RETIREMENT BOARD MEETING AGENDA

Virtual Meeting –https://meet.lync.com/fallschurch-fallschurchva/mdecelle/VFJ434JQ
Thursday, September 10, 2020 6:00 p.m.

NOTICE: The meeting for which this agenda has been posted will be held pursuant to and in compliance with the Virginia Freedom of Information Act, Section 2.2-3708.2 and state and local legislation adopted to allow for continued government operation during the COVID-19 declared emergency.

All participating members of Retirement Board will be present at this meeting through electronic means. All members of the public may view the meeting via this Skype for Business meeting link: https://meet.lync.com/fallschurch-fallschurchva/mdecelle/VFJ434JQ. Public comment and questions may be submitted to mdecelle@fallschurchva.gov until 6:30pm on September 10, 2020. All comments are provided, in full, to the members of the Retirement Board and comments received by the deadline will be summarized during the meeting.

PLEASE NOTE: This meeting will be conducted via Skype. If you do not already use Skype, you will be prompted to install it when clicking the meeting link, so please take some time ahead of the meeting to do so. If needed, there are short instructions to install the application following the meeting agenda. Please email cmester@fallschurchva.gov if you need assistance with installation. During the meeting, staff will likely not be available to assist with installation.

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1. Call To Order

2. Roll Call

3. Introductions
   (3 minutes) - *informational*

4. Petitions
   (time as required)

5. Review And Approval Of Draft Minutes
   Review and Approval of draft Minutes from May 14, 2020 meeting (3 minutes) - *action*

   Documents:

   DRAFT RETIREMENT BOARD MEETING MINUTES FROM 2020-05-14_FOR APPROVAL.PDF

6. Fiduciary Training- Segal Consulting
   (55 minutes) - *informational*

   Documents:

   SEGAL FALLS CHURCH FIDUCIARY PRESENTATION.PDF

7. Second Quarter Of 2020 Investment Performance Review For The Basic And Police Pension Plans And OPEB
   Mary Nye of AndCo Consulting (20 minutes) - *informational*

   Documents:

   INVESTMENT PERFORMANCE REVIEW - 2ND QUARTER 2020 - BASIC PLAN.PDF
   INVESTMENT PERFORMANCE REVIEW - 2ND QUARTER 2020 - POLICE PLAN.PDF
   INVESTMENT PERFORMANCE REVIEW - 2ND QUARTER 2020 - OPEB.PDF

7.I. Review Of Investment Fees For Basic, Police And OPEB Plans

   Documents:

   REVIEW OF INVESTMENT FEES - BASIC.PDF
   REVIEW OF INVESTMENT FEES - POLICE.PDF
   REVIEW OF INVESTMENT FEES - OPEB.PDF

7.I.i. Flash Reports

   Documents:

   FLASH REPORT - OPEB.PDF
   FLASH REPORT - POLICE.PDF
   FLASH REPORT - BASIC.PDF

8. 2019/2020 Training Plan
   5 Minutes

   1. IFEBP Investments in Today's Climate Presentations (Mester, 7 hours) - *informational*
   2. Researching virtual and/or nearby in-person options (Larry, Rick, Cindy or Kiran in rotation)- *informational*
   3. October Real Estate Basics by AndCo
   4. Travel expense per attendee limit discussion (Trustee request)

9. Retiree Rehire Clarification/ Plan Amendment
   (15 minutes) - *informational (November action)*

   Documents:

   RETIREE REHIRE ADMINISTRATIVE POLICY_ISSUED SEPT 2020.PDF

10. Codifying Demographic And Economic Valuation Assumptions/ Plan Amendment
    (10 minutes) - *informational (November action)*

    Documents:

    PROPOSED REVISIONS TO IPS FOR CFC BASIC AND POLICE PENSION.PDF

11. Administrative Fee Methodology Follow Up/ Plan Amendment
    (15 minutes) - *informational (November action)*

12. Legal General Pension Plan Clarifications/ Plan Amendment
    (5 minutes) - *informational (November action)*

13. Plan Administrator's Report
    Cindy Mester (10 minutes) - *informational*

    1. Administrative Quarterly Report- beneficiaries, training and administrative expenses - Attached
        1. Retirement Board Work Plan status - Attached
    2. *Retirement Purchase of Service In-house Tool- [hold]*
    3. *Insurance coverage renewal and premium costs [hold]*

    Documents:

    ADMINISTRATIVE QUARTERLY REPORT_PERIOD 5-8-20 TO 9-3-20.PDF
    RETIREMENT BOARD 2020 WORK PLAN.PDF

14. Staff And Public Participation Protocol
    [hold possible in-person November discussion]

15. Other Business Not On The Agenda
    (3 minutes)

16. Closed Session
    (15 minutes) - *action or schedule follow up meeting*

    a. VA code Section 2.2-3711.A.16, for the discussion of medical and mental health records subject to the exclusion in subdivision 1 of section 2.2-3705.5, specifically the determination of a disability under the City's pension plan.

17. Adjournment
    Next Meeting scheduled for Thursday, November 12, 2020 (Location: COVID-19 emergency virtual or in-person Dogwood A&B)

###

Accessing Skype or Skype for Business – New Users

Accessing Skype – New Users

- Smartphone: If you plan to view the meeting on a smartphone, access your preferred app store to download the "Skype" app. You will have to allow Skype access to some features on your phone and accept their terms and conditions.
- PC/Windows: If you plan to view the meeting on a personal computer, visit www.skype.com to download and install the program. You will have to allow Skype access to some features on your computer and accept their terms and conditions.

After downloading Skype:

- Click the advertised meeting link to join the Skype meeting.
- When the app opens, click 'Join as Guest' and enter your name. Click the blue arrow to continue.
- The meeting will start with your microphone and video features turned off. As an observer, you can view or listen to the meeting without these features. If you are a meeting participant, you should enable at least the microphone feature. Video is not required but

may be useful. Depending on your role in the meeting, there may be restrictions on whether you can speak during the meeting.

MINUTES OF REGULAR
RETIREMENT BOARD MEETING--DRAFT
Thursday, May 14, 2020
Virtual Meeting
6:00 p.m.

1. **Call to Order** The virtual meeting was called to order by Chair Connie Rydberg at 6:15 PM

2. **Roll Call**

   Present: Connie Rydberg, Charles Collier, Larry Little, Marshall Jarrett, Ryan Davis, Richard Campbell and Jason Widstrom
   Absent:
   Staff Present: Cindy Mester, Kiran Bawa and Steve Mason
   Also Present: Celeste Heath, City Clerk
   Kristen Michael, FCCPS COO;
   Mary Nye, AndCo Consulting

3. Introductions and Welcome

4. Receipt of Petitions: None

5. Review and approval of draft Minutes from February 20, 2020 meeting:
   Ryan Davis moved and Rick Campbell seconded to approve the minutes of February 20, 2020 as presented. **The motion passed 6-0-1 (Marshall Jarrett abstained)**.

6. Review of the Investment Performance for the First Quarter of 2020 for the Basic and Police Pension Plans and OPEB –Mary Nye of AndCo Consulting

   Market Performance: All equities showed double-digit negative returns in the 1st quarter of 2020. Fixed Income showed slight positive returns with US Government bonds performing best at almost 6% gain. One-year performance showed similar patterns to the quarter's performance, averaging negative returns in most sectors and small positive returns in fixed income.

   Basic and Police Plan and OPEB Market Values, Net Flows and Returns on Investment were presented in a consolidated chart. The Police Plan at the start of the first quarter was $37.7 Million, net flows totaled $307 thousand out of the plan, and the ending market value for Q1 was $32 Million. Thus the gross return for the quarter was a negative 14.23%. Market Value for the Basic Plan at the start of the fourth quarter was $116.8 Million with net flows of $1.2 Million out of the plan, and an ending market value of $98.7 Million. Thus the gross return for the Basic Plan in Q1 was a negative 14.51%.

   Gross returns for the 12-month period were negative 5.54% for the Police Plan and negative 5.68% for the Basic Plan.

   OPEB funds started at $16.9 Million at the beginning on Q1, showed investment loss of $2.9 Million and an ending market value of $14 Million, a gross return of negative 17.2%. OPEB is invested in index funds only. The contrast in gross returns between OPEB and the actively managed Police and Basic Plans shows that the fund managers for Basic and Police added value and protected the plan from more potential losses. All OPEB asset allocations are within policy range and returns are tracking their underlying indices.

Asset Allocations in the Basic Plan: Total domestic equities are below target but within the policy range, International Equity and Total Fixed Income are within range, and close to target. Asset Allocation in the Police Plan is very similar to the Basic Plan.

Mary Nye shared updated numbers since the quarter ending March 31: in one month the return for Basic and Police plans was 7.5% positive and OPEB gained 9%. Domestic Equities performed well, International and Fixed Income stayed roughly flat. Therefore, Domestic Equity asset allocation is now closer to policy target.

Comparative performance for the Basic and Police Plan showed the Total Funds ranked 13th in the universe of plans with similar equity mixes. In the three-, five-, seven- and ten-year comparative performances, the plans showed rankings in the top decile.

New this quarter: the cash account for the City's reserve from the Water Sale Proceeds was listed separately from the Securian cash accounts in the financial table presentations.

7. Asset Allocation Study- Mary Nye of AndCo
   Mary Nye provided a brief summary of the Asset Allocation modeling process. AndCo's report illustrates the Fund's current investment policies and a proposed portfolio mix. The objective is to balance the Trustees' collective performance targets and risk tolerances. The return, risk, and correlation forecasts utilized in this report were developed by JP Morgan Asset Management and are based on its expectations over the next 10 to 15 years.

   The Board discussed the pros and cons of changing the Plans current asset allocations in the current volatile market environment. The Plans current allocation has healthy diversification, and the current market outlook is very uncertain.
   Ryan Davis moved and Rick Campbell seconded to maintain the current asset allocation and revisit the conversation within the next 16 months. **The motion passed 7-0.**

8. Water Sale Proceeds (WSP) Administrative Manual
   The Board revisited the WSP Administrative Manual presented at the February 2020 quarterly meeting. Charles Collier moved and Ryan Davis seconded to adopt the Water Sale Proceeds Manual as presented. **The motion passed 7-0.**

9. IPS updates for WSP, OPEB Valuation recommendations & Experience Study
   Connie Rydberg addressed changes made to the draft IPS presented at the February meeting. Mary Nye clarified section 12.3 addressing Investment Managers: annual reports on performance and proxy voting from the actively managed equity Investment Managers.
   Ryan Davis moved and Rick Campbell seconded to adopt the Basic and Police Plan Investment Policy Statements as presented. **The motion passed 7-0.**
   Connie Rydberg highlighted the contribution minimum added to the OPEB IPS.
   Marshall Jarrett moved and Rick Campbell seconded to adopt the OPEB Investment Policy Statement as presented with adoption date formatting change in the document footer. **The motion passed 7-0.**

10. Officer Elections
    Pursuant to City code, the Retirement Board is directed to elect a chair and vice chair annually.
    Ryan Davis moved and Marshall Jarrett seconded to appoint Connie Rydberg as Chair of the Retirement Board and Rick Campbell as vice chair for the 2020-2021 fiscal year. **The motion passed 7-0.**

11. Staff and Public Participation protocol
    Ryan Davis moved and Rick Campbell seconded to defer the topic of staff and public participation at the Retirement Board quarterly meetings to the next available in-person meeting. **The motion passed 7-0.**

12. 2020 Training Plan update—Cindy Mester
The Plan Administrator, Cindy Mester, summarized the proposed 2020/2021 Training Plan and Budget. Cindy completed a 5-course online certification with IFEBP. Annual Trustee Fiduciary training will take place at the September meeting. Virtual conference options for Larry Little and Rick Campbell will be researched as travel to Hawaii for the annual IFEBP conference may not be prudent.
Ryan Davis moved and Marshall Jarrett seconded to adopt the proposed 2020/2021 Retirement Board Training budget and direct staff to research in-person alternatives to the IFEBP annual conference. **The motion passed 7-0.**

13. Plan Administrator's Report—Cindy Mester
Cindy Mester presented the Administrative Quarterly Report, summarizing special projects, pension participant changes, training and administrative expenses. Appendices to the current Plan documents were discovered to be out of date and action on amending may be brought to the Board at the next quarterly meeting. The Retirement Board Work Plan status was also shared and amended to capture Board-directed activities.

14. Other business not on the agenda:
Charles Collier requested that the next meeting address a limit on spending for travel to Board trainings.
Connie Rydberg thanked the Plan Administrator for making a virtual meeting possible and the Board for their flexibility.

15. Adjournment:
Jason Widstrom moved and Charles Collier seconded to adjourn the meeting at 8:05 PM. **The motion passed 7-0.**

THE CITY OF FALLS CHURCH IS COMMITTED TO THE LETTER AND SPIRIT OF THE AMERICANS WITH DISABILITIES ACT. TO REQUEST A REASONABLE ACCOMMODATION FOR ANY TYPE OF DISABILITY, CALL 703-248-5129, TTY711.

City of Falls Church Retirement Board

Fiduciary and Governance Educational Training

September 10, 2020 / Tammy Dixon / Meghan Horn / Julian Regan

Segal

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Agenda

Legal

Investment

Actuarial

Who is a fiduciary? Anyone who…

1. Exercises discretionary authority over management of the plan or disposition of plan assets
2. Provides or has the responsibility or authority to provide investment advice for a direct or indirect fee or other compensation
3. Has discretionary authority or responsibility over administration of the plan

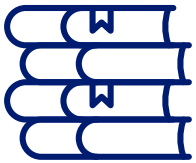
Exercise of discretion is the key

Can include more than just the trustees, such as:

- Retirement Fund staff
- Board members
- Investment advisors

Sources of Fiduciary Responsibilities in Governmental Plans

- United States Constitution contracts clause
  ("No state shall…pass any…law impairing the obligation of contracts…")
- Internal Revenue Code §401(a)(2) exclusive benefit rules and §4975 prohibited transactions
- ERISA can provide guidance even if your plan is not subject to it
- State statutes and municipal codes on plan creation, ethics and conflicts of interest
- Common law and applicable court decisions



Primary Fiduciary Responsibilities

Under ERISA §404(a)(1), affirmative duties are to:

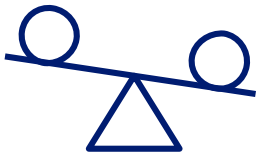
- Act prudently with respect to plan assets and expenses
- Diversify assets to minimize risk of large losses
- Act solely in the interests of beneficiaries for the exclusive purpose of providing plan benefits and paying plan expenses
- Comply with plan provisions and applicable laws
- Select service providers and monitor performance, conflicts of interest
- Communicate with participants about their benefits

Fiduciary Standards

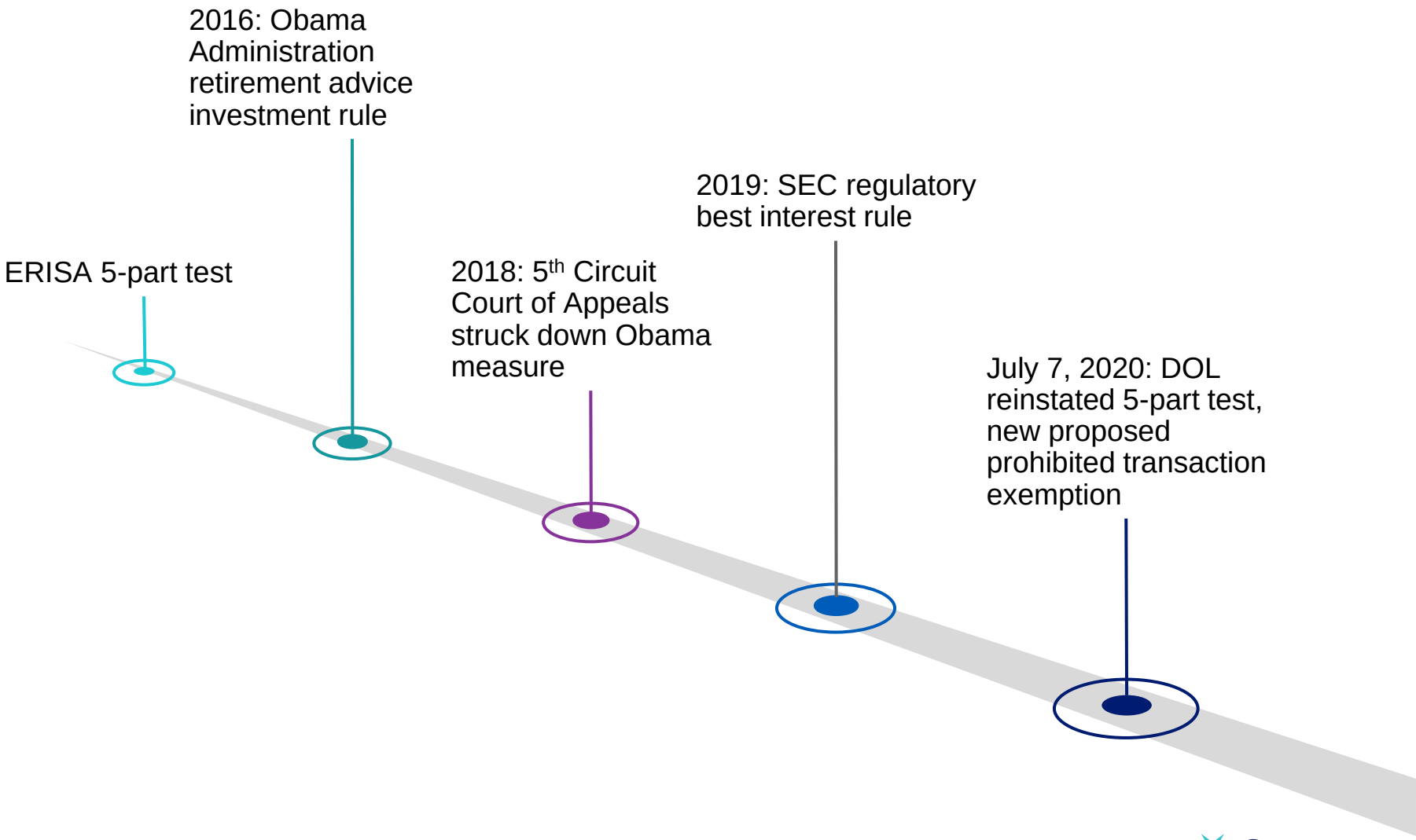
- Retirement Board (“Board”) has fiduciary responsibilities and the individual Board members are fiduciaries.
- The Board’s fiduciary responsibilities stem from delegated functions as specified in the Code of the City of Falls Church, Virginia.
- The legal standards applied to fiduciaries (duties of prudence and loyalty) are the highest standards under the law and are often difficult to understand.
- Meeting the fiduciary standards requires more than just common sense or a good faith attempt.

Proposed Rule on ESG Investments

- Whether environmental, social, or governance (ESG) factors impact the pecuniary return or risk of an investment
- If the plan concludes that an ESG factor does impact the pecuniary return or risk, heavy documentation requirements
- Analysis remains risk and return – not “all other things being equal”
- Comment period ended July 30, 2020



History of the DOL Fiduciary Rule



DOL Fiduciary Rule: 2020

- Final rule
  - Reinstates ERISA 5-part test
  - An advisor is a fiduciary if, for direct or indirect compensation, he or she:
    1. Offers advice about buying, selling, or holding investments;
    2. On a regular basis;
    3. Pursuant to an agreement with the plan that
    4. The advice would be the “primary basis” for decisions about investment of plan assets; and
    5. The advice is individualized to the plan’s needs.
- Proposed rule
  - New prohibited transaction exemption: fiduciaries may receive reasonable compensation if they follow the SEC regulatory best interest requirements
    - SEC rule: conflicts of interest are permitted if they are disclosed
  - Withdraws advisory opinion that said the fiduciary rules do not apply to advice to a participant or beneficiary to roll over plan assets to an IRA or another plan
  - Comment period ended August 6, 2020

Thole v. U.S. Bank (June 1, 2020)

- Participants alleged breach of fiduciary duty due to investing heavily in risky assets, giving rise to $750 million loss. Plan sponsor restored the defined benefit plan's funding.
- **Holding:** defined benefit plan participants that have not failed to receive promised benefits have no Article III standing for breach of fiduciary duty under ERISA
- Substantial increase of risk that plan and employer would fail and be unable to pay promised benefits? **Maybe.**
- The Supreme Court of Kentucky in *Overstreet v. Kentucky Retirement Systems* (July 9, 2020) relied on *Thole* to conclude that participants had no constitutional standing for a breach of fiduciary duty in governance of the state defined benefit plan, because the participants had not themselves incurred a loss

Actuarial Assumptions Litigation

- Series of class action lawsuits alleging that corporate defined benefit plans use “outdated,” and therefore unreasonable, mortality assumptions
- Motions to Dismiss denied in multiple cases: reasonableness of assumptions is not defined and necessitates fact finding
- Motion for Class Certification denied in one case: conflict of interest
- Relevance to governmental plans: litigation contesting reasonableness of assumptions is not gaining traction

Actuarial Standards of Practice

- ASB establishes and improves standards of actuarial practice, and what actuary should consider, document, and disclose when performing actuarial work
- Covers all professional actuarial organizations and practicing actuaries
- Universal – Code of Professional Conduct and ASOP Numbers 1, 41
- Pension ASOP Numbers 4, 27, 35, 44
  - ASOP No. 51 newest standard and covers Risk inherent in pension plans
- OPEB ASOP Numbers 6, 27 35

Insurance

- Fiduciary liability
  - Indemnification and sovereign immunity may not be enough protection
    - Indemnification is conditioned on acting within capacity as a trustee and in good faith; allegations may not be limited to these standards
    - Legal department must review request for indemnification; trustees provide their own defense in the interim
    - Some courts have held that counties and municipalities lack sovereign immunity
  - Who is covered
    - Individual insureds, past, present, and future directors, trustees, officers, employees, board members, and committee members
    - Spousal coverage, heirs and estates
    - Contracted employees
- Cyber liability
  - Ransomware
  - Hacking
  - Social engineering

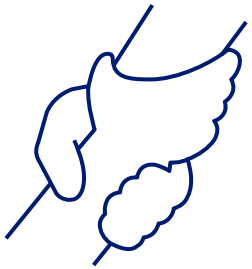
Best Governance Practices

Provide a Governance Manual to all Board Members

- Governing plan documents (statutes, regulations, plan summaries)
- Organizational chart, role descriptions and summaries of contracts
- Governance policies and procedures, including an Investment Policy Statement
- Relevant rulings and agreements that determine benefits and contribution levels
- Board meeting schedules and rules of procedure

Develop Board Practices

- Develop a strategic investment plan that guides the Retirement Fund toward its goals
- Adopt a fiduciary education program to improve skill sets
- Establish key committees, if appropriate
- Perform periodic audits to evaluate internal controls, performance and risks to fund and its fiduciaries
- Establish actuarial valuation report guidelines
- Consider asset allocation studies to identify asset mixes that meet funding needs



Best Governance Practices *continued*

Make a Strategic Plan

- Set goals and performance measures for key functions
- Long-term investment goals, risk tolerance and diversification objectives
- Multi-year budget needs
- Set service quality goals and process for improving plan compliance

Maintain Written Policies

- Standards of conduct, ethics and conflict of interest rules
- Investment policy that includes goals, monitoring procedures and risk tolerances
- Procurement guidelines that document procedures to select/monitor contractors
- Privacy and information policy

Conduct Risk Oversight

- Ensure governance structure defines risk and accountability
- Assess internal controls and test risk events
- Determine key measures that assess exposure to risk (including financial, operational, reputational)

Governance Policies: *Purpose*

Intent

- Implement plan documents/applicable laws
- Provide governance framework
- Communicate to stakeholders
- Establish historic record

Guidance

- Provide direction to fiduciaries and their delegates
- Set expectations for Board and individual member conduct

Protection

- Set out due diligence processes
- Establish monitoring and reporting processes

Key Governance Policies

Ethics

- Code of Conduct
- Gifts and consideration
- Travel and Expenses

Governance

- Define Board and staff roles
- Implementation of plan rules
- Modification of governing documents, forms

Investment

- Asset conflicts of interest
- Guidance on-class diversity
- Benchmarks
- Avoidance of evaluation and changes

Education

- Describe educational objectives
- Require justification for any educational sessions attended
- Include expense reimbursement rules
- Best practice is annual education session

Communication

- Identify rules for Board to communicate with stakeholders
- Guidelines for trustee communications (with participants, external parties)
- Specify how information is disseminated
- Protect member privacy
- Comply with FOIA laws
- Address security concerns with service providers

COVID-19 Public Health Emergency

- Financial security and retirement savings priorities
  - Consider opportunities to manage risk through tools or revised strategies
  - Consider requesting/preparing updated funding projections
  - Review internal and external processes and protocols for retirement plan operations
- Remote work priorities
  - Technology and security needs
  - Review electronic document management, backup, and storage systems and protocols
  - Assess risk management factors and design policies/strategies for mitigating risks
  - Consider revisiting remote work/telecommuting policies
- IT security and data integrity priorities
  - Potential increased threats of cyber attacks and social engineering fraud
  - Conduct yearly IT security risk assessment
  - Update training and ongoing security protocols

City of Falls Church Retirement Board

Fiduciary Training

September 10, 2020

Contents

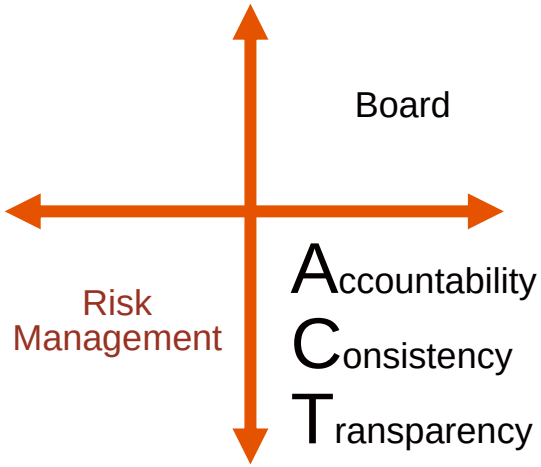
- **Best Governance and Risk Management Practices**
- Asset Allocation and Alternative Investments
- Environmental, Social and Governance (ESG) Investing

Pension Fund Governance: Performance Premium

Why Focus on Governance?

- Effective governance practices may significantly impact performance
- Public pension funds and other leading investors are continuing to place emphasis on strengthening governance
- Effective governance provides a structure for managing market, liquidity, operational and other risks.

Best Governance Practices



"The top CEO score funds outperformed the bottom ones by an average 2.4% per annum…"

—Rotman International Journal of Pension Management , Fall 2008

"Instituting governance best practices will provide the company with an internal effectiveness structure and a tool to manage corporate risk."

—The Conference Board

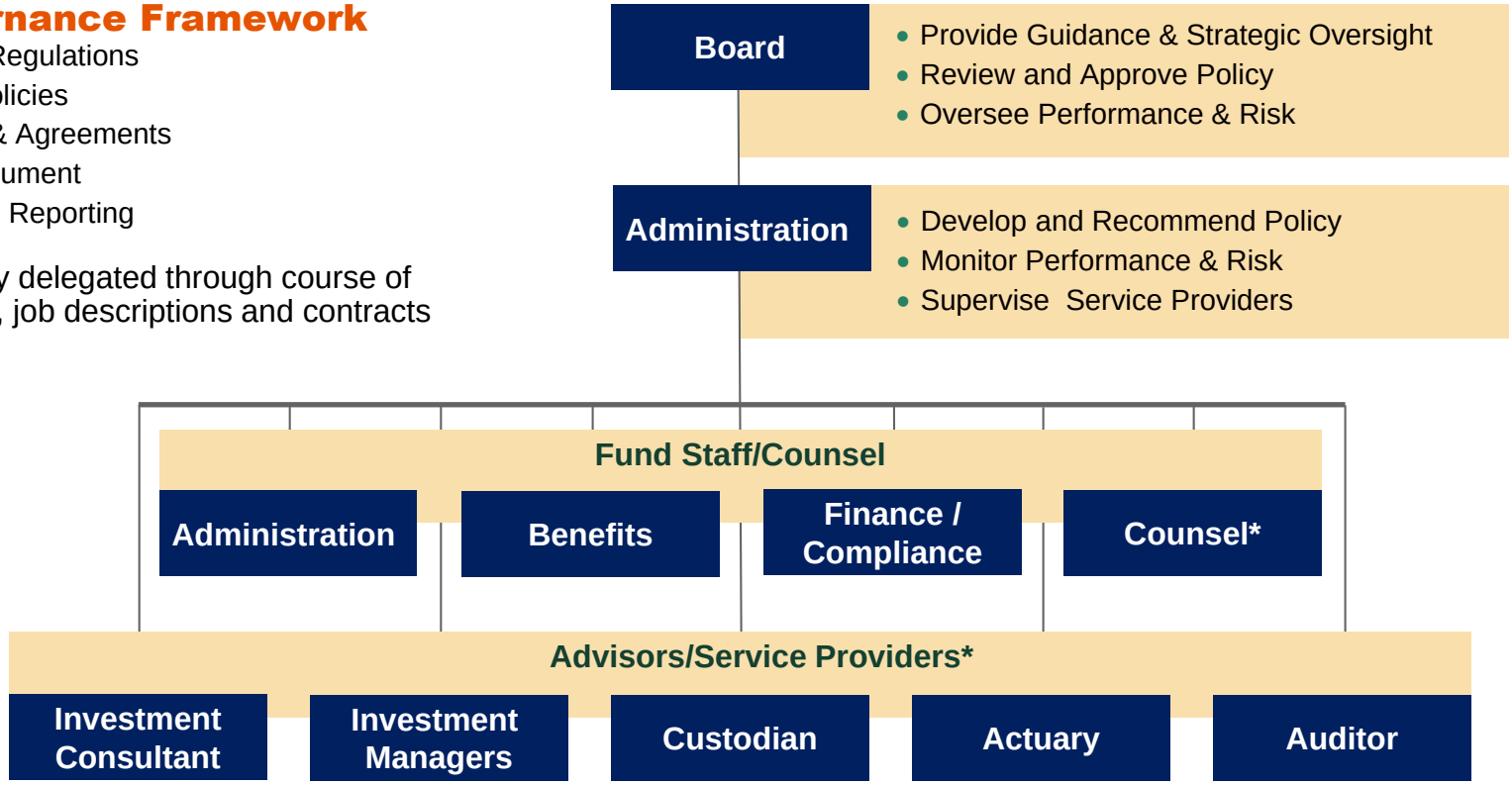
Retirement System Governance Structure & Oversight Roles

- Boards delegate performance of administrative, investment, compliance and other functions to staff and specialist groups who are responsible for managing risk within the span of their operations.

Governance Framework

- Laws & Regulations
- Board Policies
- Rulings & Agreements
- Plan Document
- Required Reporting

Authority delegated through course of conduct, job descriptions and contracts



- Sample for illustrative purposes. Example does not include Committees of the Board.

Risk Governance: Defining and Managing Risk

- By breaking risk into distinct categories an organization can more effectively measure and manage risk toward the end of reducing the probability and severity of losses.

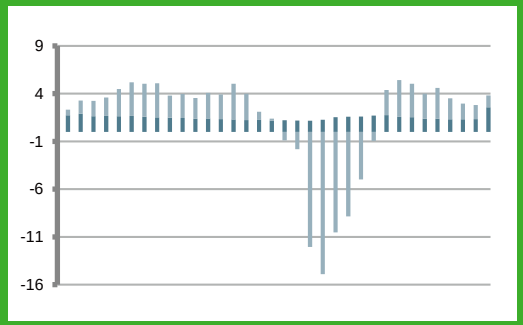
Market Risk*

- Risk related to adverse movement in market factors such as asset prices, exchange rates or interest rates.

Liquidity Risk

- Risk of loss resulting from an asset owner's inability to sell an asset in a timely manner and for its actual value.

Market



Operational Risk

- Risk resulting from inadequate or failed internal processes, people and systems of from external events.

Credit Risk

- Risk of loss due to failure of obligors (e.g. bond issuers, tenants) to honor their payments.

* Note: Sample for Illustrative Purposes. Market risk types include, but are not limited to equity, inflation, currency and interest rate risk. Asset / Liability Risk: Risk that liquidity will not be adequate to meet operational requirements or financial obligations.

NCPERS Best Governance Practices

Governance Manual
- Statutes, Rules
- Mission Statement
- Organization Chart
- Policies, Charters

Board Practices
- Strategic Planning
- Fiduciary Education
- Actuarial Studies
- Corporate Governance

Board Policies
- Standards of Conduct
- Investment Policy
- Privacy, Data Security
- Procurement

Risk Oversight
- Risk Governance
- Risk Assessments
- Key Risk Measures
- Reporting

Strategic Planning
- Multi-Year Plan
- Measurable Goals & Objectives
- Multi-Year Budget
- Succession Planning

Measures & Metrics
- Key Performance Measures
- Key Risk Measures
- Member Satisfaction
- Balanced Scorecard

Communications
- Mission Statement
- Participant Surveys
- Reports to Members (CAFR)
- Governance Principles

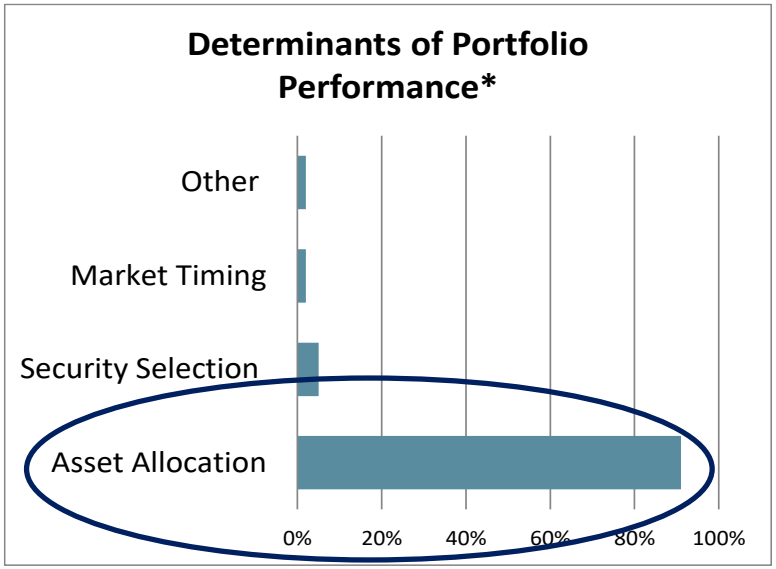
- Source: NCPERS Best Governance Practices. https://www.ncpers.org/files/NCPERS_BEST%20GOVERNANCE%20PRACTICES_2019_Final.pdf

Contents

- Best Governance and Risk Management Practices
- **Asset Allocation and Alternative Investments**
- Environmental, Social and Governance (ESG) Investing

The Importance of Asset Allocation

- Asset allocation is a primary driver of investment returns.
- Key inputs into setting an asset allocation structure include:
  - The long-term investment objectives (return assumption).
  - Board risk tolerances, cash expenditures, adequacy of assets to cover expenditures
  - Capital market assumptions for risk, return and correlations across asset classes.

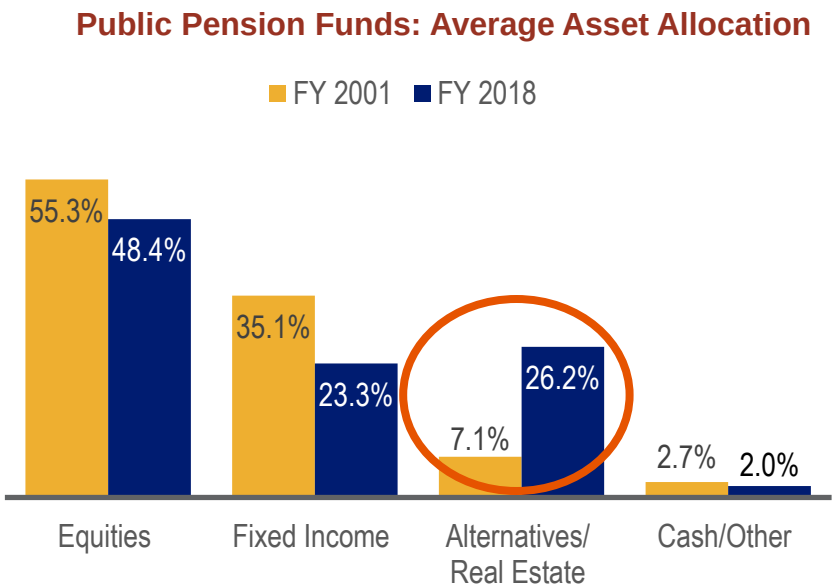


Characteristics to Consider

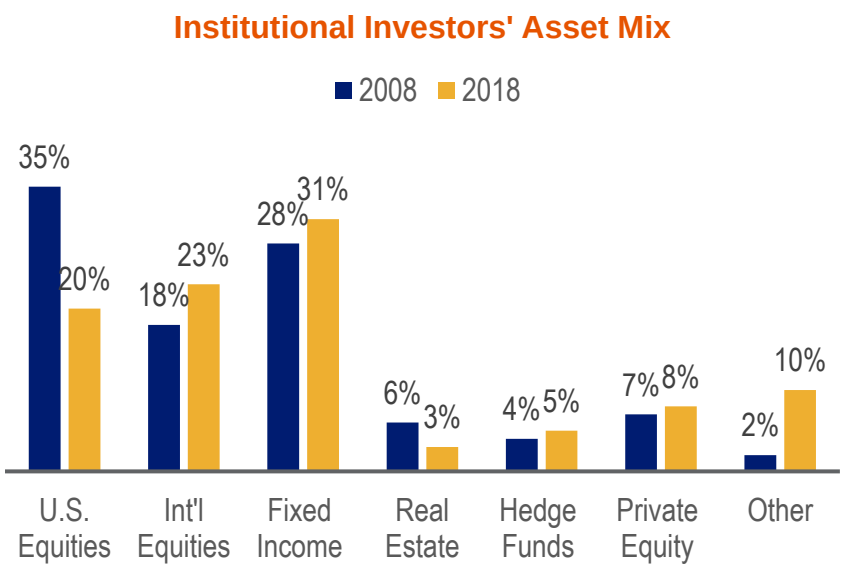
- Funded Ratio
- Earnings Assumption
- Demographics
- Projected Cash Flow
- Liquidity Needs
- Risk Tolerances

*Source: Brinson et al: "Determinants of Portfolio Performance," Financial Analyst Journal, May-June 1991.

Asset Allocation: Changing Risk Exposures



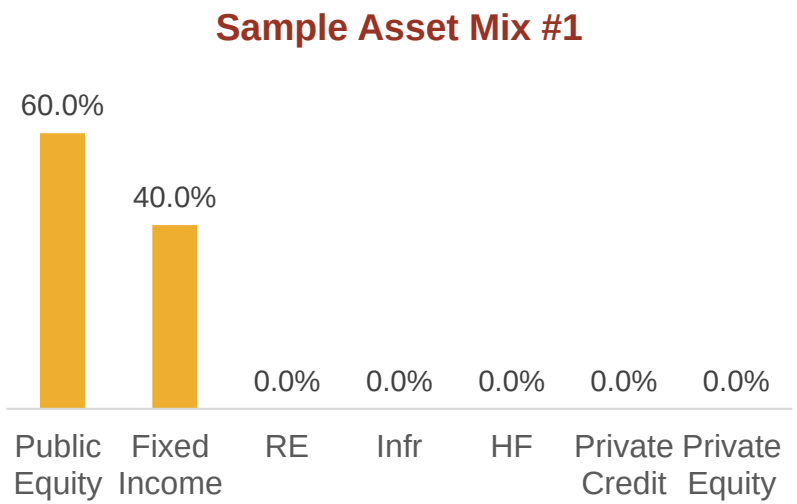
Source: NASRA

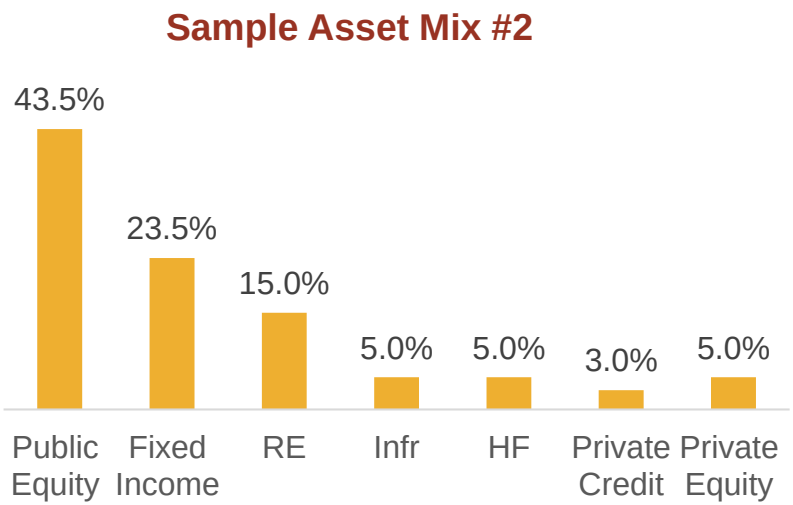


Source: Greenwich Associates

- Institutional investor allocations to alternative investments and real estate have increased significantly of the past 15 – 20 years.
- Allocations to alternative investments may increase expected return, while reducing volatility and improving portfolio efficiency.
- An effective alternative investment program requires an enhanced framework to manage market, liquidity, operational and credit risks not captured in traditional modeling.

Asset Allocation: The Role of Alternative Investments





	60/40 Portfolio	Add Real Estate	Add Infrastructure	Add Hedge Funds	Add Private Credit	Add Private Equity
20 Year Expected Return (A)*	6.6	6.7	6.8	6.8	6.9	7.2
20 Year Expected Return (G)*	6.1	6.3	6.4	6.4	6.5	6.8
Standard Deviation	10.7	9.8	9.9	9.7	9.5	9.8
Sharpe Ratio	0.32	0.36	0.37	0.38	0.40	.41

* Note: Scenarios are for illustrative purposes only. Not all inclusive. “A” – arithmetic. “G” – geomtertic.

- Adding real asset investments and hedge funds may increase expected return, while reducing volatility and improving efficiency.
- A successful alternative investment program requires a framework and tools for managing risks that are unique to alternative investments.

Contents

- Best Governance and Risk Management Practices
- Asset Allocation and Alternative Investments
- **Environmental, Social and Governance (ESG) Investing**

Environmental, Social, Governance Investing Defined

- Environmental, social and governance (ESG) investing encompasses factors outside the scope of traditional financial measures that may impact company performance.

Environmental

- water scarcity
- climate change
- energy efficiency
- pollution

Social

- labor relations
- human capital management
- health and safety
- supply chain
- human rights
- corruption
- ethical business practices

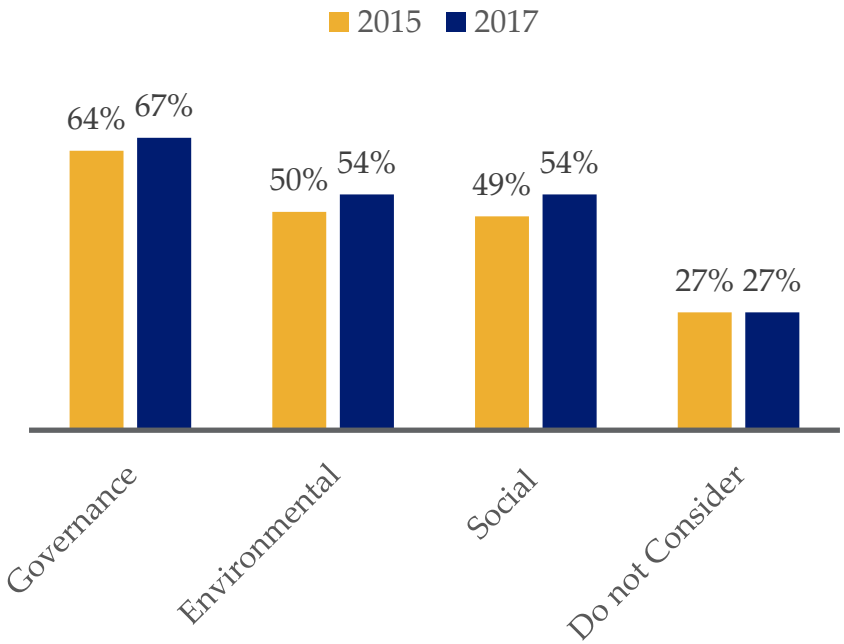
Governance

- board composition
- board structure
- board accountability
- executive compensation
- shareholder rights
- transparency
- ethical conduct

Environmental, Social and Governance Adoption

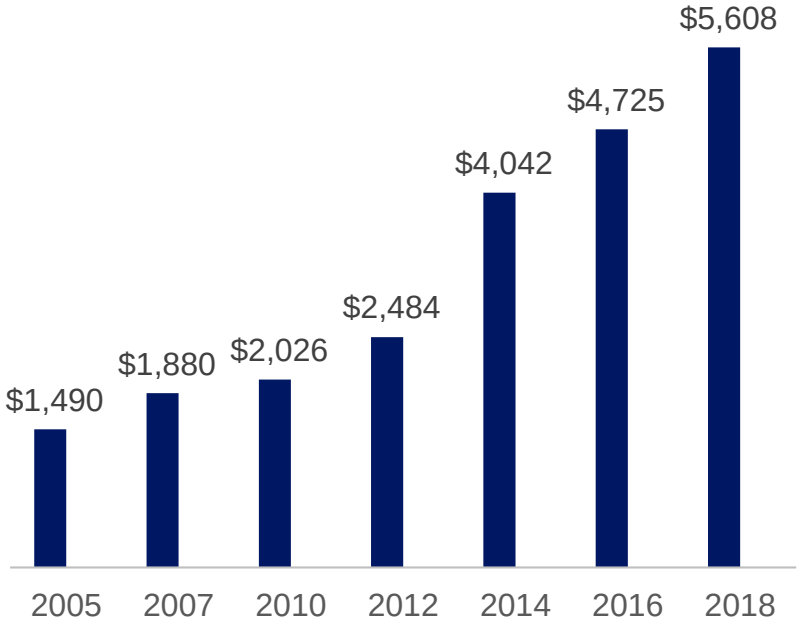
- ESG adoption is evidenced by increasing incorporation of ESG factors into investment decision making and analysis.

ESG Factors Considered in Investment Analysis or Decisions



Source: CFA Institute ESG Survey, 2017

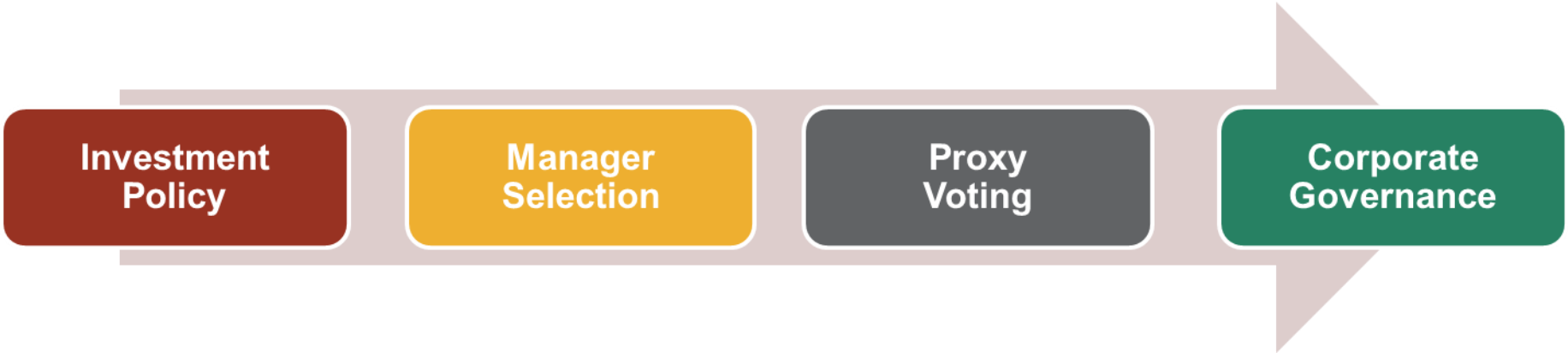
ESG Incorporation Reported by Institutional Investors (Billions)



* Source: US SIF Foundation

ESG Investment Program Implementation Tools

- Investors may implement ESG investing through a number of investment program mechanisms, including the investment policy, selection of investment managers, proxy voting and corporate governance engagement.



- Objectives
- Risk Management
- Selection Criteria
- Required Reporting

- Philosophy
- Process
- Security Selection
- Risk Management

- Proxy Policy
- Annual Meetings
- Proposals
- Reporting

- Board of Directors
- Engagement
- Advocacy
- Alliances

"ESG investing is now becoming embedded in the investment process of many institutional investors." — *Barclays Bank PLC, 2016*

Questions?

Investment Performance Review
Period Ending June 30, 2020

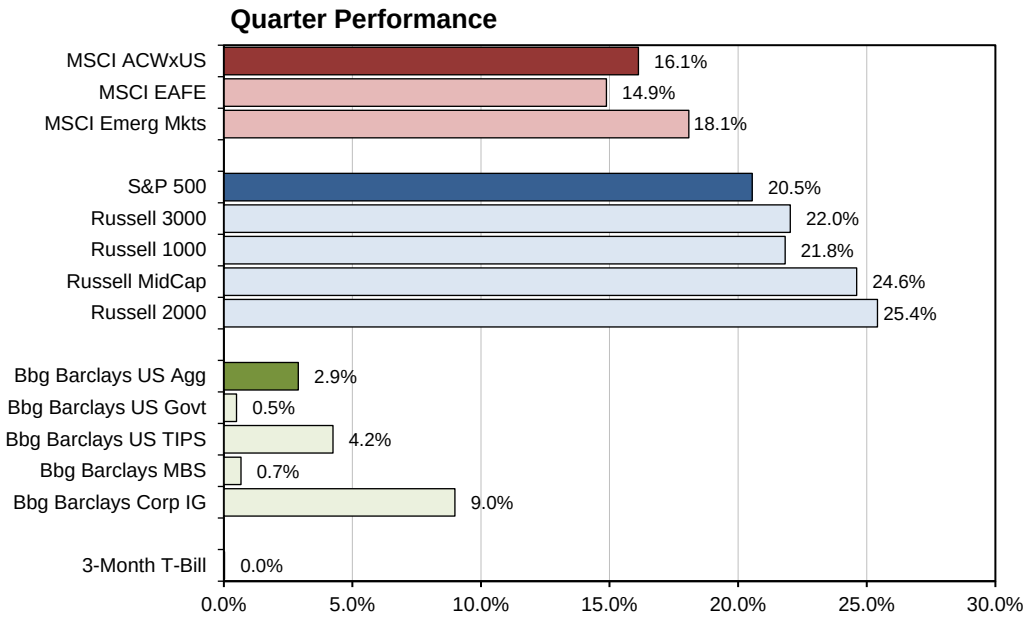
City of Falls Church
Basic Plan

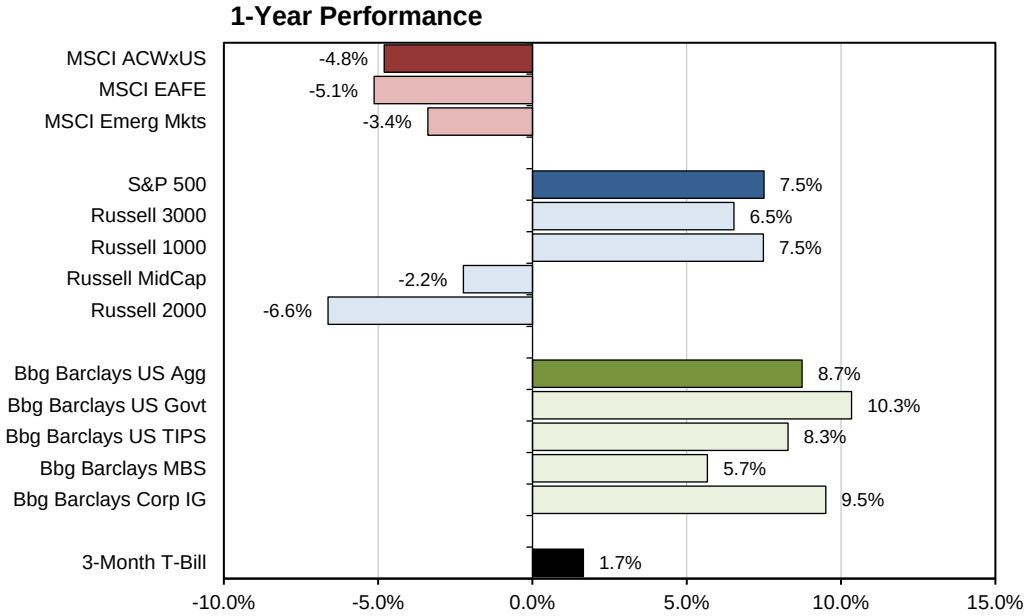
2nd Quarter 2020 Market Environment

- Broad asset class returns rebounded sharply in the 2nd quarter following their harsh drawdown during the 1st quarter. The US government and Federal Reserve Bank (Fed) implemented a myriad of programs designed to provide the economy with liquidity while also mitigating the affects from the shelter-in-place response to the COVID-19 (Coronavirus) pandemic. Despite having officially entered a recession in February, US economic data began to show improvement in May with regards to manufacturing, housing and employment as many States began the process of re-opening. Geopolitical tensions rose during the quarter following the vote by China to impose security measures in Hong Kong. Despite these risks, markets reacted positively to continued monetary easing from the Fed which supported markets directly through bond purchases and a variety of lending facilities. Within domestic equity markets, higher beta small cap stocks outperformed large cap stocks during the quarter with the Russell 2000 Index returning 25.4% versus a 20.5% return for the S&P 500 Index. US stocks also outperformed international stocks during the period. US equity results over the trailing 1-year period tell a different story with large cap stocks, returning 7.5% while mid- and small cap stocks were negative, returning -2.2% and -6.6%, respectively.

- Broad international equity markets posted positive returns for the 2nd quarter. Similar to US markets, international markets benefited from coordinated central bank policies which provided liquidity following the onset of the pandemic and subsequent re-opening of local economies. International returns also benefited from a weakening US dollar (USD) which declined against both the Euro and British pound during the period. Emerging markets outperformed relative to developed markets during the period with the MSCI Emerging Market Index returning 18.1% compared to 14.9% for the MSCI EAFE Index. Both developed and emerging market indices were negative over the 1-year period with the developed market index returning -5.1% and the emerging market index returning -3.4%.

- Fixed income returns remained strong during the 2nd quarter as investors benefited from declining interest rates globally. The broad market Bloomberg Barclays (BB) Aggregate Index gained 2.9% for the quarter as the Fed ramped up its purchases of US Treasury and Agency securities to boost market liquidity. In addition, the Fed announced that it would begin purchasing US corporate bonds to keep borrowing costs low and further support liquidity. For the quarter, the BB Corporate Investment Grade Index returned 9.0% as investors continued to seek out higher yielding assets. Over the trailing 1-year period, the bond market outperformed stocks with the BB Aggregate posting a solid return of 8.7%, while corporate bonds posted a higher 9.5%. US TIPS, which have been a laggard for some time, posted a respectable 8.3% over the trailing 1-year period despite low expectations for inflation.





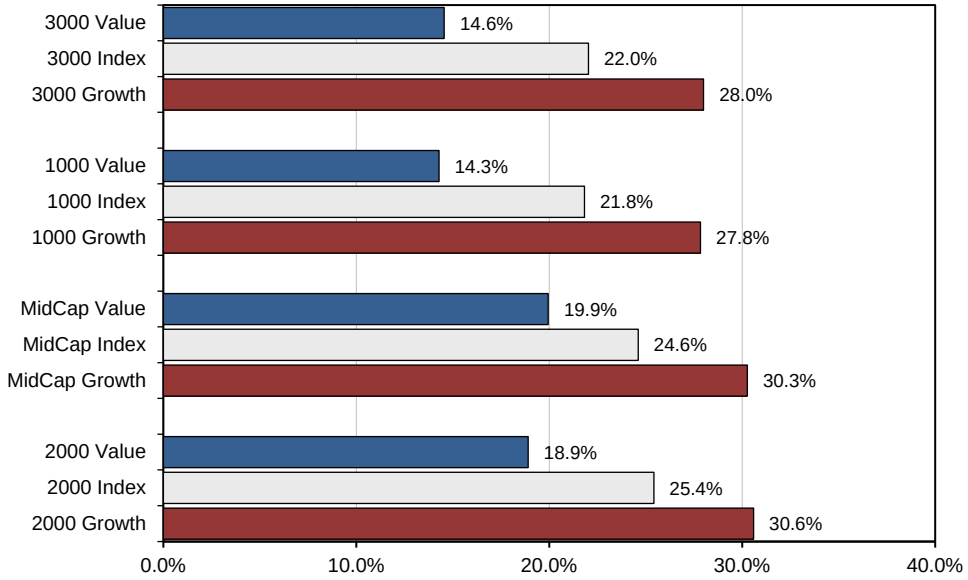
Source: Investment Metrics

- US equity returns were strongly positive during the 2nd quarter, but results varied considerably across the style and capitalization spectrum. Following one of the sharpest drawdowns in history during the previous quarter, various capitalization and style indices experienced their strongest quarterly performance in over 20-years. The US labor market showed dramatic improvement in May and June with more than 7 million jobs added for the period. However, the unemployment rate remained high at 11.1% in June with more than 14.7 million people unemployed. While States have taken steps to re-open by loosening stay-at-home orders, several States such as Florida, Texas, and Arizona, have experienced significant increases in Coronavirus cases since the orders were eased causing many States to consider rollbacks. Several potential treatments and vaccines are in various stages of development that will hopefully prove effective in treating the virus.

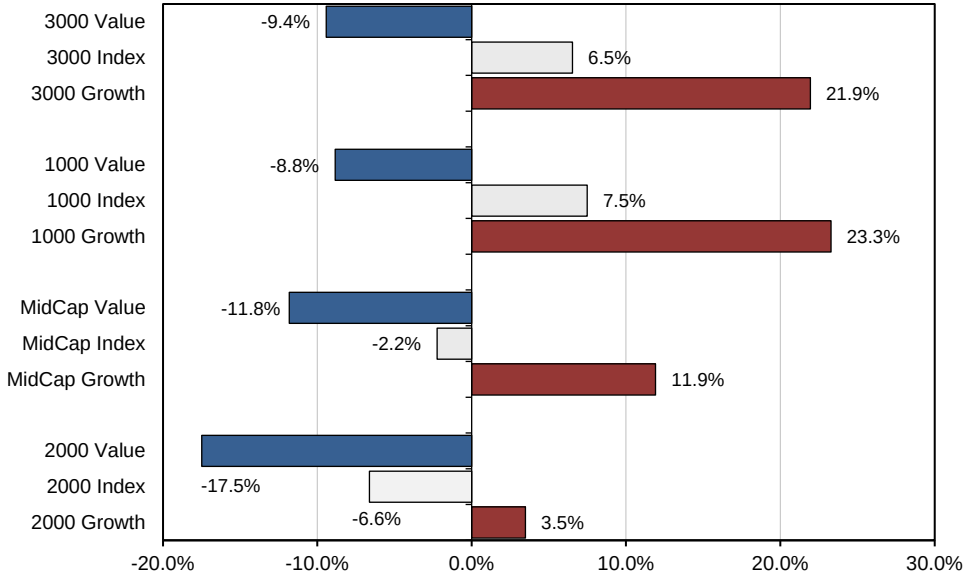
- During the quarter, small capitalization (cap) stocks broadly outperformed large cap stocks across the style spectrum. The small cap Russell 2000 Index gained a stellar 25.4% for the quarter versus a return of 21.8% for the large cap Russell 1000 Index. Investors were attracted to potentially faster growing small cap stocks which were disproportionately sold during the 1st quarter's drawdown. Small cap stocks have historically outperformed when the market enters a recovery phase. When viewed over the most recent 1-year period the trend has reversed with large cap stocks far outpacing their small cap counterparts. The Russell 1000 posted a return of 7.5% over the trailing 1-year relative to a negative return of -6.6% for the Russell 2000.

- Value stocks continued their recent trend of underperformance relative to growth stocks during the 2nd quarter recovery as investors gravitated toward companies perceived to have the potential to grow revenue and earnings faster. Within large cap, growth significantly outperformed value due to favorable weightings to the strong-performing technology and consumer discretionary sectors. The small cap Russell 2000 Growth Index was the best performing style index for the quarter, returning an outsized 30.6%. At the other extreme, the large cap value index posted the quarter's weakest relative style performance with a still solid 14.3% return. Results over the 1-year period also reflect the strength of the "growth over value" trend with value benchmarks posting negative results across the capitalization spectrum with a range of relative underperformance to growth of greater than 20% at each level.

Quarter Performance - Russell Style Series



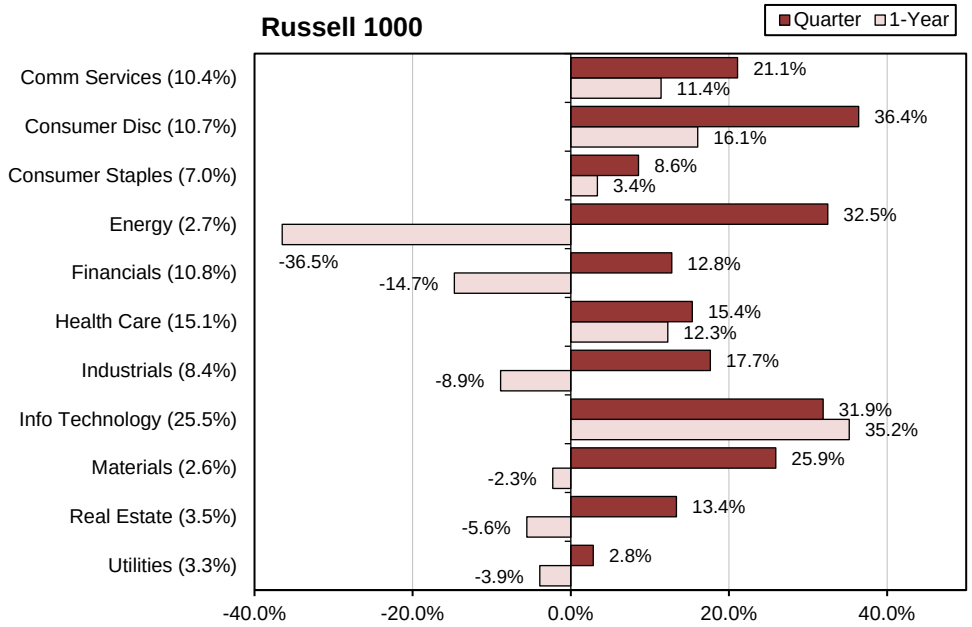
1-Year Performance - Russell Style Series

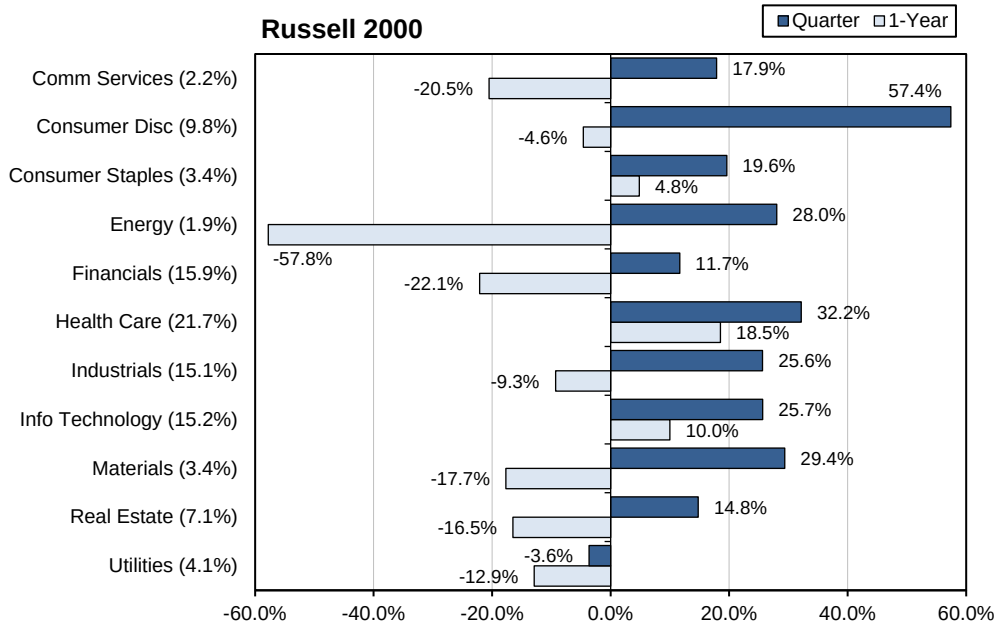


Source: Investment Metrics

- All eleven economic sectors within the large cap Russell 1000 Index were positive for the 2nd quarter with four sectors outpacing the return of the broad index. Growth-oriented sectors such as consumer discretionary and technology were some of the best performers for the quarter returning 36.4% and 32.5%, respectively. The energy sector, which had lagged considerably during the 1st quarter sell-off, also posted a strong return of 32.5% for the quarter as oil prices recovered on expectations of future economic growth. Defensive sectors such as consumer staples and utilities were the lowest performers during the period, but still posted positive returns of 8.6% and 2.8%, respectively. Traditional growth sectors also showed their dominance in the trailing 1-year period. The technology, consumer discretionary, health care and communication services sectors returned 35.2%, 16.1%, 15.4% and 11.4%, respectively, versus the core Russell 1000 index return of 7.5%. In contrast, traditional value sectors such as energy and financials, posted returns of -36.5% and -14.7%, respectively, for the trailing 1-year period.

- Ten of eleven small cap sectors posted results of greater than 10% for the 2nd quarter with only the utilities sector falling into negative territory with a return of -3.6%. In addition, seven of eleven economic sectors in the small cap index outpaced their respective large cap sector performance. While ten small cap sectors posting returns of more than 10% would be impressive in any period, six of them managed to exceed the 25.4% return of the broad Russell 2000 index. Like large caps, sectors sensitive to the consumer and economic growth were the strongest performers as investors gravitated toward those companies with the highest growth potential. Performance in consumer discretionary and health care sectors was particularly impressive with returns of 57.4% and 32.2% respectively for the quarter. Within the health care sector, many biotechnology stocks rose on hopes and speculation regarding potentially viable treatments or vaccines for the Coronavirus. Over the trailing 1-year period, the majority of small cap sector returns were negative with only three sectors contributing positive absolute performance. The traditional growth sectors also led the small cap index's performance over the trailing 1-year period with health care posting 18.5% and the technology sector returning 10%. On the opposite end of the spectrum, while the energy sector's 28.0% return for the quarter is certainly an impressive recovery, the sector led the 1-year trailing sector performance declines with the return of -57.8%.





Source: Morningstar Direct
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000

As of June 30, 2020

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Microsoft Corp	5.30%	29.4%	53.8%	Information Technology
Apple Inc	5.19%	43.8%	86.5%	Information Technology
Amazon.com Inc	4.07%	41.5%	45.7%	Consumer Discretionary
Facebook Inc A	1.90%	36.1%	17.7%	Communication Services
Alphabet Inc A	1.48%	22.0%	31.0%	Communication Services
Alphabet Inc Class C	1.46%	21.6%	30.8%	Communication Services
Johnson & Johnson	1.29%	8.0%	3.8%	Health Care
Berkshire Hathaway Inc Class B	1.21%	-2.4%	-16.3%	Financials
Visa Inc Class A	1.13%	20.1%	12.0%	Information Technology
Procter & Gamble Co	1.01%	9.4%	11.8%	Consumer Staples

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Deckers Outdoor Corp	0.31%	46.6%	11.6%	Consumer Discretionary
LHC Group Inc	0.30%	24.3%	45.8%	Health Care
BJ's Wholesale Club Holdings Inc	0.29%	46.3%	41.2%	Consumer Staples
Churchill Downs Inc	0.29%	29.3%	16.2%	Consumer Discretionary
Novavax Inc	0.27%	513.8%	1322.4%	Health Care
MyoKardia Inc	0.27%	106.1%	92.7%	Health Care
Helen Of Troy Ltd	0.27%	30.9%	44.4%	Consumer Discretionary
SiteOne Landscape Supply Inc	0.27%	54.8%	64.5%	Industrials
EastGroup Properties Inc	0.26%	14.3%	4.9%	Real Estate
Ultragenyx Pharmaceutical Inc	0.25%	76.1%	23.2%	Health Care

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Fastly Inc	0.02%	348.5%	319.8%	Information Technology
Wayfair Inc Class A	0.05%	269.8%	35.3%	Consumer Discretionary
Apache Corp	0.02%	223.9%	-51.9%	Energy
Targa Resources Corp	0.02%	192.7%	-44.7%	Energy
Etsy Inc	0.04%	176.4%	73.1%	Consumer Discretionary
Bill.com Holdings Inc Ordinary Shares	0.01%	163.8%	N/A	Information Technology
Livongo Health Inc	0.01%	163.5%	N/A	Health Care
Immunomedics Inc	0.03%	162.9%	155.5%	Health Care
Antero Midstream Corp	0.01%	159.5%	-45.7%	Energy
Thor Industries Inc	0.02%	156.2%	87.0%	Consumer Discretionary

Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Workhorse Group Inc	0.06%	860.8%	491.5%	Consumer Discretionary
Veritone Inc	0.02%	537.8%	77.8%	Information Technology
Novavax Inc	0.27%	513.8%	1322.4%	Health Care
Overstock.com Inc	0.06%	469.7%	109.0%	Consumer Discretionary
Vaxart Inc	0.02%	400.0%	1220.7%	Health Care
U.S. Auto Parts Network Inc	0.01%	394.9%	592.8%	Consumer Discretionary
Camping World Holdings Inc Class A	0.05%	380.5%	131.4%	Consumer Discretionary
Macrogenics Inc	0.08%	379.7%	64.5%	Health Care
Aspira Womens Health Inc	0.01%	361.3%	331.5%	Health Care
Retractable Technologies Inc	0.01%	350.0%	868.9%	Health Care

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Empire State Realty Trust Inc Class A	0.00%	-20.7%	-50.8%	Real Estate
Xerox Holdings Corp	0.01%	-18.0%	-54.8%	Information Technology
Hawaiian Electric Industries Inc	0.01%	-15.5%	-14.7%	Utilities
Biogen Inc	0.15%	-15.4%	14.4%	Health Care
Cincinnati Financial Corp	0.03%	-14.3%	-36.6%	Financials
General Electric Co	0.21%	-13.8%	-34.7%	Industrials
Coty Inc Class A	0.00%	-13.4%	-65.5%	Consumer Staples
EchoStar Corp	0.00%	-12.5%	-24.3%	Information Technology
NovoCure Ltd	0.02%	-11.9%	-6.2%	Health Care
Molson Coors Beverage Co B	0.02%	-11.9%	-36.5%	Consumer Staples

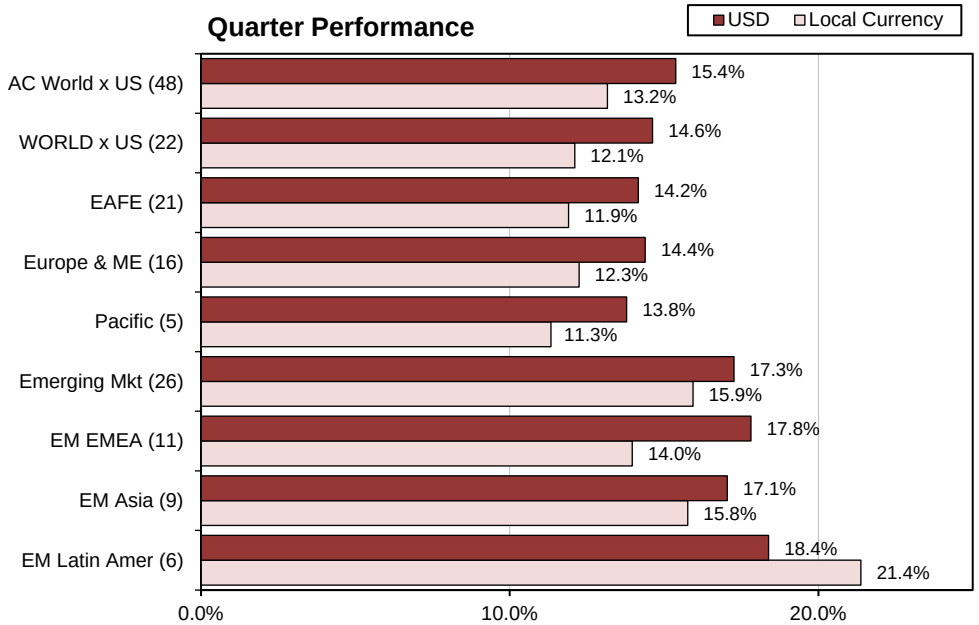
Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Chesapeake Energy Corp	0.00%	-85.8%	-98.7%	Energy
Hertz Global Holdings Inc	0.01%	-77.2%	-91.2%	Industrials
SeaChange International Inc	0.00%	-59.4%	5.6%	Information Technology
CorEnergy Infrastructure Trust Inc	0.01%	-50.0%	-75.6%	Real Estate
Evofem Biosciences Inc	0.01%	-46.8%	-57.4%	Health Care
Recro Pharma Inc	0.00%	-44.3%	-48.6%	Health Care
NextCure Inc	0.02%	-42.2%	43.1%	Health Care
NeuroBo Pharmaceuticals Inc	0.00%	-42.1%	-60.2%	Health Care
LendingClub Corp	0.02%	-42.0%	-72.3%	Financials
ProAssurance Corp	0.04%	-41.9%	-58.6%	Financials

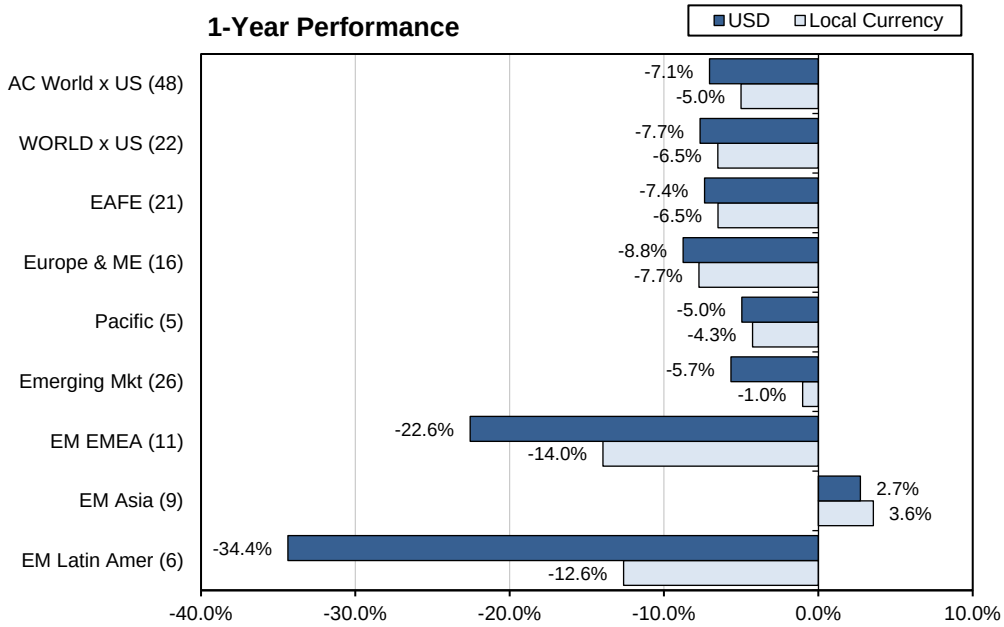
Source: Morningstar Direct

International and Regional Market Index Performance (Country Count)

As June 30, 2020

- Broad international equity index returns were positive in US dollar (USD) and local currency terms for the 2nd quarter as international markets rebounded following the meaningful drawdown during the previous period. USD denominated international equity index performance also benefited from a weakening USD which fell against most major currencies during the period. The MSCI ACWI ex US Index posted a return of 15.4% in USD and a slightly lower 13.2% in local currency terms. Like US equity market performance, international equity benchmarks also benefited from a strong monetary policy response from central banks in reaction to the Coronavirus. Since the virus ravaged Asia and Europe earlier than the US, many countries also began the process of re-opening their respective economies earlier than the US, resulting in improving economic datapoints. Both the ECB and Bank of Japan committed to significant lending programs designed to provide the capital markets with liquidity while continuing to purchase bonds under their existing economic recovery programs.
- Results for developed market international indices were strongly positive in both USD and local currency terms during the 2nd quarter. The MSCI EAFE Index returned 14.2% in USD and 11.0% in local currency terms. The spread of the pandemic slowed in Europe during the quarter allowing countries like Austria and Italy to begin the process of re-opening. ECB President Christine Lagarde announced that the bank was expanding its bond purchase program to $1.5 trillion, and in the UK, the Bank of England increased its bond purchasing program by roughly $125 billion. Both measures were targeted at providing the capital markets with liquidity.
- Emerging markets outperformed developed markets by just over 3% during the 2nd quarter. The MSCI Emerging Markets Index rose by 17.3% in USD terms and 15.9% in local currency. Emerging markets benefited relative to developed markets during the quarter as global economic activity increased despite increased geopolitical tensions from China's new security measures in Hong Kong. The rebound in commodity prices in anticipation of future economic growth was particularly beneficial to the emerging countries dependent on export demand.
- In contrast to the strong 2nd quarter returns, the 1-year trailing performance of international equity indices was broadly negative with only the Emerging Market Asia Index posting a positive return of 2.7% in USD for the period. The 1-year trailing currency impact on international index performance also contrasts with the 2nd quarter's USD weakness. Persistent strength of the USD over the 1-year period was a drag on the results realized by domestic holders of international equities for each of the indices tracked in the graph. This USD strength is particularly visible in the Emerging Market Middle East & Africa (EMEA) Index and Emerging Market Latin America Index.





Source: MSCI Global Index Monitor (Returns are Net)

US Dollar International Index Attribution & Country Detail

As of June 30, 2020

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.4%	12.3%	-6.5%
Consumer Discretionary	11.3%	17.6%	-6.9%
Consumer Staples	12.0%	8.5%	-3.8%
Energy	3.4%	-1.5%	-41.3%
Financials	16.1%	12.6%	-20.4%
Health Care	14.5%	13.8%	17.6%
Industrials	14.5%	17.5%	-8.0%
Information Technology	8.3%	23.0%	12.4%
Materials	7.3%	22.7%	-8.6%
Real Estate	3.2%	7.9%	-21.4%
Utilities	4.0%	11.4%	2.4%
Total	**100.0%**	**14.2%**	**-7.4%**

MSCI - ACWIxUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	7.6%	16.9%	2.6%
Consumer Discretionary	12.6%	19.8%	-0.6%
Consumer Staples	10.0%	9.4%	-4.8%
Energy	4.8%	8.5%	-34.5%
Financials	18.1%	10.3%	-22.4%
Health Care	10.7%	16.0%	18.3%
Industrials	11.4%	17.1%	-8.9%
Information Technology	11.0%	24.1%	19.2%
Materials	7.6%	24.6%	-8.7%
Real Estate	2.8%	6.8%	-21.4%
Utilities	3.5%	10.3%	-3.2%
Total	**100.0%**	**15.4%**	**-7.1%**

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	13.5%	22.6%	14.2%
Consumer Discretionary	17.4%	22.1%	12.7%
Consumer Staples	6.5%	12.6%	-9.1%
Energy	6.0%	21.6%	-25.3%
Financials	19.1%	6.6%	-27.4%
Health Care	4.3%	37.1%	33.5%
Industrials	4.7%	16.0%	-15.9%
Information Technology	16.9%	19.9%	21.3%
Materials	6.9%	23.3%	-16.2%
Real Estate	2.6%	3.6%	-20.3%
Utilities	2.3%	9.2%	-20.3%
Total	**100.0%**	**17.3%**	**-5.7%**

Country	MSCI-EAFE Weight	MSCI-ACWIxUS Weight	Quarter Return	1- Year Return
Japan	25.4%	16.5%	11.5%	0.9%
United Kingdom	14.1%	9.1%	7.4%	-20.8%
France	10.9%	7.1%	15.3%	-11.4%
Switzerland	10.3%	6.7%	9.7%	3.8%
Germany	9.3%	6.0%	24.5%	-4.4%
Australia	6.7%	4.4%	28.6%	-14.6%
Netherlands	4.3%	2.8%	24.0%	7.1%
Hong Kong	3.4%	2.2%	7.7%	-17.4%
Sweden	3.1%	2.0%	19.5%	0.8%
Spain	2.4%	1.6%	9.6%	-22.5%
Denmark	2.3%	1.5%	18.8%	20.7%
Italy	2.3%	1.5%	15.0%	-13.1%
Singapore	1.1%	0.7%	7.3%	-23.8%
Finland	1.0%	0.7%	18.6%	-3.6%
Belgium	0.9%	0.6%	11.9%	-23.3%
Ireland	0.6%	0.4%	19.6%	3.6%
Israel	0.6%	0.4%	20.0%	0.8%
Norway	0.5%	0.3%	13.2%	-25.1%
New Zealand	0.3%	0.2%	28.0%	19.6%
Austria	0.2%	0.1%	20.6%	-28.2%
Portugal	0.2%	0.1%	9.2%	4.2%
Total EAFE Countries	**100.0%**	**64.9%**	**14.2%**	**-7.4%**
Canada		6.5%	19.4%	-10.5%
Total Developed Countries		**71.4%**	**14.6%**	**-7.7%**
China		11.7%	14.2%	11.2%
Taiwan		3.5%	20.8%	17.8%
Korea		3.3%	19.3%	-1.4%
India		2.3%	20.4%	-18.2%
Brazil		1.5%	22.6%	-35.3%
South Africa		1.1%	25.8%	-26.9%
Russia		0.9%	17.6%	-17.7%
Saudi Arabia		0.8%	12.2%	-22.7%
Thailand		0.7%	22.4%	-25.8%
Malaysia		0.5%	12.6%	-14.8%
Mexico		0.5%	10.6%	-26.8%
Indonesia		0.4%	22.4%	-26.0%
Philippines		0.2%	19.3%	-21.4%
Qatar		0.2%	6.7%	-13.1%
Poland		0.2%	20.8%	-31.2%
Chile		0.2%	13.5%	-36.9%
United Arab Emirates		0.2%	14.4%	-21.7%
Turkey		0.1%	18.3%	-8.5%
Peru		0.1%	5.5%	-35.7%
Hungary		0.1%	14.1%	-18.3%
Colombia		0.1%	7.2%	-43.6%
Argentina		0.0%	43.7%	-47.0%
Greece		0.0%	9.6%	-35.1%
Czech Republic		0.0%	24.1%	-26.8%
Egypt		0.0%	4.9%	-13.7%
Pakistan		0.0%	11.7%	-17.3%
Total Emerging Countries		**28.6%**	**17.3%**	**-5.7%**
Total ACWIxUS Countries		**100.0%**	**15.4%**	**-7.1%**

Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

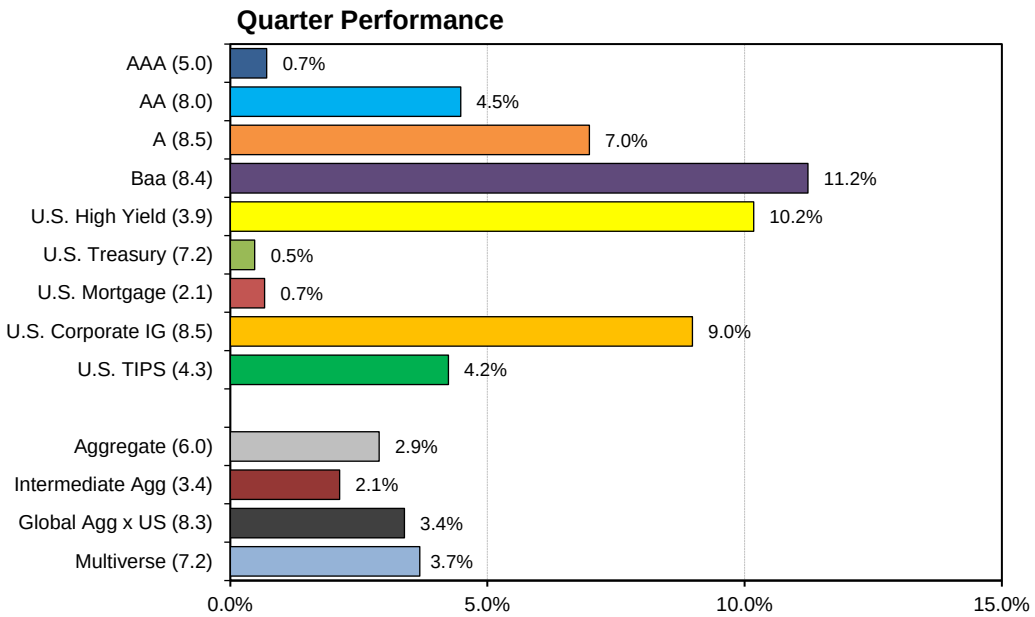
Domestic Bond Sector & Broad/Global Bond Market Performance (Duration)

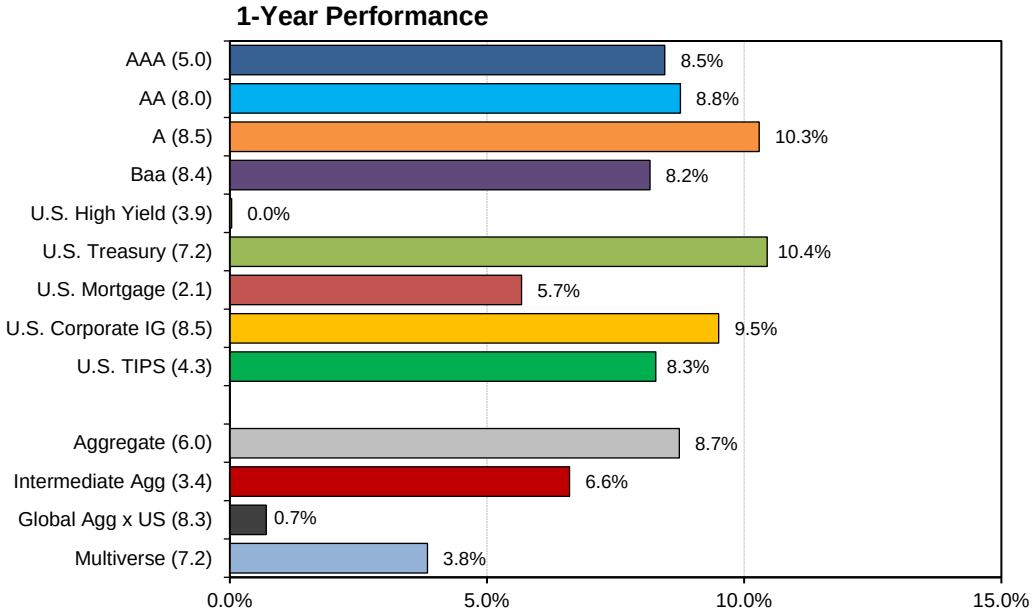
As of June 30, 2020

- Broad fixed income benchmarks rose sharply in the 2nd quarter as interest rates fell globally in response to the economic implications of the pandemic. The Fed continued purchasing bonds under programs announced during the first quarter to support capital markets and mitigate the damage to the economy. With US interest rates already near zero, the Fed announced several additional lending facilities to bridge the gap until economic activity picks up. These combined programs swelled the Fed's balance sheet to $7.0 trillion, an increase of more than $3 trillion since the beginning of the year. Late in the quarter the Fed commented that the economy faces a number of future challenges and expects interest rates to remain low for a prolonged period of time. Last August, the US Treasury yield curve inverted with the 2-year yield briefly surpassing the 10-year yield. Historically, a 2-10 inversion in the yield curve has preceded a US recession within the next 6-24 months. Recently, the National Bureau of Economic Research reported that the US economy entered a recession in February. While long-term US interest rates have moved lower recently, the Treasury yield curve has actually steepened which historically portends better economic growth.

- During the quarter, the Bloomberg Barclays (BB) US Aggregate Index returned 2.9%. Within the broad BB US Aggregate index, the US Treasury and mortgage-backed segments dramatically underperformed the corporate bond sector during the 2nd quarter. Investment grade corporate credit returned a strong 9.0% due to narrowing credit spreads and a high demand for yield. In contrast, over the 1-year period, US Treasuries outpaced both corporate and mortgage-backed issues with US Treasuries posting 10.4% versus returns of 9.5% and 5.7% for corporate and mortgage bonds, respectively. Outside of domestic markets, the BB Global Aggregate ex US Index increased by 3.4% for the quarter and 0.7% for the year.

- Within investment grade credit, lower quality issues outperformed higher quality issues during the 2nd quarter. Lower quality issues benefitted from both spread compression and investors seeking out higher yields when compared to US Treasury or mortgage bonds. On an absolute basis without adjusting for the duration differences in the sub-indices, Baa rated credit was the best performing investment grade (IG) segment, returning 11.2% for the quarter. AAA issues were the worst performing IG credit segment, returning just 0.7%. Despite a much lower duration, the high yield index returned 10.2% for the quarter. These issues benefited from credit spreads narrowing significantly following the drawdown in the first quarter. Outside of high yield performance, which was flat on the year, credit returns were all impressive with each segment returning greater than 8% for the period.



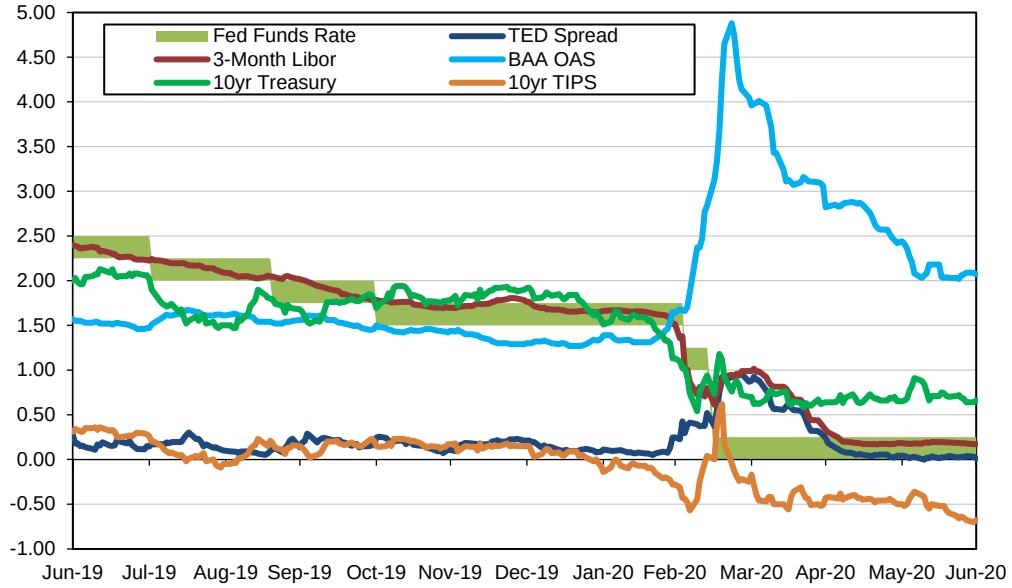


Source: Bloomberg

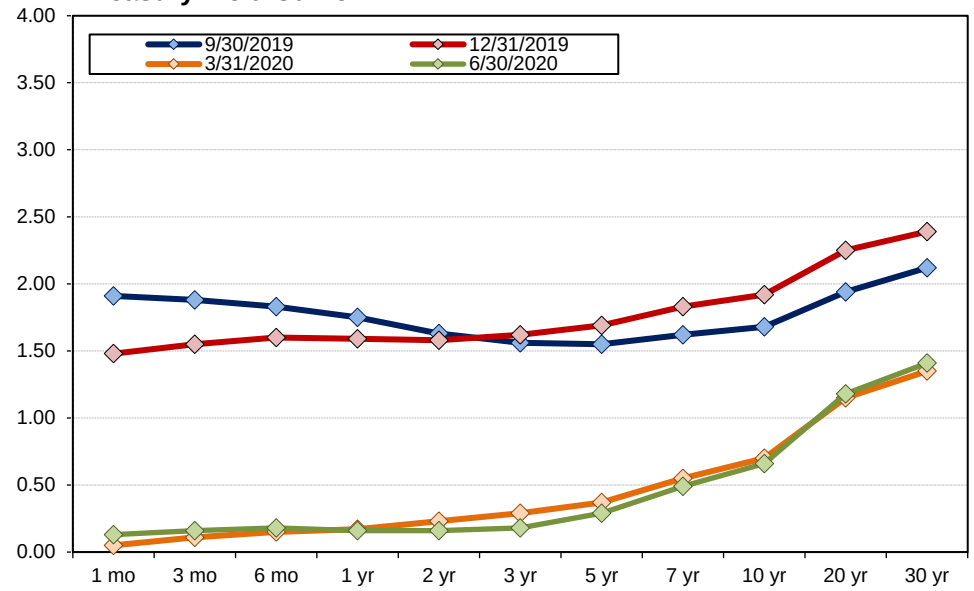
- Much of the index performance detailed in the bar graphs on the previous page is visible on a time series basis by reviewing the yield graph to the right. The '1-Year Trailing Market Rates' chart illustrates that over the last year, the 10-year Treasury yield (green line) fell from yields of greater than 2.0%, to a low of roughly 0.5% before ending the quarter at 0.66%. A decrease in yields provides a boost to bond performance. The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-Treasury investment grade issues. This line illustrates an abrupt increase in credit spreads beginning in early 2020 as investors moved to higher quality assets during the quarter's risk-off environment. Spreads increased dramatically in February following the US onset of the pandemic, reaching a high of 4.88% on March 23rd. Since then, spreads have steadily declined as markets stabilized following the aggressive actions taken by the Treasury and Fed. During the quarter, the BAA OAS spread fell by 1.98%. Similar to Treasury yield declines, spread tightening in corporate bonds is equivalent to an interest rate decrease, which causes bond prices to rise. This compression produces an additional tailwind for corporate bond index returns. The green band across the graph illustrates the decrease in the Fed Funds Rate range due to the recent US monetary policy easing. The Fed began the year with a rate range of 1.50%-1.75%, which it aggressively cut to a range of 0.00%-0.25% during the 1st quarter, where it remained at the end of the quarter.

- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four calendar quarters. The higher yields and curve inversion experienced in the 2nd half of 2019 have given way to 2020's extremely low interest rate environment. The curve continued to flatten during the 2nd quarter, particularly between the 1- and 5-year maturities. On the longer end of the curve, rates rose slightly during the period as the US Treasury issued longer-dated bonds to lock in low borrowing costs. An increase in Treasury supply, in conjunction with concerns about the potential for rising inflation, resulted in slightly higher yields during the quarter.

