

**City of Marlborough  
Contributory Retirement System**

**Meeting Materials  
October 27, 2020**

**Fund Evaluation Report**

## Agenda

1. Economic and Market Update Data as of September 30, 2020
2. Executive Summary
3. Retirement System Summary as of September 30, 2020
  - Retirement System Summary
  - Retirement System Detail
  - Portfolio Reviews
4. Appendices
  - Meketa Investment Corporate Update
  - Disclaimer, Glossary, and Notes

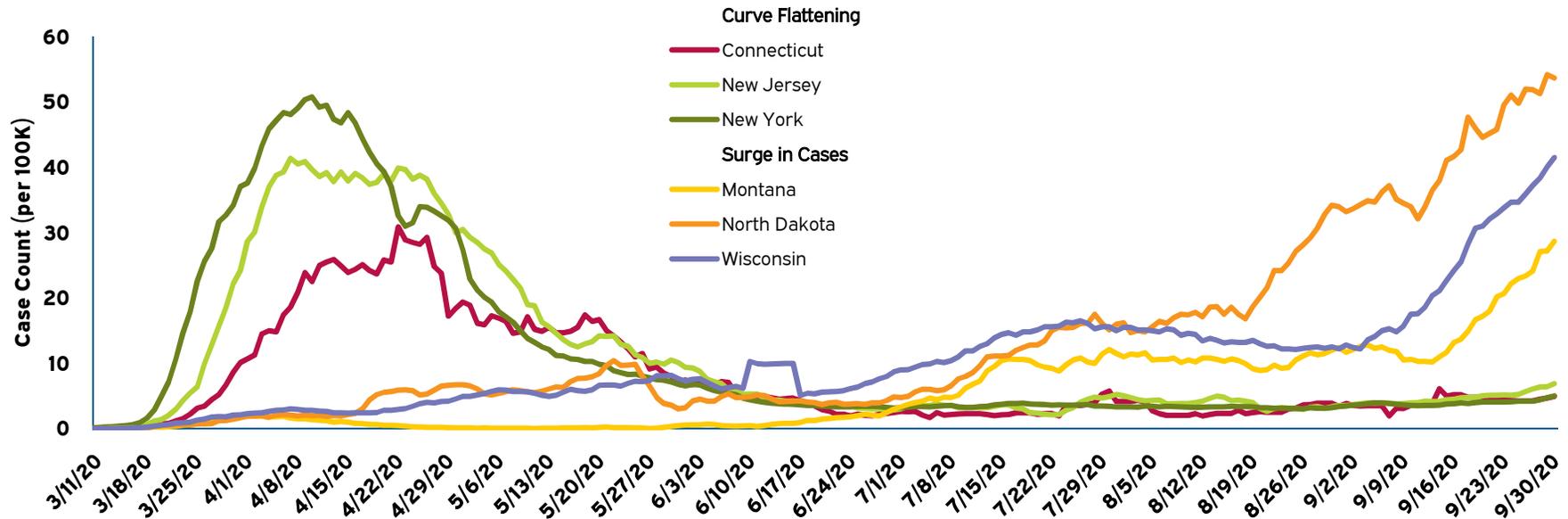
# Economic and Market Update

Data as of September 30, 2020





**New Daily Reported COVID-19 Cases<sup>1</sup>**



- Some states experienced initial spikes in cases with subsequent improvements, while other states fared better early on with recent case spikes.
- As we move into the colder months, flu season and the reopening of schools in some areas could create additional stresses on the healthcare system.
- The recent increase in cases in some states has sparked concerns that the trend will continue throughout the country.

<sup>1</sup> Source: TrackTheRecovery. Data is as of September 30, 2020.

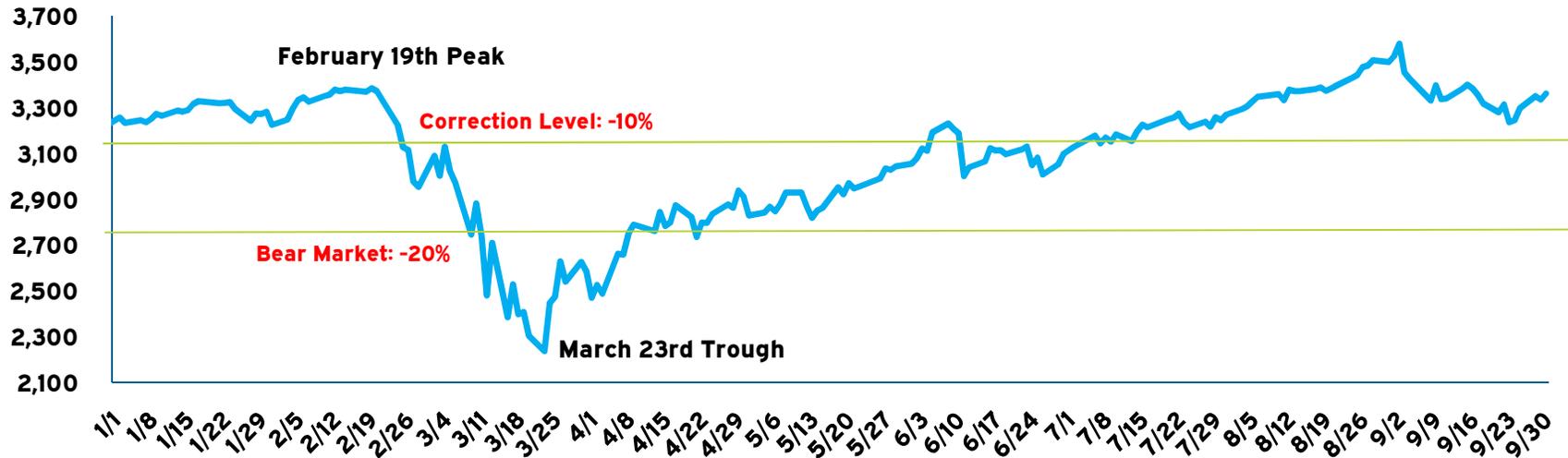
### Market Returns<sup>1</sup>

Indices	September	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	-3.8%	5.6%	15.1%	12.3%	14.1%	13.7%
MSCI EAFE	-2.6%	-7.1%	0.5%	0.6%	5.3%	4.6%
MSCI Emerging Markets	-1.6%	-1.2%	10.5%	2.4%	9.0%	2.5%
MSCI China	-2.7%	16.4%	33.6%	7.9%	13.5%	6.5%
Bloomberg Barclays Aggregate	-0.1%	6.8%	7.0%	5.2%	4.2%	3.6%
Bloomberg Barclays TIPS	-0.4%	9.2%	10.1%	5.8%	4.6%	3.6%
Bloomberg Barclays High Yield	-1.0%	0.6%	3.3%	4.2%	6.8%	6.5%
10-year US Treasury	0.2%	12.8%	10.8%	6.7%	4.6%	4.3%
30-year US Treasury	0.1%	23.9%	17.9%	12.4%	9.3%	7.8%

- In September, most asset classes declined, particularly riskier ones, possibly influenced by gridlock over the next round of US fiscal stimulus, the approaching presidential election, and fears over rising virus cases. Notably, September declines followed five straight months of substantial gains.
- Overall, global risk assets have recovered meaningfully from their lows, largely driven by record fiscal and monetary policy stimulus. The S&P 500 has appreciated by over 56% from its mid-March trough.
- Despite the recovery in risk assets, yields on safe-haven assets like US Treasuries remain close to record lows due to expectations for extremely accommodative monetary policy for the foreseeable future and for relatively weak economic growth.

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

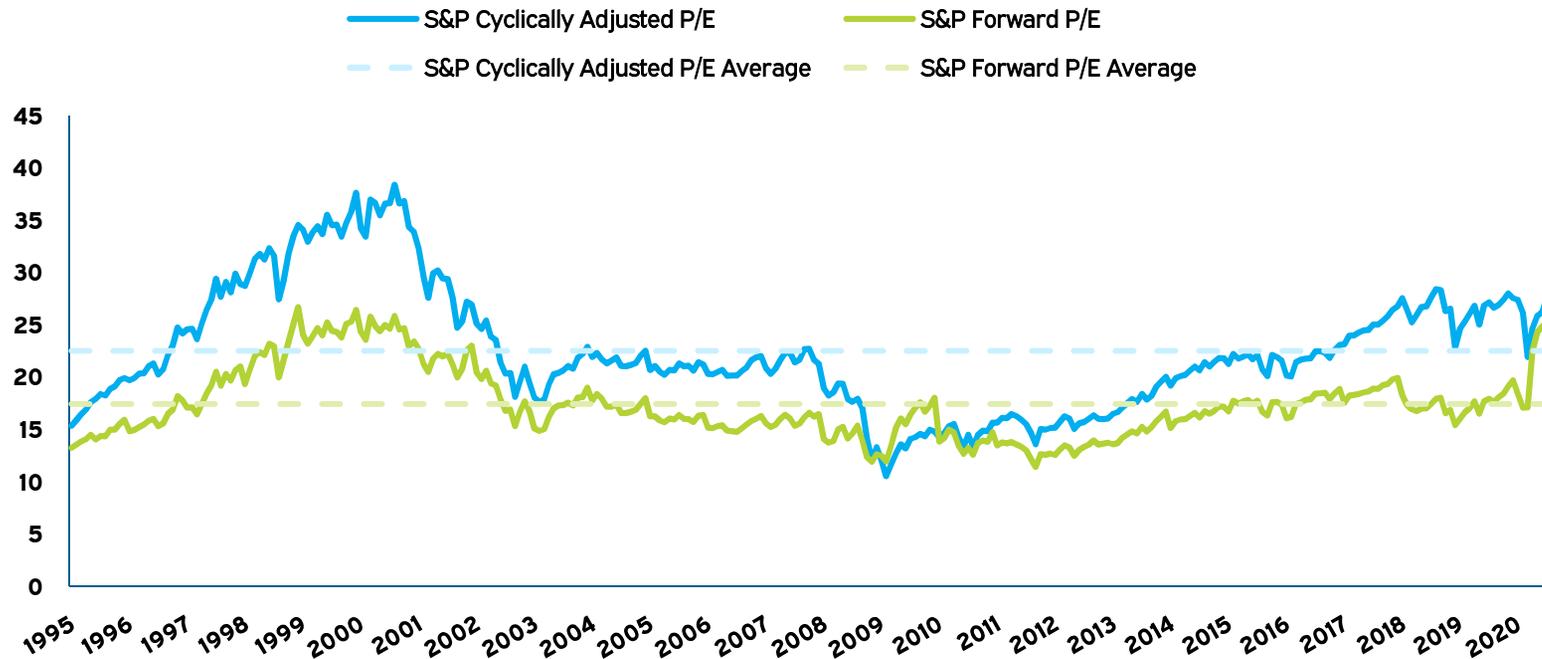
### S&P 500 Fully Recovers<sup>1</sup>



- 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.
- After quickly rebounding from its lows and finishing above its pre-COVID levels at the end of August, the market retraced 3.8% in September, bringing its year-to-date gain to 5.6%.
- The key risk going forward remains that a spike in COVID-19 cases could slow, or reverse, reopening plans.

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

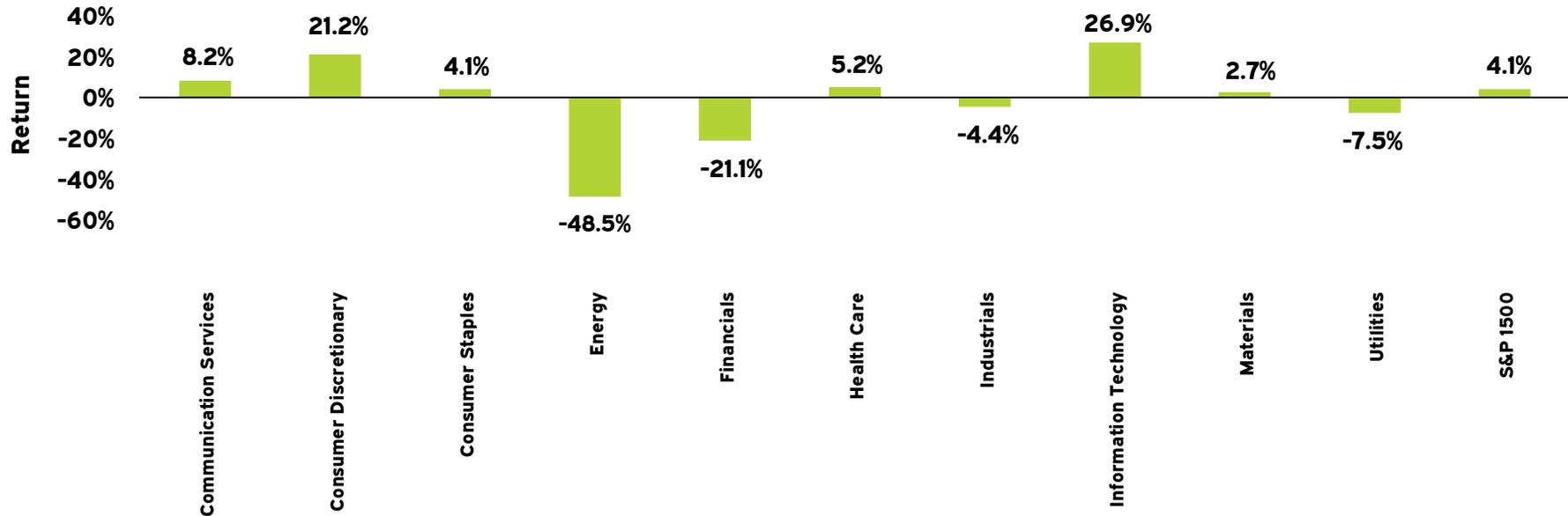
### S&P Equity Valuations<sup>1</sup>



- Despite the pullback in September, valuations based on both forward- and backward-looking earnings remain stretched.
- Many are looking to improvements in earnings growth as the US economy continues to reopen to justify market levels, with historically low interest rates also providing support.

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

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

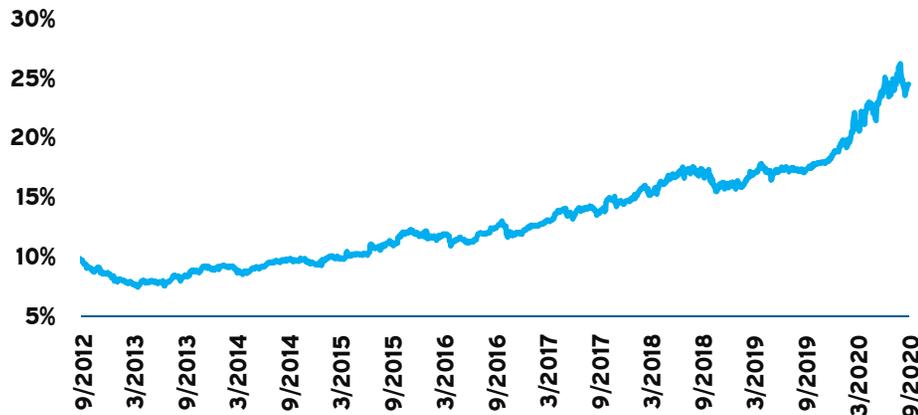


- Information technology remains the best performing sector, with a narrow group of companies including Amazon and Netflix driving market gains. The outperformance has been due to consumers moving to online purchases and streaming services.
- The consumer discretionary sector also experienced gains as the economy reopened, people returned to work, and stimulus checks were spent.
- The energy sector remains the sector with the greatest 2020 decline, triggered by the plunge in oil prices. Financials have also struggled in this slow growth environment with demand for loans down and low interest rates weighing on loan revenue.

