

# City of Marlborough Contributory Retirement System

Q1 2020 Meeting Materials

Fund Evaluation Report

## Agenda

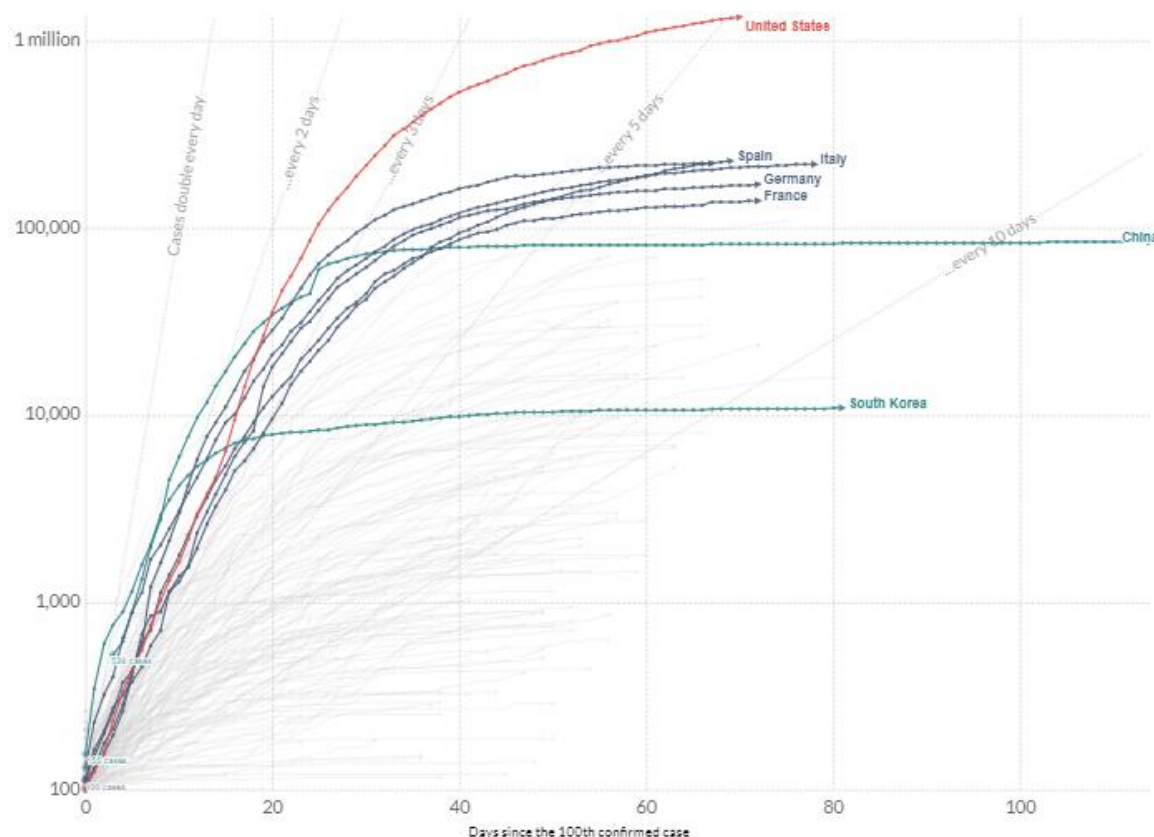
1. Economy and Market Update Data as of May 8, 2020
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# Economy and Market Update

Data as of May 8, 2020



### Case Count by Select Country: Flattening the Curve<sup>1</sup>



- There are over 4.2 million cases of coronavirus globally across 187 countries with the US now the epicenter.
- With some improvements in the data, countries are starting to gradually reopen parts of their economies.

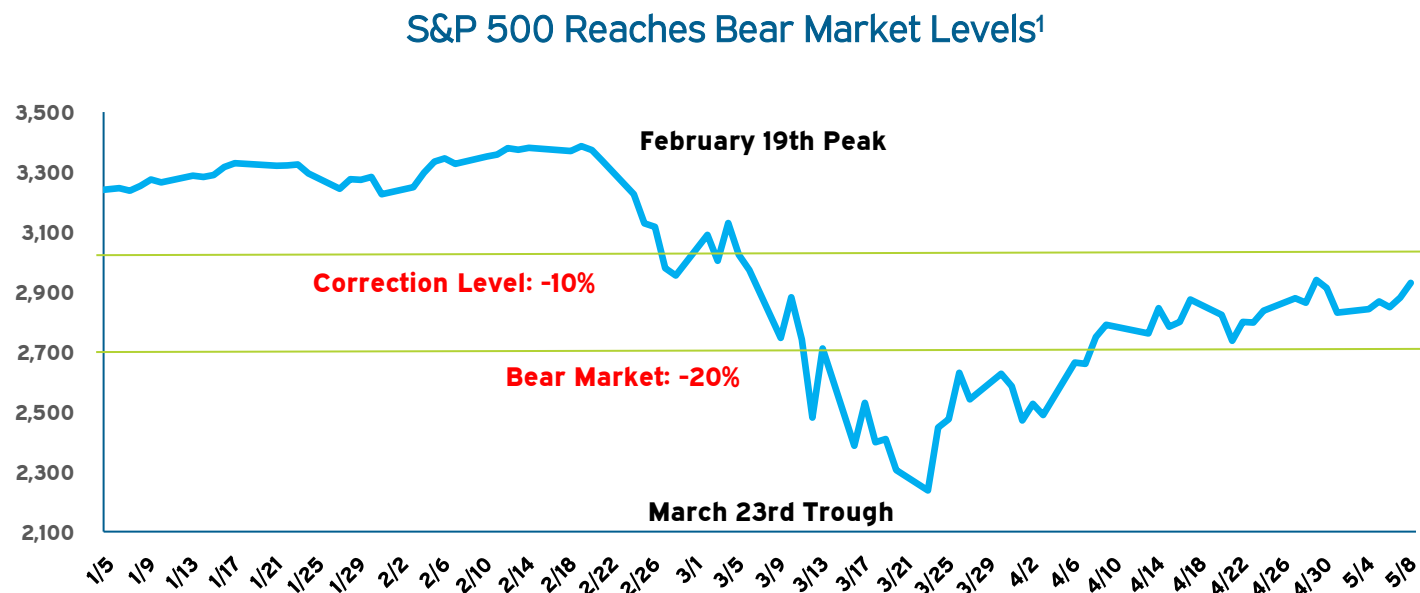
<sup>1</sup> Source: European CDC via Visual Capitalist. Data is as of May 12, 2020. Most data throughout the rest of the document is through May 8, 2020.

## Market Returns<sup>1</sup>

Indices	YTD	3 Year	5 Year	10 Year	20 Year
S&P 500	-8.7%	9.0%	8.9%	12.5%	5.7%
MSCI EAFE	-18.2%	-1.4%	-0.4%	4.6%	2.6%
MSCI Emerging Markets	-17.8%	-0.2%	-0.1%	2.3%	-
MSCI China	-4.5%	8.5%	2.3%	5.8%	--
Bloomberg Barclays Aggregate	4.5%	5.1%	3.8%	3.9%	5.2%
Bloomberg Barclays TIPS	4.5%	4.6%	3.3%	3.5%	5.5%
Bloomberg Barclays High Yield	-8.2%	2.1%	3.5%	6.2%	7.1%
10-year US Treasury	10.3%	7.2%	4.3%	5.2%	5.5%
30-year US Treasury	19.8%	14.9%	8.4%	9.5%	7.9%

- Given uncertainty related to the ultimate impact of the virus on economic growth, company profitability, and societal norms, many investors have sought perceived safe haven assets like US Treasuries.
- Initially, stocks experienced large declines, but fiscal and monetary authorities across the globe have deployed emergency measures to cushion huge economic losses; the S&P 500 has recovered by over 20% percent from its March lows.
- The 2020 decline in US stocks (S&P 500) brought 20-year returns to levels just slightly above US bonds (Bloomberg Barclays Aggregate), as this period also included the popping of the dot.com bubble and the GFC.
- By contrast, 10-year returns for the S&P 500 were 12.5%, far above the bond market's 3.9% annual return, indicating how dramatically long-term returns can shift.

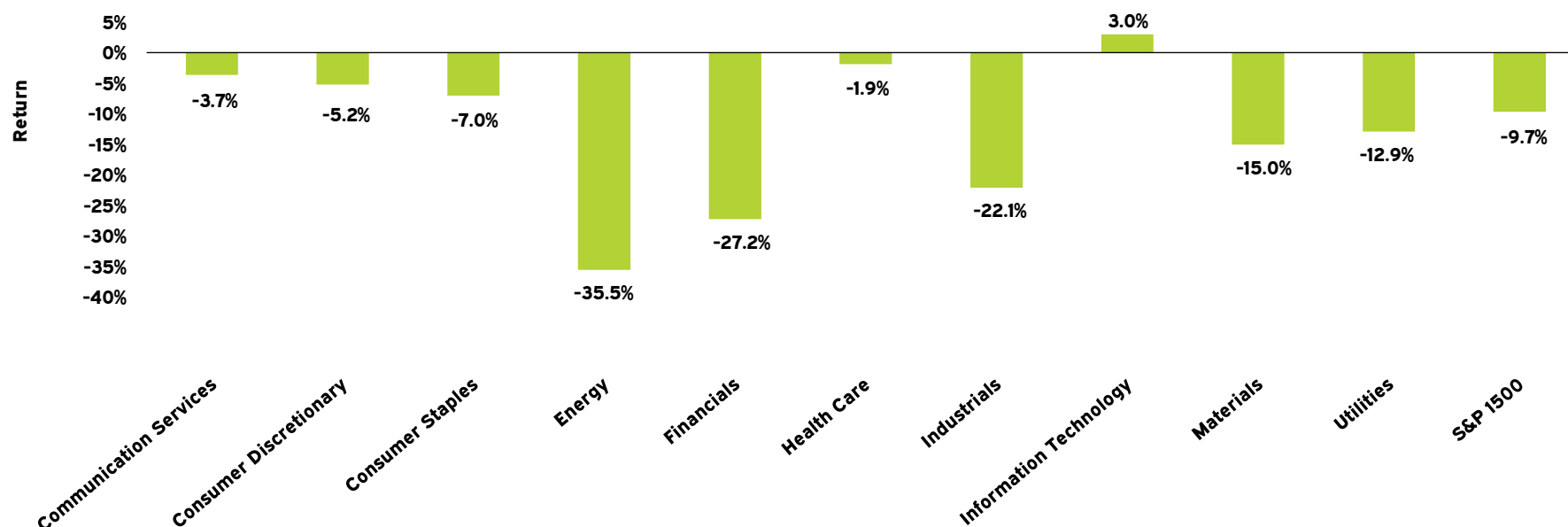
<sup>1</sup> Source: InvestorForce and Bloomberg. Data is as of May 8, 2020.



- Given the economic uncertainty surrounding the pandemic, US stocks declined from their recent peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 declined 34% in just 24 trading days.
- The index rebounded from its lows, likely due to the unprecedented monetary and fiscal stimulus announced in the US, improvements in virus data, and some economies reopening.
- It is unclear whether the US equity market has reached a bottom, or if the recent recovery is temporary, with more declines to come as the impact of COVID-19 on the economy becomes more apparent.

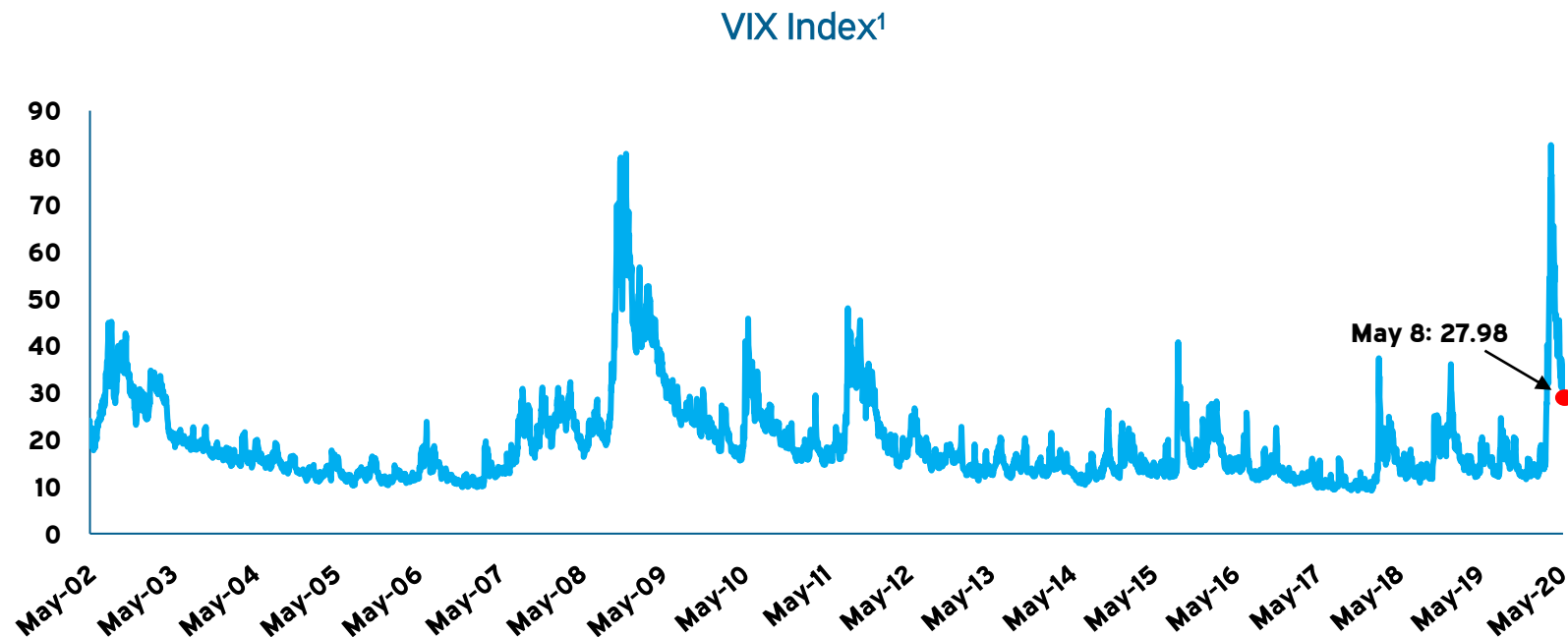
<sup>1</sup> Source: Bloomberg. Data is as of May 8, 2020.

### 2020 YTD Sector Returns<sup>1</sup>



- The energy sector has seen some improvements given the agreement between Saudi Arabia and Russia to cut supply and economies starting to gradually reopen, but it remains the sector with the greatest decline, triggered by the fall in oil prices.
- Financials, industrials, and materials experienced the next largest declines, while sectors like health care and consumer staples experienced smaller depreciation.
- Returns in the information technology sector recently turned positive as consumers moved to online purchases and entertainment under the stay-at-home restrictions.

<sup>1</sup> Source: Bloomberg. Data is as of May 8, 2020.



- Given the recent fiscal and monetary support and corresponding improvement in investor risk sentiment, expectations of short-term volatility, as measured by the VIX index, continue to decline from record levels but remains elevated.
- At the recent height, the VIX index reached 82.7, surpassing the pinnacle of volatility during the GFC, showing the magnitude of the crisis, and of investor fear.
- Going forward there is the risk of additional spikes in volatility, as investors continue to process the impacts of COVID-19 and the effectiveness of the policy response.

<sup>1</sup> Source: Chicago Board of Exchange. Data is as of May 8, 2020.



## Global Financial Crisis Comparison

2007-2009 Global Financial Crisis		COVID-19 Crisis
Primary Causes	<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>

2007-2009 Global Financial Crisis		COVID-19 Crisis
Fiscal Measures	<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
Monetary Measures		
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** COVID-19 Crisis response has been materially larger than 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 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.

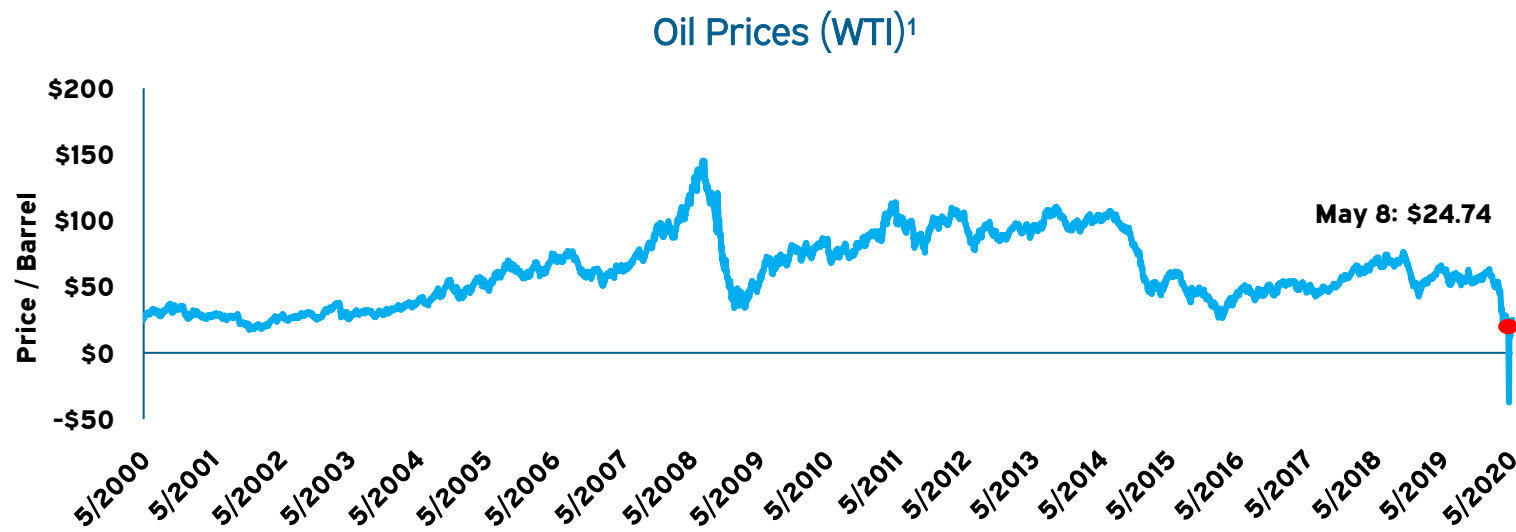
## Historic \$2T US Fiscal Stimulus

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 are actively receiving 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.
- Other parts of the package include allocations to state and local governments, support for public health, student loan relief, and a safety net.
- Recently, the next round of fiscal stimulus was approved with the majority targeted to replenish the depleted small business lending program.