1-Year Trailing Market Rates



Treasury Yield Curve



Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)

Basic - 1 Quarter

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
98,703,040	-1,196,722	14,251,506	235,728	111,757,823	14.44

Police - 1 Quarter

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
32,029,471	-232,810	4,561,996	81,076	36,358,657	14.25

OPEB - 1 Quarter

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
14,023,561	-	2,297,560	68,658	16,321,121	16.38

Basic - 1 Year

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
113,093,035	-5,206,280	3,871,069	1,664,787	111,757,823	3.61

Police - 1 Year

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
36,332,052	-1,263,252	1,289,857	742,825	36,358,657	3.63

OPEB - 1 Year

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
15,764,250	-	556,871	318,842	16,321,121	3.53

1 Quarter

	Market Value 04/01/2020	Net Flows	Return On Investment	Market Value 06/30/2020
Basic Total Fund	**98,703,040**	**-1,196,722**	**14,251,506**	**111,757,823**
Total Domestic Equity	**47,950,635**	**-1,180,675**	**10,465,160**	**57,235,120**
SKBA	1,040	-1,040	-	-
JPM Equity Inc (OIEJX)	8,812,380	-	1,169,550	9,981,931
Vanguard Equity Inc (VEIRX)	8,923,504	-	1,130,473	10,053,978
MFS Growth	20,542,470	-1,179,635	5,065,300	24,428,135
Principal Mid Cap	3,200,533	-	795,713	3,996,246
Summit Creek	6,470,706	-	2,304,124	8,774,830
Total International Equity	**17,651,386**	**-**	**2,846,816**	**20,498,203**
Templeton	6,354,789	-	814,717	7,169,506
MFS Int'l	7,457,117	-	1,290,725	8,747,841
International Emerging Market				
Schroder	3,839,480	-	741,375	4,580,855
Total Domestic Fixed Income	**15,245,173**	**-**	**429,565**	**15,674,738**
Northern Interm Fixed	7,536,313	-	213,497	7,749,810
Northern Core Fixed	7,708,860	-	216,068	7,924,928
Securian	-	-	-	-
Total Real Estate	**8,911,484**	**-26,375**	**-150,602**	**8,734,507**
Clarion Lion Properties	5,338,291	-13,869	-97,190	5,227,232
Principal Enhanced Property Fd	3,573,193	-12,506	-53,412	3,507,275
Total Infrastructure				
Lazard	5,908,613	-	659,413	6,568,025
Total Cash	**3,035,749**	**10,328**	**1,153**	**3,047,230**
Securian (Cash)	1,544,606	19,062	1,127	1,564,795
City Reserve - Basic account	1,178,268	-49	21	1,178,239
Cash	312,876	-8,685	5	304,196

Fiscal Year To Date

	Market Value 07/01/2019	Net Flows	Return On Investment	Market Value 06/30/2020
Basic Total Fund	**113,093,035**	**-5,206,280**	**3,871,069**	**111,757,823**
Total Domestic Equity	**61,413,105**	**-7,203,595**	**3,025,610**	**57,235,120**
SKBA	22,244,970	-21,695,966	-549,004	-
JPM Equity Inc (OIEJX)	-	10,831,955	-850,024	9,981,931
Vanguard Equity Inc (VEIRX)	-	10,831,955	-777,977	10,053,978
MFS Growth	22,916,163	-2,921,540	4,433,512	24,428,135
Principal Mid Cap	7,402,058	-3,300,000	-105,812	3,996,246
Summit Creek	8,849,914	-950,000	874,916	8,774,830
Total International Equity	**21,125,335**	**-**	**-627,133**	**20,498,203**
Templeton	8,038,500	-	-868,994	7,169,506
MFS Int'l	8,467,407	-	280,435	8,747,841
International Emerging Market				
Schroder	4,619,429	-	-38,573	4,580,855
Total Domestic Fixed Income	**15,978,223**	**-1,474,353**	**1,170,868**	**15,674,738**
Northern Interm Fixed	7,227,044	-	522,766	7,749,810
Northern Core Fixed	7,284,385	-	640,543	7,924,928
Securian	1,466,794	-1,474,353	7,559	-
Total Real Estate	**5,118,012**	**3,296,695**	**319,799**	**8,734,507**
Clarion Lion Properties	5,118,012	-54,937	164,157	5,227,232
Principal Enhanced Property Fd	-	3,351,632	155,642	3,507,275
Total Infrastructure				
Lazard	6,858,290	-241,097	-49,168	6,568,025
Total Cash	**2,600,068**	**416,071**	**31,091**	**3,047,230**
Securian (Cash)	-	1,547,902	16,893	1,564,795
City Reserve - Basic account	-	1,171,497	6,743	1,178,239
Cash	2,600,068	-2,303,329	7,456	304,196

1 Year

	Market Value 07/01/2019	Net Flows	Return On Investment	Market Value 06/30/2020
Basic Total Fund	**113,093,035**	**-5,206,280**	**3,871,069**	**111,757,823**
Total Domestic Equity	**61,413,105**	**-7,203,595**	**3,025,610**	**57,235,120**
SKBA	22,244,970	-21,695,966	-549,004	-
JPM Equity Inc (OIEJX)	-	10,831,955	-850,024	9,981,931
Vanguard Equity Inc (VEIRX)	-	10,831,955	-777,977	10,053,978
MFS Growth	22,916,163	-2,921,540	4,433,512	24,428,135
Principal Mid Cap	7,402,058	-3,300,000	-105,812	3,996,246
Summit Creek	8,849,914	-950,000	874,916	8,774,830
Total International Equity	**21,125,335**	**-**	**-627,133**	**20,498,203**
Templeton	8,038,500	-	-868,994	7,169,506
MFS Int'l	8,467,407	-	280,435	8,747,841
International Emerging Market				
Schroder	4,619,429	-	-38,573	4,580,855
Total Domestic Fixed Income	**15,978,223**	**-1,474,353**	**1,170,868**	**15,674,738**
Northern Interm Fixed	7,227,044	-	522,766	7,749,810
Northern Core Fixed	7,284,385	-	640,543	7,924,928
Securian	1,466,794	-1,474,353	7,559	-
Total Real Estate	**5,118,012**	**3,296,695**	**319,799**	**8,734,507**
Clarion Lion Properties	5,118,012	-54,937	164,157	5,227,232
Principal Enhanced Property Fd	-	3,351,632	155,642	3,507,275
Total Infrastructure				
Lazard	6,858,290	-241,097	-49,168	6,568,025
Total Cash	**2,600,068**	**416,071**	**31,091**	**3,047,230**
Securian (Cash)	-	1,547,902	16,893	1,564,795
City Reserve - Basic account	-	1,171,497	6,743	1,178,239
Cash	2,600,068	-2,303,329	7,456	304,196

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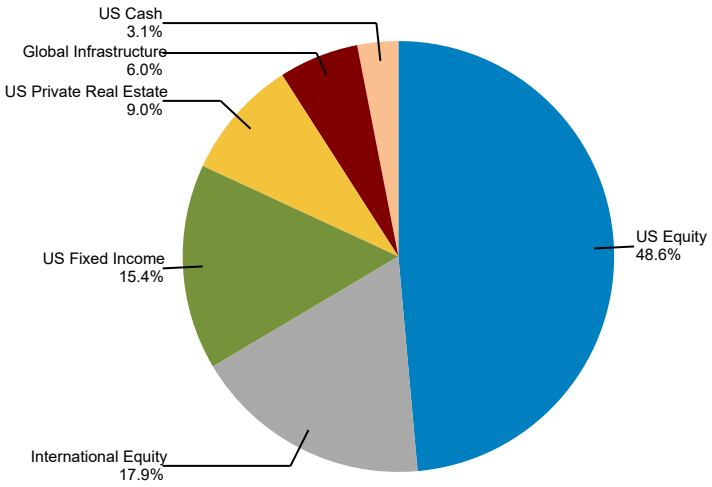
Asset Allocation Attributes

	Domestic Equity		International Equity		Emerging Equity		Domestic Fixed Income		Real Estate		Infrastructure		Cash Equivalent		Total Fund	
	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%
Basic Total Fund	**56,838,189**	**50.9**	**15,917,347**	**14.2**	**4,580,855**	**4.1**	**15,674,738**	**14.0**	**8,667,147**	**7.8**	**6,568,025**	**5.9**	**3,511,521**	**3.1**	**111,757,823**	**100.0**
Total Domestic Equity	**56,838,189**	**99.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**396,931**	**0.7**	**57,235,120**	**51.2**
JPM Equity Inc (OIEJX)	9,981,931	100.0	-	-	-	-	-	-	-	-	-	-	-	-	9,981,931	8.9
Vanguard Equity Inc (VEIRX)	10,053,978	100.0	-	-	-	-	-	-	-	-	-	-	-	-	10,053,978	9.0
MFS Growth	24,373,802	99.8	-	-	-	-	-	-	-	-	-	-	54,334	0.2	24,428,135	21.9
Principal Mid Cap	3,996,246	100.0	-	-	-	-	-	-	-	-	-	-	-	-	3,996,246	3.6
Summit Creek	8,432,233	96.1	-	-	-	-	-	-	-	-	-	-	342,597	3.9	8,774,830	7.9
Total International Equity	**-**	**-**	**15,917,347**	**77.7**	**4,580,855**	**22.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**20,498,203**	**18.3**
Templeton	-	-	7,169,506	100.0	-	-	-	-	-	-	-	-	-	-	7,169,506	6.4
MFS Int'l	-	-	8,747,841	100.0	-	-	-	-	-	-	-	-	-	-	8,747,841	7.8
International Emerging Market																
Schroder	-	-	-	-	4,580,855	100.0	-	-	-	-	-	-	-	-	4,580,855	4.1
Total Domestic Fixed Income	**-**	**-**	**-**	**-**	**-**	**-**	**15,674,738**	**100.0**	**-**	**-**	**-**	**-**	**-**	**-**	**15,674,738**	**14.0**
Northern Interm Fixed	-	-	-	-	-	-	7,749,810	100.0	-	-	-	-	-	-	7,749,810	6.9
Northern Core Fixed	-	-	-	-	-	-	7,924,928	100.0	-	-	-	-	-	-	7,924,928	7.1
Total Real Estate	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**8,667,147**	**99.2**	**-**	**-**	**67,360**	**0.8**	**8,734,507**	**7.8**
Clarion Lion Properties	-	-	-	-	-	-	-	-	5,192,960	99.3	-	-	34,272	0.7	5,227,232	4.7
Principal Enhanced Property Fd	-	-	-	-	-	-	-	-	3,474,187	99.1	-	-	33,088	0.9	3,507,275	3.1
Total Infrastructure																
Lazard	-	-	-	-	-	-	-	-	-	-	6,568,025	100.0	-	-	6,568,025	5.9
Total Cash	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3,047,230**	**100.0**	**3,047,230**	**2.7**
Securian (Cash)	-	-	-	-	-	-	-	-	-	-	-	-	1,564,795	100.0	1,564,795	1.4
City Reserve - Basic account	-	-	-	-	-	-	-	-	-	-	-	-	1,178,239	100.0	1,178,239	1.1
Cash	-	-	-	-	-	-	-	-	-	-	-	-	304,196	100.0	304,196	0.3

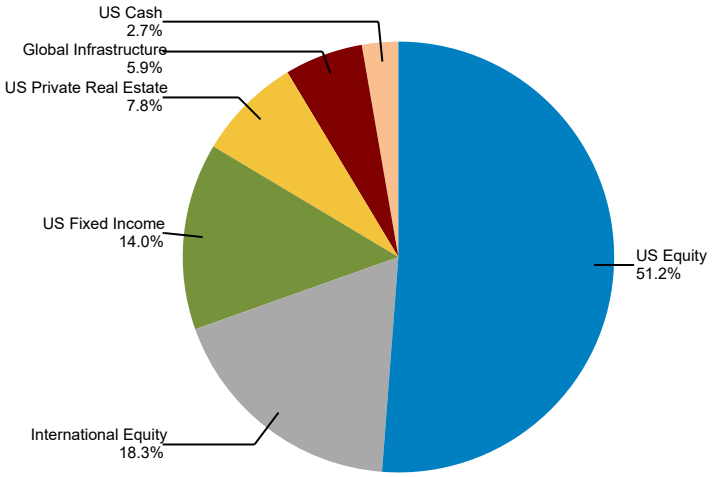
March 31, 2020 : $98,703,040



Allocation

	Market Value	Allocation
US Equity	47,950,635	48.6
International Equity	17,651,386	17.9
US Fixed Income	15,245,173	15.4
US Private Real Estate	8,911,484	9.0
Global Infrastructure	5,908,613	6.0
US Cash	3,035,749	3.1

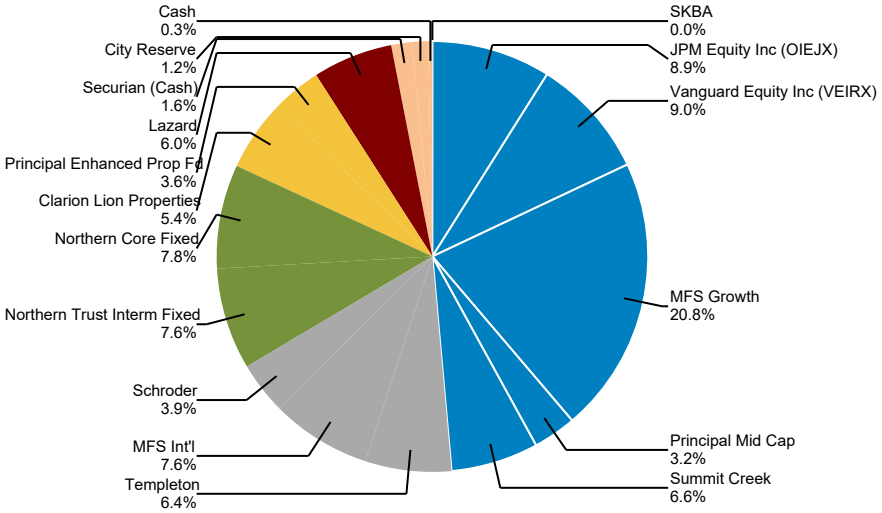
June 30, 2020 : $111,757,823



Allocation

	Market Value	Allocation
US Equity	57,235,120	51.2
International Equity	20,498,203	18.3
US Fixed Income	15,674,738	14.0
US Private Real Estate	8,734,507	7.8
Global Infrastructure	6,568,025	5.9
US Cash	3,047,230	2.7

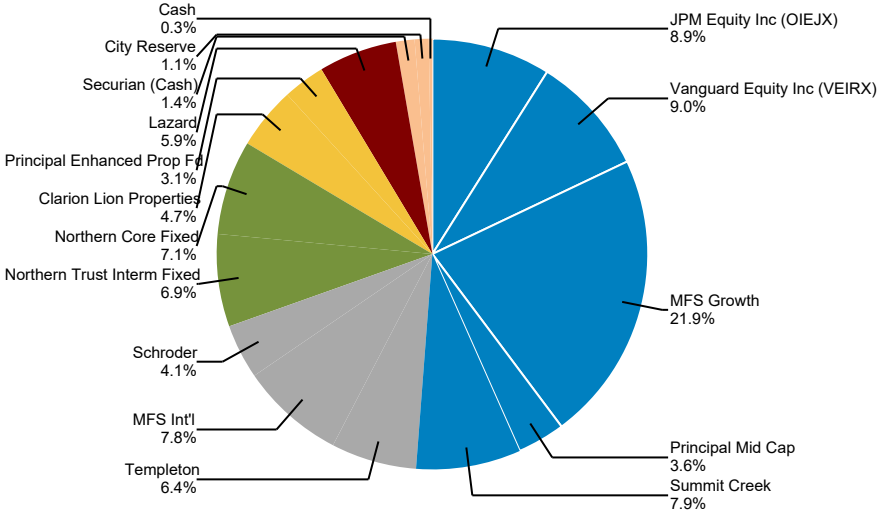
March 31, 2020 : $98,703,040



Allocation

	Market Value	Allocation
SKBA	1,040	0.0
JPM Equity Inc (OIEJX)	8,812,380	8.9
Vanguard Equity Inc (VEIRX)	8,923,504	9.0
MFS Growth	20,542,470	20.8
Principal Mid Cap	3,200,533	3.2
Summit Creek	6,470,706	6.6
Templeton	6,354,789	6.4
MFS Int'l	7,457,117	7.6
Schroder	3,839,480	3.9
Northern Trust Interm Fixed	7,536,313	7.6
Northern Core Fixed	7,708,860	7.8
Clarion Lion Properties	5,338,291	5.4
Principal Enhanced Prop Fd	3,573,193	3.6
Lazard	5,908,613	6.0
Securian (Cash)	1,544,606	1.6
City Reserve	1,178,268	1.2
Cash	312,876	0.3

June 30, 2020 : $111,757,823



Allocation

	Market Value	Allocation
SKBA	-	0.0
JPM Equity Inc (OIEJX)	9,981,931	8.9
Vanguard Equity Inc (VEIRX)	10,053,978	9.0
MFS Growth	24,428,135	21.9
Principal Mid Cap	3,996,246	3.6
Summit Creek	8,774,830	7.9
Templeton	7,169,506	6.4
MFS Int'l	8,747,841	7.8
Schroder	4,580,855	4.1
Northern Trust Interm Fixed	7,749,810	6.9
Northern Core Fixed	7,924,928	7.1
Clarion Lion Properties	5,227,232	4.7
Principal Enhanced Prop Fd	3,507,275	3.1
Lazard	6,568,025	5.9
Securian (Cash)	1,564,795	1.4
City Reserve	1,178,239	1.1
Cash	304,196	0.3

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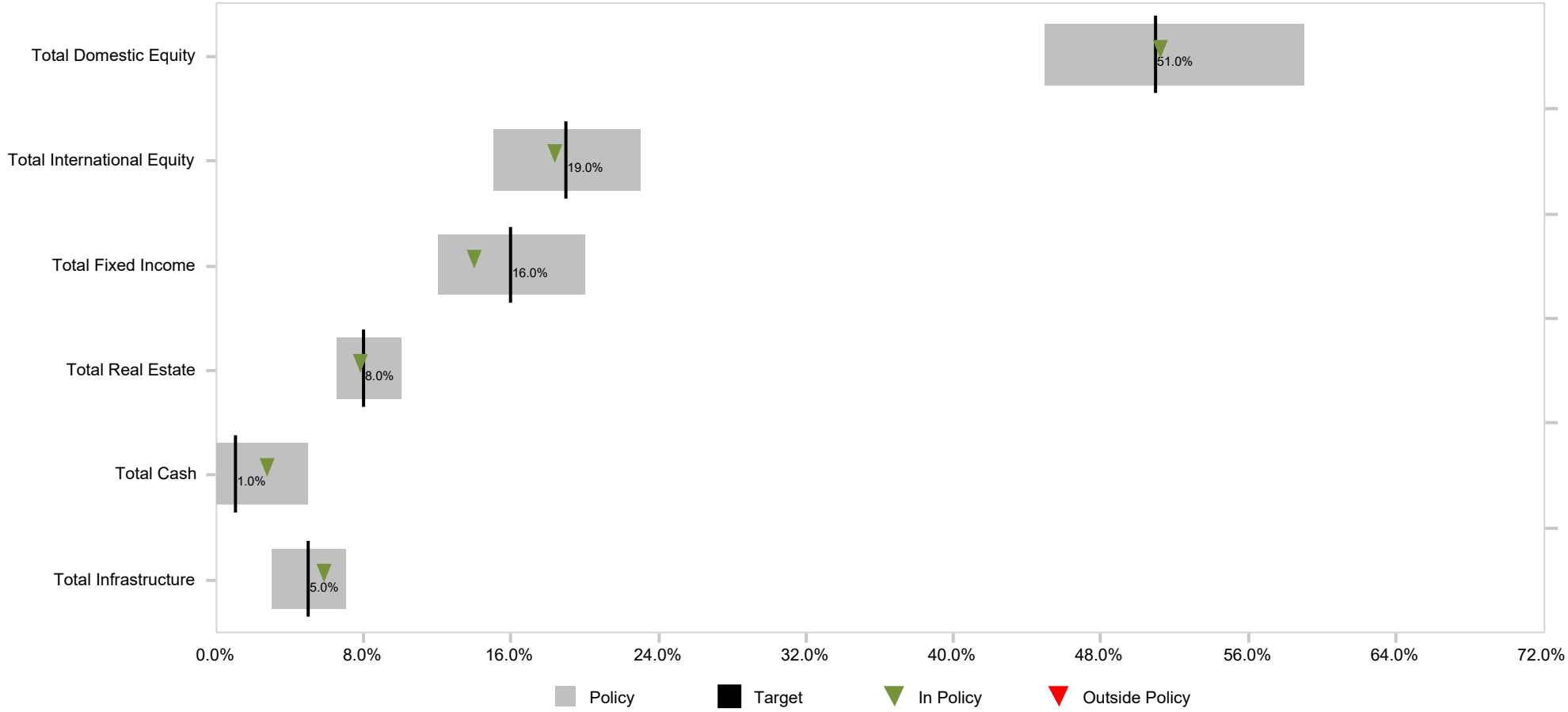
Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Target Rebal. ($)	Differences (%)
Basic Total Fund	111,757,823	100.0		100.0		-	0.0
Total Domestic Equity	57,235,120	51.2	45.0	51.0	59.0	-238,630	0.2
Total International Equity	20,498,203	18.3	15.0	19.0	23.0	735,784	-0.7
Total Fixed Income	15,674,738	14.0	12.0	16.0	20.0	2,206,513	-2.0
Total Real Estate	8,734,507	7.8	6.5	8.0	10.0	206,119	-0.2
Total Cash	3,047,230	2.7	0.0	1.0	5.0	-1,929,652	1.7
Total Infrastructure	6,568,025	5.9	3.0	5.0	7.0	-980,134	0.9

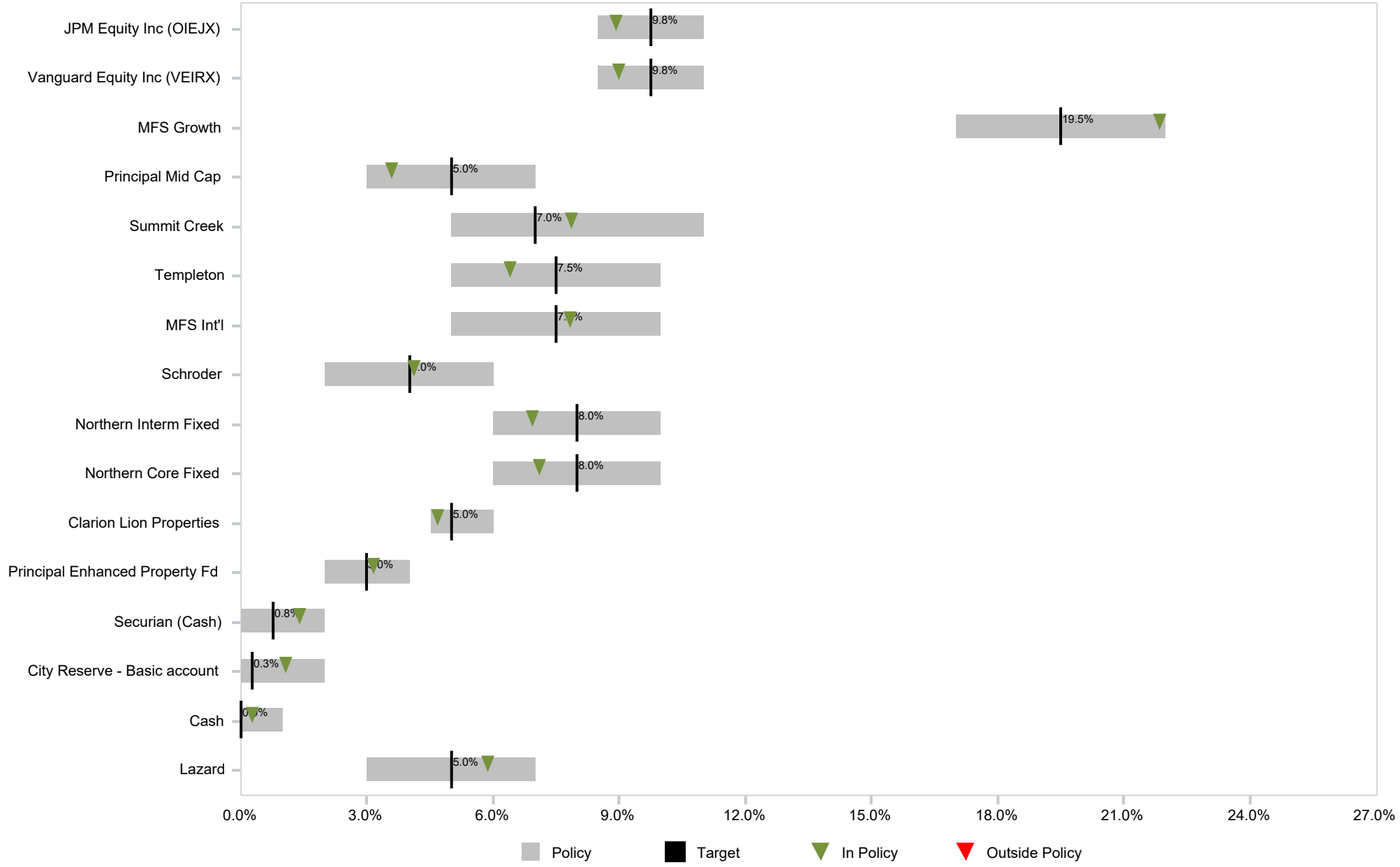
Allocation Summary



Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Target Rebal. ($)	Differences (%)
Basic Total Fund	111,757,823	100.0		100.0		-	0.0
Total Equity	77,733,323	69.6		70.0		497,154	-0.4
Total Domestic Equity	57,235,120	51.2		51.0		-238,630	0.2
JPM Equity Inc (OIEJX)	9,981,931	8.9	8.5	9.8	11.0	914,457	-0.8
Vanguard Equity Inc (VEIRX)	10,053,978	9.0	8.5	9.8	11.0	842,410	-0.8
MFS Growth	24,428,135	21.9	17.0	19.5	22.0	-2,635,360	2.4
Principal Mid Cap	3,996,246	3.6	3.0	5.0	7.0	1,591,645	-1.4
Summit Creek	8,774,830	7.9	5.0	7.0	11.0	-951,782	0.9
Total International Equity	20,498,203	18.3		19.0		735,784	-0.7
Templeton	7,169,506	6.4	5.0	7.5	10.0	1,212,331	-1.1
MFS Int'l	8,747,841	7.8	5.0	7.5	10.0	-366,005	0.3
Schroder	4,580,855	4.1	2.0	4.0	6.0	-110,543	0.1
Total Fixed Income	15,674,738	14.0		16.0		2,206,513	-2.0
Total Domestic Fixed Income	15,674,738	14.0		16.0		2,206,513	-2.0
Northern Interm Fixed	7,749,810	6.9	6.0	8.0	10.0	1,190,816	-1.1
Northern Core Fixed	7,924,928	7.1	6.0	8.0	10.0	1,015,698	-0.9
Total Real Estate	8,734,507	7.8		8.0		206,119	-0.2
Clarion Lion Properties	5,227,232	4.7	4.5	5.0	6.0	360,659	-0.3
Principal Enhanced Property Fd	3,507,275	3.1	2.0	3.0	4.0	-154,540	0.1
Total Cash	3,047,230	2.7		1.0		-1,929,652	1.7
Securian (Cash)	1,564,795	1.4	0.0	0.8	2.0	-726,612	0.7
City Reserve - Basic account	1,178,239	1.1	0.0	0.3	2.0	-898,845	0.8
Cash	304,196	0.3	0.0	0.0	1.0	-304,196	0.3
Total Infrastructure	6,568,025	5.9		5.0		-980,134	0.9
Lazard	6,568,025	5.9	3.0	5.0	7.0	-980,134	0.9

Allocation Summary



Comparative Performance

	QTR		FYTD		1 YR		3 YR		5 YR		7 YR		10 YR	
Basic Total Fund	**14.44**	**(21)**	**3.61**	**(47)**	**3.61**	**(47)**	**8.17**	**(7)**	**8.17**	**(4)**	**8.73**	**(4)**	**10.30**	**(2)**
Policy	15.19	(13)	3.69	(46)	3.69	(46)	6.96	(18)	7.21	(10)	8.57	(5)	10.21	(2)
All Master Trust - Total Fund Median	12.10		3.39		3.39		5.28		5.32		6.30		7.52	
Basic Total Fund	**14.44**	**(90)**	**3.61**	**(31)**	**3.61**	**(31)**	**8.17**	**(16)**	**8.17**	**(8)**	**8.73**	**(12)**	**10.30**	**(4)**
Policy	15.19	(80)	3.69	(31)	3.69	(31)	6.96	(29)	7.21	(22)	8.57	(19)	10.21	(4)
Master Trust >=70% Equity Median	16.15		2.99		2.99		5.96		6.17		7.39		8.82	
Total Domestic Equity	**21.83**	**(38)**	**5.67**	**(33)**	**5.67**	**(33)**	**11.89**	**(6)**	**11.01**	**(9)**	**11.54**	**(25)**	**14.15**	**(10)**
Russell 3000 Index	22.03	(35)	6.53	(25)	6.53	(25)	10.04	(25)	10.03	(25)	11.68	(22)	13.72	(23)
All Master Trust-US Equity Segment Median	20.98		4.12		4.12		8.38		8.85		10.51		12.79	
JPM Equity Inc (OIEJX)	13.27	(74)	N/A		N/A		N/A		N/A		N/A		N/A	
Russell 1000 Value Index	14.29	(63)	-8.84	(76)	-8.84	(76)	1.82	(64)	4.64	(61)	7.11	(49)	10.41	(40)
IM Equity Income (MF) Median	15.17		-5.51		-5.51		3.46		5.41		7.07		9.98	
Vanguard Equity Inc (VEIRX)	12.67	(92)	N/A		N/A		N/A		N/A		N/A		N/A	
Russell 1000 Value Index	14.29	(68)	-8.84	(65)	-8.84	(65)	1.82	(55)	4.64	(42)	7.11	(40)	10.41	(27)
IM U.S. Large Cap Value Equity (MF) Median	15.42		-7.67		-7.67		2.13		4.28		6.68		9.72	
MFS Growth	24.68	(85)	20.81	(52)	20.81	(52)	20.31	(22)	16.74	(11)	N/A		N/A	
Russell 1000 Growth Index	27.84	(46)	23.28	(26)	23.28	(26)	18.99	(37)	15.89	(24)	16.62	(27)	17.23	(21)
IM U.S. Large Cap Growth Equity (MF) Median	27.69		21.05		21.05		18.03		14.47		15.69		15.98	
Principal Mid Cap	24.86	(24)	4.20	(10)	4.20	(10)	12.19	(4)	11.20	(5)	13.04	(4)	15.70	(2)
Russell Midcap Index	24.61	(26)	-2.24	(30)	-2.24	(30)	5.79	(22)	6.76	(25)	9.40	(24)	12.35	(19)
IM U.S. Mid Cap Core Equity (SA+CF+MF) Median	21.66		-4.82		-4.82		3.43		4.95		7.94		11.16	
Summit Creek	35.61	(37)	10.68	(37)	10.68	(37)	16.06	(33)	11.72	(35)	N/A		N/A	
Russell 2000 Growth Index	30.58	(60)	3.48	(57)	3.48	(57)	7.86	(73)	6.86	(76)	10.03	(75)	12.92	(79)
IM U.S. Small Cap Growth Equity (SA+CF) Median	32.78		5.99		5.99		12.27		10.20		12.31		15.04	

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	QTR		FYTD		1 YR		3 YR		5 YR		7 YR		10 YR	
Total International Equity	**16.13**	**(71)**	**-2.97**	**(42)**	**-2.97**	**(42)**	**2.19**	**(40)**	**3.67**	**(30)**	**4.62**	**(58)**	**5.66**	**(77)**
MSCI AC World ex USA Index (Net)	16.12	(71)	-4.80	(65)	-4.80	(65)	1.13	(67)	2.26	(77)	3.71	(87)	4.97	(90)
All Master Trust-Intl. Equity Segment Median	17.42		-3.74		-3.74		1.80		3.10		4.79		6.42	
Templeton	12.82	(82)	-10.81	(49)	-10.81	(49)	-4.31	(61)	-1.54	(53)	1.11	(30)	3.68	(29)
MSCI EAFE Value Index (Net)	12.43	(88)	-14.48	(70)	-14.48	(70)	-4.43	(63)	-1.59	(54)	1.21	(28)	3.53	(32)
IM International Large Cap Value Equity (MF) Median	15.40		-10.88		-10.88		-3.94		-1.51		0.68		3.39	
MFS Int'l	17.31	(66)	3.31	(33)	3.31	(33)	7.80	(11)	8.24	(5)	8.02	(9)	N/A	
MSCI AC World ex USA Growth Index (Net)	19.11	(35)	5.80	(21)	5.80	(21)	6.07	(29)	5.61	(25)	6.32	(22)	7.04	(37)
IM International Large Cap Growth Equity (MF) Median	18.13		2.00		2.00		3.99		3.30		4.99		6.44	
Schroder	19.31	(61)	-0.83	(36)	-0.83	(36)	3.36	(29)	4.50	(26)	N/A		N/A	
MSCI Emerging Markets Index (Net)	18.08	(75)	-3.39	(53)	-3.39	(53)	1.90	(44)	2.86	(46)	3.22	(44)	3.27	(49)
IM Emerging Markets Equity (MF) Median	20.27		-3.04		-3.04		1.15		2.57		3.03		3.16	
Total Domestic Fixed Income	**2.82**	**(82)**	**7.89**	**(52)**	**7.89**	**(52)**	**4.69**	**(70)**	**3.73**	**(80)**	**3.42**	**(85)**	**3.39**	**(89)**
Bloomberg Barclays US Aggregate Index	2.90	(82)	8.74	(39)	8.74	(39)	5.32	(48)	4.30	(62)	3.96	(69)	3.82	(75)
All Master Trust-US Fixed Income Segment Median	4.94		7.98		7.98		5.25		4.55		4.37		4.74	
Northern Interm Fixed	2.83	(81)	7.23	(40)	7.23	(40)	4.51	(57)	3.50	(73)	3.18	(79)	N/A	
Bloomberg Barclays US Interm Agg Index	2.13	(96)	6.60	(71)	6.60	(71)	4.28	(77)	3.40	(82)	3.19	(78)	3.14	(83)
IM U.S. Intermediate Duration (SA+CF) Median	3.72		7.09		7.09		4.57		3.71		3.41		3.48	
Northern Core Fixed	2.80	(92)	8.79	(65)	8.79	(65)	5.35	(81)	4.32	(88)	4.00	(86)	3.85	(91)
Bloomberg Barclays US Aggregate Index	2.90	(90)	8.74	(68)	8.74	(68)	5.32	(84)	4.30	(90)	3.96	(92)	3.82	(96)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	4.42		8.93		8.93		5.57		4.70		4.41		4.34	
Total Real Estate	**-1.69**	**(70)**	**3.75**	**(37)**	**3.75**	**(37)**	**N/A**		**N/A**		**N/A**		**N/A**	
NCREIF Fund Index-ODCE (EW)	-1.27	(67)	2.56	(63)	2.56	(63)	5.99	(66)	7.63	(63)	9.25	(57)	10.90	(64)
IM U.S. Open End Private Real Estate (SA+CF) Median	-1.14		2.78		2.78		6.54		8.15		9.77		11.32	
Clarion Lion Properties	-1.82	(71)	3.21	(45)	3.21	(45)	N/A		N/A		N/A		N/A	
NCREIF Fund Index-ODCE (EW)	-1.27	(67)	2.56	(63)	2.56	(63)	5.99	(66)	7.63	(63)	9.25	(57)	10.90	(64)
IM U.S. Open End Private Real Estate (SA+CF) Median	-1.14		2.78		2.78		6.54		8.15		9.77		11.32	
Principal Enhanced Property Fd	-1.49	(69)	N/A		N/A		N/A		N/A		N/A		N/A	
NCREIF Fund Index-ODCE (EW)	-1.27	(67)	2.56	(63)	2.56	(63)	5.99	(66)	7.63	(63)	9.25	(57)	10.90	(64)
IM U.S. Open End Private Real Estate (SA+CF) Median	-1.14		2.78		2.78		6.54		8.15		9.77		11.32	
Total Infrastructure	**11.16**		**-1.00**		**-1.00**		**5.44**		**10.14**		**12.49**		**N/A**	
Lazard	11.16		-1.00		-1.00		5.44		10.14		12.49		N/A	
S&P Global Infrastructure Index	13.87		-14.76		-14.76		-0.89		2.62		5.01		6.92	
FTSE Developed Core Infrast 50/50 Index (Net)	10.31		-8.96		-8.96		2.47		5.54		6.65		9.09	

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	QTR	FYTD	1 YR	3 YR	5 YR	7 YR	10 YR
Cash							
Securian (Cash)	0.07	1.53	1.53	0.49	0.61	0.77	0.88
90 Day U.S. Treasury Bill	0.02	1.63	1.63	1.77	1.17	0.85	0.62
City Reserve - Basic account	0.00	N/A	N/A	N/A	N/A	N/A	N/A
90 Day U.S. Treasury Bill	0.02	1.63	1.63	1.77	1.17	0.85	0.62
Cash	0.00	0.97	0.97	1.27	0.79	N/A	N/A

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

Comparative Performance

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Basic Total Fund	**22.77 (5)**	**-4.02 (41)**	**21.67 (1)**	**6.91 (45)**	**1.66(6)**	**5.07 (55)**	**20.76 (8)**	**13.60 (19)**	**1.37 (29)**	**13.79 (20)**	**21.41 (39)**	**-23.50 (46)**
Policy	23.13 (4)	-5.13 (61)	18.08 (7)	9.77 (6)	-0.51(43)	7.90 (17)	22.60 (3)	14.36 (10)	-0.25 (52)	15.07 (8)	26.05 (14)	-32.60 (96)
All Master Trust - Total Fund Median	18.17	-4.58	14.55	6.66	-0.94	5.45	14.90	11.84	-0.17	12.12	19.78	-24.17
Basic Total Fund	**22.77 (31)**	**-4.02 (7)**	**21.67 (4)**	**6.91 (71)**	**1.66(5)**	**5.07 (68)**	**20.76 (28)**	**13.60 (49)**	**1.37 (14)**	**13.79 (38)**	**21.41 (72)**	**-23.50 (14)**
Policy	23.13 (27)	-5.13 (27)	18.08 (37)	9.77 (12)	-0.51(51)	7.90 (26)	22.60 (10)	14.36 (34)	-0.25 (34)	15.07 (17)	26.05 (39)	-32.60 (75)
Master Trust >=70% Equity Median	22.24	-5.99	17.33	7.86	-0.42	6.32	19.18	13.46	-1.46	13.31	24.08	-29.31
Total Domestic Equity	**29.66 (41)**	**-3.02 (12)**	**25.44 (7)**	**8.90 (86)**	**2.02(12)**	**7.10 (91)**	**30.35 (72)**	**15.23 (81)**	**4.14 (6)**	**18.39 (39)**	**33.88 (17)**	**-32.76 (12)**
Russell 3000 Index	31.02 (22)	-5.24 (42)	21.13 (43)	12.74 (44)	0.48(41)	12.56 (19)	33.55 (47)	16.42 (59)	1.03 (35)	16.93 (61)	28.34 (59)	-37.31 (39)
All Master Trust-US Equity Segment Median	28.73	-5.79	20.72	12.45	0.27	11.08	33.34	16.64	0.10	17.68	29.37	-38.27
JPM Equity Inc (OIEJX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	26.54 (33)	-8.27 (65)	13.66 (73)	17.34 (22)	-3.83(59)	13.45 (10)	32.53 (11)	17.51 (7)	0.39 (67)	15.51 (39)	19.69 (64)	-36.85 (80)
IM Equity Income (MF) Median	25.27	-7.25	16.16	14.10	-3.05	10.15	28.83	12.64	2.40	14.88	22.55	-34.32
Vanguard Equity Inc (VEIRX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	26.54 (45)	-8.27 (36)	13.66 (77)	17.34 (19)	-3.83(58)	13.45 (9)	32.53 (48)	17.51 (28)	0.39 (28)	15.51 (21)	19.69 (73)	-36.85 (48)
IM U.S. Large Cap Value Equity (MF) Median	26.07	-9.08	16.29	13.82	-3.54	10.81	32.30	15.84	-2.20	13.00	24.10	-37.02
MFS Growth	37.79 (11)	2.68 (14)	31.00 (34)	2.56 (46)	7.59(29)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	36.39 (21)	-1.51 (58)	30.21 (41)	7.08 (8)	5.67(54)	13.05 (22)	33.48 (55)	15.26 (46)	2.64 (11)	16.71 (33)	37.21 (42)	-38.44 (39)
IM U.S. Large Cap Growth Equity (MF) Median	33.38	-0.87	29.46	2.18	6.01	10.47	33.94	14.81	-1.76	15.15	35.24	-39.76
Principal Mid Cap	42.89 (1)	-6.37 (16)	25.32 (8)	10.25 (82)	1.54(18)	12.69 (28)	34.42 (68)	19.93 (18)	8.71 (3)	24.35 (55)	N/A	N/A
Russell Midcap Index	30.54 (39)	-9.06 (29)	18.52 (34)	13.80 (62)	-2.44(58)	13.22 (24)	34.76 (63)	17.28 (48)	-1.55 (43)	25.47 (40)	40.48 (22)	-41.46 (73)
IM U.S. Mid Cap Core Equity (SA+CF+MF) Median	29.25	-10.51	16.61	15.43	-2.14	9.96	36.36	17.19	-1.77	24.60	35.42	-38.03
Summit Creek	27.39 (62)	4.18 (12)	29.03 (24)	0.84 (93)	0.80(37)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 2000 Growth Index	28.48 (51)	-9.31 (77)	22.17 (57)	11.32 (52)	-1.38(56)	5.60 (35)	43.30 (67)	14.59 (53)	-2.91 (62)	29.09 (47)	34.47 (61)	-38.54 (28)
IM U.S. Small Cap Growth Equity (SA+CF) Median	28.49	-4.24	23.81	11.40	-0.74	4.32	45.49	14.76	-1.22	28.82	37.40	-41.17

Returns are expressed as percentages.

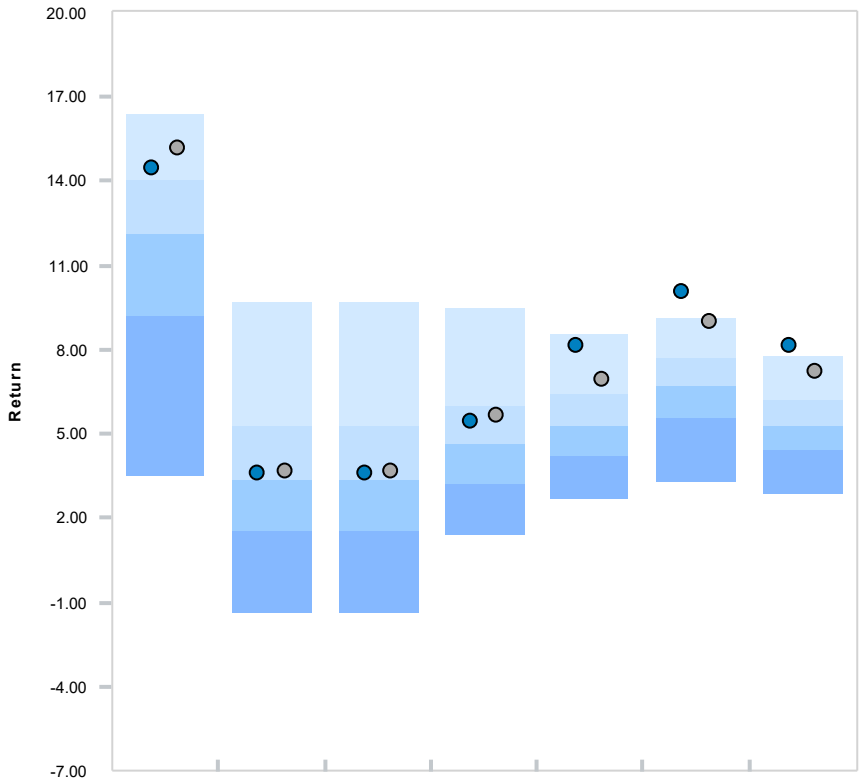
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total International Equity	**20.76 (80)**	**-12.52 (26)**	**30.90 (22)**	**3.97 (56)**	**-3.21(54)**	**-5.46 (96)**	**14.49 (84)**	**17.90 (62)**	**-12.03 (44)**	**8.17 (94)**	**34.70 (57)**	**-41.70 (33)**
MSCI AC World ex USA Index (Net)	21.51 (76)	-14.20 (61)	27.19 (63)	4.50 (47)	-5.66(82)	-3.87 (79)	15.29 (80)	16.83 (78)	-13.71 (72)	11.15 (74)	41.45 (23)	-45.53 (74)
All Master Trust-Intl. Equity Segment Median	22.67	-13.69	28.24	4.37	-2.94	-2.23	18.68	18.40	-12.55	12.90	35.64	-44.29
Templeton	11.57 (100)	-14.82 (19)	22.92 (38)	1.30 (48)	-2.67(63)	-6.78 (22)	20.48 (78)	19.47 (26)	-10.20 (13)	7.58 (20)	34.70 (21)	-41.70 (19)
MSCI EAFE Value Index (Net)	16.09 (74)	-14.78 (19)	21.44 (63)	5.02 (1)	-5.68(100)	-5.39 (16)	22.95 (3)	17.69 (49)	-12.17 (21)	3.25 (74)	34.23 (24)	-44.09 (42)
IM International Large Cap Value Equity (MF) Median	18.45	-17.83	22.09	1.18	-2.21	-9.55	21.34	17.57	-13.74	5.02	27.92	-46.14
MFS Int'l	28.68 (19)	-8.60 (10)	33.98 (6)	3.58 (11)	1.30(34)	-4.23 (37)	15.06 (70)	20.89 (21)	-9.83 (21)	N/A	N/A	N/A
MSCI AC World ex USA Growth Index (Net)	27.34 (43)	-14.43 (44)	32.01 (13)	0.12 (41)	-1.25(70)	-2.65 (24)	15.49 (66)	16.67 (70)	-14.21 (67)	14.45 (15)	38.67 (17)	-45.61 (74)
IM International Large Cap Growth Equity (MF) Median	27.03	-14.98	29.50	-0.87	-0.02	-4.98	18.48	18.97	-13.24	10.99	32.36	-42.35
Schroder	22.11 (39)	-15.63 (43)	40.94 (22)	10.41 (36)	-12.69(41)	-4.62 (71)	N/A	N/A	N/A	N/A	N/A	N/A
MSCI Emerging Markets Index (Net)	18.44 (62)	-14.58 (31)	37.28 (42)	11.19 (30)	-14.92(63)	-2.19 (43)	-2.60 (58)	18.23 (56)	-18.42 (36)	18.88 (44)	78.51 (26)	-53.33 (42)
IM Emerging Markets Equity (MF) Median	20.08	-16.40	35.37	8.35	-13.66	-2.92	-1.42	18.78	-19.51	18.32	72.67	-54.63
Total Domestic Fixed Income	**7.34 (79)**	**0.25 (29)**	**2.75 (83)**	**2.21 (86)**	**0.93(23)**	**4.30 (78)**	**-1.41 (41)**	**4.10 (94)**	**6.96 (64)**	**6.22 (92)**	**6.05 (82)**	**3.77 (21)**
Bloomberg Barclays US Aggregate Index	8.72 (58)	0.01 (36)	3.54 (69)	2.65 (78)	0.55(33)	5.97 (52)	-2.02 (54)	4.21 (92)	7.84 (51)	6.54 (89)	5.93 (82)	5.24 (17)
All Master Trust-US Fixed Income Segment Median	9.09	-0.39	4.78	4.21	-0.02	6.01	-1.83	7.78	7.85	8.82	11.63	-2.21
Northern Interm Fixed	6.84 (56)	0.94 (50)	2.14 (84)	2.02 (76)	1.14(69)	3.22 (68)	-0.74 (66)	3.87 (80)	N/A	N/A	N/A	N/A
Bloomberg Barclays US Interm Agg Index	6.67 (65)	0.92 (51)	2.27 (76)	1.97 (78)	1.21(63)	4.12 (30)	-1.02 (80)	3.56 (87)	5.97 (46)	6.15 (64)	6.46 (65)	4.86 (49)
IM U.S. Intermediate Duration (SA+CF) Median	6.93	0.94	2.54	2.37	1.30	3.56	-0.53	4.98	5.88	6.41	7.85	4.68
Northern Core Fixed	8.77 (72)	0.05 (53)	3.56 (81)	2.61 (80)	0.58(71)	6.10 (56)	-2.08 (77)	4.29 (87)	7.87 (45)	6.20 (92)	6.06 (87)	3.77 (45)
Bloomberg Barlcays US Aggregate Index	8.72 (78)	0.01 (61)	3.54 (83)	2.65 (75)	0.55(76)	5.97 (67)	-2.02 (72)	4.21 (90)	7.84 (51)	6.54 (82)	5.93 (88)	5.24 (32)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	9.19	0.06	4.04	3.10	0.82	6.16	-1.59	5.83	7.84	7.22	9.84	3.10
Total Real Estate	**7.84 (37)**	**N/A**	**N/A**	**7.22 (89)**	**12.92(83)**	**11.65 (84)**	**10.41 (92)**	**10.14 (84)**	**13.19 (82)**	**16.83 (41)**	**-22.28 (17)**	**-7.46 (34)**
NCREIF Fund Index-ODCE (EW)	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17(51)	12.28 (77)	13.34 (59)	11.03 (78)	15.96 (43)	16.14 (47)	-30.65 (53)	-10.37 (48)
IM U.S. Open End Private Real Estate (SA+CF) Median	7.02	8.42	8.08	9.35	15.23	13.59	14.47	12.48	15.71	15.76	-29.99	-11.61
Clarion Lion Properties	7.26 (45)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF Fund Index-ODCE (EW)	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17(51)	12.28 (77)	13.34 (59)	11.03 (78)	15.96 (43)	16.14 (47)	-30.65 (53)	-10.37 (48)
IM U.S. Open End Private Real Estate (SA+CF) Median	7.02	8.42	8.08	9.35	15.23	13.59	14.47	12.48	15.71	15.76	-29.99	-11.61
Principal Enhanced Property Fd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF Fund Index-ODCE (EW)	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17(51)	12.28 (77)	13.34 (59)	11.03 (78)	15.96 (43)	16.14 (47)	-30.65 (53)	-10.37 (48)
IM U.S. Open End Private Real Estate (SA+CF) Median	7.02	8.42	8.08	9.35	15.23	13.59	14.47	12.48	15.71	15.76	-29.99	-11.61
Total Infrastructure	**24.40**	**-2.85**	**24.10**	**10.37**	**10.85**	**18.28**	**29.34**	**18.61**	**N/A**	**N/A**	**N/A**	**N/A**
Lazard	24.40	-2.85	24.10	10.37	10.85	18.28	29.34	18.61	N/A	N/A	N/A	N/A
S&P Global Infrastructure Index	26.99	-9.50	20.13	12.43	-11.46	12.98	14.99	11.89	-0.39	5.77	25.28	-38.98
FTSE Developed Core Infrast 50/50 Index (Net)	25.04	-4.63	18.18	10.63	-7.56	16.02	15.48	11.49	8.00	10.34	N/A	N/A

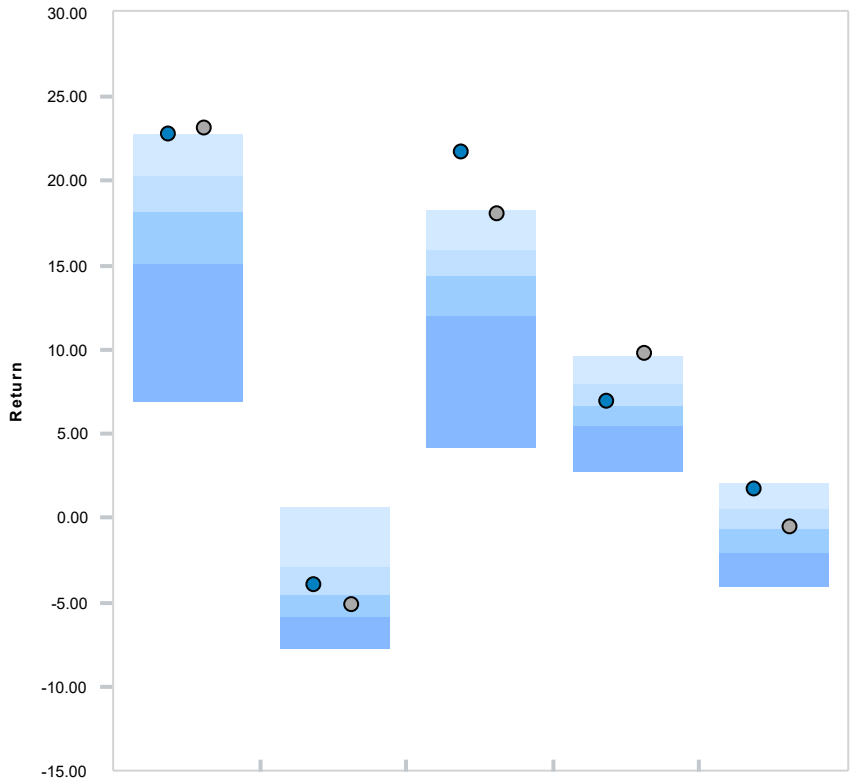
Returns are expressed as percentages.

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Cash												
Securian (Cash)	2.57	-2.55	1.43	0.68	0.28	1.66	-1.84	4.51	0.91	0.83	1.41	2.42
90 Day U.S. Treasury Bill	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17	2.10
City Reserve - Basic account	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90 Day U.S. Treasury Bill	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17	2.10
Cash	1.74	1.52	0.46	0.03	0.04	0.00	N/A	N/A	N/A	N/A	N/A	N/A
90 Day U.S. Treasury Bill	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17	2.10

Returns are expressed as percentages.

Peer Group Analysis - All Master Trust - Total Fund





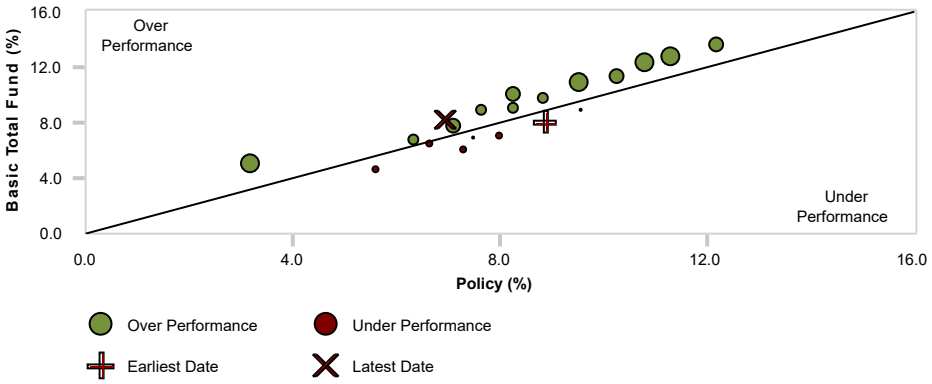
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Basic Total Fund	14.44 (21)	3.61 (47)	3.61 (47)	5.47 (34)	8.17 (7)	10.02 (2)	8.17 (4)
Policy	15.19 (13)	3.69 (46)	3.69 (46)	5.63 (31)	6.96 (18)	8.99 (7)	7.21 (10)
Median	12.10	3.39	3.39	4.62	5.27	6.74	5.32

	2019	2018	2017	2016	2015
Basic Total Fund	22.77 (5)	-4.02 (41)	21.67 (1)	6.91 (46)	1.66 (7)
Policy	23.13 (4)	-5.13 (62)	18.08 (6)	9.77 (5)	-0.51 (47)
Median	18.17	-4.55	14.39	6.73	-0.69

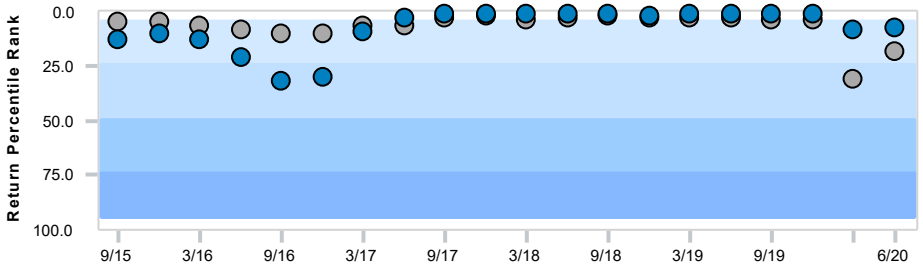
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Basic Total Fund	**-14.51 (67)**	**5.42 (40)**	**0.46 (68)**	**4.18 (10)**	**11.27 (2)**	**-11.21 (99)**
Policy	-16.30 (85)	6.72 (5)	0.78 (48)	3.62 (21)	10.48 (4)	-9.55 (90)
All Master Trust - Total Fund Median	-13.11	5.08	0.74	3.12	8.15	-7.46

3 Yr Rolling Under/Over Performance - 5 Years

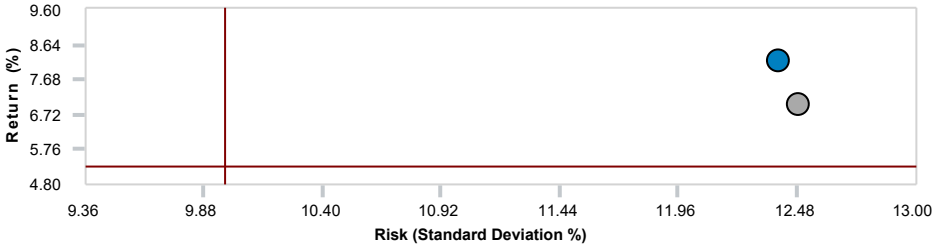


3 Yr Rolling Percentile Ranking - 5 Years



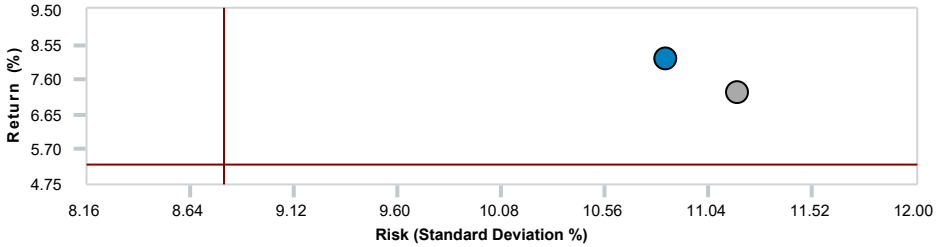
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Basic Total Fund	20	18 (90%)	2 (10%)	0 (0%)	0 (0%)
Policy	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Basic Total Fund	8.17	12.40
Policy	6.96	12.50
Median	5.26	9.97

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Basic Total Fund	8.17	10.85
Policy	7.21	11.18
Median	5.31	8.79

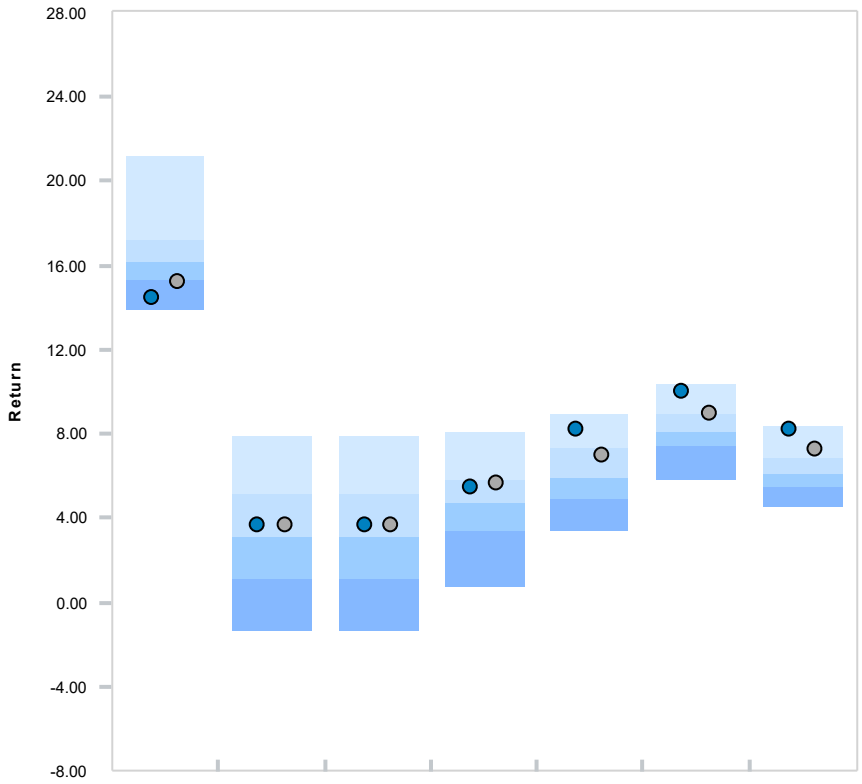
Historical Statistics - 3 Years

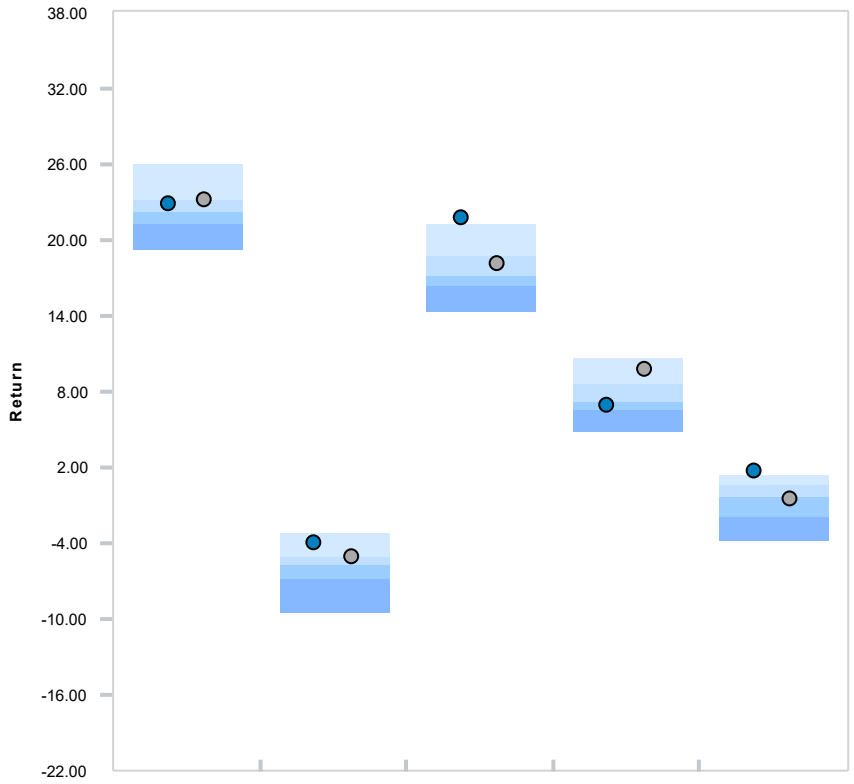
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Basic Total Fund	1.59	103.60	96.89	1.24	0.70	0.55	0.98	8.96
Policy	0.00	100.00	100.00	0.00	N/A	0.46	1.00	9.06

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Basic Total Fund	1.67	100.64	93.15	1.17	0.51	0.67	0.96	7.59
Policy	0.00	100.00	100.00	0.00	N/A	0.57	1.00	7.80

Peer Group Analysis - Master Trust >=70% Equity





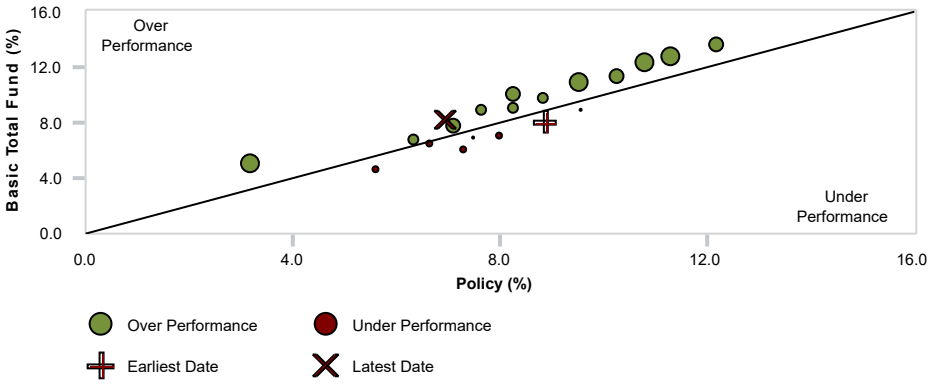
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Basic Total Fund	14.44 (90)	3.61 (33)	3.61 (33)	5.47 (33)	8.17 (16)	10.02 (11)	8.17 (8)
Policy	15.19 (79)	3.69 (32)	3.69 (32)	5.63 (30)	6.96 (28)	8.99 (25)	7.21 (20)
Median	16.14	3.06	3.06	4.66	5.94	8.14	6.15

	2019	2018	2017	2016	2015
Basic Total Fund	22.77 (31)	-4.02 (10)	21.67 (3)	6.91 (61)	1.66 (4)
Policy	23.13 (27)	-5.13 (26)	18.08 (32)	9.77 (14)	-0.51 (53)
Median	22.24	-5.81	17.10	7.22	-0.39

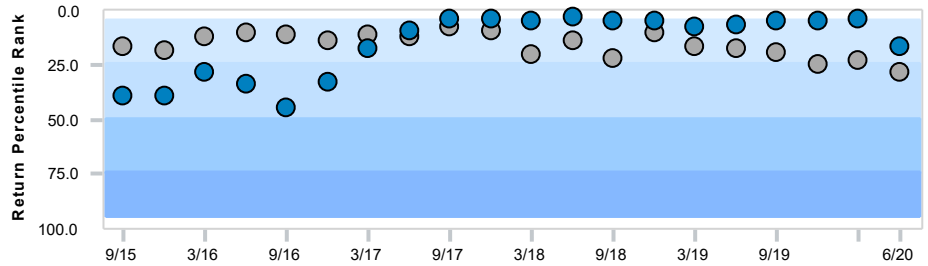
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Basic Total Fund	**-14.51 (11)**	**5.42 (95)**	**0.46 (65)**	**4.18 (14)**	**11.27 (15)**	**-11.21 (76)**
Policy	-16.30 (25)	6.72 (31)	0.78 (37)	3.62 (42)	10.48 (40)	-9.55 (11)
Master Trust >=70% Equity Median	-18.44	6.44	0.61	3.54	10.37	-10.53

3 Yr Rolling Under/Over Performance - 5 Years

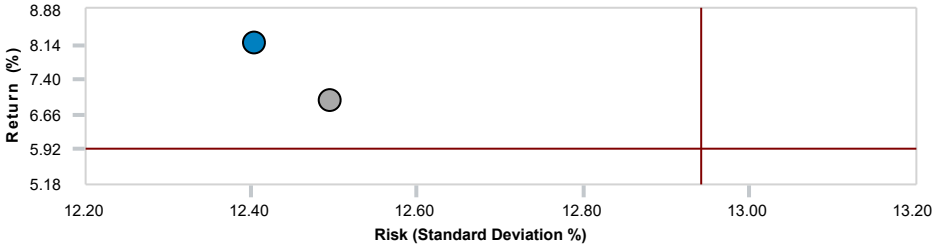


3 Yr Rolling Percentile Ranking - 5 Years



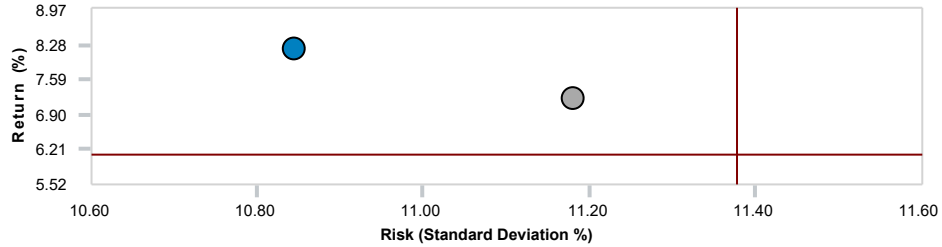
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Basic Total Fund	20	14 (70%)	6 (30%)	0 (0%)	0 (0%)
Policy	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Basic Total Fund	8.17	12.40
Policy	6.96	12.50
Median	5.94	12.94

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Basic Total Fund	8.17	10.85
Policy	7.21	11.18
Median	6.10	11.38

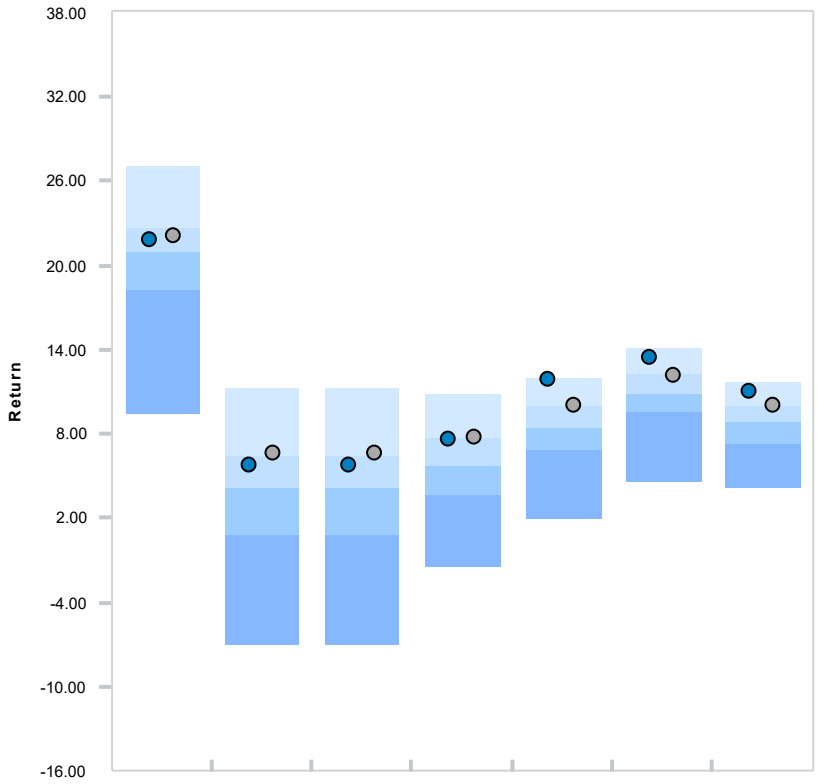
Historical Statistics - 3 Years

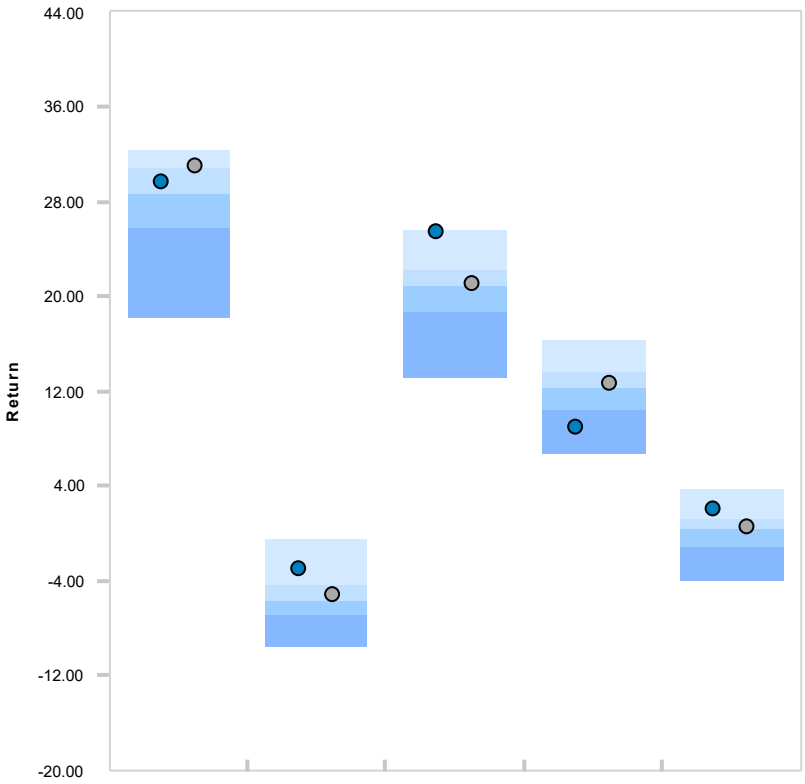
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Basic Total Fund	1.59	103.60	96.89	1.24	0.70	0.55	0.98	8.96
Policy	0.00	100.00	100.00	0.00	N/A	0.46	1.00	9.06

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Basic Total Fund	1.67	100.64	93.15	1.17	0.51	0.67	0.96	7.59
Policy	0.00	100.00	100.00	0.00	N/A	0.57	1.00	7.80

Peer Group Analysis - All Master Trust-US Equity Segment





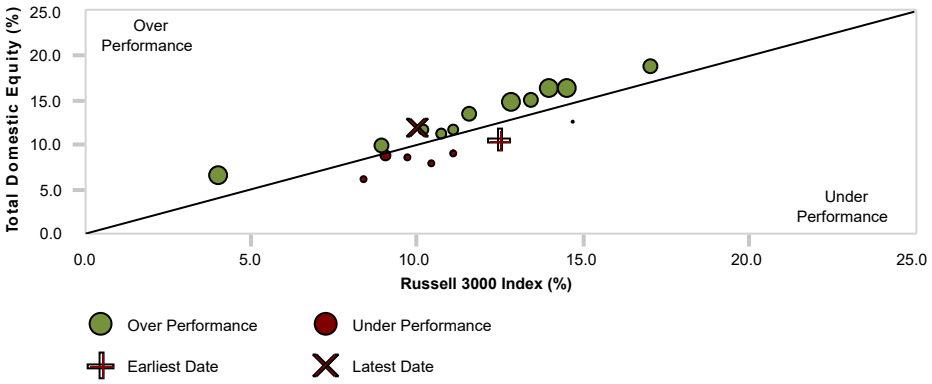
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Domestic Equity	21.83 (38)	5.67 (33)	5.67 (33)	7.58 (27)	11.89 (6)	13.48 (6)	11.01 (9)
R 3000 Index	22.03 (35)	6.53 (25)	6.53 (25)	7.75 (25)	10.04 (25)	12.10 (31)	10.03 (25)
Median	20.98	4.12	4.12	5.74	8.38	10.84	8.85

	2019	2018	2017	2016	2015
Total Domestic Equity	29.66 (41)	-3.02 (12)	25.44 (7)	8.90 (86)	2.02 (13)
R 3000 Index	31.02 (22)	-5.24 (43)	21.13 (45)	12.74 (42)	0.48 (45)
Median	28.73	-5.72	20.91	12.34	0.38

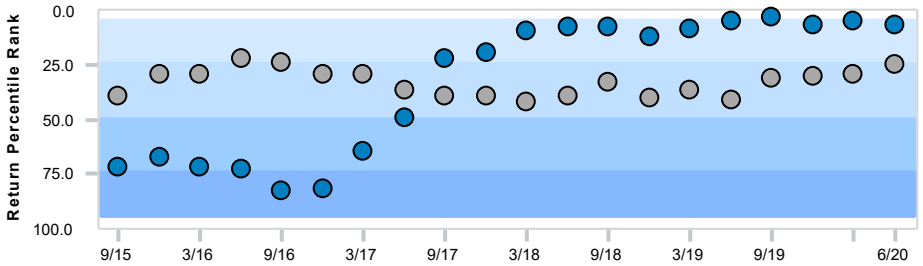
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Domestic Equity	-18.77 (20)	6.13 (90)	0.61 (57)	5.32 (4)	15.30 (6)	-15.79 (91)
Russell 3000 Index	-20.90 (46)	9.10 (31)	1.16 (28)	4.10 (31)	14.04 (31)	-14.30 (64)
All Master Trust-US Equity Segment Median	-21.19	8.70	0.75	3.80	13.56	-13.94

3 Yr Rolling Under/Over Performance - 5 Years

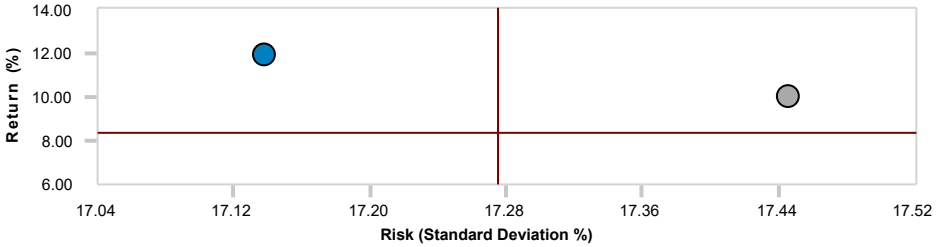


3 Yr Rolling Percentile Ranking - 5 Years



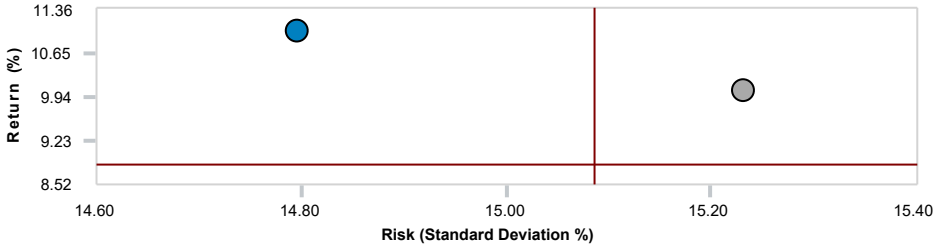
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Domestic Equity	20	12 (60%)	1 (5%)	5 (25%)	2 (10%)
R 3000 Index	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Domestic Equity	11.89	17.14
R 3000 Index	10.04	17.45
Median	8.38	17.27

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Domestic Equity	11.01	14.80
R 3000 Index	10.03	15.23
Median	8.85	15.09

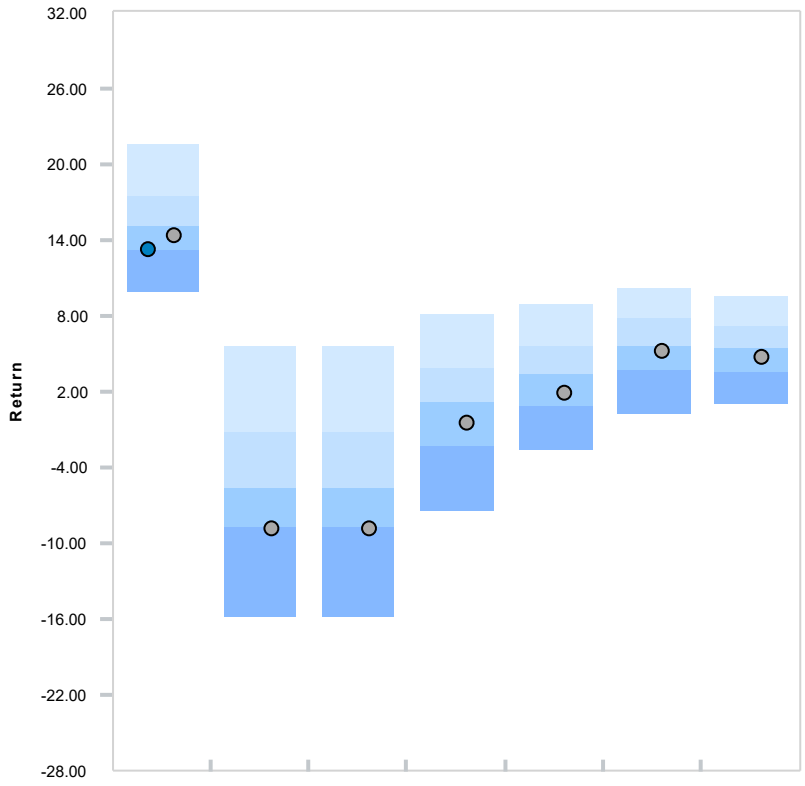
Historical Statistics - 3 Years

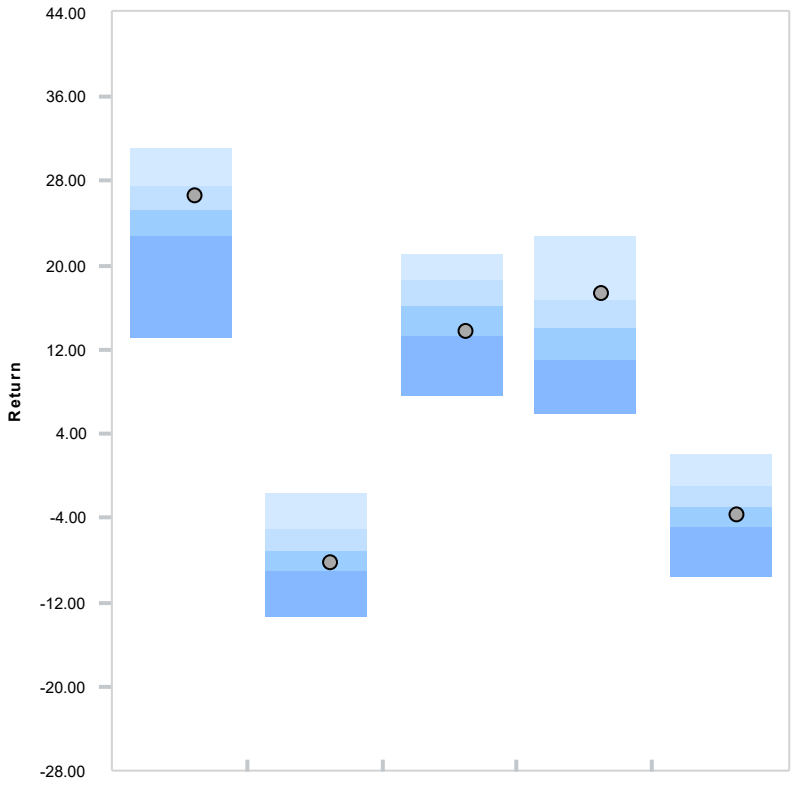
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	2.61	100.09	90.92	1.97	0.62	0.64	0.97	12.05
Russell 3000 Index	0.00	100.00	100.00	0.00	N/A	0.54	1.00	12.39

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	2.52	99.03	92.55	1.28	0.33	0.70	0.96	10.17
Russell 3000 Index	0.00	100.00	100.00	0.00	N/A	0.63	1.00	10.45

Peer Group Analysis - IM Equity Income (MF)





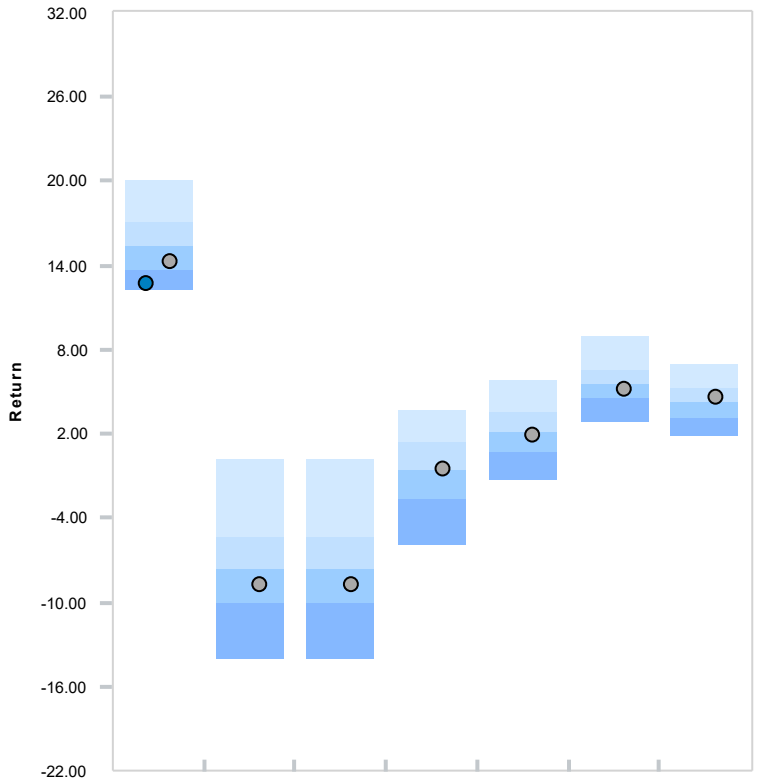
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
JPM Equity Inc (OIEJX)	13.27 (74)	N/A	N/A	N/A	N/A	N/A	N/A
R1000 V	14.29 (63)	-8.84 (76)	-8.84 (76)	-0.56 (64)	1.82 (64)	5.09 (57)	4.64 (61)
Median	15.17	-5.51	-5.51	1.24	3.46	5.61	5.41

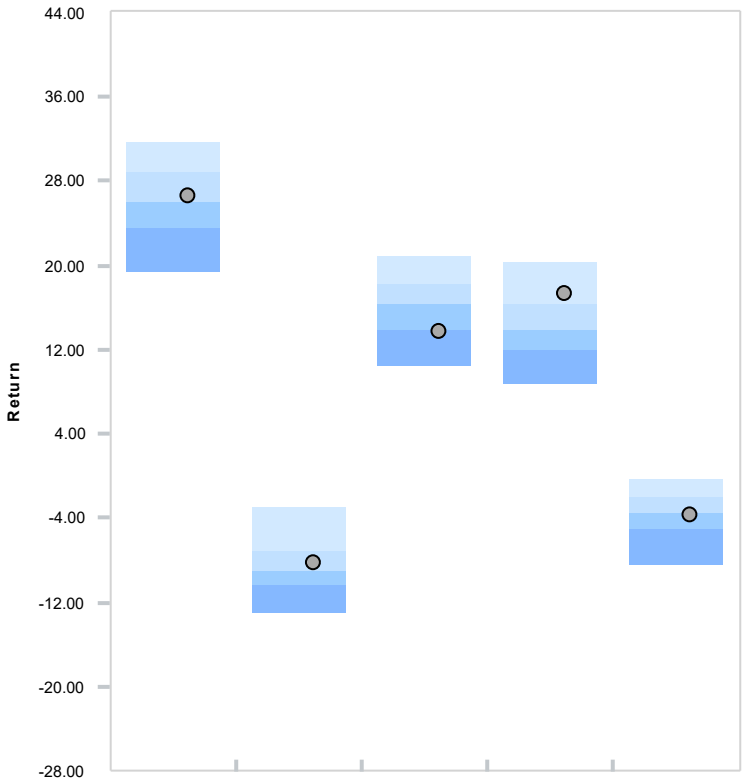
	2019	2018	2017	2016	2015
JPM Equity Inc (OIEJX)	N/A	N/A	N/A	N/A	N/A
R1000 V	26.54 (33)	-8.27 (65)	13.66 (73)	17.34 (22)	-3.83 (59)
Median	25.27	-7.25	16.16	14.10	-3.05

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
JPM Equity Inc (OIEJX)	-24.03 (52)	N/A	N/A	N/A	N/A	N/A
R 1000 V	-26.73 (73)	7.41 (27)	1.36 (79)	3.84 (42)	11.93 (30)	-11.72 (56)
IM Equity Income (MF) Median	-23.86	6.46	2.23	3.45	11.24	-11.46

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)





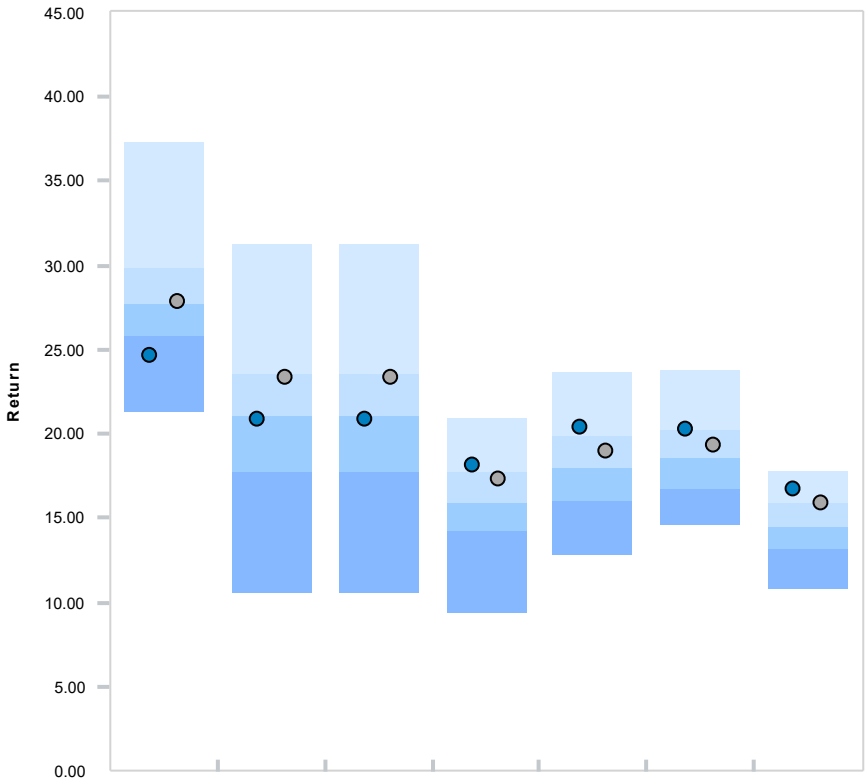
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Vanguard Equity Inc (VEIRX)	2.67 (92)	N/A	N/A	N/A	N/A	N/A	N/A
R1000 V	4.29 (68)	-8.84 (65)	-8.84 (65)	-0.56 (51)	1.82 (55)	5.09 (65)	4.64 (42)
Median	5.42	-7.67	-7.67	-0.48	2.13	5.58	4.28

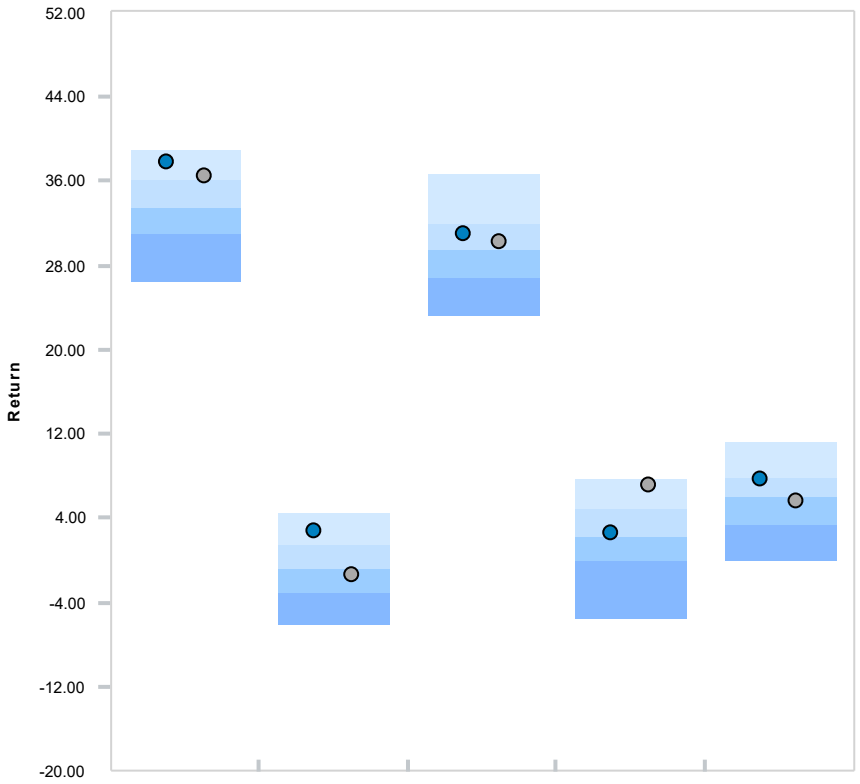
	2019	2018	2017	2016	2015
Vanguard Equity Inc (VEIRX)	N/A	N/A	N/A	N/A	N/A
R1000 V	26.54 (45)	-8.27 (36)	13.66 (77)	17.34 (19)	-3.83 (58)
Median	26.07	-9.08	16.29	13.82	-3.54

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Vanguard Equity Inc (VEIRX)	-23.06 (8)	N/A	N/A	N/A	N/A	N/A
R 1000 V	-26.73 (53)	7.41 (55)	1.36 (53)	3.84 (39)	11.93 (40)	-11.72 (29)
IM U.S. Large Cap Value Equity (MF) Median	-26.58	7.57	1.41	3.49	11.58	-12.92

Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)





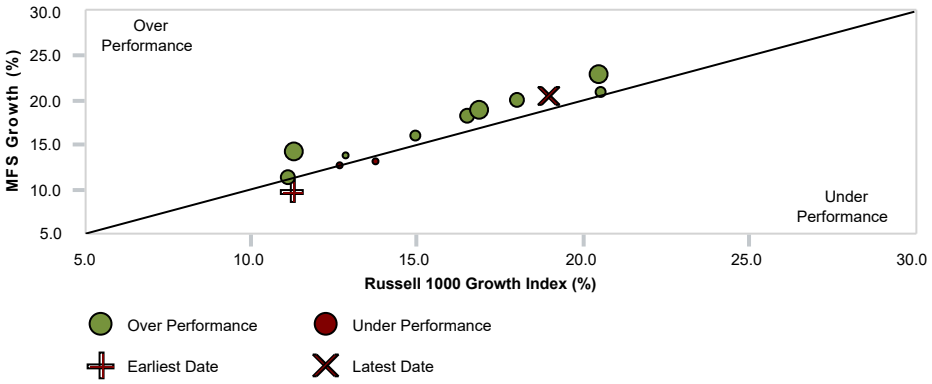
	QTR		FYTD		1 YR		2 YR		3 YR		4 YR		5 YR	
MFS Growth	24.68	(85)	20.81	(52)	20.81	(52)	18.09	(23)	20.31	(22)	20.21	(27)	16.74	(11)
R 1000 G Index	27.84	(46)	23.28	(26)	23.28	(26)	17.27	(31)	18.99	(37)	19.35	(40)	15.89	(24)
Median	27.69		21.05		21.05		15.85		18.03		18.57		14.47	

	2019		2018		2017		2016		2015	
MFS Growth	37.79	(11)	2.68	(14)	31.00	(34)	2.56	(46)	7.59	(29)
R 1000 G Index	36.39	(21)	-1.51	(58)	30.21	(41)	7.08	(8)	5.67	(54)
Median	33.38		-0.87		29.46		2.18		6.01	

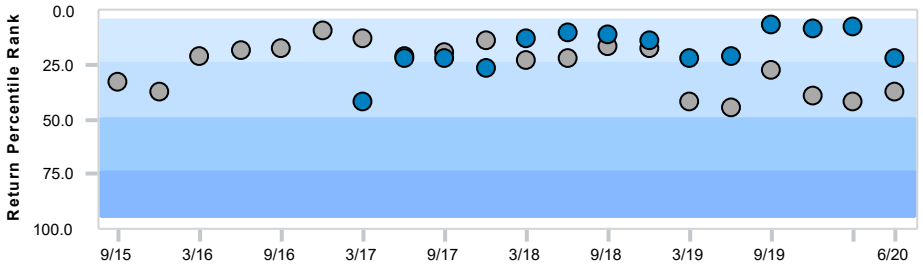
Comparative Performance

	1 Qtr Ending Mar-2020		1 Qtr Ending Dec-2019		1 Qtr Ending Sep-2019		1 Qtr Ending Jun-2019		1 Qtr Ending Mar-2019		1 Qtr Ending Dec-2018	
MFS Growth	-11.75	(18)	8.55	(78)	1.15	(22)	6.56	(11)	17.76	(10)	-15.28	(43)
Russell 1000 Growth Index	-14.10	(64)	10.62	(27)	1.49	(16)	4.64	(56)	16.10	(55)	-15.89	(53)
IM U.S. Large Cap Growth Equity (MF) Median	-13.45		9.69		-0.01		4.76		16.25		-15.76	

3 Yr Rolling Under/Over Performance - 5 Years

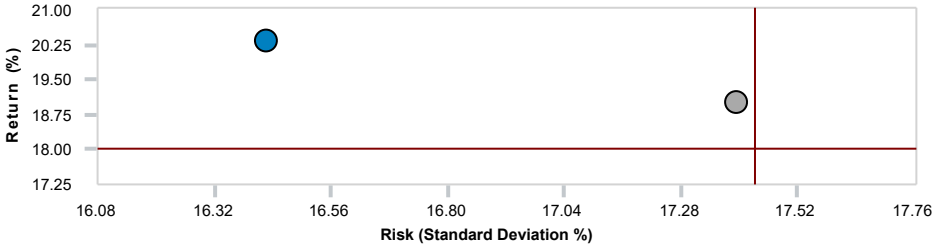


3 Yr Rolling Percentile Ranking - 5 Years



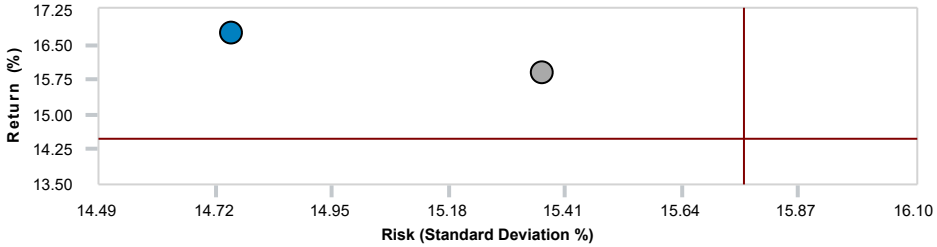
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
MFS Growth	14	12 (86%)	2 (14%)	0 (0%)	0 (0%)
R 1000 G Index	20	12 (60%)	8 (40%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
MFS Growth	20.31	16.43
R 1000 G Index	18.99	17.40
Median	18.03	17.43

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
MFS Growth	16.74	14.75
R 1000 G Index	15.89	15.36
Median	14.47	15.76

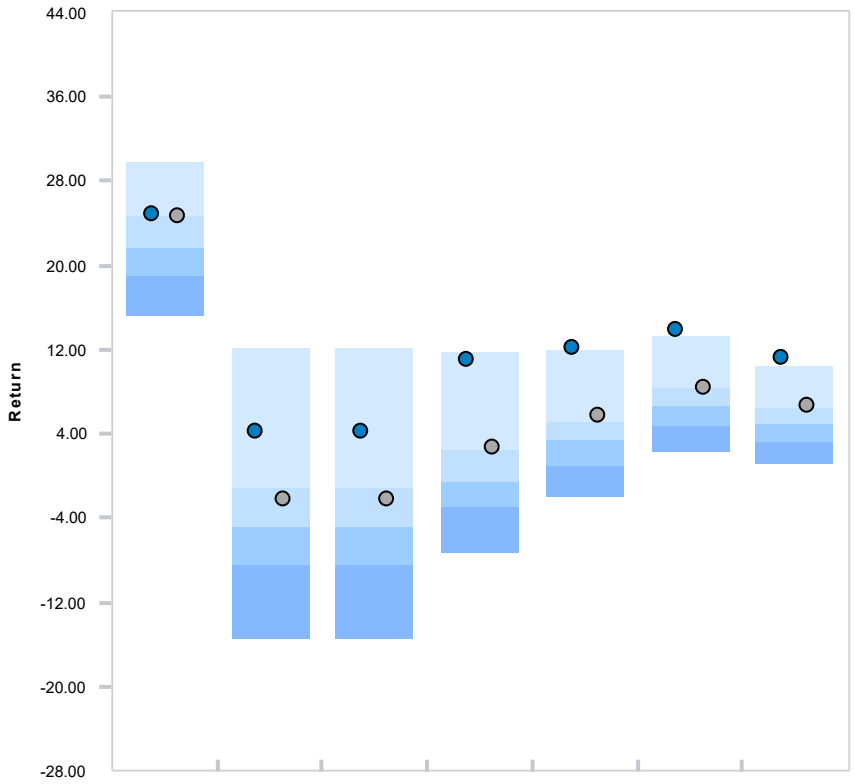
Historical Statistics - 3 Years

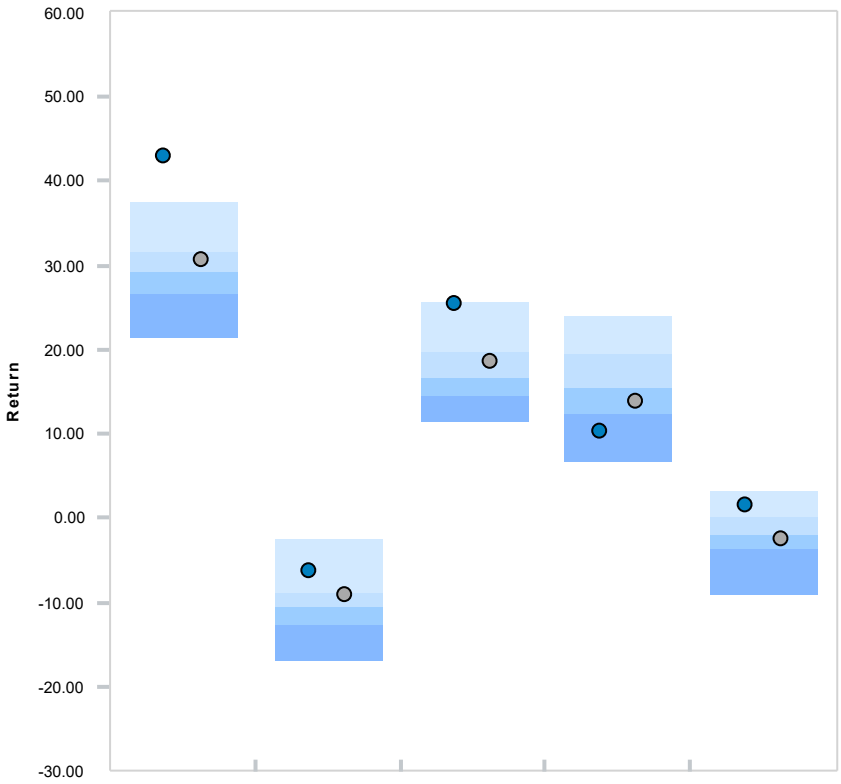
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Growth	3.10	96.47	86.00	2.31	0.31	1.10	0.93	10.00
Russell 1000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.99	1.00	10.83

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Growth	3.15	98.40	91.60	1.62	0.21	1.05	0.94	8.70
Russell 1000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.96	1.00	9.33

Peer Group Analysis - IM U.S. Mid Cap Core Equity (SA+CF+MF)





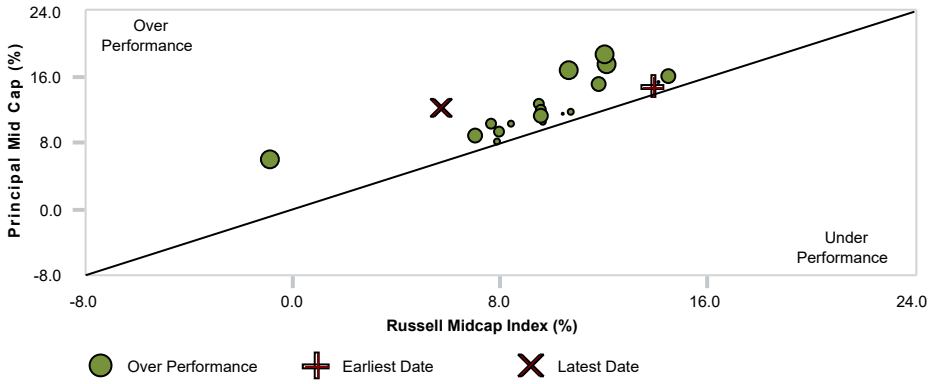
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Principal Mid Cap	24.86 (24)	4.20 (10)	4.20 (10)	10.94 (6)	12.19 (4)	13.95 (5)	11.20 (5)
R Midcap Index	24.61 (26)	-2.24 (30)	-2.24 (30)	2.67 (24)	5.79 (22)	8.37 (28)	6.76 (25)
Median	21.66	-4.82	-4.82	-0.50	3.43	6.65	4.95

	2019	2018	2017	2016	2015
Principal Mid Cap	42.89 (1)	-6.37 (16)	25.32 (8)	10.25 (82)	1.54 (18)
R Midcap Index	30.54 (39)	-9.06 (29)	18.52 (34)	13.80 (62)	-2.44 (58)
Median	29.25	-10.51	16.61	15.43	-2.14

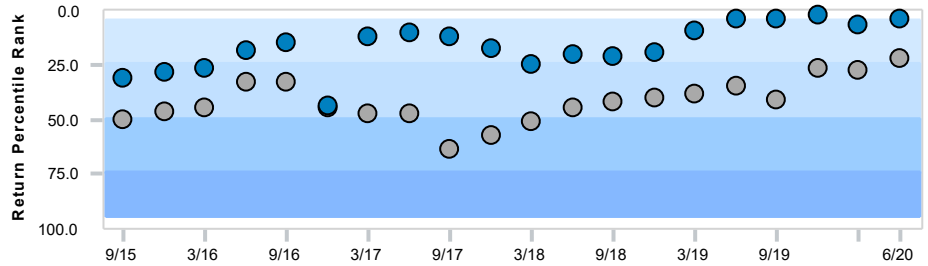
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Principal Mid Cap	-23.88 (17)	6.19 (75)	3.24 (10)	9.28 (2)	19.28 (2)	-13.30 (12)
Russell Midcap Index	-27.07 (40)	7.06 (51)	0.48 (66)	4.13 (56)	16.54 (21)	-15.37 (43)
IM U.S. Mid Cap Core Equity (SA+CF+MF) Median	-28.06	7.07	1.15	4.28	14.90	-15.65

3 Yr Rolling Under/Over Performance - 5 Years

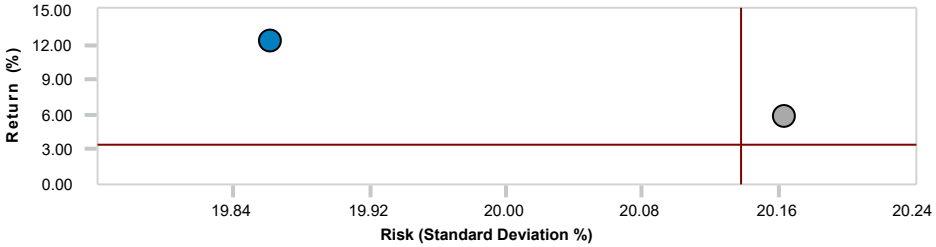


3 Yr Rolling Percentile Ranking - 5 Years



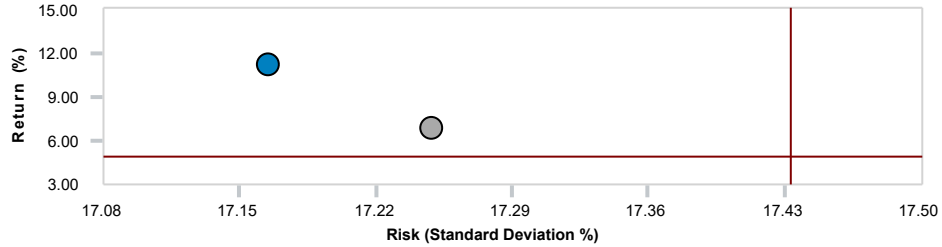
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Principal Mid Cap	20	16 (80%)	4 (20%)	0 (0%)	0 (0%)
R Midcap Index	20	1 (5%)	16 (80%)	3 (15%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Principal Mid Cap	12.19	19.86
R Midcap Index	5.79	20.16
Median	3.43	20.14

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Principal Mid Cap	11.20	17.16
R Midcap Index	6.76	17.25
Median	4.95	17.43

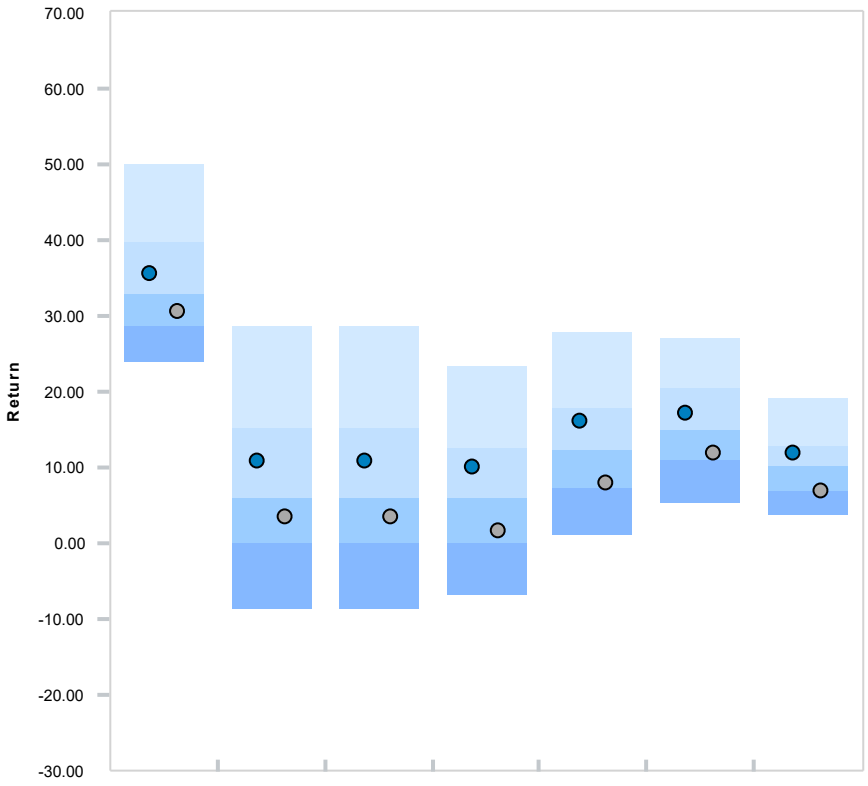
Historical Statistics - 3 Years

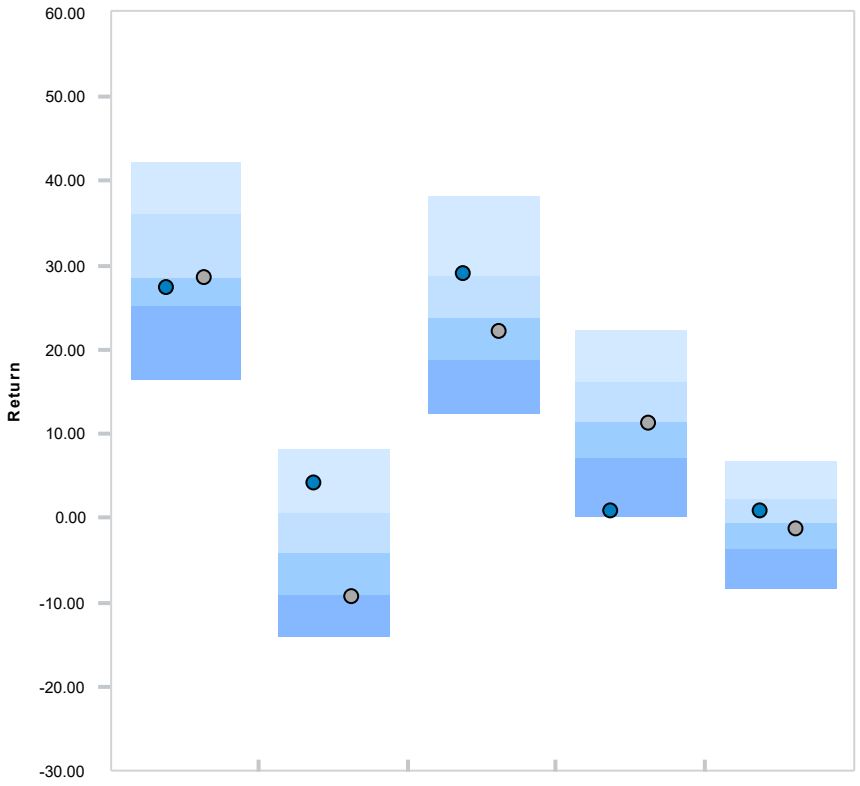
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Principal Mid Cap	7.08	100.24	71.83	6.67	0.83	0.60	0.92	14.58
Russell Midcap Index	0.00	100.00	100.00	0.00	N/A	0.30	1.00	15.13

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Principal Mid Cap	5.89	103.13	80.12	4.71	0.70	0.64	0.94	12.27
Russell Midcap Index	0.00	100.00	100.00	0.00	N/A	0.40	1.00	12.56

Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF)