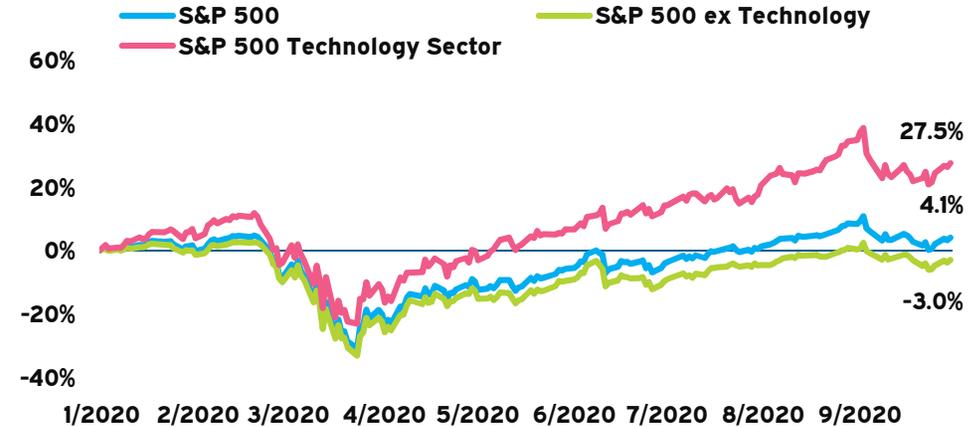
<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

### Technology has led the way in the Rebound

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



Returns Year to Date through September 30<sup>2</sup>

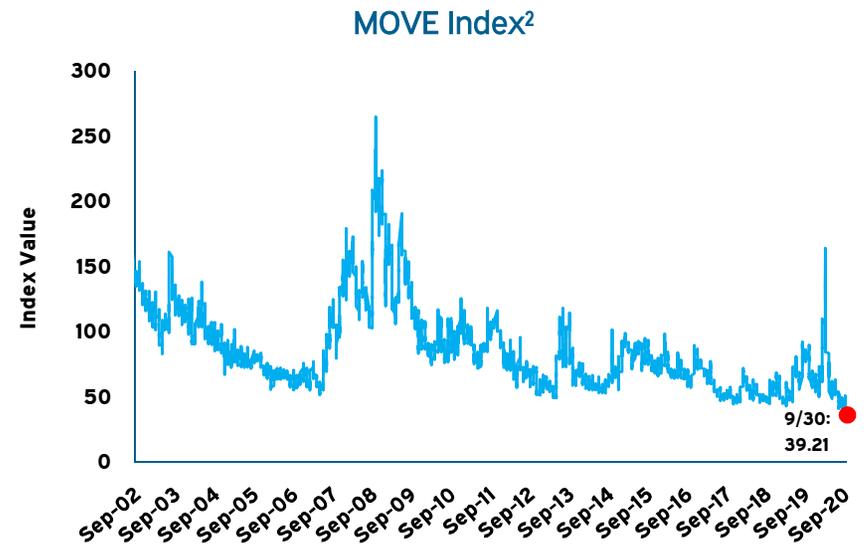
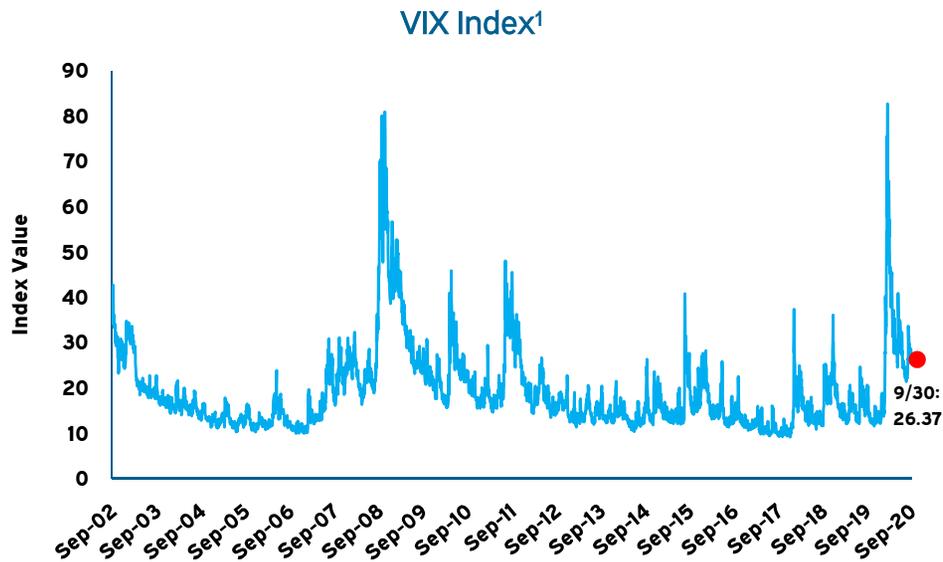


- The recent market recovery has largely been driven by a few select technology companies that benefited from the stay-at-home environment related to the virus.
- Year-to-date, the S&P 500 technology sector returned 27.5%, compared to -3.0% for the S&P 500 ex-technology index, with Amazon (+70%), Netflix (+55%), and Apple (+58%) posting strong results.
- The strong relative returns of these companies has led to them comprising a growing portion (24.5%) of the S&P 500, which makes their future performance 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 as of September 30, 2020.

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

### Volatility has Declined



- 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 peak, the VIX reached 82.7, surpassing the pinnacle of volatility during the GFC, thus showing the magnitude of the crisis and of investor fear.
- Expectations of volatility within fixed income, as represented by the MOVE index, spiked and then dropped to historic lows, helped by the broad level of monetary support and forward guidance by the Fed.

<sup>1</sup> Source: Chicago Board of Exchange. Data is as of September 30, 2020.

<sup>2</sup> Source: Bloomberg. Data is as of September 30, 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>
<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) helped 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 September, Fed programs have experienced various degrees of usage. However, at this point, none has come close to reaching program limits. Still, programs have been extended through December 2020, and the psychological value of knowing the programs are available, if necessary, likely supports market sentiment.

## 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, outcome-based 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, easing of some financial regulations for lenders, and changing the inflation mandate to an average target of 2.0%
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.

### Next Round of US Fiscal Stimulus

	Republican Proposal <sup>1</sup>	Democratic Proposal <sup>2</sup>
Status	Offered by the President and republican leaders in mid-October	Passed in House on October 1
Direct payments	\$1,200 for adults, \$1,000 per child	\$1,200 for adults, \$500 per dependent
Unemployment / Assistance	\$400 per week, through the third week of January and retroactive to Sept. 12	\$600 per week enhanced unemployment benefit through January. 15% increase in food stamps
State and local aid	\$300 billion	\$436 billion
Airlines	\$20 billion	\$25 billion
Paycheck Protection	\$330 billion	Extend program
Testing / Tracing / Healthcare	\$175 billion	\$75 billion
Education	\$150 billion	\$225 billion
Childcare	\$25 billion	\$57 billion
Total	\$1.8 Trillion	\$2.2 Trillion

- The next round of fiscal stimulus that the market has been anticipating appears to be caught in gridlock.
- Without further stimulus, many businesses might not be able to survive, particularly services like restaurants as we move into the colder months in parts of the country.
- The enhanced unemployment benefits from the initial stimulus program were particularly impactful to those without jobs. After it ended in July an extension of a lesser amount (\$300 extra per week) was implemented, but is in the process of winding down and at risk of ending without replacement.

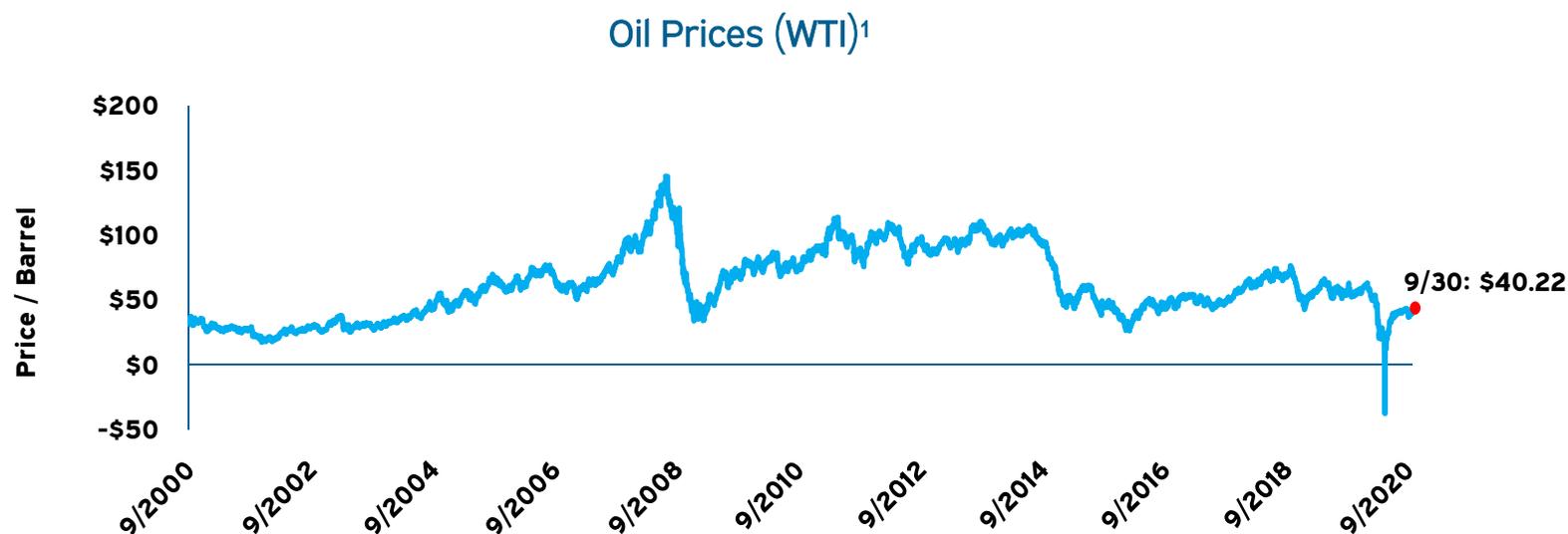
<sup>1</sup> Source: <https://www.cnn.com/2020/10/10/pelosi-dismisses-trump-coronavirus-stimulus-offer.html>

<sup>2</sup> Source: <https://www.cnn.com/2020/10/01/coronavirus-stimulus-update-house-passes-democratic-relief-bill.html>

### November US Presidential Election

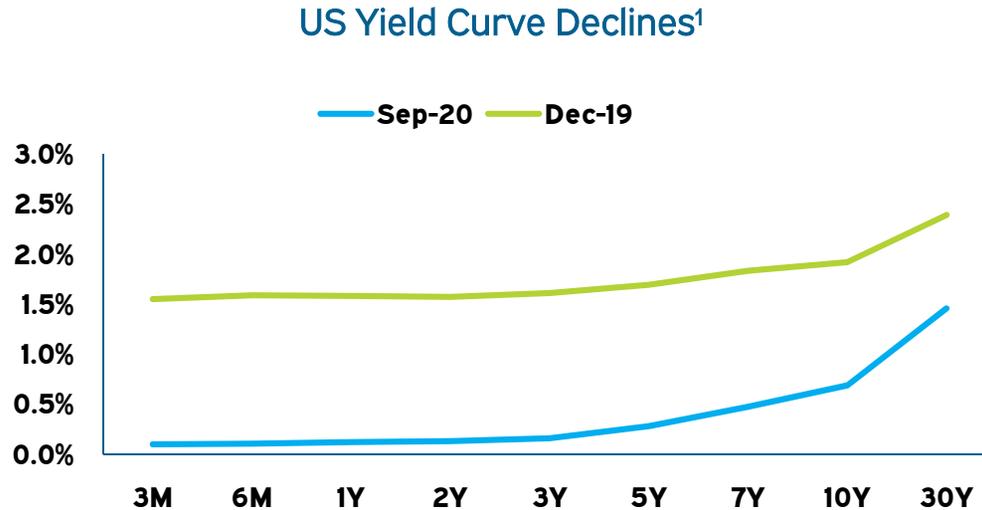
Policy Area	Trump	Biden
Tax Policy & Wages	Favors lower taxes and lower capital gains rates; “Made in America” tax credits; expanded tax breaks for investing in lower-income communities; Has indicated support for an increased minimum wage but prefers to leave it to the States.	Increase corporate tax rates from 21% to 28% (still lower than under President Obama) and implement a minimum 15% tax on global income over \$100 million; increase the tax rate for individuals earning over \$400,000 to 39.6%; Supports a \$15 an hour national minimum wage.
Infrastructure	Allocate over \$1 trillion over ten years to highways and transit, rural broadband, and 5G cell service.	Allocate over \$2 trillion to “sustainable infrastructure” and clean energy, 5G cell service, rural broadband, and modernize schools.
Government reach and Regulation	Favors smaller government and de-regulation; continue to ease regulation for businesses.	Favors increased government involvement; strengthen regulation and oversight.
Trade Policy	“America First”, protectionist in nature, use of tariffs; hard line stance with China.	“Why America Must Lead Again”; coalition forming to confront China.
Immigration	Favors restrictive immigration policies including building the southern wall and more restrictive visa requirements.	Vowed to reverse President Trump’s immigration policies including border detention and public charge rule
Climate Change	Pulled the US out of the Paris Climate Accord.	Proposed a \$2 trillion climate plan with the goal of achieving an emissions-free power sector by 2035 and upgrading four million buildings over four years to meet the highest standards for energy efficiency. Return to the Paris Accord.

- Many are looking to the November presidential election and the potential impacts of the candidate’s proposed policies.
- President Trump’s policies will likely be a continuation of those implemented pre-pandemic, focused around low taxes, deregulation, and protectionist trade policies, with a particularly aggressive stance against China. By contrast, Mr. Biden’s plans include an increase in taxes for higher-income earners, a more collaborative approach with America’s allies on foreign policy, broader regulation, and “green” initiatives.



- While global oil prices have rallied from April lows, they remain below their pre-pandemic level.
- In September, OPEC+ maintained their 7.7 million barrels/day production cuts in an effort to support oil prices.
- Counterbalancing the OPEC+ production cut agreement, US oil producers (particularly shale output) are turning wells back on, given higher prices.
- As OPEC+ starts rolling back production cuts, and an increasing virus spread potentially weighs on demand, oil prices could experience downward pressure going forward.

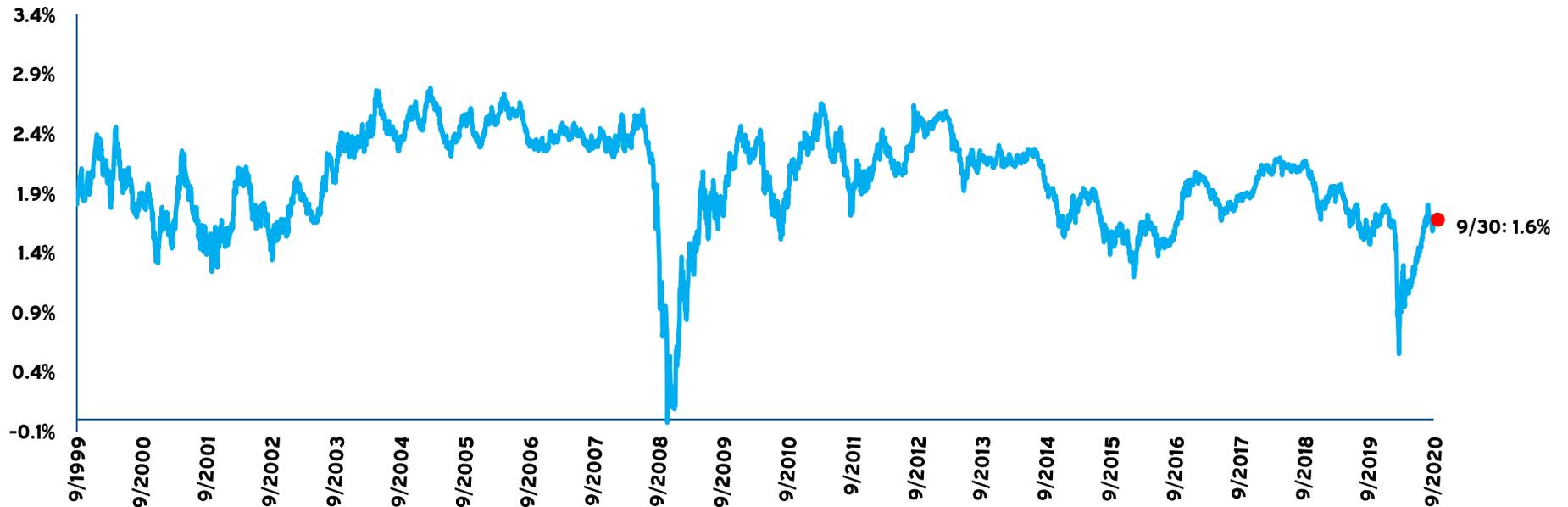
<sup>1</sup> Source: Bloomberg. Represents WTI first available futures contract. Data is as of September 30, 2020.



- The US Treasury yield curve has declined materially during 2020.
- Cuts in monetary policy rates, and policy makers’ 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 produced 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 September 30, 2020.

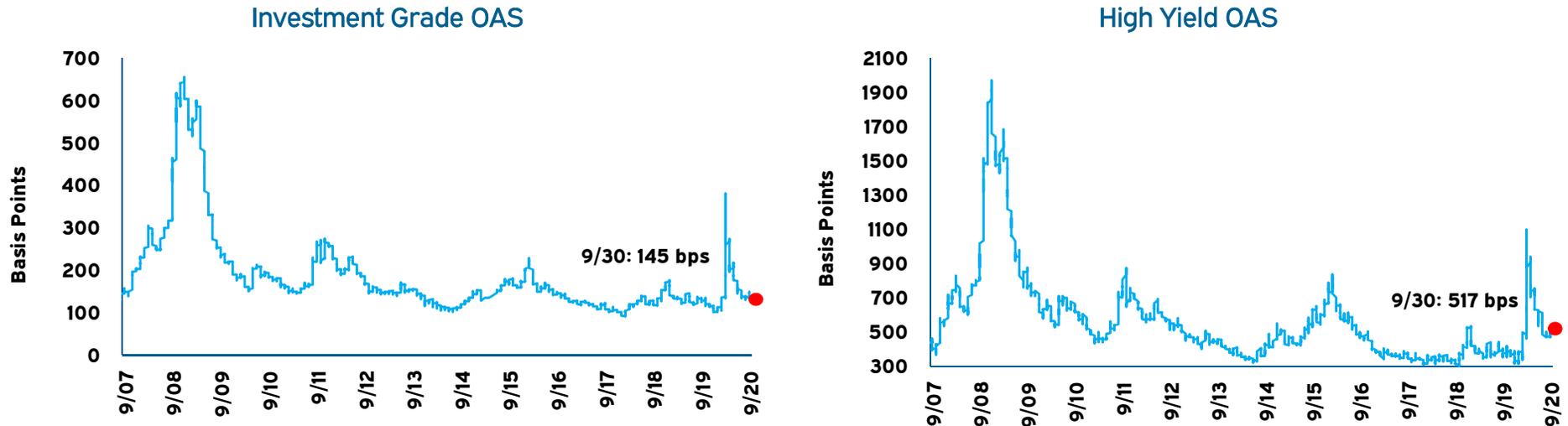
### 10-Year Breakeven Inflation<sup>1</sup>



- 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 market volatility.
- Liquidity eventually improved and breakeven rates increased as deflationary concerns moderated, but given the uncertainty regarding economic growth and the inflationary effects of the unprecedented US fiscal response, inflation expectations remain below historical averages.