## Policy Responses

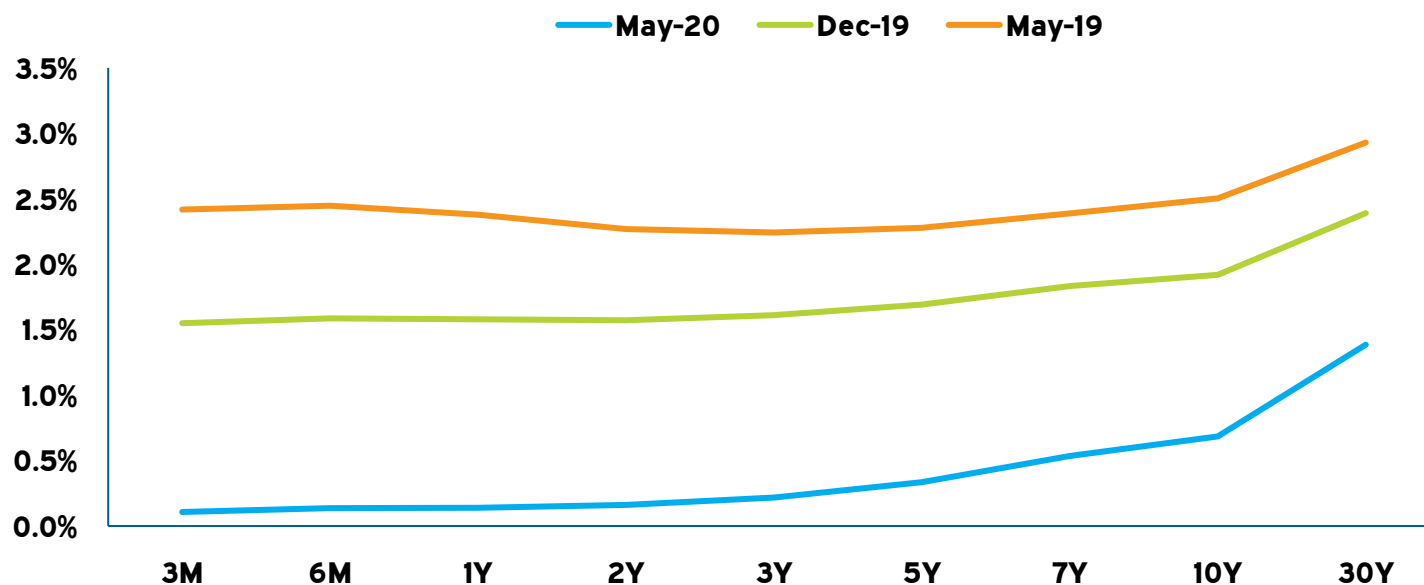
	Fiscal	Monetary
United States	\$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, \$2 trillion package for individuals, businesses, and state/local governments. Additional \$484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, unlimited QE4, offering trillions in repo market funding, restarted CPFF, PDCF, MMMF programs to support lending and financing market, 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	Germany: Launched 750 billion euro stimulus package. France: 45 billion euro for workers, guaranteed up to 300 billion euro in corporate borrowing. Italy: 25 billion euro emergency decree, suspending mortgage payments for impacted workers. 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	\$20 billion in small business loans, direct funding program to stop virus spread among nursing homes and those affected by school closures, discussion of additional relief in the coming months, and \$240 billion supplementary spending (pending).	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.
Canada	\$7.1 billion in loans to businesses to help with virus damage.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	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.



- Recently, in an unprecedented move, oil prices plunged to negative levels on concerns over storage capacity in the US. This led to producers having to pay to offload their oil for May delivery.
- Negative prices were driven by the futures market that requires physical delivery of oil at contract expirations. As the May expiration date approached, traders sold the contracts given extremely low demand and storage constraints. Prices have since moved back into positive territory, but the risk of a similar dynamic remains as the June expiration date approaches.
- Prior to this, oil markets were already under pressure as the virus lowered global growth expectations, and prices deteriorated further when Saudi Arabia initiated a price war after Russia's decision to not participate in the proposed OPEC+ supply cuts. Russia ultimately agreed to participate and this, along with optimism over economies starting to reopening, provided some support to oil recently.

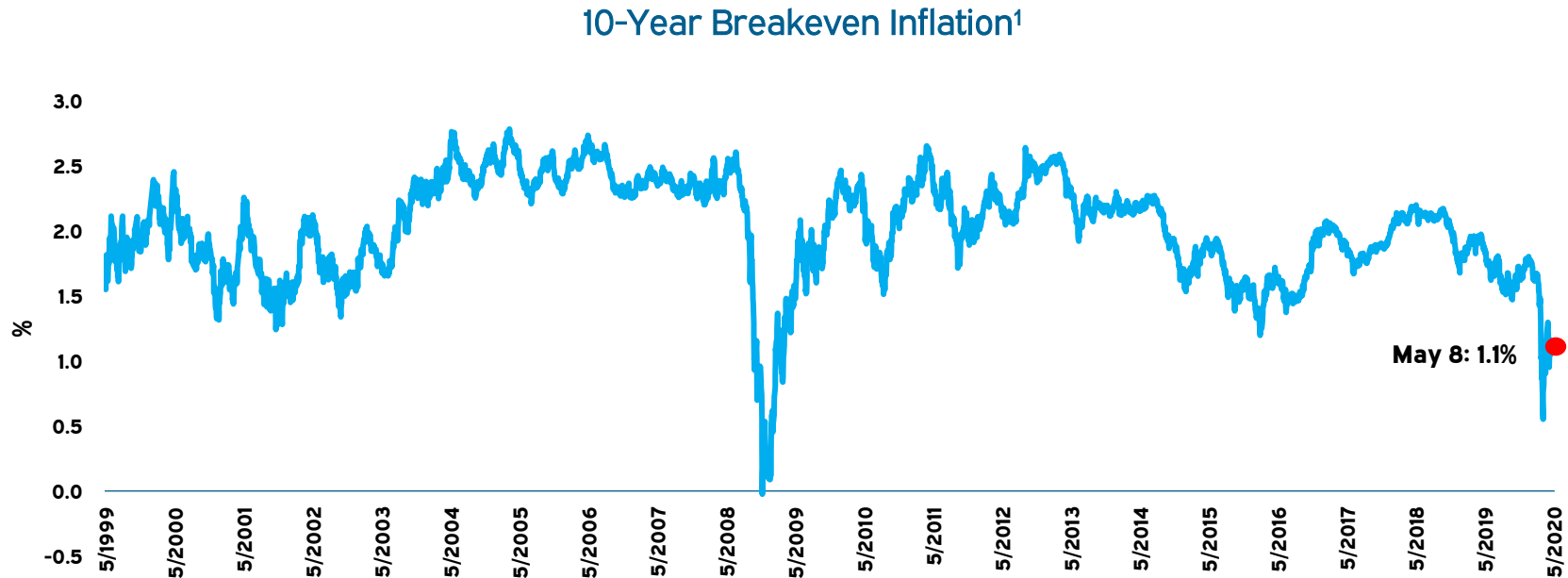
<sup>1</sup> Source: Bloomberg. Represents WTI first available futures contract. Data is as of May 8, 2020.

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



- The US Treasury yield curve has declined materially since last year.
- Cuts in monetary policy rates lowered yields in shorter maturities, while flight-to-quality flows, low inflation, and lower growth expectations, particularly given indications that economic growth could slow by record amounts, have driven the changes in longer-dated maturities.
- The Federal Reserve's unlimited quantitative easing purchase program has provided further downward pressure on interest rates.

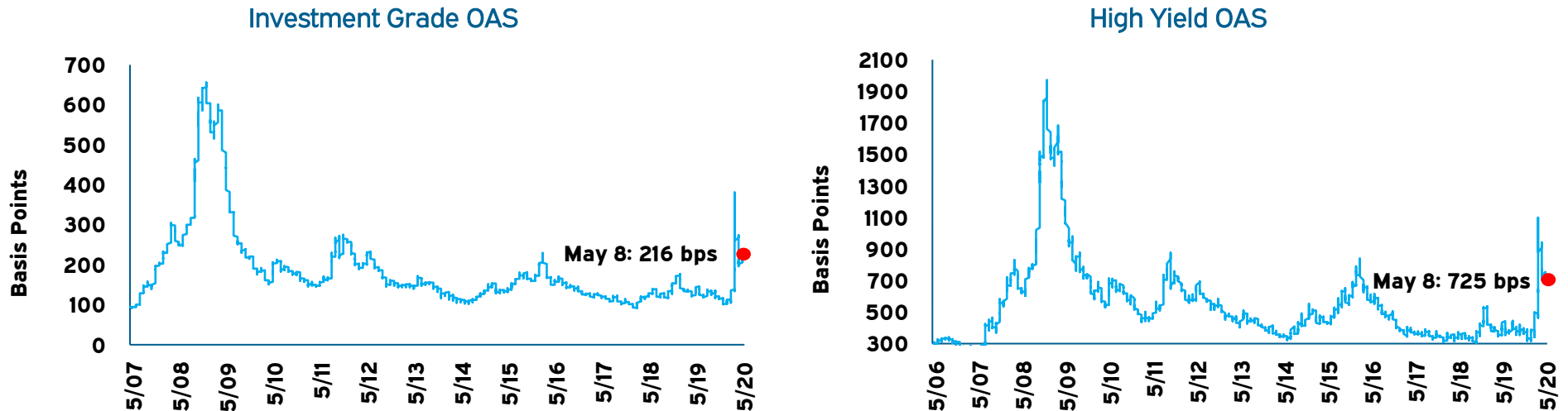
<sup>1</sup> Source: Bloomberg. Data is as of May 8, 2020.



- Inflation breakeven rates declined sharply over the last two months, due to a combination of declines in inflation expectations and liquidity dynamics in TIPS during the height of rate volatility.
- As liquidity improved, and given the potential longer term inflationary effects of the unprecedented US fiscal and monetary responses, inflation expectation levels have come off of their recent lows, but remain well below historical averages.

<sup>1</sup> Source: Bloomberg. Data is as of May 8, 2020.

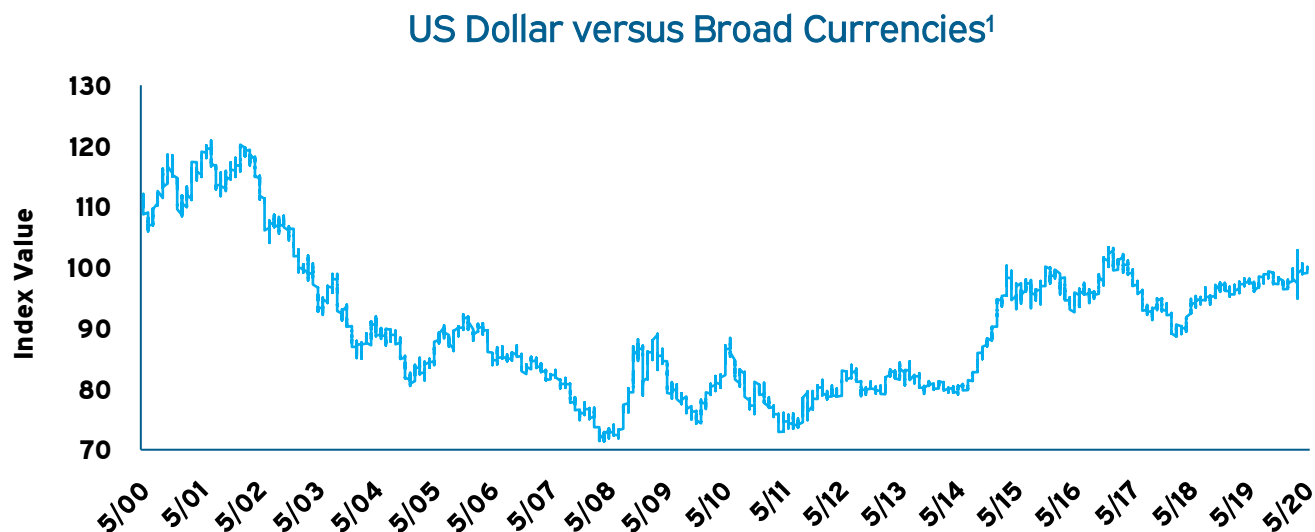
### Credit Spreads (High Yield & Investment Grade)<sup>1</sup>



- 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 much 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.
- 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 a large portion of the high yield bond market.

<sup>1</sup> Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of May 8, 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.
- 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.
- A relatively strong US dollar makes US goods more expensive for overseas consumers and causes commodity prices outside the US to rise, affecting foreign countries, and particularly emerging markets.
- 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.

<sup>1</sup> Source: Bloomberg. Represents the DXY Index. Data is as of May 8, 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.

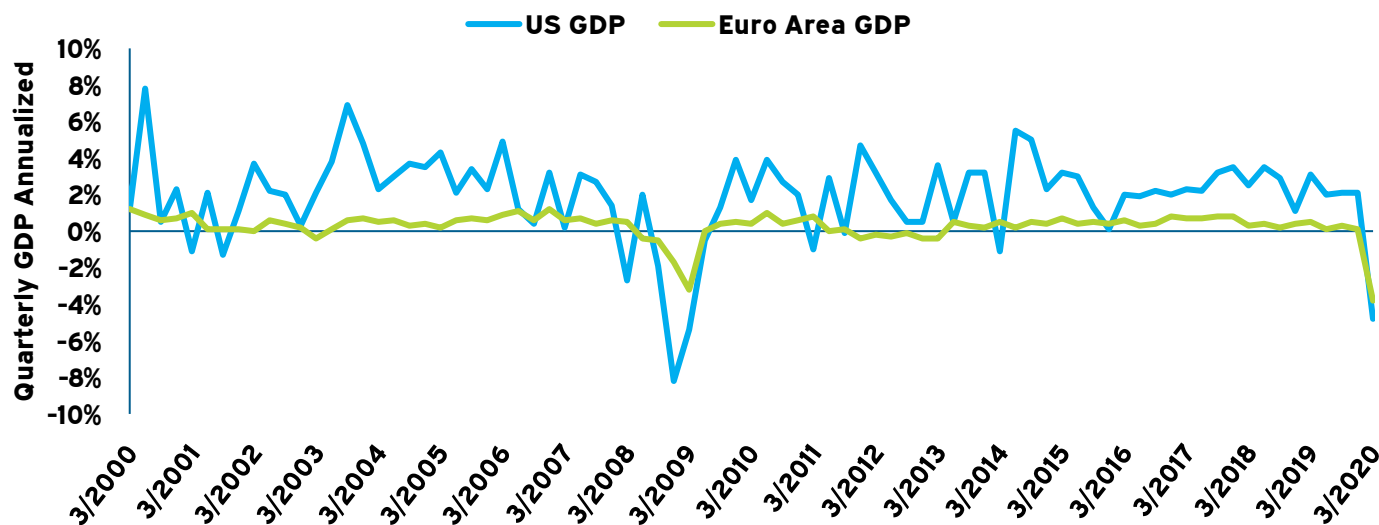
### Declines in Business and Consumer Sentiment:

- 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 First Signs of Crisis<sup>1</sup>

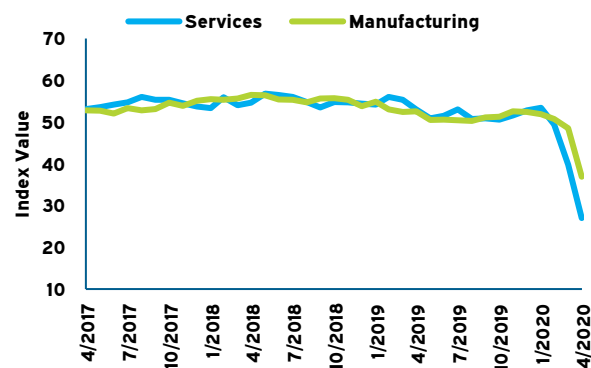


- The global economy faces major recessionary pressures this year, but optimism remains for improvements in 2021 as economies are expected to gradually reopen.
- In the US, initial estimates for first quarter GDP came in at -4.8%, with personal consumption declining the most since 1980. Eurozone GDP also fell (-3.8%) with the major economies in France, Spain and Italy experiencing historic declines.
- Going forward, Bloomberg Economics estimates that second quarter global GDP could experience further declines and be as low as -9%.

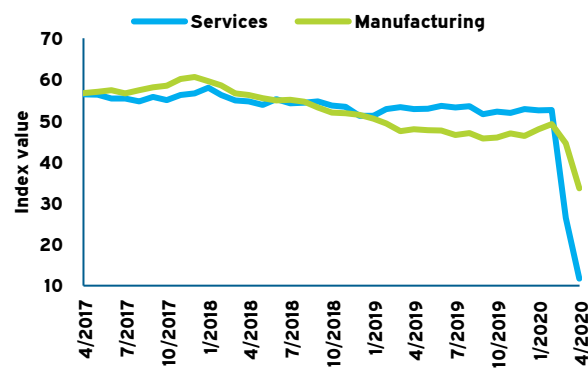
<sup>1</sup> Source: Bloomberg. Q1 2020 data represents first estimate of GDP for Euro Area and United States.

