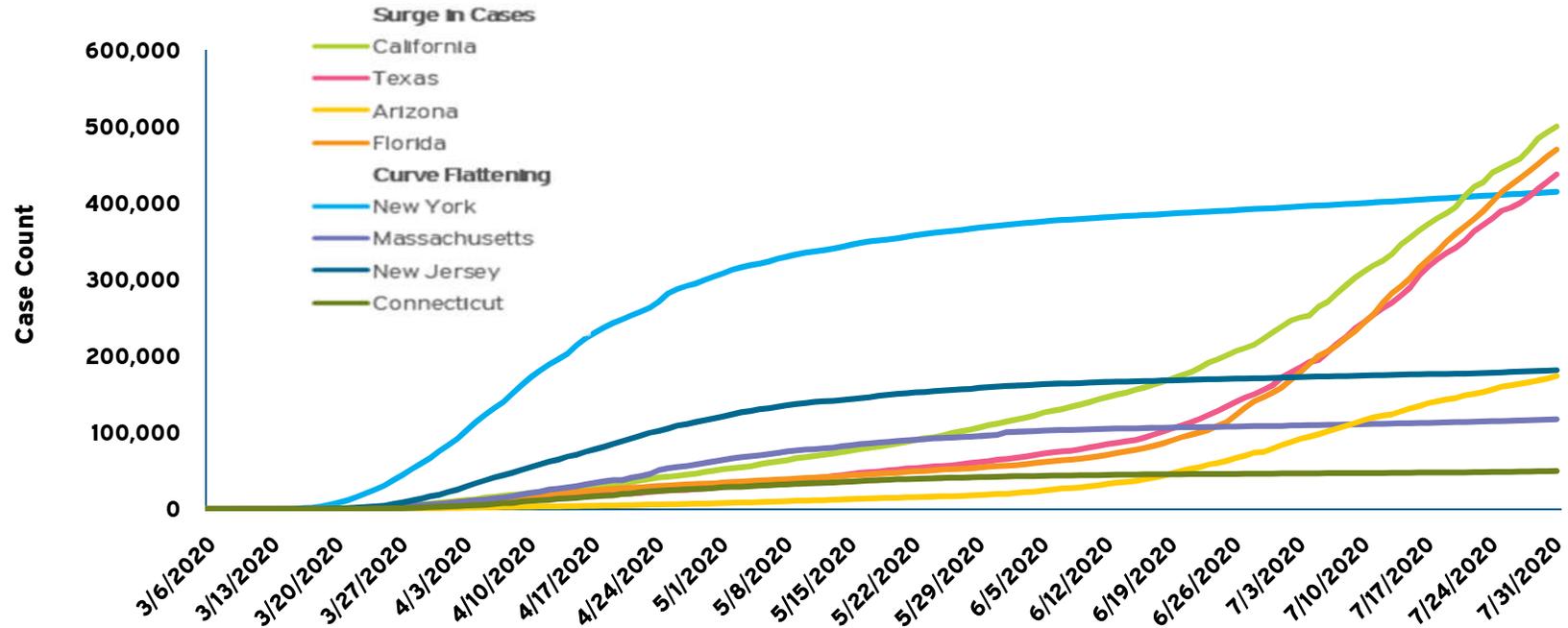


- Cases of COVID-19 continue to grow globally with now over 20 million reported cases across 188 countries.
- The US remains the epicenter, while cases in Latin America are surging, driven by Brazil, which now has the second highest case count. India has also emerged as a hotspot with over 2 million cases.

<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

<sup>2</sup> North Asia: China, Hong Kong, Japan, South Korea, and Taiwan. Southeast Asia: Singapore, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand, Bangladesh, Sri Lanka, and Vietnam. Europe: Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden, United Kingdom, Switzerland, and Ukraine. Latin America: Chile, Brazil, Mexico, Argentina, Colombia, Peru, Venezuela, Ecuador, Panama, Paraguay, Costa Rica, Bolivia, Uruguay, El Salvador, Honduras, Cuba, Dominican Republic, Haiti, and Nicaragua. Middle East/North Africa: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Turkey, Tunisia, United Arab Emirates, and Yemen.

### COVID-19 Cases by State<sup>1</sup>



- As the US economy slowly reopens, there has been a spike in cases in certain states that is creating stress on their healthcare systems, leading to officials slowing, or reversing, reopening plans.
- Some of the states that were hardest hit in the early stages made progress on containing the virus, but have also seen small upticks in cases.
- Looking ahead, a continued trend of rising cases could significantly weigh on economic growth.

<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

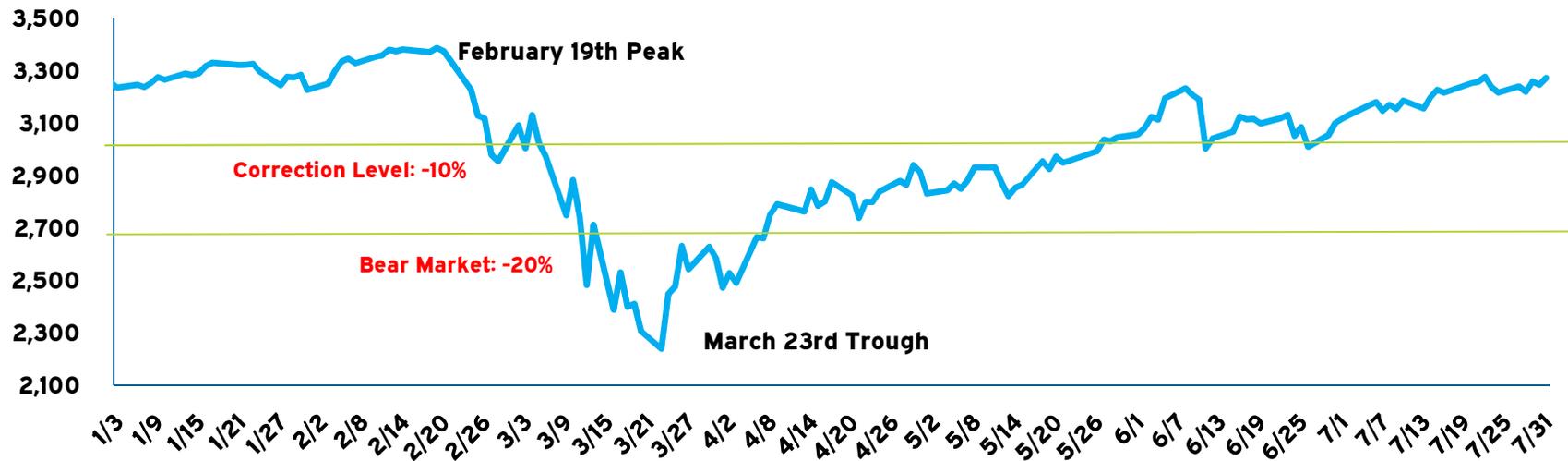
Market Returns<sup>1</sup>

Indices	July	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	5.6%	2.4%	12.0%	12.0%	11.5%	13.8%
MSCI EAFE	2.3%	-9.3%	-1.7%	0.6%	2.1%	5.0%
MSCI Emerging Markets	8.9%	-1.7%	6.5%	2.8%	6.1%	3.3%
MSCI China	9.4%	13.3%	24.5%	8.7%	9.7%	6.9%
Bloomberg Barclays Aggregate	1.5%	7.7%	10.1%	5.7%	4.5%	3.9%
Bloomberg Barclays TIPS	2.3%	8.4%	10.4%	5.7%	4.2%	3.7%
Bloomberg Barclays High Yield	4.7%	0.7%	4.1%	4.5%	5.9%	6.8%
10-year US Treasury	1.2%	14.0%	12.7%	7.5%	5.1%	4.7%
30-year US Treasury	5.5%	31.8%	30.3%	16.2%	10.8%	8.9%

- Global risk assets have recovered meaningfully from their lows, largely driven by record fiscal and monetary policy stimulus; the S&P 500 recovered by over 46% from the mid-March lows.
- Risk assets have reacted positively to the combination of a gradual re-opening of the global economy, some economic data beating expectations, and the potential for a vaccine being developed sooner than initially expected.
- Despite the recovery in risk assets, yields on safe-haven assets like US Treasuries remain at record lows due to expectations for extremely accommodative monetary policy for the foreseeable future and expectations for weaker economic growth due to the recent surge in virus cases.

<sup>1</sup> Source: InvestorForce and Bloomberg. Data is as of July 31, 2020.

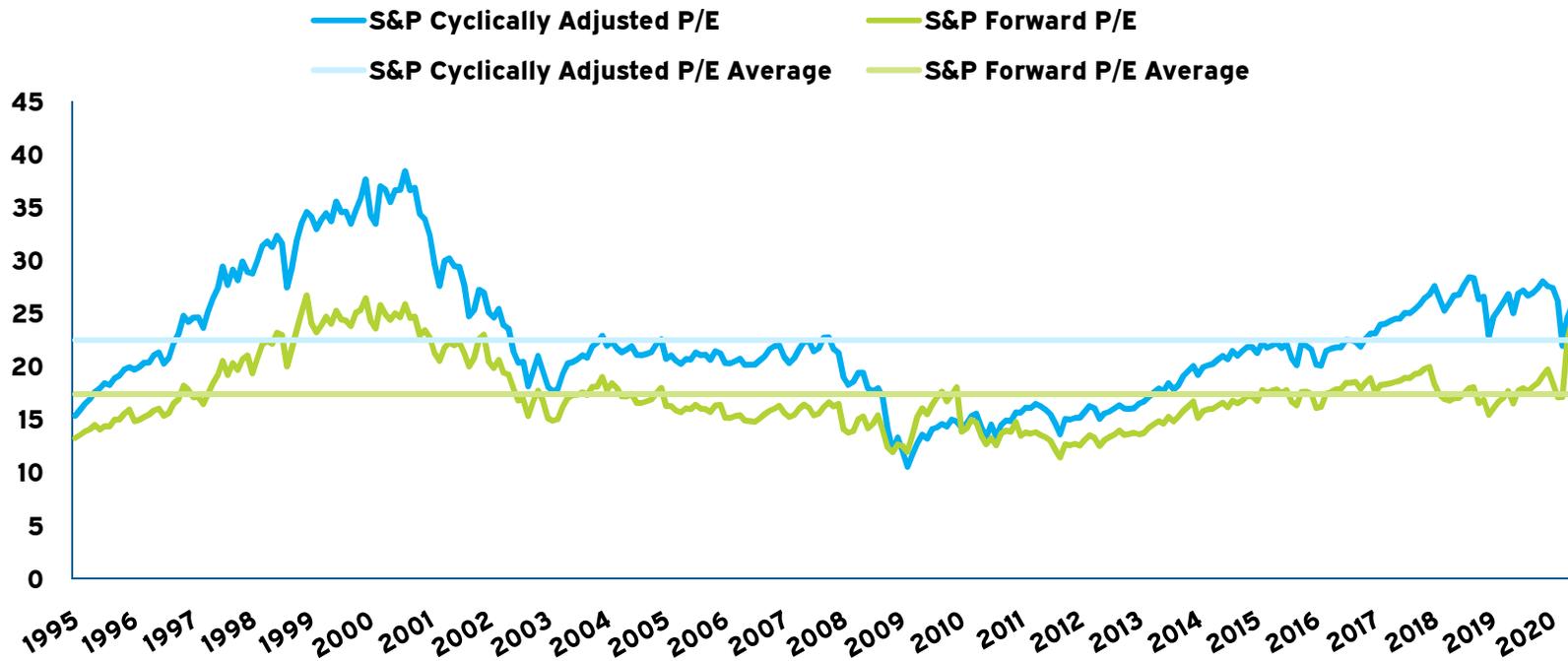
### S&P 500 Almost Fully Recovers<sup>1</sup>



- Given the anticipated economic carnage surrounding the pandemic, US stocks declined from a February peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 plunged 34% in just 24 trading days.
- The index rebounded from its lows, and was only down around 2.4% year-to-date through the end of July, primarily due to the unprecedented monetary and fiscal stimulus announced in the US, as well as improvements in some areas of the economy as it slowly reopens.
- It is unclear whether the pace of the recovery is sustainable in light of the recent surge in cases.

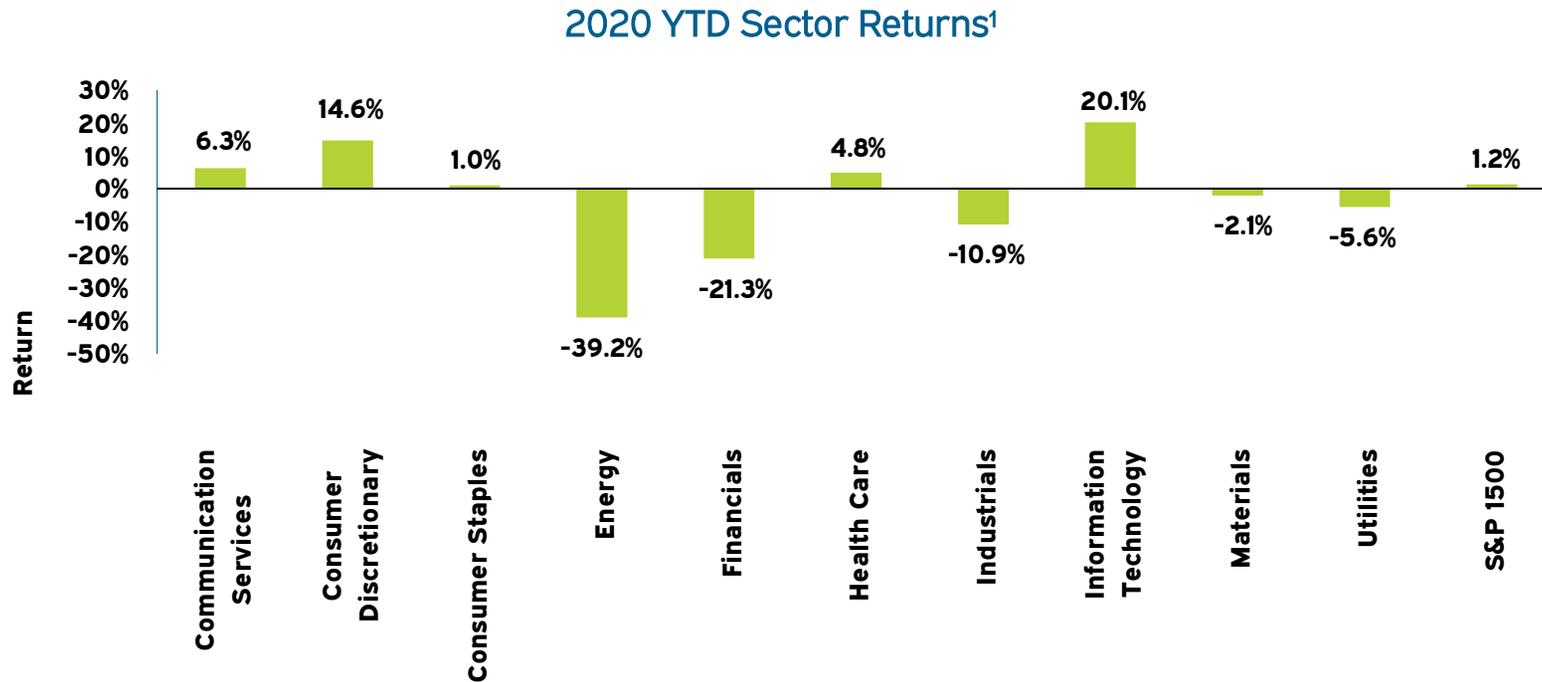
<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

### S&P Equity Valuations<sup>1</sup>



- Valuations based on both forward and backward looking earnings for the US stock market remain well above long-term averages, driven by the recent rise in equity markets.
- Many are looking to improvements in earnings to support market levels as the US economy continues to reopen with low interest rates also providing support.
- The key risk remains that a spike in COVID-19 cases could slow, or reverse, the reopening plans.

<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

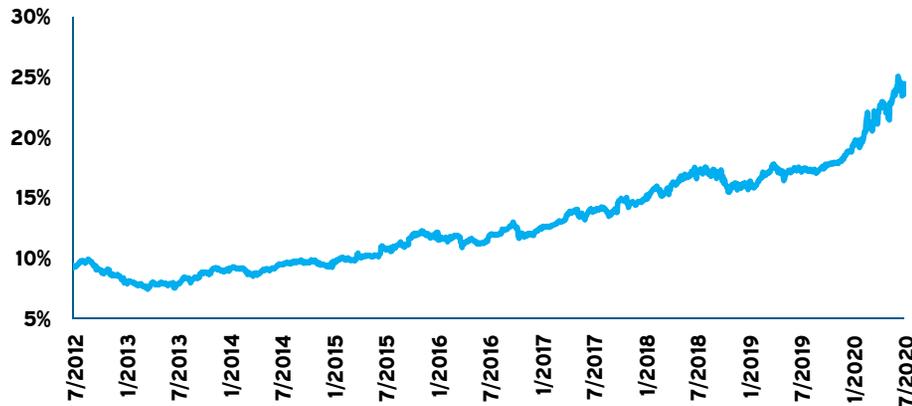


- Information technology is the best performing sector, with a narrow group of companies like Amazon and Netflix largely driving market gains. The outperformance has been due to consumers moving to online purchases and entertainment.
- The consumer discretionary sector also experienced gains as the economy slowly reopened, people returned to work, and as stimulus checks were spent.
- The energy sector has seen some improvements given supply cuts and economies starting to reopen, but it remains the sector with the greatest decline, triggered by the fall in oil prices.

<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

### Technology has led the way in the Rebound

FAANG+M Share of S&P 500<sup>1</sup>



Returns Year to Date through July 31<sup>2</sup>

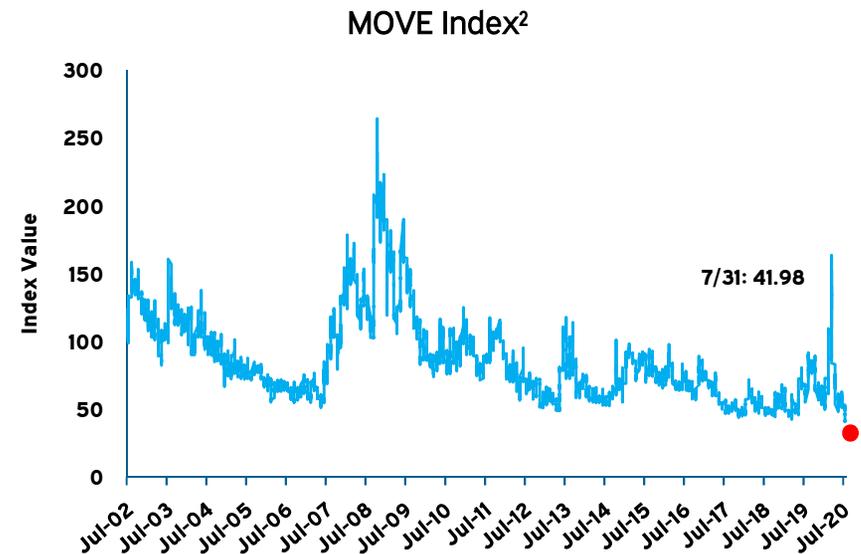
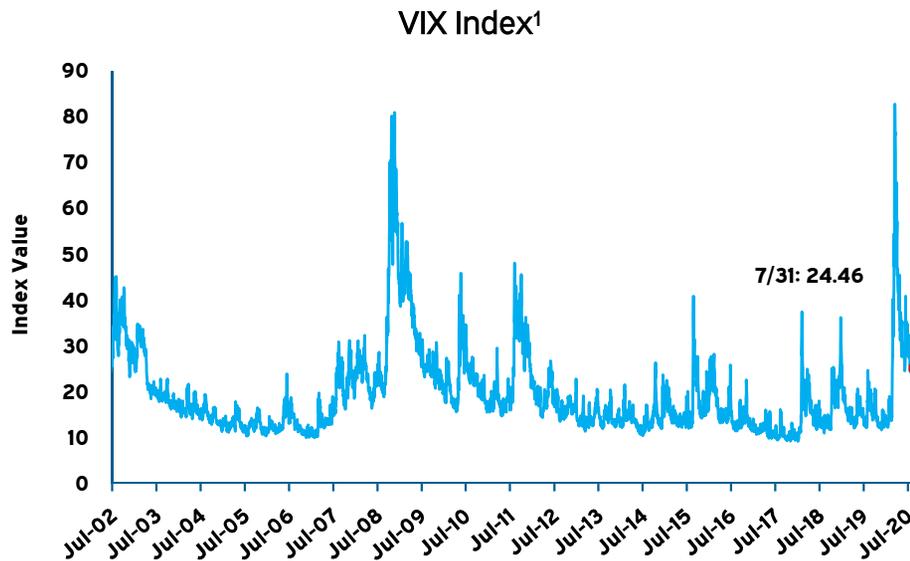


- The recent market recovery has largely been driven by a few select technology companies that have benefited from the stay-at-home environment related to the virus.
- Year-to date, the S&P 500 technology sector returned 20.6% compared to -4.6% for the S&P 500 ex. technology index, with Amazon (+71.3%), Netflix (+51.1%), and Apple (+44.7%) posting strong results.
- The strong relative results of these companies, has led to them making up a growing portion (24.4%) of the S&P 500 and making their performance going forward particularly impactful.

<sup>1</sup> FAANG+M = Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. The percentage represents the aggregate market capitalization of the 6 companies compared to the total market capitalization of the S&P 500.

<sup>2</sup> Each data point represents the price change relative to the 12/31/2019 starting value.

Volatility has Declined



- Given the recent fiscal and monetary support and corresponding improvement in investor risk sentiment, expectations of short-term equity volatility, as measured by the VIX index, continued to decline from record levels, though it remains elevated relative to the past decade.
- At the recent height, the VIX reached 82.7, surpassing the pinnacle of volatility during the GFC, showing the magnitude of the crisis, and of investor fear.
- In contrast, expectations of volatility within fixed income, as represented by the MOVE index, are at historic lows given the broad level of monetary support and forward guidance by the Fed to keep rates low.

<sup>1</sup> Source: Chicago Board of Exchange. Data is as of July 31, 2020.

<sup>2</sup> Source: Bloomberg. Data is as of July 31, 2020.

## Global Financial Crisis Comparison

	2007-2009 Global Financial Crisis	COVID-19 Crisis
<b>Primary Causes</b>	<p>Excess Risk Taking Due to:</p> <ul style="list-style-type: none"> <li>Deregulation, un-constrained securitization, shadow banking system, fraud</li> </ul>	<p>Pandemic/Natural Disaster:</p> <ul style="list-style-type: none"> <li>Large scale global restrictions on businesses and individuals leading to immediate and significant deterioration in economic fundamentals</li> </ul>
<b>Fiscal Measures</b>	<ul style="list-style-type: none"> <li>American Recovery Reinvestment Act of 2009: \$787 billion</li> <li>Economic Stimulus Act of 2008: \$152 billion</li> </ul>	<ul style="list-style-type: none"> <li>PPP Act: \$659 billion</li> <li>CARES Act of 2020: \$2.3 trillion</li> <li>Families First Coronavirus Response Act: \$150 billion</li> <li>Coronavirus Preparedness &amp; Response Supplemental Appropriations Act 2020: \$8.3 billion</li> <li>National Emergency: \$50 billion</li> </ul>
	2007-2009 Global Financial Crisis	COVID-19 Crisis
<b>Monetary Measures</b>		
Lowering Fed Funds Rate	X	X
Quantitative Easing	X	X
Primary Dealer Repos	X	X
Central Bank Swap Lines	X	X
Commercial Paper Funding Facility	X	X
Primary Dealers Credit Facility	X	X
Money Market Lending Facility	X	X
Term Auction Facility	X	
TALF	X	X
TSLF	X	
FIMA Repo Facility		X
Primary & Secondary Corp. Debt		X
PPP Term Facility		X
Municipal Liquidity Facility		X
Main Street Loan Facility		X

### Global Financial Crisis Comparison (continued)

- The US **fiscal** response to the COVID-19 Crisis has been materially larger than the response to the 2007-2009 Global Financial Crisis (GFC), and stimulus is acutely focused on areas of the economy showing the greatest need, including small and mid-sized companies. For example, the Paycheck Protection Program (PPP) helps small businesses keep employees working by offering forgivable loans to cover salaries.
- On the **monetary** side, markets targeted during both crises represent those most in need, but for the COVID-19 Crisis the policy response was dramatically faster, measured in weeks, not years, as in the GFC.
- Of the monetary stimulus measures, the corporate debt (Primary & Secondary Corporate Debt) programs and Main Street Loan Facility are new and garnered much attention from market participants.
- Through the end of July, Fed programs have experienced various degrees of usage. However, at this point, none has come close to reaching program limits. Still, respective programs have been extended through December 2020, and the psychological value of knowing the programs are available, if necessary, likely supports market sentiment.

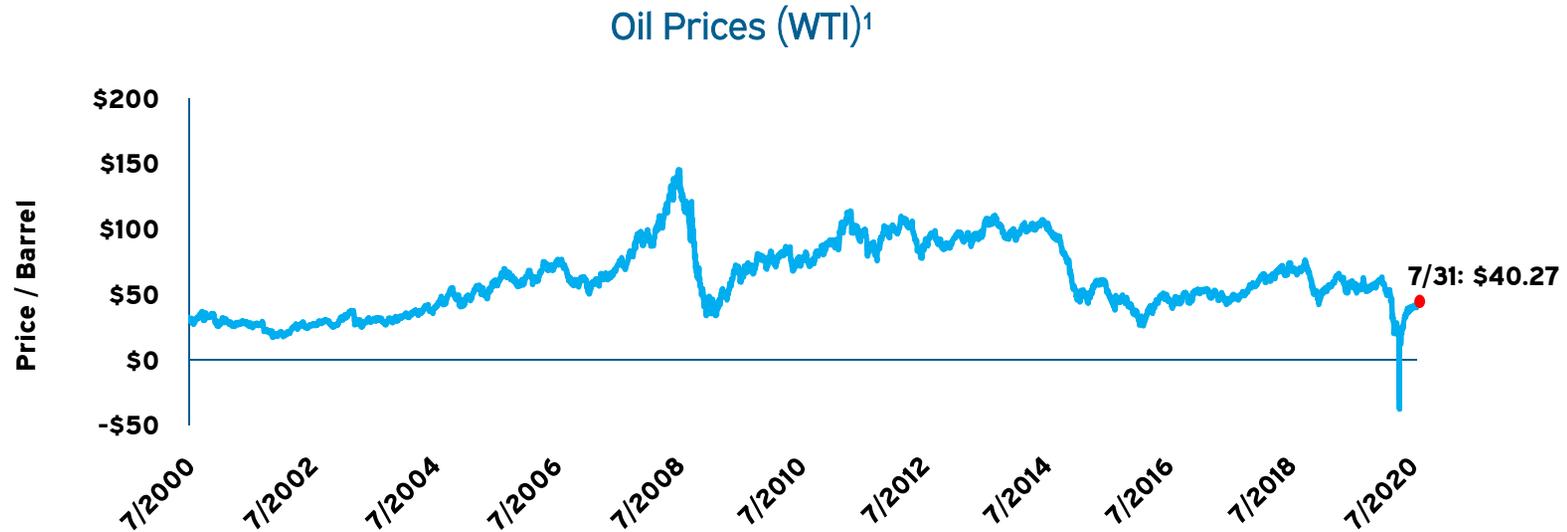
### Historic \$2T US Fiscal Stimulus

Destination	Amount (\$ Billion)
Individuals	\$560
Large Corporations	\$500
Small Business	\$377
State & Local Governments	\$340
Public Health	\$154
Student Loans	\$44
Safety Net	\$26

- Late in March, a historic \$2 trillion fiscal package was approved in the US, representing close to 10% of GDP and including support across the economy.
- Individuals received cash payments of up to \$1,200 per adult and \$500 per child, and extended and higher weekly unemployment benefits (+\$600/week).
- The package also includes a \$500 billion lending program for distressed industries like airlines, and \$377 billion in loans to small businesses (this program was recently extended).
- Other parts of the package include allocations to state and local governments, support for public health, student loan relief, and a safety net.
- With certain programs having recently expired, and Congress at an impasse on the next round of stimulus, President Trump recently signed an executive order extending various elements of the above measures.

## Policy Responses

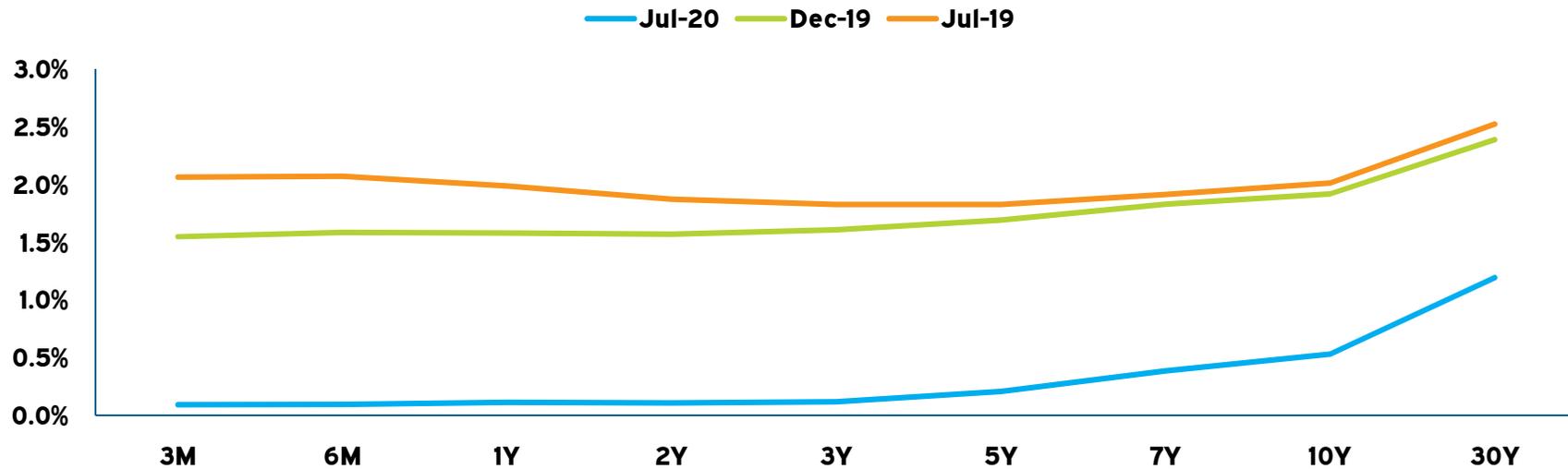
	Fiscal	Monetary
United States	\$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, \$2 trillion package for individuals, businesses, and state/local governments. Additional \$484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, forward guidance suggesting aggressively accommodative policy for the foreseeable future, unlimited QE4, offering trillions in repo market funding, restarted and extended CPFF, PDCF, MMMF programs to support lending and financing markets, expanded US dollar swap lines with foreign central banks, announced IG corporate debt buying program with subsequent amendment for certain HY securities, Main Street Lending program, Muni liquidity facility, repo facility with foreign central banks, and easing of some financial regulations for lenders.
Euro Area	European Union: Shared 750 billion euro stimulus package. Germany: 220 billion euro stimulus France: 57 billion euro stimulus. Italy: 75 billion euro stimulus. Spain: 200 billion euro and 700 million euro loan and aid package, respectively.	Targeted longer-term refinancing operations aimed at small and medium sized businesses, under more favorable pricing, and announced the 750 billion euro Pandemic Emergency Purchase Program, and then expanded the purchases to include lower-quality corporate debt.
Japan	Hundreds of trillions in yen stimulus for citizens and businesses, including low interest loans, deferrals on taxes, and direct cash handouts.	Initially increased QE purchases (ETFs, corporate bonds, and CP) and then expanded to unlimited purchases and doubling of corporate debt and commercial paper, expanded collateral and liquidity requirements, and 0% interest loans to businesses hurt by virus.
China	Tax cuts, low-interest business loans, extra payments to gov't benefit recipients.	Expanded repo facility, policy rate cuts, lowered reserve requirements, loan-purchase scheme.
Canada	\$7.1 billion in loans to businesses to help with virus damage, C\$381 billion stimulus.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	190 billion pound stimulus, Tax cut for retailers, small business cash grants, benefits for those infected with virus, expanded access to gov't benefits for self and un-employed.	Lowered policy rates and capital requirements for UK banks, restarts QE program and subsequently increased the purchase amounts.
Australia	\$11.4 billion, subsidies for impacted industries like tourism, one-time payment to gov't benefit recipients.	Policy rate cut, started QE.



- Global oil markets rallied from April lows, including from the technically-induced negative levels that saw the May futures contract trade at nearly -\$40 per barrel.
- In addition to improvements in sentiment as the global economy begins to reopen and some measures of economic fundamentals reporting better than expected numbers, OPEC+ recently agreed to extend supply cuts of 9.7 million barrels/day (~10% of global output) through July.
- Counterbalancing the OPEC+ production cut agreement, US oil producers (particularly shale output) are reportedly turning wells back on as the price of oil rises.
- As OPEC+ considers rolling back production cuts, and the virus spread increases with the potential to weigh on demand, oil pressures could experience pressure going forward.

<sup>1</sup> Source: Bloomberg. Represents WTI first available futures contract. Data is as of July 31, 2020.

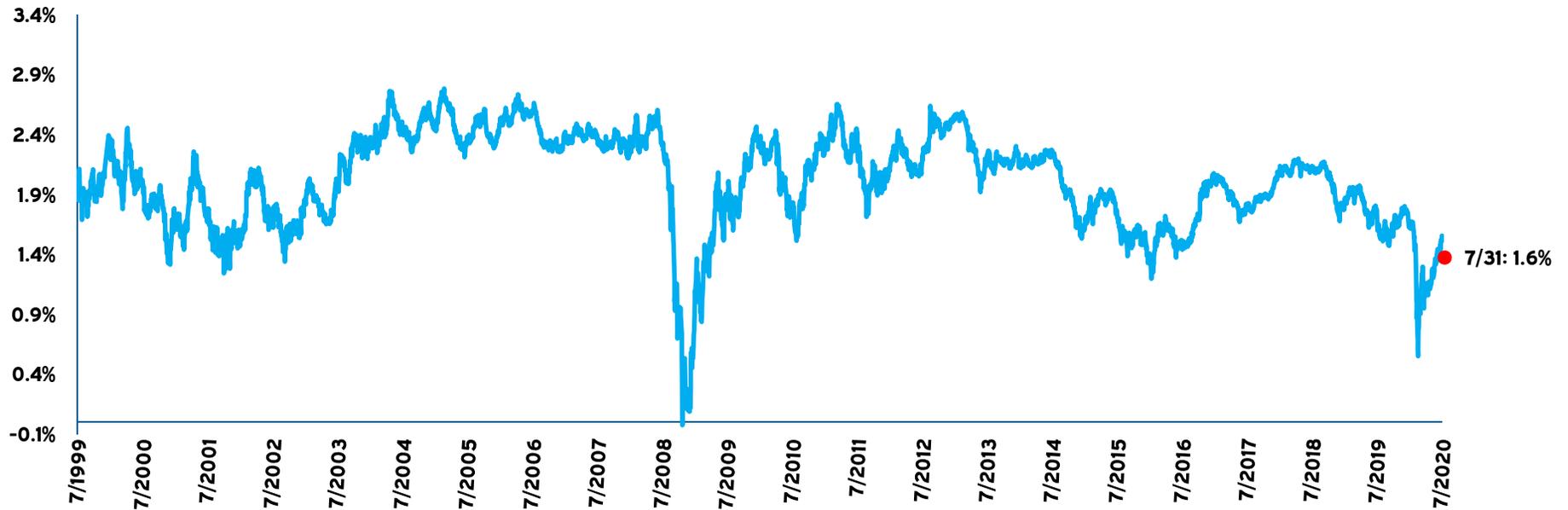
### US Yield Curve Declines<sup>1</sup>



- The US Treasury yield curve has declined materially since last year.
- Cuts in monetary policy rates, and policy maker’s open commitments to keep rates low for the foreseeable future, drove yields down in shorter maturities, while flight-to-quality flows, low inflation, and economic growth uncertainty have driven the changes in longer maturities.
- The Federal Reserve’s unlimited quantitative easing purchase program has provided further downward pressure on interest rates, particularly in the short and medium-term sectors due to the purchases being focused on those segments.

<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

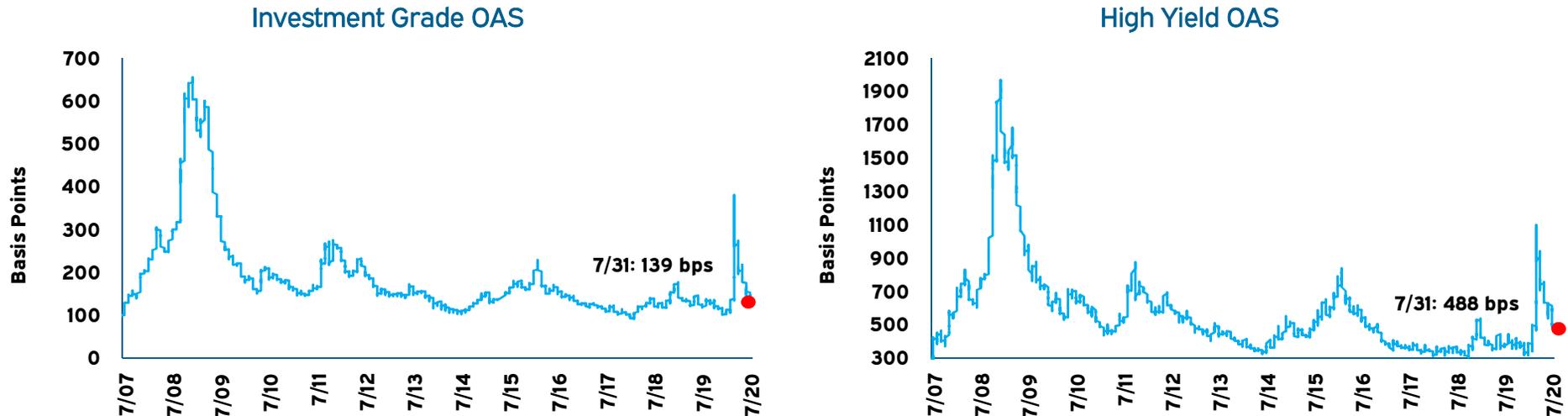
10-Year Breakeven Inflation<sup>1</sup>



- Inflation breakeven rates initially declined sharply, due to a combination of lower growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of rate volatility.
- Liquidity eventually improved and breakeven rates increased, but given the uncertainty regarding economic growth and the inflationary effects of the unprecedented US fiscal and monetary responses, inflation expectations continue to remain below historical averages.

<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

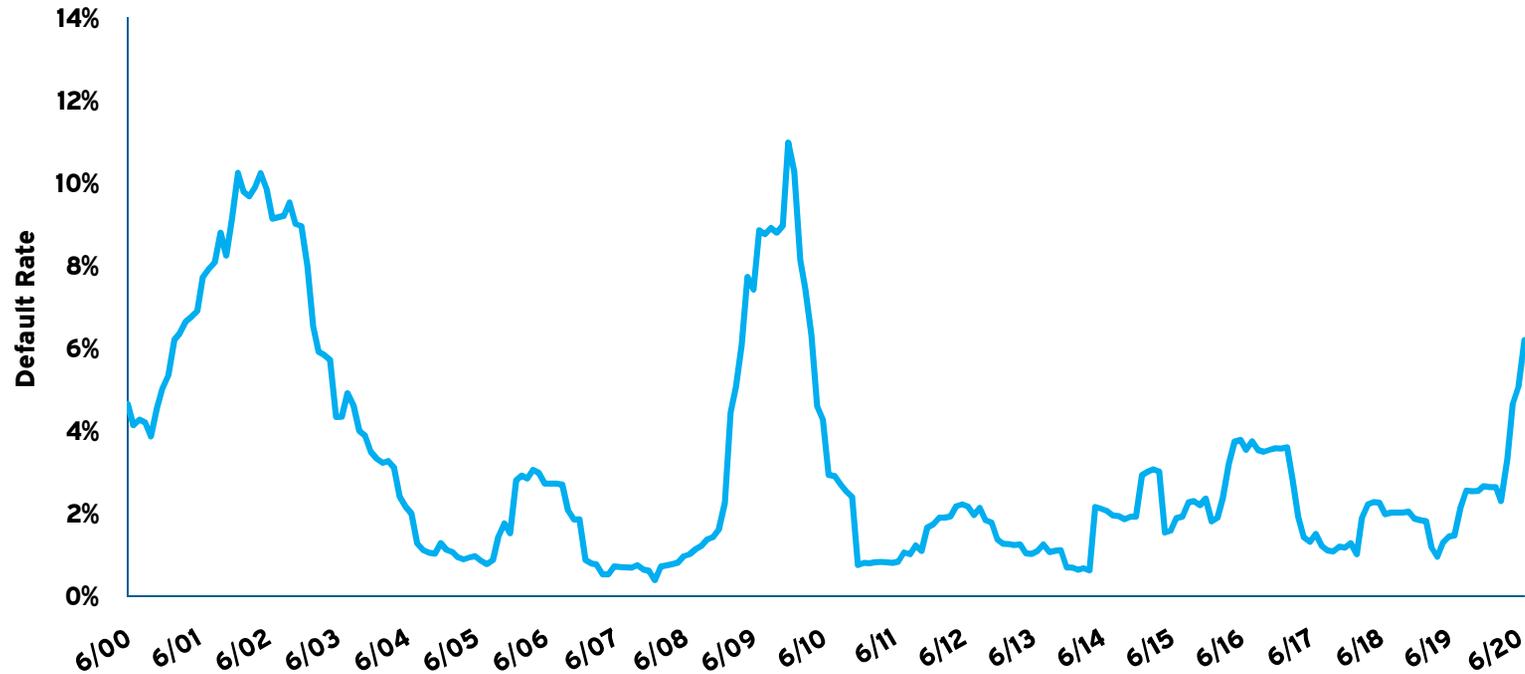
### Credit Spreads (High Yield & Investment Grade)<sup>1</sup>



- Credit spreads (the spread above a comparable Treasury bond) for investment grade and high yield corporate debt expanded sharply as investors sought safety.
- Investment grade bonds held up better than high yield bonds. The Federal Reserve's corporate debt purchase program for investment grade and certain high yield securities that were recently downgraded from investment grade, was well received by investors, leading to a decline in spreads.
- Overall, corporate debt issuance has more than doubled since 2008, which magnifies the impact of deterioration in the corporate debt market. This is particularly true in the energy sector, which represents over 10% of the high yield bond market.

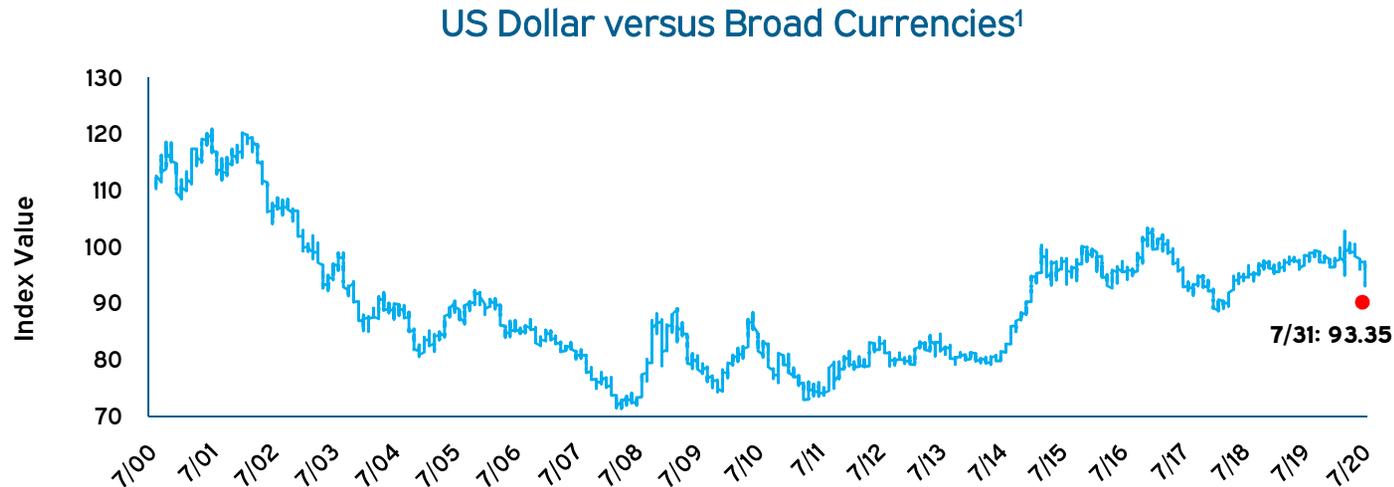
<sup>1</sup> Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of July 31, 2020.

US High Yield Credit Defaults<sup>1</sup>



- Even though spreads have declined given the Federal Reserve’s support, defaults, particularly in the high yield sector, increased dramatically.
- The energy sector has seen the greatest impact given the decline in oil prices, with defaults reaching double-digit levels and expectations for them to increase.

<sup>1</sup> Source: J.P. Morgan; S&P LCD. July data is not yet available. Data is as of June 30, 2020.



- When financial markets began aggressively reacting to COVID-19 developments, the US dollar came under selling pressure as investors sought safe-haven exposure in currencies like the Japanese yen given its current account surplus and its status as the largest creditor globally.
- As the crisis grew into a pandemic, investors' preferences shifted to holding US dollars and highly liquid, short-term securities like US Treasury bills. This global demand for US dollars led to appreciation versus most major currencies.
- To help ease global demand for US dollars, the Federal Reserve, working with a number of global central banks, re-established the US dollar swap program, providing some relief to other currencies. Usage of the program continues to decline as dollar funding demands have eased.
- Recently we have seen some weakness in the dollar as interest rates have declined and the US has particularly struggled with containing the virus. Going forward, the dollar's safe haven quality and the still relatively higher rates in the US could provide support

<sup>1</sup> Source: Bloomberg. Represents the DXY Index. Data is as of July 31, 2020.

## Economic Impact

### Supply Chain Disruptions:

- Factories closing, increased cost of stagnant inventory, and disrupted supply agreements.
- Reduced travel, tourism, and separation policies including closed borders: Significant impact on service-based economies.

### Labor Force Impacts:

- Huge layoffs across service and manufacturing economies.
- Increased strains as workforce productivity declines from increased societal responsibilities (e.g., home schooling of children) and lower functionality working from home.
- Illnesses from the disease will also depress the labor force.

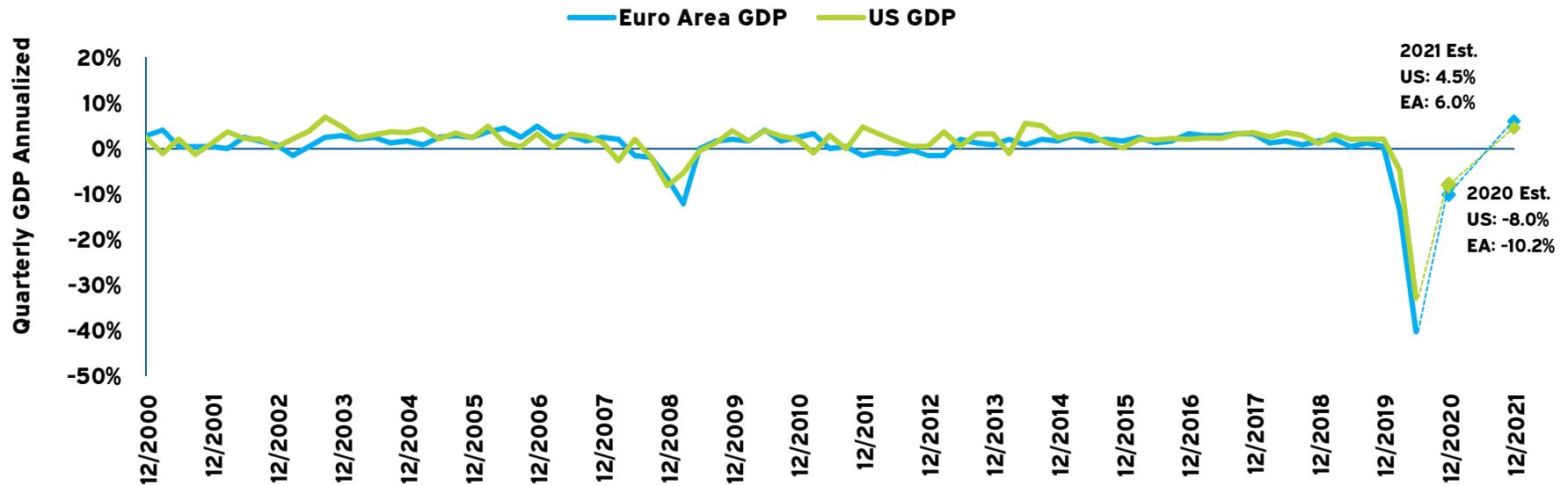
### Declines in Business and Consumer Sentiment:

- Sentiment drives investment and consumption, which leads to increased recessionary pressures as sentiment slips.

### Wealth Effect:

- As financial markets decline and wealth deteriorates, consumer spending will be impacted.

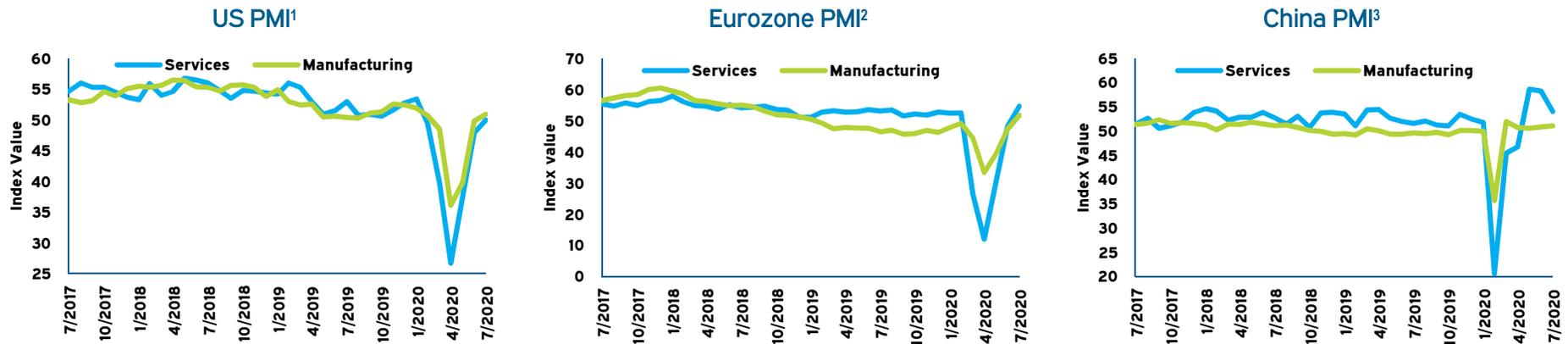
### GDP Data Shows Impact of the Pandemic<sup>1</sup>



- The global economy faces major recessionary pressures this year, but optimism remains for improvements in 2021, as economies are expected to gradually reopen.
- In the US, second quarter GDP posted a record decline of -32.9% annualized and officially put the US in a recession. Similarly, growth in the Euro Area declined by a record amount with the major economies in Germany, France, Italy, and Spain experiencing historic declines.
- Bloomberg Economics estimates that third quarter US GDP could be as high as 18.0% (QoQ annualized).

<sup>1</sup> Source: Bloomberg. Q2 2020 data represents first estimate of GDP for Euro Area and GDP for United States. Euro Area figures annualized by Meketa. Projections via June 2020 IMF World Economic Outlook and represent annual numbers.

### Global PMIs



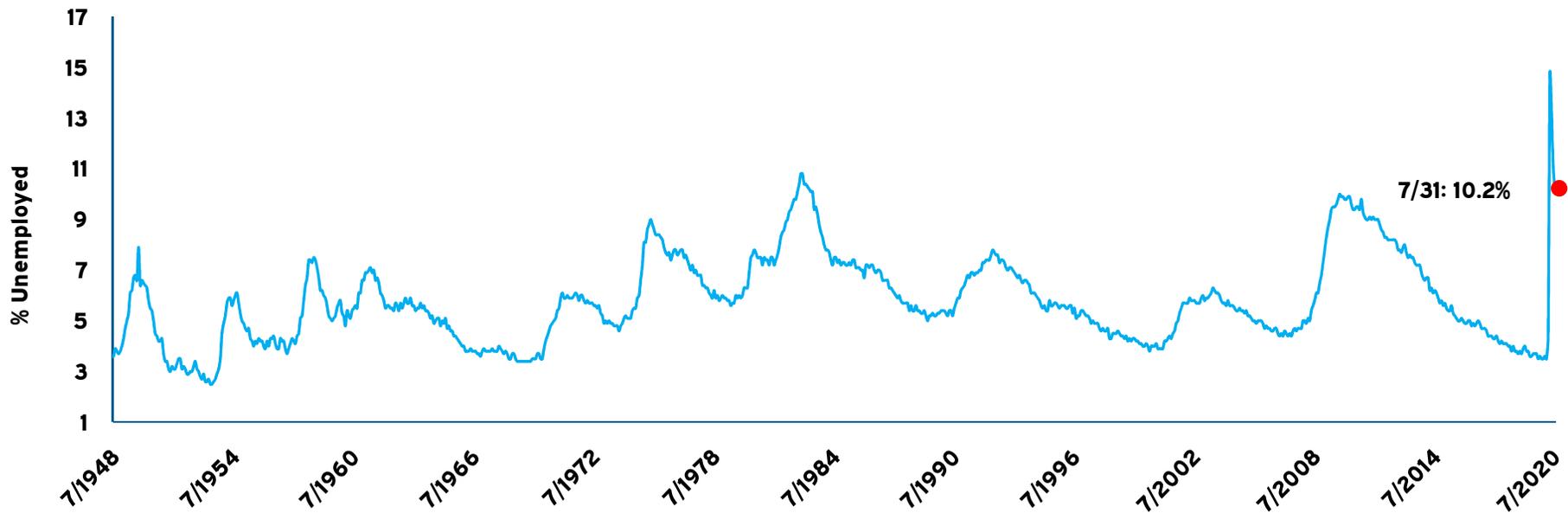
- Purchasing Managers Indices (PMI) based on surveys of private sector companies, initially collapsed across the world to record lows, as output, new orders, production, and employment were materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector was particularly hard hit by the stay-at-home restrictions in many places.
- As the Chinese economy reopened over the last few month, their PMI's, particularly in the service sector, recovered materially. In the US and Europe, the indices have improved from their lows but remain below prior levels as they struggle to contain the spread of the virus.

<sup>1</sup> Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of July 2020.

<sup>2</sup> Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of July 2020.

<sup>3</sup> Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of July 2020.

### US Unemployment Rate<sup>1</sup>

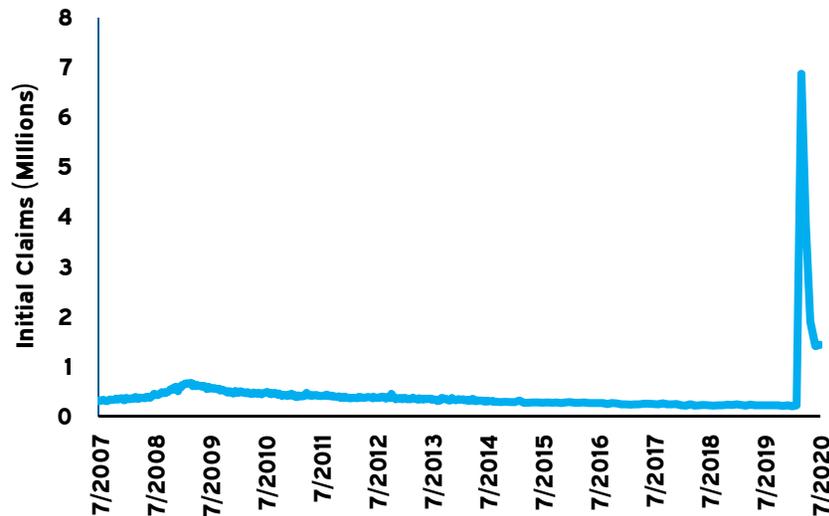


- In July, the unemployment rate continued its decline from the recent April 14.7% peak, falling to 10.2% as businesses emerged from the lockdown.
- Despite the improvement, unemployment levels remain well above pre-virus readings and are likely higher than reported due to issues related to some workers being misclassified. According to the Bureau of Labor Statistics, absent the misclassification issue, the July unemployment rate would be higher by 1.0%.
- The recent increase in COVID-19 cases could lead to an increase in the unemployment rate going forward.

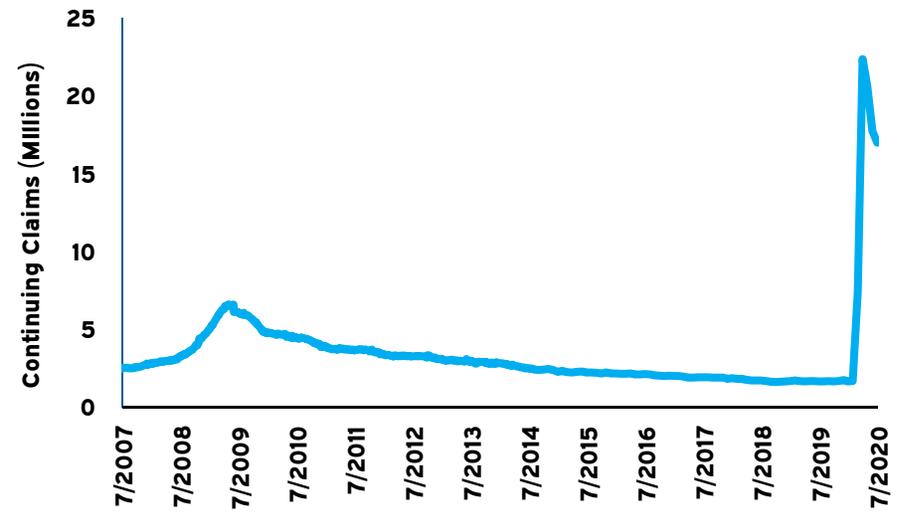
<sup>1</sup> Source: Bloomberg. Data is as of July 31, 2020.

### US Jobless Claims

US Initial Jobless Claims<sup>1</sup>



Continuing Claims<sup>2</sup>

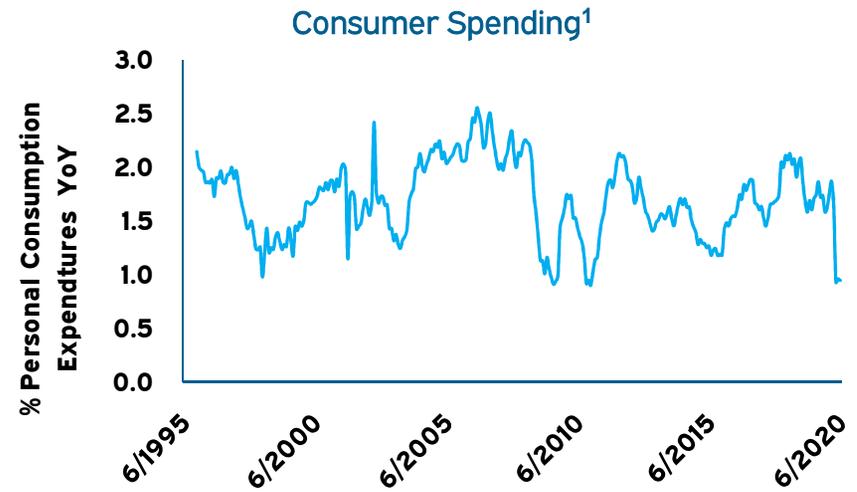


- Over the last 20 weeks, roughly 55.3 million people filed for initial unemployment. This level far exceeds the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the continued decline in initial jobless claims, the 1.2 million level of the last reading (the lowest since the onset of the crisis) remains many multiples above the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) has also declined from record levels, but remains elevated at 16.1 million.

<sup>1</sup> Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of July 31, 2020

<sup>2</sup> Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of July 31, 2020

### Savings and Spending

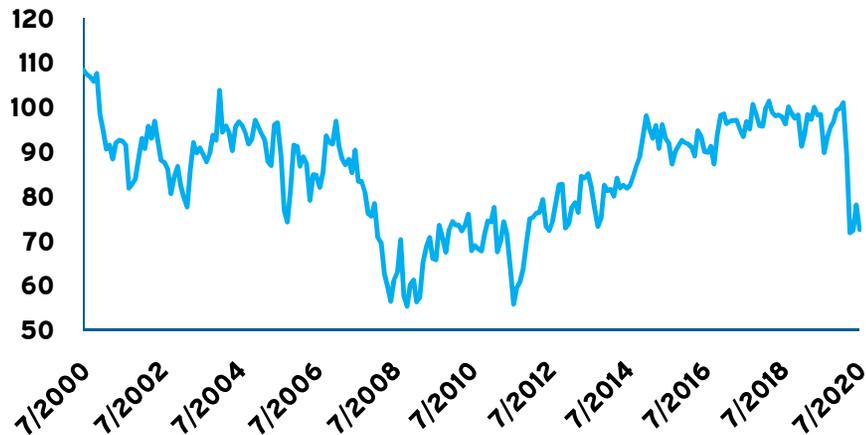


- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown.
- Despite the income support, the savings rate has increased due to the decline in consumer spending, driven by the initial lock-down of the economy, and by uncertainties related to the future of the job market and stimulus programs.
- More recently, the savings rate has declined from its peak as spending increased with the economy slowly reopening.

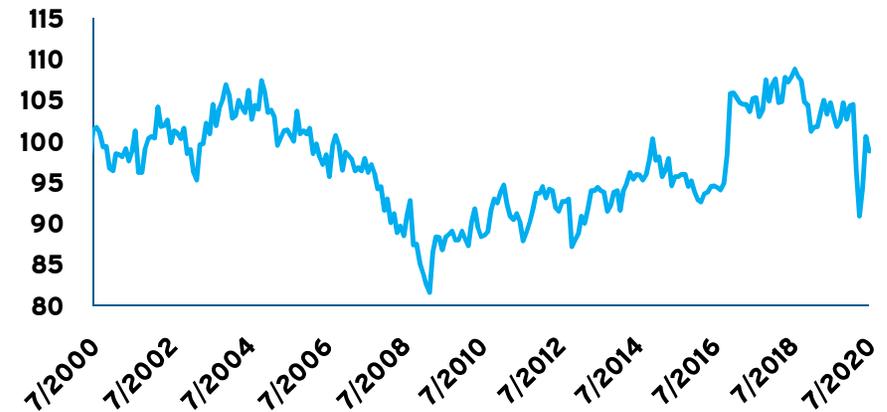
<sup>1</sup> Source: Bloomberg. Latest data is as of June 30, 2020.

### Sentiment Indicators

University of Michigan Consumer Sentiment<sup>1</sup>



Small Business Confidence<sup>2</sup>



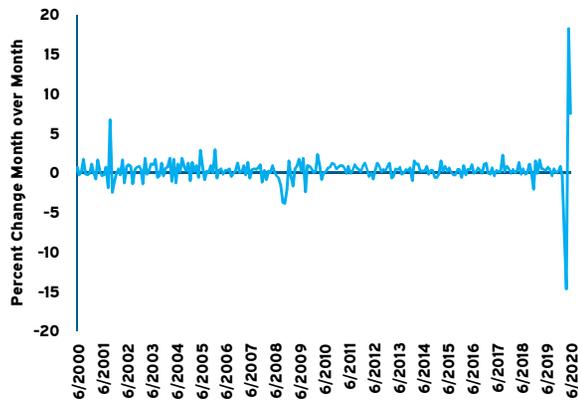
- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses comprise a majority of the economy, making sentiment in that segment important too.
- Sentiment indicators have shown some improvements as the economy re-opens, but they remain below prior levels.

<sup>1</sup> Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of July 31, 2020.

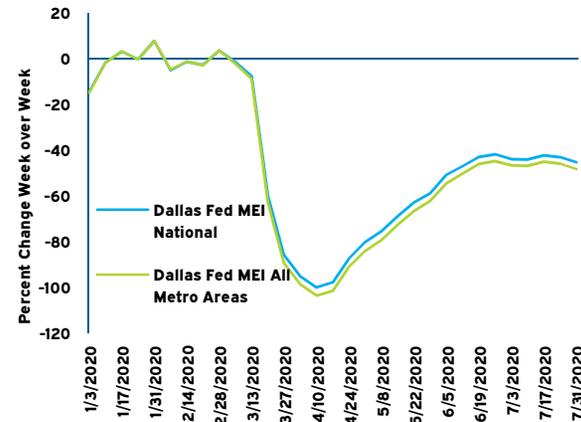
<sup>2</sup> Source: Bloomberg. NFIB Small Business Optimism Index. Data is as of July 31, 2020.

### Some US Data has Improved

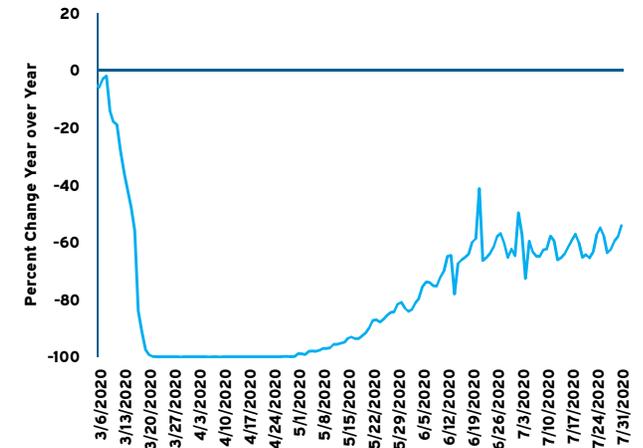
Retail Sales<sup>1</sup>



Dallas Fed Mobility and Engagement Index<sup>2</sup>



OpenTable Seated Diners YoY % Change<sup>3</sup>



- There have been improvements in high frequency data, but overall levels remain well below prior readings and have slowed in some cases given the recent spike in cases.
- Generally, people have become more active as restrictions eased and stores reopened. Retail sales recovered from a record decline with two consecutive months of positive growth as the economy reopened.
- Restaurants saw initial improvements before declining and leveling-off, as in-store dining has been cited as a key contributor to increases in infections.

<sup>1</sup> Source: Bloomberg. Data is as of June 30, 2020 and represents the US Retail Sales SA MoM%

<sup>2</sup> Source: Bloomberg. Data is as of July 31, 2020 and represents the deviation from normal mobility behaviors induced by COVID-19 (formerly the "Social Distancing Index"). The index represents a weighted average of various lengths of time that a mobile device, like a cell phone, leaves its "home" or place of residence, and/or how long a device stays at home. A decline in this index represents a mobile device at home for a longer period of time than average.

<sup>3</sup> Source: Bloomberg. This data shows year-over-year seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins. Only states or cities with 50+ restaurants in the sample are included. All such restaurants on the OpenTable network in either period are included. Data is as of July 31, 2020. Index start date 2/19/20.

### Looking Forward...

- There will be significant economic impact and a global recession.
  - How deep it will be and how long it will last depend on factors (below) that are unknowable at this time.
- The length of the virus and country responses will be key considerations.
  - As of now, it is not clear the end is in sight, particularly given the recent increases in cases in certain areas; however, individual countries are attempting to lay the groundwork to support a recoveries in their economies.
- Central banks and governments are pledging support, but will it be enough?
  - Market reactions to announced policies have been positive, but additional support will likely be required until the virus gets better contained.
- Expect heightened market volatility should economies start to shut back down given the recent spike in cases.
  - This has been a consistent theme recently; volatility is likely to remain elevated for some time.
- It is important to retain a long-term focus.
  - History supports the argument that maintaining a long-term focus will ultimately prove beneficial for diversified portfolios.