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

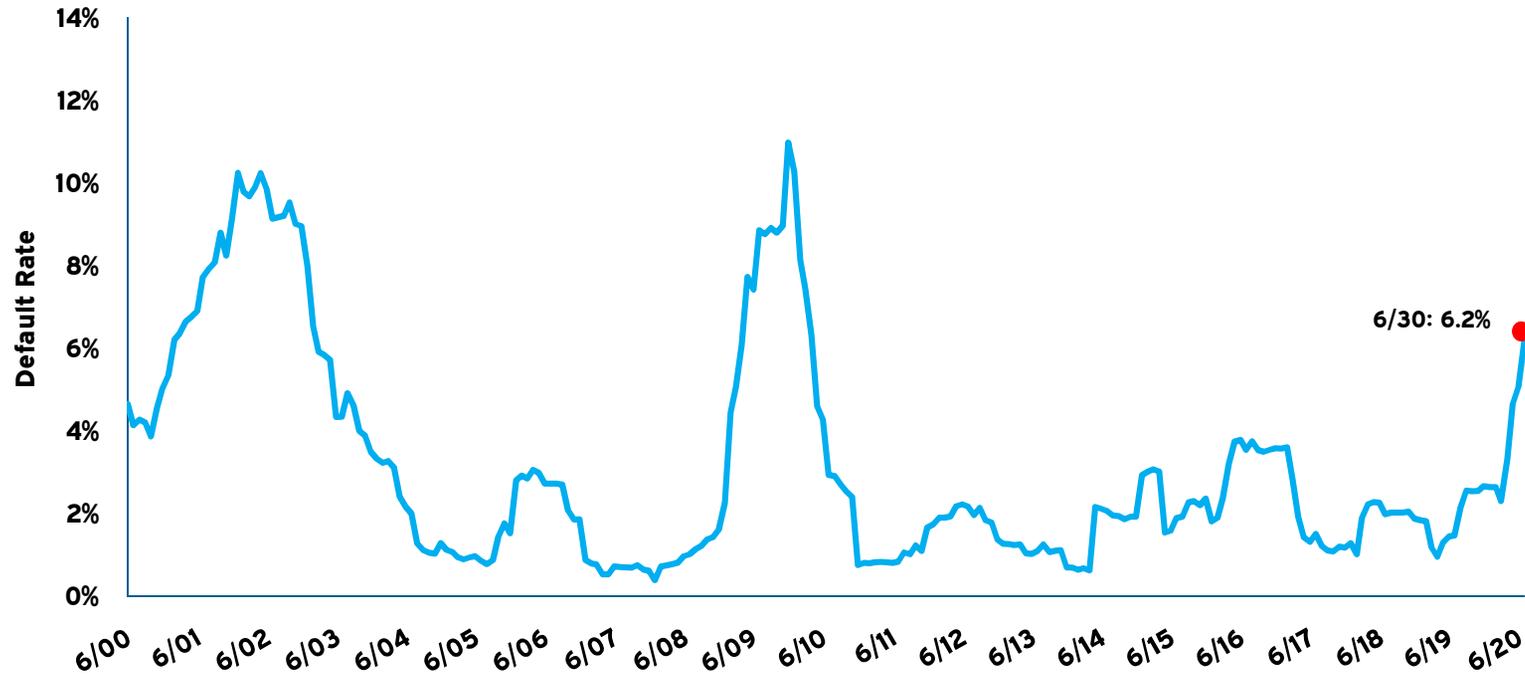
### Credit Spreads (High Yield & Investment Grade)<sup>1</sup>



- Credit spreads (the spread above a comparable Treasury bond) for investment grade and high yield corporate debt expanded sharply at the start of the pandemic 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 recently downgraded from investment grade, was well received by investors, leading to a decline in spreads to around long-term averages.
- 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.

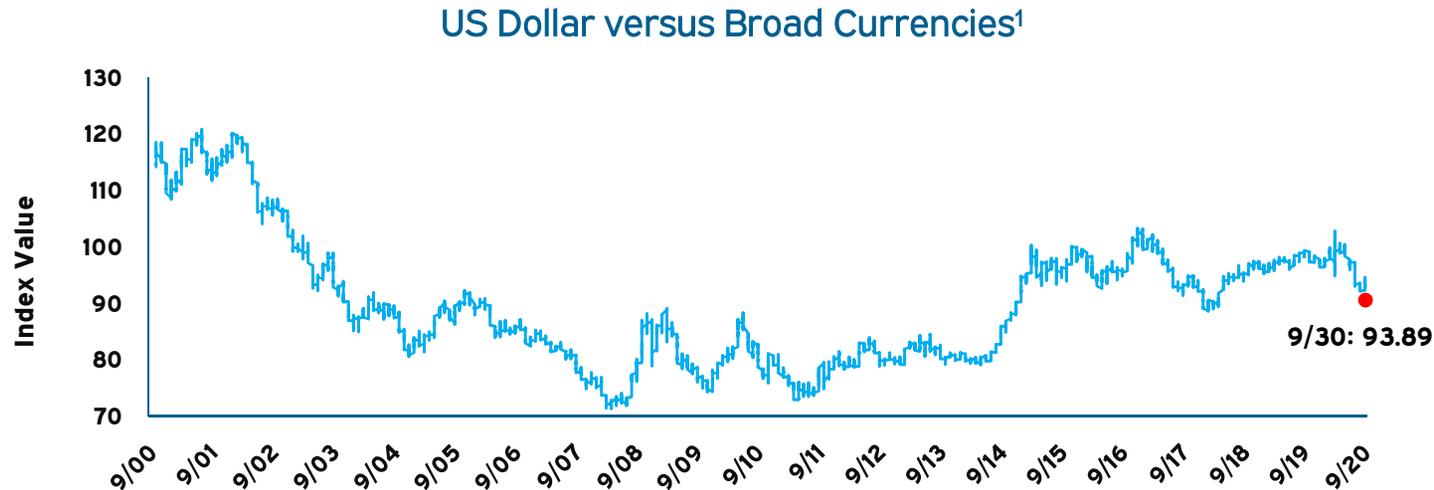
<sup>1</sup> Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of September 30, 2020.

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



- Even though spreads have declined, helped by the Federal Reserve’s support, defaults, particularly in the high yield sector, have increased dramatically in 2020.
- The energy sector has experienced the greatest impact given the decline in oil prices, with the default rate over 10% and expectations for it to increase.

<sup>1</sup> Source: J.P. Morgan; S&P LCD. Most recent 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 the US struggles with containing the virus and investors seek higher-yielding non-US assets, particularly in emerging markets. This has created pressures on already stressed export-focused countries.
- Going forward, the dollar's safe haven quality and the relatively higher rates in the US could provide support.

<sup>1</sup> Source: Bloomberg. Represents the DXY Index. Data is as of September 30, 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.

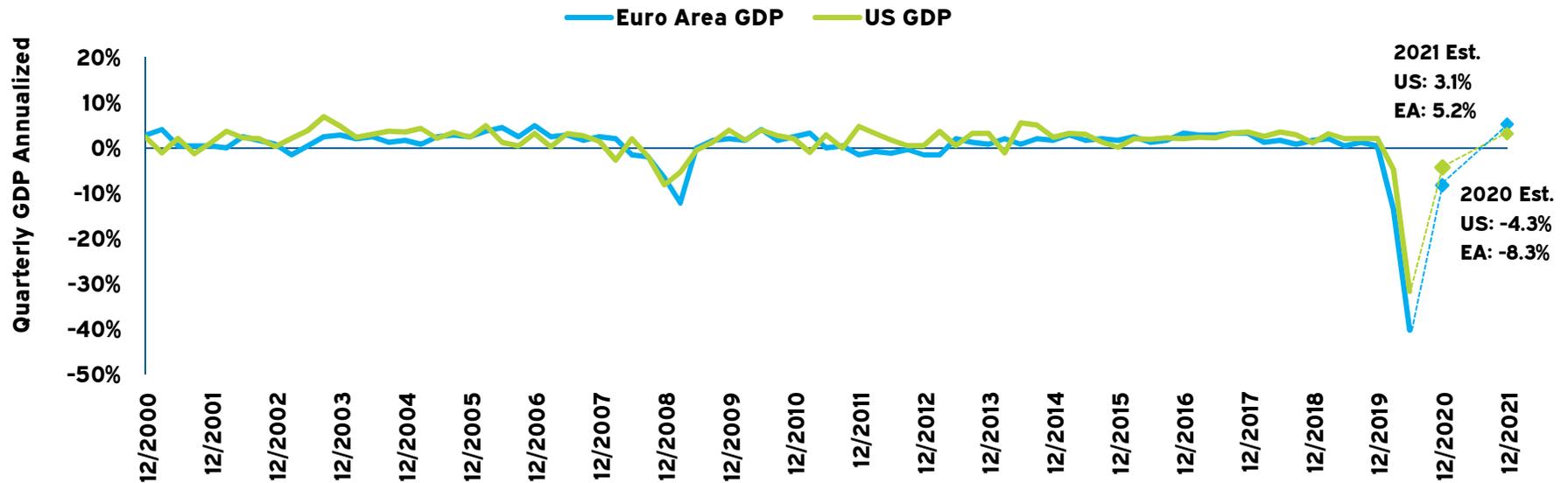
### Labor Force Impacts:

- 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.

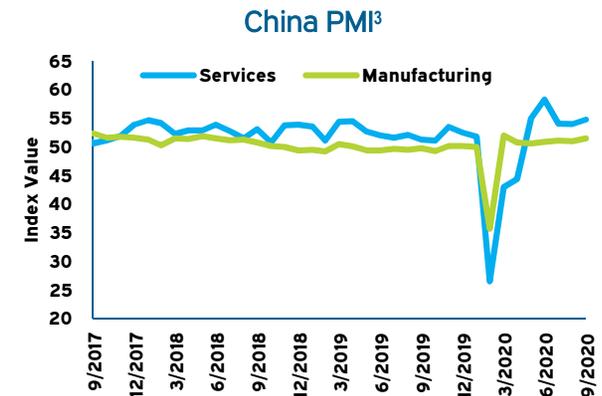
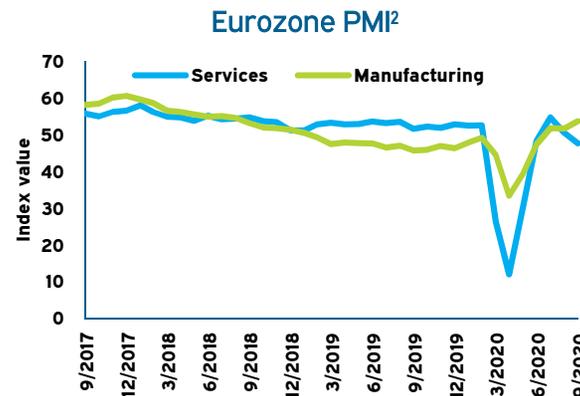
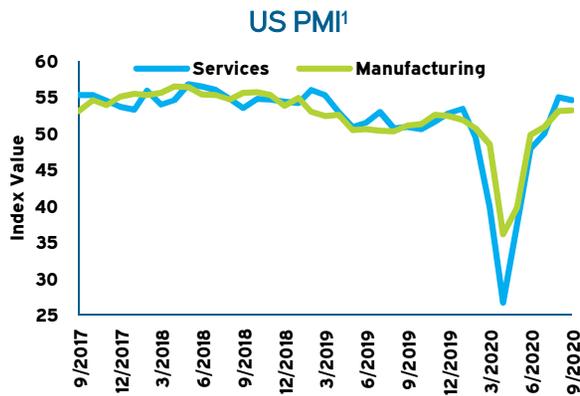
### GDP Data Shows Impact of the Pandemic<sup>1</sup>



- 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 (annualized) decline of -31.4%, officially putting 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.
- At the end of September, Bloomberg Economics estimated that third quarter US GDP growth could be as high as 25.1% (QoQ annualized). Full year US GDP growth is forecasted to decline by 4.3%.

<sup>1</sup> Source: Bloomberg and IMF. Q3 2020 data represents the third estimate of GDP for the Euro Area and United States. Euro Area figures annualized by Meketa. Projections via October 2020 IMF World Economic Outlook and represent annual numbers.

### Global PMIs



- Purchasing Managers Indices (PMI), which are 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, their PMI's, particularly in the service sector, recovered materially. In the US and Europe, the indices have also improved from their lows to above contraction levels in most cases.

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

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

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

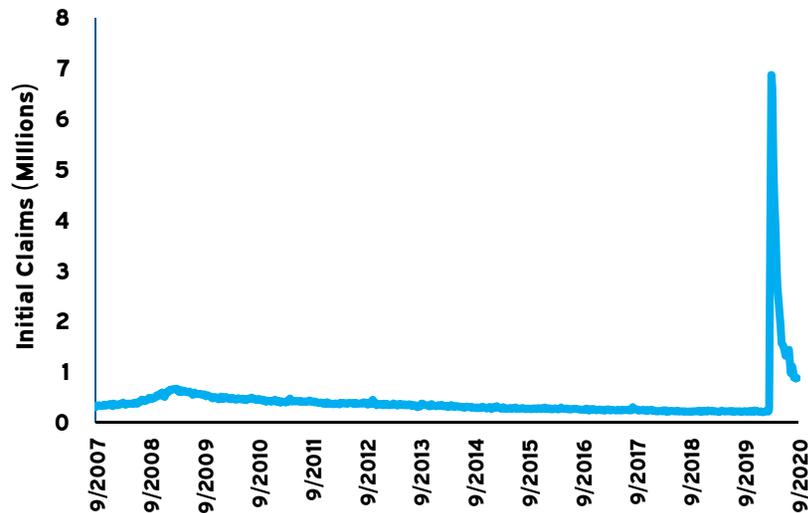


- In September, the unemployment rate continued its decline from the recent April 14.7% peak, falling to 7.9% as businesses and consumers emerged from the lockdown.
- Despite the improvement, unemployment levels remain well above pre-virus readings and are likely higher than reported, as some workers appear misclassified. According to the Bureau of Labor Statistics, absent the misclassification issue, the September unemployment rate would be higher by 0.4%.
- The recent spike in infections and the potential shutting down of some parts of the economy, could lead to an increase in the unemployment rate going forward.

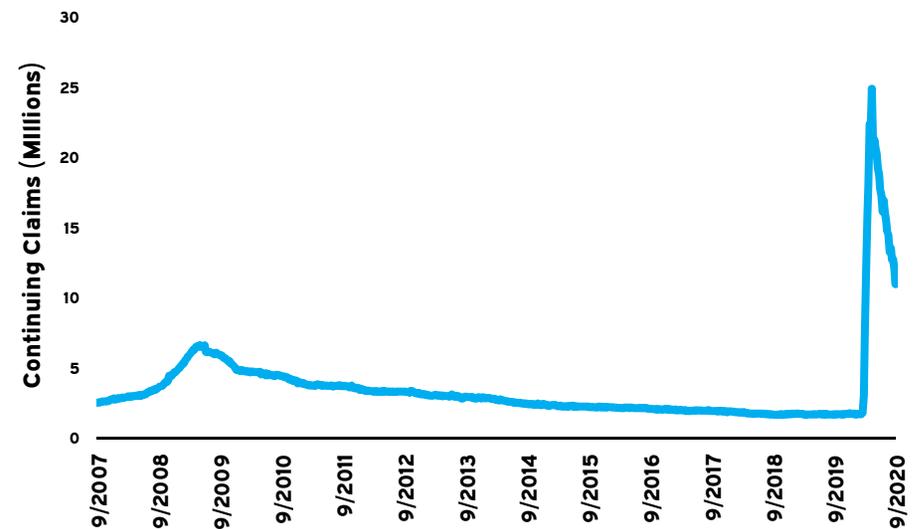
<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020. Bars represent recessions.

### US Jobless Claims

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



#### Continuing Claims<sup>2</sup>

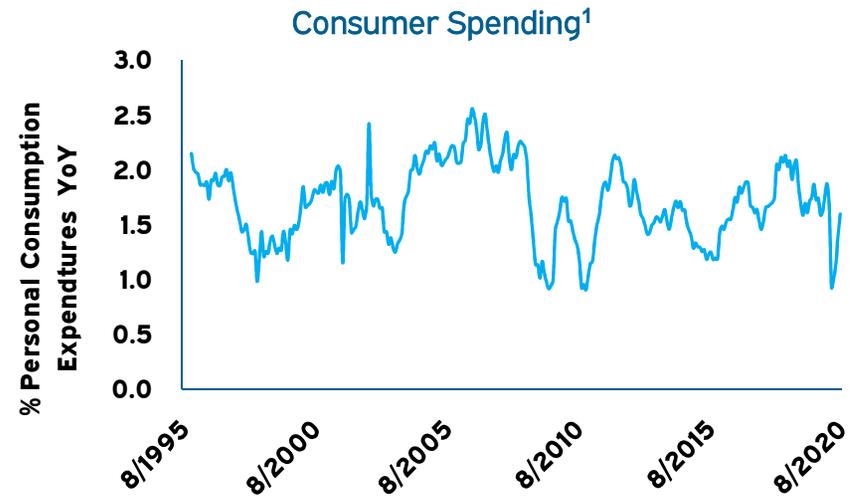


- Over the last 28 weeks, roughly 63 million people filed for initial unemployment. This level far exceeds the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the continued decline in initial jobless claims to below 1.0 million per week, levels remain 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 11.8 million.

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

<sup>2</sup> Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of September 25, 2020.

### Savings and Spending

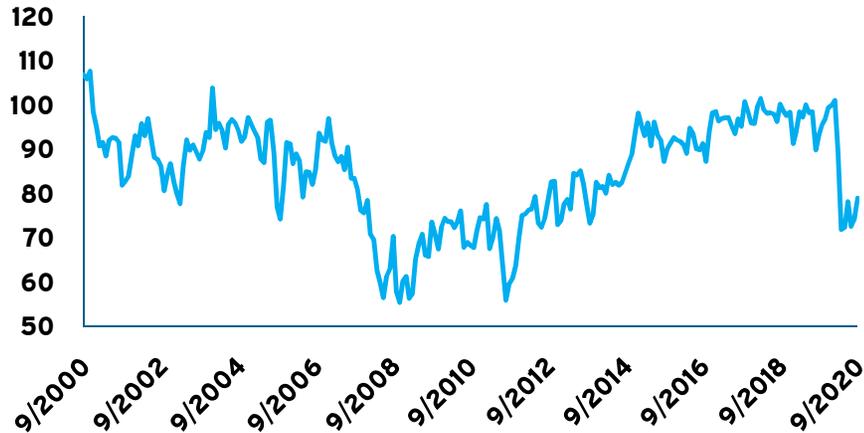


- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown.
- Despite the income support, the savings rate increased due to the decline in consumer spending, 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 declined from its peak as spending increased with the economy slowly reopening.