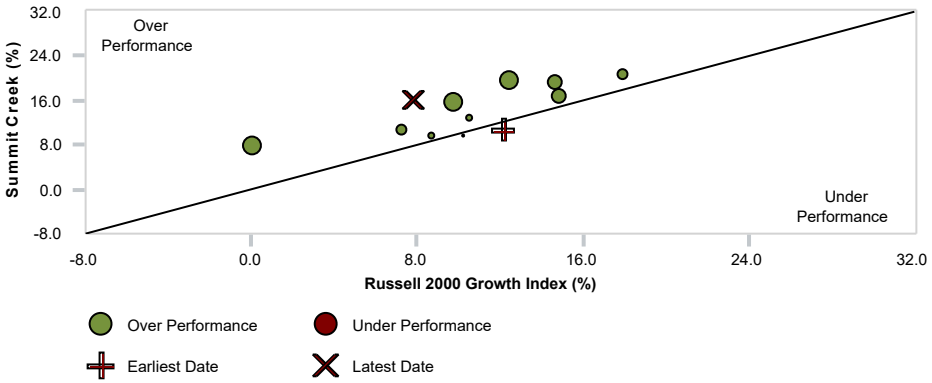
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Summit Creek	35.61 (37)	10.68 (37)	10.68 (37)	10.06 (32)	16.06 (33)	17.03 (37)	11.72 (35)
R 2000 G Index	30.58 (60)	3.48 (57)	3.48 (57)	1.47 (70)	7.86 (73)	11.78 (71)	6.86 (76)
Median	32.78	5.99	5.99	6.13	12.27	14.99	10.20

	2019	2018	2017	2016	2015
Summit Creek	27.39 (62)	4.18 (12)	29.03 (24)	0.84 (93)	0.80 (37)
R 2000 G Index	28.48 (51)	-9.31 (77)	22.17 (57)	11.32 (52)	-1.38 (56)
Median	28.49	-4.24	23.81	11.40	-0.74

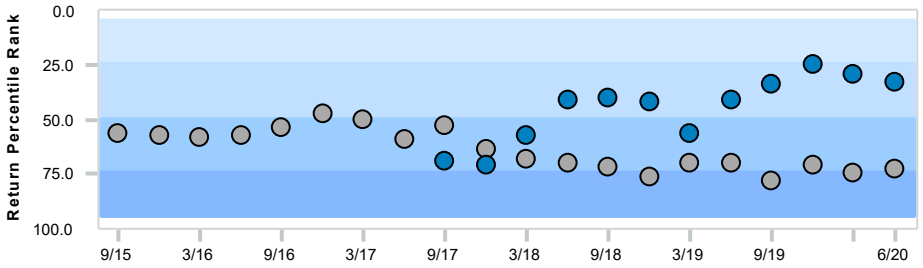
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Summit Creek	-21.14 (33)	8.94 (59)	-5.00 (61)	4.99 (47)	17.25 (52)	-19.88 (34)
Russell 2000 Growth Index	-25.76 (67)	11.39 (27)	-4.17 (52)	2.75 (80)	17.14 (54)	-21.65 (66)
IM U.S. Small Cap Growth Equity (SA+CF) Median	-23.57	9.39	-4.14	4.51	17.48	-20.69

3 Yr Rolling Under/Over Performance - 5 Years

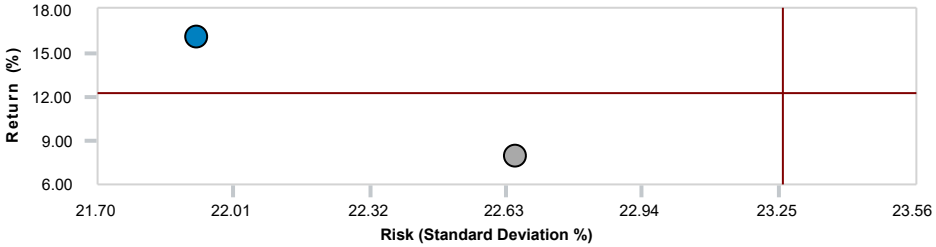


3 Yr Rolling Percentile Ranking - 5 Years



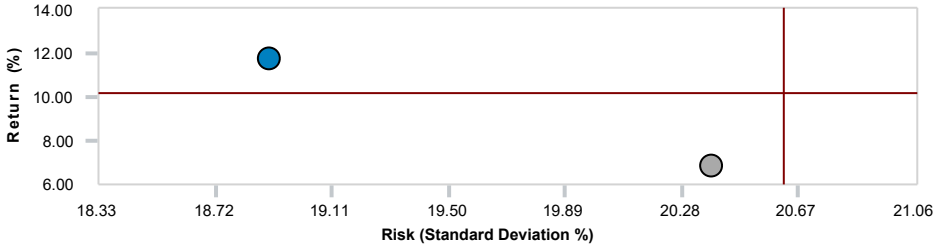
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Summit Creek	12	1 (8%)	7 (58%)	4 (33%)	0 (0%)
R 2000 G Index	20	0 (0%)	2 (10%)	16 (80%)	2 (10%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Summit Creek	16.06	21.93
R 2000 G Index	7.86	22.65
Median	12.27	23.26

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Summit Creek	11.72	18.90
R 2000 G Index	6.86	20.38
Median	10.20	20.62

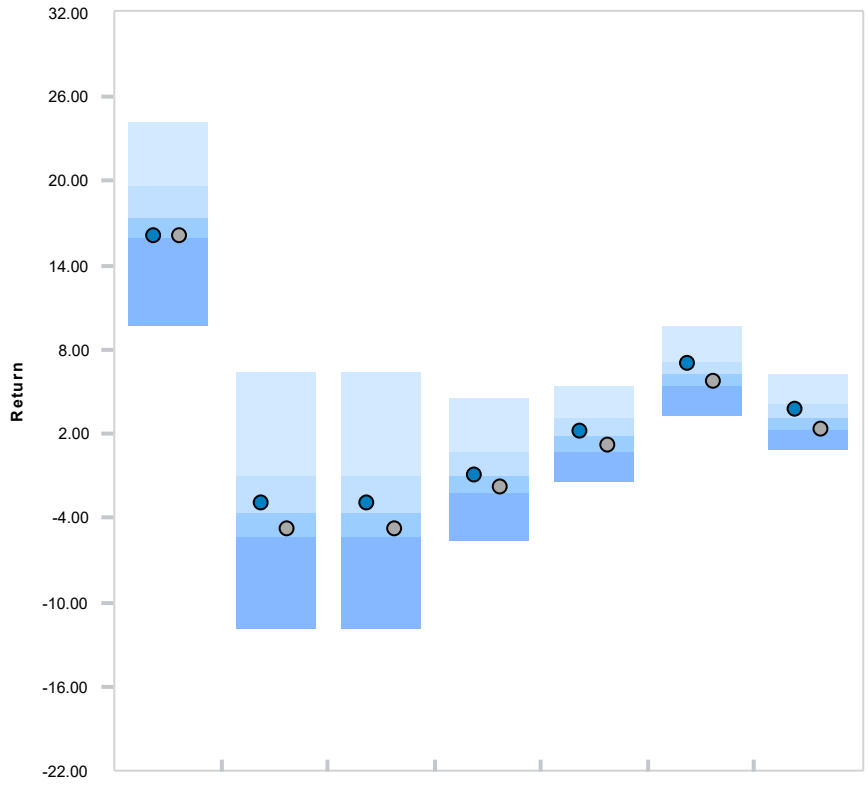
Historical Statistics - 3 Years

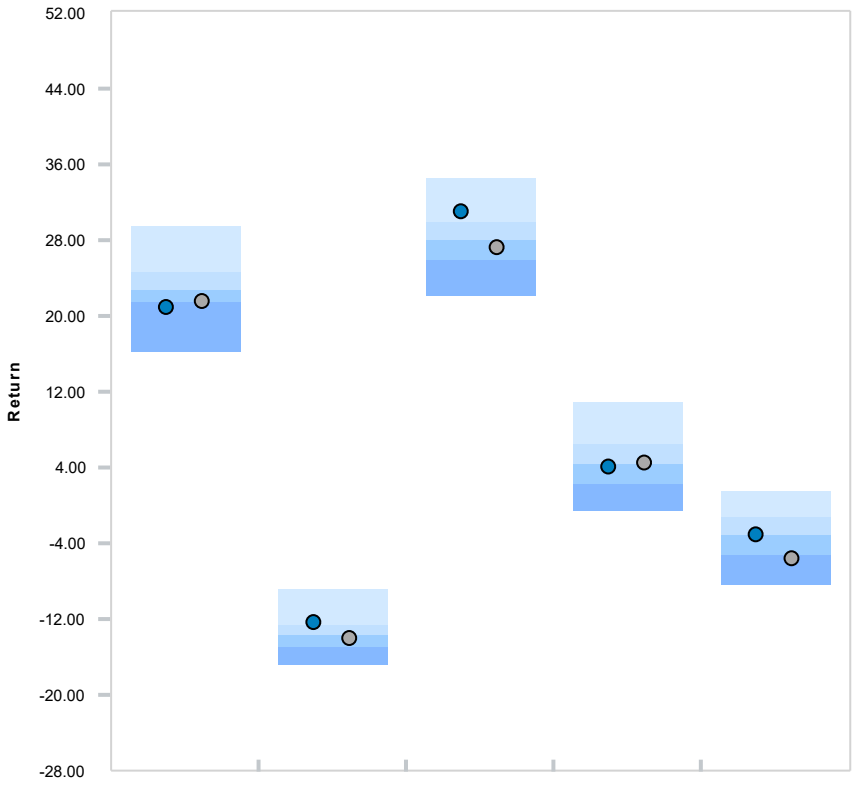
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Summit Creek	4.38	108.56	81.91	7.97	1.64	0.71	0.95	14.38
Russell 2000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.37	1.00	16.38

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Summit Creek	5.90	96.82	76.45	5.25	0.70	0.62	0.89	12.62
Russell 2000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.37	1.00	14.71

Peer Group Analysis - All Master Trust-Intl. Equity Segment





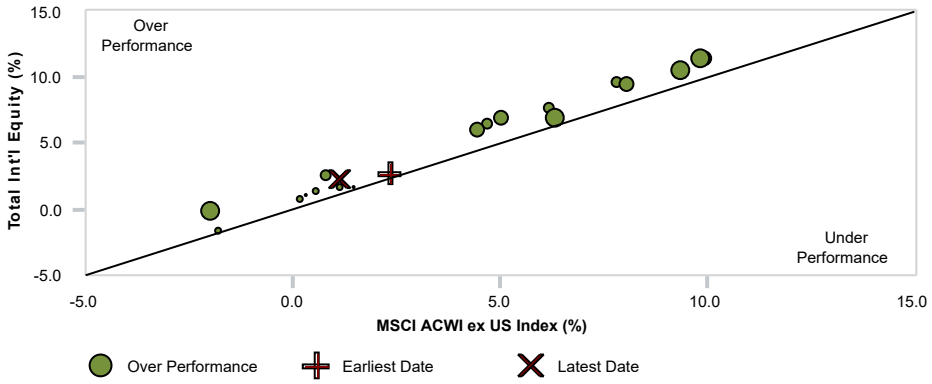
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Int'l Equity	16.13 (71)	-2.97 (42)	-2.97 (42)	-1.01 (51)	2.19 (40)	6.97 (28)	3.67 (30)
ACWIxUS Index	16.12 (71)	-4.80 (65)	-4.80 (65)	-1.80 (67)	1.13 (67)	5.65 (69)	2.26 (77)
Median	17.42	-3.74	-3.74	-0.99	1.80	6.32	3.10

	2019	2018	2017	2016	2015
Total Int'l Equity	20.76 (80)	-12.52 (25)	30.90 (18)	3.97 (55)	-3.21 (51)
ACWIxUS Index	21.51 (76)	-14.20 (61)	27.19 (62)	4.50 (49)	-5.66 (81)
Median	22.67	-13.68	28.09	4.41	-3.21

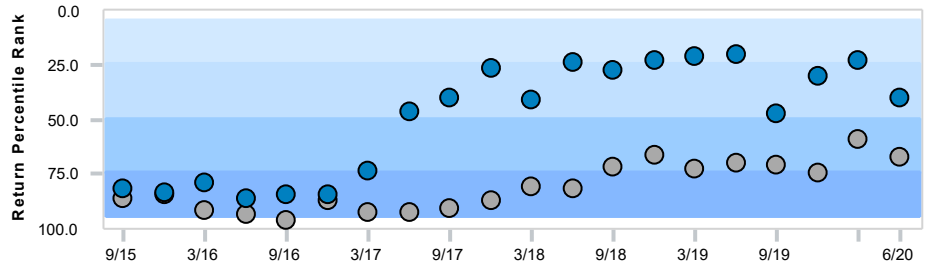
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Int'l Equity	-21.92 (23)	9.88 (34)	-2.61 (86)	2.57 (74)	10.02 (77)	-11.45 (42)
MSCI ACWI ex US Index	-23.36 (42)	8.92 (65)	-1.80 (70)	2.98 (59)	10.31 (67)	-11.46 (43)
All Master Trust-Intl. Equity Segment Median	-23.70	9.31	-1.41	3.13	10.77	-11.69

3 Yr Rolling Under/Over Performance - 5 Years

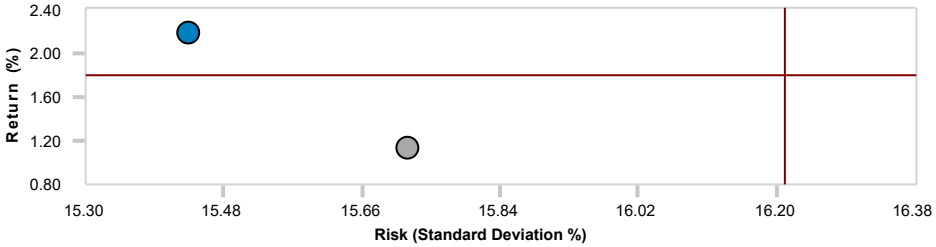


3 Yr Rolling Percentile Ranking - 5 Years



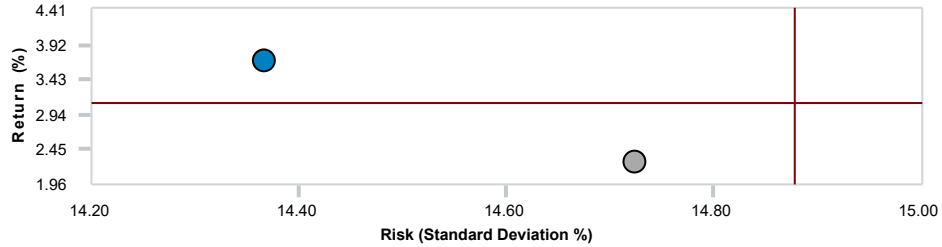
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Int'l Equity	20	5 (25%)	8 (40%)	1 (5%)	6 (30%)
ACWIxUS Index	20	0 (0%)	0 (0%)	8 (40%)	12 (60%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Int'l Equity	2.19	15.44
ACWIxUS Index	1.13	15.72
Median	1.80	16.21

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Int'l Equity	3.67	14.37
ACWIxUS Index	2.26	14.73
Median	3.10	14.88

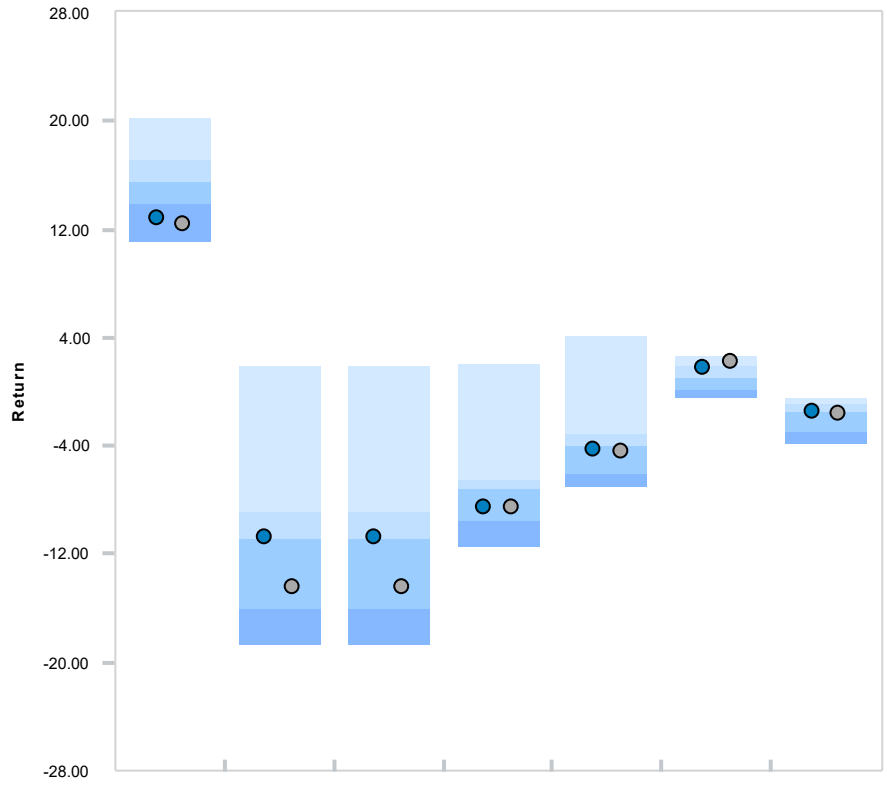
Historical Statistics - 3 Years

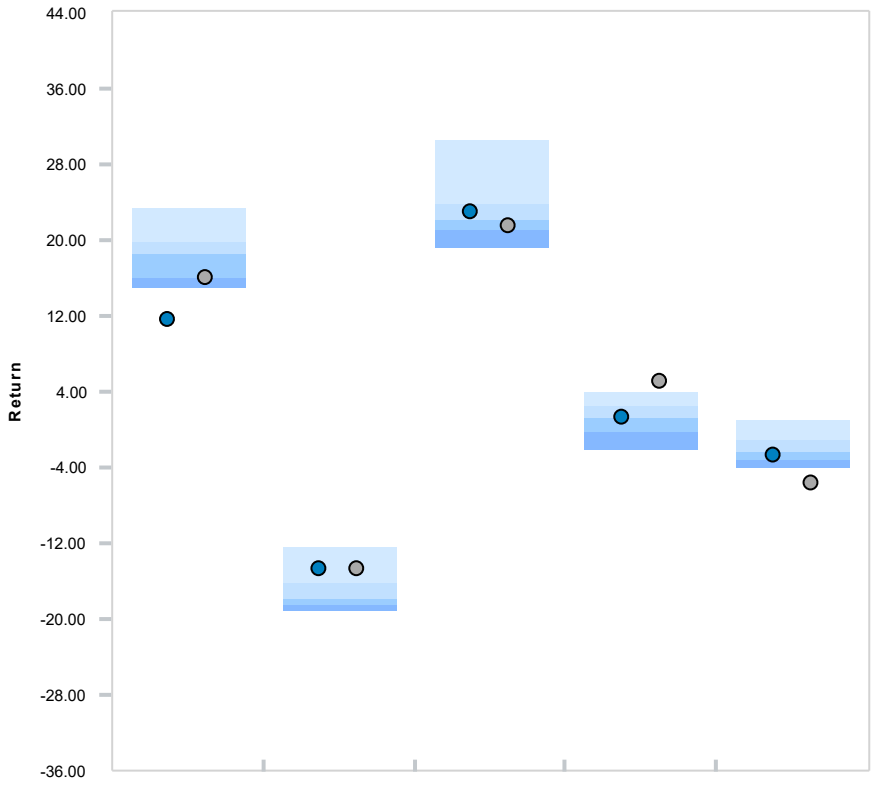
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Equity	1.77	100.85	96.02	1.05	0.56	0.11	0.98	11.81
MSCI ACWI ex US Index	0.00	100.00	100.00	0.00	N/A	0.04	1.00	12.17

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Equity	2.23	101.31	94.35	1.45	0.59	0.24	0.96	10.40
MSCI ACWI ex US Index	0.00	100.00	100.00	0.00	N/A	0.15	1.00	10.88

Peer Group Analysis - IM International Large Cap Value Equity (MF)





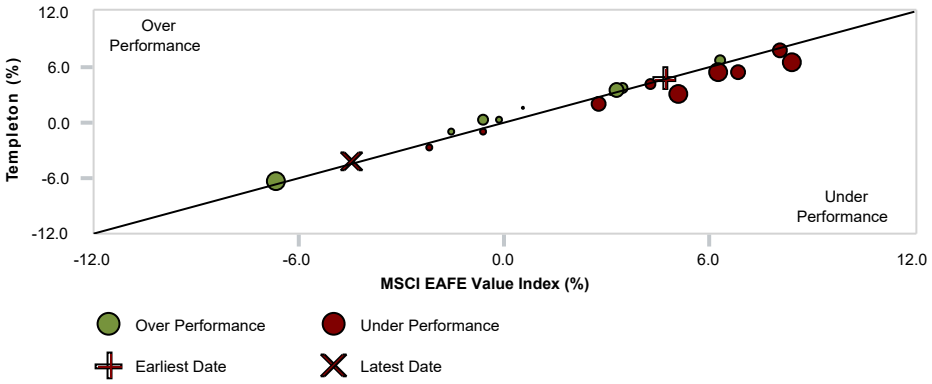
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Templeton	12.82 (82)	-10.81 (49)	-10.81 (49)	-8.57 (69)	-4.31 (61)	1.81 (28)	-1.54 (53)
EAFE V Index	12.43 (88)	-14.48 (70)	-14.48 (70)	-8.50 (67)	-4.43 (63)	2.20 (14)	-1.59 (54)
Median	15.40	-10.88	-10.88	-7.17	-3.94	1.01	-1.51

	2019	2018	2017	2016	2015
Templeton	11.57 (100)	-14.82 (19)	22.92 (38)	1.30 (48)	-2.67 (63)
EAFE V Index	16.09 (74)	-14.78 (19)	21.44 (63)	5.02 (1)	-5.68 (100)
Median	18.45	-17.83	22.09	1.18	-2.21

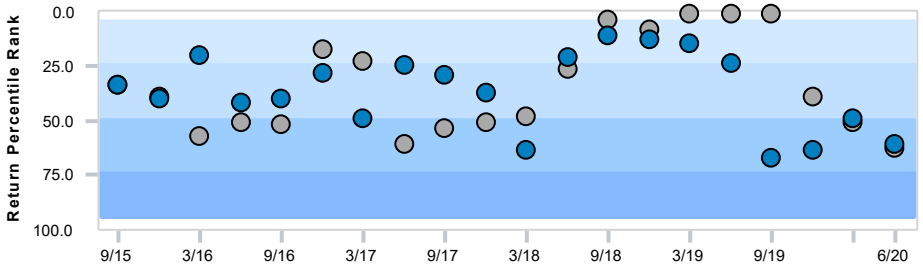
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Templeton	-24.71 (10)	8.22 (87)	-2.97 (100)	-0.36 (100)	6.64 (96)	-12.65 (23)
MSCI EAFE Value Index	-28.20 (49)	7.82 (99)	-1.74 (51)	1.54 (64)	7.92 (51)	-11.70 (13)
IM International Large Cap Value Equity (MF) Median	-28.23	8.77	-1.73	2.40	7.92	-13.74

3 Yr Rolling Under/Over Performance - 5 Years

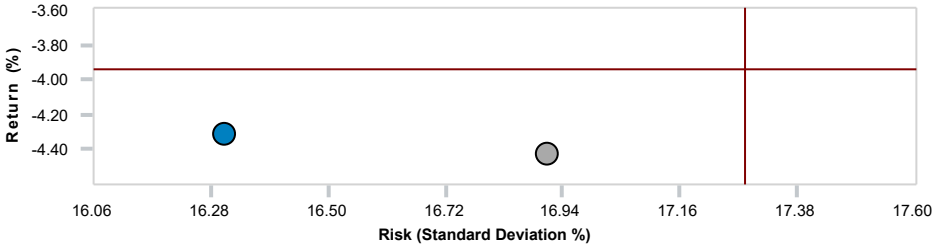


3 Yr Rolling Percentile Ranking - 5 Years



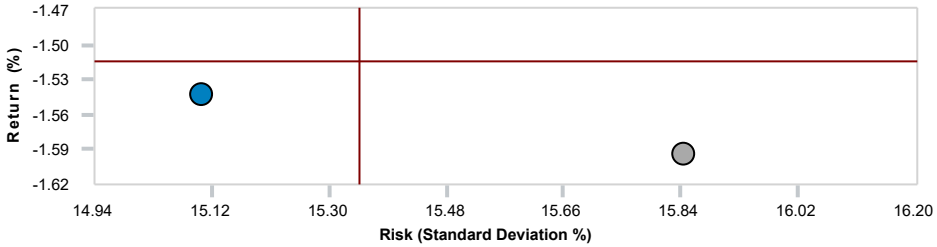
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Templeton	20	7 (35%)	9 (45%)	4 (20%)	0 (0%)
EAFE V Index	20	7 (35%)	5 (25%)	8 (40%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Templeton	-4.31	16.31
EAFE V Index	-4.43	16.91
Median	-3.94	17.28

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Templeton	-1.54	15.10
EAFE V Index	-1.59	15.85
Median	-1.51	15.35

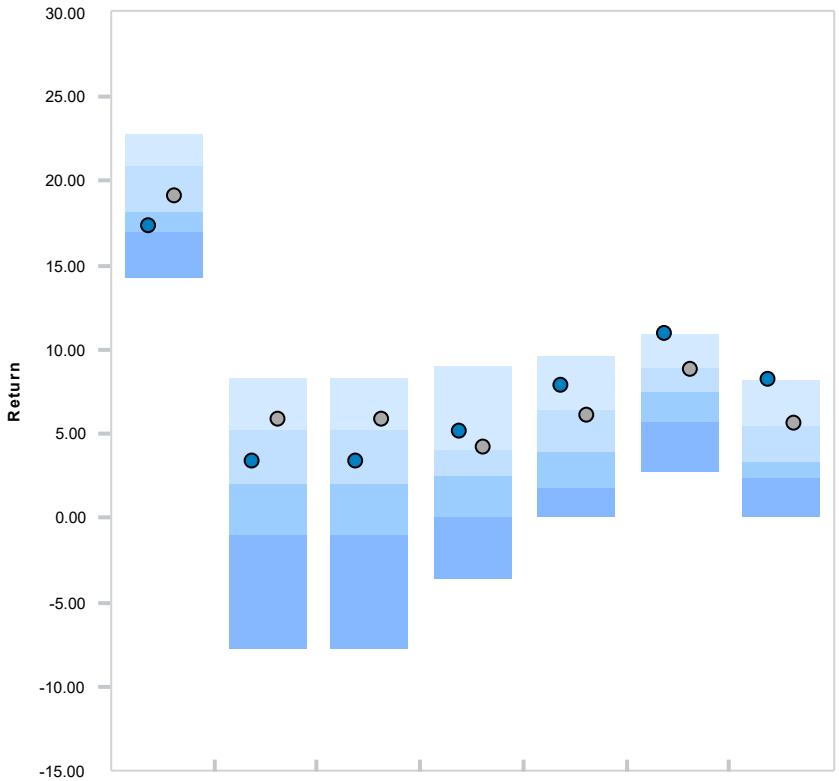
Historical Statistics - 3 Years

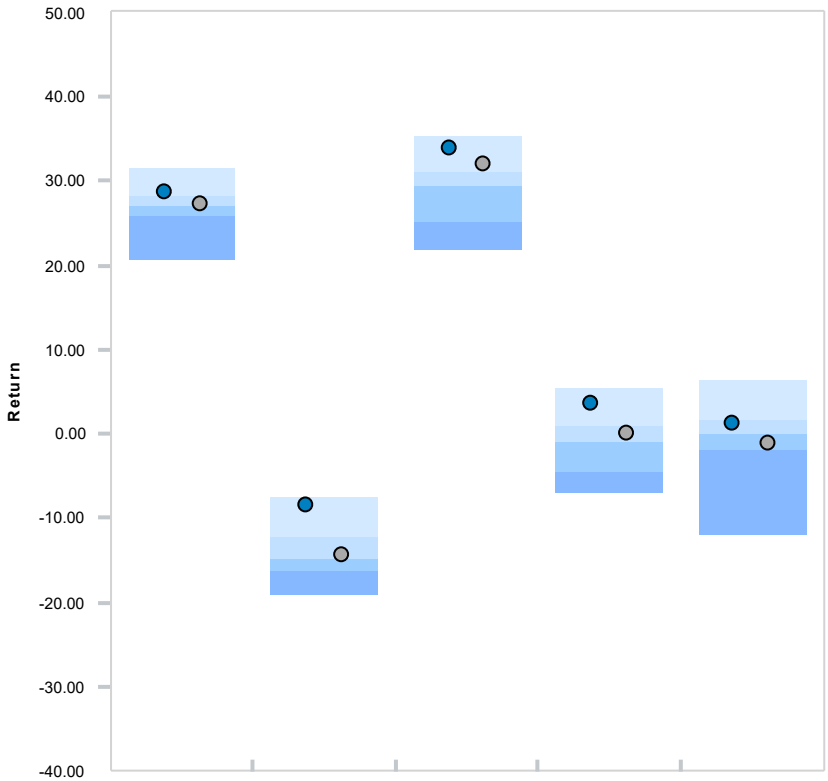
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Templeton	3.27	96.06	96.54	-0.16	0.00	-0.29	0.95	13.45
MSCI EAFE Value Index	0.00	100.00	100.00	0.00	N/A	-0.28	1.00	14.18

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Templeton	3.40	93.57	94.03	-0.10	-0.02	-0.10	0.93	11.86
MSCI EAFE Value Index	0.00	100.00	100.00	0.00	N/A	-0.09	1.00	12.69

Peer Group Analysis - IM International Large Cap Growth Equity (MF)





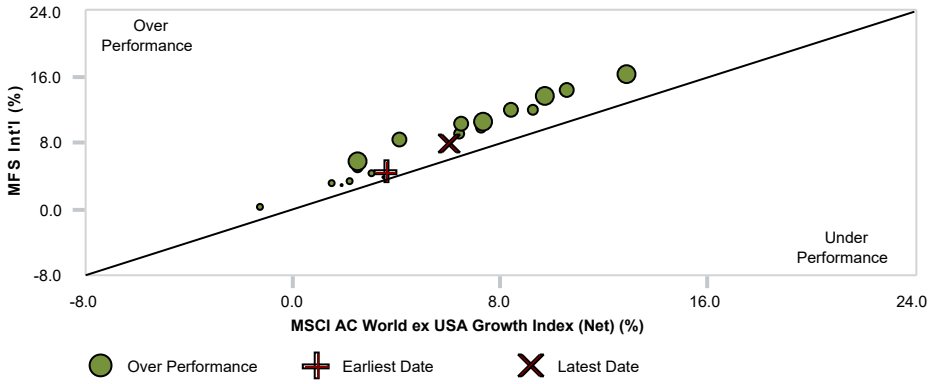
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
MFS Int'l	17.31 (66)	3.31 (33)	3.31 (33)	5.16 (16)	7.80 (11)	10.99 (5)	8.24 (5)
ACWIxUS Gr Index	19.11 (35)	5.80 (21)	5.80 (21)	4.21 (23)	6.07 (29)	8.79 (28)	5.61 (25)
Median	18.13	2.00	2.00	2.48	3.99	7.47	3.30

	2019	2018	2017	2016	2015
MFS Int'l	28.68 (19)	-8.60 (10)	33.98 (6)	3.58 (11)	1.30 (34)
ACWIxUS Gr Index	27.34 (43)	-14.43 (44)	32.01 (13)	0.12 (41)	-1.25 (70)
Median	27.03	-14.98	29.50	-0.87	-0.02

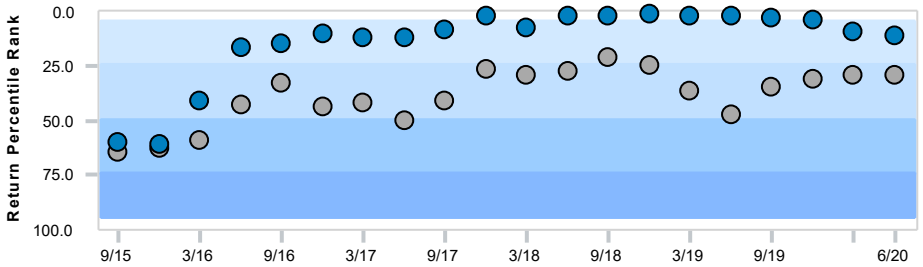
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
MFS Int'l	-18.64 (26)	10.72 (15)	-2.23 (86)	5.29 (30)	12.90 (40)	-11.57 (26)
MSCI AC World ex USA Growth Index (Net)	-18.25 (23)	9.58 (41)	-0.85 (32)	4.35 (53)	12.31 (55)	-12.20 (37)
IM International Large Cap Growth Equity (MF) Median	-20.57	9.00	-1.46	4.44	12.52	-12.70

3 Yr Rolling Under/Over Performance - 5 Years

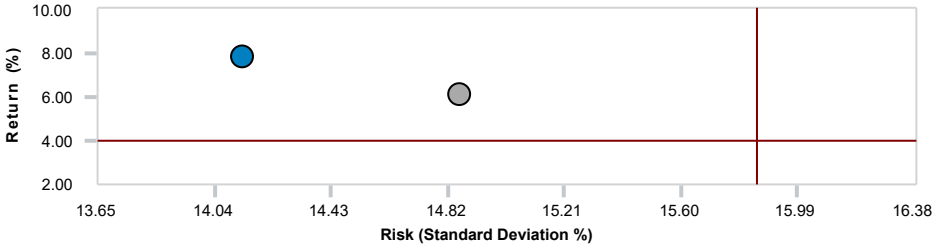


3 Yr Rolling Percentile Ranking - 5 Years



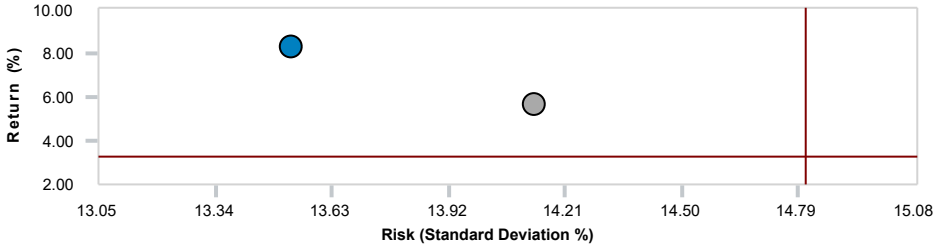
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
MFS Int'l	20	17 (85%)	1 (5%)	2 (10%)	0 (0%)
ACWIxUS Gr Index	20	2 (10%)	15 (75%)	3 (15%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
MFS Int'l	7.80	14.13
ACWIxUS Gr Index	6.07	14.86
Median	3.99	15.86

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
MFS Int'l	8.24	13.53
ACWIxUS Gr Index	5.61	14.13
Median	3.30	14.81

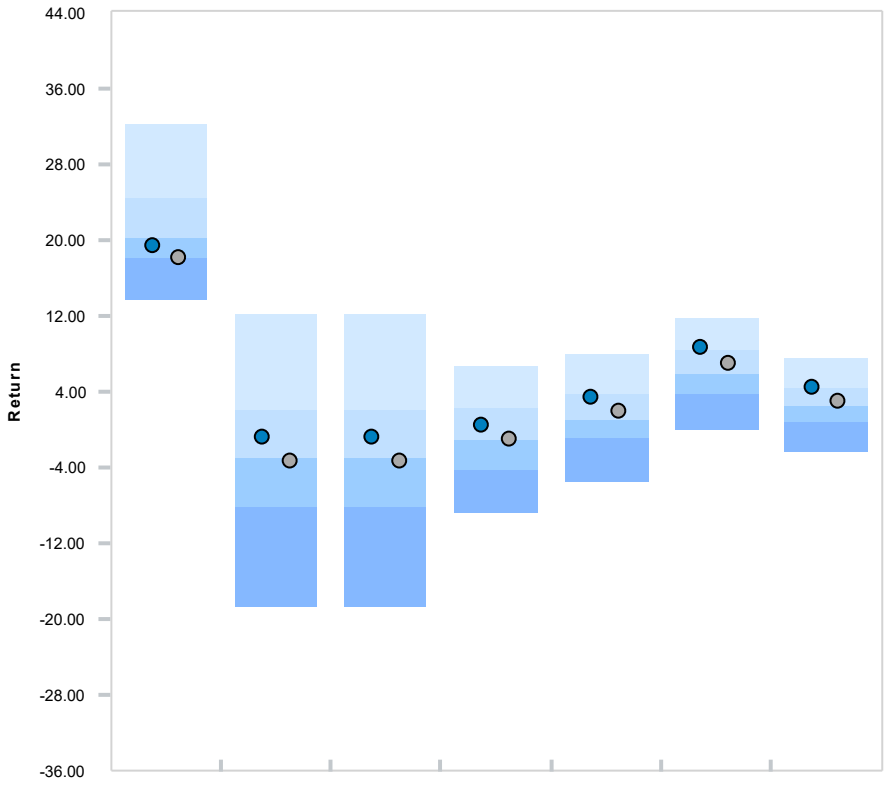
Historical Statistics - 3 Years

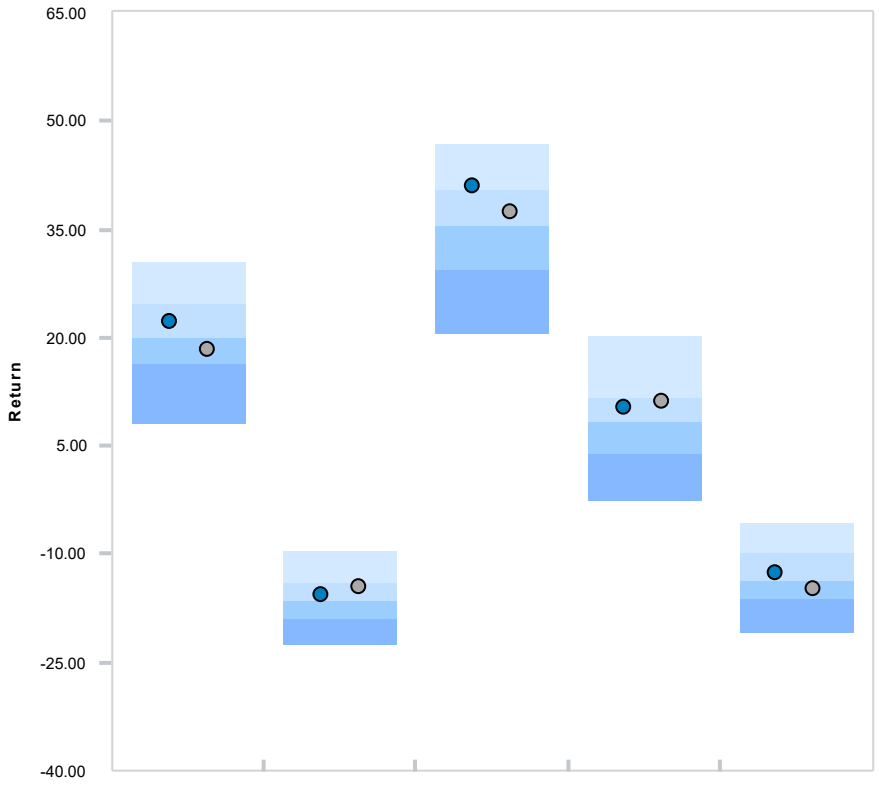
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Int'l	2.75	98.73	89.10	2.00	0.55	0.48	0.94	10.15
MSCI AC World ex USA Growth Index (Net)	0.00	100.00	100.00	0.00	N/A	0.35	1.00	10.63

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Int'l	2.91	101.40	87.05	2.83	0.82	0.57	0.94	9.24
MSCI AC World ex USA Growth Index (Net)	0.00	100.00	100.00	0.00	N/A	0.37	1.00	9.79

Peer Group Analysis - IM Emerging Markets Equity (MF)





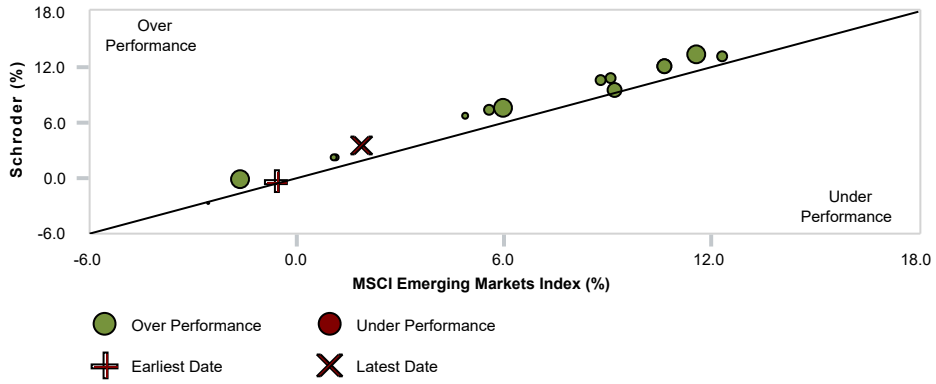
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Schroder	19.31 (61)	-0.83 (36)	-0.83 (36)	0.35 (39)	3.36 (29)	8.65 (23)	4.50 (26)
Em Mkt Index	18.08 (75)	-3.39 (53)	-3.39 (53)	-1.12 (51)	1.90 (44)	6.97 (36)	2.86 (46)
Median	20.27	-3.04	-3.04	-1.07	1.15	5.92	2.57

	2019	2018	2017	2016	2015
Schroder	22.11 (39)	-15.63 (43)	40.94 (22)	10.41 (36)	-12.69 (41)
Em Mkt Index	18.44 (62)	-14.58 (31)	37.28 (42)	11.19 (30)	-14.92 (63)
Median	20.08	-16.40	35.37	8.35	-13.66

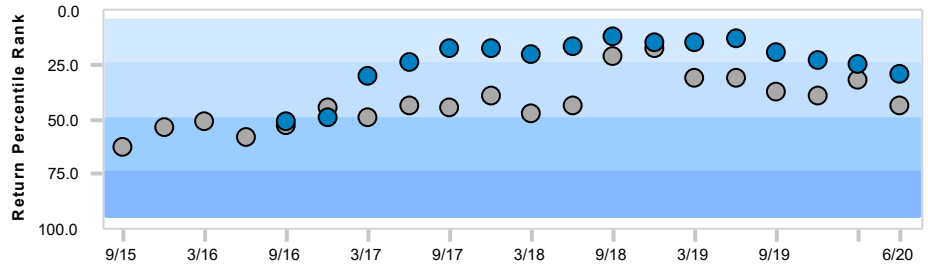
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Schroder	-23.21 (32)	11.22 (46)	-2.68 (34)	2.15 (38)	10.45 (49)	-8.88 (74)
MSCI Emerging Markets Index	-23.60 (35)	11.84 (31)	-4.25 (69)	0.61 (76)	9.93 (59)	-7.47 (48)
IM Emerging Markets Equity (MF) Median	-24.82	11.03	-3.46	1.60	10.38	-7.62

3 Yr Rolling Under/Over Performance - 5 Years

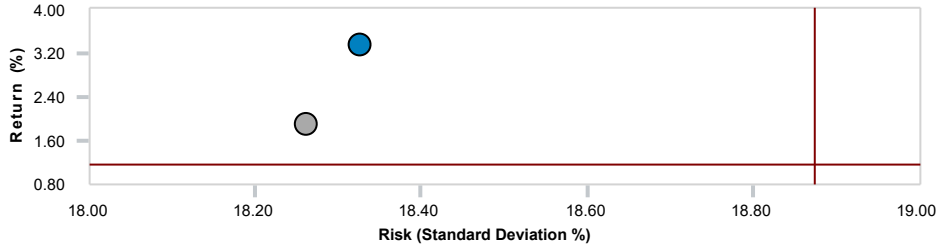


3 Yr Rolling Percentile Ranking - 5 Years



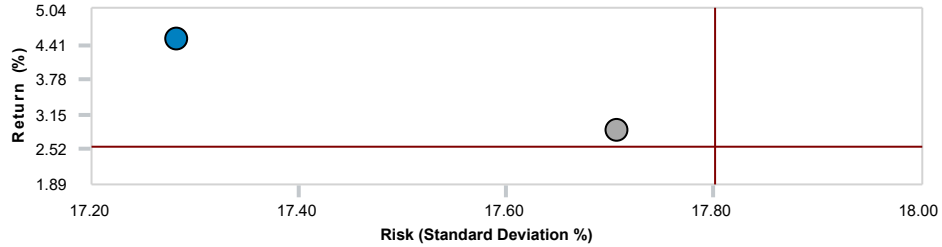
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Schroder	16	12 (75%)	3 (19%)	1 (6%)	0 (0%)
Em Mkt Index	20	2 (10%)	13 (65%)	5 (25%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Schroder	3.36	18.33
Em Mkt Index	1.90	18.26
Median	1.15	18.87

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Schroder	4.50	17.28
Em Mkt Index	2.86	17.71
Median	2.57	17.80

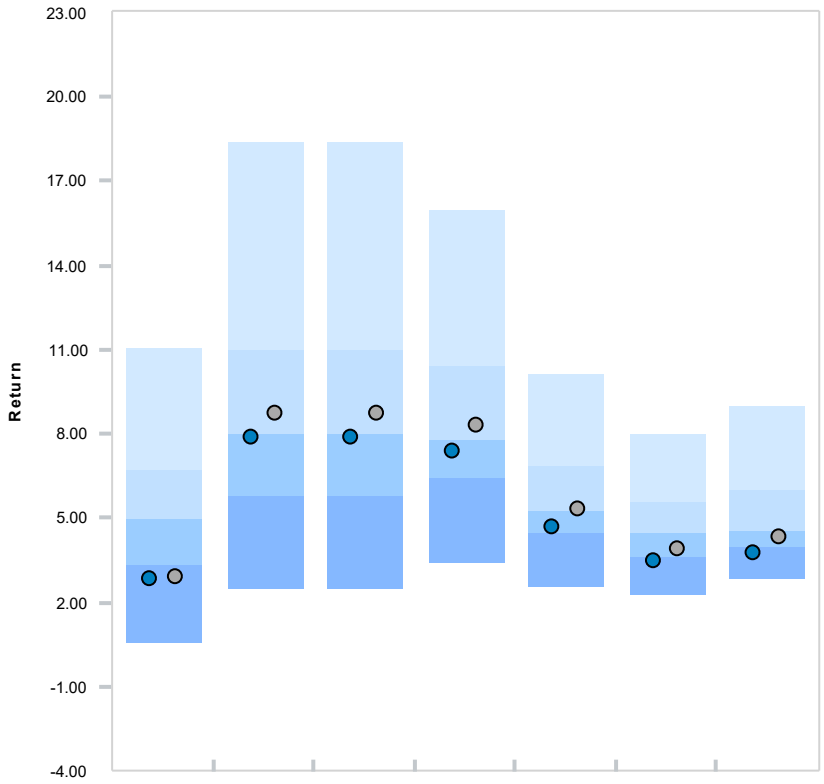
Historical Statistics - 3 Years

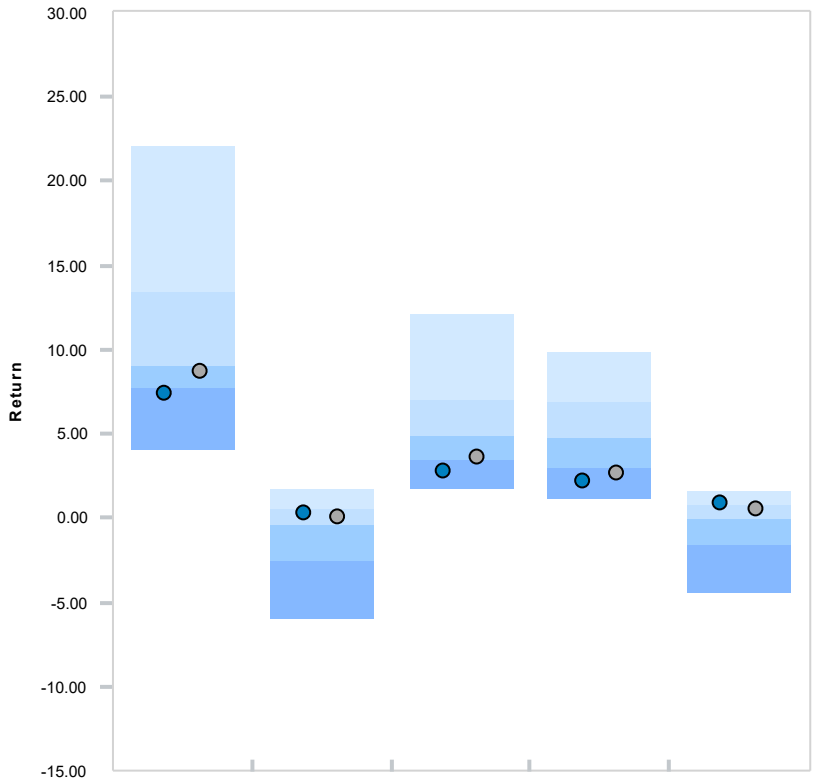
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Schroder	3.05	101.66	95.56	1.50	0.48	0.18	0.99	13.16
MSCI Emerging Markets Index	0.00	100.00	100.00	0.00	N/A	0.10	1.00	13.04

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Schroder	3.21	100.41	93.51	1.71	0.47	0.27	0.96	11.90
MSCI Emerging Markets Index	0.00	100.00	100.00	0.00	N/A	0.18	1.00	12.22

Peer Group Analysis - All Master Trust-US Fixed Income Segment





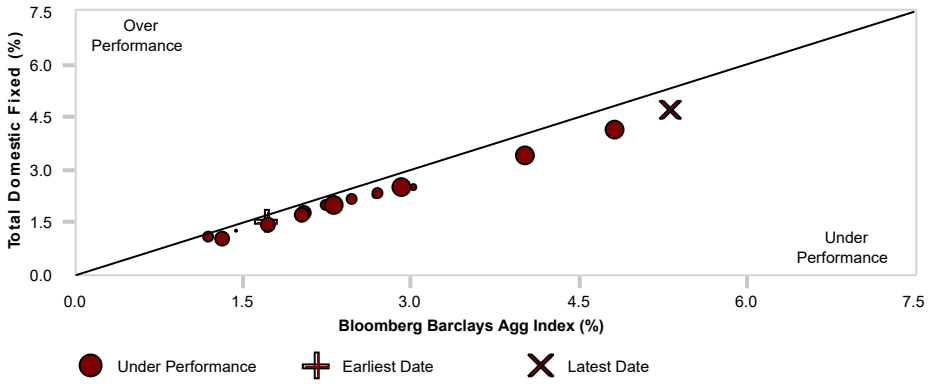
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Domestic Fixed	2.82 (82)	7.89 (52)	7.89 (52)	7.34 (59)	4.69 (70)	3.44 (83)	3.73 (80)
BB Agg Index	2.90 (82)	8.74 (39)	8.74 (39)	8.30 (38)	5.32 (48)	3.88 (68)	4.30 (62)
Median	4.94	7.98	7.98	7.82	5.25	4.42	4.55

	2019	2018	2017	2016	2015
Total Domestic Fixed	7.34 (79)	0.25 (30)	2.75 (87)	2.21 (89)	0.93 (19)
BB Agg Index	8.72 (58)	0.01 (37)	3.54 (73)	2.65 (82)	0.55 (32)
Median	9.09	-0.38	4.90	4.81	-0.06

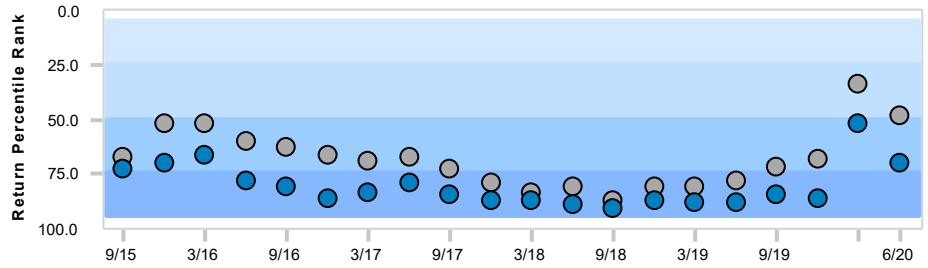
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Domestic Fixed	2.89 (21)	0.27 (64)	1.71 (70)	2.67 (72)	2.52 (80)	1.58 (11)
Bloomberg Barclays Agg Index	3.15 (20)	0.18 (69)	2.27 (41)	3.08 (48)	2.94 (66)	1.64 (10)
All Master Trust-US Fixed Income Segment Median	0.55	0.45	2.12	3.04	3.32	0.64

3 Yr Rolling Under/Over Performance - 5 Years

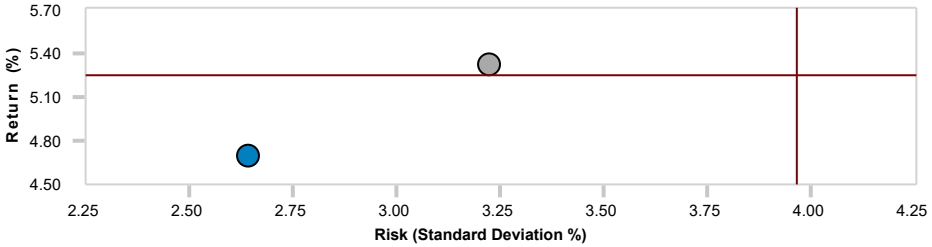


3 Yr Rolling Percentile Ranking - 5 Years



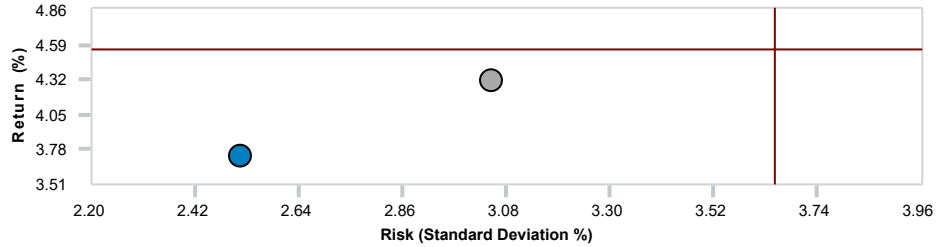
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Domestic Fixed	20	0 (0%)	0 (0%)	5 (25%)	15 (75%)
BB Agg Index	20	0 (0%)	2 (10%)	11 (55%)	7 (35%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Domestic Fixed	4.69	2.64
BB Agg Index	5.32	3.23
Median	5.25	3.96

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Domestic Fixed	3.73	2.52
BB Agg Index	4.30	3.05
Median	4.55	3.65

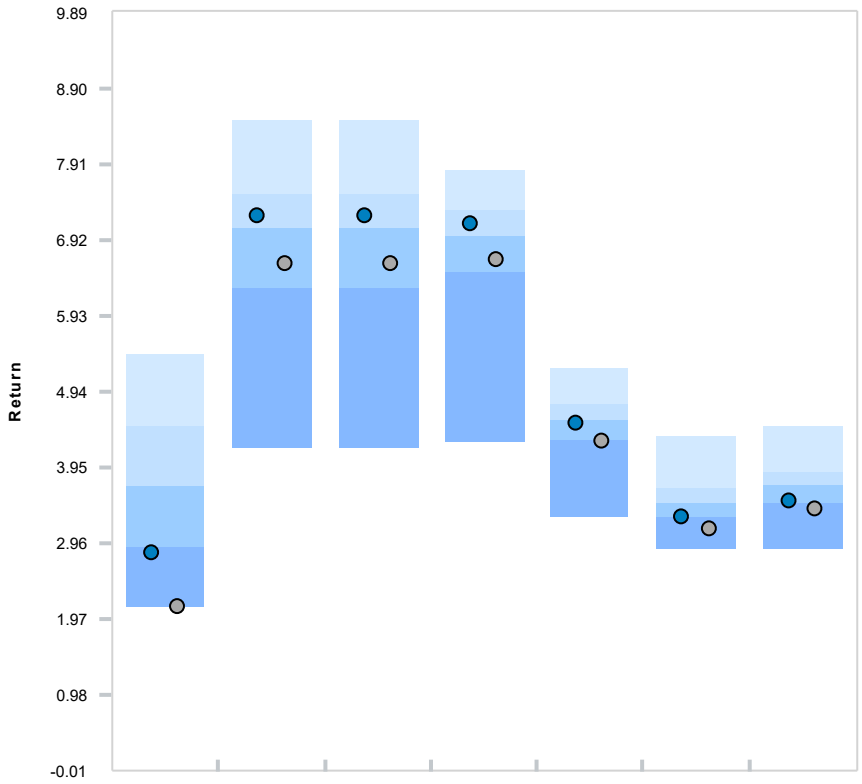
Historical Statistics - 3 Years

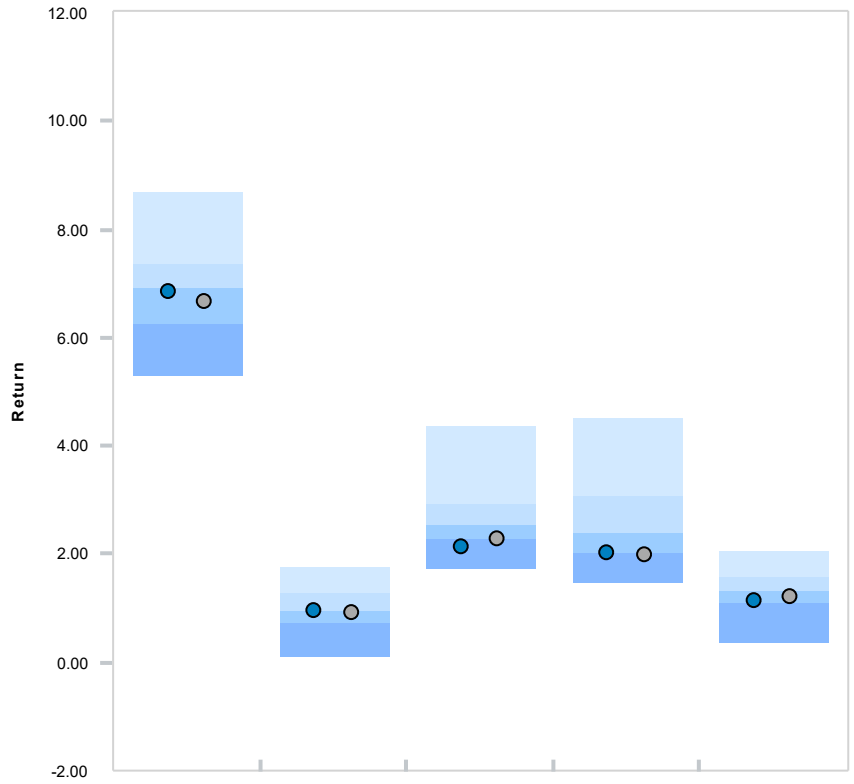
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Fixed	0.68	84.96	76.78	0.36	-0.91	1.09	0.81	0.97
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.09	1.00	1.25

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Fixed	0.62	83.72	77.58	0.20	-0.91	1.02	0.82	1.19
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.03	1.00	1.49

Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)





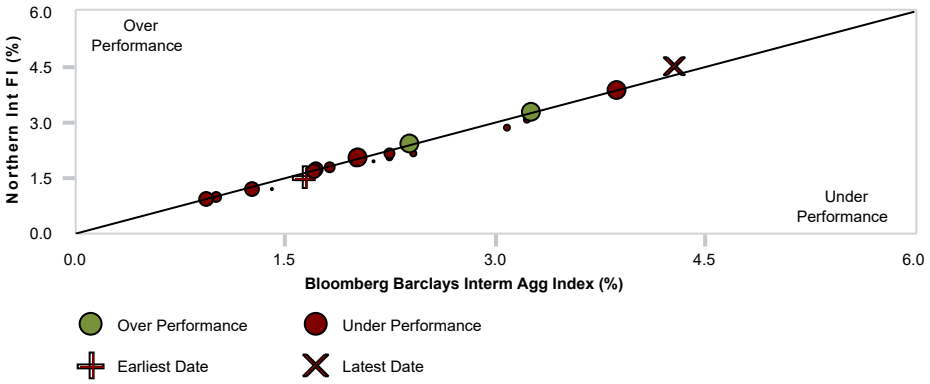
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Northern Int FI	2.83 (81)	7.23 (40)	7.23 (40)	7.12 (39)	4.51 (57)	3.29 (75)	3.50 (73)
BB Int Agg Index	2.13 (96)	6.60 (71)	6.60 (71)	6.67 (72)	4.28 (77)	3.15 (88)	3.40 (82)
Median	3.72	7.09	7.09	6.98	4.57	3.48	3.71

	2019	2018	2017	2016	2015
Northern Int FI	6.84 (56)	0.94 (50)	2.14 (84)	2.02 (76)	1.14 (69)
BB Int Agg Index	6.67 (65)	0.92 (51)	2.27 (76)	1.97 (78)	1.21 (63)
Median	6.93	0.94	2.54	2.37	1.30

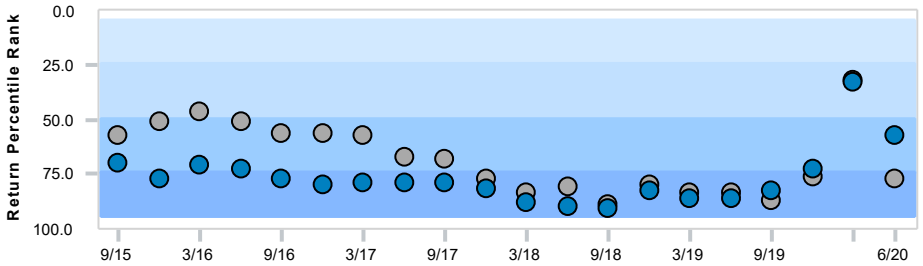
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Northern Int FI	2.48 (20)	0.39 (66)	1.37 (62)	2.60 (32)	2.34 (64)	1.67 (20)
Bloomberg Barclays Interm Agg Index	2.49 (20)	0.47 (47)	1.38 (58)	2.39 (69)	2.28 (70)	1.80 (9)
IM U.S. Intermediate Duration (SA+CF) Median	1.30	0.44	1.42	2.51	2.45	1.38

3 Yr Rolling Under/Over Performance - 5 Years

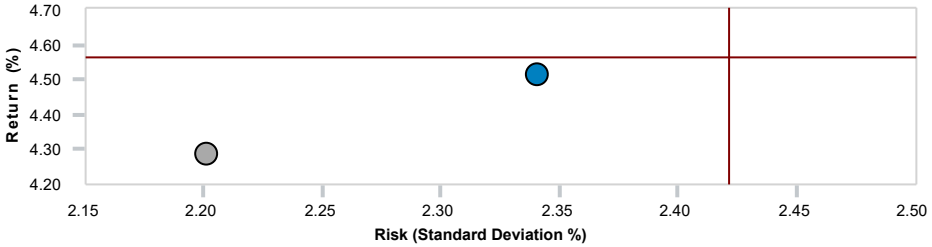


3 Yr Rolling Percentile Ranking - 5 Years



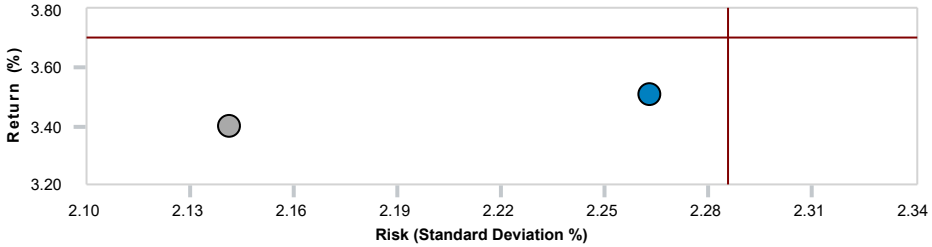
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Northern Int FI	20	0 (0%)	1 (5%)	5 (25%)	14 (70%)
BB Int Agg Index	20	0 (0%)	2 (10%)	8 (40%)	10 (50%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Northern Int FI	4.51	2.34
BB Int Agg Index	4.28	2.20
Median	4.57	2.42

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Northern Int FI	3.50	2.26
BB Int Agg Index	3.40	2.14
Median	3.71	2.29

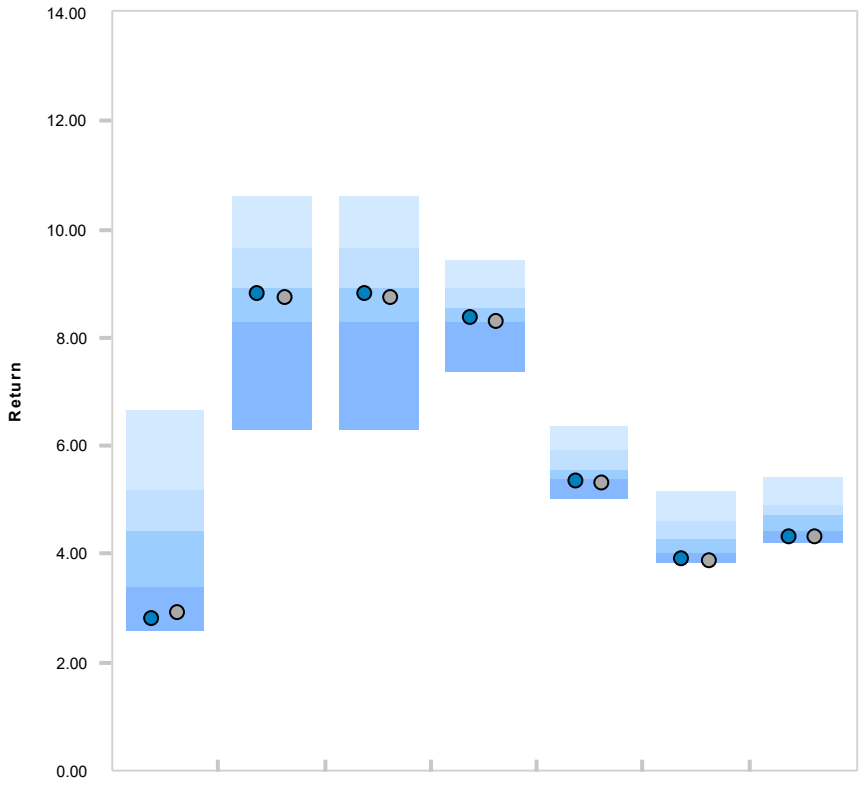
Historical Statistics - 3 Years

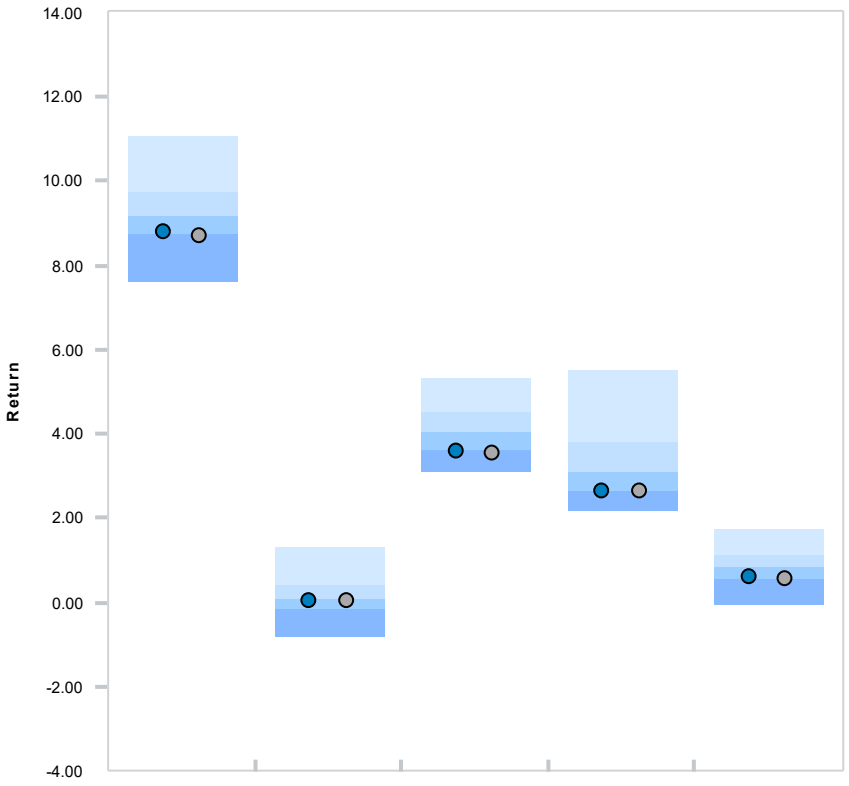
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Int FI	0.44	105.63	106.66	0.03	0.51	1.16	1.05	0.82
Bloomberg Barclays Interm Agg Index	0.00	100.00	100.00	0.00	N/A	1.14	1.00	0.84

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Int FI	0.39	104.17	106.45	-0.03	0.28	1.03	1.04	1.04
Bloomberg Barclays Interm Agg Index	0.00	100.00	100.00	0.00	N/A	1.05	1.00	1.04

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)





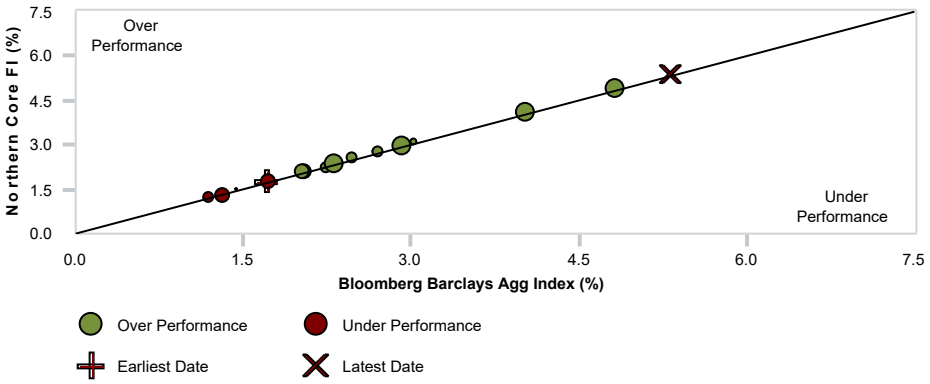
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Northern Core FI	2.80 (92)	8.79 (65)	8.79 (65)	8.37 (70)	5.35 (81)	3.90 (91)	4.32 (88)
BB Agg Index	2.90 (90)	8.74 (68)	8.74 (68)	8.30 (75)	5.32 (84)	3.88 (92)	4.30 (90)
Median	4.42	8.93	8.93	8.54	5.57	4.28	4.70

	2019	2018	2017	2016	2015
Northern Core FI	8.77 (72)	0.05 (53)	3.56 (81)	2.61 (80)	0.58 (71)
BB Agg Index	8.72 (78)	0.01 (61)	3.54 (83)	2.65 (75)	0.55 (76)
Median	9.19	0.06	4.04	3.10	0.82

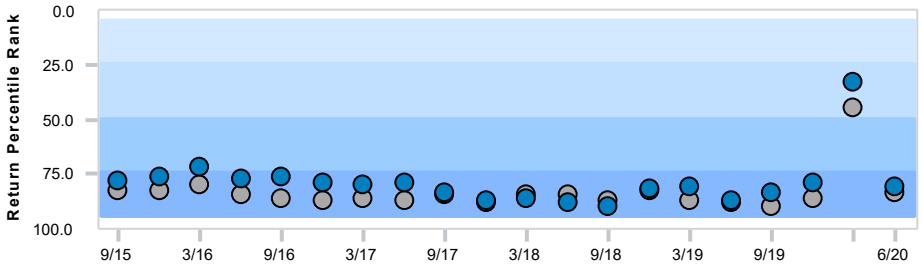
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Northern Core FI	3.30 (14)	0.16 (64)	2.28 (66)	3.10 (60)	2.98 (72)	1.63 (28)
Bloomberg Barclays Agg Index	3.15 (23)	0.18 (58)	2.27 (70)	3.08 (70)	2.94 (82)	1.64 (25)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.93	0.22	2.33	3.13	3.22	1.40

3 Yr Rolling Under/Over Performance - 5 Years

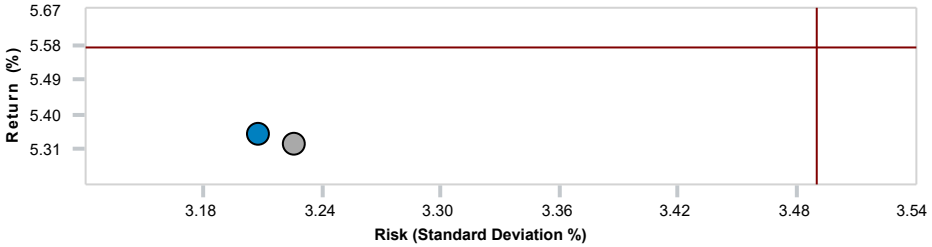


3 Yr Rolling Percentile Ranking - 5 Years



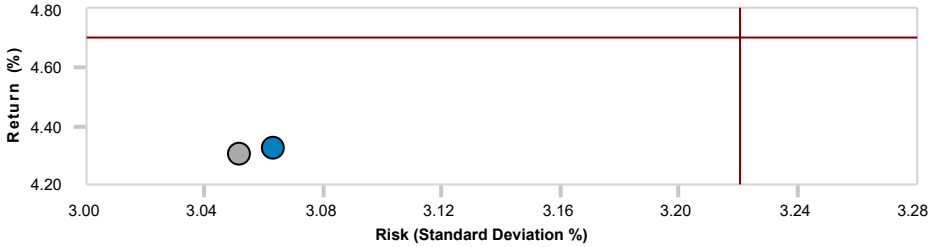
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Northern Core FI	20	0 (0%)	1 (5%)	1 (5%)	18 (90%)
BB Agg Index	20	0 (0%)	1 (5%)	0 (0%)	19 (95%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Northern Core FI	5.35	3.21
BB Agg Index	5.32	3.23
Median	5.57	3.49

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Northern Core FI	4.32	3.06
BB Agg Index	4.30	3.05
Median	4.70	3.22

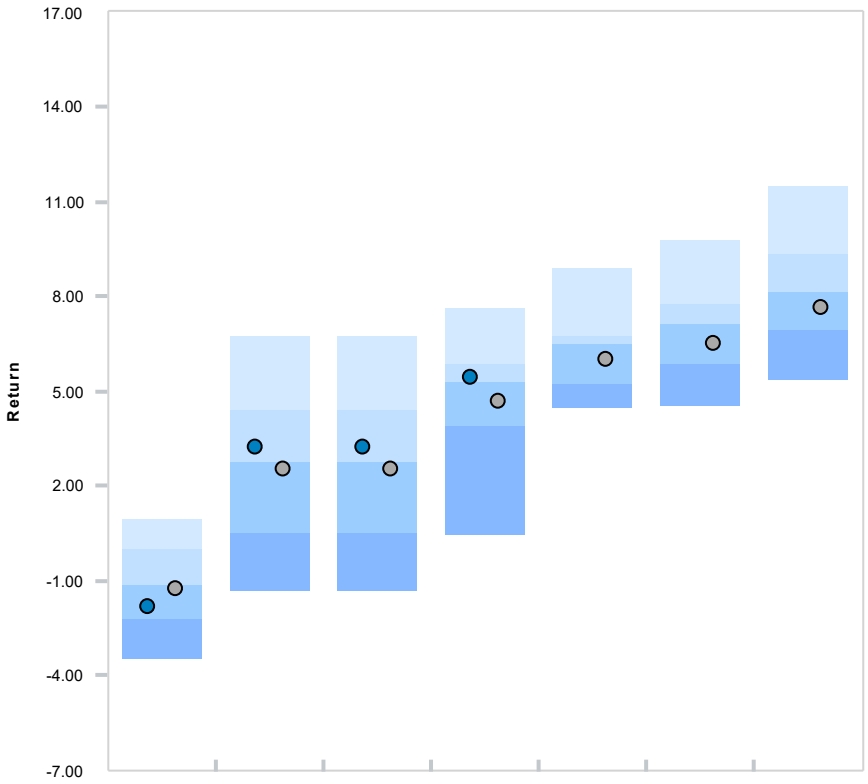
Historical Statistics - 3 Years

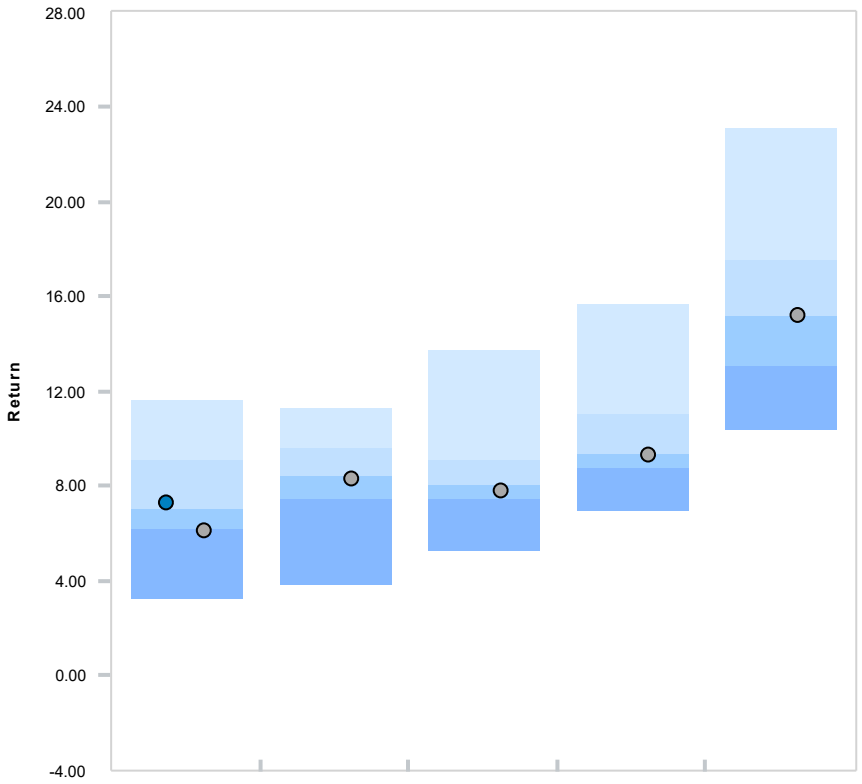
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Core FI	0.11	99.72	97.93	0.05	0.22	1.10	0.99	1.23
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.09	1.00	1.25

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Core FI	0.13	100.09	99.31	0.01	0.15	1.03	1.00	1.51
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.03	1.00	1.49

Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)





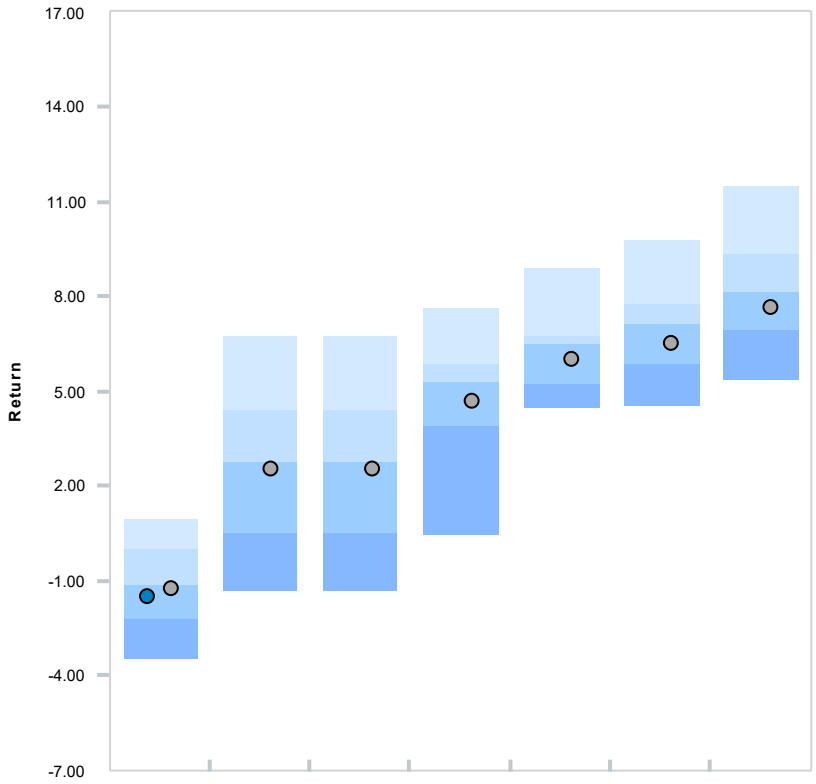
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Clarion Lion	-1.82 (71)	3.21 (45)	3.21 (45)	5.46 (36)	N/A	N/A	N/A
NCREIF ODCE	-1.27 (67)	2.56 (63)	2.56 (63)	4.71 (61)	5.99 (66)	6.52 (66)	7.63 (63)
Median	-1.14	2.78	2.78	5.30	6.54	7.15	8.15

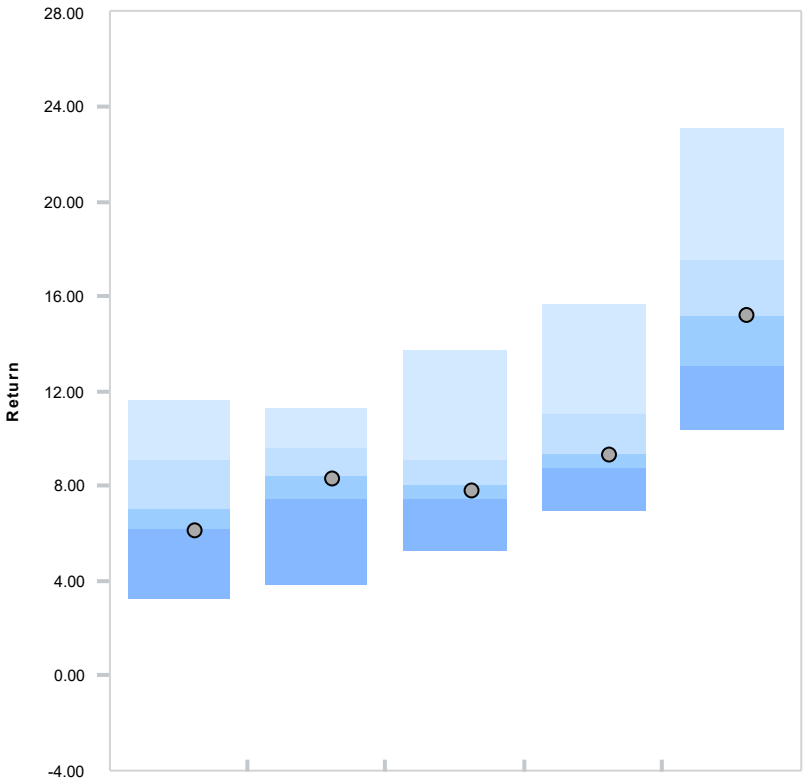
	2019	2018	2017	2016	2015
Clarion Lion	7.26 (45)	N/A	N/A	N/A	N/A
NCREIF ODCE	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17 (51)
Median	7.02	8.42	8.08	9.35	15.23

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Clarion Lion	1.39 (47)	1.99 (35)	1.66 (60)	1.43 (52)	2.00 (45)	2.03 (22)
NCREIF Fund Index-Open End Diversified Core (EW)	0.92 (67)	1.53 (58)	1.39 (75)	1.34 (61)	1.69 (76)	1.62 (58)
IM U.S. Open End Private Real Estate (SA+CF) Median	1.31	1.61	1.75	1.44	1.99	1.73

Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)





	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Principal Enh Prop Fd	-1.49 (69)	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF ODCE	-1.27 (67)	2.56 (63)	2.56 (63)	4.71 (61)	5.99 (66)	6.52 (66)	7.63 (63)
Median	-1.14	2.78	2.78	5.30	6.54	7.15	8.15

	2019	2018	2017	2016	2015
Principal Enh Prop Fd	N/A	N/A	N/A	N/A	N/A
NCREIF ODCE	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17 (51)
Median	7.02	8.42	8.08	9.35	15.23

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Principal Enh Prop Fd	1.04 (66)	2.82 (13)	N/A	N/A	N/A	N/A
NCREIF Fund Index-ODCE (EW)	0.92 (67)	1.53 (58)	1.39 (75)	1.34 (61)	1.69 (76)	1.62 (58)
IM U.S. Open End Private Real Estate (SA+CF) Median	1.31	1.61	1.75	1.44	1.99	1.73

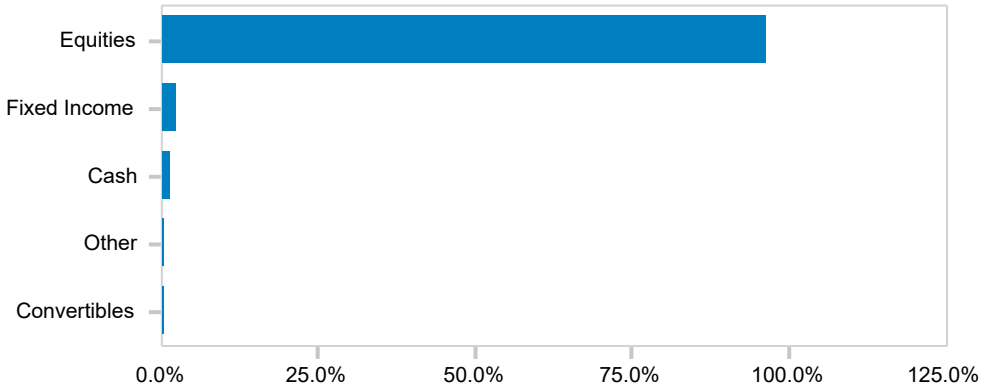
Fund Information

Fund Name :	JPMorgan Trust II: JPMorgan Equity Income Fund; Class R6 Shares	Portfolio Assets :	$29,554 Million
Fund Family :	JPMorgan Funds	Portfolio Manager :	Hart/Silberman/Brandon
Ticker :	OIEJX	PM Tenure :	2012--2019--2019
Inception Date :	01/31/2012	Fund Style :	IM Equity Income (MF)
Fund Assets :	$12,651 Million	Style Benchmark :	S&P 500 Index
Portfolio Turnover :	23%		

Fund Investment Policy

The Fund seeks current income through regular payment of dividends with the secondary goal of capital appreciation. The Fund invests 80% of its net assets in the equity securities of corporations that regularly pay dividends, including common stocks and debt securities and preferred stock convertible to common stock.

Asset Allocation As of 05/31/2020



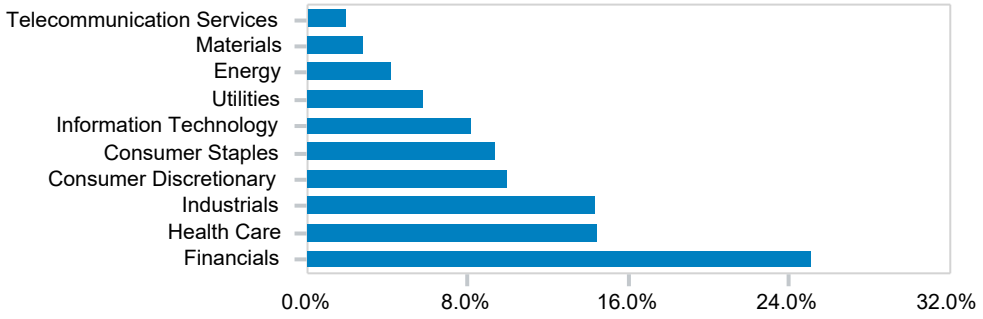
Top Ten Securities As of 05/31/2020

JPMorgan Prime Money Market Fund;IM	3.7 %
Johnson & Johnson ORD	2.6 %
Bank of America Corp ORD	2.6 %
Comcast Corp ORD	2.5 %
CME Group Inc ORD	2.5 %
Bristol-Myers Squibb Co ORD	2.4 %
BlackRock Inc ORD	2.2 %
Microsoft Corp ORD	2.2 %
Home Depot Inc ORD	2.1 %
Texas Instruments Inc ORD	2.1 %

Fund Characteristics As of 05/31/2020

Total Securities	91
Avg. Market Cap	$157,533 Million
P/E	23.8
P/B	4.7
Div. Yield	2.9%
Annual EPS	6.6
5Yr EPS	8.9
3Yr EPS Growth	12.8

Sector/Quality Allocation As of 05/31/2020



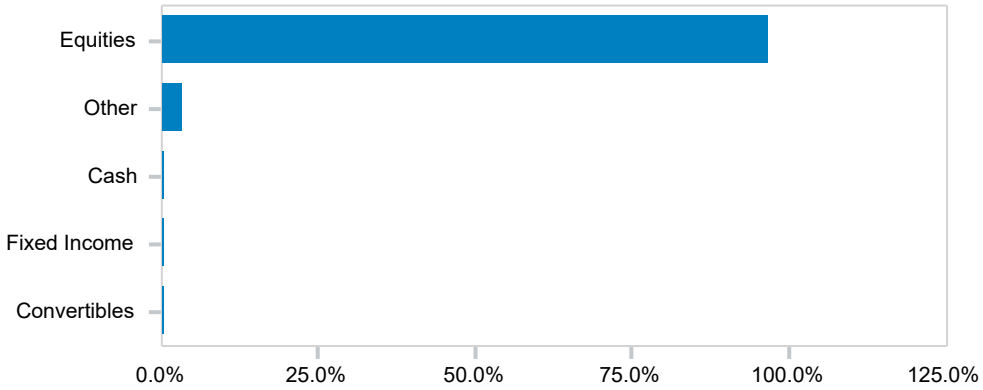
Fund Information

Fund Name :	Vanguard Fenway Funds: Vanguard Equity Income Fund; Admiral Shares	Portfolio Assets :	$34,085 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Stetler/Reckmeyer/Guo
Ticker :	VEIRX	PM Tenure :	2003--2007--2016
Inception Date :	08/13/2001	Fund Style :	IM Equity Income (MF)
Fund Assets :	$29,350 Million	Style Benchmark :	S&P 500 Index
Portfolio Turnover :	32%		

Fund Investment Policy

The Fund seeks to provide an above-average level of current income and reasonable long-term capital appreciation. It invests in common stocks of mid-size and large companies whose stocks typically pay above-average levels of dividend income and are, in the opinion of the advisor, undervalued relative to similar stocks.

Asset Allocation As of 03/31/2020



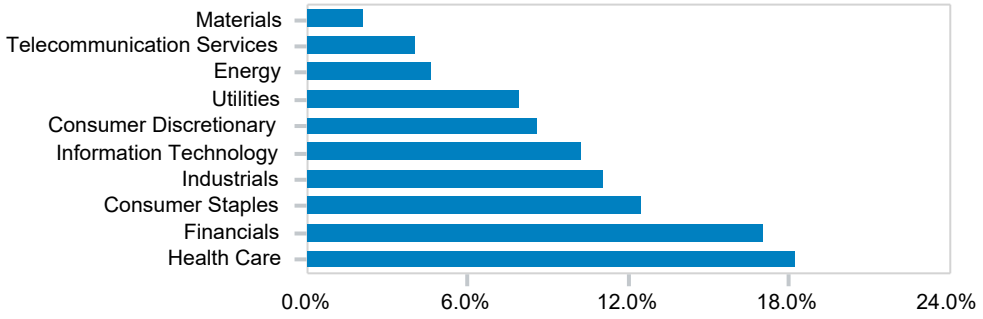
Top Ten Securities As of 03/31/2020

Johnson & Johnson ORD	3.9 %
JPMorgan Chase & Co ORD	3.3 %
Vanguard Market Liquidity Fund	3.1 %
Verizon Communications Inc ORD	3.0 %
Cisco Systems Inc ORD	2.9 %
Intel Corp ORD	2.6 %
Pfizer Inc ORD	2.5 %
Comcast Corp ORD	2.4 %
Merck & Co Inc ORD	2.3 %
Procter & Gamble Co ORD	2.1 %

Fund Characteristics As of 03/31/2020

Total Securities	191
Avg. Market Cap	$123,333 Million
P/E	18.7
P/B	4.5
Div. Yield	3.7%
Annual EPS	12.6
5Yr EPS	8.2
3Yr EPS Growth	14.4

Sector/Quality Allocation As of 03/31/2020



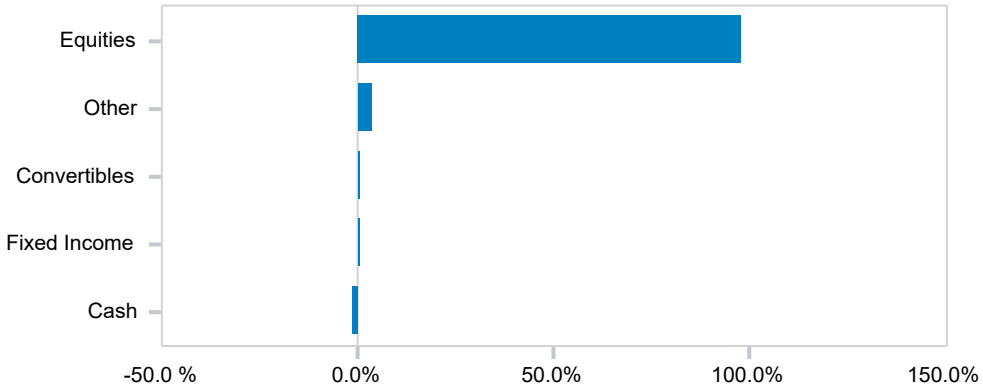
Fund Information

Fund Name :	MFS Series Trust II: MFS Growth Fund; Class R6 Shares	Portfolio Assets :	$31,561 Million
Fund Family :	MFS Investment Management	Portfolio Manager :	Fischman/Gordon
Ticker :	MFEKX	PM Tenure :	2011--2017
Inception Date :	08/26/2011	Fund Style :	IM U.S. Large Cap Growth Equity (MF)
Fund Assets :	$11,650 Million	Style Benchmark :	Russell 1000 Growth Index
Portfolio Turnover :	11%		

Fund Investment Policy

The Fund seeks to provide long-term growth of capital. The Fund invests primarily in common stocks that MFS believes are early in their life cycle and has the potential to become major enterprises (emerging growth companies).

Asset Allocation As of 05/31/2020



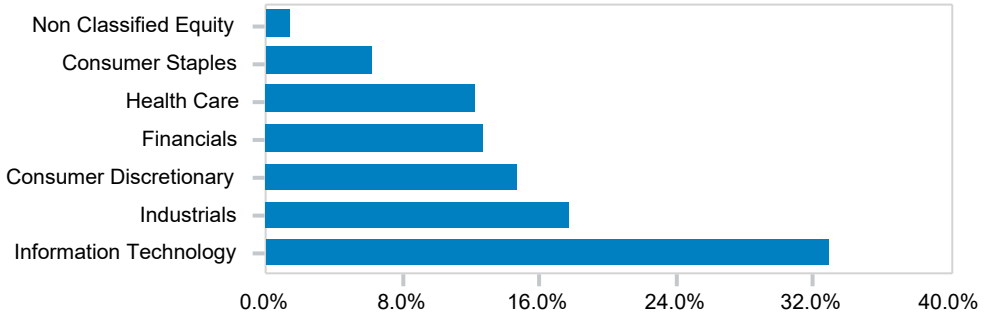
Top Ten Securities As of 05/31/2020

Microsoft Corp ORD	9.3 %
Amazon.com Inc ORD	7.4 %
Adobe Inc ORD	4.5 %
Alphabet Inc ORD	4.2 %
Visa Inc ORD	3.9 %
Mastercard Inc ORD	3.5 %
MFS Institutional Money Market	3.5 %
Facebook Inc ORD	2.4 %
Salesforce.Com Inc ORD	2.1 %
Thermo Fisher Scientific Inc ORD	2.1 %

Fund Characteristics As of 05/31/2020

Total Securities	78
Avg. Market Cap	$404,527 Million
P/E	43.8
P/B	12.0
Div. Yield	0.9%
Annual EPS	16.6
5Yr EPS	19.9
3Yr EPS Growth	26.3

Sector/Quality Allocation As of 05/31/2020



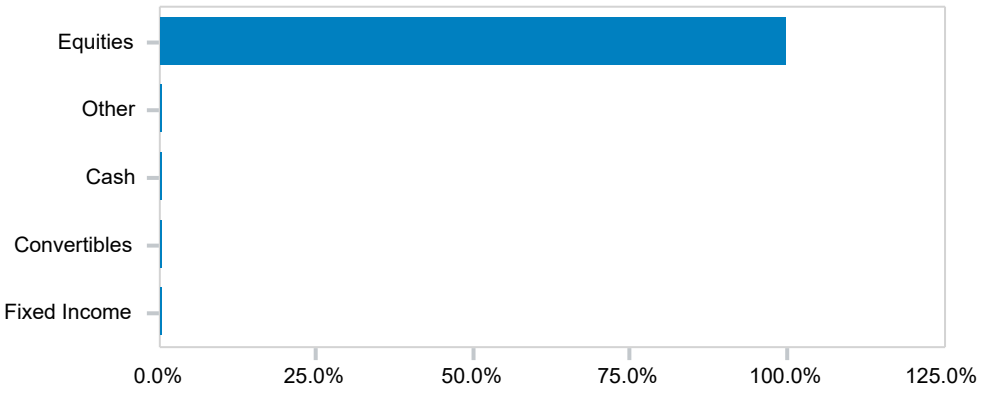
Fund Information

Fund Name :	Principal Funds, Inc: MidCap Fund; Institutional Class Shares	Portfolio Assets :	$21,882 Million
Fund Family :	Principal Global Investors LLC	Portfolio Manager :	Nolin/Rozycki
Ticker :	PCBIX	PM Tenure :	2001--2013
Inception Date :	03/01/2001	Fund Style :	IM U.S. Multi-Cap Growth Equity (MF)
Fund Assets :	$11,686 Million	Style Benchmark :	Russell 3000 Growth Index
Portfolio Turnover :	14%		

Fund Investment Policy

The Fund seeks long-term growth of capital by investing primarily in common stocks and other equity securities of medium-capitalization firms. Stock selection is pursued with a goal of creating a "blended portfolio" of growth and value stocks.

Asset Allocation As of 05/31/2020



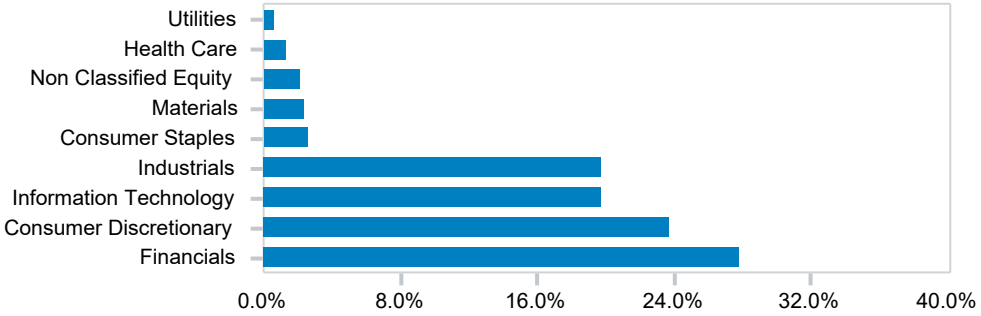
Top Ten Securities As of 05/31/2020

TransDigm Group Inc ORD	4.1 %
Brookfield Asset Management Inc	3.9 %
Carmax Inc ORD	3.4 %
SBA Communications Corp ORD	3.2 %
Autodesk Inc ORD	2.8 %
O'Reilly Automotive Inc ORD	2.8 %
Black Knight Inc ORD	2.8 %
Copart Inc ORD	2.7 %
Wix.Com Ltd ORD	2.6 %
Markel Corp ORD	2.4 %

Fund Characteristics As of 05/31/2020

Total Securities	86
Avg. Market Cap	$22,154 Million
P/E	34.4
P/B	7.6
Div. Yield	1.6%
Annual EPS	25.7
5Yr EPS	18.8
3Yr EPS Growth	23.9

Sector/Quality Allocation As of 05/31/2020



Portfolio Characteristics (Benchmark: Russell 2000 Growth Index)

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap ($)	4,013,058,709	2,490,662,225
Median Mkt. Cap ($)	2,856,457,375	879,601,800
Price/Earnings ratio	38.9	28.1
Price/Book ratio	4.4	4.4
5 Yr. EPS Growth Rate (%)	21.0	13.2
Current Yield (%)	0.1	0.5
Beta (5 Years, Monthly)	0.89	1.00
Number of Stocks	53	1,081

Top Ten Equity Holdings (Benchmark: Russell 2000 Growth Index)

	Portfolio Wt	Benchmark Wt	Active Wt	Qtr Rtrn
SPS Commerce Inc	3.5	0.3	3.2	61.5
LHC Group Inc	3.4	0.6	2.8	24.3
Descartes Systems Group Inc (The)	3.2	0.0	3.2	53.8
Repay Holdings Corp	3.2	0.1	3.1	71.6
Ollie's Bargin Outlet Holdings	3.2	0.0	3.2	110.7
RealPage Inc	3.0	0.0	3.0	22.8
Grand Canyon Education Inc	3.0	0.0	3.0	18.7
Alarm.com Holdings Inc	2.9	0.3	2.6	66.6
Envestnet Inc	2.7	0.4	2.3	36.7
Chegg Inc	2.7	0.0	2.7	88.0

Ten Best Performers (Benchmark: Russell 2000 Growth Index)

	Portfolio Wt	Benchmark Wt	Active Wt	Quarterly Rtrn
Wix.com Ltd	1.4	0.0	1.4	154.1
Kornit Digital Ltd	1.4	0.0	1.4	114.5
Ollie's Bargin Outlet Holdings	3.2	0.0	3.2	110.7
Chegg Inc	2.7	0.0	2.7	88.0
Independent Bank Group Inc	1.1	0.0	1.1	72.5
Repay Holdings Corp	3.2	0.1	3.1	71.6
Boot Barn Holdings Inc	1.6	0.1	1.5	66.7
Alarm.com Holdings Inc	2.9	0.3	2.6	66.6
Paylocity Holding Corp	2.0	0.0	2.0	65.2
Trex Co Inc	1.4	0.0	1.4	62.3

Ten Worst Performers (Benchmark: Russell 2000 Growth Index)

	Portfolio Wt	Benchmark Wt	Active Wt	Quarterly Rtrn
Haemonetics Corp	1.6	0.0	1.6	-10.1
Ameris Bancorp	1.0	0.0	1.0	-0.1
Tabula Rasa HealthCare Inc	1.8	0.1	1.7	4.7
Construction Partners inc	1.9	0.0	1.9	5.2
LeMaitre Vascular Inc	1.2	0.0	1.2	6.3
Omnicell Inc	1.2	0.3	0.9	7.7
Neogenomics Inc	1.1	0.4	0.7	12.2
Solarwinds Corp	1.5	0.0	1.5	12.8
Virtusa Corp	1.3	0.1	1.2	14.3
HealthEquity Inc	2.4	0.5	1.9	16.0

Buy and Hold Sector Attribution (Benchmark: Russell 2000 Growth Index)

	Allocation		Performance		Attribution		
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Total
Communication Services	1.0	2.3	45.71	24.26	0.22	0.08	0.29
Consumer Discretionary	12.7	9.6	58.17	55.24	0.37	0.78	1.15
Consumer Staples	1.6	3.4	18.81	19.99	-0.02	0.18	0.16
Energy	0.0	0.3	0.00	45.75	0.00	-0.04	-0.04
Financials	2.2	5.9	28.05	18.04	0.22	0.46	0.68
Health Care	23.9	33.9	19.18	31.33	-2.91	-0.10	-3.01
Industrials	12.5	17.5	37.61	28.16	1.18	0.11	1.29
Information Technology	42.0	18.2	40.03	30.14	4.16	-0.04	4.12
Materials	0.0	2.7	0.00	26.83	0.00	0.09	0.09
Real Estate	0.0	4.4	0.00	18.60	0.00	0.51	0.51
Utilities	0.0	1.9	0.00	0.12	0.00	0.56	0.56
Cash	4.0	0.0	0.00	0.00	0.00	-1.21	-1.21
Total	**100.0**	**100.0**	**34.89**	**30.29**	**3.22**	**1.38**	**4.60**

Portfolio Comparison

	Summit Creek
Market Capitalization (%)	
12000M To 16000M	4.0
8000M To 12000M	9.0
5000M To 8000M	16.9
3000M To 5000M	24.2
1000M To 3000M	23.0
500M To 1000M	16.6
200M To 500M	2.5
Cash	3.9

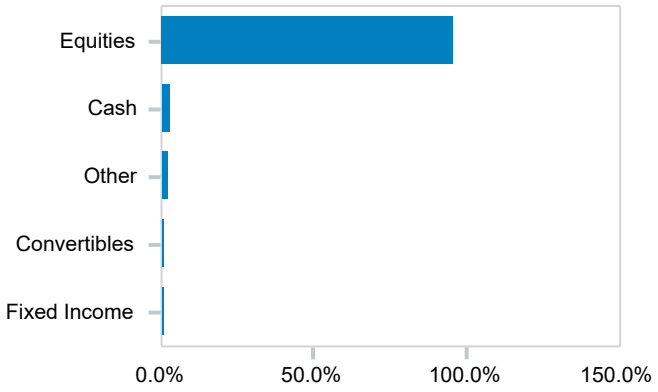
Fund Information

Fund Name :	Templeton Institutional Funds: International Equity Series; Primary Shares	Portfolio Assets :	$915 Million
Fund Family :	Franklin Templeton Investments	Portfolio Manager :	Nori/Docal/Nagle
Ticker :	TFEQX	PM Tenure :	1999--2001--2018
Inception Date :	10/18/1990	Fund Style :	IM International Multi-Cap Value Equity (MF)
Fund Assets :	$915 Million	Style Benchmark :	MSCI EAFE IMI Value
Portfolio Turnover :	37%		

Fund Investment Policy

The Fund seeks long-term capital growth through a flexible policy of investing in equity securities and debt obligations of companies and governments outside the United States.