### Prior Drawdowns and Recoveries from 1926-2020<sup>1</sup>

Period	Peak-to-Trough Decline of the S&P 500	Approximate Time to Recovery
Sept 1929 to June 1932	-85%	266 months
February 1937 to April 1942	-57%	48 months
May 1946 to February 1948	-25%	27 months
August 1956 to October 1957	-22%	11 months
December 1961 to June 1962	-28%	14 months
February 1966 to October 1966	-22%	7 months
November 1968 to May 1970	-36%	21 months
January 1973 to October 1974	-48%	69 months
September 1976 to March 1978	-19%	17 months
November 1980 to August 1982	-27%	3 months
August 1987 to December 1987	-32%	19 months
July 1990 to October 1990	-20%	4 months
July 1998 to August 1998	-19%	3 months
March 2000 to October 2002	-49%	56 months
October 2007 to March 2009	-57%	49 months
February 2020 to July 2020	-34%	TBD
<b>Average</b>	<b>-36%</b>	<b>41 months</b>
<b>Average ex. Great Depression</b>	<b>-33%</b>	<b>25 months</b>

- As markets continue to recover and approach the prior peak, questions remain about the sustainability of the rally.
- Markets are continuing to reprice amid the uncertain impact of the virus on companies and the broader economy, which means this drawdown is still being defined in the context of history.
- That said, financial markets have experienced material declines with some frequency, and while certain declines took a meaningful time to recover, in all cases they eventually did.
- If the recovery continues back to prior peak levels it would represent one of the fastest recoveries on record, similar to the historic decline.

<sup>1</sup> Source: Goldman Sachs. Recent peak to trough declines are through July 31, 2020.

### Implications for Clients

- Portfolios have generally experienced significant improvements from the March lows.
- Even though equity markets have recovered from their lows, it is important to remain vigilant and be prepared to rebalance if volatility increases again.
  - Before rebalancing, consider changes in liquidity needs given the potential for cash inflows to decline in some cases.
  - Also, consider the cost of rebalancing if investment liquidity declines.
- Diversification works. The latest decline was an example of a flight to quality leading to gains in very high quality bonds.

### Performance YTD (through July 31, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio <sup>1</sup>
2.4%	-7.0%	7.7%	1.7%

- Meketa will continue to monitor the situation and communicate frequently.
  - The situation is fluid and the economic impact is uncertain at this stage.
- Please feel free to reach out with any questions.

<sup>1</sup> Source: InvestorForce. Balanced Portfolio represents 60% MSCI ACWI and 40% Bloomberg Barclays Global Aggregate.

### Disclaimers

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# Oakland Police and Fire Retirement System

Q2 2020

Quarterly Report

1. Total Portfolio Summary
2. World Markets Second Quarter of 2020
3. Capital Markets Outlook & Risk Metrics
  - Meketa Market Sentiment Indicator
4. Total Portfolio Review
5. Manager Monitoring / Probation List
6. Individual Manager Performance
7. Disclaimer, Glossary, and Notes

## **Total Portfolio Summary**

Total Portfolio Summary

As of June 30, 2020, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$383.3 million. This represents a \$44.8 million increase in investment value and (\$3.0) million in benefit payments over the quarter. During the previous one-year period, the OPFRS Total Portfolio increased in value by \$8.0 million and withdrew (\$13.4) million for benefit payments.

Asset Allocation Trends

The asset allocation targets throughout this report reflect those as of June 30, 2020. Target weightings reflect the interim phase (CRO = 10%) of the Plan’s previously approved asset allocation (effective 5/31/2017).

With respect to policy targets, the portfolio ended the latest quarter overweight Domestic Equity, Covered Calls and Cash, while underweight Fixed Income and Crisis Risk Offset.

Recent Investment Performance

During the most recent quarter, the OPFRS Total Portfolio generated an absolute return of +13.4%, gross of fees, underperforming its policy benchmark by 140 basis points. The portfolio underperformed its benchmark by (2.3%) and (0.2%) over the 1- and 3-year periods, respectively, and underperformed by (30) basis points over the 5-year period.

The Total Portfolio outperformed the Median fund’s return over the most recent quarter by +1.0%. The Total Portfolio underperformed the Median fund over the 1-year period by (0.7%), but outperformed over the 3- and 5-year periods by +0.6% and +0.7% respectively. Performance differences with respect to the Median Fund continue to be attributed largely to differences in asset allocation.

	Quarter	Fiscal Year	1 Year	3 Year	5 Year
Total Portfolio <sup>1</sup>	13.4	2.3	2.3	6.3	6.7
Policy Benchmark <sup>2</sup>	12.0	4.6	4.6	6.2	4.6
<b>Excess Return</b>	<b>1.4</b>	<b>-2.3</b>	<b>-2.3</b>	<b>-0.2</b>	<b>-0.3</b>
Reference: Median Fund <sup>3</sup>	12.4	3.0	3.0	5.7	6.0
Reference: Total Net of Fees <sup>4</sup>	13.3	2.0	2.0	6.0	4.9

<sup>1</sup> Gross of Fees. Performance since 2005 includes securities lending.

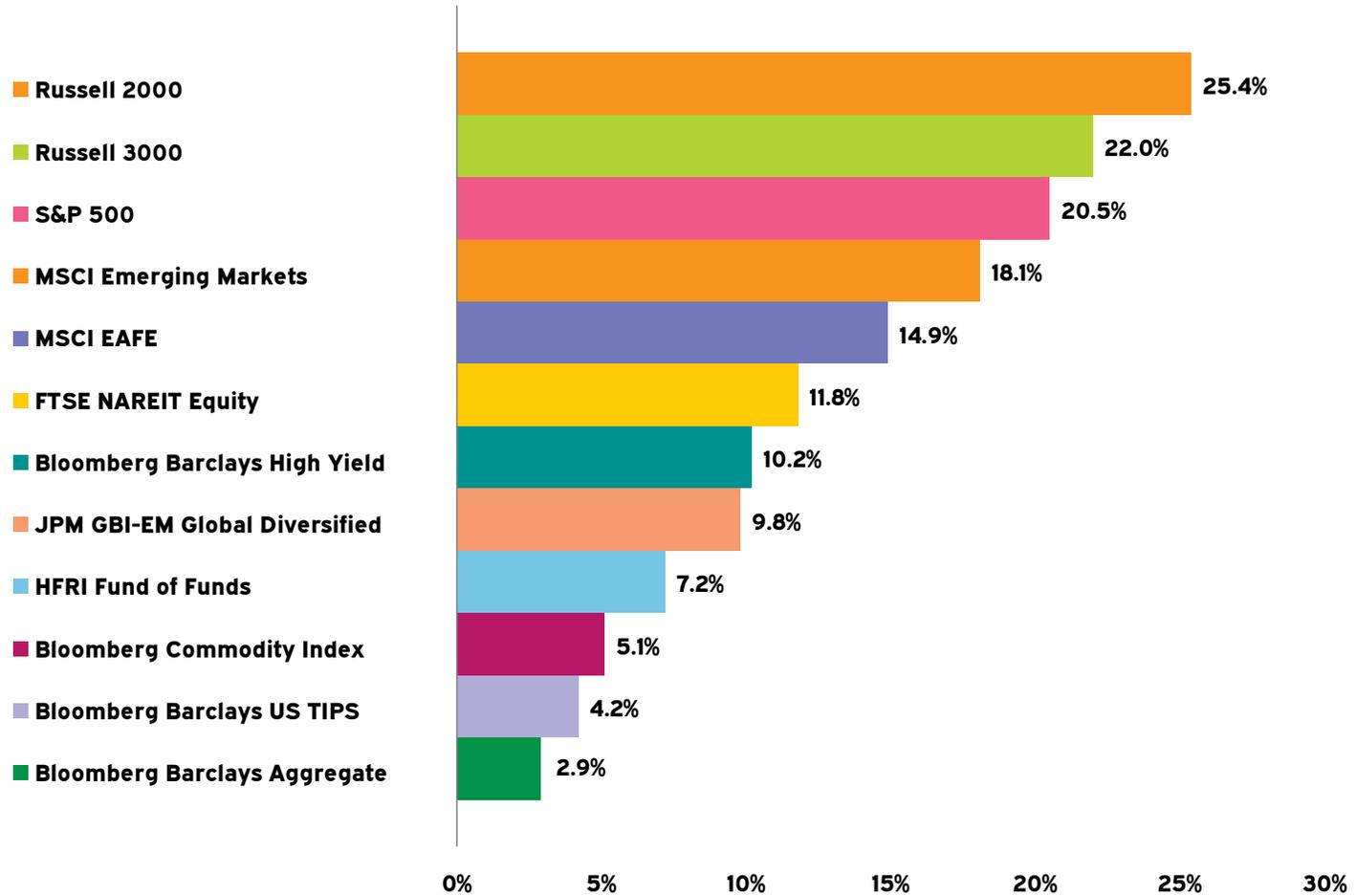
<sup>2</sup> Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM , 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury

<sup>3</sup> Investment Metrics < \$1 Billion Public Plan Universe.

<sup>4</sup> Longer-term (>1 year) Net of fee returns are estimated based on OPFRS manager fee schedule (approximately 34 bps)

# **The World Markets Second Quarter of 2020**

### The World Markets<sup>1</sup> Second Quarter of 2020



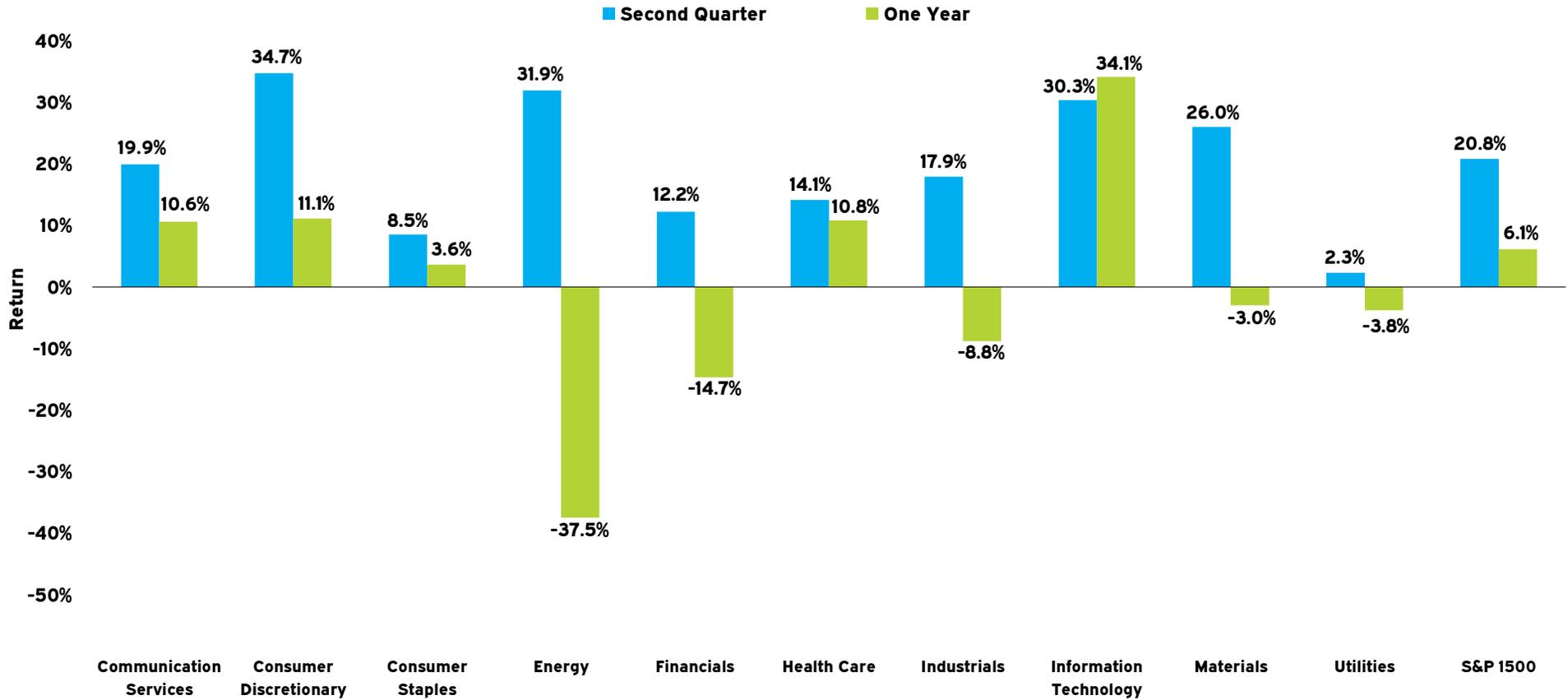
<sup>1</sup> Source: InvestorForce.

**Index Returns<sup>1</sup>**

	2Q20 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>						
S&P 500	20.5	-3.1	7.5	10.7	10.7	14.0
Russell 3000	22.0	-3.5	6.5	10.0	10.0	13.7
Russell 1000	21.8	-2.8	7.5	10.6	10.5	14.0
Russell 1000 Growth	27.8	9.8	23.3	19.0	15.9	17.2
Russell 1000 Value	14.3	-16.3	-8.8	1.8	4.6	10.4
Russell MidCap	24.6	-9.1	-2.2	5.8	6.8	12.3
Russell MidCap Growth	30.3	4.2	11.9	14.8	11.6	15.1
Russell MidCap Value	19.9	-18.1	-11.8	-0.5	3.3	10.3
Russell 2000	25.4	-13.0	-6.6	2.0	4.3	10.5
Russell 2000 Growth	30.6	-3.1	3.5	7.9	6.9	12.9
Russell 2000 Value	18.9	-23.5	-17.5	-4.3	1.3	7.8
<b>Foreign Equity</b>						
MSCI ACWI (ex. US)	16.1	-11.0	-4.8	1.1	2.3	5.0
MSCI EAFE	14.9	-11.3	-5.1	0.8	2.1	5.7
MSCI EAFE (Local Currency)	12.6	-10.5	-4.2	1.3	2.6	6.9
MSCI EAFE Small Cap	19.9	-13.1	-3.5	0.5	3.8	8.0
MSCI Emerging Markets	18.1	-9.8	-3.4	1.9	2.9	3.3
MSCI Emerging Markets (Local Currency)	16.7	-5.5	1.4	4.5	5.1	6.0
<b>Fixed Income</b>						
Bloomberg Barclays Universal	3.8	5.2	7.9	5.2	4.4	4.1
Bloomberg Barclays Aggregate	2.9	6.1	8.7	5.3	4.3	3.8
Bloomberg Barclays US TIPS	4.2	6.0	8.3	5.0	3.7	3.5
Bloomberg Barclays High Yield	10.2	-3.8	0.0	3.3	4.8	6.7
JPM GBI-EM Global Diversified	9.8	-6.9	-2.8	1.1	2.3	1.6
<b>Other</b>						
FTSE NAREIT Equity	11.8	-18.7	-13.0	0.0	4.1	9.1
Bloomberg Commodity Index	5.1	-19.4	-17.4	-6.1	-7.7	-5.8
HFRI Fund of Funds	7.2	-2.2	-0.2	2.0	1.4	2.7

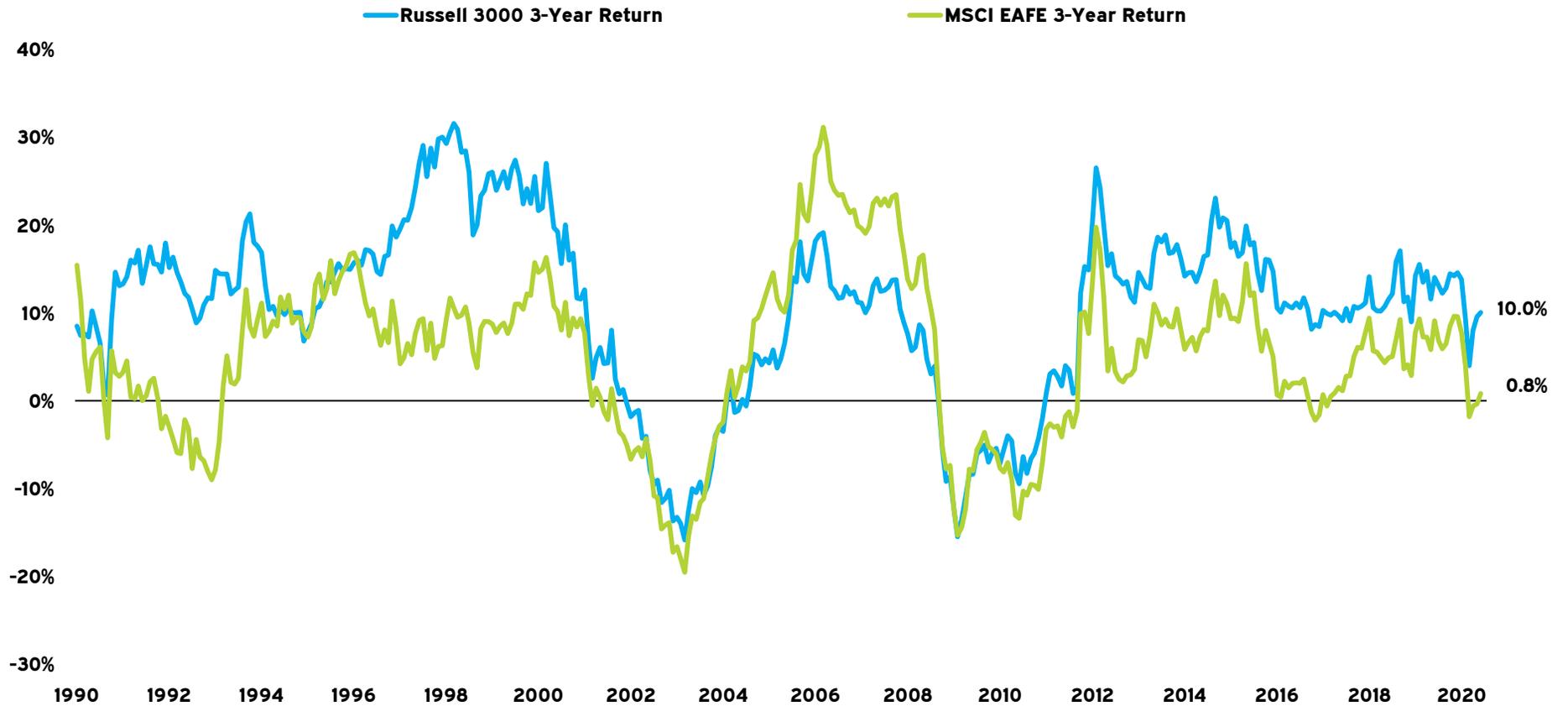
<sup>1</sup> Source: InvestorForce.

### S&P Sector Returns<sup>1</sup>



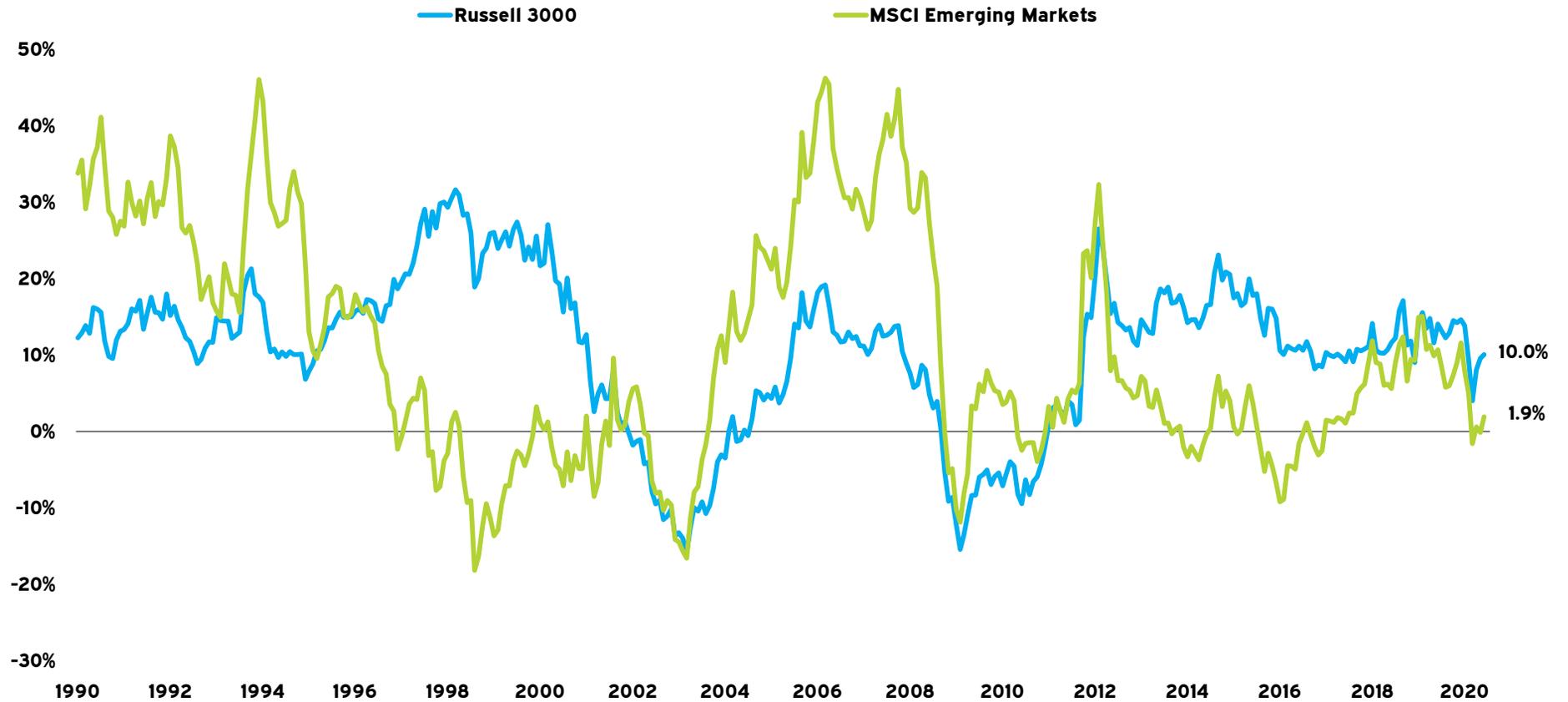
<sup>1</sup> Source: InvestorForce. Represents S&P 1500 (All Cap) data.

US and Developed Market Foreign Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce.

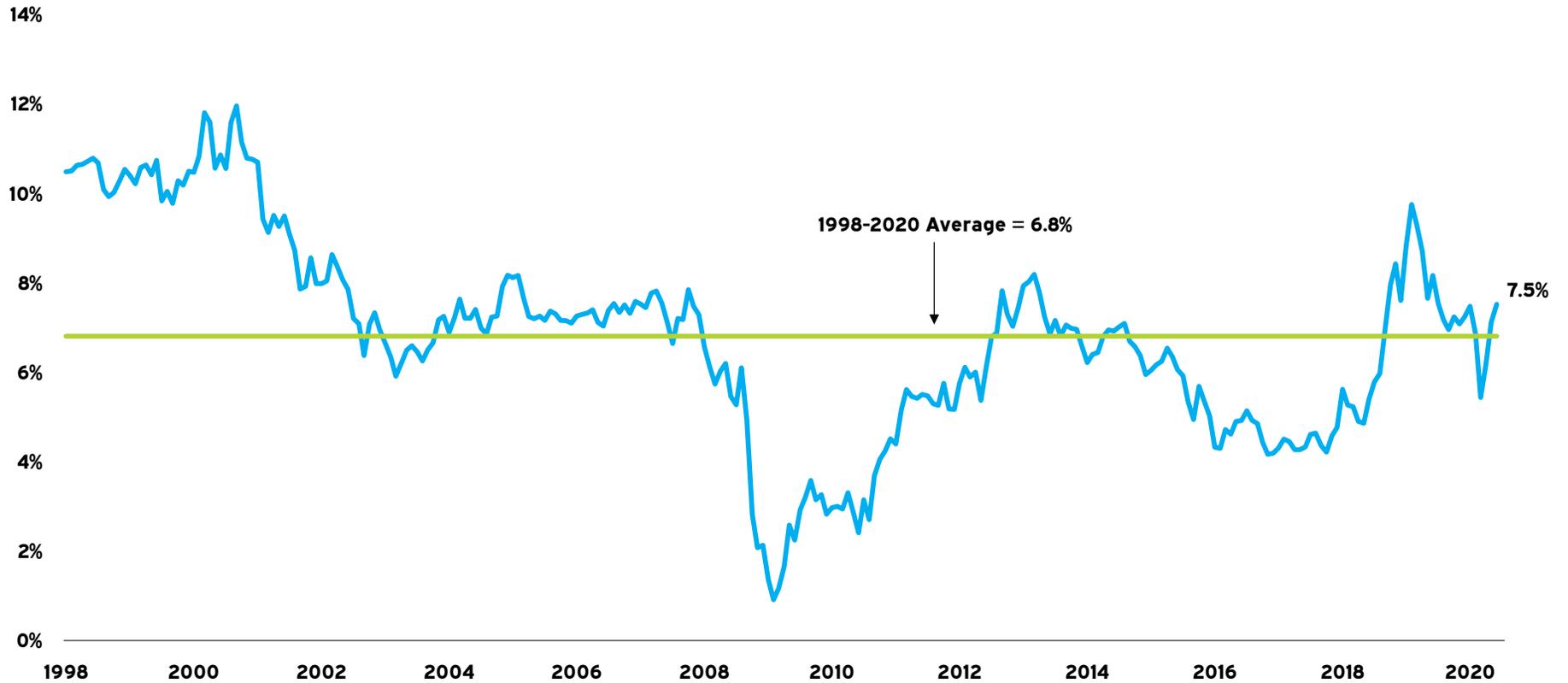
US and Emerging Market Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce.

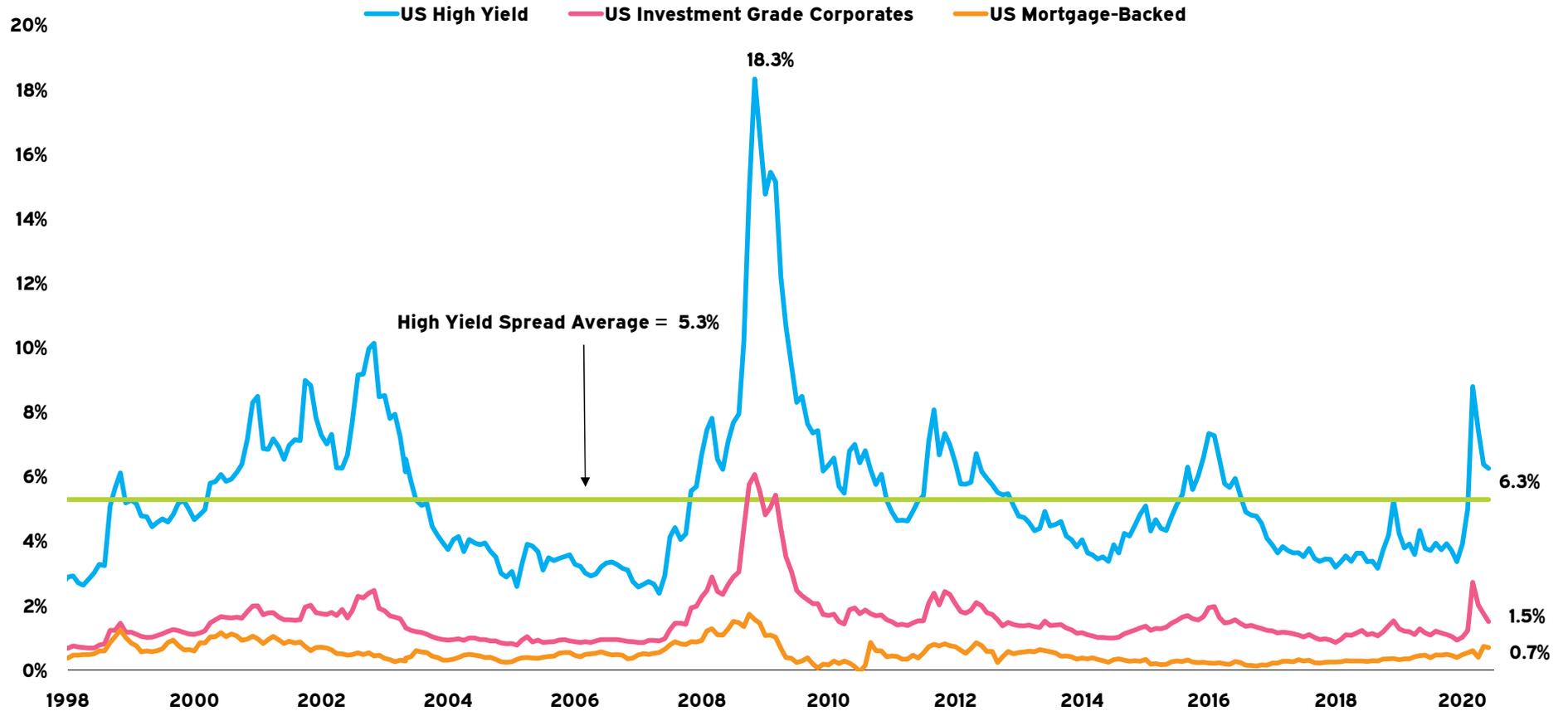
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds<sup>1</sup>

— 65% Stocks (MSCI ACWI) / 35% Bonds (Bloomberg Barclays Aggregate) 10-Year Rolling Return



<sup>1</sup> Source: InvestorForce.

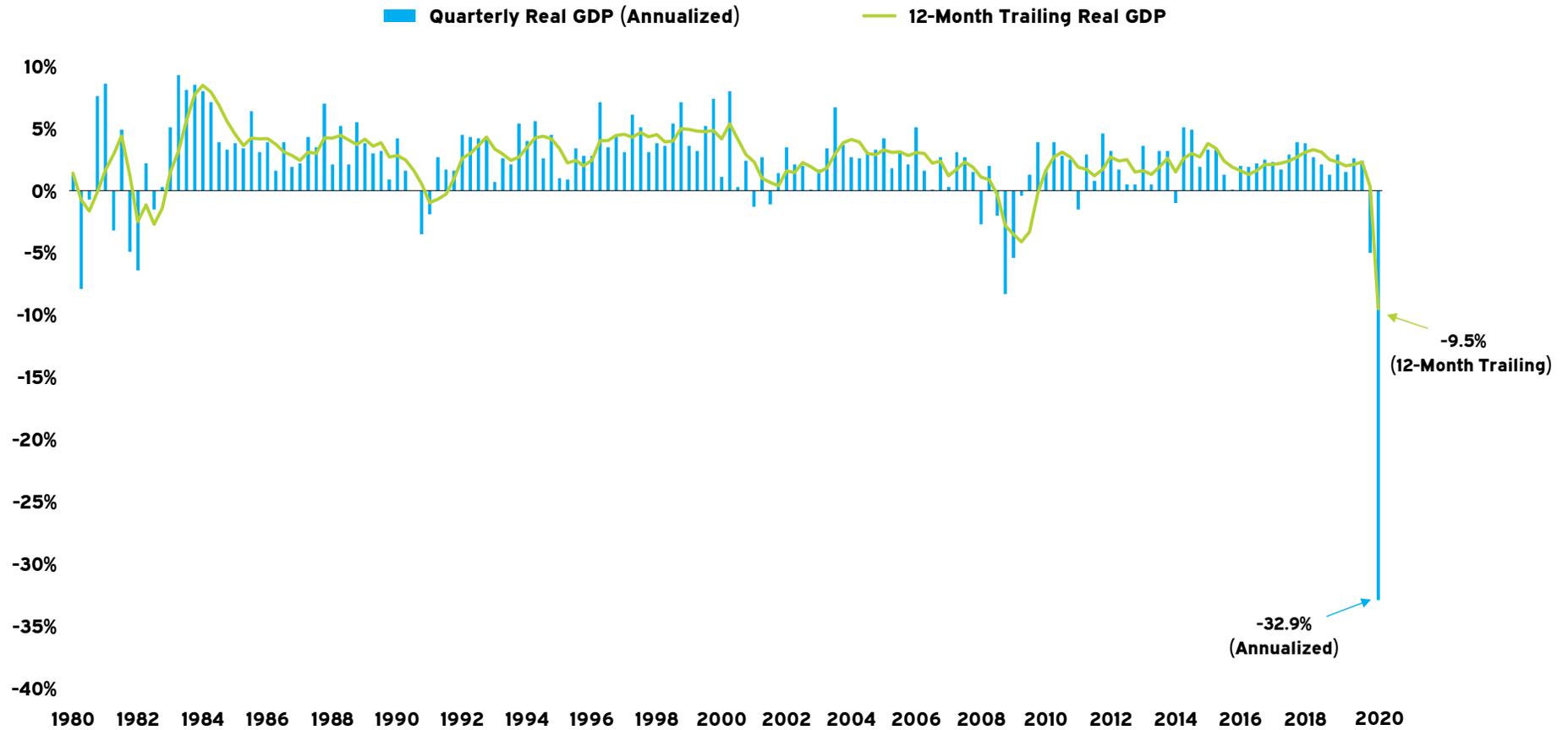
Credit Spreads vs. US Treasury Bonds<sup>1,2</sup>



<sup>1</sup> Source: Barclays Live. Data represents the OAS.

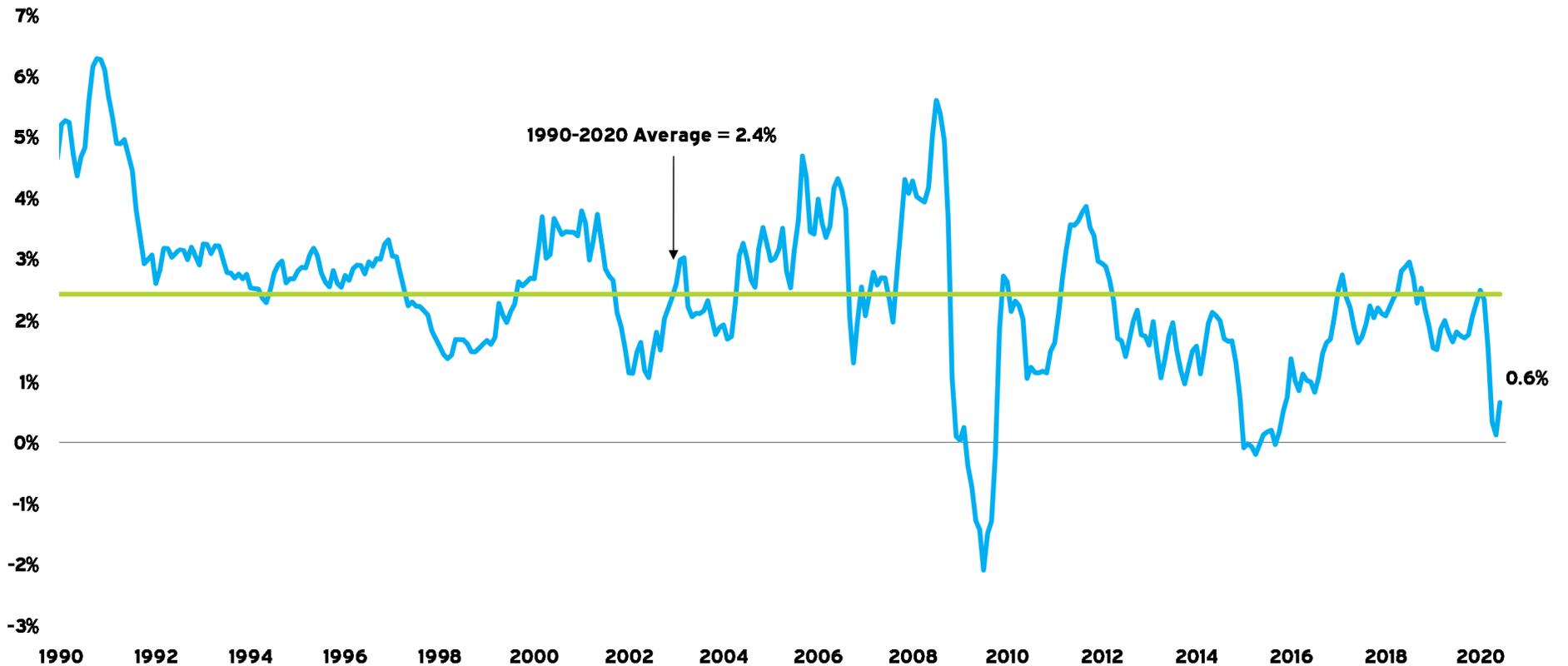
<sup>2</sup> The median high yield spread was 4.8% from 1997-2020.

### US Real Gross Domestic Product (GDP) Growth<sup>1</sup>



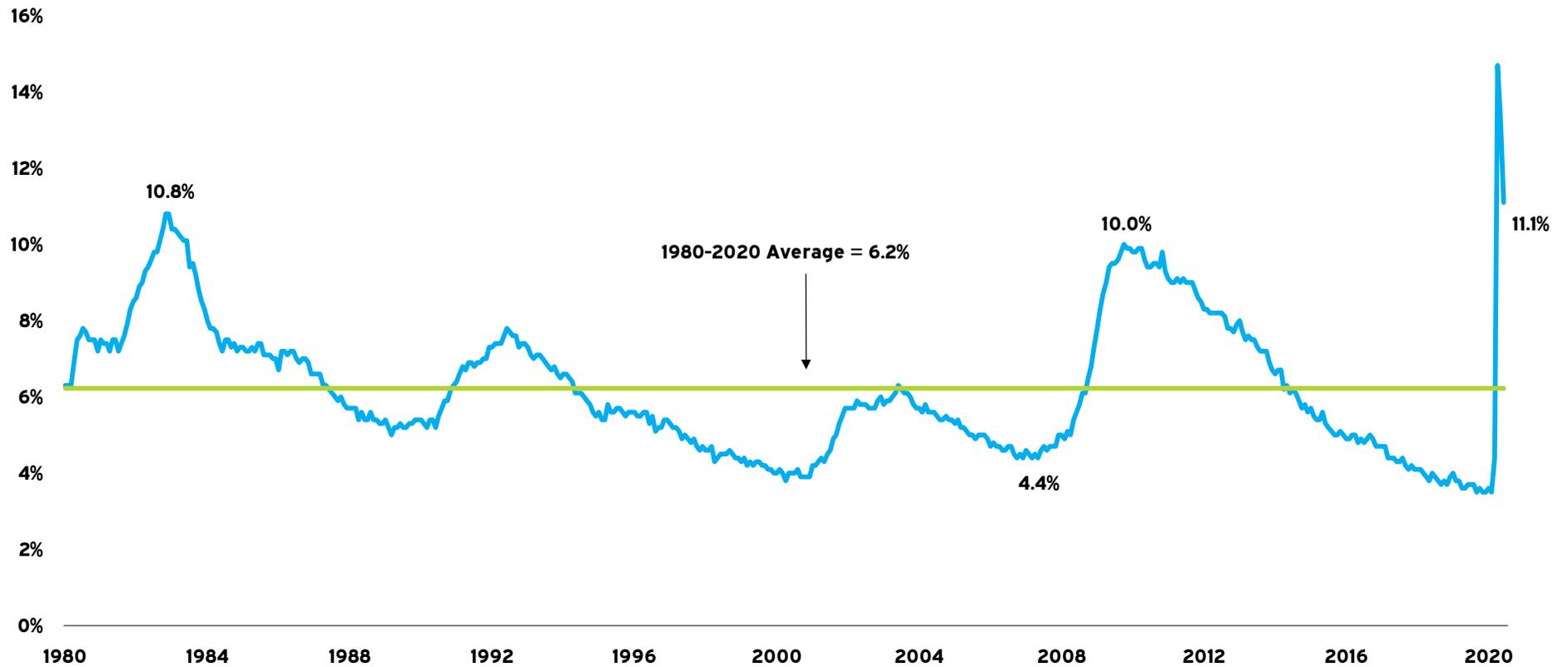
<sup>1</sup> Source: Bureau of Economic Analysis. Data is as of Q2 2020 and represents the first estimate.

### US Inflation (CPI) Trailing Twelve Months<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data is as of June 30, 2020.

### US Unemployment<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is as of June 30, 2020.

**Capital Markets Outlook & Risk Metrics**  
As of July 31, 2020

## Capital Markets Outlook

### Takeaways

- July continued where Q2 left off, as equity markets across the globe continued to appreciate while interest rates declined at the margin. With the additional gains, the number of equity markets/indices across the globe that are in or approaching positive return territory for 2020 continued to grow.
- The outperformance of growth stocks continued during July. Additionally, large cap stocks changed course (in comparison to Q2) to outperform small cap stocks over the month. There continues to be a material divergence in trailing period performance for growth vs. value and large vs. small, and this is exemplified at the extremes with large cap growth stocks (e.g., Russell 1000 Growth) outperforming small cap value stocks (e.g., Russell 2000 Value) by over 40% thus far in 2020.
- As the Federal Reserve continued to implement unprecedented monetary policies, US Treasuries produced positive returns during July, with long-term US Treasuries (i.e., 20+ years) generating returns above 4% for the month and over 25% year-to-date.
- Although monetary and fiscal policies across the globe remain extremely accommodative, many global authorities appear to be in a period of observation as they attempt to gauge how the economy does, or does not, recover in the short term. If the recovery proves insufficient, it is expected that we will experience a continuation of the until recently unprecedented policies to combat a sustained economic downturn.

## Capital Markets Outlook

### Takeaways

- Local/regional US economies are in various stages of reopening, and the timeline for returning to normal levels of economic activity remains uncertain. Relatedly, the aggregate impacts to global GDP due to the COVID-19 pandemic are still unknown. The advance estimate of US GDP indicated a decline of over 32% during Q2 on an annualized basis, which comes on the back of a 5% decline in Q1 (annualized).
- Implied equity market volatility<sup>1</sup> declined throughout the month of July from approximately 30 to 24.5 at month-end. Similarly, implied fixed income volatility<sup>2</sup> decreased to historically low levels and our Systemic Risk measure also declined during July.
- While valuations for several risk-based asset classes appear attractive at first glance, it is important to note that the full impact on corporate earnings and solvencies remains unknown. The actual path that the global economy will take moving forward is uncertain
- The Market Sentiment Indicator<sup>3</sup> flipped to **green** (i.e., positive) at month-end.

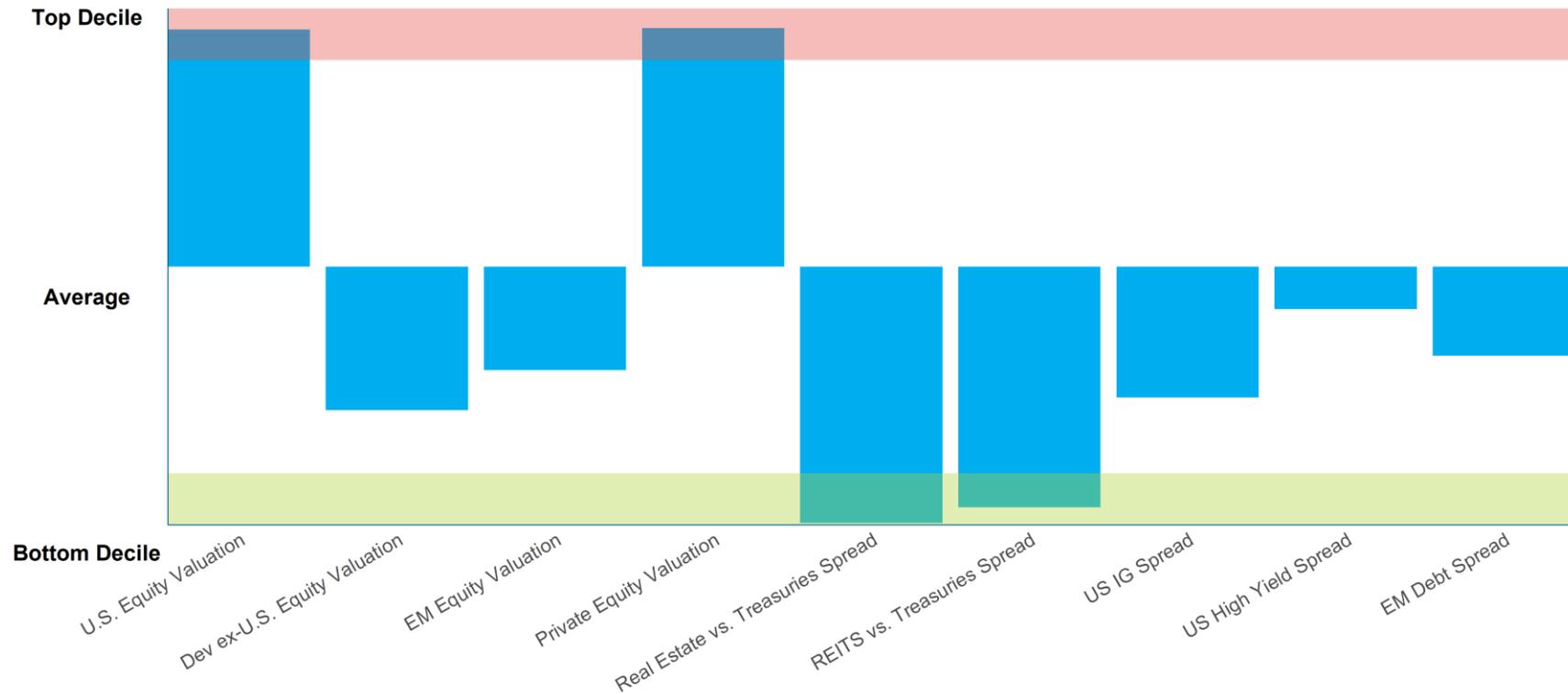
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<sup>1</sup> As measured by VIX Index.

<sup>2</sup> As measured by MOVE Index.

<sup>3</sup> See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

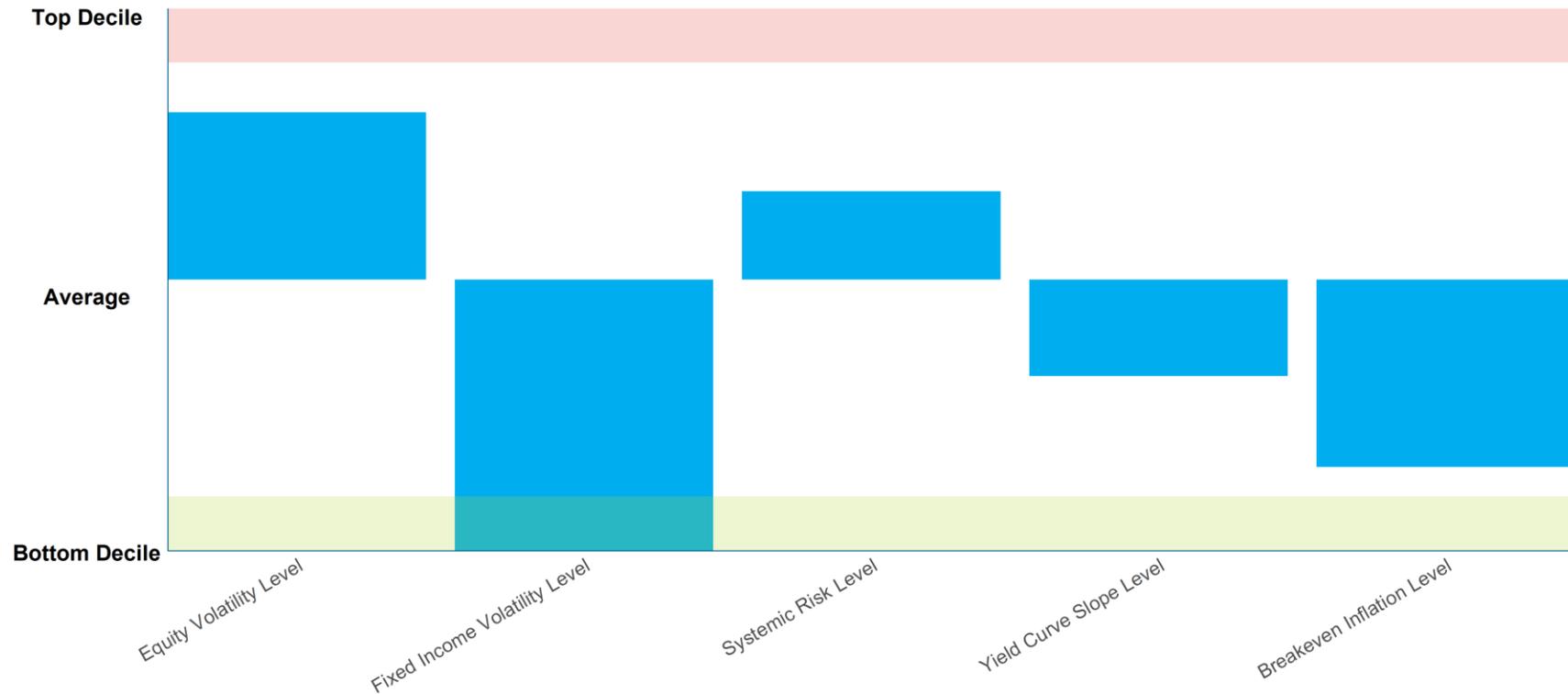
### Risk Overview/Dashboard (1) (As of July 31, 2020)<sup>1</sup>



- Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

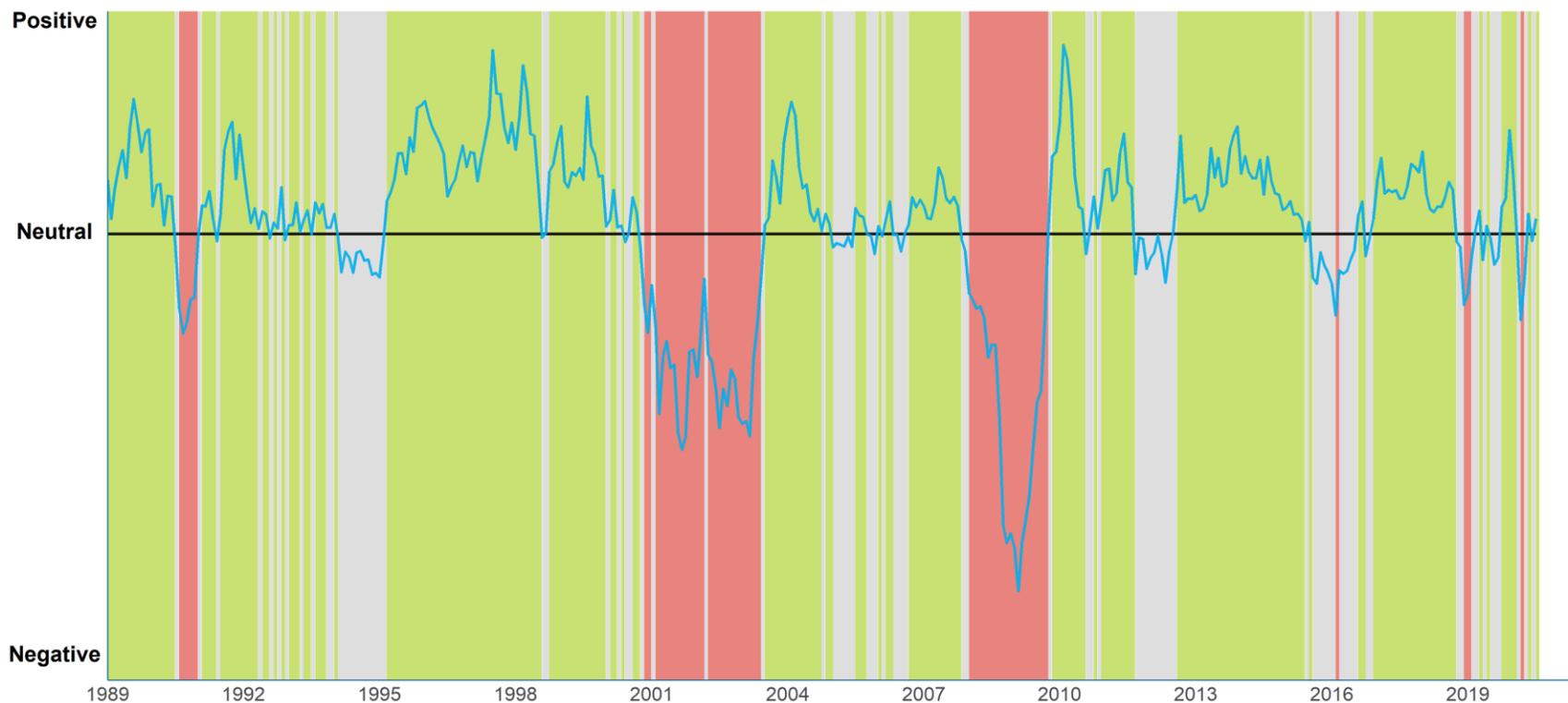
<sup>1</sup> With the exception of Private Equity Valuation, that is YTD as of December 31, 2019.

### Risk Overview/Dashboard (2) (As of July 31, 2020)

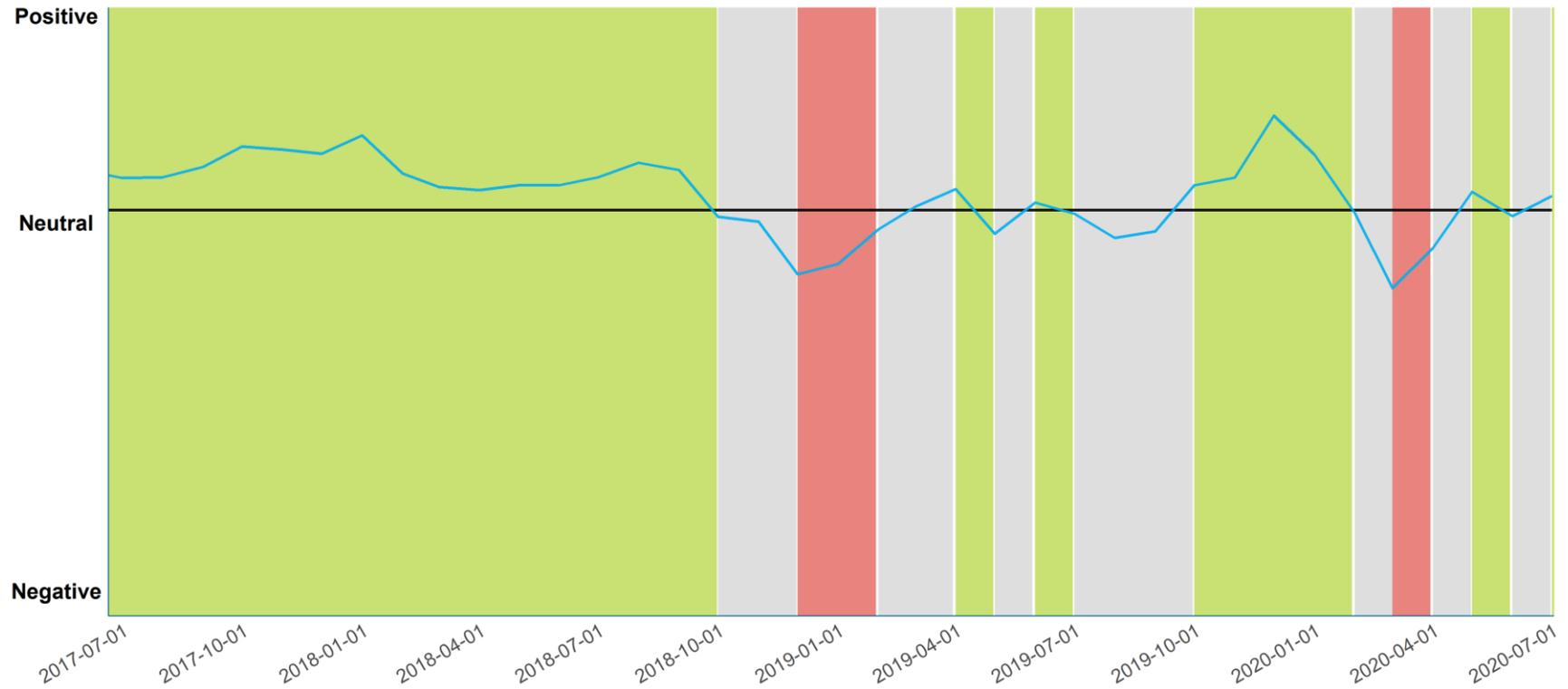


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

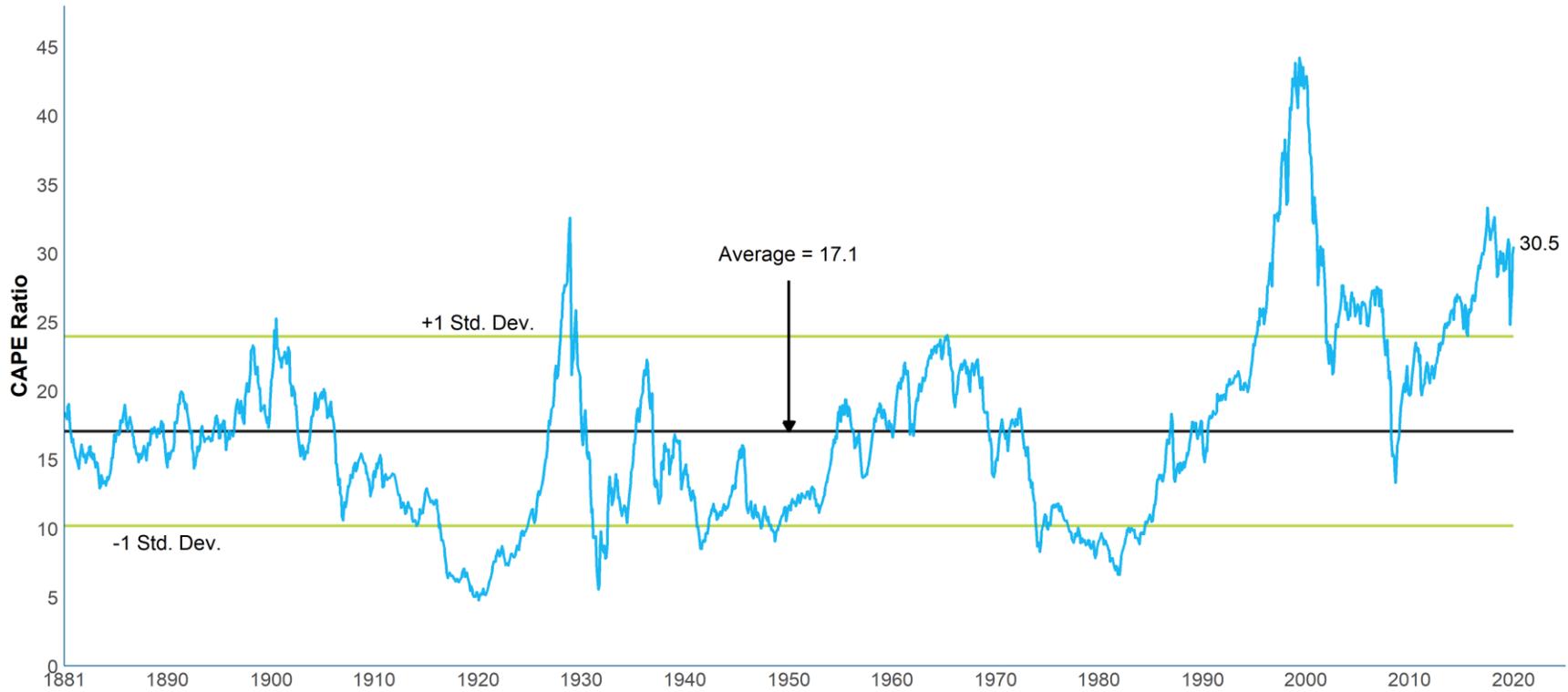
### Market Sentiment Indicator (All History) (As of July 31, 2020)



Market Sentiment Indicator (Last Three Years)  
(As of July 31, 2020)



**US Equity Cyclically Adjusted P/E<sup>1</sup>**  
(As of July 31, 2020)



- This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

<sup>1</sup> US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

### Small Cap P/E vs. Large Cap P/E<sup>1</sup> (As of July 31, 2020)



- This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

<sup>1</sup> Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

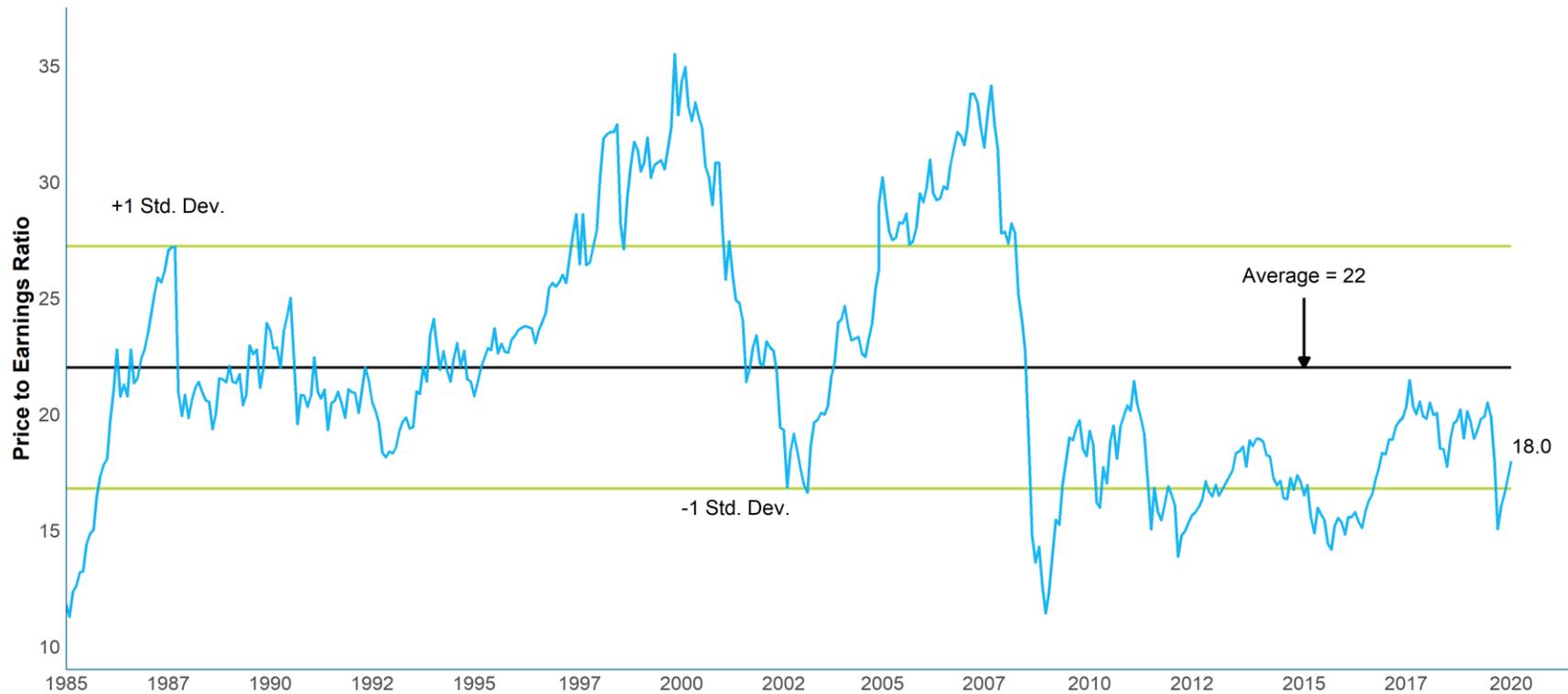
Growth P/E vs. Value P/E<sup>1</sup>  
(As of July 31, 2020)



- This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

<sup>1</sup> Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

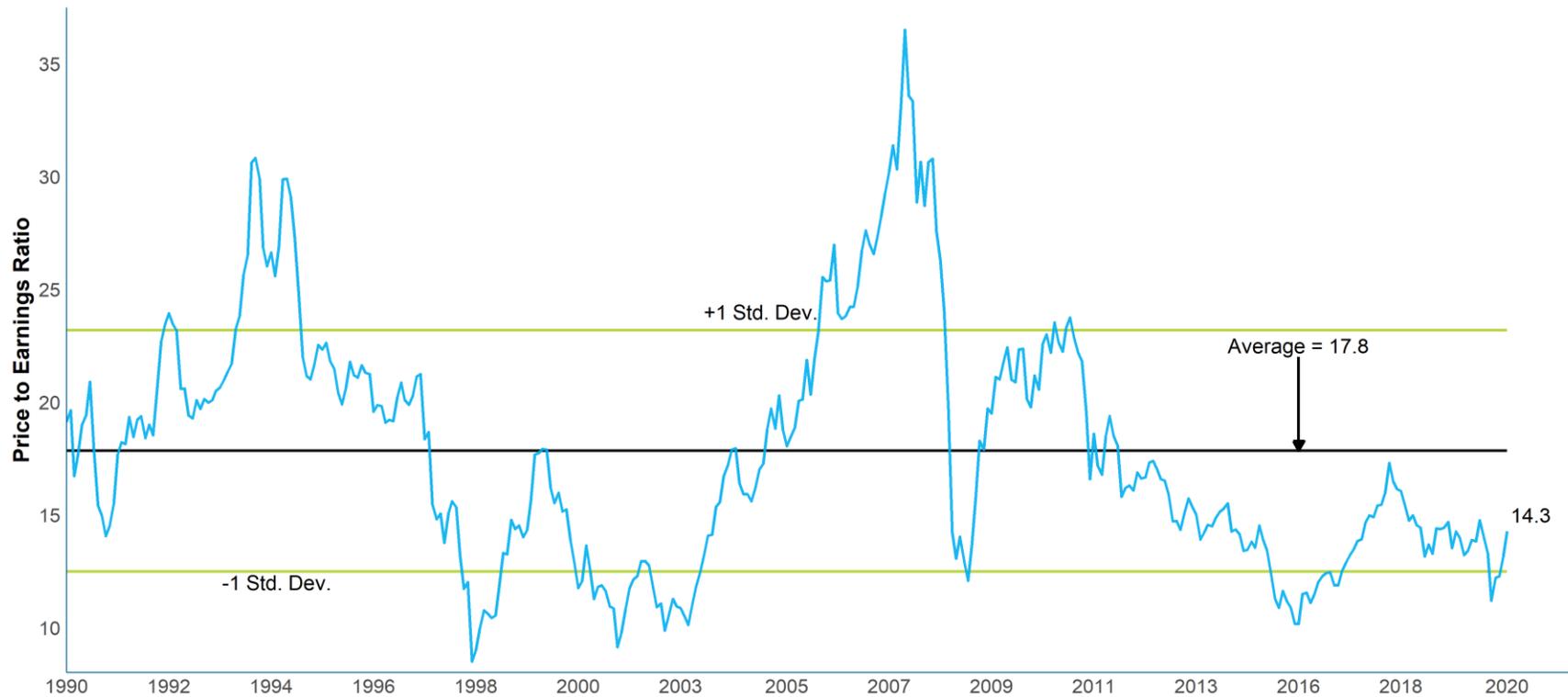
**Developed International Equity Cyclically Adjusted P/E<sup>1</sup>**  
 (As of July 31, 2020)



- This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

<sup>1</sup> Developed International Equity (MSCI EAFE ex Japan Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.