### Global PMIs

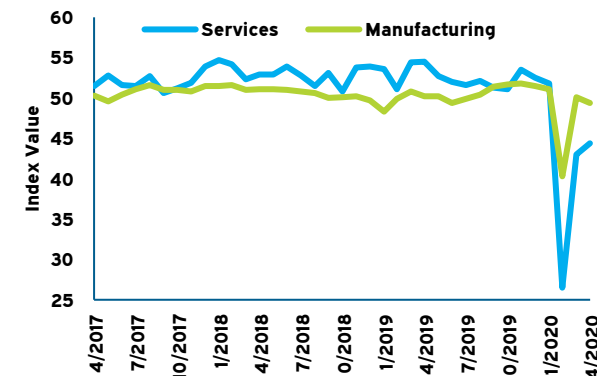
US PMI<sup>1</sup>



Eurozone PMI<sup>2</sup>



China PMI<sup>3</sup>

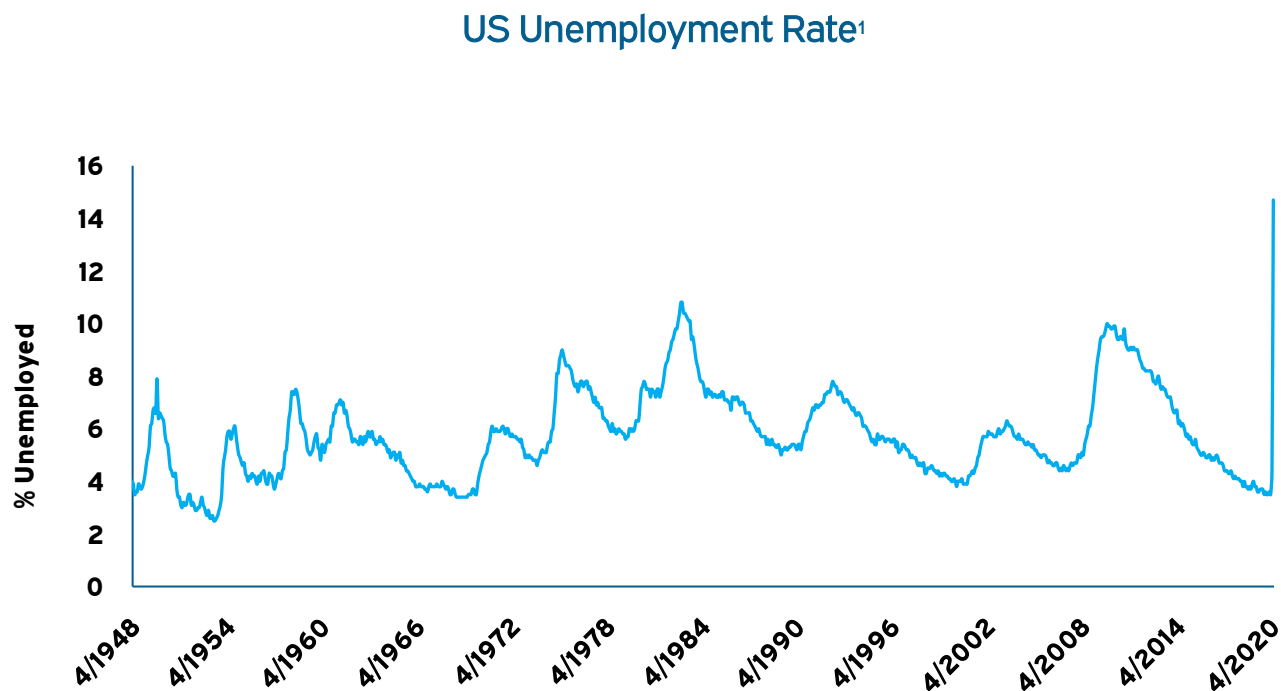


- Purchasing Managers Indices (PMI) based on surveys of private sector companies, collapsed across the world to record lows, as output, new orders, production, and employment have been materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector has been particularly hard hit given the stay at home restrictions in many places.

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

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

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

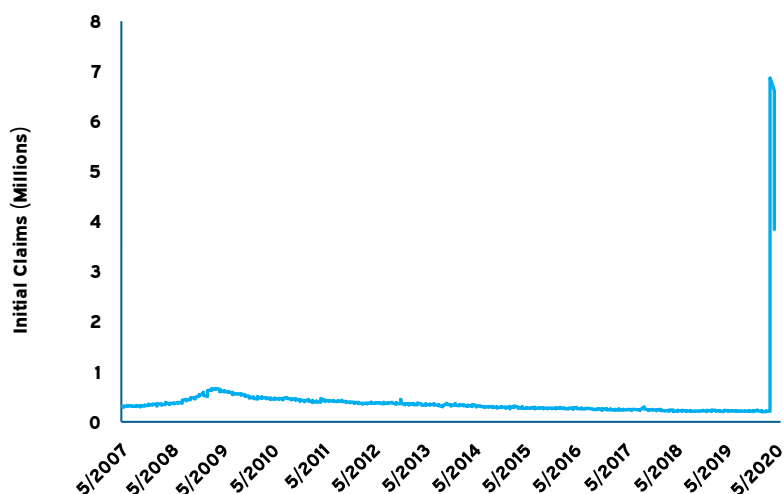


- The April reading of unemployment came in at 14.7%, slightly below estimates of 16%, but representing the highest level since the Great Depression.
- The Bureau of Labor Statistics commented in their release that a large number of workers were likely being misclassified as “employed but absent from work” versus “unemployed on temporary layoff” and that the unemployment rate was probably close to 5% higher than reported.

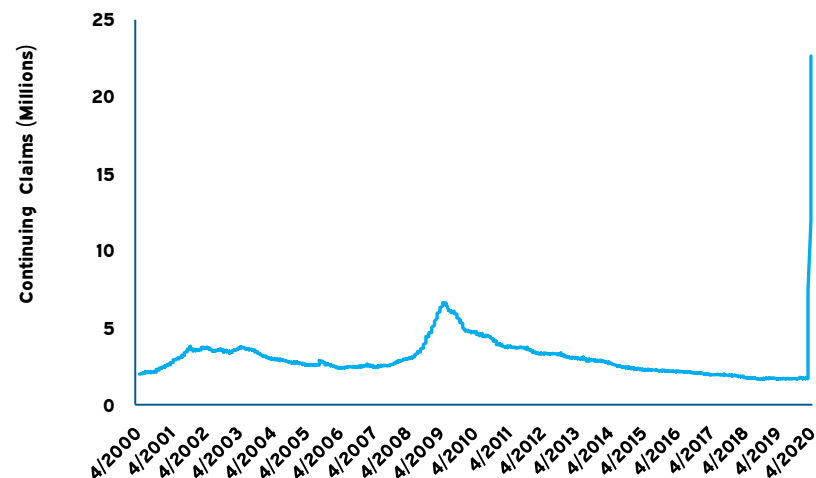
<sup>1</sup> Source: Bloomberg. Data is as of April 30, 2020.

### US Jobless Claims

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



Continuing Claims<sup>2</sup>



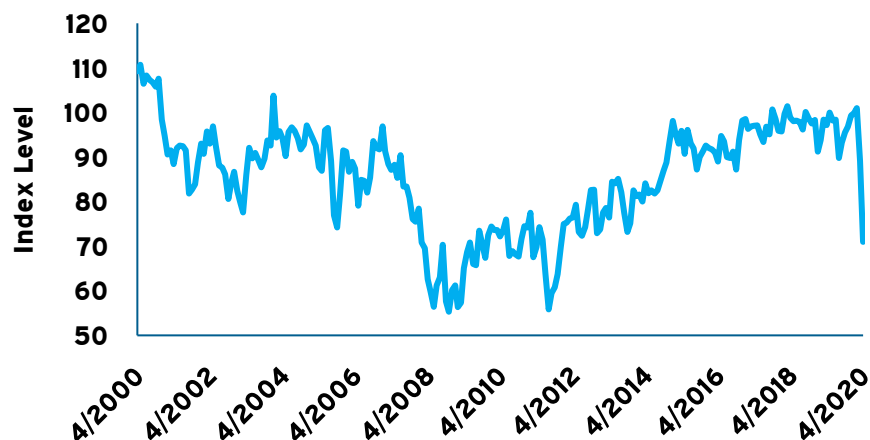
- Over the last seven weeks, over 33 million people filed for initial unemployment. This level exceeds the 22 million jobs added since the GFC, highlighting just how unprecedented the impact of the virus is.
- Continuing jobless claims (i.e., those currently receiving benefits) also spiked to a record level of 22.6 million people.

<sup>1</sup> Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of April 25, 2020.

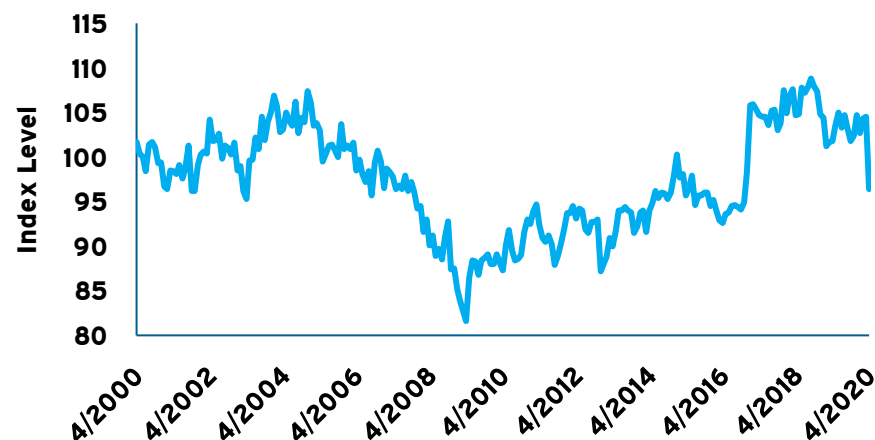
<sup>2</sup> Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of April 24, 2020.

### Sentiment Indicators

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



Small Business Confidence<sup>2</sup>

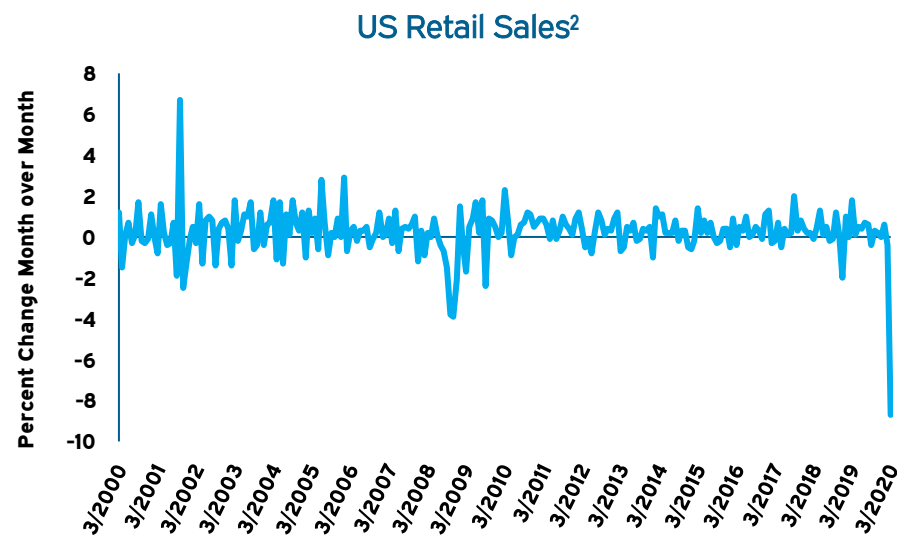
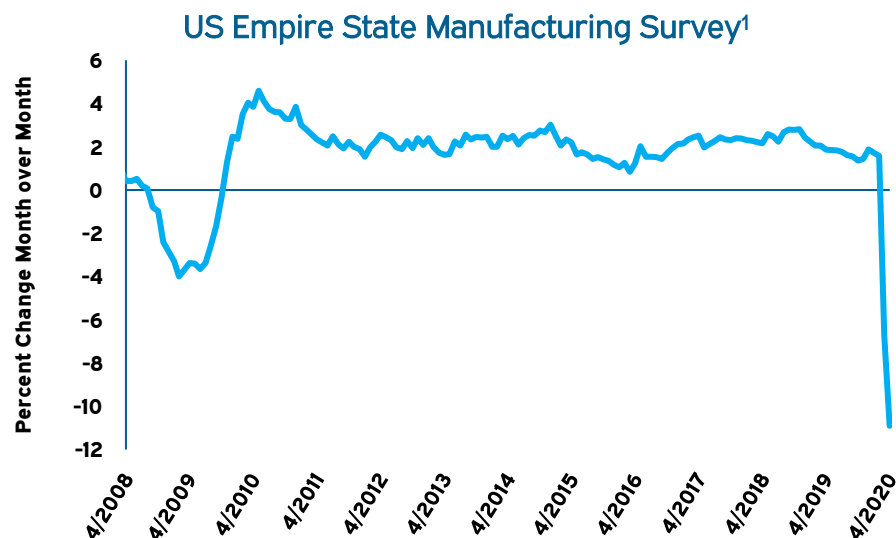


- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of future economic growth. Additionally, small businesses comprise a majority of the economy, making sentiment in that segment important too.
- As restrictions caused many businesses to close and employees to be laid off, sentiment indicators have seen corresponding declines with potentially more to come as the impact of the virus evolves.

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

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

### Cracks Starting to Show in Q2 US Data



- Manufacturing in New York during March declined at the fastest pace on record, falling 78.2%, the lowest on record dating back to 2001, with readings below zero indicating economic contraction.
- March US retail sales also fell by a record amount (-8.7%), more than double the prior -3.8% record, set during November 2008. Declines were led by clothing and accessories store sales which fell more than 50% from the previous month.

<sup>1</sup> Source: Bloomberg. Data is as of April 30, 2020 and represents the US Empire State Manufacturing Survey General Business Conditions SA.

<sup>2</sup> Source: Bloomberg. Data is as of March 31, 2020 and represents the adjusted Retail Sales SA Monthly % Change.



## Government Re-Opening Recommendation<sup>1</sup>

Phase One	Phase Two	Phase Three
<ul style="list-style-type: none"> <li>• Vulnerable individuals continue to stay at home.</li> <li>• Avoid groups of more than 10 people if social distancing is not possible.</li> <li>• Minimize non-essential travel.</li> <li>• Work remotely if possible with restrictions in the office for those businesses that open.</li> <li>• Schools remain closed, but some larger venues can open with strict protocols.</li> <li>• Outpatient elective surgeries can resume.</li> </ul>	<ul style="list-style-type: none"> <li>• Vulnerable individuals continue to stay at home.</li> <li>• Avoid groups of more than 50 people if social distancing is not possible.</li> <li>• Non-essential travel resumes.</li> <li>• Continue to work remotely if possible with restrictions in the office for those businesses that open.</li> <li>• Schools can reopen.</li> <li>• Inpatient elective surgeries can resume</li> </ul>	<ul style="list-style-type: none"> <li>• Vulnerable individuals can return to public life with social distancing.</li> <li>• Workplaces can reopen without restrictions.</li> <li>• Larger venues can operate under reduced social distancing protocols.</li> </ul>

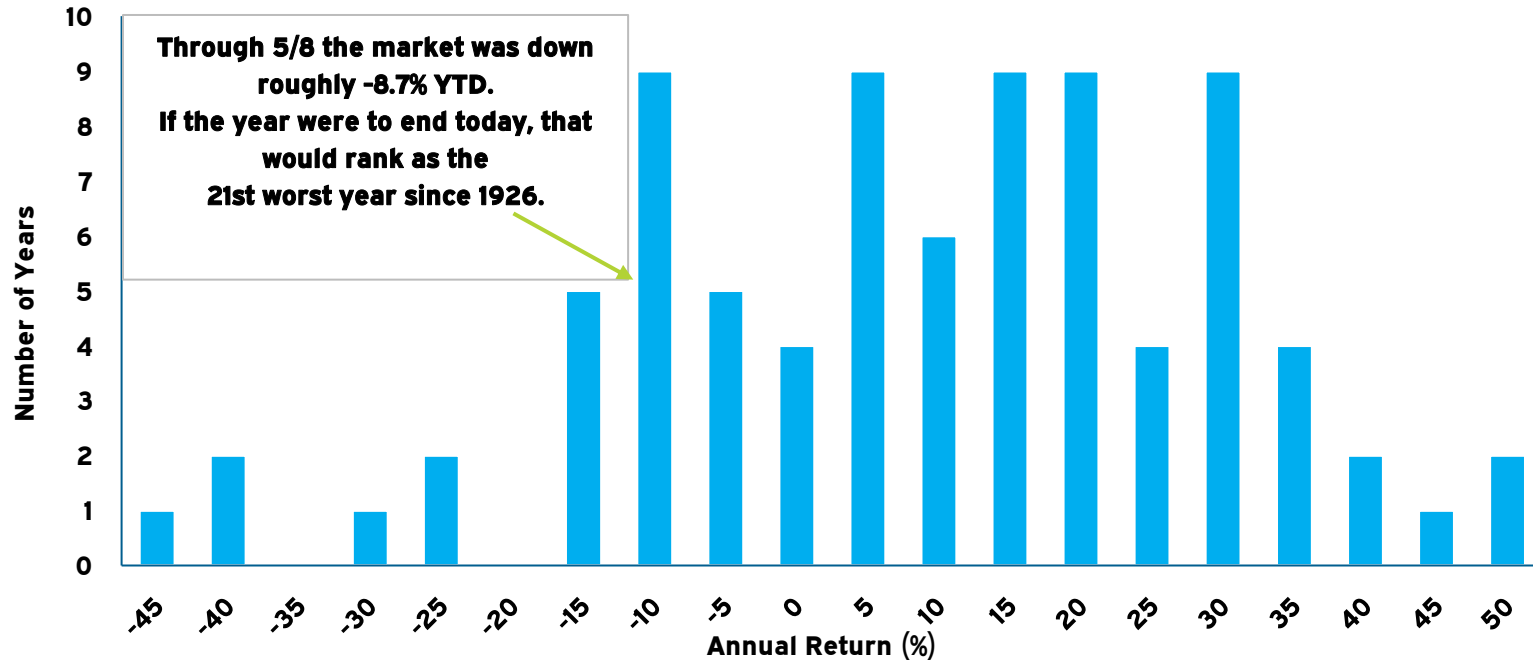
- The Trump administration recently announced guidelines for re-opening the US economy.
- Guidelines recommend states document a “downward trajectory” in new cases for two weeks before beginning a three-phase process to scale back distancing measures and reopen local economies.
- States should also document an additional two-week period decline in instances between each of the three phases, and be prepared to reinstate social distancing measures should cases rebound.
- Recently, some states have begun the reopening process, with others considering to start the process soon.

<sup>1</sup> Source: <https://www.whitehouse.gov/openingamerica/>

### 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; however, impacted countries are attempting to lay the groundwork to support a recovery.
- Central banks and governments are pledging support, but will it be enough?
  - Based on initial market reactions to announced policies, the answer is no, until the virus gets better contained.
- Expect heightened market volatility given the virus and previous high valuations.
  - This has been a consistent theme over the last weeks; 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.

Distribution of Annual S&P 500 Returns<sup>1</sup>  
(1926-2020)



- The -8.7% year-to-date decline (through 5/8) in the S&P 500 would be the twenty-first largest in modern history if it ended the year at this level.
- With around eight months remaining in 2020, and trillions of dollars in fiscal and monetary stimulus deployed, we expect asset prices to experience notable volatility over the near term.

<sup>1</sup> Source: Bloomberg. Data is as of May 8, 2020.

## 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 May 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>

- Markets are continuing to reprice amid the uncertain impact of the virus on markets and the global 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.
- The current decline is severe, and it is still too early to tell how long a full recovery might take.

<sup>1</sup> Source: Goldman Sachs. Recent peak to trough declines are through May 8, 2020.

### Implications for Clients

- Be prepared to rebalance and take advantage of the age-old wisdom “buy low, sell high”.
  - Before rebalancing, consider changes in liquidity needs given the potential for inflows to decline in some cases.
  - Also, consider the cost of rebalancing as 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 May 8, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio <sup>1</sup>
-8.7%	-18.1%	4.5%	-7.3%

- 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.
  - We would be glad to assist with performance estimates, memorandums, or phone calls.