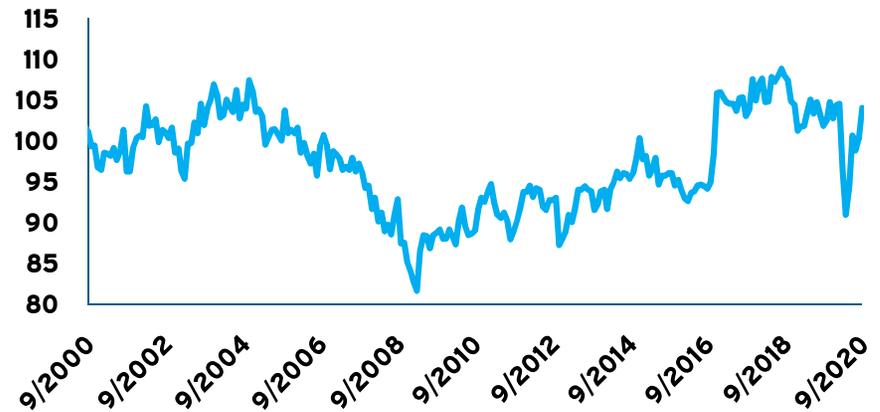
<sup>1</sup> Source: Bloomberg. Latest data is as of August 31, 2020.

### Sentiment Indicators

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



Small Business Confidence<sup>2</sup>



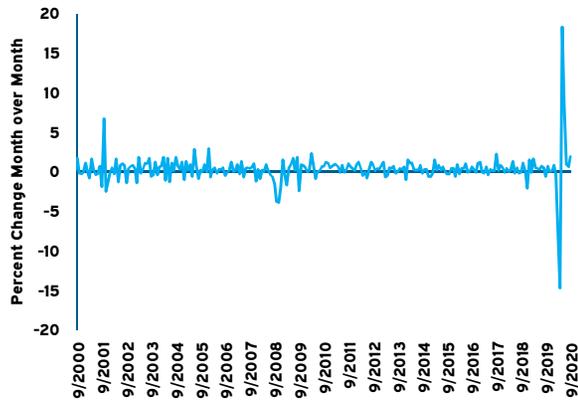
- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses generate around half of US GDP, making sentiment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

<sup>1</sup> Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of September 30, 2020.

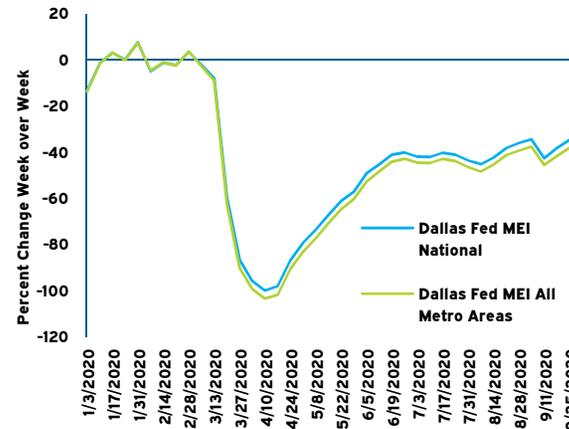
<sup>2</sup> Source: Bloomberg. NFIB Small Business Optimism Index. Latest data is as of September 30, 2020.

### Some US Data has Improved

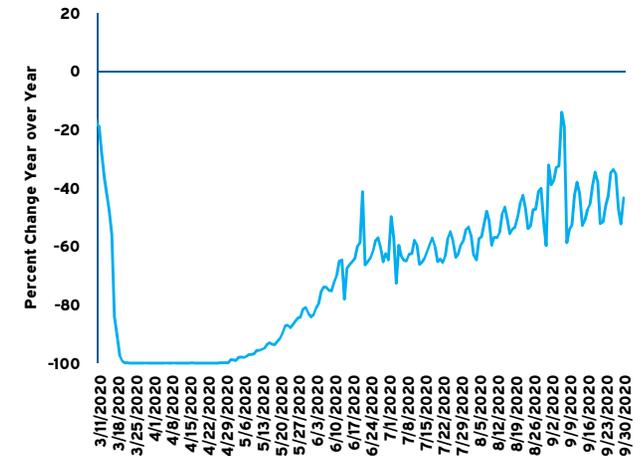
Retail Sales<sup>1</sup>



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 historical averages, and have slowed in some instances 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 five consecutive months of growth as the economy reopened, but the pace of growth has been declining.
- 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 September 30, 2020 and represents the US Retail Sales SA MoM%.

<sup>2</sup> Source: Bloomberg. Data is as of September 25, 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 September 30, 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 with the recent increases in cases in certain areas; however, individual countries are attempting to lay the groundwork to support 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 and a vaccine is developed.
- Expect heightened market volatility should economies start to shut back down in response to the recent spike in cases.
  - This has been a consistent theme recently; volatility is likely to remain at risk of spiking again for the foreseeable future.
- 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 August 2020	-34%	6 months
<b>Average</b>	<b>-36%</b>	<b>39 months</b>
<b>Average ex. Great Depression</b>	<b>-33%</b>	<b>24 months</b>

- As markets have fully recovered to above pre-COVID levels, questions remain about the sustainability of the rally.
- The six-month recovery period represents one of the shortest on record, similar to the historic decline.

<sup>1</sup> Source: Goldman Sachs.

### Implications for Clients

- Portfolios have experienced significant improvements from the March lows.
- Diversification and a disciplined rebalancing approach worked.
- Even though equity markets have recovered from their lows, it is important to remain vigilant and be prepared to rebalance if high volatility returns.
  - 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.

### Performance YTD (through September 30, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio <sup>1</sup>
5.6%	-5.4%	6.8%	3.6%

- 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.

## **Executive Summary**

### Executive Summary

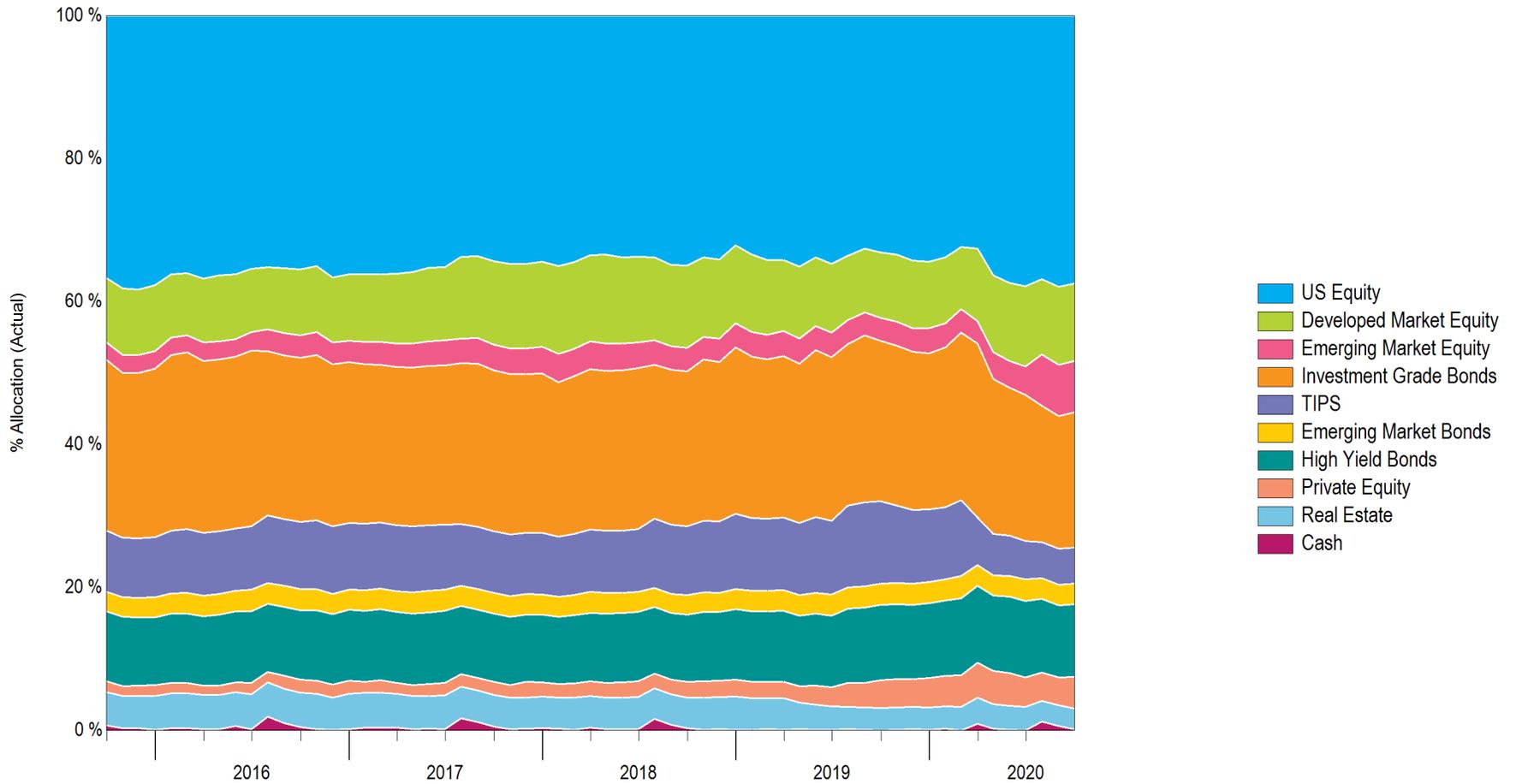
- The Q3 ending market value for the System was \$193.4 million, an increase of \$31.5 million from the end of Q1. This dramatic increase was due to two very good consecutive quarterly results. The returns were 11.6% and 5.4% for the previous two quarters, respectively.
- Since the additional equities were bought for the System during the early days of 2020 and Q2 with the appropriation, they were the best performing asset class by far.
  - The weight in domestic equity increased to 37.5% at the end of Q3 from 32.6% at the end of Q1. Domestic equity returned 31% during this period.
  - The weight in emerging markets equity increased to 7.2% Q3 from 3.1% at the end of Q1. Emerging markets equity returned 34% during this period.
- Due to the very good equity returns and the active decision to add to equities, the System's equity allocation is almost at target to the New Policy Step 2.
- There are several new and current asset classes for which we need to conduct searches during Q4 2020 and Q1 2021. They include private debt, infrastructure, real estate and private equity.
- The capital to fund these new investments will be drawn from the overweight positions we have in investment grade bonds and TIPS.
- We will also conduct a high yield search to fulfill PERAC regulations early 2021.

**Retirement System Summary  
As of September 30, 2020**

## Retirement System Summary

Allocation vs. Targets and Policy						
	Current Balance	Old Policy	Current Allocation	New Policy Step 1	New Policy Step 2	New Policy Range
US Equity	\$72,527,728	33%	37%	34%	38%	28% - 42%
Developed Market Equity	\$20,893,898	9%	11%	10%	12%	5% - 15%
Emerging Market Equity	\$13,867,744	3%	7%	8%	10%	1% - 12%
Investment Grade Bonds	\$36,570,930	22%	19%	18%	12%	10% - 25%
TIPS	\$9,839,078	10%	5%	2%	0%	0% - 10%
Emerging Market Bonds	\$5,502,574	3%	3%	3%	2%	1% - 5%
High Yield Bonds	\$19,736,220	10%	10%	7%	5%	5% - 12%
Private Equity	\$8,468,808	5%	4%	5%	5%	3% - 7%
Real Estate	\$5,706,523	5%	3%	7%	7%	2% - 10%
Infrastructure	--	0%	--	2%	5%	0% - 5%
Private Debt	--	0%	--	4%	4%	0% - 5%
Cash	\$314,606	0%	0%	0%	0%	0% - 5%
<b>Total</b>	<b>\$193,428,107</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	

Asset Allocation History  
5 Years Ending September 30, 2020



Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>Total Retirement System (net)</b>	<b>193,428,107</b>	<b>100.0</b>	<b>5.4</b>	<b>2.7</b>	<b>7.2</b>	<b>5.9</b>	<b>7.7</b>	<b>7.4</b>	<b>6.2</b>	<b>7.6</b>	<b>Jul-88</b>
55% MSCI World & 45% Barclays Aggregate			4.7	4.6	9.5	7.0	7.9	7.0	5.3	7.1	Jul-88
45% MSCI World & 55% Barclays Aggregate			3.9	5.1	9.2	6.8	7.3	6.4	5.3	7.0	Jul-88
InvMetrics Public DB \$50mm-\$250mm Net Median			4.9	2.3	7.5	6.3	7.8	7.2	5.9	8.4	Jul-88
<b>Domestic Equity Assets (net)</b>	<b>72,527,728</b>	<b>37.5</b>	<b>7.9</b>	<b>-2.7</b>	<b>5.1</b>	<b>6.9</b>	<b>10.9</b>	<b>11.8</b>	<b>5.6</b>	<b>7.8</b>	<b>Oct-06</b>
Russell 3000			9.2	5.4	15.0	11.6	13.7	13.5	6.6	9.1	Oct-06
PRIT Domestic Equity			8.5	3.1	12.4	10.7	13.0	13.0	6.1	7.9	Oct-06
<b>International Developed Markets Equity Assets (net)</b>	<b>20,893,898</b>	<b>10.8</b>	<b>4.8</b>	<b>-6.6</b>	<b>1.0</b>	<b>0.9</b>	<b>5.5</b>	<b>3.8</b>	<b>--</b>	<b>2.4</b>	<b>Oct-06</b>
MSCI EAFE			4.8	-7.1	0.5	0.6	5.3	4.6	3.6	2.7	Oct-06
<b>International Emerging Markets Equity Assets (net)</b>	<b>13,867,744</b>	<b>7.2</b>	<b>10.1</b>	<b>1.0</b>	<b>12.1</b>	<b>3.5</b>	<b>9.5</b>	<b>--</b>	<b>--</b>	<b>5.7</b>	<b>Jan-15</b>
MSCI Emerging Markets			9.6	-1.2	10.5	2.4	9.0	2.5	7.8	4.6	Jan-15
<b>Investment Grade Bonds Assets (net)</b>	<b>36,570,930</b>	<b>18.9</b>	<b>0.6</b>	<b>6.6</b>	<b>6.7</b>	<b>5.2</b>	<b>4.1</b>	<b>3.6</b>	<b>5.0</b>	<b>6.2</b>	<b>Jul-88</b>
BBgBarc US Aggregate TR			0.6	6.8	7.0	5.2	4.2	3.6	5.0	6.2	Jul-88
PRIT Core Fixed Income			1.3	11.9	10.6	7.8	6.0	5.3	5.8	7.1	Jul-88
<b>High Yield Bond Assets (net)</b>	<b>19,736,220</b>	<b>10.2</b>	<b>4.0</b>	<b>0.5</b>	<b>2.8</b>	<b>4.1</b>	<b>5.8</b>	<b>5.8</b>	<b>--</b>	<b>6.5</b>	<b>Sep-03</b>
BBgBarc US High Yield TR			4.6	0.6	3.3	4.2	6.8	6.5	7.2	7.5	Sep-03
PRIT Public Value-Added Fixed Income			4.0	-1.2	0.9	2.4	5.0	3.7	--	6.0	Sep-03
<b>TIPS Assets (net)</b>	<b>9,839,078</b>	<b>5.1</b>	<b>3.0</b>	<b>9.1</b>	<b>10.0</b>	<b>5.7</b>	<b>4.6</b>	<b>3.5</b>	<b>--</b>	<b>4.2</b>	<b>Oct-05</b>
BBgBarc US TIPS TR			3.0	9.2	10.1	5.8	4.6	3.6	5.5	4.2	Oct-05
<b>Emerging Market Debt Assets (net)</b>	<b>5,502,574</b>	<b>2.8</b>	<b>2.7</b>	<b>-1.4</b>	<b>1.6</b>	<b>2.7</b>	<b>6.1</b>	<b>--</b>	<b>--</b>	<b>5.0</b>	<b>Jan-15</b>
JP Morgan EMBI Global Diversified			2.3	-0.5	1.3	3.5	6.1	5.4	8.3	5.3	Jan-15
<b>Open-Ended Real Estate (net)</b>	<b>5,649,836</b>	<b>2.9</b>	<b>0.7</b>	<b>0.2</b>	<b>2.2</b>	<b>6.0</b>	<b>7.3</b>	<b>11.1</b>	<b>6.9</b>	<b>7.9</b>	<b>Oct-95</b>
NCREIF ODCE			0.0	-0.6	0.9	5.0	6.5	10.2	7.6	8.7	Oct-95
<b>Total Closed End Real Estate (net)</b>	<b>56,687</b>	<b>0.0</b>	<b>0.0</b>	<b>-2.9</b>	<b>7.1</b>	<b>-14.4</b>	<b>-4.6</b>	<b>--</b>	<b>--</b>	<b>2.8</b>	<b>Jan-13</b>
<b>Private Equity Assets (net)</b>	<b>8,468,808</b>	<b>4.4</b>	<b>12.6</b>	<b>6.0</b>	<b>9.0</b>	<b>10.8</b>	<b>5.3</b>	<b>6.7</b>	<b>--</b>	<b>5.6</b>	<b>Oct-06</b>
<b>Cash (net)</b>	<b>314,606</b>	<b>0.2</b>									

