

PUBLIC
AGENCY
RETIREMENT
SERVICES

PARS

TRUSTED SOLUTIONS. LASTING RESULTS.



COMMUNITY COLLEGE
LEAGUE OF CALIFORNIA



SBCCD FINANCE COMMITTEE

Pension Rate Stabilization Program (PRSP) Trust Client Review

November 12, 2020

PARS TRUST TEAM

Program Sponsor:



COMMUNITY COLLEGE LEAGUE OF CALIFORNIA

Trust Administrator & Consultant



- Recordkeeping/reporting
- Coordinates all District services
- Monitors plan compliance
- Processes contributions/disbursements
- Hands-on, dedicated support teams

36

Years of Experience
(1984-2020)

1,500+

Plans under
Administration

1,000+

Public Agency
Clients

500 K+

Plan Participants

\$4.7 B

Assets under
Administration

Trustee



- 5th largest commercial bank and one of the nation's largest trustees for Section 115 trusts.
- Safeguard plan assets, oversight protection
- Plan fiduciary
- Custodian of assets

157

Years of Experience
(1863-2020)

\$5.0 T

Assets under
Administration



Investment Manager

Vanguard®

- Independent low-cost investment leader
- Specially designed pools for program
- Portfolios comprised of institutional class, index funds with low expense ratios
- Fees decrease by economies of scale as assets in all Vanguard pools grow

45

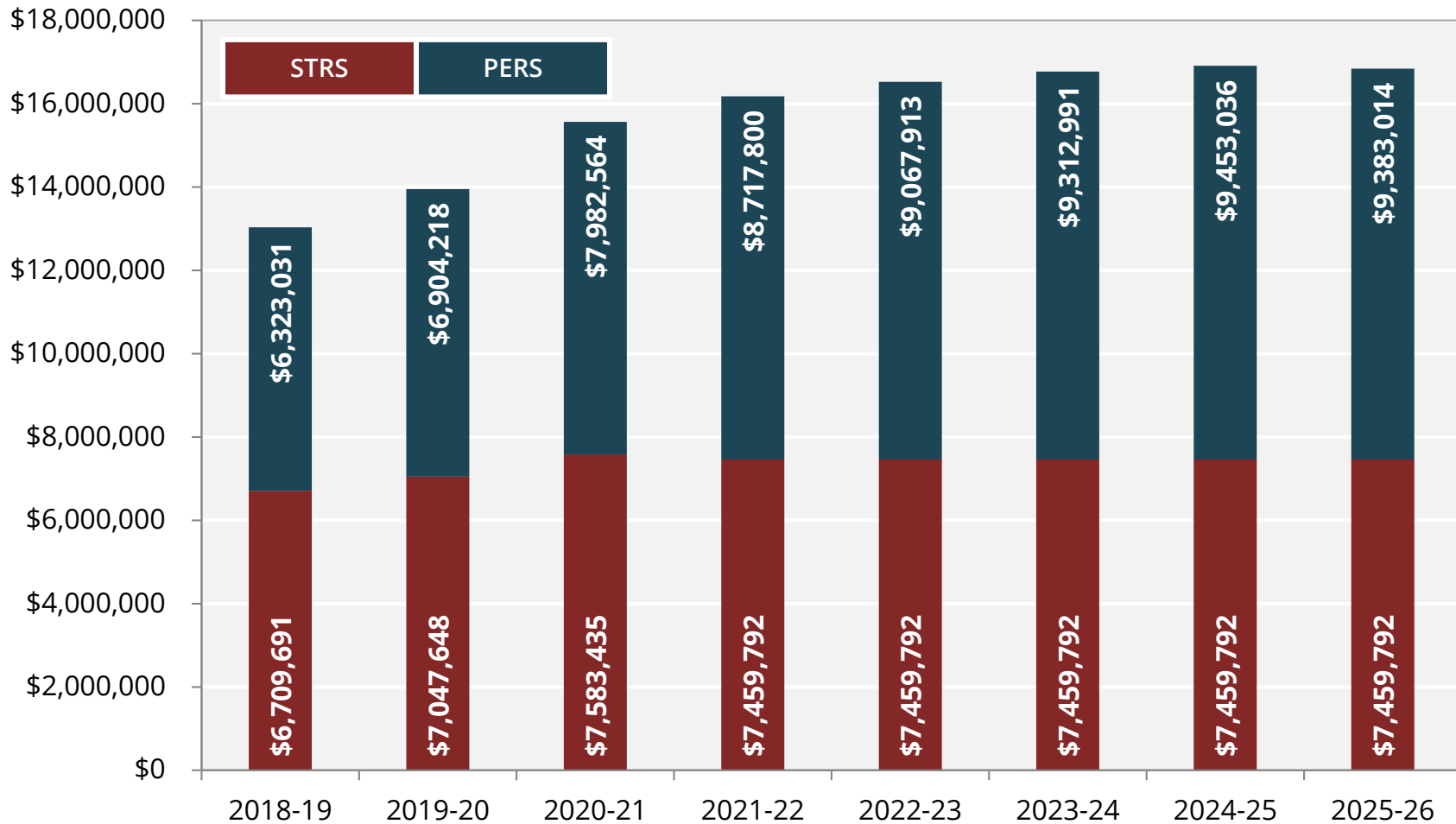
Years of Experience
(1975-2020)

\$5.5 T

Assets under
Management

HOW DO RATE INCREASES AFFECT YOUR DISTRICT?

Annual pension costs increase from \$13.0 million to \$16.8 million in 2025-26



STRS and PERS contributions for 2018-19 are taken from the 2018-2019 Annual Financial Report; STRS and PERS contributions for 2019-20 and thereafter assume consistent STRS/PERS covered payroll amounts from the 2018-2019 Annual Financial Report (increases are only based on increased STRS/PERS contribution rates)

SUMMARY OF DISTRICT'S PLAN*

| | |
|---------------------------------------|----------------------------------------------------------------------------|
| Plan Type: | IRC Section 115 Irrevocable Exclusive Benefit Trust |
| Investment Manager: | Vanguard |
| Plan Effective Date: | November 10, 2016 |
| Plan Administrator: | Executive Vice Chancellor |
| Current Investment Strategies: | Vanguard Conservative Strategy Vanguard Fixed Income (Mirrored Account) |

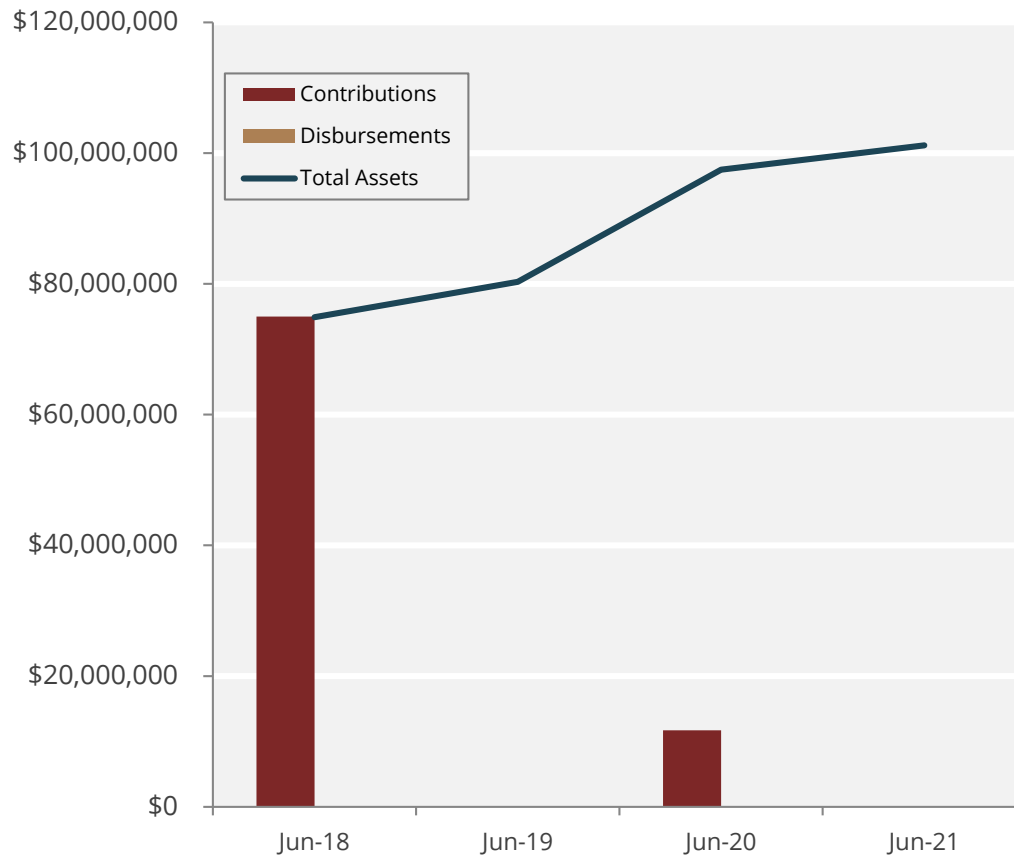
AS OF SEPTEMBER 30, 2020:

| | |
|----------------------------------|------------------------|
| Initial Contribution: | July 2017: \$5,000,000 |
| Additional Contributions: | \$81,700,000 |
| Total Contributions: | \$86,700,000 |
| Disbursements†: | \$0 |
| Net Investment Earnings: | \$14,798,998 |
| Account Balance: | \$101,197,304 |

**District's account is made up of 12 individual sub-accounts.
† Request for a distribution of \$9,170,175 made on 10/21/20.*

SUMMARY OF DISTRICT'S PLAN

CONTRIBUTIONS, DISTRIBUTIONS, AND TOTAL ASSETS AS OF SEPTEMBER 30, 2020:



| Year | Contributions | Disbursements | Total Assets |
|---------|---------------|---------------|---------------|
| Jun-18 | \$75,000,000 | \$0 | \$74,912,028 |
| Jun-19 | \$0 | \$0 | \$80,318,459 |
| Jun-20 | \$11,700,000 | \$0 | \$97,473,251 |
| Jun-21* | \$0 | \$0 | \$101,197,304 |