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

## **Retirement System Update**

### **As of May 20, 2020**

## Executive Summary

- At the last Board meeting, the trustees approved a two-step process to a more aggressive asset allocation.
  - The Growth/Equity would increase from the current target of 50% to 57%, and then to 65%
  - High Grade Bonds would decrease from the current target 32% to 20%, and then to 12%
- On March 20, 2020, Meketa made the first re-balance from TIPS to Equity. \$8 million TIPS were sold; \$5 million was used to buy the S&P 500 Index Fund and \$3 million was used to buy the EAFE Index Fund.
- Equity markets recovered sharply from the re-balance date, which did not give us an additional opportunity to add more to Equities.
- Due to the additional \$8 million invested in Equities and the strong subsequent Equity returns, the System's Equity weight is slightly more than held at the end of Q4 2019. As of May 20, 2020, the Equity weight in the System was at 53%. This is an overweight from the current target of 50%, and approximately half way to Step One's target of 57%.

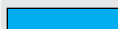



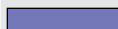





## Performance Update



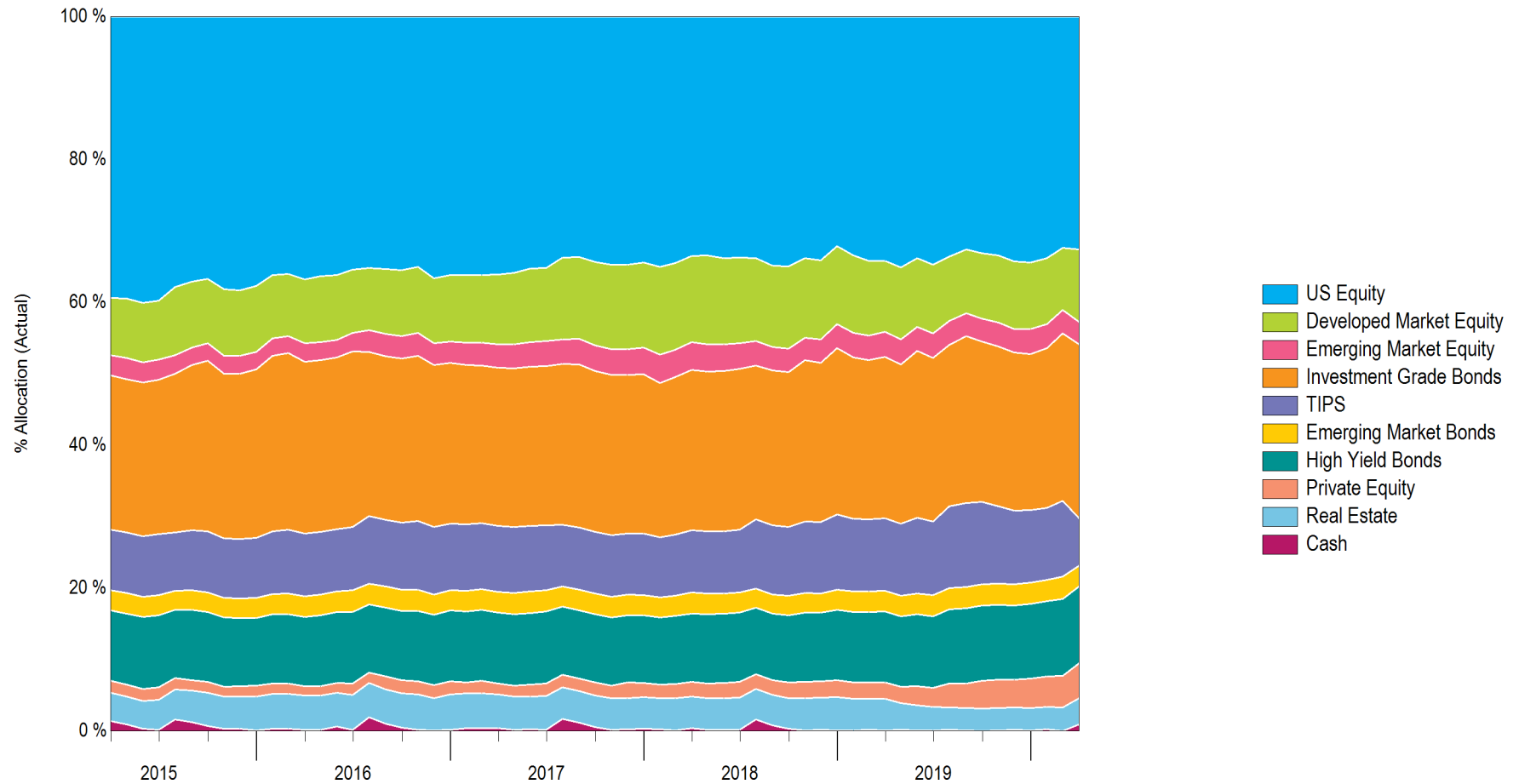
	Allocation vs. Targets and Policy				
	Current Balance	Current Allocation	Policy	Over/Under	Policy Range
US Equity	\$60,807,196	34.9%	33%	1.9%	28%-38%
Developed Market Equity	\$17,799,612	10.2%	9%	1.2%	5%-13%
Emerging Market Equity	\$5,495,767	3.1%	3%	0.1%	1%-5%
Investment Grade Bonds	\$40,230,668	23.1%	22%	1.1%	17%-27%
TIPS	\$11,071,516	6.3%	10%	-3.7%	7%-13%
Emerging Market Bonds	\$5,106,433	2.9%	3%	-0.1%	1%-5%
High Yield Bonds	\$18,544,991	10.6%	10%	0.6%	7%-13%
Private Equity	\$7,980,743	4.6%	5%	-0.4%	3%-7%
Real Estate	\$5,881,847	3.4%	5%	-1.6%	2%-8%
Cash	\$1,562,548	0.9%	0%	0.9%	0%-5%
<b>Total</b>	<b>\$174,481,321</b>				

	Performance Estimate				
	MTD (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)
Total Fund Aggregate (Net)	1.4%	7.7%	-5.9%	3.2%	4.0%
55% MSCI World/45% Barclays Aggregate	1.2%	8.1%	-3.4%	6.8%	5.3%

## **Retirement System Summary**

Allocation vs. Targets and Policy				
	Current Balance	Current Allocation	Policy	Policy Range
 US Equity	\$52,756,691	33%	33%	28% - 38%
 Developed Market Equity	\$16,519,643	10%	9%	5% - 13%
 Emerging Market Equity	\$4,964,002	3%	3%	1% - 5%
 Investment Grade Bonds	\$39,471,826	24%	22%	17% - 27%
 TIPS	\$10,726,999	7%	10%	7% - 13%
 Emerging Market Bonds	\$4,730,708	3%	3%	1% - 5%
 High Yield Bonds	\$17,400,182	11%	10%	7% - 13%
 Private Equity	\$7,980,743	5%	5%	3% - 7%
 Real Estate	\$5,881,847	4%	5%	2% - 8%
 Cash	\$1,562,392	1%	0%	0% - 5%
<b>Total</b>	<b>\$161,995,031</b>	<b>100%</b>	<b>100%</b>	

#### Asset Allocation History 5 Years Ending March 31, 2020



Asset Class Performance Summary										
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>Total Retirement System (net)</b>	<b>161,995,031</b>	<b>100.0</b>	<b>-12.6</b>	<b>-4.7</b>	<b>2.1</b>	<b>3.2</b>	<b>6.0</b>	<b>5.3</b>	<b>7.2</b>	<b>Jul-88</b>
55% MSCI World & 45% Barclays Aggregate			-10.6	-1.6	3.5	3.6	5.6	4.4	6.7	Jul-88
Consumer Price Index			0.4	1.5	1.9	1.8	1.7	2.1	2.5	Jul-88
InvMetrics Public DB \$50mm-\$250mm Net Median			-13.8	-5.4	2.7	3.3	6.1	5.0	8.1	Jul-88
InvMetrics Public DB \$50mm-\$250mm Net Rank			29	34	66	56	55	24	75	Jul-88
<b>Domestic Equity Assets (net)</b>	<b>52,756,691</b>	<b>32.6</b>	<b>-25.9</b>	<b>-16.2</b>	<b>-0.1</b>	<b>3.1</b>	<b>8.7</b>	<b>4.0</b>	<b>6.0</b>	<b>Oct-06</b>
Russell 3000			-20.9	-9.1	4.0	5.8	10.1	4.9	7.1	Oct-06
PRIT Domestic Equity			-21.4	-10.2	3.6	5.4	9.8	4.5	6.0	Oct-06
<b>International Developed Markets Equity Assets (net)</b>	<b>16,519,643</b>	<b>10.2</b>	<b>-22.6</b>	<b>-14.0</b>	<b>-1.6</b>	<b>-0.4</b>	<b>2.0</b>	<b>--</b>	<b>1.1</b>	<b>Oct-06</b>
MSCI EAFE			-22.8	-14.4	-1.8	-0.6	2.7	2.0	1.4	Oct-06
<b>International Emerging Markets Equity Assets (net)</b>	<b>4,964,002</b>	<b>3.1</b>	<b>-24.5</b>	<b>-16.9</b>	<b>-1.4</b>	<b>0.1</b>	<b>--</b>	<b>--</b>	<b>0.5</b>	<b>Jan-15</b>
MSCI Emerging Markets			-23.6	-17.7	-1.6	-0.4	0.7	5.2	0.1	Jan-15
<b>Investment Grade Bonds Assets (net)</b>	<b>39,471,826</b>	<b>24.4</b>	<b>2.8</b>	<b>8.6</b>	<b>4.7</b>	<b>3.3</b>	<b>3.9</b>	<b>5.0</b>	<b>6.2</b>	<b>Jul-88</b>
BBgBarc US Aggregate TR			3.1	8.9	4.8	3.4	3.9	5.1	6.2	Jul-88
PRIT Core Fixed Income			7.7	15.4	7.3	4.2	5.5	5.8	7.0	Jul-88
<b>High Yield Bond Assets (net)</b>	<b>17,400,182</b>	<b>10.7</b>	<b>-11.4</b>	<b>-5.4</b>	<b>1.2</b>	<b>2.3</b>	<b>5.2</b>	<b>--</b>	<b>5.9</b>	<b>Sep-03</b>
BBgBarc US High Yield TR			-12.7	-6.9	0.8	2.8	5.6	6.5	6.8	Sep-03
PRIT Public Value-Added Fixed Income			-13.6	-9.0	-0.8	1.2	3.1	--	5.3	Sep-03
<b>TIPS Assets (net)</b>	<b>10,726,999</b>	<b>6.6</b>	<b>1.6</b>	<b>6.7</b>	<b>3.4</b>	<b>2.6</b>	<b>3.4</b>	<b>--</b>	<b>3.8</b>	<b>Oct-05</b>
BBgBarc US TIPS TR			1.7	6.9	3.5	2.7	3.5	5.4	3.8	Oct-05

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Market Debt Assets (net)</b>	<b>4,730,708</b>	<b>2.9</b>	<b>-15.2</b>	<b>-8.7</b>	<b>-0.4</b>	<b>2.2</b>	<b>--</b>	<b>--</b>	<b>2.5</b>	<b>Jan-15</b>
<i>JP Morgan EMBI Global Diversified</i>			<i>-13.4</i>	<i>-6.8</i>	<i>0.4</i>	<i>2.8</i>	<i>4.9</i>	<i>7.8</i>	<i>3.1</i>	<i>Jan-15</i>
<b>Open-Ended Real Estate (net)</b>	<b>5,823,458</b>	<b>3.6</b>	<b>1.4</b>	<b>6.6</b>	<b>7.9</b>	<b>9.2</b>	<b>12.2</b>	<b>7.2</b>	<b>8.1</b>	<b>Oct-95</b>
<i>NCREIF ODCE</i>			<i>1.0</i>	<i>4.9</i>	<i>6.8</i>	<i>8.5</i>	<i>11.4</i>	<i>8.1</i>	<i>9.0</i>	<i>Oct-95</i>
<b>Total Closed End Real Estate (net)</b>	<b>58,389</b>	<b>0.0</b>								
<b>Private Equity Assets (net)</b>	<b>7,980,743</b>	<b>4.9</b>								
<b>Cash (net)</b>	<b>1,562,392</b>	<b>1.0</b>								

	Trailing Performance										Inception (%)	Inception Date
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)			
<b>Total Retirement System</b>	<b>161,995,031</b>	<b>100.0</b>	<b>--</b>	<b>-12.6</b>	<b>-4.6</b>	<b>2.3</b>	<b>3.3</b>	<b>6.0</b>	<b>5.4</b>	<b>7.2</b>	<b>Jul-88</b>	
55% MSCI World & 45% Barclays Aggregate				-10.6	-1.6	3.5	3.6	5.6	4.4	6.7	Jul-88	
Consumer Price Index				0.4	1.5	1.9	1.8	1.7	2.1	2.5	Jul-88	
<b>Domestic Equity Assets</b>	<b>52,756,691</b>	<b>32.6</b>	<b>32.6</b>	<b>-25.8</b>	<b>-16.0</b>	<b>0.1</b>	<b>3.2</b>	<b>8.7</b>	<b>4.0</b>	<b>6.0</b>	<b>Oct-06</b>	
Russell 3000				-20.9	-9.1	4.0	5.8	10.1	4.9	7.1	Oct-06	
PRIT Domestic Equity				-21.4	-10.2	3.7	5.5	9.9	4.6	6.1	Oct-06	
RhumbLine S&P 500 Index	20,695,469	12.8	39.2	-19.6	-7.0	5.1	6.7	10.5	4.9	5.6	Mar-99	
S&P 500				-19.6	-7.0	5.1	6.7	10.5	4.8	5.6	Mar-99	
Fiduciary Large Cap Equity	19,926,015	12.3	37.8	-23.4	-14.3	1.1	3.5	--	--	8.2	Sep-12	
Russell 3000				-20.9	-9.1	4.0	5.8	10.1	4.9	10.2	Sep-12	
Frontier Capital Appreciation	12,135,207	7.5	23.0	-35.8	-27.8	-6.7	-1.7	--	--	5.2	Feb-13	
Russell 2500 Growth				-23.2	-14.4	3.4	3.6	10.1	4.5	8.6	Feb-13	
<b>International Developed Markets Equity Assets</b>	<b>16,519,643</b>	<b>10.2</b>	<b>10.2</b>	<b>-22.6</b>	<b>-14.0</b>	<b>-1.6</b>	<b>-0.4</b>	<b>2.0</b>	<b>--</b>	<b>1.1</b>	<b>Oct-06</b>	
MSCI EAFE				-22.8	-14.4	-1.8	-0.6	2.7	2.0	1.4	Oct-06	
Rhumblin MSCI EAFE Index	16,519,643	10.2	100.0	-22.7	-14.1	-1.6	-0.4	--	--	-0.9	Aug-14	
MSCI EAFE				-22.8	-14.4	-1.8	-0.6	2.7	2.0	-1.1	Aug-14	



	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>International Emerging Markets Equity Assets</b>	<b>4,964,002</b>	<b>3.1</b>	<b>3.1</b>	<b>-24.5</b>	<b>-16.9</b>	<b>-1.4</b>	<b>0.1</b>	<b>--</b>	<b>--</b>	<b>0.5</b>	<b>Jan-15</b>
<i>MSCI Emerging Markets</i>				-23.6	-17.7	-1.6	-0.4	0.7	5.2	0.1	Jan-15
DFA Emerging Markets	2,228,566	1.4	44.9	-28.3	-23.4	-5.4	-2.0	--	--	-1.6	Jan-15
<i>MSCI Emerging Markets</i>				-23.6	-17.7	-1.6	-0.4	0.7	5.2	0.1	Jan-15
Driehaus Emerging Market Equity	2,735,436	1.7	55.1	-21.0	-10.7	2.5	2.0	--	--	2.5	Jan-15
<i>MSCI Emerging Markets</i>				-23.6	-17.7	-1.6	-0.4	0.7	5.2	0.1	Jan-15
<b>Investment Grade Bonds Assets</b>	<b>39,471,826</b>	<b>24.4</b>	<b>24.4</b>	<b>2.8</b>	<b>8.6</b>	<b>4.7</b>	<b>3.3</b>	<b>3.9</b>	<b>5.0</b>	<b>6.2</b>	<b>Jul-88</b>
<i>BBgBarc US Aggregate TR</i>				3.1	8.9	4.8	3.4	3.9	5.1	6.2	Jul-88
<i>PRIT Core Fixed Income</i>				7.7	15.5	7.4	4.3	5.7	5.9	7.2	Jul-88
SSgA U.S. Aggregate Bond Index	39,471,826	24.4	100.0	3.1	8.8	4.8	3.4	3.9	--	4.8	May-01
<i>BBgBarc US Aggregate TR</i>				3.1	8.9	4.8	3.4	3.9	5.1	4.7	May-01
<b>High Yield Bond Assets</b>	<b>17,400,182</b>	<b>10.7</b>	<b>10.7</b>	<b>-11.3</b>	<b>-4.9</b>	<b>1.6</b>	<b>2.7</b>	<b>5.4</b>	<b>--</b>	<b>6.0</b>	<b>Sep-03</b>
<i>BBgBarc US High Yield TR</i>				-12.7	-6.9	0.8	2.8	5.6	6.5	6.8	Sep-03
<i>PRIT Public Value-Added Fixed Income</i>				-13.5	-8.6	-0.4	1.7	3.5	--	5.7	Sep-03
Shenkman Capital	17,400,182	10.7	100.0	-11.3	-4.9	1.6	2.7	5.4	--	5.9	Apr-06
<i>BBgBarc US High Yield TR</i>				-12.7	-6.9	0.8	2.8	5.6	6.5	6.3	Apr-06
<b>TIPS Assets</b>	<b>10,726,999</b>	<b>6.6</b>	<b>6.6</b>	<b>1.6</b>	<b>6.8</b>	<b>3.4</b>	<b>2.6</b>	<b>3.5</b>	<b>--</b>	<b>3.8</b>	<b>Oct-05</b>
<i>BBgBarc US TIPS TR</i>				1.7	6.9	3.5	2.7	3.5	5.4	3.8	Oct-05
SSgA TIPS Index-NL	10,726,999	6.6	100.0	1.6	6.8	3.4	2.6	3.5	--	3.8	Oct-05
<i>BBgBarc US TIPS TR</i>				1.7	6.9	3.5	2.7	3.5	5.4	3.8	Oct-05