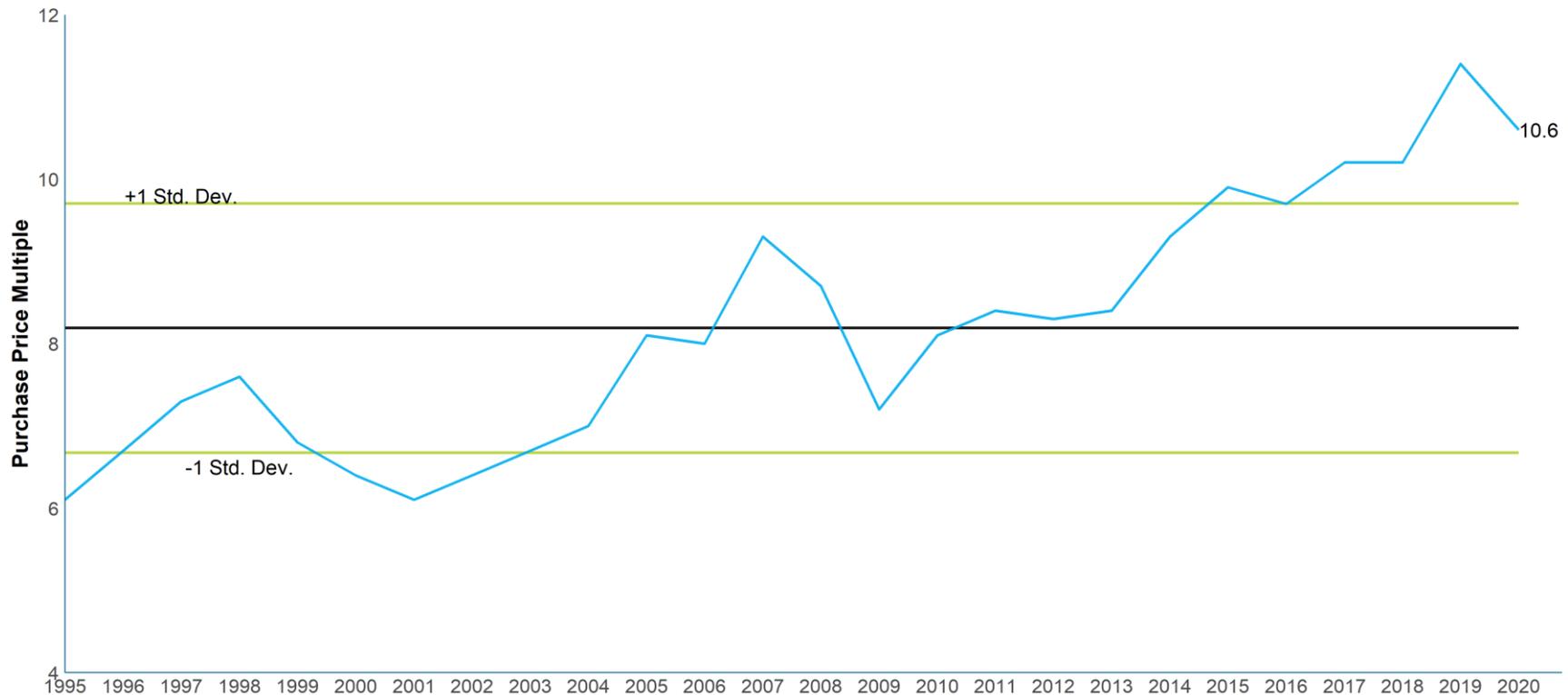
Emerging Market Equity Cyclically Adjusted P/E<sup>1</sup>  
(As of July 31, 2020)



- This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

<sup>1</sup> Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.

### Private Equity Multiples<sup>1</sup> (As of February 29, 2020)<sup>2</sup>

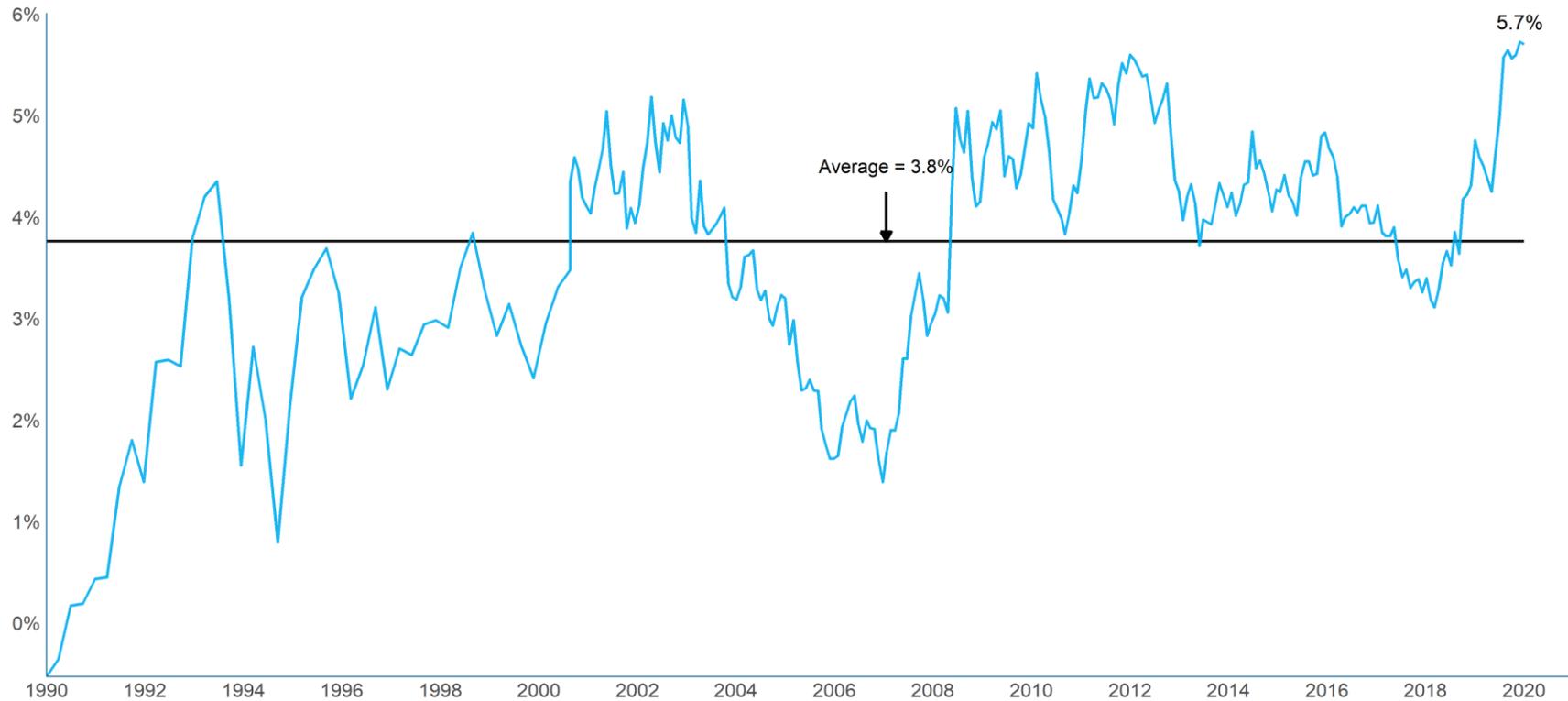


- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

<sup>1</sup> Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

<sup>2</sup> Annual figures, except for 2020 (YTD).

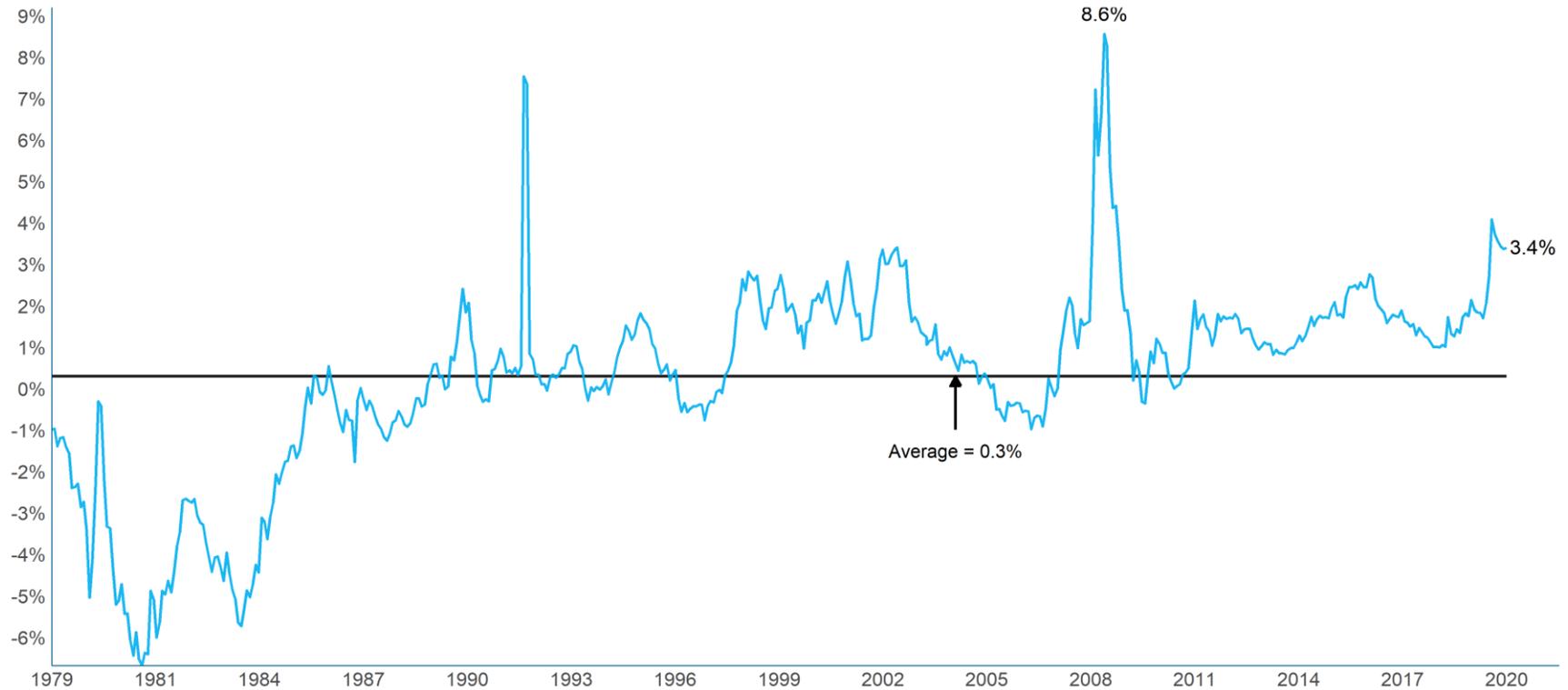
**Core Real Estate Spread vs. Ten-Year Treasury<sup>1</sup>**  
(As of July 31, 2020)



- This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

<sup>1</sup> Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.

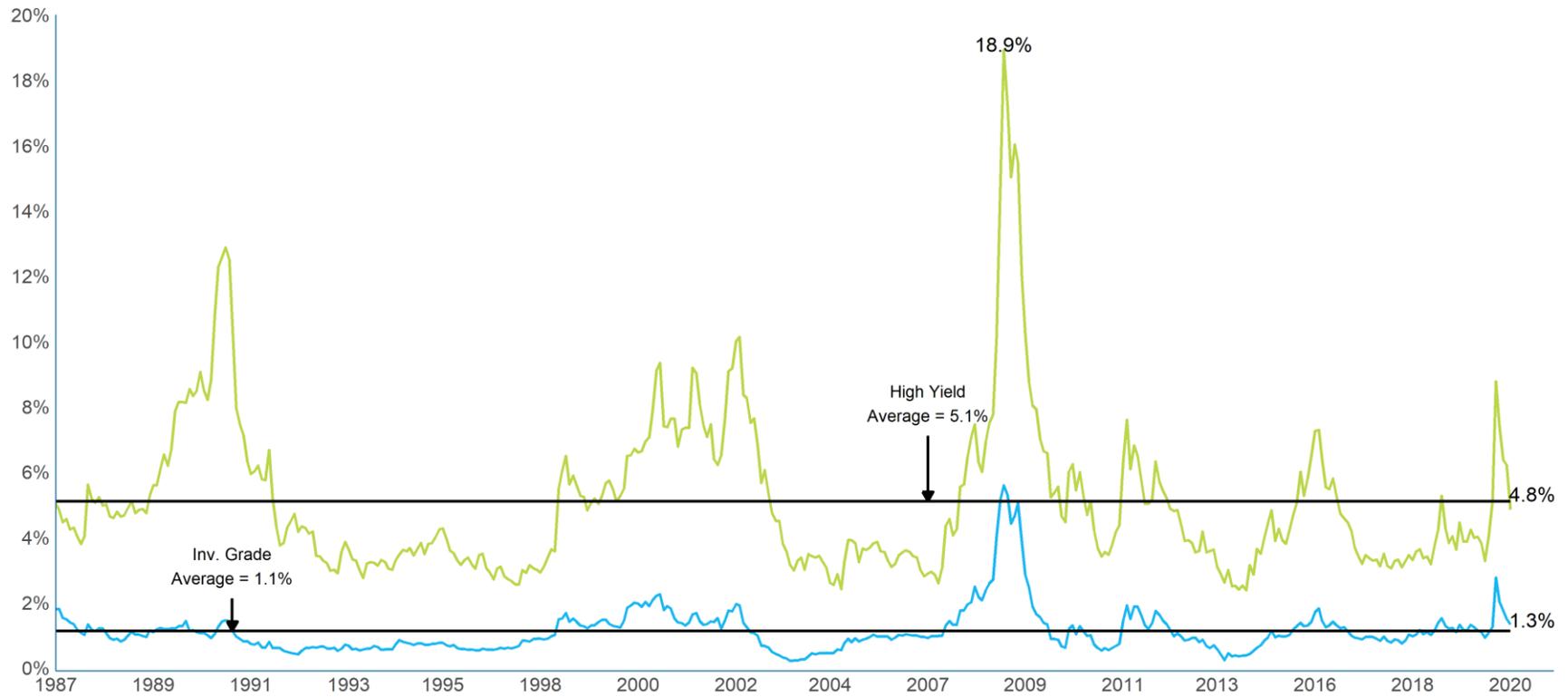
**REITs Dividend Yield Spread vs. Ten-Year Treasury<sup>1</sup>**  
 (As of July 31, 2020)



- This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

<sup>1</sup> REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.

**Credit Spreads<sup>1</sup>**  
(As of July 31, 2020)



- This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

<sup>1</sup> Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

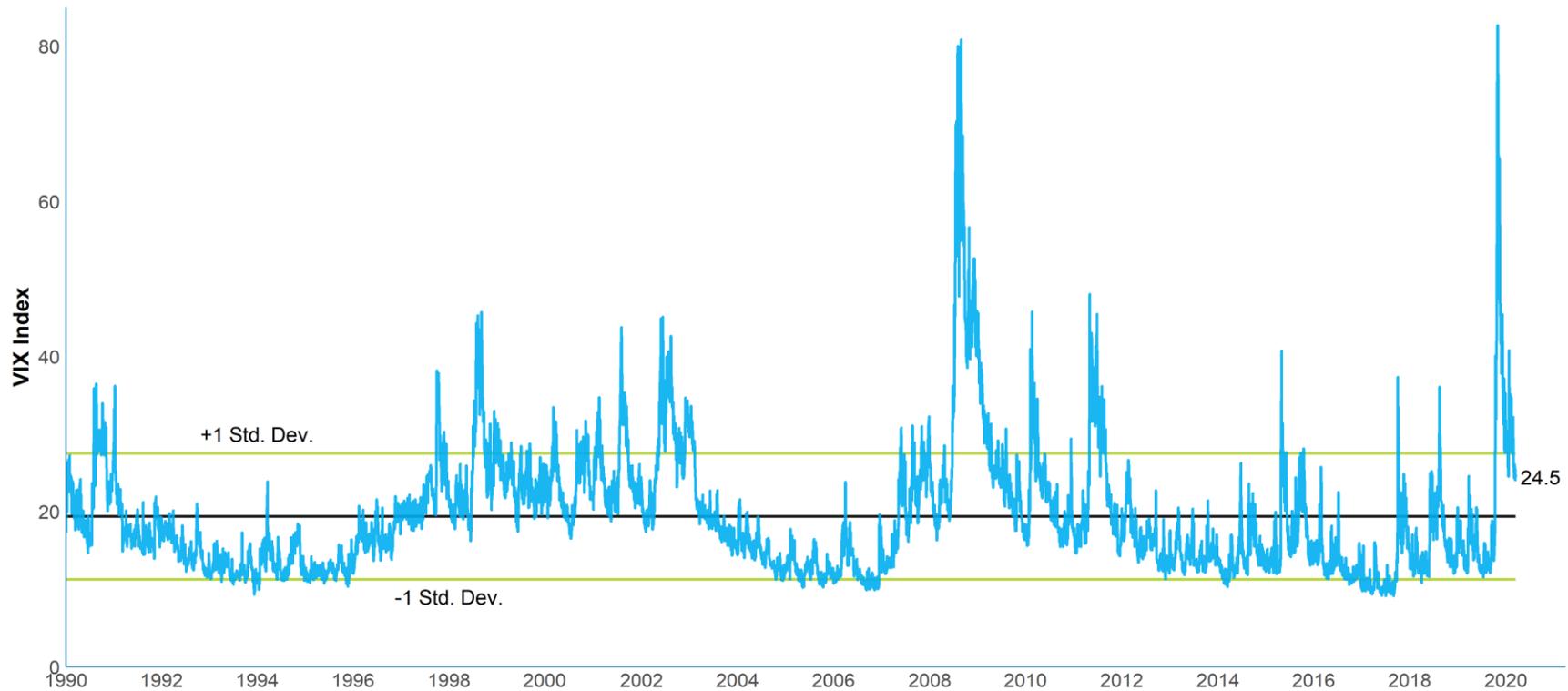
Emerging Market Debt Spreads<sup>1</sup>  
(As of July 31, 2020)



- This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

<sup>1</sup> EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg Barclays EM USD Aggregate Index.

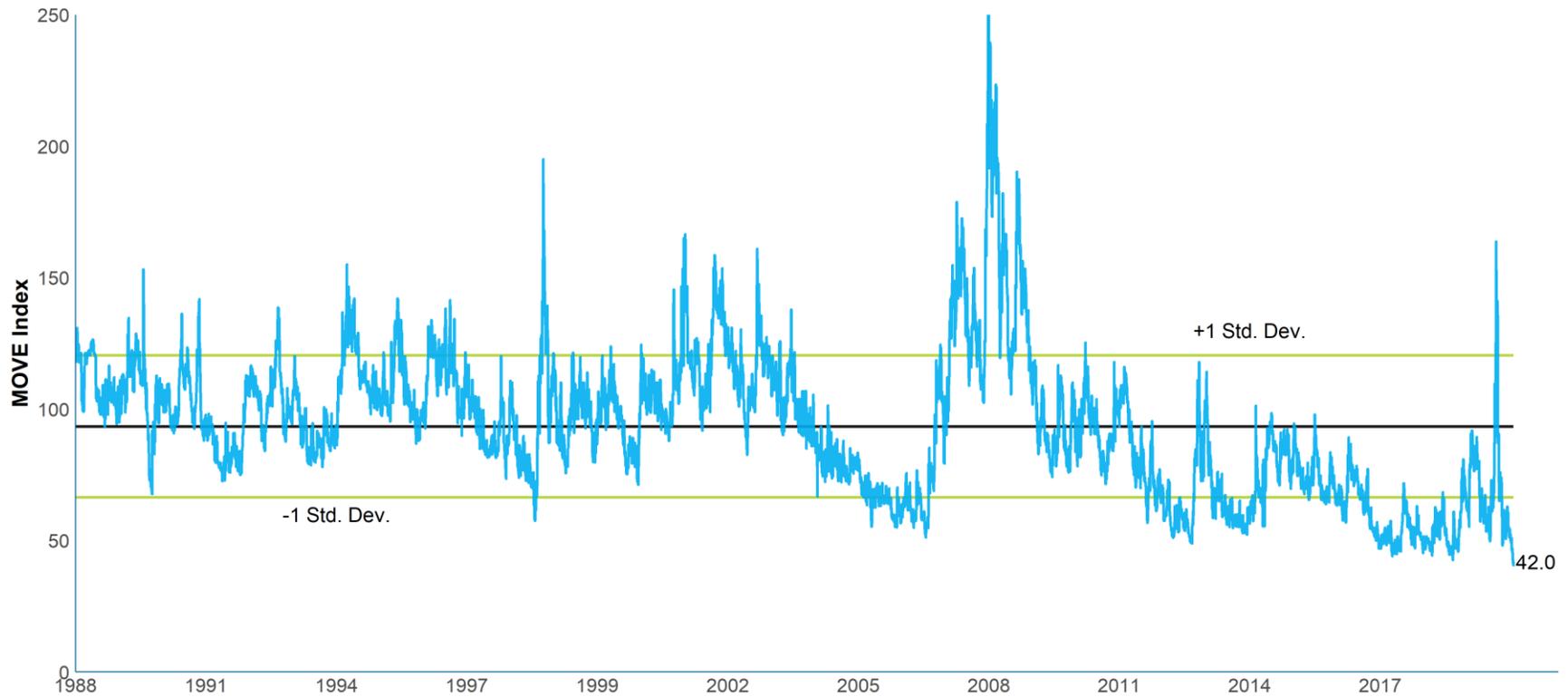
**Equity Volatility<sup>1</sup>**  
(As of July 31, 2020)



- This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

<sup>1</sup> Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

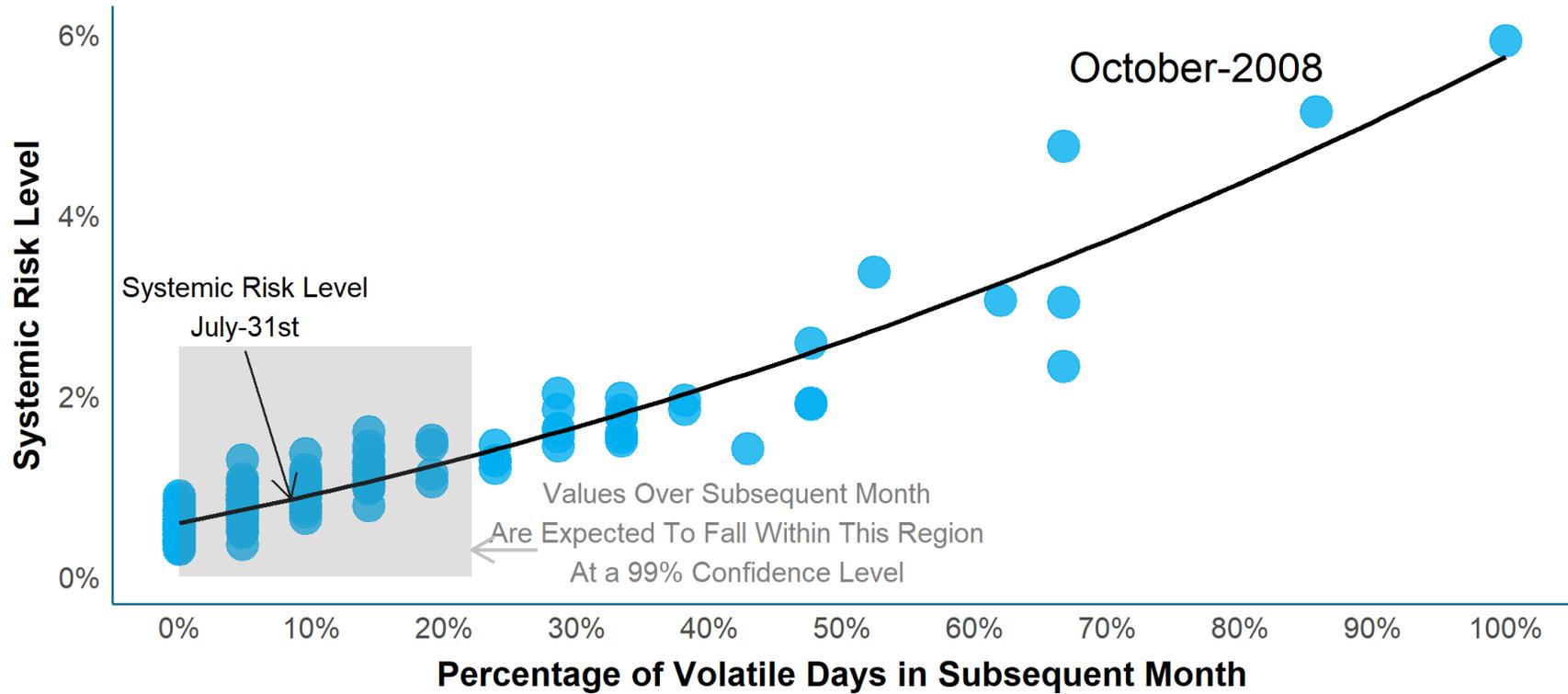
**Fixed Income Volatility<sup>1</sup>**  
(As of July 31, 2020)



- This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

<sup>1</sup> Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

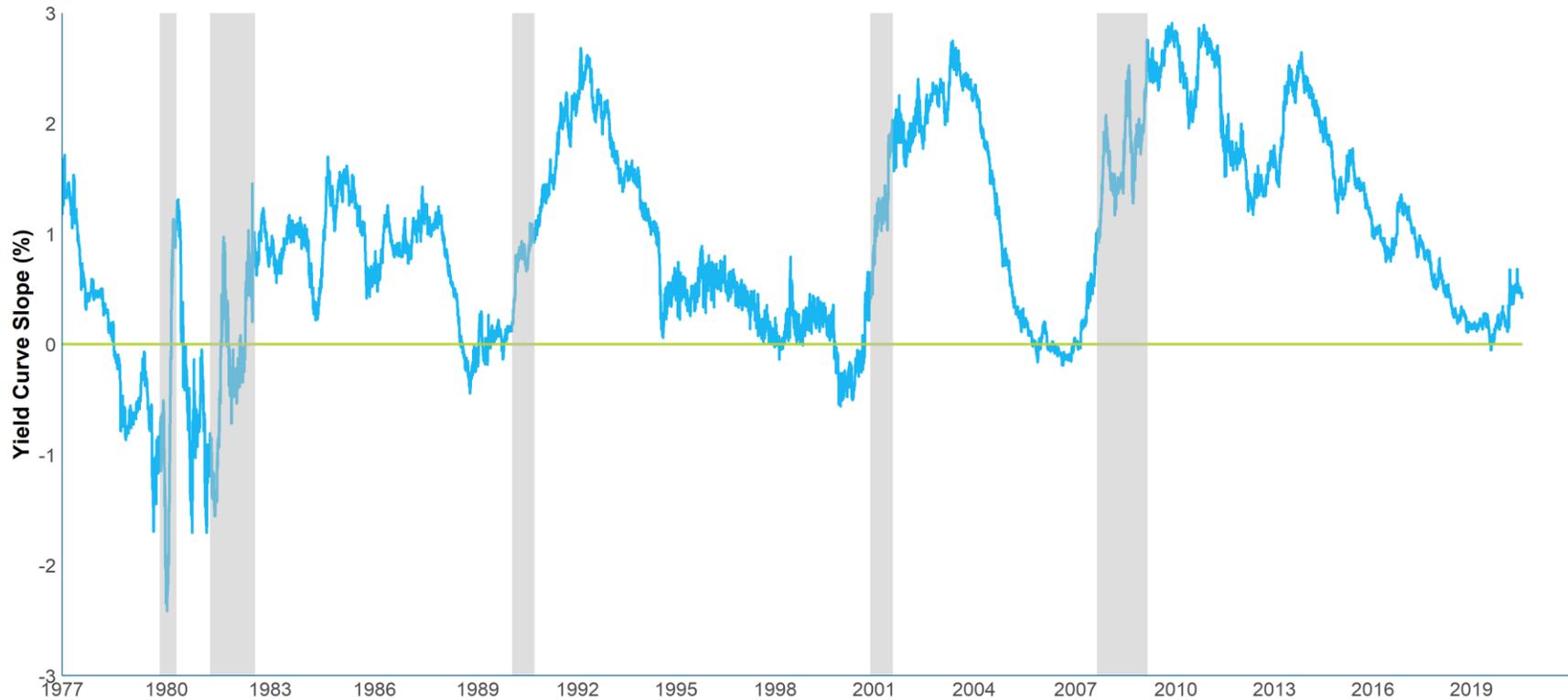
**Systemic Risk and Volatile Market Days<sup>1</sup>**  
(As of July 31, 2020)



- Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

<sup>1</sup> Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

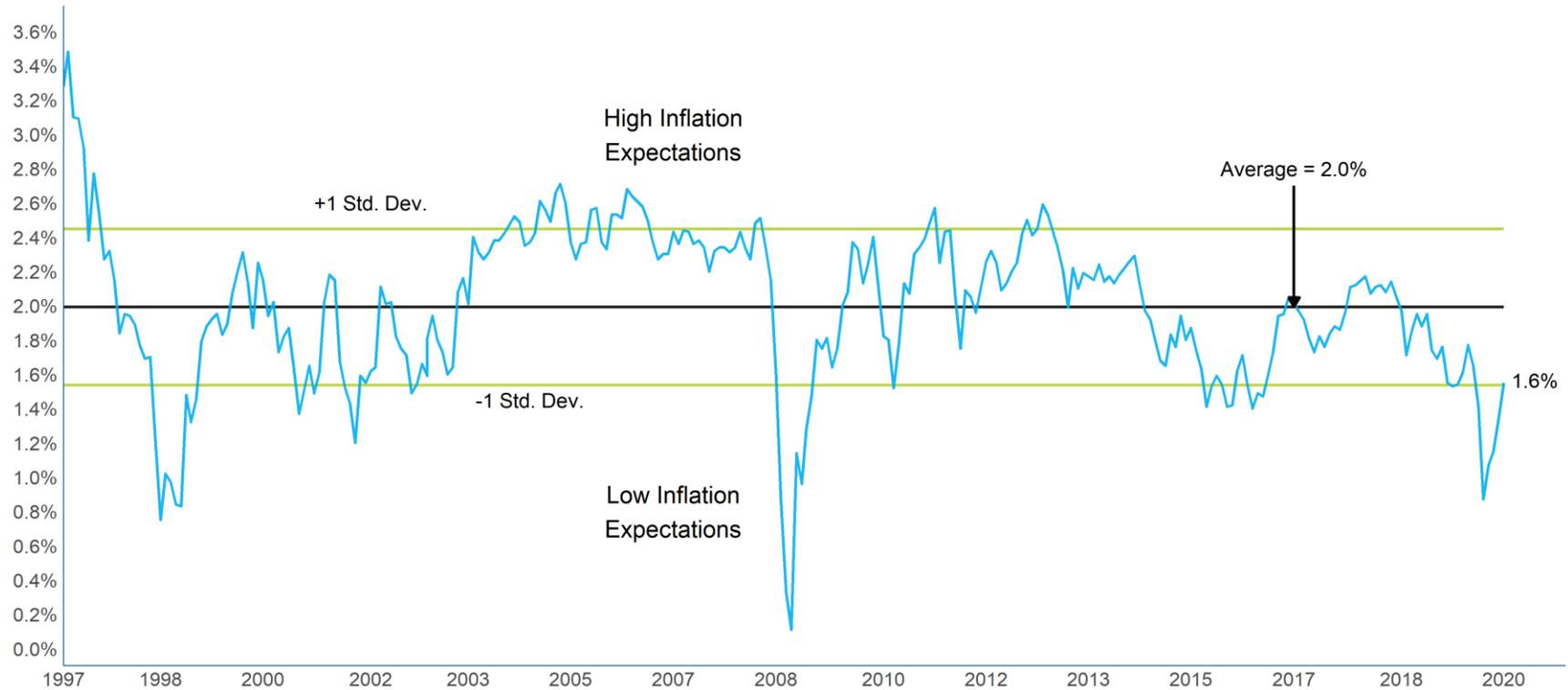
Yield Curve Slope (Ten Minus Two)<sup>1</sup>  
(As of July 31, 2020)



- This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

<sup>1</sup> Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

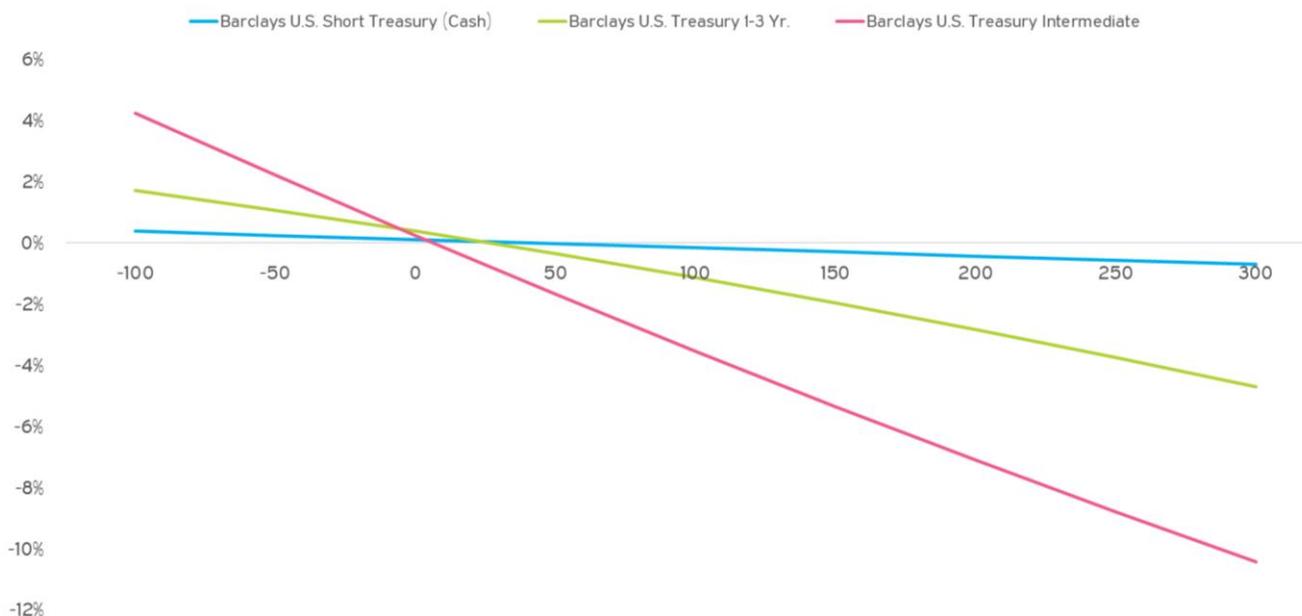
**Ten-Year Breakeven Inflation<sup>1</sup>**  
(As of July 31, 2020)



- This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

<sup>1</sup> Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

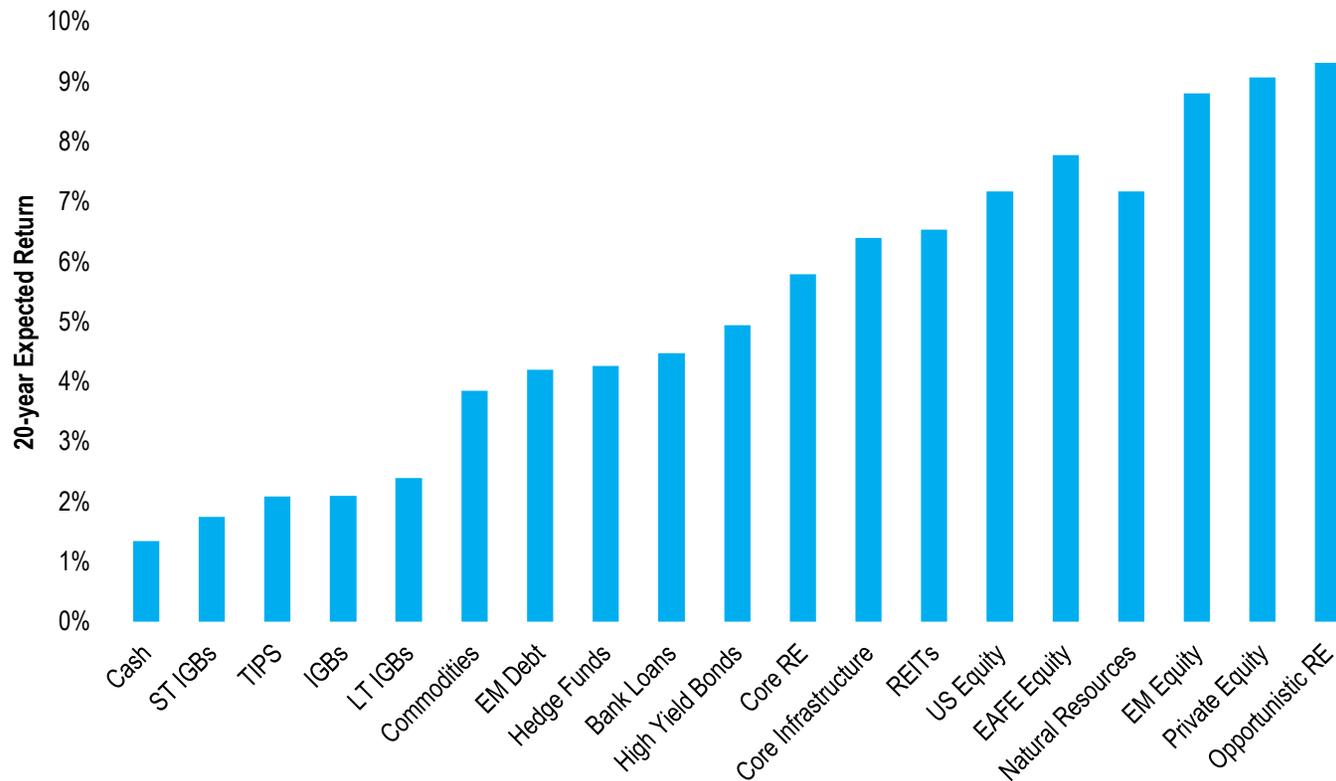
### Total Return Given Changes in Interest Rates (bps)<sup>1</sup> (As of July 31, 2020)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.4%	0.2%	0.1%	0.0%	-0.2%	-0.3%	-0.4%	-0.6%	-0.7%	0.27	0.09%
Barclays US Treasury 1-3 Yr.	1.7%	1.0%	0.4%	-0.4%	-1.2%	-2.0%	-2.8%	-3.8%	-4.7%	1.42	0.36%
Barclays US Treasury Intermediate	4.2%	2.2%	0.2%	-1.7%	-3.6%	-5.4%	-7.1%	-8.8%	-10.4%	3.89	0.22%
Barclays US Treasury Long	22.9%	11.4%	1.1%	-8.1%	-16.1%	-22.9%	-28.6%	-33.1%	-36.5%	19.49	1.10%

<sup>1</sup> Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

### Long-Term Outlook – 20-Year Annualized Expected Returns<sup>1</sup>



- This chart details Meketa’s long-term forward-looking expectations for total returns across asset classes.

<sup>1</sup> Source: Meketa Investment Group’s 2020 Annual Asset Study.

## Appendix

### Data Sources and Explanations<sup>1</sup>

- US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month “as reported” earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month “as reported” earnings.
- Developed International Equity (MSCI EAFE ex Japan Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.

<sup>1</sup> All Data as of July 31, 2020 unless otherwise noted.

## Appendix

### Data Sources and Explanations<sup>1</sup>

- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.
- Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index.
  - Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.
- EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg Barclays EM USD Aggregate Index.
- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
- Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

<sup>1</sup> All Data as of July 31, 2020 unless otherwise noted.

### Appendix

#### Data Sources and Explanations<sup>1</sup>

- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.
- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

<sup>1</sup> All Data as of July 31, 2020 unless otherwise noted.

**Meketa Market Sentiment Indicator**  
Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

### This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa’s Risk Metrics.

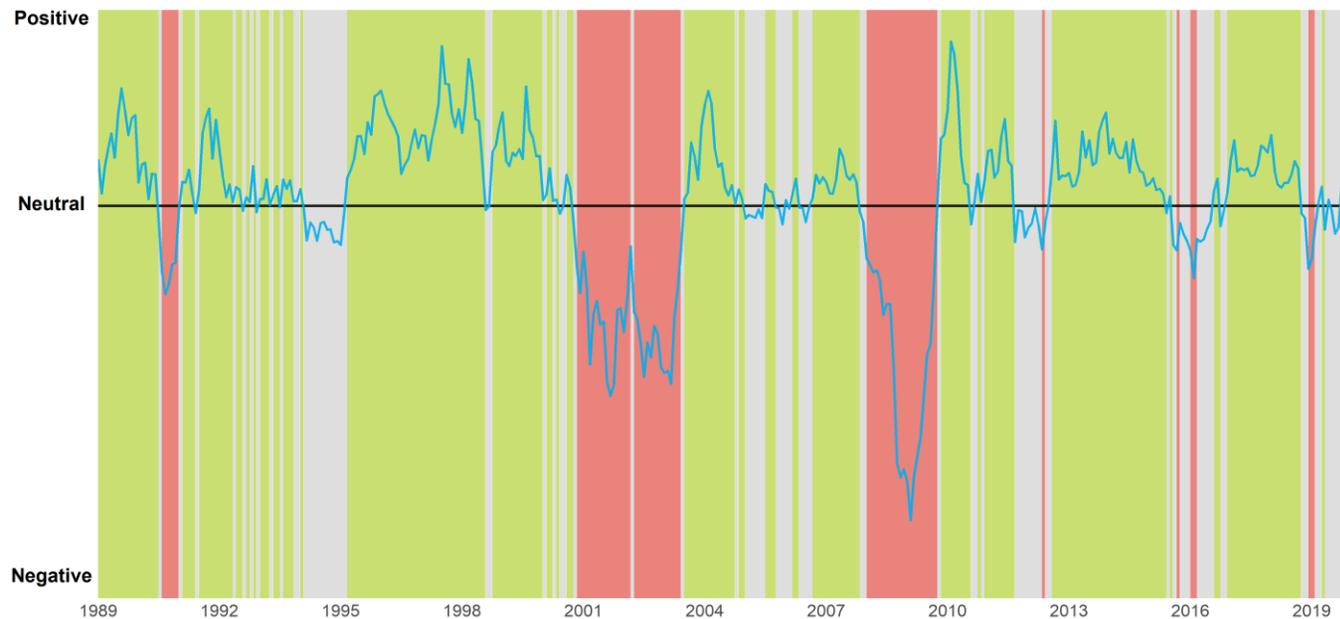
- Meketa’s Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market corrections take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

### What is the Meketa Market Sentiment Indicator (MIG-MSI)?

- The MIG-MSI is a measure meant to gauge the market’s sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

### How do I read the Meketa Market Sentiment Indicator graph?

- Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.
- Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



### How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

- The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:
  - Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
  - Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
  - Both measures are converted to Z-scores and then combined to get an “apples to apples” comparison without the need of re-scaling.
- The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure.<sup>1</sup> The color reading on the graph is determined as follows:
  - If both stock return momentum and bond spread momentum are positive = GREEN (positive)
  - If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
  - If both stock return momentum and bond spread momentum are negative = RED (negative)

<sup>1</sup> Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.

“Time Series Momentum” Moskowitz, Ooi, Pedersen, August 2010. <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>

### What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

- There is strong evidence that time series momentum is significant and persistent. In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

## **Total Portfolio Review**

### OPFRS Total Plan | As of June 30, 2020

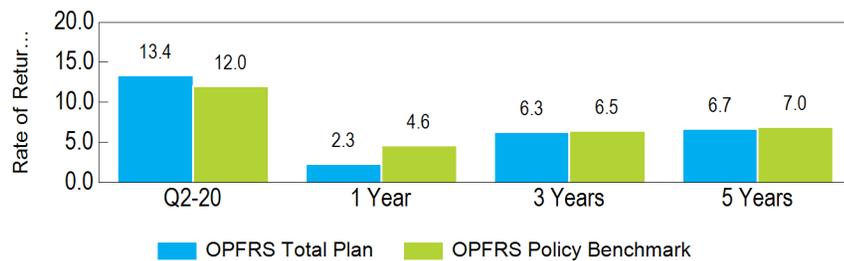
#### 6 Months Ending June 30, 2020

	Anlzd Return	Standard Deviation
OPFRS Total Plan	-2.97%	6.15%
OPFRS Policy Benchmark	-0.10%	5.14%
InvMetrics Public DB \$250mm-\$1B Gross Median	-0.50%	5.03%

#### 1 Year Ending June 30, 2020

	Anlzd Return	Standard Deviation
OPFRS Total Plan	2.04%	4.62%
OPFRS Policy Benchmark	4.61%	3.84%
InvMetrics Public DB \$250mm-\$1B Gross Median	2.98%	3.89%

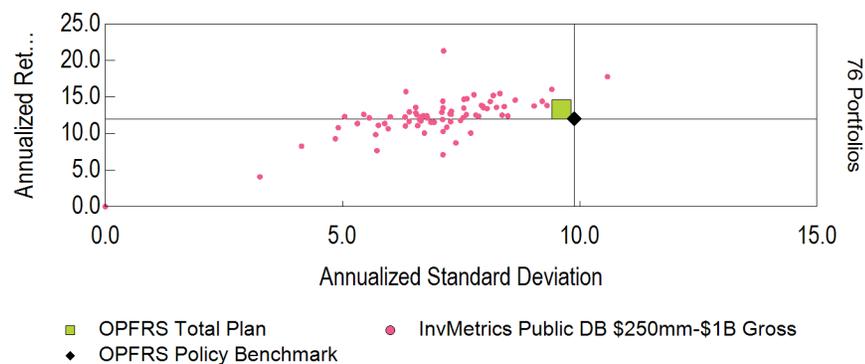
#### Return Summary Ending June 30, 2020



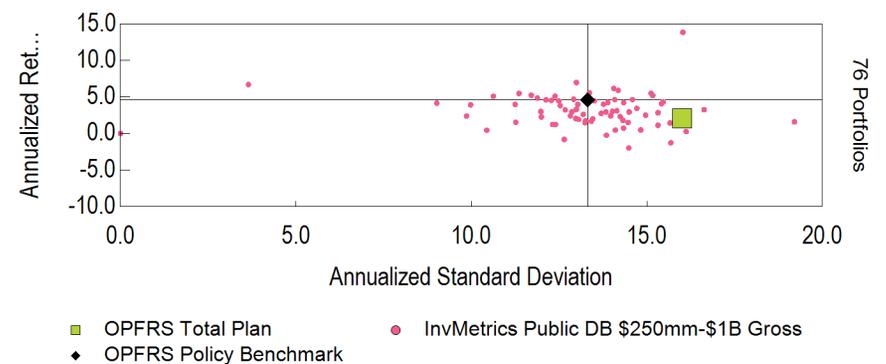
#### Summary of Cash Flows

	Quarter-To-Date	One Year
Beginning Market Value	\$341,530,509	\$388,739,955
Net Cash Flow	-\$3,019,856	-\$13,435,546
Capital Appreciation	\$44,814,641	\$8,020,885
Ending Market Value	\$383,325,294	\$383,325,294

#### Annualized Return vs. Annualized Standard Deviation 3 Months Ending June 30, 2020



#### Annualized Return vs. Annualized Standard Deviation 1 Year Ending June 30, 2020



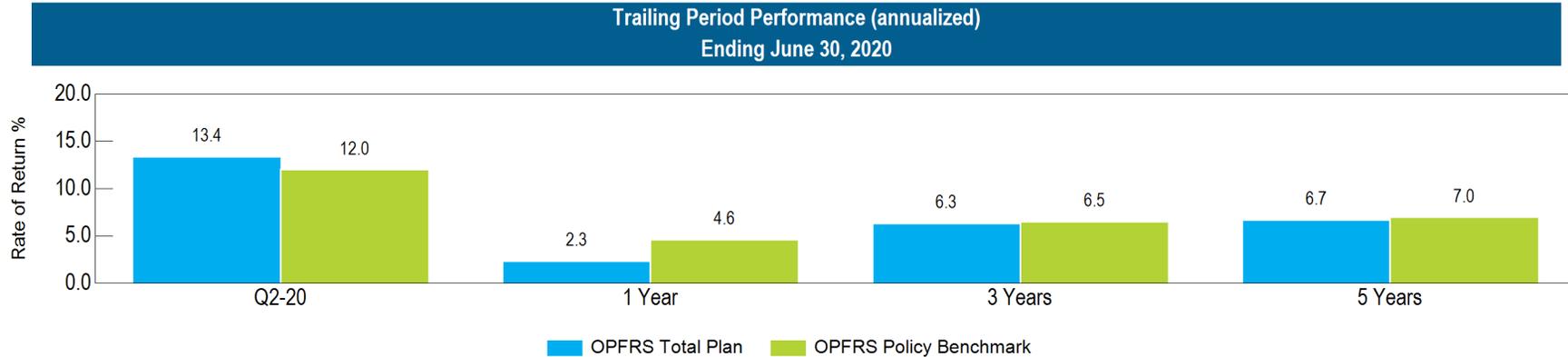
Evolving Policy Benchmark consists of 40% russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury.

### Asset Class Performance (gross of fees) | As of June 30, 2020

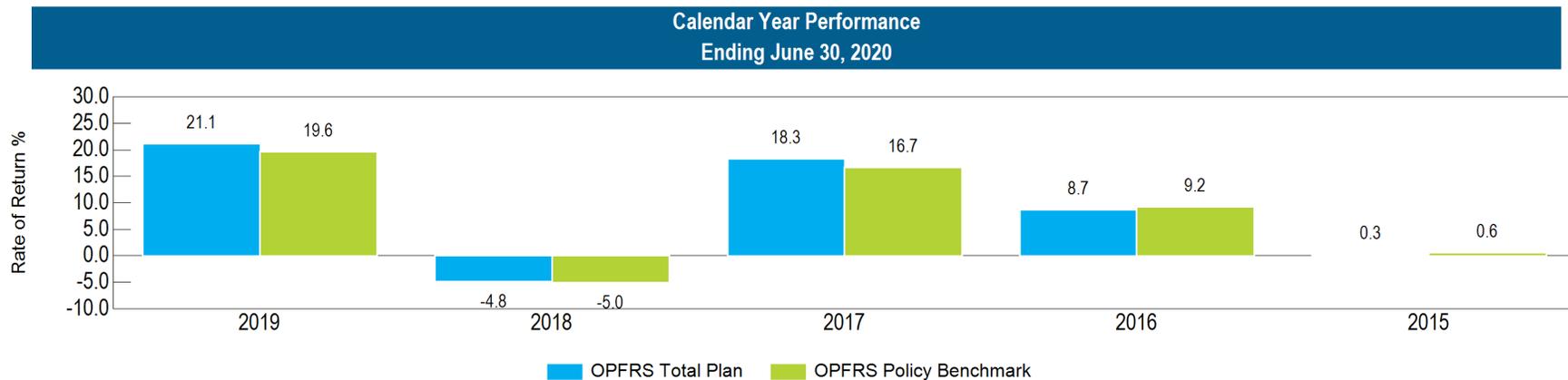
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>OPFRS Total Plan</b>	<b>13.4</b>	<b>2.3</b>	<b>6.3</b>	<b>6.7</b>	<b>7.7</b>	<b>8.7</b>
<i>OPFRS Policy Benchmark</i>	<u>12.0</u>	<u>4.6</u>	<u>6.5</u>	<u>7.0</u>	<u>7.6</u>	<u>8.5</u>
Excess Return	1.4	-2.3	-0.2	-0.3	0.1	0.2
<b>Domestic Equity</b>	<b>22.0</b>	<b>3.8</b>	<b>9.0</b>	<b>9.3</b>	<b>11.3</b>	<b>13.6</b>
<i>Russell 3000 (Blend)</i>	<u>22.0</u>	<u>6.5</u>	<u>10.0</u>	<u>10.0</u>	<u>11.7</u>	<u>13.7</u>
Excess Return	0.0	-2.7	-1.0	-0.7	-0.4	-0.1
<b>International Equity</b>	<b>16.1</b>	<b>-2.0</b>	<b>2.9</b>	<b>4.0</b>	<b>5.5</b>	<b>6.5</b>
<i>MSCI ACWI ex US (Blend)</i>	<u>16.3</u>	<u>-4.4</u>	<u>1.6</u>	<u>2.7</u>	<u>4.2</u>	<u>5.5</u>
Excess Return	-0.2	2.4	1.3	1.3	1.3	1.0
<b>Fixed Income</b>	<b>5.9</b>	<b>7.0</b>	<b>5.4</b>	<b>4.6</b>	<b>4.3</b>	<b>4.2</b>
<i>Bblmbg BC Universal (Blend)</i>	<u>3.8</u>	<u>7.9</u>	<u>5.2</u>	<u>4.4</u>	<u>4.1</u>	<u>4.1</u>
Excess Return	2.1	-0.9	0.2	0.2	0.2	0.1
<b>Credit</b>	<b>10.9</b>	<b>-6.0</b>	<b>1.0</b>	<b>3.5</b>	--	--
<i>BBgBarc US High Yield TR</i>	<u>10.2</u>	<u>0.0</u>	<u>3.3</u>	<u>4.8</u>	--	--
Excess Return	0.7	-6.0	-2.3	-1.3	--	--
<b>Covered Calls</b>	<b>15.9</b>	<b>2.0</b>	<b>5.7</b>	<b>7.3</b>	--	--
<i>CBOE S&amp;P 500 BuyWrite USD</i>	<u>9.1</u>	<u>-10.3</u>	<u>-0.2</u>	<u>3.0</u>	--	--
Excess Return	6.8	12.3	5.9	4.3	--	--
<b>Crisis Risk Offset</b>	<b>-2.6</b>	<b>-13.9</b>	--	--	--	--
<i>SG Multi Alternative Risk Premia Index</i>	<u>-4.3</u>	<u>-11.6</u>	--	--	--	--
Excess Return	1.7	-2.3	--	--	--	--
<b>Cash</b>	<b>0.0</b>	<b>2.3</b>	<b>2.0</b>	<b>1.4</b>	<b>1.0</b>	--
<i>FTSE T-Bill 3 Months TR</i>	<u>0.1</u>	<u>1.6</u>	<u>1.7</u>	<u>1.2</u>	<u>0.8</u>	--
Excess Return	-0.1	0.7	0.3	0.2	0.2	--

1. Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI Acwi ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury,
2. Domestic Equity Benchmark consists of S&P 500 thru 3/31/98 10% Russell 1000, 20% Russell 1000 Value, 5% RMC from 4/1/98 - 12/31/04 and Russell 3000 from 1/1/05 to present.
3. International Equity Benchmark consists of MSCI EAFE thru 12/31/04 and MSCI ACWI x US thereafter.
4. Fixed Income Benchmark consists of Bbg BC Aggregate prior to 4/1/06, and Bbg BC Universal thereafter.

### Portfolio Relative Performance Results | As of June 30, 2020



	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)
<b>OPFRS Total Plan</b>	<b>13.3</b>	<b>2.0</b>	<b>6.0</b>	<b>4.9</b>	<b>-15.2</b>	<b>8.3</b>	<b>18.0</b>	<b>-5.1</b>	<b>20.8</b>
<i>OPFRS Policy Benchmark</i>	<i>12.0</i>	<i>4.6</i>	<i>6.5</i>	<i>7.0</i>	<i>0.6</i>	<i>9.2</i>	<i>16.7</i>	<i>-5.0</i>	<i>19.6</i>
<i>InvMetrics Public DB \$250mm-\$1B Gross Median</i>	<i>12.4</i>	<i>3.0</i>	<i>5.7</i>	<i>6.0</i>	<i>0.0</i>	<i>7.8</i>	<i>15.8</i>	<i>-4.1</i>	<i>18.6</i>

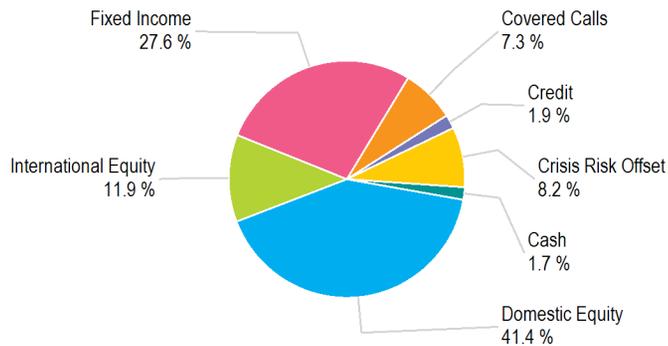


#### Asset Allocation vs. Target

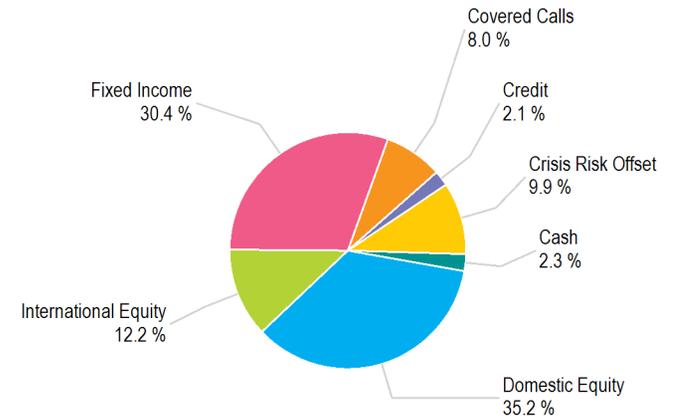
As Of June 30, 2020

	Current	%	Policy	Difference*
Domestic Equity	\$158,832,765	41.4%	40.0%	1.4%
International Equity	\$45,465,830	11.9%	12.0%	-0.1%
Fixed Income	\$105,683,312	27.6%	31.0%	-3.4%
Covered Calls	\$27,906,651	7.3%	5.0%	2.3%
Credit	\$7,466,702	1.9%	2.0%	-0.1%
Crisis Risk Offset	\$31,437,239	8.2%	10.0%	-1.8%
Cash	\$6,532,794	1.7%	0.0%	1.7%
<b>Total</b>	<b>\$383,325,294</b>	<b>100.0%</b>	<b>100.0%</b>	

June 30, 2020: 383,325,294



March 31, 2020: \$341,530,509



Target weightings reflect the Plan's evolving asset allocation (effective 5/31/2017.)

### Manager Performance - Gross of Fees | As of June 30, 2020

	Market Value	QTD	YTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
<b>Domestic Equity</b>	<b>158,832,765</b>	<b>22.0</b>	<b>-5.1</b>	<b>3.8</b>	<b>9.0</b>	<b>9.3</b>	<b>8.4</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>		<u>22.0</u>	<u>-3.5</u>	<u>6.5</u>	<u>10.0</u>	<u>10.0</u>	<u>8.5</u>	<u>Jun-97</u>
Excess Return		0.0	-1.6	-2.7	-1.0	-0.7	-0.1	
Northern Trust Russell 1000	91,148,347	21.8	-2.9	7.4	10.6	10.5	13.2	Jun-10
<i>Russell 1000</i>		<u>21.8</u>	<u>-2.8</u>	<u>7.5</u>	<u>10.6</u>	<u>10.5</u>	<u>13.2</u>	<u>Jun-10</u>
Excess Return		0.0	-0.1	-0.1	0.0	0.0	0.0	
<i>eV US Large Cap Core Equity Gross Rank</i>		27	38	33	35	34	39	Jun-10
EARNEST Partners	31,959,060	23.8	-5.4	3.1	10.0	11.0	9.4	Apr-06
<i>Russell MidCap</i>		<u>24.6</u>	<u>-9.1</u>	<u>-2.2</u>	<u>5.8</u>	<u>6.8</u>	<u>7.8</u>	<u>Apr-06</u>
Excess Return		-0.8	3.7	5.3	4.2	4.2	1.6	
<i>eV US Mid Cap Core Equity Gross Rank</i>		38	26	16	17	9	32	Apr-06
Vanguard Russell 2000 Value	6,549,328	18.8	-23.2	--	--	--	-17.0	Aug-19
<i>Russell 2000 Value</i>		<u>18.9</u>	<u>-23.5</u>	--	--	--	<u>-17.6</u>	<u>Aug-19</u>
Excess Return		-0.1	0.3				0.6	
<i>eV US Small Cap Value Equity Gross Rank</i>		71	64	--	--	--	57	Aug-19
Rice Hall James	11,728,340	37.3	-2.5	2.1	--	--	6.9	Jul-17
<i>Russell 2000 Growth</i>		<u>30.6</u>	<u>-3.1</u>	<u>3.5</u>	--	--	<u>7.9</u>	<u>Jul-17</u>
Excess Return		6.7	0.6	-1.4			-1.0	
<i>eV US Small Cap Growth Equity Gross Rank</i>		32	67	66	--	--	83	Jul-17
iShares Edge MSCI Min Vol	17,447,691	12.8	--	--	--	--	12.8	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>		<u>12.9</u>	--	--	--	--	<u>12.9</u>	<u>Apr-20</u>
Excess Return		-0.1					-0.1	
<i>eV US Low Volatility Equity Gross Rank</i>		65	--	--	--	--	65	Apr-20

### Manager Performance - Gross of Fees | As of June 30, 2020

	Market Value	QTD	YTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
<b>International Equity</b>	<b>45,465,830</b>	<b>16.1</b>	<b>-9.9</b>	<b>-2.0</b>	<b>2.9</b>	<b>4.0</b>	<b>5.0</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>		<i>16.3</i>	<i>-10.8</i>	<i>-4.4</i>	<i>1.6</i>	<i>2.7</i>	<i>5.0</i>	<i>Jan-98</i>
Excess Return		-0.2	0.9	2.4	1.3	1.3	0.0	
Vanguard Developed Markets	13,341,703	16.9	-10.9	--	--	--	-0.5	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>		<i>16.5</i>	<i>-11.2</i>	--	--	--	<i>-0.6</i>	<i>Sep-19</i>
Excess Return		0.4	0.3				0.1	
<i>eV ACWI ex-US All Cap Core Eq Gross Rank</i>		<i>63</i>	<i>62</i>	--	--	--	<i>69</i>	<i>Sep-19</i>
iShares MSCI ACWI ex U.S. ETF	31,683,417	16.2	-10.5	--	--	--	-9.9	Dec-19
<i>MSCI ACWI ex USA Gross</i>		<i>16.3</i>	<i>-10.8</i>	--	--	--	<i>-6.9</i>	<i>Dec-19</i>
Excess Return		-0.1	0.3				-3.0	
<i>eV ACWI ex-US All Cap Core Eq Gross Rank</i>		<i>75</i>	<i>60</i>	--	--	--	<i>78</i>	<i>Dec-19</i>

Total International Equity market value includes cash held in closed accounts Fisher and Hansberger.