Asset Allocation As of 03/31/2020



Top Ten Securities As of 03/31/2020

E.ON SE ORD	3.4 %
Deutsche Telekom AG ORD	3.4 %
Total SA ORD	3.4 %
Sanofi SA ORD	3.0 %
Samsung Electronics Co Ltd ORD	2.9 %
Takeda Pharmaceutical Co Ltd ORD	2.8 %
Vodafone Group PLC ORD	2.8 %
Kirin Holdings Co Ltd ORD	2.6 %
Roche Holding AG Par	2.4 %
Bayer AG ORD	2.3 %

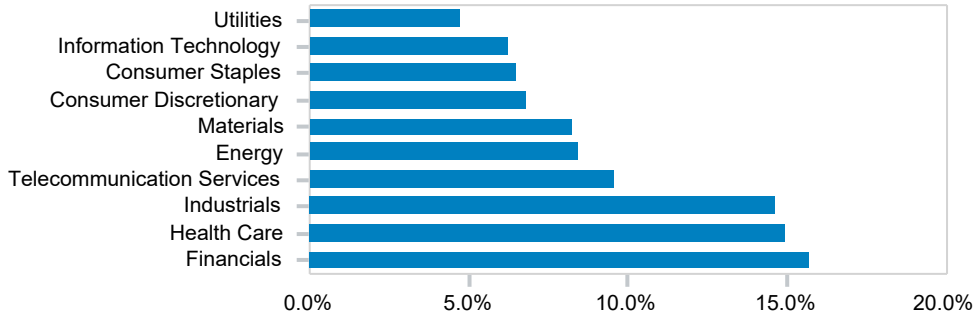
Top 5 Countries As of 03/31/2020

Japan	26.0 %
Germany	14.5 %
France	10.3 %
United Kingdom	10.1 %
Hong Kong	7.7 %

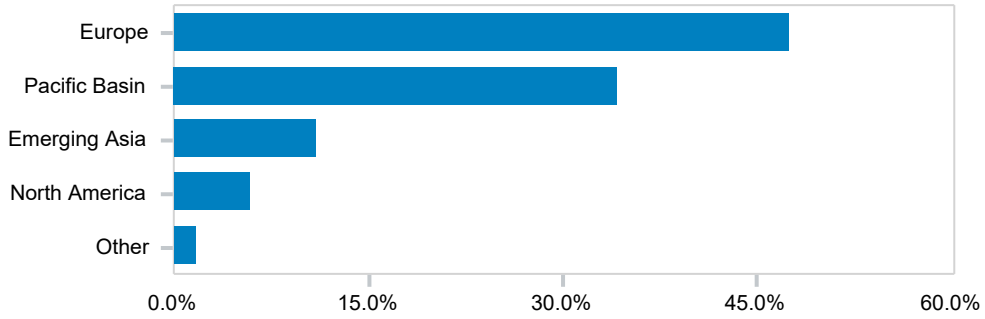
Fund Characteristics As of 03/31/2020

Total Securities	64
Avg. Market Cap	$54,823 Million
P/E	18.5
P/B	1.5
Div. Yield	4.6%
Annual EPS	-2.0
5Yr EPS	3.3
3Yr EPS Growth	4.9

Sector/Quality Allocation As of 03/31/2020



Regional Allocation As of 03/31/2020



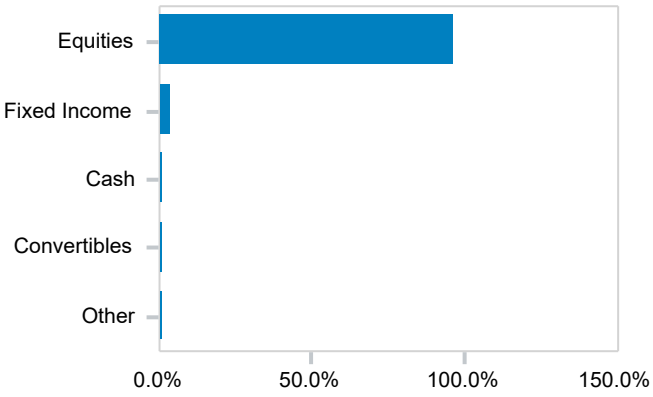
Fund Information

Fund Name :	Hartford Mutual Funds II, Inc: Hartford Schroders Emerging Markets Equity Fund; Class I Shares	Portfolio Assets :	$3,503 Million
Fund Family :	Hartford Mutual Funds	Portfolio Manager :	Team Managed
Ticker :	SEMNX	PM Tenure :	
Inception Date :	03/31/2006	Fund Style :	IM Emerging Markets Equity (MF)
Fund Assets :	$1,683 Million	Style Benchmark :	MSCI Emerging Markets Index
Portfolio Turnover :	43%		

Fund Investment Policy

The Fund seeks capital appreciation. Under normal circumstances, the Fund invests at least 80% of its assets in equity securities of emerging companies, or those issuers listed or domiciled in, deriving a substantial portion of their revenues from, or having a substantial portion of their assets in emerging markets.

Asset Allocation As of 05/31/2020



Top Ten Securities As of 05/31/2020

Tencent Holdings Ltd ORD	7.5 %
Alibaba Group Holding Ltd DR	6.7 %
Taiwan Semiconductor Manufacturing	5.6 %
Samsung Electronics Co Ltd ORD	4.7 %
Morgan Stanley Inst Liq Treasury	3.5 %
JD.com Inc DR	3.3 %
SK Hynix Inc ORD	3.1 %
Ping An Insurance Group Co of China	2.8 %
Sberbank Rossii PAO DR	2.2 %
AIA Group Ltd ORD	1.8 %

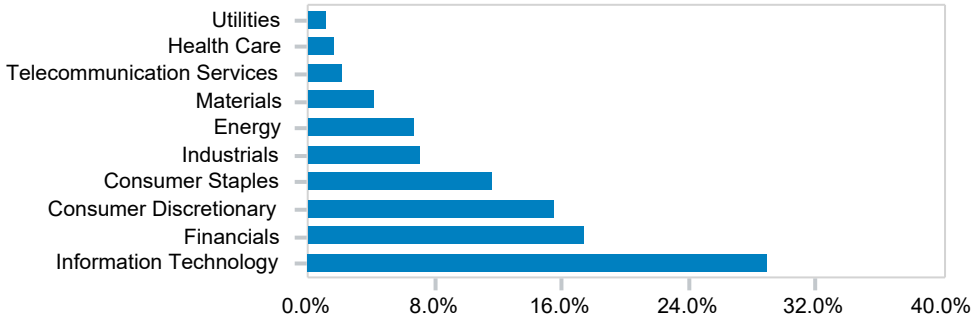
Top 5 Countries As of 05/31/2020

China	34.1 %
Korea	14.6 %
Taiwan	12.1 %
Russian Federation	7.6 %
Brazil	7.4 %

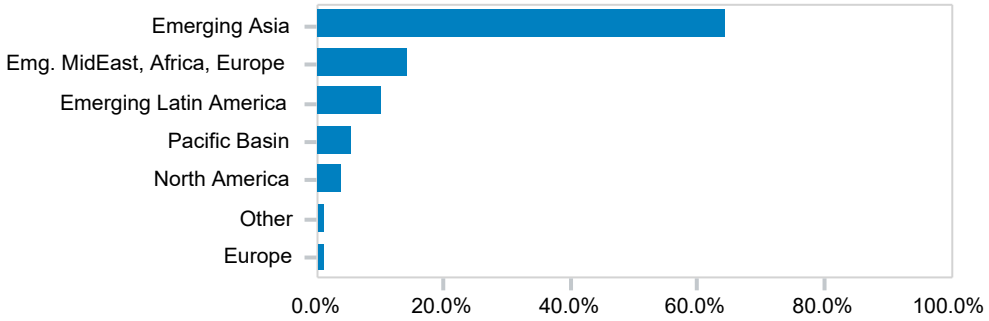
Fund Characteristics As of 05/31/2020

Total Securities	117
Avg. Market Cap	$139,288 Million
P/E	25.4
P/B	4.1
Div. Yield	2.9%
Annual EPS	14.6
5Yr EPS	17.9
3Yr EPS Growth	21.8

Sector/Quality Allocation As of 05/31/2020



Regional Allocation As of 05/31/2020



Comparative Performance

	QTR	FYTD	1 YR	3 YR	5 YR	10 YR
Basic Total Fund	**14.42**	**3.52**	**3.52**	**8.11**	**8.09**	**10.07**
Policy	15.19	3.69	3.69	6.96	7.21	10.21
Total Domestic Equity	**21.83**	**5.67**	**5.67**	**11.89**	**10.98**	**13.88**
Russell 3000 Index	22.03	6.53	6.53	10.04	10.03	13.72
MFS Growth	24.68	20.81	20.81	20.31	16.74	N/A
Russell 1000 Growth Index	27.84	23.28	23.28	18.99	15.89	17.23
JPM Equity Inc (OIEJX)	13.27	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	14.29	-8.84	-8.84	1.82	4.64	10.41
Vanguard Equity Inc (VEIRX)	12.67	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	14.29	-8.84	-8.84	1.82	4.64	10.41
Principal Mid Cap	24.86	4.20	4.20	12.19	11.20	15.43
Russell Midcap Index	24.61	-2.24	-2.24	5.79	6.76	12.35
Summit Creek	35.61	10.68	10.68	16.06	11.67	N/A
Russell 2000 Growth Index	30.58	3.48	3.48	7.86	6.86	12.92
Total International Equity	**16.13**	**-2.97**	**-2.97**	**2.19**	**3.67**	**5.50**
MSCI AC World ex USA Index (Net)	16.12	-4.80	-4.80	1.13	2.26	4.97
Templeton	12.82	-10.81	-10.81	-4.31	-1.54	3.39
MSCI EAFE Value Index (Net)	12.43	-14.48	-14.48	-4.43	-1.59	3.53
MFS Int'l	17.31	3.31	3.31	7.80	8.24	N/A
MSCI AC World ex USA Growth Index (Net)	19.11	5.80	5.80	6.07	5.61	7.04
Schroder	19.31	-0.83	-0.83	3.36	4.50	N/A
MSCI Emerging Markets Index (Net)	18.08	-3.39	-3.39	1.90	2.86	3.27

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	QTR	FYTD	1 YR	3 YR	5 YR	10 YR
Total Domestic Fixed Income	**2.82**	**7.89**	**7.89**	**4.69**	**3.73**	**3.39**
Bloomberg Barclays US Aggregate Index	2.90	8.74	8.74	5.32	4.30	3.82
Northern Interm Fixed	2.83	7.23	7.23	4.51	3.50	N/A
Bloomberg Barclays US Interm Agg Index	2.13	6.60	6.60	4.28	3.40	3.14
Northern Core Fixed	2.80	8.79	8.79	5.35	4.32	3.85
Bloomberg Barclays US Aggregate Index	2.90	8.74	8.74	5.32	4.30	3.82
Total Real Estate	**-1.99**	**2.54**	**2.54**	**N/A**	**N/A**	**N/A**
NCREIF Fund Index-Open End Diversified Core (EW)	-1.27	2.56	2.56	5.99	7.63	10.90
Clarion Lion Properties	-2.08	2.13	2.13	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	-1.27	2.56	2.56	5.99	7.63	10.90
Principal Enhanced Property Fund, LP	-1.49	N/A	N/A	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	-1.27	2.56	2.56	5.99	7.63	10.90
Total Infrastructure	**11.16**	**-1.00**	**-1.00**	**5.44**	**10.14**	**N/A**
Lazard	11.16	-1.00	-1.00	5.44	10.14	N/A
S&P Global Infrastructure Index	13.87	-14.76	-14.76	-0.89	2.62	6.92
FTSE Developed Core Infrast 50/50 Index (Net)	10.31	-8.96	-8.96	2.47	5.54	9.09

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	% of Portfolio	Market Value ($)	Estimated Annual Fee (%)	Estimated Annual Fee ($)
Basic Total Fund	100.00	111,757,823	0.60	675,197
Domestic Equity				
JPM Equity Inc (OIEJX)	8.93	9,981,931	0.49	48,911
Vanguard Equity Inc (VEIRX)	9.00	10,053,978	0.18	18,097
MFS Growth	21.86	24,428,135	0.60	146,569
Principal Mid Cap	3.58	3,996,246	0.68	27,174
Summit Creek	7.85	8,774,830	1.00	87,748
International Equity				
Templeton	6.42	7,169,506	0.79	56,639
MFS Int'l	7.83	8,747,841	0.75	65,609
Schroder	4.10	4,580,855	1.23	56,345
Domestic Fixed Income				
Northern Interm Fixed	6.93	7,749,810	0.06	4,650
Northern Core Fixed	7.09	7,924,928	0.06	4,755
Real Estate				
Clarion Lion Properties	4.68	5,227,232	1.10	57,500
Principal Enhanced Property Fund, LP	1.02	1,134,707	1.20	13,616
Infrastructure				
Lazard	5.88	6,568,025	0.90	59,112
Cash				
Securian (Cash)	1.40	1,564,795		-
City Reserve - Basic account	1.05	1,178,239		-
Cash	0.27	304,196		-

Historical Hybrid Composition

Allocation Mandate	Weight (%)
Oct-2001	
Russell 1000 Index	40.00
Russell Midcap Index	6.00
Russell 2000 Index	9.00
Blmbg. Barc. U.S. Aggregate Index	16.00
MSCI Emerging Markets (Net) Index	4.00
MSCI EAFE (Net) Index	15.00
NCREIF Fund Index-ODCE (VW)	2.50
S&P Global Infrastructure	5.00
FTSE NAREIT Equity REIT Index	2.50
Aug-2011	
Russell 1000 Index	40.00
Russell Midcap Index	6.00
Russell 2000 Index	9.00
Blmbg. Barc. U.S. Aggregate Index	16.00
MSCI Emerging Markets (Net) Index	4.00
MSCI EAFE (Net) Index	15.00
NCREIF Fund Index-ODCE (VW)	5.00
S&P Global Infrastructure	5.00
Aug-2017	
Russell 3000 Index	52.00
MSCI AC World ex USA (Net)	19.00
Blmbg. Barc. U.S. Aggregate Index	16.00
NCREIF Fund Index-ODCE (VW)	8.00
S&P Global Infrastructure	5.00
Feb-2019	
Russell 3000 Index	51.00
MSCI AC World ex USA (Net)	19.00
Blmbg. Barc. U.S. Aggregate Index	16.00
NCREIF Fund Index-Open End Diversified Core (EW)	8.00
S&P Global Infrastructure	5.00
90 Day U.S. Treasury Bill	1.00

Active Return	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
Alpha	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
Consistency	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
Distributed to Paid In (DPI)	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
Down Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
Downside Risk	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
Excess Return	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
Excess Risk	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
Information Ratio	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
Public Market Equivalent (PME)	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
R-Squared	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
Return	- Compounded rate of return for the period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
Standard Deviation	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
Total Value to Paid In (TVPI)	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
Tracking Error	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
Treynor Ratio	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
Up Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

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Investment Performance Review
Period Ending June 30, 2020

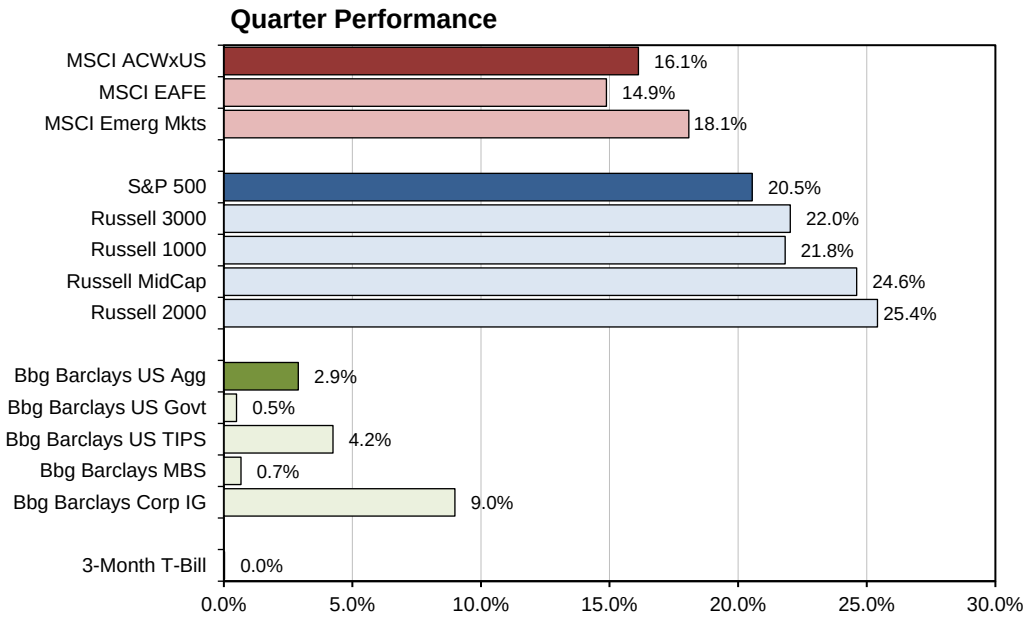
City of Falls Church Police Plan

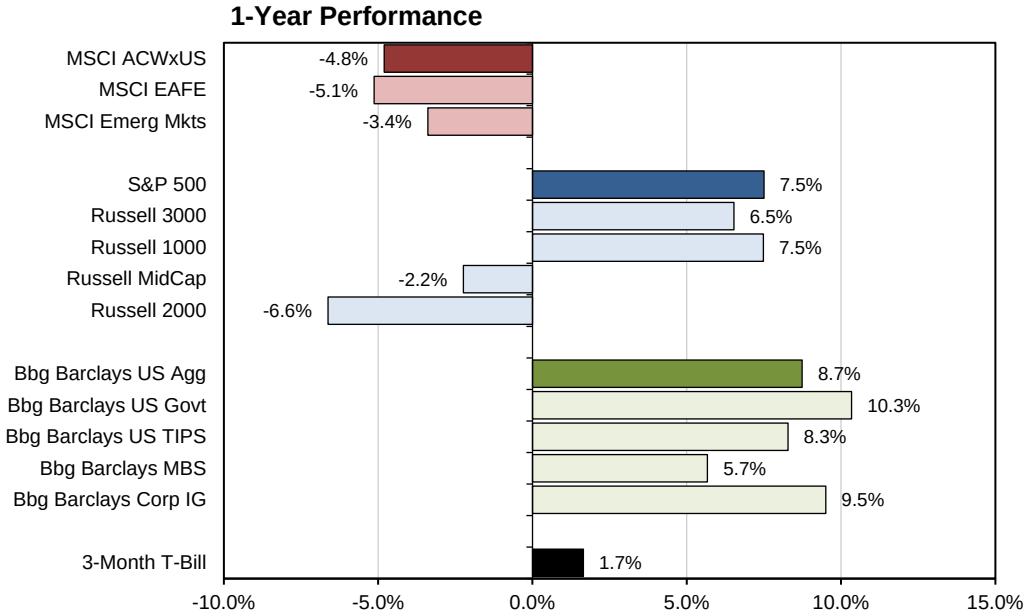
2nd Quarter 2020 Market Environment

- Broad asset class returns rebounded sharply in the 2nd quarter following their harsh drawdown during the 1st quarter. The US government and Federal Reserve Bank (Fed) implemented a myriad of programs designed to provide the economy with liquidity while also mitigating the affects from the shelter-in-place response to the COVID-19 (Coronavirus) pandemic. Despite having officially entered a recession in February, US economic data began to show improvement in May with regards to manufacturing, housing and employment as many States began the process of re-opening. Geopolitical tensions rose during the quarter following the vote by China to impose security measures in Hong Kong. Despite these risks, markets reacted positively to continued monetary easing from the Fed which supported markets directly through bond purchases and a variety of lending facilities. Within domestic equity markets, higher beta small cap stocks outperformed large cap stocks during the quarter with the Russell 2000 Index returning 25.4% versus a 20.5% return for the S&P 500 Index. US stocks also outperformed international stocks during the period. US equity results over the trailing 1-year period tell a different story with large cap stocks, returning 7.5% while mid- and small cap stocks were negative, returning -2.2% and -6.6%, respectively.

- Broad international equity markets posted positive returns for the 2nd quarter. Similar to US markets, international markets benefited from coordinated central bank policies which provided liquidity following the onset of the pandemic and subsequent re-opening of local economies. International returns also benefited from a weakening US dollar (USD) which declined against both the Euro and British pound during the period. Emerging markets outperformed relative to developed markets during the period with the MSCI Emerging Market Index returning 18.1% compared to 14.9% for the MSCI EAFE Index. Both developed and emerging market indices were negative over the 1-year period with the developed market index returning -5.1% and the emerging market index returning -3.4%.

- Fixed income returns remained strong during the 2nd quarter as investors benefited from declining interest rates globally. The broad market Bloomberg Barclays (BB) Aggregate Index gained 2.9% for the quarter as the Fed ramped up its purchases of US Treasury and Agency securities to boost market liquidity. In addition, the Fed announced that it would begin purchasing US corporate bonds to keep borrowing costs low and further support liquidity. For the quarter, the BB Corporate Investment Grade Index returned 9.0% as investors continued to seek out higher yielding assets. Over the trailing 1-year period, the bond market outperformed stocks with the BB Aggregate posting a solid return of 8.7%, while corporate bonds posted a higher 9.5%. US TIPS, which have been a laggard for some time, posted a respectable 8.3% over the trailing 1-year period despite low expectations for inflation.





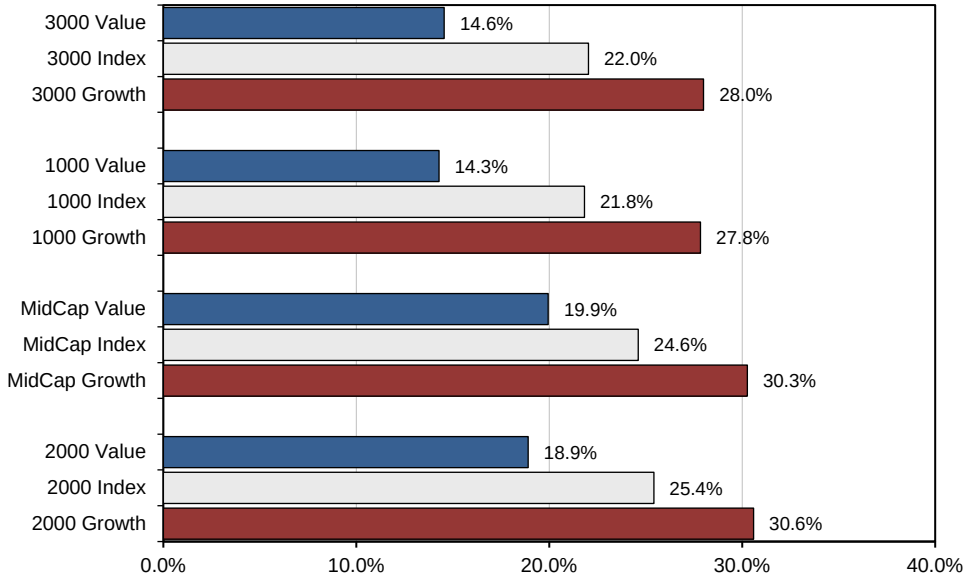
Source: Investment Metrics

- US equity returns were strongly positive during the 2nd quarter, but results varied considerably across the style and capitalization spectrum. Following one of the sharpest drawdowns in history during the previous quarter, various capitalization and style indices experienced their strongest quarterly performance in over 20-years. The US labor market showed dramatic improvement in May and June with more than 7 million jobs added for the period. However, the unemployment rate remained high at 11.1% in June with more than 14.7 million people unemployed. While States have taken steps to re-open by loosening stay-at-home orders, several States such as Florida, Texas, and Arizona, have experienced significant increases in Coronavirus cases since the orders were eased causing many States to consider rollbacks. Several potential treatments and vaccines are in various stages of development that will hopefully prove effective in treating the virus.

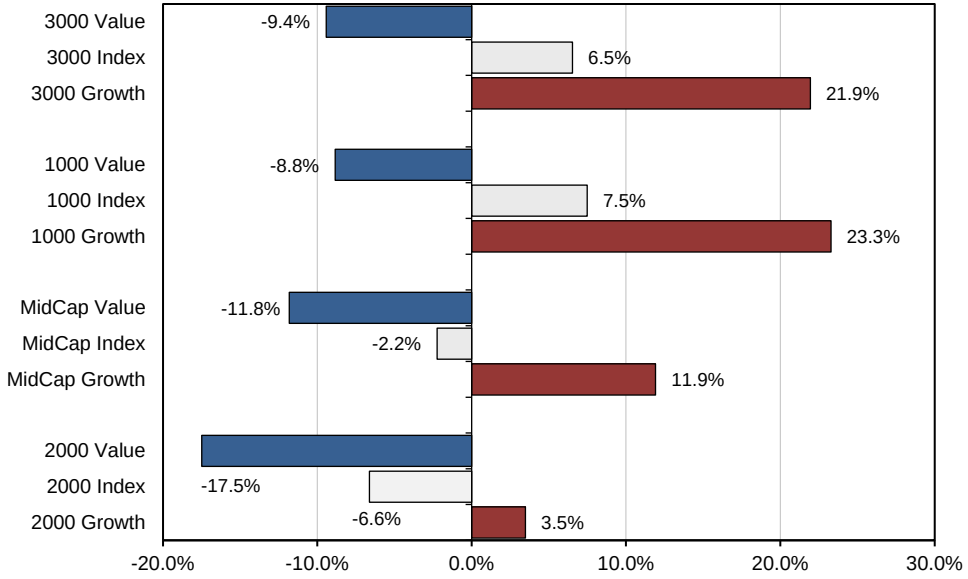
- During the quarter, small capitalization (cap) stocks broadly outperformed large cap stocks across the style spectrum. The small cap Russell 2000 Index gained a stellar 25.4% for the quarter versus a return of 21.8% for the large cap Russell 1000 Index. Investors were attracted to potentially faster growing small cap stocks which were disproportionately sold during the 1st quarter's drawdown. Small cap stocks have historically outperformed when the market enters a recovery phase. When viewed over the most recent 1-year period the trend has reversed with large cap stocks far outpacing their small cap counterparts. The Russell 1000 posted a return of 7.5% over the trailing 1-year relative to a negative return of -6.6% for the Russell 2000.

- Value stocks continued their recent trend of underperformance relative to growth stocks during the 2nd quarter recovery as investors gravitated toward companies perceived to have the potential to grow revenue and earnings faster. Within large cap, growth significantly outperformed value due to favorable weightings to the strong-performing technology and consumer discretionary sectors. The small cap Russell 2000 Growth Index was the best performing style index for the quarter, returning an outsized 30.6%. At the other extreme, the large cap value index posted the quarter's weakest relative style performance with a still solid 14.3% return. Results over the 1-year period also reflect the strength of the "growth over value" trend with value benchmarks posting negative results across the capitalization spectrum with a range of relative underperformance to growth of greater than 20% at each level.

Quarter Performance - Russell Style Series



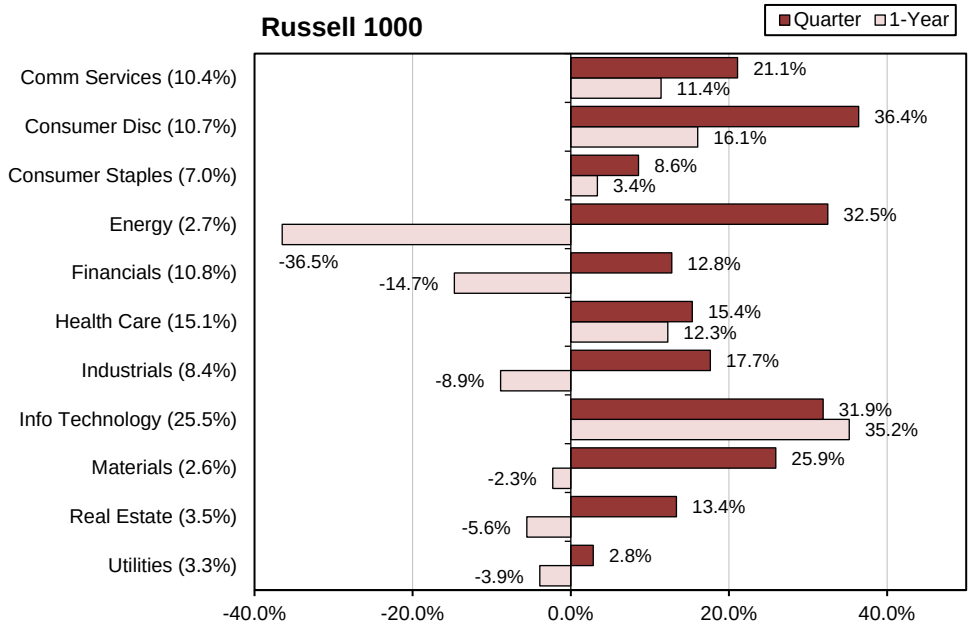
1-Year Performance - Russell Style Series

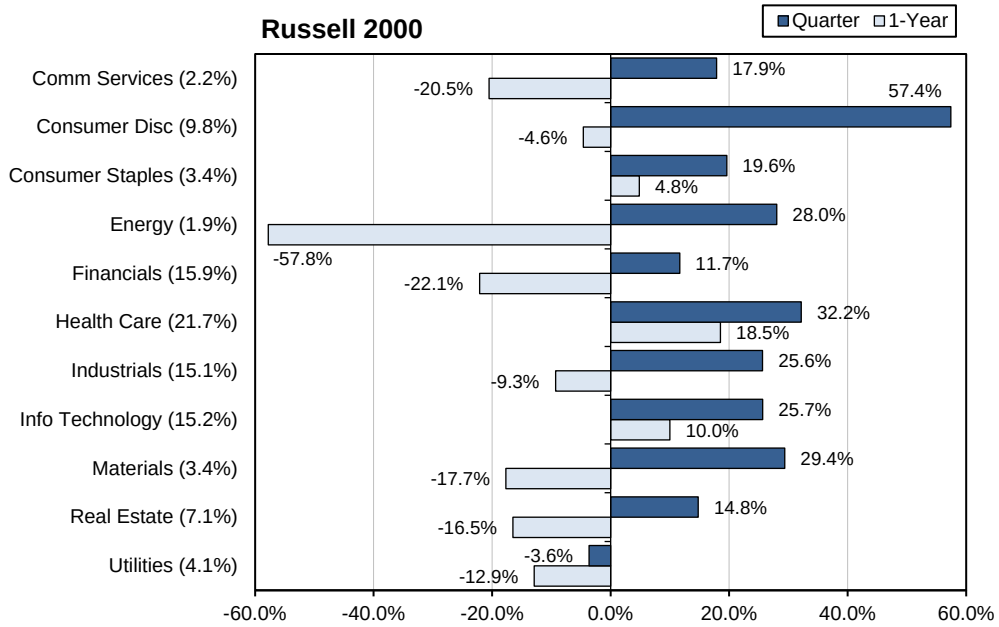


Source: Investment Metrics

- All eleven economic sectors within the large cap Russell 1000 Index were positive for the 2nd quarter with four sectors outpacing the return of the broad index. Growth-oriented sectors such as consumer discretionary and technology were some of the best performers for the quarter returning 36.4% and 32.5%, respectively. The energy sector, which had lagged considerably during the 1st quarter sell-off, also posted a strong return of 32.5% for the quarter as oil prices recovered on expectations of future economic growth. Defensive sectors such as consumer staples and utilities were the lowest performers during the period, but still posted positive returns of 8.6% and 2.8%, respectively. Traditional growth sectors also showed their dominance in the trailing 1-year period. The technology, consumer discretionary, health care and communication services sectors returned 35.2%, 16.1%, 15.4% and 11.4%, respectively, versus the core Russell 1000 index return of 7.5%. In contrast, traditional value sectors such as energy and financials, posted returns of -36.5% and -14.7%, respectively, for the trailing 1-year period.

- Ten of eleven small cap sectors posted results of greater than 10% for the 2nd quarter with only the utilities sector falling into negative territory with a return of -3.6%. In addition, seven of eleven economic sectors in the small cap index outpaced their respective large cap sector performance. While ten small cap sectors posting returns of more than 10% would be impressive in any period, six of them managed to exceed the 25.4% return of the broad Russell 2000 index. Like large caps, sectors sensitive to the consumer and economic growth were the strongest performers as investors gravitated toward those companies with the highest growth potential. Performance in consumer discretionary and health care sectors was particularly impressive with returns of 57.4% and 32.2% respectively for the quarter. Within the health care sector, many biotechnology stocks rose on hopes and speculation regarding potentially viable treatments or vaccines for the Coronavirus. Over the trailing 1-year period, the majority of small cap sector returns were negative with only three sectors contributing positive absolute performance. The traditional growth sectors also led the small cap index's performance over the trailing 1-year period with health care posting 18.5% and the technology sector returning 10%. On the opposite end of the spectrum, while the energy sector's 28.0% return for the quarter is certainly an impressive recovery, the sector led the 1-year trailing sector performance declines with the return of -57.8%.





Source: Morningstar Direct
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000

As of June 30, 2020

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Microsoft Corp	5.30%	29.4%	53.8%	Information Technology
Apple Inc	5.19%	43.8%	86.5%	Information Technology
Amazon.com Inc	4.07%	41.5%	45.7%	Consumer Discretionary
Facebook Inc A	1.90%	36.1%	17.7%	Communication Services
Alphabet Inc A	1.48%	22.0%	31.0%	Communication Services
Alphabet Inc Class C	1.46%	21.6%	30.8%	Communication Services
Johnson & Johnson	1.29%	8.0%	3.8%	Health Care
Berkshire Hathaway Inc Class B	1.21%	-2.4%	-16.3%	Financials
Visa Inc Class A	1.13%	20.1%	12.0%	Information Technology
Procter & Gamble Co	1.01%	9.4%	11.8%	Consumer Staples

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Deckers Outdoor Corp	0.31%	46.6%	11.6%	Consumer Discretionary
LHC Group Inc	0.30%	24.3%	45.8%	Health Care
BJ's Wholesale Club Holdings Inc	0.29%	46.3%	41.2%	Consumer Staples
Churchill Downs Inc	0.29%	29.3%	16.2%	Consumer Discretionary
Novavax Inc	0.27%	513.8%	1322.4%	Health Care
MyoKardia Inc	0.27%	106.1%	92.7%	Health Care
Helen Of Troy Ltd	0.27%	30.9%	44.4%	Consumer Discretionary
SiteOne Landscape Supply Inc	0.27%	54.8%	64.5%	Industrials
EastGroup Properties Inc	0.26%	14.3%	4.9%	Real Estate
Ultragenyx Pharmaceutical Inc	0.25%	76.1%	23.2%	Health Care

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Fastly Inc	0.02%	348.5%	319.8%	Information Technology
Wayfair Inc Class A	0.05%	269.8%	35.3%	Consumer Discretionary
Apache Corp	0.02%	223.9%	-51.9%	Energy
Targa Resources Corp	0.02%	192.7%	-44.7%	Energy
Etsy Inc	0.04%	176.4%	73.1%	Consumer Discretionary
Bill.com Holdings Inc Ordinary Shares	0.01%	163.8%	N/A	Information Technology
Livongo Health Inc	0.01%	163.5%	N/A	Health Care
Immunomedics Inc	0.03%	162.9%	155.5%	Health Care
Antero Midstream Corp	0.01%	159.5%	-45.7%	Energy
Thor Industries Inc	0.02%	156.2%	87.0%	Consumer Discretionary

Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Workhorse Group Inc	0.06%	860.8%	491.5%	Consumer Discretionary
Veritone Inc	0.02%	537.8%	77.8%	Information Technology
Novavax Inc	0.27%	513.8%	1322.4%	Health Care
Overstock.com Inc	0.06%	469.7%	109.0%	Consumer Discretionary
Vaxart Inc	0.02%	400.0%	1220.7%	Health Care
U.S. Auto Parts Network Inc	0.01%	394.9%	592.8%	Consumer Discretionary
Camping World Holdings Inc Class A	0.05%	380.5%	131.4%	Consumer Discretionary
Macrogenics Inc	0.08%	379.7%	64.5%	Health Care
Aspira Womens Health Inc	0.01%	361.3%	331.5%	Health Care
Retractable Technologies Inc	0.01%	350.0%	868.9%	Health Care

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Empire State Realty Trust Inc Class A	0.00%	-20.7%	-50.8%	Real Estate
Xerox Holdings Corp	0.01%	-18.0%	-54.8%	Information Technology
Hawaiian Electric Industries Inc	0.01%	-15.5%	-14.7%	Utilities
Biogen Inc	0.15%	-15.4%	14.4%	Health Care
Cincinnati Financial Corp	0.03%	-14.3%	-36.6%	Financials
General Electric Co	0.21%	-13.8%	-34.7%	Industrials
Coty Inc Class A	0.00%	-13.4%	-65.5%	Consumer Staples
EchoStar Corp	0.00%	-12.5%	-24.3%	Information Technology
NovoCure Ltd	0.02%	-11.9%	-6.2%	Health Care
Molson Coors Beverage Co B	0.02%	-11.9%	-36.5%	Consumer Staples

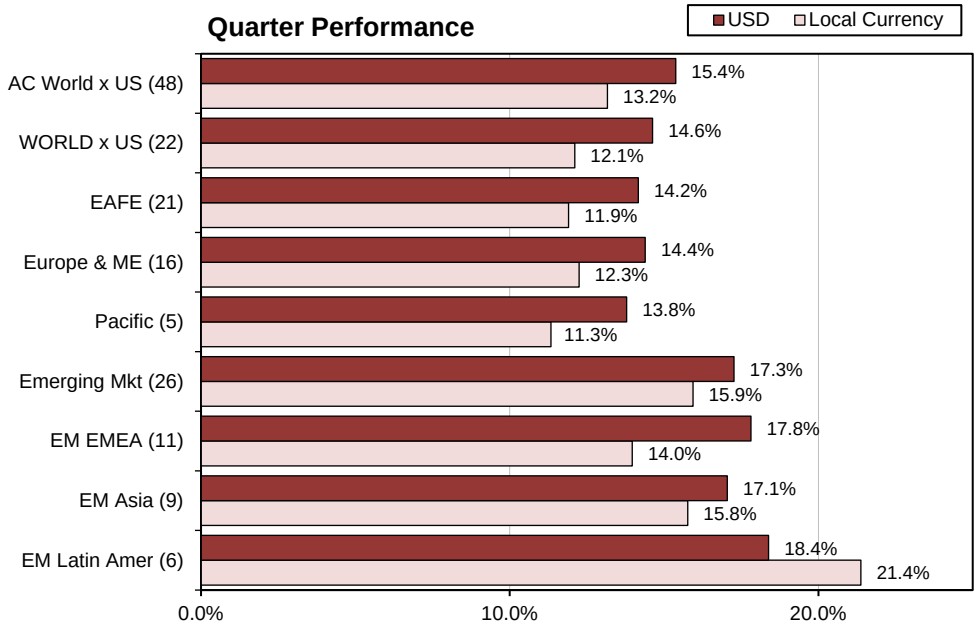
Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Chesapeake Energy Corp	0.00%	-85.8%	-98.7%	Energy
Hertz Global Holdings Inc	0.01%	-77.2%	-91.2%	Industrials
SeaChange International Inc	0.00%	-59.4%	5.6%	Information Technology
CorEnergy Infrastructure Trust Inc	0.01%	-50.0%	-75.6%	Real Estate
Evofem Biosciences Inc	0.01%	-46.8%	-57.4%	Health Care
Recro Pharma Inc	0.00%	-44.3%	-48.6%	Health Care
NextCure Inc	0.02%	-42.2%	43.1%	Health Care
NeuroBo Pharmaceuticals Inc	0.00%	-42.1%	-60.2%	Health Care
LendingClub Corp	0.02%	-42.0%	-72.3%	Financials
ProAssurance Corp	0.04%	-41.9%	-58.6%	Financials

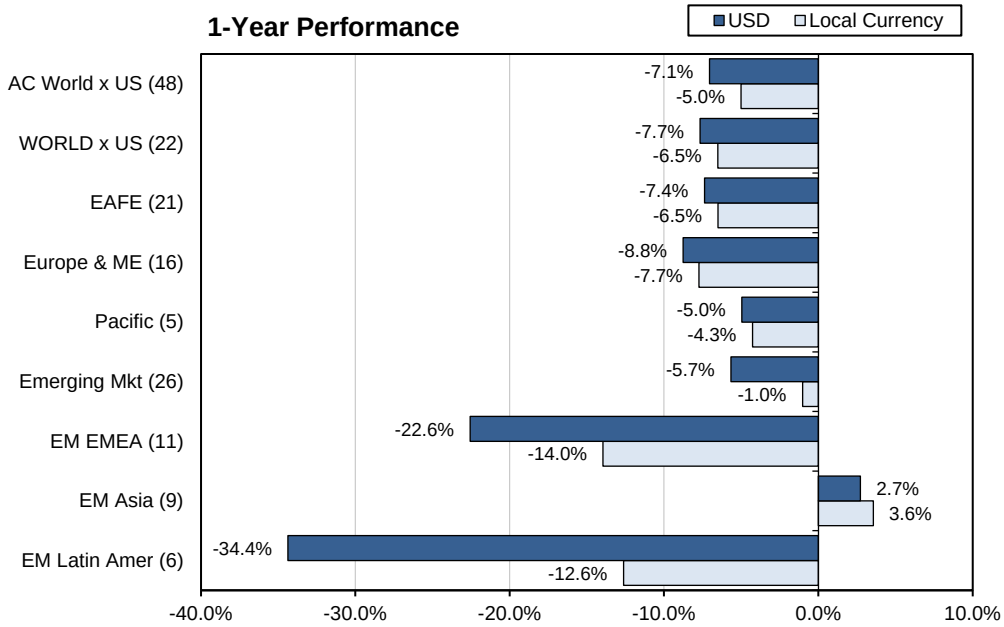
Source: Morningstar Direct

International and Regional Market Index Performance (Country Count)

As June 30, 2020

- Broad international equity index returns were positive in US dollar (USD) and local currency terms for the 2nd quarter as international markets rebounded following the meaningful drawdown during the previous period. USD denominated international equity index performance also benefited from a weakening USD which fell against most major currencies during the period. The MSCI ACWI ex US Index posted a return of 15.4% in USD and a slightly lower 13.2% in local currency terms. Like US equity market performance, international equity benchmarks also benefited from a strong monetary policy response from central banks in reaction to the Coronavirus. Since the virus ravaged Asia and Europe earlier than the US, many countries also began the process of re-opening their respective economies earlier than the US, resulting in improving economic datapoints. Both the ECB and Bank of Japan committed to significant lending programs designed to provide the capital markets with liquidity while continuing to purchase bonds under their existing economic recovery programs.
- Results for developed market international indices were strongly positive in both USD and local currency terms during the 2nd quarter. The MSCI EAFE Index returned 14.2% in USD and 11.0% in local currency terms. The spread of the pandemic slowed in Europe during the quarter allowing countries like Austria and Italy to begin the process of re-opening. ECB President Christine Lagarde announced that the bank was expanding its bond purchase program to $1.5 trillion, and in the UK, the Bank of England increased its bond purchasing program by roughly $125 billion. Both measures were targeted at providing the capital markets with liquidity.
- Emerging markets outperformed developed markets by just over 3% during the 2nd quarter. The MSCI Emerging Markets Index rose by 17.3% in USD terms and 15.9% in local currency. Emerging markets benefited relative to developed markets during the quarter as global economic activity increased despite increased geopolitical tensions from China's new security measures in Hong Kong. The rebound in commodity prices in anticipation of future economic growth was particularly beneficial to the emerging countries dependent on export demand.
- In contrast to the strong 2nd quarter returns, the 1-year trailing performance of international equity indices was broadly negative with only the Emerging Market Asia Index posting a positive return of 2.7% in USD for the period. The 1-year trailing currency impact on international index performance also contrasts with the 2nd quarter's USD weakness. Persistent strength of the USD over the 1-year period was a drag on the results realized by domestic holders of international equities for each of the indices tracked in the graph. This USD strength is particularly visible in the Emerging Market Middle East & Africa (EMEA) Index and Emerging Market Latin America Index.





Source: MSCI Global Index Monitor (Returns are Net)

US Dollar International Index Attribution & Country Detail

As of June 30, 2020

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.4%	12.3%	-6.5%
Consumer Discretionary	11.3%	17.6%	-6.9%
Consumer Staples	12.0%	8.5%	-3.8%
Energy	3.4%	-1.5%	-41.3%
Financials	16.1%	12.6%	-20.4%
Health Care	14.5%	13.8%	17.6%
Industrials	14.5%	17.5%	-8.0%
Information Technology	8.3%	23.0%	12.4%
Materials	7.3%	22.7%	-8.6%
Real Estate	3.2%	7.9%	-21.4%
Utilities	4.0%	11.4%	2.4%
Total	**100.0%**	**14.2%**	**-7.4%**

MSCI - ACWIxUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	7.6%	16.9%	2.6%
Consumer Discretionary	12.6%	19.8%	-0.6%
Consumer Staples	10.0%	9.4%	-4.8%
Energy	4.8%	8.5%	-34.5%
Financials	18.1%	10.3%	-22.4%
Health Care	10.7%	16.0%	18.3%
Industrials	11.4%	17.1%	-8.9%
Information Technology	11.0%	24.1%	19.2%
Materials	7.6%	24.6%	-8.7%
Real Estate	2.8%	6.8%	-21.4%
Utilities	3.5%	10.3%	-3.2%
Total	**100.0%**	**15.4%**	**-7.1%**

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	13.5%	22.6%	14.2%
Consumer Discretionary	17.4%	22.1%	12.7%
Consumer Staples	6.5%	12.6%	-9.1%
Energy	6.0%	21.6%	-25.3%
Financials	19.1%	6.6%	-27.4%
Health Care	4.3%	37.1%	33.5%
Industrials	4.7%	16.0%	-15.9%
Information Technology	16.9%	19.9%	21.3%
Materials	6.9%	23.3%	-16.2%
Real Estate	2.6%	3.6%	-20.3%
Utilities	2.3%	9.2%	-20.3%
Total	**100.0%**	**17.3%**	**-5.7%**

Country	MSCI-EAFE Weight	MSCI-ACWIxUS Weight	Quarter Return	1- Year Return
Japan	25.4%	16.5%	11.5%	0.9%
United Kingdom	14.1%	9.1%	7.4%	-20.8%
France	10.9%	7.1%	15.3%	-11.4%
Switzerland	10.3%	6.7%	9.7%	3.8%
Germany	9.3%	6.0%	24.5%	-4.4%
Australia	6.7%	4.4%	28.6%	-14.6%
Netherlands	4.3%	2.8%	24.0%	7.1%
Hong Kong	3.4%	2.2%	7.7%	-17.4%
Sweden	3.1%	2.0%	19.5%	0.8%
Spain	2.4%	1.6%	9.6%	-22.5%
Denmark	2.3%	1.5%	18.8%	20.7%
Italy	2.3%	1.5%	15.0%	-13.1%
Singapore	1.1%	0.7%	7.3%	-23.8%
Finland	1.0%	0.7%	18.6%	-3.6%
Belgium	0.9%	0.6%	11.9%	-23.3%
Ireland	0.6%	0.4%	19.6%	3.6%
Israel	0.6%	0.4%	20.0%	0.8%
Norway	0.5%	0.3%	13.2%	-25.1%
New Zealand	0.3%	0.2%	28.0%	19.6%
Austria	0.2%	0.1%	20.6%	-28.2%
Portugal	0.2%	0.1%	9.2%	4.2%
Total EAFE Countries	**100.0%**	**64.9%**	**14.2%**	**-7.4%**
Canada		6.5%	19.4%	-10.5%
Total Developed Countries		**71.4%**	**14.6%**	**-7.7%**
China		11.7%	14.2%	11.2%
Taiwan		3.5%	20.8%	17.8%
Korea		3.3%	19.3%	-1.4%
India		2.3%	20.4%	-18.2%
Brazil		1.5%	22.6%	-35.3%
South Africa		1.1%	25.8%	-26.9%
Russia		0.9%	17.6%	-17.7%
Saudi Arabia		0.8%	12.2%	-22.7%
Thailand		0.7%	22.4%	-25.8%
Malaysia		0.5%	12.6%	-14.8%
Mexico		0.5%	10.6%	-26.8%
Indonesia		0.4%	22.4%	-26.0%
Philippines		0.2%	19.3%	-21.4%
Qatar		0.2%	6.7%	-13.1%
Poland		0.2%	20.8%	-31.2%
Chile		0.2%	13.5%	-36.9%
United Arab Emirates		0.2%	14.4%	-21.7%
Turkey		0.1%	18.3%	-8.5%
Peru		0.1%	5.5%	-35.7%
Hungary		0.1%	14.1%	-18.3%
Colombia		0.1%	7.2%	-43.6%
Argentina		0.0%	43.7%	-47.0%
Greece		0.0%	9.6%	-35.1%
Czech Republic		0.0%	24.1%	-26.8%
Egypt		0.0%	4.9%	-13.7%
Pakistan		0.0%	11.7%	-17.3%
Total Emerging Countries		**28.6%**	**17.3%**	**-5.7%**
Total ACWIxUS Countries		**100.0%**	**15.4%**	**-7.1%**

Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

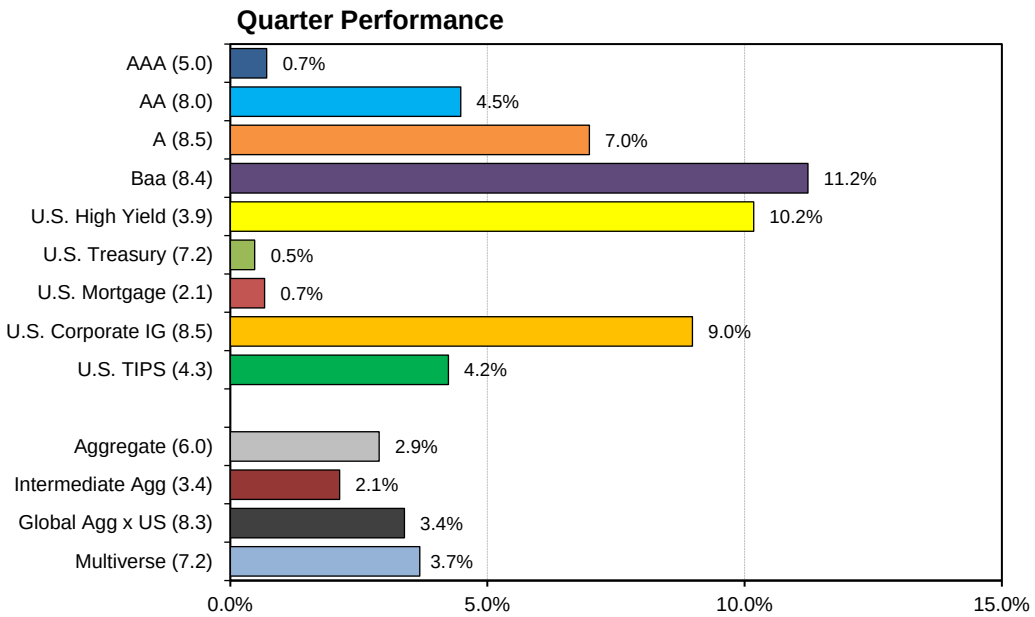
Domestic Bond Sector & Broad/Global Bond Market Performance (Duration)

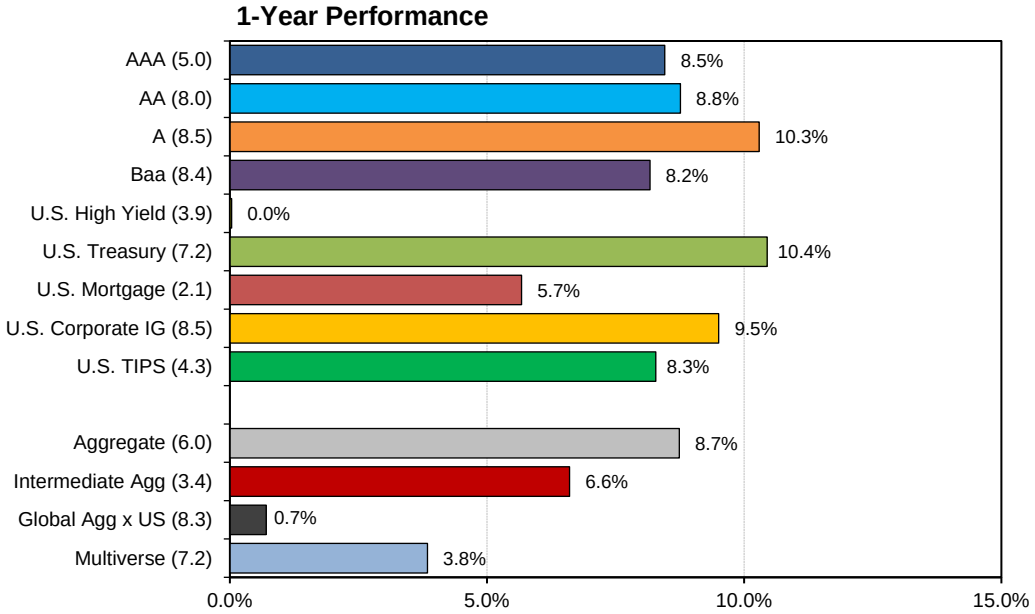
As of June 30, 2020

- Broad fixed income benchmarks rose sharply in the 2nd quarter as interest rates fell globally in response to the economic implications of the pandemic. The Fed continued purchasing bonds under programs announced during the first quarter to support capital markets and mitigate the damage to the economy. With US interest rates already near zero, the Fed announced several additional lending facilities to bridge the gap until economic activity picks up. These combined programs swelled the Fed's balance sheet to $7.0 trillion, an increase of more than $3 trillion since the beginning of the year. Late in the quarter the Fed commented that the economy faces a number of future challenges and expects interest rates to remain low for a prolonged period of time. Last August, the US Treasury yield curve inverted with the 2-year yield briefly surpassing the 10-year yield. Historically, a 2-10 inversion in the yield curve has preceded a US recession within the next 6-24 months. Recently, the National Bureau of Economic Research reported that the US economy entered a recession in February. While long-term US interest rates have moved lower recently, the Treasury yield curve has actually steepened which historically portends better economic growth.

- During the quarter, the Bloomberg Barclays (BB) US Aggregate Index returned 2.9%. Within the broad BB US Aggregate index, the US Treasury and mortgage-backed segments dramatically underperformed the corporate bond sector during the 2nd quarter. Investment grade corporate credit returned a strong 9.0% due to narrowing credit spreads and a high demand for yield. In contrast, over the 1-year period, US Treasuries outpaced both corporate and mortgage-backed issues with US Treasuries posting 10.4% versus returns of 9.5% and 5.7% for corporate and mortgage bonds, respectively. Outside of domestic markets, the BB Global Aggregate ex US Index increased by 3.4% for the quarter and 0.7% for the year.

- Within investment grade credit, lower quality issues outperformed higher quality issues during the 2nd quarter. Lower quality issues benefitted from both spread compression and investors seeking out higher yields when compared to US Treasury or mortgage bonds. On an absolute basis without adjusting for the duration differences in the sub-indices, Baa rated credit was the best performing investment grade (IG) segment, returning 11.2% for the quarter. AAA issues were the worst performing IG credit segment, returning just 0.7%. Despite a much lower duration, the high yield index returned 10.2% for the quarter. These issues benefited from credit spreads narrowing significantly following the drawdown in the first quarter. Outside of high yield performance, which was flat on the year, credit returns were all impressive with each segment returning greater than 8% for the period.



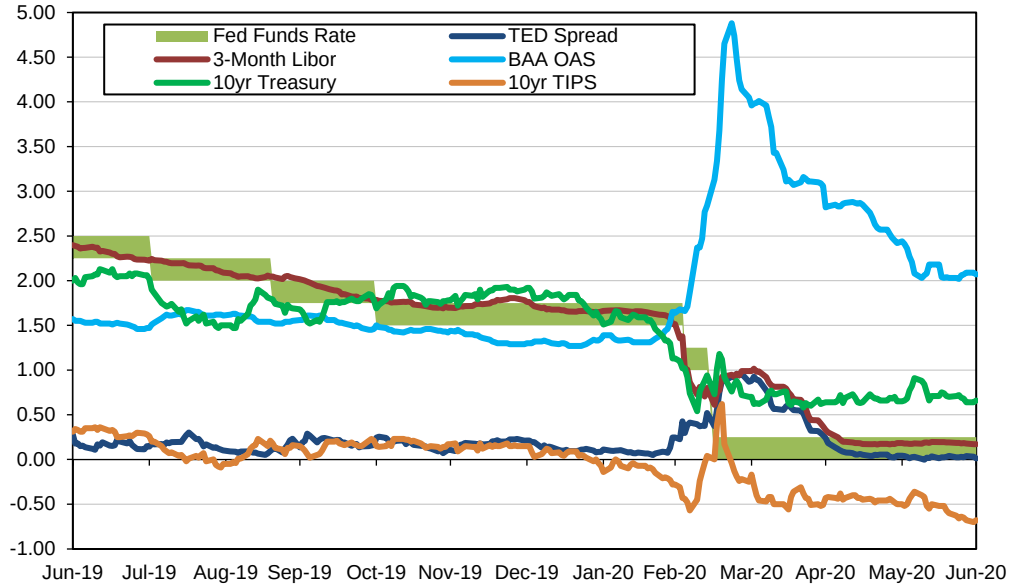


Source: Bloomberg

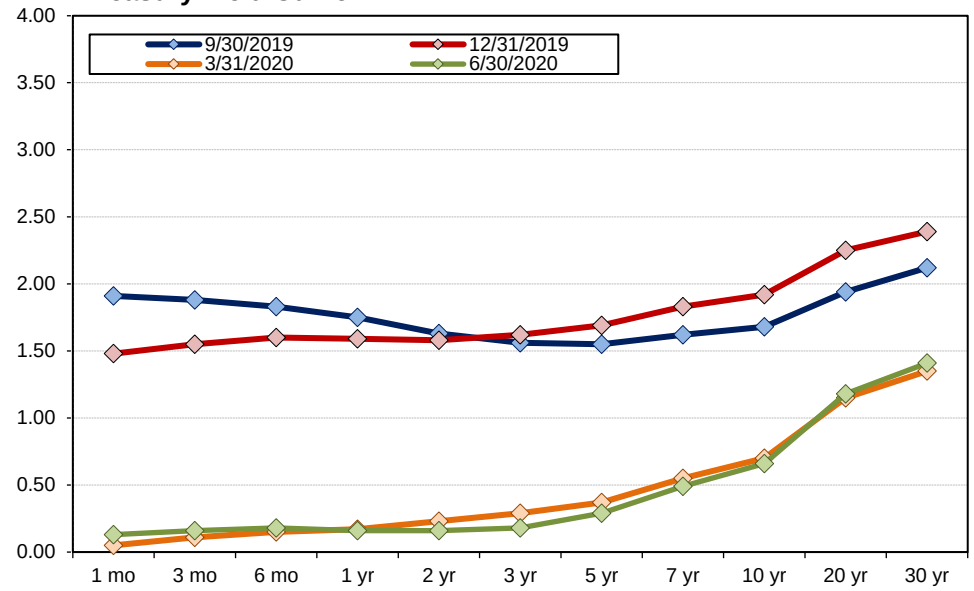
- Much of the index performance detailed in the bar graphs on the previous page is visible on a time series basis by reviewing the yield graph to the right. The '1-Year Trailing Market Rates' chart illustrates that over the last year, the 10-year Treasury yield (green line) fell from yields of greater than 2.0%, to a low of roughly 0.5% before ending the quarter at 0.66%. A decrease in yields provides a boost to bond performance. The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-Treasury investment grade issues. This line illustrates an abrupt increase in credit spreads beginning in early 2020 as investors moved to higher quality assets during the quarter's risk-off environment. Spreads increased dramatically in February following the US onset of the pandemic, reaching a high of 4.88% on March 23rd. Since then, spreads have steadily declined as markets stabilized following the aggressive actions taken by the Treasury and Fed. During the quarter, the BAA OAS spread fell by 1.98%. Similar to Treasury yield declines, spread tightening in corporate bonds is equivalent to an interest rate decrease, which causes bond prices to rise. This compression produces an additional tailwind for corporate bond index returns. The green band across the graph illustrates the decrease in the Fed Funds Rate range due to the recent US monetary policy easing. The Fed began the year with a rate range of 1.50%-1.75%, which it aggressively cut to a range of 0.00%-0.25% during the 1st quarter, where it remained at the end of the quarter.

- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four calendar quarters. The higher yields and curve inversion experienced in the 2nd half of 2019 have given way to 2020's extremely low interest rate environment. The curve continued to flatten during the 2nd quarter, particularly between the 1- and 5-year maturities. On the longer end of the curve, rates rose slightly during the period as the US Treasury issued longer-dated bonds to lock in low borrowing costs. An increase in Treasury supply, in conjunction with concerns about the potential for rising inflation, resulted in slightly higher yields during the quarter.

1-Year Trailing Market Rates



Treasury Yield Curve



Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)

Police - 1 Quarter

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
32,029,471	-232,810	4,561,996	81,076	36,358,657	14.25

Basic - 1 Quarter

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
98,703,040	-1,196,722	14,251,506	235,728	111,757,823	14.44

OPEB - 1 Quarter

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
14,023,561	-	2,297,560	68,658	16,321,121	16.38

Police - 1 Year

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
36,332,052	-1,263,252	1,289,857	742,825	36,358,657	3.63

Basic - 1 Year

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
113,093,035	-5,206,280	3,871,069	1,664,787	111,757,823	3.61

OPEB - 1 Year

Beginning Market Value $	Net Cash Flow $	Gain/Loss $	Income $	Ending Market Value $	Gross Return
15,764,250	-	556,871	318,842	16,321,121	3.53

1 Quarter	Market Value 04/01/2020	Net Flows	Return On Investment	Market Value 06/30/2020
Police Total Fund	**32,029,471**	**-232,810**	**4,561,996**	**36,358,657**
Total Domestic Equity	**15,464,399**	**-244,629**	**3,403,997**	**18,623,768**
SKBA	317	-317	-	-
JPM Equity Inc (OIEJX)	2,771,246	-	367,791	3,139,037
Vanguard Equity Inc (VEIRX)	2,806,191	-	355,502	3,161,694
MFS Growth	6,424,009	-244,312	1,584,454	7,764,151
Principal Mid Cap	1,270,612	-	315,898	1,586,511
Summit Creek	2,192,024	-	780,352	2,972,376
Total International Equity	**5,607,225**	**-**	**902,321**	**6,509,546**
Templeton	2,052,373	-	263,125	2,315,498
MFS Int'l	2,360,211	-	408,520	2,768,732
International Emerging Market				
Schroder	1,194,640	-	230,676	1,425,317
Total Domestic Fixed Income	**4,565,341**	**-**	**128,639**	**4,693,980**
Northern Interm Fixed	2,258,525	-	63,982	2,322,507
Northern Core Fixed	2,306,816	-	64,657	2,371,473
Securian	-	-	-	-
Total Real Estate	**2,824,248**	**-8,380**	**-47,651**	**2,768,217**
Clarion Lion Properties	1,668,215	-4,334	-30,371	1,633,510
Principal Enhanced Property Fund, LP	1,156,033	-4,046	-17,280	1,134,707
Infrastructure				
Lazard	1,571,220	-	175,351	1,746,571
Total Cash	**1,997,038**	**20,199**	**-662**	**2,016,575**
Securian (Cash)	1,364,074	22,959	-673	1,386,360
City Reserve - Police account	540,642	-23	10	540,629
Cash	92,322	-2,737	2	89,587

Fiscal Year To Date

	Market Value 07/01/2019	Net Flows	Return On Investment	Market Value 06/30/2020
Police Total Fund	**36,332,052**	**-1,263,252**	**1,289,857**	**36,358,657**
Total Domestic Equity	**19,901,893**	**-2,266,621**	**988,495**	**18,623,768**
SKBA	6,997,869	-6,822,761	-175,108	-
JPM Equity Inc (OIEJX)	-	3,406,346	-267,309	3,139,037
Vanguard Equity Inc (VEIRX)	-	3,406,346	-244,652	3,161,694
MFS Growth	7,543,866	-1,166,541	1,386,826	7,764,151
Principal Mid Cap	2,364,185	-770,010	-7,664	1,586,511
Summit Creek	2,995,974	-320,000	296,402	2,972,376
Total International Equity	**6,713,444**	**-**	**-203,898**	**6,509,546**
Templeton	2,596,152	-	-280,655	2,315,498
MFS Int'l	2,679,973	-	88,759	2,768,732
International Emerging Market				
Schroder	1,437,319	-	-12,002	1,425,317
Total Domestic Fixed Income	**5,510,834**	**-1,185,100**	**368,246**	**4,693,980**
Northern Interm Fixed	2,165,842	-	156,666	2,322,507
Northern Core Fixed	2,179,796	-	191,677	2,371,473
Securian	1,165,197	-1,185,100	19,903	-
Total Real Estate	**1,599,379**	**1,067,184**	**101,654**	**2,768,217**
Clarion Lion Properties	1,599,379	-17,168	51,299	1,633,510
Principal Enhanced Property Fund, LP	-	1,084,352	50,355	1,134,707
Infrastructure				
Lazard	1,835,206	-76,440	-12,195	1,746,571
Total Cash	**771,296**	**1,197,725**	**47,554**	**2,016,575**
Securian (Cash)	-	1,344,038	42,322	1,386,360
City Reserve - Police account	-	537,518	3,111	540,629
Cash	771,296	-683,830	2,121	89,587

1 Year	Market Value 07/01/2019	Net Flows	Return On Investment	Market Value 06/30/2020
Police Total Fund	**36,332,052**	**-1,263,252**	**1,289,857**	**36,358,657**
Total Domestic Equity	**19,901,893**	**-2,266,621**	**988,495**	**18,623,768**
SKBA	6,997,869	-6,822,761	-175,108	-
JPM Equity Inc (OIEJX)	-	3,406,346	-267,309	3,139,037
Vanguard Equity Inc (VEIRX)	-	3,406,346	-244,652	3,161,694
MFS Growth	7,543,866	-1,166,541	1,386,826	7,764,151
Principal Mid Cap	2,364,185	-770,010	-7,664	1,586,511
Summit Creek	2,995,974	-320,000	296,402	2,972,376
Total International Equity	**6,713,444**	**-**	**-203,898**	**6,509,546**
Templeton	2,596,152	-	-280,655	2,315,498
MFS Int'l	2,679,973	-	88,759	2,768,732
International Emerging Market				
Schroder	1,437,319	-	-12,002	1,425,317
Total Domestic Fixed Income	**5,510,834**	**-1,185,100**	**368,246**	**4,693,980**
Northern Interm Fixed	2,165,842	-	156,666	2,322,507
Northern Core Fixed	2,179,796	-	191,677	2,371,473
Securian	1,165,197	-1,185,100	19,903	-
Total Real Estate	**1,599,379**	**1,067,184**	**101,654**	**2,768,217**
Clarion Lion Properties	1,599,379	-17,168	51,299	1,633,510
Principal Enhanced Property Fund, LP	-	1,084,352	50,355	1,134,707
Infrastructure				
Lazard	1,835,206	-76,440	-12,195	1,746,571
Total Cash	**771,296**	**1,197,725**	**47,554**	**2,016,575**
Securian (Cash)	-	1,344,038	42,322	1,386,360
City Reserve - Police account	-	537,518	3,111	540,629
Cash	771,296	-683,830	2,121	89,587

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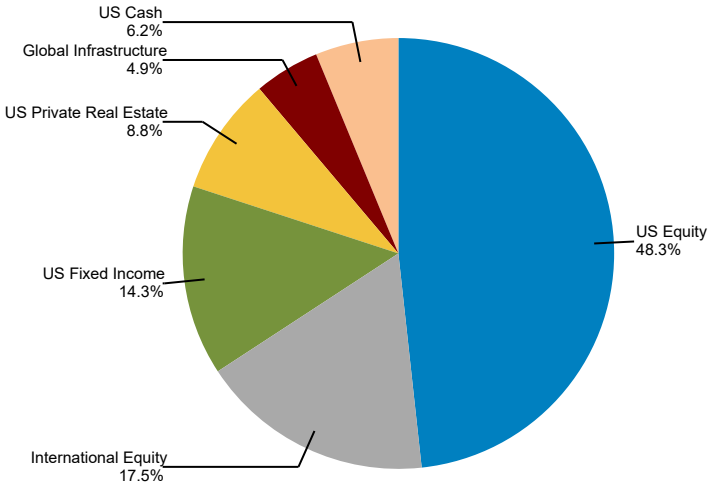
Asset Allocation Attributes

	Domestic Equity		International Equity		Emerging Equity		Domestic Fixed Income		Real Estate		Infrastructure		Cash Equivalent		Total Fund	
	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%
Police Total Fund	**18,490,853**	**50.9**	**5,084,229**	**14.0**	**1,425,317**	**3.9**	**4,693,980**	**12.9**	**2,746,802**	**7.6**	**1,746,571**	**4.8**	**2,170,905**	**6.0**	**36,358,657**	**100.0**
Total Domestic Equity	**18,490,853**	**99.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**132,915**	**0.7**	**18,623,768**	**51.2**
JPM Equity Inc (OIEJX)	3,139,037	100.0	-	-	-	-	-	-	-	-	-	-	-	-	3,139,037	8.6
Vanguard Equity Inc (VEIRX)	3,161,694	100.0	-	-	-	-	-	-	-	-	-	-	-	-	3,161,694	8.7
MFS Growth	7,746,861	99.8	-	-	-	-	-	-	-	-	-	-	17,290	0.2	7,764,151	21.4
Principal Mid Cap	1,586,511	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1,586,511	4.4
Summit Creek	2,856,751	96.1	-	-	-	-	-	-	-	-	-	-	115,625	3.9	2,972,376	8.2
Total International Equity	**-**	**-**	**5,084,229**	**78.1**	**1,425,317**	**21.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6,509,546**	**17.9**
Templeton	-	-	2,315,498	100.0	-	-	-	-	-	-	-	-	-	-	2,315,498	6.4
MFS Int'l	-	-	2,768,732	100.0	-	-	-	-	-	-	-	-	-	-	2,768,732	7.6
International Emerging Market																
Schroder	-	-	-	-	1,425,317	100.0	-	-	-	-	-	-	-	-	1,425,317	3.9
Total Domestic Fixed Income	**-**	**-**	**-**	**-**	**-**	**-**	**4,693,980**	**100.0**	**-**	**-**	**-**	**-**	**-**	**-**	**4,693,980**	**12.9**
Northern Interm Fixed	-	-	-	-	-	-	2,322,507	100.0	-	-	-	-	-	-	2,322,507	6.4
Northern Core Fixed	-	-	-	-	-	-	2,371,473	100.0	-	-	-	-	-	-	2,371,473	6.5
Total Real Estate	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2,746,802**	**99.2**	**-**	**-**	**21,415**	**0.8**	**2,768,217**	**7.6**
Clarion Lion Properties	-	-	-	-	-	-	-	-	1,622,800	99.3	-	-	10,710	0.7	1,633,510	4.5
Principal Enhanced Property Fund, LP	-	-	-	-	-	-	-	-	1,124,002	99.1	-	-	10,705	0.9	1,134,707	3.1
Infrastructure																
Lazard	-	-	-	-	-	-	-	-	-	-	1,746,571	100.0	-	-	1,746,571	4.8
Total Cash	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2,016,575**	**100.0**	**2,016,575**	**5.5**
Securian (Cash)	-	-	-	-	-	-	-	-	-	-	-	-	1,386,360	100.0	1,386,360	3.8
City Reserve - Police account	-	-	-	-	-	-	-	-	-	-	-	-	540,629	100.0	540,629	1.5
Cash	-	-	-	-	-	-	-	-	-	-	-	-	89,587	100.0	89,587	0.2

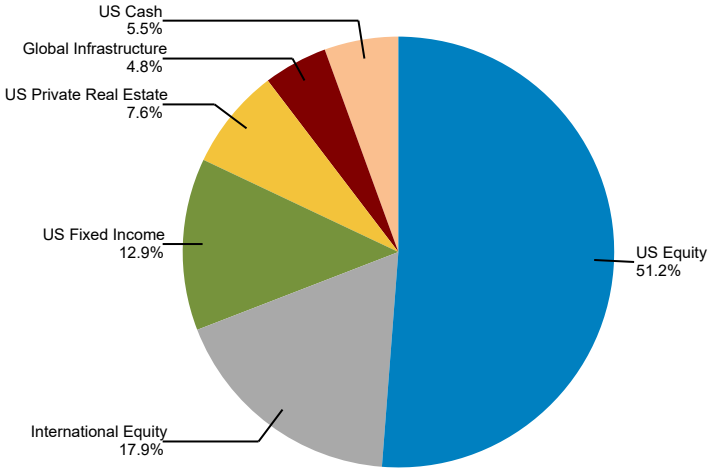
March 31, 2020 : $32,029,471



Allocation

	Market Value	Allocation
US Equity	15,464,399	48.3
International Equity	5,607,225	17.5
US Fixed Income	4,565,341	14.3
US Private Real Estate	2,824,248	8.8
Global Infrastructure	1,571,220	4.9
US Cash	1,997,038	6.2

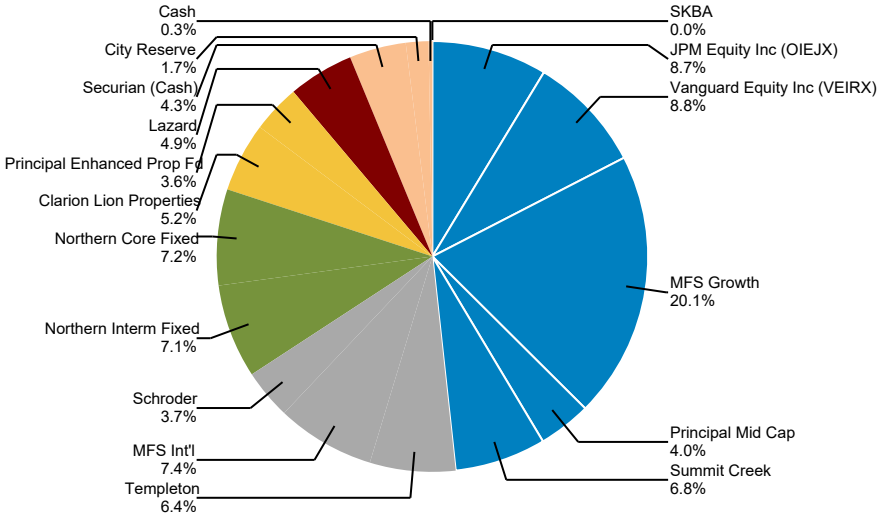
June 30, 2020 : $36,358,657



Allocation

	Market Value	Allocation
US Equity	18,623,768	51.2
International Equity	6,509,546	17.9
US Fixed Income	4,693,980	12.9
US Private Real Estate	2,768,217	7.6
Global Infrastructure	1,746,571	4.8
US Cash	2,016,575	5.5

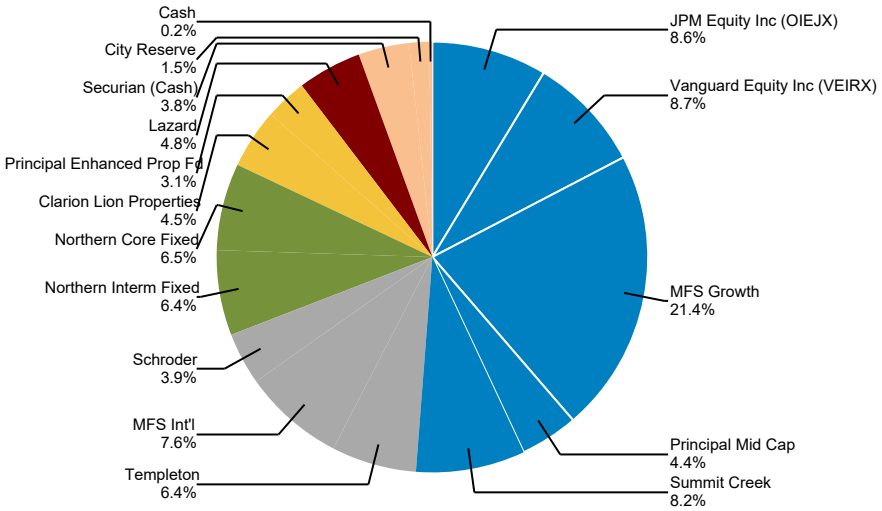
March 31, 2020 : $32,029,471



Allocation

	Market Value	Allocation
SKBA	317	0.0
JPM Equity Inc (OIEJX)	2,771,246	8.7
Vanguard Equity Inc (VEIRX)	2,806,191	8.8
MFS Growth	6,424,009	20.1
Principal Mid Cap	1,270,612	4.0
Summit Creek	2,192,024	6.8
Templeton	2,052,373	6.4
MFS Int'l	2,360,211	7.4
Schroder	1,194,640	3.7
Northern Interm Fixed	2,258,525	7.1
Northern Core Fixed	2,306,816	7.2
Clarion Lion Properties	1,668,215	5.2
Principal Enhanced Prop Fd	1,156,033	3.6
Lazard	1,571,220	4.9
Securian (Cash)	1,364,074	4.3
City Reserve	540,642	1.7
Cash	92,322	0.3

June 30, 2020 : $36,358,657



Allocation

	Market Value	Allocation
SKBA	-	0.0
JPM Equity Inc (OIEJX)	3,139,037	8.6
Vanguard Equity Inc (VEIRX)	3,161,694	8.7
MFS Growth	7,764,151	21.4
Principal Mid Cap	1,586,511	4.4
Summit Creek	2,972,376	8.2
Templeton	2,315,498	6.4
MFS Int'l	2,768,732	7.6
Schroder	1,425,317	3.9
Northern Interm Fixed	2,322,507	6.4
Northern Core Fixed	2,371,473	6.5
Clarion Lion Properties	1,633,510	4.5
Principal Enhanced Prop Fd	1,134,707	3.1
Lazard	1,746,571	4.8
Securian (Cash)	1,386,360	3.8
City Reserve	540,629	1.5
Cash	89,587	0.2

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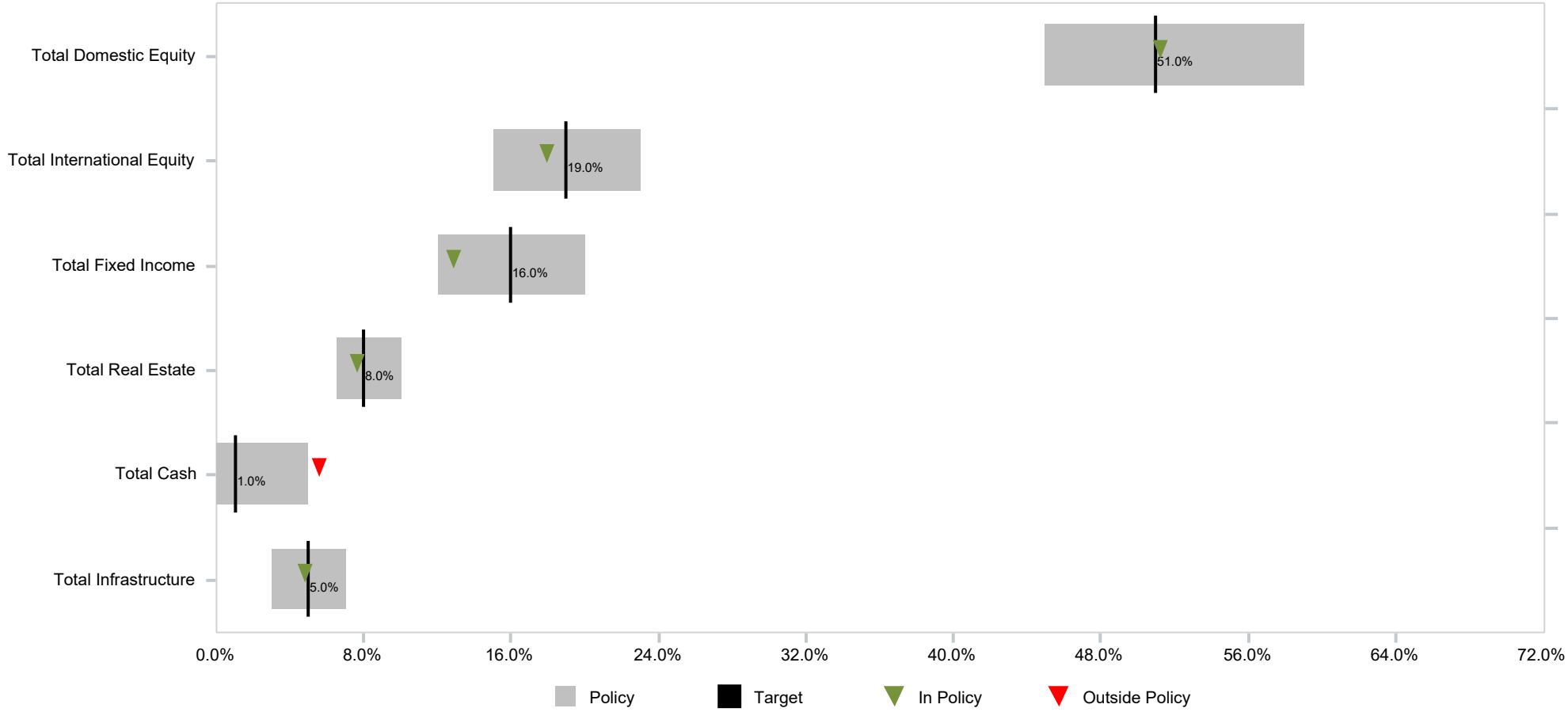
Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Target Rebal. ($)	Differences (%)
Police Total Fund	36,358,657	100.0		100.0		-	0.0
Total Domestic Equity	18,623,768	51.2	45.0	51.0	59.0	-80,853	0.2
Total International Equity	6,509,546	17.9	15.0	19.0	23.0	398,599	-1.1
Total Fixed Income	4,693,980	12.9	12.0	16.0	20.0	1,123,405	-3.1
Total Real Estate	2,768,217	7.6	6.5	8.0	10.0	140,476	-0.4
Total Cash	2,016,575	5.5	0.0	1.0	5.0	-1,652,989	4.5
Total Infrastructure	1,746,571	4.8	3.0	5.0	7.0	71,362	-0.2

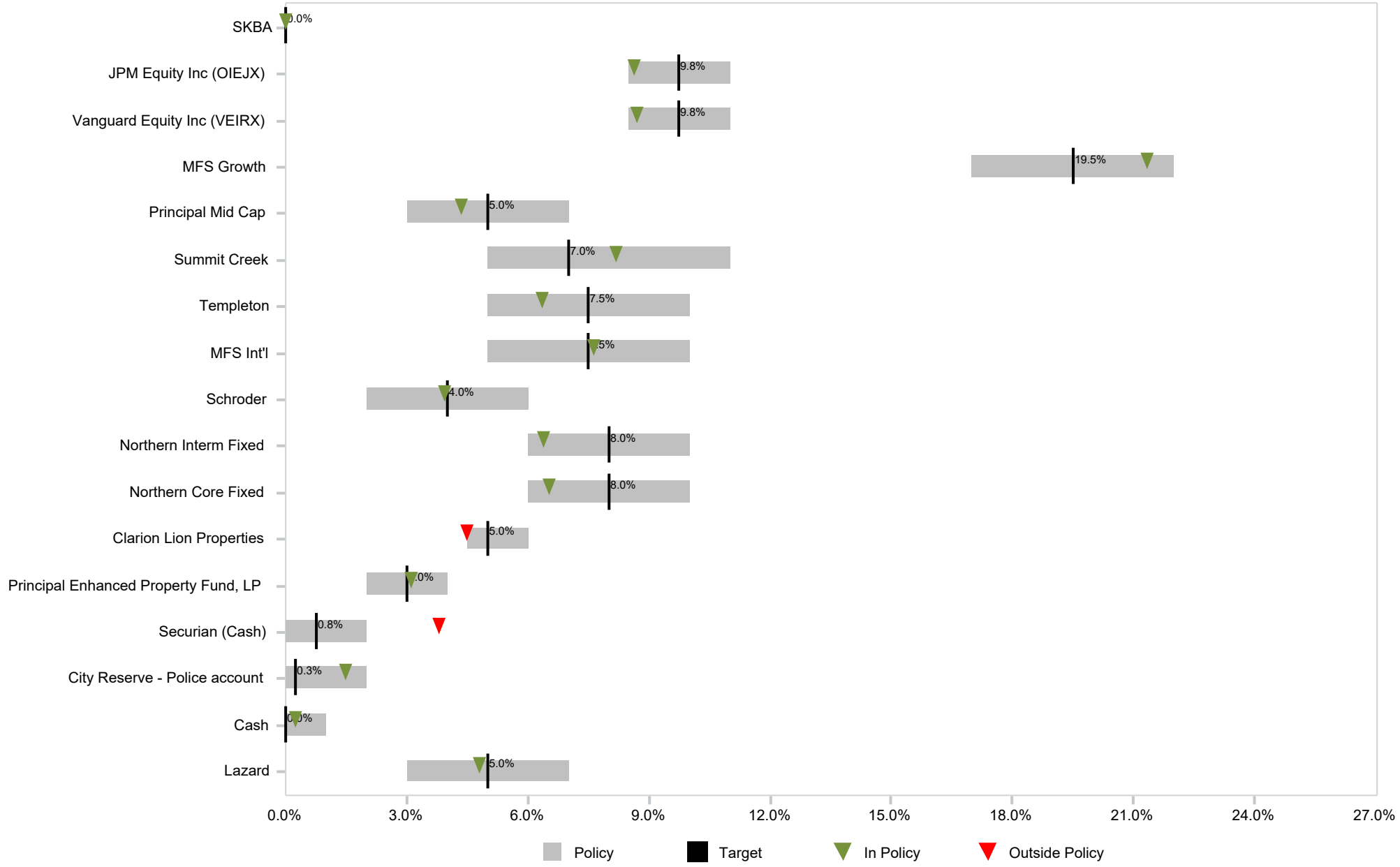
Allocation Summary



Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Target Rebal. ($)	Differences (%)
Police Total Fund	36,358,657	100.0		100.0		-	0.0
Total Equity	25,133,314	69.1		70.0		317,746	-0.9
Total Domestic Equity	18,623,768	51.2		51.0		-80,853	0.2
SKBA	-	0.0	0.0	0.0	0.0	-	0.0
JPM Equity Inc (OIEJX)	3,139,037	8.6	8.5	9.8	11.0	405,932	-1.1
Vanguard Equity Inc (VEIRX)	3,161,694	8.7	8.5	9.8	11.0	383,276	-1.1
MFS Growth	7,764,151	21.4	17.0	19.5	22.0	-674,213	1.9
Principal Mid Cap	1,586,511	4.4	3.0	5.0	7.0	231,422	-0.6
Summit Creek	2,972,376	8.2	5.0	7.0	11.0	-427,270	1.2
Total International Equity	6,509,546	17.9		19.0		398,599	-1.1
Templeton	2,315,498	6.4	5.0	7.5	10.0	411,401	-1.1
MFS Int'l	2,768,732	7.6	5.0	7.5	10.0	-41,832	0.1
Schroder	1,425,317	3.9	2.0	4.0	6.0	29,030	-0.1
Total Fixed Income	4,693,980	12.9		16.0		1,123,405	-3.1
Total Domestic Fixed Income	4,693,980	12.9		16.0		1,123,405	-3.1
Northern Interm Fixed	2,322,507	6.4	6.0	8.0	10.0	586,186	-1.6
Northern Core Fixed	2,371,473	6.5	6.0	8.0	10.0	537,220	-1.5
Total Real Estate	2,768,217	7.6		8.0		140,476	-0.4
Clarion Lion Properties	1,633,510	4.5	4.5	5.0	6.0	184,423	-0.5
Principal Enhanced Property Fund, LP	1,134,707	3.1	2.0	3.0	4.0	-43,947	0.1
Total Cash	2,016,575	5.5		1.0		-1,652,989	4.5
Securian (Cash)	1,386,360	3.8	0.0	0.8	2.0	-1,113,670	3.1
City Reserve - Police account	540,629	1.5	0.0	0.3	2.0	-449,732	1.2
Cash	89,587	0.2	0.0	0.0	1.0	-89,587	0.2
Total Infrastructure	1,746,571	4.8		5.0		71,362	-0.2
Lazard	1,746,571	4.8	3.0	5.0	7.0	71,362	-0.2

Allocation Summary



Comparative Performance

	QTR		FYTD		1 YR		3 YR		5 YR		7 YR		10 YR	
Police Total Fund	**14.25**	**(23)**	**3.63**	**(47)**	**3.63**	**(47)**	**8.21**	**(7)**	**8.17**	**(4)**	**8.79**	**(4)**	**10.40**	**(2)**
Policy	15.19	(13)	3.69	(46)	3.69	(46)	6.96	(18)	7.21	(10)	8.57	(5)	10.21	(2)
All Master Trust - Total Fund Median	12.10		3.39		3.39		5.28		5.32		6.30		7.52	
Police Total Fund	**14.25**	**(92)**	**3.63**	**(31)**	**3.63**	**(31)**	**8.21**	**(15)**	**8.17**	**(8)**	**8.79**	**(9)**	**10.40**	**(3)**
Policy	15.19	(80)	3.69	(31)	3.69	(31)	6.96	(29)	7.21	(22)	8.57	(19)	10.21	(4)
Master Trust >=70% Equity Median	16.15		2.99		2.99		5.96		6.17		7.39		8.82	
Total Domestic Equity	**22.02**	**(35)**	**5.65**	**(33)**	**5.65**	**(33)**	**11.94**	**(6)**	**11.01**	**(9)**	**11.59**	**(24)**	**14.17**	**(9)**
Russell 3000 Index	22.03	(35)	6.53	(25)	6.53	(25)	10.04	(25)	10.03	(25)	11.68	(22)	13.72	(23)
All Master Trust-US Equity Segment Median	20.98		4.12		4.12		8.38		8.85		10.51		12.79	
JPM Equity Inc (OIEJX)	13.27	(74)	N/A		N/A		N/A		N/A		N/A		N/A	
Russell 1000 Value Index	14.29	(63)	-8.84	(76)	-8.84	(76)	1.82	(64)	4.64	(61)	7.11	(49)	10.41	(40)
IM Equity Income (MF) Median	15.17		-5.51		-5.51		3.46		5.41		7.07		9.98	
Vanguard Equity Inc (VEIRX)	12.67	(92)	N/A		N/A		N/A		N/A		N/A		N/A	
Russell 1000 Value Index	14.29	(68)	-8.84	(65)	-8.84	(65)	1.82	(55)	4.64	(42)	7.11	(40)	10.41	(27)
IM U.S. Large Cap Value Equity (MF) Median	15.42		-7.67		-7.67		2.13		4.28		6.68		9.72	
MFS Growth	24.68	(85)	20.88	(52)	20.88	(52)	20.32	(22)	16.73	(12)	N/A		N/A	
Russell 1000 Growth Index	27.84	(46)	23.28	(26)	23.28	(26)	18.99	(37)	15.89	(24)	16.62	(27)	17.23	(21)
IM U.S. Large Cap Growth Equity (MF) Median	27.69		21.05		21.05		18.03		14.47		15.69		15.98	
Principal Mid Cap	24.86	(24)	4.20	(10)	4.20	(10)	12.14	(4)	11.15	(5)	13.00	(4)	15.64	(2)
Russell Midcap Index	24.61	(26)	-2.24	(30)	-2.24	(30)	5.79	(22)	6.76	(25)	9.40	(24)	12.35	(19)
IM U.S. Mid Cap Core Equity (SA+CF+MF) Median	21.66		-4.82		-4.82		3.43		4.95		7.94		11.16	
Summit Creek	35.60	(37)	10.68	(37)	10.68	(37)	16.05	(34)	11.68	(35)	N/A		N/A	
Russell 2000 Growth Index	30.58	(60)	3.48	(57)	3.48	(57)	7.86	(73)	6.86	(76)	10.03	(75)	12.92	(79)
IM U.S. Small Cap Growth Equity (SA+CF) Median	32.78		5.99		5.99		12.27		10.20		12.31		15.04	

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.
Principal Enhanced Property Fund returns are preliminary.

	QTR		FYTD		1 YR		3 YR		5 YR		7 YR		10 YR	
Total International Equity	**16.09**	**(72)**	**-3.04**	**(43)**	**-3.04**	**(43)**	**2.03**	**(46)**	**3.60**	**(33)**	**4.57**	**(60)**	**5.63**	**(77)**
MSCI AC World ex USA Index (Net)	16.12	(71)	-4.80	(65)	-4.80	(65)	1.13	(67)	2.26	(77)	3.71	(87)	4.97	(90)
All Master Trust-Intl. Equity Segment Median	17.42		-3.74		-3.74		1.80		3.10		4.79		6.42	
Templeton	12.82	(82)	-10.81	(49)	-10.81	(49)	-4.36	(62)	-1.58	(54)	1.08	(30)	3.66	(29)
MSCI EAFE Value Index (Net)	12.43	(88)	-14.48	(70)	-14.48	(70)	-4.43	(63)	-1.59	(54)	1.21	(28)	3.53	(32)
IM International Large Cap Value Equity (MF) Median	15.40		-10.88		-10.88		-3.94		-1.51		0.68		3.39	
MFS Int'l	17.31	(66)	3.31	(33)	3.31	(33)	7.96	(11)	8.33	(4)	8.10	(9)	N/A	
MSCI AC World ex USA Growth Index (Net)	19.11	(35)	5.80	(21)	5.80	(21)	6.07	(29)	5.61	(25)	6.32	(22)	7.04	(37)
IM International Large Cap Growth Equity (MF) Median	18.13		2.00		2.00		3.99		3.30		4.99		6.44	
Schroder	19.31	(61)	-0.83	(36)	-0.83	(36)	3.34	(29)	4.48	(26)	N/A		N/A	
MSCI Emerging Markets Index (Net)	18.08	(75)	-3.39	(53)	-3.39	(53)	1.90	(44)	2.86	(46)	3.22	(44)	3.27	(49)
IM Emerging Markets Equity (MF) Median	20.27		-3.04		-3.04		1.15		2.57		3.03		3.16	
Total Domestic Fixed Income	**2.82**	**(82)**	**7.99**	**(50)**	**7.99**	**(50)**	**5.13**	**(54)**	**4.10**	**(71)**	**3.80**	**(75)**	**3.66**	**(83)**
Blmbg. Barc. U.S. Aggregate Index	2.90	(82)	8.74	(39)	8.74	(39)	5.32	(48)	4.30	(62)	3.96	(69)	3.82	(75)
All Master Trust-US Fixed Income Segment Median	4.94		7.98		7.98		5.25		4.55		4.37		4.74	
Northern Interm Fixed	2.83	(81)	7.23	(40)	7.23	(40)	4.53	(55)	3.51	(73)	3.19	(78)	N/A	
Bloomberg Barclays Intermed Aggregate Index	2.13	(96)	6.60	(71)	6.60	(71)	4.28	(77)	3.40	(82)	3.19	(78)	3.14	(83)
IM U.S. Intermediate Duration (SA+CF) Median	3.72		7.09		7.09		4.57		3.71		3.41		3.48	
Northern Core Fixed	2.80	(92)	8.79	(65)	8.79	(65)	5.35	(81)	4.32	(89)	4.00	(85)	3.86	(88)
Blmbg. Barc. U.S. Aggregate Index	2.90	(90)	8.74	(68)	8.74	(68)	5.32	(84)	4.30	(90)	3.96	(92)	3.82	(96)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	4.42		8.93		8.93		5.57		4.70		4.41		4.34	
Total Real Estate	**-1.69**	**(70)**	**3.76**	**(37)**	**3.76**	**(37)**	**N/A**		**N/A**		**N/A**		**N/A**	
NCREIF Fund Index-ODCE (EW)	-1.27	(67)	2.56	(63)	2.56	(63)	5.99	(66)	7.63	(63)	9.25	(57)	10.90	(64)
IM U.S. Open End Private Real Estate (SA+CF) Median	-1.14		2.78		2.78		6.54		8.15		9.77		11.32	
Clarion Lion Properties	-1.82	(71)	3.21	(45)	3.21	(45)	N/A		N/A		N/A		N/A	
NCREIF Fund Index-ODCE (EW)	-1.27	(67)	2.56	(63)	2.56	(63)	5.99	(66)	7.63	(63)	9.25	(57)	10.90	(64)
IM U.S. Open End Private Real Estate (SA+CF) Median	-1.14		2.78		2.78		6.54		8.15		9.77		11.32	
Principal Enhanced Property Fund, LP	-1.49	(69)	N/A		N/A		N/A		N/A		N/A		N/A	
NCREIF Fund Index-ODCE (EW)	-1.27	(67)	2.56	(63)	2.56	(63)	5.99	(66)	7.63	(63)	9.25	(57)	10.90	(64)
IM U.S. Open End Private Real Estate (SA+CF) Median	-1.14		2.78		2.78		6.54		8.15		9.77		11.32	
Infrastructure														
Lazard	11.16		-1.00		-1.00		5.44		10.14		12.49		N/A	
S&P Global Infrastructure Index	13.87		-14.76		-14.76		-0.89		2.62		5.01		6.92	
FTSE Developed Core Infrast 50/50 Index (Net)	10.31		-8.96		-8.96		2.47		5.54		6.65		9.09	

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.
Principal Enhanced Property Fund returns are preliminary.

	QTR	FYTD	1 YR	3 YR	5 YR	7 YR	10 YR
Cash							
Securian (Cash)	-0.05	4.85	4.85	4.86	4.07	4.17	4.08
90 Day U.S. Treasury Bill	0.02	1.63	1.63	1.77	1.17	0.85	0.62
City Reserve - Police account	0.00	N/A	N/A	N/A	N/A	N/A	N/A
90 Day U.S. Treasury Bill	0.02	1.63	1.63	1.77	1.17	0.85	0.62
Cash	0.00	0.93	0.93	1.44	N/A	N/A	N/A

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.
Principal Enhanced Property Fund returns are preliminary.

Comparative Performance

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Police Total Fund	**22.55 (6)**	**-3.96 (40)**	**21.54 (1)**	**6.90 (45)**	**1.61(6)**	**5.20 (54)**	**21.01 (6)**	**14.10 (13)**	**1.23 (30)**	**13.85 (19)**	**21.89 (36)**	**-23.88 (49)**
Policy	23.13 (4)	-5.13 (61)	18.08 (7)	9.77 (6)	-0.51(43)	7.90 (17)	22.60 (3)	14.36 (10)	-0.25 (52)	15.07 (8)	26.05 (14)	-32.60 (96)
All Master Trust - Total Fund Median	18.17	-4.58	14.55	6.66	-0.94	5.45	14.90	11.84	-0.17	12.12	19.78	-24.17
Police Total Fund	**22.55 (36)**	**-3.96 (7)**	**21.54 (5)**	**6.90 (71)**	**1.61(5)**	**5.20 (68)**	**21.01 (25)**	**14.10 (40)**	**1.23 (15)**	**13.85 (38)**	**21.89 (67)**	**-23.88 (22)**
Policy	23.13 (27)	-5.13 (27)	18.08 (37)	9.77 (12)	-0.51(51)	7.90 (26)	22.60 (10)	14.36 (34)	-0.25 (34)	15.07 (17)	26.05 (39)	-32.60 (75)
Master Trust >=70% Equity Median	22.24	-5.99	17.33	7.86	-0.42	6.32	19.18	13.46	-1.46	13.31	24.08	-29.31
Total Domestic Equity	**29.75 (41)**	**-3.09 (12)**	**25.40 (7)**	**8.90 (86)**	**2.07(11)**	**7.46 (89)**	**30.21 (73)**	**15.16 (81)**	**4.08 (6)**	**18.45 (38)**	**33.75 (19)**	**-32.94 (12)**
Russell 3000 Index	31.02 (22)	-5.24 (42)	21.13 (43)	12.74 (44)	0.48(41)	12.56 (19)	33.55 (47)	16.42 (59)	1.03 (35)	16.93 (61)	28.34 (59)	-37.31 (39)
All Master Trust-US Equity Segment Median	28.73	-5.79	20.72	12.45	0.27	11.08	33.34	16.64	0.10	17.68	29.37	-38.27
JPM Equity Inc (OIEJX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	26.54 (33)	-8.27 (65)	13.66 (73)	17.34 (22)	-3.83(59)	13.45 (10)	32.53 (11)	17.51 (7)	0.39 (67)	15.51 (39)	19.69 (64)	-36.85 (80)
IM Equity Income (MF) Median	25.27	-7.25	16.16	14.10	-3.05	10.15	28.83	12.64	2.40	14.88	22.55	-34.32
Vanguard Equity Inc (VEIRX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	26.54 (45)	-8.27 (36)	13.66 (77)	17.34 (19)	-3.83(58)	13.45 (9)	32.53 (48)	17.51 (28)	0.39 (28)	15.51 (21)	19.69 (73)	-36.85 (48)
IM U.S. Large Cap Value Equity (MF) Median	26.07	-9.08	16.29	13.82	-3.54	10.81	32.30	15.84	-2.20	13.00	24.10	-37.02
MFS Growth	37.88 (10)	2.66 (14)	30.92 (35)	2.58 (46)	7.54(29)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	36.39 (21)	-1.51 (58)	30.21 (41)	7.08 (8)	5.67(54)	13.05 (22)	33.48 (55)	15.26 (46)	2.64 (11)	16.71 (33)	37.21 (42)	-38.44 (39)
IM U.S. Large Cap Growth Equity (MF) Median	33.38	-0.87	29.46	2.18	6.01	10.47	33.94	14.81	-1.76	15.15	35.24	-39.76
Principal Mid Cap	42.89 (1)	-6.51 (16)	25.32 (8)	10.25 (82)	1.47(19)	12.69 (28)	34.44 (68)	19.93 (18)	8.60 (3)	24.41 (55)	N/A	N/A
Russell Midcap Index	30.54 (39)	-9.06 (29)	18.52 (34)	13.80 (62)	-2.44(58)	13.22 (24)	34.76 (63)	17.28 (48)	-1.55 (43)	25.47 (40)	40.48 (22)	-41.46 (73)
IM U.S. Mid Cap Core Equity (SA+CF+MF) Median	29.25	-10.51	16.61	15.43	-2.14	9.96	36.36	17.19	-1.77	24.60	35.42	-38.03
Summit Creek	27.34 (62)	4.19 (12)	28.93 (24)	0.76 (94)	0.63(39)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 2000 Growth Index	28.48 (51)	-9.31 (77)	22.17 (57)	11.32 (52)	-1.38(56)	5.60 (35)	43.30 (67)	14.59 (53)	-2.91 (62)	29.09 (47)	34.47 (61)	-38.54 (28)
IM U.S. Small Cap Growth Equity (SA+CF) Median	28.49	-4.24	23.81	11.40	-0.74	4.32	45.49	14.76	-1.22	28.82	37.40	-41.17

Returns are expressed as percentages.