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Market Debt Assets</b>	<b>4,730,708</b>	<b>2.9</b>	<b>2.9</b>	<b>-15.2</b>	<b>-8.7</b>	<b>-0.4</b>	<b>2.2</b>	<b>--</b>	<b>--</b>	<b>2.5</b>	<b>Jan-15</b>
JP Morgan EMBI Global Diversified				-13.4	-6.8	0.4	2.8	4.9	7.8	3.1	Jan-15
Payden Emerging Market Bond	4,730,708	2.9	100.0	-15.2	-8.7	-0.4	2.2	--	--	2.5	Jan-15
JP Morgan EMBI Global Diversified				-13.4	-6.8	0.4	2.8	4.9	7.8	3.1	Jan-15
<b>Open-Ended Real Estate</b>	<b>5,823,458</b>	<b>3.6</b>	<b>3.6</b>	<b>1.4</b>	<b>6.6</b>	<b>7.9</b>	<b>9.2</b>	<b>12.2</b>	<b>7.2</b>	<b>8.1</b>	<b>Oct-95</b>
NCREIF ODCE				1.0	4.9	6.8	8.5	11.4	8.1	9.0	Oct-95
Clarion Partners	5,823,458	3.6	100.0	1.4	6.6	7.9	9.2	12.2	--	7.3	Oct-02
NCREIF ODCE				1.0	4.9	6.8	8.5	11.4	8.1	8.1	Oct-02
<b>Total Closed End Real Estate</b>	<b>58,389</b>	<b>0.0</b>	<b>0.0</b>								
Colony Realty Partners IV	25,309	0.0	43.3								
Rockwood Capital Real Estate Partners Fund XI, L.P.	33,080	0.0	56.7								

Colony market value is as of December 31, 2019 and adjusted for subsequent flows

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>Private Equity Assets</b>	<b>7,980,743</b>	<b>4.9</b>	<b>4.9</b>								
North American Strategic Partners 2006	659,554	0.4	8.3								
Ironsides Partnership Fund IV	1,979,668	1.2	24.8								
Ironsides Direct Investment Fund IV	2,566,648	1.6	32.2								
Ironsides Partnership Fund V, L.P.	98,382	0.1	1.2								
Ironsides Direct Investment Fund V, L.P.	2,451,583	1.5	30.7								
HarbourVest 2019 Global Fund	224,907	0.1	2.8								
<b>Cash</b>	<b>1,562,392</b>	<b>1.0</b>	<b>1.0</b>								

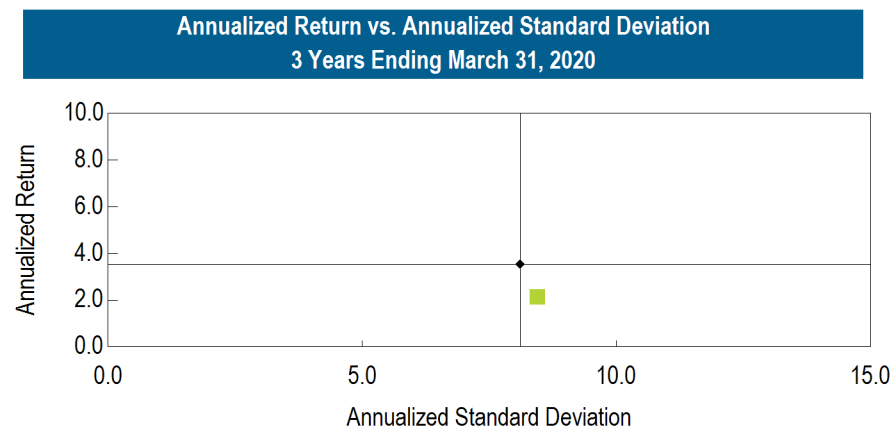
Private Equity market values are as of December 31, 2019 and adjusted for subsequent flows

	Calendar Year Performance									
	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
<b>Total Retirement System</b>	<b>17.6</b>	<b>-4.4</b>	<b>13.1</b>	<b>8.7</b>	<b>-0.2</b>	<b>6.3</b>	<b>14.0</b>	<b>10.9</b>	<b>2.4</b>	<b>12.3</b>
55% MSCI World & 45% Barclays Aggregate	19.1	-4.6	13.6	5.5	0.0	5.5	13.0	10.7	0.7	10.0
Consumer Price Index	2.3	1.9	2.1	2.1	0.7	0.8	1.5	1.7	3.0	1.5
<b>Domestic Equity Assets</b>	<b>27.9</b>	<b>-6.7</b>	<b>20.3</b>	<b>14.6</b>	<b>-1.6</b>	<b>13.1</b>	<b>33.1</b>	<b>15.3</b>	<b>0.0</b>	<b>18.8</b>
Russell 3000	31.0	-5.2	21.1	12.7	0.5	12.6	33.6	16.4	1.0	16.9
PRIT Domestic Equity	30.2	-5.1	20.8	12.9	0.3	11.7	33.7	16.9	1.1	16.8
RhumbLine S&P 500 Index	31.4	-4.4	21.8	11.9	1.4	13.6	32.2	16.0	2.1	15.0
S&P 500	31.5	-4.4	21.8	12.0	1.4	13.7	32.4	16.0	2.1	15.1
Fiduciary Large Cap Equity (net)	23.8	-3.7	19.2	13.8	-2.4	12.4	30.5	--	--	--
Russell 3000	31.0	-5.2	21.1	12.7	0.5	12.6	33.6	16.4	1.0	16.9
Frontier Capital Appreciation (net)	28.9	-13.9	19.1	20.5	-6.5	12.4	--	--	--	--
Russell 2500 Growth	32.7	-7.5	24.5	9.7	-0.2	7.1	40.6	16.1	-1.6	28.9
<b>International Developed Markets Equity Assets</b>	<b>22.3</b>	<b>-13.5</b>	<b>24.9</b>	<b>1.4</b>	<b>-0.8</b>	<b>-8.7</b>	<b>21.2</b>	<b>15.0</b>	<b>-14.1</b>	<b>10.6</b>
MSCI EAFE	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8
Rhumblin MSCI EAFE Index (net)	22.3	-13.5	24.9	1.4	-0.8	--	--	--	--	--
MSCI EAFE	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8

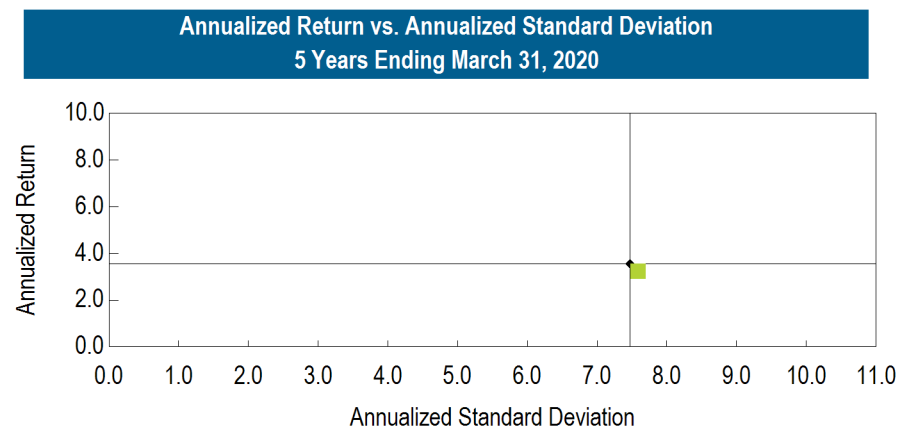
	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
<b>International Emerging Markets Equity Assets</b>	<b>20.7</b>	<b>-15.4</b>	<b>39.7</b>	<b>9.4</b>	<b>-12.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>MSCI Emerging Markets</i>	<i>18.4</i>	<i>-14.6</i>	<i>37.3</i>	<i>11.2</i>	<i>-14.9</i>	<i>-2.2</i>	<i>-2.6</i>	<i>18.2</i>	<i>-18.4</i>	<i>18.9</i>
DFA Emerging Markets (net)	16.0	-15.2	36.6	12.4	-14.9	--	--	--	--	--
<i>MSCI Emerging Markets</i>	<i>18.4</i>	<i>-14.6</i>	<i>37.3</i>	<i>11.2</i>	<i>-14.9</i>	<i>-2.2</i>	<i>-2.6</i>	<i>18.2</i>	<i>-18.4</i>	<i>18.9</i>
Driehaus Emerging Market Equity (net)	25.3	-15.6	43.0	6.5	-10.6	--	--	--	--	--
<i>MSCI Emerging Markets</i>	<i>18.4</i>	<i>-14.6</i>	<i>37.3</i>	<i>11.2</i>	<i>-14.9</i>	<i>-2.2</i>	<i>-2.6</i>	<i>18.2</i>	<i>-18.4</i>	<i>18.9</i>
<b>Investment Grade Bonds Assets</b>	<b>8.7</b>	<b>0.0</b>	<b>3.6</b>	<b>2.6</b>	<b>0.6</b>	<b>6.0</b>	<b>-2.0</b>	<b>4.3</b>	<b>7.8</b>	<b>6.6</b>
<i>BBgBarc US Aggregate TR</i>	<i>8.7</i>	<i>0.0</i>	<i>3.5</i>	<i>2.6</i>	<i>0.5</i>	<i>6.0</i>	<i>-2.0</i>	<i>4.2</i>	<i>7.8</i>	<i>6.5</i>
<i>PRIT Core Fixed Income</i>	<i>11.3</i>	<i>-0.8</i>	<i>5.4</i>	<i>4.0</i>	<i>-2.0</i>	<i>15.2</i>	<i>-2.8</i>	<i>6.4</i>	<i>8.1</i>	<i>7.5</i>
SSgA U.S. Aggregate Bond Index	8.7	0.0	3.6	2.6	0.6	6.0	-2.0	4.3	7.8	6.6
<i>BBgBarc US Aggregate TR</i>	<i>8.7</i>	<i>0.0</i>	<i>3.5</i>	<i>2.6</i>	<i>0.5</i>	<i>6.0</i>	<i>-2.0</i>	<i>4.2</i>	<i>7.8</i>	<i>6.5</i>
<b>High Yield Bond Assets</b>	<b>14.5</b>	<b>-1.3</b>	<b>7.1</b>	<b>12.7</b>	<b>-2.3</b>	<b>2.9</b>	<b>6.4</b>	<b>12.4</b>	<b>6.0</b>	<b>12.8</b>
<i>BBgBarc US High Yield TR</i>	<i>14.3</i>	<i>-2.1</i>	<i>7.5</i>	<i>17.1</i>	<i>-4.5</i>	<i>2.5</i>	<i>7.4</i>	<i>15.8</i>	<i>5.0</i>	<i>15.1</i>
<i>PRIT Public Value-Added Fixed Income</i>	<i>11.2</i>	<i>-2.1</i>	<i>9.0</i>	<i>11.7</i>	<i>-4.7</i>	<i>-0.2</i>	<i>-1.5</i>	<i>14.7</i>	<i>5.3</i>	<i>13.6</i>
Shenkman Capital	14.5	-1.3	7.2	12.7	-2.3	2.9	6.4	12.4	6.0	12.8
<i>BBgBarc US High Yield TR</i>	<i>14.3</i>	<i>-2.1</i>	<i>7.5</i>	<i>17.1</i>	<i>-4.5</i>	<i>2.5</i>	<i>7.4</i>	<i>15.8</i>	<i>5.0</i>	<i>15.1</i>
<b>TIPS Assets</b>	<b>8.4</b>	<b>-1.3</b>	<b>3.0</b>	<b>4.7</b>	<b>-1.4</b>	<b>3.6</b>	<b>-8.6</b>	<b>6.9</b>	<b>13.5</b>	<b>6.3</b>
<i>BBgBarc US TIPS TR</i>	<i>8.4</i>	<i>-1.3</i>	<i>3.0</i>	<i>4.7</i>	<i>-1.4</i>	<i>3.6</i>	<i>-8.6</i>	<i>7.0</i>	<i>13.6</i>	<i>6.3</i>
SSgA TIPS Index-NL	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	6.9	13.5	6.3
<i>BBgBarc US TIPS TR</i>	<i>8.4</i>	<i>-1.3</i>	<i>3.0</i>	<i>4.7</i>	<i>-1.4</i>	<i>3.6</i>	<i>-8.6</i>	<i>7.0</i>	<i>13.6</i>	<i>6.3</i>

## Total Retirement System | As of March 31, 2020

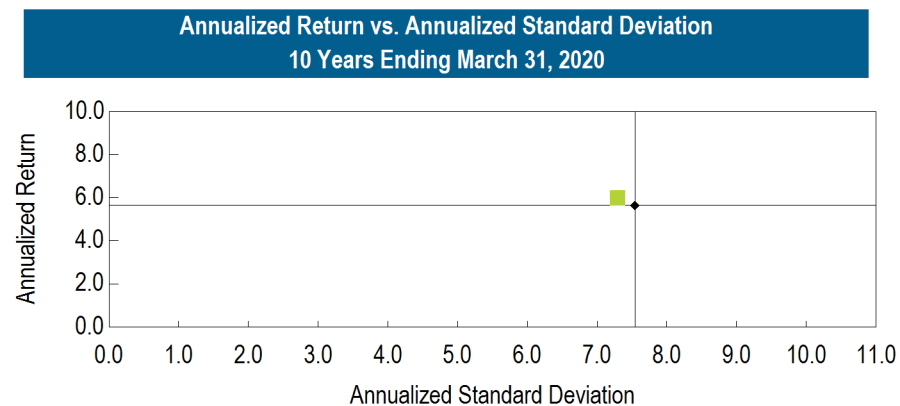
	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
<b>Emerging Market Debt Assets</b>	<b>16.5</b>	<b>-7.0</b>	<b>12.0</b>	<b>11.5</b>	<b>-0.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>JP Morgan EMBI Global Diversified</i>	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2
Payden Emerging Market Bond (net)	16.5	-7.0	12.0	11.5	-0.8	--	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2
<b>Open-Ended Real Estate</b>	<b>7.3</b>	<b>8.6</b>	<b>7.9</b>	<b>9.1</b>	<b>15.7</b>	<b>13.2</b>	<b>12.8</b>	<b>10.9</b>	<b>18.7</b>	<b>19.2</b>
<i>NCREIF ODCE</i>	5.3	8.3	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4
Clarion Partners	7.3	8.6	7.9	9.1	15.7	13.2	12.8	10.9	18.7	19.2
<i>NCREIF ODCE</i>	5.3	8.3	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4
<b>Total Closed End Real Estate</b>										
Colony Realty Partners IV										
Rockwood Capital Real Estate Partners Fund XI, L.P. (net)										
<b>Private Equity Assets</b>										
North American Strategic Partners 2006 (net)										
Ironsides Partnership Fund IV (net)										
Ironsides Direct Investment Fund IV (net)										
Ironsides Partnership Fund V, L.P. (net)										
Ironsides Direct Investment Fund V, L.P. (net)										
HarbourVest 2019 Global Fund (net)										
<b>Cash</b>										



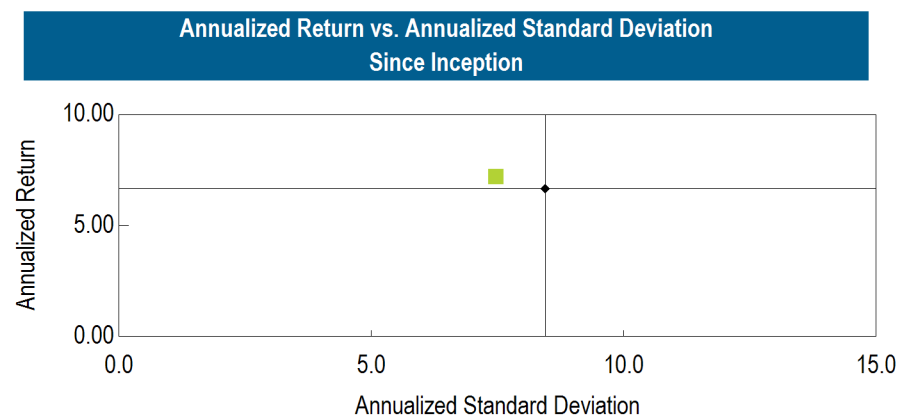
- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate



- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate

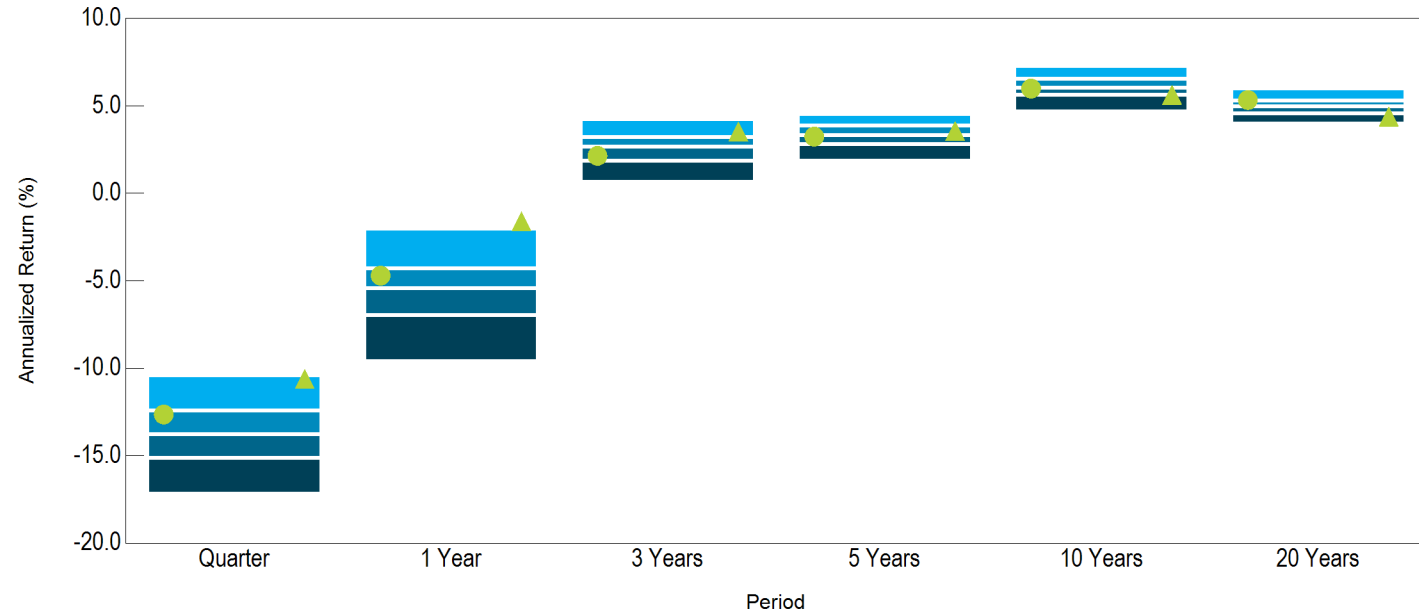


- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate



- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate

InvMetrics Public DB \$50mm-\$250mm Net Return Comparison  
Ending March 31, 2020