**Manager Performance - Gross of Fees | As of June 30, 2020**

	Market Value	QTD	YTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
<b>Fixed Income</b>	<b>105,683,312</b>	<b>5.9</b>	<b>4.5</b>	<b>7.0</b>	<b>5.4</b>	<b>4.6</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>		<u>3.8</u>	<u>5.2</u>	<u>7.9</u>	<u>5.2</u>	<u>4.4</u>	<u>5.5</u>	<i>Dec-93</i>
Excess Return		2.1	-0.7	-0.9	0.2	0.2	0.1	
Ramirez	76,852,455	5.8	3.5	6.2	5.2	--	5.2	Jan-17
<i>BBgBarc US Aggregate TR</i>		<u>2.9</u>	<u>6.1</u>	<u>8.7</u>	<u>5.3</u>	--	<u>5.2</u>	<i>Jan-17</i>
Excess Return		2.9	-2.6	-2.5	-0.1		0.0	
<i>eV US Core Fixed Inc Net Rank</i>		12	95	93	65	--	52	<i>Jan-17</i>
Reams	28,830,813	9.0	15.7	18.3	8.8	6.4	6.1	Feb-98
<i>Blmbg BC Universal (Blend)</i>		<u>3.8</u>	<u>5.2</u>	<u>7.9</u>	<u>5.2</u>	<u>4.4</u>	<u>5.2</u>	<i>Feb-98</i>
Excess Return		5.2	10.5	10.4	3.6	2.0	0.9	
<i>eV US Core Plus Fixed Inc Gross Rank</i>		4	1	1	1	3	34	<i>Feb-98</i>

**Manager Performance - Gross of Fees | As of June 30, 2020**

	Market Value	QTD	YTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
<b>Covered Calls</b>	<b>27,906,651</b>	<b>15.9</b>	<b>-5.7</b>	<b>2.0</b>	<b>5.7</b>	<b>7.3</b>	<b>7.1</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>		<i>9.1</i>	<i>-15.1</i>	<i>-10.3</i>	<i>-0.2</i>	<i>3.0</i>	<i>3.5</i>	<i>Apr-14</i>
Excess Return		6.8	9.4	12.3	5.9	4.3	3.6	
Parametric BXM	12,885,520	12.0	-7.7	-1.8	3.2	5.4	5.5	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>		<i>9.1</i>	<i>-15.1</i>	<i>-10.3</i>	<i>-0.2</i>	<i>3.0</i>	<i>3.5</i>	<i>Apr-14</i>
Excess Return		2.9	7.4	8.5	3.4	2.4	2.0	
Parametric DeltaShift	15,021,131	19.7	-3.8	5.8	8.2	8.8	9.3	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>		<i>9.1</i>	<i>-15.1</i>	<i>-10.3</i>	<i>-0.2</i>	<i>3.0</i>	<i>3.5</i>	<i>Apr-14</i>
Excess Return		10.6	11.3	16.1	8.4	5.8	5.8	

Manager Performance - Gross of Fees | As of June 30, 2020

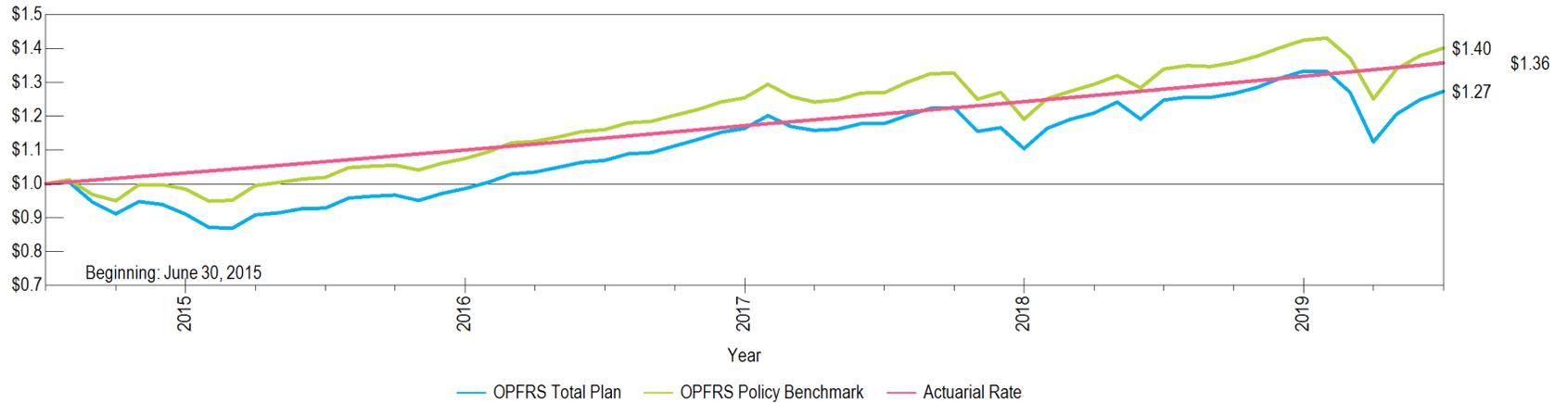
	Market Value	QTD	YTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
<b>Credit</b>	<b>7,466,702</b>	<b>10.9</b>	<b>-6.7</b>	<b>-6.0</b>	<b>1.0</b>	<b>3.5</b>	<b>3.8</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>		<i>10.2</i>	<i>-3.8</i>	<i>0.0</i>	<i>3.3</i>	<i>4.8</i>	<i>4.8</i>	<i>Feb-15</i>
Excess Return		0.7	-2.9	-6.0	-2.3	-1.3	-1.0	
DDJ Capital	7,466,702	10.9	-6.7	-6.0	1.0	3.5	3.8	Feb-15
<i>ICE BofA High Yield Master TR</i>		<i>9.6</i>	<i>-4.8</i>	<i>-1.1</i>	<i>3.0</i>	<i>4.6</i>	<i>4.6</i>	<i>Feb-15</i>
Excess Return		1.3	-1.9	-4.9	-2.0	-1.1	-0.8	

**Manager Performance - Gross of Fees | As of June 30, 2020**

	Market Value	QTD	YTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
<b>Crisis Risk Offset</b>	<b>31,437,239</b>	<b>-2.6</b>	<b>-20.2</b>	<b>-13.9</b>	--	--	<b>-9.0</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>		<i>-4.3</i>	<i>-12.5</i>	<i>-11.6</i>	--	--	<i>-5.9</i>	<i>Aug-18</i>
Excess Return		1.7	-7.7	-2.3			-3.1	
Parametric Systematic Alternative Risk Premia	15,689,227	-4.7	-41.1	-35.0	--	--	-21.1	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>		<i>-4.3</i>	<i>-12.5</i>	<i>-11.6</i>	--	--	<i>-5.9</i>	<i>Aug-18</i>
Excess Return		-0.4	-28.6	-23.4			-15.2	
Vanguard Long-Term Treasury ETF	15,748,012	-0.4	21.0	25.1	--	--	25.1	Jul-19
<i>BBgBarc US Govt Long TR</i>		<i>0.3</i>	<i>21.0</i>	<i>25.1</i>	--	--	<i>25.1</i>	<i>Jul-19</i>
Excess Return		-0.7	0.0	0.0			0.0	
<i>eV US Long Duration - Gov/Cred Fixed Inc Net Rank</i>		<i>99</i>	<i>1</i>	<i>3</i>	--	--	<i>3</i>	<i>Jul-19</i>

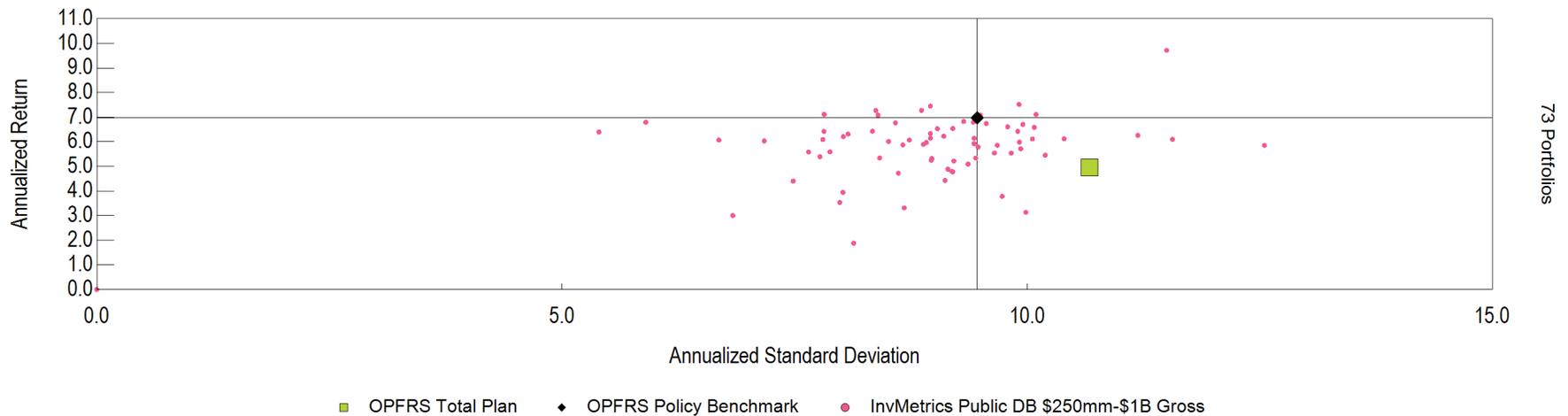
### Total Portfolio 5-Year Performance | As of June 30, 2020

#### Growth of a Dollar

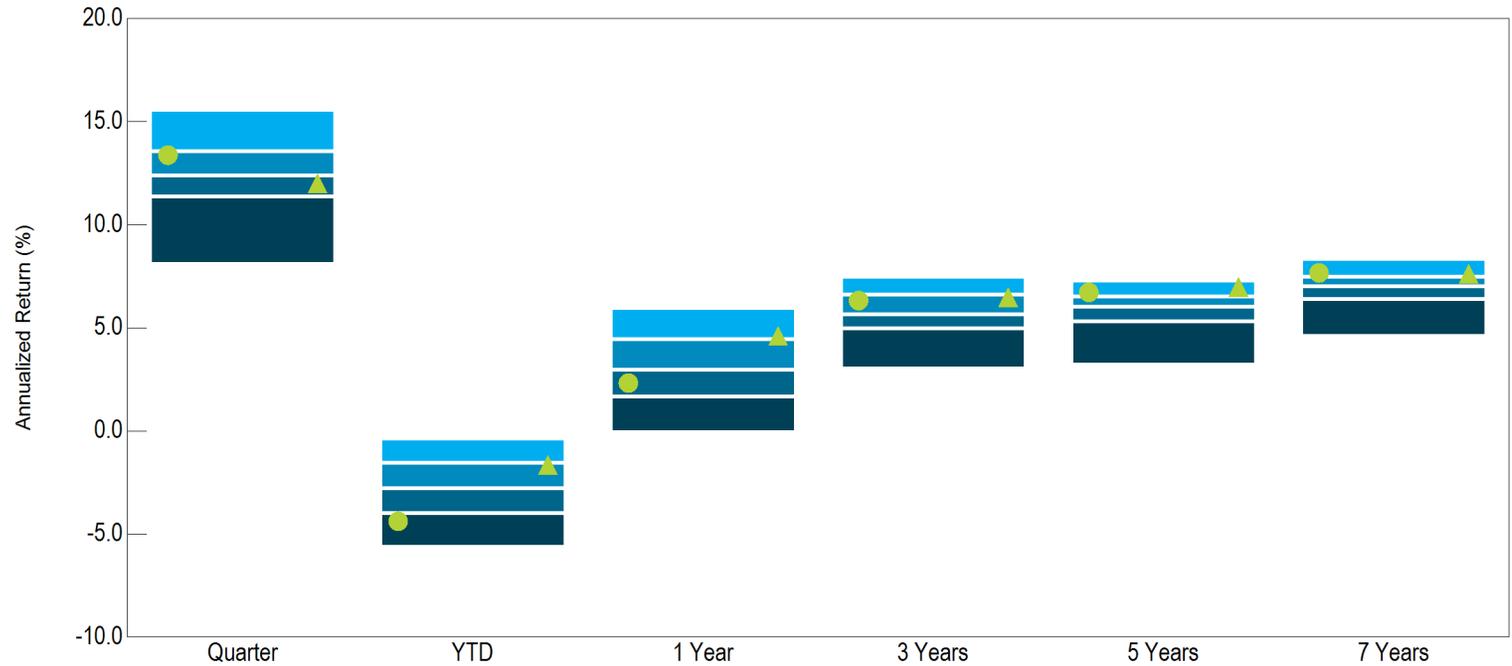


The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, 6.5% through 2/31/2017 and 6.0% currently

#### Annualized Return vs. Annualized Standard Deviation 5 Years Ending June 30, 2020



#### InvMetrics Public DB \$250mm-\$1B Gross Return Comparison



	Return (Rank)		Quarter		YTD		1 Year		3 Years		5 Years		7 Years	
5th Percentile	15.5		-0.4		6.0		7.5		7.3		8.3			
25th Percentile	13.6		-1.5		4.5		6.6		6.5		7.5			
Median	12.4		-2.8		3.0		5.7		6.0		7.0			
75th Percentile	11.4		-4.0		1.7		5.0		5.3		6.4			
95th Percentile	8.1		-5.6		-0.1		3.1		3.2		4.6			
# of Portfolios	76		76		76		75		73		72			
● OPFRS Total Plan	13.4	(33)	-4.4	(81)	2.3	(65)	6.3	(35)	6.7	(20)	7.7	(22)		
▲ OPFRS Policy Benchmark	12.0	(63)	-1.7	(29)	4.6	(23)	6.5	(30)	7.0	(12)	7.6	(24)		

## **Manager Monitoring / Probation List**

### Monitoring/Probation Status

#### Return vs. Benchmark since Corrective Action As of June 30, 2020

Portfolio	Status	Concern	Months Since Corrective Action	Performance <sup>^</sup> Since Corrective Action (Gross)	Peer Group Percentile Ranking	Date of Corrective Action*
DDJ Capital	On Watch	Performance	12	-6.0	24	5/29/2019
Ice BofAML US High Yield			---	-1.1		
Rice Hall James	On Watch	Performance	12	1.1	34	5/29/2019
Russell 2000 Growth	---	---	---	3.5		

<sup>^</sup>Annualized performance if over one year.

\* Approximate date based on when Board voted to either monitor a manager at a heightened level or place it on probation.

#### Investment Performance Criteria For Manager Monitoring/Probation Status

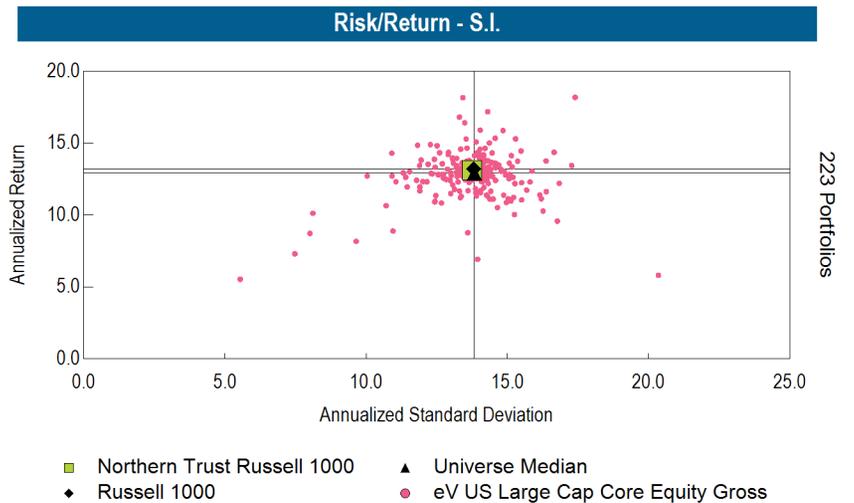
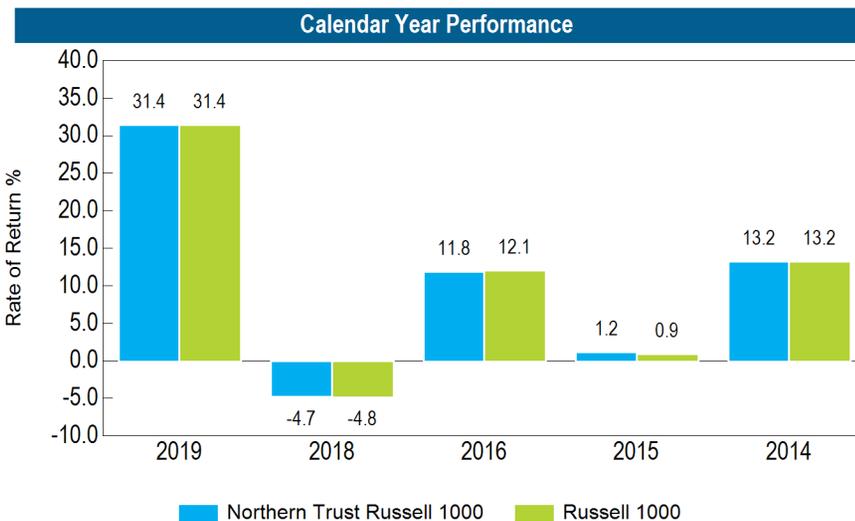
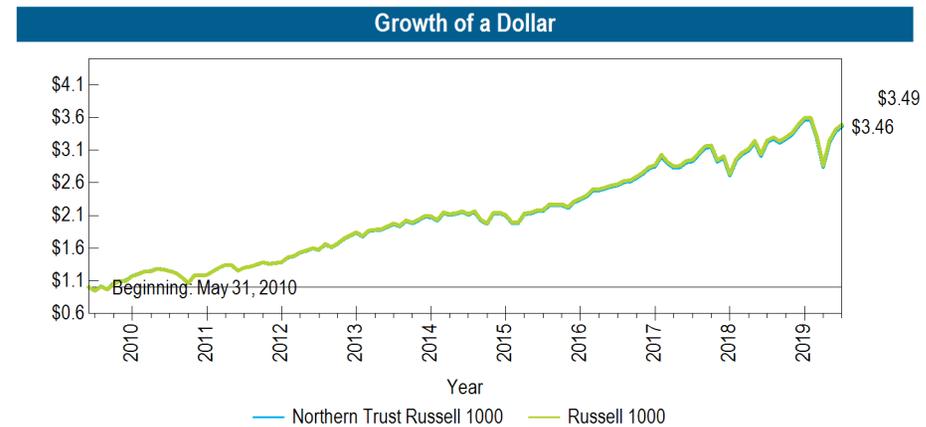
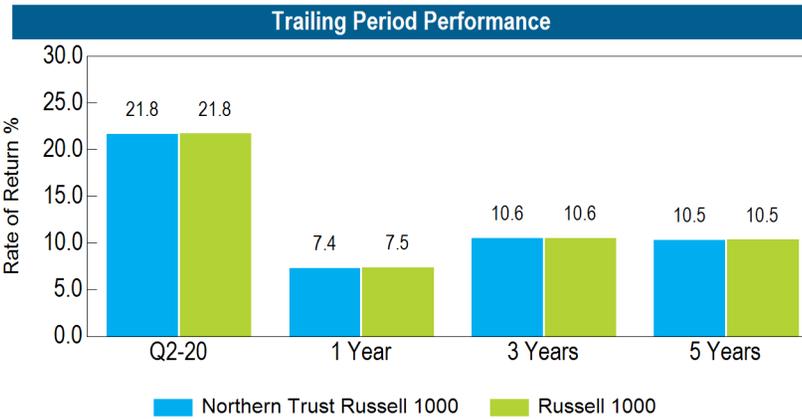
Asset Class	Short-term (Rolling 12 months)	Medium-term (Rolling 36 months)	Long-term (60 + months)
<b>Active Domestic Equity</b>	Fund return < benchmark return – 3.5%	Annualized Fund return < benchmark return – 1.75% for 6 consecutive months	VRR** < 0.97 for 6 consecutive months
<b>Active International Equity</b>	Fund return < benchmark return – 4.5%	Annualized Fund return < benchmark return – 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
<b>Passive International Equity</b>	Tracking Error > 0.50%	Tracking Error > 0.45% for 6 consecutive months	Annualized Fund return < benchmark return – 0.40% for 6 consecutive months
<b>Fixed Income</b>	Fund return < benchmark return – 1.5%	Annualized Fund return < benchmark return – 1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months

\*\* VRR – Value Relative Ratio – is calculated as: manager cumulative return / benchmark cumulative return.

# Individual Manager Performance

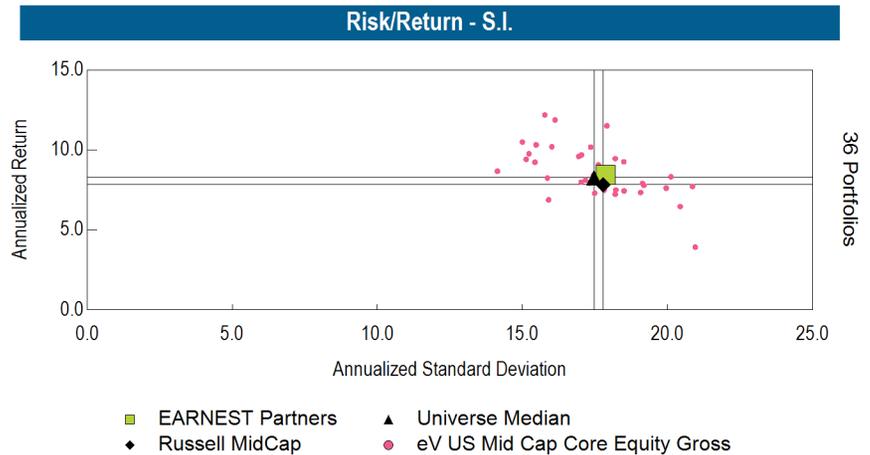
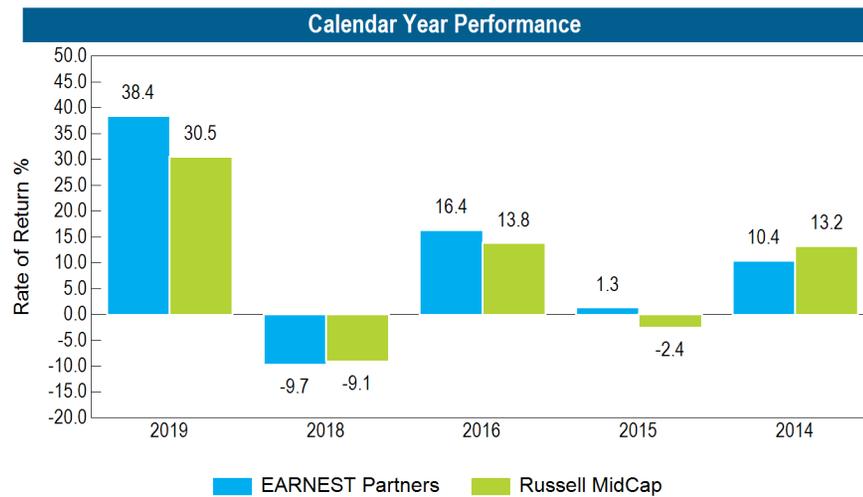
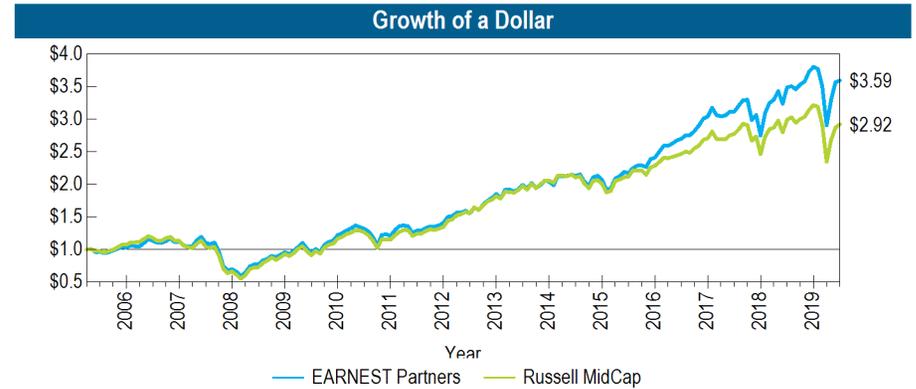
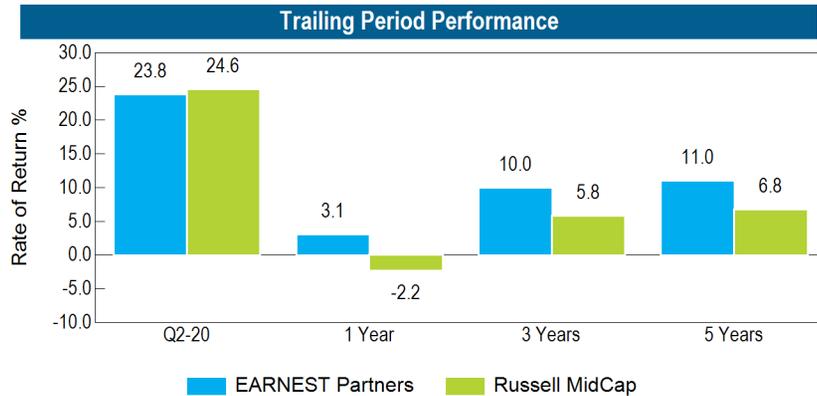
### Northern Trust Russell 1000 | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Northern Trust Russell 1000	0.00%	1.00	-0.68	0.91	0.14%	1.00	98.41%	99.74%
Russell 1000	0.00%	1.00	--	0.91	0.00%	1.00	100.00%	100.00%



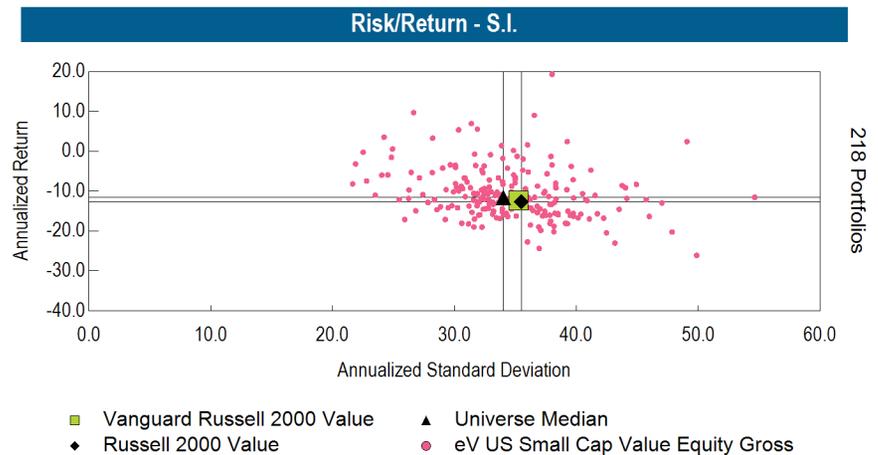
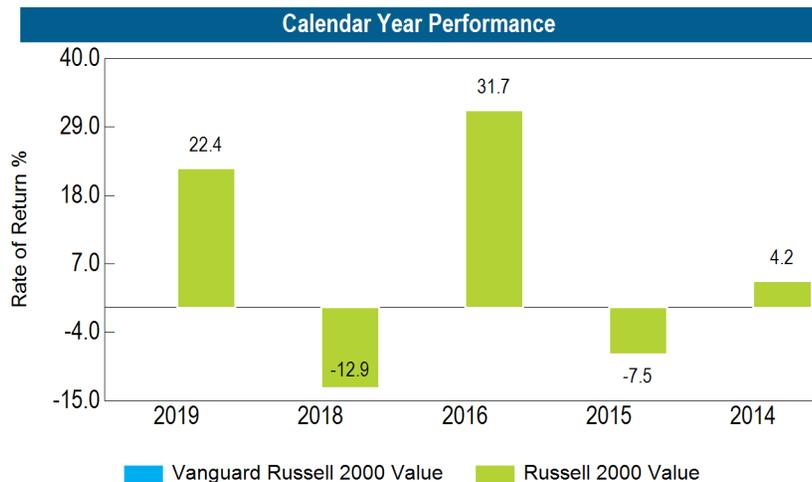
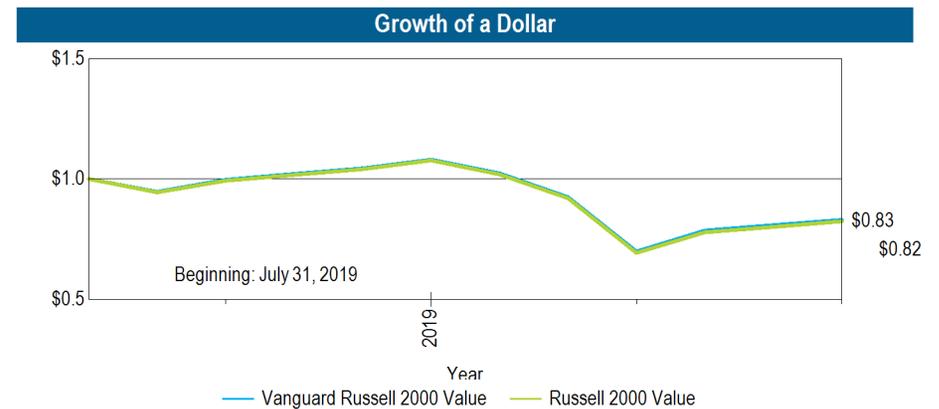
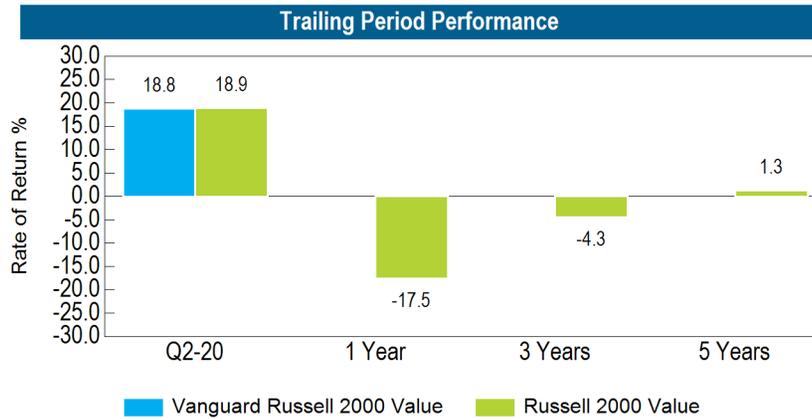
### EARNEST Partners | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
EARNEST Partners	0.13%	0.99	0.47	0.46	3.34%	0.97	104.50%	98.71%
Russell MidCap	0.00%	1.00	--	0.38	0.00%	1.00	100.00%	100.00%



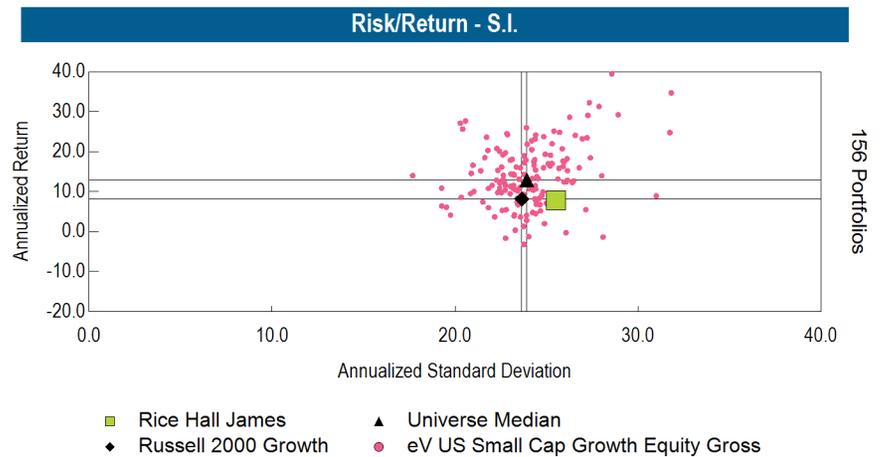
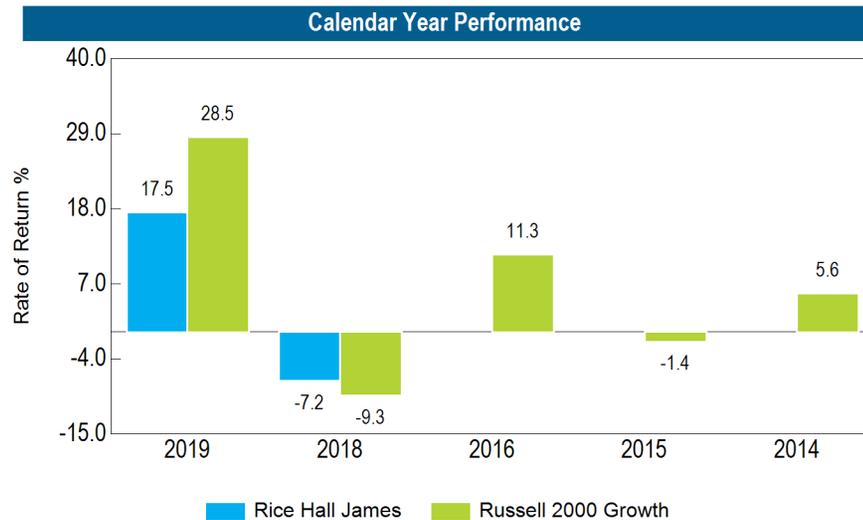
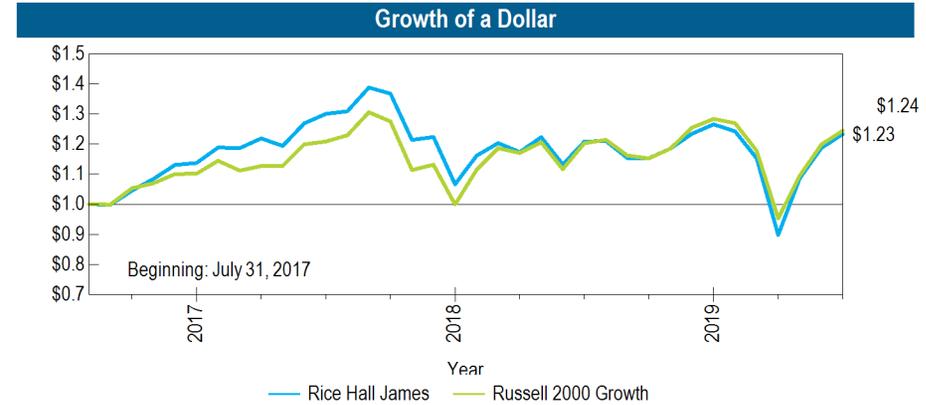
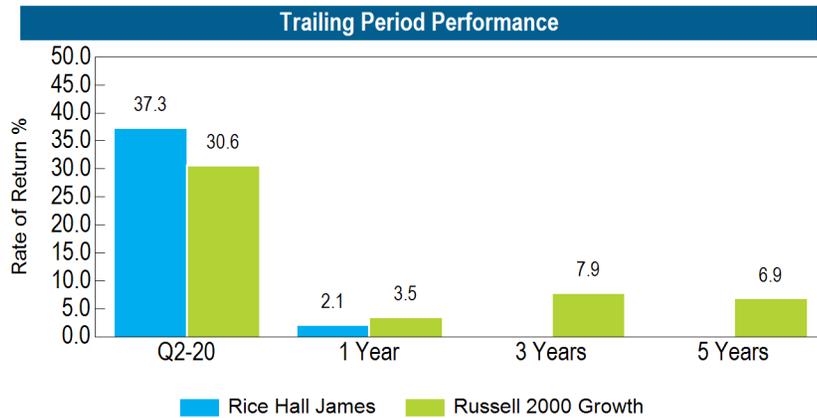
### Vanguard Russell 2000 Value | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Russell 2000 Value	0.05%	0.99	1.21	-0.54	0.49%	1.00	99.72%	98.78%
Russell 2000 Value	0.00%	1.00	--	-0.55	0.00%	1.00	100.00%	100.00%



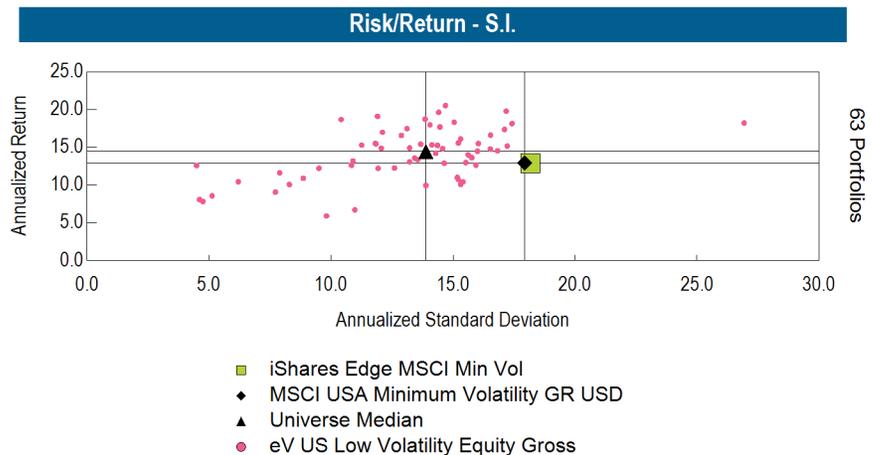
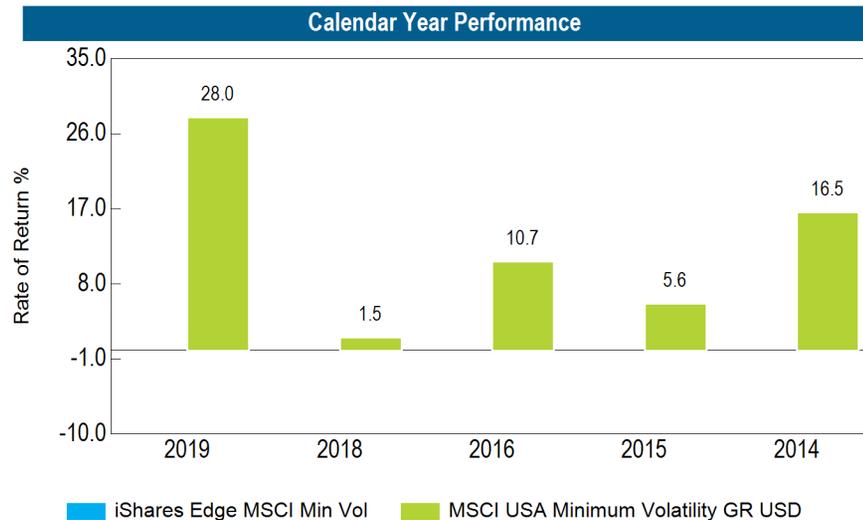
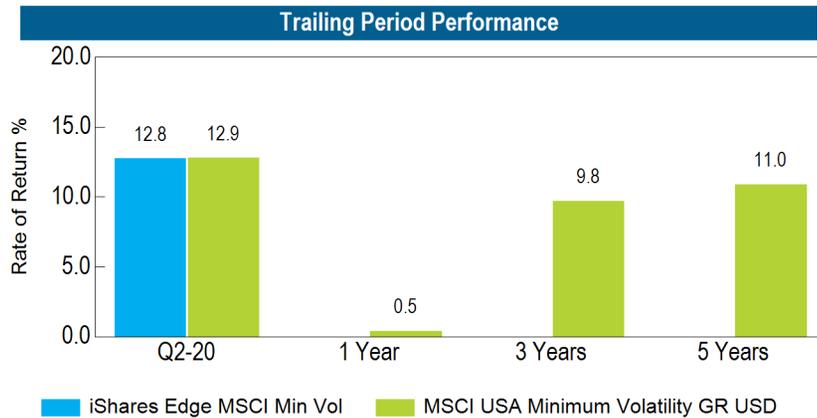
### Rice Hall James | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Rice Hall James	-0.03%	1.05	-0.06	0.23	5.93%	0.95	100.99%	101.33%
Russell 2000 Growth	0.00%	1.00	--	0.26	0.00%	1.00	100.00%	100.00%



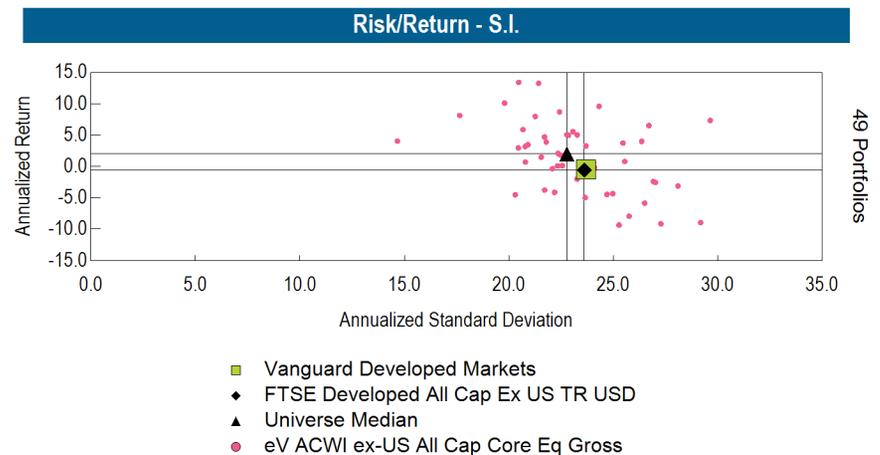
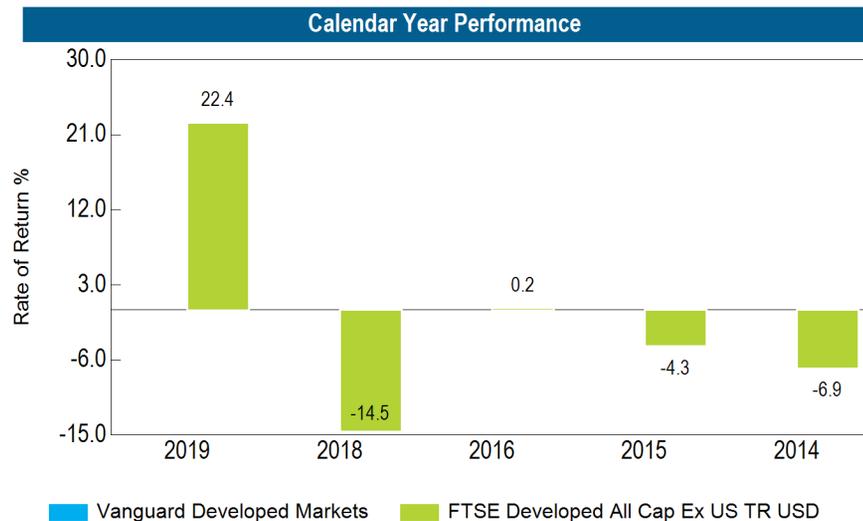
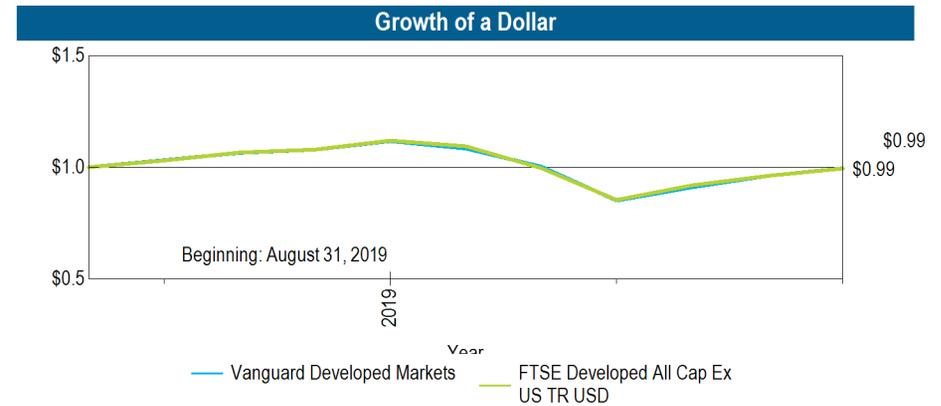
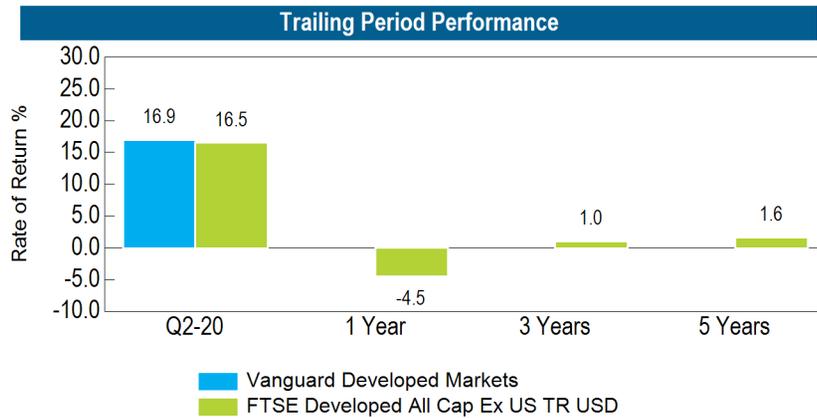
### iShares Edge MSCI Min Vol | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
iShares Edge MSCI Min Vol	-0.06%	1.01	-0.18	0.70	0.26%	1.00	100.16%	105.59%
MSCI USA Minimum Volatility GR USD	0.00%	1.00	--	0.72	0.00%	1.00	100.00%	100.00%



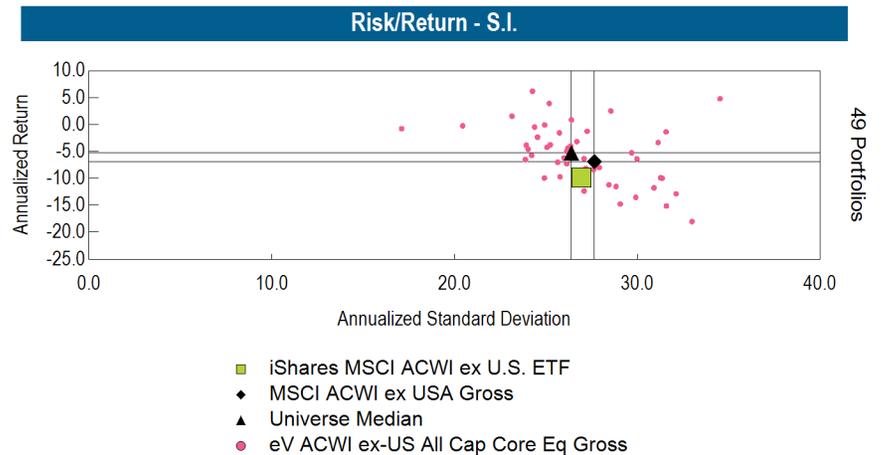
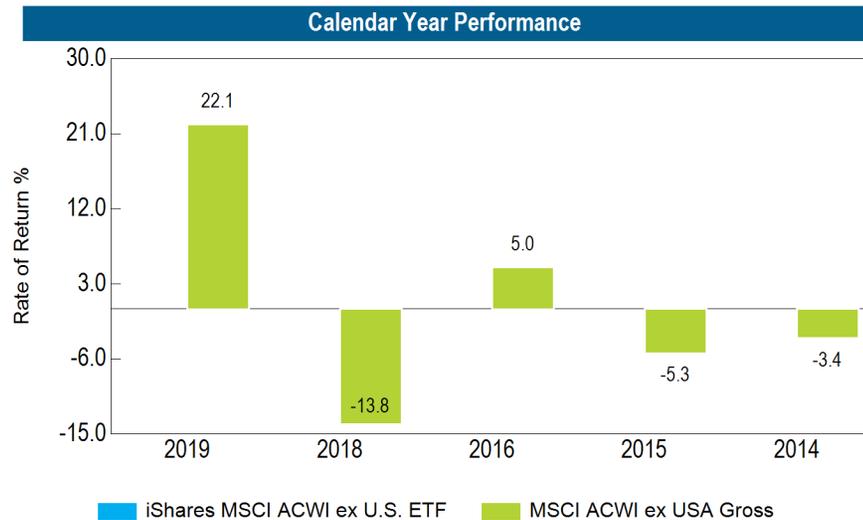
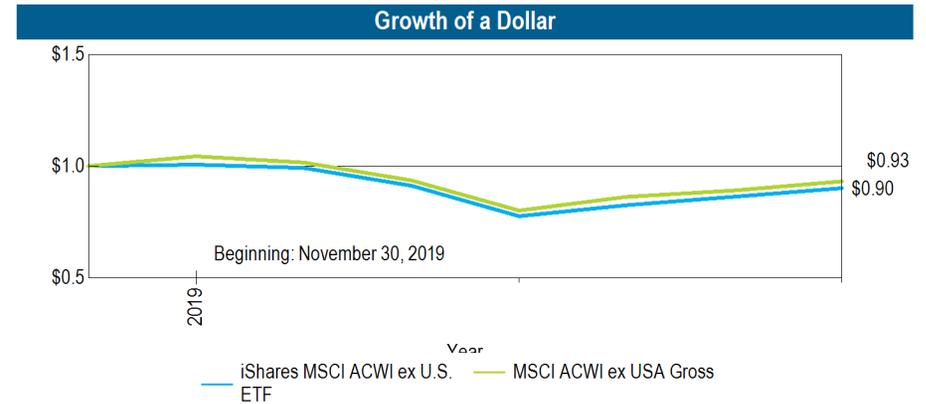
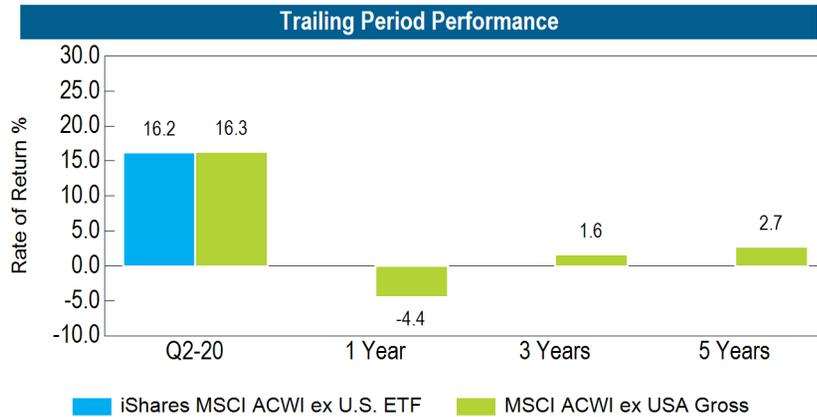
### Vanguard Developed Markets | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Developed Markets	0.01%	1.00	0.02	-0.06	2.49%	0.99	100.69%	100.35%
FTSE Developed All Cap Ex US TR USD	0.00%	1.00	--	-0.07	0.00%	1.00	100.00%	100.00%

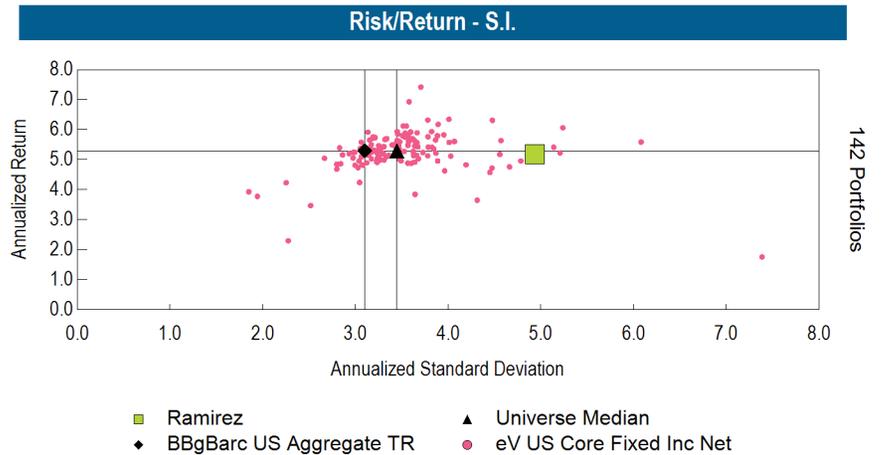
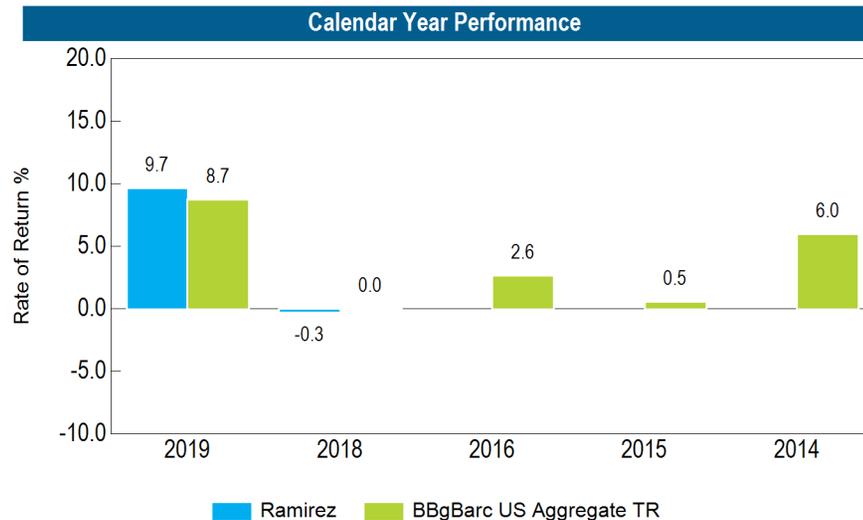
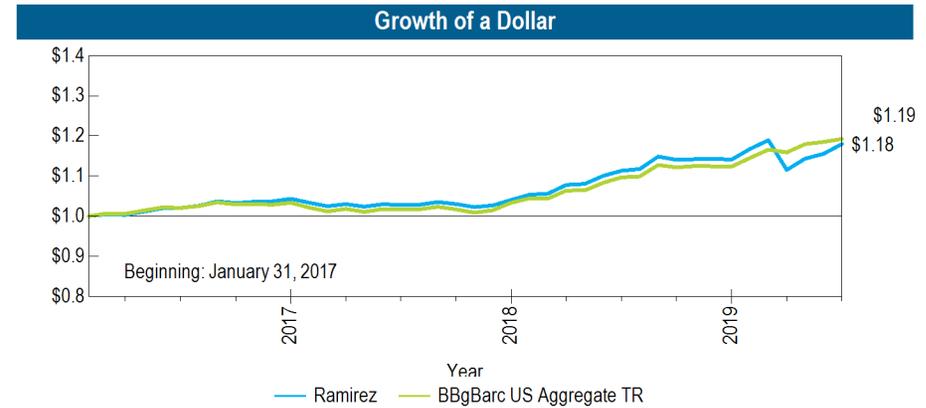
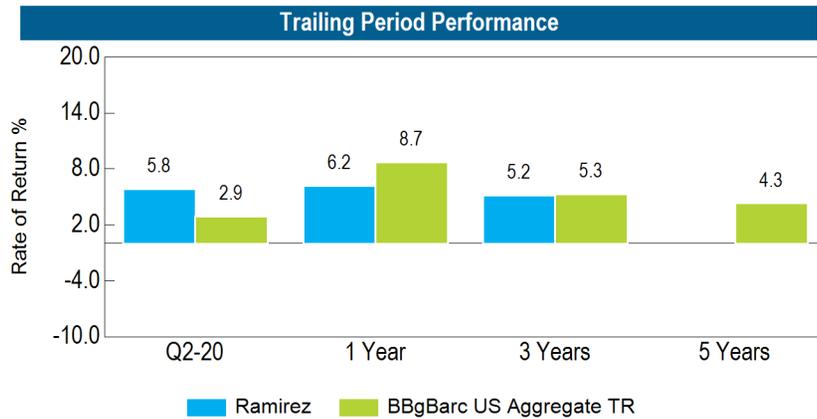


### iShares MSCI ACWI ex U.S. ETF | As of June 30, 2020

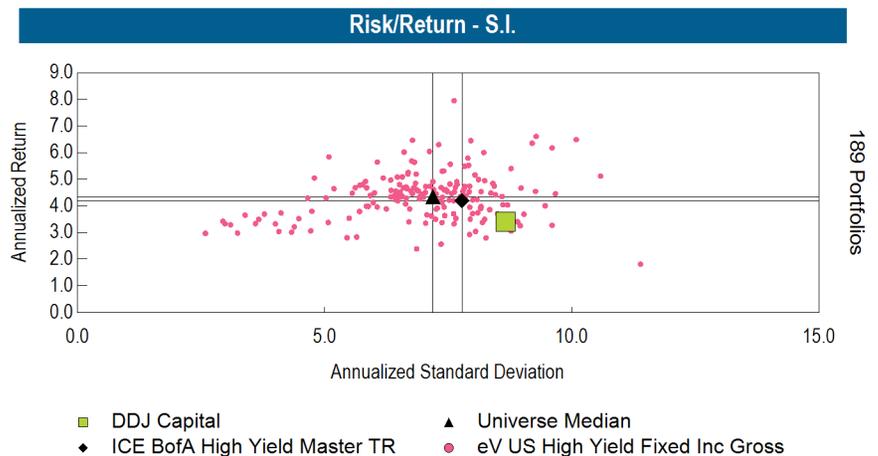
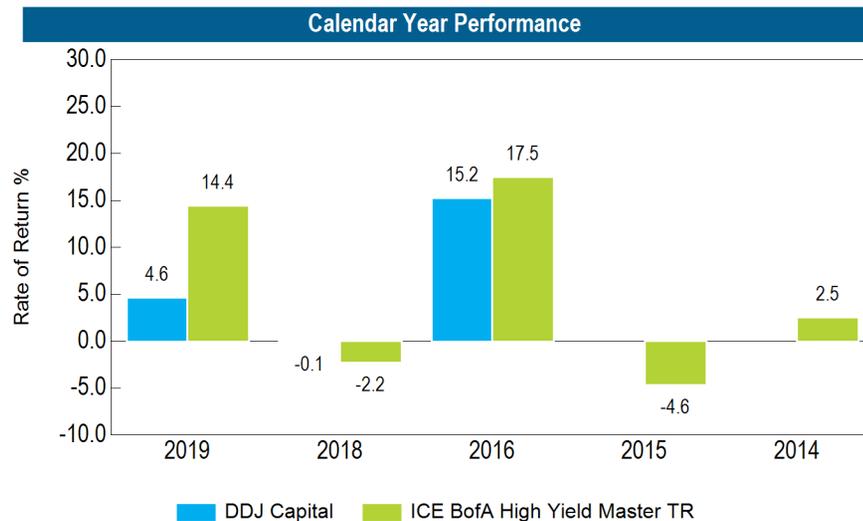
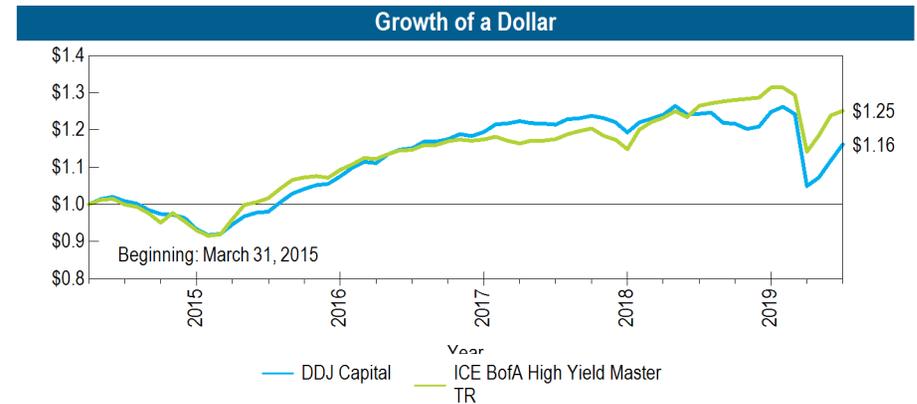
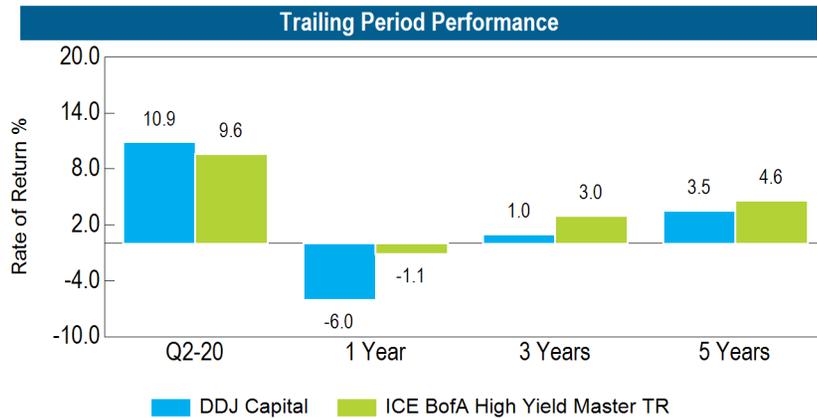
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
iShares MSCI ACWI ex U.S. ETF	-0.52%	0.95	-0.52	-0.39	5.91%	0.95	79.19%	98.65%
MSCI ACWI ex USA Gross	0.00%	1.00	--	-0.27	0.00%	1.00	100.00%	100.00%



	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Ramirez	-0.09%	1.20	-0.04	0.73	3.29%	0.57	119.44%	165.41%
BBgBarc US Aggregate TR	0.00%	1.00	--	1.21	0.00%	1.00	100.00%	100.00%

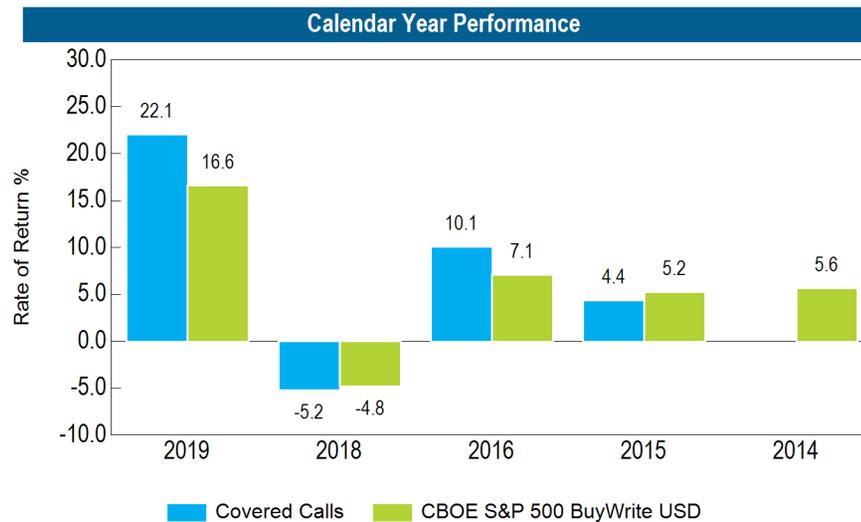
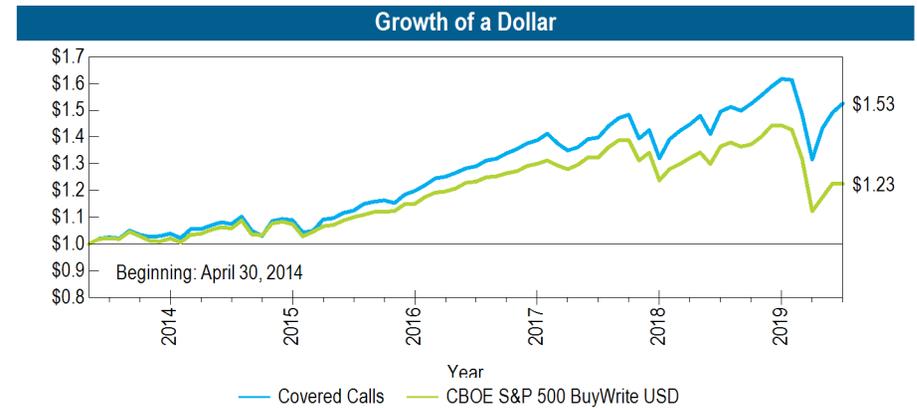
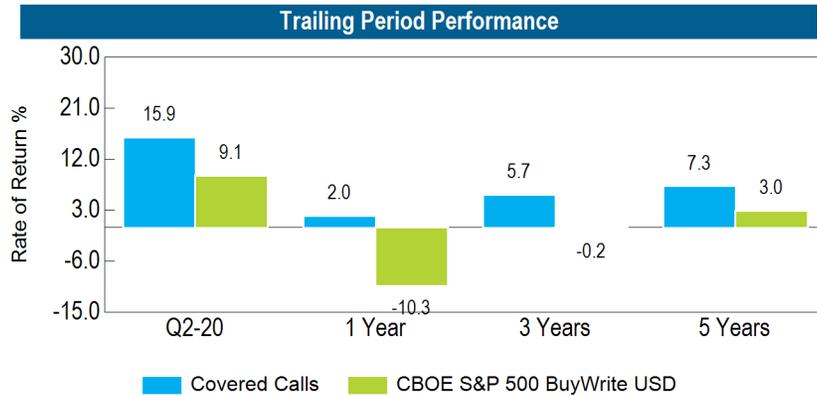


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
DDJ Capital	-0.05%	0.99	-0.20	0.27	3.91%	0.80	85.55%	94.12%
ICE BofA High Yield Master TR	0.00%	1.00	--	0.40	0.00%	1.00	100.00%	100.00%



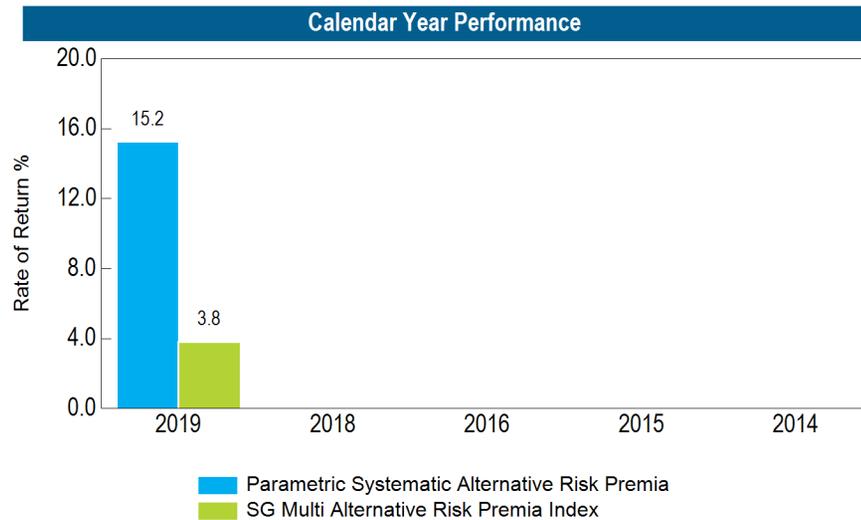
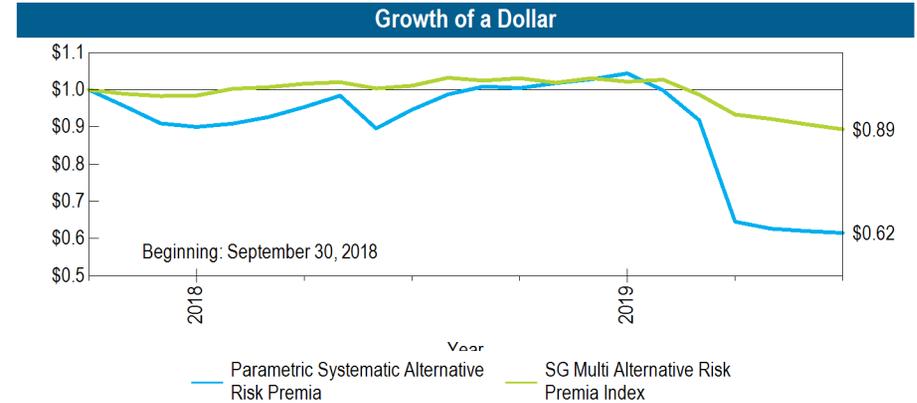
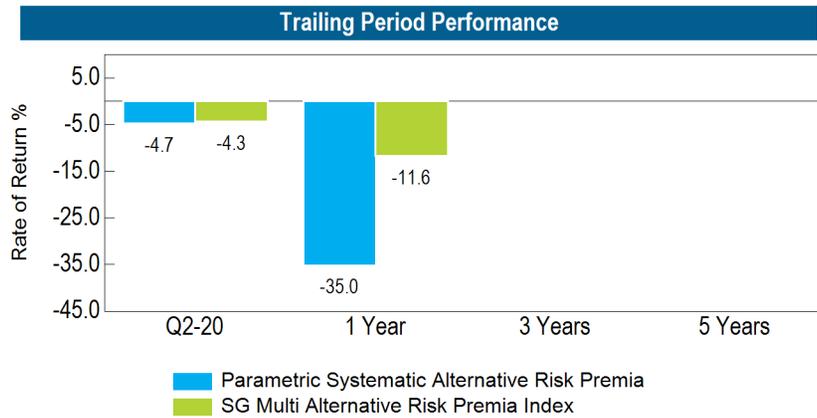
### Covered Calls | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Covered Calls	0.30%	0.98	1.14	0.58	3.28%	0.90	136.05%	95.80%
CBOE S&P 500 BuyWrite USD	0.00%	1.00	--	0.24	0.00%	1.00	100.00%	100.00%



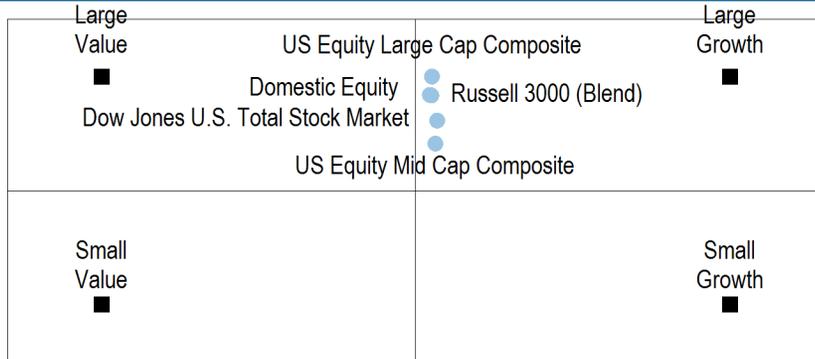
### Parametric Systematic Alternative Risk Premia | As of June 30, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Parametric Systematic Alternative Risk Premia	-0.10%	3.38	-0.77	-0.93	20.83%	0.65	194.24%	254.76%
SG Multi Alternative Risk Premia Index	0.00%	1.00	--	-1.26	0.00%	1.00	100.00%	100.00%

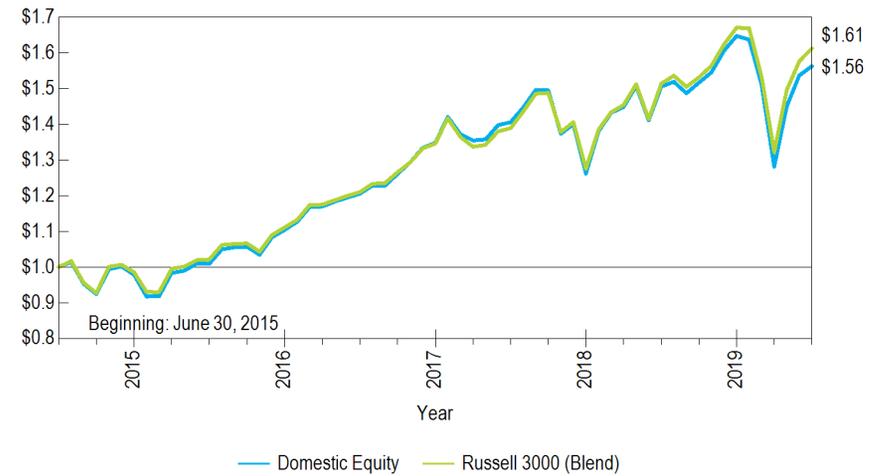


### Domestic Equity | As of June 30, 2020

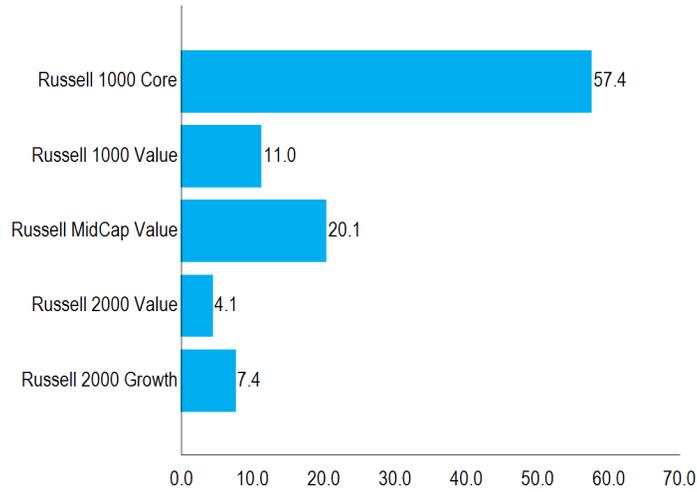
Style Map (5-Year)