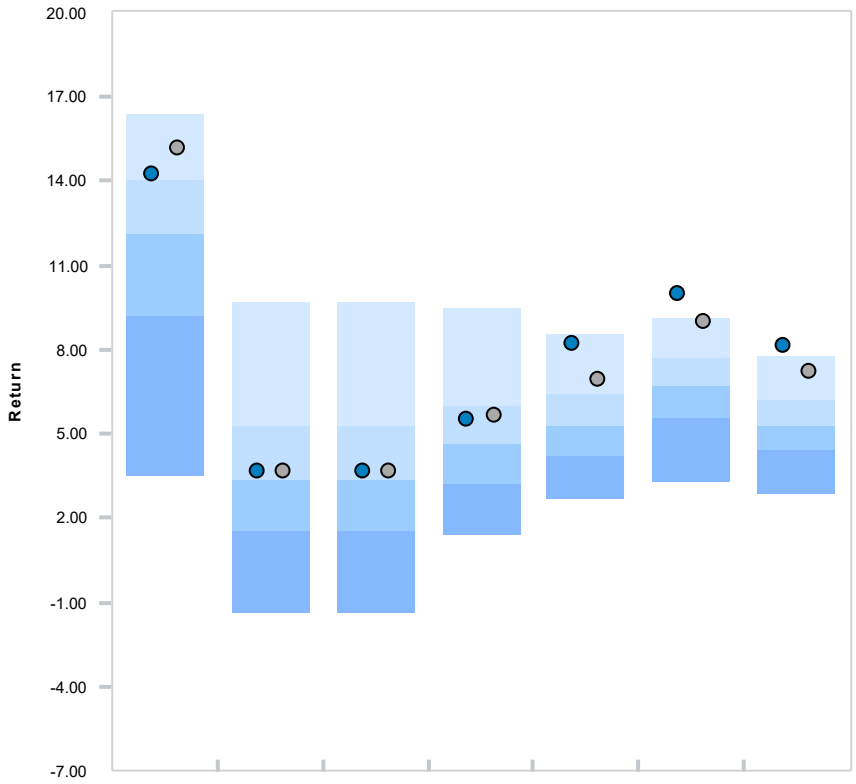
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total International Equity	**20.48 (82)**	**-12.65 (27)**	**30.90 (22)**	**3.96 (56)**	**-3.11(53)**	**-5.33 (96)**	**14.34 (84)**	**17.95 (60)**	**-12.03 (44)**	**8.20 (94)**	**34.70 (57)**	**-41.70 (33)**
MSCI AC World ex USA Index (Net)	21.51 (76)	-14.20 (61)	27.19 (63)	4.50 (47)	-5.66(82)	-3.87 (79)	15.29 (80)	16.83 (78)	-13.71 (72)	11.15 (74)	41.45 (23)	-45.53 (74)
All Master Trust-Intl. Equity Segment Median	22.67	-13.69	28.24	4.37	-2.94	-2.23	18.68	18.40	-12.55	12.90	35.64	-44.29
Templeton	11.57 (100)	-14.95 (19)	22.90 (38)	1.30 (48)	-2.67(63)	-6.78 (22)	20.47 (78)	19.47 (26)	-10.20 (13)	7.58 (20)	34.70 (21)	-41.70 (19)
MSCI EAFE Value Index (Net)	16.09 (74)	-14.78 (19)	21.44 (63)	5.02 (1)	-5.68(100)	-5.39 (16)	22.95 (3)	17.69 (49)	-12.17 (21)	3.25 (74)	34.23 (24)	-44.09 (42)
IM International Large Cap Value Equity (MF) Median	18.45	-17.83	22.09	1.18	-2.21	-9.55	21.34	17.57	-13.74	5.02	27.92	-46.14
MFS Int'l	28.59 (21)	-8.14 (9)	33.99 (6)	3.58 (11)	1.31(34)	-4.20 (36)	15.06 (70)	20.89 (21)	-9.83 (21)	N/A	N/A	N/A
MSCI AC World ex USA Growth Index (Net)	27.34 (43)	-14.43 (44)	32.01 (13)	0.12 (41)	-1.25(70)	-2.65 (24)	15.49 (66)	16.67 (70)	-14.21 (67)	14.45 (15)	38.67 (17)	-45.61 (74)
IM International Large Cap Growth Equity (MF) Median	27.03	-14.98	29.50	-0.87	-0.02	-4.98	18.48	18.97	-13.24	10.99	32.36	-42.35
Schroder	22.11 (39)	-15.63 (43)	40.88 (22)	10.40 (36)	-12.70(42)	-4.61 (71)	N/A	N/A	N/A	N/A	N/A	N/A
MSCI Emerging Markets Index (Net)	18.44 (62)	-14.58 (31)	37.28 (42)	11.19 (30)	-14.92(63)	-2.19 (43)	-2.60 (58)	18.23 (56)	-18.42 (36)	18.88 (44)	78.51 (26)	-53.33 (42)
IM Emerging Markets Equity (MF) Median	20.08	-16.40	35.37	8.35	-13.66	-2.92	-1.42	18.78	-19.51	18.32	72.67	-54.63
Total Domestic Fixed Income	**7.60 (77)**	**1.02 (13)**	**3.19 (79)**	**2.49 (81)**	**1.04(21)**	**5.06 (72)**	**-1.38 (40)**	**4.09 (94)**	**6.99 (64)**	**6.24 (92)**	**5.97 (82)**	**3.77 (21)**
Blmbg. Barc. U.S. Aggregate Index	8.72 (58)	0.01 (36)	3.54 (69)	2.65 (78)	0.55(33)	5.97 (52)	-2.02 (54)	4.21 (92)	7.84 (51)	6.54 (89)	5.93 (82)	5.24 (17)
All Master Trust-US Fixed Income Segment Median	9.09	-0.39	4.78	4.21	-0.02	6.01	-1.83	7.78	7.85	8.82	11.63	-2.21
Northern Interm Fixed	6.85 (55)	0.94 (50)	2.17 (83)	2.04 (75)	1.14(69)	3.21 (68)	-0.71 (62)	3.87 (80)	N/A	N/A	N/A	N/A
Bloomberg Barclays Intermed Aggregate Index	6.67 (65)	0.92 (51)	2.27 (76)	1.97 (78)	1.21(63)	4.12 (30)	-1.02 (80)	3.56 (87)	5.97 (46)	6.15 (64)	6.46 (65)	4.86 (49)
IM U.S. Intermediate Duration (SA+CF) Median	6.93	0.94	2.54	2.37	1.30	3.56	-0.53	4.98	5.88	6.41	7.85	4.68
Northern Core Fixed	8.77 (72)	0.05 (53)	3.56 (81)	2.60 (81)	0.58(71)	6.12 (53)	-2.12 (81)	4.34 (85)	7.92 (42)	6.24 (92)	5.97 (88)	3.77 (45)
Blmbg. Barc. U.S. Aggregate Index	8.72 (78)	0.01 (61)	3.54 (83)	2.65 (75)	0.55(76)	5.97 (67)	-2.02 (72)	4.21 (90)	7.84 (51)	6.54 (82)	5.93 (88)	5.24 (32)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	9.19	0.06	4.04	3.10	0.82	6.16	-1.59	5.83	7.84	7.22	9.84	3.10
Total Real Estate	**7.85 (37)**	**N/A**	**N/A**	**7.23 (88)**	**12.92(83)**	**11.65 (84)**	**10.41 (92)**	**10.14 (84)**	**13.19 (82)**	**16.83 (41)**	**-22.28 (17)**	**-7.46 (34)**
NCREIF Fund Index-ODCE (EW)	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17(51)	12.28 (77)	13.34 (59)	11.03 (78)	15.96 (43)	16.14 (47)	-30.65 (53)	-10.37 (48)
IM U.S. Open End Private Real Estate (SA+CF) Median	7.02	8.42	8.08	9.35	15.23	13.59	14.47	12.48	15.71	15.76	-29.99	-11.61
Clarion Lion Properties	7.26 (45)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF Fund Index-ODCE (EW)	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17(51)	12.28 (77)	13.34 (59)	11.03 (78)	15.96 (43)	16.14 (47)	-30.65 (53)	-10.37 (48)
IM U.S. Open End Private Real Estate (SA+CF) Median	7.02	8.42	8.08	9.35	15.23	13.59	14.47	12.48	15.71	15.76	-29.99	-11.61
Principal Enhanced Property Fund, LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF Fund Index-ODCE (EW)	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17(51)	12.28 (77)	13.34 (59)	11.03 (78)	15.96 (43)	16.14 (47)	-30.65 (53)	-10.37 (48)
IM U.S. Open End Private Real Estate (SA+CF) Median	7.02	8.42	8.08	9.35	15.23	13.59	14.47	12.48	15.71	15.76	-29.99	-11.61
Infrastructure												
Lazard	24.40	-2.85	24.10	10.36	10.85	18.28	29.34	18.61	N/A	N/A	N/A	N/A
S&P Global Infrastructure Index	26.99	-9.50	20.13	12.43	-11.46	12.98	14.99	11.89	-0.39	5.77	25.28	-38.98
FTSE Developed Core Infrast 50/50 Index (Net)	25.04	-4.63	18.18	10.63	-7.56	16.02	15.48	11.49	8.00	10.34	N/A	N/A

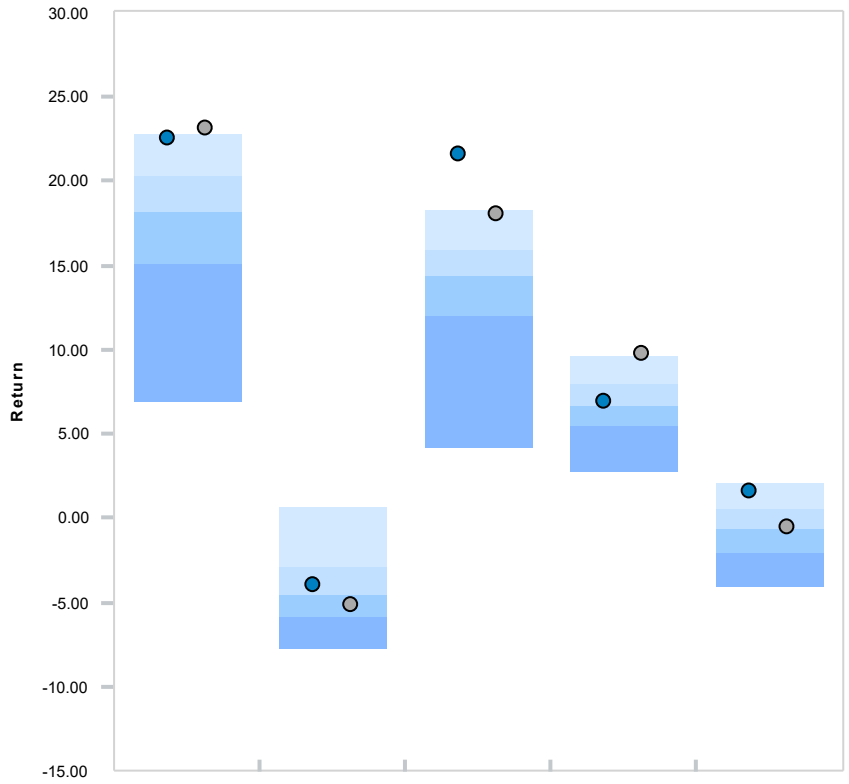
Returns are expressed as percentages.

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Cash												
Securian (Cash)	6.49	3.09	4.16	2.90	1.16	6.69	-3.88	11.25	4.17	4.32	7.18	4.93
90 Day U.S. Treasury Bill	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17	2.10
City Reserve - Police account	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90 Day U.S. Treasury Bill	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17	2.10
Cash	1.70	2.03	0.47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90 Day U.S. Treasury Bill	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17	2.10

Returns are expressed as percentages.

Peer Group Analysis - All Master Trust - Total Fund





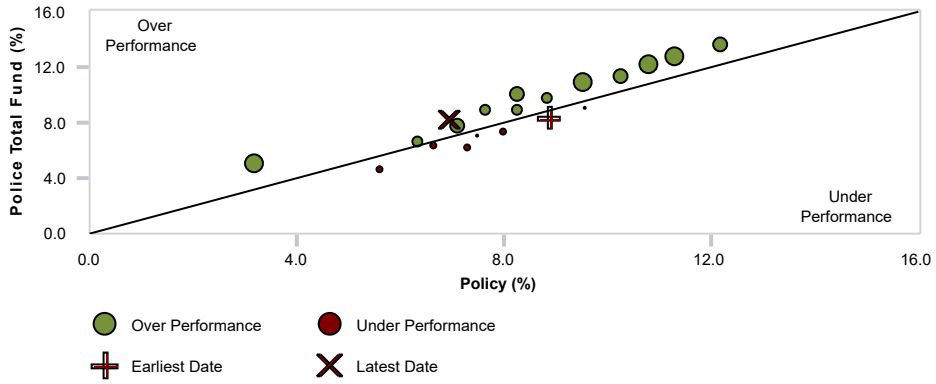
	QTR		FYTD		1 YR		2 YR		3 YR		4 YR		5 YR	
Police Total Fund	14.25	(23)	3.63	(47)	3.63	(47)	5.54	(33)	8.21	(7)	9.99	(2)	8.17	(4)
Policy	15.19	(13)	3.69	(46)	3.69	(46)	5.63	(31)	6.96	(18)	8.99	(7)	7.21	(10)
Median	12.10		3.39		3.39		4.63		5.28		6.74		5.32	

	2019		2018		2017		2016		2015	
Police Total Fund	22.55	(6)	-3.96	(40)	21.54	(1)	6.90	(47)	1.61	(8)
Policy	23.13	(4)	-5.13	(62)	18.08	(6)	9.77	(5)	-0.51	(47)
Median	18.17		-4.55		14.39		6.73		-0.69	

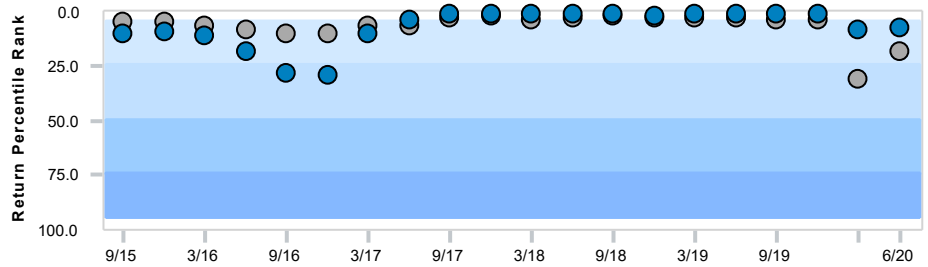
Comparative Performance

	1 Qtr Ending Mar-2020		1 Qtr Ending Dec-2019		1 Qtr Ending Sep-2019		1 Qtr Ending Jun-2019		1 Qtr Ending Mar-2019		1 Qtr Ending Dec-2018	
Police Total Fund	**-14.23**	**(63)**	**5.35**	**(42)**	**0.39**	**(72)**	**4.13**	**(10)**	**11.29**	**(2)**	**-11.14**	**(99)**
Policy	-16.30	(85)	6.72	(5)	0.78	(48)	3.62	(21)	10.48	(4)	-9.55	(90)
All Master Trust - Total Fund Median	-13.11		5.08		0.74		3.12		8.15		-7.46	

3 Yr Rolling Under/Over Performance - 5 Years

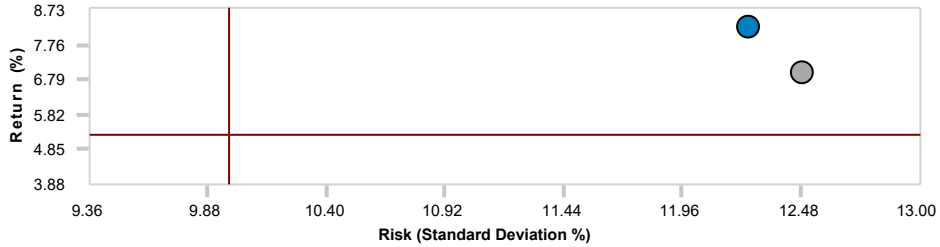


3 Yr Rolling Percentile Ranking - 5 Years



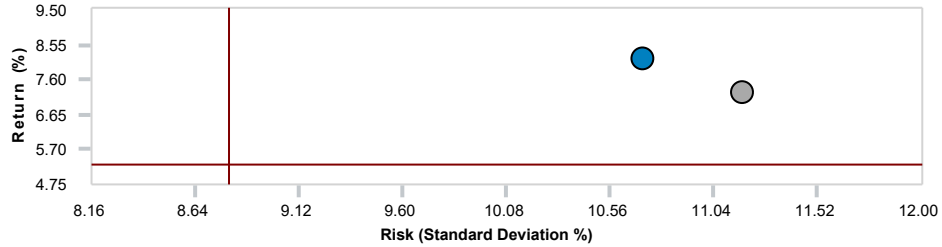
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Police Total Fund	20	18 (90%)	2 (10%)	0 (0%)	0 (0%)
Policy	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Police Total Fund	8.21	12.26
Policy	6.96	12.50
Median	5.27	9.97

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Police Total Fund	8.17	10.72
Policy	7.21	11.18
Median	5.31	8.79

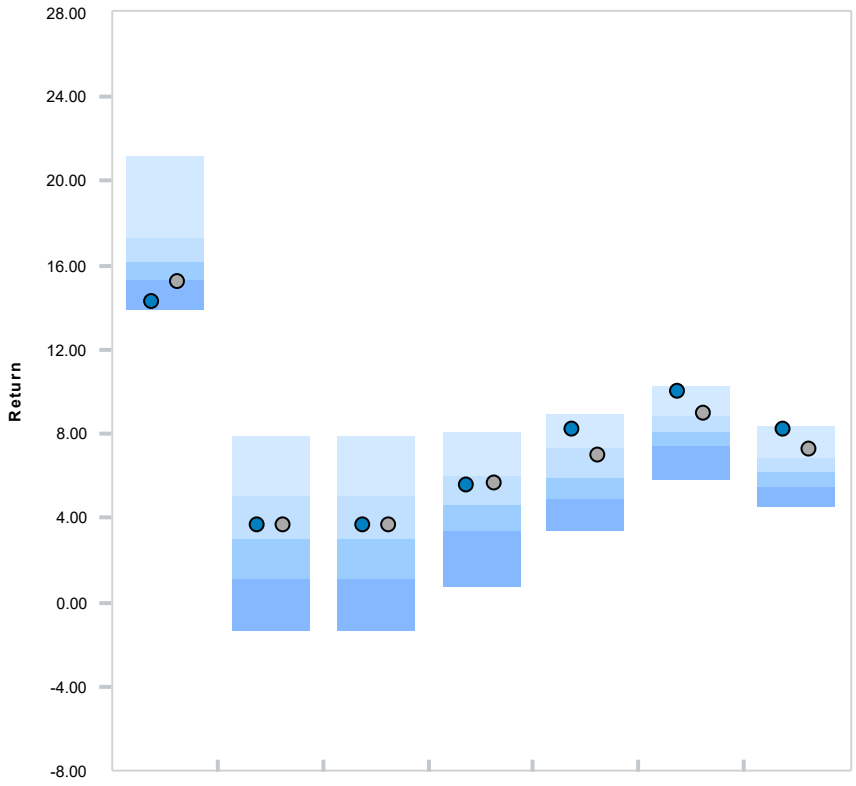
Historical Statistics - 3 Years

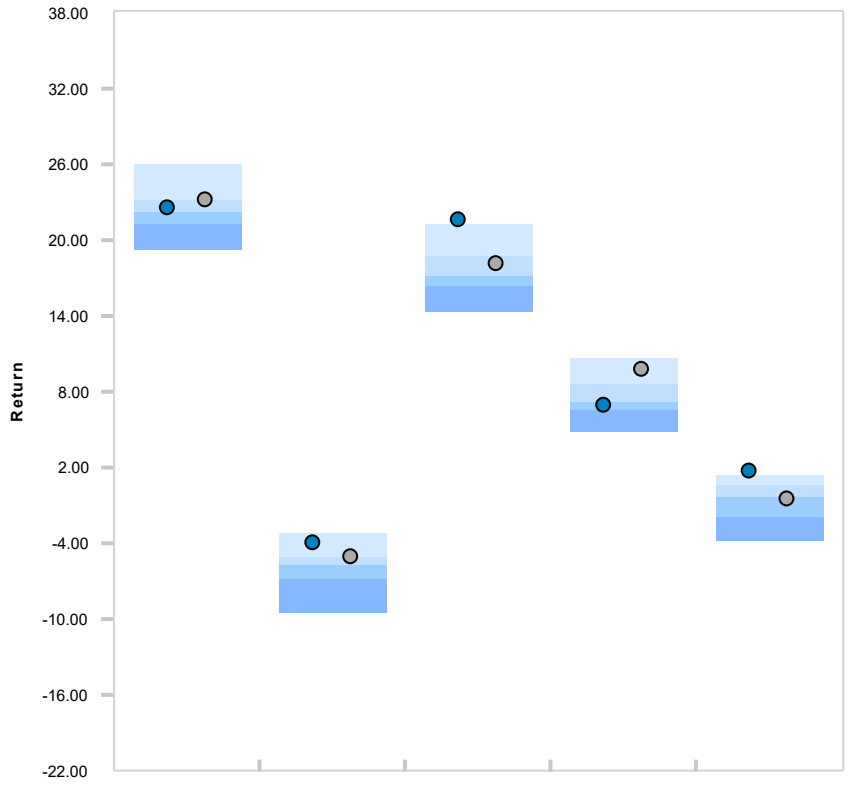
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Police Total Fund	1.66	103.03	95.80	1.36	0.68	0.56	0.97	8.82
Policy	0.00	100.00	100.00	0.00	N/A	0.46	1.00	9.06

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Police Total Fund	1.72	99.93	92.06	1.25	0.49	0.68	0.95	7.47
Policy	0.00	100.00	100.00	0.00	N/A	0.57	1.00	7.80

Peer Group Analysis - Master Trust >=70% Equity





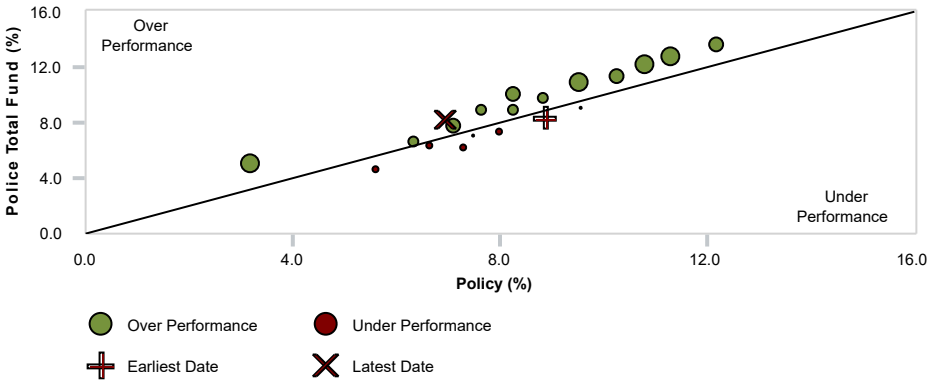
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Police Total Fund	14.25 (92)	3.63 (31)	3.63 (31)	5.54 (32)	8.21 (15)	9.99 (11)	8.17 (8)
Policy	15.19 (80)	3.69 (31)	3.69 (31)	5.63 (31)	6.96 (29)	8.99 (25)	7.21 (22)
Median	16.15	2.99	2.99	4.63	5.96	8.11	6.17

	2019	2018	2017	2016	2015
Police Total Fund	22.55 (36)	-3.96 (9)	21.54 (5)	6.90 (61)	1.61 (4)
Policy	23.13 (27)	-5.13 (26)	18.08 (32)	9.77 (14)	-0.51 (53)
Median	22.24	-5.81	17.10	7.22	-0.39

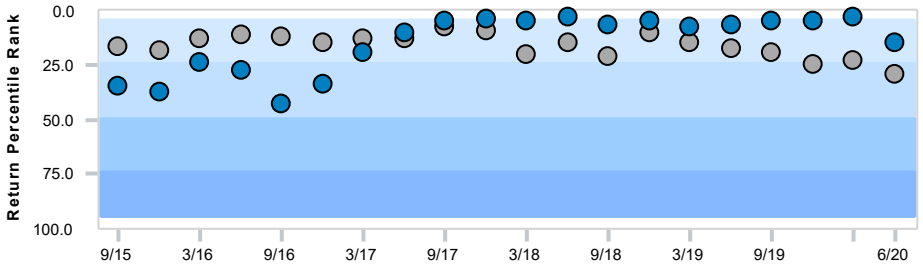
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Police Total Fund	**-14.23 (7)**	**5.35 (95)**	**0.39 (71)**	**4.13 (15)**	**11.29 (15)**	**-11.14 (75)**
Policy	-16.30 (25)	6.72 (31)	0.78 (37)	3.62 (42)	10.48 (40)	-9.55 (11)
Master Trust >=70% Equity Median	-18.44	6.44	0.61	3.54	10.37	-10.53

3 Yr Rolling Under/Over Performance - 5 Years

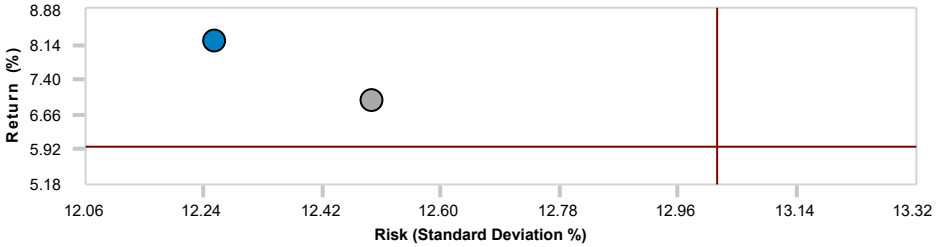


3 Yr Rolling Percentile Ranking - 5 Years



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Police Total Fund	20	15 (75%)	5 (25%)	0 (0%)	0 (0%)
Policy	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Police Total Fund	8.21	12.26
Policy	6.96	12.50
Median	5.96	13.02

Peer Group Scattergram - 5 Years

	Return	Standard Deviation
Police Total Fund	8.17	10.72
Policy	7.21	11.18
Median	6.15	11.40

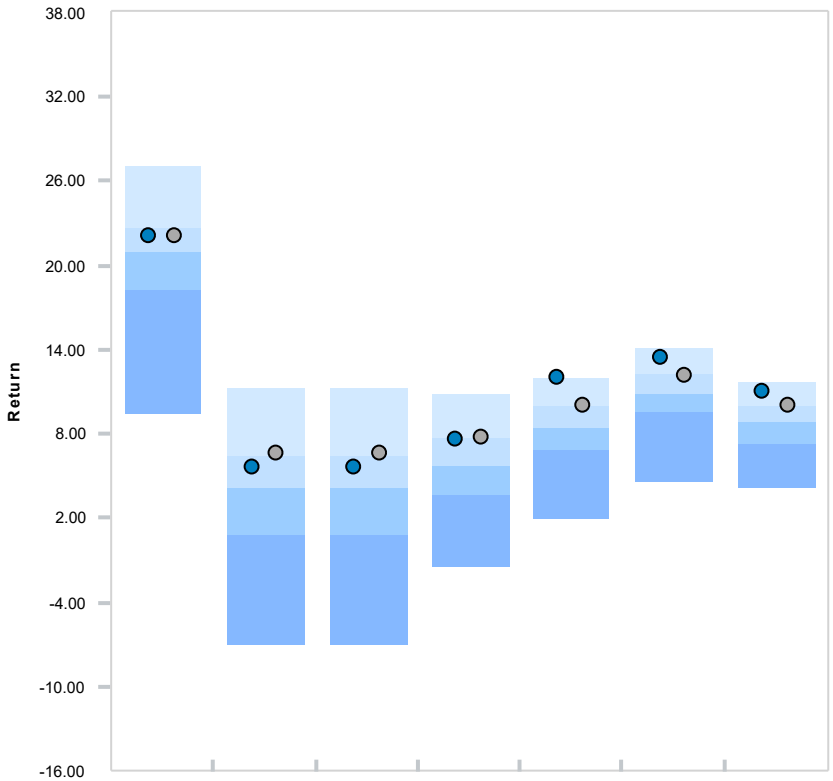
Historical Statistics - 3 Years

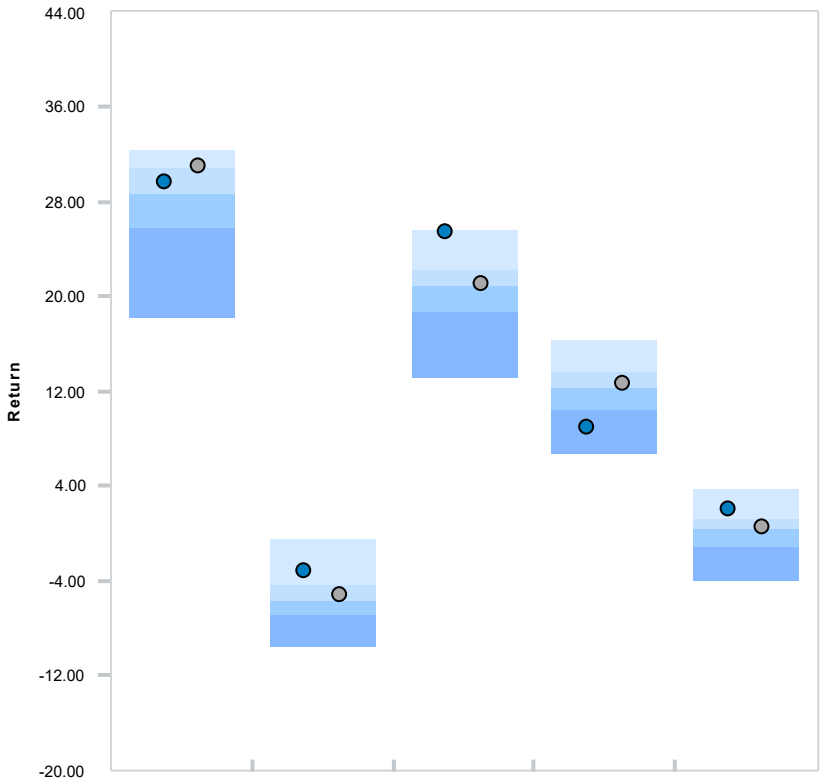
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Police Total Fund	1.66	103.03	95.80	1.36	0.68	0.56	0.97	8.82
Policy	0.00	100.00	100.00	0.00	N/A	0.46	1.00	9.06

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Police Total Fund	1.72	99.93	92.06	1.25	0.49	0.68	0.95	7.47
Policy	0.00	100.00	100.00	0.00	N/A	0.57	1.00	7.80

Peer Group Analysis - All Master Trust-US Equity Segment





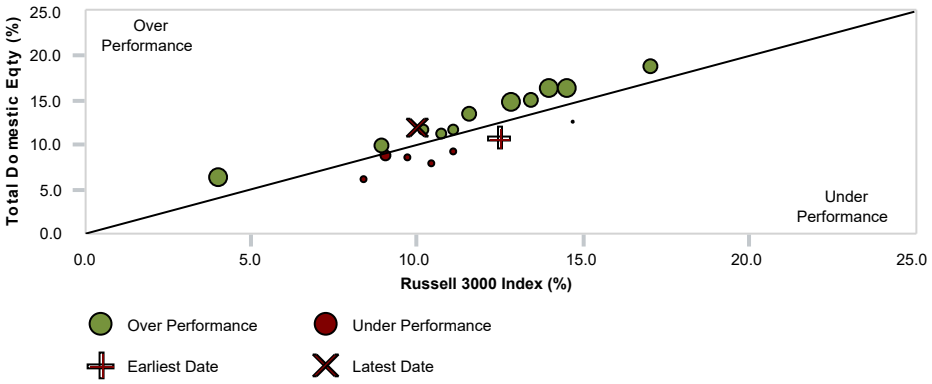
	QTR		FYTD		1 YR		2 YR		3 YR		4 YR		5 YR	
Total Domestic Eqty	22.02	(35)	5.65	(33)	5.65	(33)	7.64	(26)	11.94	(6)	13.47	(6)	11.01	(9)
R 3000 Index	22.03	(35)	6.53	(25)	6.53	(25)	7.75	(25)	10.04	(25)	12.10	(31)	10.03	(25)
Median	20.98		4.12		4.12		5.74		8.38		10.84		8.85	

	2019		2018		2017		2016		2015	
Total Domestic Eqty	29.75	(41)	-3.09	(13)	25.40	(7)	8.90	(86)	2.07	(13)
R 3000 Index	31.02	(22)	-5.24	(43)	21.13	(45)	12.74	(42)	0.48	(45)
Median	28.73		-5.72		20.91		12.34		0.38	

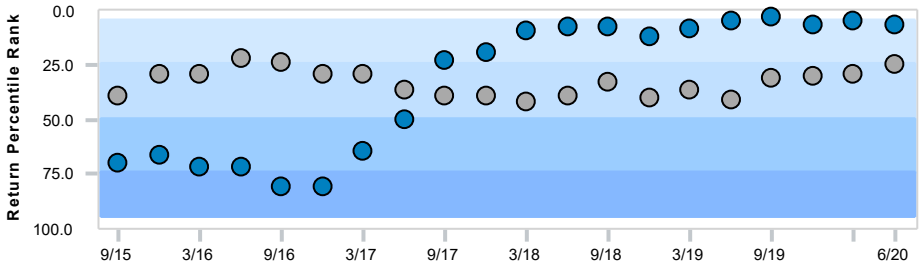
Comparative Performance

	1 Qtr Ending Mar-2020		1 Qtr Ending Dec-2019		1 Qtr Ending Sep-2019		1 Qtr Ending Jun-2019		1 Qtr Ending Mar-2019		1 Qtr Ending Dec-2018	
Total Domestic Eqty	-18.89	(21)	6.18	(89)	0.54	(60)	5.36	(4)	15.37	(6)	-15.70	(89)
Russell 3000 Index	-20.90	(46)	9.10	(31)	1.16	(28)	4.10	(31)	14.04	(31)	-14.30	(64)
All Master Trust-US Equity Segment Median	-21.19		8.70		0.75		3.80		13.56		-13.94	

3 Yr Rolling Under/Over Performance - 5 Years

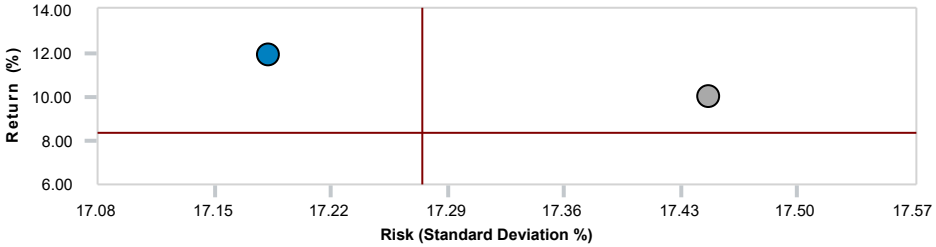


3 Yr Rolling Percentile Ranking - 5 Years



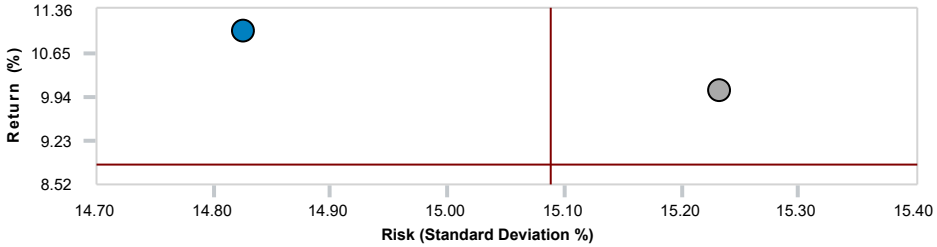
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Domestic Eqty	20	12 (60%)	1 (5%)	5 (25%)	2 (10%)
R 3000 Index	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Domestic Eqty	11.94	17.18
R 3000 Index	10.04	17.45
Median	8.38	17.27

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Domestic Eqty	11.01	14.83
R 3000 Index	10.03	15.23
Median	8.85	15.09

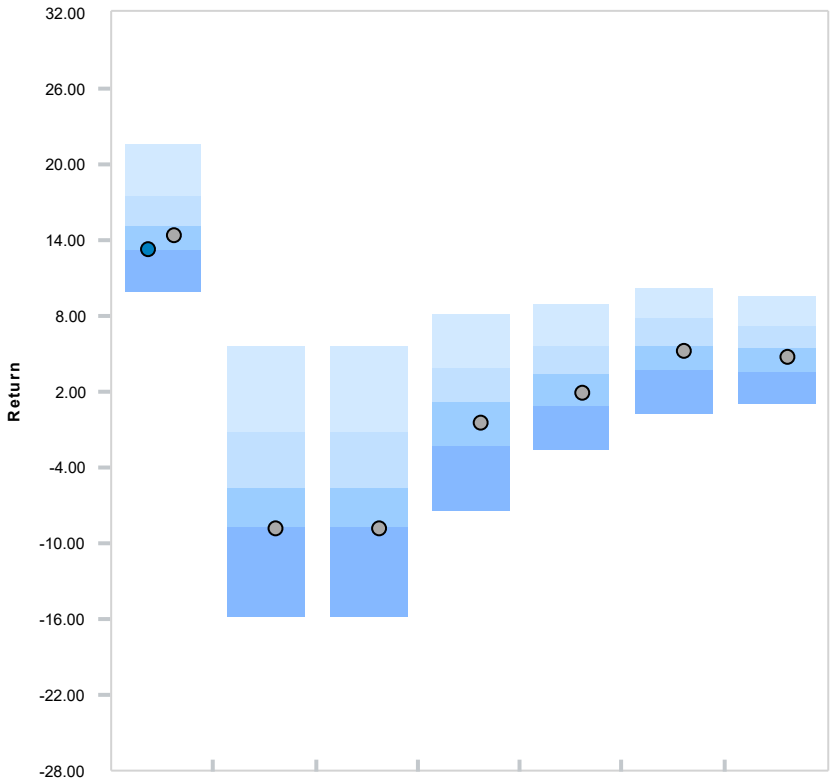
Historical Statistics - 3 Years

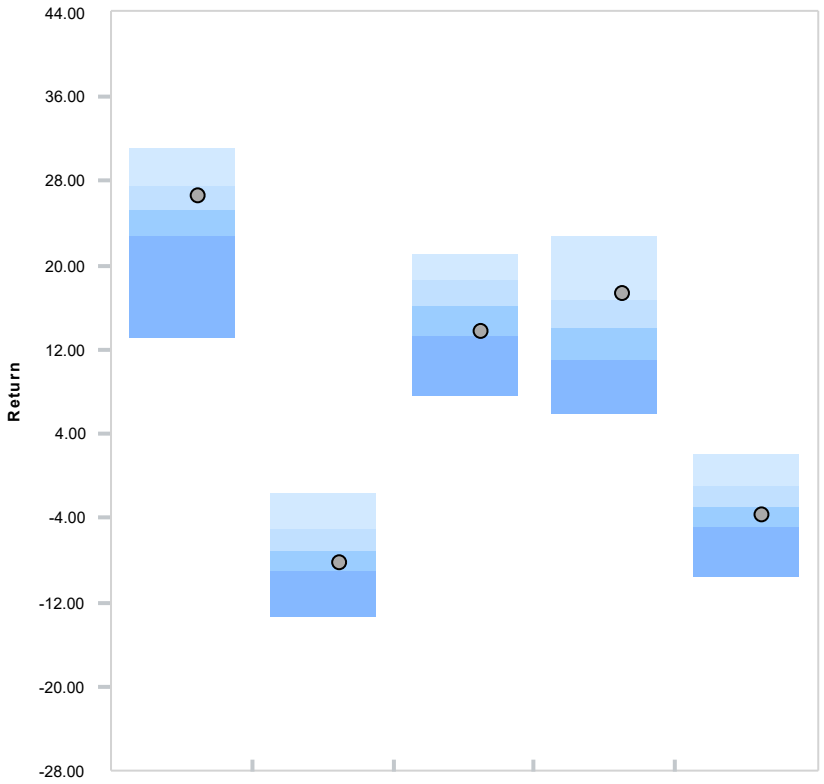
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Eqty	2.62	100.17	90.78	1.99	0.64	0.64	0.97	12.07
Russell 3000 Index	0.00	100.00	100.00	0.00	N/A	0.54	1.00	12.39

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Eqty	2.51	98.95	92.40	1.26	0.33	0.70	0.96	10.17
Russell 3000 Index	0.00	100.00	100.00	0.00	N/A	0.63	1.00	10.45

Peer Group Analysis - IM Equity Income (MF)





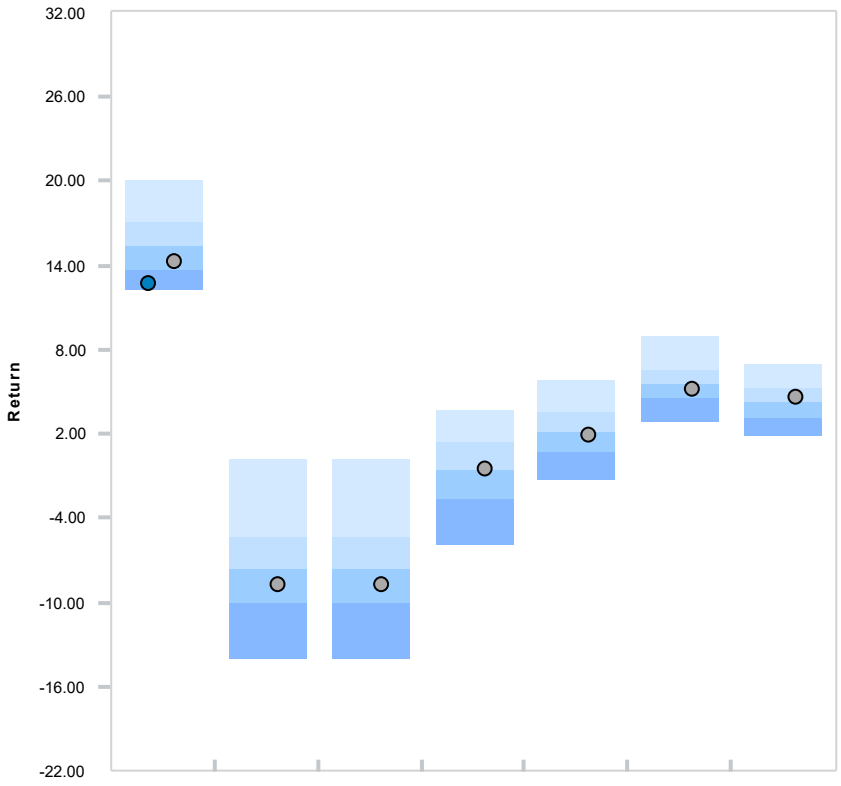
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
JPM Eq Inc (OIEJX)	13.27 (74)	N/A	N/A	N/A	N/A	N/A	N/A
R1000 V	14.29 (63)	-8.84 (76)	-8.84 (76)	-0.56 (64)	1.82 (64)	5.09 (57)	4.64 (61)
Median	15.17	-5.51	-5.51	1.24	3.46	5.61	5.41

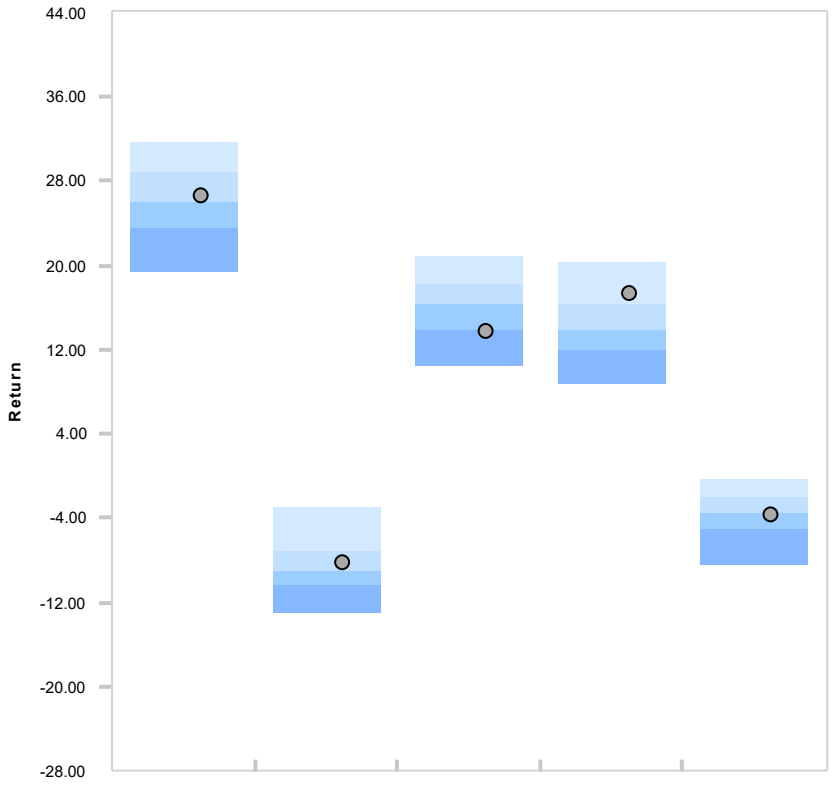
	2019	2018	2017	2016	2015
JPM Eq Inc (OIEJX)	N/A	N/A	N/A	N/A	N/A
R1000 V	26.54 (33)	-8.27 (65)	13.66 (73)	17.34 (22)	-3.83 (59)
Median	25.27	-7.25	16.16	14.10	-3.05

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
JPM Eq Inc (OIEJX)	-24.03 (52)	N/A	N/A	N/A	N/A	N/A
R 1000 V	-26.73 (73)	7.41 (27)	1.36 (79)	3.84 (42)	11.93 (30)	-11.72 (56)
IM Equity Income (MF) Median	-23.86	6.46	2.23	3.45	11.24	-11.46

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)





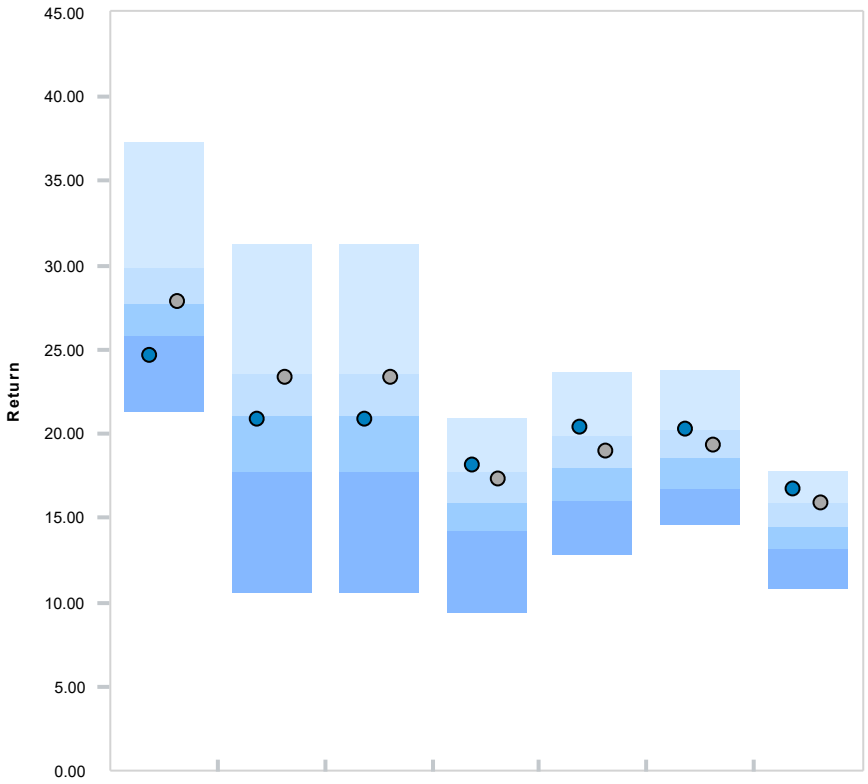
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
VG Eq Inc (VEIRX)	12.67 (92)	N/A	N/A	N/A	N/A	N/A	N/A
R1000 V	14.29 (68)	-8.84 (65)	-8.84 (65)	-0.56 (51)	1.82 (55)	5.09 (65)	4.64 (42)
Median	15.42	-7.67	-7.67	-0.48	2.13	5.58	4.28

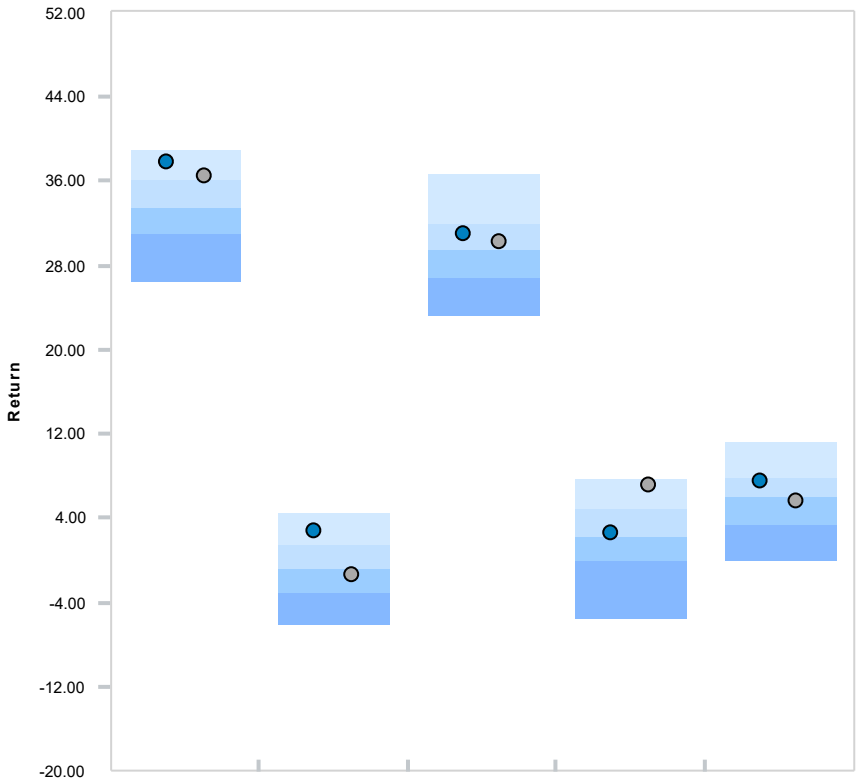
	2019	2018	2017	2016	2015
VG Eq Inc (VEIRX)	N/A	N/A	N/A	N/A	N/A
R1000 V	26.54 (45)	-8.27 (36)	13.66 (77)	17.34 (19)	-3.83 (58)
Median	26.07	-9.08	16.29	13.82	-3.54

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
VG Eq Inc (VEIRX)	-23.06 (8)	N/A	N/A	N/A	N/A	N/A
R 1000 V	-26.73 (53)	7.41 (55)	1.36 (53)	3.84 (39)	11.93 (40)	-11.72 (29)
IM U.S. Large Cap Value Equity (MF) Median	-26.58	7.57	1.41	3.49	11.58	-12.92

Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)





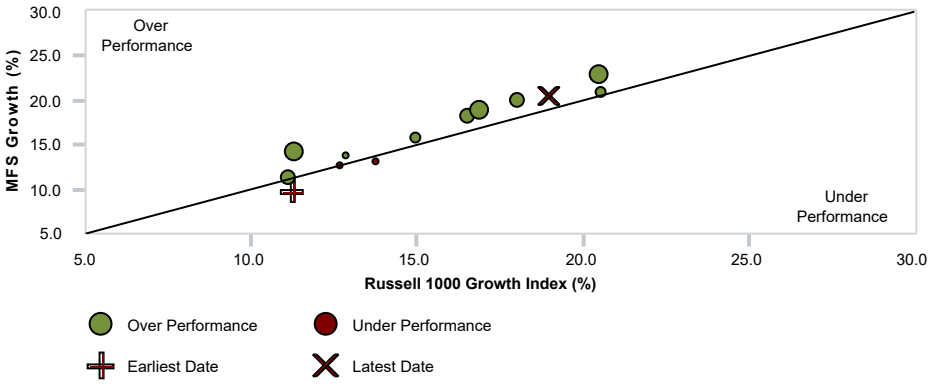
	QTR		FYTD		1 YR		2 YR		3 YR		4 YR		5 YR	
MFS Growth	24.68	(85)	20.88	(52)	20.88	(52)	18.12	(23)	20.32	(22)	20.21	(27)	16.73	(12)
R 1000 G Index	27.84	(46)	23.28	(26)	23.28	(26)	17.27	(31)	18.99	(37)	19.35	(40)	15.89	(24)
Median	27.69		21.05		21.05		15.85		18.03		18.57		14.47	

	2019		2018		2017		2016		2015	
MFS Growth	37.88	(10)	2.66	(14)	30.92	(35)	2.58	(46)	7.54	(29)
R 1000 G Index	36.39	(21)	-1.51	(58)	30.21	(41)	7.08	(8)	5.67	(54)
Median	33.38		-0.87		29.46		2.18		6.01	

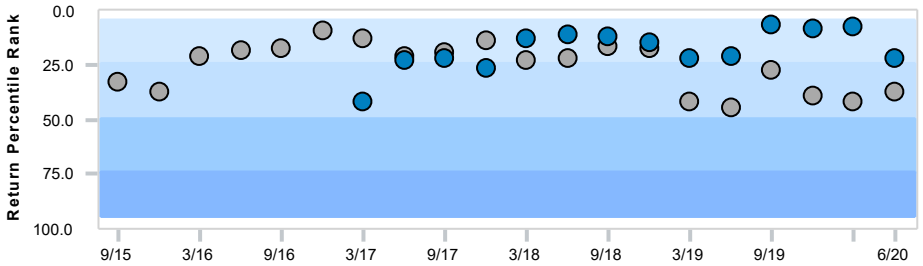
Comparative Performance

	1 Qtr Ending Mar-2020		1 Qtr Ending Dec-2019		1 Qtr Ending Sep-2019		1 Qtr Ending Jun-2019		1 Qtr Ending Mar-2019		1 Qtr Ending Dec-2018	
MFS Growth	-11.75	(18)	8.55	(78)	1.21	(21)	6.56	(11)	17.77	(10)	-15.28	(43)
Russell 1000 Growth Index	-14.10	(64)	10.62	(27)	1.49	(16)	4.64	(56)	16.10	(55)	-15.89	(53)
IM U.S. Large Cap Growth Equity (MF) Median	-13.45		9.69		-0.01		4.76		16.25		-15.76	

3 Yr Rolling Under/Over Performance - 5 Years

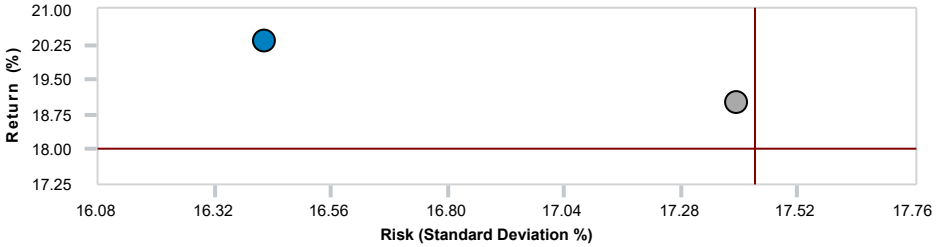


3 Yr Rolling Percentile Ranking - 5 Years



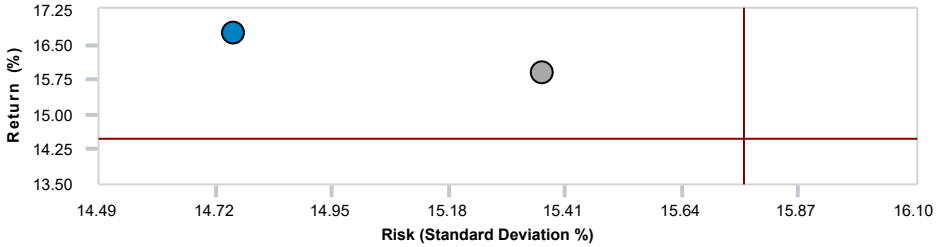
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
MFS Growth	14	12 (86%)	2 (14%)	0 (0%)	0 (0%)
R 1000 G Index	20	12 (60%)	8 (40%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
MFS Growth	20.32	16.42
R 1000 G Index	18.99	17.40
Median	18.03	17.43

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
MFS Growth	16.73	14.76
R 1000 G Index	15.89	15.36
Median	14.47	15.76

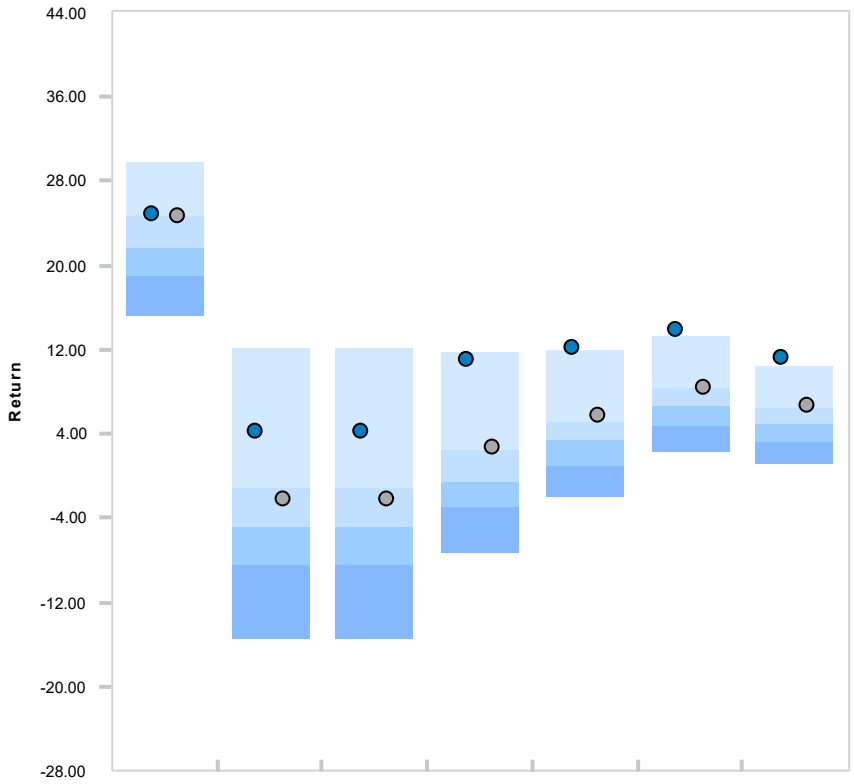
Historical Statistics - 3 Years

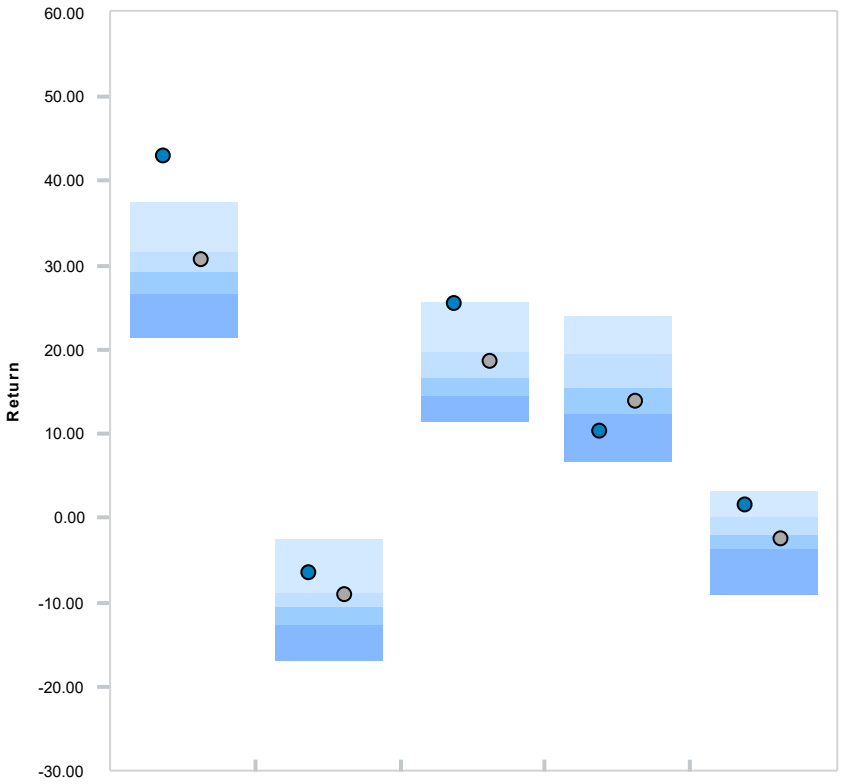
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Growth	3.09	96.49	86.03	2.32	0.31	1.10	0.93	10.00
Russell 1000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.99	1.00	10.83

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Growth	3.15	98.42	91.70	1.61	0.20	1.05	0.94	8.70
Russell 1000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.96	1.00	9.33

Peer Group Analysis - IM U.S. Mid Cap Core Equity (SA+CF+MF)





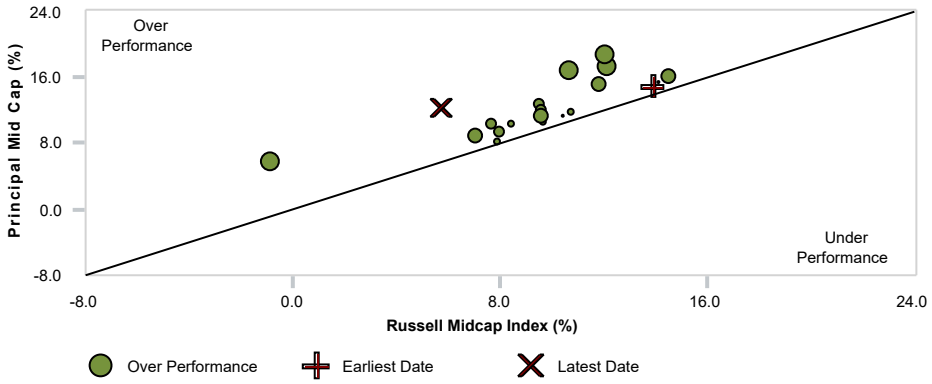
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Principal Mid Cap	24.86 (24)	4.20 (10)	4.20 (10)	10.94 (6)	12.14 (4)	13.91 (5)	11.15 (5)
R Midcap Index	24.61 (26)	-2.24 (30)	-2.24 (30)	2.67 (24)	5.79 (22)	8.37 (28)	6.76 (25)
Median	21.66	-4.82	-4.82	-0.50	3.43	6.65	4.95

	2019	2018	2017	2016	2015
Principal Mid Cap	42.89 (1)	-6.51 (16)	25.32 (8)	10.25 (82)	1.47 (19)
R Midcap Index	30.54 (39)	-9.06 (29)	18.52 (34)	13.80 (62)	-2.44 (58)
Median	29.25	-10.51	16.61	15.43	-2.14

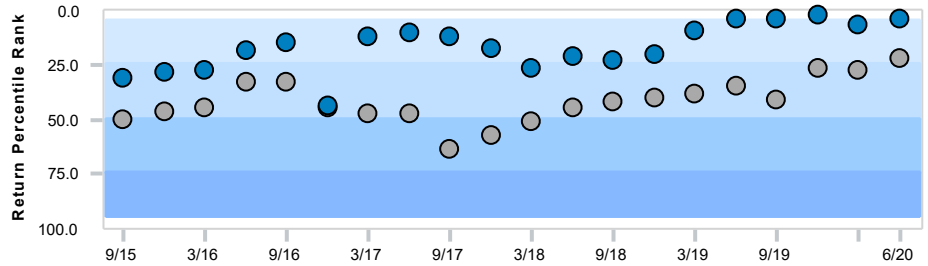
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Principal Mid Cap	-23.88 (17)	6.19 (75)	3.23 (10)	9.28 (2)	19.28 (2)	-13.30 (12)
Russell Midcap Index	-27.07 (40)	7.06 (51)	0.48 (66)	4.13 (56)	16.54 (21)	-15.37 (43)
IM U.S. Mid Cap Core Equity (SA+CF+MF) Median	-28.06	7.07	1.15	4.28	14.90	-15.65

3 Yr Rolling Under/Over Performance - 5 Years

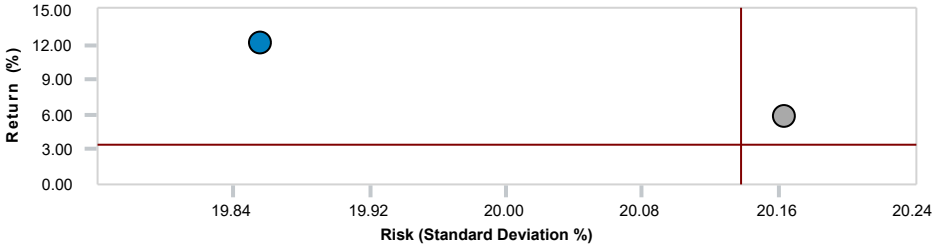


3 Yr Rolling Percentile Ranking - 5 Years



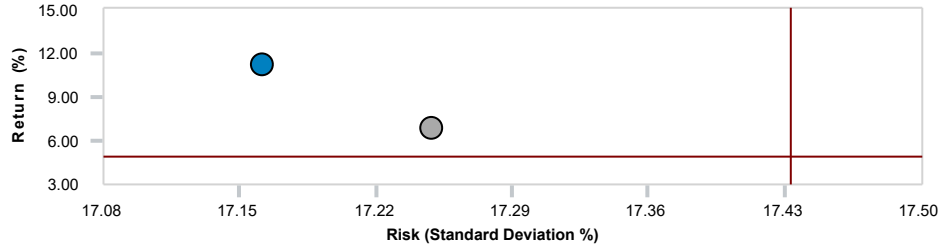
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Principal Mid Cap	20	15 (75%)	5 (25%)	0 (0%)	0 (0%)
R Midcap Index	20	1 (5%)	16 (80%)	3 (15%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Principal Mid Cap	12.14	19.86
R Midcap Index	5.79	20.16
Median	3.43	20.14

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Principal Mid Cap	11.15	17.16
R Midcap Index	6.76	17.25
Median	4.95	17.43

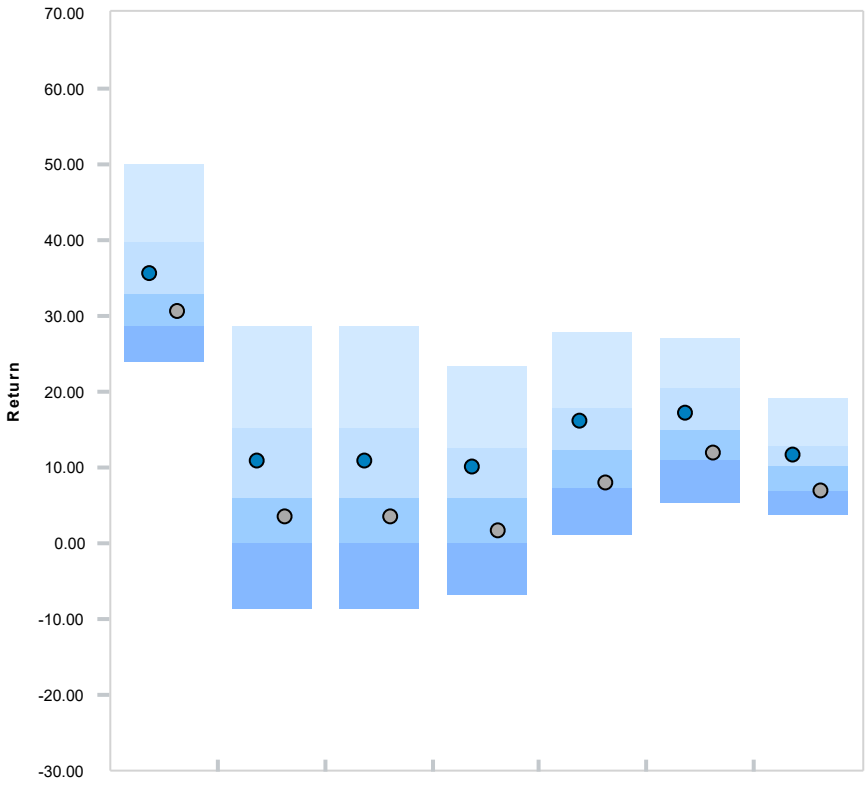
Historical Statistics - 3 Years

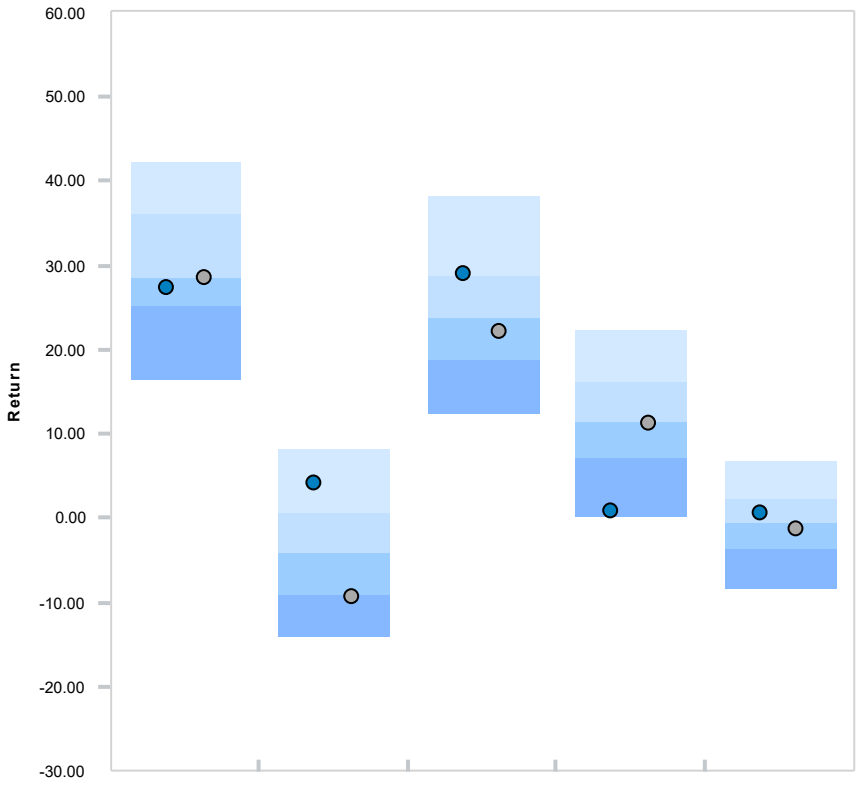
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Principal Mid Cap	7.06	100.05	71.83	6.61	0.82	0.59	0.92	14.58
Russell Midcap Index	0.00	100.00	100.00	0.00	N/A	0.30	1.00	15.13

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Principal Mid Cap	5.88	103.00	80.19	4.66	0.69	0.64	0.94	12.27
Russell Midcap Index	0.00	100.00	100.00	0.00	N/A	0.40	1.00	12.56

Peer Group Analysis - IM U.S. Small Cap Growth Equity (SA+CF)





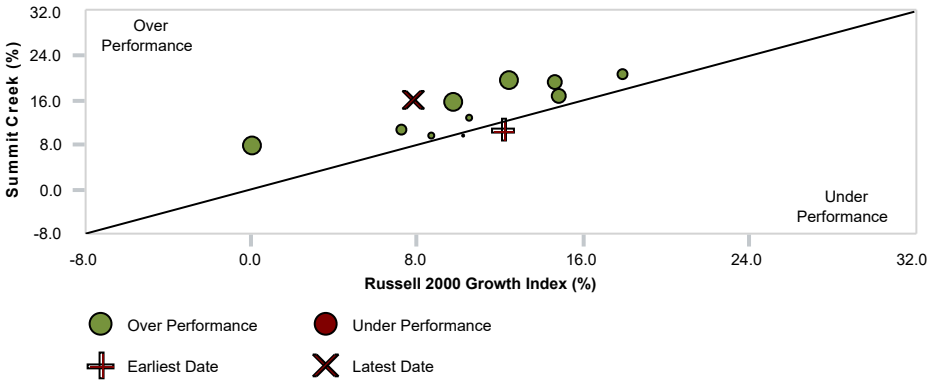
	QTR		FYTD		1 YR		2 YR		3 YR		4 YR		5 YR	
Summit Creek	35.60	(37)	10.68	(37)	10.68	(37)	10.06	(32)	16.05	(34)	16.99	(38)	11.68	(35)
R 2000 G Index	30.58	(60)	3.48	(57)	3.48	(57)	1.47	(70)	7.86	(73)	11.78	(71)	6.86	(76)
Median	32.78		5.99		5.99		6.13		12.27		14.99		10.20	

	2019		2018		2017		2016		2015	
Summit Creek	27.34	(62)	4.19	(12)	28.93	(24)	0.76	(94)	0.63	(39)
R 2000 G Index	28.48	(51)	-9.31	(77)	22.17	(57)	11.32	(52)	-1.38	(56)
Median	28.49		-4.24		23.81		11.40		-0.74	

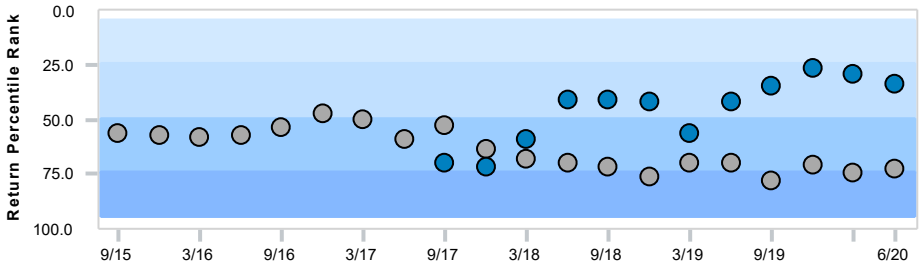
Comparative Performance

	1 Qtr Ending Mar-2020		1 Qtr Ending Dec-2019		1 Qtr Ending Sep-2019		1 Qtr Ending Jun-2019		1 Qtr Ending Mar-2019		1 Qtr Ending Dec-2018	
Summit Creek	-21.13	(33)	8.93	(59)	-5.00	(61)	4.95	(47)	17.24	(53)	-19.84	(34)
Russell 2000 Growth Index	-25.76	(67)	11.39	(27)	-4.17	(52)	2.75	(80)	17.14	(54)	-21.65	(66)
IM U.S. Small Cap Growth Equity (SA+CF) Median	-23.57		9.39		-4.14		4.51		17.48		-20.69	

3 Yr Rolling Under/Over Performance - 5 Years

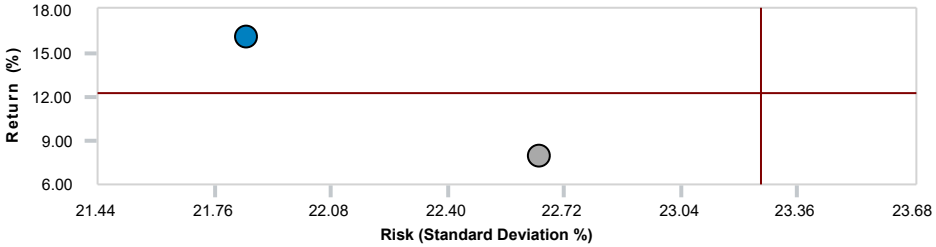


3 Yr Rolling Percentile Ranking - 5 Years



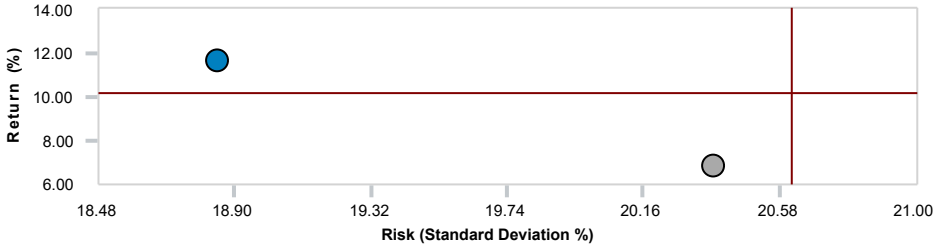
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Summit Creek	12	0 (0%)	8 (67%)	4 (33%)	0 (0%)
R 2000 G Index	20	0 (0%)	2 (10%)	16 (80%)	2 (10%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Summit Creek	16.05	21.85
R 2000 G Index	7.86	22.65
Median	12.27	23.26

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Summit Creek	11.68	18.85
R 2000 G Index	6.86	20.38
Median	10.20	20.62

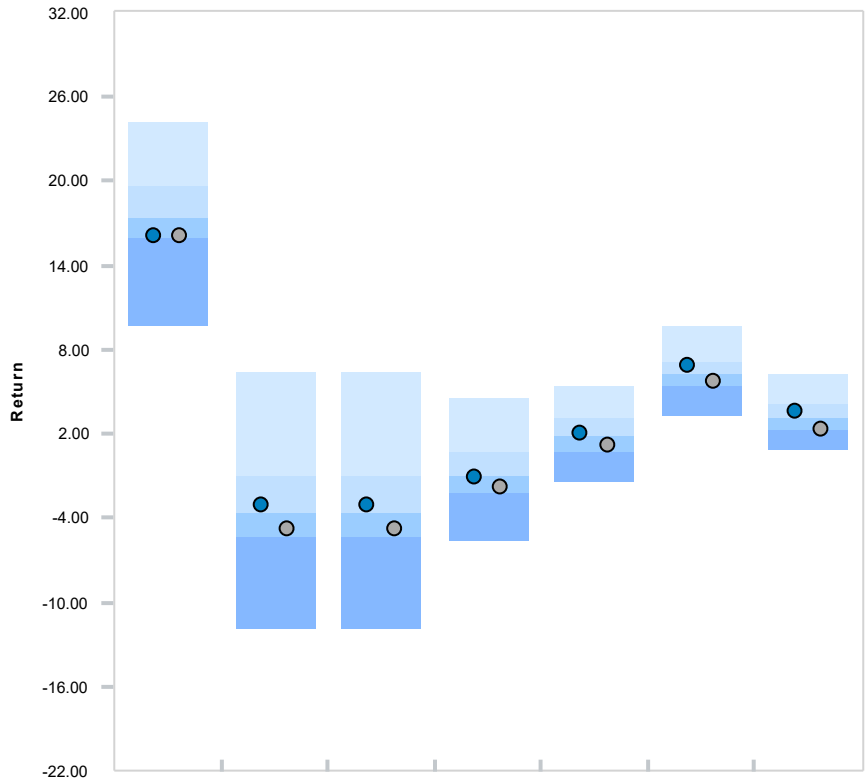
Historical Statistics - 3 Years

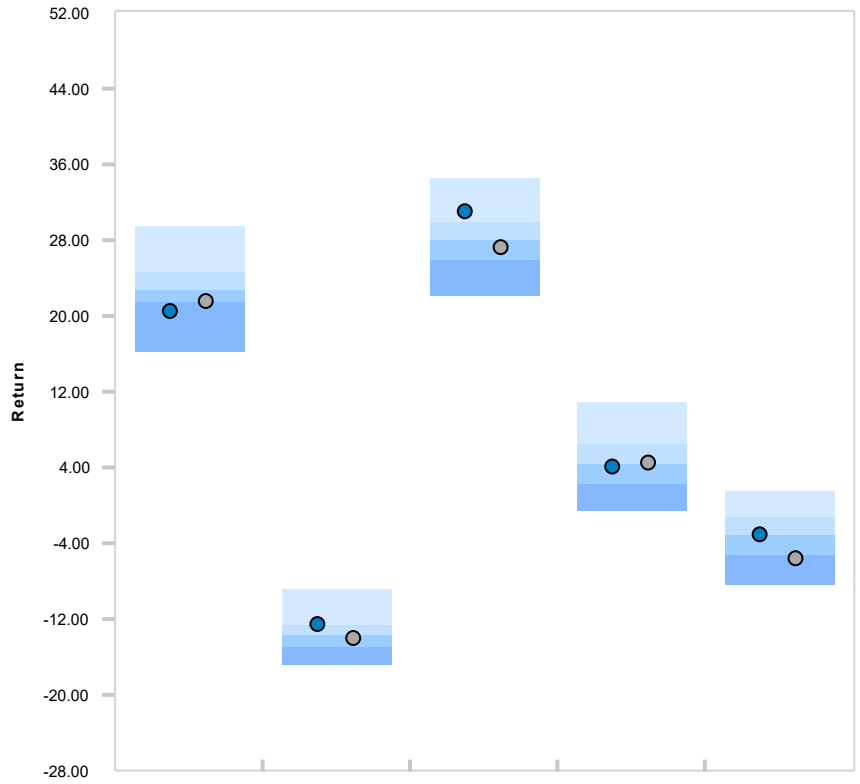
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Summit Creek	4.67	107.05	79.88	8.00	1.53	0.71	0.94	14.29
Russell 2000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.37	1.00	16.38

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Summit Creek	6.03	95.71	75.12	5.24	0.68	0.62	0.88	12.56
Russell 2000 Growth Index	0.00	100.00	100.00	0.00	N/A	0.37	1.00	14.71

Peer Group Analysis - All Master Trust-Intl. Equity Segment





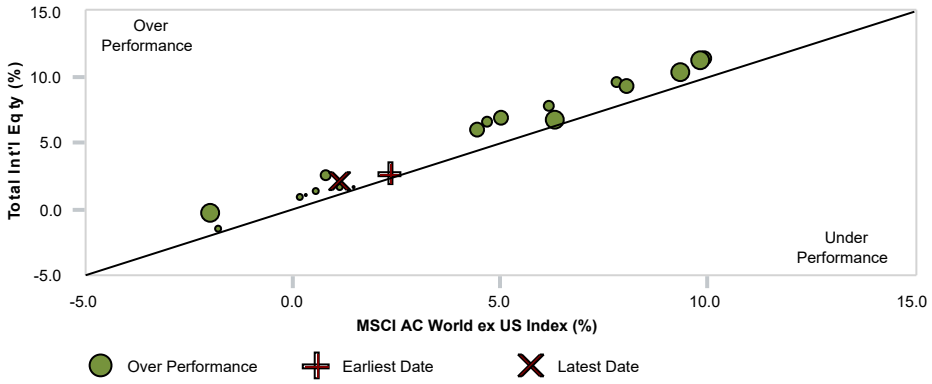
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Int'l Eqty	16.09 (72)	-3.04 (43)	-3.04 (43)	-1.17 (54)	2.03 (46)	6.84 (32)	3.60 (33)
ACWIxUS Index	16.12 (71)	-4.80 (65)	-4.80 (65)	-1.80 (67)	1.13 (67)	5.65 (69)	2.26 (77)
Median	17.42	-3.74	-3.74	-0.99	1.80	6.32	3.10

	2019	2018	2017	2016	2015
Total Int'l Eqty	20.48 (82)	-12.65 (26)	30.90 (18)	3.96 (55)	-3.11 (49)
ACWIxUS Index	21.51 (76)	-14.20 (61)	27.19 (62)	4.50 (49)	-5.66 (81)
Median	22.67	-13.68	28.09	4.41	-3.21

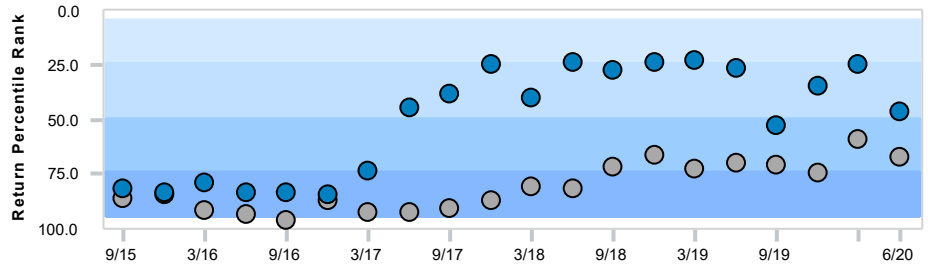
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Int'l Eqty	-21.93 (23)	9.86 (34)	-2.62 (86)	2.45 (77)	9.92 (80)	-11.46 (43)
MSCI AC World ex US Index	-23.36 (42)	8.92 (65)	-1.80 (70)	2.98 (59)	10.31 (67)	-11.46 (43)
All Master Trust-Intl. Equity Segment Median	-23.70	9.31	-1.41	3.13	10.77	-11.69

3 Yr Rolling Under/Over Performance - 5 Years

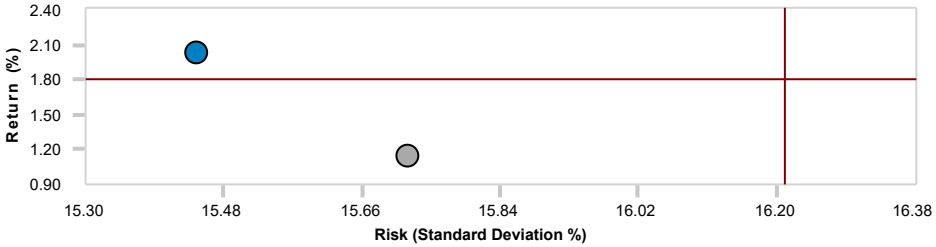


3 Yr Rolling Percentile Ranking - 5 Years



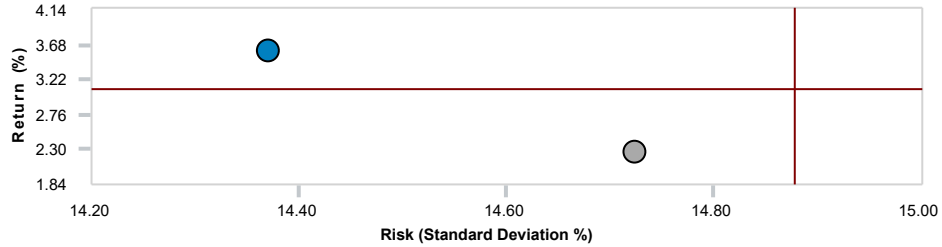
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Int'l Eqty	20	5 (25%)	7 (35%)	2 (10%)	6 (30%)
ACWIxUS Index	20	0 (0%)	0 (0%)	8 (40%)	12 (60%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Int'l Eqty	2.03	15.45
ACWIxUS Index	1.13	15.72
Median	1.80	16.21

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Int'l Eqty	3.60	14.37
ACWIxUS Index	2.26	14.73
Median	3.10	14.88

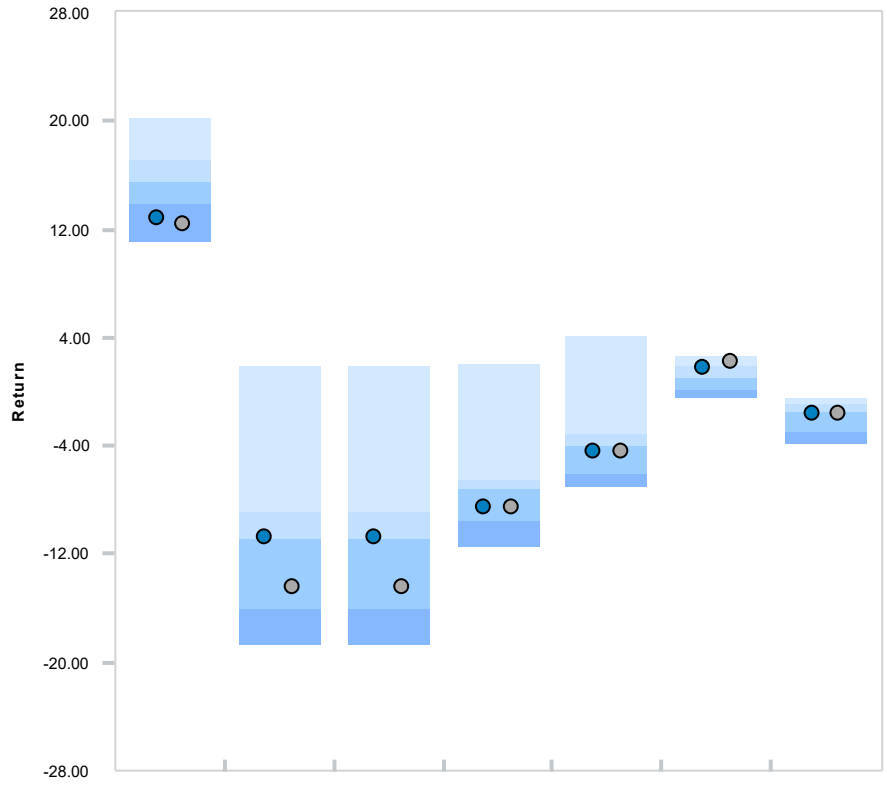
Historical Statistics - 3 Years

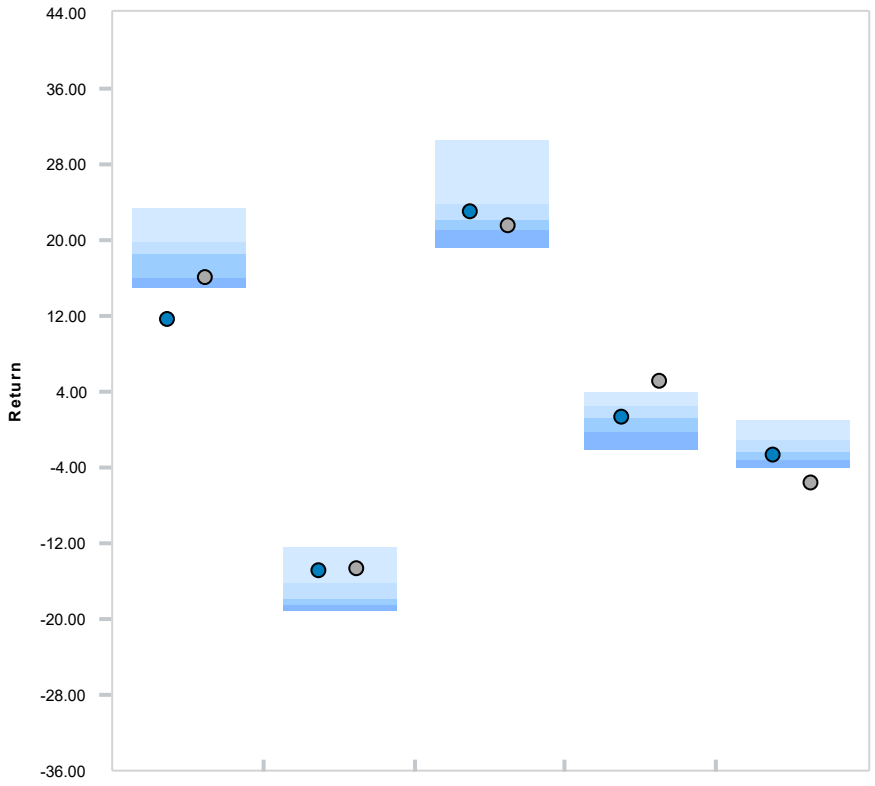
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Eqty	1.75	100.58	96.50	0.89	0.48	0.10	0.98	11.83
MSCI AC World ex US Index	0.00	100.00	100.00	0.00	N/A	0.04	1.00	12.17

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Eqty	2.23	101.16	94.56	1.37	0.56	0.24	0.96	10.41
MSCI AC World ex US Index	0.00	100.00	100.00	0.00	N/A	0.15	1.00	10.88

Peer Group Analysis - IM International Large Cap Value Equity (MF)





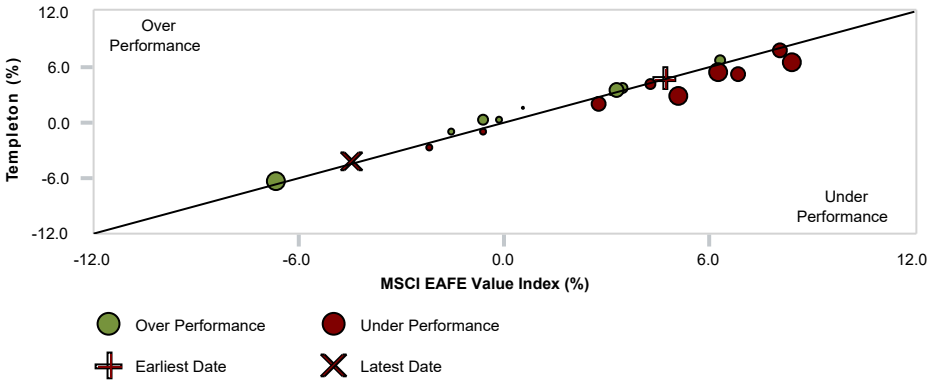
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Templeton	12.82 (82)	-10.81 (49)	-10.81 (49)	-8.57 (69)	-4.36 (62)	1.77 (30)	-1.58 (54)
EAFE V Index	12.43 (88)	-14.48 (70)	-14.48 (70)	-8.50 (67)	-4.43 (63)	2.20 (14)	-1.59 (54)
Median	15.40	-10.88	-10.88	-7.17	-3.94	1.01	-1.51

	2019	2018	2017	2016	2015
Templeton	11.57 (100)	-14.95 (19)	22.90 (38)	1.30 (48)	-2.67 (63)
EAFE V Index	16.09 (74)	-14.78 (19)	21.44 (63)	5.02 (1)	-5.68 (100)
Median	18.45	-17.83	22.09	1.18	-2.21

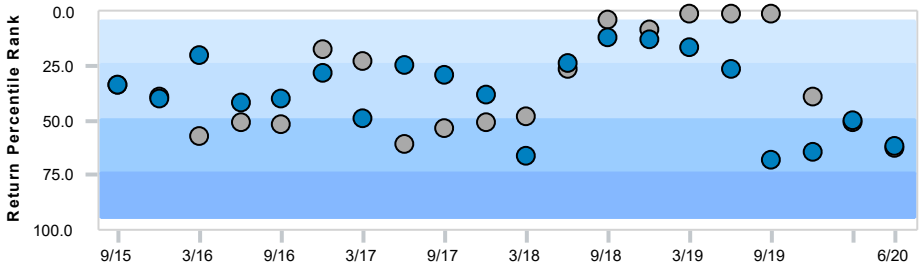
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Templeton	-24.71 (10)	8.22 (87)	-2.97 (100)	-0.36 (100)	6.64 (96)	-12.65 (23)
MSCI EAFE Value Index	-28.20 (49)	7.82 (99)	-1.74 (51)	1.54 (64)	7.92 (51)	-11.70 (13)
IM International Large Cap Value Equity (MF) Median	-28.23	8.77	-1.73	2.40	7.92	-13.74

3 Yr Rolling Under/Over Performance - 5 Years

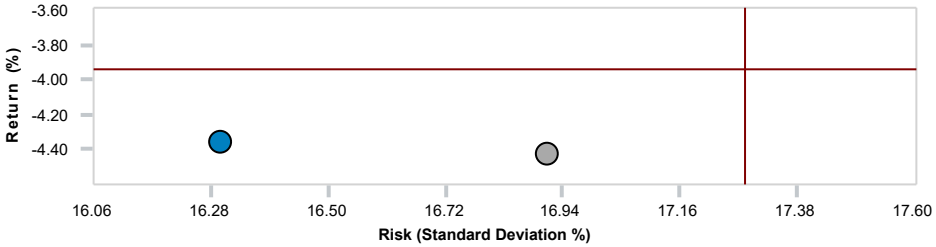


3 Yr Rolling Percentile Ranking - 5 Years



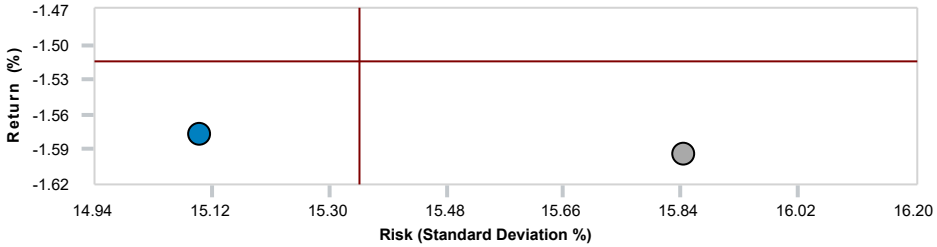
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Templeton	20	6 (30%)	10 (50%)	4 (20%)	0 (0%)
EAFE V Index	20	7 (35%)	5 (25%)	8 (40%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Templeton	-4.36	16.30
EAFE V Index	-4.43	16.91
Median	-3.94	17.28

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Templeton	-1.58	15.10
EAFE V Index	-1.59	15.85
Median	-1.51	15.35

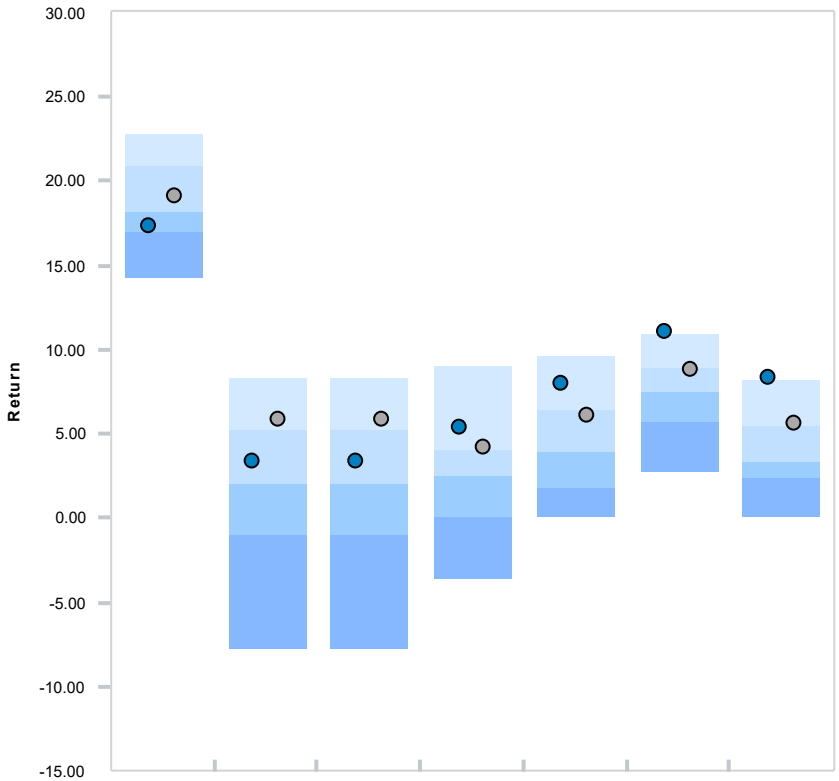
Historical Statistics - 3 Years

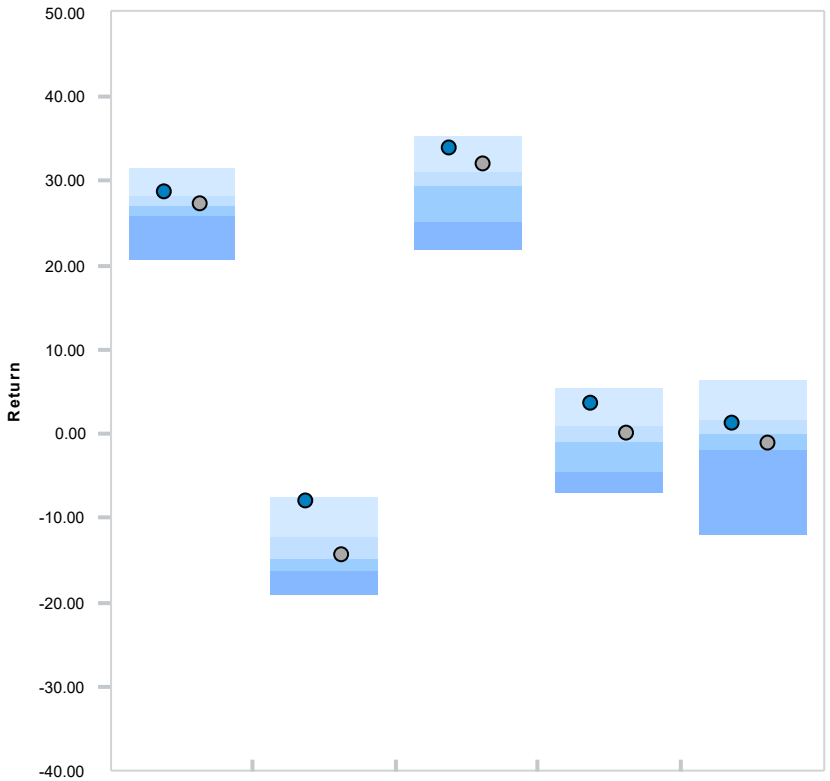
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Templeton	3.27	95.94	96.66	-0.22	-0.02	-0.29	0.95	13.46
MSCI EAFE Value Index	0.00	100.00	100.00	0.00	N/A	-0.28	1.00	14.18

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Templeton	3.40	93.49	94.11	-0.13	-0.03	-0.10	0.93	11.86
MSCI EAFE Value Index	0.00	100.00	100.00	0.00	N/A	-0.09	1.00	12.69

Peer Group Analysis - IM International Large Cap Growth Equity (MF)





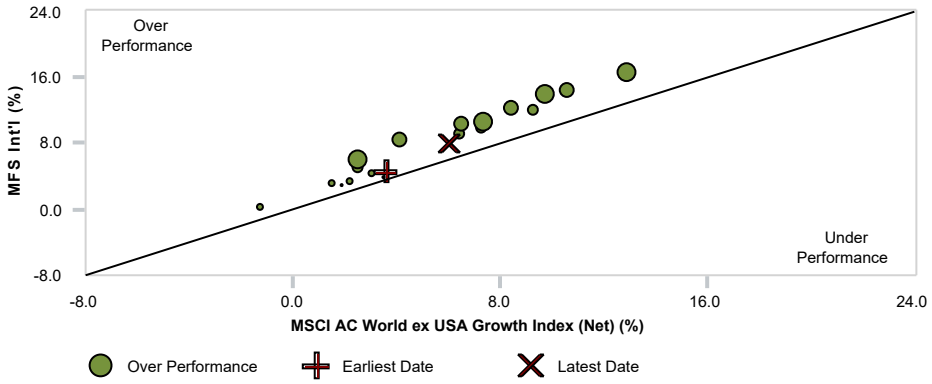
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
MFS Int'l	17.31 (66)	3.31 (33)	3.31 (33)	5.35 (16)	7.96 (11)	11.11 (5)	8.33 (4)
ACWIxUS Gr Index	19.11 (35)	5.80 (21)	5.80 (21)	4.21 (23)	6.07 (29)	8.79 (28)	5.61 (25)
Median	18.13	2.00	2.00	2.48	3.99	7.47	3.30