	Return (Rank)					
	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
5th Percentile	-10.4	-2.0	4.2	4.5	7.3	6.0
25th Percentile	-12.4	-4.3	3.2	3.9	6.6	5.3
Median	-13.8	-5.4	2.7	3.3	6.1	5.0
75th Percentile	-15.1	-6.9	1.9	2.8	5.7	4.6
95th Percentile	-17.1	-9.6	0.7	1.9	4.7	4.0
# of Portfolios	154	154	146	135	115	46
● Total Retirement System	-12.6 (29)	-4.7 (34)	2.1 (66)	3.2 (56)	6.0 (55)	5.3 (24)
▲ 55% MSCI World & 45% Barclays Aggregate	-10.6 (6)	-1.6 (4)	3.5 (18)	3.6 (42)	5.6 (77)	4.4 (83)



Statistics Summary						
5 Years Ending March 31, 2020						
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	3.2%	7.6%	-0.2	1.0	0.3	1.4%
55% MSCI World & 45% Barclays Aggregate	3.6%	7.5%	--	1.0	0.3	0.0%
Equity Assets	2.2%	14.3%	-1.3	1.0	0.1	2.7%
Russell 3000	5.8%	14.2%	--	1.0	0.3	0.0%
Domestic Equity Assets	3.1%	15.0%	-1.1	1.0	0.1	2.5%
Russell 3000	5.8%	14.2%	--	1.0	0.3	0.0%
RhumbLine S&P 500 Index	6.7%	13.6%	-0.6	1.0	0.4	0.0%
S&P 500	6.7%	13.7%	--	1.0	0.4	0.0%
Fiduciary Large Cap Equity	3.5%	13.1%	-0.6	0.9	0.2	4.0%
Russell 3000	5.8%	14.2%	--	1.0	0.3	0.0%
Frontier Capital Appreciation	-2.1%	20.8%	-0.8	1.1	-0.2	6.9%
Russell 2500 Growth	3.6%	17.9%	--	1.0	0.1	0.0%
International Developed Markets Equity Assets	-0.4%	14.0%	0.8	1.0	-0.1	0.3%
MSCI EAFE	-0.6%	14.1%	--	1.0	-0.1	0.0%
Rhumblne MSCI EAFE Index	-0.4%	14.0%	0.8	1.0	-0.1	0.3%
MSCI EAFE	-0.6%	14.1%	--	1.0	-0.1	0.0%
International Emerging Markets Equity Assets	0.1%	16.3%	0.1	0.9	-0.1	3.2%
MSCI Emerging Markets	-0.4%	17.6%	--	1.0	-0.1	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DFA Emerging Markets	-2.0%	17.9%	-0.5	1.0	-0.2	3.3%
MSCI Emerging Markets	-0.4%	17.6%	--	1.0	-0.1	0.0%
DrieHaus Emerging Market Equity	2.0%	15.1%	0.5	0.8	0.1	4.9%
MSCI Emerging Markets	-0.4%	17.6%	--	1.0	-0.1	0.0%
Investment Grade Bonds Assets	3.3%	3.1%	-0.4	1.0	0.7	0.2%
BBgBarc US Aggregate TR	3.4%	3.1%	--	1.0	0.7	0.0%
SSgA U.S. Aggregate Bond Index	3.3%	3.1%	-0.2	1.0	0.7	0.1%
BBgBarc US Aggregate TR	3.4%	3.1%	--	1.0	0.7	0.0%
High Yield Bond Assets	2.3%	6.6%	-0.4	0.9	0.2	1.2%
BBgBarc US High Yield TR	2.8%	7.5%	--	1.0	0.2	0.0%
Shenkman Capital	2.3%	6.6%	-0.4	0.9	0.2	1.2%
BBgBarc US High Yield TR	2.8%	7.5%	--	1.0	0.2	0.0%
TIPS Assets	2.6%	3.4%	-0.9	1.0	0.4	0.1%
BBgBarc US TIPS TR	2.7%	3.4%	--	1.0	0.5	0.0%
SSgA TIPS Index-NL	2.6%	3.4%	-1.0	1.0	0.4	0.1%
BBgBarc US TIPS TR	2.7%	3.4%	--	1.0	0.5	0.0%
Emerging Market Debt Assets	2.2%	9.6%	-0.3	1.1	0.1	1.9%
JP Morgan EMBI Global Diversified	2.8%	8.4%	--	1.0	0.2	0.0%
Payden Emerging Market Bond	2.2%	9.6%	-0.3	1.1	0.1	1.9%
JP Morgan EMBI Global Diversified	2.8%	8.4%	--	1.0	0.2	0.0%

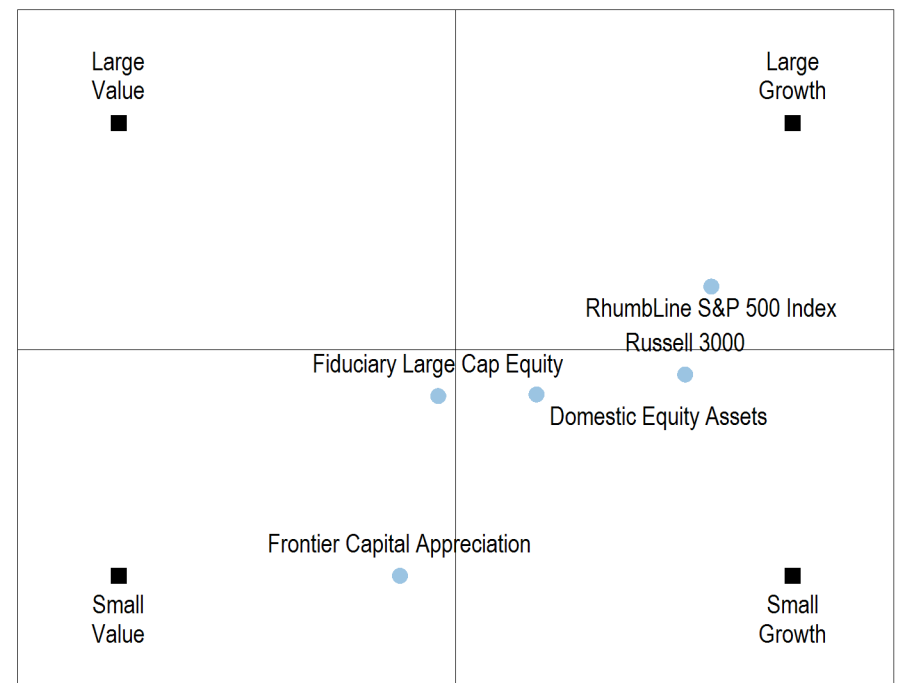
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Open-Ended Real Estate	9.2%	4.1%	0.8	1.1	2.0	1.0%
NCREIF ODCE	8.5%	3.7%	--	1.0	2.0	0.0%
Clarion Partners	9.2%	4.1%	0.8	1.1	2.0	1.0%
NCREIF ODCE	8.5%	3.7%	--	1.0	2.0	0.0%
Total Closed End Real Estate	-0.9%	22.8%	-0.4	1.2	-0.1	22.4%
NCREIF ODCE	8.5%	3.7%	--	1.0	2.0	0.0%
Colony Realty Partners IV	-0.8%	22.9%	-0.4	1.2	-0.1	22.5%
NCREIF ODCE	8.5%	3.7%	--	1.0	2.0	0.0%
Comerica Short Term Fund	0.4%	0.2%	-2.4	0.0	-3.7	0.3%
91 Day T-Bills	1.1%	0.2%	--	1.0	0.0	0.0%

## Retirement System Detail

#### Asset Allocation on March 31, 2020

	Actual	Actual
Fiduciary Large Cap Equity	\$19,926,015	37.8%
Frontier Capital Appreciation	\$12,135,207	23.0%
RhumbLine S&P 500 Index	\$20,695,469	39.2%
<b>Total</b>	<b>\$52,756,691</b>	<b>100.0%</b>

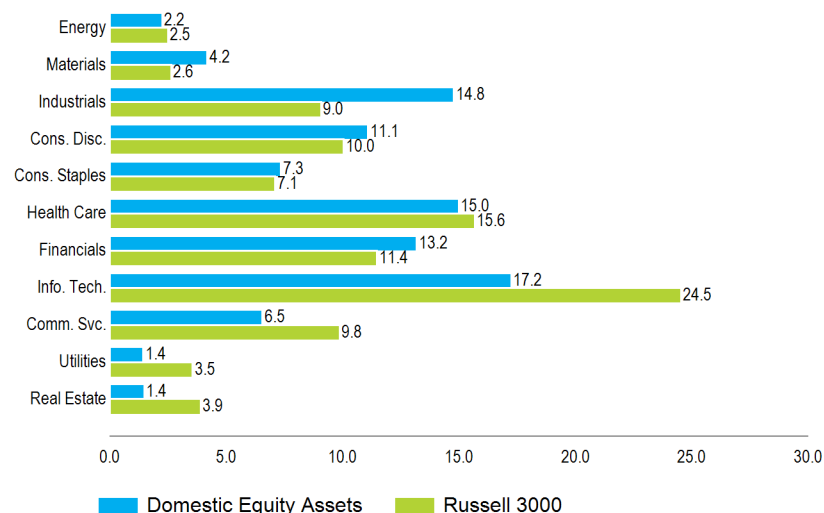
#### Domestic Equity Assets Style Map 3 Years Ending March 31, 2020



### Domestic Equity Assets | As of March 31, 2020

Domestic Equity Assets Characteristics			
	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
Market Value			
Market Value (\$M)	52.8	--	64.6
Number Of Holdings	625	2976	630
Characteristics			
Weighted Avg. Market Cap. (\$B)	145.8	227.2	129.9
Median Market Cap (\$B)	13.4	1.1	18.3
P/E Ratio	14.7	16.8	20.7
Yield	2.1	2.3	1.5
EPS Growth - 5 Yrs.	11.8	12.9	9.3
Price to Book	3.1	3.6	3.5
Beta (holdings; domestic)	1.1	1.0	1.1

#### Sector Allocation (%) vs Russell 3000



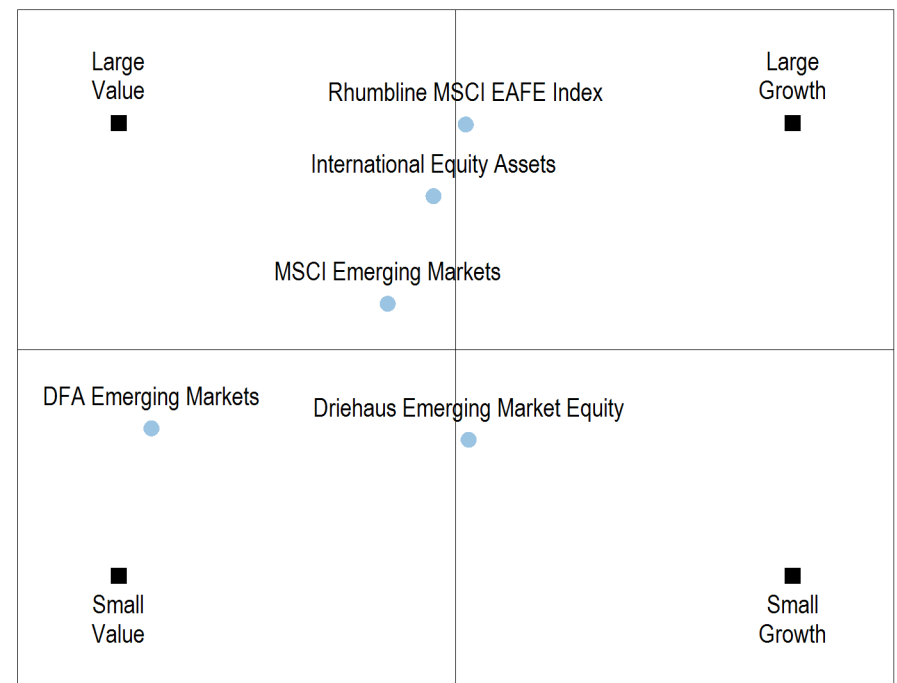
#### Top 10 Holdings

CASH - USD	5.8%
BERKSHIRE HATHAWAY 'B'	3.2%
UNITEDHEALTH GROUP	2.7%
DOLLAR GENERAL	2.4%
MICROSOFT	2.2%
JP MORGAN CHASE & CO.	2.0%
APPLE	1.9%
MASCO	1.8%
HONEYWELL INTL.	1.7%
PEPSICO	1.6%
<b>Total</b>	<b>25.4%</b>

#### Asset Allocation on March 31, 2020

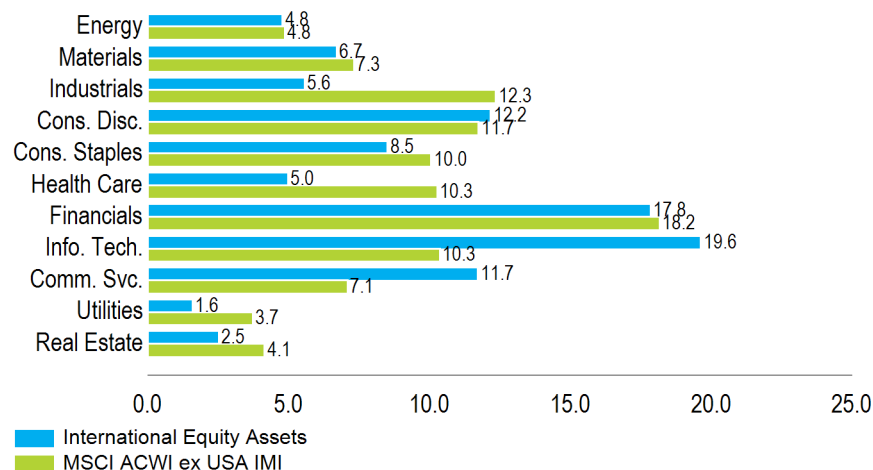
	Actual	Actual
DFA Emerging Markets	\$2,228,566	10.4%
Driehaus Emerging Market Equity	\$2,735,436	12.7%
Rhumblin MSCI EAFE Index	\$16,519,643	76.9%
<b>Total</b>	<b>\$21,483,645</b>	<b>100.0%</b>

#### International Equity Assets Style Map 3 Years Ending March 31, 2020



International Equity Characteristics			
	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
Market Value			
Market Value (\$M)	21.5	--	24.1
Number Of Holdings	4731	6578	5742
Characteristics			
Weighted Avg. Market Cap. (\$B)	97.2	60.8	69.6
Median Market Cap (\$B)	0.3	1.2	0.7
P/E Ratio	13.3	12.9	16.7
Yield	2.8	3.7	2.9
EPS Growth - 5 Yrs.	11.9	8.4	8.3
Price to Book	2.8	2.4	2.5
Beta (holdings; domestic)	1.0	1.0	1.0

Sector Allocation (%) vs MSCI ACWI ex USA IMI



Top 10 Holdings

TENCENT HOLDINGS	5.8%
ALIBABA GROUP HOLDING ADR 1:8	4.2%
CASH - USD	4.1%
SAMSUNG ELECTRONICS	3.9%
TAIWAN SEMICON.SPN.ADR 1:5	3.9%
PING AN INSURANCE (GROUP) OF CHINA 'H'	1.9%
SK HYNIX	1.1%
ICICI BK.ADR 1:2	1.1%
PJSC LUKOIL SPON (LON) ADR	1.0%
JD COM ADR 1:2	1.0%
<b>Total</b>	<b>27.9%</b>



### Country Allocation Report

As of 3/31/2020

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.8%	6.3%	-5.4%
United States	6.7%	0.0%	6.7%
Europe Ex U.K.	1.9%	30.7%	-28.8%
United Kingdom	0.5%	10.2%	-9.7%
Pacific Basin Ex Japan	17.3%	7.5%	9.8%
Japan	0.7%	18.3%	-17.7%
Emerging Markets	70.9%	25.5%	45.5%
Other	1.2%	1.6%	-0.4%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

International Equity Country Allocation			
vs MSCI ACWI ex USA IMI			
Country	% of Total	% of Bench	% Diff
ARGENTINA	0.0%	0.0%	0.0%
AUSTRALIA	0.0%	4.0%	-4.0%
AUSTRIA	0.0%	0.2%	-0.2%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.0%	0.7%	-0.7%
BRAZIL	5.3%	1.4%	3.9%
CANADA	0.8%	6.3%	-5.4%
CHILE	0.4%	0.2%	0.2%
CHINA	17.1%	10.0%	7.1%
COLOMBIA	0.1%	0.1%	0.1%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.1%	0.0%	0.0%
DENMARK	0.0%	1.4%	-1.4%
EGYPT	0.5%	0.0%	0.4%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.0%	0.7%	-0.7%
FRANCE	0.0%	6.5%	-6.5%
GERMANY	0.0%	5.3%	-5.3%
GREECE	0.6%	0.1%	0.5%
HONG KONG	16.5%	2.4%	14.1%
HUNGARY	0.6%	0.1%	0.6%
INDIA	9.9%	2.2%	7.8%
INDONESIA	1.8%	0.4%	1.4%

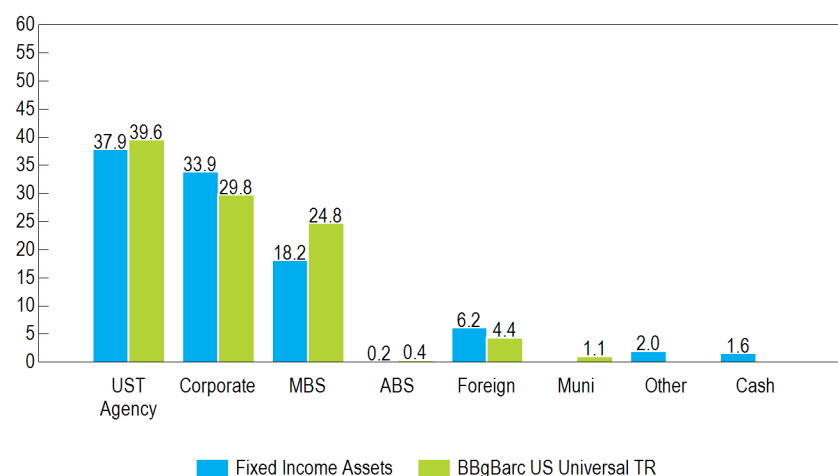
Country	% of Total	% of Bench	% Diff
IRELAND	0.0%	0.4%	-0.4%
ISRAEL	0.3%	0.5%	-0.2%
ITALY	0.0%	1.6%	-1.6%
JAPAN	0.7%	18.3%	-17.7%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	10.2%	3.3%	6.9%
KUWAIT	0.0%	0.0%	0.0%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.0%	0.0%	0.0%
MALAYSIA	1.5%	0.5%	1.0%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	1.8%	0.5%	1.3%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	0.9%	2.6%	-1.7%
NEW ZEALAND	0.0%	0.2%	-0.2%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.0%	0.5%	-0.5%
OMAN	0.0%	0.0%	0.0%
OTHER	0.9%	0.0%	0.9%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.1%	0.1%	0.0%
PHILIPPINES	0.8%	0.2%	0.6%
POLAND	1.3%	0.2%	1.0%
PORTUGAL	0.0%	0.1%	-0.1%