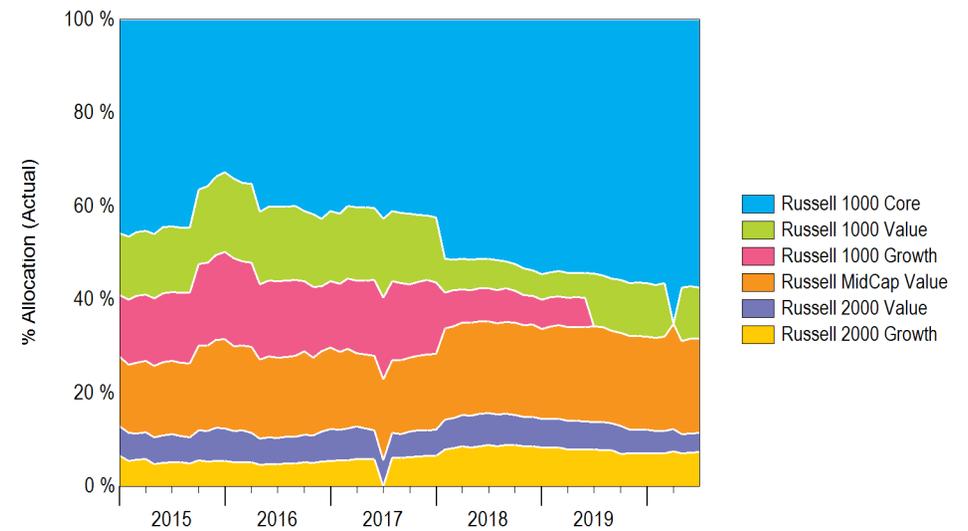
Growth of a Dollar



Style Exposure

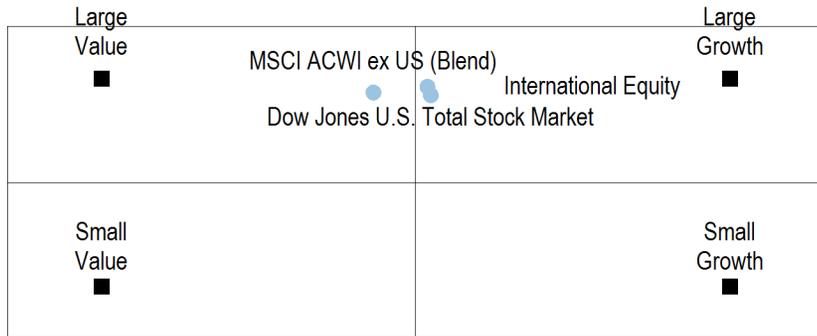


Style History (5-Year)

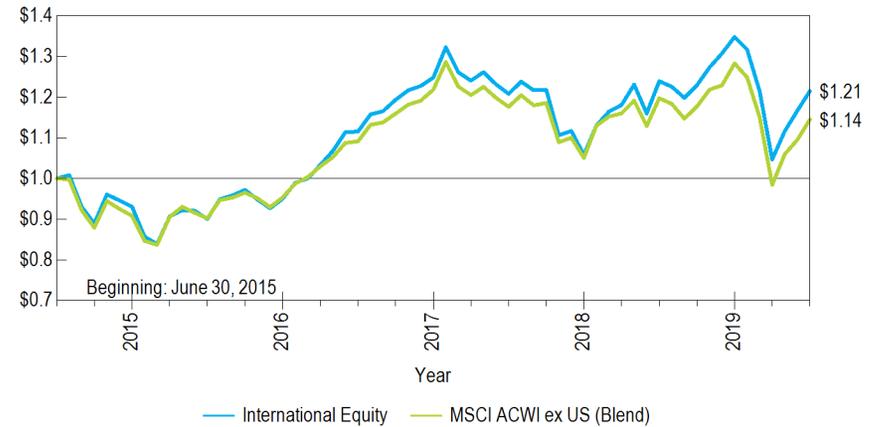


### International Equity | As of June 30, 2020

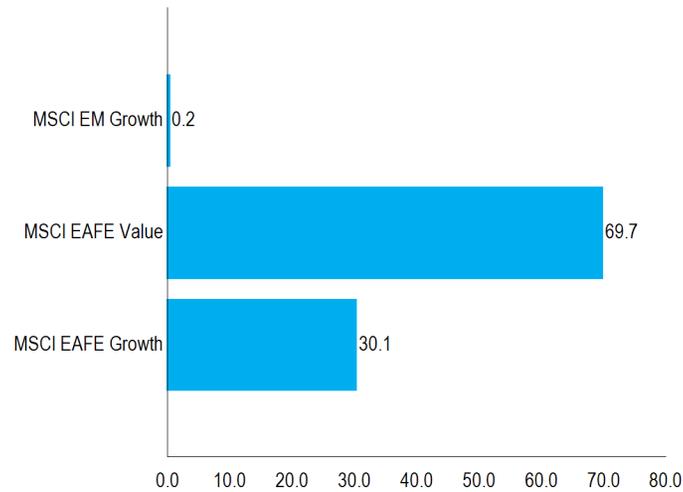
**U.S. Effective Style Map**  
5 Years 6 Months Ending June 30, 2020



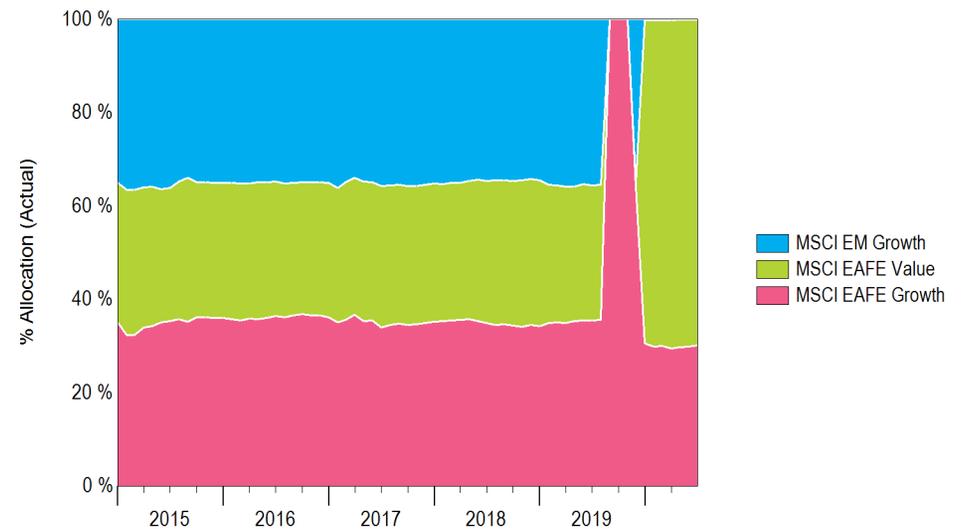
**Growth of a Dollar**  
5 Years Ending June 30, 2020

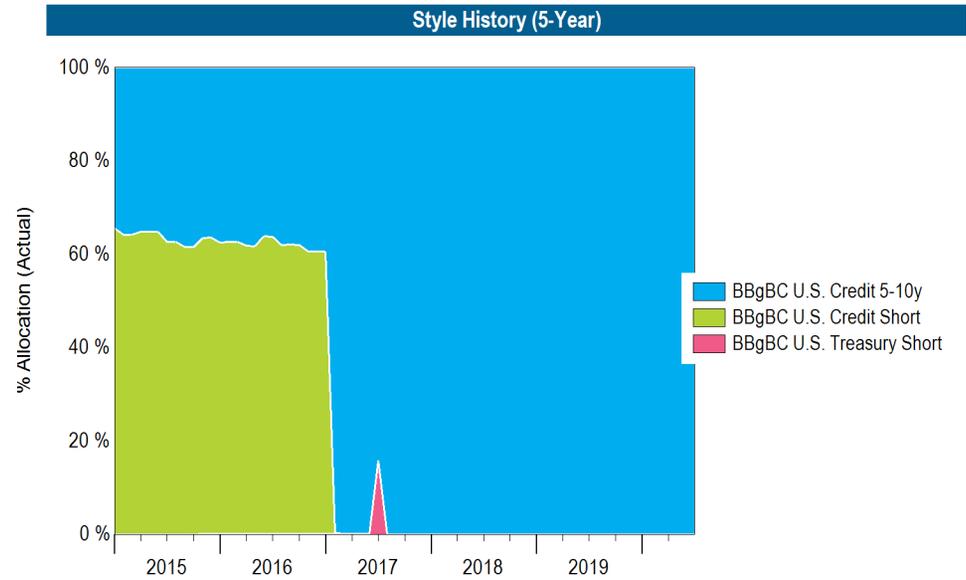
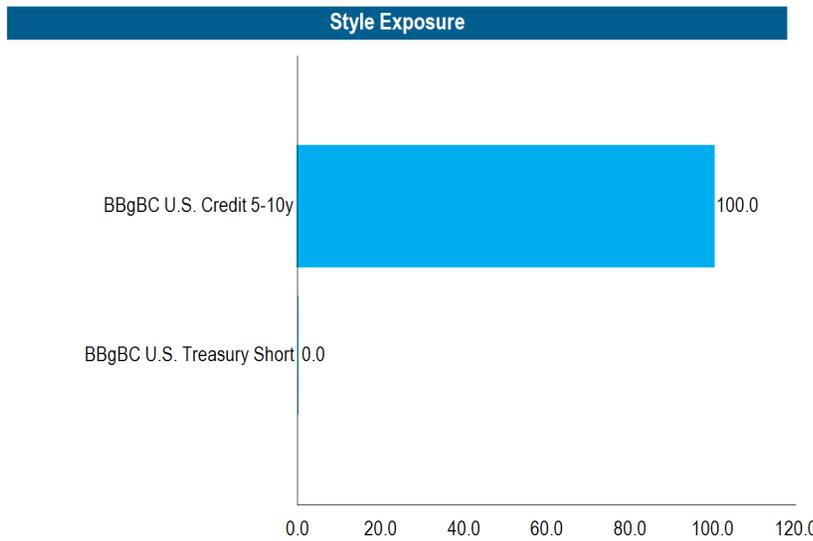
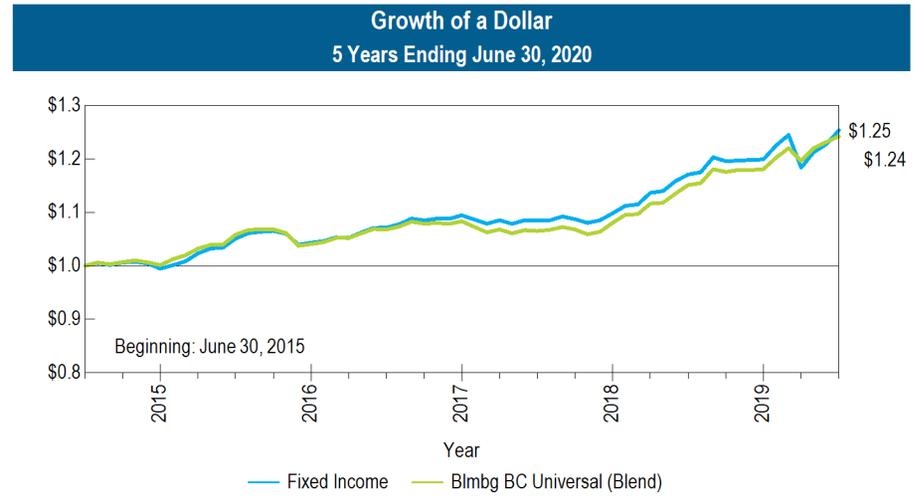
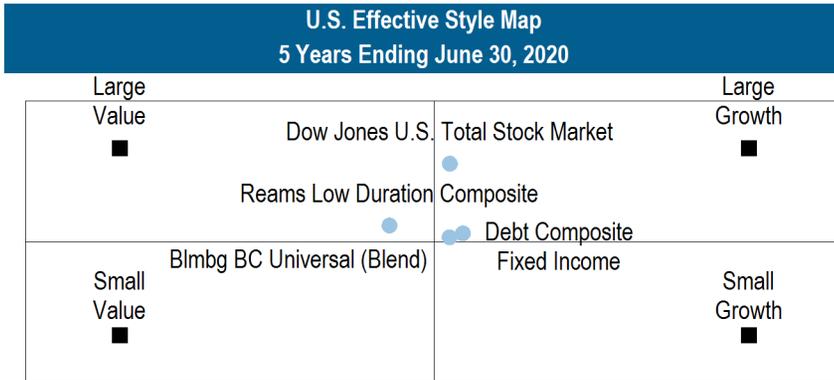


**Style Exposure**



**Style History (5-Year)**





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SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

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CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

**Credit Risk:** Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

**Duration:** Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

**Jensen's Alpha:** A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$ .

**Market Capitalization:** For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

**Market Weighted:** Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

**Maturity:** The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

**Prepayment Risk:** The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

**Price-Book Value (P/B) Ratio:** The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

**Price-Earnings (P/E) Ratio:** A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

**Quality Rating:** The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

**Sharpe Ratio:** A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

**STIF Account:** Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

**Standard Deviation:** A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**Style:** The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

**Tracking Error:** A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

**Yield to Maturity:** The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

**Yield to Worst:** The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

**NCREIF Property Index (NPI):** Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

**NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE):** Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.  
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

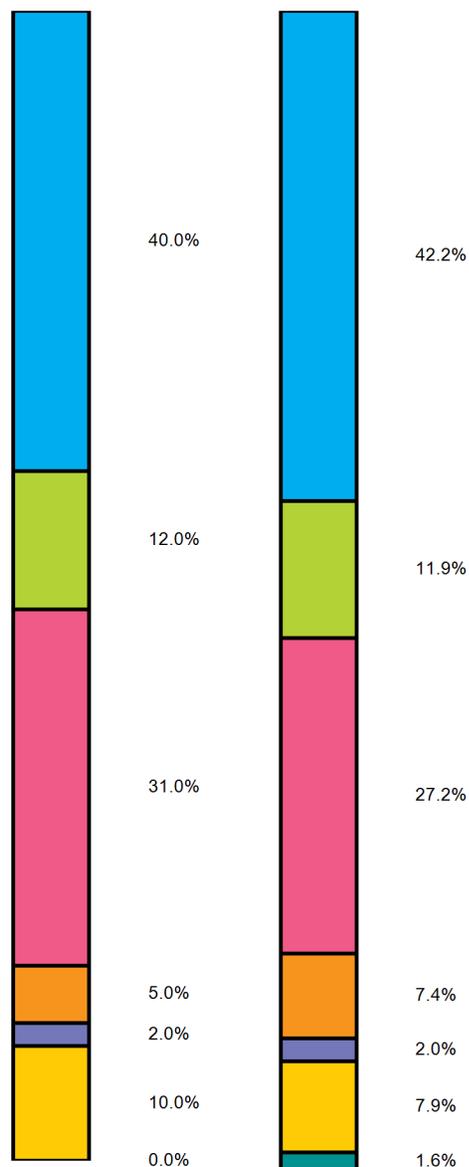
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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

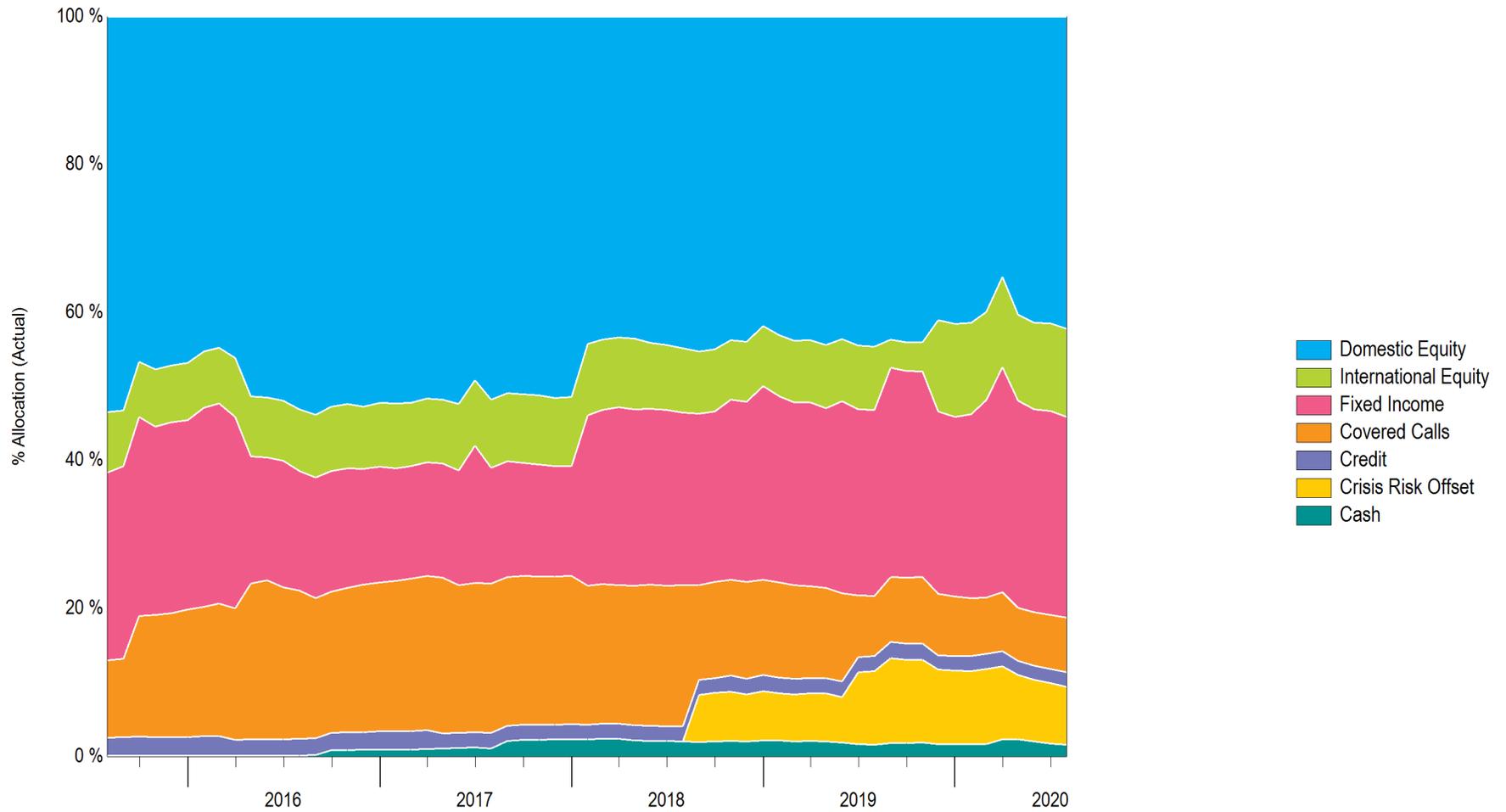
Values shown are in millions of dollars, unless noted otherwise.

### OPFRS Total Plan As of July 31, 2020



Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Policy	Difference	Within IPS Range?	
Domestic Equity	\$167,520,142	42.2%	40.0%	2.2%	Yes	
International Equity	\$47,113,069	11.9%	12.0%	-0.1%	Yes	
Fixed Income	\$107,865,026	27.2%	31.0%	-3.8%	Yes	
Covered Calls	\$29,188,304	7.4%	5.0%	2.4%	Yes	
Credit	\$7,757,904	2.0%	2.0%	0.0%	Yes	
Crisis Risk Offset	\$31,215,886	7.9%	10.0%	-2.1%	Yes	
Cash	\$6,243,211	1.6%	0.0%	1.6%	Yes	
<b>Total</b>	<b>\$396,903,541</b>	<b>100.0%</b>	<b>100.0%</b>			

Asset Allocation History  
5 Years Ending July 31, 2020



**Asset Class Performance Summary**

	Market Value (\$)	% of Portfolio	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>OPFRS Total Plan</b>	<b>396,903,541</b>	<b>100.0</b>	<b>3.9</b>	<b>-0.6</b>	<b>5.5</b>	<b>7.0</b>	<b>7.3</b>	<b>8.6</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>			<i>3.7</i>	<i>2.0</i>	<i>7.7</i>	<i>7.2</i>	<i>7.5</i>	<i>8.3</i>	<i>8.2</i>	<i>Dec-88</i>
<b>Domestic Equity</b>	<b>167,520,142</b>	<b>42.2</b>	<b>5.5</b>	<b>0.1</b>	<b>8.5</b>	<b>10.3</b>	<b>10.2</b>	<b>13.5</b>	<b>8.6</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>			<i>5.7</i>	<i>2.0</i>	<i>10.9</i>	<i>11.4</i>	<i>10.9</i>	<i>13.6</i>	<i>8.8</i>	<i>Jun-97</i>
<b>International Equity</b>	<b>47,113,069</b>	<b>11.9</b>	<b>3.6</b>	<b>-6.6</b>	<b>2.7</b>	<b>2.8</b>	<b>4.5</b>	<b>5.8</b>	<b>5.2</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>			<i>4.5</i>	<i>-6.7</i>	<i>1.1</i>	<i>1.9</i>	<i>3.7</i>	<i>5.0</i>	<i>5.2</i>	<i>Jan-98</i>
<b>Fixed Income</b>	<b>107,865,026</b>	<b>27.2</b>	<b>2.1</b>	<b>6.7</b>	<b>8.9</b>	<b>5.9</b>	<b>4.9</b>	<b>4.4</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>			<i>1.8</i>	<i>7.0</i>	<i>9.5</i>	<i>5.6</i>	<i>4.7</i>	<i>4.2</i>	<i>5.5</i>	<i>Dec-93</i>
<b>Credit</b>	<b>7,757,904</b>	<b>2.0</b>	<b>3.9</b>	<b>-3.3</b>	<b>-2.8</b>	<b>1.6</b>	<b>4.4</b>	<b>--</b>	<b>4.4</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>			<i>4.7</i>	<i>0.7</i>	<i>4.1</i>	<i>4.5</i>	<i>5.9</i>	<i>6.8</i>	<i>5.6</i>	<i>Feb-15</i>
<b>Covered Calls</b>	<b>29,188,304</b>	<b>7.4</b>	<b>4.6</b>	<b>-1.3</b>	<b>5.5</b>	<b>6.7</b>	<b>7.7</b>	<b>--</b>	<b>7.8</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>			<i>3.9</i>	<i>-11.8</i>	<i>-7.8</i>	<i>0.6</i>	<i>3.2</i>	<i>6.1</i>	<i>4.0</i>	<i>Apr-14</i>
<b>Crisis Risk Offset</b>	<b>31,215,886</b>	<b>7.9</b>	<b>2.7</b>	<b>-18.1</b>	<b>-14.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-7.4</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>			<i>0.1</i>	<i>-12.4</i>	<i>-13.3</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.6</i>	<i>Aug-18</i>
<b>Cash</b>	<b>6,243,211</b>	<b>1.6</b>	<b>0.0</b>	<b>1.0</b>	<b>2.0</b>	<b>2.0</b>	<b>1.4</b>	<b>--</b>	<b>0.7</b>	<b>Mar-11</b>
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.5</i>	<i>1.4</i>	<i>1.7</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>

### OPFRS Total Plan As of July 31, 2020

Trailing Net Performance											
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>OPFRS Total Plan</b>	<b>396,903,541</b>	<b>100.0</b>	<b>--</b>	<b>3.9</b>	<b>-0.6</b>	<b>5.5</b>	<b>7.0</b>	<b>7.3</b>	<b>8.6</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>				<i>3.7</i>	<i>2.0</i>	<i>7.7</i>	<i>7.2</i>	<i>7.5</i>	<i>8.3</i>	<i>8.2</i>	<i>Dec-88</i>
<b>Domestic Equity</b>	<b>167,520,142</b>	<b>42.2</b>	<b>42.2</b>	<b>5.5</b>	<b>0.1</b>	<b>8.5</b>	<b>10.3</b>	<b>10.2</b>	<b>13.5</b>	<b>8.6</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>				<i>5.7</i>	<i>2.0</i>	<i>10.9</i>	<i>11.4</i>	<i>10.9</i>	<i>13.6</i>	<i>8.8</i>	<i>Jun-97</i>
Northern Trust Russell 1000	96,470,874	24.3	57.6	5.8	2.8	11.9	12.0	11.3	13.8	13.7	Jun-10
<i>Russell 1000</i>				<i>5.9</i>	<i>2.9</i>	<i>12.0</i>	<i>12.0</i>	<i>11.3</i>	<i>13.9</i>	<i>13.7</i>	<i>Jun-10</i>
EARNEST Partners	33,631,193	8.5	20.1	5.2	-0.5	7.9	11.2	11.9	14.1	9.7	Apr-06
<i>Russell MidCap</i>				<i>5.9</i>	<i>-3.8</i>	<i>2.0</i>	<i>7.3</i>	<i>7.8</i>	<i>12.2</i>	<i>8.2</i>	<i>Apr-06</i>
Vanguard Russell 2000 Value	6,693,106	1.7	4.0	2.2	-21.5	-15.2	--	--	--	-15.2	Aug-19
<i>Russell 2000 Value</i>				<i>2.1</i>	<i>-21.9</i>	<i>-15.9</i>	<i>-3.9</i>	<i>2.2</i>	<i>7.3</i>	<i>-15.9</i>	<i>Aug-19</i>
Rice Hall James	12,488,936	3.1	7.5	6.5	3.8	8.5	9.5	--	--	8.9	Jul-17
<i>Russell 2000 Growth</i>				<i>3.4</i>	<i>0.3</i>	<i>6.0</i>	<i>8.8</i>	<i>7.5</i>	<i>12.6</i>	<i>8.8</i>	<i>Jul-17</i>
iShares Edge MSCI Min Vol	18,236,033	4.6	10.9	4.6	--	--	--	--	--	18.0	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>				<i>4.5</i>	<i>-2.3</i>	<i>3.3</i>	<i>10.7</i>	<i>11.1</i>	<i>13.9</i>	<i>17.9</i>	<i>Apr-20</i>
<b>International Equity</b>	<b>47,113,069</b>	<b>11.9</b>	<b>11.9</b>	<b>3.6</b>	<b>-6.6</b>	<b>2.7</b>	<b>2.8</b>	<b>4.5</b>	<b>5.8</b>	<b>5.2</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>				<i>4.5</i>	<i>-6.7</i>	<i>1.1</i>	<i>1.9</i>	<i>3.7</i>	<i>5.0</i>	<i>5.2</i>	<i>Jan-98</i>
Vanguard Developed Markets	13,683,345	3.4	29.0	2.6	-8.6	--	--	--	--	2.1	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>3.1</i>	<i>-8.4</i>	<i>-0.2</i>	<i>1.0</i>	<i>2.0</i>	<i>3.4</i>	<i>2.5</i>	<i>Sep-19</i>
iShares MSCI ACWI ex U.S. ETF	32,986,154	8.3	70.0	4.0	-6.9	--	--	--	--	-6.3	Dec-19
<i>MSCI ACWI ex USA Gross</i>				<i>4.5</i>	<i>-6.7</i>	<i>1.1</i>	<i>1.9</i>	<i>3.7</i>	<i>5.0</i>	<i>-2.7</i>	<i>Dec-19</i>

International equity performance inclusive of residual cash in Fisher and Hansberger transition accounts.

### OPFRS Total Plan As of July 31, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Fixed Income</b>	<b>107,865,026</b>	<b>27.2</b>	<b>27.2</b>	<b>2.1</b>	<b>6.7</b>	<b>8.9</b>	<b>5.9</b>	<b>4.9</b>	<b>4.4</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>				<i>1.8</i>	<i>7.0</i>	<i>9.5</i>	<i>5.6</i>	<i>4.7</i>	<i>4.2</i>	<i>5.5</i>	<i>Dec-93</i>
Ramirez	78,460,306	19.8	72.7	2.1	5.7	8.0	5.7	--	--	5.7	Jan-17
<i>BBgBarc US Aggregate TR</i>				<i>1.5</i>	<i>7.7</i>	<i>10.1</i>	<i>5.7</i>	<i>4.5</i>	<i>3.9</i>	<i>5.5</i>	<i>Jan-17</i>
Reams	29,404,676	7.4	27.3	2.0	18.0	20.4	9.4	6.7	5.5	6.2	Feb-98
<i>Blmbg BC Universal (Blend)</i>				<i>1.8</i>	<i>7.0</i>	<i>9.5</i>	<i>5.6</i>	<i>4.7</i>	<i>4.2</i>	<i>5.2</i>	<i>Feb-98</i>
<b>Credit</b>	<b>7,757,904</b>	<b>2.0</b>	<b>2.0</b>	<b>3.9</b>	<b>-3.3</b>	<b>-2.8</b>	<b>1.6</b>	<b>4.4</b>	<b>--</b>	<b>4.4</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>				<i>4.7</i>	<i>0.7</i>	<i>4.1</i>	<i>4.5</i>	<i>5.9</i>	<i>6.8</i>	<i>5.6</i>	<i>Feb-15</i>
DDJ Capital	7,757,904	2.0	100.0	3.9	-3.0	-2.6	1.7	4.5	--	4.5	Feb-15
<i>ICE BofA High Yield Master TR</i>				<i>4.8</i>	<i>-0.2</i>	<i>3.1</i>	<i>4.2</i>	<i>5.7</i>	<i>6.6</i>	<i>5.4</i>	<i>Feb-15</i>
<b>Covered Calls</b>	<b>29,188,304</b>	<b>7.4</b>	<b>7.4</b>	<b>4.6</b>	<b>-1.3</b>	<b>5.5</b>	<b>6.7</b>	<b>7.7</b>	<b>--</b>	<b>7.8</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>				<i>3.9</i>	<i>-11.8</i>	<i>-7.8</i>	<i>0.6</i>	<i>3.2</i>	<i>6.1</i>	<i>4.0</i>	<i>Apr-14</i>
Parametric BXM	13,363,093	3.4	45.8	3.7	-4.2	1.0	4.0	5.6	--	6.0	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>				<i>3.9</i>	<i>-11.8</i>	<i>-7.8</i>	<i>0.6</i>	<i>3.2</i>	<i>6.1</i>	<i>4.0</i>	<i>Apr-14</i>
Parametric DeltaShift	15,825,211	4.0	54.2	5.4	1.4	9.7	9.4	9.5	--	10.1	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>				<i>3.9</i>	<i>-11.8</i>	<i>-7.8</i>	<i>0.6</i>	<i>3.2</i>	<i>6.1</i>	<i>4.0</i>	<i>Apr-14</i>
<b>Crisis Risk Offset</b>	<b>31,215,886</b>	<b>7.9</b>	<b>7.9</b>	<b>2.7</b>	<b>-18.1</b>	<b>-14.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-7.4</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>				<i>0.1</i>	<i>-12.4</i>	<i>-13.3</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.6</i>	<i>Aug-18</i>
Parametric Systematic Alternative Risk Premia	15,864,723	4.0	50.8	1.2	-40.4	-37.0	--	--	--	-19.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>0.1</i>	<i>-12.4</i>	<i>-13.3</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.6</i>	<i>Aug-18</i>
Vanguard Long-Term Treasury ETF	15,351,163	3.9	49.2	4.2	26.0	30.0	--	--	--	27.7	Jul-19
<i>BBgBarc US Govt Long TR</i>				<i>4.2</i>	<i>26.0</i>	<i>30.2</i>	<i>13.7</i>	<i>9.4</i>	<i>8.1</i>	<i>27.7</i>	<i>Jul-19</i>
<b>Cash</b>	<b>6,243,211</b>	<b>1.6</b>	<b>1.6</b>	<b>0.0</b>	<b>1.0</b>	<b>2.0</b>	<b>2.0</b>	<b>1.4</b>	<b>--</b>	<b>0.7</b>	<b>Mar-11</b>
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.5</i>	<i>1.4</i>	<i>1.7</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash	183,211	0.0	2.9	0.3	1.5	2.4	2.2	1.5	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.5</i>	<i>1.4</i>	<i>1.7</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash - Treasury	6,060,000	1.5	97.1								

Values for DDJ Capital are based on manager estimated performance for July.

**Cash Flow Summary**
**Month to Date**

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Cash	\$161,794	\$20,893	\$524	\$183,211
Cash - Treasury	\$6,371,000	-\$311,000	\$0	\$6,060,000
DDJ Capital	\$7,466,702	\$0	\$291,201	\$7,757,904
EARNEST Partners	\$31,959,060	\$0	\$1,672,133	\$33,631,193
Fisher Transition	\$79,570	-\$10,438	\$3,578	\$72,709
Hansberger Transition	\$361,141	\$0	\$9,720	\$370,861
iShares Edge MSCI Min Vol	\$17,447,691	\$0	\$788,342	\$18,236,033
iShares MSCI ACWI ex U.S. ETF	\$31,683,417	\$0	\$1,302,737	\$32,986,154
Northern Trust Russell 1000	\$91,148,347	\$0	\$5,322,527	\$96,470,874
Parametric BXM	\$12,885,520	\$0	\$477,573	\$13,363,093
Parametric DeltaShift	\$15,021,131	\$0	\$804,080	\$15,825,211
Parametric Systematic Alternative Risk Premia	\$15,689,227	\$0	\$175,496	\$15,864,723
Ramirez	\$76,852,455	\$0	\$1,607,850	\$78,460,306
Reams	\$28,830,813	\$0	\$573,863	\$29,404,676
Reams Low Duration	\$44	\$0	\$0	\$44
Rice Hall James	\$11,728,340	\$0	\$760,596	\$12,488,936
Securities Lending Northern Trust	\$0	-\$10,999	\$10,999	\$0
Vanguard Developed Markets	\$13,341,703	\$0	\$341,642	\$13,683,345
Vanguard Long-Term Treasury ETF	\$15,748,012	-\$1,000,000	\$603,151	\$15,351,163
Vanguard Russell 2000 Value	\$6,549,328	\$0	\$143,779	\$6,693,106
<b>Total</b>	<b>\$383,325,294</b>	<b>-\$1,311,544</b>	<b>\$14,889,791</b>	<b>\$396,903,541</b>

**Benchmark History**
**As of July 31, 2020**

Total Plan x Securities Lending x Reams LD Exception Comp

1/1/2019	Present	40% Russell 3000 / 12% MSCI ACWI ex USA Gross / 33% BBgBarc US Universal TR / 5% CBOE BXM / 6.7% SG Multi Alternative Risk Premia Index / 3.3% BBgBarc US Treasury Long TR
5/1/2016	12/31/2018	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 20% CBOE BXM
10/1/2015	4/30/2016	43% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 15% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
1/1/2014	9/30/2015	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 10% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
3/1/2013	12/31/2013	40% Russell 3000 / 10% MSCI ACWI ex USA Gross / 17% BBgBarc US Universal TR / 33% ICE BofA 3M US Treasury TR USD
8/1/2012	2/28/2013	20% Russell 3000 / 7% MSCI ACWI ex USA Gross / 18% BBgBarc US Universal TR / 55% ICE BofA 3M US Treasury TR USD
10/1/2007	7/31/2012	53% Russell 3000 / 17% MSCI ACWI ex USA Gross / 30% BBgBarc US Universal TR
4/1/2006	9/30/2007	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% BBgBarc US Universal TR
1/1/2005	3/31/2006	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% BBgBarc US Aggregate TR
4/1/1998	12/31/2004	50% BBgBarc US Aggregate TR / 10% Russell 1000 / 20% Russell 1000 Value / 5% Russell MidCap / 15% MSCI EAFE
9/1/1988	3/31/1998	40% S&P 500 / 55% BBgBarc US Aggregate TR / 5% FTSE T-Bill 3 Months TR

# Oakland Police and Fire Retirement System

Core Fixed Income

## Table of Contents

1. **Manager Candidates**
  - Income Research & Management
  - Longfellow Investment Management
  - Wellington Management Company
2. **Historical Performance, Portfolio Characteristics, and Management Fees**
3. **Glossary**

## Background

- In the first quarter of 2020, an RFP was issued on behalf of OPFRS. As a result of the RFP, Meketa received a total of 38 responses from 38 firms for the Core Fixed Income mandate. Meketa evaluated the RFPs and analyzed performance, risk data, and other qualitative factors from each of the responding firms. Based on both qualitative and quantitative analysis.
- At the July 29, 2020 OPFRS board meeting, Meketa discussed narrowing the field to finalist candidates to present to the OPFRS Investment Committee.
- This document provides a summary of the search process and highlights four strategies for the Board's consideration.
  - Income Research and Management: Core Bond
  - Longfellow: Core Fixed Income
  - Wellington: Core Bond

## Introduction

Selecting strong and appropriate investment managers is a key determinant of the overall success of the Plan. Investment managers are expected to operate within a client's investment guidelines and are given a large degree of latitude to achieve the investment objective.

Manager selection is a nuanced process and requires extensive due diligence. When selecting prospective active managers, Meketa evaluates the following areas:

- Organization
- Investment Team
- Investment Philosophy
- Investment Process
- Investment Performance
- Management Fees

In addition, all managers are evaluated within the context of the Plan's overall investment policy.

## Manager Candidates

### Manager Overviews as of June 30, 2020

	Income Research & Management	Longfellow Investment Management	Wellington Management Company
Firm Location	Boston, MA	Boston, MA	Boston, MA
Firm Inception	1987	1986	1982
Ownership Structure	Employee Owned	Employee Owned	Limited Liability Partnership
Strategy Name	Core Bond	Core Fixed Income	Core Bond
Strategy Inception	February 2010	October 2006	October 1982
AUM (Firm)	\$81.3 billion	\$12.8 billion	\$1.1 trillion
AUM (Strategy)	\$12.8 billion	\$3.0 billion	\$44.9 billion

## Income Research & Management

### Organization

- The firm is privately owned by 57 employee shareholders. There are three Founders/Managing Principals. One is retired and two have stepped back from many of the functions of the investment process. Bill O'Malley (31 years' experience), John Sommers (retired) and his son Jack Sommers (34 years' experience) collectively own approximately 65% of the firm in some form (including Jack's two brothers who are not involved in the firm, but now own part of what used to be owned by their retired father, John). The remaining 54 employees own the remaining 35.3% in sizes that range from 10 basis points to 3%.
- The succession plan is to continue selling shares each year at a rate of about 2-3% of the firm but the shares are not coming from the founders - they are being issued as new shares in a process where all current shareholders (founders and everyone) get diluted in the process equally.
- IR&M manages \$81.3 billion in fixed income assets, mostly in separately managed accounts.

### Investment Team

- There are 46 members of the investment team and turnover has been low. There are 6 PMs and the Director of Research on the Target Team which consists of the most senior members of the firm, including Managing Principal Bill O'Malley. Seven sector PMs each lead a sector of research analysts. There are 13 research analysts of different levels (7 credit, 3 securitized, and 3 product analysts) covering the sectors and the credit analysts are divided by industry coverage. There are five traders with 8-12 years' experience.

## Income Research & Management (Continued)

### Investment Team (Continued)

- Succession plans were furthered in 2019. Jim Gubitosi, Senior Portfolio Manager, assumed the title of co-CIO alongside longtime CIO Bill O'Malley. Mr. O'Malley assumed the role of CEO. Jack Sommers stepped back from the day to day operations at the start of 2020.
- Jim Gubitosi had been effectively running the investment team for years and was considered the de-facto Head of the Investment Team. He has an unusually strong background in both securitized and credit which uniquely qualifies him for the leadership role.

### Investment Philosophy and Process

- IR&M follows a team-oriented duration-neutral and key rate neutral approach focused on relative value emphasizing bottom-up security selection to drive sector selection. The team is benchmark aware with low tracking error.
- Security selection and relative value drive exposures and excess returns. IR&M use no leverage, no derivatives, and no currency risk.
- The Target Team decides upon target allocations from a top down basis determining risk positioning and monitoring relative value across sectors. A team of 7 Sector PMs lead sector specialist research analysts to fill their respective sector buckets (credit, securitized, governments, municipals, etc.) based upon bottom-up fundamental security selection. A team of PMs, Strategists and Risk Managers construct and optimize portfolios according to client objectives while adhering to the risk parameters established by the Target Team and the preferred themes of the Sector PMs..

## Longfellow Investment Management

### Organization

- Longfellow is based in Boston, MA and was founded in 1986 by David Seeley and John Ciarleglio, who had previously managed fixed income assets of Polaroid's pension. Barbara McKenna joined in 2005 from State Street Research and the firm structure was changed from an LLP to an LLC to allow for the distribution of ownership. Longfellow is 100% employee-owned and has been certified as a Women's Business Enterprise as it is majority woman-owned. As of June 30, 2020, the firm managed close to \$12.8 billion in assets.

### Investment Team

- Barbara McKenna has served as the lead portfolio manager since the inception of the strategy on October 1, 2006. Portfolio managers are sector specialists so an individual on the team with a separate focus can also contribute to the Core team in their areas of expertise. In a similar way, analysts are assigned to specific sectors in order to gain a deeper understanding of unique attributes within sectors.

### Investment Philosophy and Process

- The investment philosophy is defensive in nature and it puts a strong emphasis on bottom up fundamental analysis. The team employs strong risk management and strict diversification in order to mitigate downside risk. They also seek to add value by identifying mispriced securities within undervalued sectors in the fixed income universe.

## Longfellow Investment Management (Continued)

### Investment Philosophy and Process (Continued)

- Fundamental research also helps the team form broader market opinions and come up with market themes. Approximately 70%-80% of excess returns come from security selection and sector allocation and the remaining comes from duration and yield curve positioning.
- The team begins by generating trade ideas, which come from various sources, internally and externally. Once ideas are generated, the team produces a valuation of the issuers' credit fundamentals and a pricing analysis. The team also analyzes liquidity as well as supply and demand imbalances.
- Around 75% of research is developed in-house and the rest is supplemented with third party research services such as CreditSights, Morningstar, Factset, KDP, rating agencies and other industry and government publications.
- ESG is also incorporated into the research process through an internal scoring system, which is used to monitor issuer trends, mitigate weakness, improve disclosure and reporting, and more accurately value securities.
- The investment team meets three times per week and research is shared and discussed among the entire team, however portfolio managers are responsible for final decisions.

## Wellington Trust Company

### Organization

- Wellington Management, headquartered in Boston, MA, traces its history back to the founding of Wellington Fund in 1928.
- Wellington Management Group (WMG) is a limited liability partnership, privately held by 177 partners who are all fully active in the business of the firm with no external entities with any ownership interest in the firm.
- Wellington had \$1.1 trillion in assets under management as of June 30, 2020, of which \$44.9 billion are in Core Bond strategies.

### Investment Team

- Core Bond is run by two partners of the firm, Joe Marvan and Campe Goodman, who are also members of this Broad Markets team of PMs. Sector specialists manage each sector based on fundamental bottom-up research in each sector (Governments, MBS, CMBS, IG Credit, rates, inflation). The Core Bond PMs work with the Sector Specialist PM and all analysts to construct and monitor the portfolio.
- There is no CIO. The Broad Markets team decides upon the broad strategy such as allocating risk to sector and duration. Broad Markets has four PMs and an Investment Director that make broad top down macro decisions based on the economy, central bank policy, rates, etc. Portfolio managers that run other strategies usually are in agreement with their views but they do not have to take direction from them and may run independently.

## Wellington Trust Company (Continued)

### Investment Team (Continued)

- There are 40 credit analysts and the fixed income team leverages the 51 industry equity analysts, often sitting in on company meetings together to get a management team to address both the equity and balance sheet concerns. This large pool of analysts work on various strategies across the firm.

### Investment Philosophy and Process

- The Core Bond strategy is managed in a benchmark-relative style that invests across the major sectors of the domestic, investment grade bond market. The strategy seeks excess returns of 25-75 bps with tracking error of 50-150 bps through AA/A quality within +/- 1.0 year of the benchmark duration. Historic portfolio exposures to the different sectors have been in ranges of: US Treasuries and Agencies 0-50% (vs BM of 40%); IG credit 10-50% (vs. BM of 30%), Agency MBS 20-70% (vs. BM of 30%); Structured credit 20-40% (vs. BM of below 5%).
- Wellington runs a well-diversified portfolio such that no one source of alpha overwhelms returns and only invest in investment grade US-dollar denominated securities that do not make allocations to the high yield or non-US dollar denominated sectors.
- While individual security analysis is the cornerstone to their research effort, the Broad Markets team maintains its own top-down sector relative value analysis as well as views on interest rates, yield curve shape and inflation. The Broad Markets Team meets formally bi-monthly to discuss and develop top-down strategy that includes an interdisciplinary team of internal analysts, macro strategists, portfolio managers and traders.

## Historical Performance, Portfolio Characteristics, and Management Fees

Historical Performance (Net of Fees)  
as of June 30, 2020

	Income Research & Management	Longfellow	Wellington	BBG Barclays U.S. Aggregate Index
<b>Trailing Period Returns (%):</b>				
YTD	6.9	5.4	6.8	6.1
1 year	9.5	7.8	9.6	8.7
3 years	5.5	5.1	5.6	5.3
5 years	4.5	4.2	4.9	4.3
10 years	4.2	4.1	4.6	3.8
<b>Calendar Year Returns (%):</b>				
2019	8.9	8.6	9.5	8.7
2018	-0.3	0.0	-0.6	0.0
2017	3.6	3.9	4.4	3.5
2016	3.2	2.7	4.0	2.6
2015	0.2	1.4	0.4	0.5
2014	6.7	5.4	6.2	6.0
2013	-1.7	-1.0	-1.3	-2.0
2012	7.0	6.3	6.7	4.2
2011	6.9	7.5	8.3	7.9
2010	6.8	7.5	8.5	6.6

Portfolio Characteristics  
as of June 30, 2020

	Income Research & Management	Longfellow	Wellington	BBG Barclays U.S. Aggregate Index
<b>Portfolio Profile:</b>				
Average Duration (years)	5.9	5.8	6.0	6.0
Yield to Maturity (%)	1.8	1.9	1.8	1.1
Number of Holdings	283	210	352	11,690
Average Credit Quality	A+	Aa3	Aa3	AA-
<b>Credit Quality Breakdown (%):</b>				
AAA	51	55	67	70
AA	3	8	4	4
A	18	14	16	12
BBB	28	22	25	14
Below BBB	1	0	0	-
Non-rated	-	-	3	-
Cash	0	1	-15	-
<b>Sector Allocation:</b>				
Treasury	11	17	11	37
Agency	4	11	-	1
Corporate	46	34	39	27
Municipal	2	8	2	1
MBS	23	13	43	27
CMBS	8	9	4	2
ABS	7	8	5	0
Other	-	-	11	4
Cash and Equivalents	0	1	-15	-

Common Period Returns and Risk Statistics <sup>1</sup>  
(October 2006–June 2020)

	Income Research & Management	Longfellow	Wellington	BBG Barclays U.S. Aggregate Index
<b>Common Period Perf (%):</b>				
Trailing Period Return	5.0	5.0	5.1	4.6
Best 3-Month Return	7.1	5.3	7.8	6.2
Worst 3-Month Return	-6.3	-2.7	-6.5	-3.2
<b>Risk:</b>				
Standard Deviation (%)	3.8	3.4	3.7	3.4
Tracking Error (%)	1.5	0.9	1.7	NA
Beta	1.02	0.95	0.97	1.00
Correlation to Benchmark	0.91	0.96	0.87	NA
Downside Deviation (%)	2.4	2.0	2.5	1.9
Upside Capture (%)	108	102	108	NA
Downside Capture (%)	105	89	102	NA
<b>Risk-Adjusted Return:</b>				
Sharpe Ratio	1.06	1.20	1.10	1.08
Information Ratio	0.25	0.46	0.28	NA

<sup>1</sup> Data shown is calculated using net of fees performance  
Risk statistics calculated against the primary benchmark: Bloomberg Barclays U.S. Aggregate Index.

Rolling Three-Year Excess Returns (Net of Fees) <sup>1</sup>  
(January 1997 - June 2020)



As of 6/30/2020	Total Periods	Periods Outperformed	Percentage (%)	Average Excess Return (%)	Median Excess Return (%)	Max (%)	Min (%)	Range (%)
Income Research and Management	202	180	89	0.4	0.4	2.5	-2.3	4.8
Longfellow	130	122	94	0.6	0.7	1.3	-0.5	1.8
Wellington	246	173	70	0.3	0.2	4.6	-4.1	8.8

<sup>1</sup>Benchmark: Bloomberg Barclays US Aggregate

Historical Trailing Risk (Net of Fees)  
as of June 30, 2020

	IR&M				Longfellow				Wellington				BBG Barclays U.S. Agg			
	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.
Information Ratio	0.26	0.26	0.44	0.52	-0.22	-0.07	-0.02	0.34	0.30	0.60	0.62	0.94	-	-	-	-
Tracking Error (%)	0.8	0.7	0.6	0.8	1.1	0.9	0.8	0.8	1.0	1.0	0.8	0.8	-	-	-	-
Sharpe Ratio	1.06	1.02	1.08	1.16	0.92	0.95	1.02	1.18	1.09	1.12	1.14	1.27	1.07	0.99	1.01	1.06
Standard Deviation (%)	3.6	3.3	3.2	3.1	3.7	3.3	3.1	3.0	3.6	3.4	3.2	3.1	3.4	3.2	3.1	3.0
<i>S.D. Index (%)</i>	3.4	3.2	3.1	3.0	3.4	3.2	3.1	3.0	3.4	3.2	3.1	3.0	3.4	3.2	3.1	3.0
Jensen's Alpha (%)	0.1	0.2	0.3	0.4	-0.4	0.0	0.1	0.5	0.3	0.6	0.5	0.8	-	-	-	-
Beta	1.03	1.00	0.99	0.99	1.03	0.98	0.95	0.94	1.01	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Correlation Coefficient	0.97	0.98	0.98	0.96	0.95	0.95	0.96	0.96	0.96	0.96	0.96	0.96	1.00	1.00	1.00	1.00
Upside Market Capture (%)	106	104	103	107	102	100	97	101	106	109	107	109	100	100	100	100
Downside Market Capture (%)	110	103	97	100	118	102	94	91	107	99	96	92	100	100	100	100

- Wellington and Longfellow have similar, lower downside capture compared to IR&M however Wellington has also been able to capture 109% of upside, similar to IR&M at 107% over the 10-year trailing period.
- Wellington and IR&M have consistently outperformed or matched the benchmark Sharpe Ratio with Longfellow lagging the index over the 3- and 5-year trailing periods.

Peer Rankings (net of fees)<sup>1,2</sup>  
as of June 30, 2020

	IR&M				Longfellow				Wellington				BBG Barclays U.S. Agg			
	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.
Excess Return	22	26	24	24	75	65	61	42	21	7	12	13	-	-	-	-
Standard Deviation	39	30	33	40	48	34	22	15	37	42	43	39	17	22	24	26
Sharpe Ratio	19	15	12	15	71	51	39	15	16	5	6	7	51	68	77	86
Beta	50	58	55	51	53	67	74	79	61	58	57	52	-	-	-	-
Jensen's Alpha (%)	24	27	22	25	76	58	48	28	18	8	12	15	-	-	-	-
Tracking Error	27	25	23	35	48	45	43	34	38	45	43	35	-	-	-	-
Information Ratio	19	16	8	14	75	68	64	34	24	9	11	4	-	-	-	-

- IR&M and Wellington’s trailing period excess returns rank in the top quartile for almost all trailing periods among the US Core Fixed Income peer universe. Wellington has produced the highest excess returns compared with the other three managers over all trailing periods.
- IR&M has exhibited the lowest tracking error over the 3-, 5- and 7- year trailing periods, consistently ranking at the top of the 4<sup>th</sup> quartile.
- Overall, Wellington has the most consistently strong risk-adjusted returns, as measured by information and Sharpe ratio and Jensen’s Alpha rankings. IR&M is on average slightly below Wellington, with Longfellow consistently ranking in the median quartiles.

<sup>1</sup>All characteristics are ranked high to low. A 1<sup>st</sup> percentile ranking corresponds to the highest absolute number in the peer group

<sup>2</sup>Based on gross of fees returns. Excess Return rankings are based on excess returns of each manager preferred benchmark as listed in eVestment.

### Fees and Terms

	Fee Schedule	Vehicle Type	Effective Fee on \$30M	Minimum Account Size	Liquidity
Income Research & Management	0.39% on first \$10M 0.35% on next \$10M 0.30% on next \$10M 0.25% on next \$20M 0.225% on next \$50M 0.20% thereafter	Private Investment Fund	34.7bp	\$5M	Daily
	0.35bp on all assets	Commingled Fund	35bp	None	Daily
Longfellow	0.315% on first \$50M 0.225% on next \$50M 0.18% on next \$20M 0.135% thereafter Small account fee 0.36% less than \$20mm	Separate Account	31.5bp	\$20M	Daily
Wellington	0.25% on first \$100M 0.15% thereafter	Separate Account	25bp	\$150M	Daily
	0.12% on all assets (3bp capped operating expenses)	Commingled Fund	15bp	\$1M	Daily

- Meketa was able to negotiate a 52% discounted fee in Wellington’s commingled vehicles (CIF II and CTF) at 12 bps plus operating expenses which run around 1.4 bps currently (capped at 3 bps).
- Wellington’s fee structure ranks in the most competitive decile (4<sup>th</sup> percentile) in its peer universe.

Appendix

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

**Sharpe Ratio:** A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

**Standard Deviation:** A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**Tracking Error:** This statistic measures the standard deviation of excess returns relative to a benchmark. Tracking error is calculated by multiplying the standard deviation of the monthly excess returns of a portfolio relative to a benchmark by the square root of twelve in order to annualize. The higher the tracking error, the greater the volatility of excess returns relative to a benchmark.

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**INCOME RESEARCH + MANAGEMENT**  
**OAKLAND POLICE AND FIRE**  
**RETIREMENT SYSTEM**

August 26, 2020

Presented by: Angela Meringoff, CFA  
Bill O'Malley, CFA



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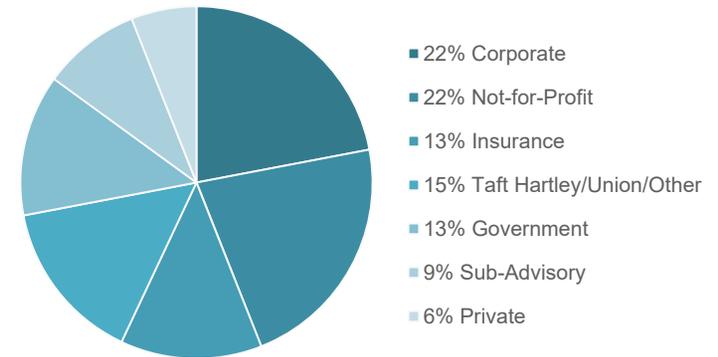
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# IR+M OVERVIEW KEY FACTS

## FIRM FACTS

- 30+ years since firm's inception
- \$83.1 billion in assets under management
- Exclusively US dollar-denominated fixed income
- Team-oriented, bottom-up investment approach
- Consistent investment process with experienced leadership team
- Privately owned with 57 employee shareholders
- 16 year average tenure for portfolio management team

## ASSETS BY CLIENT TYPE



## KEY DIFFERENTIATORS

+ INDEPENDENT FIRM

+ VALUE ORIENTED APPROACH

+ COLLABORATIVE CULTURE

+ CLIENT FOCUS



# IR+M OVERVIEW WHO WE ARE

## SENIOR MANAGEMENT

### Bill O'Malley, CFA\*

Principal  
CEO, Co-CIO  
32 years experience

### Jack Sommers, CFA\*

Principal  
Executive Chairperson  
35 years experience

### John Sommers\*

Principal  
Senior Portfolio Manager  
55 years experience

### Matt Conroy, CFA\*

Principal  
Chief Financial Officer  
28 years experience

### Max DeSantis, CFA\*

Principal  
Director of Enterprise Solutions  
21 years experience

### Jim Gubitosi, CFA\*

Principal  
Co-CIO  
16 years experience

### Sarah Kilpatrick\*

Principal  
COO, Senior Portfolio Manager  
18 years experience

### Molly Manning\*

Principal  
Director of Client Service  
22 years experience

### Sue Synodis\*

Principal  
Chief Human Capital Officer  
40 years experience

### Brooke Anderson, CFA

Principal  
Director of Product Management  
26 years experience

### Rick Kizik, CFA

Principal  
Chief Compliance Officer  
28 years experience

## CULTURAL HIGHLIGHTS



- Workforce Integration, Retention, and Engagement (WIRE) Forum
  - Networking Circles
- Volunteer Action and Community Outreach
  - Annual IR+M Week of Giving
  - Paid Personal Volunteering Days
  - Generous Charitable Donation Matching Program
- Firm-wide Commitment to Sustainability
  - Fully integrated ESG research process
  - PRI signatory since 2013



Pensions & Investments	Investments	Investments	Investments
<b>BEST PLACES TO WORK</b>	<b>ST CES ORK</b>	<b>ST CES ORK</b>	<b>ST CES ORK</b>
IN MONEY MANAGEMENT	NAGEMENT	NAGEMENT	NAGEMENT
★★ 2019 ★★	18★★	17★★	16★★

# IR+M OVERVIEW INVESTMENT PROFESSIONALS

TARGET TEAM		YRS EXP / YRS at IR+M
Bill O'Malley, CFA	Principal, CEO, Co-CIO	32 / 25
Ed Ingalls, CFA	Principal, Senior PM / Product Specialist	41 / 20
Jim Gubitosi, CFA	Principal, Co-CIO	16 / 13
Sarah Kilpatrick	Principal, COO, Senior Portfolio Manager	18 / 16
Bill O'Neill, CFA	Principal, Senior Portfolio Manager	20 / 15
Jake Remley, CFA	Principal, Senior Portfolio Manager	19 / 14
Allysen Mattison, CFA	Director of Investment Risk	15 / 11

PORTFOLIO MANAGERS		YRS EXP / YRS at IR+M
John Sommers	Principal, Senior Portfolio Manager	55 / 33
Paul Clifford, CFA	Principal, Senior PM / Product Specialist	34 / 17
Mike Sheldon, CFA	Principal, Senior Portfolio Manager	29 / 12
Scott Pike, CFA	Senior Portfolio Manager	23 / 13
Matt Walker, CFA	Senior Portfolio Manager	17 / 13
Wesly Pate, CFA	Portfolio Manager	12 / 9
Justin Quattrini, CFA	Portfolio Manager	17 / 14

PORTFOLIO STRATEGY / RISK + INVESTMENT RISK		YRS EXP / YRS at IR+M
John Costello, CFA	Senior Portfolio Strategy Analyst	8 / 7
Tucker Rothmann, CFA	Portfolio Strategy Analyst	7 / 3
Annemarie Ellicott	Senior Portfolio Risk Analyst	9 / 6
Mark Riordan, CFA	Senior Portfolio Risk Analyst	11 / 8
Joe Alfano, CFA	Portfolio Risk Analyst	11 / 7
Samantha Quinn, CFA	Portfolio Risk Analyst	8 / 5
Kaysonne Anderson	Portfolio Risk Associate	10 / 7
John Lu	Junior Portfolio Risk Associate	4 / <1
Sarah Spencer	Business Management Analyst	13 / 4
Carrie Mermelstein, CFA	Senior Investment Risk Analyst	19 / 1
Devan Acker	Investment Risk Analyst	9 / 9

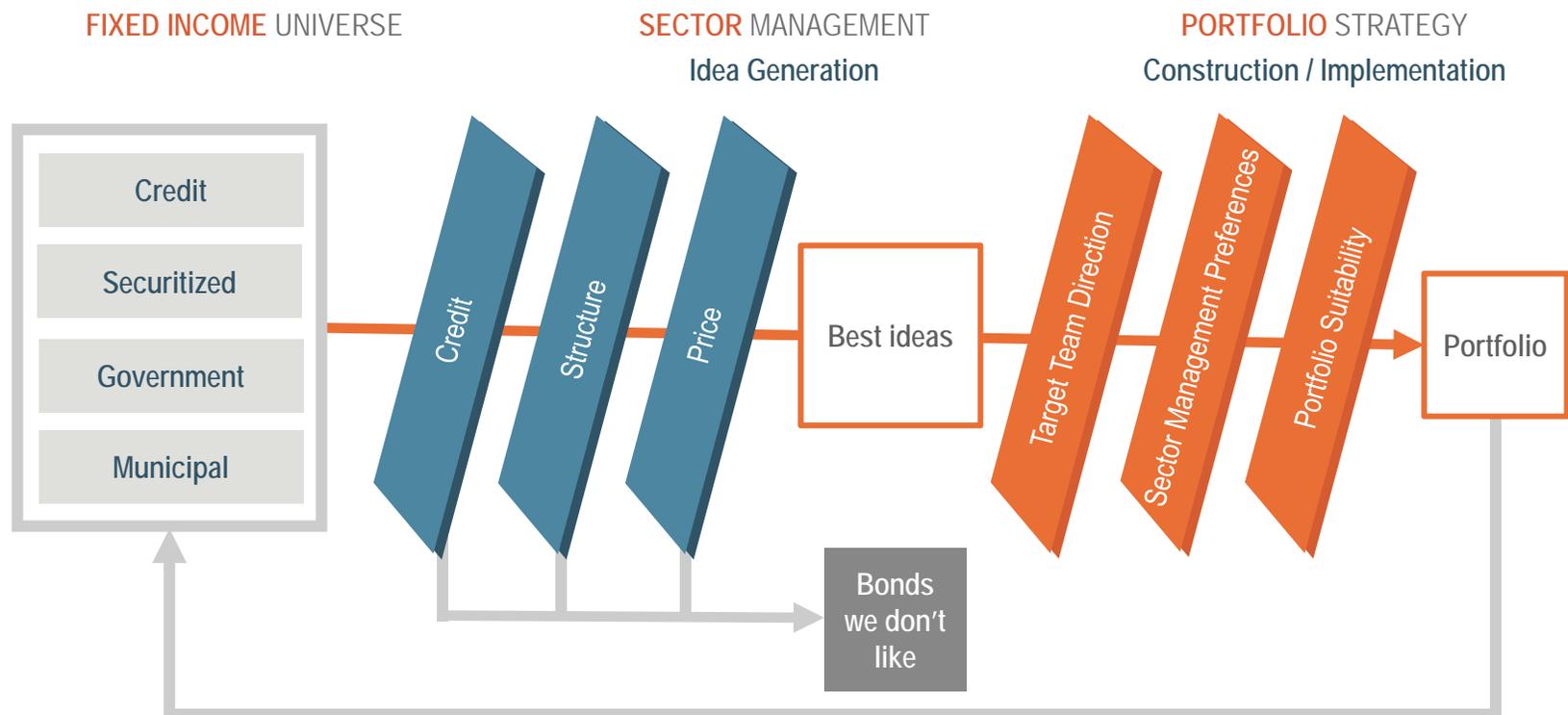
DIRECTORS + PRODUCT SPECIALISTS		YRS EXP / YRS at IR+M
Rachel Campbell	Director of Securitized Research	14 / 11
Nate Hollingsworth, CFA	Director of Portfolio Risk	14 / 11
Kara Maloy, CFA	Director of Credit Research	14 / 10
Brooke Anderson, CFA	Principal, Director of Product Management	26 / 10
Amy DiMarzio	SVP, Product Specialist	20 / 3
Allison Walsh, CFA	SVP, Product Specialist	17 / 4
Theresa Roy, FSA, EA, CFA	VP, Product Specialist	11 / <1

RESEARCH / PRODUCT		YRS EXP / YRS at IR+M
Caroline Chen	SVP, Senior Research Analyst (Securitized)	18 / 4
Kristoff Nelson, CFA	SVP, Senior Research Analyst (Credit)	12 / 9
Isha Chanana, CFA	Senior Research Analyst (Credit)	13 / 5
Luke Ferriter, CFA	Senior Research Analyst (Credit)	14 / 6
Rob Nuccio, CFA	Senior Research Analyst (Credit)	12 / 8
Ralph Saturné	Senior Research Analyst (Securitized)	13 / 8
Ginny Schiappa, CFA	Senior Research Analyst (Credit)	9 / 5
Michael Bronson, CFA	Research Analyst (Credit)	7 / 4
Layla Zhu, CFA	Research Analyst (Securitized)	7 / 4
Harrison Ameen	Research Associate	5 / 1
Emily O'Toole	Junior Research Associate	3 / 1
Valérie Salmon	Junior Research Associate	1 / 1
Dan Comiskey, CFA	Senior Product Analyst	7 / 5
Neal Gombeski, CFA	Senior Product Analyst	15 / 5
Tim McCabe, CFA	Product Analyst	8 / 6
Jennifer Kaing	Product Analyst	10 / <1

TRADERS		YRS EXP / YRS at IR+M
Lucas Murray	SVP, Senior Trader	16 / 12
Mark Paulson	Senior Trader	14 / 11
Preston Raymond, CFA	Senior Trader	15 / 9
Andy Tenczar	Senior Trader	22 / 8
Jeremy Holtz, CFA	Trader	15 / 10
Nicole Pasquale	Junior Trader	3 / <1

## IR+M INVESTMENT PROCESS BOTTOM-UP APPROACH

- + Relative-value oriented, duration-neutral approach
- + Introduce incremental risk to portfolios when compensation is attractive
- + Believe careful security selection and risk management provide superior results over the long term



## IR+M INVESTMENT PROCESS CREDIT & SECURITIZED SECURITY SELECTION

- Corporate bonds
  - High Quality: Diversified businesses with favorable metrics
  - Liquid: Large deal sizes and well-known names
  - Solid Management Teams: Consistent and transparent financial policies
- Securitized bonds
  - High Quality
    - Agency-Issued: Explicitly or implicitly backed by the U.S. Government
    - Non-Agency
      - Top of the deal capital structure; typically AAA-rated
      - Strong credit enhancement and underlying loan performance
  - Stable and predictable cash flows
  - Liquid with active trading markets



## IR+M INVESTMENT PROCESS PORTFOLIO CONSTRUCTION + RISK CONTROL

- + We are benchmark aware, but not benchmark constrained

Factors	IR+M Broad Strategy Approach
<b>Duration / Yield Curve</b>	+ Duration and key rate neutral to benchmark
<b>Yield</b>	+ Spread product overweight generally means portfolio's effective spread (OAS) is greater than the Index's effective spread (OAS)
<b>Sector Allocation</b>	+ Security selection and relative value drive exposures + Diversified by sector, but we don't need to own everything
<b>Quality</b>	+ Return of principal is paramount
<b>ESG</b>	+ Compensation vs. risk mitigation; focus on business sustainability
<b>Liquidity</b>	+ Provide liquidity when well-compensated
<b>Tracking Error</b>	+ Tracking error reflects available opportunities
<b>US Cash Bonds</b>	+ No derivatives / no currency
<b>Leverage</b>	+ None



## IR+M AGGREGATE STRATEGY CHARACTERISTICS

Characteristics	IR+M Aggregate Portfolio (12/31/19)	IR+M Aggregate Portfolio (7/31/20)	Bloomberg Barclays Aggregate Index (7/31/20)
Yield (%)	2.47	1.52	1.05
Spread to Tsy (bp)	60	115	60
Effective Duration (yrs)	5.76	6.01	6.09
Convexity	0.56	0.69	0.59
Number Of Issues	231	285	11,780
Average Quality (M/S&P)	Aa2/AA-	Aa3/A+	Aa2/AA-
Ratings Distribution (%)			
Aaa	65.8	50.9	69.4
Aa	2.4	3.0	3.4
A	11.3	17.8	12.5
Baa	19.8	27.0	14.7
Ba	0.2	1.1	0.0
Cash	0.5	0.3	0.0
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Sector Distribution (%)	IR+M Aggregate Portfolio (12/31/19)	IR+M Aggregate Portfolio (7/31/20)	Bloomberg Barclays Aggregate Index (7/31/20)
<b>Government</b>	<b>23.5</b>	<b>14.0</b>	<b>38.6</b>
Treasury	19.4	7.8	37.1
TIPS	0.0	2.7	0.0
Agency	0.0	0.0	1.3
Govt Guaranteed	4.1	3.5	0.1
<b>Credit</b>	<b>30.7</b>	<b>45.4</b>	<b>31.7</b>
Finance	10.1	14.5	8.4
Industrial	16.8	26.3	17.1
Utility	3.5	4.6	2.3
Credit Non-Corporate	0.2	0.0	3.9
<b>Securitized</b>	<b>43.6</b>	<b>38.7</b>	<b>29.0</b>
RMBS	1.7	1.7	0.0
Agency RMBS	26.7	21.0	26.4
ABS	7.9	7.4	0.4
CMBS	7.2	7.6	1.3
Agency CMBS	0.0	1.0	0.9
<b>Municipal</b>	<b>1.7</b>	<b>1.6</b>	<b>0.7</b>
GO	0.9	0.0	0.2
Revenue	0.8	1.6	0.5
<b>Cash</b>	<b>0.5</b>	<b>0.3</b>	<b>0.0</b>
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

### Three Ways to Outperform the Benchmark

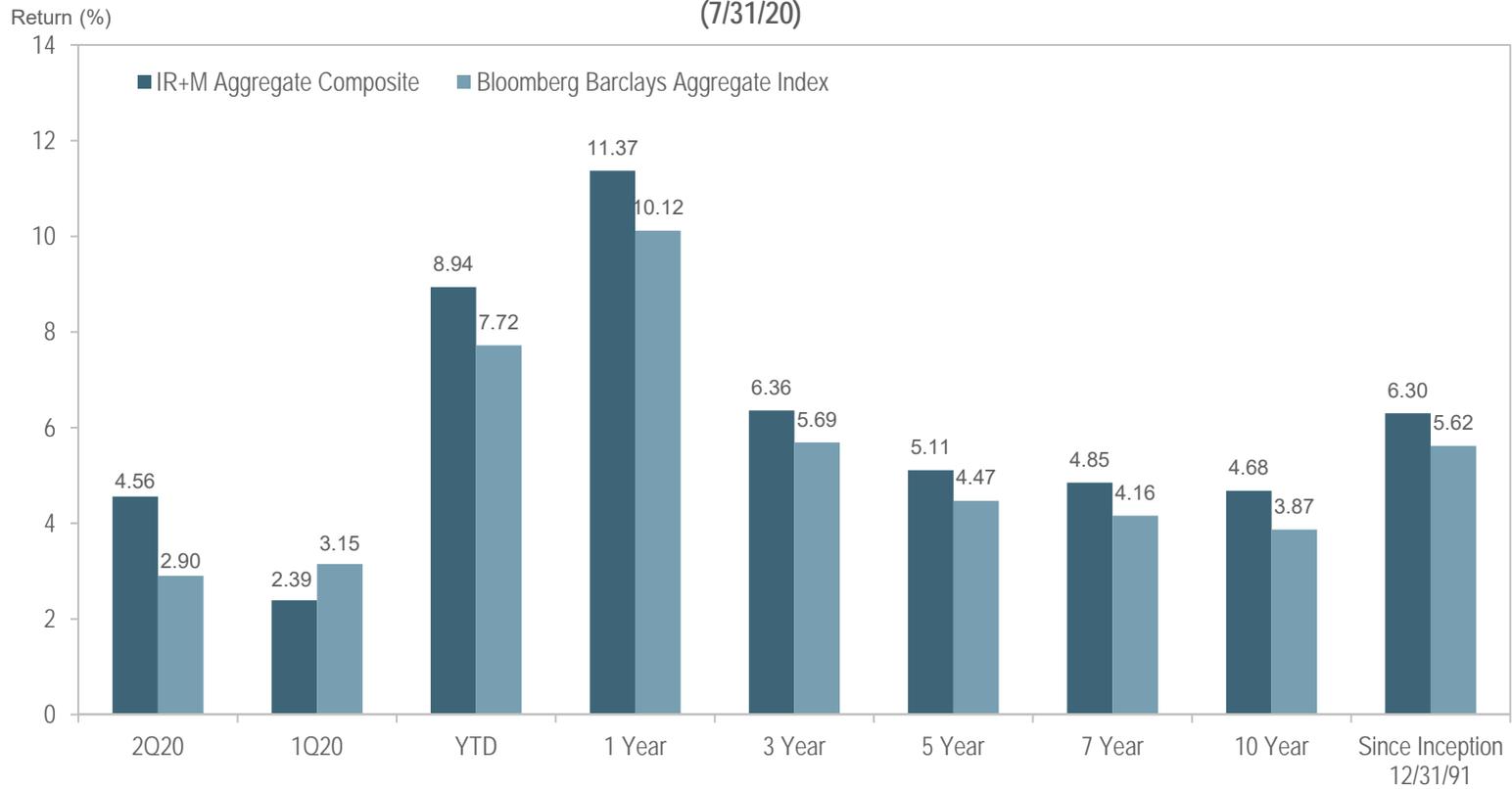
- Yield advantage gives the portfolio wind at its back
- High quality positioning allows the portfolio to hold-up better in negative economic scenarios
- Security selection generates ~70% of excess returns relative to index

Some statistics require assumptions for calculations which can be disclosed upon request. Yields are represented as of the above date(s) and are subject to change. Totals may not sum to 100 due to rounding.  
Source: Bloomberg Barclays  
The views contained in this report are those of IR+M as of 7/31/20 and are based on information obtained by IR+M from sources that are believed to be reliable.