Trailing Performance													
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date	
<b>Total Retirement System</b>	<b>193,428,107</b>	<b>100.0</b>	<b>--</b>	<b>5.4</b>	<b>2.8</b>	<b>7.3</b>	<b>6.0</b>	<b>7.8</b>	<b>7.5</b>	<b>6.2</b>	<b>7.6</b>	<b>Jul-88</b>	
<i>55% MSCI World &amp; 45% Barclays Aggregate</i>				4.7	4.6	9.5	7.0	7.9	7.0	5.3	7.1	Jul-88	
<i>45% MSCI World &amp; 55% Barclays Aggregate</i>				3.9	5.1	9.2	6.8	7.3	6.4	5.3	7.0	Jul-88	
<i>InvMetrics Public DB \$50mm-\$250mm Net Median</i>				4.9	2.3	7.5	6.3	7.8	7.2	5.9	8.4	Jul-88	
<b>Domestic Equity Assets</b>	<b>72,527,728</b>	<b>37.5</b>	<b>37.5</b>	<b>8.0</b>	<b>-2.5</b>	<b>5.3</b>	<b>7.1</b>	<b>11.1</b>	<b>11.9</b>	<b>5.6</b>	<b>7.9</b>	<b>Oct-06</b>	
<i>Russell 3000</i>				9.2	5.4	15.0	11.6	13.7	13.5	6.6	9.1	Oct-06	
<i>PRIT Domestic Equity</i>				8.5	3.2	12.6	10.8	13.1	13.1	6.2	8.0	Oct-06	
RhumbLine S&P 500 Index	30,567,006	15.8	42.1	8.9	5.6	15.1	12.2	14.1	13.7	6.5	6.8	Mar-99	
<i>S&amp;P 500</i>				8.9	5.6	15.1	12.3	14.1	13.7	6.4	6.8	Mar-99	
<i>eV US Passive S&amp;P 500 Equity Net Median</i>				8.9	5.5	15.1	12.2	14.1	13.7	6.3	6.7	Mar-99	
Fiduciary Large Cap Equity	24,792,130	12.8	34.2	7.7	-4.7	0.8	6.4	9.8	--	--	10.6	Sep-12	
<i>Russell 3000</i>				9.2	5.4	15.0	11.6	13.7	13.5	6.6	13.5	Sep-12	
<i>eV US Large Cap Equity Net Median</i>				7.8	1.4	9.6	9.4	11.5	12.2	7.1	11.9	Sep-12	
Frontier Capital Appreciation	17,168,591	8.9	23.7	6.7	-8.9	0.3	2.2	9.3	--	--	9.8	Feb-13	
<i>Russell 2500 Growth</i>				9.4	11.6	23.4	13.4	14.2	14.1	7.1	13.4	Feb-13	
<i>eV US Small-Mid Cap Growth Equity Net Median</i>				9.0	12.9	24.2	17.3	15.5	14.0	8.1	14.0	Feb-13	

### Total Retirement System | As of September 30, 2020

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>International Developed Markets Equity Assets</b>	<b>20,893,898</b>	<b>10.8</b>	<b>10.8</b>	<b>4.8</b>	<b>-6.6</b>	<b>1.0</b>	<b>0.9</b>	<b>5.5</b>	<b>3.8</b>	<b>--</b>	<b>2.4</b>	<b>Oct-06</b>
<i>MSCI EAFE</i>				4.8	-7.1	0.5	0.6	5.3	4.6	3.6	2.7	Oct-06
Rhumbline MSCI EAFE Index	20,893,898	10.8	100.0	4.8	-6.9	0.7	0.8	5.5	--	--	2.2	Aug-14
<i>MSCI EAFE</i>				4.8	-7.1	0.5	0.6	5.3	4.6	3.6	2.0	Aug-14
<i>eV EAFE All Cap Equity Net Median</i>				6.0	-4.4	3.2	1.4	5.7	5.9	5.0	3.4	Aug-14
<b>International Emerging Markets Equity Assets</b>	<b>13,867,744</b>	<b>7.2</b>	<b>7.2</b>	<b>10.1</b>	<b>1.0</b>	<b>12.1</b>	<b>3.5</b>	<b>9.5</b>	<b>--</b>	<b>--</b>	<b>5.7</b>	<b>Jan-15</b>
<i>MSCI Emerging Markets</i>				9.6	-1.2	10.5	2.4	9.0	2.5	7.8	4.6	Jan-15
DFA Emerging Markets	7,270,280	3.8	52.4	8.5	-6.1	3.8	-0.2	7.2	--	--	3.3	Jan-15
<i>MSCI Emerging Markets</i>				9.6	-1.2	10.5	2.4	9.0	2.5	7.8	4.6	Jan-15
<i>eV Emg Mkts All Cap Equity Net Median</i>				9.9	-1.3	10.5	2.4	9.3	3.3	8.6	4.9	Jan-15
Driehaus Emerging Market Equity	6,597,464	3.4	47.6	12.0	8.2	20.4	7.1	11.7	--	--	8.0	Jan-15
<i>MSCI Emerging Markets</i>				9.6	-1.2	10.5	2.4	9.0	2.5	7.8	4.6	Jan-15
<i>eV Emg Mkts All Cap Equity Net Median</i>				9.9	-1.3	10.5	2.4	9.3	3.3	8.6	4.9	Jan-15
<b>Investment Grade Bonds Assets</b>	<b>36,570,930</b>	<b>18.9</b>	<b>18.9</b>	<b>0.7</b>	<b>6.6</b>	<b>6.8</b>	<b>5.2</b>	<b>4.2</b>	<b>3.6</b>	<b>5.0</b>	<b>6.2</b>	<b>Jul-88</b>
<i>BBgBarc US Aggregate TR</i>				0.6	6.8	7.0	5.2	4.2	3.6	5.0	6.2	Jul-88
<i>PRIT Core Fixed Income</i>				1.3	12.0	10.7	8.0	6.1	5.4	5.9	7.2	Jul-88
SSgA U.S. Aggregate Bond Index	36,570,930	18.9	100.0	0.7	6.8	7.0	5.3	4.2	3.7	--	4.8	May-01
<i>BBgBarc US Aggregate TR</i>				0.6	6.8	7.0	5.2	4.2	3.6	5.0	4.8	May-01
<i>eV US Core Fixed Inc Net Median</i>				1.1	7.2	7.3	5.4	4.4	3.9	5.2	5.0	May-01

### Total Retirement System | As of September 30, 2020

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>High Yield Bond Assets</b>	<b>19,736,220</b>	<b>10.2</b>	<b>10.2</b>	<b>4.1</b>	<b>0.9</b>	<b>3.3</b>	<b>4.6</b>	<b>6.2</b>	<b>6.0</b>	<b>--</b>	<b>6.7</b>	<b>Sep-03</b>
<i>BBgBarc US High Yield TR</i>				4.6	0.6	3.3	4.2	6.8	6.5	7.2	7.5	Sep-03
<i>PRIT Public Value-Added Fixed Income</i>				4.1	-1.0	1.3	2.8	5.5	4.2	--	6.4	Sep-03
Shenkman Capital	19,736,220	10.2	100.0	4.1	0.9	3.3	4.6	6.2	6.0	--	6.6	Apr-06
<i>BBgBarc US High Yield TR</i>				4.6	0.6	3.3	4.2	6.8	6.5	7.2	7.1	Apr-06
<i>eV US High Yield Fixed Inc Net Median</i>				4.5	0.3	2.6	3.6	5.9	6.0	6.6	6.5	Apr-06
<b>TIPS Assets</b>	<b>9,839,078</b>	<b>5.1</b>	<b>5.1</b>	<b>3.0</b>	<b>9.2</b>	<b>10.0</b>	<b>5.7</b>	<b>4.6</b>	<b>3.5</b>	<b>--</b>	<b>4.2</b>	<b>Oct-05</b>
<i>BBgBarc US TIPS TR</i>				3.0	9.2	10.1	5.8	4.6	3.6	5.5	4.2	Oct-05
SSgA TIPS Index-NL	9,839,078	5.1	100.0	3.0	9.2	10.0	5.7	4.6	3.5	--	4.2	Oct-05
<i>BBgBarc US TIPS TR</i>				3.0	9.2	10.1	5.8	4.6	3.6	5.5	4.2	Oct-05
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>				3.3	8.9	9.9	5.8	4.6	3.4	5.7	4.2	Oct-05
<b>Emerging Market Debt Assets</b>	<b>5,502,574</b>	<b>2.8</b>	<b>2.8</b>	<b>2.7</b>	<b>-1.4</b>	<b>1.6</b>	<b>2.7</b>	<b>6.1</b>	<b>--</b>	<b>--</b>	<b>5.0</b>	<b>Jan-15</b>
<i>JP Morgan EMBI Global Diversified</i>				2.3	-0.5	1.3	3.5	6.1	5.4	8.3	5.3	Jan-15
Payden Emerging Market Bond	5,502,574	2.8	100.0	2.7	-1.4	1.6	2.7	6.1	--	--	5.0	Jan-15
<i>JP Morgan EMBI Global Diversified</i>				2.3	-0.5	1.3	3.5	6.1	5.4	8.3	5.3	Jan-15
<b>Open-Ended Real Estate</b>	<b>5,649,836</b>	<b>2.9</b>	<b>2.9</b>	<b>0.7</b>	<b>0.2</b>	<b>2.2</b>	<b>6.0</b>	<b>7.3</b>	<b>11.1</b>	<b>6.9</b>	<b>7.9</b>	<b>Oct-95</b>
<i>NCREIF ODCE</i>				0.0	-0.6	0.9	5.0	6.5	10.2	7.6	8.7	Oct-95
Clarion Partners	5,649,836	2.9	100.0	0.7	0.2	2.2	6.0	7.3	11.1	--	7.1	Oct-02
<i>NCREIF ODCE</i>				0.0	-0.6	0.9	5.0	6.5	10.2	7.6	7.7	Oct-02
<i>US Real Estate Equity Median</i>				--	--	--	--	--	--	--	--	Oct-02

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>Total Closed End Real Estate</b>	<b>56,687</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-2.9</b>	<b>7.1</b>	<b>-14.4</b>	<b>-4.6</b>	<b>--</b>	<b>--</b>	<b>2.8</b>	<b>Jan-13</b>
Colony Realty Partners IV	23,607	0.0	41.6	0.0	-6.7	9.7	-13.7	-4.2	--	--	--	Jan-13
<i>US Real Estate Equity Median</i>				--	--	--	--	--	--	--	--	<i>Jan-13</i>
Rockwood Capital Real Estate Partners Fund XI, L.P.	33,080	0.0	58.4	0.0	0.0	--	--	--	--	--	0.0	Dec-19
<b>Private Equity Assets</b>	<b>8,468,808</b>	<b>4.4</b>	<b>4.4</b>	<b>12.6</b>	<b>6.0</b>	<b>9.0</b>	<b>10.8</b>	<b>5.3</b>	<b>6.7</b>	<b>--</b>	<b>5.6</b>	<b>Oct-06</b>
North American Strategic Partners 2006	489,663	0.3	5.8	11.6	1.4	-0.3	0.2	-1.3	3.4	--	3.2	Oct-06
Ironsides Partnership Fund IV	2,131,176	1.1	25.2	9.3	21.9	24.3	22.5	--	--	--	12.1	May-16
Ironsides Direct Investment Fund IV	2,694,325	1.4	31.8	6.3	9.3	15.5	13.5	--	--	--	7.7	Jun-16
Ironsides Partnership Fund V, L.P.	276,617	0.1	3.3	11.9	--	--	--	--	--	--	N/A	Mar-20
Ironsides Direct Investment Fund V, L.P.	2,103,990	1.1	24.8	21.5	-8.6	-7.4	--	--	--	--	23.2	Jul-19
HarbourVest 2019 Global Fund	773,036	0.4	9.1	24.7	19.7	--	--	--	--	--	19.7	Dec-19
<b>Cash</b>	<b>314,606</b>	<b>0.2</b>	<b>0.2</b>									

Colony Realty Partners market value is based on June 30, 2020 data

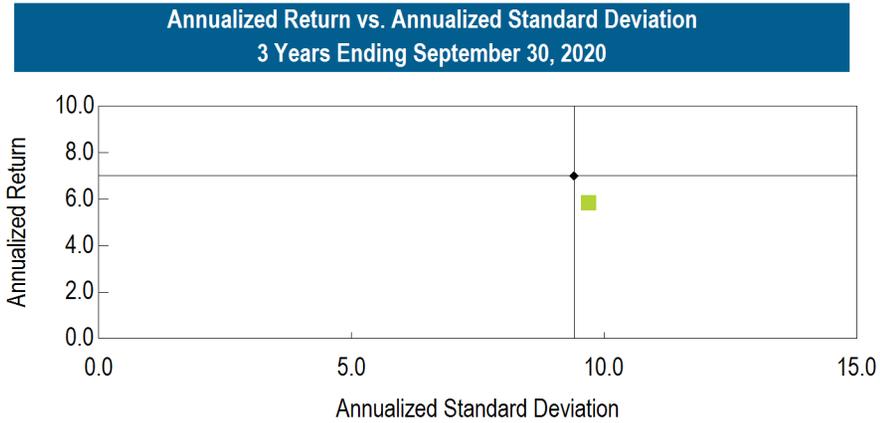
Private Equity market values are as of June 30, 2020 and adjusted for subsequent flows

	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
45% MSCI World & 55% Barclays Aggregate	17.2	-3.8	11.7	5.0	0.2	5.6	10.1	9.5	2.0	9.5
<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	30.7	-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

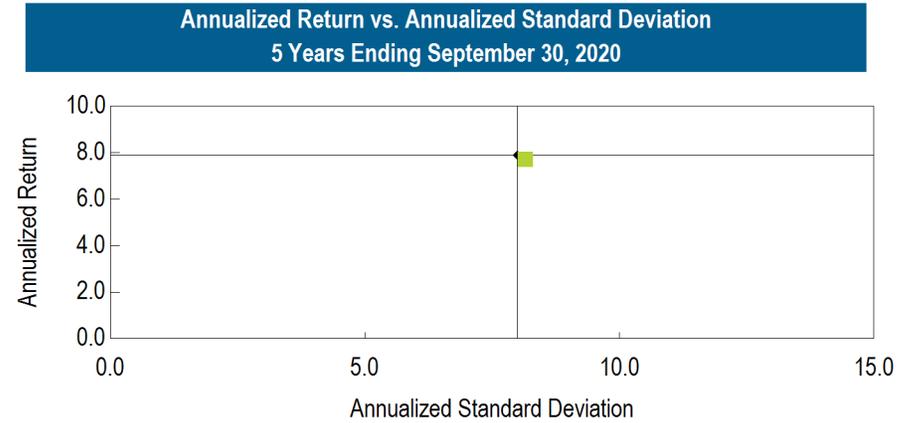
	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
<b>International Emerging Markets Equity Assets</b>	<b>20.7</b>	<b>-15.4</b>	<b>39.7</b>	<b>9.4</b>	<b>-12.7</b>	--	--	--	--	--
<i>MSCI Emerging Markets</i>	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9
DFA Emerging Markets (net)	16.0	-15.2	36.6	12.4	-14.9	--	--	--	--	--
<i>MSCI Emerging Markets</i>	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9
Driehaus Emerging Market Equity (net)	25.3	-15.6	43.0	6.5	-10.6	--	--	--	--	--
<i>MSCI Emerging Markets</i>	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9
<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>	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5
<i>PRIT Core Fixed Income</i>	11.3	-0.8	5.4	4.0	-2.0	15.2	-2.8	6.4	8.1	7.5
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>	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5
<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>	14.3	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0	15.1
<i>PRIT Public Value-Added Fixed Income</i>	11.2	-2.1	9.0	11.7	-4.7	-0.2	-1.5	14.7	5.3	13.6
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>	14.3	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0	15.1
<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>	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3
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>	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3

### Total Retirement System | As of September 30, 2020

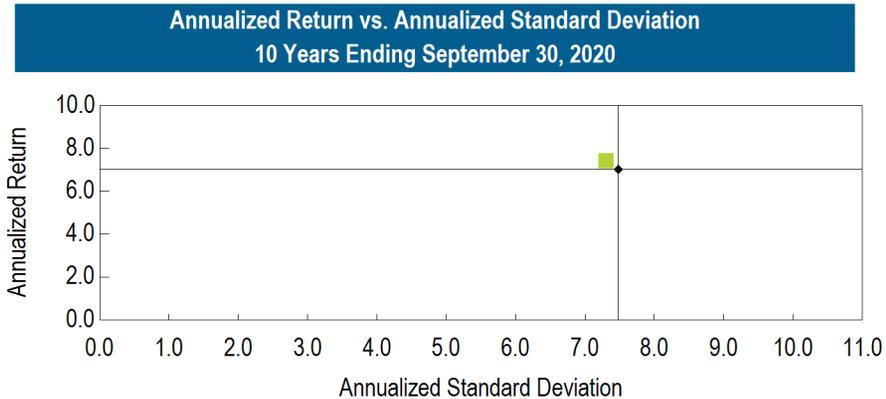
	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
<b>Emerging Market Debt Assets</b>	<b>16.5</b>	<b>-7.0</b>	<b>12.0</b>	<b>11.5</b>	<b>-0.8</b>	--	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2
Payden Emerging 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>	<b>-38.2</b>	<b>-1.8</b>	<b>15.1</b>	<b>9.5</b>	<b>23.8</b>	<b>13.3</b>	<b>18.8</b>	--	--	--
Colony Realty Partners IV	-34.2	-1.8	15.1	9.5	23.8	13.3	--	--	--	--
Rockwood Capital Real Estate Partners Fund XI, L.P. (net)	--	--	--	--	--	--	--	--	--	--
<b>Private Equity Assets</b>	<b>17.7</b>	<b>10.2</b>	<b>-5.3</b>	<b>-2.8</b>	<b>8.6</b>	<b>5.5</b>	<b>9.1</b>	<b>12.2</b>	<b>3.6</b>	<b>14.2</b>
North American Strategic Partners 2006 (net)	-5.4	4.0	-7.5	-0.4	8.6	5.5	9.1	12.2	3.6	14.2
Ironsides Partnership Fund IV (net)	33.1	13.8	19.3	--	--	--	--	--	--	--
Ironsides Direct Investment Fund IV (net)	21.1	13.6	-5.0	--	--	--	--	--	--	--
Ironsides Partnership Fund V, L.P. (net)	--	--	--	--	--	--	--	--	--	--
Ironsides Direct Investment Fund V, L.P. (net)	--	--	--	--	--	--	--	--	--	--
HarbourVest 2019 Global Fund (net)	--	--	--	--	--	--	--	--	--	--
<b>Cash</b>										



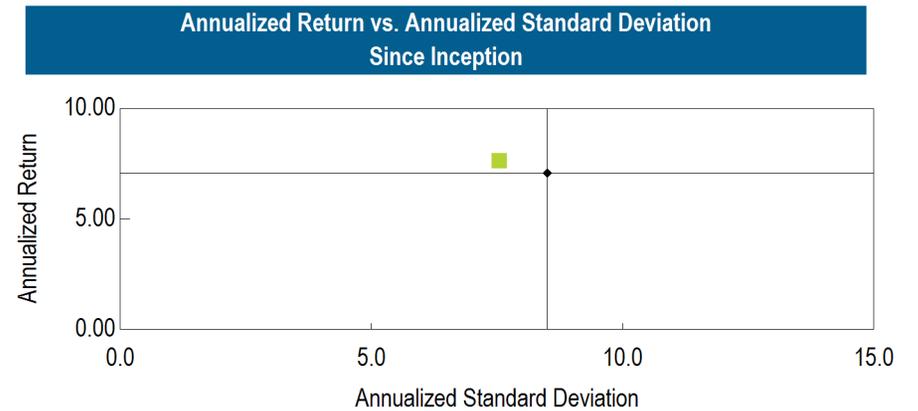
- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate



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

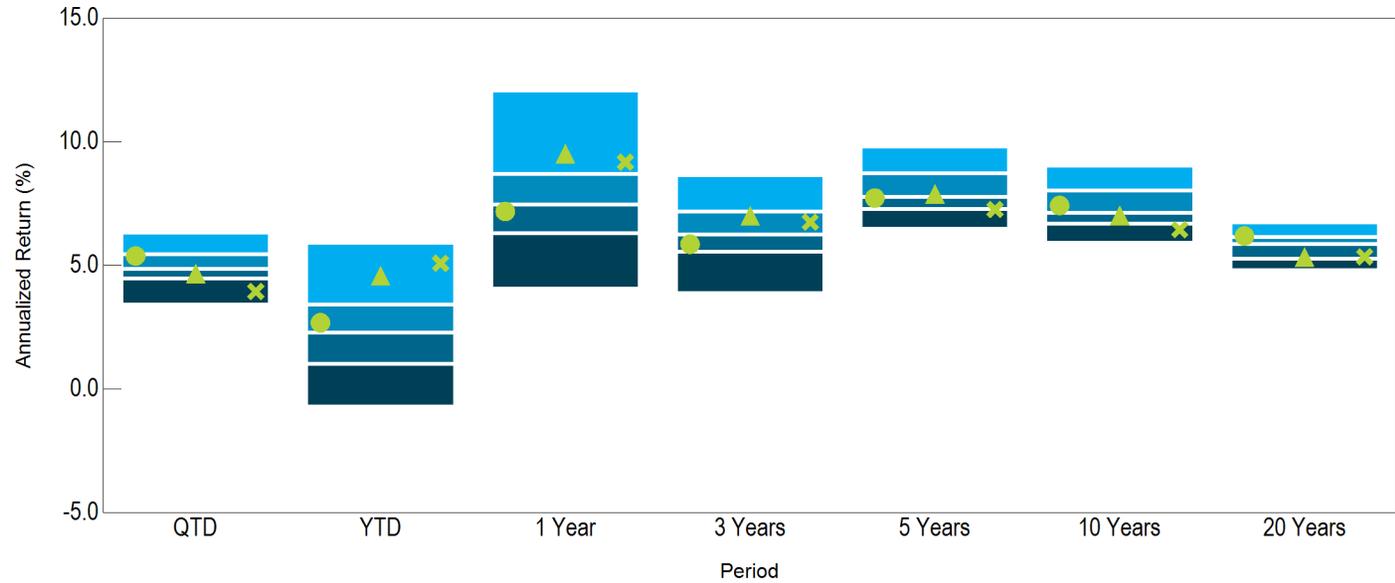


- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate



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

**InvMetrics Public DB \$50mm-\$250mm Net Return Comparison  
Ending September 30, 2020**



	QTD		YTD		1 Year		3 Years		5 Years		10 Years		20 Years	
<b>5th Percentile</b>	6.3		5.9		12.1		8.6		9.8		9.0		6.7	
<b>25th Percentile</b>	5.5		3.4		8.7		7.2		8.7		8.1		6.2	
<b>Median</b>	4.9		2.3		7.5		6.3		7.8		7.2		5.9	
<b>75th Percentile</b>	4.5		1.0		6.3		5.6		7.3		6.7		5.3	
<b>95th Percentile</b>	3.4		-0.7		4.1		3.9		6.5		5.9		4.8	
<b># of Portfolios</b>	78		78		78		72		64		53		26	
<b>● Total Retirement System</b>	5.4	(31)	2.7	(37)	7.2	(57)	5.9	(69)	7.7	(53)	7.4	(38)	6.2	(20)
<b>▲ 55% MSCI World &amp; 45% Barclays Aggregate</b>	4.7	(61)	4.6	(17)	9.5	(19)	7.0	(33)	7.9	(44)	7.0	(58)	5.3	(73)
<b>× 45% MSCI World &amp; 55% Barclays Aggregate</b>	3.9	(90)	5.1	(11)	9.2	(20)	6.8	(40)	7.3	(76)	6.4	(85)	5.3	(73)

Statistics Summary

5 Years Ending September 30, 2020

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	7.7%	8.2%	-0.1	1.0	0.8	1.4%
55% MSCI World & 45% Barclays Aggregate	7.9%	8.0%	--	1.0	0.8	0.0%
Equity Assets	9.7%	15.1%	-1.3	1.0	0.6	3.0%
Russell 3000	13.7%	15.5%	--	1.0	0.8	0.0%
Domestic Equity Assets	10.9%	16.1%	-1.1	1.0	0.6	2.6%
Russell 3000	13.7%	15.5%	--	1.0	0.8	0.0%
RhumbLine S&P 500 Index	14.1%	14.9%	-0.8	1.0	0.9	0.0%
S&P 500	14.1%	14.9%	--	1.0	0.9	0.0%
Fiduciary Large Cap Equity	9.8%	13.7%	-0.8	0.8	0.6	4.7%
Russell 3000	13.7%	15.5%	--	1.0	0.8	0.0%
Frontier Capital Appreciation	8.8%	22.3%	-0.8	1.1	0.3	6.5%
Russell 2500 Growth	14.2%	19.3%	--	1.0	0.7	0.0%
International Developed Markets Equity Assets	5.5%	13.9%	0.9	1.0	0.3	0.3%
MSCI EAFE	5.3%	14.0%	--	1.0	0.3	0.0%
Rhumbline MSCI EAFE Index	5.5%	13.9%	0.8	1.0	0.3	0.2%
MSCI EAFE	5.3%	14.0%	--	1.0	0.3	0.0%
International Emerging Markets Equity Assets	9.5%	16.7%	0.2	0.9	0.5	3.1%
MSCI Emerging Markets	9.0%	17.4%	--	1.0	0.5	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DFA Emerging Markets	7.2%	18.0%	-0.5	1.0	0.3	3.4%
MSCI Emerging Markets	9.0%	17.4%	--	1.0	0.5	0.0%
Driehaus Emerging Market Equity	11.7%	15.8%	0.6	0.9	0.7	4.6%
MSCI Emerging Markets	9.0%	17.4%	--	1.0	0.5	0.0%
Investment Grade Bonds Assets	4.1%	3.2%	-0.3	1.0	0.9	0.2%
BBgBarc US Aggregate TR	4.2%	3.2%	--	1.0	1.0	0.0%
SSgA U.S. Aggregate Bond Index	4.2%	3.2%	0.0	1.0	1.0	0.1%
BBgBarc US Aggregate TR	4.2%	3.2%	--	1.0	1.0	0.0%
High Yield Bond Assets	5.8%	7.0%	-0.8	0.9	0.7	1.2%
BBgBarc US High Yield TR	6.8%	7.9%	--	1.0	0.7	0.0%
Shenkman Capital	5.8%	7.0%	-0.8	0.9	0.7	1.2%
BBgBarc US High Yield TR	6.8%	7.9%	--	1.0	0.7	0.0%
TIPS Assets	4.6%	3.6%	-1.0	1.0	1.0	0.1%
BBgBarc US TIPS TR	4.6%	3.6%	--	1.0	1.0	0.0%
SSgA TIPS Index-NL	4.6%	3.6%	-1.1	1.0	1.0	0.1%
BBgBarc US TIPS TR	4.6%	3.6%	--	1.0	1.0	0.0%
Emerging Market Debt Assets	6.1%	10.2%	0.0	1.1	0.5	2.0%
JP Morgan EMBI Global Diversified	6.1%	9.0%	--	1.0	0.6	0.0%
Payden Emerging Market Bond	6.1%	10.2%	0.0	1.1	0.5	2.0%
JP Morgan EMBI Global Diversified	6.1%	9.0%	--	1.0	0.6	0.0%

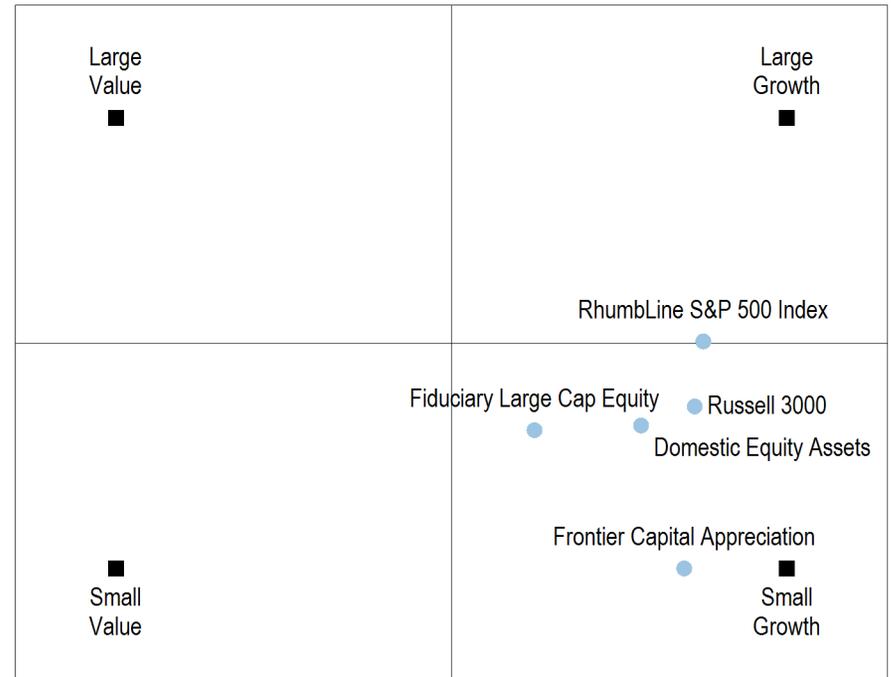
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Open-Ended Real Estate	7.3%	3.6%	0.8	1.1	1.7	0.9%
NCREIF ODCE	6.5%	3.3%	--	1.0	1.6	0.0%
Clarion Partners	7.3%	3.6%	0.8	1.1	1.7	0.9%
NCREIF ODCE	6.5%	3.3%	--	1.0	1.6	0.0%
Total Closed End Real Estate	-4.6%	21.8%	-0.5	0.8	-0.3	21.6%
NCREIF ODCE	6.5%	3.3%	--	1.0	1.6	0.0%
Colony Realty Partners IV	-4.2%	22.8%	-0.5	1.0	-0.2	22.5%
NCREIF ODCE	6.5%	3.3%	--	1.0	1.6	0.0%
Comerica Short Term Fund	0.5%	0.2%	-2.0	-0.1	-3.1	0.3%
91 Day T-Bills	1.1%	0.2%	--	1.0	0.0	0.0%

## Retirement System Detail

#### Asset Allocation on September 30, 2020

	Actual	Actual
Fiduciary Large Cap Equity	\$24,792,130	34.2%
Frontier Capital Appreciation	\$17,168,591	23.7%
RhumbLine S&P 500 Index	\$30,567,006	42.1%
<b>Total</b>	<b>\$72,527,728</b>	<b>100.0%</b>

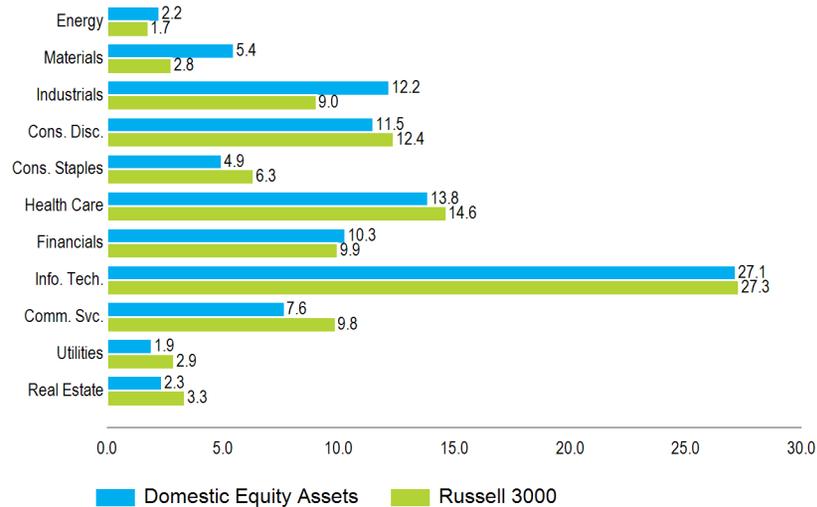
#### Domestic Equity Assets Style Map 3 Years Ending September 30, 2020



### Domestic Equity Assets | As of September 30, 2020

Domestic Equity Assets Characteristics			
	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Market Value</b>			
Market Value (\$M)	72.5	--	67.2
Number Of Holdings	638	3034	627
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	286.7	376.0	241.9
Median Market Cap (\$B)	15.6	1.5	15.2
P/E Ratio	22.5	24.0	21.6
Yield	1.4	1.6	1.5
EPS Growth - 5 Yrs.	20.4	19.9	13.0
Price to Book	3.9	4.3	3.7
Beta (holdings; domestic)	--	--	1.2

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



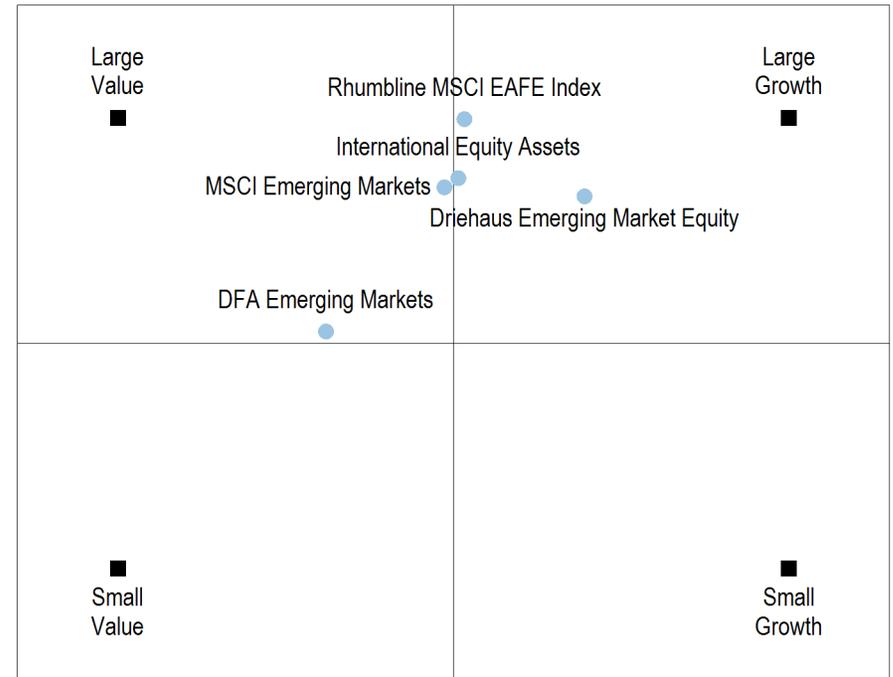
#### Top 10 Holdings

APPLE INC	4.2%
MICROSOFT CORP	3.6%
AMAZON.COM INC	3.1%
FACEBOOK INC	1.4%
PAN AMERICAN SILVER CORP	1.1%
ALPHABET INC	1.0%
ALPHABET INC	1.0%
INSULET CORP	1.0%
BERKSHIRE HATHAWAY INC	1.0%
JOHNSON & JOHNSON	0.9%
<b>Total</b>	<b>18.3%</b>

#### Asset Allocation on September 30, 2020

	Actual	Actual
DFA Emerging Markets	\$7,270,280	20.9%
Driehaus Emerging Market Equity	\$6,597,464	19.0%
Rhumbline MSCI EAFE Index	\$20,893,898	60.1%
<b>Total</b>	<b>\$34,761,642</b>	<b>100.0%</b>

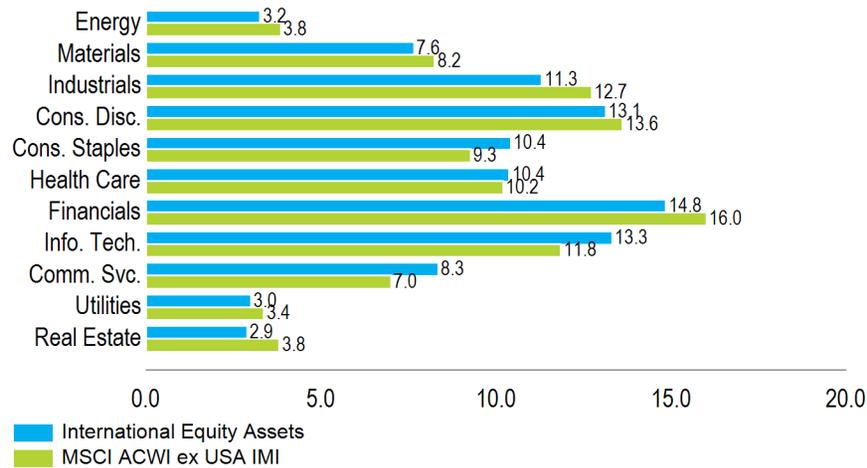
#### International Equity Assets Style Map 3 Years Ending September 30, 2020



### International Equity Assets | As of September 30, 2020

International Equity Characteristics			
	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Market Value</b>			
Market Value (\$M)	34.8	--	27.0
Number Of Holdings	6376	6426	6205
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	98.2	84.8	75.3
Median Market Cap (\$B)	1.1	1.7	0.9
P/E Ratio	17.3	16.6	16.9
Yield	2.4	2.6	2.8
EPS Growth - 5 Yrs.	7.2	5.1	7.6
Price to Book	3.1	2.8	2.8
Beta (holdings; domestic)	--	--	1.0