	2019	2018	2017	2016	2015
MFS Int'l	28.59 (21)	-8.14 (9)	33.99 (6)	3.58 (11)	1.31 (34)
ACWIxUS Gr Index	27.34 (43)	-14.43 (44)	32.01 (13)	0.12 (41)	-1.25 (70)
Median	27.03	-14.98	29.50	-0.87	-0.02

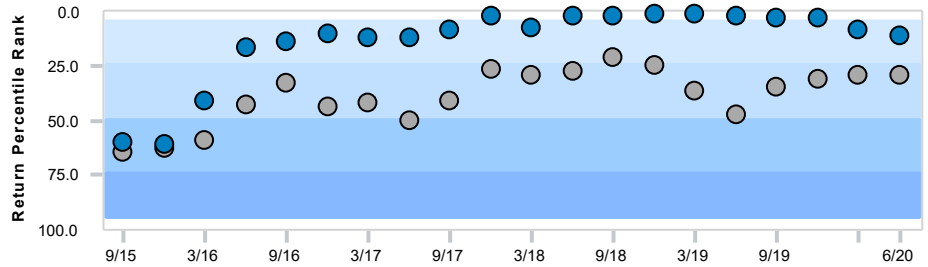
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
MFS Int'l	-18.64 (26)	10.72 (15)	-2.23 (86)	5.22 (30)	12.90 (40)	-11.57 (26)
MSCI AC World ex USA Growth Index (Net)	-18.25 (23)	9.58 (41)	-0.85 (32)	4.35 (53)	12.31 (55)	-12.20 (37)
IM International Large Cap Growth Equity (MF) Median	-20.57	9.00	-1.46	4.44	12.52	-12.70

3 Yr Rolling Under/Over Performance - 5 Years

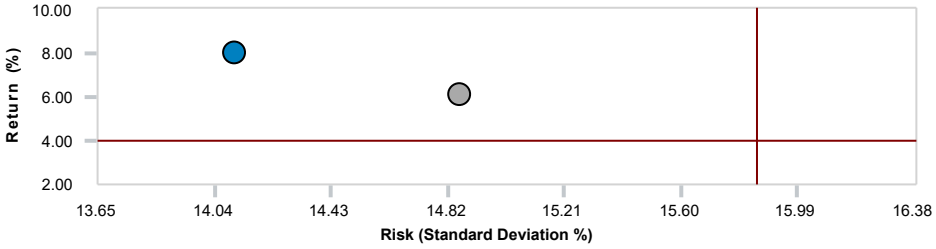


3 Yr Rolling Percentile Ranking - 5 Years



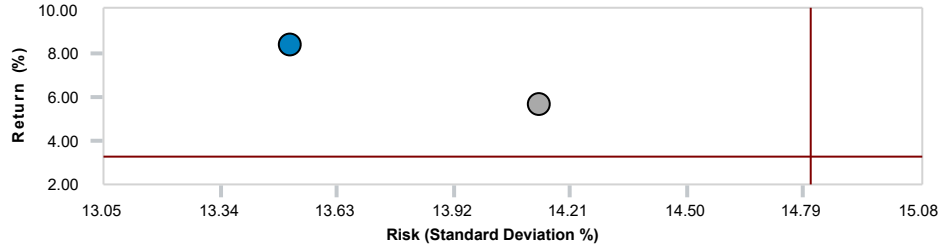
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
MFS Int'l	20	17 (85%)	1 (5%)	2 (10%)	0 (0%)
ACWIxUS Gr Index	20	2 (10%)	15 (75%)	3 (15%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
MFS Int'l	7.96	14.11
ACWIxUS Gr Index	6.07	14.86
Median	3.99	15.86

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
MFS Int'l	8.33	13.52
ACWIxUS Gr Index	5.61	14.13
Median	3.30	14.81

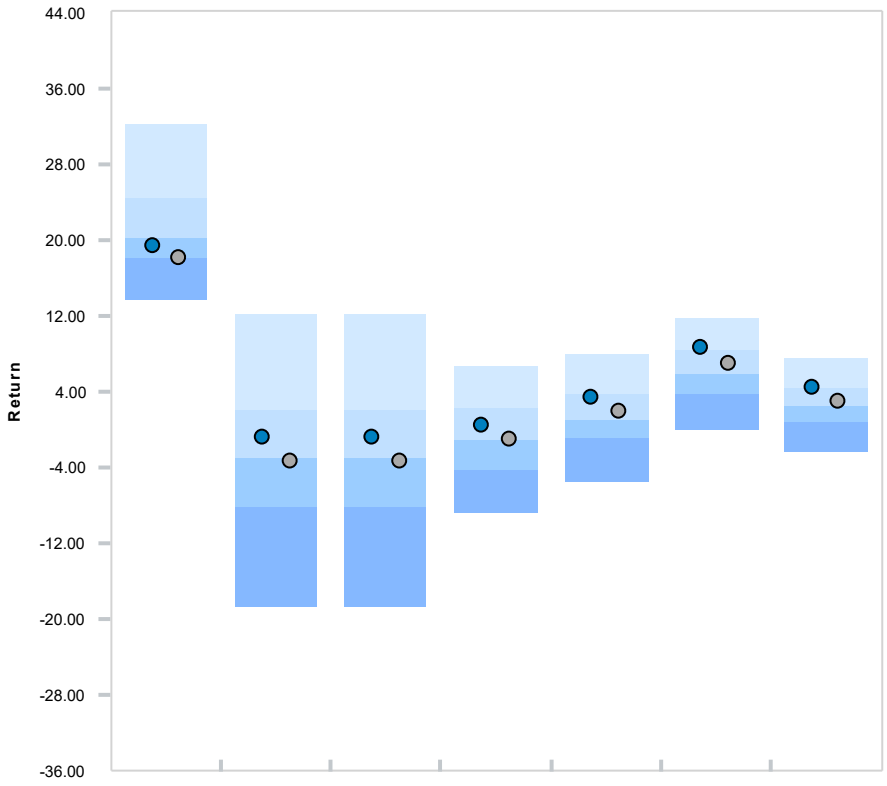
Historical Statistics - 3 Years

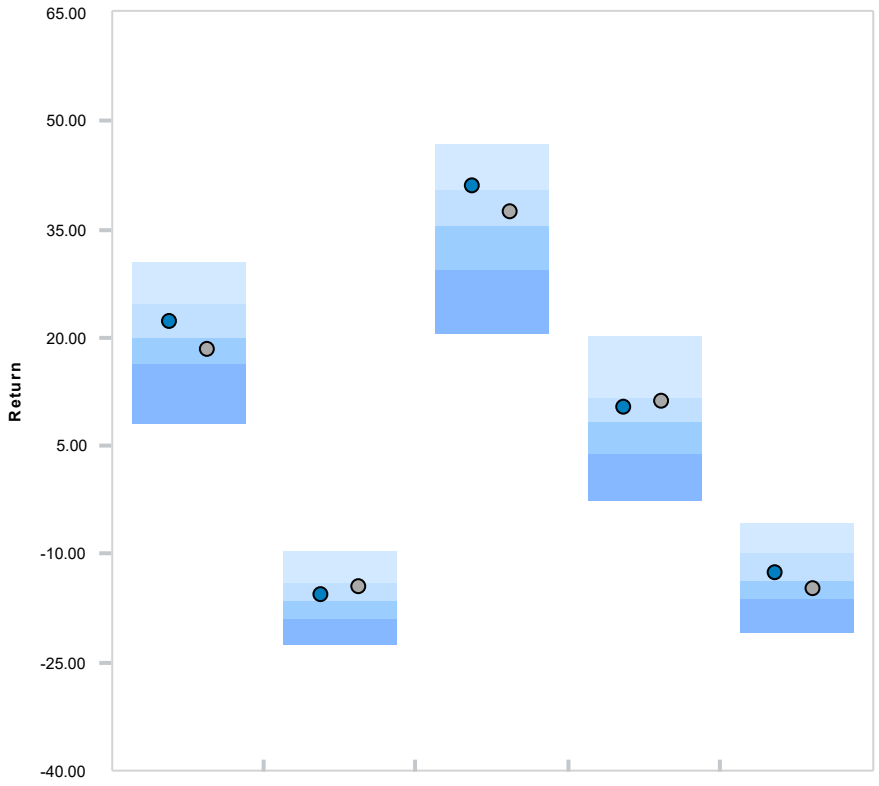
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Int'l	2.79	98.68	88.18	2.16	0.60	0.49	0.93	10.14
MSCI AC World ex USA Growth Index (Net)	0.00	100.00	100.00	0.00	N/A	0.35	1.00	10.63

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MFS Int'l	2.93	101.38	86.48	2.93	0.84	0.57	0.94	9.24
MSCI AC World ex USA Growth Index (Net)	0.00	100.00	100.00	0.00	N/A	0.37	1.00	9.79

Peer Group Analysis - IM Emerging Markets Equity (MF)





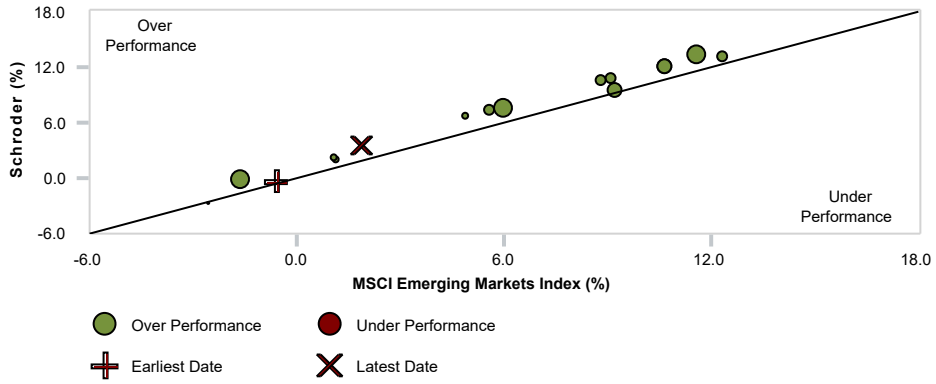
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Schroder	19.31 (61)	-0.83 (36)	-0.83 (36)	0.35 (39)	3.34 (29)	8.63 (23)	4.48 (26)
Em Mkt Index	18.08 (75)	-3.39 (53)	-3.39 (53)	-1.12 (51)	1.90 (44)	6.97 (36)	2.86 (46)
Median	20.27	-3.04	-3.04	-1.07	1.15	5.92	2.57

	2019	2018	2017	2016	2015
Schroder	22.11 (39)	-15.63 (43)	40.88 (22)	10.40 (36)	-12.70 (42)
Em Mkt Index	18.44 (62)	-14.58 (31)	37.28 (42)	11.19 (30)	-14.92 (63)
Median	20.08	-16.40	35.37	8.35	-13.66

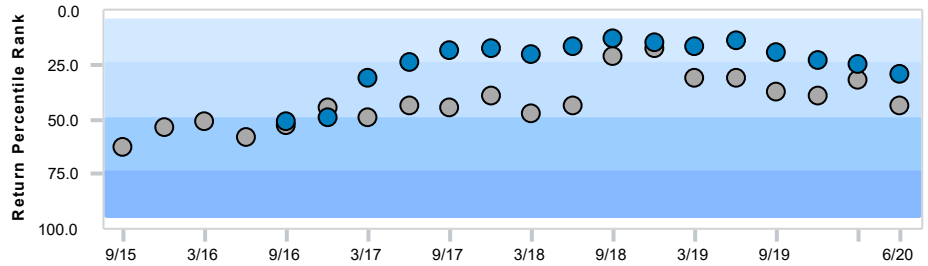
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Schroder	-23.21 (32)	11.22 (46)	-2.68 (34)	2.15 (38)	10.45 (49)	-8.88 (74)
MSCI Emerging Markets Index	-23.60 (35)	11.84 (31)	-4.25 (69)	0.61 (76)	9.93 (59)	-7.47 (48)
IM Emerging Markets Equity (MF) Median	-24.82	11.03	-3.46	1.60	10.38	-7.62

3 Yr Rolling Under/Over Performance - 5 Years

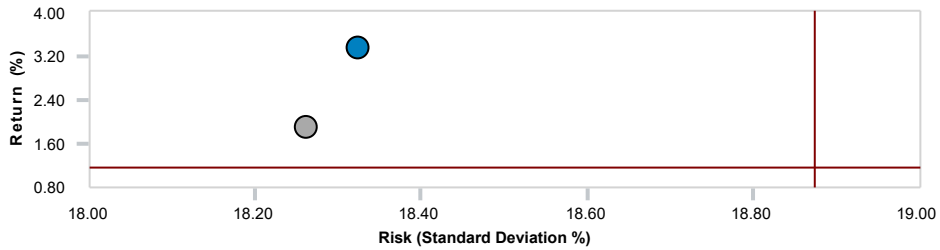


3 Yr Rolling Percentile Ranking - 5 Years



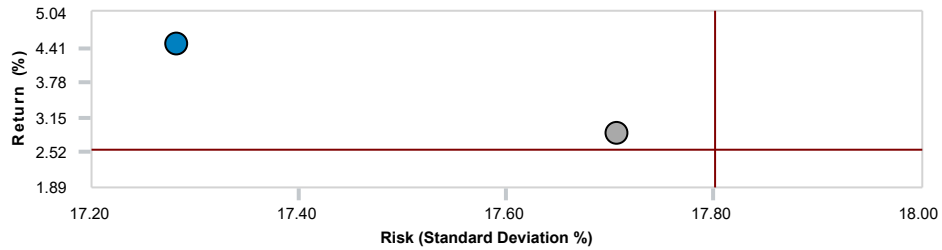
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Schroder	16	12 (75%)	3 (19%)	1 (6%)	0 (0%)
Em Mkt Index	20	2 (10%)	13 (65%)	5 (25%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Schroder	3.34	18.33
Em Mkt Index	1.90	18.26
Median	1.15	18.87

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Schroder	4.48	17.28
Em Mkt Index	2.86	17.71
Median	2.57	17.80

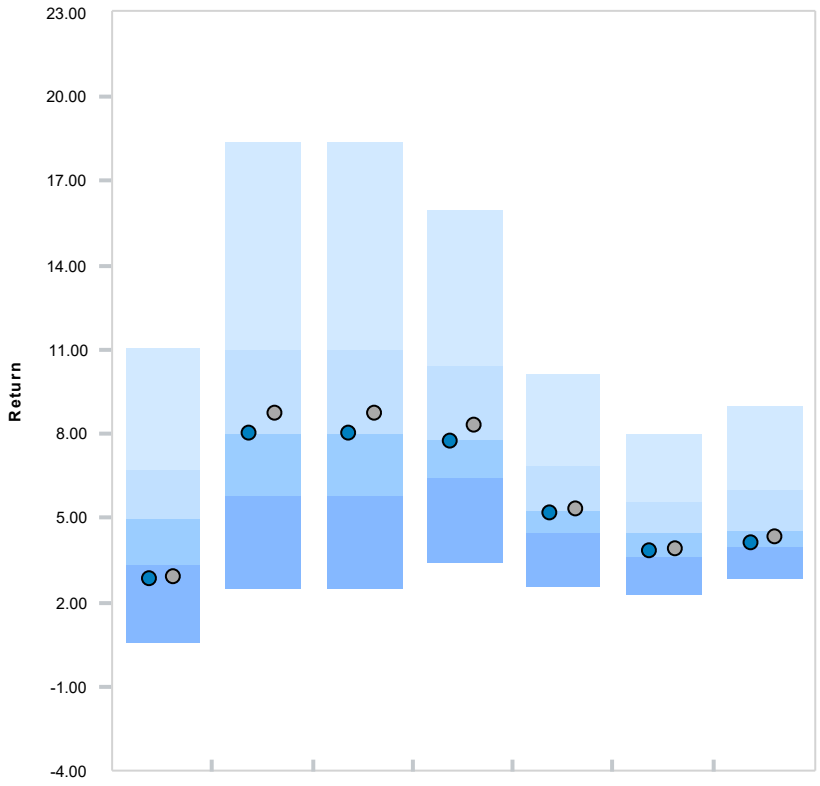
Historical Statistics - 3 Years

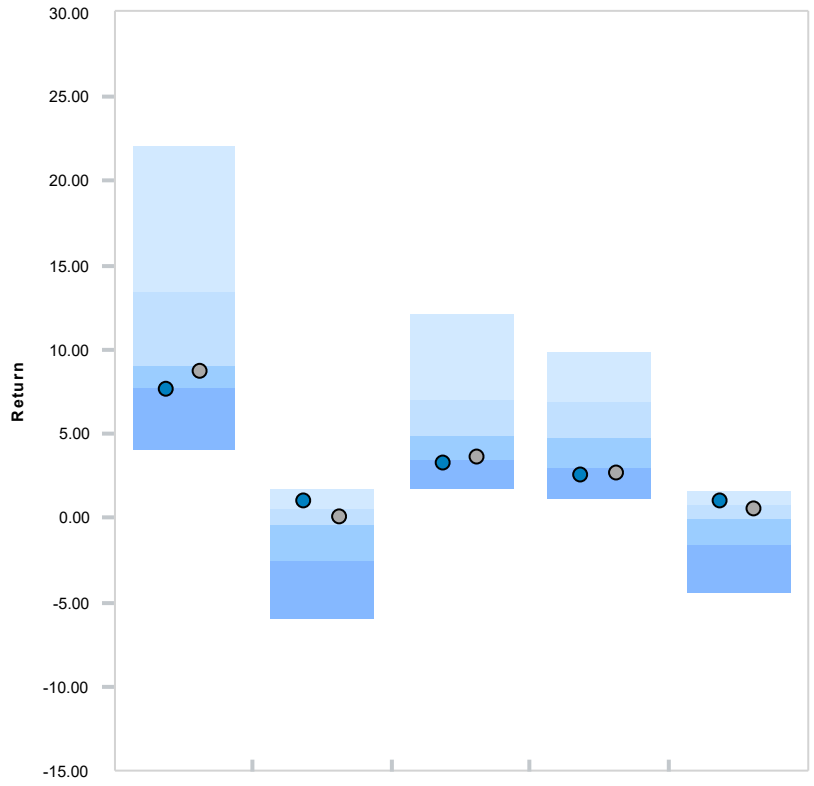
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Schroder	3.05	101.60	95.58	1.48	0.47	0.18	0.99	13.16
MSCI Emerging Markets Index	0.00	100.00	100.00	0.00	N/A	0.10	1.00	13.04

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Schroder	3.21	100.38	93.53	1.69	0.47	0.27	0.96	11.91
MSCI Emerging Markets Index	0.00	100.00	100.00	0.00	N/A	0.18	1.00	12.22

Peer Group Analysis - All Master Trust-US Fixed Income Segment





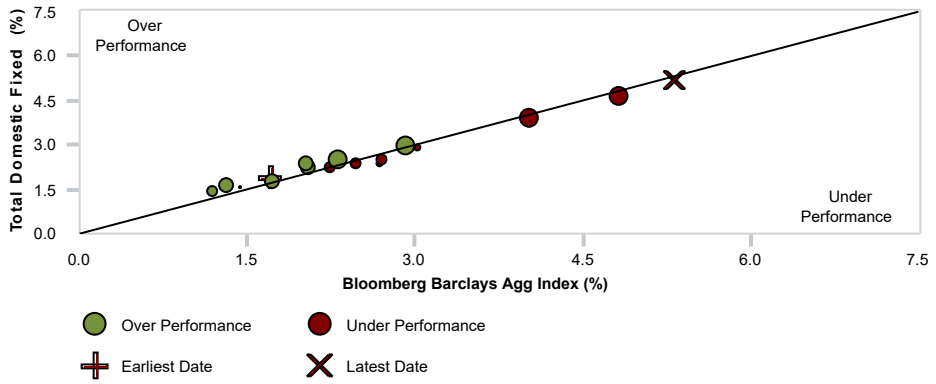
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Domestic Fixed	2.82 (82)	7.99 (50)	7.99 (50)	7.74 (51)	5.13 (54)	3.83 (70)	4.10 (71)
BB Agg Index	2.90 (82)	8.74 (39)	8.74 (39)	8.30 (38)	5.32 (48)	3.88 (68)	4.30 (62)
Median	4.94	7.98	7.98	7.82	5.25	4.42	4.55

	2019	2018	2017	2016	2015
Total Domestic Fixed	7.60 (77)	1.02 (13)	3.19 (83)	2.49 (85)	1.04 (17)
BB Agg Index	8.72 (58)	0.01 (37)	3.54 (73)	2.65 (82)	0.55 (32)
Median	9.09	-0.38	4.90	4.81	-0.06

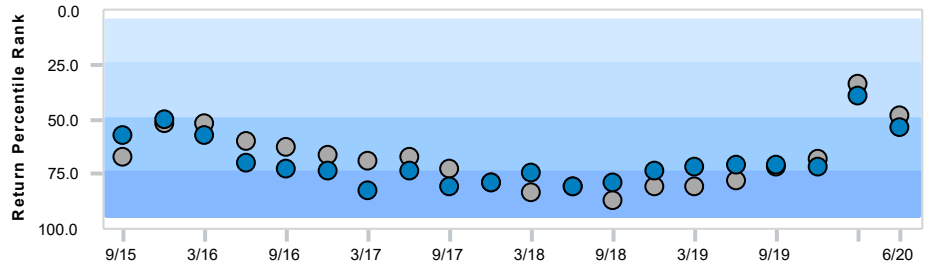
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Domestic Fixed	2.89 (21)	0.27 (64)	1.80 (67)	2.50 (77)	2.83 (72)	1.21 (26)
Bloomberg Barclays Agg Index	3.15 (20)	0.18 (69)	2.27 (41)	3.08 (48)	2.94 (66)	1.64 (10)
All Master Trust-US Fixed Income Segment Median	0.55	0.45	2.12	3.04	3.32	0.64

3 Yr Rolling Under/Over Performance - 5 Years

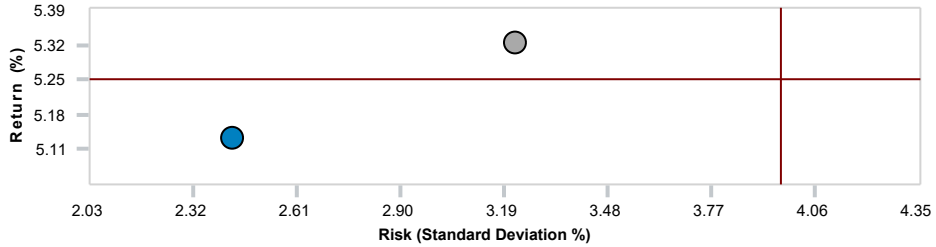


3 Yr Rolling Percentile Ranking - 5 Years



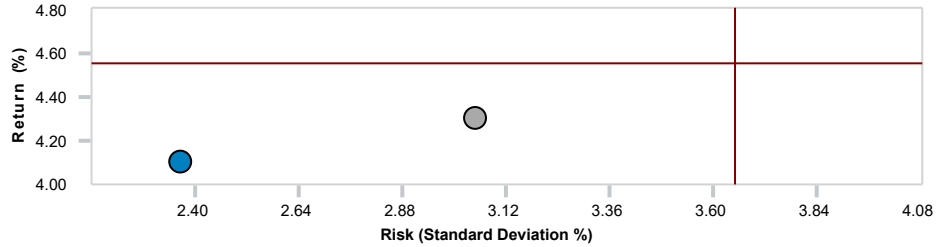
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Domestic Fixed	20	0 (0%)	2 (10%)	13 (65%)	5 (25%)
BB Agg Index	20	0 (0%)	2 (10%)	11 (55%)	7 (35%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Domestic Fixed	5.13	2.43
BB Agg Index	5.32	3.23
Median	5.25	3.96

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Domestic Fixed	4.10	2.37
BB Agg Index	4.30	3.05
Median	4.55	3.65

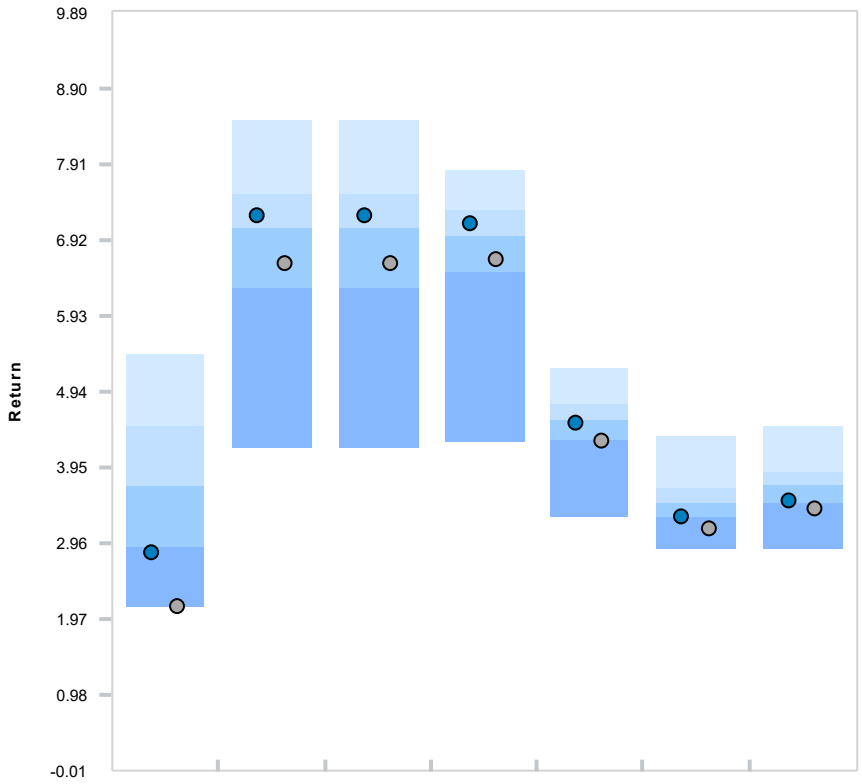
Historical Statistics - 3 Years

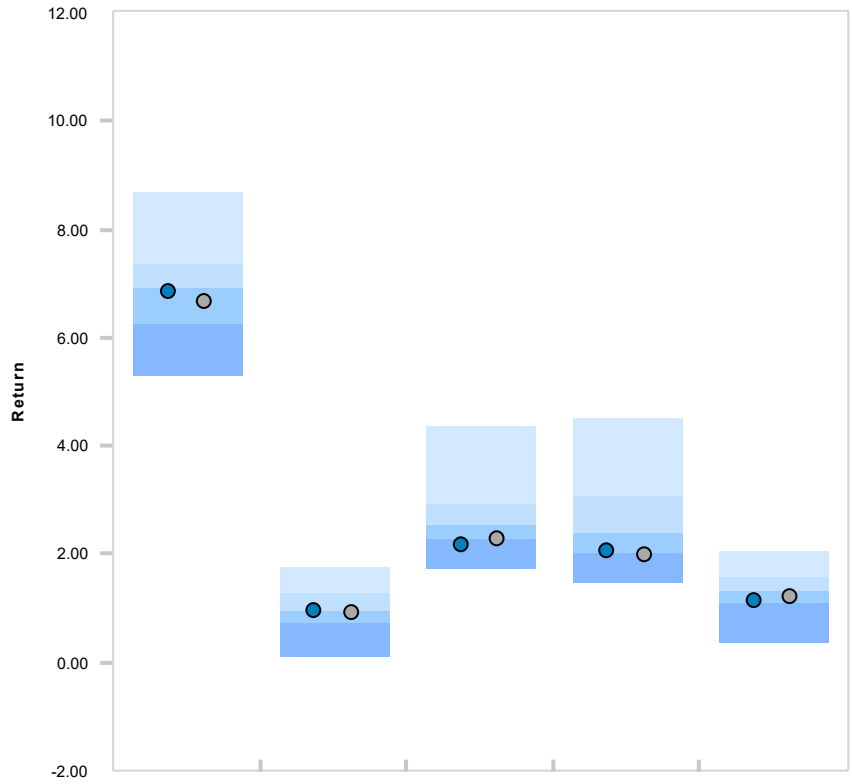
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Fixed	1.12	82.16	47.35	1.25	-0.18	1.36	0.72	0.73
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.09	1.00	1.25

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Fixed	1.06	80.03	49.79	0.89	-0.21	1.24	0.74	0.98
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.03	1.00	1.49

Peer Group Analysis - IM U.S. Intermediate Duration (SA+CF)





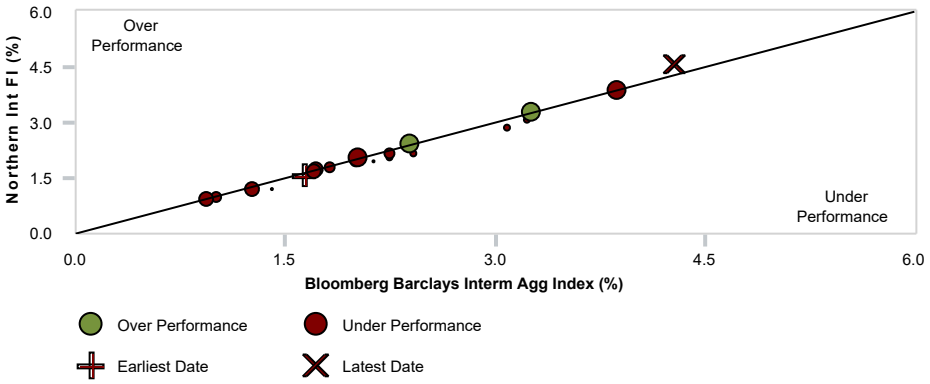
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Northern Int FI	2.83 (81)	7.23 (40)	7.23 (40)	7.12 (38)	4.53 (55)	3.30 (73)	3.51 (73)
BB Int Agg Index	2.13 (96)	6.60 (71)	6.60 (71)	6.67 (72)	4.28 (77)	3.15 (88)	3.40 (82)
Median	3.72	7.09	7.09	6.98	4.57	3.48	3.71

	2019	2018	2017	2016	2015
Northern Int FI	6.85 (55)	0.94 (50)	2.17 (83)	2.04 (75)	1.14 (69)
BB Int Agg Index	6.67 (65)	0.92 (51)	2.27 (76)	1.97 (78)	1.21 (63)
Median	6.93	0.94	2.54	2.37	1.30

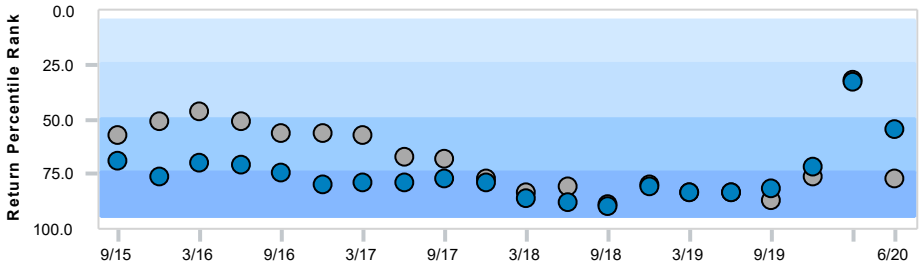
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Northern Int FI	2.48 (20)	0.39 (66)	1.37 (62)	2.61 (30)	2.34 (64)	1.67 (20)
Bloomberg Barclays Interm Agg Index	2.49 (20)	0.47 (47)	1.38 (58)	2.39 (69)	2.28 (70)	1.80 (9)
IM U.S. Intermediate Duration (SA+CF) Median	1.30	0.44	1.42	2.51	2.45	1.38

3 Yr Rolling Under/Over Performance - 5 Years

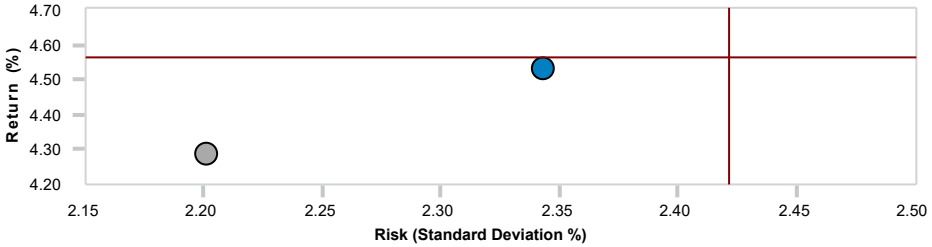


3 Yr Rolling Percentile Ranking - 5 Years



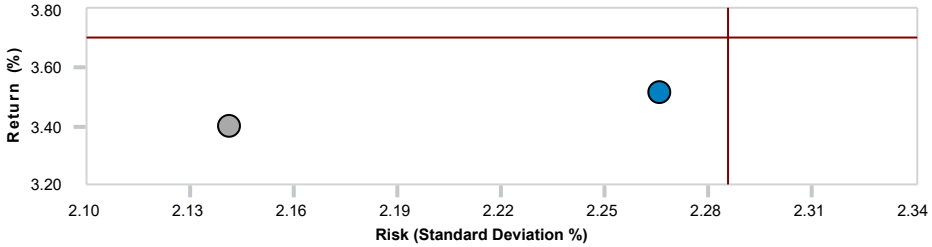
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Northern Int FI	20	0 (0%)	1 (5%)	6 (30%)	13 (65%)
BB Int Agg Index	20	0 (0%)	2 (10%)	8 (40%)	10 (50%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Northern Int FI	4.53	2.34
BB Int Agg Index	4.28	2.20
Median	4.57	2.42

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Northern Int FI	3.51	2.27
BB Int Agg Index	3.40	2.14
Median	3.71	2.29

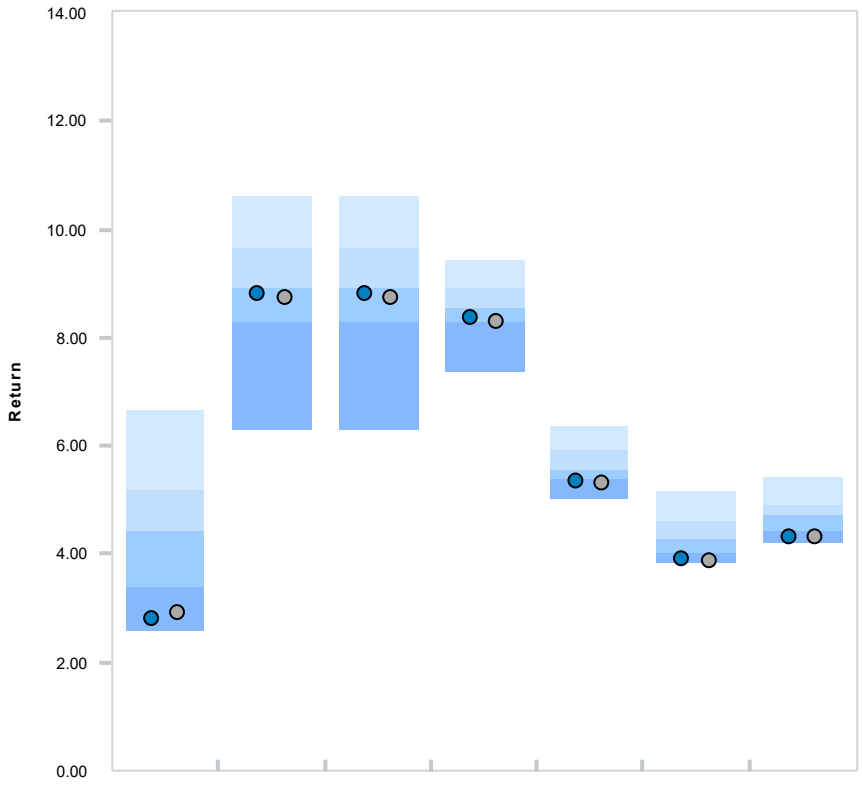
Historical Statistics - 3 Years

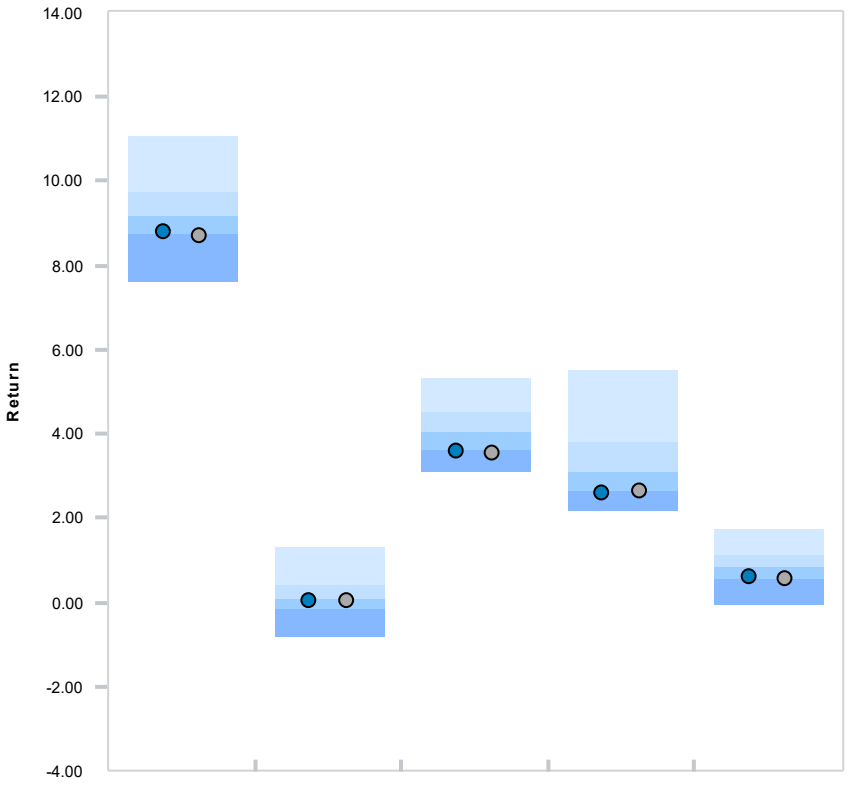
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Int FI	0.44	105.92	106.66	0.05	0.54	1.16	1.05	0.82
Bloomberg Barclays Interm Agg Index	0.00	100.00	100.00	0.00	N/A	1.14	1.00	0.84

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Int FI	0.39	104.43	106.66	-0.03	0.30	1.04	1.04	1.04
Bloomberg Barclays Interm Agg Index	0.00	100.00	100.00	0.00	N/A	1.05	1.00	1.04

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)





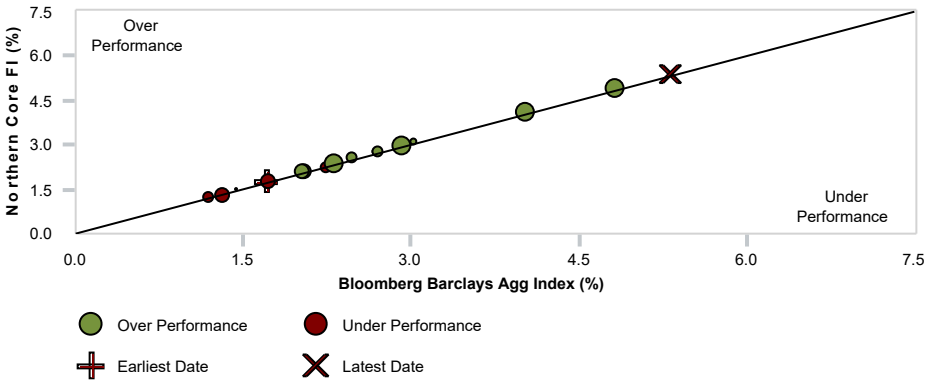
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Northern Core FI	2.80 (92)	8.79 (65)	8.79 (65)	8.37 (70)	5.35 (81)	3.90 (91)	4.32 (89)
BB Agg Index	2.90 (90)	8.74 (68)	8.74 (68)	8.30 (75)	5.32 (84)	3.88 (92)	4.30 (90)
Median	4.42	8.93	8.93	8.54	5.57	4.28	4.70

	2019	2018	2017	2016	2015
Northern Core FI	8.77 (72)	0.05 (53)	3.56 (81)	2.60 (81)	0.58 (71)
BB Agg Index	8.72 (78)	0.01 (61)	3.54 (83)	2.65 (75)	0.55 (76)
Median	9.19	0.06	4.04	3.10	0.82

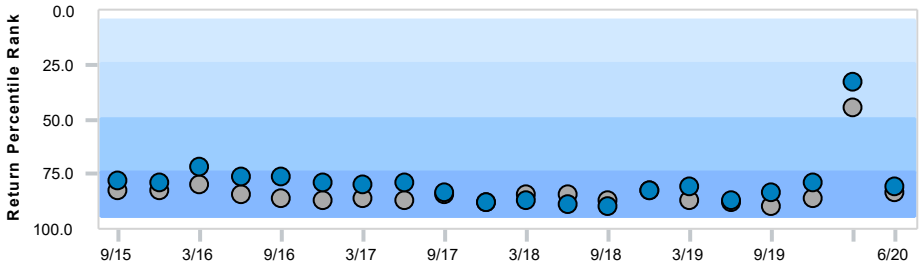
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Northern Core FI	3.30 (14)	0.16 (64)	2.28 (66)	3.10 (60)	2.98 (72)	1.63 (28)
Bloomberg Barclays Agg Index	3.15 (23)	0.18 (58)	2.27 (70)	3.08 (70)	2.94 (82)	1.64 (25)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.93	0.22	2.33	3.13	3.22	1.40

3 Yr Rolling Under/Over Performance - 5 Years

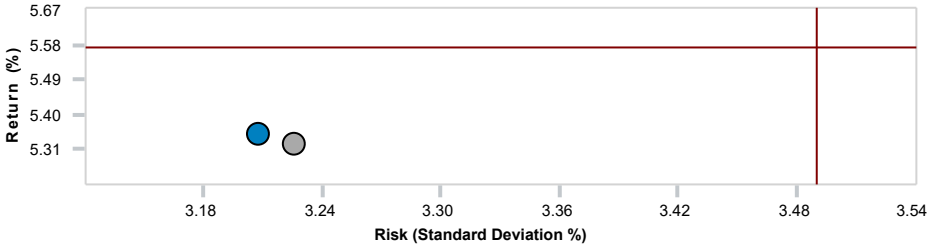


3 Yr Rolling Percentile Ranking - 5 Years



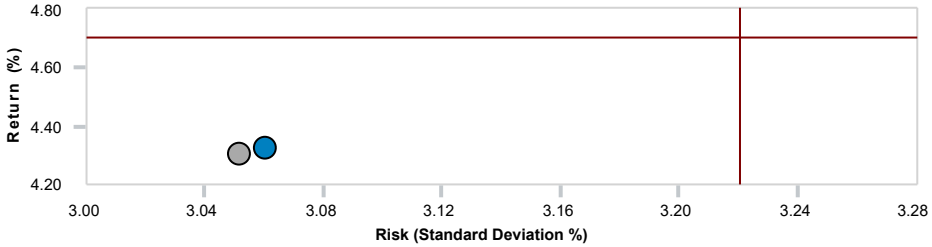
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Northern Core FI	20	0 (0%)	1 (5%)	1 (5%)	18 (90%)
BB Agg Index	20	0 (0%)	1 (5%)	0 (0%)	19 (95%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Northern Core FI	5.35	3.21
BB Agg Index	5.32	3.23
Median	5.57	3.49

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Northern Core FI	4.32	3.06
BB Agg Index	4.30	3.05
Median	4.70	3.22

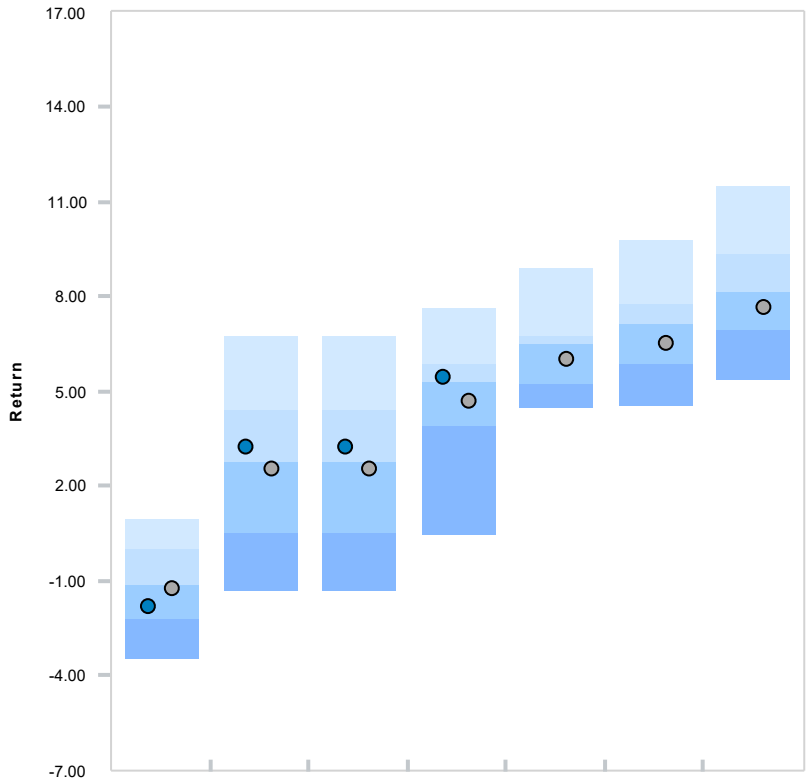
Historical Statistics - 3 Years

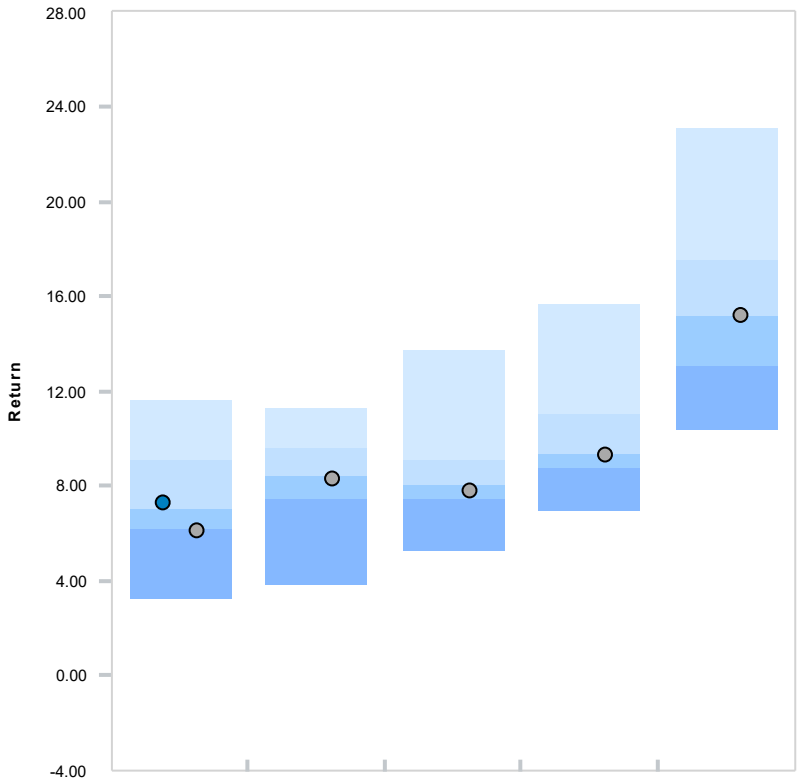
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Core FI	0.11	99.72	97.93	0.05	0.22	1.10	0.99	1.23
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.09	1.00	1.25

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Northern Core FI	0.13	99.98	99.10	0.01	0.14	1.03	1.00	1.51
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.03	1.00	1.49

Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)





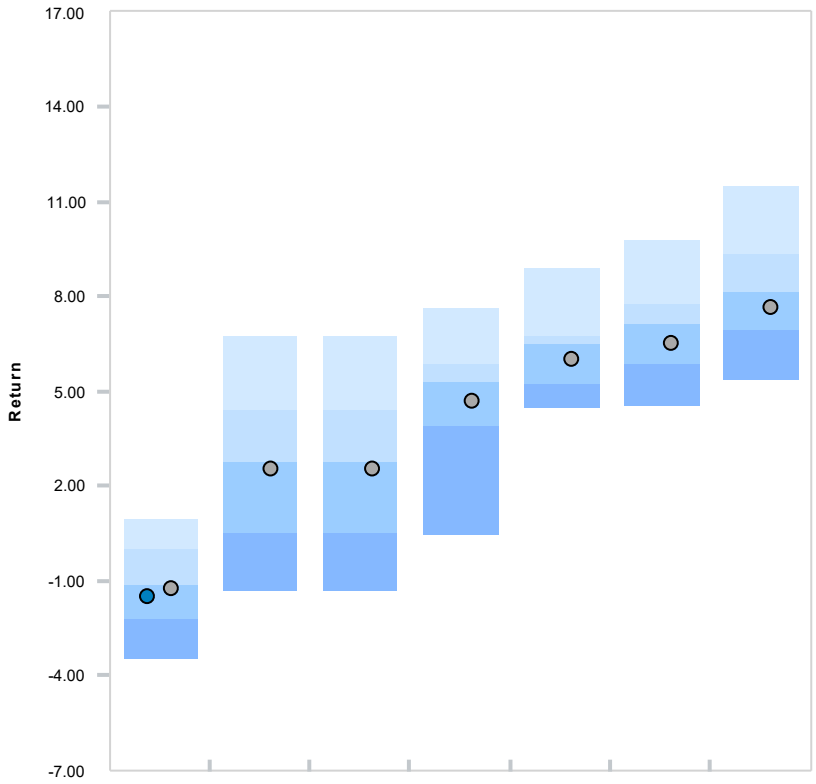
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Clarion Lion Properties	-1.82 (71)	3.21 (45)	3.21 (45)	5.46 (36)	N/A	N/A	N/A
NCREIF ODEC	-1.27 (67)	2.56 (63)	2.56 (63)	4.71 (61)	5.99 (66)	6.52 (66)	7.63 (63)
Median	-1.14	2.78	2.78	5.30	6.54	7.15	8.15

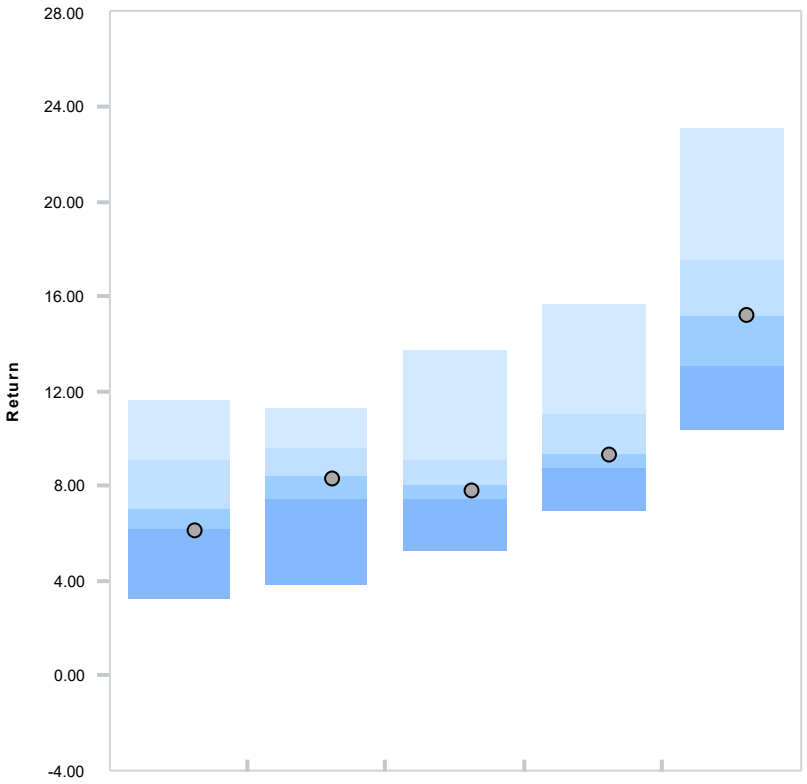
	2019	2018	2017	2016	2015
Clarion Lion Properties	7.26 (45)	N/A	N/A	N/A	N/A
NCREIF ODEC	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17 (51)
Median	7.02	8.42	8.08	9.35	15.23

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Clarion Lion Properties	1.39 (47)	1.99 (35)	1.66 (60)	1.43 (52)	2.00 (45)	2.03 (22)
NCREIF Fund Index-Open End Diversified Core Index (EW)	0.92 (67)	1.53 (58)	1.39 (75)	1.34 (61)	1.69 (76)	1.62 (58)
IM U.S. Open End Private Real Estate (SA+CF) Median	1.31	1.61	1.75	1.44	1.99	1.73

Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)





	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Principal Enh Prop Fd	-1.49 (69)	N/A	N/A	N/A	N/A	N/A	N/A
NCREIF ODCE	-1.27 (67)	2.56 (63)	2.56 (63)	4.71 (61)	5.99 (66)	6.52 (66)	7.63 (63)
Median	-1.14	2.78	2.78	5.30	6.54	7.15	8.15

	2019	2018	2017	2016	2015
Principal Enh Prop Fd	N/A	N/A	N/A	N/A	N/A
NCREIF ODCE	6.08 (77)	8.25 (55)	7.80 (57)	9.27 (52)	15.17 (51)
Median	7.02	8.42	8.08	9.35	15.23

Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Principal Enh Prop Fd	1.04 (66)	2.82 (13)	N/A	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	0.92 (67)	1.53 (58)	1.39 (75)	1.34 (61)	1.69 (76)	1.62 (58)
IM U.S. Open End Private Real Estate (SA+CF) Median	1.31	1.61	1.75	1.44	1.99	1.73

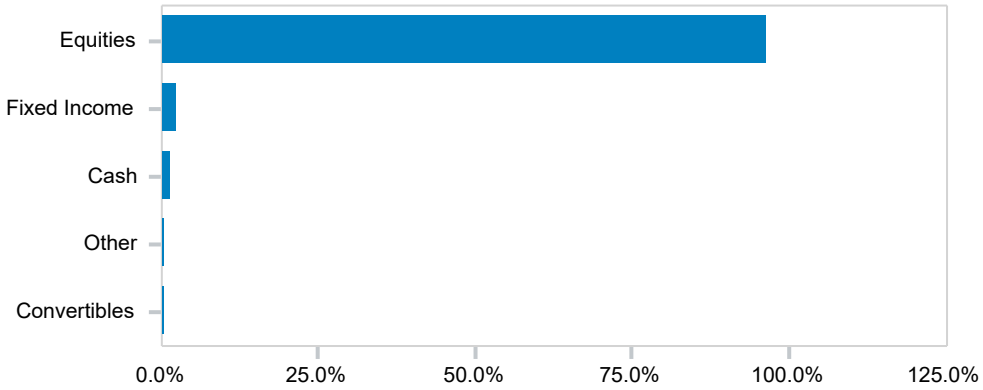
Fund Information

Fund Name :	JPMorgan Trust II: JPMorgan Equity Income Fund; Class R6 Shares	Portfolio Assets :	$29,554 Million
Fund Family :	JPMorgan Funds	Portfolio Manager :	Hart/Silberman/Brandon
Ticker :	OIEJX	PM Tenure :	2012--2019--2019
Inception Date :	01/31/2012	Fund Style :	IM Equity Income (MF)
Fund Assets :	$12,651 Million	Style Benchmark :	S&P 500 Index
Portfolio Turnover :	23%		

Fund Investment Policy

The Fund seeks current income through regular payment of dividends with the secondary goal of capital appreciation. The Fund invests 80% of its net assets in the equity securities of corporations that regularly pay dividends, including common stocks and debt securities and preferred stock convertible to common stock.

Asset Allocation As of 05/31/2020



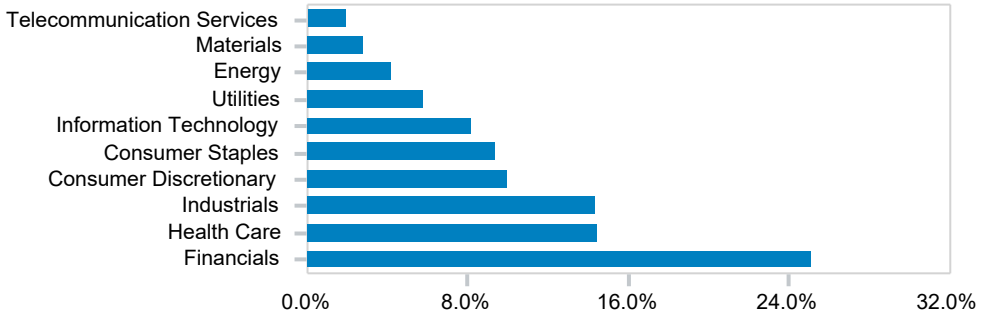
Top Ten Securities As of 05/31/2020

JPMorgan Prime Money Market Fund;IM	3.7 %
Johnson & Johnson ORD	2.6 %
Bank of America Corp ORD	2.6 %
Comcast Corp ORD	2.5 %
CME Group Inc ORD	2.5 %
Bristol-Myers Squibb Co ORD	2.4 %
BlackRock Inc ORD	2.2 %
Microsoft Corp ORD	2.2 %
Home Depot Inc ORD	2.1 %
Texas Instruments Inc ORD	2.1 %

Fund Characteristics As of 05/31/2020

Total Securities	91
Avg. Market Cap	$157,533 Million
P/E	23.8
P/B	4.7
Div. Yield	2.9%
Annual EPS	6.6
5Yr EPS	8.9
3Yr EPS Growth	12.8

Sector/Quality Allocation As of 05/31/2020



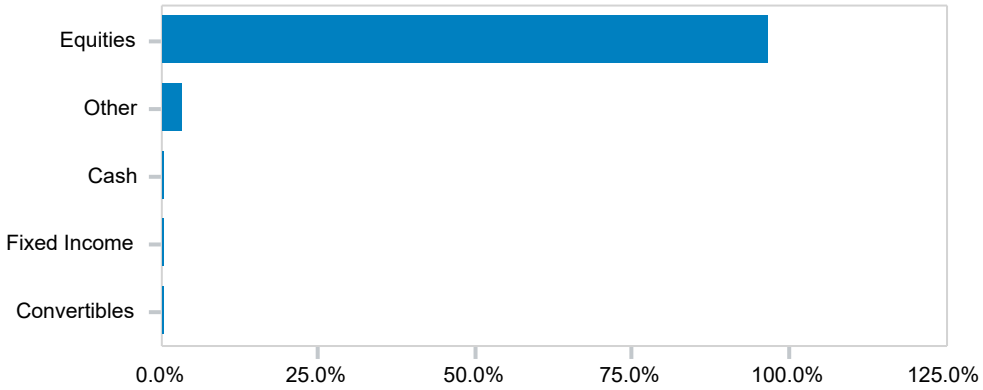
Fund Information

Fund Name :	Vanguard Fenway Funds: Vanguard Equity Income Fund; Admiral Shares	Portfolio Assets :	$34,085 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Stetler/Reckmeyer/Guo
Ticker :	VEIRX	PM Tenure :	2003--2007--2016
Inception Date :	08/13/2001	Fund Style :	IM Equity Income (MF)
Fund Assets :	$29,350 Million	Style Benchmark :	S&P 500 Index
Portfolio Turnover :	32%		

Fund Investment Policy

The Fund seeks to provide an above-average level of current income and reasonable long-term capital appreciation. It invests in common stocks of mid-size and large companies whose stocks typically pay above-average levels of dividend income and are, in the opinion of the advisor, undervalued relative to similar stocks.

Asset Allocation As of 03/31/2020



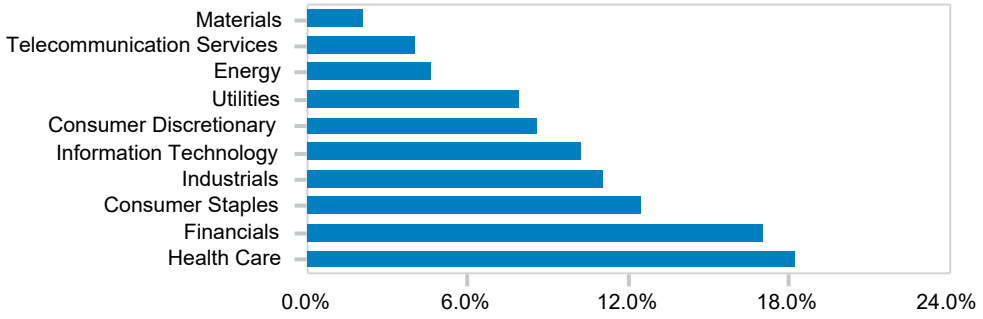
Top Ten Securities As of 03/31/2020

Johnson & Johnson ORD	3.9 %
JPMorgan Chase & Co ORD	3.3 %
Vanguard Market Liquidity Fund	3.1 %
Verizon Communications Inc ORD	3.0 %
Cisco Systems Inc ORD	2.9 %
Intel Corp ORD	2.6 %
Pfizer Inc ORD	2.5 %
Comcast Corp ORD	2.4 %
Merck & Co Inc ORD	2.3 %
Procter & Gamble Co ORD	2.1 %

Fund Characteristics As of 03/31/2020

Total Securities	191
Avg. Market Cap	$123,333 Million
P/E	18.7
P/B	4.5
Div. Yield	3.7%
Annual EPS	12.6
5Yr EPS	8.2
3Yr EPS Growth	14.4

Sector/Quality Allocation As of 03/31/2020



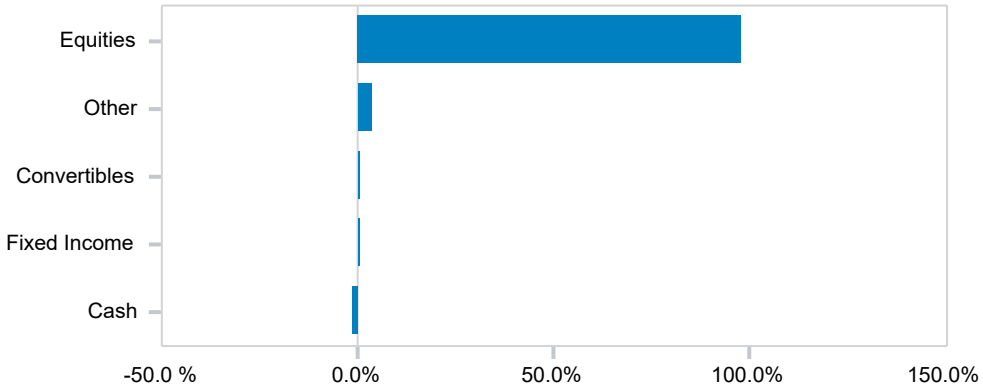
Fund Information

Fund Name :	MFS Series Trust II: MFS Growth Fund; Class R6 Shares	Portfolio Assets :	$31,561 Million
Fund Family :	MFS Investment Management	Portfolio Manager :	Fischman/Gordon
Ticker :	MFEKX	PM Tenure :	2011--2017
Inception Date :	08/26/2011	Fund Style :	IM U.S. Large Cap Growth Equity (MF)
Fund Assets :	$11,650 Million	Style Benchmark :	Russell 1000 Growth Index
Portfolio Turnover :	11%		

Fund Investment Policy

The Fund seeks to provide long-term growth of capital. The Fund invests primarily in common stocks that MFS believes are early in their life cycle and has the potential to become major enterprises (emerging growth companies).

Asset Allocation As of 05/31/2020



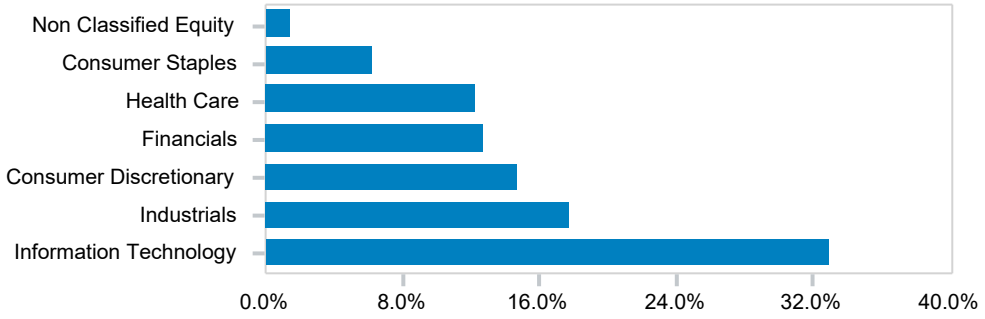
Top Ten Securities As of 05/31/2020

Microsoft Corp ORD	9.3 %
Amazon.com Inc ORD	7.4 %
Adobe Inc ORD	4.5 %
Alphabet Inc ORD	4.2 %
Visa Inc ORD	3.9 %
Mastercard Inc ORD	3.5 %
MFS Institutional Money Market	3.5 %
Facebook Inc ORD	2.4 %
Salesforce.Com Inc ORD	2.1 %
Thermo Fisher Scientific Inc ORD	2.1 %

Fund Characteristics As of 05/31/2020

Total Securities	78
Avg. Market Cap	$404,527 Million
P/E	43.8
P/B	12.0
Div. Yield	0.9%
Annual EPS	16.6
5Yr EPS	19.9
3Yr EPS Growth	26.3

Sector/Quality Allocation As of 05/31/2020



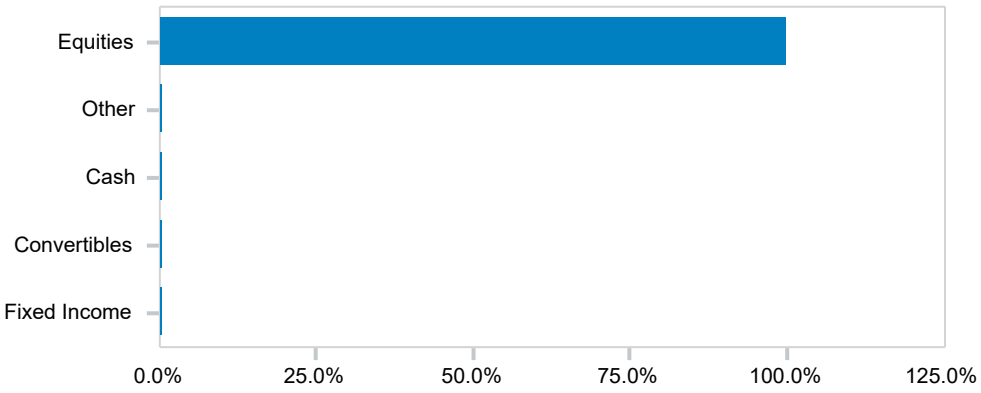
Fund Information

Fund Name :	Principal Funds, Inc: MidCap Fund; Institutional Class Shares	Portfolio Assets :	$21,882 Million
Fund Family :	Principal Global Investors LLC	Portfolio Manager :	Nolin/Rozycki
Ticker :	PCBIX	PM Tenure :	2001--2013
Inception Date :	03/01/2001	Fund Style :	IM U.S. Multi-Cap Growth Equity (MF)
Fund Assets :	$11,686 Million	Style Benchmark :	Russell 3000 Growth Index
Portfolio Turnover :	14%		

Fund Investment Policy

The Fund seeks long-term growth of capital by investing primarily in common stocks and other equity securities of medium-capitalization firms. Stock selection is pursued with a goal of creating a "blended portfolio" of growth and value stocks.

Asset Allocation As of 05/31/2020



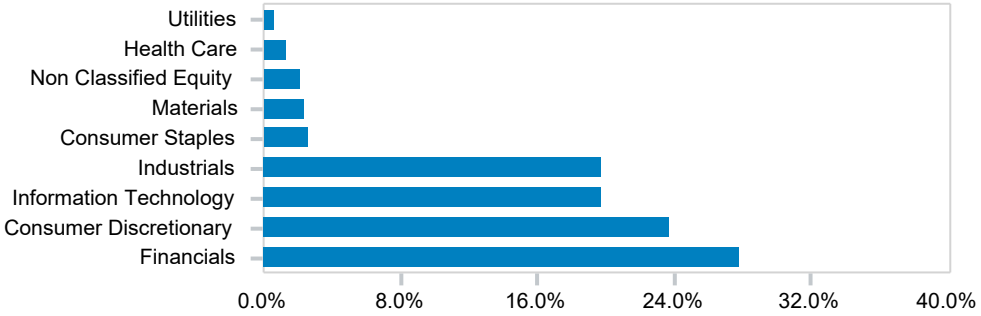
Top Ten Securities As of 05/31/2020

TransDigm Group Inc ORD	4.1 %
Brookfield Asset Management Inc	3.9 %
Carmax Inc ORD	3.4 %
SBA Communications Corp ORD	3.2 %
Autodesk Inc ORD	2.8 %
O'Reilly Automotive Inc ORD	2.8 %
Black Knight Inc ORD	2.8 %
Copart Inc ORD	2.7 %
Wix.Com Ltd ORD	2.6 %
Markel Corp ORD	2.4 %

Fund Characteristics As of 05/31/2020

Total Securities	86
Avg. Market Cap	$22,154 Million
P/E	34.4
P/B	7.6
Div. Yield	1.6%
Annual EPS	25.7
5Yr EPS	18.8
3Yr EPS Growth	23.9

Sector/Quality Allocation As of 05/31/2020



Portfolio Characteristics (Benchmark: Russell 2000 Growth Index)

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap ($)	4,024,928,275	2,490,662,225
Median Mkt. Cap ($)	2,856,457,375	879,601,800
Price/Earnings ratio	38.9	28.1
Price/Book ratio	4.4	4.4
5 Yr. EPS Growth Rate (%)	21.0	13.2
Current Yield (%)	0.1	0.5
Beta (5 Years, Monthly)	0.88	1.00
Number of Stocks	53	1,081

Top Ten Equity Holdings (Benchmark: Russell 2000 Growth Index)

	Portfolio Wt	Benchmark Wt	Active Wt	Qtr Rtrn
SPS Commerce Inc	3.5	0.3	3.2	61.5
LHC Group Inc	3.4	0.6	2.8	24.3
Descartes Systems Group Inc (The)	3.2	0.0	3.2	53.8
Repay Holdings Corp	3.2	0.1	3.1	71.6
Ollie's Bargin Outlet Holdings	3.2	0.0	3.2	110.7
RealPage Inc	3.0	0.0	3.0	22.8
Grand Canyon Education Inc	3.0	0.0	3.0	18.7
Alarm.com Holdings Inc	2.9	0.3	2.6	66.6
Envestnet Inc	2.7	0.4	2.3	36.7
Chegg Inc	2.6	0.0	2.6	88.0

Ten Best Performers (Benchmark: Russell 2000 Growth Index)

	Portfolio Wt	Benchmark Wt	Active Wt	Quarterly Rtrn
Wix.com Ltd	1.4	0.0	1.4	154.1
Kornit Digital Ltd	1.4	0.0	1.4	114.5
Ollie's Bargin Outlet Holdings	3.2	0.0	3.2	110.7
Chegg Inc	2.6	0.0	2.6	88.0
Independent Bank Group Inc	1.1	0.0	1.1	72.5
Repay Holdings Corp	3.2	0.1	3.1	71.6
Boot Barn Holdings Inc	1.6	0.1	1.5	66.7
Alarm.com Holdings Inc	2.9	0.3	2.6	66.6
Paylocity Holding Corp	2.1	0.0	2.1	65.2
Trex Co Inc	1.4	0.0	1.4	62.3

Ten Worst Performers (Benchmark: Russell 2000 Growth Index)

	Portfolio Wt	Benchmark Wt	Active Wt	Quarterly Rtrn
Haemonetics Corp	1.6	0.0	1.6	-10.1
Ameris Bancorp	1.0	0.0	1.0	-0.1
Tabula Rasa HealthCare Inc	1.8	0.1	1.7	4.7
Construction Partners inc	1.9	0.0	1.9	5.2
LeMaitre Vascular Inc	1.2	0.0	1.2	6.3
Omnicell Inc	1.2	0.3	0.9	7.7
Neogenomics Inc	1.1	0.4	0.7	12.2
Solarwinds Corp	1.5	0.0	1.5	12.8
Virtusa Corp	1.3	0.1	1.2	14.3
HealthEquity Inc	2.3	0.5	1.8	16.0

Buy and Hold Sector Attribution (Benchmark: Russell 2000 Growth Index)

	Allocation		Performance		Attribution		
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Total
Communication Services	1.0	2.3	45.71	24.26	0.22	0.08	0.30
Consumer Discretionary	12.7	9.6	58.20	55.24	0.37	0.78	1.15
Consumer Staples	1.6	3.4	18.81	19.99	-0.02	0.18	0.16
Energy	0.0	0.3	0.00	45.75	0.00	-0.04	-0.04
Financials	2.2	5.9	27.98	18.04	0.22	0.46	0.68
Health Care	24.0	33.9	19.19	31.33	-2.91	-0.10	-3.02
Industrials	12.5	17.5	37.58	28.16	1.17	0.11	1.28
Information Technology	42.1	18.2	39.96	30.14	4.14	-0.04	4.10
Materials	0.0	2.7	0.00	26.83	0.00	0.09	0.09
Real Estate	0.0	4.4	0.00	18.60	0.00	0.51	0.51
Utilities	0.0	1.9	0.00	0.12	0.00	0.56	0.56
Cash	3.9	0.0	0.00	0.00	0.00	-1.20	-1.20
Total	**100.0**	**100.0**	**34.87**	**30.29**	**3.19**	**1.39**	**4.58**

Portfolio Comparison

	Summit Creek
Market Capitalization (%)	
12000M To 16000M	4.0
8000M To 12000M	9.1
5000M To 8000M	16.9
3000M To 5000M	24.2
1000M To 3000M	22.9
500M To 1000M	16.6
200M To 500M	2.5
Cash	3.9

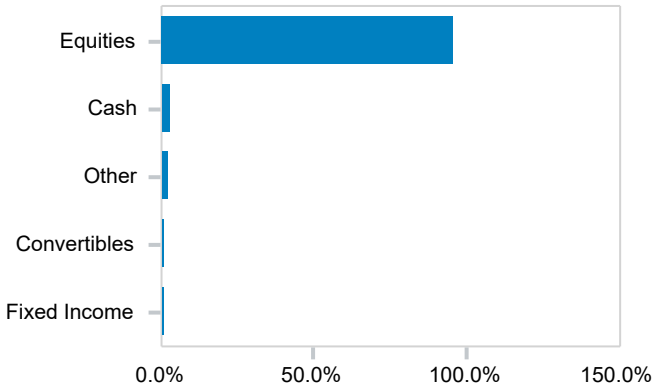
Fund Information

Fund Name :	Templeton Institutional Funds: International Equity Series; Primary Shares	Portfolio Assets :	$915 Million
Fund Family :	Franklin Templeton Investments	Portfolio Manager :	Nori/Docal/Nagle
Ticker :	TFEQX	PM Tenure :	1999--2001--2018
Inception Date :	10/18/1990	Fund Style :	IM International Multi-Cap Value Equity (MF)
Fund Assets :	$915 Million	Style Benchmark :	MSCI EAFE IMI Value
Portfolio Turnover :	37%		

Fund Investment Policy

The Fund seeks long-term capital growth through a flexible policy of investing in equity securities and debt obligations of companies and governments outside the United States.

Asset Allocation As of 03/31/2020



Top Ten Securities As of 03/31/2020

E.ON SE ORD	3.4 %
Deutsche Telekom AG ORD	3.4 %
Total SA ORD	3.4 %
Sanofi SA ORD	3.0 %
Samsung Electronics Co Ltd ORD	2.9 %
Takeda Pharmaceutical Co Ltd ORD	2.8 %
Vodafone Group PLC ORD	2.8 %
Kirin Holdings Co Ltd ORD	2.6 %
Roche Holding AG Par	2.4 %
Bayer AG ORD	2.3 %

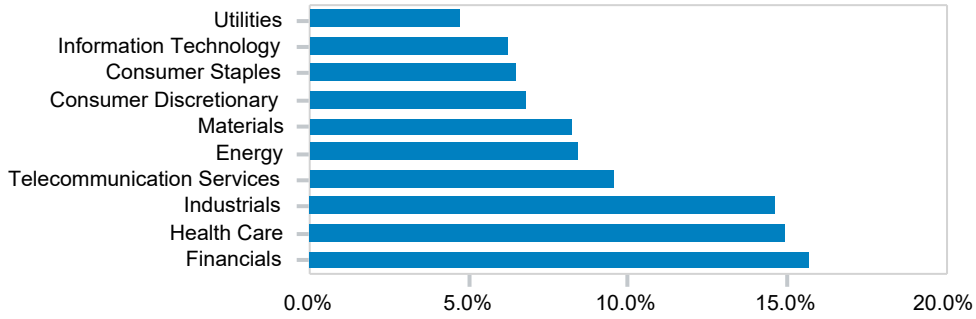
Top 5 Countries As of 03/31/2020

Japan	26.0 %
Germany	14.5 %
France	10.3 %
United Kingdom	10.1 %
Hong Kong	7.7 %

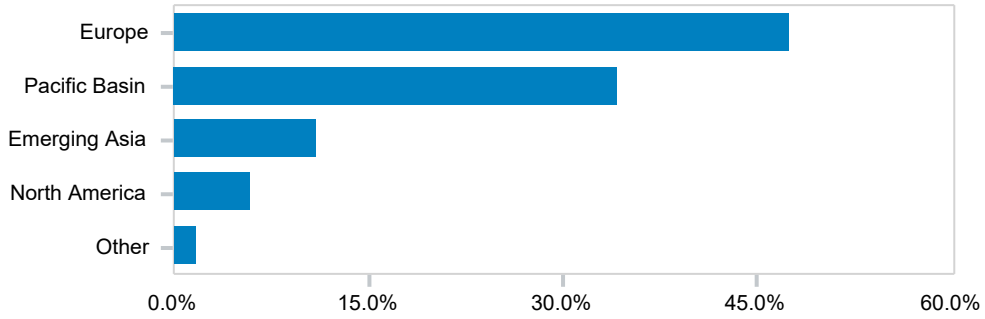
Fund Characteristics As of 03/31/2020

Total Securities	64
Avg. Market Cap	$54,823 Million
P/E	18.5
P/B	1.5
Div. Yield	4.6%
Annual EPS	-2.0
5Yr EPS	3.3
3Yr EPS Growth	4.9

Sector/Quality Allocation As of 03/31/2020



Regional Allocation As of 03/31/2020



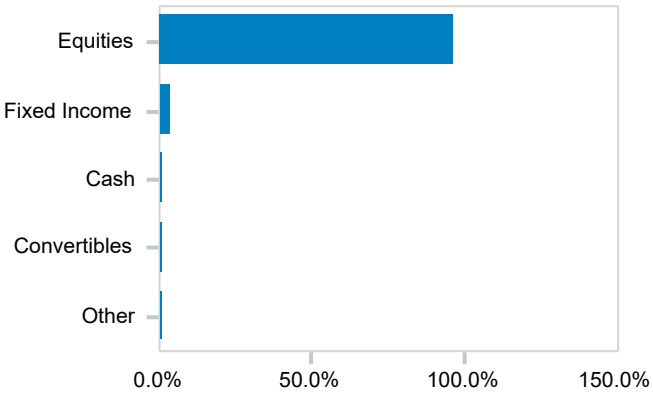
Fund Information

Fund Name :	Hartford Mutual Funds II, Inc: Hartford Schroders Emerging Markets Equity Fund; Class I Shares	Portfolio Assets :	$3,503 Million
Fund Family :	Hartford Mutual Funds	Portfolio Manager :	Team Managed
Ticker :	SEMNX	PM Tenure :	
Inception Date :	03/31/2006	Fund Style :	IM Emerging Markets Equity (MF)
Fund Assets :	$1,683 Million	Style Benchmark :	MSCI Emerging Markets Index
Portfolio Turnover :	43%		

Fund Investment Policy

The Fund seeks capital appreciation. Under normal circumstances, the Fund invests at least 80% of its assets in equity securities of emerging companies, or those issuers listed or domiciled in, deriving a substantial portion of their revenues from, or having a substantial portion of their assets in emerging markets.

Asset Allocation As of 05/31/2020



Top Ten Securities As of 05/31/2020

Tencent Holdings Ltd ORD	7.5 %
Alibaba Group Holding Ltd DR	6.7 %
Taiwan Semiconductor Manufacturing	5.6 %
Samsung Electronics Co Ltd ORD	4.7 %
Morgan Stanley Inst Liq Treasury	3.5 %
JD.com Inc DR	3.3 %
SK Hynix Inc ORD	3.1 %
Ping An Insurance Group Co of China	2.8 %
Sberbank Rossii PAO DR	2.2 %
AIA Group Ltd ORD	1.8 %

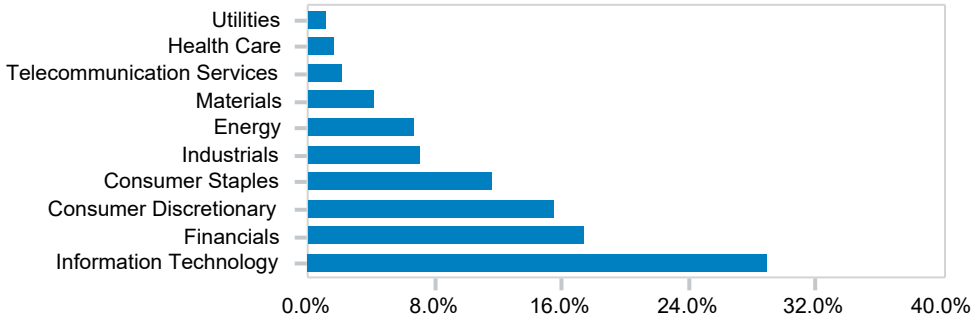
Top 5 Countries As of 05/31/2020

China	34.1 %
Korea	14.6 %
Taiwan	12.1 %
Russian Federation	7.6 %
Brazil	7.4 %

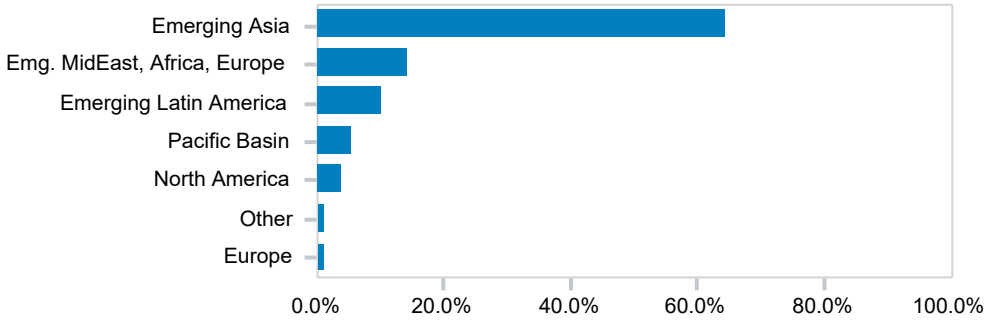
Fund Characteristics As of 05/31/2020

Total Securities	117
Avg. Market Cap	$139,288 Million
P/E	25.4
P/B	4.1
Div. Yield	2.9%
Annual EPS	14.6
5Yr EPS	17.9
3Yr EPS Growth	21.8

Sector/Quality Allocation As of 05/31/2020



Regional Allocation As of 05/31/2020



Comparative Performance

	QTR	FYTD	1 YR	3 YR	5 YR	10 YR
Police Total Fund	**14.22**	**3.54**	**3.54**	**8.15**	**8.09**	**10.16**
Policy	15.19	3.69	3.69	6.96	7.21	10.21
Total Domestic Equity	**22.02**	**5.65**	**5.65**	**11.94**	**10.98**	**13.90**
Russell 3000 Index	22.03	6.53	6.53	10.04	10.03	13.72
MFS Growth	24.68	20.88	20.88	20.32	16.73	N/A
Russell 1000 Growth Index	27.84	23.28	23.28	18.99	15.89	17.23
JPM Equity Inc (OIEJX)	13.27	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	14.29	-8.84	-8.84	1.82	4.64	10.41
Vanguard Equity Inc (VEIRX)	12.67	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	14.29	-8.84	-8.84	1.82	4.64	10.41
Principal Mid Cap	24.86	4.20	4.20	12.14	11.15	15.42
Russell Midcap Index	24.61	-2.24	-2.24	5.79	6.76	12.35
Summit Creek	35.60	10.68	10.68	16.05	11.63	N/A
Russell 2000 Growth Index	30.58	3.48	3.48	7.86	6.86	12.92
Total International Equity	**16.09**	**-3.04**	**-3.04**	**2.03**	**3.60**	**5.47**
MSCI AC World ex USA Index(Net)	16.12	-4.80	-4.80	1.13	2.26	4.97
Templeton	12.82	-10.81	-10.81	-4.36	-1.58	3.37
MSCI EAFE Value Index (Net)	12.43	-14.48	-14.48	-4.43	-1.59	3.53
MFS Int'l	17.31	3.31	3.31	7.96	8.33	N/A
MSCI AC World ex USA Growth Index (Net)	19.11	5.80	5.80	6.07	5.61	7.04
Schroder	19.31	-0.83	-0.83	3.34	4.48	N/A
MSCI Emerging Markets Index (Net)	18.08	-3.39	-3.39	1.90	2.86	3.27

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	QTR	FYTD	1 YR	3 YR	5 YR	10 YR
Total Domestic Fixed Income	**2.82**	**7.99**	**7.99**	**5.13**	**4.10**	**3.66**
Blmbg. Barc. U.S. Aggregate Index	2.90	8.74	8.74	5.32	4.30	3.82
Northern Interm Fixed	2.83	7.23	7.23	4.53	3.51	N/A
Bloomberg Barclays Intermed Aggregate Index	2.13	6.60	6.60	4.28	3.40	3.14
Northern Core Fixed	2.80	8.79	8.79	5.35	4.32	3.86
Blmbg. Barc. U.S. Aggregate Index	2.90	8.74	8.74	5.32	4.30	3.82
Total Real Estate	**-1.98**	**2.55**	**2.55**	**N/A**	**N/A**	**N/A**
NCREIF Fund Index-Open End Diversified Core (EW)	-1.27	2.56	2.56	5.99	7.63	10.90
Clarion Lion Properties	-2.08	2.13	2.13	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	-1.27	2.56	2.56	5.99	7.63	10.90
Principal Enhanced Property Fund, LP	-1.49	N/A	N/A	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	-1.27	2.56	2.56	5.99	7.63	10.90
Infrastructure						
Lazard	11.16	-1.00	-1.00	5.44	10.14	N/A
S&P Global Infrastructure Index	13.87	-14.76	-14.76	-0.89	2.62	6.92
FTSE Developed Core Infrast 50/50 Index (Net)	10.31	-8.96	-8.96	2.47	5.54	9.09

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	% of Portfolio	Market Value ($)	Estimated Annual Fee (%)	Estimated Annual Fee ($)
Police Total Fund	**100.00**	**36,358,657**	**0.59**	**214,879**
Domestic Equity				
JPM Equity Inc (OIEJX)	8.63	3,139,037	0.49	15,381
Vanguard Equity Inc (VEIRX)	8.70	3,161,694	0.18	5,691
MFS Growth	21.35	7,764,151	0.60	46,585
Principal Mid Cap	4.36	1,586,511	0.68	10,788
Summit Creek	8.18	2,972,376	1.00	29,724
International Equity				
Templeton	6.37	2,315,498	0.79	18,292
MFS Int'l	7.62	2,768,732	0.75	20,765
Schroder	3.92	1,425,317	1.23	17,531
Domestic Fixed Income				
Northern Interm Fixed	6.39	2,322,507	0.06	1,394
Northern Core Fixed	6.52	2,371,473	0.06	1,423
Real Estate				
Clarion Lion Properties	4.49	1,633,510	1.10	17,969
Principal Enhanced Property Fund, LP	3.12	1,134,707	1.20	13,616
Infrastructure				
Lazard	4.80	1,746,571	0.90	15,719
Cash				
Securian (Cash)	3.81	1,386,360		-
City Reserve - Police account	1.49	540,629		-
Cash	0.25	89,587		-

Historical Hybrid Composition

Allocation Mandate	Weight (%)
Oct-2001	
Russell 1000 Index	40.00
Russell Midcap Index	6.00
Russell 2000 Index	9.00
Blmbg. Barc. U.S. Aggregate Index	16.00
MSCI Emerging Markets (Net) Index	4.00
MSCI EAFE (Net) Index	15.00
NCREIF Fund Index-ODCE (VW)	2.50
S&P Global Infrastructure	5.00
FTSE NAREIT Equity REIT Index	2.50
Aug-2011	
Russell 1000 Index	40.00
Russell Midcap Index	6.00
Russell 2000 Index	9.00
Blmbg. Barc. U.S. Aggregate Index	16.00
MSCI Emerging Markets (Net) Index	4.00
MSCI EAFE (Net) Index	15.00
NCREIF Fund Index-ODCE (VW)	5.00
S&P Global Infrastructure	5.00
Aug-2017	
Russell 3000 Index	52.00
MSCI AC World ex USA (Net)	19.00
Blmbg. Barc. U.S. Aggregate Index	16.00
NCREIF Fund Index-ODCE (VW)	8.00
S&P Global Infrastructure	5.00
Feb-2019	
Russell 3000 Index	51.00
MSCI AC World ex USA (Net)	19.00
Blmbg. Barc. U.S. Aggregate Index	16.00
NCREIF Fund Index-Open End Diversified Core (EW)	8.00
S&P Global Infrastructure	5.00
90 Day U.S. Treasury Bill	1.00

Active Return	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
Alpha	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
Consistency	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
Distributed to Paid In (DPI)	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
Down Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
Downside Risk	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
Excess Return	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
Excess Risk	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
Information Ratio	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
Public Market Equivalent (PME)	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
R-Squared	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
Return	- Compounded rate of return for the period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
Standard Deviation	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
Total Value to Paid In (TVPI)	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
Tracking Error	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
Treynor Ratio	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
Up Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

AndCo compiled this report for the sole use of the client for which it was prepared. AndCo is responsible for evaluating the performance results of the Total Fund along with the investment advisors by comparing their performance with indices and other related peer universe data that is deemed appropriate. AndCo uses the results from this evaluation to make observations and recommendations to the client.

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Investment Performance Review
Period Ending June 30, 2020

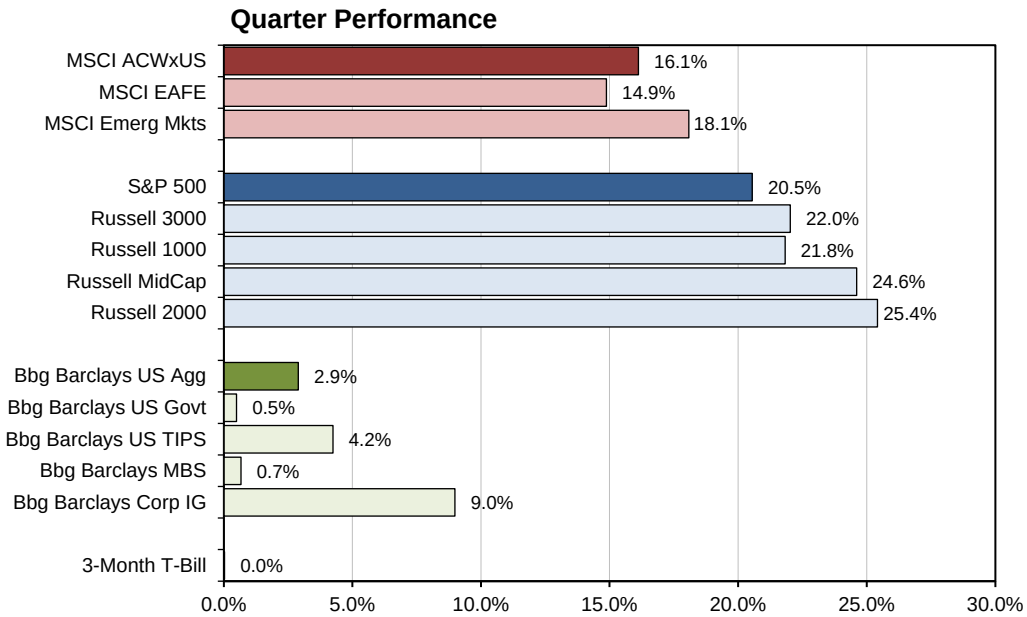
City of Falls Church
OPEB

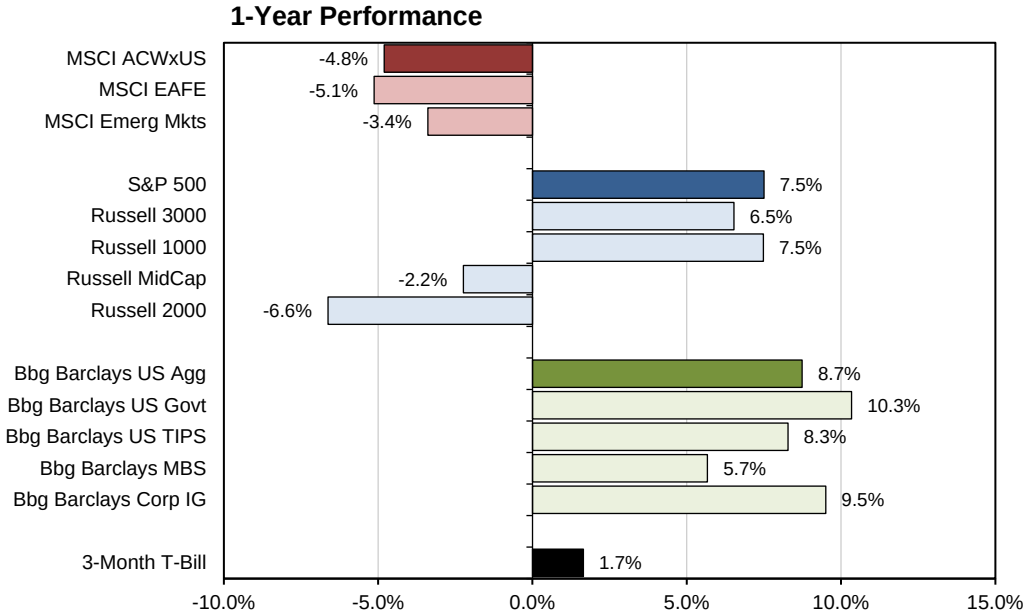
2nd Quarter 2020 Market Environment

- Broad asset class returns rebounded sharply in the 2nd quarter following their harsh drawdown during the 1st quarter. The US government and Federal Reserve Bank (Fed) implemented a myriad of programs designed to provide the economy with liquidity while also mitigating the affects from the shelter-in-place response to the COVID-19 (Coronavirus) pandemic. Despite having officially entered a recession in February, US economic data began to show improvement in May with regards to manufacturing, housing and employment as many States began the process of re-opening. Geopolitical tensions rose during the quarter following the vote by China to impose security measures in Hong Kong. Despite these risks, markets reacted positively to continued monetary easing from the Fed which supported markets directly through bond purchases and a variety of lending facilities. Within domestic equity markets, higher beta small cap stocks outperformed large cap stocks during the quarter with the Russell 2000 Index returning 25.4% versus a 20.5% return for the S&P 500 Index. US stocks also outperformed international stocks during the period. US equity results over the trailing 1-year period tell a different story with large cap stocks, returning 7.5% while mid- and small cap stocks were negative, returning -2.2% and -6.6%, respectively.

- Broad international equity markets posted positive returns for the 2nd quarter. Similar to US markets, international markets benefited from coordinated central bank policies which provided liquidity following the onset of the pandemic and subsequent re-opening of local economies. International returns also benefited from a weakening US dollar (USD) which declined against both the Euro and British pound during the period. Emerging markets outperformed relative to developed markets during the period with the MSCI Emerging Market Index returning 18.1% compared to 14.9% for the MSCI EAFE Index. Both developed and emerging market indices were negative over the 1-year period with the developed market index returning -5.1% and the emerging market index returning -3.4%.

- Fixed income returns remained strong during the 2nd quarter as investors benefited from declining interest rates globally. The broad market Bloomberg Barclays (BB) Aggregate Index gained 2.9% for the quarter as the Fed ramped up its purchases of US Treasury and Agency securities to boost market liquidity. In addition, the Fed announced that it would begin purchasing US corporate bonds to keep borrowing costs low and further support liquidity. For the quarter, the BB Corporate Investment Grade Index returned 9.0% as investors continued to seek out higher yielding assets. Over the trailing 1-year period, the bond market outperformed stocks with the BB Aggregate posting a solid return of 8.7%, while corporate bonds posted a higher 9.5%. US TIPS, which have been a laggard for some time, posted a respectable 8.3% over the trailing 1-year period despite low expectations for inflation.





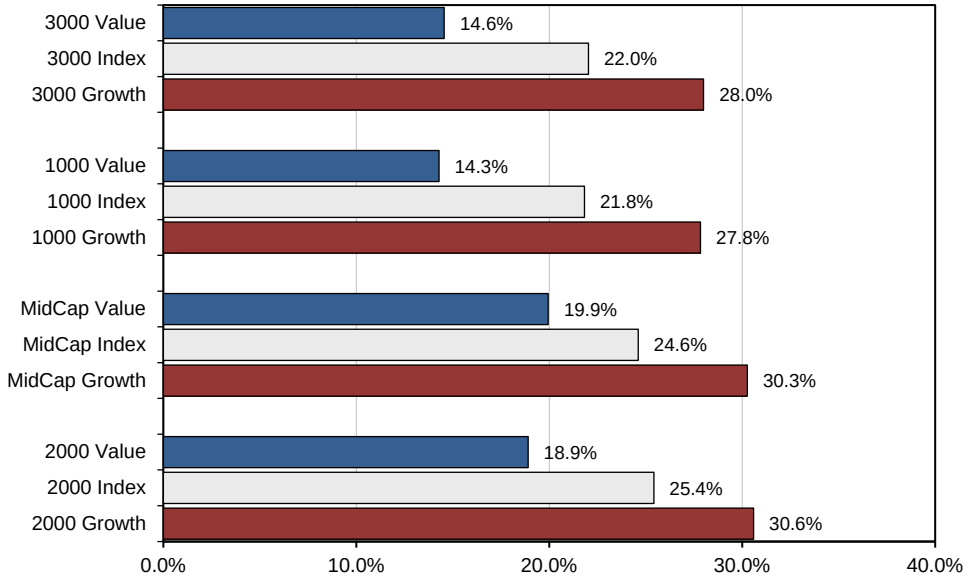
Source: Investment Metrics

- US equity returns were strongly positive during the 2nd quarter, but results varied considerably across the style and capitalization spectrum. Following one of the sharpest drawdowns in history during the previous quarter, various capitalization and style indices experienced their strongest quarterly performance in over 20-years. The US labor market showed dramatic improvement in May and June with more than 7 million jobs added for the period. However, the unemployment rate remained high at 11.1% in June with more than 14.7 million people unemployed. While States have taken steps to re-open by loosening stay-at-home orders, several States such as Florida, Texas, and Arizona, have experienced significant increases in Coronavirus cases since the orders were eased causing many States to consider rollbacks. Several potential treatments and vaccines are in various stages of development that will hopefully prove effective in treating the virus.

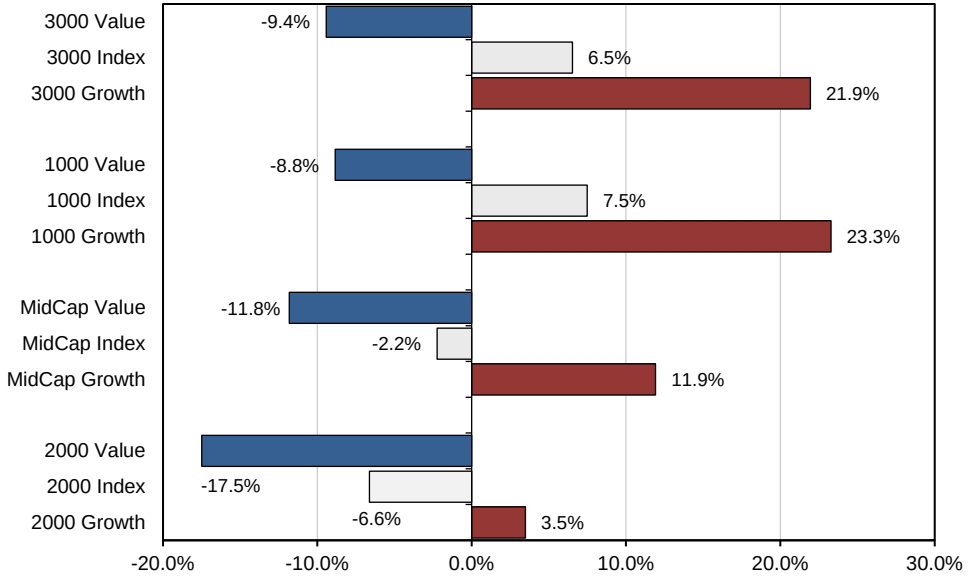
- During the quarter, small capitalization (cap) stocks broadly outperformed large cap stocks across the style spectrum. The small cap Russell 2000 Index gained a stellar 25.4% for the quarter versus a return of 21.8% for the large cap Russell 1000 Index. Investors were attracted to potentially faster growing small cap stocks which were disproportionately sold during the 1st quarter's drawdown. Small cap stocks have historically outperformed when the market enters a recovery phase. When viewed over the most recent 1-year period the trend has reversed with large cap stocks far outpacing their small cap counterparts. The Russell 1000 posted a return of 7.5% over the trailing 1-year relative to a negative return of -6.6% for the Russell 2000.

- Value stocks continued their recent trend of underperformance relative to growth stocks during the 2nd quarter recovery as investors gravitated toward companies perceived to have the potential to grow revenue and earnings faster. Within large cap, growth significantly outperformed value due to favorable weightings to the strong-performing technology and consumer discretionary sectors. The small cap Russell 2000 Growth Index was the best performing style index for the quarter, returning an outsized 30.6%. At the other extreme, the large cap value index posted the quarter's weakest relative style performance with a still solid 14.3% return. Results over the 1-year period also reflect the strength of the "growth over value" trend with value benchmarks posting negative results across the capitalization spectrum with a range of relative underperformance to growth of greater than 20% at each level.