# IR+M AGGREGATE STRATEGY PERFORMANCE

IR+M Aggregate Composite vs. Bloomberg Barclays Aggregate Index  
Investment Results  
(7/31/20)



Unless otherwise stated, the investment results shown do not reflect the deduction of investment advisory fees. Periods over one year are annualized. Past performance is not indicative of future results. A similar analysis can be provided for any time period since inception. Please refer to the GIPS® composite disclosures at the end of this presentation.

## WHY IR+M

- + Proactive client service with transparent communication
- + Deep, accessible team of subject matter experts
- + Stable organization
- + Consistent investment process and performance
- + Competitive fees



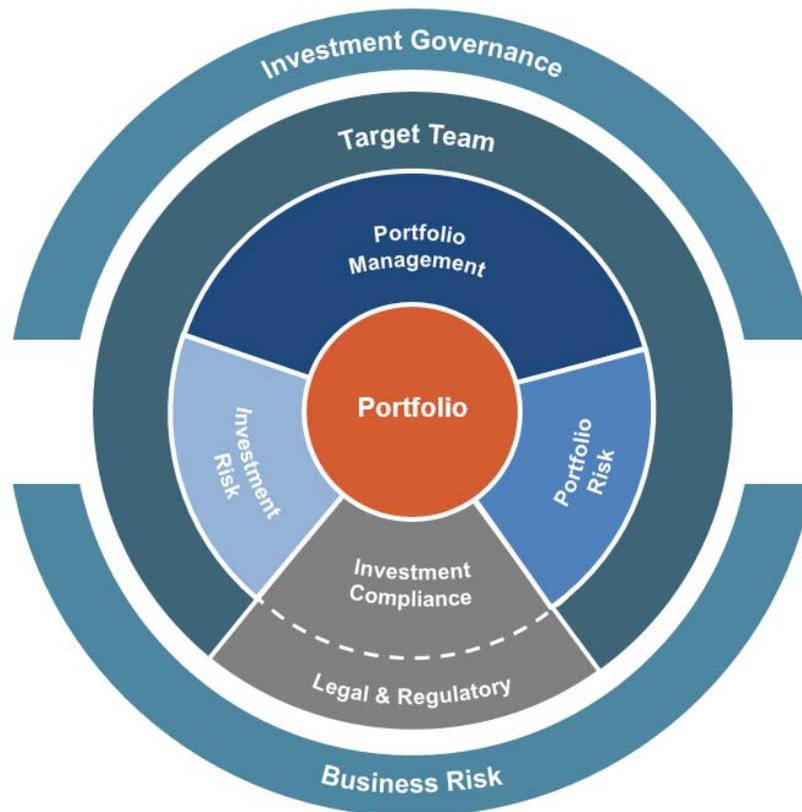
## IR+M FIXED INCOME CAPABILITIES

## APPENDIX

## IR+M OVERVIEW RISK GOVERNANCE

- Managing risk is a cross-functional effort, with several teams and systems engaged in the process

### FUNCTIONAL OVERSIGHT



### TECHNICAL OVERSIGHT

#### Third Party Solutions

- + Order Management System (Fidessa)
  - + Guideline Compliance Monitoring (Sentinel)
  - + Trade Allocations and Trade Workflow (Minerva)
  - + Portfolio Partition Workbooks (Tesseract)
- + Portfolio Risk & Analytics (Bloomberg PORT+)

#### Proprietary Tools

- + Portfolio Exposures & Historical Data (PRISM – Portfolio Risk Investment Strategy Management)
- + Sector Targets (TMA – Target Management Application)
- + Attribution (PAA – Performance Attribution Application)

## PENSIONS & INVESTMENTS BEST PLACES TO WORK FOR 2019

- Income Research + Management (IR+M) was named a Best Place to Work in Money Management for the fourth consecutive year by Pensions & Investments
- Presented by Pensions & Investments, the global news source of money management, the annual survey and recognition program is dedicated to identifying and recognizing the best employers in the money management industry
- One of the cornerstones of IR+M is its unique culture, which is collaborative and collegial, as well as focused on serving its clients and community; the firm's open office environment fosters constant communication across team lines, and empowers employees to freely share ideas
- The firm's commitment to the community is pervasive, with employees frequently volunteering to mentor students or provide meals to those in need; additionally, the firm's benefits program reflects its emphasis on the importance of work/life balance

For a complete list of the 2019 Pensions & Investments' Best Places to Work in Money Management winners, please visit:

<https://www.pionline.com/best-places-work/76-money-managers-go-above-and-beyond>



# IR+M COMPOSITE DISCLOSURES – 12/31/19

## Aggregate Composite

January 1, 1992 through December 31, 2019

Year	Returns (%)			3-Yr St Dev (%)		Number of Portfolios	Dispersion (%)	Y/E Assets (USD, mm)	
	Gross	Net	Benchmark	Composite	Benchmark		Composite	Composite	Firm
1992	8.06	7.69	7.40	N/A	N/A	≤ 5	N/A	9	538
1993	11.95	11.57	9.75	N/A	N/A	≤ 5	N/A	21	803
1994	(1.80)	(2.15)	(2.92)	N/A	N/A	≤ 5	N/A	18	957
1995	18.90	18.50	18.47	N/A	N/A	≤ 5	N/A	97	1,700
1996	4.53	4.17	3.63	N/A	N/A	≤ 5	N/A	100	1,964
1997	9.22	8.85	9.65	N/A	N/A	≤ 5	N/A	108	2,420
1998	7.61	7.24	8.69	N/A	N/A	6	0.10	293	3,041
1999	0.45	0.10	(0.82)	N/A	N/A	6	0.08	239	3,374
2000	10.19	9.81	11.63	N/A	N/A	7	0.63	162	3,620
2001	10.38	10.01	8.44	N/A	N/A	7	0.22	111	3,705
2002	9.32	8.94	10.26	N/A	N/A	7	0.24	181	3,847
2003	6.20	5.84	4.10	N/A	N/A	12	0.40	700	5,108
2004	5.31	4.95	4.34	N/A	N/A	16	0.21	927	6,636
2005	3.05	2.69	2.43	N/A	N/A	33	0.23	1,255	7,480
2006	4.81	4.45	4.33	N/A	N/A	42	0.17	1,845	9,238
2007	6.91	6.54	6.97	N/A	N/A	44	0.27	2,616	11,507
2008	0.23	(0.12)	5.24	N/A	N/A	51	1.47	2,618	13,718
2009	13.49	13.11	5.93	N/A	N/A	69	1.35	3,765	21,252
2010	7.16	6.79	6.54	N/A	N/A	84	0.32	4,885	26,295
2011	7.30	6.93	7.84	3.35	2.78	86	0.25	5,054	30,676
2012	7.39	7.02	4.22	2.49	2.38	84	0.35	5,391	35,466
2013	(1.33)	(1.68)	(2.02)	2.89	2.71	72	0.20	4,528	37,224
2014	7.10	6.73	5.97	2.75	2.63	71	0.19	6,075	48,414
2015	0.59	0.23	0.55	2.91	2.88	62	0.14	6,747	54,887
2016	3.57	3.15	2.65	2.88	2.98	66	0.20	8,290	61,589
2017	3.97	3.56	3.54	2.65	2.78	69	0.13	9,099	69,256
2018	0.09	(0.32)	0.01	2.65	2.84	69	0.09	9,470	71,882
2019	9.32	8.89	8.72	2.76	2.87	66	0.13	10,424	75,105

The three-year annualized ex-post standard deviation of the composite and benchmark is as of year end. Reporting began in 2011.



## IR+M COMPOSITE DISCLOSURES – 12/31/19 (continued)

### Aggregate Composite Continued

Income Research & Management (“IR+M”) is an independent investment management firm with approximately \$75.1 billion in assets under management. IR+M has no subsidiaries or divisions, all business is done at IR+M and all assets are managed by IR+M. A complete list of composite descriptions is available upon request. IR+M claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. IR+M has been independently verified for the period January 1, 2000 through December 31, 2019 by ACA Performance Services. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm’s processes and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Aggregate Composite has been examined for the period January 1, 2000 through December 31, 2019. The verification and performance examination reports are available upon request.

Valuations are computed, performance is reported, and fees are based on U.S. dollars. Gross-of-fee performance returns are presented before management and custodial fees but after all trading expenses. Net-of-fee performance returns are calculated using the highest fee of the two scenarios: 1) fee charged to a current portfolio within the composite or 2) the standard fee schedule. Therefore, we use whichever fee is highest for a given year. The fees are deducted quarterly, using one-fourth of the annual fee rate. Fees disclosed are the standard management fee for that strategy. Actual management fees may be different than those illustrated in this disclosure. Additional information regarding valuing portfolios, calculating performance and preparing compliant presentations are available upon request.

Dispersion is calculated using the equal-weighted standard deviation of all portfolios that were included in the composite for the entire year. Dispersion is not calculated for years with five or fewer portfolios in the composite for the entire year.

This composite utilizes a Significant Cash Flow Policy, which is described as follows. Prior to 1/1/10, if cash flows exceeded 5%, IR+M removed the portfolio from the composite, effective as of the last full month of management prior to the cash flow, if the impact to the performance of the composite was greater than the absolute value of 0.02%. For periods beginning 1/1/10 or later, IR+M will remove a portfolio from a composite if an external contribution or withdrawal (flow) is significant. The portfolio will be removed as of the last full month of management prior to the flow. IR+M defines a flow (either cash or securities) as significant by mandate according to the following criteria: Government mandates: No level – all portfolios left in regardless of size of flow; Corporate/Broad market/TIPS: 25% of beginning portfolio value; Convertibles/Municipals: 10% of beginning portfolio value. Portfolios will re-enter the composite according to the Entering Composites criteria detailed in the IR+M GIPS Policy Manual. Additional information regarding the treatment of significant cash flows is available on request.

Derivatives, if used in those accounts whose guidelines permit their use, are primarily engaged as hedging instruments. Interest Rate Swaps and Treasury-bond futures may be used to manage a portfolio’s duration, and Credit Default Swaps may be used in strategies to isolate a particular issuer’s credit risk.

The Aggregate Composite is comprised of separately managed institutional portfolios mainly invested in a diversified range of domestic, investment grade, fixed income securities. The objective of the mandate is to outperform the benchmark on a total return basis while staying within the boundaries of individual client guidelines. The securities’ typical maturity range is between 1-12 years. The benchmark for the composite is the Bloomberg Barclays Aggregate Index. Benchmark returns are not covered by the report of independent verifiers. The standard management fee schedule is 0.30% on the initial \$50mm, 0.25% on the next \$50mm, 0.20% on the next \$100mm, and 0.15% on amounts over \$200mm. The composite was created on 12/31/91.



## IR+M DISCLOSURE STATEMENT

The views contained in this report are those of Income Research & Management (“IR+M”) and are based on information obtained by IR+M from sources that are believed to be reliable. This report is for informational purposes only and is not intended to provide specific advice, recommendations, or projected returns for any particular IR+M product. Investing in securities involves risk of loss that clients should be prepared to bear. More specifically, investing in the bond market is subject to certain risks including but not limited to market, interest rate, credit, call or prepayment, extension, issuer, and inflation risk.

It should not be assumed that the yields or any other data presented exist today or will in the future. Past performance is not a guarantee of future results and current and future portfolio holdings are subject to risk. Securities listed in this presentation are for illustrative purposes only and are not a recommendation to purchase or sell any of the securities listed. Forward looking analyses are based on assumptions and may change. It should not be assumed that recommendations made in the future will be profitable or will equal the performance of the securities listed. Some statistics require assumptions for calculations which can be disclosed upon request.

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Unless otherwise noted, the investment results shown do not reflect the deduction of investment advisory fees. The investment advisory fees charged by Income Research & Management are described in Part 2A of IR+M's Form ADV, which is available upon request. Actual returns will be reduced by advisory fees and any other expenses (custodial, etc.) that may be incurred in the management of an investment account. Investment management fees do have an effect on the investment results achieved by a client. For instance, on a \$100 million portfolio, an example IR+M fee might be 0.39%. A gross hypothetical return of 10.00% in a given year would be reduced to 9.61% if the client's annual investment management fee were 0.39%. Over a 5-year period of annual 10% returns, a gross return of 61.05% would be reduced to 58.82% after the deduction of investment management fees. Different strategies may have different standard fees. Total returns including realized and unrealized gains plus interest and dividends are used to calculate investment performance. Cash is included in performance calculation. All returns are expressed in US\$ terms. Trade date accounting and valuation are used. Past performance is not indicative of future results. Periods over one year are annualized. A similar analysis can be provided for any time period since inception.

Please see additional disclosures for important composite performance information such as inception date and historical index changes.

Please refer to your investment management agreement ("IMA") for additional information including, but not limited to, investment advisory fee information.

### *Characteristics:*

Unless otherwise noted, characteristics and holdings are from the representative portfolio of the applicable composite or specific to the client account included in this presentation. The representative portfolio information is supplemental to the IR+M Composite Disclosures. Some statistics require assumptions for calculations which can be disclosed upon request. Yields are represented as of the aforementioned dates and are subject to change. A similar analysis can be provided for any portfolio we manage. Totals may not sum due to rounding.

### *Sample Portfolios:*

All sample portfolios are represented as of the aforementioned dates. There are limitations in sample results, including the fact that such results neither represent trading nor reflect the impact that economic market factors might have had on the management of the account if the adviser had been managing an actual clients money. Actual results may differ. A similar analysis can be provided of any portfolio we manage.





## Core Fixed Income Review

August 26, 2020

---

Presented by:

Akshay Anand, CFA

Corinne Larson, CTP

Barbara McKenna, CFA

**Longfellow Investment Management Co., LLC**

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One-on-one Presentation



1	Firm Overview	3
2	Investment Philosophy and Process	8
3	Market Review	12
4	Core Strategy Review	15
5	Appendix:	
	Fixed Income Composite Statistics	20
	Employee Diversity	22
	Biographies	23

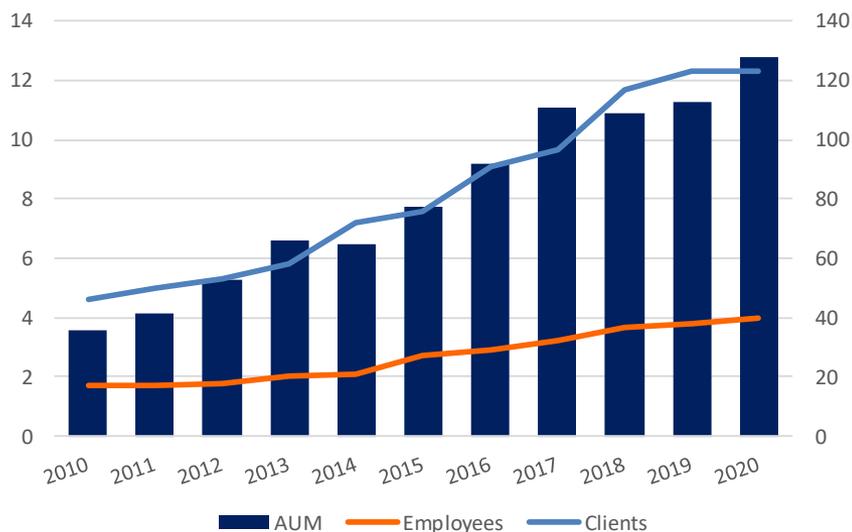
**Boutique investment management firm**

- SEC registered advisor since inception in 1986
- \$12.8 billion in assets under management (6/30/2020)

**100% employee owned – client and employee interests aligned**

- 40 employees; including 14 principals
  - › 2 new principals added as of 3/31/2020
- Long-term continuity and succession plans in place
- Certified Women’s Business Enterprise since 2010

**Asset Flows – average annual growth of 15% for the past 5 years**



**Customized, proactive approach to asset management**

- All accounts separately managed to each client’s unique investment guidelines
- Strive to achieve strong, consistent risk-adjusted returns
- Focus on developing lasting client relationships
  - › Experience managing a wide variety of clients and portfolios
  - › Still retain first two institutional clients

**Industry recognition\***

- PSN Top Guns Manager of the Decade – based on risk return profile over 10-year period
  - › Intermediate Duration: 2014, 2015, 2016, 2017, 2018, and 2019 Manager of the Decade within PSN’s Intermediate Maturity Universe
  - › Core: 2016, 2017, and 2018 Manager of the Decade within PSN’s Core Fixed Income and U.S. Fixed Income Universes
  - › Core Plus: 2019 Manager of the Decade within PSN’s Core Plus Fixed Income Universe
- PSN Top Guns 6 Stars – based on risk return profile over 5-year period
  - › Short Duration: December 31, 2019 within PSN’s Short Maturity Universe

*\*See award disclosures in appendix for more information*

**Firm Facts**

Assets Under Management	\$12.8 bn
Clients	123

**New Portfolio Fundings Year-to-Date\***

Fixed Income	\$652mm
Absolute Return	\$30mm

**Client Type**

**% of Firm Assets**

Bank	2.5%
Corporate	30.4%
Endowment	1.8%
Foundation	4.4%
Healthcare	9.9%
HNW	2.0%
Insurance	3.6%
Non-profit	0.9%
Public	20.7%
Religious	4.9%
Sub Advised	8.9%
Taft Hartley	9.3%
Other	0.9%

**LIM Strategies**

**June 30, 2020**

	Duration	Assets (\$mm) 6/30/2020	% of Firm Assets	Managed Since	Assets (\$mm) 6/30/2019
<b>Absolute Return/Alternatives</b>		366	2.9%		142
Arbitrage	< 1.00	53	0.4%	7/1/1986	41
SPACs	< 1.00	286	2.2%	7/1/2018	73
Credit Opportunities	2.25	27	0.2%	2/1/2015	28
<b>Fixed Income</b>		12,477	97.2%		11,193
Enhanced Cash	1.02	2,841	22.1%	7/1/2005	2,912
Short Duration	1.84	2,167	16.9%	7/1/1986	1,854
Intermediate Duration	3.98	1,451	11.3%	9/1/1997	1,191
Core	5.82	3,000	23.4%	10/1/2006	2,816
Core Plus	5.91	888	6.9%	7/1/2009	809
Long Duration	15.20	371	2.9%	6/1/2020	0
Government Only	2.15	718	5.6%	7/1/2005	596
TIPS	3.70	75	0.6%	10/1/2007	0
Crossover	Client Specific	679	5.3%	2/1/2010	688
Opportunistic Bond	3.04	288	2.2%	7/1/2013	326

*\*All data as of June 30, 2020*

# Representative Client List

## Bank (1)

Dedham Institution For Savings

## Corporate (13)

Amazon.com

The Boeing Company

E.T. Horn

Public Service Enterprise Group, Inc.  
Square, Inc.

Tauck, Inc.

## Endowments and Foundations (29)

American Diabetes Association

Children's Fund of Connecticut

City University of New York

East Bay Community Foundation

Jessie Ball duPont Fund

The John S. & James L. Knight  
Foundation

Loma Linda University

Michigan Health Endowment Fund

Saint Paul & Minnesota Community  
Servants of Relief for Incurable Cancer

Samford University

Starr Commonwealth

Tiger Athletic Foundation

University of West Florida

University System of New Hampshire

Union Theological Seminary

Utah State University

## Healthcare (18)

Beaumont Health

Care New England Health System

Charleston Area Medical Center

CoxHealth

Greater Fairbanks Community  
Hospital Foundation

Health Research, Inc.

Lehigh Valley Health Network

MelroseWakefield Healthcare, Inc.

Nicklaus Children's Hospital

Passport Health Plan

Rady Children's Hospital

Reliant Medical Group

Spartanburg Regional Health System

The University of VT Medical Center

University of MD Medical System

Woman's Hospital

## Insurance (6)

Augusta Mutual Insurance Company

Depositors Insurance Fund

Hospital Mutual Insurance Group

Tecumseh Health Reciprocal Risk  
Retention Group

Texas Council Risk Management Fund

University of Missouri Medical

Professional Liability Plan Trust

## Non-Profit/Other (6)

American College of Surgeons

Burns and Roe Personal Injury  
Settlement Trust

NC School Board Pension & Trust  
Fund

Professional Contract Services, Inc.

U.S. Pharmacopeial Convention, Inc.

## Platform (4)

Capital Prospects

Goldman Sachs AIMS Platform

Northern Trust Global Advisors, Inc.

PNC Platform

## Public (17)

California Earthquake Authority

City of Boston Trust Office

City of New Britain, CT

City of Phoenix Employees Retirement

Dallas Police & Fire Pension System

Illinois Municipal Retirement Fund

MA Housing Finance Agency  
Retirement System

MA Pension Reserve Investment  
Management Board (PRIM)

Maryland Retirement Agency

Orange County Employee Retirement

Philadelphia Public Employees

Transit Employees' Retirement Plan

## Religious (12)

NC Baptist Foundation, Inc.

National Christian Foundation

Roman Catholic Bishop of Worcester

Sinsinawa Dominicans

Sisters of St. Francis of Mary  
Immaculate

Sisters of St. Francis of the Neumann  
Communities

Sisters of St. Joseph

## Sub-Advised (6)

Christian Brothers Investment  
Services, Inc.

MetLife Inc.

Northern Trust Investments

## Taft-Hartley (8)

Asbestos Workers Local Union 24

Michigan Upper Peninsula IBEW

Minnesota Laborers

Roofers Local #20 Pension Fund

Twin City Iron Workers #512

Client for < 5 years    Client for > 15 years  
Client for > 5 years    Client for > 20 years  
Client for > 10 years    Client for > 30 years  
(#) = total clients by type

The above list consists of all clients who have consented to Longfellow's use of their name in marketing materials. This list was not generated based on performance nor does it include all of Longfellow's clients. Longfellow follows a policy of confidentiality regarding information pertaining to its client relationships. The above listing should not be construed as endorsements of Longfellow, its products or services. It is not known whether the listed clients approve or disapprove of Longfellow or the services provided. Prospective clients may not have the same experience as those identified on this list.

**Portfolio Management Team**

**Fixed Income**

Akshay Anand, CFA  
Raymond Kubiak, CFA  
Ryan Nelson, CFA

George Noyes, CFA  
Barbara McKenna, CFA  
Sarah Scranton, CFA

David Stuehr, CFA  
John Villela, CFA

**Absolute Return/Alternatives**

Andrew Bail  
Craig Carlozzi, CFA  
David Stuehr, CFA

**Sector Specialties**

**Securitized**

**Head:** Akshay Anand, CFA

- Kathleen Barton, CFA
- Gaurav Jagani, CFA
- Scott Supple, CAIA\*
- Adriano Taylor-Escribano\*

**Credit**

**Head:** David Stuehr, CFA

- Samir Agarwal
- Aileen Barbiellini Amidei, CFA
- Craig Carlozzi, CFA\*
- Mark Duffy, CFA
- Heather Meehan, CFA\*

**Municipals/HNW**

**Head:** Raymond Kubiak, CFA

- Ryan Nelson, CFA\*
- George Noyes, CFA

**Governments**

**Head:** John Villela, CFA

- Derek McCarthy\*
- Scott Supple, CAIA\*

**Absolute Return**

**Head:** Andrew Bail\*

**Portfolio Analysis**

- Petr Soustal

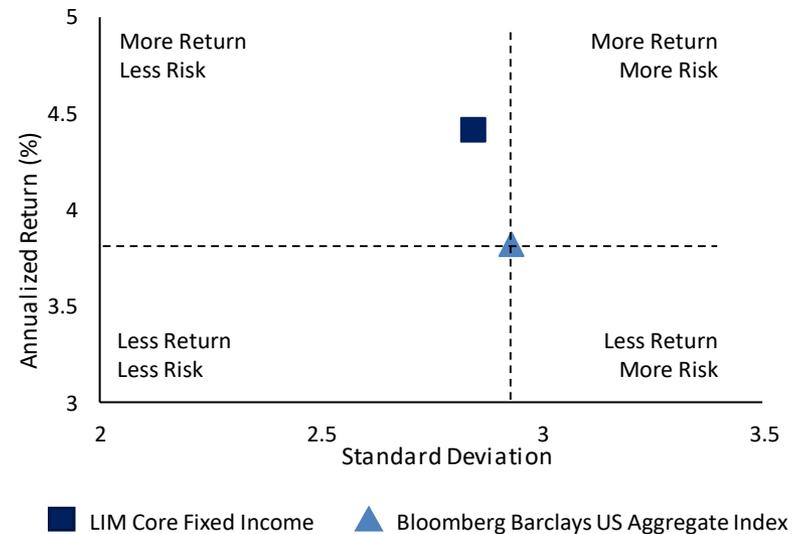
\*Sector Trader

## LIM Core Fixed Income - Total Annual Returns

	Gross Composite	BB US Aggregate	Difference
2019	8.86%	8.72%	0.14%
2018	0.30%	0.01%	0.29%
2017	4.16%	3.54%	0.62%
2016	3.02%	2.65%	0.37%
2015	1.69%	0.55%	1.14%
2014	5.69%	5.96%	-0.27%
2013	-0.69%	-2.02%	1.33%
2012	6.61%	4.21%	2.40%
2011	7.85%	7.84%	0.01%
2010	7.88%	6.54%	1.34%
2009	8.09%	5.93%	2.16%
2008	5.52%	5.24%	0.28%
2007	7.85%	6.96%	0.89%
2006 (3 mos)	1.58%	1.24%	0.34%

## Core Fixed Income Risk Reward

June 30, 2010 to June 30, 2020



The supplemental information on this page complements the full Core Composite presentation at the conclusion of this presentation. Please see the Core Composite presentation for further information.

## Risk management is our focus

- Top-down strategy for risk management coupled with bottom-up security selection
- Diversification by both percent and duration contribution
- Focus on identifying stable-to-improving credits and avoiding adverse outcomes
- Established buy and sell disciplines

## Investment decision making foundation is built on independent and proprietary analysis

- Detailed independent research combined with regular monitoring to proactively respond to changing situations
  - › This process enabled us to avoid post-2004 home equity, as well as consumer, mortgage, and finance exposure in 2007-08
- Recommendations reviewed regularly, with quarterly formal assessments

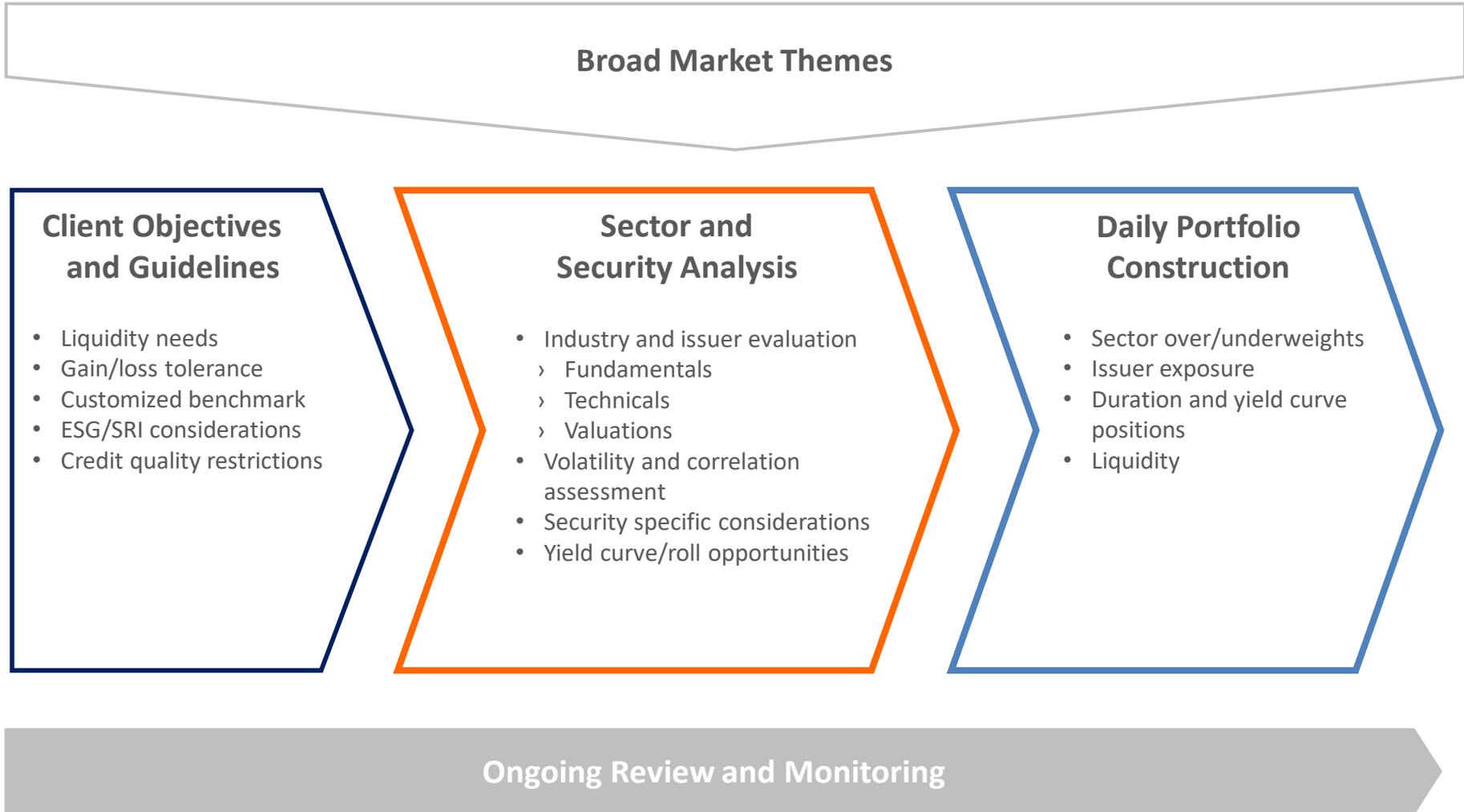
## Over a cycle, avoiding problems generally results in superior relative performance

- Our analysis and monitoring process seeks to provide early warning signals and opportunities
- Our risk management insulates clients from the impact of event risk

### Historical Value Added – Relative Return over a Cycle

Strategy	Allocation of Excess Return
Sector Allocation	30-40%
Security/Issuer Selection	30-40%
Duration	10-20%
Yield Curve Placement	10-20%

*\*See Performance Composite and Disclosures for additional information*



## **Take advantage of market inefficiencies**

- Buy securities that trade cheap for non-economic factors
  - › Supply/demand imbalances
  - › Analytical/administrative complexity
  - › Liquidity
  - › Overlooked or not closely followed by other fixed income participants

## **Identify relative value by analyzing spread relative to risks**

- Research, including internal research reports, CreditSights, dealer research, rating agencies, and other resources
- Analysis using proprietary models, BondEdge Solutions, Bloomberg, and other tools

## **Maximize trading efficiency**

- Survey over 20 dealer inventories
- Minimize turnover/transaction costs by investing in strategic positions
- Block trades across similar portfolios when appropriate

## **Limit interest rate volatility**

- Constrain portfolio duration within a narrow range around benchmark, or to reflect client's cashflow considerations
- Duration management is a strategic decision versus short-term market timing

## **Maintain well-diversified portfolio**

- Limit event risk through sector, industry, and issuer diversification
- Issuer constraints based on credit quality, maturity, and spread volatility

## Comprehensive analysis

- ESG performance analyzed with the same rigor and diligence as traditional financial performance, leading to a more complete risk assessment

## Sector-specific weightings

- E, S, or G evaluations can be broadly applied yet differentiated, with sector-specific emphasis placed on each sustainability dimension

## Quantitative focus

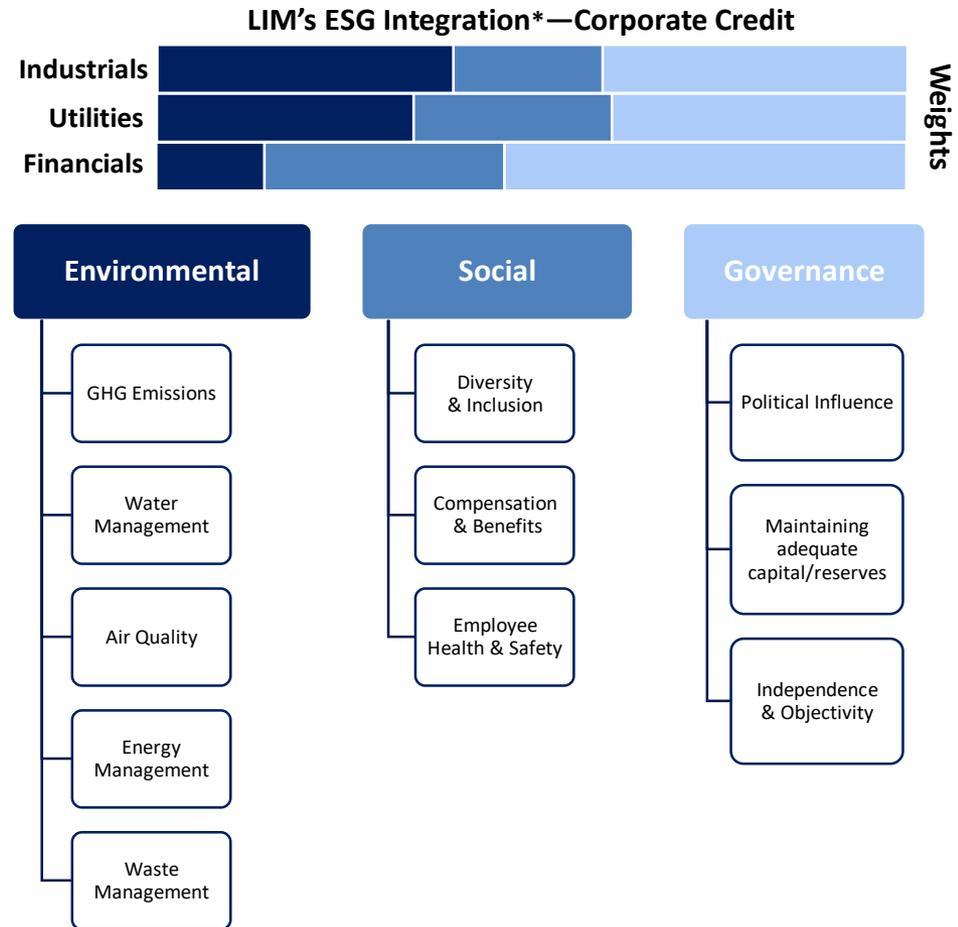
- Data aggregated from diversified sources to analyze industry-level performance from a relative and, when applicable, absolute perspective (e.g., greenhouse gas emissions under a cap)

## Context is everything

- Assess risk by considering emerging regulation and management approach to mitigating identified weaknesses

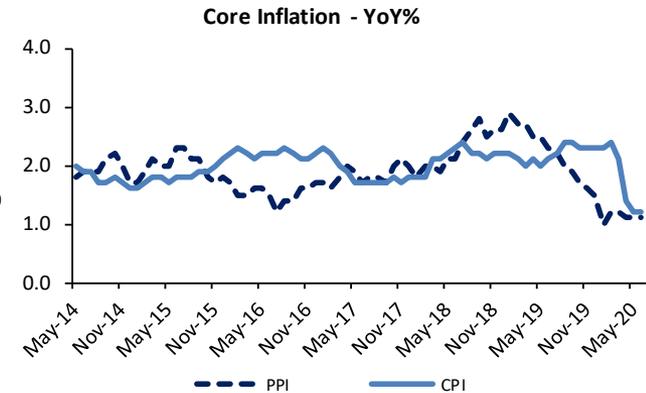
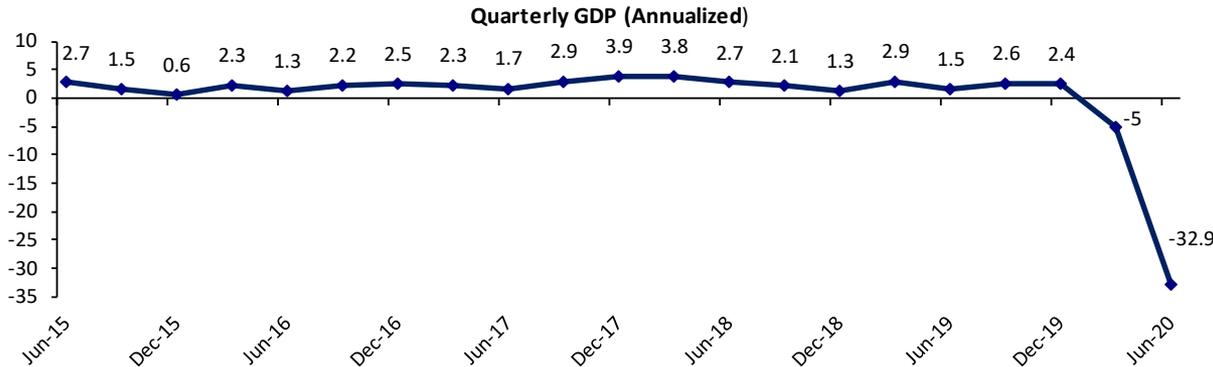
## Firm engagement

- Signatory to the U.N. Principles of Responsible Investing
- Supporter of the Task Force on Climate-Related Financial Disclosures



\*Not all topics are material to each industry, and this is not an all inclusive list of material issues

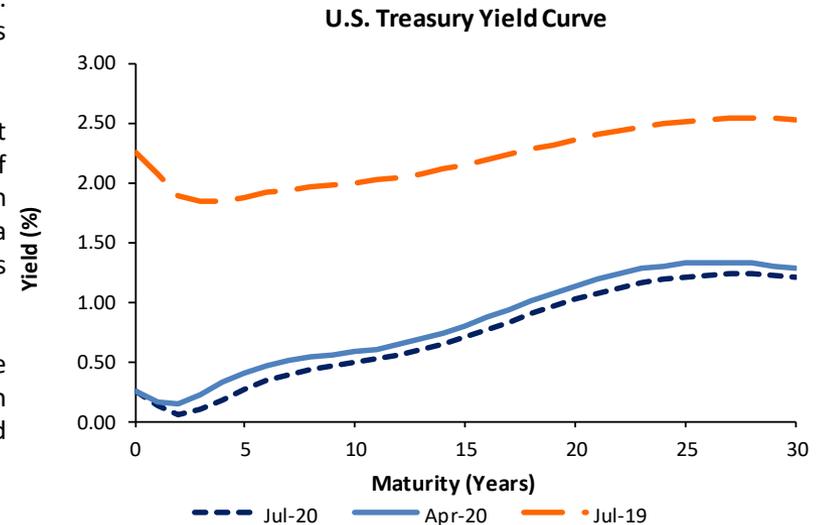
Economic Activity/Growth	Latest Release			Inflation	Latest Release			Equity Indices	Month	Quarter	1 Yr Ago
	Date	Current	Prior		Date	Current	Prior		End	End	
GDP (Annualized)%	Jun-20	-32.9	-5.0	PPI MoM%	Jun-20	0.0	2.3	Dow Jones Industrial	26,428	25,813	26,864
Retail Sales MoM%	Jun-20	7.5	18.2	PPI Ex Food/Energy MoM%	Jun-20	0.0	0.1	NASDAQ	10,745	10,059	8,175
Retail Sales Ex Autos MoM%	Jun-20	7.3	12.1	PPI YoY%	Jun-20	-2.2	-2.8	S&P 500	3,271	3,100	2,980
U. Michigan Consumer Confidence	Jul-20	72.5	78.1	PPI Ex Food/Energy YoY%	Jun-20	1.1	1.1	<b>Currency &amp; Commodities</b>			
Industrial Production MoM%	Jun-20	5.4	1.4	CPI MoM%	Jun-20	0.6	-0.1	USD / EUR	1.18	1.12	1.11
Capacity Utilization MoM%	Jun-20	68.6	65.1	CPI Ex Food/Energy MoM%	Jun-20	0.2	-0.1	USD / GBP	1.31	1.24	1.22
Durables Goods MoM%	Jun-20	7.6	15.0	CPI YoY%	Jun-20	0.6	0.1	JPY / USD	105.83	107.93	108.78
Durable Goods Ex Transports MoM%	Jun-20	3.6	3.4	CPI Ex Food/Energy YoY%	Jun-20	1.2	1.2	Crude Oil	40.27	39.34	55.91
				GDP - PCE Core YoY%	Jun-20	0.9	1.0	Gasoline	117	119	174
								Gold	1,976	1,781	1,414
<b>Employment</b>				<b>Real Estate</b>							
Initial Jobless Claims	Jul-20	1434	1408	FHFA House Price Index MoM%	May-20	-0.3	0.1				
Continuing Claims	Jul-20	17018	17760	Existing Home Sales MoM %	Jun-20	20.7	-9.7				
Chg in Nonfarm Payrolls	Jun-20	4800	2699	New Home Sales MoM %	Jun-20	13.8	19.4				
Unemployment Rate %	Jun-20	11.1	13.3	Pending Homes Sales MoM %	Jun-20	16.6	44.3				



Source: Bloomberg Barclays Index Services Limited ("BISL"), BofA Merrill Lynch, and LIM. Data provided is for informational use only.

As of July 31, 2020

- Despite already low levels, U.S Treasury yields fell across the yield curve during July. Long rates fell the most, resulting in a flattening of the curve. TIPS break-even levels rose, as investors judged valuations as attractive given future inflation expectations.
- The Federal Reserve Board reconfirmed its commitment to maintaining low interest rates and providing liquidity as needed to the bond market. Since the beginning of the pandemic response, the Fed’s balance sheet has grown dramatically, although emergency lending facilities have seen only modest use. As the month came to a close, Congress was engaged in debate over additional pandemic economic relief as extended unemployment benefits were set to lapse.
- The European Union enacted new measures to support recovery, including the issuance of debt to fund the “Support to Mitigate Unemployment Risks in an Emergency” loan program. The U.S. dollar continued its slide, falling sharply and broadly during July. Gold continued to march upward.
- The market began to focus again on economic data, which, for the most part, exceeded market expectations. However, quarter-over-quarter GDP numbers at record lows were shocking. Covid cases rose in several highly populated regions during the month, leading in some cases to renewed (or the potential for renewed) shutdowns.



Index	Yields (%)					Total Return (%)			
	Jul-20	Jun-20	Apr-20	Dec-19	Jul-19	1-Mo.	3-Mo.	YTD	1-Yr.
<b>U.S. Treasury</b>									
3 Month Bill	0.10	0.15	0.10	1.51	2.07	0.02	0.03	0.62	1.47
6 Month Bill	0.10	0.17	0.10	1.55	2.08	0.04	0.03	0.97	1.96
1 Year	0.14	0.19	0.17	1.65	2.07	0.05	0.07	1.74	2.85
2 Year	0.06	0.11	0.15	1.57	1.89	0.08	0.15	3.00	4.19
3 Year	0.10	0.15	0.23	1.60	1.84	0.18	0.41	4.63	5.99
5 Year	0.27	0.34	0.41	1.72	1.88	0.40	0.77	7.67	9.16
10 Year	0.49	0.60	0.58	1.91	2.00	1.16	1.13	13.99	15.55
30 Year	1.21	1.41	1.28	2.36	2.53	5.55	2.68	31.76	36.50

Source: Bloomberg Barclays Index Services Limited (“BISL”), BofA Merrill Lynch, and LIM. Data provided is for informational use only.

As of July 31, 2020

Sector	Yield %	Spread bps	Excess Return			Total Return
			Q1	Q2	YTD	YTD
<b>Government</b>	<b>0.42</b>	<b>0</b>	<b>(0.03)</b>	<b>0.02</b>	<b>(0.02)</b>	<b>9.82</b>
<b>Treasuries</b>	<b>0.41</b>					<b>9.96</b>
1-3 Yr	0.13					3.11
1-10 Yr	<b>0.22</b>					<b>6.16</b>
10+ Yr	<b>1.10</b>					<b>26.33</b>
TIPS	0.62					8.44
<b>Agencies</b>	<b>0.68</b>	<b>34</b>	<b>(5.93)</b>	<b>1.56</b>	<b>(4.19)</b>	<b>2.70</b>
<b>U.S. Agency</b>	<b>0.62</b>	<b>22</b>	<b>(1.06)</b>	<b>0.46</b>	<b>(0.64)</b>	<b>5.52</b>
<b>U.S. Credit</b>	<b>1.82</b>	<b>126</b>	<b>(12.72)</b>	<b>7.71</b>	<b>(3.65)</b>	<b>8.05</b>
AAA (1-10 Yr)	0.34	14	(0.73)	0.57	(0.05)	5.12
AA (1-10 Yr)	0.67	42	(3.58)	2.88	(0.20)	5.66
A (1-10 Yr)	1.00	70	(6.08)	5.25	(0.06)	6.74
BBB (1-10 Yr)	1.77	140	(12.18)	9.04	(2.42)	4.80
<b>Corporates</b>	<b>1.91</b>	<b>133</b>	<b>(13.50)</b>	<b>8.47</b>	<b>(3.62)</b>	<b>8.44</b>
1-3 Yr	0.82	60	(4.15)	3.81	(0.08)	2.94
1-3 Yr x-BBB	0.55	36	(2.67)	2.89	0.43	3.44
1-10 Yr	1.35	102	(8.92)	7.02	(1.12)	5.80
10+	2.80	182	(21.95)	11.00	(8.66)	12.93
Industrial	2.01	138	(14.84)	8.90	(4.55)	8.39
Financial	1.66	122	(10.46)	7.32	(1.98)	7.45
<b>High Yield</b>	<b>6.04</b>	<b>512</b>	<b>(17.03)</b>	<b>9.66</b>	<b>(4.62)</b>	<b>0.71</b>
<b>Securitized</b>	<b>1.10</b>	<b>63</b>	<b>(1.24)</b>	<b>0.63</b>	<b>(0.57)</b>	<b>3.89</b>
<b>U.S. MBS</b>	<b>1.07</b>	<b>58</b>	<b>(0.83)</b>	<b>0.38</b>	<b>(0.47)</b>	<b>3.69</b>
<b>CMBS</b>	<b>1.51</b>	<b>120</b>	<b>(5.86)</b>	<b>3.23</b>	<b>(1.99)</b>	<b>6.47</b>
1-5 Yr	1.19	104	(3.30)	2.22	(0.62)	4.34
<b>ABS AAA</b>	<b>0.60</b>	<b>47</b>	<b>(2.90)</b>	<b>3.02</b>	<b>0.27</b>	<b>3.75</b>
Credit Cds	0.61	45	(3.01)	3.15	0.17	4.12
Autos	0.75	66	(3.33)	3.34	0.39	3.45
<b>Muni 1-10 Yr Blend (1-12)</b>			<b>(5.81)</b>	<b>2.16</b>	<b>(2.83)</b>	<b>3.33</b>
1-3 Yr			(2.81)	1.31	(1.23)	1.87
1-5 Yr						2.38

July 31, 2020

Source: LIM, Barclays

## Bond Market Summary

- The market began to focus again on economic data, which, for the most part, exceeded market expectations. However, quarter-over-quarter GDP numbers at record lows were shocking. COVID cases rose in several highly populated regions during the month, leading in some cases to renewed (or the potential for renewed) shutdowns.
- July continued the meaningful equity and corporate bond rally that began in April. Despite a significant increase in COVID-19 cases and signs of a weakening recovery, the (seemingly) ever-supportive Fed, talk of additional fiscal stimulus, and a relentless investor demand for yield provided a significant offset. Demand for yield in tandem with a very subdued pace of corporate bond issuance in investment grade and high yield continued throughout the month, and spreads collectively moved tighter.
- ABS spreads tightened and outperformed Treasuries for the fourth consecutive month throughout the capital stack. Lower-rated issues and esoteric ABS lead the charge. RMBS performance was mixed across pools as prepayment speeds continue to weigh on mortgages

## Duration/Yield Curve

Duration remains neutral to short of benchmarks, with longer strategies tactically adjusting duration when volatility enters the Treasury market. Curve positioning reflects a neutral/long bias at the shorter end of the curve and steeper/shorter at the longer end. The global economy continues to struggle as individual countries, specific industries, as well as the general consumer grapple with the economic fallout of the Covid-19 pandemic. Longer-term, Covid-19 vaccination timeline, deficit funding, negative/low global rates, dollar flows, and the Fed's balance sheet direction remain key factors to positioning.

## Governments

The agency allocation is concentrated in federal agencies backed by the full faith and credit of the United States, such as Small Business Administration and Export-Import Bank. Valuations remain attractive over bullet GSEs and other high-quality asset classes (ABS, CMOs). Prefer issues with a diverse collateral base and limited operational complexities with stable cash flows to limit average life variability. Tactically seek to increase exposure to the SBA program, concentrating on 10-year and 25-year structures for intermediate/core portfolios at par or discount (avoid premiums). Tactically trade TIPs when breakevens move to their outer ranges.

## Corporates

While the pro-active response from the Federal Reserve in tandem with fiscal stimulus and signs of nascent economic recovery tightened spreads, valuations across many issuers remain attractive, resulting in an overweight to corporates. Given the near term uncertainty around the pace of the economic recovery, we are favoring less economically sensitive industries. Within this disrupted investment environment, we continue to remain very active on the trading front, adding exposure via the new issue and secondary markets and, given the degree of spread tightening witnessed to date, have selectively sold down positions we now consider fully valued. Although we expect that technical factors will remain quite positive through the remainder of 2020, we are wary of additional market disruption related to the upcoming US election and a re-accelerated trend toward credit downgrades.

## Neutral/Short

## Overweight Agencies/Underweight USTs

## Overweight

## Mortgages

RMBS outperformed Treasuries in the second quarter, as markets stabilized, and the government sought to mitigate the effects of Covid-19. The Federal Housing Finance Agency outlined programs to assist borrowers under stress, a positive for outstanding mortgage pools. The Fed continues to support a functioning mortgage market and has signaled they will maintain their current purchases over the coming months. Prepayments continue to be the biggest risk and expected to remain elevated as the historical low mortgage rates face additional downward pressure, and technological innovation motivate borrowers to refinance. CMBS excess returns were positive for the quarter, as government stimulus overwhelmed market fears. Uncertainty, around long-term implications for Covid-19 and the economy remain, and will continue to put pressure on CRE. We believe higher in capital structure CMBS, backed by higher quality assets will continue to outperform higher beta CMBS. We remain cautious on spreads and risk product despite Fed supporting markets. As these markets evolve and find stability, we could look to add opportunistically down in credit in high quality names that will survive an economic downturn.

## Asset Backed Securities

While the second quarter presented enormous opportunity amidst the disorder, valuations across all subsectors have reigned in. The opportunity set has dwindled, but there is still relative value to be had in certain esoteric ABS subsectors such as container and off-the-run whole business securitizations which are still performing well and have robust structural protections, if called upon. Within consumer ABS, autos and cards have retraced much of the widening seen in the second quarter, but student loan ABS has been a laggard; we like the current relative value there and expect strong collateral performance notwithstanding the current health of the consumer.

## Municipals

Municipals rebounded after a steep selloff late in the first quarter. The second quarter brought a return to lower yields, supported by fed action and stronger demand. Tax-exempt municipals still remain slightly cheap to taxable bonds based on historical averages. Taxable municipals offer the same quality as tax-exempts and offer diversification from corporates.

## Neutral

## Overweight

## Neutral

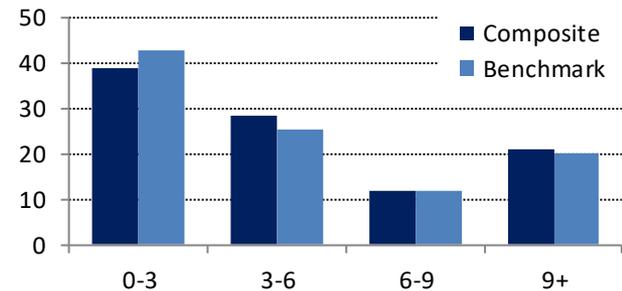
**CHARACTERISTICS**

	Composite	Benchmark
Effective Duration	5.98	6.19
Average Maturity	7.84	8.38
Average Quality	Aa3	Aa2
Yield to Worst (%)	1.66	1.16
Market Value (\$000)	2,996,292	

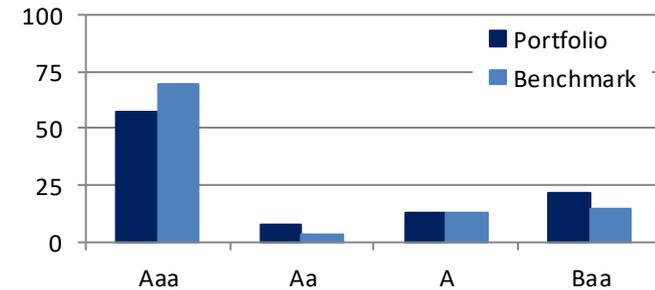
**SECTOR ALLOCATION (%)**

	Composite	Benchmark
Cash	1.2	
<b>Government</b>	<b>28.6</b>	<b>42.8</b>
U.S. Treasury	17.9	37.3
Agency/Sovereigns	10.6	5.5
<b>Credit</b>	<b>40.2</b>	<b>28.4</b>
Corporate	33.6	27.8
Industrial	20.3	17.1
Finance	10.3	8.4
Utility	3.0	2.3
Municipals	6.6	0.7
<b>Securitized</b>	<b>30.0</b>	<b>28.8</b>
RMBS	10.1	26.2
CMO	1.1	
ABS	10.0	0.4
CMBS	8.8	2.3

**DURATION (%)**



**QUALITY (%)**



**BENCHMARK**

Bloomberg Barclays U.S. Aggregate Bond Index

**TRAILING PERIOD PERFORMANCE as of June 30, 2020**

	QTR		Annualized				Since Inception
	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr	1-Oct-06
Composite (gross)	3.88%	5.51%	8.12%	5.36%	4.52%	4.41%	5.34%
Composite (net)	3.81%	5.37%	7.84%	5.07%	4.24%	4.10%	5.02%
Benchmark	2.90%	6.14%	8.74%	5.32%	4.30%	3.82%	4.58%

**CALENDAR-YEAR PERFORMANCE**

	2019	2018	2017	2016	2015	2014	2013
Composite (gross)	8.86%	0.30%	4.16%	3.02%	1.69%	5.69%	-0.69%
Composite (net)	8.56%	0.02%	3.87%	2.75%	1.40%	5.35%	-1.03%
Benchmark	8.72%	0.01%	3.54%	2.65%	0.55%	5.96%	-2.02%

Year-to-Date Changes

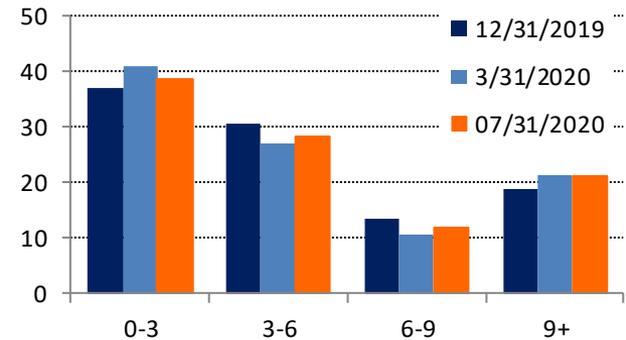
CHARACTERISTICS

	12/31/2019	3/31/2020	07/31/2020
Effective Duration	5.68	5.95	5.98
Average Maturity	7.50	7.95	7.84
Average Quality	Aa2	Aa2	Aa3
Yield to Worst (%)	2.55	2.49	1.66
Market Value (\$000)	2,966,456	2,917,656	2,996,292

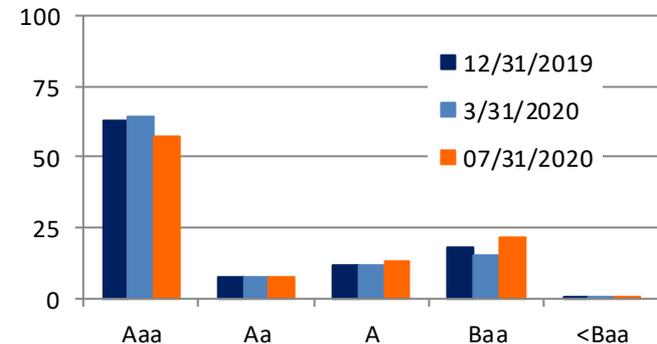
SECTOR ALLOCATION (%)

	12/31/2019	3/31/2020	07/31/2020
Cash	2.2	1.8	1.2
<b>Government</b>	<b>33.6</b>	<b>30.4</b>	<b>28.6</b>
U.S. Treasury	21.5	18.9	17.9
Agency/Sovereigns	12.2	11.5	10.6
<b>Credit</b>	<b>33.5</b>	<b>32.7</b>	<b>40.2</b>
Corporate	27.4	26.3	33.6
Industrial	14.8	13.7	20.3
Finance	11.0	10.3	10.3
Utility	1.5	2.3	3.0
Municipals	6.1	6.4	6.6
<b>Securitized</b>	<b>30.7</b>	<b>35.1</b>	<b>30.0</b>
RMBS	9.8	15.0	10.1
CMO	1.9	1.6	1.1
ABS	9.8	9.5	10.0
CMBS	9.3	9.0	8.8

DURATION (%)



QUALITY (%)



PORTFOLIO

LIM Core Composite

BENCHMARK

Bloomberg Barclays U.S. Aggregate Bond Index

## Composite information (10/1/2010 - 12/31/2019)

Year	Gross-of-Fees Return (%)	Net-of-Fees Return (%)	Benchmark Return (%)	3-Year	3-Year	Total Composite Assets (USD 000s)	Total Firm Assets (USD 000s)	Average Credit Rating	Modified Duration
				Annualized Std. Dev. (Composite)	Annualized Std. Dev. (Benchmark)				
2019	8.86	8.56	8.72	2.71	2.87	2,979,469	11,310,846	AA	6.01
2018	0.30	0.02	0.01	2.53	2.84	2,091,925	10,886,474	AA-	5.58
2017	4.16	3.87	3.54	2.50	2.77	1,472,594	11,125,311	AA	5.50
2016	3.02	2.75	2.65	2.64	2.98	1,200,632	9,192,326	AA-	5.73
2015	1.69	1.40	0.55	2.53	2.88	1,024,041	7,746,998	AA	5.20
2014	5.69	5.35	5.96	2.33	2.63	384,964	6,457,921	AA	5.11
2013	-0.69	-1.03	-2.02	2.39	2.71	240,210	6,581,242	AA	4.64
2012	6.61	6.25	4.21	2.33	2.38	199,785	5,290,475	AA	4.75
2011	7.85	7.53	7.84	3.05	2.78	179,578	4,131,202	AA	5.04
2010	7.88	7.54	6.54	4.31	4.16	134,809	3,584,719	AA	4.63

## Notes and Disclosures

Longfellow Investment Management Co., LLC ("LIM") is an independent registered investment advisor that manages a variety of fixed income and alternative investment strategies, primarily for institutional clients in the United States. LIM claims compliance with the Global Investment Performance Standards (GIPS®). To receive a complete list and description of LIM's composites, please contact LIM Marketing at (617) 695-3504, write to Longfellow Investment Management Co., LLC, 20 Winthrop Square, Boston, MA 02110, or email Info@LongfellowIM.com.

The Core Bond Composite includes all fee-paying, discretionary portfolios with comparable objectives and strategies (including accounts no longer with the firm). The Core Bond Composite is limited to U.S. dollar denominated, investment grade bonds. The overall portfolio durations are +/- 0.5 of the benchmark duration, typically between 4.0 to 5.0. Past performance is not an indication of future results. Investment in the strategy involves the possible loss of principal.

Gross of fees performance returns are presented before management and custodial fees but after all trading expenses. Net of fees performance returns reflect the standard strategy fee applied to each portfolio in the composite. The gross and net of fee performance of the composite as well as the total return of the benchmark, includes the reinvestment of income generated by the securities held in the strategy and benchmark. Beginning January 1, 2012 the management fee schedule is: assets >\$25 million: 0.35% on the first \$50 million, 0.25% on the next \$50 million, 0.20% on the next \$25 million and 0.15% on the balance. Fees are further detailed in LIM's Form ADV Part II.

The benchmark is the Bloomberg Barclays U.S. Aggregate Index<sup>1</sup> which does not incur management fees, transaction costs or other expenses associated with a managed account.

<sup>1</sup>Formerly known as Barclays U.S. Aggregate Index

### Monetary and fiscal policy update

- On June 10, the Federal Reserve kept interest rates zero bound and remains “committed to using its full range of tools to support the U.S. economy in this challenging time, thereby promoting maximum employment and price stability goals”.
  - › The Fed pledged, at a minimum, to maintain the asset purchase program at its current pace.
- The Dot Plot revealed that committee members believe rates should remain close to zero through 2022. This commitment should anchor the front end of the yield curve at their current low levels for the foreseeable future.

### Market environment

- The stock market produced the highest quarterly return in 21 years. Corporate bond had returns of 8.98% despite record breaking amounts of new issuance and widespread downgrades and high yield had returns of 10.18% despite a rising default rate that at least one rating agency expects to double through the first quarter of 2021.
- Bond buying – and promises to buy bonds – by the Fed has driven credit spreads tighter, as have the trillions of dollars deployed in the economy, targeted to businesses, taxpayers, and the unemployed. Combined with ultra-low U.S. Treasury yields, this creates the underpinnings of a “risk-on” market
- Early in the month, an unexpectedly large jump in non-farm payrolls moved the market. Retail sales and pending home sales also brought positive news from a growth perspective.

### Opportunities and risks

- The economic maladies facing the nation are ultimately a function of the pandemic and how it is managed. While it is reassuring that government policies have enabled financial markets to prosper, the resolution of the health crisis will be the key to long-term stability both in the economy and the markets.
- Globally, the potential for renewed trade wars lingers, as do longer-term issues associated with the role of the U.S. on the world stage and the move to a multi-polar environment. At home, racial inequality is now front and center and demands resolution. A contentious election season awaits. The policy outcomes – or lack thereof – in addressing these issues can and will affect markets.

### Summary positioning moving forward

- Barring re-closing of the economy, the outlook for credit spreads generally remains favorable, although there are examples where valuations are already stretched.
- While we have added risk, we have done so with an eye to such things as good balance sheets and sustainable enterprises. In the world of structured securities, we are focusing on ensuring that those structures are indeed sound.
- We continue to use taxable municipal bonds as a source of excess yield for high quality paper, but are well aware of the stress that the pandemic will put on certain state and local governments.

**Portfolio Statistics as of June 30, 2020**

LIM Strategies		Duration	Avg Life	YTM (%)	Avg Qlty	12 Mo	Inception
		(Yrs)	(Yrs)			Turnover	
Enhanced Cash	LIM	1.02	1.11	0.82	Aa2	77	7/1/2005
	ICE BofAML 0-3 Yr UST	1.40	1.43	0.22	Aaa	N/A	
Short Duration	LIM	1.84	2.01	0.96	Aa2	42	7/1/1986
	ICE BofAML 1-3 Yr UST	1.84	1.87	0.19	Aaa	N/A	
Intermediate Duration	LIM	3.98	4.50	1.41	Aa3	68	9/1/1997
	BC Int Gov/Credit	4.09	4.47	0.77	Aa2	N/A	
Core	LIM	5.82	7.79	1.89	Aa3	82	10/1/2006
	BB US Agg	6.11	8.23	1.28	Aa2	N/A	
Core Plus	LIM	5.91	7.96	2.10	Aa3	79	7/1/2009
	BB US Agg	6.11	8.23	1.28	Aa2	N/A	

**Total Return (%) as of June 30, 2020**

LIM Strategies		3 mos	YTD	1 yr	3 yrs	5 yrs	10 yrs	Inception	5 Yr Std
									Dev
Enhanced Cash	Gross	1.31%	1.61%	2.98%	2.49%	1.97%	1.58%	2.60%	0.70
	Net	1.26%	1.51%	2.83%	2.37%	1.84%	1.45%	2.46%	
	ICE BofAML 0-3 Yr UST	0.09%	2.35%	3.48%	2.49%	1.71%	1.17%	2.06%	0.86
Short Duration	Gross	2.06%	2.72%	4.11%	3.09%	2.43%	2.09%	5.24%	0.98
	Net	2.03%	2.64%	3.95%	2.93%	2.25%	1.91%	4.97%	
	ICE BofAML 1-3 Yr UST	0.13%	2.94%	4.07%	2.69%	1.84%	1.33%	4.48%	1.11
Intermediate Duration	Gross	3.02%	4.31%	6.18%	4.42%	3.61%	3.57%	5.19%	2.22
	Net	2.96%	4.21%	5.97%	4.20%	3.38%	3.34%	4.94%	
	BB Int Gov/Credit	2.81%	5.28%	7.12%	4.43%	3.46%	3.12%	4.68%	2.27
Core	Gross	3.88%	5.51%	8.12%	5.36%	4.52%	4.41%	5.34%	3.13
	Net	3.81%	5.37%	7.84%	5.07%	4.24%	4.10%	5.02%	
	BB US Agg	2.90%	6.14%	8.74%	5.32%	4.30%	3.82%	4.58%	3.05
Core Plus	Gross	4.36%	5.41%	8.09%	5.44%	4.68%	4.58%	5.25%	3.17
	Net	4.28%	5.24%	7.75%	5.10%	4.34%	4.21%	4.87%	
	BB US Agg	2.90%	6.14%	8.74%	5.32%	4.30%	3.82%	4.33%	3.05

\*Net values not yet available

Longfellow Investment Management Co., LLC (LIM) is an independent investment management firm established in 1986. LIM manages a variety of fixed income mandates and merger arbitrage hedge fund strategies, primarily for U.S. based institutional clients. The supplemental information on this page compliments the full GIPS compliant presentation for each strategy. Additional information regarding the firm, its policies and the procedures for calculating and reporting performance returns, and a complete listing and description of all composites are available upon request. To receive this information, contact Marketing at 617.695.3504 or write to Longfellow Investment Management Co., LLC 20 Winthrop Square, Boston, MA 02110 or info@longfellowinvestment.com.