Plan Year Ending

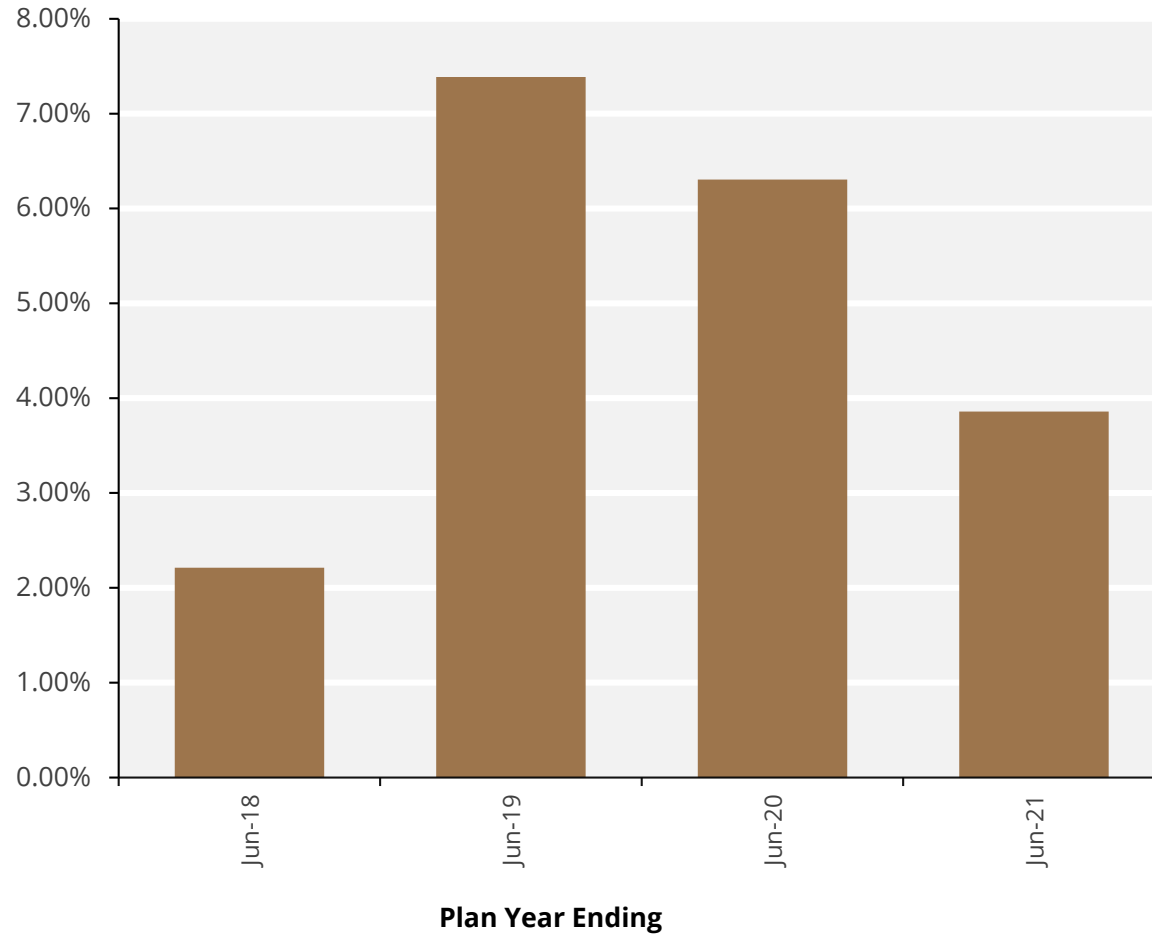
**Plan Year Ending June 2021 is based on 3 months of activity.*

SUMMARY OF AGENCY'S SUB-ACCOUNT PENSION PLAN

| Subaccount | Total Contributions | Transfer In | Transfer Out | Total Investment Earnings: | Account Balance |
|-----------------------------|---------------------|-----------------------------|----------------------------------------|----------------------------|----------------------|
| Original Account | \$25,000,000 | --- | \$25,875,282 (May 2019) | \$936,799 | \$0 |
| General Fund | \$24,000,000 | \$25,875,283 (May 2019) | --- | \$7,860,428 | \$55,552,144 |
| SBVC | \$5,000,000 | --- | --- | \$943,041 | \$5,287,363 |
| CHC | \$2,700,000 | --- | --- | \$199,006 | \$2,895,822 |
| MAE | \$9,000,000 | --- | \$2,290,000 (Sept. 2020) | \$805,788 | \$7,502,905 |
| KVCR | \$21,000,000 | --- | \$11,338,682 (Aug. 2019, Aug. 2020) | \$3,131,891 | \$12,734,598 |
| FNX | --- | \$9,000,000 (Aug. 2019) | \$343,700 (Aug. 2020) | \$828,890 | \$9,472,392 |
| General Fund – Fixed Income | --- | \$2,050,000 (March 2020) | --- | \$91,167 | \$2,139,705 |
| SBVC – Fixed Income | --- | \$638,393 (Aug. 2020) | --- | \$52 | \$638,372 |
| MAE – Fixed Income | --- | \$2,290,000 (Sept. 2020) | --- | \$1,708 | \$2,291,708 |
| KVCR – Fixed Income | --- | \$2,338,682 (Aug. 2020) | --- | \$190 | \$2,338,606 |
| FNX – Fixed Income | --- | \$343,700 (Aug. 2020) | --- | \$28 | \$343,689 |
| TOTALS | \$86,700,000 | \$42,536,058 | \$39,847,664 | \$14,798,998 | \$101,197,304 |

PLAN TOTAL RETURNS

AS OF SEPTEMBER 30, 2020



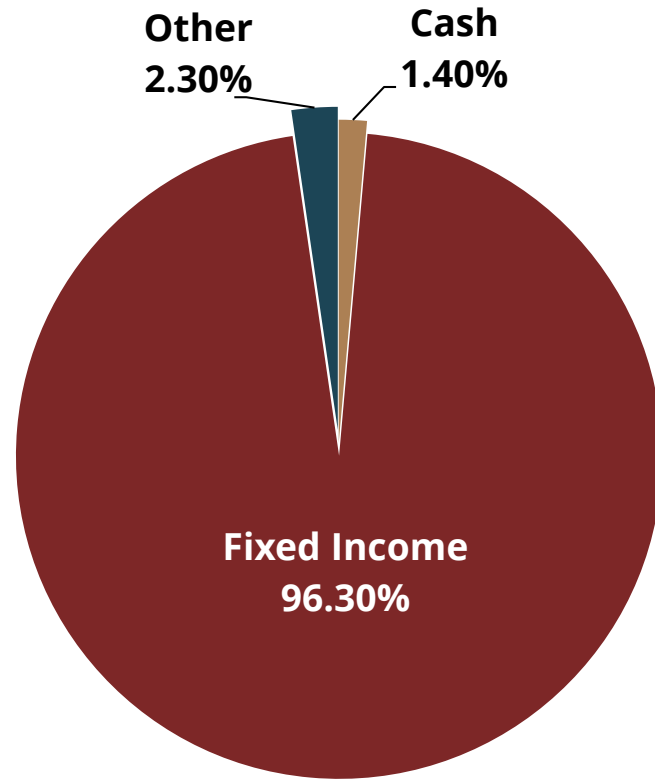
| Year | Gross Returns | Net Returns |
|---------|---------------|-------------|
| Jun-18 | 2.21% | 2.01% |
| Jun-19 | 7.39% | 7.21% |
| Jun-20 | 6.30% | 6.17% |
| Jun-21* | 3.86% | 3.82% |

*Plan Year Ending June 2021 is based on 3 months of activity.

VANGUARD ASSET ALLOCATION

As of September 30, 2020

| Asset Class | Allocation (%) |
|---------------|----------------|
| U.S. Bond | 61.80% |
| Non-U.S. Bond | 34.50% |
| Cash | 1.40% |
| Other | 2.30% |
| TOTAL | 100.00% |

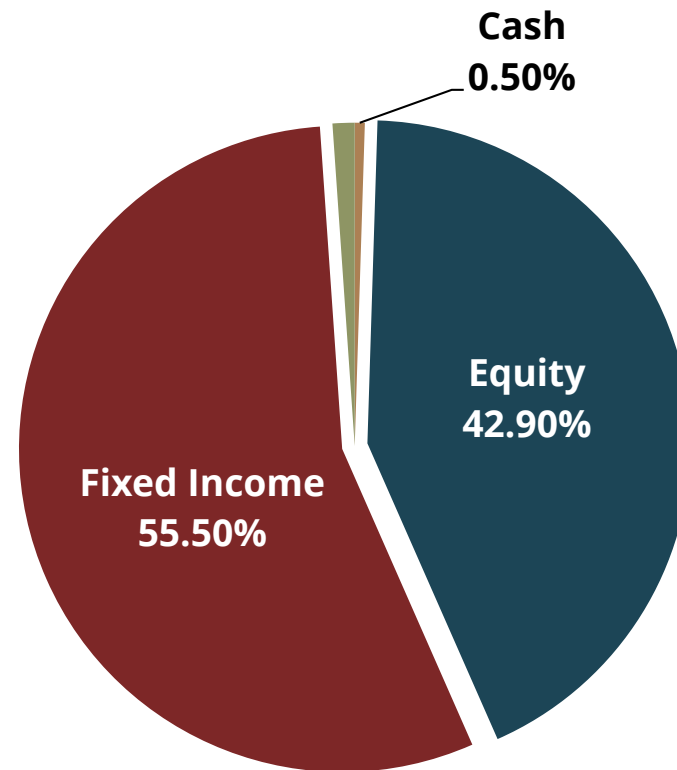


Fixed Income Portfolio

VANGUARD ASSET ALLOCATION

As of September 30, 2020

| Asset Class | Allocation (%) |
|-----------------|----------------|
| U.S. Equity | 32.30% |
| Non U.S. Equity | 10.60% |
| U.S. Bond | 49.70% |
| Non-U.S. Bond | 5.80% |
| Cash | 0.50% |
| Other | 1.10% |
| TOTAL | 100.00% |



Conservative Portfolio

UPCOMING PORTFOLIO CHANGES

| Strategy | Current Target Allocations | | New Target Allocations | |
|--------------|----------------------------|--------------|------------------------|--------------|
| | Equity | Fixed Income | Equity | Fixed Income |
| Fixed Income | 0% | 100% | 0% | 100% |
| Conservative | 43% | 57% | 40% | 60% |
| Balanced | 61% | 39% | 60% | 40% |
| Growth | 77% | 23% | 75% | 25% |

- Minor adjustments being made to the four portfolios that will allow Vanguard greater flexibility to change underlying sub-asset classes
- No impact to the overall objective and risk/return profile of the strategies
- Anticipated to go into effect in late 2020 or early 2021 (*upon receipt of all signed Schedule B's*)