Quarter Performance - Russell Style Series



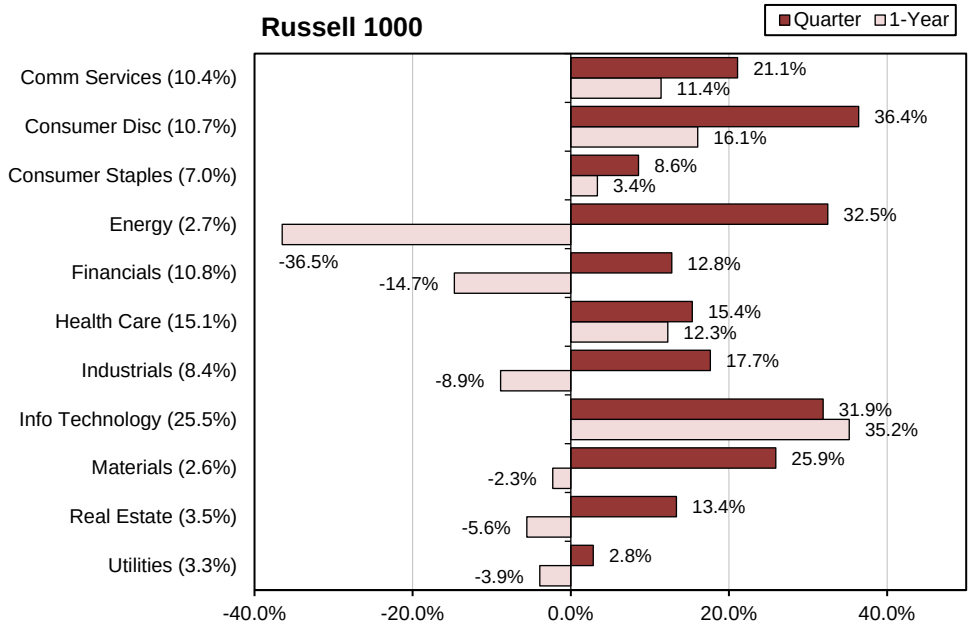
1-Year Performance - Russell Style Series

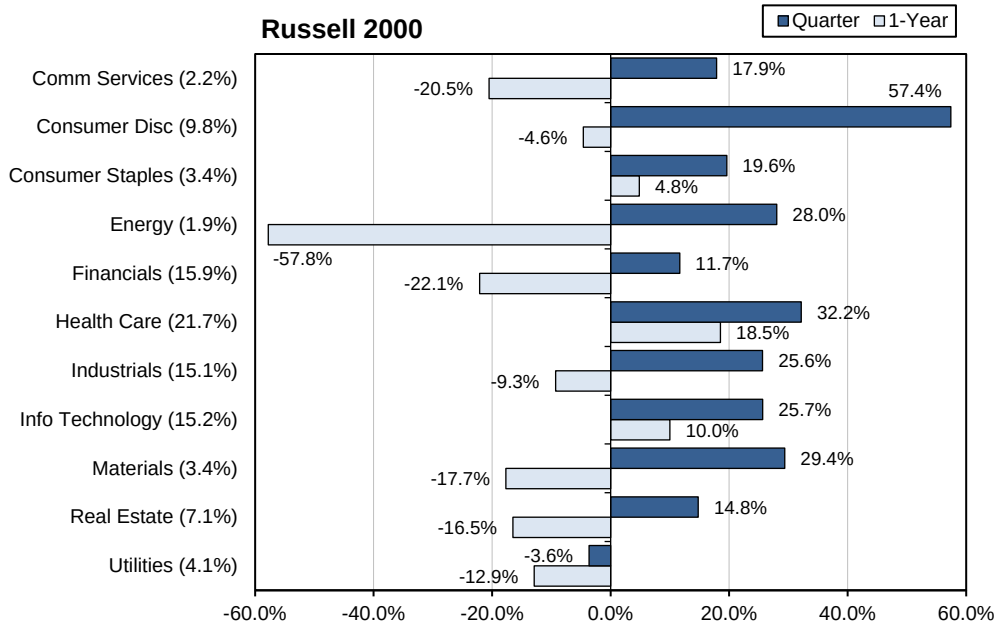


Source: Investment Metrics

- All eleven economic sectors within the large cap Russell 1000 Index were positive for the 2nd quarter with four sectors outpacing the return of the broad index. Growth-oriented sectors such as consumer discretionary and technology were some of the best performers for the quarter returning 36.4% and 32.5%, respectively. The energy sector, which had lagged considerably during the 1st quarter sell-off, also posted a strong return of 32.5% for the quarter as oil prices recovered on expectations of future economic growth. Defensive sectors such as consumer staples and utilities were the lowest performers during the period, but still posted positive returns of 8.6% and 2.8%, respectively. Traditional growth sectors also showed their dominance in the trailing 1-year period. The technology, consumer discretionary, health care and communication services sectors returned 35.2%, 16.1%, 15.4% and 11.4%, respectively, versus the core Russell 1000 index return of 7.5%. In contrast, traditional value sectors such as energy and financials, posted returns of -36.5% and -14.7%, respectively, for the trailing 1-year period.

- Ten of eleven small cap sectors posted results of greater than 10% for the 2nd quarter with only the utilities sector falling into negative territory with a return of -3.6%. In addition, seven of eleven economic sectors in the small cap index outpaced their respective large cap sector performance. While ten small cap sectors posting returns of more than 10% would be impressive in any period, six of them managed to exceed the 25.4% return of the broad Russell 2000 index. Like large caps, sectors sensitive to the consumer and economic growth were the strongest performers as investors gravitated toward those companies with the highest growth potential. Performance in consumer discretionary and health care sectors was particularly impressive with returns of 57.4% and 32.2% respectively for the quarter. Within the health care sector, many biotechnology stocks rose on hopes and speculation regarding potentially viable treatments or vaccines for the Coronavirus. Over the trailing 1-year period, the majority of small cap sector returns were negative with only three sectors contributing positive absolute performance. The traditional growth sectors also led the small cap index's performance over the trailing 1-year period with health care posting 18.5% and the technology sector returning 10%. On the opposite end of the spectrum, while the energy sector's 28.0% return for the quarter is certainly an impressive recovery, the sector led the 1-year trailing sector performance declines with the return of -57.8%.





Source: Morningstar Direct
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000

As of June 30, 2020

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Microsoft Corp	5.30%	29.4%	53.8%	Information Technology
Apple Inc	5.19%	43.8%	86.5%	Information Technology
Amazon.com Inc	4.07%	41.5%	45.7%	Consumer Discretionary
Facebook Inc A	1.90%	36.1%	17.7%	Communication Services
Alphabet Inc A	1.48%	22.0%	31.0%	Communication Services
Alphabet Inc Class C	1.46%	21.6%	30.8%	Communication Services
Johnson & Johnson	1.29%	8.0%	3.8%	Health Care
Berkshire Hathaway Inc Class B	1.21%	-2.4%	-16.3%	Financials
Visa Inc Class A	1.13%	20.1%	12.0%	Information Technology
Procter & Gamble Co	1.01%	9.4%	11.8%	Consumer Staples

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Deckers Outdoor Corp	0.31%	46.6%	11.6%	Consumer Discretionary
LHC Group Inc	0.30%	24.3%	45.8%	Health Care
BJ's Wholesale Club Holdings Inc	0.29%	46.3%	41.2%	Consumer Staples
Churchill Downs Inc	0.29%	29.3%	16.2%	Consumer Discretionary
Novavax Inc	0.27%	513.8%	1322.4%	Health Care
MyoKardia Inc	0.27%	106.1%	92.7%	Health Care
Helen Of Troy Ltd	0.27%	30.9%	44.4%	Consumer Discretionary
SiteOne Landscape Supply Inc	0.27%	54.8%	64.5%	Industrials
EastGroup Properties Inc	0.26%	14.3%	4.9%	Real Estate
Ultragenyx Pharmaceutical Inc	0.25%	76.1%	23.2%	Health Care

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Fastly Inc	0.02%	348.5%	319.8%	Information Technology
Wayfair Inc Class A	0.05%	269.8%	35.3%	Consumer Discretionary
Apache Corp	0.02%	223.9%	-51.9%	Energy
Targa Resources Corp	0.02%	192.7%	-44.7%	Energy
Etsy Inc	0.04%	176.4%	73.1%	Consumer Discretionary
Bill.com Holdings Inc Ordinary Shares	0.01%	163.8%	N/A	Information Technology
Livongo Health Inc	0.01%	163.5%	N/A	Health Care
Immunomedics Inc	0.03%	162.9%	155.5%	Health Care
Antero Midstream Corp	0.01%	159.5%	-45.7%	Energy
Thor Industries Inc	0.02%	156.2%	87.0%	Consumer Discretionary

Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Workhorse Group Inc	0.06%	860.8%	491.5%	Consumer Discretionary
Veritone Inc	0.02%	537.8%	77.8%	Information Technology
Novavax Inc	0.27%	513.8%	1322.4%	Health Care
Overstock.com Inc	0.06%	469.7%	109.0%	Consumer Discretionary
Vaxart Inc	0.02%	400.0%	1220.7%	Health Care
U.S. Auto Parts Network Inc	0.01%	394.9%	592.8%	Consumer Discretionary
Camping World Holdings Inc Class A	0.05%	380.5%	131.4%	Consumer Discretionary
Macrogenics Inc	0.08%	379.7%	64.5%	Health Care
Aspira Womens Health Inc	0.01%	361.3%	331.5%	Health Care
Retractable Technologies Inc	0.01%	350.0%	868.9%	Health Care

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Empire State Realty Trust Inc Class A	0.00%	-20.7%	-50.8%	Real Estate
Xerox Holdings Corp	0.01%	-18.0%	-54.8%	Information Technology
Hawaiian Electric Industries Inc	0.01%	-15.5%	-14.7%	Utilities
Biogen Inc	0.15%	-15.4%	14.4%	Health Care
Cincinnati Financial Corp	0.03%	-14.3%	-36.6%	Financials
General Electric Co	0.21%	-13.8%	-34.7%	Industrials
Coty Inc Class A	0.00%	-13.4%	-65.5%	Consumer Staples
EchoStar Corp	0.00%	-12.5%	-24.3%	Information Technology
NovoCure Ltd	0.02%	-11.9%	-6.2%	Health Care
Molson Coors Beverage Co B	0.02%	-11.9%	-36.5%	Consumer Staples

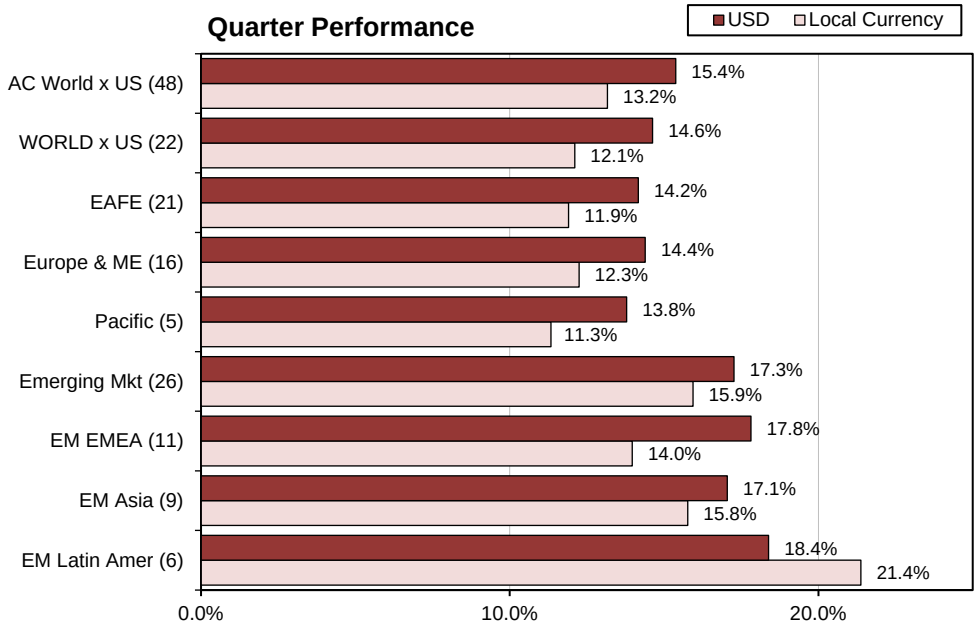
Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Chesapeake Energy Corp	0.00%	-85.8%	-98.7%	Energy
Hertz Global Holdings Inc	0.01%	-77.2%	-91.2%	Industrials
SeaChange International Inc	0.00%	-59.4%	5.6%	Information Technology
CorEnergy Infrastructure Trust Inc	0.01%	-50.0%	-75.6%	Real Estate
Evofem Biosciences Inc	0.01%	-46.8%	-57.4%	Health Care
Recro Pharma Inc	0.00%	-44.3%	-48.6%	Health Care
NextCure Inc	0.02%	-42.2%	43.1%	Health Care
NeuroBo Pharmaceuticals Inc	0.00%	-42.1%	-60.2%	Health Care
LendingClub Corp	0.02%	-42.0%	-72.3%	Financials
ProAssurance Corp	0.04%	-41.9%	-58.6%	Financials

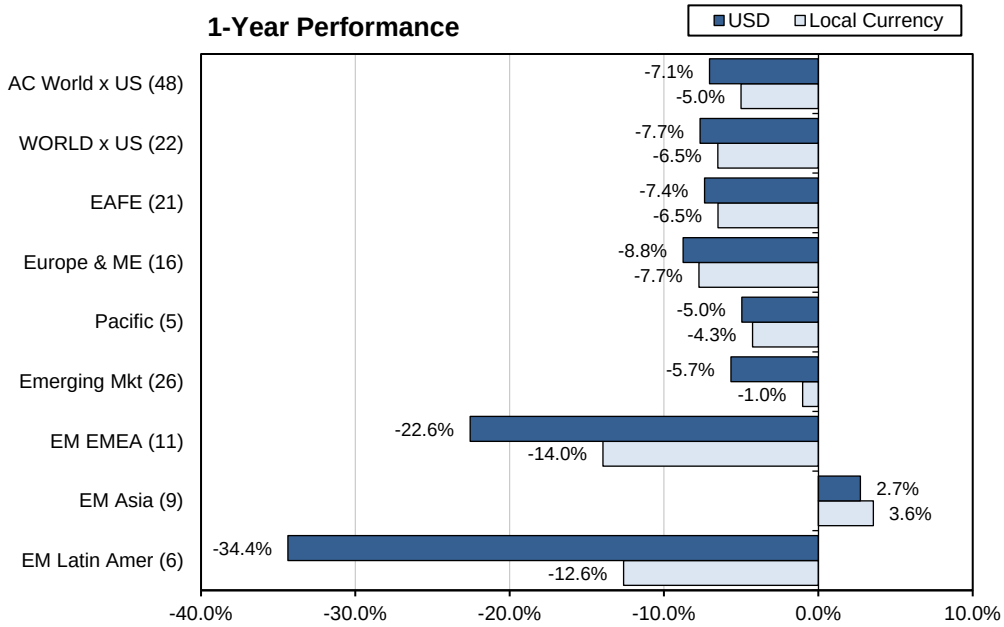
Source: Morningstar Direct

International and Regional Market Index Performance (Country Count)

As June 30, 2020

- Broad international equity index returns were positive in US dollar (USD) and local currency terms for the 2nd quarter as international markets rebounded following the meaningful drawdown during the previous period. USD denominated international equity index performance also benefited from a weakening USD which fell against most major currencies during the period. The MSCI ACWI ex US Index posted a return of 15.4% in USD and a slightly lower 13.2% in local currency terms. Like US equity market performance, international equity benchmarks also benefited from a strong monetary policy response from central banks in reaction to the Coronavirus. Since the virus ravaged Asia and Europe earlier than the US, many countries also began the process of re-opening their respective economies earlier than the US, resulting in improving economic datapoints. Both the ECB and Bank of Japan committed to significant lending programs designed to provide the capital markets with liquidity while continuing to purchase bonds under their existing economic recovery programs.
- Results for developed market international indices were strongly positive in both USD and local currency terms during the 2nd quarter. The MSCI EAFE Index returned 14.2% in USD and 11.0% in local currency terms. The spread of the pandemic slowed in Europe during the quarter allowing countries like Austria and Italy to begin the process of re-opening. ECB President Christine Lagarde announced that the bank was expanding its bond purchase program to $1.5 trillion, and in the UK, the Bank of England increased its bond purchasing program by roughly $125 billion. Both measures were targeted at providing the capital markets with liquidity.
- Emerging markets outperformed developed markets by just over 3% during the 2nd quarter. The MSCI Emerging Markets Index rose by 17.3% in USD terms and 15.9% in local currency. Emerging markets benefited relative to developed markets during the quarter as global economic activity increased despite increased geopolitical tensions from China's new security measures in Hong Kong. The rebound in commodity prices in anticipation of future economic growth was particularly beneficial to the emerging countries dependent on export demand.
- In contrast to the strong 2nd quarter returns, the 1-year trailing performance of international equity indices was broadly negative with only the Emerging Market Asia Index posting a positive return of 2.7% in USD for the period. The 1-year trailing currency impact on international index performance also contrasts with the 2nd quarter's USD weakness. Persistent strength of the USD over the 1-year period was a drag on the results realized by domestic holders of international equities for each of the indices tracked in the graph. This USD strength is particularly visible in the Emerging Market Middle East & Africa (EMEA) Index and Emerging Market Latin America Index.





Source: MSCI Global Index Monitor (Returns are Net)

US Dollar International Index Attribution & Country Detail

As of June 30, 2020

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.4%	12.3%	-6.5%
Consumer Discretionary	11.3%	17.6%	-6.9%
Consumer Staples	12.0%	8.5%	-3.8%
Energy	3.4%	-1.5%	-41.3%
Financials	16.1%	12.6%	-20.4%
Health Care	14.5%	13.8%	17.6%
Industrials	14.5%	17.5%	-8.0%
Information Technology	8.3%	23.0%	12.4%
Materials	7.3%	22.7%	-8.6%
Real Estate	3.2%	7.9%	-21.4%
Utilities	4.0%	11.4%	2.4%
Total	**100.0%**	**14.2%**	**-7.4%**

MSCI - ACWIxUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	7.6%	16.9%	2.6%
Consumer Discretionary	12.6%	19.8%	-0.6%
Consumer Staples	10.0%	9.4%	-4.8%
Energy	4.8%	8.5%	-34.5%
Financials	18.1%	10.3%	-22.4%
Health Care	10.7%	16.0%	18.3%
Industrials	11.4%	17.1%	-8.9%
Information Technology	11.0%	24.1%	19.2%
Materials	7.6%	24.6%	-8.7%
Real Estate	2.8%	6.8%	-21.4%
Utilities	3.5%	10.3%	-3.2%
Total	**100.0%**	**15.4%**	**-7.1%**

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	13.5%	22.6%	14.2%
Consumer Discretionary	17.4%	22.1%	12.7%
Consumer Staples	6.5%	12.6%	-9.1%
Energy	6.0%	21.6%	-25.3%
Financials	19.1%	6.6%	-27.4%
Health Care	4.3%	37.1%	33.5%
Industrials	4.7%	16.0%	-15.9%
Information Technology	16.9%	19.9%	21.3%
Materials	6.9%	23.3%	-16.2%
Real Estate	2.6%	3.6%	-20.3%
Utilities	2.3%	9.2%	-20.3%
Total	**100.0%**	**17.3%**	**-5.7%**

Country	MSCI-EAFE Weight	MSCI-ACWIxUS Weight	Quarter Return	1- Year Return
Japan	25.4%	16.5%	11.5%	0.9%
United Kingdom	14.1%	9.1%	7.4%	-20.8%
France	10.9%	7.1%	15.3%	-11.4%
Switzerland	10.3%	6.7%	9.7%	3.8%
Germany	9.3%	6.0%	24.5%	-4.4%
Australia	6.7%	4.4%	28.6%	-14.6%
Netherlands	4.3%	2.8%	24.0%	7.1%
Hong Kong	3.4%	2.2%	7.7%	-17.4%
Sweden	3.1%	2.0%	19.5%	0.8%
Spain	2.4%	1.6%	9.6%	-22.5%
Denmark	2.3%	1.5%	18.8%	20.7%
Italy	2.3%	1.5%	15.0%	-13.1%
Singapore	1.1%	0.7%	7.3%	-23.8%
Finland	1.0%	0.7%	18.6%	-3.6%
Belgium	0.9%	0.6%	11.9%	-23.3%
Ireland	0.6%	0.4%	19.6%	3.6%
Israel	0.6%	0.4%	20.0%	0.8%
Norway	0.5%	0.3%	13.2%	-25.1%
New Zealand	0.3%	0.2%	28.0%	19.6%
Austria	0.2%	0.1%	20.6%	-28.2%
Portugal	0.2%	0.1%	9.2%	4.2%
Total EAFE Countries	**100.0%**	**64.9%**	**14.2%**	**-7.4%**
Canada		6.5%	19.4%	-10.5%
Total Developed Countries		**71.4%**	**14.6%**	**-7.7%**
China		11.7%	14.2%	11.2%
Taiwan		3.5%	20.8%	17.8%
Korea		3.3%	19.3%	-1.4%
India		2.3%	20.4%	-18.2%
Brazil		1.5%	22.6%	-35.3%
South Africa		1.1%	25.8%	-26.9%
Russia		0.9%	17.6%	-17.7%
Saudi Arabia		0.8%	12.2%	-22.7%
Thailand		0.7%	22.4%	-25.8%
Malaysia		0.5%	12.6%	-14.8%
Mexico		0.5%	10.6%	-26.8%
Indonesia		0.4%	22.4%	-26.0%
Philippines		0.2%	19.3%	-21.4%
Qatar		0.2%	6.7%	-13.1%
Poland		0.2%	20.8%	-31.2%
Chile		0.2%	13.5%	-36.9%
United Arab Emirates		0.2%	14.4%	-21.7%
Turkey		0.1%	18.3%	-8.5%
Peru		0.1%	5.5%	-35.7%
Hungary		0.1%	14.1%	-18.3%
Colombia		0.1%	7.2%	-43.6%
Argentina		0.0%	43.7%	-47.0%
Greece		0.0%	9.6%	-35.1%
Czech Republic		0.0%	24.1%	-26.8%
Egypt		0.0%	4.9%	-13.7%
Pakistan		0.0%	11.7%	-17.3%
Total Emerging Countries		**28.6%**	**17.3%**	**-5.7%**
Total ACWIxUS Countries		**100.0%**	**15.4%**	**-7.1%**

Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

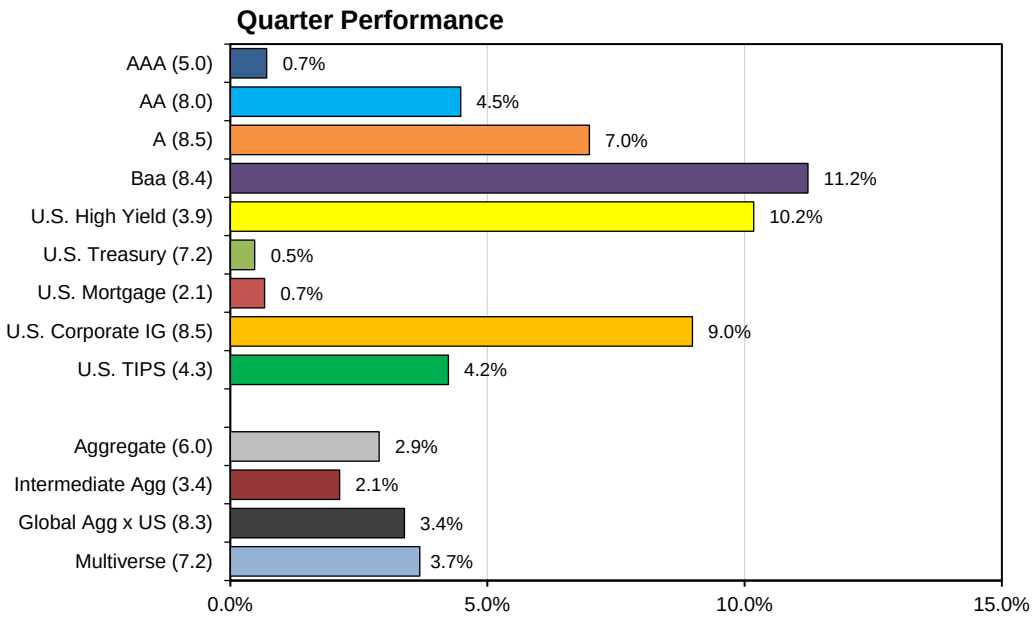
Domestic Bond Sector & Broad/Global Bond Market Performance (Duration)

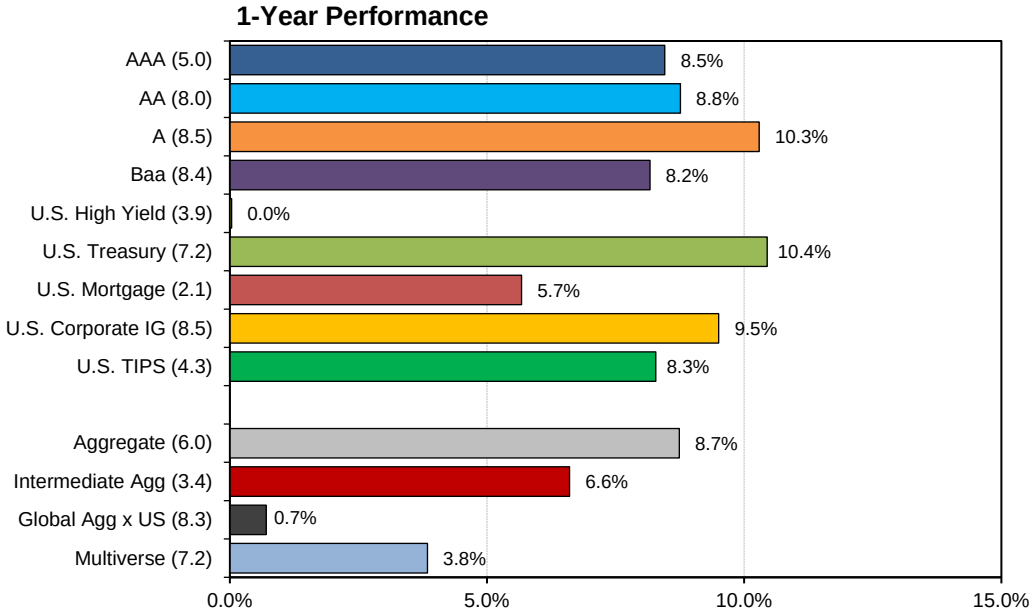
As of June 30, 2020

- Broad fixed income benchmarks rose sharply in the 2nd quarter as interest rates fell globally in response to the economic implications of the pandemic. The Fed continued purchasing bonds under programs announced during the first quarter to support capital markets and mitigate the damage to the economy. With US interest rates already near zero, the Fed announced several additional lending facilities to bridge the gap until economic activity picks up. These combined programs swelled the Fed's balance sheet to $7.0 trillion, an increase of more than $3 trillion since the beginning of the year. Late in the quarter the Fed commented that the economy faces a number of future challenges and expects interest rates to remain low for a prolonged period of time. Last August, the US Treasury yield curve inverted with the 2-year yield briefly surpassing the 10-year yield. Historically, a 2-10 inversion in the yield curve has preceded a US recession within the next 6-24 months. Recently, the National Bureau of Economic Research reported that the US economy entered a recession in February. While long-term US interest rates have moved lower recently, the Treasury yield curve has actually steepened which historically portends better economic growth.

- During the quarter, the Bloomberg Barclays (BB) US Aggregate Index returned 2.9%. Within the broad BB US Aggregate index, the US Treasury and mortgage-backed segments dramatically underperformed the corporate bond sector during the 2nd quarter. Investment grade corporate credit returned a strong 9.0% due to narrowing credit spreads and a high demand for yield. In contrast, over the 1-year period, US Treasuries outpaced both corporate and mortgage-backed issues with US Treasuries posting 10.4% versus returns of 9.5% and 5.7% for corporate and mortgage bonds, respectively. Outside of domestic markets, the BB Global Aggregate ex US Index increased by 3.4% for the quarter and 0.7% for the year.

- Within investment grade credit, lower quality issues outperformed higher quality issues during the 2nd quarter. Lower quality issues benefitted from both spread compression and investors seeking out higher yields when compared to US Treasury or mortgage bonds. On an absolute basis without adjusting for the duration differences in the sub-indices, Baa rated credit was the best performing investment grade (IG) segment, returning 11.2% for the quarter. AAA issues were the worst performing IG credit segment, returning just 0.7%. Despite a much lower duration, the high yield index returned 10.2% for the quarter. These issues benefited from credit spreads narrowing significantly following the drawdown in the first quarter. Outside of high yield performance, which was flat on the year, credit returns were all impressive with each segment returning greater than 8% for the period.



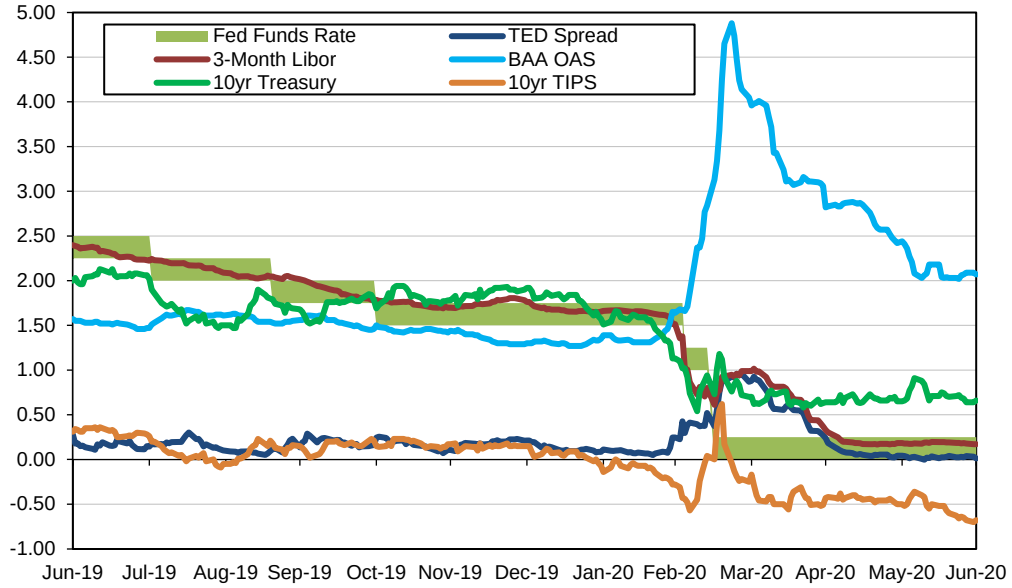


Source: Bloomberg

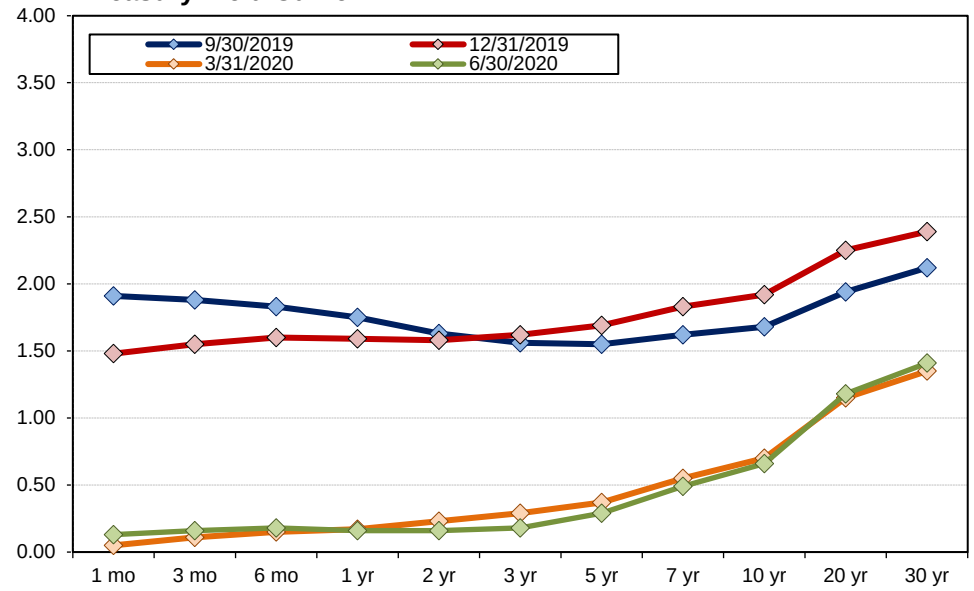
- Much of the index performance detailed in the bar graphs on the previous page is visible on a time series basis by reviewing the yield graph to the right. The '1-Year Trailing Market Rates' chart illustrates that over the last year, the 10-year Treasury yield (green line) fell from yields of greater than 2.0%, to a low of roughly 0.5% before ending the quarter at 0.66%. A decrease in yields provides a boost to bond performance. The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-Treasury investment grade issues. This line illustrates an abrupt increase in credit spreads beginning in early 2020 as investors moved to higher quality assets during the quarter's risk-off environment. Spreads increased dramatically in February following the US onset of the pandemic, reaching a high of 4.88% on March 23rd. Since then, spreads have steadily declined as markets stabilized following the aggressive actions taken by the Treasury and Fed. During the quarter, the BAA OAS spread fell by 1.98%. Similar to Treasury yield declines, spread tightening in corporate bonds is equivalent to an interest rate decrease, which causes bond prices to rise. This compression produces an additional tailwind for corporate bond index returns. The green band across the graph illustrates the decrease in the Fed Funds Rate range due to the recent US monetary policy easing. The Fed began the year with a rate range of 1.50%-1.75%, which it aggressively cut to a range of 0.00%-0.25% during the 1st quarter, where it remained at the end of the quarter.

- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four calendar quarters. The higher yields and curve inversion experienced in the 2nd half of 2019 have given way to 2020's extremely low interest rate environment. The curve continued to flatten during the 2nd quarter, particularly between the 1- and 5-year maturities. On the longer end of the curve, rates rose slightly during the period as the US Treasury issued longer-dated bonds to lock in low borrowing costs. An increase in Treasury supply, in conjunction with concerns about the potential for rising inflation, resulted in slightly higher yields during the quarter.

1-Year Trailing Market Rates



Treasury Yield Curve



Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)

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1 Quarter	Market Value 04/01/2020	Net Flows	Return On Investment	Market Value 06/30/2020
Total OPEB	**14,023,561**	**-**	**2,297,560**	**16,321,121**
Total Domestic Equity	**8,120,009**	**-**	**1,825,408**	**9,945,418**
Vanguard Large-Cap Index (VLCAX)	6,120,902	-	1,310,223	7,431,125
Vanguard Mid-Cap Index (VIMAX)	1,044,988	-	260,786	1,305,774
Vanguard Small-Cap Index (VSMAX)	954,120	-	254,399	1,208,519
Total International & Emerging Market Equity	**2,315,740**	**-**	**415,294**	**2,731,034**
Vanguard Devel Market Index (VTMGX)	1,830,967	-	318,811	2,149,777
Vanguard Emerging Market Index (VEMAX)	484,774	-	96,483	581,257
Total Domestic Fixed Income	**3,172,424**	**-**	**56,527**	**3,228,951**
Vanguard Short-Term Bond Index (VBIRX)	3,172,424	-	56,527	3,228,951
Cash				
Federal Money Mkt (VMFXX)	415,387	-	331	415,718

Fiscal Year To Date

	Market Value 07/01/2019	Net Flows	Return On Investment	Market Value 06/30/2020
Total OPEB	**15,764,250**	**-**	**556,871**	**16,321,121**
Total Domestic Equity	**9,447,290**	**-**	**498,128**	**9,945,418**
Vanguard Large-Cap Index (VLCAX)	6,858,718	-	572,408	7,431,125
Vanguard Mid-Cap Index (VIMAX)	1,308,393	-	-2,619	1,305,774
Vanguard Small-Cap Index (VSMAX)	1,280,179	-	-71,660	1,208,519
Total International & Emerging Market Equity	**2,844,188**	**-**	**-113,154**	**2,731,034**
Vanguard Devel Market Index (VTMGX)	2,245,422	-	-95,645	2,149,777
Vanguard Emerging Market Index (VEMAX)	598,766	-	-17,509	581,257
Total Domestic Fixed Income	**3,062,773**	**-**	**166,178**	**3,228,951**
Vanguard Short-Term Bond Index (VBIRX)	3,062,773	-	166,178	3,228,951
Cash				
Federal Money Mkt (VMFXX)	410,000	-	5,718	415,718

1 Year	Market Value 07/01/2019	Net Flows	Return On Investment	Market Value 06/30/2020
Total OPEB	**15,764,250**	**-**	**556,871**	**16,321,121**
Total Domestic Equity	**9,447,290**	**-**	**498,128**	**9,945,418**
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Cash				
Federal Money Mkt (VMFXX)	410,000	-	5,718	415,718

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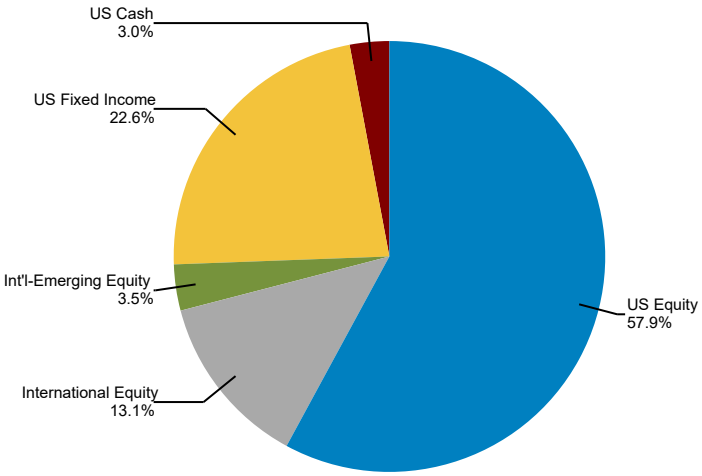
Asset Allocation Attributes

	Domestic Equity		International Equity		Emerging Equity		Domestic Fixed Income		Cash Equivalent		Total Fund	
	($)	%	($)	%	($)	%	($)	%	($)	%	($)	%
Total OPEB	**9,945,418**	**60.9**	**2,149,777**	**13.2**	**581,257**	**3.6**	**3,228,951**	**19.8**	**415,718**	**2.5**	**16,321,121**	**100.0**
Total Domestic Equity	**9,945,418**	**100.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**9,945,418**	**60.9**
Vanguard Large-Cap Index (VLCAX)	7,431,125	100.0	-	-	-	-	-	-	-	-	7,431,125	45.5
Vanguard Mid-Cap Index (VIMAX)	1,305,774	100.0	-	-	-	-	-	-	-	-	1,305,774	8.0
Vanguard Small-Cap Index (VSMAX)	1,208,519	100.0	-	-	-	-	-	-	-	-	1,208,519	7.4
Total International & Emerging Market Equity	**-**	**-**	**2,149,777**	**78.7**	**581,257**	**21.3**	**-**	**-**	**-**	**-**	**2,731,034**	**16.7**
Vanguard Devel Market Index (VTMGX)	-	-	2,149,777	100.0	-	-	-	-	-	-	2,149,777	13.2
Vanguard Emerging Market Index (VEMAX)	-	-	-	-	581,257	100.0	-	-	-	-	581,257	3.6
Total Domestic Fixed Income	**-**	**-**	**-**	**-**	**-**	**-**	**3,228,951**	**100.0**	**-**	**-**	**3,228,951**	**19.8**
Vanguard Short-Term Bond Index (VBIRX)	-	-	-	-	-	-	3,228,951	100.0	-	-	3,228,951	19.8
Cash												
Federal Money Mkt (VMFXX)	-	-	-	-	-	-	-	-	415,718	100.0	415,718	2.5

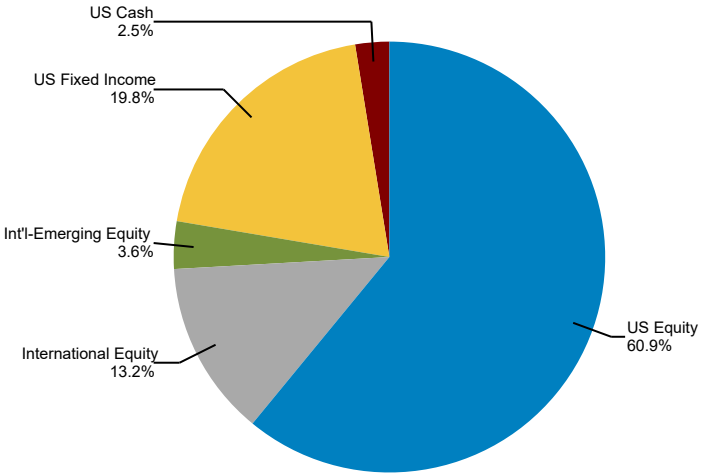
March 31, 2020 : $14,023,561



Allocation

	Market Value	Allocation
US Equity	8,120,009	57.9
International Equity	1,830,967	13.1
International-Emerging Equity	484,774	3.5
US Fixed Income	3,172,424	22.6
US Cash	415,387	3.0

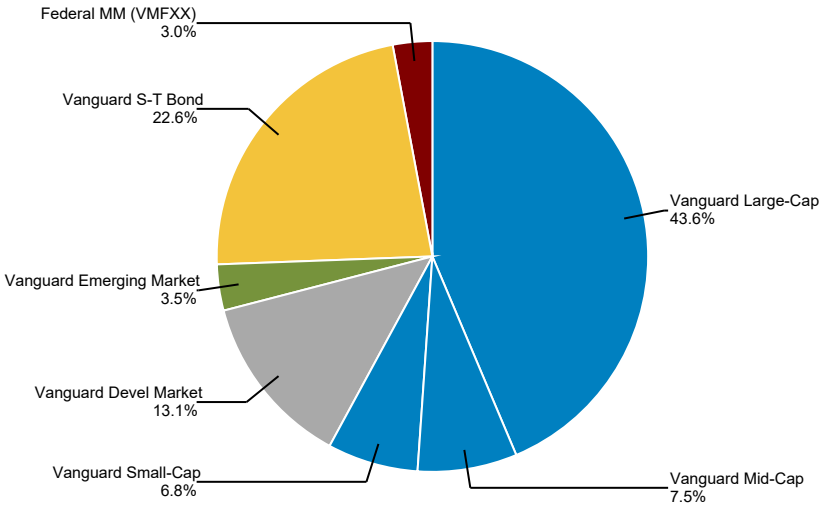
June 30, 2020 : $16,321,121



Allocation

	Market Value	Allocation
US Equity	9,945,418	60.9
International Equity	2,149,777	13.2
International-Emerging Equity	581,257	3.6
US Fixed Income	3,228,951	19.8
US Cash	415,718	2.5

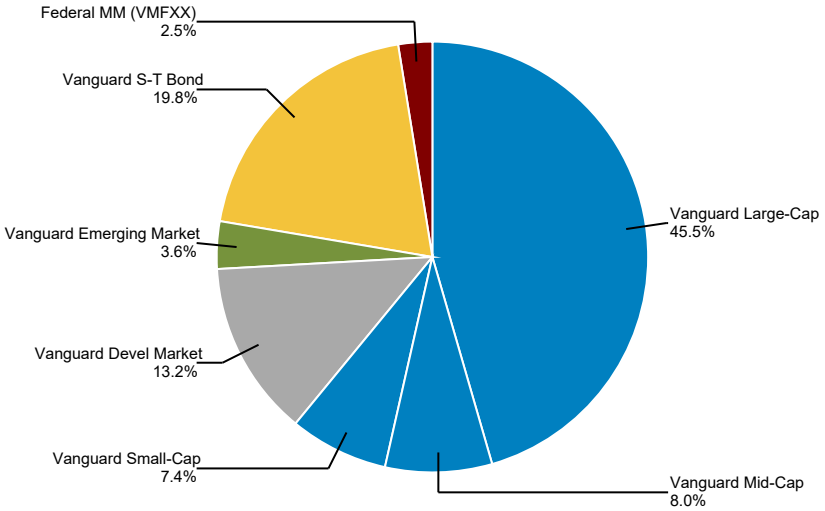
March 31, 2020 : $14,023,561



Allocation

	Market Value	Allocation
Vanguard Large-Cap	6,120,902	43.6
Vanguard Mid-Cap	1,044,988	7.5
Vanguard Small-Cap	954,120	6.8
Vanguard Devel Market	1,830,967	13.1
Vanguard Emerging Market	484,774	3.5
Vanguard S-T Bond	3,172,424	22.6
Federal MM (VMFXX)	415,387	3.0

June 30, 2020 : $16,321,121



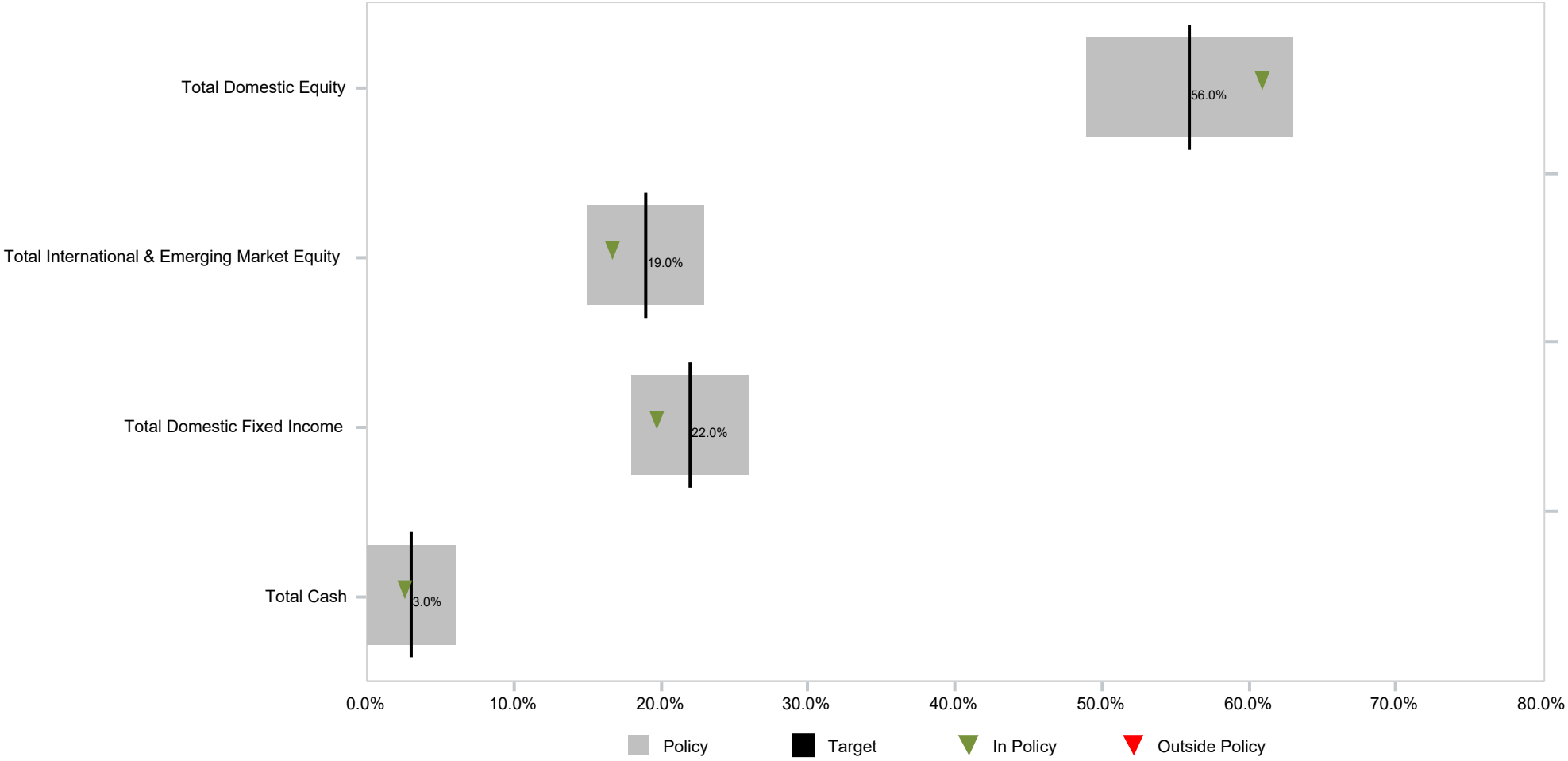
Allocation

	Market Value	Allocation
Vanguard Large-Cap	7,431,125	45.5
Vanguard Mid-Cap	1,305,774	8.0
Vanguard Small-Cap	1,208,519	7.4
Vanguard Devel Market	2,149,777	13.2
Vanguard Emerging Market	581,257	3.6
Vanguard S-T Bond	3,228,951	19.8
Federal MM (VMFXX)	415,718	2.5

Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Target Rebal. ($)	Differences (%)
Total OPEB	16,321,121	100.0		100.0		-	0.0
Total Domestic Equity	9,945,418	60.9	49.0	56.0	63.0	-805,590	4.9
Total International & Emerging Market Equity	2,731,034	16.7	15.0	19.0	23.0	369,979	-2.3
Total Domestic Fixed Income	3,228,951	19.8	18.0	22.0	26.0	361,696	-2.2
Total Cash	415,718	2.5	0.0	3.0	6.0	73,915	-0.5

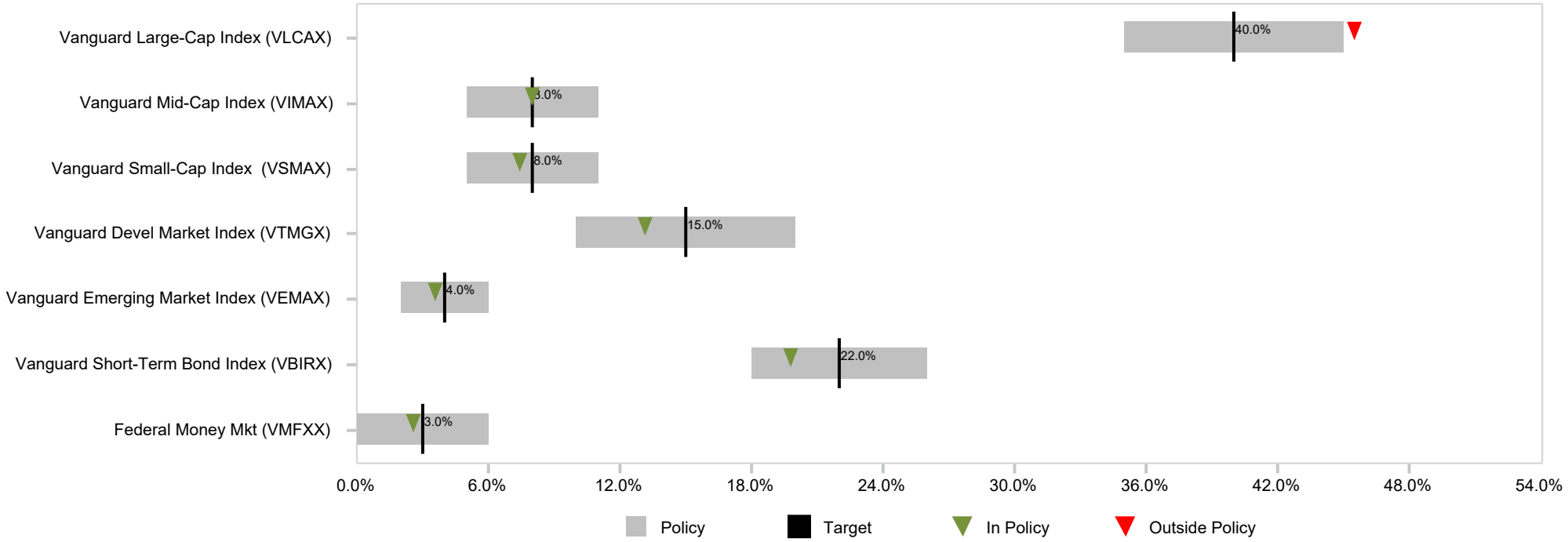
Allocation Summary



Asset Allocation Compliance

	Asset Allocation $	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Target Rebal. ($)	Differences (%)
Total OPEB	16,321,121	100.0		100.0		-	0.0
Total Domestic Equity	9,945,418	60.9		56.0		-805,590	4.9
Vanguard Large-Cap Index (VLCAX)	7,431,125	45.5	35.0	40.0	45.0	-902,677	5.5
Vanguard Mid-Cap Index (VIMAX)	1,305,774	8.0	5.0	8.0	11.0	-84	0.0
Vanguard Small-Cap Index (VSMAX)	1,208,519	7.4	5.0	8.0	11.0	97,171	-0.6
Total International & Emerging Market Equity	2,731,034	16.7		19.0		369,979	-2.3
Total International Equity	2,149,777	13.2		15.0		298,391	-1.8
Vanguard Devel Market Index (VTMGX)	2,149,777	13.2	10.0	15.0	20.0	298,391	-1.8
Total Emerging Market Equity	581,257	3.6		4.0		71,588	-0.4
Vanguard Emerging Market Index (VEMAX)	581,257	3.6	2.0	4.0	6.0	71,588	-0.4
Total Domestic Fixed Income	3,228,951	19.8		22.0		361,696	-2.2
Vanguard Short-Term Bond Index (VBIRX)	3,228,951	19.8	18.0	22.0	26.0	361,696	-2.2
Total Cash	415,718	2.5		3.0		73,915	-0.5
Federal Money Mkt (VMFXX)	415,718	2.5	0.0	3.0	6.0	73,915	-0.5

Allocation Summary



Comparative Performance

	QTR		6 Months Ending Jun-2020		9 Months Ending Jun-2020		FYTD		1 YR		2 YR		3 YR		5 YR	
Total OPEB	**16.38**	**(5)**	**-3.64**	**(71)**	**2.98**	**(45)**	**3.53**	**(48)**	**3.53**	**(48)**	**4.94**	**(45)**	**6.41**	**(25)**	**6.47**	**(20)**
Policy OPEB	16.06	(7)	-3.00	(62)	3.47	(37)	4.07	(40)	4.07	(40)	5.54	(33)	6.80	(20)	6.82	(15)
All Master Trust - Total Fund Median	12.10		-2.08		2.65		3.39		3.39		4.63		5.28		5.32	
Total Domestic Equity	**22.48**	**(27)**	**-4.08**	**(39)**	**4.20**	**(38)**	**5.27**	**(34)**	**5.27**	**(34)**	**7.02**	**(30)**	**9.42**	**(32)**	**9.47**	**(35)**
Russell 3000 Index	22.03	(35)	-3.48	(35)	5.31	(30)	6.53	(25)	6.53	(25)	7.75	(25)	10.04	(25)	10.03	(25)
All Master Trust-US Equity Segment Median	20.98		-4.85		3.29		4.12		4.12		5.74		8.38		8.85	
Vanguard Large-Cap Index Fund (VLCAX)	21.41	(28)	-2.19	(30)	6.67	(27)	8.35	(24)	8.35	(24)	9.32	(25)	10.99	(23)	10.75	(13)
CRSP U.S. Large Cap TR Index	21.42	(27)	-2.16	(30)	6.71	(27)	8.39	(23)	8.39	(23)	9.37	(24)	11.04	(22)	10.80	(12)
IM U.S. Large Cap Core Equity (MF) Median	19.44		-4.04		4.60		5.68		5.68		7.05		9.04		9.02	
Vanguard Mid-Cap Index Fund (VIMAX)	24.96	(22)	-7.18	(15)	-0.80	(15)	-0.20	(16)	-0.20	(16)	3.74	(13)	6.45	(12)	6.99	(13)
CRSP U.S. Mid Cap TR Index	24.97	(21)	-7.20	(15)	-0.82	(15)	-0.20	(16)	-0.20	(16)	3.75	(12)	6.47	(11)	7.01	(11)
IM U.S. Mid Cap Core Equity (MF) Median	20.77		-12.42		-6.38		-6.15		-6.15		-1.29		2.34		3.60	
Vanguard Small-Cap Index Fund (VSMAX)	26.66	(20)	-11.42	(14)	-4.21	(15)	-5.60	(15)	-5.60	(15)	-1.75	(6)	3.99	(6)	5.40	(7)
CRSP U.S. Small Cap TR Index	26.66	(20)	-11.44	(14)	-4.24	(15)	-5.65	(15)	-5.65	(15)	-1.76	(6)	3.98	(6)	5.38	(8)
IM U.S. Small Cap Core Equity (MF) Median	22.39		-17.68		-10.56		-11.79		-11.79		-8.07		-0.91		2.33	
Total International & Emerging Market Equity	**17.93**	**(44)**	**-10.50**	**(49)**	**-2.48**	**(51)**	**-3.98**	**(53)**	**-3.98**	**(53)**	**-1.69**	**(65)**	**1.14**	**(67)**	**2.36**	**(74)**
MSCI AC World ex USA (Net)	16.12	(71)	-11.00	(58)	-3.06	(60)	-4.80	(65)	-4.80	(65)	-1.80	(67)	1.13	(67)	2.26	(77)
All Master Trust-Intl. Equity Segment Median	17.42		-10.59		-2.46		-3.74		-3.74		-0.99		1.80		3.10	
Vanguard Devel Market Index Fund (VTMGX)	17.41	(64)	-10.76	(57)	-3.30	(61)	-4.26	(57)	-4.26	(57)	-2.16	(55)	0.88	(52)	2.46	(48)
FTSE Developed x North America Index (Net)	15.46	(81)	-10.98	(59)	-3.38	(62)	-4.51	(58)	-4.51	(58)	-2.26	(56)	0.75	(54)	2.27	(51)
IM International Equity (MF) Median	18.60		-9.65		-0.98		-3.02		-3.02		-1.72		0.98		2.30	
Vanguard Emerging Market Index Fund (VEMAX)	19.90	(53)	-9.54	(52)	0.70	(48)	-2.92	(50)	-2.92	(50)	0.10	(42)	2.12	(42)	2.15	(58)
FTSE Emerging Mkts All Cap China A Inclusion Index	19.11	(64)	-9.67	(54)	0.65	(48)	-2.86	(49)	-2.86	(49)	0.20	(40)	2.37	(40)	2.17	(57)
FTSE Emerging Index (Net)	18.35	(72)	-10.32	(60)	0.23	(53)	-3.60	(54)	-3.60	(54)	0.14	(41)	2.47	(38)	2.57	(50)
IM Emerging Markets Equity (MF) Median	20.27		-9.44		0.48		-3.04		-3.04		-1.07		1.15		2.57	

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

	QTR		6 Months Ending Jun-2020		9 Months Ending Jun-2020		FYTD		1 YR		2 YR		3 YR		5 YR	
Total Domestic Fixed Income	**1.78**	**(91)**	**4.06**	**(70)**	**4.43**	**(72)**	**5.43**	**(79)**	**5.43**	**(79)**	**5.32**	**(85)**	**3.44**	**(91)**	**2.57**	**(96)**
Blmbg. Barc. U.S. Aggregate Index	2.90	(82)	6.14	(39)	6.33	(40)	8.74	(39)	8.74	(39)	8.30	(38)	5.32	(48)	4.30	(62)
All Master Trust-US Fixed Income Segment Median	4.94		5.37		5.77		7.98		7.98		7.82		5.25		4.55	
Vanguard Short-Term Bond Index Fund (VBIRX)	1.78	(92)	4.06	(36)	4.43	(37)	5.43	(33)	5.43	(33)	5.32	(36)	3.44	(35)	2.57	(42)
Bloomberg Barclays 1-5 Year Gov/Credit Index	1.77	(93)	3.98	(37)	4.50	(36)	5.43	(32)	5.43	(32)	5.39	(35)	3.49	(33)	2.63	(39)
Bloomberg Barclays Intermed Aggregate Index	2.13	(84)	4.67	(28)	5.15	(29)	6.60	(15)	6.60	(15)	6.67	(7)	4.28	(6)	3.40	(6)
IM U.S. Intermediate Investment Grade (MF) Median	3.60		3.13		3.89		4.84		4.84		5.02		3.15		2.45	
Total Cash	**0.08**		**0.42**		**0.85**		**1.39**		**1.39**		**1.80**		**1.62**		**N/A**	
90 Day U.S. Treasury Bill	0.02		0.60		1.06		1.63		1.63		1.97		1.77		1.17	
Federal Money Mkt (VMFXX)	0.08		0.42		0.85		1.39		1.39		1.80		1.62		N/A	
90 Day U.S. Treasury Bill	0.02		0.60		1.06		1.63		1.63		1.97		1.77		1.17	

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.

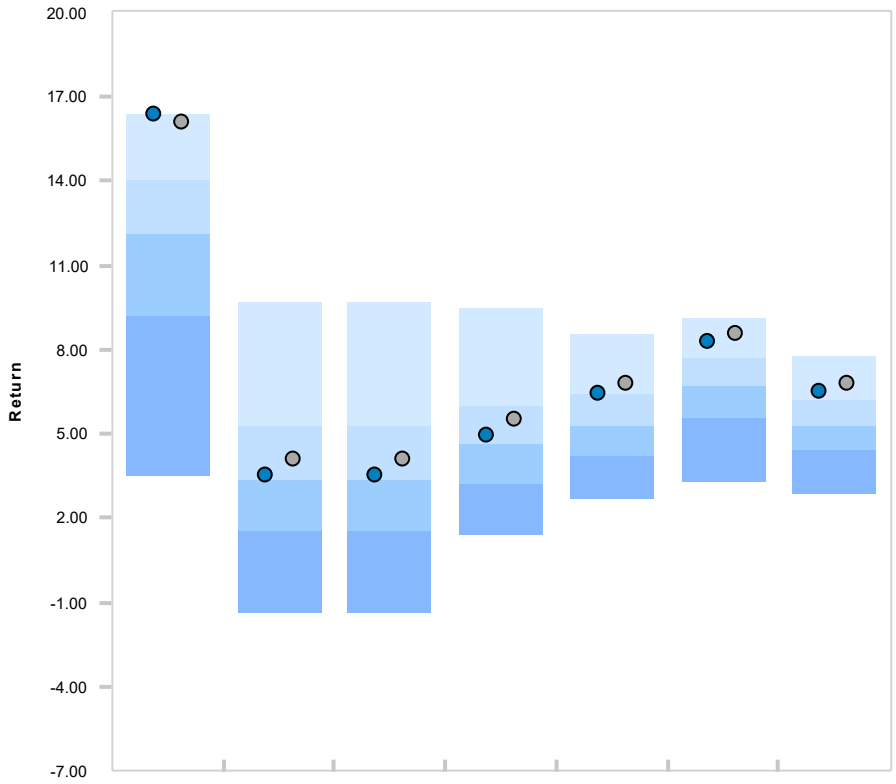
Comparative Performance	2019		2018		2017		2016		2015	
Total OPEB	**22.74**	**(6)**	**-5.92**	**(76)**	**17.09**	**(14)**	**8.10**	**(23)**	**-0.39**	**(40)**
Policy OPEB	22.66	(6)	-5.53	(69)	17.16	(13)	8.36	(18)	-0.19	(36)
All Master Trust - Total Fund Median	18.17		-4.58		14.55		6.66		-0.94	
Total Domestic Equity	**30.80**	**(27)**	**-5.82**	**(52)**	**20.74**	**(50)**	**12.44**	**(51)**	**0.04**	**(54)**
Russell 3000 Index	31.02	(22)	-5.24	(42)	21.13	(43)	12.74	(44)	0.48	(41)
All Master Trust-US Equity Segment Median	28.73		-5.79		20.72		12.45		0.27	
Vanguard Large-Cap Index (VLCAX)	31.39	(32)	-4.47	(31)	22.03	(36)	11.65	(31)	1.07	(38)
CRSP U.S. Large Cap TR Index	31.44	(30)	-4.44	(31)	22.07	(35)	11.75	(29)	1.11	(37)
IM U.S. Large Cap Core Equity (MF) Median	29.68		-5.61		21.17		10.07		0.26	
Vanguard Mid-Cap Index (VIMAX)	31.03	(20)	-9.23	(23)	19.25	(19)	11.22	(75)	-1.34	(24)
CRSP U.S. Mid Cap TR Index	31.09	(19)	-9.22	(23)	19.30	(19)	11.25	(73)	-1.28	(23)
IM U.S. Mid Cap Core Equity (MF) Median	28.08		-11.52		15.44		14.23		-3.40	
Vanguard Small-Cap Index (VSMAX)	27.37	(16)	-9.31	(18)	16.23	(13)	18.30	(78)	-3.64	(41)
CRSP U.S. Small Cap TR Index	27.35	(16)	-9.33	(18)	16.24	(13)	18.26	(78)	-3.68	(42)
IM U.S. Small Cap Core Equity (MF) Median	23.87		-12.68		12.38		21.34		-4.34	
Total International & Emerging Market Equity	**21.68**	**(73)**	**-14.48**	**(67)**	**27.43**	**(61)**	**4.00**	**(56)**	**-3.44**	**(57)**
MSCI AC World ex USA (Net)	21.51	(76)	-14.20	(61)	27.19	(63)	4.50	(47)	-5.66	(82)
All Master Trust-Intl. Equity Segment Median	22.67		-13.69		28.24		4.37		-2.94	
Vanguard Emerging Market Index (VEMAX)	20.31	(50)	-14.58	(30)	31.38	(71)	11.72	(26)	-15.35	(68)
FTSE Emerging Index	20.55	(48)	-13.03	(20)	32.53	(65)	13.53	(15)	-15.22	(66)
IM Emerging Markets Equity (MF) Median	20.08		-16.40		35.37		8.35		-13.66	
Vanguard Devel Market Index (VTMGX)	22.05	(50)	-14.46	(34)	26.40	(64)	2.45	(46)	-0.18	(36)
FTSE Developed x North America Index (Net)	21.48	(56)	-14.39	(33)	26.50	(64)	1.43	(53)	-0.45	(37)
IM International Equity (MF) Median	21.99		-16.01		28.78		1.79		-2.33	

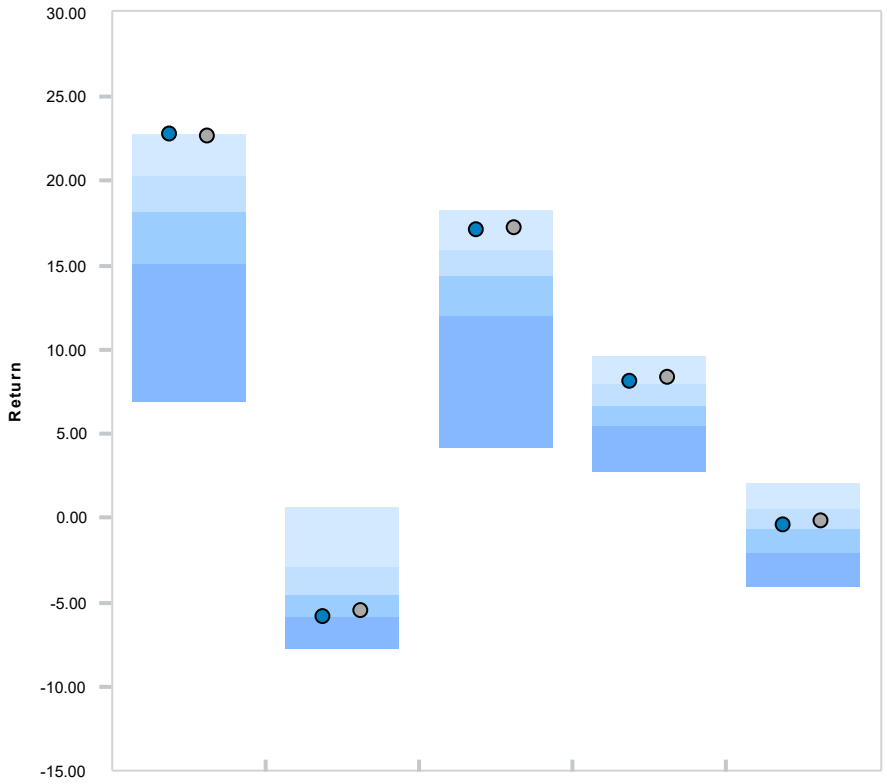
Returns are expressed as percentages.

	2019		2018		2017		2016		2015	
Total Domestic Fixed Income	**4.86**	**(94)**	**1.35**	**(9)**	**1.17**	**(99)**	**1.49**	**(92)**	**0.94**	**(23)**
Blmbg. Barc. U.S. Aggregate Index	8.72	(58)	0.01	(36)	3.54	(69)	2.65	(78)	0.55	(33)
All Master Trust-US Fixed Income Segment Median	9.09		-0.39		4.78		4.21		-0.02	
Vanguard Short-Term Bond Index (VBIRX)	4.86	(53)	1.35	(11)	1.17	(77)	1.49	(68)	0.94	(12)
Bloomberg Barclays 1-5 Year Gov/Credit Idx	5.01	(50)	1.38	(10)	1.27	(73)	1.56	(66)	0.97	(12)
Bloomberg Barclays Intermed Aggregate Index	6.67	(15)	0.92	(37)	2.27	(24)	1.97	(54)	1.21	(4)
IM U.S. Intermediate Investment Grade (MF) Median	5.00		0.73		1.78		2.09		0.45	
Total Cash	**2.14**		**1.78**		**N/A**		**N/A**		**N/A**	
90 Day U.S. Treasury Bill	2.28		1.87		0.86		0.25		0.03	
Federal Money Mkt (VMFXX)	2.14		1.78		N/A		N/A		N/A	
90 Day U.S. Treasury Bill	2.28		1.87		0.86		0.25		0.03	

Returns are expressed as percentages.

Peer Group Analysis - All Master Trust - Total Fund





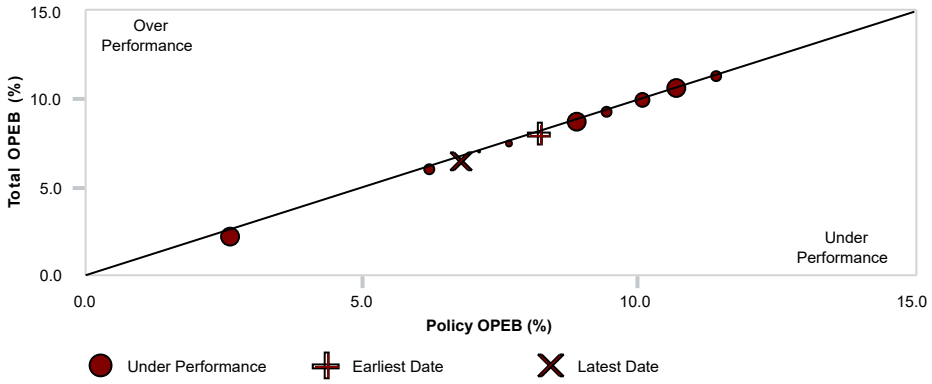
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total OPEB	16.38 (5)	3.53 (48)	3.53 (48)	4.94 (45)	6.41 (25)	8.25 (16)	6.47 (20)
Policy OPEB	16.06 (7)	4.07 (40)	4.07 (40)	5.54 (33)	6.80 (20)	8.56 (11)	6.82 (15)
Median	12.10	3.39	3.39	4.63	5.28	6.74	5.32

	2019	2018	2017	2016	2015
Total OPEB	22.74 (6)	-5.92 (76)	17.09 (12)	8.10 (23)	-0.39 (44)
Policy OPEB	22.66 (6)	-5.53 (70)	17.16 (12)	8.36 (18)	-0.19 (40)
Median	18.17	-4.55	14.39	6.73	-0.69

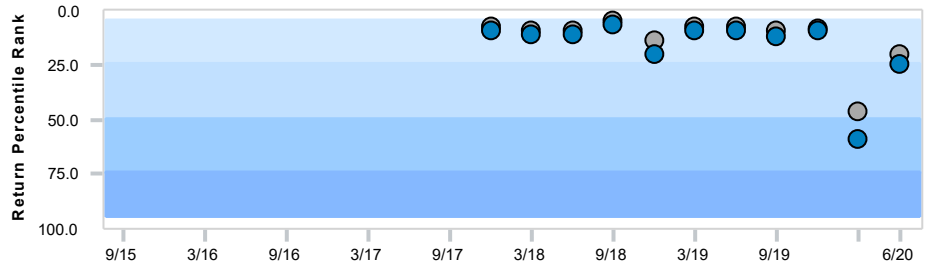
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total OPEB	**-17.20 (92)**	**6.87 (4)**	**0.54 (64)**	**3.31 (39)**	**10.58 (4)**	**-10.57 (97)**
Policy OPEB	-16.42 (86)	6.66 (6)	0.58 (61)	3.47 (27)	10.49 (4)	-9.95 (94)
All Master Trust - Total Fund Median	-13.11	5.08	0.74	3.12	8.15	-7.46

3 Yr Rolling Under/Over Performance - 5 Years

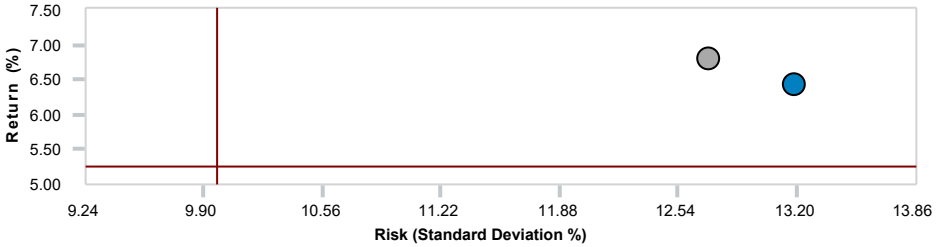


3 Yr Rolling Percentile Ranking - 5 Years



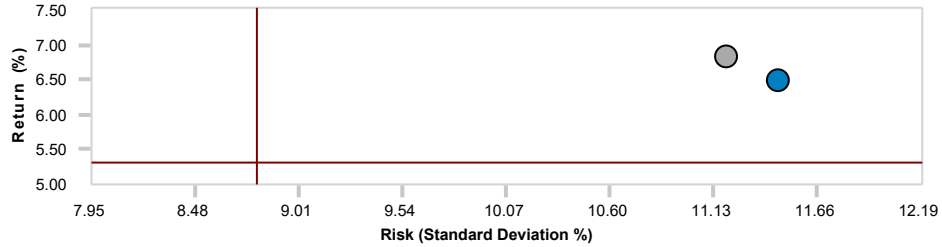
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total OPEB	11	10 (91%)	0 (0%)	1 (9%)	0 (0%)
Policy OPEB	11	10 (91%)	1 (9%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total OPEB	6.41	13.20
Policy OPEB	6.80	12.72
Median	5.27	9.97

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total OPEB	6.47	11.46
Policy OPEB	6.82	11.20
Median	5.31	8.79

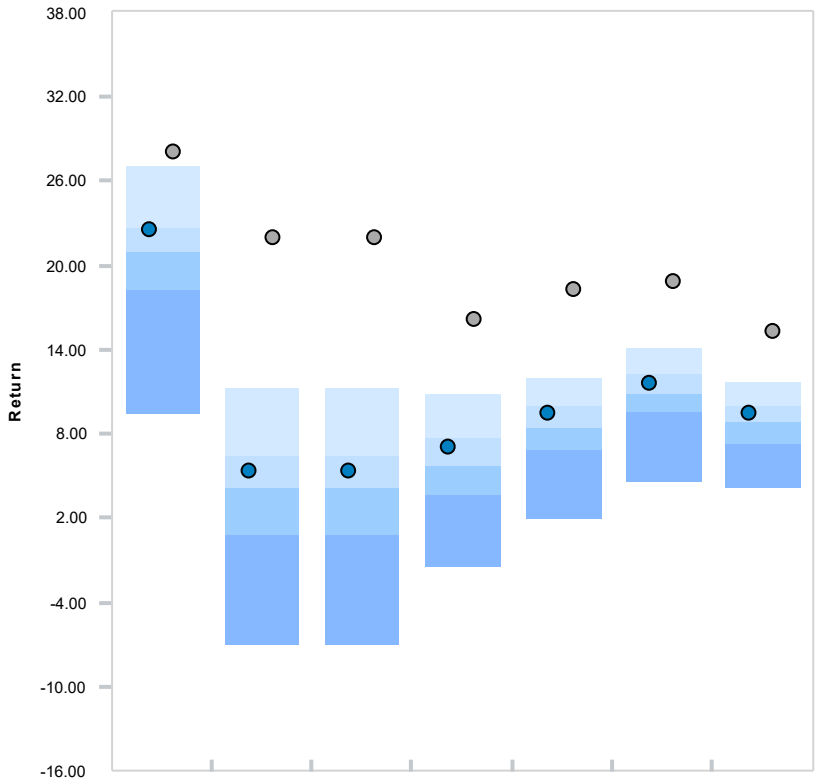
Historical Statistics - 3 Years

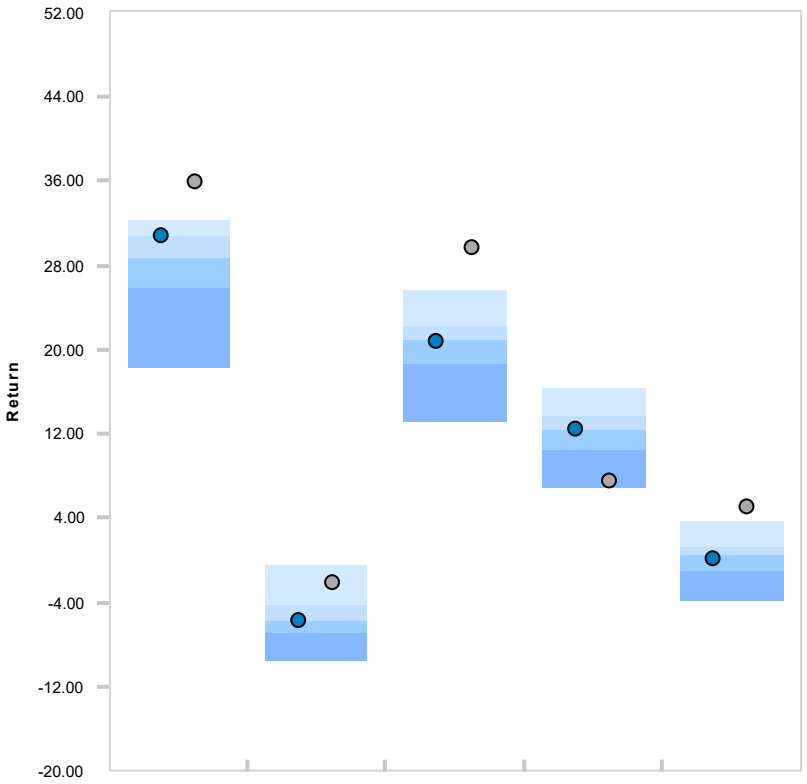
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total OPEB	0.59	101.80	105.15	-0.57	-0.51	0.40	1.04	9.65
Policy OPEB	0.00	100.00	100.00	0.00	N/A	0.44	1.00	9.17

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total OPEB	0.55	100.55	103.72	-0.46	-0.54	0.50	1.02	8.13
Policy OPEB	0.00	100.00	100.00	0.00	N/A	0.54	1.00	7.81

Peer Group Analysis - All Master Trust-US Equity Segment





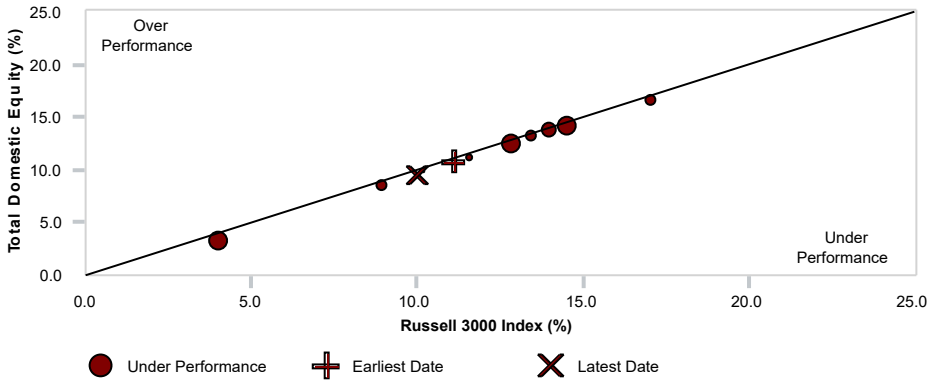
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Domestic Equity	22.48 (27)	5.27 (34)	5.27 (34)	7.02 (30)	9.42 (32)	11.55 (38)	9.47 (35)
Russell 3000 G Index	27.99 (5)	21.94 (1)	21.94 (1)	16.14 (1)	18.21 (1)	18.83 (1)	15.23 (1)
Median	20.98	4.12	4.12	5.74	8.38	10.84	8.85

	2019	2018	2017	2016	2015
Total Domestic Equity	30.80 (27)	-5.82 (52)	20.74 (53)	12.44 (49)	0.04 (55)
Russell 3000 G Index	35.85 (1)	-2.12 (10)	29.59 (2)	7.39 (94)	5.09 (3)
Median	28.73	-5.72	20.91	12.34	0.38

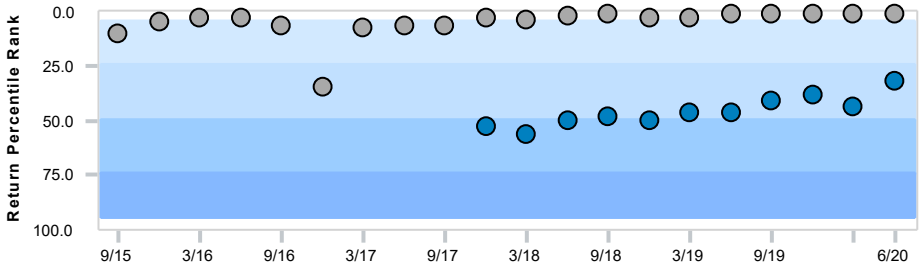
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Domestic Equity	-21.69 (58)	8.64 (53)	1.03 (37)	4.10 (30)	14.48 (19)	-14.48 (68)
Russell 3000 Index	-20.90 (46)	9.10 (31)	1.16 (28)	4.10 (31)	14.04 (31)	-14.30 (64)
All Master Trust-US Equity Segment Median	-21.19	8.70	0.75	3.80	13.56	-13.94

3 Yr Rolling Under/Over Performance - 5 Years

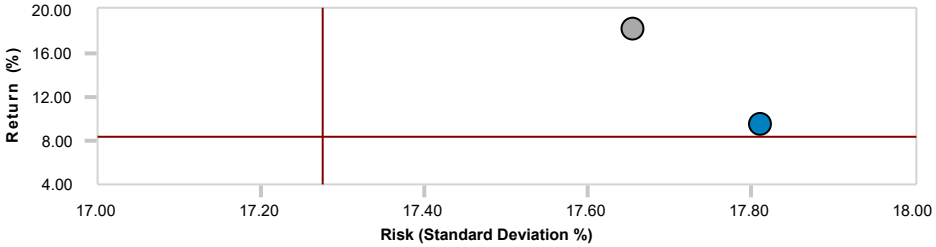


3 Yr Rolling Percentile Ranking - 5 Years



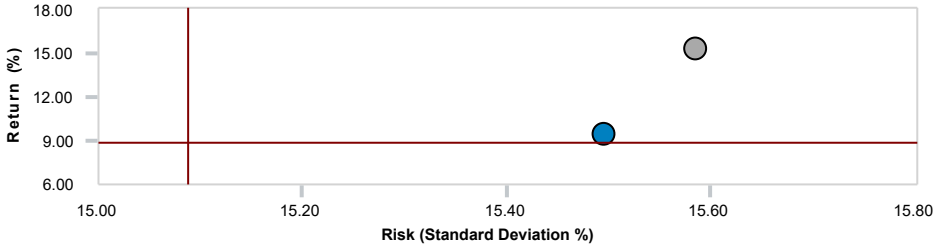
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Domestic Equity	11	0 (0%)	9 (82%)	2 (18%)	0 (0%)
Russell 3000 G Index	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Domestic Equity	9.42	17.81
Russell 3000 G Index	18.21	17.66
Median	8.38	17.27

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Domestic Equity	9.47	15.50
Russell 3000 G Index	15.23	15.59
Median	8.85	15.09

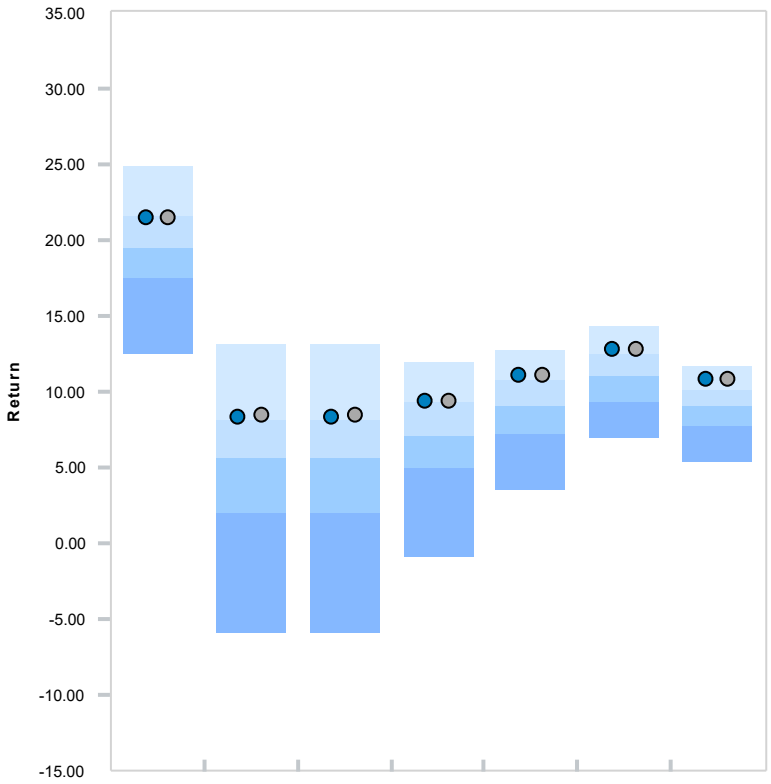
Historical Statistics - 3 Years

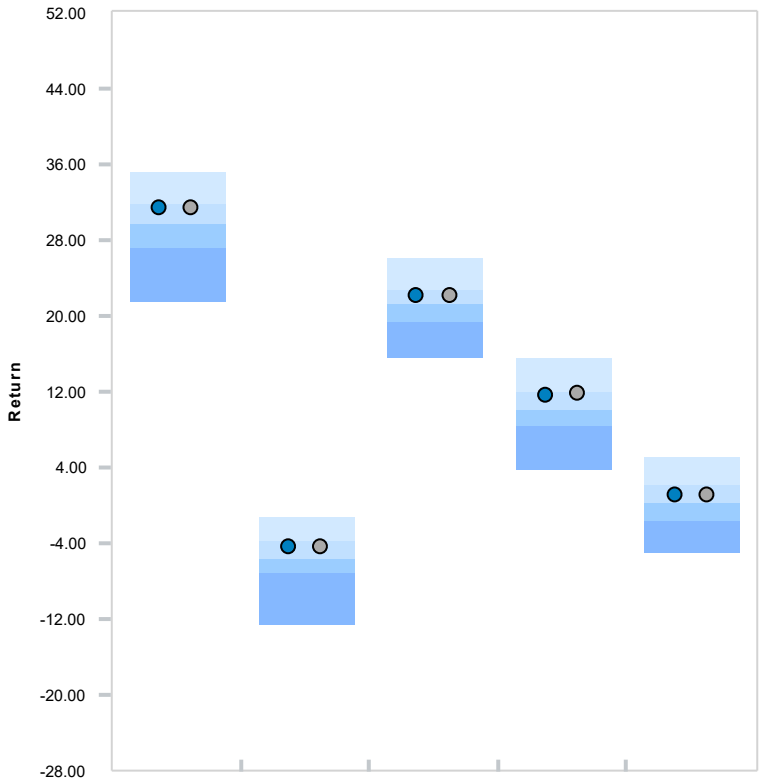
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	0.65	99.41	101.88	-0.73	-0.78	0.50	1.02	12.76
Russell 3000 Index	0.00	100.00	100.00	0.00	N/A	0.54	1.00	12.39

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	0.59	99.21	101.91	-0.65	-0.80	0.59	1.02	10.75
Russell 3000 Index	0.00	100.00	100.00	0.00	N/A	0.63	1.00	10.45

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)





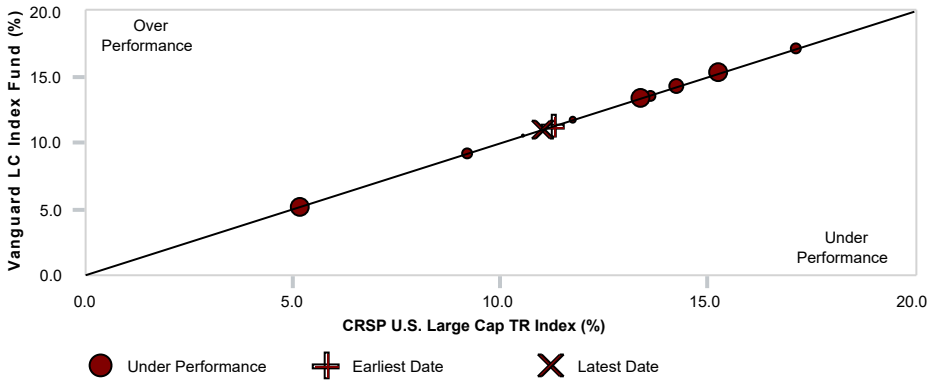
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Vanguard LC Index Fund	21.41 (28)	8.35 (24)	8.35 (24)	9.32 (25)	10.99 (23)	12.76 (21)	10.75 (13)
CRSP US Large Cap Index	21.42 (27)	8.39 (23)	8.39 (23)	9.37 (24)	11.04 (22)	12.79 (20)	10.80 (12)
Median	19.44	5.68	5.68	7.05	9.04	11.08	9.02

	2019	2018	2017	2016	2015
Vanguard LC Index Fund	31.39 (32)	-4.47 (31)	22.03 (36)	11.65 (31)	1.07 (38)
CRSP US Large Cap Index	31.44 (30)	-4.44 (31)	22.07 (35)	11.75 (29)	1.11 (37)
Median	29.68	-5.61	21.17	10.07	0.26

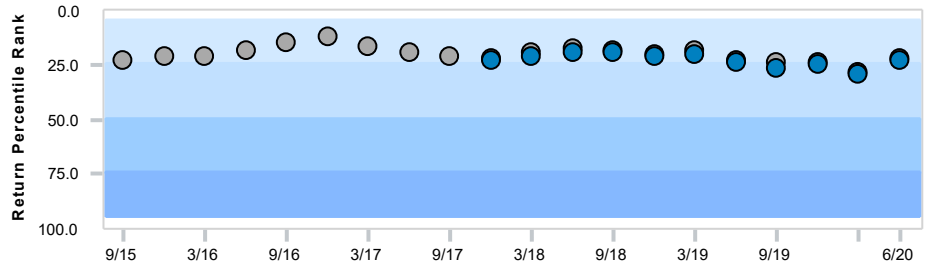
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Vanguard LC Index Fund	-19.43 (41)	9.06 (39)	1.57 (45)	4.29 (45)	13.74 (29)	-13.54 (47)
CRSP U.S. Large Cap TR Index	-19.42 (41)	9.07 (38)	1.58 (44)	4.29 (44)	13.76 (28)	-13.52 (46)
IM U.S. Large Cap Core Equity (MF) Median	-19.85	8.73	1.46	4.15	13.08	-13.74

3 Yr Rolling Under/Over Performance - 5 Years

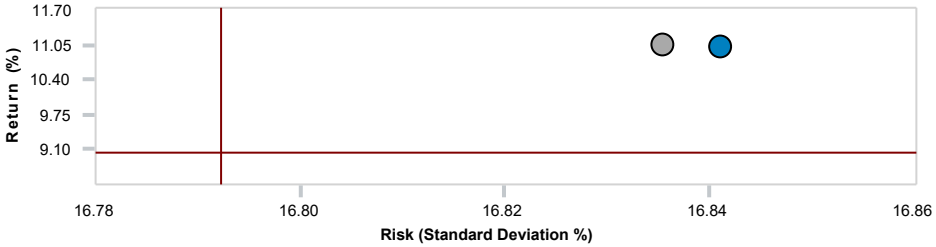


3 Yr Rolling Percentile Ranking - 5 Years



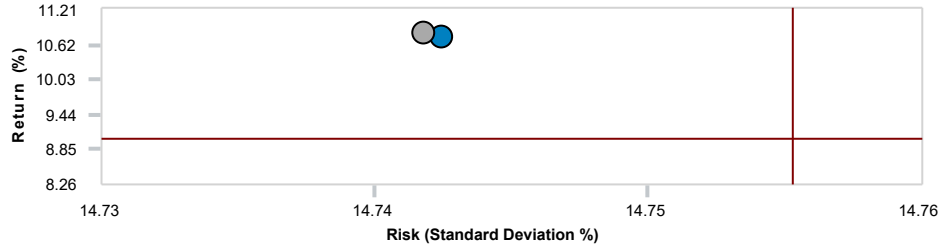
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Vanguard LC Index Fund	11	9 (82%)	2 (18%)	0 (0%)	0 (0%)
CRSP US Large Cap Index	20	19 (95%)	1 (5%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Vanguard LC Index Fund	10.99	16.84
CRSP US Large Cap Index	11.04	16.84
Median	9.04	16.79

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Vanguard LC Index Fund	10.75	14.74
CRSP US Large Cap Index	10.80	14.74
Median	9.02	14.76

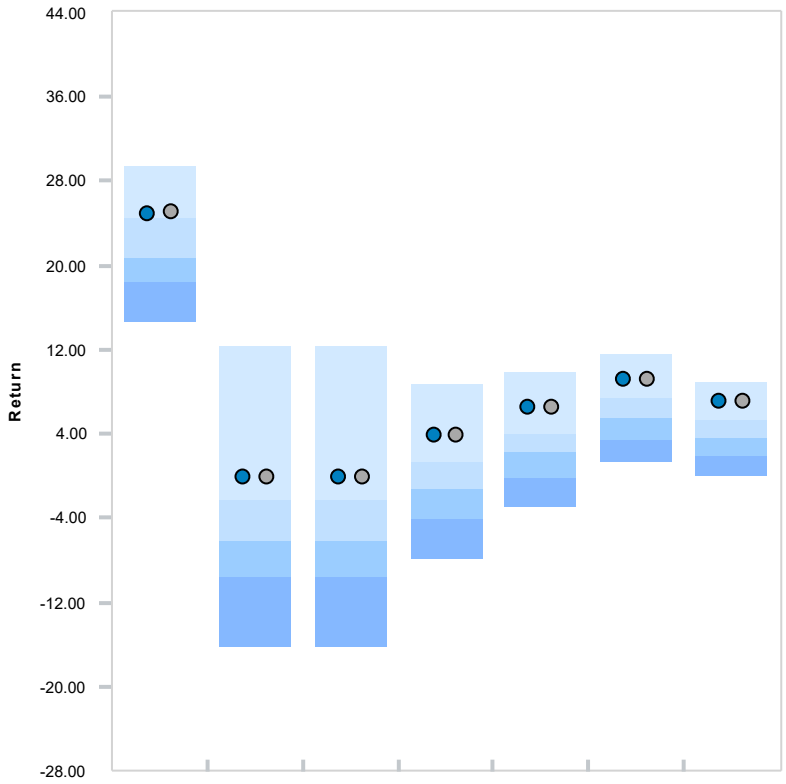
Historical Statistics - 3 Years

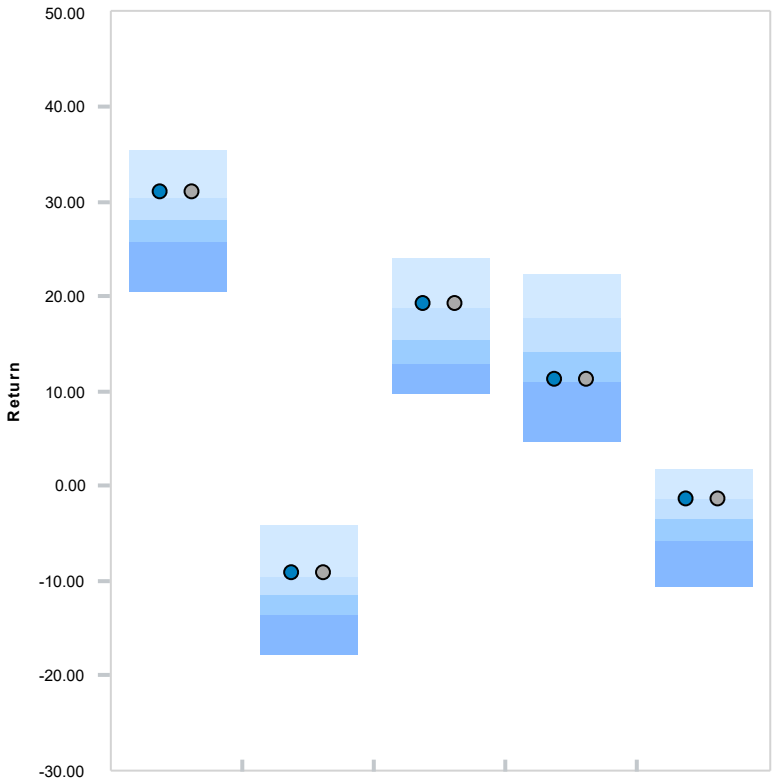
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard LC Index Fund	0.02	99.91	100.07	-0.04	-1.51	0.60	1.00	11.76
CRSP U.S. Large Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.60	1.00	11.75

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard LC Index Fund	0.03	99.88	100.16	-0.05	-1.53	0.69	1.00	9.92
CRSP U.S. Large Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.69	1.00	9.91

Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)





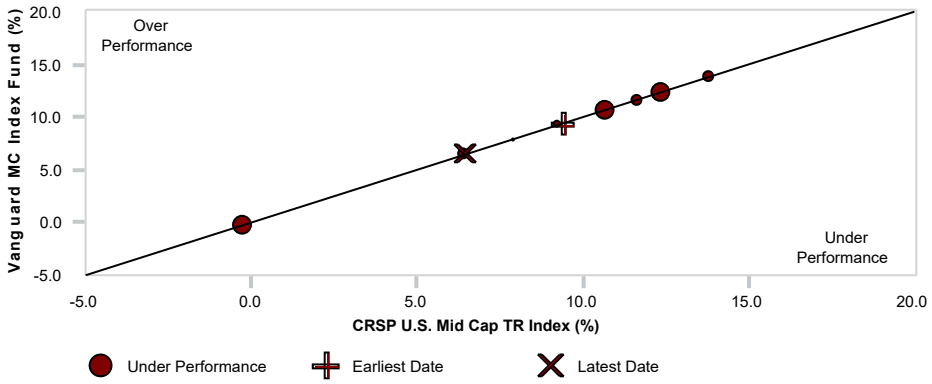
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Vanguard MC Index Fund	24.96 (22)	-0.20 (16)	-0.20 (16)	3.74 (13)	6.45 (12)	9.05 (14)	6.99 (13)
CRSP US Mid Cap Index	24.97 (21)	-0.20 (16)	-0.20 (16)	3.75 (12)	6.47 (11)	9.08 (13)	7.01 (11)
Median	20.77	-6.15	-6.15	-1.29	2.34	5.46	3.60

	2019	2018	2017	2016	2015
Vanguard MC Index Fund	31.03 (20)	-9.23 (23)	19.25 (19)	11.22 (75)	-1.34 (24)
CRSP US Mid Cap Index	31.09 (19)	-9.22 (23)	19.30 (19)	11.25 (73)	-1.28 (23)
Median	28.08	-11.52	15.44	14.23	-3.40

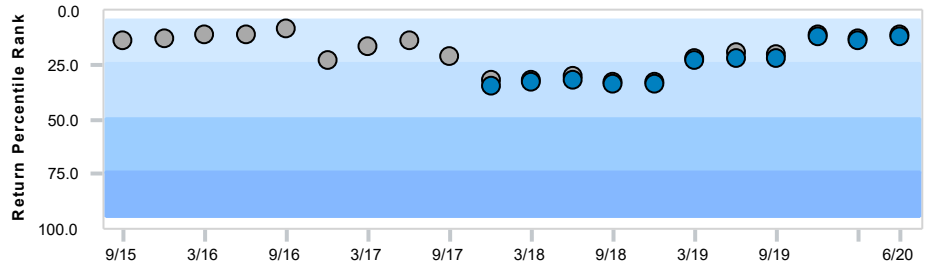
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Vanguard MC Index Fund	-25.72 (26)	6.88 (50)	0.61 (62)	4.36 (41)	16.77 (8)	-15.46 (45)
CRSP U.S. Mid Cap TR Index	-25.74 (27)	6.88 (50)	0.62 (61)	4.37 (40)	16.79 (6)	-15.46 (45)
IM U.S. Mid Cap Core Equity (MF) Median	-28.30	6.85	0.98	4.14	14.57	-15.85

3 Yr Rolling Under/Over Performance - 5 Years

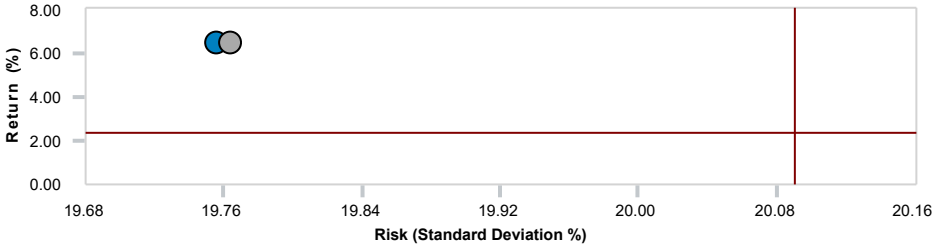


3 Yr Rolling Percentile Ranking - 5 Years



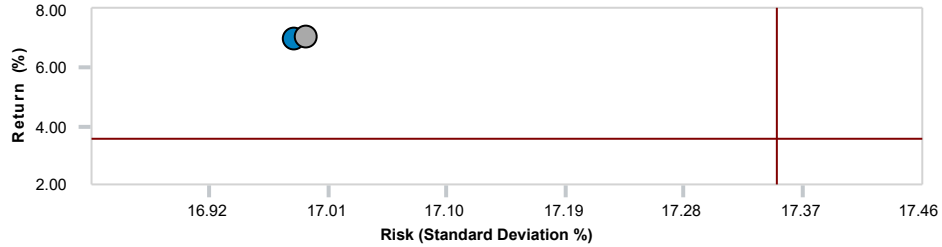
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Vanguard MC Index Fund	11	6 (55%)	5 (45%)	0 (0%)	0 (0%)
CRSP US Mid Cap Index	20	15 (75%)	5 (25%)	0 (0%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Vanguard MC Index Fund	6.45	19.76
CRSP US Mid Cap Index	6.47	19.76
Median	2.34	20.09

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Vanguard MC Index Fund	6.99	16.98
CRSP US Mid Cap Index	7.01	16.99
Median	3.60	17.35

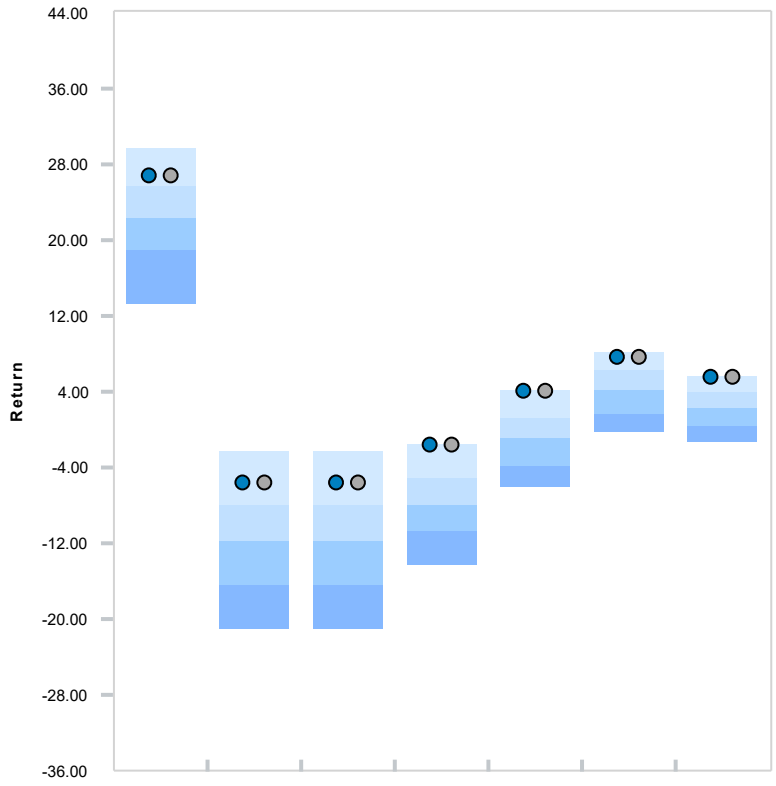
Historical Statistics - 3 Years

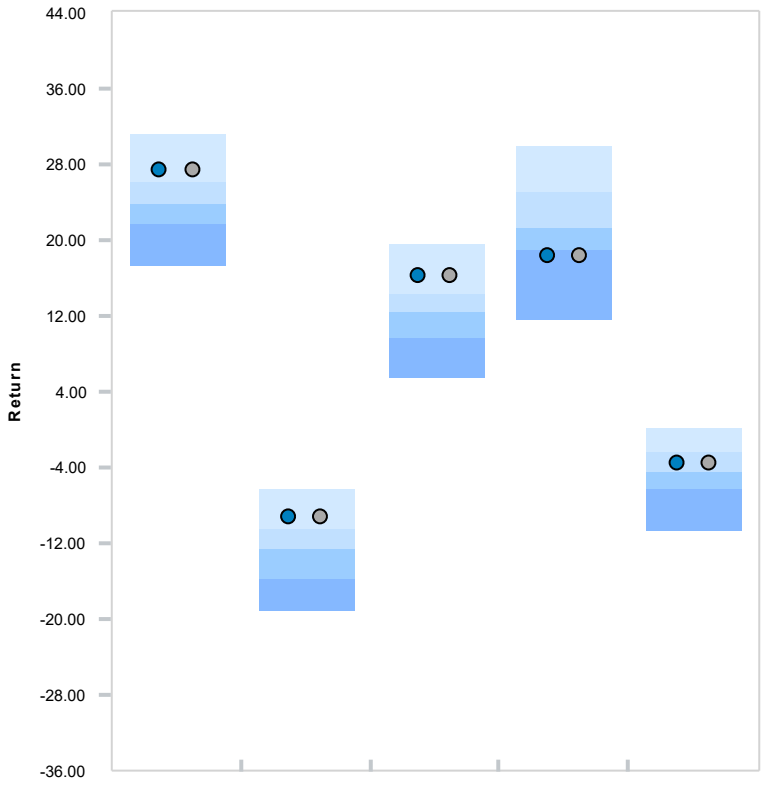
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard MC Index Fund	0.03	99.97	100.04	-0.01	-0.57	0.33	1.00	14.65
CRSP U.S. Mid Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.33	1.00	14.66