Gross composite returns reflect the deduction of trading expenses but do not reflect the deduction of LIM's management fees. Realized, or net, returns would be gross returns less all fees and expenses incurred by the client. The management fee schedules are described in part II of Form ADV and is based on the size of the account. As an example, a \$25 million account that produced a 5-year annualized gross return of 5.25% would have produced a net return of 5.00% over the same period. Monthly, time weighted gross returns are calculated for each portfolio and include re-investment of income. Beginning 1/93, all portfolios are beginning of period asset value weighted to form the monthly composite return. Prior to that, the composite was equal weighted. Any terminated accounts remain in the composite. The performance data represents past performance. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic and political conditions.

Longfellow Fixed Income Composites - Total Returns (%)											
LIM Strategies		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
<b>Enhanced Cash</b>	<b>Gross</b>	<b>3.61</b>	<b>1.81</b>	<b>1.14</b>	<b>1.35</b>	<b>0.87</b>	<b>0.98</b>	<b>0.71</b>	<b>1.68</b>	<b>1.08</b>	<b>2.56</b>
	<i>Net</i>	<i>3.51</i>	<i>1.70</i>	<i>1.04</i>	<i>1.22</i>	<i>0.73</i>	<i>0.83</i>	<i>0.57</i>	<i>1.54</i>	<i>0.94</i>	<i>2.42</i>
	<i>% of Firm Assets</i>	<i>20</i>	<i>26</i>	<i>15</i>	<i>9</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>9</i>	<i>10</i>	<i>8</i>
<b>Short Duration</b>	<b>Gross</b>	<b>4.15</b>	<b>1.91</b>	<b>1.47</b>	<b>1.65</b>	<b>1.06</b>	<b>1.27</b>	<b>0.83</b>	<b>2.28</b>	<b>2.34</b>	<b>3.69</b>
	<i>Net</i>	<i>4.00</i>	<i>1.74</i>	<i>1.27</i>	<i>1.44</i>	<i>0.86</i>	<i>1.07</i>	<i>0.64</i>	<i>2.09</i>	<i>2.16</i>	<i>3.50</i>
	<i>% of Firm Assets</i>	<i>17</i>	<i>18</i>	<i>6</i>	<i>9</i>	<i>13</i>	<i>10</i>	<i>11</i>	<i>16</i>	<i>23</i>	<i>25</i>
<b>Intermediate Duration</b>	<b>Gross</b>	<b>6.77</b>	<b>1.28</b>	<b>2.87</b>	<b>2.37</b>	<b>1.57</b>	<b>3.60</b>	<b>-0.11</b>	<b>5.80</b>	<b>5.70</b>	<b>7.17</b>
	<i>Net</i>	<i>6.55</i>	<i>1.06</i>	<i>2.65</i>	<i>2.15</i>	<i>1.32</i>	<i>3.36</i>	<i>-0.33</i>	<i>5.57</i>	<i>5.48</i>	<i>6.93</i>
	<i>% of Firm Assets</i>	<i>12</i>	<i>11</i>	<i>6</i>	<i>7</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>10</i>	<i>14</i>	<i>15</i>
<b>Core</b>	<b>Gross</b>	<b>8.86</b>	<b>0.30</b>	<b>4.16</b>	<b>3.02</b>	<b>1.69</b>	<b>5.69</b>	<b>-0.69</b>	<b>6.61</b>	<b>7.85</b>	<b>7.88</b>
	<i>Net</i>	<i>8.56</i>	<i>0.02</i>	<i>3.87</i>	<i>2.75</i>	<i>1.40</i>	<i>5.35</i>	<i>-1.03</i>	<i>6.25</i>	<i>7.53</i>	<i>7.54</i>
	<i>% of Firm Assets</i>	<i>27</i>	<i>22</i>	<i>13</i>	<i>13</i>	<i>13</i>	<i>6</i>	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>
<b>Core Plus</b>	<b>Gross</b>	<b>9.25</b>	<b>0.14</b>	<b>4.48</b>	<b>3.59</b>	<b>1.85</b>	<b>5.61</b>	<b>-0.31</b>	<b>6.74</b>	<b>7.04</b>	<b>8.29</b>
	<i>Net</i>	<i>8.91</i>	<i>-0.18</i>	<i>4.14</i>	<i>3.24</i>	<i>1.50</i>	<i>5.22</i>	<i>-0.70</i>	<i>6.32</i>	<i>6.63</i>	<i>7.86</i>
	<i>% of Firm Assets</i>	<i>7</i>	<i>8</i>	<i>8</i>	<i>8</i>	<i>4</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>2</i>	<i>1</i>
<b>Total Firm Assets (\$mm)</b>		<b>\$11,311</b>	<b>\$10,886</b>	<b>\$11,124</b>	<b>\$9,192</b>	<b>\$7,747</b>	<b>\$6,458</b>	<b>\$6,581</b>	<b>\$5,290</b>	<b>\$4,131</b>	<b>\$3,585</b>
<b>Indices - Total Return (%)</b>											
<i>BAML 0-3 Year U.S. Treasury</i>		<i>3.25</i>	<i>1.70</i>	<i>0.55</i>	<i>0.78</i>	<i>0.43</i>	<i>0.46</i>	<i>0.30</i>	<i>0.35</i>	<i>1.17</i>	<i>1.83</i>
<i>BAML 1-3 Year U.S. Treasury</i>		<i>3.55</i>	<i>1.58</i>	<i>-0.25</i>	<i>0.88</i>	<i>0.54</i>	<i>0.62</i>	<i>0.36</i>	<i>0.43</i>	<i>1.55</i>	<i>2.35</i>
<i>BC Int Gov/Credit</i>		<i>6.8</i>	<i>0.88</i>	<i>-0.2</i>	<i>2.08</i>	<i>1.07</i>	<i>3.13</i>	<i>-0.86</i>	<i>3.89</i>	<i>5.80</i>	<i>5.89</i>
<i>BC U.S. Aggregate</i>		<i>8.72</i>	<i>0.01</i>	<i>0.39</i>	<i>2.65</i>	<i>0.55</i>	<i>5.96</i>	<i>-2.02</i>	<i>4.21</i>	<i>7.84</i>	<i>6.54</i>

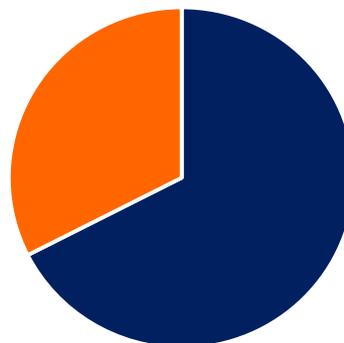
Longfellow Investment Management Co., LLC is an independent investment management firm established in 1986. Longfellow manages a variety of fixed income mandates and merger arbitrage hedge fund strategies, primarily for U.S. based institutional clients. The supplemental information on this page compliments the full GIPS compliant presentation for each strategy. Additional information regarding the firm, its policies and the procedures for calculating and reporting performance returns, and a complete listing and description of all composites are available upon request. To receive this information, contact Marketing at 617.695.3504 or write to Longfellow Investment Management Co., LLC 20 Winthrop Square, Boston, MA 02110 or [info@longfellowinvestment.com](mailto:info@longfellowinvestment.com). Gross composite returns reflect the deduction of trading expenses but do not reflect the deduction of Longfellow's management fees. Realized, or net, returns would be gross returns less all fees and expenses incurred by the client. The management fee schedules are described in part II of Form ADV and is based on the size of the account. As an example, a \$25 million account that produced a 5 year annualized gross return of 5.25% would have produced a net return of 5.00% over the same period. Monthly, time weighted gross returns are calculated for each portfolio and include re-investment of income. Beginning 1/93, all portfolios are beginning of period asset value weighted to form the monthly composite return. Prior to that, the composite was equal weighted. Any terminated accounts remain in the composite. The performance data represents past performance. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic and political conditions.

Firm Employees by Gender

Female Employees by Ethnicity



Male Employees by Ethnicity



Legend

- Male
- Female
- Caucasian
- Asian
- African American

	Total	Total Male	Caucasian	Asian	African American	Total Female	Caucasian	Asian
Portfolio Managers	9	7	6	1		2	2	
Analysts	11	8	6	2		3	2	1
Marketing/Client Services	6	3	3			3	3	
Compliance	3	2	2			1	1	
Accounting/Operations	8	4	4			4	2	2
IT/Administration	3	3	2		1	0		
<i>Total LIM Employees</i>	<i>40</i>	<i>27</i>	<i>23</i>	<i>3</i>	<i>1</i>	<i>13</i>	<i>10</i>	<i>3</i>
<b>Principals</b>	<b>14</b>	<b>8</b>	<b>7</b>	<b>1</b>		<b>6</b>	<b>4</b>	<b>2</b>
<b>Advisory Board</b>	<b>3</b>	<b>1</b>	<b>1</b>			<b>2</b>	<b>2</b>	

As of August 10, 2020

### **Akshay Anand, CFA**

**Principal, Portfolio Manager**

AA@LongfellowIM.com

Mr. Anand serves as a portfolio manager on LIM's Core and Core Plus strategies and leads the firm's structured securities team. Prior to joining LIM in 2008, Akshay worked at Babson Capital as an associate director on the Core and High Yield Teams where he was responsible for fixed income portfolio analytics. He previously worked at The Mentor Network as a senior treasury analyst responsible for debt and liquidity management. Akshay also has two years of public accounting experience. He holds a Master of Business Administration from Rochester Institute of Technology and a Bachelor of Commerce (Honors) in accounting from the University of Delhi. Akshay is a CFA charterholder, a member of the CFA Institute, and a member of the CFA Society Boston.

### **Corinne Larson, CTP**

**Principal, Director of Marketing and Client Service**

CL@LongfellowIM.com

Ms. Larson serves as the Director of Marketing and Client Service. Her responsibilities include managing new and existing client activity and consultant relationships. Corinne joined LIM in 2013 with over 30 years of professional experience. Most recently, she was a Vice President and Senior Relationship Manager at State Street Global Advisors where she was responsible for institutional clients across asset classes. Previous roles also include Associate Director at Bear, Stearns & Co., Vice President at MBIA Asset Management, and Assistant Director at the Government Finance Officers Association (GFOA). Corinne is the chair of the board for Economic Mobility Pathways (EMPath) and a former advisor to GFOA's Standing Committee on Retirement and Benefits Administration. She holds the designation of Certified Treasury Professional through the Association for Financial Professionals and has more than 10 years of experience in corporate treasury management. She received her Bachelor of Arts from Indiana University and her Master of Business Administration from the University of Notre Dame.

### **Barbara J. McKenna, CFA**

**Managing Principal, Portfolio Manager**

BJM@LongfellowIM.com

Ms. McKenna serves as a managing principal and oversees LIM's investment process. Barbara leads longer strategies, including Core and Core Plus and several U.S. government mandates. From 2005-2015, she also led Intermediate Fixed Income. Prior to joining LIM in 2005, she was a director and senior portfolio manager at State Street Research (SSR), responsible for \$14 billion of institutional fixed income accounts. As director of corporate bond strategy, Barbara was responsible for the development and implementation of corporate bond strategy across all fixed income mandates. Prior to joining SSR, she was a director and portfolio manager at Standish, Ayer & Wood. Barbara has also held portfolio management and investment banking positions at BayBank and Massachusetts Capital Resource Company, a private capital firm. She has over 30 years of experience and holds a Master of Science and Bachelor of Science in finance from Boston College. Barbara is a CFA charterholder, a member of the CFA Institute, and a member of the CFA Society Boston. She is also a board trustee of the American Beacon Funds and a member of the N.E. Financial Services CEO Roundtable and the Federal Reserve Bank of Boston's External Diversity Advisory Council.

## Investment Team Members

Name (Principals in bold)	Title	Focus	Education	Prior Experience	Experience	
					Industry	LIM
Samir Agarwal	Analyst	Credit - Utilities	MBA, Boston College BBA, New Delhi Institute of Management	WNS Global Service ARC Financial Services	2008	2015
<b>Akshay Anand, CFA</b>	Principal Portfolio Manager	Fixed Income Securitized	MBA, Rochester Institute of Technology B. Com, (H) University of Delhi	Babson Capital The Mentor Network	2004	2008
<b>Andrew Bail</b>	Principal Portfolio Manager/Senior Analyst	Absolute Return Equities - Event-Driven	MBA, MSF, Boston College BA, Johns Hopkins University	JP Morgan Babson Capital Flatley Company	2006	2016
<b>Aileen Barbiellini Amidei, CFA</b>	Analyst	Credit - Financials	PGC, Helsinki University of Technology BA, Ateneo de Manila University	State Street Global Advisors State Street Bank and Trust Co. Federal Home Loan Bank of Boston	2000	2018
Kathleen Barton, CFA	Analyst	Securitized - MBS	BA, Mount Holyoke College	The Fournier Law Firm (intern)	2010	2010
Craig Carlozzi, CFA	Portfolio Manager	Alternatives Credit	BS, Miami University	BulwarkBay Investment Group, LLC MAST Capital Management, LLC Bank of America Merrill Lynch	2000	2019
Mark Duffy, CFA	Analyst	Credit - Industrials	MSF, Bentley University BA, University of Connecticut	Green Century Capital Management Inc. Bentley University	2012	2016
Gaurav Jagani, CFA	Analyst	Securitized - ABS	BA, University of Virginia	Morgan Stanley Ellington Management Group	2013	2018
Raymond Kubiak, CFA	Portfolio Manager Senior Analyst	Fixed Income Municipals	MSF, Boston College MPA, University of Pittsburgh BA, Canisius College	Standish Mellon/SA&W Lee Munder Capital Moody's Investor Services	1984	2010
Derek McCarthy	Associate	Fixed Income Absolute Return	BS, Bentley University	State Street Bank & Trust Co. Zolio Incorporated	2012	2015
<b>Barbara J. McKenna, CFA</b>	Managing Principal Portfolio Manager	Fixed Income Credit	MSF, BS, Boston College	State Street Research Standish, Ayer & Wood (SA&W) BayBank Investment Management	1985	2005
Heather Meehan, CFA	Trader	Credit High Yield	MBA, University of New Hampshire BS, Pennsylvania State University	Fidelity Investments JP Morgan	2005	2017
<b>Ryan Nelson, CFA</b>	Principal Portfolio Manager	Fixed Income Municipals	BA, Franklin & Marshall College	Columbia Management Eaton Vance	2007	2016
George Noyes, CFA	Chairman Emeritus Portfolio Manager	Generalist/HNW	MBA, Babson College BA, University of Vermont	Hanover Strategic Management Standish Mellon/SA&W	1970	2009
Sarah Scranton, CFA	Portfolio Manager	Fixed Income Credit	BBA, University of Michigan	Chittenden & Co., Inc. Freedom Capital Management, LLC	1988	2018
Petr Soustal	Associate	Fixed Income	MBA, Fitchburg State University BS, Saint Michael's College	Boston Children's Hospital Pastore Financial Group	2013	2017

## Investment Team Members (Continued)

Name (Principals in bold)	Title	Focus	Education	Prior Experience	Experience	
					Industry	LIM
<b>David C. Stuehr, CFA</b>	Principal Portfolio Manager/Senior Analyst	Credit - Industrials High Yield	MSF, Boston College MA, BS, Bowling Green University	Hanover Strategic Management Seneca Capital Standish Mellon/ SA&W	1982	2009
<b>Scott Supple, CAIA</b>	Principal Trader	Securitized - ABS	BS, Westfield State University	Charter Oak Insurance Teradyne Inc. Rice McVane Comm.	2014	2014
Adriano Taylor-Escribano	Analyst/Trader	Securitized - CMBS	MSc, University of St. Andrews	Loomis, Sayles & Company L.P.	2012	2017
<b>John E. Villela, CFA</b>	Managing Principal Portfolio Manager	Fixed Income Credit	MBA, BA, Boston College	State Street Research Standish Mellon/SA&W Lehman Brothers HSBC	1995	2005

## Non-Investment Team Managers

<b>Anuja Batra</b>	Principal Finance & Human Resources Officer	Finance and HR	MBA, Babson College B. Com, Rajasthan University	Endowment Solutions, LLC Engineering Principles, LLC National Patient Safety Foundation	1997	2015
Conner Brown	Client Service Manager	Client Service	MBA, BS, Drexel University	Mercer Investments	2010	2017
<b>Corinne Larson, CTP</b>	Principal Director of Marketing and Client Service	Marketing and Client Service	MBA, University of Notre Dame BA, Indiana University	State Street Global Advisors Bear, Stearns & Co. MBIA Asset Management Government Finance Officers Association	1985	2013
<b>Michelle L. Martin</b>	Principal Chief Compliance Officer	Compliance	BS, Northeastern University	State Street Bank & Trust Co. IBM	1986	1988
Allison Morse	Relationship Manager	Marketing and Client Service	MBA, Boston College BS, University of Vermont	State Street Global Advisors State Street Global Markets	2012	2019
<b>Kevin Papadopoulos</b>	Investment Technology Manager	Investment Technology	BS, Northeastern University	GMO LLC State Street Global Advisors	2011	2017
<b>Mike Timmermans</b>	Principal General Counsel Assistant Chief Compliance Officer	Compliance	JD, New England School of Law BA, Muhlenberg College	State Street Global Advisors Atlantis Technology Corporation Intrepid Legal Strategies	2010	2015
<b>Mary Van Mameren</b>	Principal Director of Portfolio Operations	Operations	MBA, MSF Northeastern University BA, Wellesley College	JP Morgan International Fund Services	1999	2011
Mariusz Zielinski, CAIA	Portfolio Operations Manager	Operations	MSLA, Harvard University BS, Pennsylvania State University	Harvard Management Company State Street Global Advisors	1997	2018

Records of all investment analyses performed by Longfellow Investment Management Co., LLC in the management of clients' accounts are available at the firm's office. Past performance is no indication of future results. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic, and political conditions.

The preceding presentation is being used in a one-on-one setting and should not be used for any other purposes. The information contained in this presentation is accurate as of the date of the presentation but is subject to change based at LIM's discretion.

The PRI is an investor initiative in partnership with UNEP Finance Initiative and the United Nations Global Compact. In order to become an investment management signatory, need to commit to six initiatives which include: incorporating ESG issues into investment analysis and decision-making processes; to be active owners and to incorporate ESG issues into ownership policies and practices; to seek appropriate disclosure on ESG issues by the entities in which the firm invests client assets; to promote acceptance and implementation of the Principles within the investment industry; to work with the PRI Secretariat and other signatories to enhance their effectiveness in implementing the Principles; and to report on the firm's activities and progress towards implementing the Principles. These principles are voluntary and aspirational. For most signatories, the commitments are a work-in-progress and provide direction for their responsible investment efforts rather than a checklist with which to comply. The only mandatory requirements are paying an annual membership fee and committing to completing the PRI Reporting Framework on an annual basis. PRI signatory status does not imply any level of skill or investment acumen nor does it imply a rating, favorable or unfavorable, of the signatories or of signatory status. It does not constitute investment advice, is not a recommendation, offer or solicitation to buy or sell any securities, or to adopt any investment strategy and should not be relied upon as such. LIM's status as a PRI signatory is year to year and LIM is currently a PRI signatory.

The Task Force on Climate-Related Financial Disclosures (TCFD) was set up in 2015 by the Financial Stability Board (FSB) to develop voluntary, consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders. Longfellow is a supporter of this initiative and its broad goals. The Financial Stability Board is an international body that monitors and makes recommendations about the global financial system. It promotes international financial stability through coordinating national financial authorities and international standard-setting bodies as they work towards developing a strong regulatory, supervisory and other financial sector policies. The FSB's charter was endorsed by members of the G20. In order to become a TCFD supporter, a firm needs to notify the TCFD that it is a supporter. There are no fees or other commitments. Being a TCFD supporter does not imply any level of skill or investment acumen nor does it imply a rating, favorable or unfavorable, of the TCFD. It does not constitute investment advice, is not a recommendation, offer or solicitation to buy or sell any securities, or to adopt any investment strategy and should not be relied upon as such. LIM's status as a TCFD supporter is subject to change. LIM is currently a TCFD supporter.

## Award Disclosures

### PSN Top Guns:

LIM was awarded Top Guns Manager of the Decade Status by PSN for 2014, 2015, 2016, 2017, 2018, and 2019 for the PSN Intermediate Fixed Income Universe. In addition, LIM was awarded Top Guns Manager of the Decade Status for 2016, 2017, and 2018 for both the PSN Core Fixed Income Universe and the PSN U.S. Fixed Income Universe, and in 2019 for PSN Core Plus Fixed Income Universe.

All of the PSN universes were created using the information collected through the PSN investment manager questionnaire and use only gross of fee returns. Mutual fund and commingled fund products are not included in the universe. PSN Top Guns investment managers must claim that they are GIPS compliant. Each additional criteria listed below was applied for the respective 10-year period ending December 31. Products must have an R-Squared of 0.80 or greater relative to the style benchmark. LIM's Intermediate Duration Composite returns were used in this analysis. Moreover, products must have returns greater than the style benchmark and standard deviation less than the style benchmark. At this point, the top ten performers for the respective 10-year period ending December 31 become the PSN Top Guns Manager of the Decade.

The PSN Intermediate Fixed Income Universe was comprised of 266 firms and 610 products for 2014, 265 firms and 608 products for 2015, 267 firms and 622 products for 2016, 262 firms and 624 products for 2017, 257 firms and 624 products for 2018, and 246 firms and 603 products for 2019. In all three years, 1.6% these products were named "Top Guns Manager of the Decade." The PSN Core Fixed Income Universe was comprised of 197 firms and 407 products for 2016, 196 firms and 392 products for 2017, and 193 firms and 391 products for 2018. Of these products, 2.5% were named "Top Guns Manager of the Decade." The PSN U.S. Fixed Income Universe was comprised of 384 firms and 1,615 products, 368 firms and 1,649 products for 2017, and 362 firms and 1656 products for 2018. Of these products, 0.6% were named "Top Guns Manager of the Decade." The PSN Core Plus Fixed Income Universe was comprised of 106 firms and 144 products for 2019. Of these products, 6.9% were named "Top Guns Manager of the Decade."

### PSN Top Guns 6 Stars:

The PSN universes were created using the information collected through the PSN Top Guns investment managers must claim that they are GIPs compliant. Products must have an R-Squared of 0.80 or greater relative to the style benchmark for the recent five year period. LIM's Short Duration Composite returns were used in this analysis. Moreover, products must have returns greater than the style benchmark for the three latest three-year rolling periods. After that, only the products with a five-year standard deviation equal or less than the median standard deviation for the peer group are included. The Products with top ten information ratios for the latest five-year period ending December 31, 2018 then become the 6 Star Top Guns.

These ratings may not be representative of any one client's experience, since the ratings are based on composite performance and statistics. Past performance is no indication of future results. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic and political conditions.

## Oakland Police & Fire Retirement System

WELLINGTON  
MANAGEMENT®

# Core Bond

For institutional use only. Any views expressed herein are those of the author(s), are based on available information, and are subject to change without notice. Individual portfolio management teams may hold different views and may make different investment decisions for different clients. The material and/or its contents are current as of the most recent quarter end, unless otherwise noted. Certain data provided is that of a third party. While data is believed to be reliable, no assurance is being provided as to its accuracy or completeness.

26 August 2020

**Joseph Marvan, CFA** Partner and Fixed Income Portfolio Manager

**Anand Dharan, CFA** Vice President and Investment Director  
**Akin Greville, CFA** Managing Director and Business Development Manager

## Agenda

**Section one** ..... Wellington Management overview

**Section two** ..... Core Bond overview

**Section three** ..... Appendix



## Our distinctive strengths

A singular focus on investment management

Long-term perspective of a partnership structure

Comprehensive capabilities

Rigorous proprietary research

Open, collaborative culture

A commitment to bringing the right resources to each client



Our mission is simple: We seek to exceed the investment objectives and service expectations of our clients worldwide.

## Wellington Management today

### Diversified asset base

USD 1,121 billion in client assets under management

42% equity, 41% fixed income, 17% multi-strategy – including ~ USD 27.6 billion in alternatives<sup>1</sup>

### Global resources

2,695 employees

847 investment professionals

14 offices with investment and relationship personnel in key financial centers

Globally integrated research since 1972

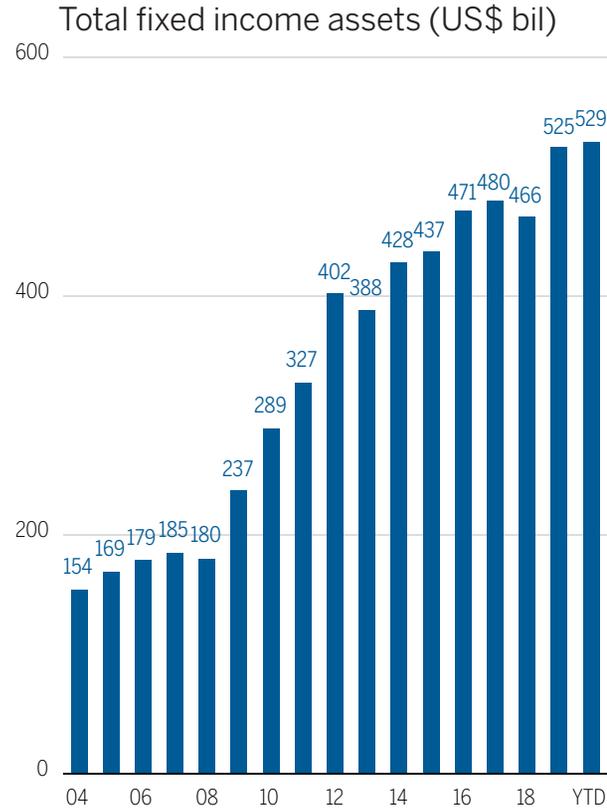


We serve as a trusted adviser and strategic partner to investors worldwide.

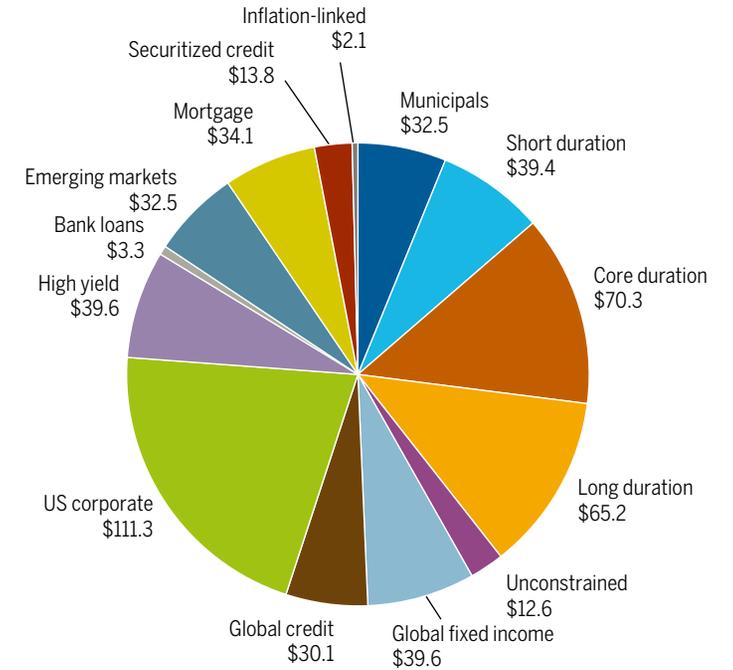
<sup>1</sup>Alternatives data as of 30 April 2020 | As of 30 June 2020

# Fixed income assets under management

## Expertise across all sectors

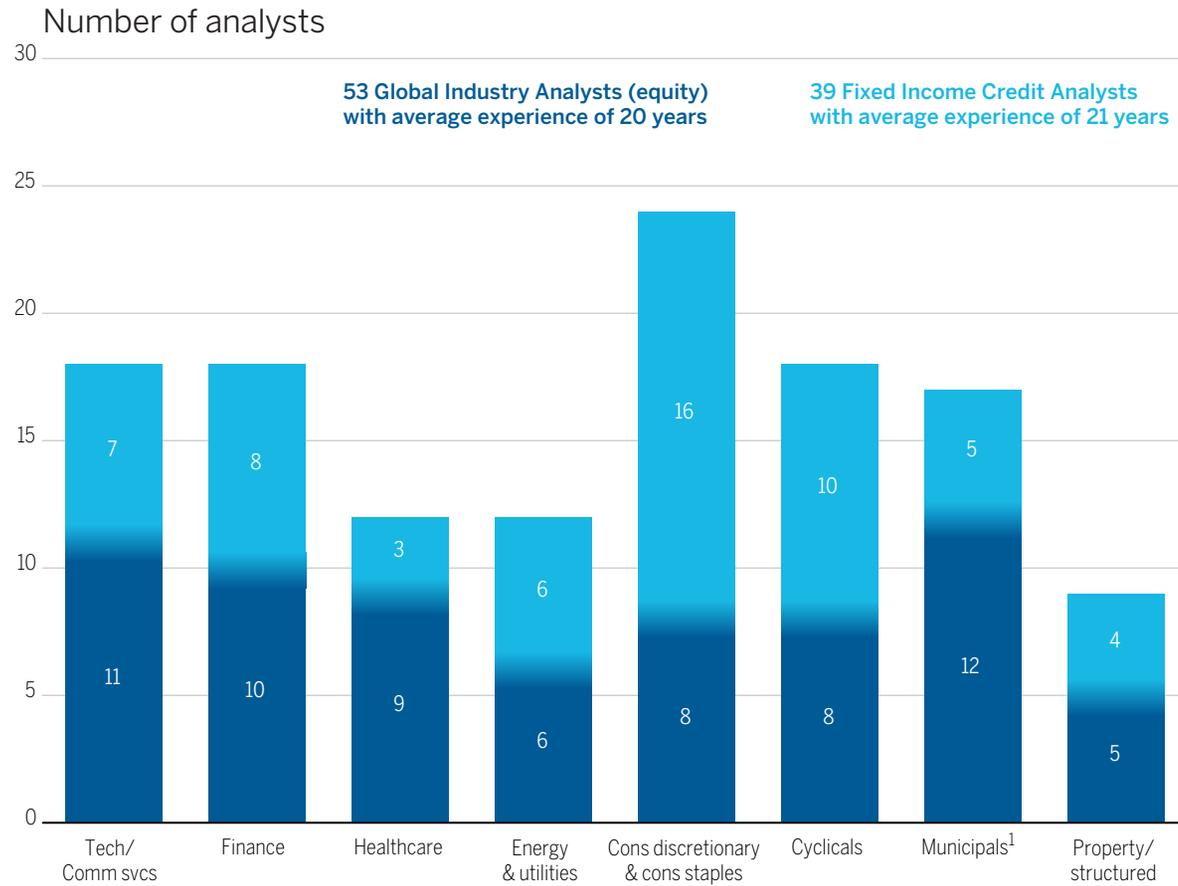


By major investment style (US\$ bil)



## Integrated credit and equity research

Over 10,000 company interactions every year



<sup>1</sup>Equity analysts covering key sectors relevant to municipal bond credit risk (including airlines, hospitals, electric utilities, tobacco, industrials, real estate, and insurance) | Due to multiple sector responsibilities, some analysts may be counted in more than one sector | 30 June 2020

## Representative client list

### Corporations

AbbVie Inc.  
Allfunds Bank  
American Electric Power System  
BT Pension Scheme  
Canadian Pacific  
Canada Post Pension Plan  
Cargill, Inc.  
CoINVEST Limited  
Dow Chemical  
Graymont, Inc.  
Hallmark Cards, Inc.  
International Paper Company  
Laerernes Pension  
Medtronic, Inc.  
Merck & Company  
MKS Instruments  
Northrop Grumman Corporation  
PG&E Corporation  
Royal Bank of Canada  
Siemens Corporation  
SPF Beheer  
TELUS  
Textron, Inc.  
Trans-Canada Capital  
TransCanada PipeLines  
United Technologies Corporation

### Insurance (general account assets)

Assured Guaranty Corp.  
Hiscox  
Mortgage Guaranty Insurance Corporation  
UHG

### Endowments, Foundations, and Family Offices

Chicago Symphony Orchestra  
Children's Medical Center  
Diocese of Portland  
Jewish Foundation of Greater Toronto  
Massachusetts Institute of Technology  
Renaissance Charitable Foundation  
Stanhope Capital  
University Hospitals Health System  
University of Kentucky  
Wespath Benefits and Investments

### Public Sector, Sovereign, and Taft-Hartley

Alberta Teachers' Retirement Fund  
Flintshire County Council  
Government of Bermuda  
Hospital Authority Provident Fund Scheme  
Massachusetts Laborers' Pension Fund  
Mississippi Public Employees Retirement System  
Ohio Carpenters' Pension Fund  
Oklahoma Teachers Retirement System  
Ontario Teachers' Pension Plan (OTPP)  
Oregon Laborers – Employers Pension Trust Fund  
Retail Employees Superannuation Trust  
State of Oregon  
Treasurer of the State of North Carolina

### Subadvisory Relationships

GAM  
Nikko Asset Management  
UOB Asset Management Ltd  
Vanguard

As of 30 June 2020 | Clients included on the list above were selected based on client type, account size, and/or other nonperformance-based criteria to show a list of representative clients. This list does not represent an endorsement of the firm or its services.

## Relationship Team

Experienced client service resources



**Anand Dharan, CFA**  
Investment Director  
Vice President

10 years of professional experience  
5 years with Wellington Management

---



**Matthew McLaughlin, CFA**  
Relationship Manager  
Vice President

21 years of professional experience  
16 years with Wellington Management

---



**Akin Greville, CFA**  
Business Development Manager  
Managing Director

18 years of professional experience  
13 years with Wellington Management

---



**Brian White**  
Business Development Analyst

6 years of professional experience  
2 years with Wellington Management



## Core Bond

### Key characteristics

Benchmark	Bloomberg Barclays US Aggregate Bond Index
Average duration	Within $\pm 1.0$ years of Index
Diversification	Broad (by coupon, industry, issuer)
Vehicles	Separate account Commingled pools
Investment universe	US dollar denominated investment grade securities

Sector exposure	Historic portfolio ranges (%)	Bloomberg Barclays US Aggregate Bond Index (%)
US treasuries and agencies	0 – 50	40
Corporate credit	10 – 50	30
Agency MBS	20 – 70	30
Structured finance (Non-agency RMBS, CMBS, ABS, CLOs)	20 – 40	< 5

The characteristics presented are sought during the portfolio management process. Actual experience may not reflect all of these characteristics, or may be outside of stated ranges.

## **Core Bond**

### Distinguishing features

#### **Stability**

The investment team is led by two Partners of the firm, which helps to reduce key person risk and greater attention to succession planning

#### **Specialist breadth**

The investment process is designed to harness the breadth of specialist resources across fixed income and equities

---

Collaboration between fixed income and equity specialists has led to some of the team's most successful outcomes

#### **Diverse return sources**

The breadth of sector specialist expertise should reduce reliance on any individual return driver over time and may improve a portfolio's risk-return characteristics

## Core Bond

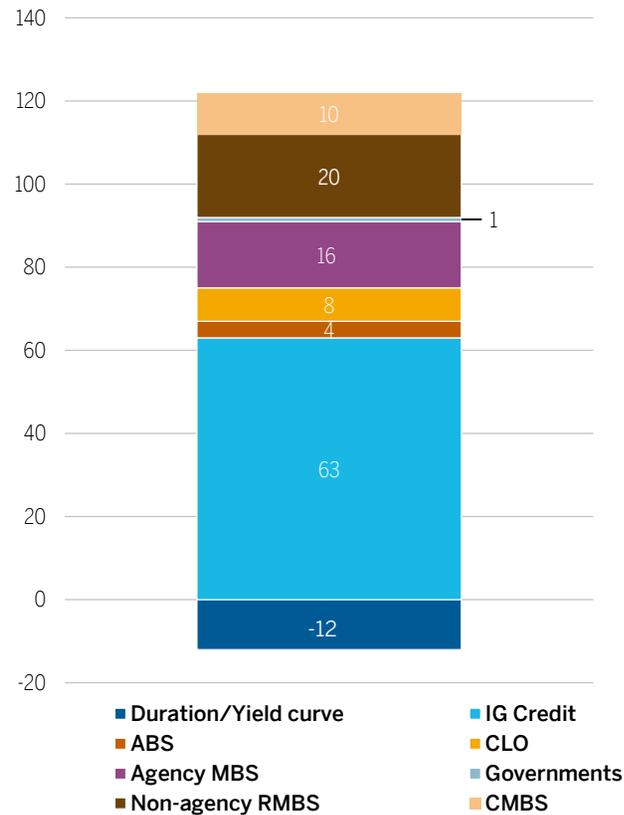
Performance review (USD): Ten years as of 30 June 2020  
Representative account

Annualized total alpha	117 bps
Information ratio	1.37

Benchmark used in the calculation of attribution data: Bloomberg Barclays US Aggregate Bond | Chart contribution effects may not sum to total alpha due to exclusion of 'Other' and 'Cash and cash equivalents' totaling 8 bps. Other may include litigation payments, preferred stock, warrants, etc. | Results shown for periods greater than one year are annualized. | **PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS AND AN INVESTMENT CAN LOSE VALUE.** |

The data shown is of a representative account, is for informational purposes only, is subject to change, and is not indicative of future portfolio characteristics or returns. | Gross performance results are net of commissions and other direct expenses, but before (gross of) advisory fees, custody charges, withholding taxes, and other indirect expenses, and include reinvestment of dividends and other earnings. If all expenses were reflected, the performance shown would be lower. Actual fees will vary depending on, among other things, the applicable fee schedule and account size. For use in one-on-one presentations only. | This supplemental information complements the GIPS® compliant presentation provided in the attachment. Please refer to the Important Disclosures page for additional information.

Sector contribution to alpha (bps)



# Broad Markets Investment team

## Broad markets team



**Joe Marvan, CFA**  
Portfolio Manager  
32 years of professional experience



**Campe Goodman, CFA**  
Portfolio Manager  
21 years of professional experience



**Allan Levin, CFA**  
Portfolio Manager  
24 years of professional experience



**Jeremy Forster, CFA**  
Portfolio Manager  
15 years of professional experience



**Rob Burn, CFA**  
Portfolio Manager  
19 years of professional experience



**Anand Dharan, CFA**  
Investment Director  
10 years of professional experience

## Sector specialist portfolio managers

### Brian Conroy, CFA

Agency Mortgages  
13 years of professional experience

### Tim Haney, CFA

Municipals  
31 years of professional experience

### Jeff Heuer, CFA

Bank Loans  
31 years of professional experience

### Michael Hong, CFA

Global High Yield  
24 years of professional experience

### Chris Jones, CFA

Global High Yield  
29 years of professional experience

### Kevin Murphy

Emerging Markets Corporates  
33 years of professional experience

### Cory D. Perry, CFA

Securitized Credit  
22 years of professional experience

### Scott St. John, CFA

Investment Grade Credit  
27 years of professional experience

### Jim Valone, CFA

Emerging Markets Debt  
32 years of professional experience

## Research/Trading

### Global High Yield/Bank Loans

13 Credit analysts

### Emerging Markets Debt

5 Credit analysts

### Securitized

4 Credit analysts

### IG Credit/Taxable Municipals

18 Credit analysts

### Fixed Income Syndicate

4 traders

### Secondary Trading

36 traders

## Portfolio construction

Lia Kirakossian  
Solutions Portfolio Manager

Adam Chrissis, CFA, FRM

Dave Rittner, CFA

Mihir Shah, FRM

## Additional resources

16 Macro strategists

51 Global Industry analysts

11 ESG research

15 Quantitative analysts

20 Multi-Asset analysts

31 March 2020

# Core Bond

## Investment process



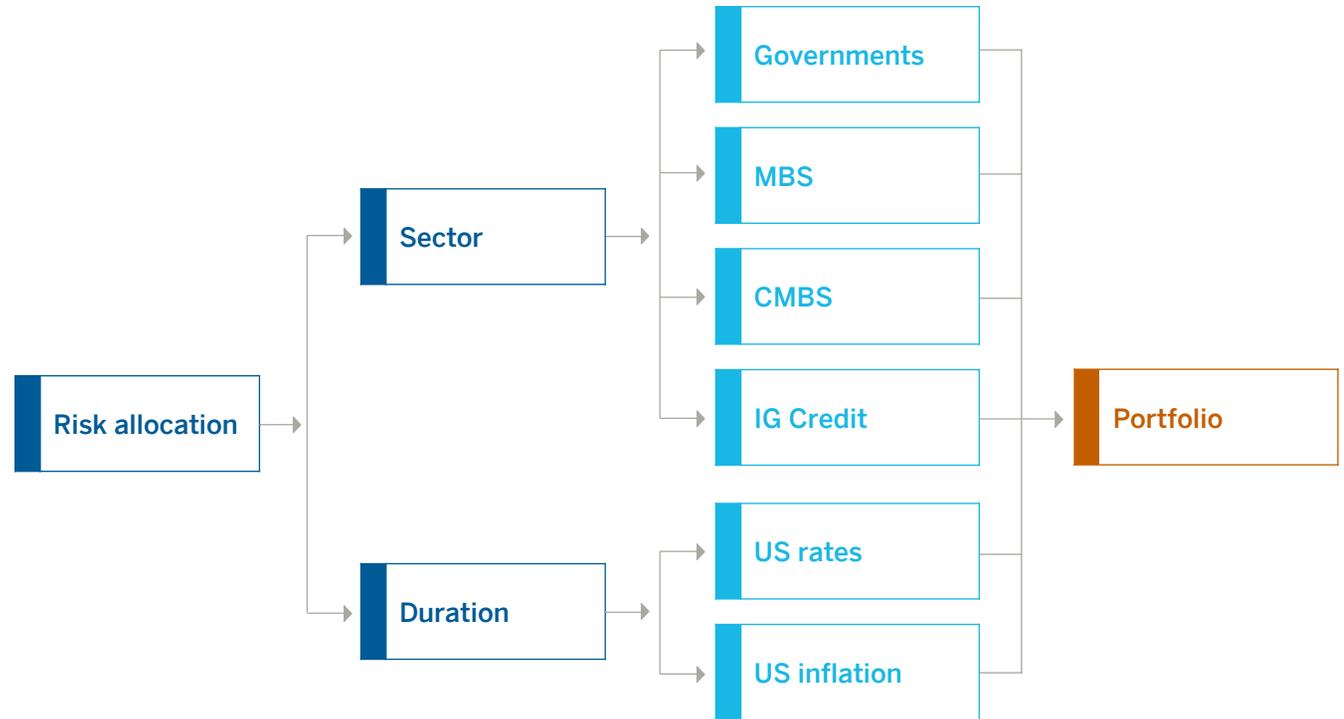
# Core Bond

## Investment process

**Broad strategy**  
Broad markets team

**Sector strategy**  
Sector specialists

**Portfolio construction**  
Portfolio manager



### Risk management



# Investment risk oversight at Wellington Management

## Line Management

- Team/resource focus
- High frequency interaction
- Assess resource needs
- Investment team reviews

## Product Management

- Independent reporting line
- Trade and client portfolio level focus
- High frequency interaction
- Style consistency/capacity/risks

## Risk Advisory Council

- Informal, tactical
- Small group of specialists
- Focus on investment risk topics

## Portfolio Manager

- Philosophy
- Process
- Risk Approach

## Investment Review Group

- Formal, strategic
- Senior Portfolio Manager peer oriented review
- Focus on fiduciary topics

## Global Risk and Analytics

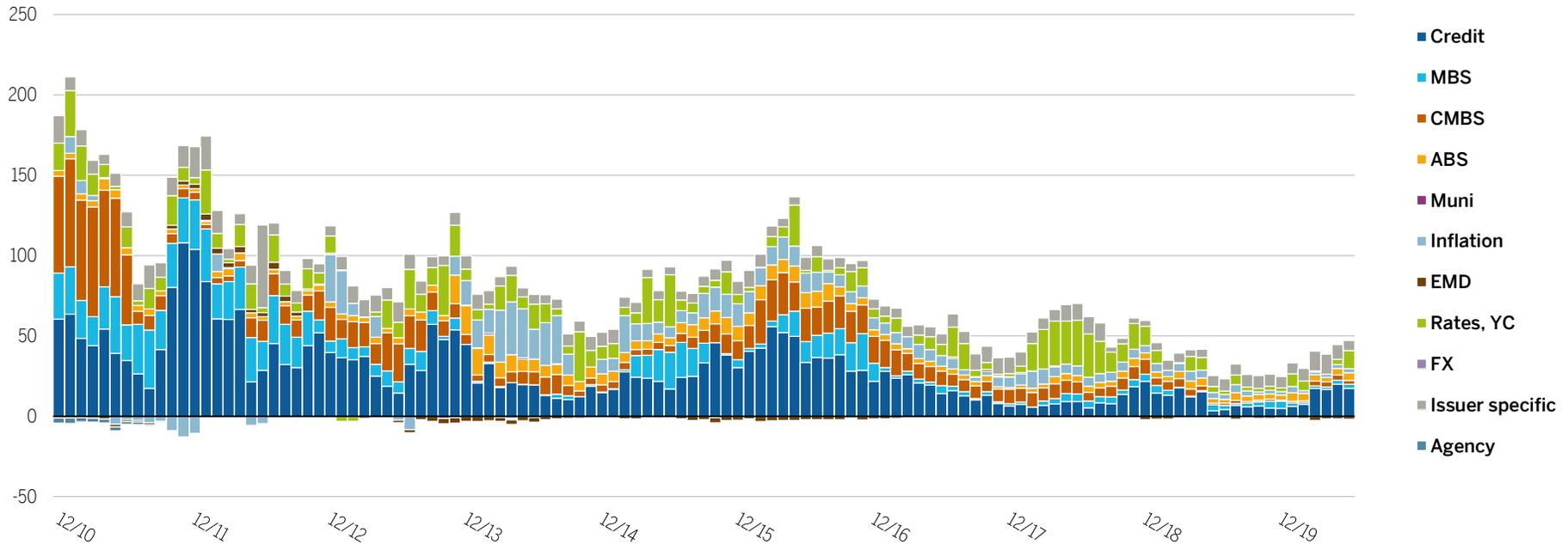
- Independent reporting line
- Lead independent oversight
- Strategy level across asset classes
- Match risk with conviction
- Set best practices for analytics/tools

# Core Bond

## Active risk exposure over time

### Representative account

Contribution to active risk (bps)



Benchmark: Bloomberg Barclays US Aggregate Bond | Please note the benchmark shown is the client-specific benchmark for the representative account. Designated representative accounts may have changed and historical benchmark data represents the benchmark of the representative account over time. Additional benchmark detail is available upon request. | Source: Wellington Management Fixed Income Risk Engine (FIRE). FIRE is an internal proprietary system that provides projected or ex-ante tracking risk estimates for fixed income portfolios versus the primary benchmark. | Due to system limitations, data is only available from 31 December 2010. The first data point displayed may not correspond to the inception date of the account and is based upon the account's configuration within the FIRE system. | The data shown is of a representative account, is for informational purposes only, is subject to change, and is not indicative of future portfolio characteristics or returns. This supplemental information complements the GIPS® compliant presentation provided in the attachment. Please refer to the Important Disclosures page for additional information. | Chart data: 31 December 2010 - 30 June 2020

## Core Bond

### Outlook and strategy – Third quarter 2020

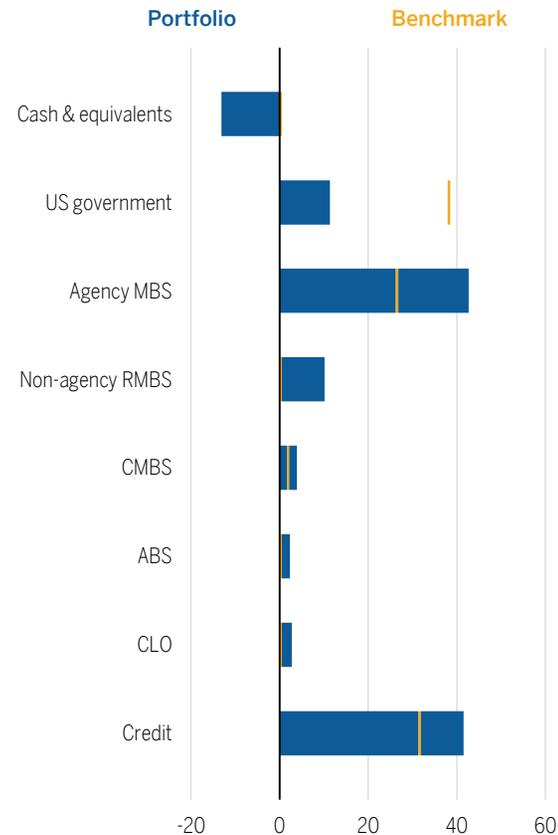
	Outlook	Strategy
Economy/Interest rates	<p>Growth to be buoyed by low interest rates, pent-up demand</p> <p>Extraordinary monetary and fiscal stimulus measures will limit the depth and duration of the global recession</p>	<p>Pro-cyclical risk posture, but preserving cash/liquidity</p> <p>Keeping active duration risk low, focusing on tactical positions</p>
MBS	<p>Expect interest rate volatility to be rangebound</p> <p>Fed purchases will continue to support MBS markets</p>	<p>Overweight to agency pass-throughs</p>
Corporate bonds	<p>Valuations remain attractive given lack of over-investment imbalances</p> <p>The adverse impact on company revenues and earnings will vary considerably across sectors.</p>	<p>Overweight IG corporate bonds</p> <p>Focus on identifying inefficiencies in the pricing of risk</p>
Structured finance	<p>Attractive forbearance plans and lower interest rates are tailwinds for US housing</p> <p>TALF to support high-quality CMBS market</p> <p>CLOs are well-diversified across sectors; upper tranches can withstand increase in bank loan defaults</p>	<p>Own structured finance tied to residential mortgages, high quality CLOs, DUS, CMOs, and senior CMBS tranches with attractive collateral</p>

Information contained within Outlook section contains estimates and forecasts. Actual results may differ significantly from information shown. Forecasts rely upon assumptions and other expectations of future outcomes and is therefore subject to numerous limitations and biases. Future occurrences and results, which may also be formulated based on subjective inputs (i.e., strategist/analyst judgment), will differ, perhaps significantly, from those reflected in the charts and/or graphs within.

## Core Bond

Representative account portfolio positioning as of 30 June 2020

Sector (MV %)



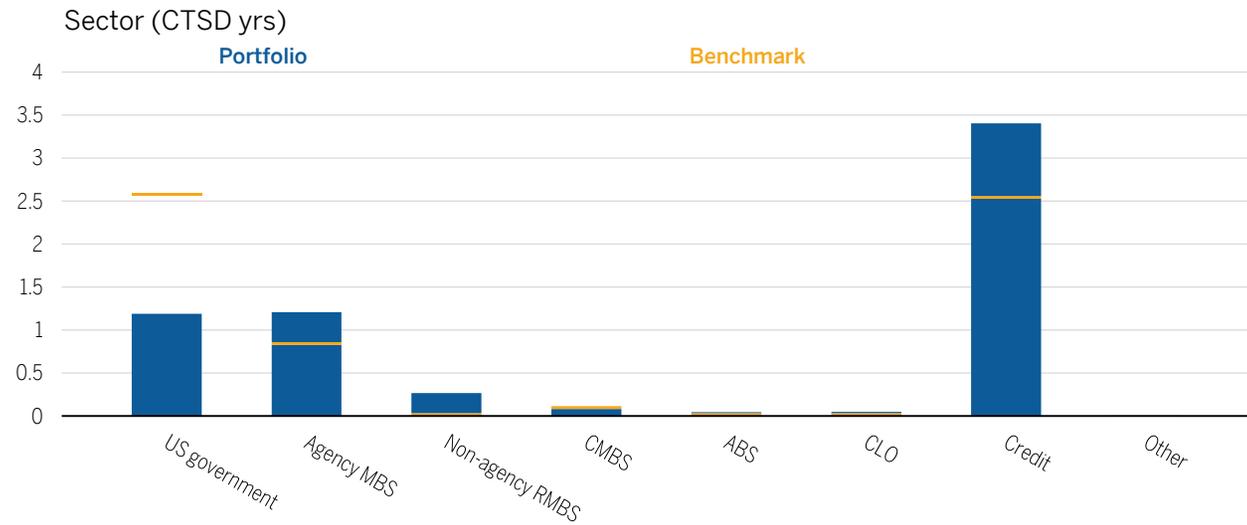
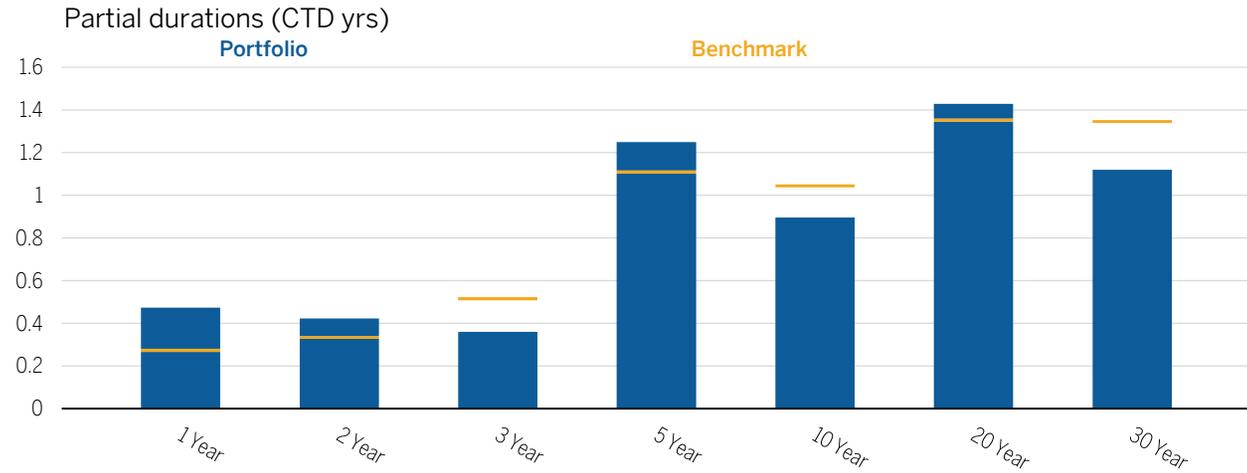
Sector detail (MV %)

	Portfolio	Benchmark
<b>Cash &amp; equivalents</b>	<b>-13.09</b>	<b>0.16</b>
<b>US government</b>	<b>11.36</b>	<b>38.52</b>
Treasuries	11.04	37.13
TIPS	0.32	—
US agencies	—	1.39
<b>Agency MBS</b>	<b>42.66</b>	<b>26.80</b>
Pass-throughs	38.74	26.80
CMO	3.92	—
ARMs	0.01	—
<b>Non-agency RMBS</b>	<b>10.16</b>	<b>—</b>
<b>CMBS</b>	<b>3.90</b>	<b>2.20</b>
Conduit	2.99	1.28
Single borrower	1.58	—
CMBX	-1.02	—
Cell towers	0.32	—
Agency guaranteed	0.03	0.92
<b>ABS</b>	<b>2.31</b>	<b>0.39</b>
Autos	0.89	0.23
Unsecured	0.87	—
Other ABS	0.55	0.16
<b>CLO</b>	<b>2.76</b>	<b>—</b>
<b>Credit</b>	<b>41.51</b>	<b>31.92</b>
Industrials	23.05	16.52
Financials	9.37	8.35
Utilities	3.51	2.12
Credit index derivatives	2.60	—
Taxable municipal	2.11	1.02
Non-corporates	0.80	3.91
Tax exempt municipal	0.07	—

Benchmark: Bloomberg Barclays US Aggregate Bond. | "Other" within Sector (when applicable) includes security types that do not fall within the displayed categories. | The data shown is of a representative account, is for informational purposes only, is subject to change, and is not indicative of future portfolio characteristics or returns. This supplemental information complements the GIPS® compliant presentation provided in the attachment. Please refer to the Important Disclosures page for additional information.

## Core Bond

Representative account portfolio positioning as of 30 June 2020



Benchmark: Bloomberg Barclays US Aggregate Bond. | "Other" within Sector (when applicable) includes security types that do not fall within the displayed categories. | The data shown is of a representative account, is for informational purposes only, is subject to change, and is not indicative of future portfolio characteristics or returns. This supplemental information complements the GIPS® compliant presentation provided in the attachment. Please refer to the Important Disclosures page for additional information.

## Core Bond

### Representative account portfolio characteristics

#### Statistics

	As of 30 June 2020		
	Portfolio	Benchmark	Difference
Yield to worst (%)	1.7	1.1	0.6
% TBAs (%)	27.6	0	27.6
Option-adjusted spread (bps)	113	60	53
Average quality	AA-	AA	
Duration - effective (yrs)	5.95	6.02	-0.07
Duration - inflation-linked (yrs)	0.16	0	0.16
Convexity - effective	0.10	0.49	-0.39
Duration - spread (yrs)	6.26	6.14	0.12

Benchmark: Bloomberg Barclays US Aggregate Bond.  
 | Quality ratings are based on the middle of Moody's, S&P, and Fitch (split low). | The data shown is of a representative account, is for informational purposes only, is subject to change, and is not indicative of future portfolio characteristics or returns. This supplemental information complements the GIPS® compliant presentation provided in the attachment. Please refer to the Important Disclosures page for additional information.

## Core Bond

### Investment returns

As of 30 June 2020 (% , USD)

	3 mos	1 yr	3 yrs	5 yrs	10 yrs
<b>Core Bond Composite (gross)</b>	<b>4.85</b>	<b>9.86</b>	<b>5.91</b>	<b>5.18</b>	<b>4.89</b>
Bloomberg Barclays US Aggregate Bond	2.90	8.74	5.32	4.30	3.83
Active return (gross vs benchmark)	1.95	1.13	0.59	0.87	1.06

	YTD	2019	2018	2017	2016	2015
<b>Core Bond Composite (gross)</b>	<b>6.91</b>	<b>9.74</b>	<b>-0.31</b>	<b>4.67</b>	<b>4.27</b>	<b>0.70</b>
Bloomberg Barclays US Aggregate Bond	6.14	8.72	0.01	3.54	2.65	0.55
Active return (gross vs benchmark)	0.78	1.03	-0.32	1.13	1.62	0.15

	2014	2013	2012	2011	2010
<b>Core Bond Composite (gross)</b>	<b>6.55</b>	<b>-0.99</b>	<b>7.02</b>	<b>8.61</b>	<b>8.79</b>
Bloomberg Barclays US Aggregate Bond	5.97	-2.02	4.21	7.84	6.56
Active return (gross vs benchmark)	0.58	1.03	2.81	0.76	2.23

Sums may not total due to rounding. | Performance returns for periods one year or less are not annualized.

**| PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS AND AN INVESTMENT CAN LOSE VALUE.**

Gross performance results are net of commissions and other direct expenses, but before (gross of) advisory fees, custody charges, withholding taxes, and other indirect expenses, and include reinvestment of dividends and other earnings. If all expenses were reflected, the performance shown would be lower.

Actual fees will vary depending on, among other things, the applicable fee schedule and account size. Composite returns have the potential to be adjusted until reviewed and finalized 30 days following each calendar quarter end period. For use in one-on-one presentations only. This supplemental information complements the GIPS® compliant presentation provided in the attachment. Please refer to the Important Disclosures page for additional information.

## The Wellington Management relationship

### Wellington Management feature

### Oakland PFRS benefit

Time-tested investment team and process

Stable team and diverse return sources;  
Proven over multiple markets

Extensive specialist research resources

High-quality investment idea generation  
and analysis; Fixed income and  
equity insights

Experienced, well-resourced relationship team

Bay Area based client team; Member  
of CALAPRS community and thought  
partner for OPFRS

100% employee owned private partnership

Long-term focus; organizational stability

## Core Bond

### Custom Fee Schedule for OPFRS

### Institutional Commingled Fund Management Fee\*

Market Value	Annual Fee
On all assets	0.12%

Minimum account Size USD 1 million

\*In addition to the investment management fee, commingled pool accounts incur routine operating expenses (e.g., custody, accounting, audit, transfer agency, and other administrative expenses). These operating expenses are voluntarily capped. Commingled pool accounts also indirectly experience operating expenses of any other pooled investment vehicles in which they invest, and the voluntary cap does not apply to those indirect expenses. The cap on the portfolio's direct operating expenses could be eliminated or revised in the future, which may lower the portfolio's yield or return. Fee changes are not anticipated at this time, but could occur in the future.



As a global asset management firm, we believe that diversity and inclusion enable us to deliver better investment results and innovative solutions for clients.

## Diversity and Inclusion

What is our philosophy?

### Four competitive advantages

to having a globally diverse and inclusive firm



Enhances our ability to **understand clients' goals** and needs



Attracts, develops, and retains **exceptional talent** around the world



Introduces **new perspectives** and fosters constructive debate

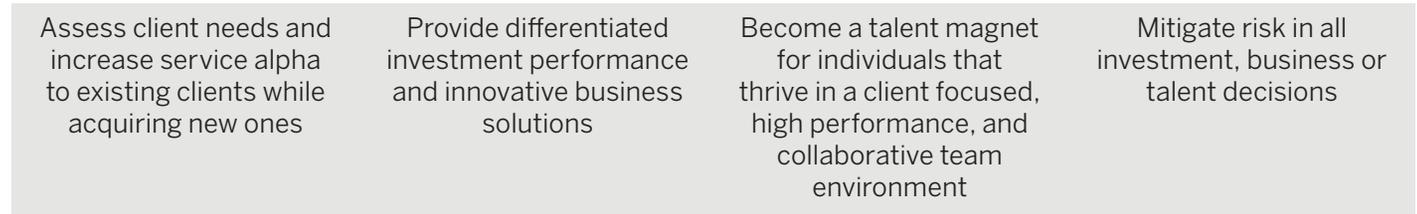


Strengthens our ability to **adapt and innovate** in a complex global market

### DIFFERENTIATED APPROACH



### OUTCOMES



<sup>1</sup>Including a Global Diversity Committee, 13 business networks with regional chapters, and a director of Global Diversity and Inclusion

# Development of a trade

## Adding short duration corporates

### Catalyst

#### Market environment

Positive US economic fundamentals and a stable near-term monetary policy outlook led Wellington Management's macroanalysts to be positive on near-term growth prospects

Credit analysts remained constructive on credit fundamentals, particularly in Financials

### Thesis



**Joseph F. Marvan, CFA**  
Fixed Income  
Portfolio Manager

Short duration corporates looked attractive in this environment due to

- **Valuation:** Early-2018 selloff made front-end credit yields look oversold
- **Technicals:** We expected that supply/demand technicals had been temporarily exacerbated by elevated hedge costs and corporate cash repatriation

### Sector specialist discussion



**Scott I. St. John, CFA**  
Fixed Income  
Portfolio Manager

Attractiveness of short credit differed by sector. The IG Credit Team was positive broadly on Financials and on select retail names (e.g., CVS)

### Trade idea



**Terri Cancelarich, CFA**  
Fixed Income  
Credit Analyst

IG Credit Analysts suggested focusing specifically on the Insurance sector, and shared guidance on specific issuers with attractive short-dated debt

The Short Duration Investment Team shared further guidance on Insurance issuers with attractive short-dated debt

### Sizing and implementation



**Adam C. Chrissis, CFA, FRM**  
Fixed Income  
Portfolio Analyst

Portfolio Analysts led coordination between the investment team, Credit Analysts, and Trading, creating transparency on available issues and levels at which the team was willing to buy



**Masaya Okoshi**  
Director, Credit  
Trading, Americas

The example shown is presented for illustrative purposes only and is not to be viewed as representative of actual holdings. It should not be assumed that any client is invested in the (or similar) example, nor should it be assumed that an investment in the example has been or will be profitable. Actual holdings will vary for each client and there is no guarantee that a particular client's account will hold the example presented.

# Development of a trade

## Underwriting high-quality consumer collateral

### Catalyst

#### Market environment

Positive US economic fundamentals and a stable monetary policy outlook led Wellington Management's macroanalysts to be positive on near-term growth prospects

Sector specialists expressed the view in monthly sector strategy meetings that there was more room for growth in the consumer credit cycle than in the corporate credit sector

### Investment thesis



**Joseph F. Marvan, CFA**  
Fixed Income  
Portfolio Manager

Based on the fundamental macro view, the team decided to allocate to residential credit, funded by reducing IG credit

### Sector specialist discussion



**Scott I. St. John, CFA**  
Fixed Income  
Portfolio Manager

The IG Credit Team helped to reduce exposure to certain IG names thoughtfully, without disturbing the balance within the credit allocation

### Security recommendation



**Daniel J. Kim, CFA**  
Fixed Income  
Credit Analyst

The Mortgage Team shared their preferred segments of the residential mortgage market (e.g., legacy securitizations, reperforming loans)

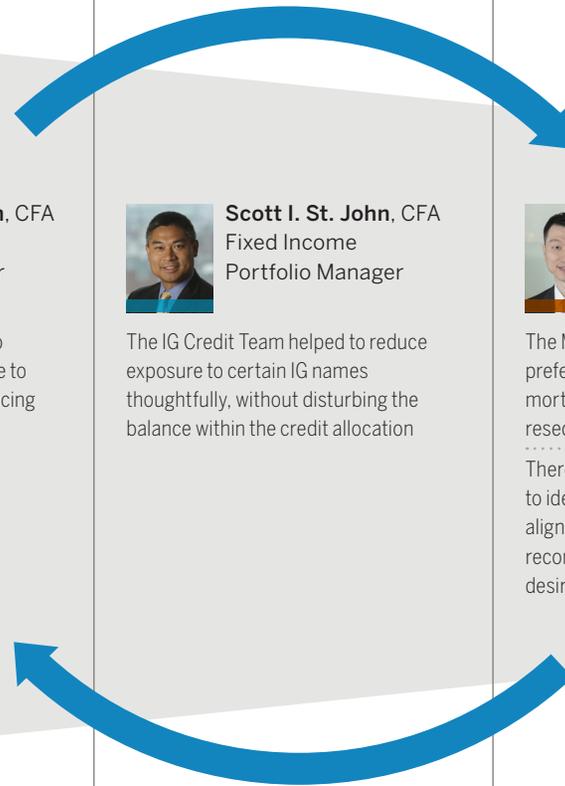
There was an iterative process to identify opportunities that aligned with both the Analyst's recommendations and the team's desired risk/return profile

### Sizing and implementation



**David Rittner, CFA**  
Fixed Income  
Portfolio Analyst

Portfolio Analysts led coordination between the investment team, Credit Analyst, and trading desk, communicating what issues were available and levels at which the team was willing to buy



The example shown is presented for illustrative purposes only and is not to be viewed as representative of actual holdings. It should not be assumed that any client is invested in the (or similar) example, nor should it be assumed that an investment in the example has been or will be profitable. Actual holdings will vary for each client and there is no guarantee that a particular client's account will hold the example presented.