VANGUARD INVESTMENT RETURNS

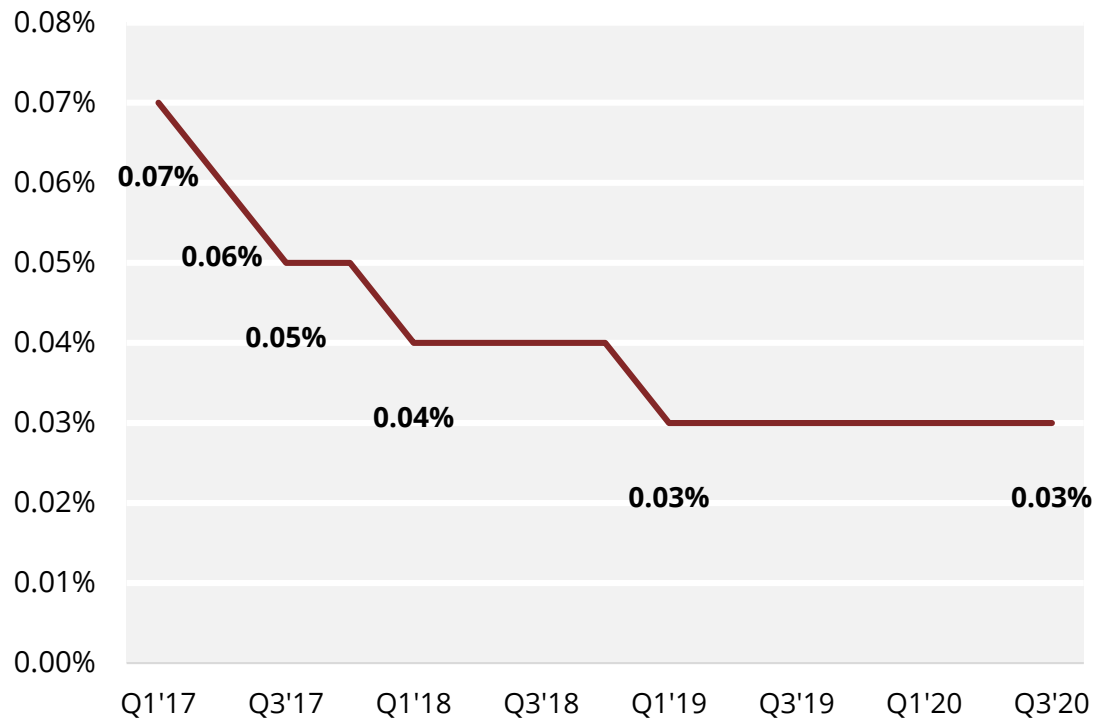
As of September 30, 2020

| Strategy | Equity (%) | 1 Year | 3 Years | 5 Years | 10 Years |
|--------------|------------|--------|---------|---------|----------|
| Growth | 76.90% | 9.07% | 7.56% | 9.52% | 9.08% |
| Balanced | 60.90% | 8.80% | 7.17% | 8.45% | 7.99% |
| Conservative | 42.90% | 8.02% | 6.57% | 7.15% | 6.73% |
| Fixed Income | 0.00% | 5.57% | 4.87% | 4.07% | 3.60% |

Past performance does not guarantee future results; Returns are net of the fund expenses, and gross of advisory fees; PARS is not licensed to provide and does not offer investment advice or recommendations of any kind; All investment decisions in the PARS Section 115 Trust Programs are made at the sole discretion of the Agency, with or without the assistance of the Agency's selected investment advisors and/or managers.

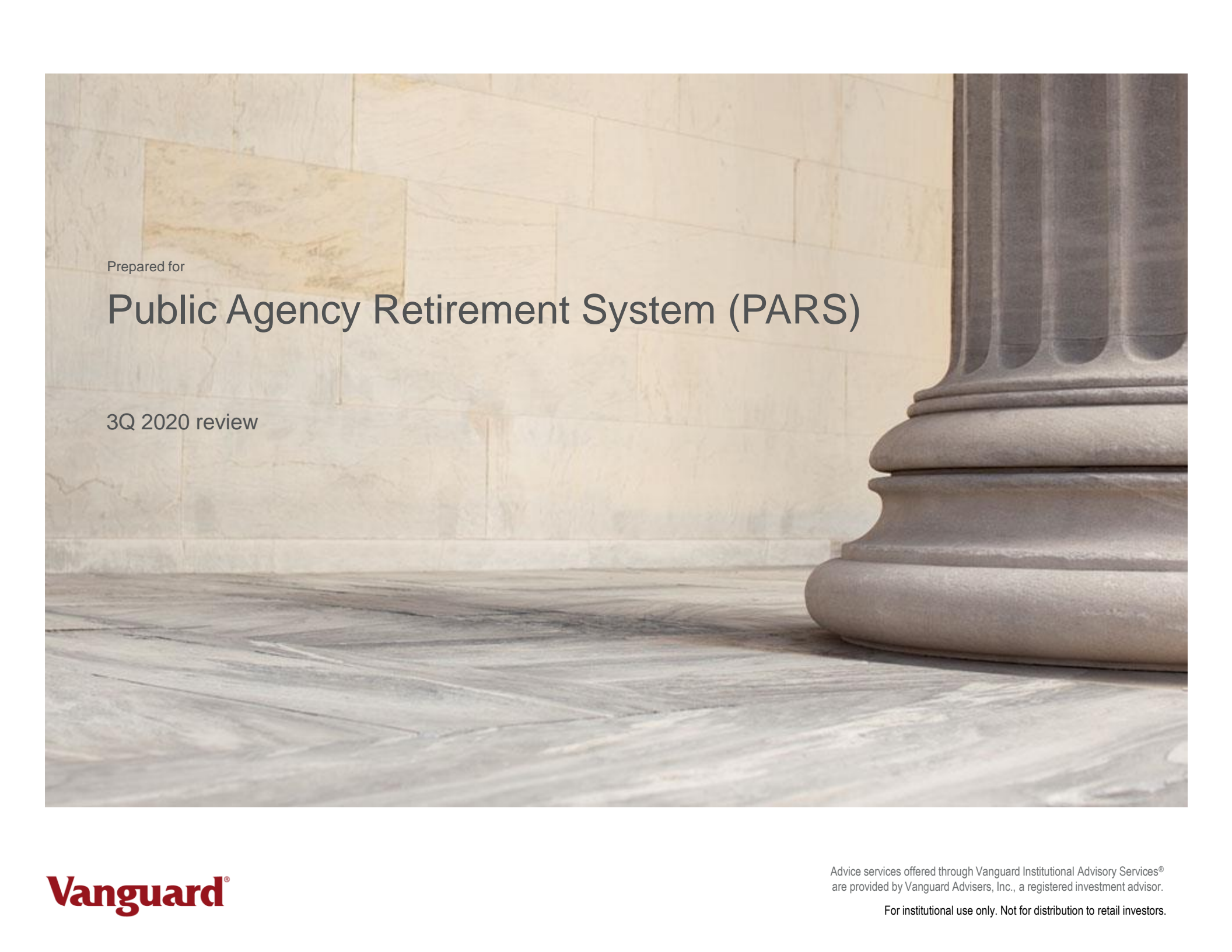
INVESTMENT MANAGEMENT FEES

- Vanguard’s investment management fees are based on total assets of all participants in the four portfolio options.
- **As of September 30, 2020, the investment management fee for Vanguard investment program members is 0.030% of assets (3 basis points).**



Vanguard Fee Schedule

- 0.07%** for assets \$0-50 million
- 0.04%** for assets \$50-150 million
- 0.03%** for assets \$150-250 million
- 0.01%** for assets \$250-500 million
- 0.005%** for assets over \$500 million

A photograph of a classical marble wall and a large column. The wall is made of large, light-colored marble blocks with visible veining. The column is dark grey or black with a fluted shaft and a decorative base. The floor is made of dark grey marble tiles.

Prepared for

Public Agency Retirement System (PARS)

3Q 2020 review

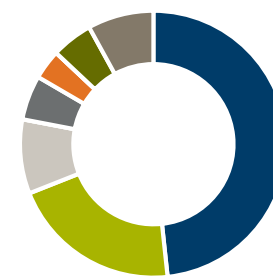
Agenda

- I. Vanguard portfolios and estimated return on assets
- II. 3Q capital market returns
- III. Market outlook

Vanguard portfolios and estimated return on assets

Suite of Vanguard portfolio options

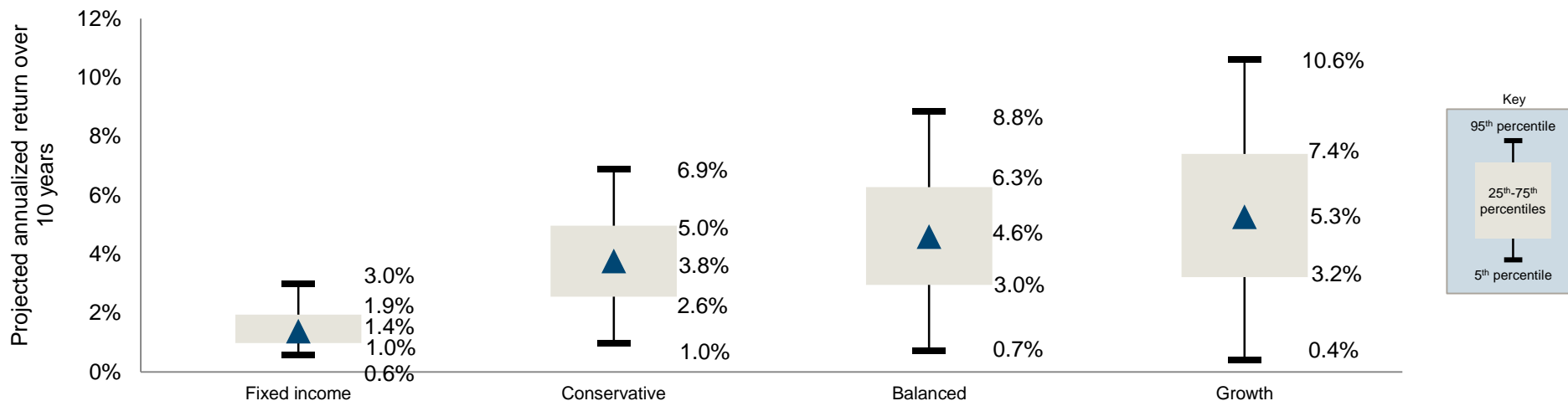
| Target allocations (equity/fixed income) | Fixed Income Portfolio (0/100) | Conservative Portfolio (43/57) | Balanced Portfolio (61/39) | Growth Portfolio (77/23) |
|---------------------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------|
| Total Equity | 0.0% | 35.0% | 53.0% | 69.0% |
| • Total Stock Market Index | 0.0% | 24.5% | 37.1% | 48.3% |
| • Total Int'l Stock Market Index | 0.0% | 10.5% | 15.9% | 20.7% |
| Total Fixed Income | 100.0% | 57.0% | 39.0% | 23.0% |
| • Total Bond Market Index | 24.0% | 21.0% | 12.0% | 9.0% |
| • Total Int'l Bond Market Index | 24.0% | 0.0% | 0.0% | 0.0% |
| • Intermediate-Term Investment Grade | 20.0% | 12.6% | 7.2% | 5.4% |
| • Short-Term Investment Grade | 28.0% | 8.4% | 4.8% | 3.6% |
| • Short-Term Inflation-Protected Securities | 4.0% | 0.0% | 0.0% | 0.0% |
| • Inflation-Protected Securities | 0.0% | 15.0% | 15.0% | 5.0% |
| Total Real Estate | 0.0% | 8.0% | 8.0% | 8.0% |
| • Real Estate Index | 0.0% | 8.0% | 8.0% | 8.0% |
| Portfolio weighted average expense ratio | 0.09% | 0.08% | 0.07% | 0.07% |
| Advisory fee | 0.03% | 0.03% | 0.03% | 0.03% |
| All-in fee | 0.12% | 0.11% | 0.10% | 0.10% |