Country	% of Total	% of Bench	% Diff
QATAR	0.0%	0.3%	-0.3%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	2.5%	0.8%	1.7%
SAUDI ARABIA	0.0%	0.7%	-0.7%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	0.8%	0.9%	-0.1%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	2.5%	1.0%	1.6%
SPAIN	0.0%	1.7%	-1.7%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	0.0%	2.2%	-2.2%
SWITZERLAND	0.4%	6.7%	-6.4%
TAIWAN	12.7%	3.6%	9.1%
THAILAND	1.4%	0.6%	0.8%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	0.4%	0.1%	0.2%
UNITED ARAB EMIRATES	0.0%	0.1%	-0.1%
UNITED KINGDOM	0.5%	10.2%	-9.7%
UNITED STATES	6.7%	0.0%	6.7%
VIETNAM	0.0%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

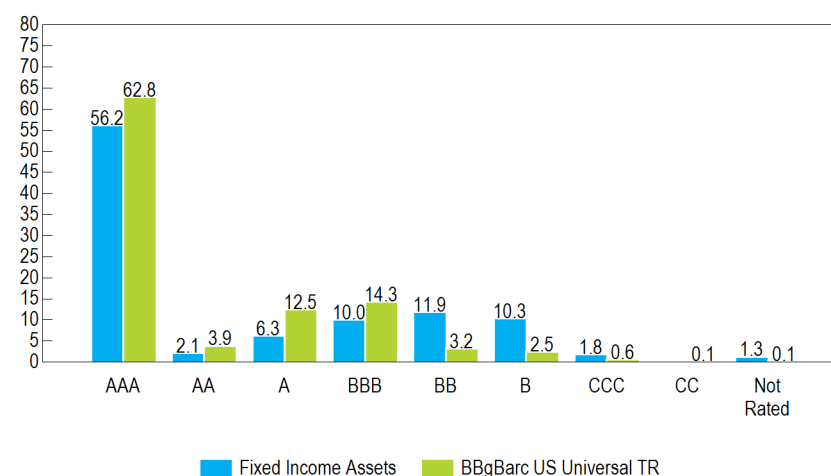
Asset Allocation on March 31, 2020		
	Actual	Actual
Payden Emerging Market Bond	\$4,730,708	6.5%
Shenkman Capital	\$17,400,182	24.1%
SSgA TIPS Index-NL	\$10,726,999	14.8%
SSgA U.S. Aggregate Bond Index	\$39,471,826	54.6%
<b>Total</b>	<b>\$72,329,715</b>	<b>100.0%</b>

Fixed Income Characteristics vs. BBgBarc US Universal TR			
	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
Fixed Income Characteristics			
Yield to Maturity	3.4	2.5	3.2
Average Duration	5.4	6.2	4.9
Average Quality	A	AA	A
Weighted Average Maturity	7.6	12.4	7.7

#### Sector Allocation



#### Credit Quality Allocation



## Portfolio Reviews

## RhumbLine S&P 500 Index | As of March 31, 2020

### Account Information

Account Name	RhumbLine S&P 500 Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	3/01/99
Account Type	US Equity
Benchmark	S&P 500
Universe	eV US Passive S&P 500 Equity Net

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine S&P 500 Index	-19.6	-19.6	-7.0	5.1	6.7	10.5	5.6	Mar-99
S&P 500	-19.6	-19.6	-7.0	5.1	6.7	10.5	5.6	Mar-99

### Top 10 Holdings

MICROSOFT	5.6%
APPLE	4.9%
AMAZON.COM	3.8%
FACEBOOK CLASS A	1.9%
BERKSHIRE HATHAWAY 'B'	1.7%
ALPHABET A	1.6%
ALPHABET 'C'	1.6%
JOHNSON & JOHNSON	1.6%
JP MORGAN CHASE & CO.	1.3%
VISA 'A'	1.3%
<b>Total</b>	<b>25.2%</b>

### RhumbLine S&P 500 Index Equity Characteristics vs S&P 500

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
<b>Market Value</b>			
Market Value (\$M)	20.70	--	19.61
Number Of Holdings	506	505	506
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	263.95	267.10	269.49
Median Market Cap (\$B)	17.61	17.58	23.61
P/E Ratio	17.14	17.01	23.03
Yield	2.34	2.34	1.86
EPS Growth - 5 Yrs.	12.75	12.82	12.90
Price to Book	3.72	3.72	3.87
Beta (holdings; domestic)	0.98	0.97	1.00
<b>Sector Distribution</b>			
Energy	2.62	2.54	4.28
Materials	2.42	2.38	2.60
Industrials	8.17	8.16	8.93
Consumer Discretionary	9.72	10.21	9.65
Consumer Staples	7.77	8.48	7.12
Health Care	15.33	14.91	14.06
Financials	11.37	11.28	13.96
Information Technology	25.35	24.98	22.95
Communication Services	10.68	10.78	10.28
Utilities	3.56	3.39	3.28
Real Estate	2.98	2.89	2.87

### Account Information

Account Name	Fiduciary Large Cap Equity
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	9/01/12
Account Type	US Equity
Benchmark	Russell 3000
Universe	eV US Large Cap Equity Net

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Fiduciary Large Cap Equity	-23.4	-23.4	-14.3	1.1	3.5	--	8.2	Sep-12
Russell 3000	-20.9	-20.9	-9.1	4.0	5.8	10.1	10.2	Sep-12

### Top Holdings as of December 31, 2019

BERKSHIRE HATHAWAY INC B	6.32%
UNITEDHEALTH GROUP INC	5.53%
MASCO CORP	5.01%
DOLLAR GENERAL CORP	4.98%
JPMORGAN CHASE & CO	4.84%
HONEYWELL INTERNATIONAL INC	4.20%
QUEST DIAGNOSTICS INC	3.85%
CHUBB LTD	3.47%
ACCENTURE PLC CLASS A	3.42%
OMNICOM GROUP INC	3.39%

### Fund Characteristics as of December 31, 2019

#### Versus Russell 3000

Sharpe Ratio (3 Year)	1.06
Average Market Cap (\$mm)	63,476.13
Price/Earnings	17.98
Price/Book	3.21
Price/Sales	1.92
Price/Cash Flow	14.03
Dividend Yield	1.64
Number of Equity Holdings	31
R-Squared (3 Year)	0.91
Alpha (3 Year)	0.08%

### Sector Allocation as of December 31, 2019

BASIC MATERIALS	4.10%
COMMUNICATION SERVICES	5.16%
CONSUMER CYCLICAL	5.72%
CONSUMER DEFENSIVE	18.14%
ENERGY	3.01%
FINANCIAL SERVICES	20.17%
HEALTHCARE	15.67%
INDUSTRIALS	22.03%
REAL ESTATE	0.00%
TECHNOLOGY	6.01%
UTILITIES	0.00%



## Frontier Capital Appreciation | As of March 31, 2020

### Account Information

Account Name	Frontier Capital Appreciation
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/13
Account Type	US Equity
Benchmark	Russell 2500 Growth
Universe	eV US Small-Mid Cap Growth Equity Net

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Frontier Capital Appreciation	-36.0	-36.0	-28.3	-7.3	-2.1	--	4.9	Feb-13
Russell 2500 Growth	-23.2	-23.2	-14.4	3.4	3.6	10.1	8.6	Feb-13

### Top 10 Holdings

CASH - USD	15.5%
INSULET	2.5%
MONOLITHIC PWR.SYS.	2.3%
DEXCOM	2.3%
COOPER COS.	2.1%
FMC	1.9%
PAN AMERICAN SILVER(NAS)	1.7%
KBR	1.6%
COGENT COMMS.HOLDINGS	1.6%
UNITED AIRLINES HOLDINGS	1.5%
<b>Total</b>	<b>32.9%</b>

### Frontier Capital Appreciation Characteristics

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
<b>Market Value</b>			
Market Value (\$M)	12.1	--	19.0
Number Of Holdings	133	1407	140
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	5.1	5.4	7.0
Median Market Cap (\$B)	2.2	0.9	3.1
P/E Ratio	13.5	20.6	20.2
Yield	1.3	0.9	0.8
EPS Growth - 5 Yrs.	11.6	14.5	7.1
Price to Book	2.5	4.2	2.9
Beta (holdings; domestic)	1.4	1.2	1.4
<b>Sector Distribution</b>			
Energy	3.1	0.2	6.1
Materials	8.5	3.3	9.5
Industrials	16.8	16.0	22.0
Consumer Discretionary	7.7	10.8	7.3
Consumer Staples	0.6	2.2	0.6
Health Care	13.2	27.2	12.6
Financials	8.0	6.1	8.4
Information Technology	22.7	26.8	23.6
Communication Services	2.7	2.6	3.7
Utilities	0.0	0.9	0.0
Real Estate	1.2	4.0	0.8

### Account Information

Account Name	Rhumblin MSCI EAFE Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/14
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE All Cap Equity Net

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rhumblin MSCI EAFE Index	-22.7	-22.7	-14.1	-1.6	-0.4	--	-0.9	Aug-14
MSCI EAFE	-22.8	-22.8	-14.4	-1.8	-0.6	2.7	-1.1	Aug-14

### Top 10 Holdings

NXP SEMICONDUCTORS	27.3%
CHECK POINT SFTW.TECHS.	14.4%
TEVA PHARMACEUTICAL INDUSTRIES ADR 1:1	11.5%
COCA COLA EUROPEAN PARTNERS	10.1%
BRITISH AMER.TO.B.ADR 1:1	8.9%
WIX COM	5.8%
BEIGENE SPN.ADR 1:13	5.6%
DAIWA HOUSE REIT INV.	5.6%
CYBER ARK SOFTWARE	3.8%
AERCAP HOLDINGS N V	3.3%
<b>Total</b>	<b>96.3%</b>

### Rhumblin MSCI EAFE Index Characteristics

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
<b>Market Value</b>			
Market Value (\$M)	16.5	--	17.5
Number Of Holdings	12	918	924
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	18.6	55.6	63.9
Median Market Cap (\$B)	7.8	8.2	10.8
P/E Ratio	17.4	13.9	17.2
Yield	2.1	3.9	3.2
EPS Growth - 5 Yrs.	7.4	6.7	7.0
Price to Book	2.8	2.5	2.4
Beta (holdings; domestic)	1.2	1.0	1.0
<b>Sector Distribution</b>			
Energy	0.0	4.0	4.8
Materials	0.0	6.7	7.0
Industrials	3.3	14.2	15.0
Consumer Discretionary	3.2	11.1	11.6
Consumer Staples	19.0	12.7	11.2
Health Care	17.2	14.3	12.1
Financials	0.0	16.5	18.4
Information Technology	51.8	7.6	6.9
Communication Services	0.0	5.5	5.2
Utilities	0.0	4.2	3.7
Real Estate	5.6	3.2	3.4

## DFA Emerging Markets | As of March 31, 2020

### Account Information

Account Name	DFA Emerging Markets
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts All Cap Equity Net

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DFA Emerging Markets	-28.3	-28.3	-23.4	-5.4	-2.0	--	-1.6	Jan-15
MSCI Emerging Markets	-23.6	-23.6	-17.7	-1.6	-0.4	0.7	0.1	Jan-15

### Top 10 Holdings

SAMSUNG ELECTRONICS	4.9%
TENCENT HOLDINGS	4.2%
TAIWAN SEMICON.SPN.ADR 1:5	2.3%
ALIBABA GROUP HOLDING ADR 1:8	1.9%
TAIWAN SEMICON.MNFG.	1.9%
PING AN INSURANCE (GROUP) OF CHINA 'H'	1.5%
CHINA CON.BANK 'H'	1.3%
SK HYNIX	0.9%
INDL&COML.BOC.'H'	0.9%
VALE ON	0.8%
<b>Total</b>	<b>20.5%</b>

### DFA Emerging Markets Characteristics

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
<b>Market Value</b>			
Market Value (\$M)	2.2	--	3.1
Number Of Holdings	4681	1397	4791
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	66.4	109.8	58.3
Median Market Cap (\$B)	0.3	4.4	0.4
P/E Ratio	10.4	12.2	13.9
Yield	3.8	3.4	2.9
EPS Growth - 5 Yrs.	9.6	11.2	11.4
Price to Book	2.2	2.6	2.3
Beta (holdings; domestic)	1.1	1.1	1.1
<b>Sector Distribution</b>			
Energy	5.8	5.9	6.9
Materials	9.2	6.6	10.3
Industrials	7.4	4.9	8.3
Consumer Discretionary	10.5	15.5	10.3
Consumer Staples	7.2	6.5	6.8
Health Care	3.7	3.4	3.0
Financials	17.4	21.9	18.4
Information Technology	20.4	16.8	19.7
Communication Services	10.3	13.0	7.7
Utilities	3.3	2.5	3.4
Real Estate	4.7	2.9	4.1

### Account Information

Account Name	DrieHaus Emerging Market Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts All Cap Equity Net

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DrieHaus Emerging Market Equity	-21.0	-21.0	-10.7	2.5	2.0	--	2.5	Jan-15
MSCI Emerging Markets	-23.6	-23.6	-17.7	-1.6	-0.4	0.7	0.1	Jan-15

### Top 10 Holdings

CASH - USD	7.6%
TENCENT HOLDINGS	7.3%
ALIBABA GROUP HOLDING ADR 1:8	6.2%
TAIWAN SEMICON.SPN.ADR 1:5	5.4%
SAMSUNG ELECTRONICS	3.3%
PING AN INSURANCE (GROUP) OF CHINA 'H'	2.3%
ICICI BK.ADR 1:2	1.9%
PJSC LUKOIL SPON (LON) ADR	1.9%
JD COM ADR 1:2	1.7%
HDFC BANK ADR 1:3	1.6%
<b>Total</b>	<b>39.1%</b>

### DrieHaus Emerging Market Equity Characteristics

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
<b>Market Value</b>			
Market Value (\$M)	2.7	--	3.5
Number Of Holdings	93	1397	103
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	129.9	109.8	111.5
Median Market Cap (\$B)	16.8	4.4	16.5
P/E Ratio	18.7	12.2	20.4
Yield	2.0	3.4	1.7
EPS Growth - 5 Yrs.	14.6	11.2	12.7
Price to Book	3.5	2.6	3.8
Beta (holdings; domestic)	1.0	1.1	1.0
<b>Sector Distribution</b>			
Energy	4.1	5.9	8.9
Materials	5.0	6.6	3.5
Industrials	4.2	4.9	5.0
Consumer Discretionary	13.9	15.5	14.0
Consumer Staples	9.1	6.5	10.1
Health Care	5.5	3.4	3.5
Financials	19.0	21.9	28.3
Information Technology	17.5	16.8	15.1
Communication Services	13.4	13.0	10.0
Utilities	0.3	2.5	0.0
Real Estate	0.5	2.9	1.5

#### Account Information

Account Name	SSgA U.S. Aggregate Bond Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	5/01/01
Account Type	US Fixed Income Investment Grade
Benchmark	BBgBarc US Aggregate TR
Universe	eV US Core Fixed Inc Net

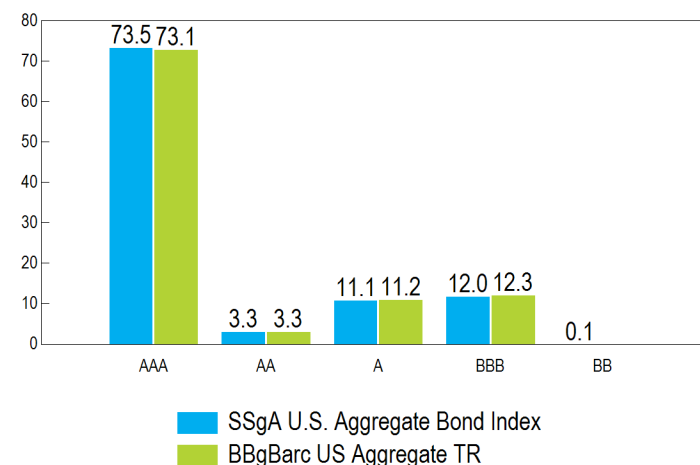
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA U.S. Aggregate Bond Index	3.0	3.0	8.8	4.8	3.3	3.9	4.8	May-01
BBgBarc US Aggregate TR	3.1	3.1	8.9	4.8	3.4	3.9	4.7	May-01

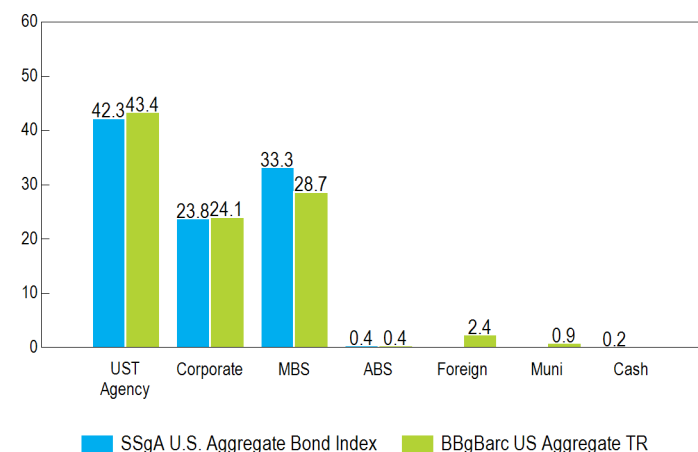
#### SSgA U.S. Aggregate Bond Index Characteristics vs. BBgBarc US Aggregate TR

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
<b>Fixed Income Characteristics</b>			
Yield to Maturity	1.6	1.7	2.3
Average Duration	5.7	6.4	5.9
Average Quality	AA	AA	AA
Weighted Average Maturity	7.7	7.8	7.9

#### Credit Quality Allocation



#### Sector Allocation



#### Account Information

Account Name	Shenkman Capital
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/01/06
Account Type	US Fixed Income High Yield
Benchmark	BBgBarc US High Yield TR
Universe	eV US High Yield Fixed Inc Net