## **Core Bond**

### Key considerations

The portfolio will generally be diversified by sector, issuer, and investment strategy, but may hold concentrated positions from time to time

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The portfolio adjusts its risk posture at different times in the business cycle, which at times may increase portfolio tracking risk

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The portfolio includes positions based on both long-term and short-term investment ideas. The time horizon for macro thematic ideas often have long-term investment horizons, while tactical ideas often have much shorter-term investment horizons.

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The portfolio may use derivatives, including both liquid government bond futures and less liquid credit default swaps, for the purpose of risk management and alpha generation. Gross exposure, defined as the sum of all long plus sum of the absolute value of all short positions, may exceed 100% of the market value of the portfolio.

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Projected risk statistics are estimated using FIRE, Wellington Management's proprietary risk model. The actual risk profile may differ from projections.

## Core Bond Investment risks

### PRINCIPAL RISKS

**Asset/Mortgage-Backed Securities Risk** – Mortgage-related and asset-backed securities are subject to prepayment risk, which is the possibility that the principal of the loans underlying the securities may prepay differently than anticipated at purchase. Because of prepayment risk, the duration of mortgage-related and asset-backed securities may be difficult to predict.

**Commingled Fund Risk** – Investments in funds or other pooled vehicles generally will indirectly incur a portion of that fund's operating expenses and/or fees and will inherit a proportion of the fund's investment risks. Funds may have different liquidity profiles based on their dealing terms, and the types of instruments in the fund. In the event a fund holds illiquid instruments, it is possible that a full redemption from the fund could result in taking custody of illiquid instruments that could not be sold in the market.

**Credit Risk** – The value of a fixed income security may decline due to an increased risk that the issuer or guarantor of that security may fail to pay interest or principal when due, as a result of adverse changes to the issuer's or guarantor's financial status and/or business. In general, lower-rated securities carry a greater degree of credit risk than higher-rated securities.

**Derivatives Risk** – Derivatives can be volatile and involve various degrees of risk. The value of derivative instruments may be affected by changes in overall market movements, the business or financial condition of specific companies, index volatility, changes in interest rates, or factors affecting a particular industry or region. Derivative instruments may provide more market exposure than the money paid or deposited when the transaction is entered into. As a result, a relatively small adverse market movement can not only result in the loss of the entire investment, but may also expose a portfolio to the possibility of a loss exceeding the original amount invested. Derivatives may also be imperfectly correlated with the underlying securities or indices it represents, and may be subject to additional liquidity and counterparty risk. Examples include futures, options and swaps.

**Fixed Income Securities Risk** – Fixed income security market values are subject to many factors, including economic conditions, government regulations, market sentiment, and local and international political events. In addition, the market value of fixed income securities will fluctuate in response to changes in interest rates, and the creditworthiness of the issuer.

**Interest Rate Risk** – Generally, the value of fixed income securities will change inversely with changes in interest rates, all else equal. The risk that changes in active interest rates will adversely affect fixed income investments will be greater for longer-term fixed income securities than for shorter-term fixed income securities.

### ADDITIONAL RISKS

**Credit Derivatives Risk** – Credit derivatives transfer price, spread and/or default risks from one party to another and are subject to additional risks including liquidity, loss of value, and counterparty risk. Payments under credit derivatives are generally triggered by credit events such as bankruptcy, default, restructuring, failure to pay, or acceleration. The market for credit derivatives may be illiquid, and there are considerable risks that it may be difficult to either buy or sell the instruments as needed or at reasonable prices. The value and risks of a credit derivative instrument depends largely the underlying credit asset. These risks may include price, spread, default, and counterparty.

**Emerging Markets Risk** – Investments in emerging and frontier countries may present risks such as changes in currency exchange rates; less liquid markets and less available information; less government supervision of exchanges, brokers, and issuers; increased social, economic, and political uncertainty; and greater price volatility. These risks are likely greater relative to developed markets.

## Core Bond

### Investment risks

**Leverage Risk** – Use of leverage increases portfolio exposure and may result in a higher degree of risk, including (i) greater volatility, (ii) greater losses from investments than would otherwise have been the case had leverage not been used to make the investments, (iii) margin calls that may force premature liquidations of investment positions.

**Liquidity Risk** – Investments with low liquidity may experience market value volatility because they are thinly traded (such as small cap and private equity or private placement bonds). Since there is no guarantee that these securities could be sold at fair value, sales may occur at a discount. In the event of a full liquidation, these securities may need to be held after liquidation date.

**Options Risk** – An option on a security (or index) is a derivative contract that gives the holder of the option, in return for the payment of a “premium,” the right, but not the obligation, to buy from (in the case of a call option) or sell to (in the case of a put option) the writer of the option the security underlying the option (or the cash value of the index) at a specified exercise price prior to the expiration date of the option. Purchasing an option involves the risk that the underlying instrument will not change price in the manner expected, so that the investor loses the premium paid. However, the seller of an option takes on the potentially greater risk of the actual price movement in the underlying instrument, which could result in a potentially unlimited loss rather than only the loss of the premium payment received. Over-the-counter options also involve counterparty risk.

**Repo & Reverse Repo Risk** – Both repurchase and reverse repurchase transactions involve counterparty risk. A reverse repurchase transaction also involves the risk that the market value of the securities the investor is obligated to repurchase may decline below the repurchase price.

## Important disclosures

### **Additional performance information**

**PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.** There can be no assurance nor should it be assumed that future investment performance of any strategy will conform to any performance examples set forth in this material or that the portfolio's underlying investments will be able to avoid losses. The investment results and any portfolio compositions set forth in this material are provided for illustrative purposes only and may not be indicative of the future investment results or future portfolio composition. The composition, size of, and risks associated with an investment in the strategy may differ substantially from the examples set forth in this material. An investment can lose value.

### **Impact of fees**

Illustration of impact of fees: If USD100,000 was invested and experienced a 10% annual return compounded monthly for ten years, its ending value, without giving effect to the deduction of advisory fees, would be USD270,704 with an annualized compounded return of 10.47%. If an advisory fee of 0.95% of average net assets per year were deducted monthly for the ten-year period, the annualized compounded return would be 9.43% and the ending USD value would be USD246,355. Information regarding the firm's advisory fees is available upon request.

### **Selection of representative account**

The current representative account became effective on 1 August 1989 because it was the oldest account at the time of selection. For data shown prior to the current representative account effective date, data of the representative account(s) deemed appropriate for the time period was used. Further information regarding former representative accounts can be provided upon request. Each client account is individually managed; individual holdings will vary for each account and there is no guarantee that a particular account will have the same characteristics as described. Actual results may vary for each client due to specific client guidelines, holdings, and other factors. In limited circumstances, the designated representative account may have changed over time, for reasons including, but not limited to, account termination, imposition of significant investment restrictions, or material asset size fluctuations.

### **Access products**

If access products are held by the portfolio they may not be included in the calculation of characteristic data. Access products are instruments used to gain access to equity markets not otherwise available and may include (but are not limited to) instruments such as warrants, total return swaps, p-notes, or zero strike options.

### **Additional disclosures**

Securities indices are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly into an index.

### **Benchmark definition**

Bloomberg Barclays US Aggregate Bond: The Index measures the performance of the U.S. investment grade bond market.

**Wellington Management**  
**Composite: Core Bond**  
**Schedule of Performance Returns from 01 January 2010 to 31 December 2019**

Period	Gross Return (%)	Net Return (%)	Benchmark Return (%)	Number of Portfolios	Internal Dispersion (%)	Composite Mkt. Value (USD Mil)	Total Firm Assets (USD Mil)
2010	8.79	8.47	6.56	< 6	N/M	592	633,922
2011	8.61	8.28	7.84	< 6	N/M	505	651,496
2012	7.02	6.70	4.21	< 6	N/M	533	757,903
2013	-0.99	-1.29	-2.02	< 6	N/M	529	834,441
2014	6.55	6.23	5.97	< 6	N/M	539	914,109
2015	0.70	0.40	0.55	< 6	N/M	545	926,949
2016	4.27	3.96	2.65	< 6	N/M	708	979,210
2017	4.67	4.36	3.54	< 6	N/M	999	1,080,307
2018	-0.31	-0.61	0.01	< 6	N/M	1,325	1,003,389
2019	9.74	9.46	8.72	< 6	N/M	2,054	1,154,735

Benchmark: Bloomberg Barclays US Aggregate Bond

*N/M: For years where there are less than six portfolios throughout the performance period, Internal Dispersion is not meaningful.*

**Composite Description:** Portfolios included in the Core Bond Composite seek to achieve returns above the Bloomberg Barclays US Aggregate Bond Index by investing in US Treasuries and Agencies, mortgage-backed securities, investment grade corporate bonds, and certain eligible derivative instruments including futures contracts, and swap agreements. The average duration of portfolios included in this composite generally range within +/-1.5 years of the Bloomberg Barclays US Aggregate Bond Index duration. Portfolios included in this composite are restricted from the use of non-US dollar and below investment grade securities.

**Composite Creation Date:** The composite creation date is October 2002.

**Composite Membership:** All fully discretionary, fee paying portfolios with at least US\$5.0 million in net assets are eligible for inclusion in the composite.

**Fee Schedule:** Effective 1 March 2019 the institutional separate account fee schedule for this product is:

Market Value	Annual Fee
On the first US\$100 million	0.25%
Over US\$100 million	0.15

**Benchmark Definition:** Bloomberg Barclays US Aggregate Bond measures the performance of the U.S. investment grade bond market.

**Derivatives/Leverage/Shorts:** Derivative instruments are used only when and as client guidelines permit. When permitted by client guidelines, portfolios may use exchange-traded and over-the-counter derivative instruments, including interest rate, credit and index futures; interest rate, total rate of return and credit default swaps; bond and swap options; to-be-announced (TBA) securities, bonds for forward settlement, forward rate agreements and other derivative instruments for risk management purposes and otherwise in pursuit of the investment objective of the portfolios in the composite.

Typically, portfolios in the composite will use derivative instruments for hedging purposes and in the pursuit of approved investment strategies. Derivative instruments are used either as a substitute for underlying cash or bond positions or to hedge the risk of a portfolio in the composite in a way that is consistent with client investment guidelines. In particular, derivative instruments are used as an efficient alternative to cash bonds in the implementation of duration, yield curve, security selection and sector rotation strategies. The net market value of derivative instruments typically does not exceed 25% of the assets of a portfolio in the composite.

**Firm:** For purposes of GIPS® compliance, the Firm is defined as all portfolios managed by Wellington Management Company LLP, an independently owned, SEC-registered investment adviser, as well as its affiliates (collectively, Wellington Management). Wellington Management provides investment advisory services to institutions around the world.

**GIPS®:** Wellington Management claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS® standards. Wellington Management has been independently verified for the periods 1 January 1993 to 31 December 2018. The verification reports are available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS® standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS® standards.

**Performance Calculation:** Gross performance results are net of trading expenses. Returns are gross of withholding taxes on dividends, interest and capital gains. Returns, market values, and assets are reported in USD except when otherwise noted. Returns, market values and assets reported in currencies other than USD are calculated by converting the USD monthly return and assets using the appropriate exchange rate (official 4:00 p.m. London closing spot rates). Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

Net of fees performance reflects the deduction of the highest tier investment management fee ("model fee") that would be charged based on the fee schedule appropriate to you for this mandate, without the benefit of breakpoints and is calculated by subtracting 1/12th of the model fee from monthly gross composite returns. In certain instances Wellington Management may charge certain clients a fee in excess of the standard model fee, such as to legacy clients or clients receiving additional investment services. Performance net of model fees is intended to provide the most appropriate example of the impact management fees would have for you.

Pool investors will experience costs in excess of investment management fees, such as operating expenses and custodial fees. These indirect costs are not reflected in the model fee, or net of fees performance.

**Internal Dispersion:** The dispersion measure presented is the asset-weighted standard deviation. The asset-weighted standard deviation measures the dispersion of individual portfolio returns relative to the asset-weighted composite return. Only portfolios that have been included in the composite for the full period are included in the standard deviation calculation. Limitations imposed by client guidelines or by law on a portfolio's ability to invest in certain securities or instruments, such as IPO securities, and/or implementation of the firm's Trade Allocation Policies and Procedures, may cause the portfolio's performance to differ from that of the composite.

**Wellington Management****Composite: Core Bond****Schedule of Performance Returns from 01 January 2010 to 31 December 2019**

**External Dispersion:** The dispersion measure presented is the three-year annualized ex-post standard deviation. It measures the variability of the composite and the benchmark(s) over the preceding 36-month period. For periods prior to 1 January 2011, the Firm was not required to present the three-year annualized ex-post standard deviation.

	<i>3-Year Standard Deviation (%)</i>								
<i>Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>
Composite	3.56	2.37	2.79	2.70	2.89	3	2.80	2.78	2.76
Benchmark	2.78	2.38	2.71	2.63	2.88	2.98	2.78	2.84	2.87

**Composite Listing:** Wellington Management's list of composite descriptions is available upon request.

**Other Matters:** This material contains summary information regarding the investment approach described herein and is not a complete description of the investment objectives, policies, guidelines, or portfolio management and research that supports this investment approach. Any decision to engage Wellington Management should be based upon a review of the terms of the investment management agreement and the specific investment objectives, policies, and guidelines that apply under the terms of such agreement.

**Past Performance:** Past results are not necessarily indicative of future results and an investment can lose value.

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OAKLAND POLICE AND FIRE RETIREMENT BOARD  
CITY OF OAKLAND, CALIFORNIA

Approved to Form  
and Legality



RESOLUTION No. 7098

ON MOTION OF MEMBER \_\_\_\_\_ SECONDED BY MEMBER \_\_\_\_\_

**RESOLUTION RATIFYING THE JULY 29, 2020 MOTION OF THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM BOARD TO HIRE BROWN ADVISORY TO SERVE AS THE ACTIVE SMALL CAP VALUE DOMESTIC EQUITY ASSET CLASS INVESTMENT MANAGER FOR THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM FOR A TERM OF FIVE (5) YEARS AT A FEE RATE NOT TO EXCEED 85 BPS (0.85%) OF THE PORTFOLIO'S ANNUAL ASSET VALUE AND AUTHORIZING THE PRESIDENT OF THE POLICE AND FIRE RETIREMENT SYSTEM BOARD TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH BROWN ADVISORY.**

**WHEREAS**, Article XVI §17 of the California Constitution, commonly referred to as the Pension Protection Act or Proposition 162, and Article XXVI of the City Charter vest the Board with exclusive control of the administration and investment of the assets of the Police and Fire Retirement Fund (the "Fund"); and

**WHEREAS**, the Board manages and administers the Police and Fire Retirement System ("PFRS"), pursuant to the requirements of Article XXVI of the Oakland City Charter ("City Charter"); and

**WHEREAS**, the Oakland City Charter section 2601(e) gives the Board of the Oakland Police and Fire Retirement System ("PFRS Board") power to make all necessary rules and regulation for its guidance and shall have exclusive control of the administration and investment of the funds established for the maintenance and operation of the system; and

**WHEREAS**, Article XXVI of the City Charter expressly authorizes the Board to secure competent investment counsel to provide advice and counsel regarding the investment of the Fund and further provides that discretionary powers granted to such investment counsel will be at the option of the Board; and

**WHEREAS**, pursuant to direction from the Board, Meketa Investment Group issued a Request for Proposals ("RFP") for a Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio for the Oakland Police and Fire Retirement System (PFRS) investment portfolio; and

**WHEREAS**, on July 29, 2020, the PFRS Investment Committee and the PFRS Board reviewed and considered the RFP responses and qualifications of the following investment firms: (1) Brown Advisory, (2) Phocas Financial Corp., (3) Systematic Financial Management, and (4) Vaughan Nelson Investment Management; and

**WHEREAS**, on July 29, 2020, the PFRS Board selected Brown Advisory to serve as the new Active Small Cap Value Domestic Equities Asset Class Investment Manager for PFRS; and

**OAKLAND POLICE AND FIRE RETIREMENT BOARD**  
CITY OF OAKLAND, CALIFORNIA

**WHEREAS**, the Assets will be managed in an actively managed separate account and benchmarked to the Russell 2000 value index; and

**WHEREAS**, the fees charged by Brown Advisory will not exceed 0.85% (85 basis points) annually of PFRS's investment portfolio assets value under its management (presently valued at approximately Ten Million Dollars (\$10,000,000)); and

**WHEREAS**, Brown Advisory agrees to charge no more than said 0.85% (85 basis points) annually during the initial contract term of five (5) years; now, therefore, be it

**RESOLVED:** That the PFRS Board hereby ratifies its July 29, 2020 motion to hire Brown Advisory to serve as the Active Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio for the Oakland Police and Fire Retirement System for a term of five (5) year at a fee rate not to exceed 0.85% (85 basis points) annually of PFRS's investment portfolio assets value each year; and be it

**FURTHER RESOLVED:** That the PFRS Board hereby authorizes the Oakland Police and Fire Retirement System Board President to execute, on behalf of the Oakland Police and Fire Retirement System and its Board, a Professional Service Agreement with Brown Advisory to serve as Active Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio for the Oakland Police and Fire Retirement, subject to the terms and conditions set forth above.

IN BOARD MEETING, VIA ZOOM TELE-CONFERENCE \_\_\_\_\_ AUGUST 26, 2020 \_\_\_\_\_

PASSED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSENT:

ATTEST: \_\_\_\_\_  
PRESIDENT

ATTEST: \_\_\_\_\_  
SECRETARY





OAKLAND POLICE AND FIRE RETIREMENT BOARD  
CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 8000

Approved as to  
Form and Legality



ON MOTION OF MEMBER \_\_\_\_\_ SECONDED BY MEMBER \_\_\_\_\_

**RESOLUTION RATIFYING THE JULY 29, 2020 MOTION OF THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM BOARD TO HIRE BLACKROCK INVESTMENT MANAGEMENT COMPANY TO SERVE AS INVESTMENT MANAGER OF THE LONG DURATION TREASURY PLAN COMPONENT OF THE CRISIS RISK OFFSET INVESTMENT STRATEGY FOR THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM AT A MANAGEMENT FEE RATE NOT TO EXCEED 3 BASIS POINTS (3 BPS OR 0.03 PERCENT) OF THE PORTFOLIO'S ANNUAL ASSET VALUE AND AUTHORIZING THE PRESIDENT OF THE POLICE AND FIRE RETIREMENT SYSTEM BOARD TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH BLACKROCK INVESTMENT MANAGEMENT COMPANY.**

**WHEREAS**, Article XVI §17 of the California Constitution, commonly referred to as the Pension Protection Act or Proposition 162, and Article XXVI of the City Charter vest the Board with exclusive control of the administration and investment of the assets of the Police and Fire Retirement Fund (the "Fund"); and

**WHEREAS**, the Board manages and administers the Police and Fire Retirement System ("PFRS"), pursuant to the requirements of Article XXVI of the Oakland City Charter ("City Charter"); and

**WHEREAS**, the Oakland City Charter section 2601(e) gives the Board of the Oakland Police and Fire Retirement System ("PFRS Board") power to make all necessary rules and regulation for its guidance and shall have exclusive control of the administration and investment of the funds established for the maintenance and operation of the system; and

**WHEREAS**, Article XXVI of the City Charter expressly authorizes the Board to secure competent investment counsel to provide advice and counsel regarding the investment of the Fund and further provides that discretionary powers granted to such investment counsel will be at the option of the Board; and

**WHEREAS**, on July 31, 2019, pursuant to direction from the Board, Meketa Investment Group conducted a Request for Proposals ("RFP") for a Long Duration Treasury Plan Component of the Crisis Risk Offset Investment Strategy Manager who can also serve as the Passive International Equity Investment Manager for the Oakland Police and Fire Retirement System (PFRS) investment portfolio; and

**WHEREAS**, on July 29 2020, the PFRS Investment Consultant, Meketa Investment Group ("Meketa"), reported that it had reviewed the investment options for the Long Duration Treasury Plan Component of the Crisis Risk Offset Investment Strategy and recommended BlackRock Investment Management Company be investment manager for this investment component; and

**OAKLAND POLICE AND FIRE RETIREMENT BOARD**  
CITY OF OAKLAND, CALIFORNIA

**WHEREAS,** Meketa did provide its rationale for recommending that BlackRock Investment Management Company be selected as the Manager of the Long Duration Treasury Plan Component of The Crisis Risk Offset Investment Strategy for the Oakland Police and Fire Retirement System; and

**WHEREAS,** on July 29, 2020, the PFRS Board passed a motion to hire Blackrock Investment Management Company to serve as the Manager of the Long Duration Treasury Plan Component of the Crisis Risk Offset Investment Strategy for the Oakland Police and Fire Retirement System at a fee rate not to exceed 3 basis points (3 BPS or 0.03 percent) of the portfolio's annual asset value, which is presently valued at approximately Fifteen Million Dollars (\$15,000,000); now, therefore, be it

**RESOLVED:** That the PFRS Board hereby ratifies its July 29, 2020 motion to hire Blackrock Investment Management Company to serve as the Manager of the Long Duration Treasury Plan Component of the Crisis Risk Offset Investment Strategy for the Oakland Police and Fire Retirement System at a fee rate not to exceed 3 basis points (3 BPS or 0.03 percent) of the portfolio's annual assets value; and be it

**FURTHER RESOLVED,** That the PFRS Board hereby authorizes the Oakland Police and Fire Retirement System Board President to execute, on behalf of the Oakland Police and Fire Retirement System and its Board, a Professional Service Agreement with Blackrock Investment Management Company to serve as the Manager of the Long Duration Treasury Plan Component Of The Crisis Risk Offset Investment Strategy for the Oakland Police and Fire Retirement System at a fee rate not to exceed three basis points (3BPS, or 0.03 percent) of the portfolio's assets value each year.

IN BOARD MEETING, VIA ZOOM TELE-CONFERENCE \_\_\_\_\_ **AUGUST 26, 2020**

PASSED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST: \_\_\_\_\_  
PRESIDENT

ATTEST: \_\_\_\_\_  
SECRETARY

## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** David Sancewich, Sean Copus, CFA – Meketa Inv. Group  
**DATE:** August 26, 2020  
**RE:** 2020 Ongoing Strategic Investment Agenda

On an ongoing (monthly) basis, Meketa develops a list of projects that we expect to work closely with OPFRS to complete over throughout the calendar year (see table below). In an attempt to coordinate the scheduling of these tasks, this memo details a Preliminary Investment Project Agenda by calendaring and prioritizing the expected tasks and deliverables that would be required to fulfill the Agenda. Meketa welcomes any suggestions and/or modifications to the proposed timeline.

### 2020 Preliminary Investment Project Agenda

Expected Completion Date	Task
August 2020	<ul style="list-style-type: none"><li>Quarterly Performance Report (2Q 2020)</li><li>Fixed Income Manager Interviews</li></ul>
September 2020	<ul style="list-style-type: none"><li>Cash Flow Report (4Q 2020)</li><li>Manager Update: <b>Ramirez</b></li><li>Watch Update Memo: Rice Hall &amp; James</li><li>Manager Update: <b>Rice Hall &amp; James</b></li><li>Educational Item: TBD</li><li>Thermal Coal List Update: 2020</li></ul>
October 2020	<ul style="list-style-type: none"><li>Flash Performance (3Q2020)</li></ul>
November 2020	<ul style="list-style-type: none"><li>Quarterly Performance Report (3Q 2020)</li></ul>
December 2020	<ul style="list-style-type: none"><li>Cash Flow Report (1Q 2021)</li></ul>

**Bold** are priority strategic items.



This agenda includes only major strategic items. Meketa also expects to work with the Staff and Board to complete more routine tasks and projects, as expected.

DS/SC/hs

Pursuant to the Governor's Executive Order N-29-20, all members of the City Council, as well as the City Administrator, City Attorney and City Clerk will join the meeting via phone/video conference and no teleconference locations are required

Oakland Police and Fire Retirement Board meetings are being held via Tele-Conference. Please see the agenda to participate in the meeting. For additional information, contact the Retirement Unit by calling (510) 238-6481.



# AGENDA

## RETIREMENT BOARD MEMBERS

**Walter L. Johnson, Sr.**  
President

**Jaime T. Godfrey**  
Vice President

**Robert W. Nichelini**  
Member

**Kevin R. Traylor**  
Member

**John C. Speakman**  
Member

**R. Steven Wilkinson**  
Member

**Margaret O'Brien**  
Member

## REGULAR MEETING of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

**Wednesday, August 26, 2020 – 12:30 pm**  
**Tele-Conference Board Meeting**  
**via Zoom**

### OBSERVE:

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- To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
- iPhone one-tap: US: +16699006833,83665111281# or +13462487799,,83665111281#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 836 6511 1281.  
If asked for a participant ID or code, press #.

### PUBLIC COMMENTS There are three ways to submit public comments.

- eComment. To send your comment directly to staff BEFORE the meeting starts, please email to [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov) with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time.**

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR BOARD MEETING  
AUGUST 26, 2020**

- To comment by Zoom video conference, click the “Raise Your Hand” button to request to speak when Public Comment is being taken on an eligible agenda item at the beginning of the meeting. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Instructions on how to “Raise Your Hand” is available at: <https://support.zoom.us/hc/en-us/articles/205566129> - Raise-Hand-In-Webinar.
- To comment by phone, please call on one of the above listed phone numbers. You will be prompted to “Raise Your Hand” by pressing “\*9” to speak when Public Comment is taken. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Please unmute yourself by pressing \*6.

If you have any questions, please email Maxine Visaya, Administrative Assistant at [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov).

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- - - ORDER OF BUSINESS - - -

- A. Subject: PFRS Board Meeting Minutes**  
**From:** Staff of the PFRS Board  
**Recommendation:** **APPROVE** July 29, 2020 PFRS Board meeting minutes.
- B. Subject: Administrative Expenses Report**  
**From:** Staff of the PFRS Board  
**Recommendation:** **ACCEPT** an informational report regarding PFRS administrative expenses from July 1, 2019 through June 30, 2020.
- 
- C. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – AUGUST 26, 2020**
- C1. Subject: Investment Market Overview**  
**From:** Meketa Investment Group  
**Recommendation:** **ACCEPT** an informational report on the global investment markets through July31, 2020.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR BOARD MEETING  
AUGUST 26, 2020

- C2. **Subject:** Investment Fund Performance Report for the Quarter Ending July 31, 2020  
**From:** Meketa Investment Group
- 
- Recommendation:** **RECOMMEND BOARD APPROVAL** of the Investment Fund Performance Report for the Quarter Ending June 30, 2020
- C3. **Subject:** Preliminary Investment Fund Performance Update as Of July 31, 2020  
**From:** Meketa Investment Group
- 
- Recommendation:** **APPROVE** a Preliminary Investment Fund Performance Update as of July 31, 2020
- C4. **Subject:** Prospective Core Fixed Income Investments Portfolio Manager Presentations  
**From:** Meketa Investment Group
- 
- Recommendation:** **RECEIVE** finalists' presentations from Investment Firms seeking to serve as PFRS's New Core Fixed Income Investment Manager
- **Income Research & Management**  
IR+M Aggregate
  - **Longfellow Investment Management Co.**  
Core
  - **Wellington Management Company LLP**  
Core Bond
- C5. **Subject:** Selection of a New Core Fixed Income Investments Portfolio Manager  
**From:** Meketa Investment Group
- 
- Recommendation:** **DISCUSS** Investment Firm Presentations, **SELECT** Investment Firm to Serve as PFRS's New Core Fixed Income Investment Manager and **RECOMMEND BOARD APPROVAL** of Committee's Selection
- C6. **Subject:** Resolution No. 7098 Hiring Brown Advisory as PFRS New Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio  
**From:** Staff of PFRS Board
- 
- Recommendation:** **ACCEPT** Resolution 7098 Hiring Brown Advisory to Serve as PFRS's New Manager of the Small Cap Value Domestic Equities Asset Class Investment Portfolio and **RECOMMEND BOARD APPROVAL**.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR BOARD MEETING  
AUGUST 26, 2020

C7. **Subject:** Resolution No. 7099 Hiring BlackRock Investment Management Company as PFRS New Passive International Equity Asset Class Investment Manager  
**From:** Staff of PFRS Board

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**Recommendation:** **ACCEPT** Resolution 7099 Hiring BlackRock Investment Management Company as PFRS New Passive International Equity Asset Class Investment Manager. and **RECOMMEND BOARD APPROVAL.**

C8. **Subject:** Resolution No. 8000 Hiring BlackRock Investment Management Company as PFRS New Manager of the Long Duration Treasury Plan Component of The Crisis Risk Offset Investment Strategy Portfolio  
**From:** Meketa Investment Group

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**Recommendation:** **ACCEPT** Resolution 8000 Hiring BlackRock Investment Management Company as PFRS New Manager of the Long Duration Treasury Plan Component of The Crisis Risk Offset Investment Strategy Portfolio and **RECOMMEND BOARD APPROVAL**

D. **Subject:** Meketa Investment Group Paycheck Protection Program (PPP) Loan  
**From:** Meketa Investment Group

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**Recommendation:** **RECEIVE** update from Meketa Investment Group regarding Paycheck Protection Program (PPP) Loan and **DISCUSS**

E. **Subject:** Resolution No. 8001  
**From:** Staff of the PFRS Board

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**Recommendation:** **APPROVE** Resolution No. 8001 – Resolution Expressing Appreciation for Adam Benson’s Dedication and Loyal and Valuable Service as an Audit Committee Member and Full Board Member to The Oakland Police and Fire Retirement System Board.

F. NEW BUSINESS

G. OPEN FORUM

H. FUTURE SCHEDULING

I. ADJOURNMENT

**A BOARD MEETING** of the Oakland Police and Fire Retirement System (“PFRS”) was held on July 29, 2020 via Zoom Tele-Conference.

Board Members Present:

- Walter L. Johnson, President
- Jaime T. Godfrey, Vice President
- Adam D. Benson, Member
- Robert W. Nichelini, Member
- John C. Speakman, Member
- Kevin R. Traylor, Member
- R. Steven Wilkinson, Member

Additional Attendees:

- David Jones, PFRS Plan Administrator
- Jennifer Logue, PFRS Legal Counsel
- Teir Jenkins, Staff Member
- Maxine Visaya, Staff Member
- David Sancewich, Meketa Investment Group
- Paola Nealon, Meketa Investment Group
- David Low

The meeting was called to order at 12:06 pm.

**A. PFRS Board Meeting Minutes** – Member Traylor made a motion to approve the June 24, 2020 PFRS Board meeting minutes, second by Member Speakman. Motion Passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

**B. AUDIT AND OPERATIONS COMMITTEE AGENDA – JULY 29, 2020**

**B1. Administrative Expenses Report** – Investment Officer Teir Jenkins presented an informational report of the PFRS administrative expenditures from July 1, 2019 through May 31, 2020.

**MOTION:** Member Speakman made a motion to accept the administrative expenses report, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

**B2. Scope of Services and Initiation of the Financial Audit of the PFRS fund for the Fiscal Year Ending June 30, 2020** – Investment Officer Teir Jenkins presented on the report by Annie Louie of Macias Gini & O’Connell, LLP regarding the scope of services for the Financial Audit of the PFRS fund for the fiscal year ending June 30, 2020. The only caveat is, due to current circumstances, the audit will be conducted remotely.

**MOTION:** Member Speakman made a motion to approve the scope of services and initiation of the financial services audit of the PFRS fund for fiscal year ending June 30, 2020 by Macias Gini and O’Connell, LLP, second by Member Traylor. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

**C. INVESTMENT & FINANCIAL MATTERS COMMITTEE MEETING – FEBRUARY 26, 2020**

**c1. Preliminary June 2020 Investment Fund Performance Update** – David Sancewich reported on the details of the Preliminary Investment Fund Performance as of June 30, 2020.

**MOTION:** Chairperson Godfrey made a motion to accept the informational report from Meketa regarding the Preliminary Investment Fund Performance as of June 30, 2020, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

**c2. Review of the Finalists for a New Active Small Cap Domestic Equities Asset Class Investment Manager** – Mr. Sancewich presented a review and summary of the following finalists seeking to serve as PFRS’s new Active Small Cap Domestic Equities Asset Class Manager. The firms were interviewed by the committee in February 2020 and the Board asked Meketa to compile additional information on firm and organizational diversity for each of the finalists, which this summary addresses.

- Brown Advisory
- Phocas Financial Corp.
- Systematic Financial Management
- Vaughan Nelson Investment Management

**MOTION:** Member Godfrey made a motion to accept the informational report for consideration of the finalists for the New Small Cap Domestic Equities Asset Class Investment Manager presented by Meketa, second by Member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- c3. Selection of a New Active Small Cap Domestic Equities Asset Class Investment Manager** – Member Godfrey recommends the Full Board move to accept Brown Advisory to serve as PFRS’s New Active Small Cap Domestic Equities Asset Class Investment Manager.

**MOTION:** Member Godfrey made a motion to accept Brown Advisory as the New Small Cap Domestic Equities Asset Class Investment Manager, second by Member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- c4. Investment Market Overview** – Paola Nealon provided an informational report on the global economic factors affecting the PFRS Fund through June 2020, including the impact of the Coronavirus on the world investment markets.

**MOTION:** Chairperson Godfrey made a motion to accept the informational report of the Investment Market Overview by Meketa Investment Group, second by Member Traylor. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- c5. Prospective Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager Presentations** – Member Godfrey noted it is unusual only one management firm presented today. He explained only two firms, BlackRock Investment and Northern Trust, responded to the RFP. Northern Trust Company currently invests a significant portion of the PFRS portfolio. Member Godfrey briefly summarized the presentation to the Full Board. Mr. Sancewich clarified the two separate portfolios, Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments BlackRock will manage within PFRS

**MOTION:** Member Godfrey made a motion to accept the informational presentation regarding BlackRock Investment Manager Company, second by Member Wilkinson. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- c6. Selection of New Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager** –Member Godfrey made a motion to hire BlackRock Investment Management Company to be the New Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager.

**MOTION:** Chairperson Godfrey made a motion to hire BlackRock Investment Management Company to be the New Passive International Equity Asset Class Investments and PFRS Crisis Risk Offset (Long Duration Treasury) Investments Portfolio Manager for the PFRS fund, second by Member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- c7. Investment Manager Overview Parametric Portfolio Associates** – David Sancewich from Meketa presented its review of Parametric Portfolio Associates. He recommends Parametric Portfolio Associates be placed on watch status, due to underperformance. Meketa will bring back an update memo in three to four months with a recommendation to maintain watch status or make a decision to move in another direction.

**MOTION:** Member Godfrey made a motion to accept the informational report by Meketa regarding Parametric Portfolio Associates and further moves to place Parametric Portfolio Associates on watch status, second by Member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- D. Resolution No. 7097** – Resolution expressing appreciation for David Low. Member Benson commented how he was struck by his level of professionalism and his ability to pivot and organize these meetings. Noting he was an incredible asset and we were so lucky to have him. Adam thanked David Low on behalf of the entire City and the Finance Department. Members of the Board, PFRS Staff, and others in attendance also expressed their appreciation and best wishes moving forward.

**Motion:** Member Benson moved to approve Resolution 7097, second by Member Speakman.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- E. New Business** – No Report

**F. Open Forum** – Teir Jenkins introduced new staff member Maxine Visaya.

Member Speakman addressed the importance of the Ad Hoc Committee meeting regarding the 2026 funding date. Attention was brought to the composition of the Ad Hoc Committee and caution should be taken as to not create a quorum. President Johnson suggested to seek advice from staff and Legal Counsel to address this concern.

David Sancewich of Meketa discussed the media coverage of Meketa taking a Paycheck Protection Program (PPP) Loan.

**MOTION:** Member Speakman made a motion to place an agenda item for Meketa to discuss the Paycheck Protection Program PPP Loan, second by Member Nichelini. Motion passed, that item will be place on the agenda.

[JOHNSON – Y/ GODFREY –ABSTAINY/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 7/ NOES: 0/ ABSTAIN: 1)

**G. Future Scheduling** – The next PFRS Board meeting was scheduled for Wednesday, August 26, 2020.

**H. Adjournment** – Member Godfrey made a motion to adjourn, second by Member Benson.

The meeting adjourned at 1:00 pm.

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DAVID JONES, BOARD SECRETARY

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of June 30, 2020

	Approved Budget		June 2020		FYTD		Remaining		Percent Remaining	
<b>Internal Administrative Costs</b>										
PFRS Staff Salaries	\$	1,149,000	\$	95,460	\$	1,098,560	\$	50,440		4.4%
Board Travel Expenditures		52,500		-		9,487		43,013		81.9%
Staff Training		20,000		125		451		19,549		97.7%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Annual Report & Duplicating Services		4,000		-		-		4,000		100.0%
Board Hospitality		3,600		-		1,370		2,230		61.9%
Payroll Processing Fees		40,000		40,000		40,000		-		0.0%
Miscellaneous Expenditures		40,000		2,522		31,698		8,302		20.8%
Internal Service Fees (ISF)		85,000		6,545		83,471		1,529		1.8%
Contract Services Contingency		50,000		-		1,200		48,800		97.6%
Office Construction Costs*		5,128		-		-		5,128		100.0%
<b>Internal Administrative Costs Subtotal :</b>	<b>\$</b>	<b>1,456,728</b>	<b>\$</b>	<b>144,652</b>	<b>\$</b>	<b>1,266,237</b>	<b>\$</b>	<b>190,491</b>		<b>13.1%</b>
<b>Actuary and Accounting Services</b>										
Audit	\$	45,000	\$	-	\$	45,000	\$	-		0.0%
Actuary		46,500		4,710		46,500		-		0.0%
<b>Actuary and Accounting Subtotal:</b>	<b>\$</b>	<b>91,500</b>	<b>\$</b>	<b>4,710</b>	<b>\$</b>	<b>91,500</b>	<b>\$</b>	<b>-</b>		<b>0.0%</b>
<b>Legal Services</b>										
City Attorney Salaries	\$	188,000	\$	13,666	\$	158,990	\$	29,010		15.4%
Legal Contingency		150,000		-		5,455		144,546		96.4%
<b>Legal Services Subtotal:</b>	<b>\$</b>	<b>338,000</b>	<b>\$</b>	<b>13,666</b>	<b>\$</b>	<b>164,445</b>	<b>\$</b>	<b>173,555</b>		<b>51.3%</b>
<b>Investment Services</b>										
Money Manager Fees	\$	1,326,000	\$	277,687	\$	956,950	\$	369,050		27.8%
Custodial Fee		124,000		58,250		116,500		7,500		6.0%
Investment Consultant (Meketa)		100,000		25,000		100,000		-		0.0%
<b>Investment Subtotal:</b>	<b>\$</b>	<b>1,550,000</b>	<b>\$</b>	<b>360,937</b>	<b>\$</b>	<b>1,173,450</b>	<b>\$</b>	<b>376,550</b>		<b>24.3%</b>
<b>Total Operating Budget</b>	<b>\$</b>	<b>3,436,228</b>	<b>\$</b>	<b>523,964</b>	<b>\$</b>	<b>2,695,632</b>	<b>\$</b>	<b>740,596</b>		<b>21.55%</b>

\*Carry Forward from FY 2018-2019

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of June 30, 2020

	June 2020
<b>Beginning Cash as of 5/31/2020</b>	\$ 7,344,973
<b>Additions:</b>	
City Pension Contribution - June	\$ 3,617,417
Investment Draw	-
Misc. Receipts	1,558
<b>Total Additions:</b>	\$ 3,618,975
<b>Deductions:</b>	
Pension Payment (May Pension Paid on 6/1/2020)	(4,400,134)
Expenditures Paid	(297,883)
<b>Total Deductions</b>	\$ (4,698,017)
 <b>Ending Cash Balance as of 6/30/2020*</b>	 \$ 6,265,931

\* On 6/1/2020, May pension payment of appx \$4,427,000 will be made leaving a cash balance of \$1,839,000

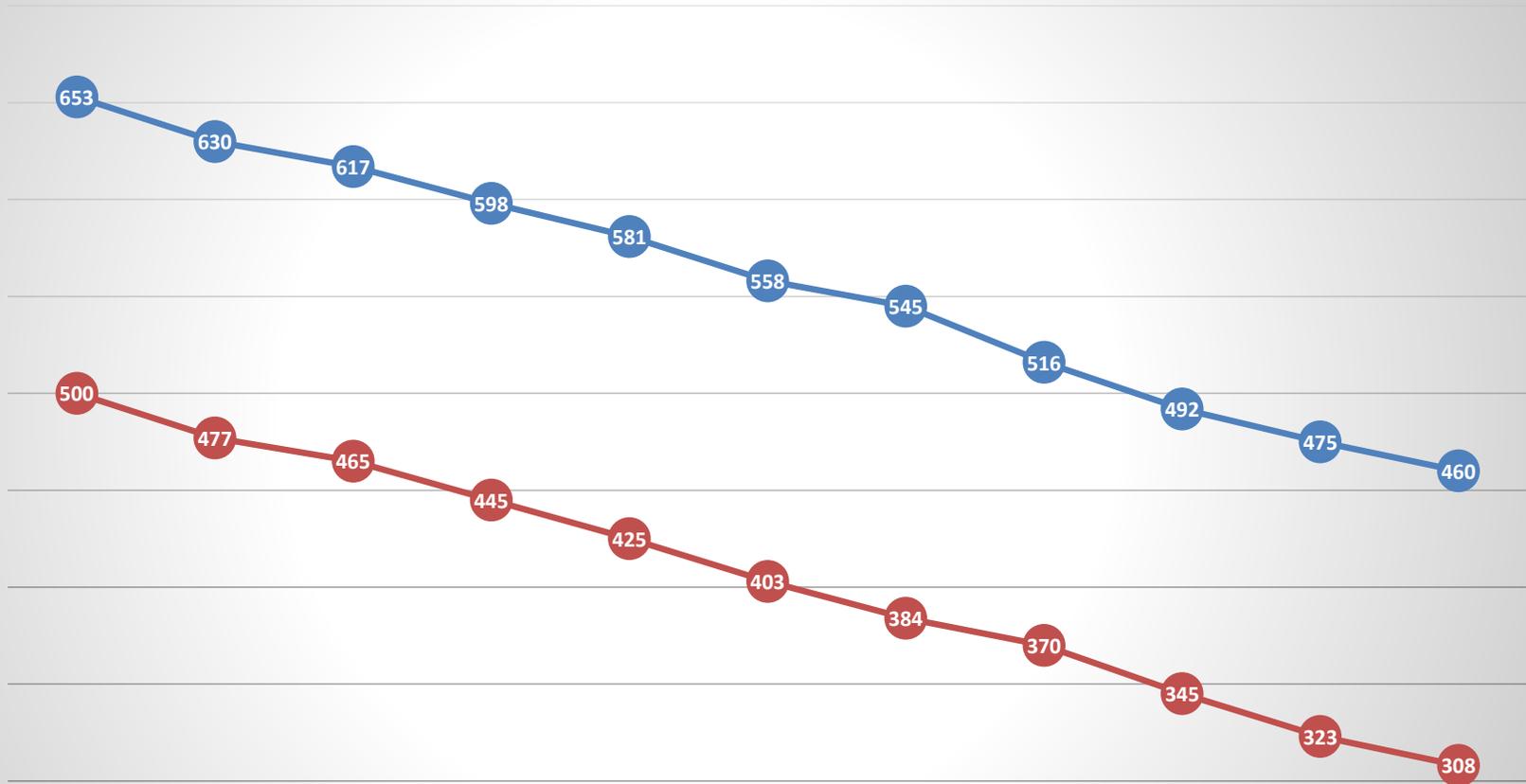
**Table 3**  
**CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**

Census  
As of June 30, 2020

COMPOSITION	POLICE	FIRE	TOTAL
<b>Retired Member:</b>			
Retiree	339	195	534
Beneficiary	121	113	234
<b><i>Total Retired Members</i></b>	<b>460</b>	<b>308</b>	<b>768</b>
<b><i>Total Membership:</i></b>	<b>460</b>	<b>308</b>	<b>768</b>

COMPOSITION	POLICE	FIRE	TOTAL
<b>Retired Member:</b>			
Service Retirement	306	158	464
Disability Retirement	141	137	278
Death Allowance	13	13	26
<b><i>Total Retired Members:</i></b>	<b>460</b>	<b>308</b>	<b>768</b>
<b><i>Total Membership as of June 30, 2020:</i></b>	<b>460</b>	<b>308</b>	<b>768</b>
<b><i>Total Membership as of June 30, 2019:</i></b>	<b>475</b>	<b>323</b>	<b>798</b>
<b><i>Annual Difference:</i></b>	<b>-15</b>	<b>-15</b>	<b>-30</b>

## Oakland Police and Fire Retirement System Pension Plan Membership Count As of June 30, 2020 (FY 2010 - FY 2020)

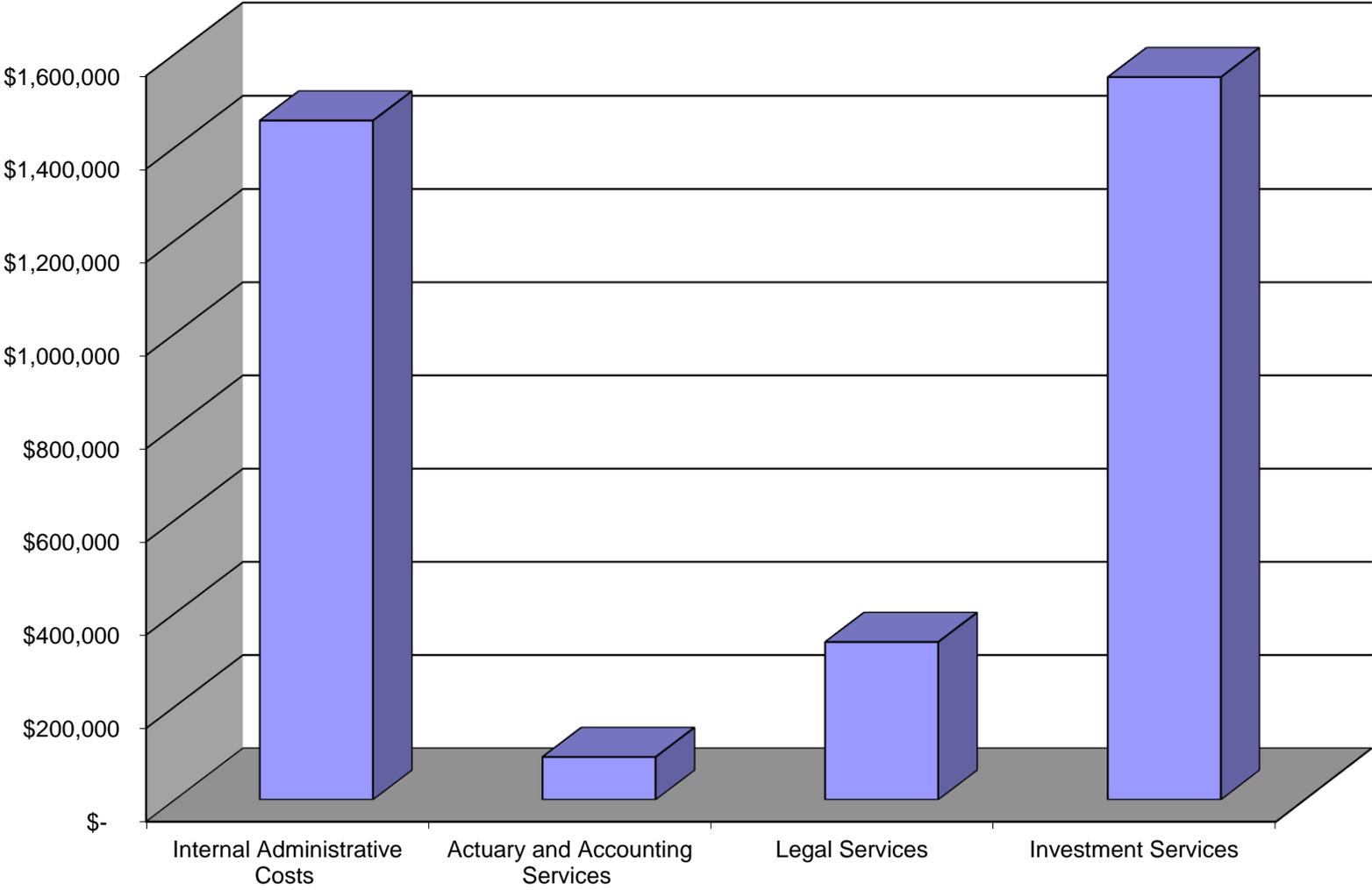


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 FYTD
Police	653	630	617	598	581	558	545	516	492	475	460
Fire	500	477	465	445	425	403	384	370	345	323	308
Total	1153	1107	1082	1043	1006	961	929	886	837	798	768

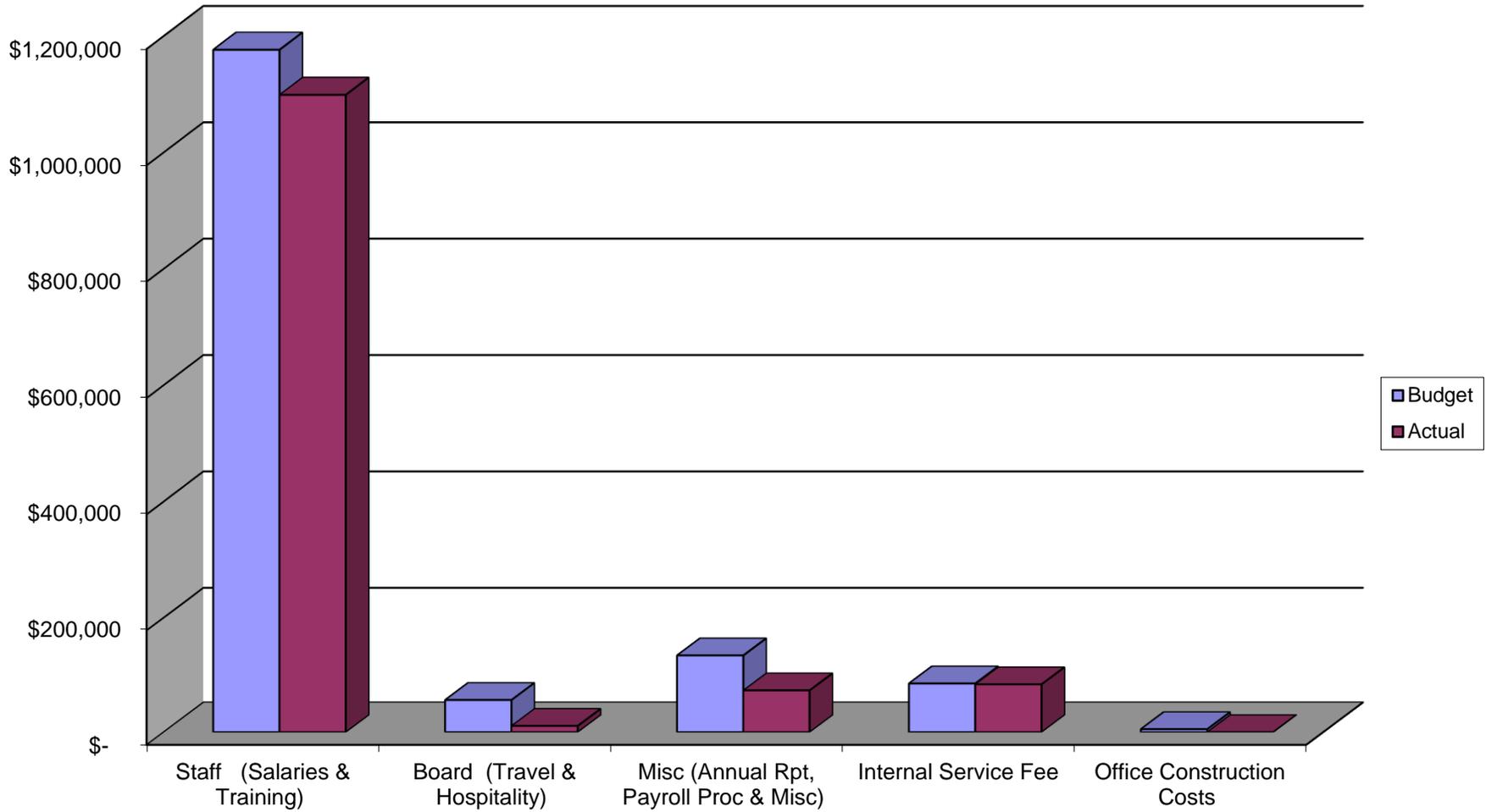
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Approved Budget

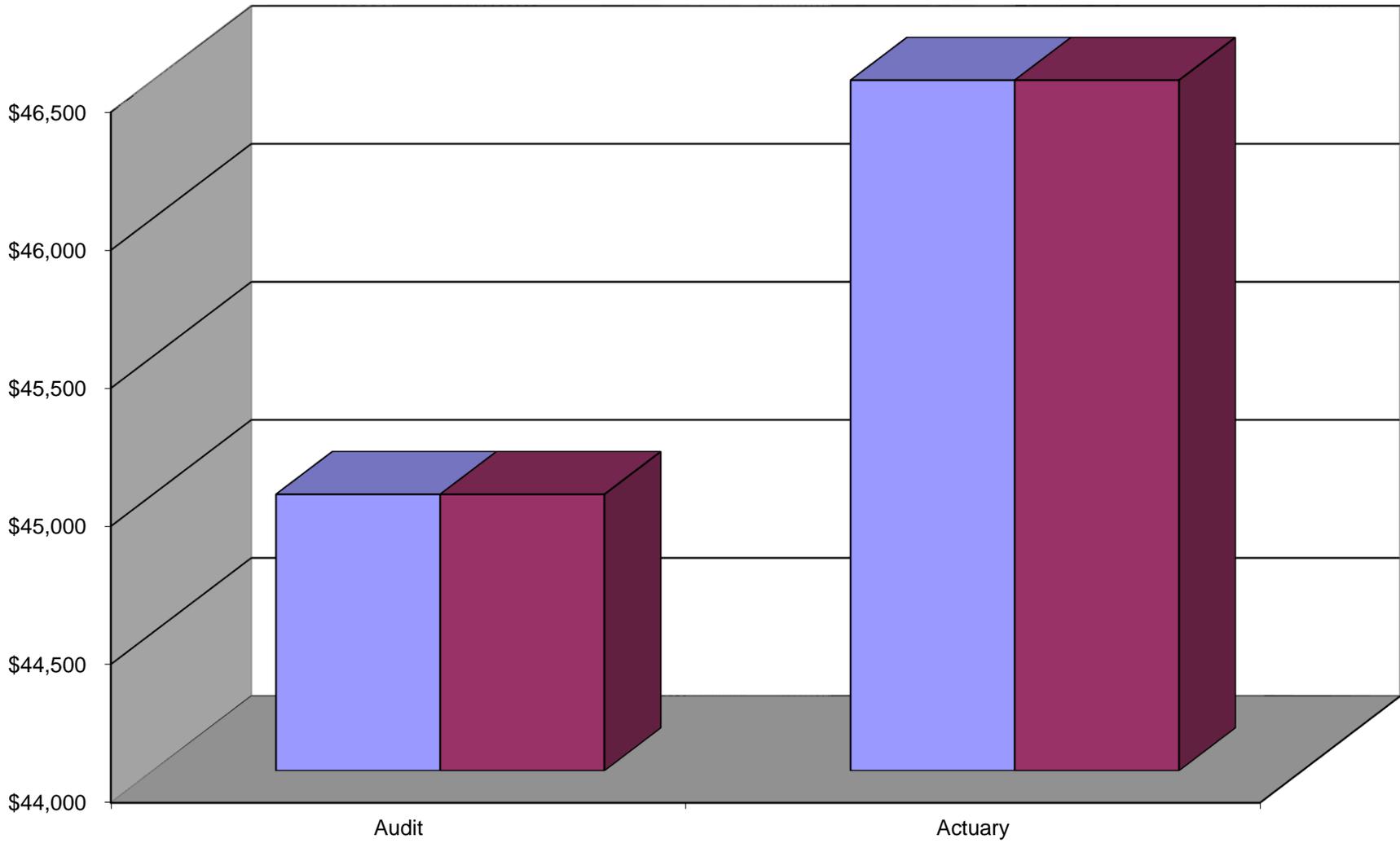
FY 2019-2020



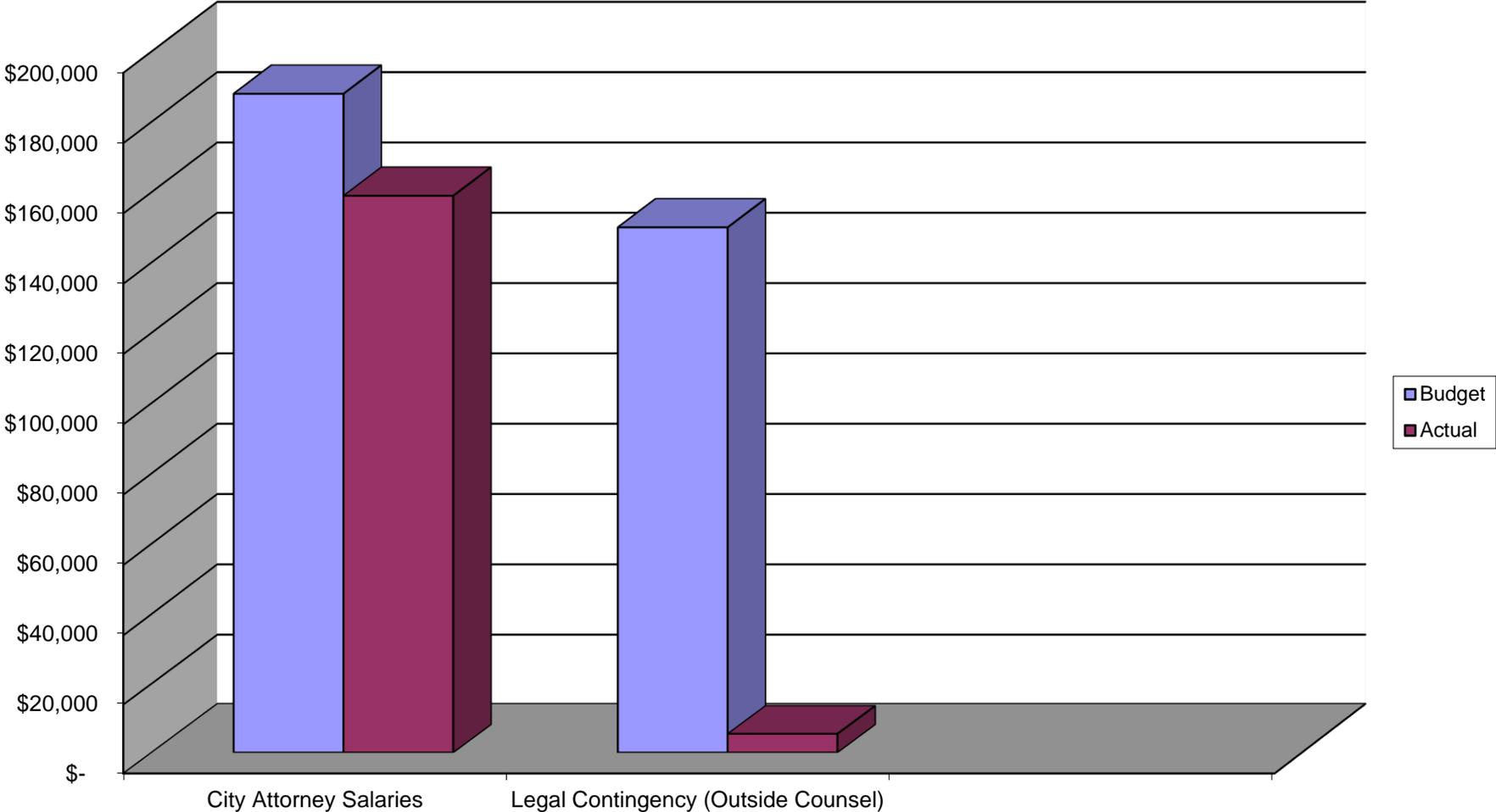
**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**  
**Budget vs Actual as of June 30, 2020**  
**Internal Administrative Costs**



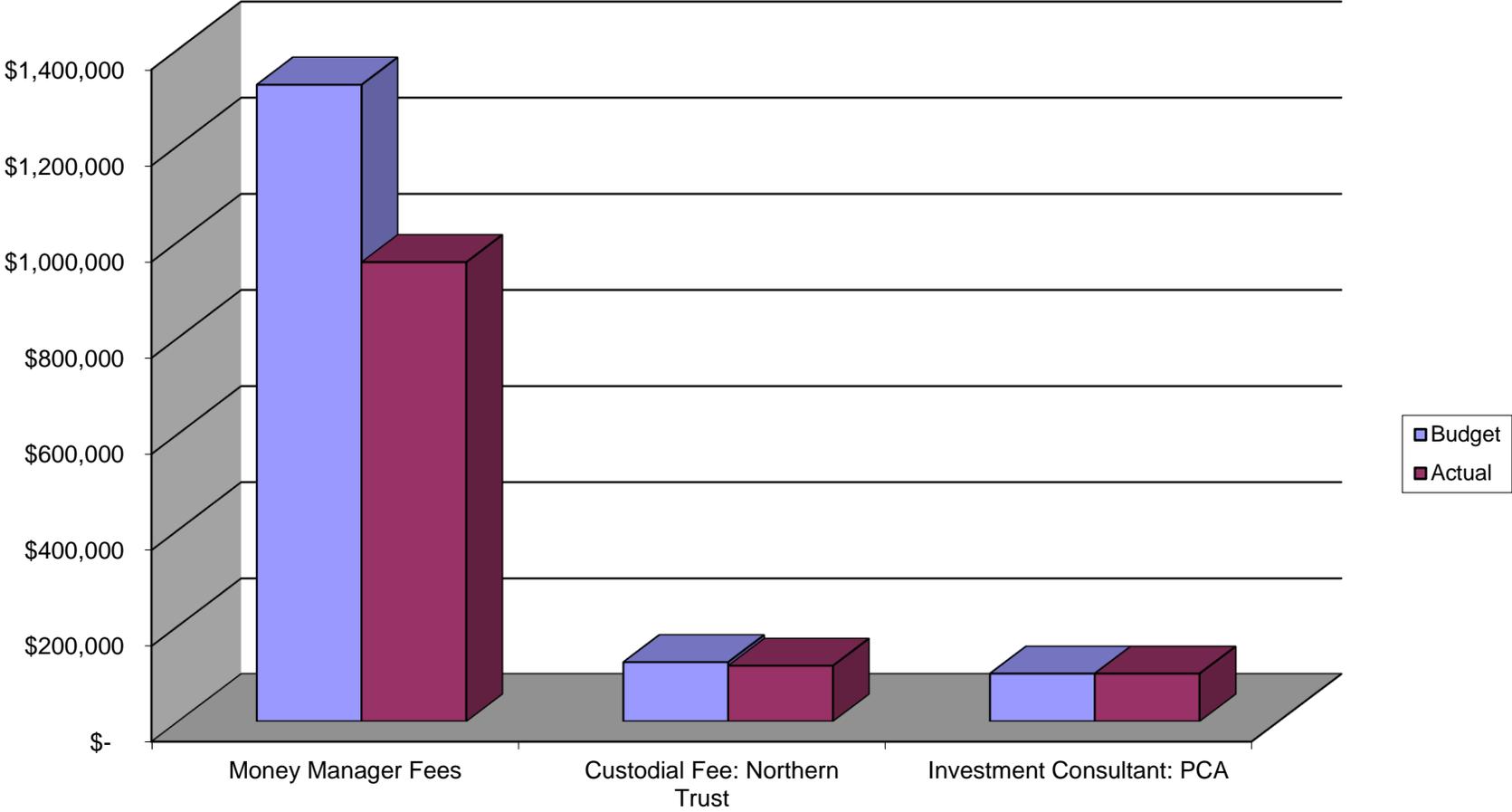
**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**  
**Budget vs. Actual as of June 30, 2020**  
**Actuary and Accounting Services**



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
Budget vs. Actual as of June 30, 2020  
Legal Services



**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**  
**Budget vs. Actual as of June 30, 2020**  
**Investment Services**



## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** Meketa Investment Group  
**DATE:** August 26, 2020  
**RE:** ADV Updates

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Meketa recently provided clients with an updated Form ADV that highlights two items related to our response to the COVID-19 global pandemic: securing a PPP loan to facilitate the prioritization of our employees through this uncertain time, and necessary changes to our due diligence processes given the inability to conduct on-site due diligence.

In March, when the initial effects of the COVID-19 pandemic were being felt, Meketa reiterated to its employees our philosophy of putting employees first, throughout the pandemic. We recognize the value of our employees to our clients and our firm. Our clients' success over the past 40 years is due to our deep staff of employees and their hard work and dedication. We view our commitment to our employees as a commitment to continuing to deliver the highest level of critical services to our clients.

Meketa Investment Group is financially stable. Nonetheless, we believe that it is prudent to take all necessary steps to protect our employees, and to maintain the highest level of service to our clients, through what we, and most pandemic experts, believe will be a prolonged battle with COVID-19. In this spirit, we elected to participate in the SBA's Paycheck Protection Program. We believe this and other pre-emptive steps are the responsible actions of fiduciaries and are in the best interest of our employees and clients.

In addition to securing the PPP loan, Meketa modified its due diligence processes for evaluating public and private market managers. To avoid disadvantaging new or emerging managers during the pandemic, we modified our processes to be fully remote and connect face-to-face using video technology. We believe these changes do not sacrifice the depth of research and analysis we conduct, and put smaller and emerging asset managers on a level playing field within Meketa's due diligence processes.

If you have any questions regarding either of these items, please feel free to reach out at any time to our Co-CEOs, Peter Woolley and Steve McCourt.

OAKLAND POLICE AND FIRE RETIREMENT BOARD  
CITY OF OAKLAND, CALIFORNIA

Approved as to  
Form and Legality



RESOLUTION No. 8001

ON MOTION OF MEMBER \_\_\_\_\_ SECONDED BY MEMBER \_\_\_\_\_

**RESOLUTION EXPRESSING APPRECIATION FOR ADAM BENSON'S  
DEDICATION AND LOYAL AND VALUABLE SERVICE AS A  
MEMBER OF THE OAKLAND POLICE AND FIRE RETIREMENT  
SYSTEM AUDIT COMMITTEE AND THE OAKLAND POLICE AND  
FIRE RETIREMENT SYSTEM BOARD**

**WHEREAS**, Adam Benson was appointed to the Board of Administration of the Oakland Police and Fire Retirement System (PFRS) as the Mayoral Representative in accordance with Section 2601 of the Oakland City Charter commencing on August 24, 2019; and

**WHEREAS**, Adam Benson served as a member of the Audit Committee during his entire term and helped guide the Board with its policy decisions; now, therefore, be it

**RESOLVED**: That the Oakland Police and Fire Retirement System Board does hereby express its appreciation for Adam Benson's loyal service, dedication and valuable contribution as a member of the Oakland Police and Fire Retirement System Board and Audit Committee; and be it

**FURTHER RESOLVED**: That the members of the Oakland Police and Fire Retirement System Board express their sincere best wishes to Adam Benson for a healthy and prosperous future.

IN BOARD MEETING, VIA ZOOM TELE-CONFERENCE **AUGUST 26, 2020**

PASSED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST: \_\_\_\_\_  
PRESIDENT

ATTEST: \_\_\_\_\_  
SECRETARY