Asset allocation analysis: 10-year outlook

| Asset classes | Fixed income | Conservative | Balanced | Growth |
|---------------------------------|--------------|--------------|----------|---------|
| U.S. Equity | - | 24.5% | 37.1% | 48.3% |
| Non U.S. Equity | - | 10.5% | 15.9% | 20.7% |
| REITs | - | 8% | 8% | 8% |
| U.S. Aggregate Bonds | 24% | 21% | 12% | 9% |
| Non U.S. Bonds | 24% | - | - | - |
| Intermediate-Term Credit | 20% | 12.6% | 7.2% | 5.4% |
| Short-Term Credit | 28% | 8.4% | 4.8% | 3.6% |
| Short-Term Inflation-Protected | 4% | - | - | - |
| Inflation-Protected | - | 15% | 15% | 5% |
| Median expected outcomes | | | | |
| Returns | 1.38% | 3.76% | 4.59% | 5.27% |
| Volatility | 2.70% | 7.05% | 9.83% | 12.63% |
| Sharpe ratio | 0.14 | 0.38 | 0.38 | 0.37 |
| EQ/FI/REITS (%) | 0/100/0 | 35/57/8 | 53/39/8 | 69/23/8 |

Portfolio nominal return distributions (10-year horizon)



IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model®(VCMM) regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from VCMM derived from 10,000 simulations for U.S. equity returns and fixed income returns. Simulations as of June 30, 2020. Results from the model may vary with each use and over time. For more information on VCMM, see the Important Information slide.

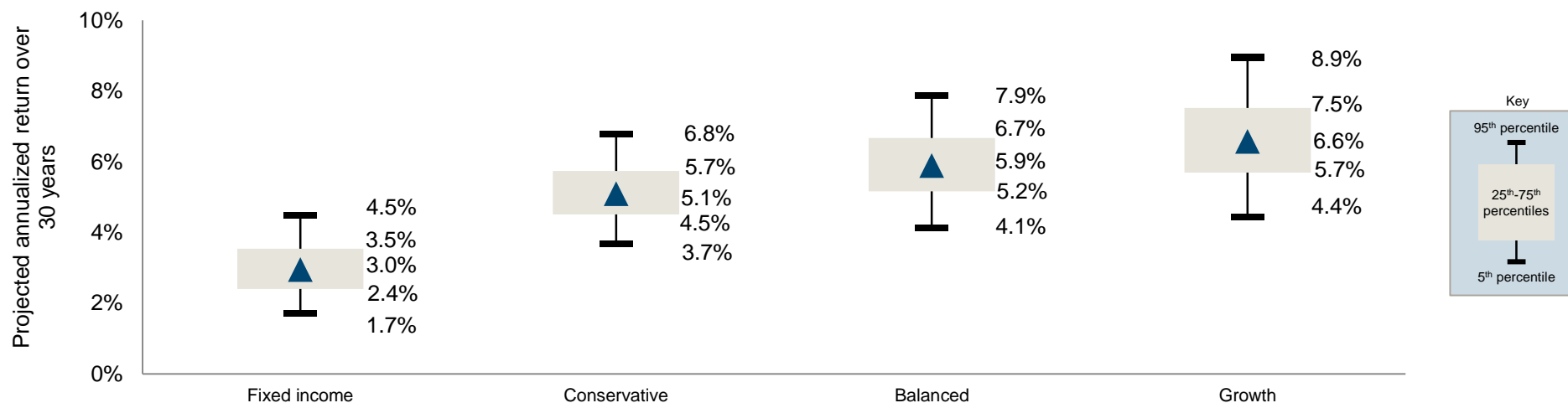
Note: Returns, real returns, and Sharpe ratio listed above represent the median value for 10,000 scenarios. The Sharpe ratio calculates return (or reward) per unit of risk; $(R_x - r_f) / \sigma(x - r)$; R_f = cash. The risk-free rate is based on VCMM's projections for cash.

Source: Vanguard, Investment Strategy Group.

Asset allocation analysis: 30-year outlook

| Asset classes | Fixed income | Conservative | Balanced | Growth |
|---------------------------------|--------------|--------------|----------|---------|
| U.S. Equity | - | 24.5% | 37.1% | 48.3% |
| Non U.S. Equity | - | 10.5% | 15.9% | 20.7% |
| REITs | - | 8% | 8% | 8% |
| U.S. Aggregate Bonds | 24% | 21% | 12% | 9% |
| Non U.S. Bonds | 24% | - | - | - |
| Intermediate-Term Credit | 20% | 12.6% | 7.2% | 5.4% |
| Short-Term Credit | 28% | 8.4% | 4.8% | 3.6% |
| Short-Term Inflation-Protected | 4% | - | - | - |
| Inflation-Protected | - | 15% | 15% | 5% |
| Median expected outcomes | | | | |
| Returns | 2.95% | 5.09% | 5.89% | 6.57% |
| Volatility | 3.70% | 7.39% | 10.27% | 13.20% |
| Sharpe ratio | 0.16 | 0.39 | 0.38 | 0.37 |
| EQ/FI/REITS (%) | 0/100/0 | 35/57/8 | 53/39/8 | 69/23/8 |

Portfolio nominal return distributions (30-year horizon)



IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model®(VCMM) regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from VCMM derived from 10,000 simulations for U.S. equity returns and fixed income returns. Simulations as of June 30, 2020. Results from the model may vary with each use and over time. For more information on VCMM, see the Important Information slide.

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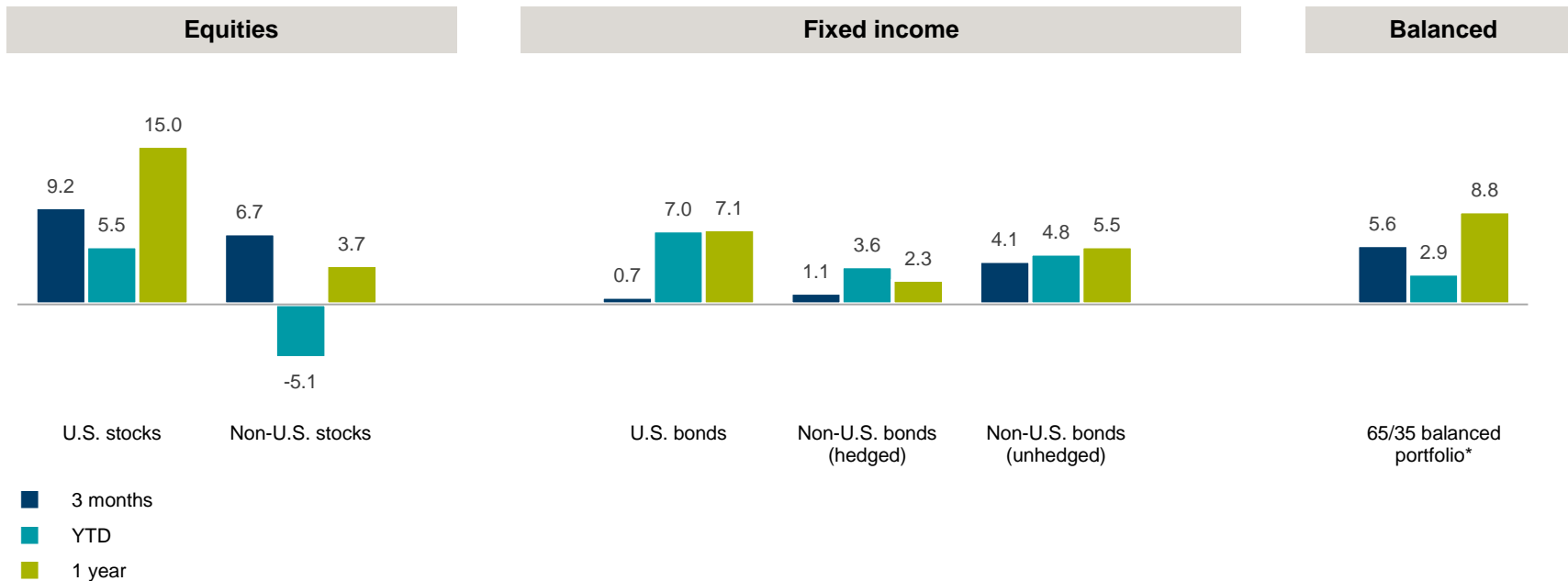
Source: Vanguard, Investment Strategy Group.

3Q capital market returns

Global markets stabilize amid continued pandemic uncertainty

- As the coronavirus pandemic continues to impact global economies, markets are assessing length and shape of recovery in progress
- Global equities sold off sharply during the first quarter, driving markets briefly into bear market territory, yet have recovered significantly over the last several months
- Fixed income delivered positive returns as Treasury yields reached record lows and credit bonds weathered the impact of the uncertainty

Global market returns as of September 30, 2020 (%)



Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Sources: Bloomberg Barclays, CRSP, and FTSE.

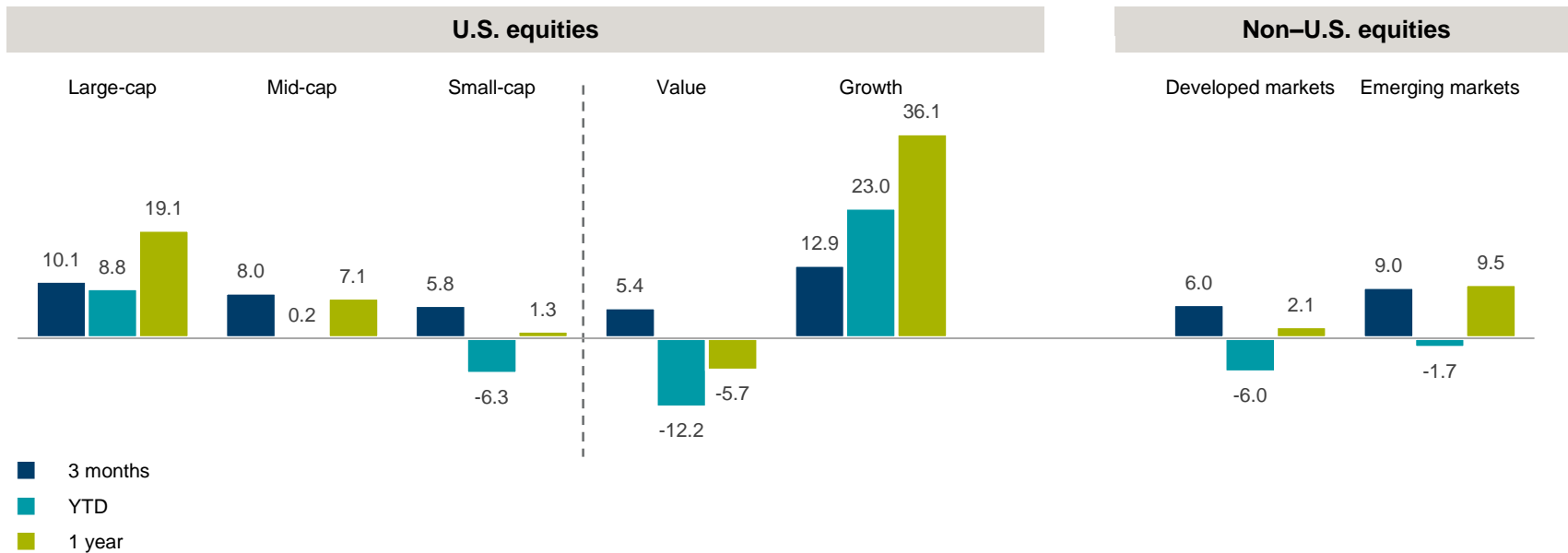
U.S. stocks (CRSP U.S. Total Market Index), non-U.S. stocks (FTSE Global All-Cap ex-US Index), U.S. bonds (Bloomberg Barclays U.S. Aggregate Float Adjusted Index), non-U.S. bonds hedged (Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Index hedged), non-U.S. bonds unhedged (Bloomberg Barclays Global Aggregate Index ex USD).