#### Sector Allocation (%) vs MSCI ACWI ex USA IMI



#### Top 10 Holdings

TENCENT HOLDINGS LTD	2.5%
ALIBABA GROUP HOLDING LTD	2.1%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.7%
SAMSUNG ELECTRONICS CO LTD	1.6%
NESTLE SA, CHAM UND VEVEY	1.6%
ROCHE HOLDING AG	1.0%
NOVARTIS AG	0.9%
ASML HOLDING NV	0.7%
AIA GROUP LTD	0.7%
SAP SE	0.7%
<b>Total</b>	<b>13.4%</b>

Country Allocation Report

As of 9/30/2020

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.1%	6.5%	-6.4%
United States	2.2%	0.0%	2.2%
Europe Ex U.K.	29.6%	30.8%	-1.1%
United Kingdom	8.0%	8.9%	-1.0%
Pacific Basin Ex Japan	13.7%	7.5%	6.2%
Japan	15.8%	17.3%	-1.5%
Emerging Markets	30.1%	28.4%	1.7%
Other	0.5%	0.6%	-0.1%
<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%	0.1%	-0.1%	
AUSTRALIA	4.0%	4.5%	-0.5%	
AUSTRIA	0.1%	0.2%	-0.1%	
BAHRAIN	0.0%	0.0%	0.0%	
BANGLADESH	0.0%	0.0%	0.0%	
BELGIUM	0.6%	0.7%	-0.1%	
BRAZIL	2.1%	1.4%	0.7%	
CANADA	0.1%	6.5%	-6.4%	
CHILE	0.3%	0.2%	0.1%	
CHINA	7.6%	11.2%	-3.6%	
COLOMBIA	0.0%	0.1%	0.0%	
CROATIA	0.0%	0.0%	0.0%	
CZECH REPUBLIC	0.0%	0.0%	0.0%	
DENMARK	1.5%	1.6%	0.0%	
EGYPT	0.1%	0.0%	0.1%	
ESTONIA	0.0%	0.0%	0.0%	
FINLAND	0.7%	0.8%	-0.1%	
FRANCE	6.6%	6.2%	0.4%	
GERMANY	5.7%	5.8%	-0.1%	
GREECE	0.0%	0.1%	0.0%	
HONG KONG	8.8%	2.0%	6.8%	
HUNGARY	0.2%	0.1%	0.1%	
INDIA	4.2%	2.5%	1.7%	
INDONESIA	0.6%	0.4%	0.3%	

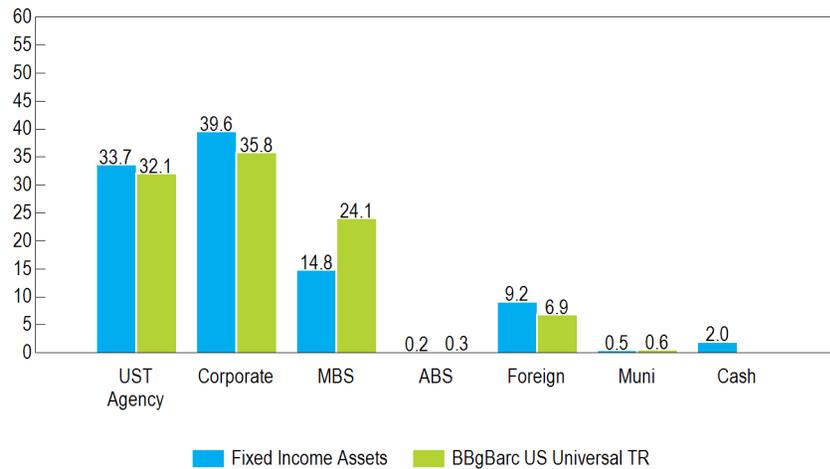
Country	% of Total	% of Bench	% Diff
IRELAND	0.3%	0.4%	-0.1%
ISRAEL	0.2%	0.5%	-0.3%
ITALY	1.3%	1.5%	-0.2%
JAPAN	15.8%	17.3%	-1.5%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	4.8%	3.6%	1.1%
KUWAIT	0.0%	0.0%	0.0%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.0%	0.0%	0.0%
MALAYSIA	0.6%	0.5%	0.0%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	0.7%	0.5%	0.2%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	3.0%	2.6%	0.3%
NEW ZEALAND	0.2%	0.3%	-0.1%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.0%	0.5%	-0.5%
OMAN	0.0%	0.0%	0.0%
OTHER	0.3%	0.0%	0.3%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	0.1%	0.0%
PHILIPPINES	0.2%	0.2%	0.0%
POLAND	0.4%	0.2%	0.2%
PORTUGAL	0.1%	0.1%	0.0%

Country	% of Total	% of Bench	% Diff
QATAR	0.0%	0.2%	-0.2%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	0.7%	0.7%	0.0%
SAUDI ARABIA	0.3%	0.8%	-0.5%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	0.7%	0.8%	0.0%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	1.0%	1.0%	0.0%
SPAIN	1.4%	1.4%	0.0%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	2.1%	2.6%	-0.5%
SWITZERLAND	6.3%	6.3%	0.0%
TAIWAN	5.6%	4.0%	1.7%
THAILAND	0.5%	0.5%	0.0%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	0.1%	0.1%	0.0%
UNITED ARAB EMIRATES	0.0%	0.2%	-0.1%
UNITED KINGDOM	8.0%	8.9%	-1.0%
UNITED STATES	2.2%	0.0%	2.2%
VIETNAM	0.0%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

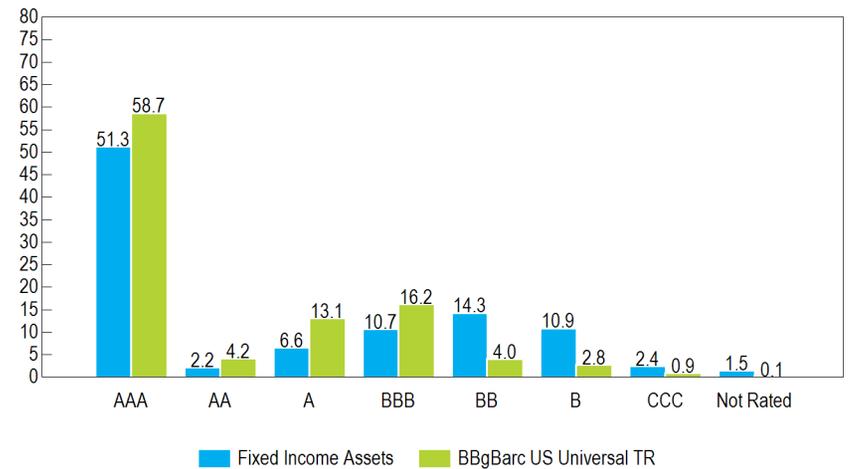
Asset Allocation on September 30, 2020		
	Actual	Actual
Payden Emerging Market Bond	\$5,502,574	7.7%
Shenkman Capital	\$19,736,220	27.5%
SSgA TIPS Index-NL	\$9,839,078	13.7%
SSgA U.S. Aggregate Bond Index	\$36,570,930	51.0%
<b>Total</b>	<b>\$71,648,802</b>	<b>100.0%</b>

Fixed Income Characteristics vs. BBgBarc US Universal TR			
	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
Fixed Income Characteristics			
Yield to Maturity	2.7	1.7	2.9
Average Duration	4.8	6.4	5.4
Average Quality	A	AA	A
Weighted Average Maturity	7.9	8.2	8.0

#### Sector Allocation



#### Credit Quality Allocation



## **Portfolio Reviews**

#### 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	8.9	5.6	15.1	12.2	14.1	13.7	6.8	Mar-99
S&P 500	8.9	5.6	15.1	12.3	14.1	13.7	6.8	Mar-99

#### Top 10 Holdings

APPLE INC	6.6%
MICROSOFT CORP	5.7%
AMAZON.COM INC	4.8%
FACEBOOK INC	2.2%
ALPHABET INC	1.6%
ALPHABET INC	1.5%
BERKSHIRE HATHAWAY INC	1.5%
JOHNSON & JOHNSON	1.4%
PROCTER & GAMBLE CO (THE)	1.2%
VISA INC	1.2%
<b>Total</b>	<b>27.8%</b>

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

	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Market Value</b>			
Market Value (\$M)	30.6	--	28.1
Number Of Holdings	507	505	506
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	441.9	443.2	364.5
Median Market Cap (\$B)	22.9	22.8	21.4
P/E Ratio	23.8	23.8	22.8
Yield	1.7	1.7	1.9
EPS Growth - 5 Yrs.	20.8	20.6	13.4
Price to Book	4.4	4.4	4.2
Beta (holdings; domestic)	--	--	1.0
<b>Sector Distribution</b>			
Energy	2.0	1.8	2.8
Materials	2.6	2.6	2.5
Industrials	8.2	8.3	7.9
Consumer Discretionary	11.5	11.6	10.7
Consumer Staples	7.0	7.0	6.9
Health Care	14.2	14.3	14.5
Financials	10.1	9.7	11.2
Information Technology	28.0	28.2	27.2
Communication Services	10.7	10.8	10.7
Utilities	3.0	3.0	3.0
Real Estate	2.6	2.6	2.8

### Account Information

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

### Fund Characteristics as of June 30, 2020

Versus Russell 3000

Sharpe Ratio (3 Year)	0.2
Average Market Cap (\$mm)	55,323.4
Price/Earnings	20.8
Price/Book	2.6
Price/Sales	1.6
Price/Cash Flow	9.1
Dividend Yield	2.2
Number of Equity Holdings	30
R-Squared (3 Year)	0.9
Alpha (3 Year)	-0.3%

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Fiduciary Large Cap Equity	7.7	-4.7	0.8	6.4	9.8	--	10.6	Sep-12
<i>Russell 3000</i>	<i>9.2</i>	<i>5.4</i>	<i>15.0</i>	<i>11.6</i>	<i>13.7</i>	<i>13.5</i>	<i>13.5</i>	<i>Sep-12</i>

### Top Holdings as of June 30, 2020

BERKSHIRE HATHAWAY INC CLASS B	6.0%
MASCO CORP	5.2%
DOLLAR GENERAL CORP	5.0%
QUEST DIAGNOSTICS INC	5.0%
UNILEVER PLC ADR	4.0%
UNITEDHEALTH GROUP INC	3.8%
BOOKING HOLDINGS INC	3.8%
CHUBB LTD	3.8%
DOLLAR TREE INC	3.7%
SONY CORP ADR	3.6%

### Sector Allocation as of June 30, 2020

BASIC MATERIALS	2.7%
COMMUNICATION SERVICES	6.4%
CONSUMER CYCLICAL	7.0%
CONSUMER DEFENSIVE	19.0%
ENERGY	1.5%
FINANCIAL SERVICES	21.2%
HEALTHCARE	15.2%
INDUSTRIALS	20.6%
REAL ESTATE	0.0%
TECHNOLOGY	6.5%
UTILITIES	0.0%

### Frontier Capital Appreciation | As of September 30, 2020

#### Account Information

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

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Frontier Capital Appreciation	6.5	-9.4	-0.5	1.4	8.8	--	9.4	Feb-13
<i>Russell 2500 Growth</i>	9.4	11.6	23.4	13.4	14.2	14.1	13.4	Feb-13

#### Top 10 Holdings

PAN AMERICAN SILVER CORP	3.0%
INSULET CORP	2.7%
TUTOR PERINI CORP	2.0%
TREX CO INC	2.0%
FMC CORP.	1.9%
MONOLITHIC POWER SYSTEMS INC	1.9%
COOPER COS INC (THE)	1.8%
CREE INC.	1.7%
NUANCE COMMUNICATIONS INC	1.7%
BMC STOCK HOLDINGS INC	1.6%
<b>Total</b>	<b>20.2%</b>

#### Frontier Capital Appreciation Characteristics

	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Market Value</b>			
Market Value (\$M)	17.2	--	16.1
Number Of Holdings	149	1291	141
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	6.2	6.0	5.9
Median Market Cap (\$B)	2.7	1.2	2.8
P/E Ratio	19.8	30.3	18.3
Yield	0.8	0.5	0.9
EPS Growth - 5 Yrs.	21.6	21.2	12.2
Price to Book	3.1	6.1	3.0
Beta (holdings; domestic)	--	--	1.5
<b>Sector Distribution</b>			
Energy	2.6	0.1	2.8
Materials	10.5	3.1	9.0
Industrials	19.1	11.8	17.3
Consumer Discretionary	11.5	12.0	10.1
Consumer Staples	1.3	3.0	1.0
Health Care	13.3	30.6	11.9
Financials	10.5	4.1	9.7
Information Technology	25.6	29.0	25.3
Communication Services	2.1	2.5	2.3
Utilities	0.0	1.0	0.0
Real Estate	1.8	2.7	1.6

#### Account Information

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

#### Portfolio Performance Summary

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
Rhumblin MSCI EAFE Index	4.8	-6.9	0.7	0.8	5.5	--	2.2	Aug-14
MSCI EAFE	4.8	-7.1	0.5	0.6	5.3	4.6	2.0	Aug-14

#### Top 10 Holdings

NESTLE SA, CHAM UND VEVEY	2.7%
ROCHE HOLDING AG	1.7%
NOVARTIS AG	1.4%
SAP SE	1.1%
ASTRAZENECA PLC	1.1%
ASML HOLDING NV	1.1%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.0%
TOYOTA MOTOR CORP	1.0%
SANOFI	0.9%
AIA GROUP LTD	0.8%
<b>Total</b>	<b>12.6%</b>

#### Rhumblin MSCI EAFE Index Characteristics

	Portfolio	Index	Portfolio
	Q3-20	Q3-20	Q2-20
<b>Market Value</b>			
Market Value (\$M)	20.9	--	19.9
Number Of Holdings	894	902	907
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	65.3	64.8	60.5
Median Market Cap (\$B)	10.2	10.2	9.5
P/E Ratio	19.4	19.3	17.2
Yield	2.7	2.7	2.9
EPS Growth - 5 Yrs.	3.8	3.6	6.0
Price to Book	3.0	2.9	2.7
Beta (holdings; domestic)	--	--	1.0
<b>Sector Distribution</b>			
Energy	2.7	2.8	3.3
Materials	7.5	7.6	7.1
Industrials	15.1	15.2	14.4
Consumer Discretionary	11.8	11.8	11.2
Consumer Staples	11.9	11.9	11.9
Health Care	14.3	14.4	14.2
Financials	14.7	15.1	15.8
Information Technology	8.4	8.6	8.1
Communication Services	5.4	5.5	5.3
Utilities	3.9	4.0	4.0
Real Estate	3.1	3.1	3.1

**Account Information**

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

**Portfolio Performance Summary**

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
DFA Emerging Markets	8.5	-6.1	3.8	-0.2	7.2	--	3.3	Jan-15
MSCI Emerging Markets	9.6	-1.2	10.5	2.4	9.0	2.5	4.6	Jan-15

**Top 10 Holdings**

TENCENT HOLDINGS LTD	4.7%
SAMSUNG ELECTRONICS CO LTD	4.4%
ALIBABA GROUP HOLDING LTD	3.0%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.9%
PING AN INSURANCE GROUP	1.3%
RELIANCE INDUSTRIES LTD	1.2%
CHINA CONSTRUCTION BANK CORP	0.9%
VALE SA	0.8%
SK HYNIX INC	0.7%
<b>Total</b>	<b>21.4%</b>

**DFA Emerging Markets Characteristics**

	Portfolio	Index	Portfolio
	Q3-20	Q3-20	Q2-20
<b>Market Value</b>			
Market Value (\$M)	7.3	--	3.7
Number Of Holdings	5464	1386	5272
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	105.1	178.5	80.1
Median Market Cap (\$B)	0.7	5.6	0.5
P/E Ratio	13.1	12.6	13.3
Yield	2.7	2.3	3.1
EPS Growth - 5 Yrs.	9.2	8.1	10.1
Price to Book	2.6	3.1	2.5
Beta (holdings; domestic)	--	--	1.1
<b>Sector Distribution</b>			
Energy	5.2	5.3	5.8
Materials	10.3	7.1	9.7
Industrials	7.5	4.2	7.3
Consumer	13.3	20.3	11.4
Discretionary	6.7	5.9	7.1
Consumer Staples	4.2	4.3	4.0
Health Care	14.9	17.4	16.1
Financials	20.6	18.6	19.1
Information Technology	10.1	12.5	10.6
Communication Services	2.8	2.0	3.1
Utilities	4.4	2.4	4.5
Real Estate			

**Account Information**

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

**Portfolio Performance Summary**

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Market Equity	12.0	8.2	20.4	7.1	11.7	--	8.0	Jan-15
MSCI Emerging Markets	9.6	-1.2	10.5	2.4	9.0	2.5	4.6	Jan-15

**Top 10 Holdings**

TENCENT HOLDINGS LTD	8.0%
ALIBABA GROUP HOLDING LTD	7.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	7.0%
SAMSUNG ELECTRONICS CO LTD	3.6%
NORTHERN INSTITUTIONAL U.S. GOVERNMENT SELECT PORTFOLIO	3.0%
B3 S.A.-BRASIL BOLSA BALCAO	2.1%
H D F C BANK LTD	1.5%
SBERBANK OF RUSSIA OJSC	1.5%
WUXI BIOLOGICS (CAYMAN) INC	1.4%
NVIDIA CORPORATION	1.3%
<b>Total</b>	<b>36.9%</b>

**Driehaus Emerging Market Equity Characteristics**

	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Market Value</b>			
Market Value (\$M)	6.6	--	3.3
Number Of Holdings	101	1386	96
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	195.4	178.5	173.3
Median Market Cap (\$B)	22.0	5.6	19.7
P/E Ratio	22.0	12.6	25.1
Yield	1.3	2.3	1.5
EPS Growth - 5 Yrs.	15.8	8.1	15.4
Price to Book	5.0	3.1	4.5
Beta (holdings; domestic)	--	--	1.1
<b>Sector Distribution</b>			
Energy	3.0	5.3	3.3
Materials	5.2	7.1	3.7
Industrials	3.5	4.2	3.9
Consumer Discretionary	17.0	20.3	17.9
Consumer Staples	9.9	5.9	7.5
Health Care	4.8	4.3	5.4
Financials	15.1	17.4	15.7
Information Technology	20.6	18.6	21.5
Communication Services	15.9	12.5	17.4
Utilities	0.4	2.0	0.5
Real Estate	0.5	2.4	0.6