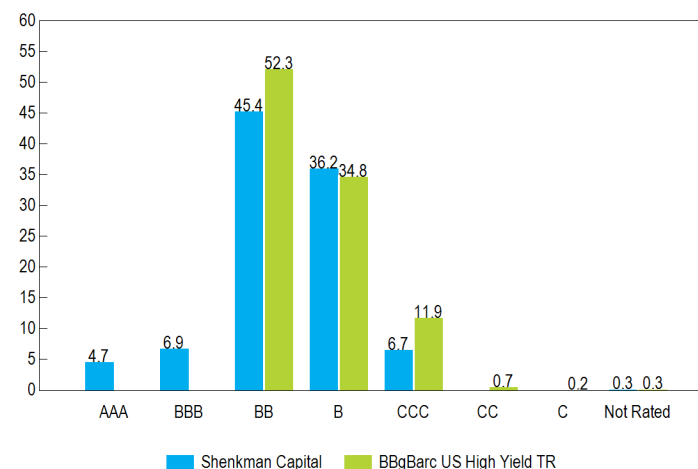
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Shenkman Capital	-11.4	-11.4	-5.4	1.1	2.3	5.2	5.8	Apr-06
BBgBarc US High Yield TR	-12.7	-12.7	-6.9	0.8	2.8	5.6	6.3	Apr-06

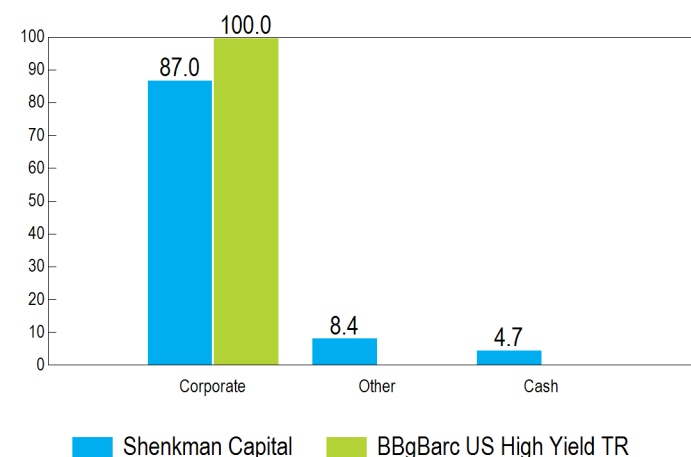
#### Shenkman Capital Characteristics vs. BBgBarc US High Yield TR

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
Fixed Income Characteristics			
Yield to Maturity	8.1	10.3	5.3
Average Duration	3.4	4.5	2.3
Average Quality	BB	B	BB
Weighted Average Maturity	5.8	6.2	5.8

#### Credit Quality Allocation



#### Sector Allocation



### SSgA TIPS Index-NL | As of March 31, 2020

#### Account Information

Account Name	SSgA TIPS Index-NL
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	10/01/05
Account Type	US Inflation Protected Fixed
Benchmark	BBgBarc US TIPS TR
Universe	eV US TIPS / Inflation Fixed Inc Net

#### Portfolio Performance Summary

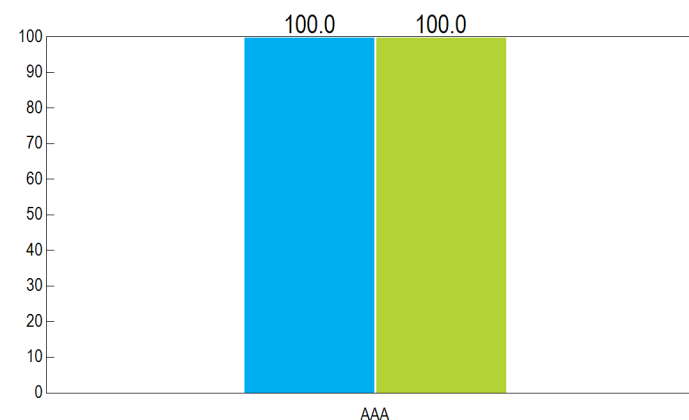
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS Index-NL	1.6	1.6	6.7	3.4	2.6	3.4	3.8	Oct-05
BBgBarc US TIPS TR	1.7	1.7	6.9	3.5	2.7	3.5	3.8	Oct-05

#### SSgA TIPS Index-NL Characteristics

##### vs. BBgBarc US TIPS TR

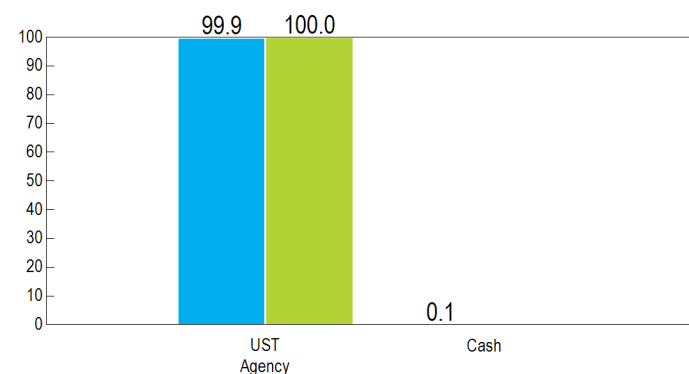
	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
Fixed Income Characteristics			
Yield to Maturity	0.9	0.2	2.0
Average Duration	6.7	7.8	4.7
Average Quality	AAA	AAA	AAA
Weighted Average Maturity	8.4	8.4	8.0

#### Credit Quality Allocation



SSgA TIPS Index-NL BBgBarc US TIPS TR

#### Sector Allocation



SSgA TIPS Index-NL BBgBarc US TIPS TR

### Account Information

Account Name	Payden Emerging Market Bond
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	International Emerging Market Debt
Benchmark	JP Morgan EMBI Global Diversified
Universe	

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Payden Emerging Market Bond	-15.2	-15.2	-8.7	-0.4	2.2	--	2.5	Jan-15
JP Morgan EMBI Global Diversified	-13.4	-13.4	-6.8	0.4	2.8	4.9	3.1	Jan-15

### Fund Characteristics as of March 31, 2020

Versus JP Morgan EMBI Global Diversified

Sharpe Ratio (3 Year)	-0.19
Average Duration	7.26
Average Coupon	6.22%
Average Effective Maturity	12.09
R-Squared (3 Year)	0.97
Alpha (3 Year)	-0.07%
Beta (3 Year)	1.14

### Payden Emerging Market Bond Characteristics

vs. JP Morgan EMBI Global Diversified

	Portfolio Q1-20	Index Q1-20	Portfolio Q4-19
Fixed Income Characteristics			
Yield to Maturity	7.2	7.5	6.1
Average Duration	7.3	7.1	7.5
Average Quality	BB	BBB	BB
Weighted Average Maturity	12.1	12.1	12.3

### Fixed Income Sectors as of March 31, 2020

GOVERNMENT	59.26%
MUNICIPAL	0.00%
CORPORATE	15.07%
SECURITIZED	0.00%
CASH & EQUIVALENTS	2.88%
DERIVATIVE	22.79%

### Credit Quality as of March 31, 2020

AAA	0.00%
AA	4.00%
A	7.00%
BBB	32.00%
BB	19.00%
B	24.00%
Below B	11.00%
Not Rated	3.00%



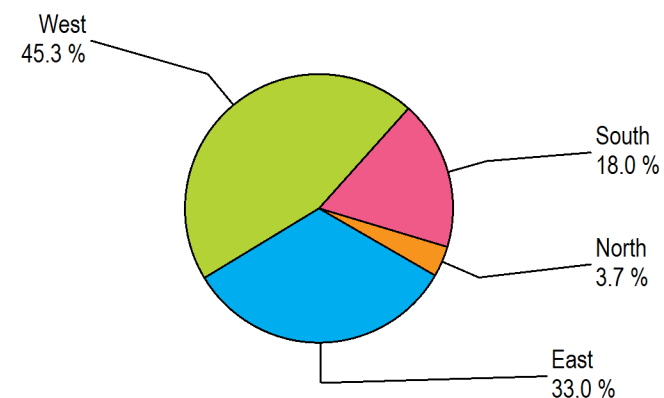
#### Account Information

Account Name	Clarion Partners
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/02
Account Type	Real Estate
Benchmark	NCREIF ODCE
Universe	US Real Estate Equity

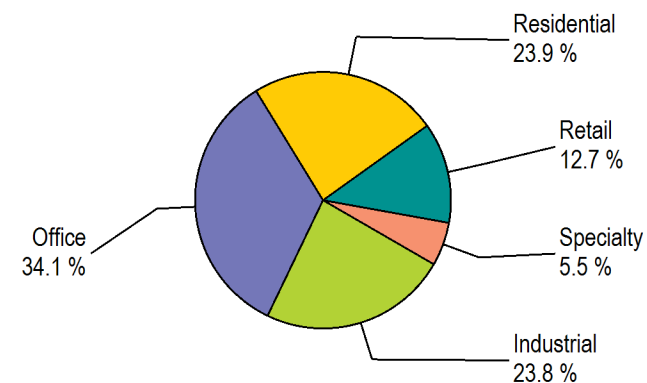
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Clarion Partners	1.4	1.4	6.6	7.9	9.2	12.2	7.3	Oct-02
NCREIF ODCE	1.0	1.0	4.9	6.8	8.5	11.4	8.1	Oct-02

#### Geographic Diversification



#### Property Type Allocation



Account Information	
Account Name	Colony Realty Partners IV
Account Structure	Other
Investment Style	Active
Inception Date	1/01/13
Account Type	Real Estate
Benchmark	NCREIF ODCE
Universe	US Real Estate Equity

Colony Realty Partners IV no longer has any funds invested in properties. While there is a residual balance in the Fund, it no longer has control over any real estate.

Non-Marketable Securities Overview						
As of March 31, 2020						
Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
North American Strategic Partners 2006	2006	\$4,539,998	\$4,387,178	\$2,609,124	\$659,554	6.8%
Ironsides Partnership Fund IV	2015	\$2,500,000	\$1,343,006	\$0	\$1,979,668	26.7%
Ironsides Direct Investment Fund IV	2015	\$2,500,000	\$2,419,534	\$658,317	\$2,566,648	16.2%
Ironsides Partnership Fund V	2020	\$2,000,000	\$98,382	\$0	\$98,382	--
Ironsides Direct Investment Fund V, L.P.	2019	\$2,000,000	\$2,289,730	\$0	\$2,451,583	--
HarbourVest 2019 Global Fund	2019	\$4,000,000	\$200,000	\$0	\$224,907	--

IRRs for investments less than 2 years old are not shown.

IRR for North American Strategic Partners is as of 9/30/2019.

IRRs for Ironsides funds are as of 12/31/2019.

Annual Investment Expense Analysis As Of March 31, 2020				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Equity Assets</b>		<b>\$74,240,335</b>		
<b>Domestic Equity Assets</b>		<b>\$52,756,691</b>		
RhumbLine S&P 500 Index	0.07% of First 25.0 Mil, 0.05% of Next 25.0 Mil, 0.04% Thereafter	\$20,695,469	\$14,487	0.07%
Fiduciary Large Cap Equity	0.66% of Assets	\$19,926,015	\$131,512	0.66%
Frontier Capital Appreciation	0.79% of Assets	\$12,135,207	\$95,868	0.79%
<b>International Equity Assets</b>		<b>\$21,483,645</b>		
<b>International Developed Markets Equity Assets</b>		<b>\$16,519,643</b>		
Rhumblin MSCI EAFE Index	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil, 0.05% Thereafter	\$16,519,643	\$13,216	0.08%
<b>International Emerging Markets Equity Assets</b>		<b>\$4,964,002</b>		
DFA Emerging Markets	0.52% of Assets	\$2,228,566	\$11,589	0.52%
Driehaus Emerging Market Equity	0.90% of Assets	\$2,735,436	\$24,619	0.90%
<b>Fixed Income Assets</b>		<b>\$72,329,715</b>		
<b>Investment Grade Bonds Assets</b>		<b>\$39,471,826</b>		
SSgA U.S. Aggregate Bond Index	0.04% of Assets	\$39,471,826	\$15,789	0.04%
<b>High Yield Bond Assets</b>		<b>\$17,400,182</b>		
Shenkman Capital	0.45% of Assets	\$17,400,182	\$78,301	0.45%
<b>TIPS Assets</b>		<b>\$10,726,999</b>		
SSgA TIPS Index-NL	0.04% of Assets	\$10,726,999	\$4,291	0.04%
<b>Emerging Market Debt Assets</b>		<b>\$4,730,708</b>		
Payden Emerging Market Bond	0.69% of Assets	\$4,730,708	\$32,642	0.69%

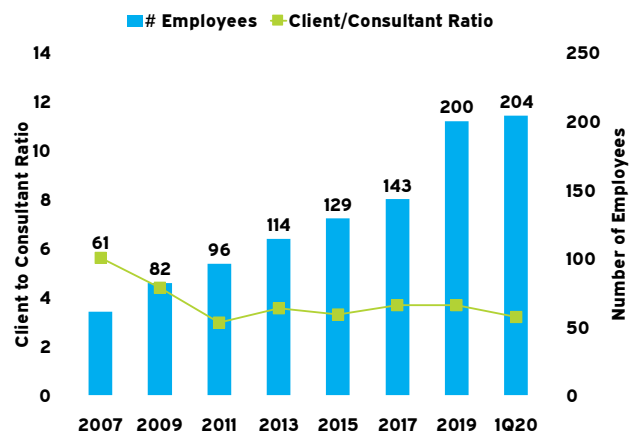
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Real Estate Assets</b>		<b>\$5,881,847</b>		
<b>Open-Ended Real Estate</b>		<b>\$5,823,458</b>		
Clarion Partners	1.10% of Assets	\$5,823,458	\$64,058	1.10%
<b>Total Closed End Real Estate</b>		<b>\$58,389</b>		
Colony Realty Partners IV	1.5% management fee based on committed equity during the investment period and invested equity thereafter	\$25,309		
Rockwood Capital Real Estate Partners Fund XI, L.P.	1.4% of committed capital during investment period; 1.4% on invested equity thereafter	\$33,080		
<b>Private Equity Assets</b>		<b>\$7,980,743</b>		
North American Strategic Partners 2006	0.8% on drawn and undrawn capital less investments sold or written off   5% carried interest, 8% preferred return	\$659,554		
Ironsides Partnership Fund IV	0% Management fee, 8% Preferred Return, 5% Carried Interest	\$1,979,668		
Ironsides Direct Investment Fund IV	0.5% Management fee, 8% Preferred Return, 15% Carried Interest	\$2,566,648		
Ironsides Partnership Fund V, L.P.		\$98,382		
Ironsides Direct Investment Fund V, L.P.	0.5% Management fee, 8% preferred return, 15% carried interest	\$2,451,583		
HarbourVest 2019 Global Fund	0.69% average annual management fee; 8.0% preferred return on secondary and direct investments and with corresponding carried interest of 12.5% on secondary and direct investments	\$224,907		
<b>Cash</b>		<b>\$1,562,392</b>		
Comerica Short Term Fund		\$1,562,392		
<b>Total</b>		<b>\$161,995,031</b>	<b>\$486,370</b>	<b>0.30%</b>

## Appendices

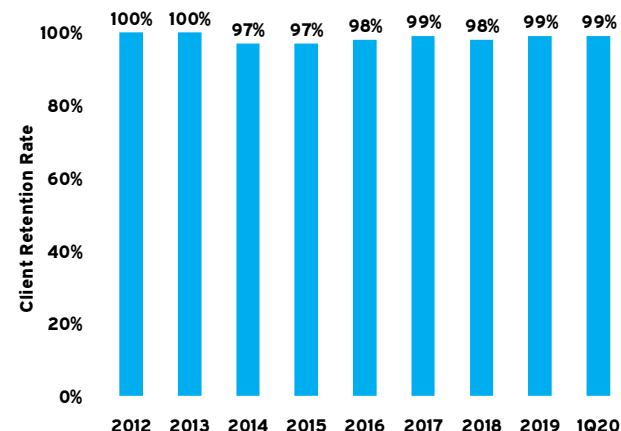
## Meketa Investment Group Corporate Update

- Staff of 204, including 138 investment professionals and 43 CFA Charterholders
- 214 clients, with over 300 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, New York, Portland (OR), San Diego, and London
- We advise on \$1.4 trillion in client assets
  - Over \$100 billion in assets committed to alternative investments
    - Private Equity      ▪ Infrastructure      ▪ Natural Resources
    - Real Estate      ▪ Hedge Funds      ▪ Commodities

**Client to Consultant Ratio<sup>1</sup>**



**Client Retention Rate<sup>2</sup>**



**Meketa Investment Group is proud to work for over 5 million American families everyday.**

<sup>1</sup> On March 15, 2019, 31 employees joined the firm as part of the merger of Meketa Investment Group and Pension Consulting Alliance.

<sup>2</sup> Client Retention Rate is one minus the number of clients lost divided by the number of clients at prior year-end.



## Asset Classes Followed Intensively by Meketa Investment Group

Domestic Equities	International Equities	Private Equity	Real Assets	Fixed Income	Hedge Funds
<ul style="list-style-type: none"> <li>- Passive</li> <li>- Enhanced Index</li> <li>- Large Cap</li> <li>- Midcap</li> <li>- Small Cap</li> <li>- Microcap</li> <li>- 130/30</li> </ul>	<ul style="list-style-type: none"> <li>- Large Cap Developed</li> <li>- Small Cap Developed</li> <li>- Emerging Markets</li> <li>- Frontier Markets</li> </ul>	<ul style="list-style-type: none"> <li>- Buyouts</li> <li>- Venture Capital</li> <li>- Private Debt</li> <li>- Special Situations</li> <li>- Secondaries</li> <li>- Fund of Funds</li> </ul>	<ul style="list-style-type: none"> <li>- Public REITs</li> <li>- Core Real Estate</li> <li>- Value Added Real Estate</li> <li>- Opportunistic Real Estate</li> <li>- Infrastructure</li> <li>- Timber</li> <li>- Natural Resources</li> <li>- Commodities</li> </ul>	<ul style="list-style-type: none"> <li>- Short-Term</li> <li>- Core</li> <li>- Core Plus</li> <li>- TIPS</li> <li>- High Yield</li> <li>- Bank Loans</li> <li>- Distressed</li> <li>- Global</li> <li>- Emerging Markets</li> </ul>	<ul style="list-style-type: none"> <li>- Long/Short Equity</li> <li>- Event Driven</li> <li>- Relative Value</li> <li>- Fixed Income Arbitrage</li> <li>- Multi Strategy</li> <li>- Market Neutral</li> <li>- Global Macro</li> <li>- Fund of Funds</li> <li>- Portable Alpha</li> </ul>

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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.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} \times (\text{market return} - \text{Risk Free Rate})]$ .

**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.