* 65/35 balanced portfolio Static Composite (39% U.S. stocks, 26% international stocks, and 24.5% investment-grade U.S. bonds, 10.5% investment-grade international bonds).

Stocks across market cap and style see significant divergence

- Large-cap stocks have led returns by market cap year-to-date (YTD) and during the trailing 12 months
- Growth stocks, led by a select group of mega-cap companies, have significantly outperformed value stocks, extending their recent performance advantage of the last couple years
- In non-U.S. equity markets, emerging markets have outperformed developed markets recently, yet both have fallen short of U.S. market returns

Global equity market returns as of September 30, 2020 (%)



Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

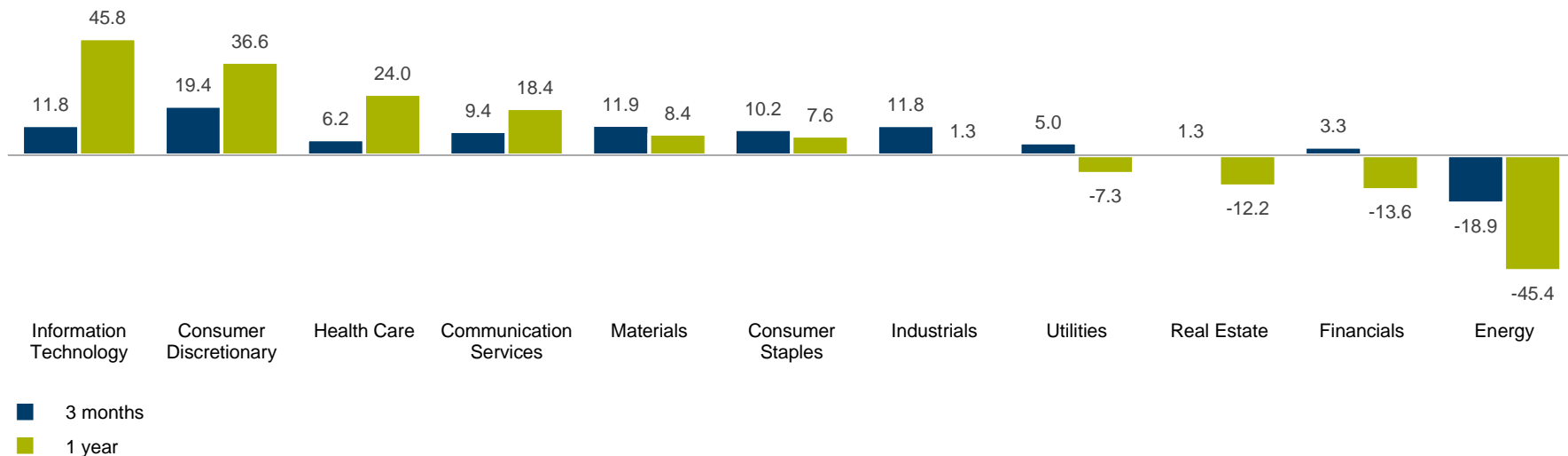
Sources: CRSP, FTSE, and Russell.

Large-cap (CRSP U.S. Mega Cap Index), mid-cap (CRSP U.S. Mid Cap Index), small-cap (CRSP U.S. Small Cap Index); value (Russell 3000 Value Index), growth (Russell 3000 Growth Index); developed markets (FTSE Developed All Cap ex-U.S. Index), emerging markets (FTSE Emerging Markets All Cap China A Inclusion Index).

U.S. sector performance—Recovery present in many industries

- No sector escaped the sell-off in the first quarter as steep losses were booked across industries, yet growth-oriented companies have led the recovery over the past several months
- Wide divergence in 12-month returns between the top and bottom sectors illustrates the benefit of diversification
- Energy has posted the deepest loss over the trailing 12 months, impacted by a severe demand shock from the COVID-19 pandemic

U.S. equity sector returns as of September 30, 2020 (%)



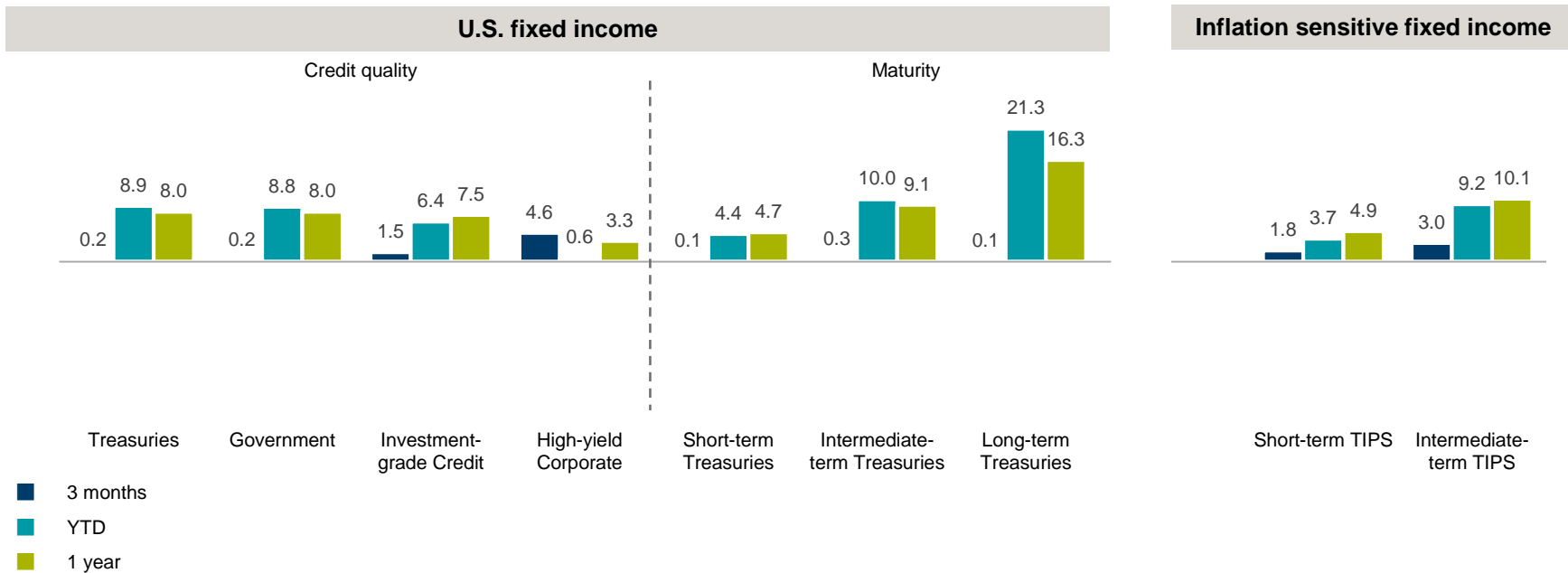
Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Source: FactSet.
U.S. markets measured by CRSP U.S. Total Market Index.

Bonds post positive returns during crisis

- Treasury yields hit record lows across the curve as investors fled risky assets and the Federal Reserve cut short-term rates to near zero
- Credit spreads widened sharply during the initial outbreak and market reaction, yet both investment-grade and high-yield bonds have recovered during the past several months
- Treasuries have had exceptionally strong performance as economic activity and expectations have fallen dramatically

Domestic fixed income market returns as of September 30, 2020 (%)



Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Source: Bloomberg Barclays.

Treasuries, government, investment-grade credit; high-yield (Bloomberg Barclays U.S. Treasury/Government/Credit/Corporate High-Yield Indices); short-inter-long-term Treasuries (Bloomberg Barclays U.S. 1-5/5-10/Long Treasury Indices); short-term TIPS (Bloomberg Barclays U.S. Treasury 0-5 Year Inflation-Protected Index); intermediate-term TIPS (Bloomberg Barclays U.S. Treasury Inflation-Protected Index).

Market outlook

Vanguard October 2020 market and economic outlook at a glance

Key takeaways:

- It will take until the end of 2021 for U.S. GDP to return to pre-COVID levels.
- Vanguard expects agreement on a continuing resolution to fund the government at least through the election.
- Monetary policy should remain loose into 2021, with risks skewed toward further easing.
- Global trade is poised for a sharp rebound through October, followed by a slower recovery.
- Vanguard expects core inflation to remain below 2% over the medium term.
- The United States will finish 2020 with an unemployment rate in a range of 7% to 9%.

• Asset-class return outlooks

Our ten-year, annualized, nominal return projections, as of June 30, 2020, are shown below. Please note that the figures are based on a 1.0 point range around the rounded 50th percentile of the distribution of return outcomes for equities and a 0.5-point range around the rounded 50th percentile for fixed income.

| Equities | Return projection | Median volatility |
|------------------------------------|-------------------|-------------------|
| U.S. equities | 3.9%–5.9% | 17.9% |
| U.S. value | 5.0%–7.0% | 19.9% |
| U.S. growth | 1.6%–3.6% | 19.5% |
| U.S. large-cap | 3.7%–5.7% | 19.4% |
| U.S. small-cap | 4.0%–6.0% | 23.5% |
| U.S. real estate investment trusts | 3.4%–5.4% | 19.9% |
| Global equities ex-U.S. (unhedged) | 7.4%–9.4% | 18.6% |
| U.S. inflation | 0.5%–1.5% | 2.4% |

| Fixed income | Return projection | Median volatility |
|----------------------------------------------|-------------------|-------------------|
| U.S. aggregate bonds | 0.7%–1.7% | 4.0% |
| U.S. Treasury bonds | 0.3%–1.3% | 4.2% |
| U.S. credit bonds | 1.4%–2.4% | 5.7% |
| U.S. high-yield corporate bonds | 3.2%–4.2% | 10.7% |
| U.S. Treasury inflation-protected securities | 0.4%–1.4% | 6.4% |
| U.S. cash | 0.5%–1.5% | 0.9% |
| Global bonds ex-U.S. (hedged) | 0.5%–1.5% | 2.5% |
| Emerging market sovereign | 3.1%–4.1% | 11.1% |

These probabilistic return assumptions depend on current market conditions and, as such, may change over time.