#### Account Information

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

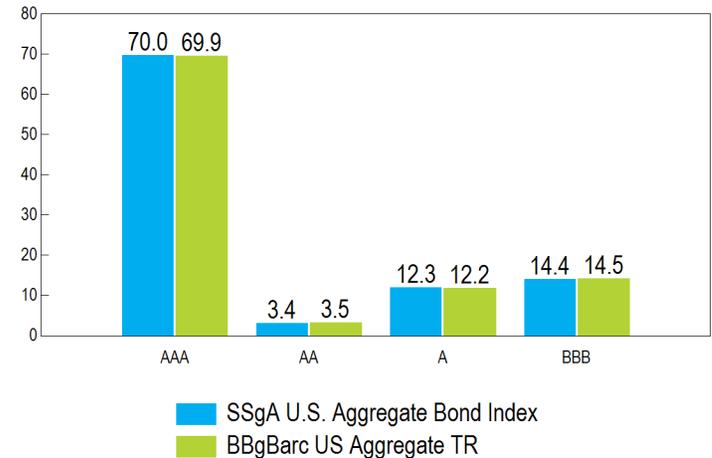
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA U.S. Aggregate Bond Index	0.6	6.8	7.0	5.2	4.2	3.6	4.8	May-01
BBgBarc US Aggregate TR	0.6	6.8	7.0	5.2	4.2	3.6	4.8	May-01

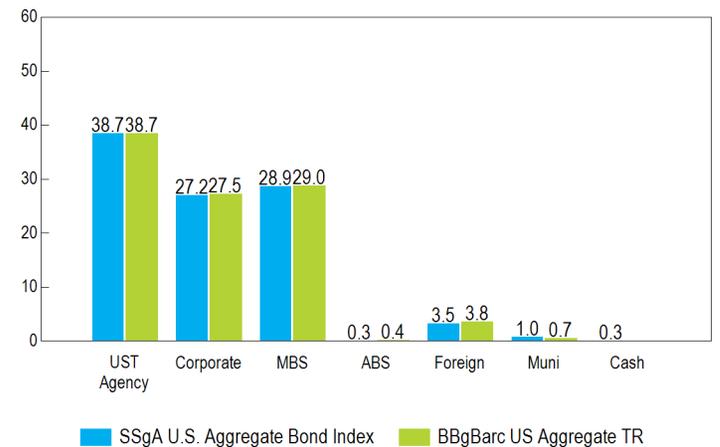
#### SSgA U.S. Aggregate Bond Index Characteristics vs. BBgBarc US Aggregate TR

	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Fixed Income Characteristics</b>			
Yield to Maturity	1.2	1.2	1.3
Average Duration	6.1	6.5	6.1
Average Quality	AA	AA	AA
Weighted Average Maturity	8.0	8.2	8.1

#### Credit Quality Allocation



#### Sector Allocation



Shenkman Capital | As of September 30, 2020

### Account Information

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

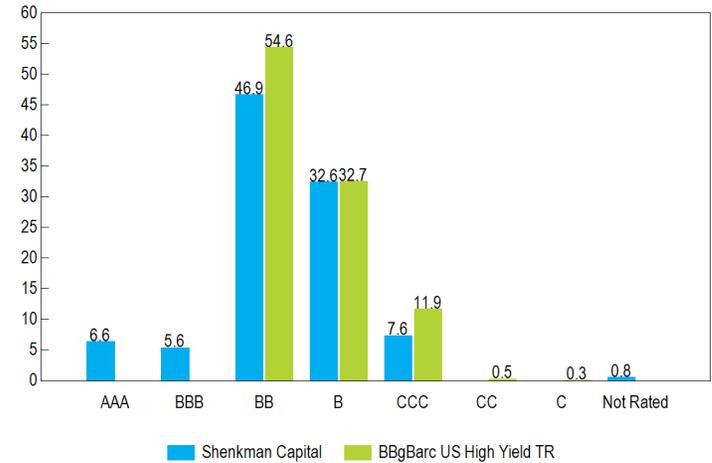
### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Shenkman Capital	4.0	0.5	2.8	4.1	5.8	5.8	6.5	Apr-06
BBgBarc US High Yield TR	4.6	0.6	3.3	4.2	6.8	6.5	7.1	Apr-06

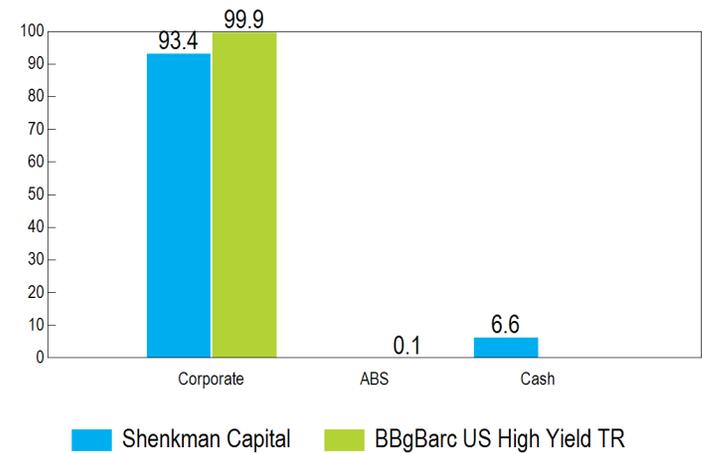
### Shenkman Capital Characteristics vs. BBgBarc US High Yield TR

	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Fixed Income Characteristics</b>			
Yield to Maturity	5.5	6.0	6.0
Average Duration	3.2	4.9	3.9
Average Quality	BB	B	BB
Weighted Average Maturity	6.4	6.3	6.5

### Credit Quality Allocation



### Sector Allocation



### SSgA TIPS Index-NL | As of September 30, 2020

#### Account Information

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

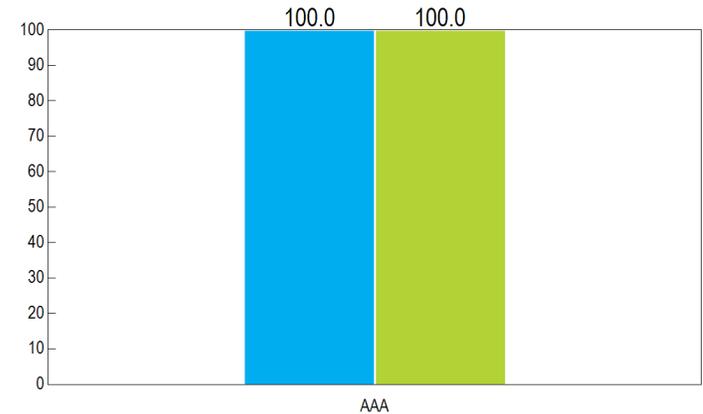
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS Index-NL	3.0	9.1	10.0	5.7	4.6	3.5	4.2	Oct-05
BBgBarc US TIPS TR	3.0	9.2	10.1	5.8	4.6	3.6	4.2	Oct-05

#### SSgA TIPS Index-NL Characteristics vs. BBgBarc US TIPS TR

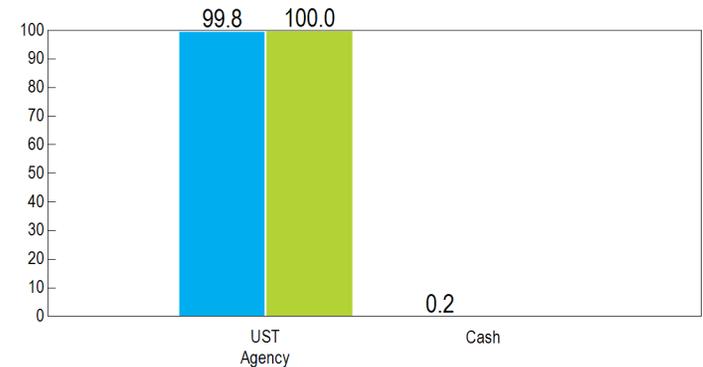
	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Fixed Income Characteristics</b>			
Yield to Maturity	0.7	0.5	0.7
Average Duration	5.2	5.2	4.4
Average Quality	AAA	AAA	AAA
Weighted Average Maturity	8.4	8.4	8.2

#### Credit Quality Allocation



SSgA TIPS Index-NL (Blue bar) and BBgBarc US TIPS TR (Green bar)

#### Sector Allocation



SSgA TIPS Index-NL (Blue bar) and BBgBarc US TIPS TR (Green bar)

### Account Information

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

### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Payden Emerging Market Bond	2.7	-1.4	1.6	2.7	6.1	--	5.0	Jan-15
<i>JP Morgan EMBI Global Diversified</i>	2.3	-0.5	1.3	3.5	6.1	5.4	5.3	Jan-15

### Fund Characteristics as of August 31, 2020

Versus JP Morgan EMBI Global Diversified

Sharpe Ratio (3 Year)	0.2
Average Duration	7.7
Average Coupon	6.4%
Average Effective Maturity	12.0
R-Squared (3 Year)	1.0
Alpha (3 Year)	-0.1%
Beta (3 Year)	1.1

### Payden Emerging Market Bond Characteristics vs. JP Morgan EMBI Global Diversified

	Portfolio Q3-20	Index Q3-20	Portfolio Q2-20
<b>Fixed Income Characteristics</b>			
Yield to Maturity	6.6	4.6	6.7
Average Duration	7.8	7.9	7.5
Average Quality	BB	BBB	BB
Weighted Average Maturity	12.0	12.7	11.9

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

GOVERNMENT	63.8%
MUNICIPAL	0.0%
CORPORATE	16.2%
SECURITIZED	0.0%
CASH & EQUIVALENTS	1.6%
DERIVATIVE	18.3%

### Credit Quality as of September 30, 2020

AAA	4.0%
AA	5.0%
A	6.0%
BBB	26.0%
BB	24.0%
B	26.0%
Below B	6.0%
Not Rated	3.0%

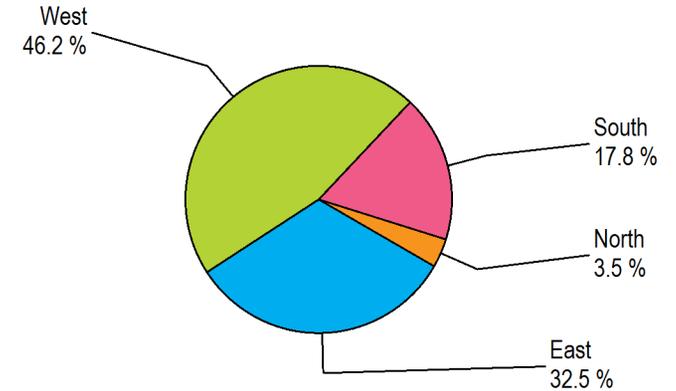
#### Account Information

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

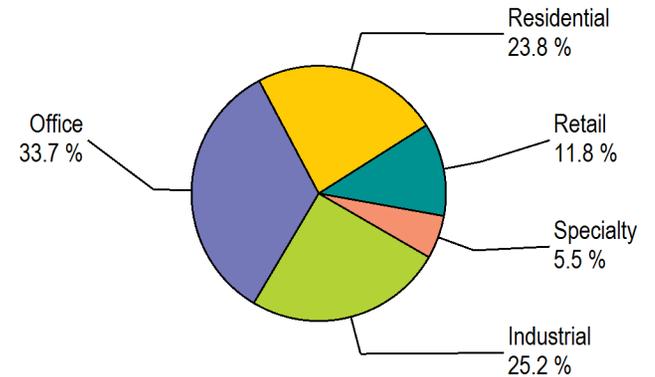
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Clarion Partners	0.7	0.2	2.2	6.0	7.3	11.1	7.1	Oct-02
NCREIF ODCE	0.0	-0.6	0.9	5.0	6.5	10.2	7.7	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 September 30, 2020						
Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
North American Strategic Partners 2006	2006	\$4,539,998	\$4,411,659	\$2,448,408	\$489,663	6.7
Ironsides Partnership Fund IV	2015	\$2,500,000	\$1,343,006	\$0	\$2,131,176	25.4
Ironsides Direct Investment Fund IV	2015	\$2,500,000	\$2,419,534	\$658,317	\$2,694,325	11.2
Ironsides Partnership Fund V, L.P.	2020	\$2,000,000	\$296,552	\$0	\$276,617	--
Ironsides Direct Investment Fund V, L.P.	2019	\$2,000,000	\$2,289,730	\$107,139	\$2,103,990	--
HarbourVest 2019 Global Fund	2019	\$4,000,000	\$660,000	\$0	\$773,036	--
<b>Total Account</b>		<b>\$17,539,998</b>	<b>\$11,420,481</b>	<b>\$1,682,952</b>	<b>\$8,468,808</b>	

IRRs for investments less than 2 years are not shown.

North American Strategic Partners IRR is estimated as of 6/30/20.

Annual Investment Expense Analysis				
As Of September 30, 2020				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Equity Assets</b>		<b>\$107,289,370</b>		
<b>Domestic Equity Assets</b>		<b>\$72,527,728</b>		
RhumbLine S&P 500 Index	0.07% of First 25.0 Mil, 0.05% of Next 25.0 Mil, 0.04% Thereafter	\$30,567,006	\$20,284	0.07%
Fiduciary Large Cap Equity	0.66% of Assets	\$24,792,130	\$163,628	0.66%
Frontier Capital Appreciation	0.79% of Assets	\$17,168,591	\$135,632	0.79%
<b>International Equity Assets</b>		<b>\$34,761,642</b>		
<b>International Developed Markets Equity Assets</b>		<b>\$20,893,898</b>		
Rhumblin MSCI EAFE Index	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil, 0.05% Thereafter	\$20,893,898	\$16,715	0.08%
<b>International Emerging Markets Equity Assets</b>		<b>\$13,867,744</b>		
DFA Emerging Markets	0.52% of Assets	\$7,270,280	\$37,805	0.52%
Driehaus Emerging Market Equity	0.90% of Assets	\$6,597,464	\$59,377	0.90%
<b>Fixed Income Assets</b>		<b>\$71,648,802</b>		
<b>Investment Grade Bonds Assets</b>		<b>\$36,570,930</b>		
SSgA U.S. Aggregate Bond Index	0.04% of Assets	\$36,570,930	\$14,628	0.04%
<b>High Yield Bond Assets</b>		<b>\$19,736,220</b>		
Shenkman Capital	0.45% of Assets	\$19,736,220	\$88,813	0.45%
<b>TIPS Assets</b>		<b>\$9,839,078</b>		
SSgA TIPS Index-NL	0.04% of Assets	\$9,839,078	\$3,936	0.04%
<b>Emerging Market Debt Assets</b>		<b>\$5,502,574</b>		
Payden Emerging Market Bond	0.69% of Assets	\$5,502,574	\$37,968	0.69%

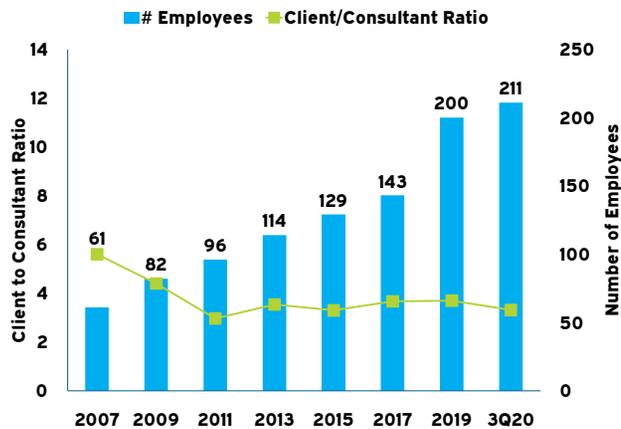
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Real Estate Assets</b>		<b>\$5,706,523</b>		
<b>Open-Ended Real Estate</b>		<b>\$5,649,836</b>		
Clarion Partners	1.10% of Assets	\$5,649,836	\$62,148	1.10%
<b>Total Closed End Real Estate</b>		<b>\$56,687</b>		
Colony Realty Partners IV	1.5% management fee based on committed equity during the investment period and invested equity thereafter	\$23,607		
Rockwood Capital Real Estate Partners Fund XI, L.P.		\$33,080		
<b>Private Equity Assets</b>		<b>\$8,468,808</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	\$489,663		
Ironsides Partnership Fund IV	0% Management fee, 8% Preferred Return, 5% Carried Interest	\$2,131,176		
Ironsides Direct Investment Fund IV	0.5% Management fee, 8% Preferred Return, 15% Carried Interest	\$2,694,325		
Ironsides Partnership Fund V, L.P.		\$276,617		
Ironsides Direct Investment Fund V, L.P.	0.5% Management fee, 8% preferred return, 15% carried interest	\$2,103,990		
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	\$773,036		
<b>Cash</b>		<b>\$314,606</b>		
Comerica Short Term Fund		\$314,606		
<b>Total</b>		<b>\$193,428,107</b>	<b>\$640,934</b>	<b>0.33%</b>

# Appendices

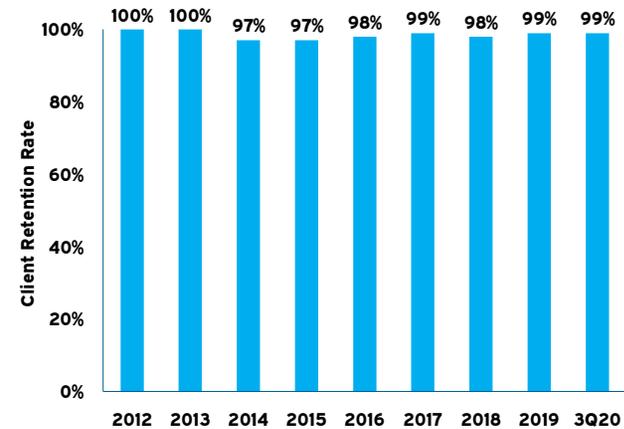
**Meketa Investment Group  
Corporate Update**

- Staff of 211, including 141 investment professionals and 41 CFA Charterholders
- 215 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 over \$1.4 trillion in client assets
  - Over \$125 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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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.