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model® regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results.

Distribution of return outcomes from the VCMM are derived from 10,000 simulations for each modeled asset class. Simulations are as of June 30, 2020. Results from the model may vary with each use and over time. For more information, see Important information page.

Source: Vanguard Investment Strategy Group.

Vanguard October 2020 market and economic outlook at a glance



Region-by-region outlook

Economic growth picture brightens a bit

United States. The second government estimate of second-quarter GDP in the United States, at negative 31.7%, confirmed an economy-wide collapse in activity led by services. But that data came in at the more optimistic end of Vanguard's forecast range.

- Some parts of the economy rushed to reopen, leading to a mixed bag of worsening virus infection trends alongside a brighter near-term U.S. economic picture.
- With these unexpected developments, Vanguard sees a shift forward in growth expectations, with higher economic growth in 2020 owing to less-stringent lockdowns (full-year 2020 GDP around negative 4%, compared with our previous view of negative 7% to negative 9%), but a slower pace of recovery in 2021 (reduced to around 4% growth, compared with a range of 7% to 9% previously). In all, the longer-term picture hasn't changed.
- We still see it taking until the end of 2021 for GDP to return to pre-COVID levels and into 2022 to reach a pre-COVID trajectory, or where GDP would have been had COVID never happened. Our view anticipates further fiscal stimulus of around \$1 trillion; we'd likely reduce our outlook in the absence of such stimulus.

Euro area. Vanguard continues to foresee a full-year economic contraction around negative 10% for the euro area economy in 2020 as both headwinds and tailwinds strengthen.

- A strengthening in the euro against other major currencies since May, including a nearly 10% strengthening against the U.S. dollar, is a negative for exports that are now more expensive, which could weigh on GDP.
- We expect economic recovery for the rest of the year to be gradual. Although most supply has come back online, it will take longer for demand to return as households remain reluctant to engage in highly social activities.

China. Vanguard continues to foresee full-year growth for China in a 1% to 3% range.

- Vanguard is seeing a broadening in China's export goods after a period where exports were concentrated in protective equipment, medical instruments, and work-from-home technology.
- We'll watch for whether subdued spending in the developed world may weigh on China's exports in the months ahead.

Japan. Vanguard expects the resignation of Prime Minister Shinzo Abe to have little near-term effect on the economy or consumer sentiment in Japan. We continue to foresee Japan's full-year GDP contracting in a range around negative 3% to negative 5%.

Vanguard October 2020 market and economic outlook at a glance

Emerging markets. The International Monetary Fund foresees emerging markets contracting by negative 3.0% before rebounding to growth of 5.9% in 2021.

- The outlook for Latin America, under assault from COVID-19, is particularly pessimistic.
- Emerging markets will be watching developments in U.S.-China relations, which have implications for supply chains and trade-related growth.



Expect agreement
on a continuing
resolution

Averting a U.S. government shutdown

- Vanguard expects agreement on a continuing resolution to fund the government at least through the November 3 presidential and congressional elections, averting a shutdown in the interim.
- The government is required to authorize funding each fiscal year for the approximately one-third of the federal budget that isn't authorized automatically. When it doesn't do so, certain government operations cease to function.



New approach
to inflation

Monetary policy to remain loose

Given our expectation for a slow recovery in demand amid pandemic containment efforts, Vanguard continues to expect monetary policy to remain loose into 2021, with risks skewed toward further easing.

The Fed. The Fed said it expects to maintain the current target range of 0%–0.25% until it assesses that inflation “is on track to moderately exceed 2% for some time.”

- U.S. Federal Open Market Committee (FOMC) members broadly expect the Fed will keep the current federal funds target rate at today's level through 2023, even as they expect inflation to then finally reach 2%.

The ECB. Vanguard expects little change in ECB policy over the next 12 months.

China. Vanguard expects China to largely maintain the status quo in both monetary and fiscal policy as it tries to balance near-term growth and medium-term financial stability.

Vanguard October 2020 market and economic outlook at a glance



Inflation should be tame

Core inflation should remain below 2% over the medium term

We see inflation remaining below 2% by the end of 2021, though virus-related supply shocks, fiscal support and/or monetary stimulus, and willingness by the Federal Reserve to tolerate above-target inflation may serve as potential spurs to higher prices.



Sharp rebound ahead?

Global trade has swung back to an upward trajectory

Similar to the trajectory of broader economic recovery in many places, the leading indexes imply a sharp rebound for global trade through October, followed by a slower recovery to pre-pandemic levels.

- We expect global inventory drawdowns prior to the crisis to act as a tailwind to global trade, as firms rebuild depleted inventories.

China. The country remains the standout in trade, its exports buoyed by products that were in demand during COVID lockdowns, such as protective gear, pharmaceuticals, and office equipment.

- China has been supported by its position at the center of global goods production and by lower commodities input prices.

Employment better than expected

- **United States.** The U.S. labor market has surpassed expectations in recent months, and our view that U.S. growth will accelerate for the rest of the year supports our view that the United States will finish 2020 with an unemployment rate in a range of 7% to 9%, lower than our prior view of a range of 8% to 10%.



Register today

Vanguard's Advisor Symposium
Thursday, October 15, 2020 | Noon–4:45 p.m., E.T.

Hear from Vanguard CEO Tim Buckley, Managing Director of Vanguard Financial Advisor Services™ Tom Rampulla, Vanguard Global Chief Economist Joe Davis, and more.

Important information

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model® (VCMM) regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. VCMM results will vary with each use and over time.

The VCMM projections are based on a statistical analysis of historical data. Future returns may behave differently from the historical patterns captured in the VCMM. More importantly, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The Vanguard Capital Markets Model® is a proprietary financial simulation tool developed and maintained by Vanguard's primary investment research and advice teams. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include U.S. and international equity markets, several maturities of the U.S. Treasury and corporate fixed income markets, international fixed income markets, U.S. money markets, commodities, and certain alternative investment strategies. The theoretical and empirical foundation for the Vanguard Capital Markets Model is that the returns of various asset classes reflect the compensation investors require for bearing different types of systematic risk (beta). At the core of the model are estimates of the dynamic statistical relationship between risk factors and asset returns, obtained from statistical analysis based on available monthly financial and economic data from as early as 1960. Using a system of estimated equations, the model then applies a Monte Carlo simulation method to project the estimated interrelationships among risk factors and asset classes as well as uncertainty and randomness over time. The model generates a large set of simulated outcomes for each asset class over several time horizons. Forecasts are obtained by computing measures of central tendency in these simulations. Results produced by the tool will vary with each use and over time.

The Vanguard Lifecycle Model (VLCM) is designed to identify the product design that represents the best investment solution for a theoretical, representative investor who uses the target-date funds to accumulate wealth for retirement. The VLCM generates an optimal custom glide path for a participant population by assessing the trade-offs between the expected (median) wealth accumulation and the uncertainty about that wealth outcome, for thousands of potential glide paths. The VLCM does this by combining two sets of inputs: the asset class return projections from the VCMM and the average characteristics of the participant population. Along with the optimal custom glide path, the VLCM generates a wide range of portfolio metrics such as a distribution of potential wealth accumulation outcomes, risk and return distributions for the asset allocation, and probability of ruin, such as the odds of participants depleting their wealth by age 95.

The VLCM inherits the distributional forecasting framework of the VCMM and applies to it the calculation of wealth outcomes from any given portfolio.

The most impactful drivers of glide path changes within the VLCM tend to be risk aversion, the presence of a defined benefit plan, retirement age, savings rate and starting compensation. The VLCM chooses among glide paths by scoring them according to the utility function described and choosing the one with the highest score. The VLCM does not optimize the levels of spending and contribution rates. Rather, the VLCM optimizes the glide path for a given customizable level of spending, growth rate of contributions and other plan sponsor characteristics.

A full dynamic stochastic life-cycle model, including optimization of a savings strategy and dynamic spending in retirement is beyond the scope of this framework.

Important information

For more information about any fund, visit institutional.vanguard.com or call 866-499-8473 to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

Vanguard ETF[®] Shares are not redeemable with the issuing fund other than in very large aggregations worth millions of dollars. Instead, investors must buy or sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Mutual funds and all investments are subject to risk, including the possible loss of the money you invest. Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks. Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk. These risks are especially high in emerging markets. Funds that concentrate on a relatively narrow sector face the risk of higher share-price volatility. It is possible that tax-managed funds will not meet their objective of being tax-efficient. Because company stock funds concentrate on a single stock, they are considered riskier than diversified stock funds.

Investments in bond funds are subject to the risk that an issuer will fail to make payments on time and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments. High-yield bonds generally have medium- and lower-range credit quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit quality ratings. Although the income from a municipal bond fund is exempt from federal tax, you may owe taxes on any capital gains realized through the fund's trading or through your own redemption of shares. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the federal Alternative Minimum Tax. Diversification does not ensure a profit or protect against a loss.

While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest.

Investments in Target Retirement Funds or Trusts are subject to the risks of their underlying funds. The year in the fund name refers to the approximate year (the target date) when an investor in the fund or trust would retire and leave the workforce. The fund or trust will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. An investment in the Target Retirement Fund or Trust is not guaranteed at any time, including on or after the target date.

Vanguard collective trusts are not mutual funds. They are collective trusts available only to tax-qualified plans and their eligible participants. Investment objectives, risks, charges, expenses, and other important information should be considered carefully before investing. The collective trust mandates are managed by Vanguard Fiduciary Trust Company, a wholly owned subsidiary of The Vanguard Group, Inc.

A stable value investment is neither insured nor guaranteed by the U.S. government. There is no assurance that the investment will be able to maintain a stable net asset value, and it is possible to lose money in such an investment.

Factor funds are subject to investment style risk, which is the chance that returns from the types of stocks in which the fund invests will trail returns from U.S. stock markets. Factor funds are subject to manager risk, which is the chance that poor security selection will cause the fund to underperform relevant benchmarks or other funds with a similar investment objective.

The information contained herein does not constitute tax advice and cannot be used by any person to avoid tax penalties that may be imposed under the Internal Revenue Code. We recommend that you consult a tax or financial advisor about your individual situation.

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Important information

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Overview

The PARS Investment Partnership relates to a relationship between Vanguard and PARS where Vanguard manages four trusts (Fixed Income, Conservative, Balanced, and Growth) in which individual clients can invest their assets according to their appropriate investment objective.

Investment objective

The Fixed Income Portfolio seeks to provide capital preservation and current income consistent with its current allocation.

Investment strategy

The Fixed Income Portfolio invests in Vanguard mutual funds using an asset allocation strategy designed for investors seeking a reasonable level of income and long-term capital preservation. The underlying funds are: Vanguard Total Bond Market Index Fund, Vanguard Total International Bond Index Fund, Vanguard Intermediate-Term Investment-Grade Fund, Vanguard Short-Term Investment-Grade Fund, and Vanguard Short-Term Inflation-Protected Securities Fund.

The Portfolio's indirect bond holdings are a diversified mix of short-, intermediate-, and long-term U.S. government, U.S. agency, and investment-grade U.S. corporate bonds; mortgage-backed and asset-backed securities; and government, agency, and corporate bonds. The Portfolio also holds currency-hedged international bonds.

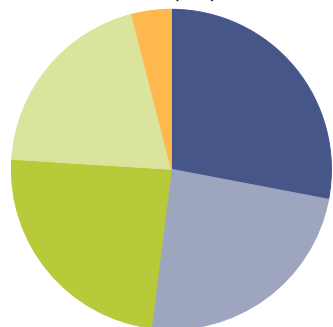
Fees

The fees for managing the portfolio consists of the expense ratios of the individual funds and the advisor fee. Both of these fees are dependent on the assets under management. Currently the average expense ratio is **0.09%** which consists of averaging the expense ratio of the individual funds which are outlined above. The average advisory fee is **0.03%** based on the current assets under management.

PARS Investment Partnership - Fixed Income Portfolio

Portfolio holdings

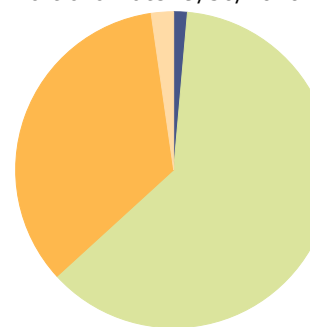
Portfolio Date: 9/30/2020



| | % |
|------------------------------------------|--------------|
| Vanguard Short-Term Investment-Grade Adm | 28.0 |
| Vanguard Total Bond Market Index Adm | 24.0 |
| Vanguard Total Intl Bd Idx Admiral™ | 24.0 |
| Vanguard Interm-Term Investment-Grde Adm | 20.0 |
| Vanguard Shrt-Term Infl-Prot Sec Idx Adm | 4.0 |
| Total | 100.0 |

Asset allocation

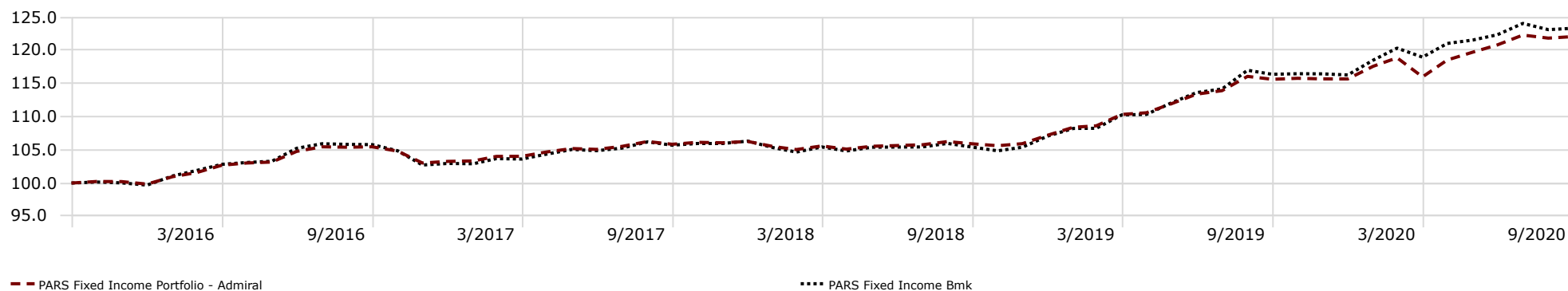
Portfolio Date: 9/30/2020



| | % |
|---------------|--------------|
| Cash | 1.4 |
| US Equity | - |
| Non-US Equity | 0.0 |
| US Bond | 61.8 |
| Non-US Bond | 34.5 |
| Other | 2.3 |
| Total | 100.0 |

Investment growth

Time Period: 10/1/2015 to 9/30/2020

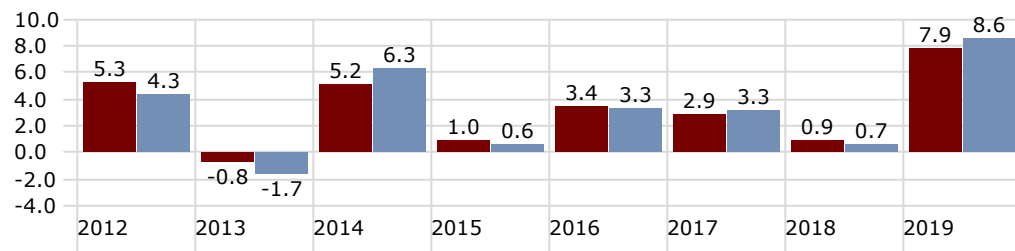


Trailing Returns - Annualized after one year

As of Date: 9/30/2020

| | YTD | One Year | Three Years | Five Years | Eight Years | Ten Years |
|---------------------------------------|------|----------|-------------|------------|-------------|-----------|
| PARS Fixed Income Portfolio - Admiral | 5.52 | 5.57 | 4.87 | 4.07 | 3.28 | 3.60 |
| PARS Fixed Income Bmk | 6.05 | 5.96 | 5.27 | 4.28 | 3.39 | 3.76 |

Annual returns



Portfolio

52% Total Bond Market Index Admiral, 20% Intermediate-Term Investment Grade Admiral, 28% Short-Term Investment Grade Admiral through October 16, 2012/ 48% Total Bond Market Index Admiral, 20% Intermediate-Term Investment Grade Admiral, 28% Short-Term Investment Grade Admiral, 4% Short-Term Inflation-Protected Securities Index Admiral through May 31, 2013/ 24% Total Bond Market Index Admiral, 24% Total International Bond Index Admiral, 20% Intermediate-Term Investment Grade Admiral, 28% Short-Term Investment Grade Admiral, 4% Short-Term Inflation-Protected Securities Index Admiral thereafter.

Benchmark

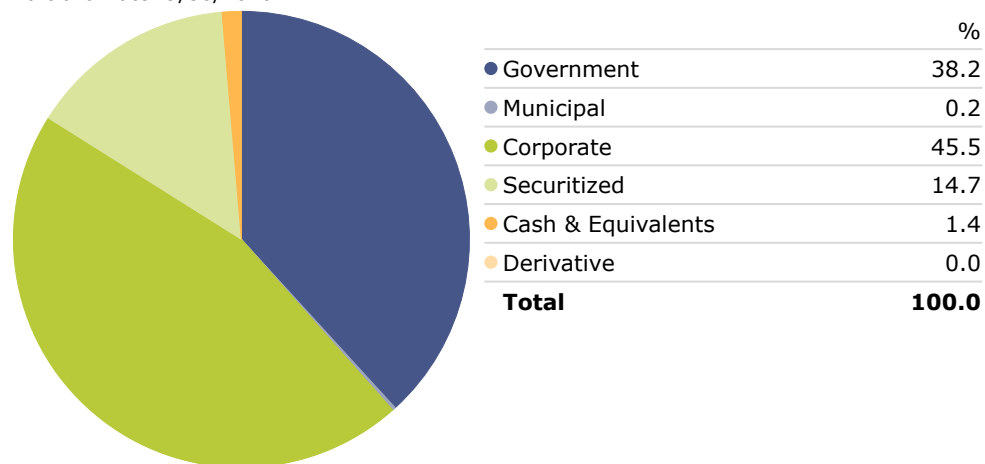
100% Spliced Barclays US Aggregate Float-Adjusted Bond Index through October 16, 2012/ 96% Spliced Barclays US Aggregate Float-Adjusted Bond Index, 4% Barclays US 0-5 Year TIPS Index through May 31, 2013/ 72% Spliced Barclays US Aggregate Float-Adjusted Bond Index, 24% Barclays ex-USD Flood Adjusted Index Hedged, 4% Barclays US 0-5 Year TIPS Index thereafter.

The performance data shown represent past performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. Returns are net of the fund expense ratio, gross of advisory fees. Returns represent the historical performance for a Vanguard composite based on the portfolio holdings listed above.

PARS Investment Partnership - Fixed Income Portfolio

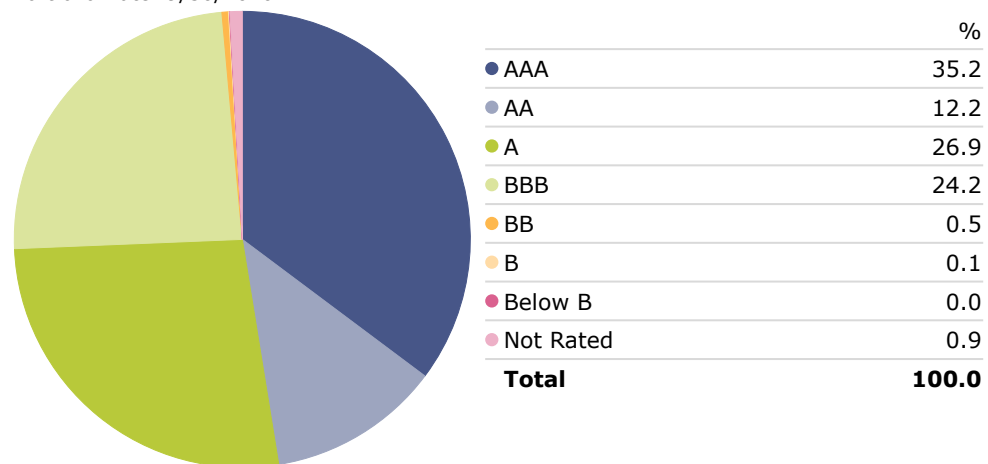
Fixed income sectors

Portfolio Date: 9/30/2020



Fixed income credit quality

Portfolio Date: 9/30/2020



Overview

The PARS Investment Partnership relates to a relationship between Vanguard and PARS where Vanguard manages four trusts (Conservative, Balanced, Growth, and Fixed Income) in which individual clients can invest their assets according to their appropriate investment objective.

Investment objective

The Conservative Portfolio seeks to provide current income and low to moderate capital appreciation consistent with its current allocation.

Investment strategy

The Conservative Portfolio invests in Vanguard mutual funds using an asset allocation strategy designed for investors seeking both current income and low to moderate capital appreciation. The underlying funds are: Vanguard Total Stock Market Index Fund, Vanguard Total International Stock Index Fund, Vanguard Total Bond Market Index Fund, Vanguard Intermediate-Term Investment-Grade Fund, Vanguard Short-Term Investment-Grade Fund, Vanguard Inflation-Protected Securities Fund, and Vanguard Real Estate Index Fund.

The Portfolio's indirect stock holdings are a diversified mix of U.S. and foreign large-, mid-, and small-capitalization stocks. The Portfolio's indirect bond holdings are a diversified mix of short-, intermediate-, and long-term U.S. government, U.S. agency, and investment-grade U.S. corporate bonds; mortgage backed and asset-backed securities; and government, agency, and corporate bonds.

Fees

The fees for managing the portfolio consists of the expense ratios of the individual funds and the advisor fee. Both of these fees are dependent on the assets under management. Currently the average expense ratio is **0.08%** which consists of averaging the expense ratio of the individual funds which are outlined above. The average advisory fee is **0.03%** based on the current assets under management.

PARS Investment Partnership - Conservative Portfolio

Portfolio holdings

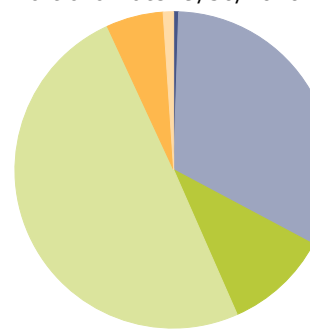
Portfolio Date: 9/30/2020



| | % |
|--------------------------------------------|--------------|
| • Vanguard Total Stock Mkt Idx Adm | 24.5 |
| • Vanguard Total Bond Market Index Adm | 21.0 |
| • Vanguard Inflation-Protected Secs Adm | 15.0 |
| • Vanguard Interm-Term Investment-Grde Adm | 12.6 |
| • Vanguard Total Intl Stock Index Inv | 10.5 |
| • Vanguard Short-Term Investment-Grade Adm | 8.4 |
| • Vanguard Real Estate Index Admiral | 8.0 |
| Total | 100.0 |

Asset allocation

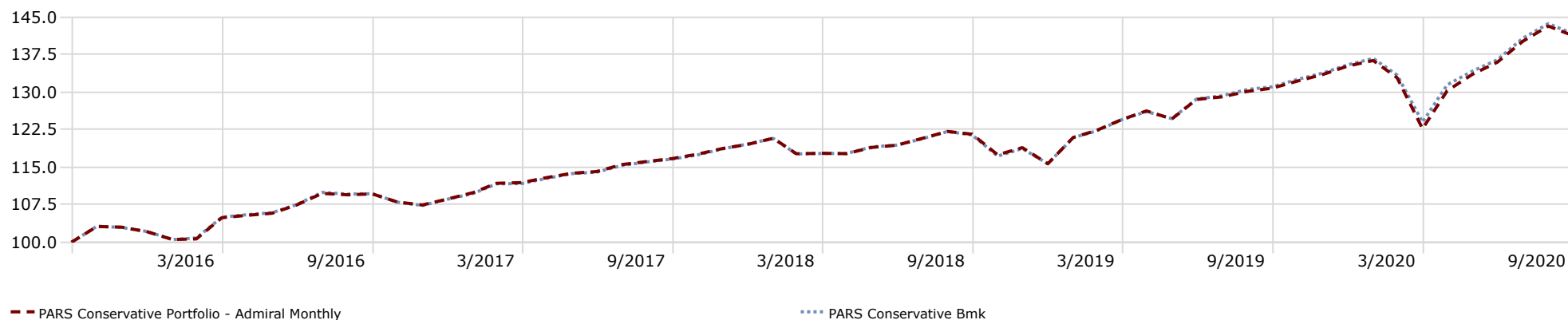
Portfolio Date: 9/30/2020



| | % |
|-----------------|--------------|
| • Cash | 0.5 |
| • US Equity | 32.3 |
| • Non-US Equity | 10.6 |
| • US Bond | 49.7 |
| • Non-US Bond | 5.8 |
| • Other | 1.1 |
| Total | 100.0 |

Investment growth

Time Period: 10/1/2015 to 9/30/2020

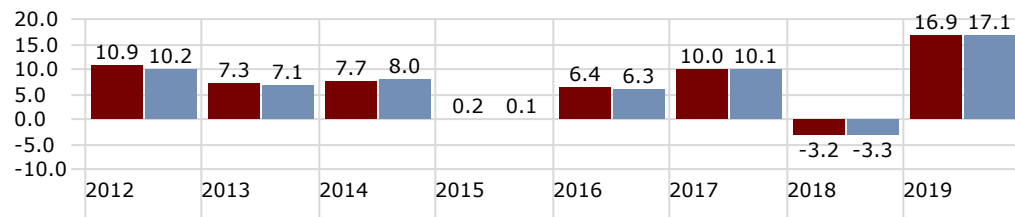


Trailing Returns - Annualized after one year

As of Date: 9/30/2020

| | YTD | One Year | Three Years | Five Years | Eight Years | Ten Years |
|-----------------------------------------------|------|----------|-------------|------------|-------------|-----------|
| PARS Conservative Portfolio - Admiral Monthly | 4.49 | 8.02 | 6.57 | 7.15 | 6.22 | 6.73 |
| PARS Conservative Bmk | 4.58 | 8.09 | 6.69 | 7.21 | 6.23 | 6.75 |

Annual returns



Benchmark

24.5% Spliced Total Stock Mkt Index (equal to CRSP US Total Market Index as of 6/2/13, MSCI US Broad Market Index through 4/22/05, prior DJ Wilshire 5000 Index) / 10.5% Spliced Total International Composite Index (Consists of the Total International Composite Index through August 31, 2006; the MSCI EAFE + Emerging Markets Index through December 15, 2010; the MSCI ACWI ex USA IMI Index through 6/2/13; and the FTSE Global All Cap ex US Index thereafter) / 42% Spliced Barclays US Aggregate Float-Adjusted Bond Index / 15% Barclays US Treasury Inflation-Protected Securities Index / 8% US REIT Spliced Index (equal to MSCI US REIT Index adjusted for a 2% cash position though 4/30/2009; MSCI US REIT Index thereafter).

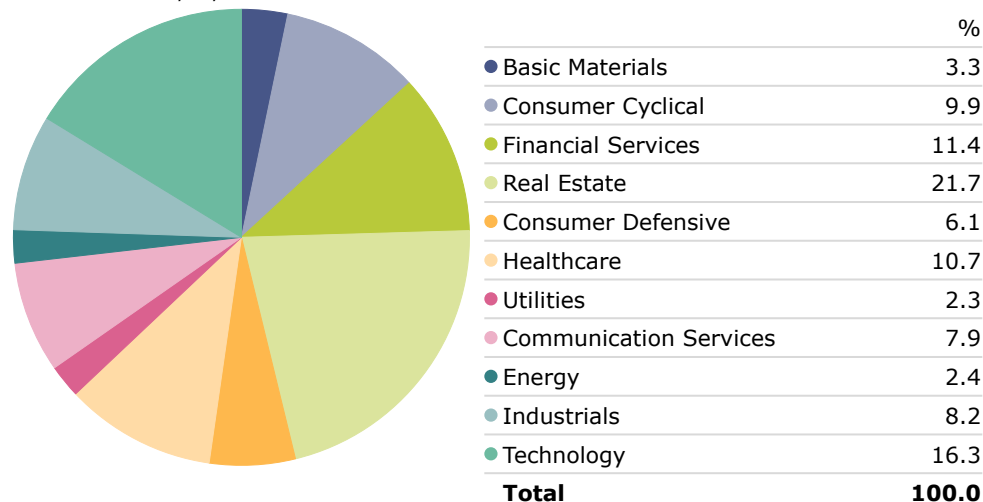
The performance data shown represent past performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. Returns are net of the fund expense ratio, gross of advisory fees. Returns represent the historical performance for a Vanguard composite based on the portfolio holdings listed above.

Source: Morningstar Direct

PARS Investment Partnership - Conservative Portfolio

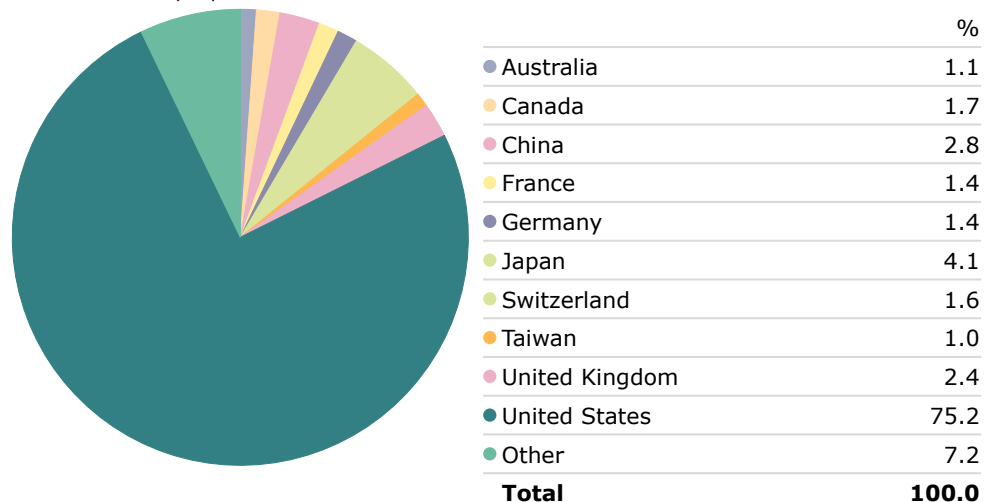
Equity sectors

Portfolio Date: 9/30/2020



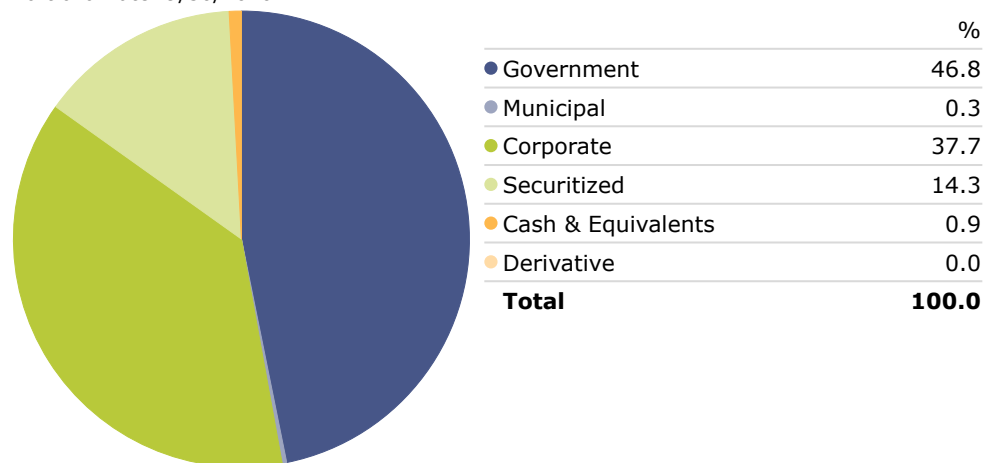
Equity country exposure

Portfolio Date: 9/30/2020



Fixed income sectors

Portfolio Date: 9/30/2020



Fixed income credit quality

Portfolio Date: 9/30/2020