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard MC Index Fund	0.03	99.91	100.02	-0.02	-0.96	0.42	1.00	12.29
CRSP U.S. Mid Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.42	1.00	12.30

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)





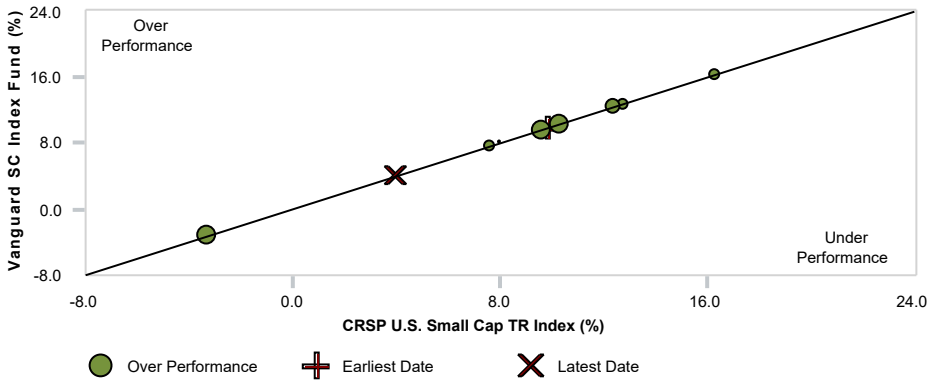
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Vanguard SC Index Fund	26.66 (20)	-5.60 (15)	-5.60 (15)	-1.75 (6)	3.99 (6)	7.58 (9)	5.40 (7)
CRSP US Small Cap Index	26.66 (20)	-5.65 (15)	-5.65 (15)	-1.76 (6)	3.98 (6)	7.57 (9)	5.38 (8)
Median	22.39	11.79	11.79	-8.07	-0.91	4.19	2.33

	2019	2018	2017	2016	2015
Vanguard SC Index Fund	27.37 (16)	-9.31 (18)	16.23 (13)	18.30 (78)	-3.64 (41)
CRSP US Small Cap Index	27.35 (16)	-9.33 (18)	16.24 (13)	18.26 (78)	-3.68 (42)
Median	23.87	-12.68	12.38	21.34	-4.34

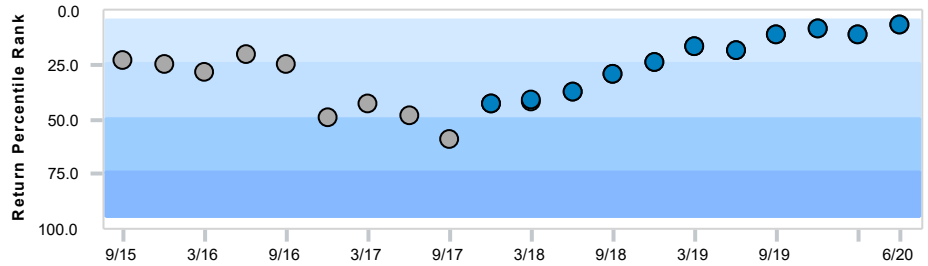
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Vanguard SC Index Fund	-30.07 (21)	8.14 (50)	-1.45 (60)	2.87 (34)	16.18 (8)	-18.33 (24)
CRSP U.S. Small Cap TR Index	-30.08 (21)	8.12 (50)	-1.47 (60)	2.86 (34)	16.21 (8)	-18.33 (24)
IM U.S. Small Cap Core Equity (MF) Median	-32.66	8.12	-1.09	2.19	13.13	-19.89

3 Yr Rolling Under/Over Performance - 5 Years

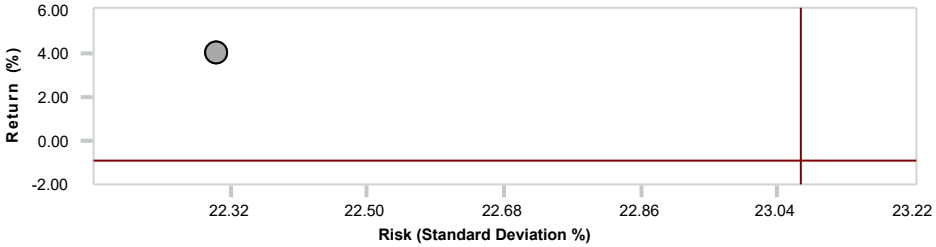


3 Yr Rolling Percentile Ranking - 5 Years



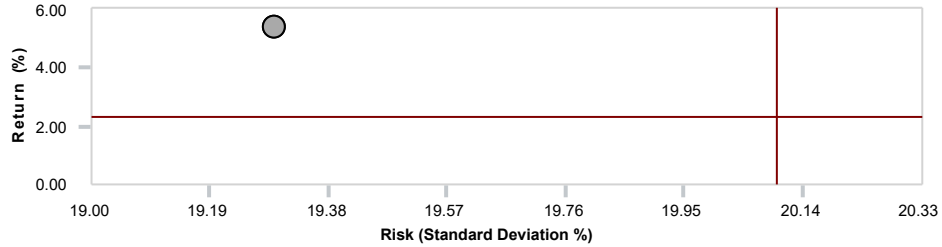
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Vanguard SC Index Fund	11	7 (64%)	4 (36%)	0 (0%)	0 (0%)
CRSP US Small Cap Index	20	11 (55%)	8 (40%)	1 (5%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Vanguard SC Index Fund	3.99	22.30
CRSP US Small Cap Index	3.98	22.30
Median	-0.91	23.07

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Vanguard SC Index Fund	5.40	19.29
CRSP US Small Cap Index	5.38	19.29
Median	2.33	20.10

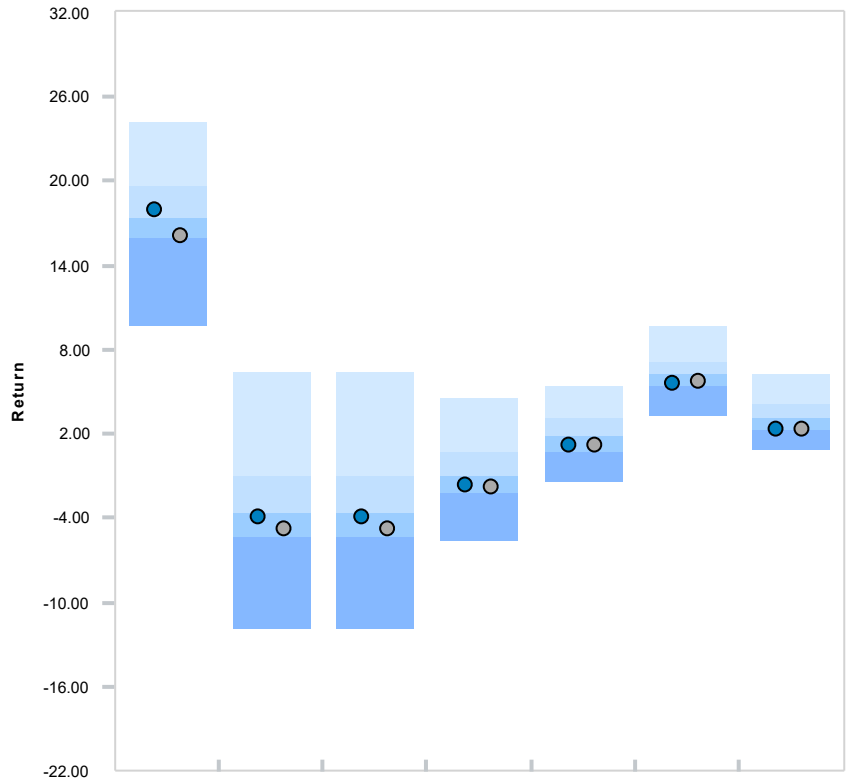
Historical Statistics - 3 Years

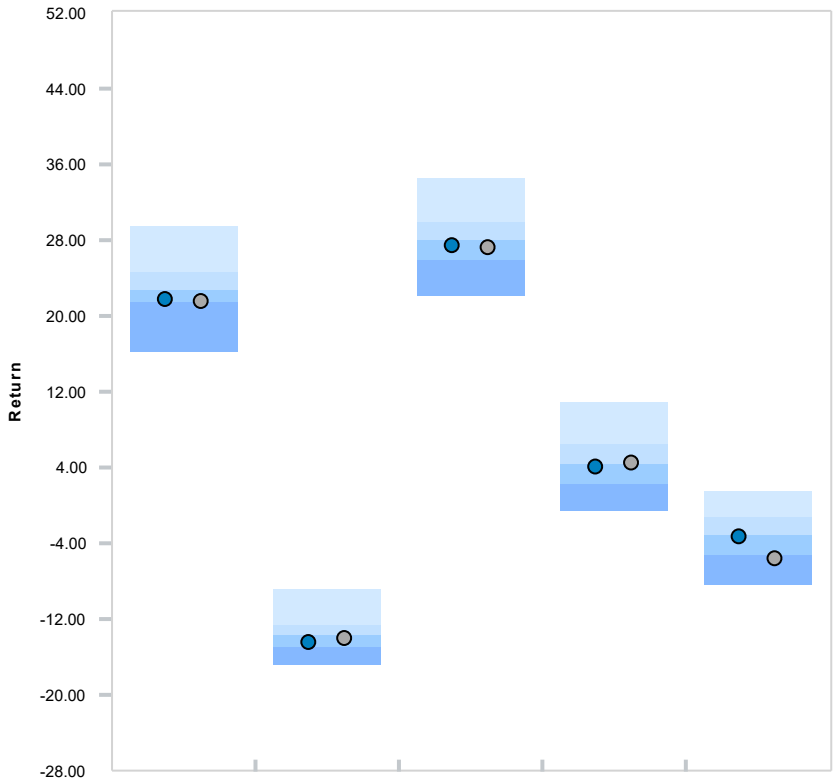
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard SC Index Fund	0.03	100.07	100.03	0.01	0.49	0.21	1.00	17.04
CRSP U.S. Small Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.21	1.00	17.04

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard SC Index Fund	0.03	100.07	100.02	0.02	0.53	0.31	1.00	14.28
CRSP U.S. Small Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.31	1.00	14.28

Peer Group Analysis - All Master Trust-Intl. Equity Segment





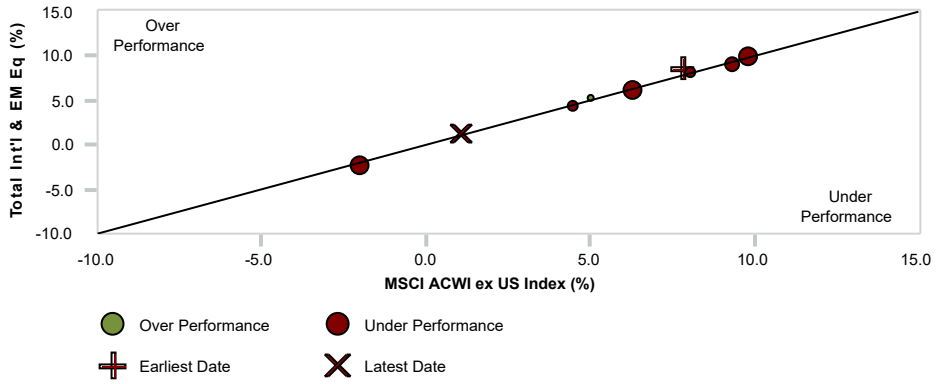
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Int'l & EM Eq	17.93 (44)	-3.98 (53)	-3.98 (53)	-1.69 (65)	1.14 (67)	5.55 (72)	2.36 (74)
ACWIxUS Index	16.12 (71)	-4.80 (65)	-4.80 (65)	-1.80 (67)	1.13 (67)	5.65 (69)	2.26 (77)
Median	17.42	-3.74	-3.74	-0.99	1.80	6.32	3.10

	2019	2018	2017	2016	2015
Total Int'l & EM Eq	21.68 (73)	-14.48 (68)	27.43 (61)	4.00 (55)	-3.44 (54)
ACWIxUS Index	21.51 (76)	-14.20 (61)	27.19 (62)	4.50 (49)	-5.66 (81)
Median	22.67	-13.68	28.09	4.41	-3.21

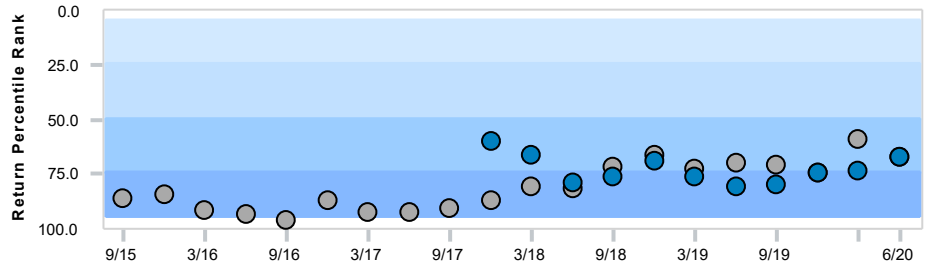
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Int'l & EM Eq	-24.11 (59)	8.97 (62)	-1.54 (57)	2.72 (69)	10.41 (64)	-11.70 (51)
MSCI ACWI ex US Index	-23.36 (42)	8.92 (65)	-1.80 (70)	2.98 (59)	10.31 (67)	-11.46 (43)
All Master Trust-Intl. Equity Segment Median	-23.70	9.31	-1.41	3.13	10.77	-11.69

3 Yr Rolling Under/Over Performance - 5 Years

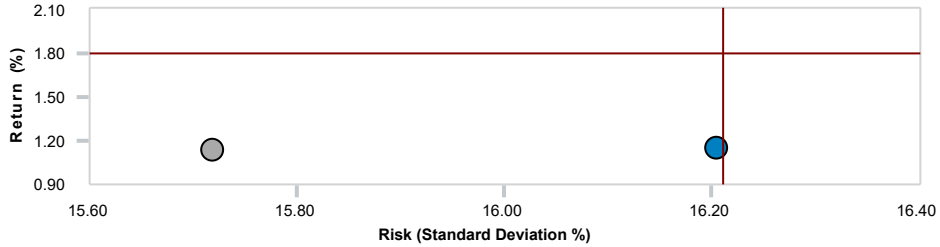


3 Yr Rolling Percentile Ranking - 5 Years



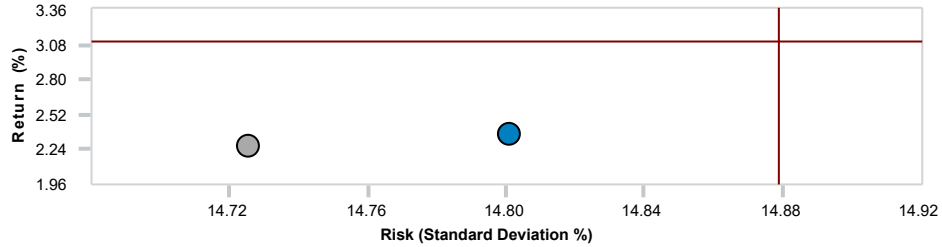
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Int'l & EM Eq	11	0 (0%)	0 (0%)	6 (55%)	5 (45%)
ACWIxUS Index	20	0 (0%)	0 (0%)	8 (40%)	12 (60%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Int'l & EM Eq	1.14	16.20
ACWIxUS Index	1.13	15.72
Median	1.80	16.21

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Int'l & EM Eq	2.36	14.80
ACWIxUS Index	2.26	14.73
Median	3.10	14.88

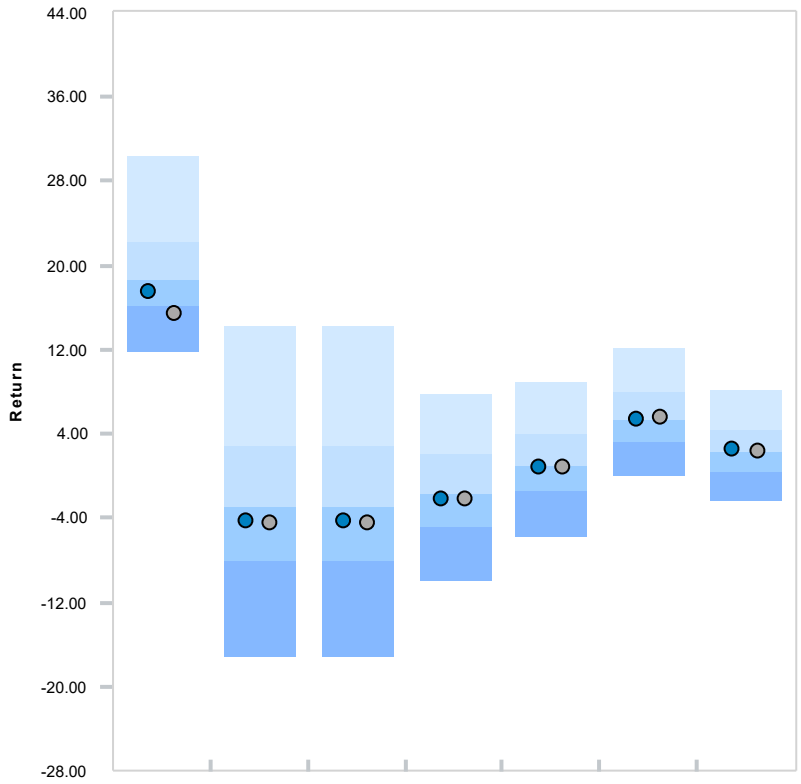
Historical Statistics - 3 Years

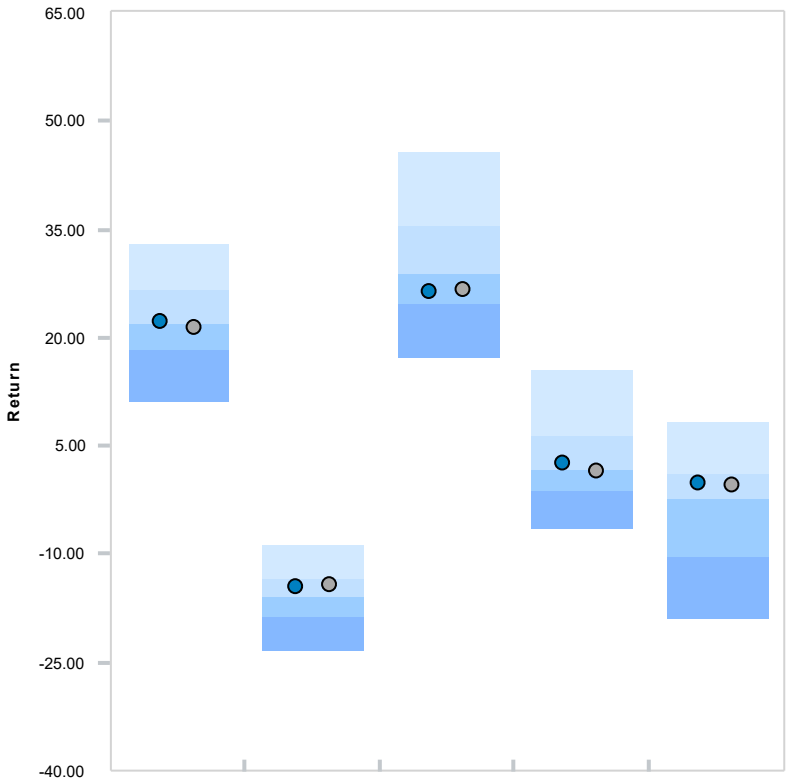
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l & EM Eq	1.88	101.29	100.98	0.03	0.05	0.05	1.02	12.65
MSCI ACWI ex US Index	0.00	100.00	100.00	0.00	N/A	0.04	1.00	12.17

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l & EM Eq	1.88	99.34	98.58	0.13	0.06	0.15	1.00	11.05
MSCI ACWI ex US Index	0.00	100.00	100.00	0.00	N/A	0.15	1.00	10.88

Peer Group Analysis - IM International Equity (MF)





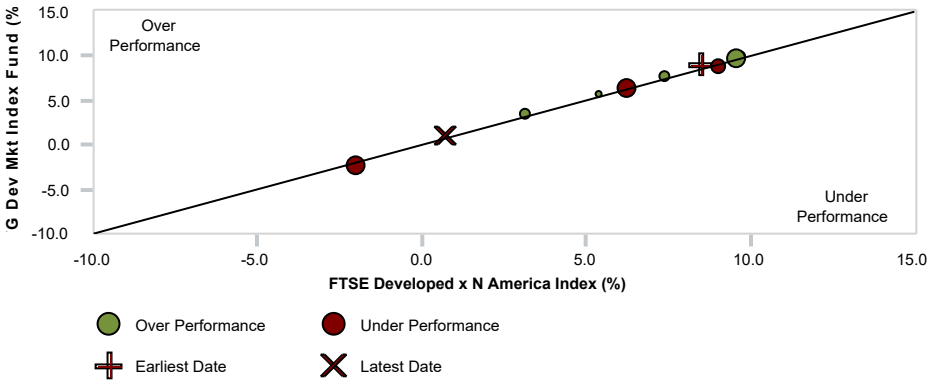
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
VG Dev Mkt Index Fund	17.41 (64)	-4.26 (57)	-4.26 (57)	-2.16 (55)	0.88 (52)	5.42 (50)	2.46 (48)
FTSE Dev x NA Index	15.46 (81)	-4.51 (58)	-4.51 (58)	-2.26 (56)	0.75 (54)	5.49 (48)	2.27 (51)
Median	18.60	-3.02	-3.02	-1.72	0.98	5.38	2.30

	2019	2018	2017	2016	2015
VG Dev Mkt Index Fund	22.05 (50)	-14.46 (34)	26.40 (64)	2.45 (46)	-0.18 (36)
FTSE Dev x NA Index	21.48 (56)	-14.39 (33)	26.50 (64)	1.43 (53)	-0.45 (37)
Median	21.99	-16.01	28.78	1.79	-2.33

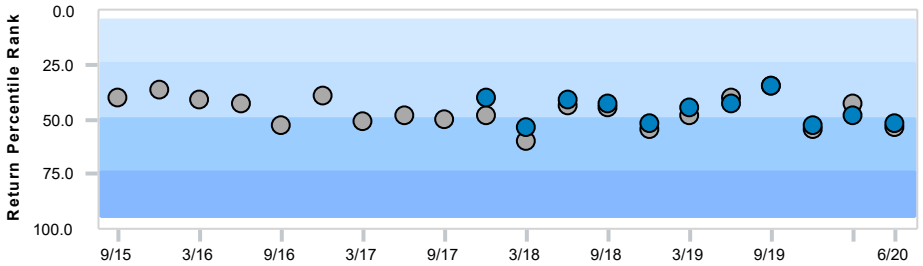
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
VG Dev Mkt Index Fund	-23.99 (53)	8.36 (72)	-0.99 (25)	3.27 (38)	10.16 (58)	-13.06 (61)
FTSE Developed x N America Index	-22.91 (42)	8.54 (69)	-1.16 (29)	3.23 (39)	9.69 (67)	-12.78 (58)
IM International Equity (MF) Median	-23.74	9.60	-1.90	2.58	10.54	-12.22

3 Yr Rolling Under/Over Performance - 5 Years

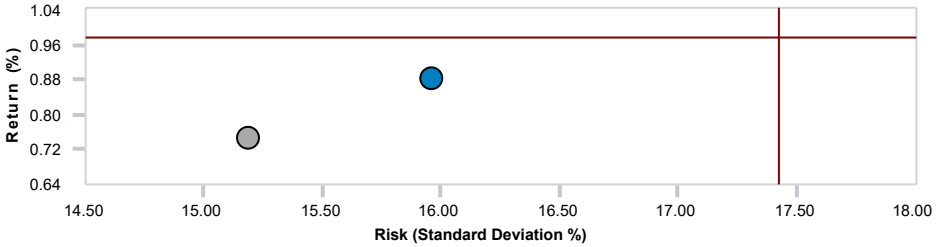


3 Yr Rolling Percentile Ranking - 5 Years



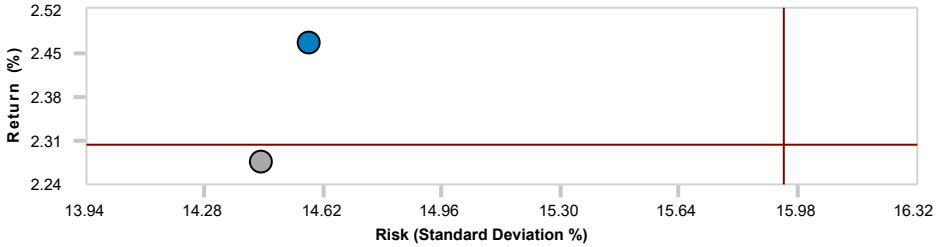
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
VG Dev Mkt Index Fund	11	0 (0%)	7 (64%)	4 (36%)	0 (0%)
FTSE Dev x NA Index	20	0 (0%)	14 (70%)	6 (30%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
VG Dev Mkt Index Fund	0.88	15.97
FTSE Dev x NA Index	0.75	15.19
Median	0.98	17.43

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
VG Dev Mkt Index Fund	2.46	14.58
FTSE Dev x NA Index	2.27	14.45
Median	2.30	15.94

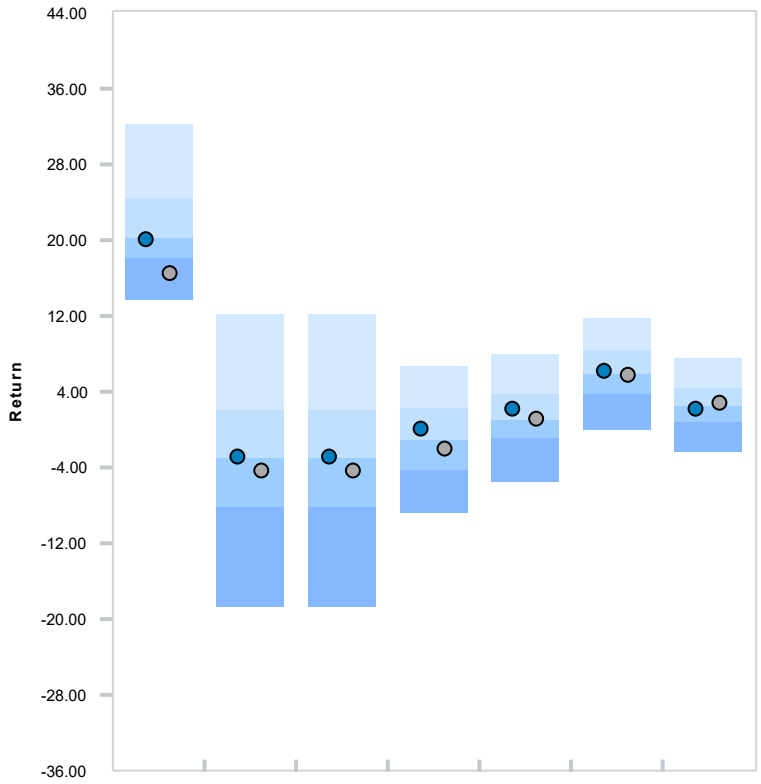
Historical Statistics - 3 Years

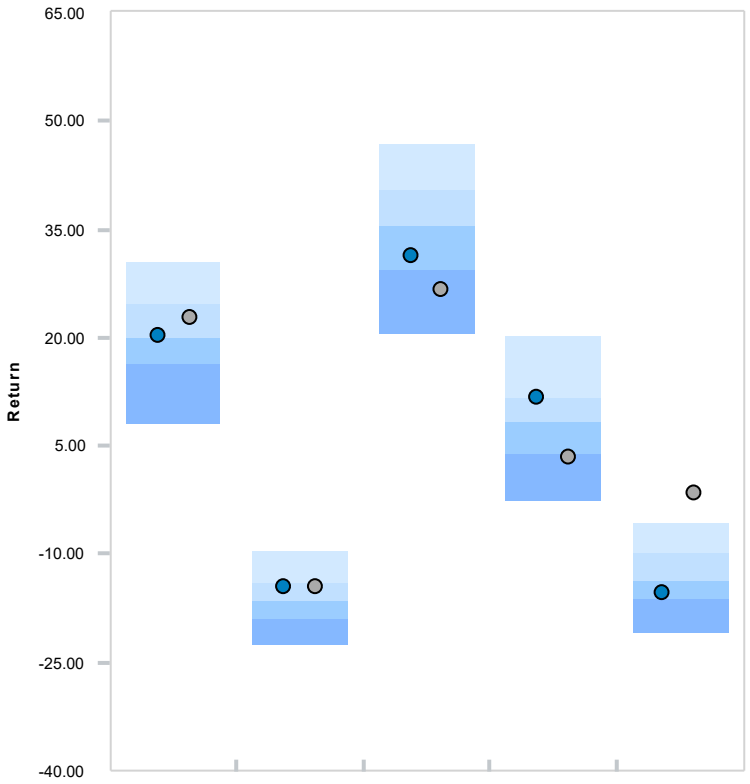
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
VG Dev Mkt Index Fund	2.17	102.14	101.00	0.19	0.12	0.03	1.04	12.60
FTSE Developed x N America Index	0.00	100.00	100.00	0.00	N/A	0.01	1.00	11.91

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
VG Dev Mkt Index Fund	2.20	98.29	96.80	0.22	0.10	0.16	1.00	11.00
FTSE Developed x N America Index	0.00	100.00	100.00	0.00	N/A	0.15	1.00	10.76

Peer Group Analysis - IM Emerging Markets Equity (MF)





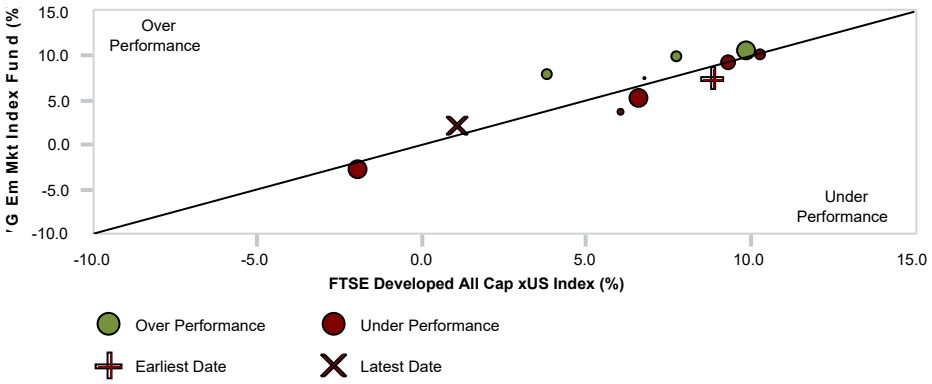
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
VG Em Mkt Index Fund	9.90 (53)	-2.92 (50)	-2.92 (50)	0.10 (42)	2.12 (42)	6.07 (48)	2.15 (58)
FTSE Dev All CapxUS Index	6.51 (88)	-4.46 (61)	-4.46 (61)	-2.18 (58)	1.11 (51)	5.71 (53)	2.68 (49)
Median	0.27	-3.04	-3.04	-1.07	1.15	5.92	2.57

	2019	2018	2017	2016	2015
VG Em Mkt Index Fund	20.31 (50)	-14.58 (30)	31.38 (71)	11.72 (26)	-15.35 (68)
FTSE Dev All CapxUS Index	22.71 (35)	-14.55 (30)	26.65 (85)	3.41 (79)	-1.52 (2)
Median	20.08	-16.40	35.37	8.35	-13.66

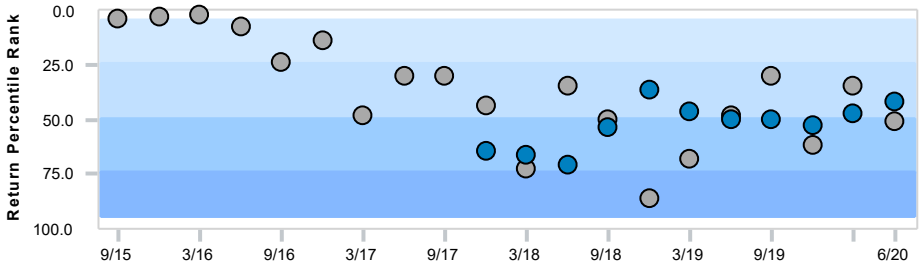
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
VG Em Mkt Index Fund	-24.55 (49)	11.32 (44)	-3.60 (54)	0.70 (73)	11.33 (35)	-6.29 (33)
FTSE Developed All Cap xUS Index	-23.76 (38)	8.66 (82)	-1.01 (9)	3.49 (16)	10.24 (54)	-13.18 (99)
IM Emerging Markets Equity (MF) Median	-24.82	11.03	-3.46	1.60	10.38	-7.62

3 Yr Rolling Under/Over Performance - 5 Years

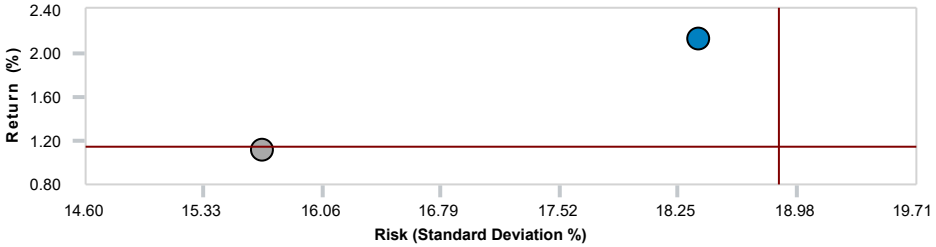


3 Yr Rolling Percentile Ranking - 5 Years



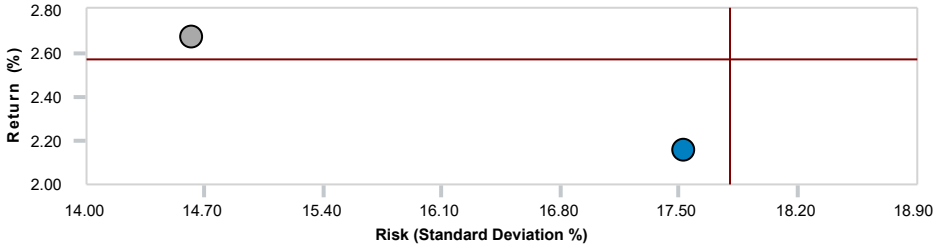
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
VG Em Mkt Index Fund	11	0 (0%)	6 (55%)	5 (45%)	0 (0%)
FTSE Dev All CapxUS Index	20	6 (30%)	9 (45%)	4 (20%)	1 (5%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
VG Em Mkt Index Fund	2.12	18.38
FTSE Dev All CapxUS Index	1.11	15.69
Median	1.15	18.87

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
VG Em Mkt Index Fund	2.15	17.53
FTSE Dev All CapxUS Index	2.68	14.63
Median	2.57	17.80

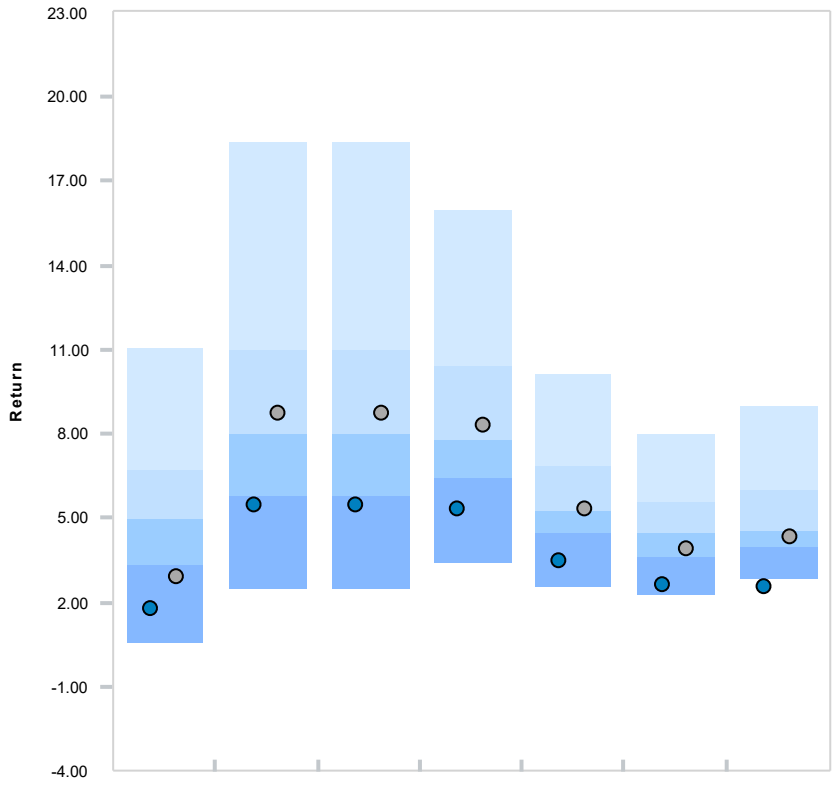
Historical Statistics - 3 Years

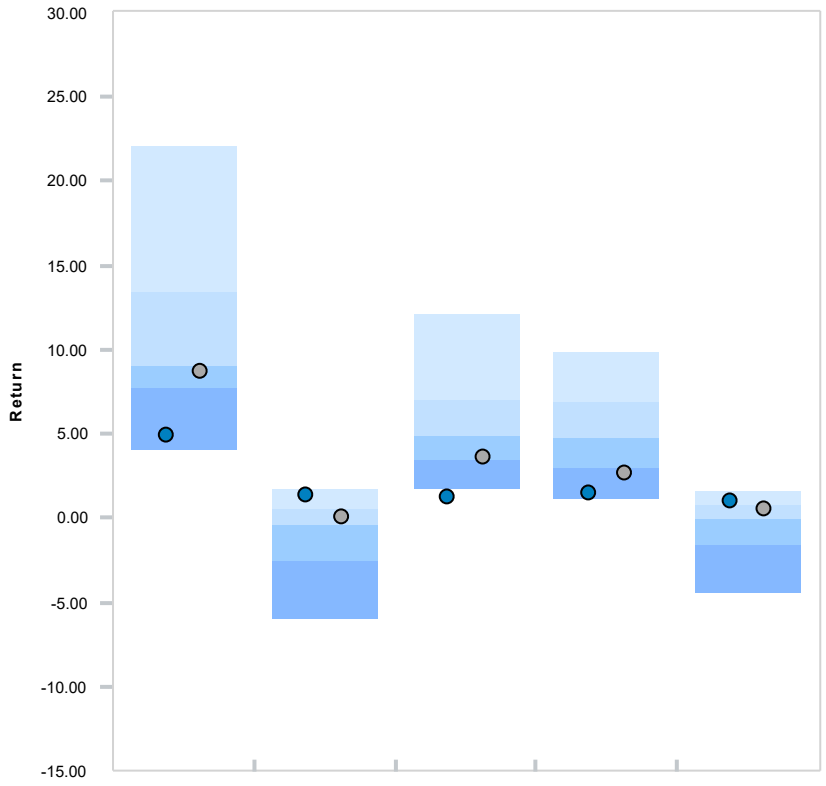
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
VG Em Mkt Index Fund	8.18	110.89	104.76	1.35	0.18	0.11	1.05	13.42
FTSE Developed All Cap xUS Index	0.00	100.00	100.00	0.00	N/A	0.04	1.00	12.29

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
VG Em Mkt Index Fund	9.25	99.21	99.29	-0.11	0.00	0.14	1.02	12.38
FTSE Developed All Cap xUS Index	0.00	100.00	100.00	0.00	N/A	0.18	1.00	10.90

Peer Group Analysis - All Master Trust-US Fixed Income Segment





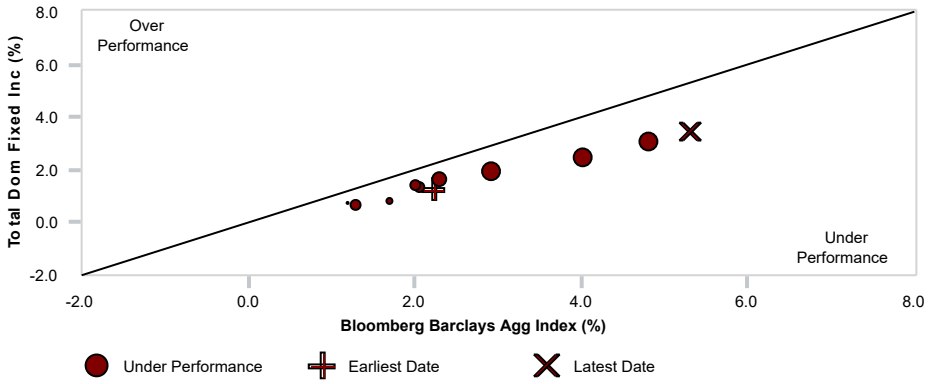
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
Total Dom Fixed Inc	1.78 (91)	5.43 (79)	5.43 (79)	5.32 (85)	3.44 (91)	2.58 (95)	2.57 (96)
BB Agg Index	2.90 (82)	8.74 (39)	8.74 (39)	8.30 (38)	5.32 (48)	3.88 (68)	4.30 (62)
Median	4.94	7.98	7.98	7.82	5.25	4.42	4.55

	2019	2018	2017	2016	2015
Total Dom Fixed Inc	4.86 (94)	1.35 (9)	1.17 (98)	1.49 (92)	0.94 (19)
BB Agg Index	8.72 (58)	0.01 (37)	3.54 (73)	2.65 (82)	0.55 (32)
Median	9.09	-0.38	4.90	4.81	-0.06

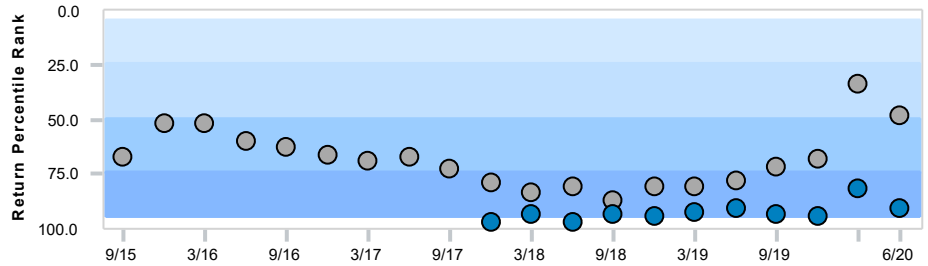
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
Total Dom Fixed Inc	2.23 (28)	0.36 (59)	0.95 (90)	1.83 (92)	1.64 (94)	1.44 (16)
Bloomberg Barclays Agg Index	3.15 (20)	0.18 (69)	2.27 (41)	3.08 (48)	2.94 (66)	1.64 (10)
All Master Trust-US Fixed Income Segment Median	0.55	0.45	2.12	3.04	3.32	0.64

3 Yr Rolling Under/Over Performance - 5 Years

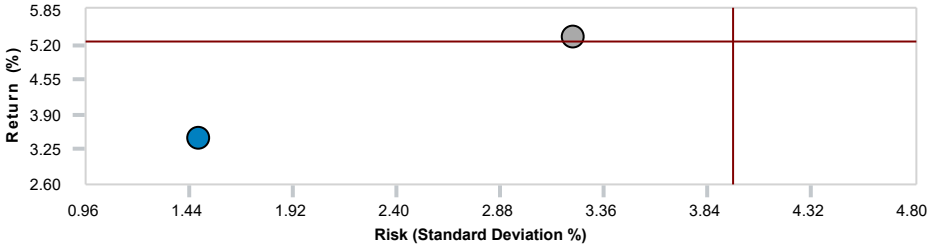


3 Yr Rolling Percentile Ranking - 5 Years



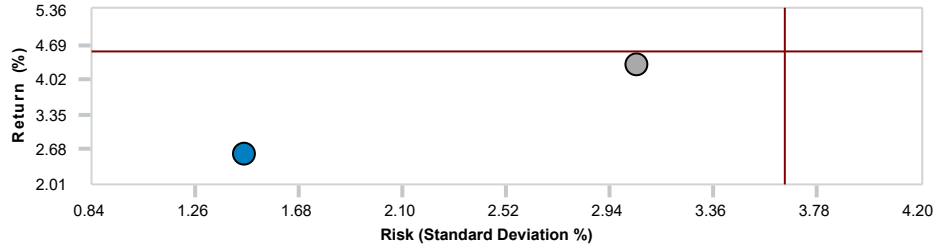
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Dom Fixed Inc	11	0 (0%)	0 (0%)	0 (0%)	11 (100%)
BB Agg Index	20	0 (0%)	2 (10%)	11 (55%)	7 (35%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
Total Dom Fixed Inc	3.44	1.49
BB Agg Index	5.32	3.23
Median	5.25	3.96

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
Total Dom Fixed Inc	2.57	1.46
BB Agg Index	4.30	3.05
Median	4.55	3.65

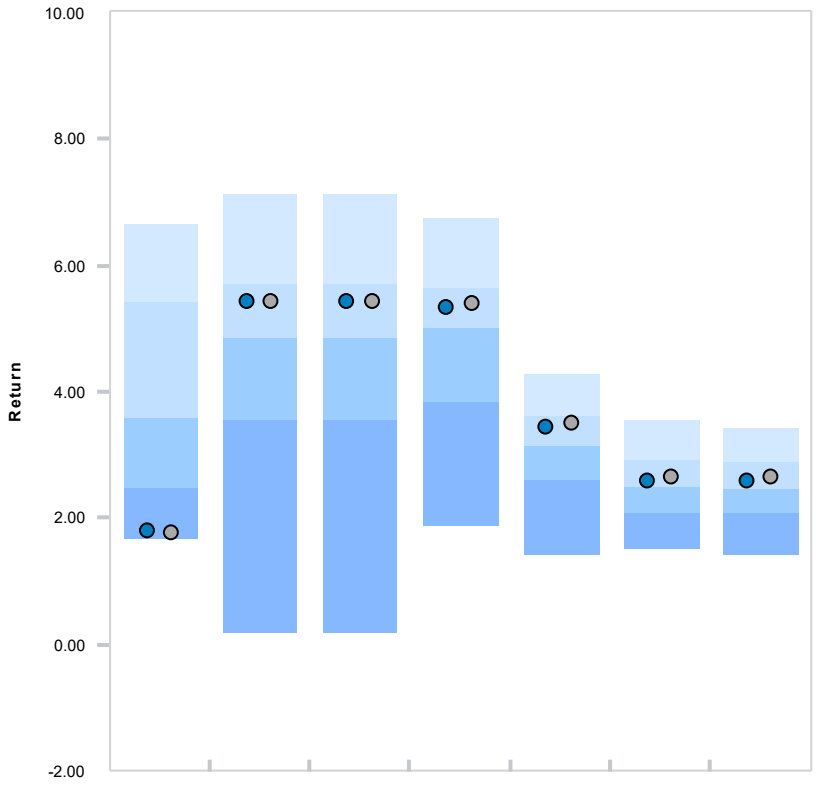
Historical Statistics - 3 Years

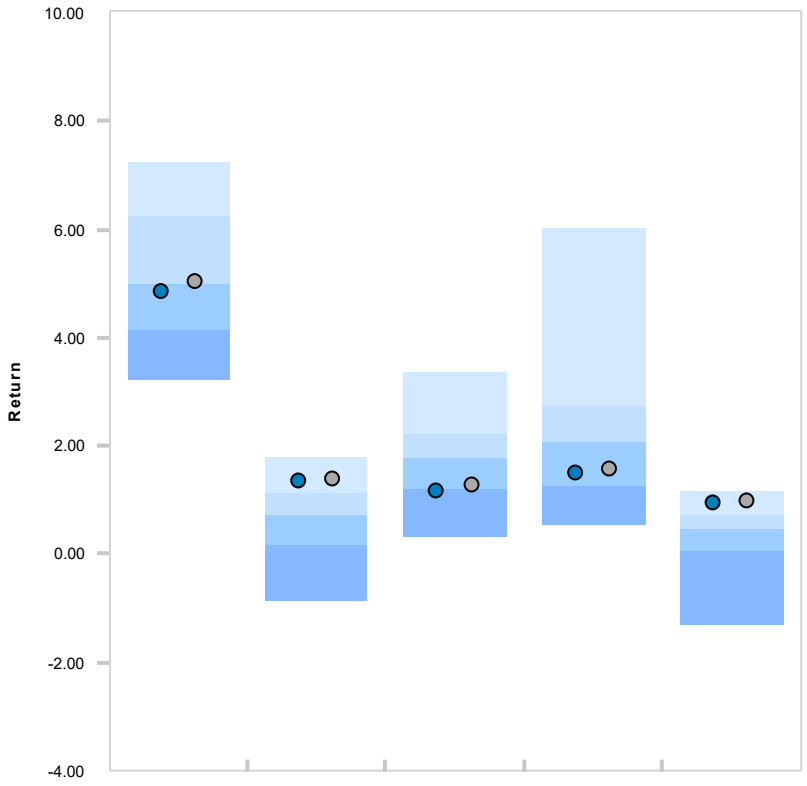
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Dom Fixed Inc	1.91	52.22	21.00	1.14	-0.97	1.13	0.43	0.47
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.09	1.00	1.25

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Dom Fixed Inc	1.77	49.76	29.58	0.64	-0.97	0.98	0.45	0.61
Bloomberg Barclays Agg Index	0.00	100.00	100.00	0.00	N/A	1.03	1.00	1.49

Peer Group Analysis - IM U.S. Intermediate Investment Grade (MF)





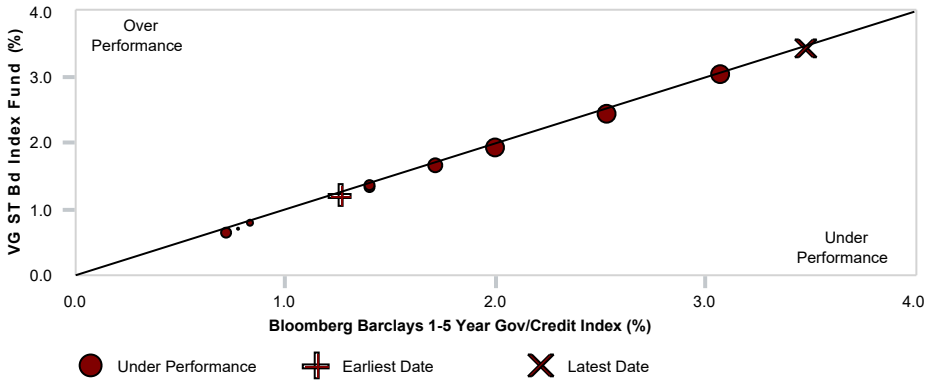
	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
VG ST Bd Index Fund	1.78 (92)	5.43 (33)	5.43 (33)	5.32 (36)	3.44 (35)	2.58 (47)	2.57 (42)
BB 1-5 Yr G/C Index	1.77 (93)	5.43 (32)	5.43 (32)	5.39 (35)	3.49 (33)	2.63 (42)	2.63 (39)
Median	3.60	4.84	4.84	5.02	3.15	2.50	2.45

	2019	2018	2017	2016	2015
VG ST Bd Index Fund	4.86 (53)	1.35 (11)	1.17 (77)	1.49 (68)	0.94 (12)
BB 1-5 Yr G/C Index	5.01 (50)	1.38 (10)	1.27 (73)	1.56 (66)	0.97 (12)
Median	5.00	0.73	1.78	2.09	0.45

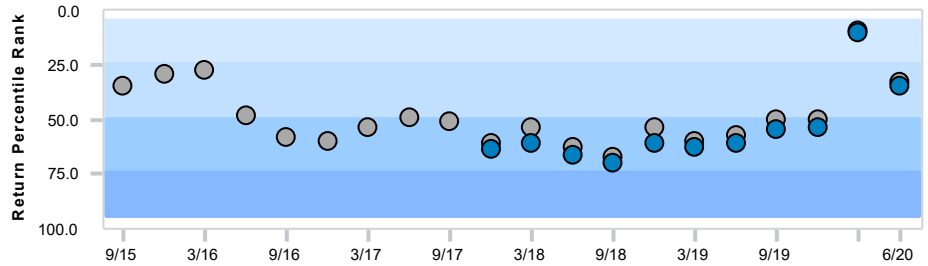
Comparative Performance

	1 Qtr Ending Mar-2020	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018
VG ST Bd Index Fund	2.23 (26)	0.36 (73)	0.95 (40)	1.83 (47)	1.64 (63)	1.44 (13)
Bloomberg Barclays 1-5 Year Gov/Credit Index	2.17 (26)	0.50 (49)	0.89 (48)	1.92 (37)	1.62 (65)	1.46 (12)
IM U.S. Intermediate Investment Grade (MF) Median	-0.68	0.49	0.87	1.79	1.88	0.80

3 Yr Rolling Under/Over Performance - 5 Years

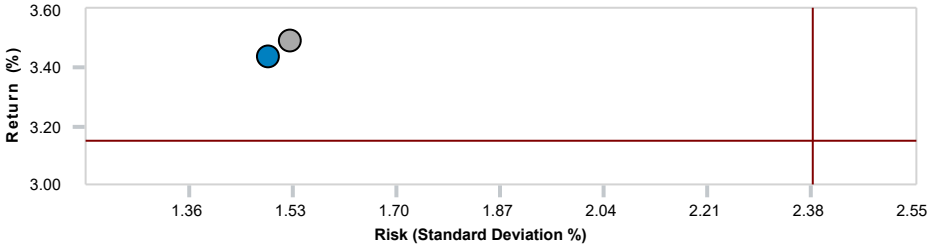


3 Yr Rolling Percentile Ranking - 5 Years



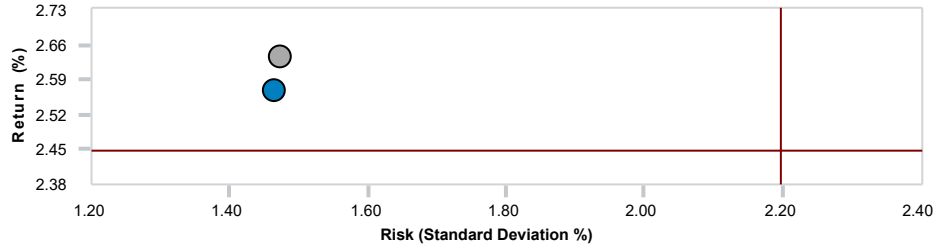
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
VG ST Bd Index Fund	11	1 (9%)	1 (9%)	9 (82%)	0 (0%)
BB 1-5 Yr G/C Index	20	1 (5%)	8 (40%)	11 (55%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
VG ST Bd Index Fund	3.44	1.49
BB 1-5 Yr G/C Index	3.49	1.53
Median	3.15	2.38

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
VG ST Bd Index Fund	2.57	1.46
BB 1-5 Yr G/C Index	2.63	1.47
Median	2.45	2.20

Historical Statistics - 3 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
VG ST Bd Index Fund	0.20	97.19	90.68	0.06	-0.25	1.13	0.97	0.47
Bloomberg Barclays 1-5 Year Gov/Credit Index	0.00	100.00	100.00	0.00	N/A	1.13	1.00	0.46

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
VG ST Bd Index Fund	0.18	98.18	100.26	-0.03	-0.36	0.98	0.99	0.61
Bloomberg Barclays 1-5 Year Gov/Credit Index	0.00	100.00	100.00	0.00	N/A	1.02	1.00	0.59

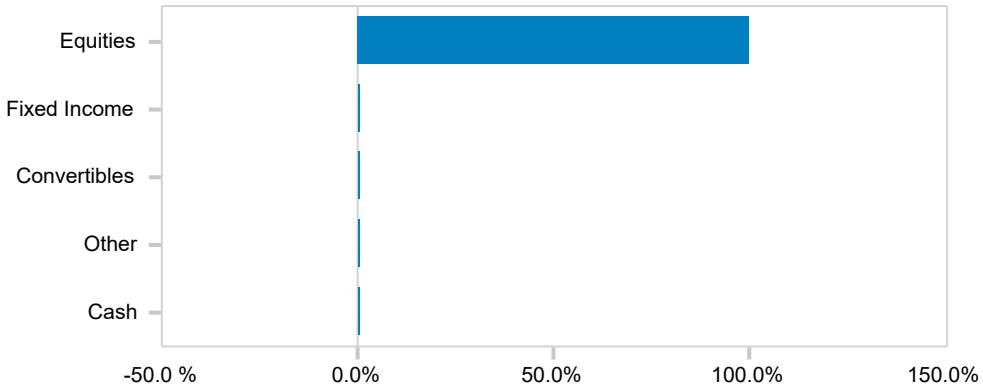
Fund Information

Fund Name :	Vanguard Index Funds: Vanguard Large-Cap Index Fund; Admiral Shares	Portfolio Assets :	$27,008 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Johnson/Nejman
Ticker :	VLCAX	PM Tenure :	2016--2016
Inception Date :	02/02/2004	Fund Style :	IM U.S. Large Cap Core Equity (MF)
Fund Assets :	$7,536 Million	Style Benchmark :	S&P 500 Index
Portfolio Turnover :	5%		

Fund Investment Policy

The Fund seeks to track the performance of a benchmark index that measures the investment return of large capitalization, U.S. stocks.

Asset Allocation As of 05/31/2020



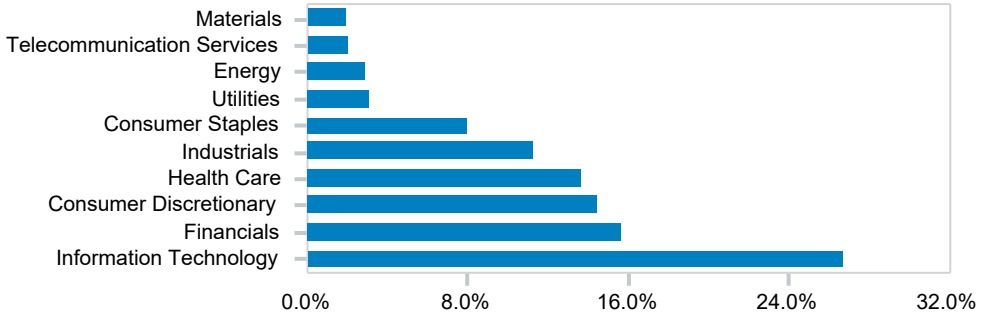
Top Ten Securities As of 05/31/2020

Microsoft Corp ORD	5.4 %
Apple Inc ORD	4.9 %
Amazon.com Inc ORD	4.0 %
Facebook Inc ORD	2.1 %
Alphabet Inc ORD 1	1.6 %
Alphabet Inc ORD 2	1.6 %
Johnson & Johnson ORD	1.5 %
Berkshire Hathaway Inc ORD	1.4 %
Visa Inc ORD	1.3 %
JPMorgan Chase & Co ORD	1.1 %

Fund Characteristics As of 05/31/2020

Total Securities	588
Avg. Market Cap	$321,184 Million
P/E	30.8
P/B	8.7
Div. Yield	2.5%
Annual EPS	11.6
5Yr EPS	13.1
3Yr EPS Growth	18.5

Sector/Quality Allocation As of 05/31/2020



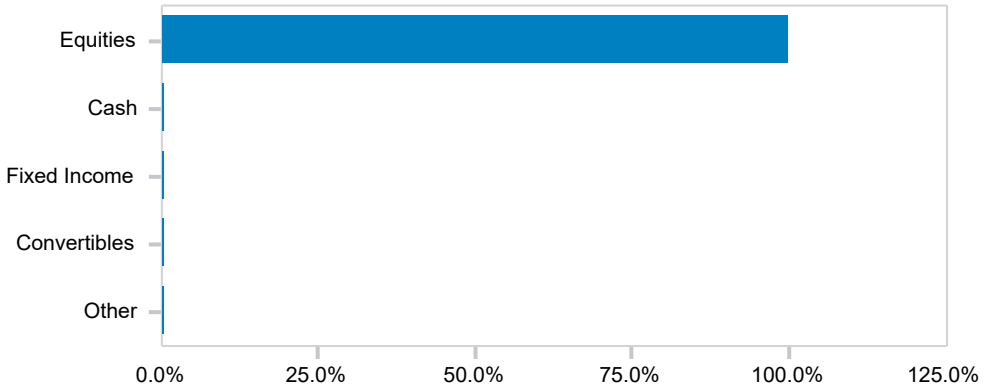
Fund Information

Fund Name :	Vanguard Index Funds: Vanguard Mid-Cap Index Fund; Admiral Shares	Portfolio Assets :	$110,409 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Butler/Johnson
Ticker :	VIMAX	PM Tenure :	2001--2016
Inception Date :	11/12/2001	Fund Style :	IM U.S. Mid Cap Core Equity (MF)
Fund Assets :	$42,844 Million	Style Benchmark :	Russell Midcap Index
Portfolio Turnover :	15%		

Fund Investment Policy

The Fund seeks to track the performance of a benchmark index that measures the investment return of mid-capitalization stocks. The Fund employs a "passive management" approach designed to track the performance of the CRSP US Mid Cap Index, a broadly diversified index of stocks of medium-size U.S. companies.

Asset Allocation As of 05/31/2020



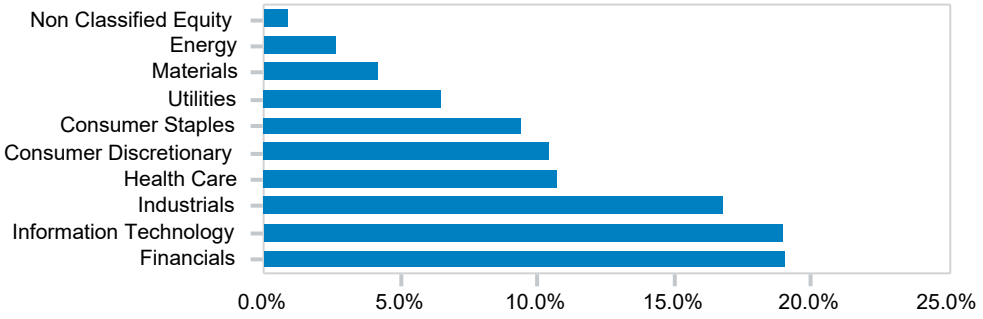
Top Ten Securities As of 05/31/2020

Newmont Corporation ORD	1.2 %
Centene Corp ORD	1.0 %
SBA Communications Corp ORD	0.9 %
Lululemon Athletica Inc ORD	0.9 %
DexCom Inc ORD	0.9 %
Digital Realty Trust Inc ORD	0.8 %
Advanced Micro Devices Inc ORD	0.8 %
WEC Energy Group Inc ORD	0.7 %
Veeva Systems Inc ORD	0.7 %
Splunk Inc ORD	0.7 %

Fund Characteristics As of 05/31/2020

Total Securities	347
Avg. Market Cap	$18,419 Million
P/E	31.5
P/B	6.9
Div. Yield	2.7%
Annual EPS	18.3
5Yr EPS	13.6
3Yr EPS Growth	20.9

Sector/Quality Allocation As of 05/31/2020



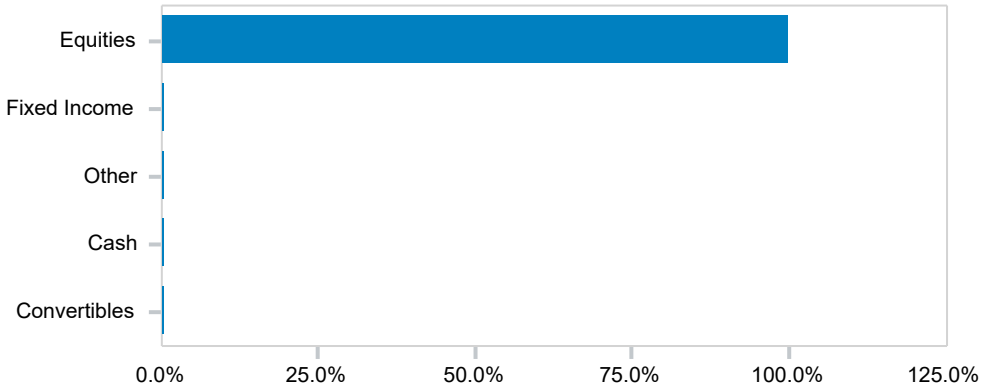
Fund Information

Fund Name :	Vanguard Index Funds: Vanguard Small-Cap Index Fund; Admiral Shares	Portfolio Assets :	$89,836 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Coleman/O'Reilly
Ticker :	VSMAX	PM Tenure :	2016--2016
Inception Date :	11/13/2000	Fund Style :	IM U.S. SMID Cap Core Equity (MF)
Fund Assets :	$35,807 Million	Style Benchmark :	Russell 2500 Index
Portfolio Turnover :	16%		

Fund Investment Policy

The Fund seeks to track the performance of a benchmark index that measures the investment return of small-capitalization stocks. The Fund employs an indexing investment approach designed to track the performance of the CRSP US Small Cap Index, a broadly diversified index of stocks of small U.S. companies.

Asset Allocation As of 05/31/2020



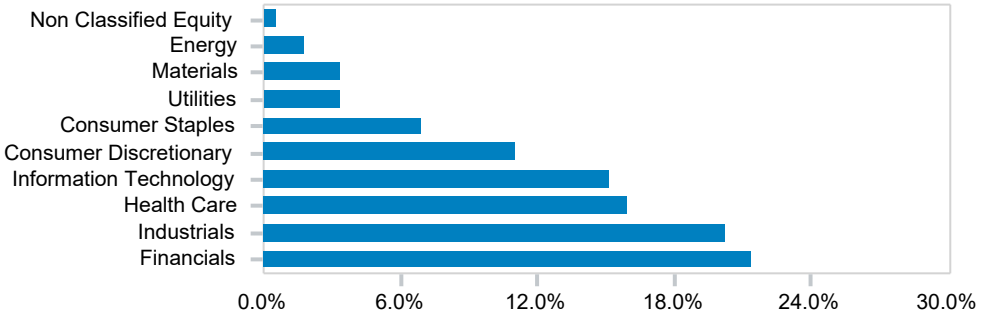
Top Ten Securities As of 05/31/2020

DocuSign Inc ORD	0.6 %
Moderna Inc ORD	0.5 %
West Pharmaceutical Services Inc	0.5 %
Leidos Holdings Inc ORD	0.5 %
Tyler Technologies Inc ORD	0.5 %
Coupa Software Inc ORD	0.4 %
Zebra Technologies Corp ORD	0.4 %
Steris plc ORD	0.4 %
Teledyne Technologies Inc ORD	0.4 %
Teladoc Health Inc ORD	0.4 %

Fund Characteristics As of 05/31/2020

Total Securities	1,347
Avg. Market Cap	$5,569 Million
P/E	29.9
P/B	6.0
Div. Yield	3.4%
Annual EPS	11.0
5Yr EPS	13.9
3Yr EPS Growth	15.6

Sector/Quality Allocation As of 05/31/2020



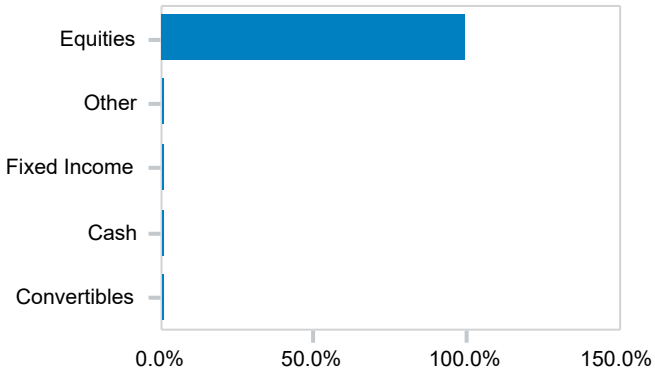
Fund Information

Fund Name :	Vanguard Tax-Managed Funds: Vanguard Developed Markets Index Fund; Admiral Class Shares	Portfolio Assets :	$110,758 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Franquin/Perre
Ticker :	VTMGX	PM Tenure :	2013--2017
Inception Date :	08/17/1999	Fund Style :	IM International Multi-Cap Core Equity (MF)
Fund Assets :	$17,138 Million	Style Benchmark :	MSCI EAFE IMI
Portfolio Turnover :	2%		

Fund Investment Policy

The Fund seeks to track the performance of a benchmark index that measures the investment return of stocks issued by companies located in the major markets of Europe and the Pacific Region. The Fund employs an indexing investment approach designed to track the performance of FTSE Developed All Cap ex US Index.

Asset Allocation As of 05/31/2020



Top Ten Securities As of 05/31/2020

Nestle SA ORD	1.9 %
Roche Holding AG Par	1.4 %
Novartis AG ORD	1.1 %
Samsung Electronics Co Ltd ORD	1.1 %
Toyota Motor Corp ORD	0.9 %
AstraZeneca PLC ORD	0.8 %
ASML Holding NV ORD	0.8 %
SAP SE ORD	0.7 %
Novo Nordisk A/S ORD	0.6 %
Sanofi SA ORD	0.6 %

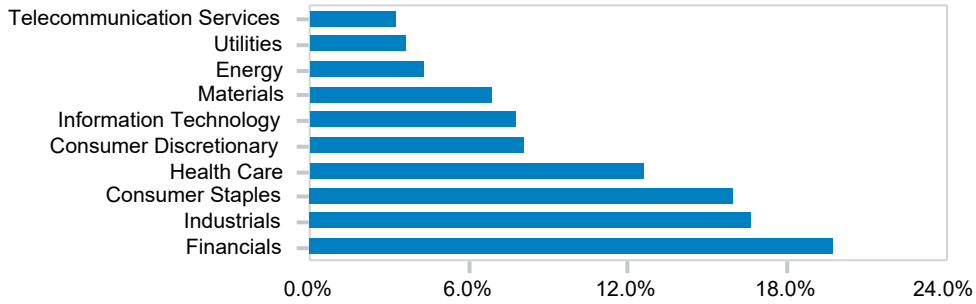
Top 5 Countries As of 05/31/2020

Japan	23.7 %
United Kingdom	11.4 %
Switzerland	8.6 %
Canada	8.5 %
France	7.6 %

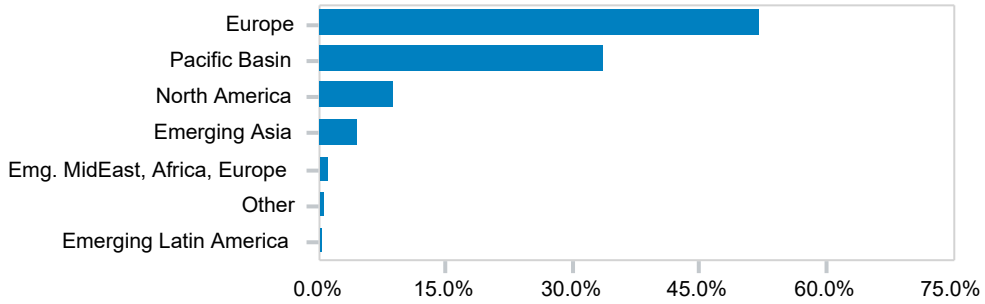
Fund Characteristics As of 05/31/2020

Total Securities	3,927
Avg. Market Cap	$52,751 Million
P/E	24.0
P/B	3.6
Div. Yield	3.4%

Sector/Quality Allocation As of 05/31/2020



Regional Allocation As of 05/31/2020



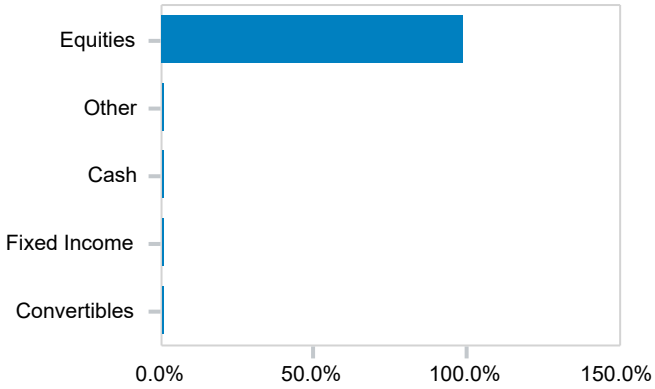
Fund Information

Fund Name :	Vanguard International Equity Index Funds: Vanguard Emerging Markets Stock Index Fund; Admiral Class Shares	Portfolio Assets :	$78,935 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Perre/Miller
Ticker :	VEMAX	PM Tenure :	2008--2016
Inception Date :	06/23/2006	Fund Style :	IM Emerging Markets Equity (MF)
Fund Assets :	$12,437 Million	Style Benchmark :	MSCI Emerging Markets Index
Portfolio Turnover :	9%		

Fund Investment Policy

The Fund seeks to track the performance of a benchmark index that measures the investment return of stocks issued by companies located in emerging market countries. The Fund employs an indexing investment approach designed to track the FTSE Emerging Markets All Cap China A Inclusion Index by sampling the Index.

Asset Allocation As of 05/31/2020



Top Ten Securities As of 05/31/2020

Alibaba Group Holding Ltd DR	6.9 %
Tencent Holdings Ltd ORD	5.8 %
Taiwan Semiconductor Manufacturing	2.9 %
Taiwan Semiconductor Manufacturing	1.6 %
China Construction Bank Corp ORD	1.4 %
Naspers Ltd ORD	1.3 %
Meituan Dianping ORD	1.2 %
Reliance Industries Ltd ORD	1.1 %
Ping An Insurance Group Co of China	1.0 %
Industrial and Commercial Bank	1.0 %

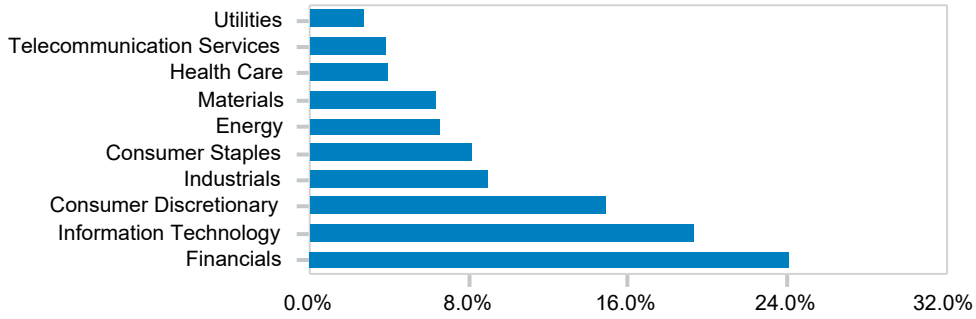
Top 5 Countries As of 05/31/2020

China	39.7 %
Taiwan	15.3 %
India	9.4 %
Brazil	5.9 %
South Africa	4.1 %

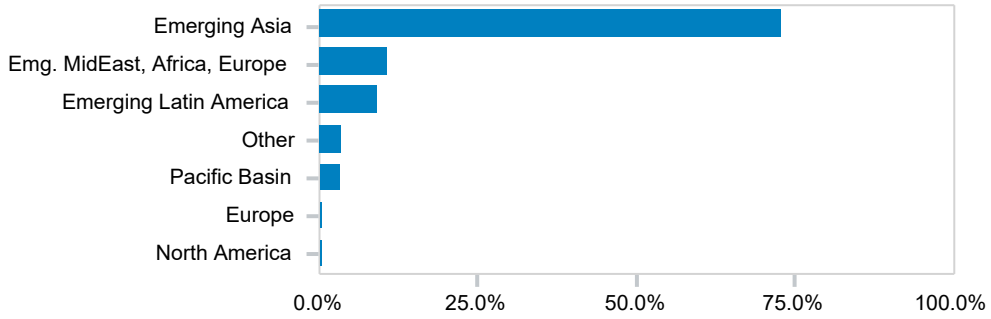
Fund Characteristics As of 05/31/2020

Total Securities	4,198
Avg. Market Cap	$114,232 Million
P/E	23.5
P/B	3.9
Div. Yield	3.7%
Annual EPS	17.4
5Yr EPS	15.2
3Yr EPS Growth	19.0

Sector/Quality Allocation As of 05/31/2020



Regional Allocation As of 05/31/2020



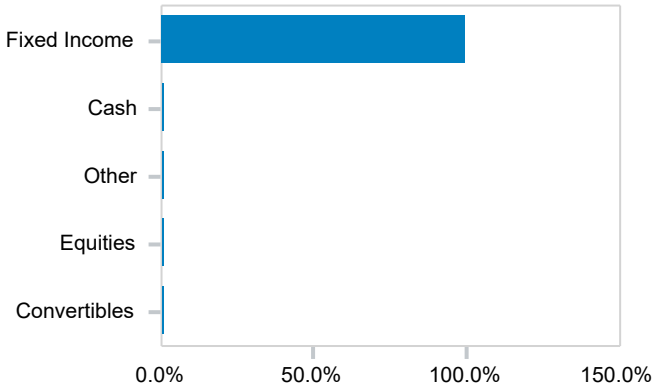
Fund Information

Fund Name :	Vanguard Bond Index Funds: Vanguard Short-Term Bond Index Fund; Admiral Shares	Portfolio Assets :	$58,597 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Joshua C. Barrickman
Ticker :	VBIRX	PM Tenure :	2013
Inception Date :	11/12/2001	Fund Style :	IM U.S. Short Term Investment Grade (MF)
Fund Assets :	$16,506 Million	Style Benchmark :	Bloomberg Barclays U.S. Aggregate 1-3 Yrs
Portfolio Turnover :	44%		

Fund Investment Policy

The Fund seeks to track the performance of a market-weighted bond index with a short-term dollar-weighted average maturity. The Fund employs an indexing investment approach designed to track the performance of the Barclays Capital U.S. 1-5 Year Government/ Credit Float Adjusted Index.

Asset Allocation As of 03/31/2020



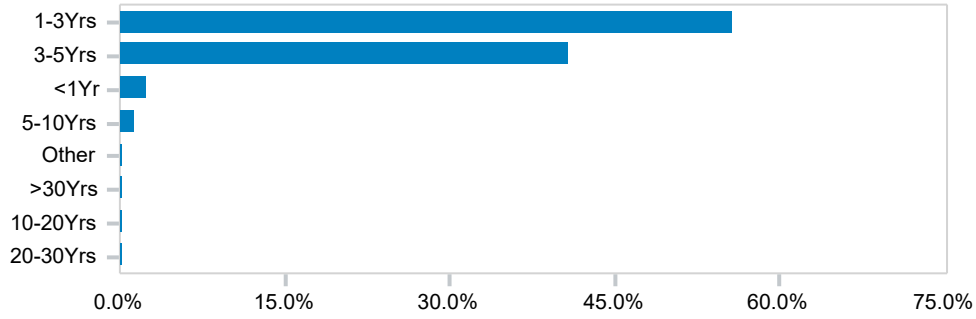
Top Ten Securities As of 03/31/2020

Treasury Notes/Bonds	64.0 %
Corporate Notes/Bonds	28.8 %
Government Agency Securities	4.5 %
US$ Denominated Fgn. Gvt.	2.1 %
Fgn. Currency Denominated Bonds	0.1 %

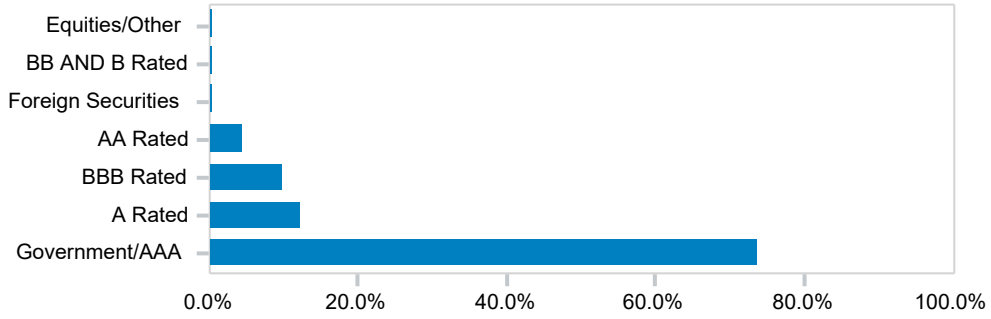
Fund Characteristics As of 03/31/2020

Avg. Coupon	2.35 %
Nominal Maturity	N/A
Effective Maturity	2.79 Years
Duration	2.67 Years
SEC 30 Day Yield	1.0
Avg. Credit Quality	AA

Maturity Distribution As of 03/31/2020



Sector/Quality Allocation As of 03/31/2020



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	Market Value ($)	Estimated Annual Fee (%)	Estimated Annual Fee ($)
Total OPEB	**16,321,121**	**0.06**	**10,009**
Domestic Equity			
Vanguard Large-Cap Index Fund (VLCAX)	7,431,125	0.05	3,716
Vanguard Mid-Cap Index Fund (VIMAX)	1,305,774	0.05	653
Vanguard Small-Cap Index Fund (VSMAX)	1,208,519	0.05	604
International & Emerging Market Equity			
Vanguard Devel Market Index Fund (VTMGX)	2,149,777	0.07	1,505
Vanguard Emerging Market Index Fund (VEMAX)	581,257	0.14	814
Domestic Fixed Income			
Vanguard Short-Term Bond Index Fund (VBIRX)	3,228,951	0.07	2,260
Cash			
Federal Money Mkt (VMFXX)	415,718	0.11	457

Active Return	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
Alpha	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
Consistency	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
Distributed to Paid In (DPI)	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
Down Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
Downside Risk	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
Excess Return	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
Excess Risk	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
Information Ratio	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
Public Market Equivalent (PME)	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
R-Squared	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
Return	- Compounded rate of return for the period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
Standard Deviation	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
Total Value to Paid In (TVPI)	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
Tracking Error	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
Treynor Ratio	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
Up Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

AndCo compiled this report for the sole use of the client for which it was prepared. AndCo is responsible for evaluating the performance results of the Total Fund along with the investment advisors by comparing their performance with indices and other related peer universe data that is deemed appropriate. AndCo uses the results from this evaluation to make observations and recommendations to the client.

AndCo uses time-weighted calculations which are founded on standards recommended by the CFA Institute. The calculations and values shown are based on information that is received from custodians. AndCo analyzes transactions as indicated on the custodian statements and reviews the custodial market values of the portfolio. As a result, this provides AndCo with a reasonable basis that the investment information presented is free from material misstatement. This methodology of evaluating and measuring performance provides AndCo with a practical foundation for our observations and recommendations. Nothing came to our attention that would cause AndCo to believe that the information presented is significantly misstated.

This performance report is based on data obtained by the client's custodian(s), investment fund administrator, or other sources believed to be reliable. While these sources are believed to be reliable, the data providers are responsible for the accuracy and completeness of their statements. Clients are encouraged to compare the records of their custodian(s) to ensure this report fairly and accurately reflects their various asset positions.

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	% of Portfolio	Market Value ($)	Estimated Annual Fee (%)	Estimated Annual Fee ($)
Basic Total Fund	100.00	111,757,823	0.60	675,197
Domestic Equity				
JPM Equity Inc (OIEJX)	8.93	9,981,931	0.49	48,911
Vanguard Equity Inc (VEIRX)	9.00	10,053,978	0.18	18,097
MFS Growth	21.86	24,428,135	0.60	146,569
Principal Mid Cap	3.58	3,996,246	0.68	27,174
Summit Creek	7.85	8,774,830	1.00	87,748
International Equity				
Templeton	6.42	7,169,506	0.79	56,639
MFS Int'l	7.83	8,747,841	0.75	65,609
Schroder	4.10	4,580,855	1.23	56,345
Domestic Fixed Income				
Northern Interm Fixed	6.93	7,749,810	0.06	4,650
Northern Core Fixed	7.09	7,924,928	0.06	4,755
Real Estate				
Clarion Lion Properties	4.68	5,227,232	1.10	57,500
Principal Enhanced Property Fund, LP	1.02	1,134,707	1.20	13,616
Infrastructure				
Lazard	5.88	6,568,025	0.90	59,112
Cash				
Securian (Cash)	1.40	1,564,795		-
City Reserve - Basic account	1.05	1,178,239		-
Cash	0.27	304,196		-

	% of Portfolio	Market Value ($)	Estimated Annual Fee (%)	Estimated Annual Fee ($)
Police Total Fund	**100.00**	**36,358,657**	**0.59**	**214,879**
Domestic Equity				
JPM Equity Inc (OIEJX)	8.63	3,139,037	0.49	15,381
Vanguard Equity Inc (VEIRX)	8.70	3,161,694	0.18	5,691
MFS Growth	21.35	7,764,151	0.60	46,585
Principal Mid Cap	4.36	1,586,511	0.68	10,788
Summit Creek	8.18	2,972,376	1.00	29,724
International Equity				
Templeton	6.37	2,315,498	0.79	18,292
MFS Int'l	7.62	2,768,732	0.75	20,765
Schroder	3.92	1,425,317	1.23	17,531
Domestic Fixed Income				
Northern Interm Fixed	6.39	2,322,507	0.06	1,394
Northern Core Fixed	6.52	2,371,473	0.06	1,423
Real Estate				
Clarion Lion Properties	4.49	1,633,510	1.10	17,969
Principal Enhanced Property Fund, LP	3.12	1,134,707	1.20	13,616
Infrastructure				
Lazard	4.80	1,746,571	0.90	15,719
Cash				
Securian (Cash)	3.81	1,386,360		-
City Reserve - Police account	1.49	540,629		-
Cash	0.25	89,587		-

	Market Value ($)	Estimated Annual Fee (%)	Estimated Annual Fee ($)
Total OPEB	**16,321,121**	**0.06**	**10,009**
Domestic Equity			
Vanguard Large-Cap Index Fund (VLCAX)	7,431,125	0.05	3,716
Vanguard Mid-Cap Index Fund (VIMAX)	1,305,774	0.05	653
Vanguard Small-Cap Index Fund (VSMAX)	1,208,519	0.05	604
International & Emerging Market Equity			
Vanguard Devel Market Index Fund (VTMGX)	2,149,777	0.07	1,505
Vanguard Emerging Market Index Fund (VEMAX)	581,257	0.14	814
Domestic Fixed Income			
Vanguard Short-Term Bond Index Fund (VBIRX)	3,228,951	0.07	2,260
Cash			
Federal Money Mkt (VMFXX)	415,718	0.11	457

Asset Allocation & Performance

	Allocation		Performance(%)					
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR
Total OPEB	**17,830,694**	**100.0**	**4.81**	**11.56**	**5.28**	**14.22**	**8.87**	**9.26**
Vanguard Large-Cap Index (VLCAX)	8,465,709	47.5	7.61	16.42	11.43	23.68	15.03	14.64
Dow Jones U.S. Total Stock Market Index			7.19	15.85	9.28	21.20	13.85	13.77
Vanguard Mid-Cap Index (VIMAX)	1,434,061	8.0	3.15	11.97	1.93	11.19	9.41	9.89
CRSP U.S. Mid Cap TR Index			3.15	11.98	1.91	11.17	9.42	9.91
Vanguard Small-Cap Index (VSMAX)	1,314,329	7.4	4.07	11.52	-3.66	5.62	6.88	8.54
CRSP U.S. Small Cap TR Index			4.05	11.49	-3.70	5.55	6.86	8.52
Vanguard Devel Market Index (VTMGX)	2,318,320	13.0	5.07	11.51	-3.76	7.50	2.43	5.34
FTSE Developed x North America Index (LC)			4.18	5.50	-7.28	1.54	2.40	4.86
Vanguard Emerging Market Index (VEMAX)	644,228	3.6	2.28	18.80	0.26	13.10	2.80	7.84
FTSE Emerging Index			2.22	19.68	0.12	13.35	3.59	8.81
Vanguard Short-Term Bond Index (VBIRX)	3,238,260	18.2	-0.04	0.71	4.36	4.63	3.31	2.60
Bloomberg Barclays 1-5 Year Gov/Credit Idx			0.03	0.74	4.38	4.72	3.38	2.69

This report is for the sole use of the named client. Information is based on sources and data believed to be reliable, but AndCo is not responsible for third party data and cannot guarantee the accuracy of the information. This report is presented as a supplement to the client's quarterly Investment Performance Review which contains additional important disclosure information.

Asset Allocation & Performance

	Allocation		Performance(%)					
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR
Police Total Fund	**39,084,254**	**100.0**	**3.48**	**9.41**	**5.34**	**12.38**	**10.05**	**10.47**
Policy			4.46	10.91	4.88	13.62	9.18	9.97
Total Domestic Equity	**20,759,464**	**53.1**	**5.51**	**13.72**	**10.32**	**18.58**	**15.29**	**14.29**
Russell 3000 Index			7.24	15.93	9.39	21.44	13.95	13.86
JPM Equity Inc (OIEJX)	3,427,252	8.8	4.80	9.08	-6.04	N/A	N/A	N/A
Russell 1000 Value Index			4.14	7.53	-9.35	0.84	4.50	7.53
Vanguard Equity Inc (VEIRX)	3,389,362	8.7	3.53	6.09	-7.07	N/A	N/A	N/A
Russell 1000 Value Index			4.14	7.53	-9.35	0.84	4.50	7.53
MFS Growth	8,965,739	22.9	7.91	19.67	27.05	36.46	24.36	20.52
Russell 1000 Growth Index			10.32	23.98	30.47	44.34	24.18	20.66
Principal Mid Cap	1,757,150	4.5	4.36	12.05	5.27	12.63	16.02	14.16
Russell Midcap Index			3.52	11.57	-0.41	8.73	8.83	9.76
Summit Creek	3,219,962	8.2	2.59	12.52	15.86	26.42	18.27	14.87
Russell 2000 Growth Index			5.87	13.71	6.15	17.28	10.90	10.45
Total International Equity	**7,080,160**	**18.1**	**3.58**	**13.75**	**-1.43**	**10.22**	**3.63**	**7.07**
MSCI AC World ex USA Index (Net)			4.28	13.85	-3.05	8.31	2.63	5.75
Templeton	2,422,502	6.2	3.29	8.06	-11.13	0.09	-3.52	0.56
MSCI EAFE Value Index (Net)			5.85	9.84	-14.38	-3.24	-3.40	0.79
MFS Int'l	3,061,679	7.8	4.48	15.67	5.54	16.40	10.53	11.95
MSCI AC World ex USA Growth Index (Net)			4.08	16.78	8.22	20.00	8.27	9.51
Schroder	1,595,979	4.1	2.35	19.52	2.59	16.23	4.34	10.22
MSCI Emerging Markets Index (Net)			2.21	19.53	0.45	14.49	2.83	8.66

* Market values carried at previous quarter's ending value.

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Asset Allocation & Performance
City of Falls Church Police Total Fund
As of August 31, 2020

	Allocation		Performance(%)					
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR
Total Domestic Fixed Income	**4,723,402**	**12.1**	**-0.49**	**1.24**	**6.45**	**6.73**	**5.02**	**4.16**
Blmbg. Barc. U.S. Aggregate Index			-0.81	1.31	6.85	6.47	5.09	4.33
Northern Interm Fixed	2,336,568	6.0	-0.13	1.23	6.02	6.04	4.34	3.59
Bloomberg Barclays Intermed Aggregate Index			-0.06	0.92	5.20	5.45	4.08	3.41
Northern Core Fixed	2,386,835	6.1	-0.83	1.25	6.88	6.47	5.12	4.34
Blmbg. Barc. U.S. Aggregate Index			-0.81	1.31	6.85	6.47	5.09	4.33
Total Real Estate	**2,768,217**	**7.1**	**0.00**	**-1.69**	**-0.46**	**3.76**	**N/A**	**N/A**
Clarion Lion Properties*	1,633,510	4.2	0.00	-1.82	-0.46	3.21	N/A	N/A
Principal Enhanced Property Fund, LP*	1,134,707	2.9	0.00	-1.49	-0.47	4.58	N/A	N/A
Total Infrastructure	**1,737,843**	**4.4**	**0.58**	**-0.51**	**-8.53**	**-2.65**	**3.74**	**9.92**
S&P Global Infrastructure			1.66	3.42	-15.55	-9.30	-0.98	4.52
Lazard	1,737,843	4.4	0.58	-0.51	-8.53	-2.65	3.74	9.92
S&P Global Infrastructure Index			1.66	3.42	-15.55	-9.30	-0.98	4.52
Total Cash	**2,015,168**	**5.2**						
Securian (Cash)*	1,386,360	3.5	0.00	-0.05	3.14	4.85	4.86	4.07
90 Day U.S. Treasury Bill			0.01	0.04	0.63	1.27	1.72	1.18
City Reserve - Police account	540,634	1.4	0.00	0.00	0.25	N/A	N/A	N/A
90 Day U.S. Treasury Bill			0.01	0.04	0.63	1.27	1.72	1.18
Cash	88,174	0.2	0.00	0.00	0.24	0.63	1.40	N/A
90 Day U.S. Treasury Bill			0.01	0.04	0.63	1.27	1.72	1.18

* Market values carried at previous quarter's ending value.

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Asset Allocation & Performance

	Allocation		Performance(%)					
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR
Basic Total Fund	**120,205,350**	**100.0**	**3.52**	**9.50**	**5.23**	**12.33**	**10.00**	**10.50**
Policy			4.46	10.91	4.88	13.62	9.18	9.97
Total Domestic Equity	**63,816,435**	**53.1**	**5.55**	**13.75**	**10.35**	**18.63**	**15.25**	**14.30**
Russell 3000 Index			7.24	15.93	9.39	21.44	13.95	13.86
JPM Equity Inc (OIEJX)	10,898,437	9.1	4.80	9.08	-6.04	N/A	N/A	N/A
Russell 1000 Value Index			4.14	7.53	-9.35	0.84	4.50	7.53
Vanguard Equity Inc (VEIRX)	10,777,947	9.0	3.53	6.09	-7.07	N/A	N/A	N/A
Russell 1000 Value Index			4.14	7.53	-9.35	0.84	4.50	7.53
MFS Growth	28,208,736	23.5	7.91	19.67	27.05	36.38	24.34	20.53
Russell 1000 Growth Index			10.32	23.98	30.47	44.34	24.18	20.66
Principal Mid Cap	4,426,068	3.7	4.36	12.05	5.27	12.63	16.08	14.21
Russell Midcap Index			3.52	11.57	-0.41	8.73	8.83	9.76
Summit Creek	9,505,247	7.9	2.57	12.51	15.84	26.41	18.28	14.91
Russell 2000 Growth Index			5.87	13.71	6.15	17.28	10.90	10.45
Total International Equity	**22,303,588**	**18.6**	**3.58**	**13.82**	**-1.34**	**10.32**	**3.80**	**7.17**
MSCI AC World ex USA Index (Net)			4.28	13.85	-3.05	8.31	2.63	5.75
Templeton	7,500,824	6.2	3.29	8.06	-11.13	0.09	-3.46	0.60
MSCI EAFE Value Index (Net)			5.85	9.84	-14.38	-3.24	-3.40	0.79
MFS Int'l	9,673,412	8.0	4.48	15.67	5.54	16.40	10.37	11.85
MSCI AC World ex USA Growth Index (Net)			4.08	16.78	8.22	20.00	8.27	9.51
Schroder	5,129,353	4.3	2.35	19.52	2.59	16.23	4.36	10.23
MSCI Emerging Markets Index (Net)			2.21	19.53	0.45	14.49	2.83	8.66

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	Allocation		Performance(%)					
	Market Value $	%	MTH	QTR	YTD	1 YR	3 YR	5 YR
Total Domestic Fixed Income	**15,772,991**	**13.1**	**-0.49**	**1.24**	**6.45**	**6.35**	**4.52**	**3.78**
Bloomberg Barclays US Aggregate Index			-0.81	1.31	6.85	6.47	5.09	4.33
Northern Interm Fixed	7,796,728	6.5	-0.13	1.23	6.02	6.04	4.34	3.58
Bloomberg Barclays US Interm Agg Index			-0.06	0.92	5.20	5.45	4.08	3.41
Northern Core Fixed	7,976,263	6.6	-0.83	1.25	6.88	6.47	5.12	4.35
Bloomberg Barclays US Aggregate Index			-0.81	1.31	6.85	6.47	5.09	4.33
Total Real Estate	**8,734,507**	**7.3**	**0.00**	**-1.69**	**-0.46**	**3.75**	**N/A**	**N/A**
Clarion Lion Properties	5,227,232	4.3	0.00	-1.82	-0.46	3.21	N/A	N/A
Principal Enhanced Property Fd	3,507,275	2.9	0.00	-1.49	-0.47	4.58	N/A	N/A
Total Infrastructure	**6,535,202**	**5.4**	**0.58**	**-0.51**	**-8.53**	**-2.89**	**3.74**	**9.93**
S&P Global Infrastructure Index			1.66	3.42	-15.55	-9.30	-0.98	4.52
Lazard	6,535,202	5.4	0.58	-0.51	-8.53	-2.89	3.74	9.93
S&P Global Infrastructure Index			1.66	3.42	-15.55	-9.30	-0.98	4.52
Total Cash	**3,042,627**	**2.5**						
Securian (Cash)	1,564,795	1.3	0.00	0.07	0.83	1.53	0.49	0.61
90 Day U.S. Treasury Bill			0.01	0.04	0.63	1.27	1.72	1.18
City Reserve - Basic account	1,178,251	1.0	0.00	0.00	0.25	N/A	N/A	N/A
90 Day U.S. Treasury Bill			0.01	0.04	0.63	1.27	1.72	1.18
Cash	299,580	0.2	0.00	0.00	0.24	0.68	1.24	0.79
90 Day U.S. Treasury Bill			0.01	0.04	0.63	1.27	1.72	1.18

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CITY OF FALLS CHURCH

INTEROFFICE MEMORANDUM

DATE: September 4, 2020

TO: Basic and Police Pension Plan Participants

FROM: Cindy L. Mester, Deputy City Manager/ Pension Plan Administrator

SUBJECT: **Post-retirement Employment/ Pension Plans Code Compliance**

Purpose: To establish parameters that permit the City to rehire retirees (i,e. post-retirement employment) to meet limited organizational service needs, ensure the long term financial sustainability of the Basic and Police Pension Plans (Plans) and retain federal and state code qualifying tax compliance.

Administrative Policy:

1) Effective July 15, 2020 to June 30, 2021 for future post-retirement employment. Current retirees that have been rehired and are receiving annuities are grandfathered as long as current rehire terms are maintained but term changes or break in service will terminate grandfathered status.
2) Permitted parameters:
    a. No in-service distributions, i.e. commencement of annuity payments prior to retirement with a bona fide termination of employment;
    b. No rehiring pre- arrangements made before an employee retirement;
    c. Employee must be separated/terminated from employment and qualified as a retiree;
    d. Required minimum of 30-day break in service prior to consideration of rehire in service.
    e. Retirees shall be rehired only with a substantial change in position, including the following types of positions.
    Under employee status, as approved by the Pension Plan Administrator and Human Resources Director, if they are:
        i. Rehired into a non-benefit accrual position (less than 19 average hours per week) assuming this is different from prior position OR
        ii. Rehired into a different position and job duties regardless of department; OR
        iii. Re-hired for a short duration not to exceed 90 days; a one-time extension could be considered for extenuating circumstances (i.e. vacancy recruitment process is pending): OR
        iv. Re-hired because there are unexpected, unplanned, compelling facts and extenuating circumstance that justify the rehire, OR
        v. The occurrence of a natural/man-made crisis, or economic revenue crisis, but this exception is: (a) rare, not the general rule; and (b) for a duration not to exceed 12 months.

Under a consultant status, as approved by the Pension Plan Administrator and Human Resources Director, for a period not to exceed 90 days for one of the following needs:

i. Advisory role to position replacement;
ii. Serves as a trainer/transfer expert with specific CFC knowledge; or
iii. Available for as needed/ ad hoc consulting on pre-defined issues/questions.

f. Additional service in a position will not accrue as Credited Service for purposes of future benefit payments and compensation paid during such service will be not taken into account for purposes of determining the retired employee's Final Average Pay.

Pension Plan Amendment: In order for this Administrative Policy to become a permanent and permissive policy the Plans must be amended to permit post-retirement employment. Plan Amendments must be considered and recommended by the City of Falls Church Retirement Board (City Code Chapter 30) and adopted by the City Council by Ordinance.

Next Steps: Retirement Board will be briefed on this Administrative Policy at the September 10, 2020 meeting with request to approve or deny at their next quarterly meeting in November. If approved the amendment to the Plans would be presented to City Council in December.

Cc: City of Falls Church Retirement Board Trustees
Steve Mason, Human Resources Director
Meaghan DeCelle, Human Resources Generalist

Investment Policy of the
City of Falls Church Basic and Police Pension Plans
Res. 2020-22 (TR20-25) Retirement Board May 2020; Council June 2020
Proposed revisions to Retirment Board September 2020

Commented [CM1]: Proposed revisions to IPS with corresponding Basic and Police Pension Plan amendment to remove Exhibit V. Exhibit V included at the end of this draft document for ease of reference.

1.0 Policy

It is the policy of the City of Falls Church Basic and Police Pension Plans' Retirement Board to invest the assets of the fund in a manner which will meet the Plans' objectives and conform to all applicable federal, state and local laws.

2.0 Scope

This investment policy applies to all the financial assets of the Plans.

3.0 Objectives

3.1 Funding

The primary objective of the City of Falls Church Basic and Police Pension Plans' Retirement Board is to maintain the assets of the Plans at a funding level equal to at least 100% of the pension benefit obligation throughout the City's budgetary and economic cycles, while minimizing the City's required contribution rate. To obtain this objective the Board will diversify Plan assets and adopt a moderately aggressive investment posture relative to other retirement systems.

The City and employee contributions in each fiscal year will be no less than 100% of the annual Final Actuarially Determined Contribution (Final ADC) for that fiscal year as determined by the plan's actuary, based upon actuarially sound methods and assumptions. In addition, except as noted below, the Preliminary Actuarially Determined Contribution (the contribution amount determined before any reduction due to the City's Election) in each fiscal year will be no less than 75% of the plans' actuarially determined normal cost (Minimum Contribution Override), determined based upon actuarially sound methods and assumptions. The City may disregard the Minimum Contribution Override (but not the Final ADC requirements) only if the Plan's actuary certifies that the plan is more than 150% funded at the beginning of the fiscal year, based upon the Regular Plan Assets (actual market value of assets in the plan minus the Water Sale Money) on the first day of the fiscal year.

The actuarial assumptions and methods will be established in consultation with relevant experts to include, but not intended to be an exclusive list:~~,~~ actuary, investment/ financial consultant and legal counsel.

Commented [CN2]: I assume legal counsel is the right term? Or lawyers?

The capitalized terms in the preceding paragraph are defined in the Water Sale Administrative Manual adopted by the Retirement Board May 14, 2020. That manual, in current and adopted form, is incorporated into this policy by reference.

3.2 Return

The Plans' asset allocation shall be designed with the objective of generating a return that exceeds the annual rate of inflation by at least 4.5% through economic cycles, commensurate with legal constraints, investment risk constraints and cash flow characteristics of the portfolio.

3.3 Safety

The board's goal is to diversify assets among asset classes as well as select investment managers with differing styles of management to provide for the opportunity to optimize the risk/reward characteristics and to have above average returns for the risks that are taken.

3.4 Liquidity

The City of Falls Church Basic and Police Pension Plans' investment portfolio in combination with the projected net cash flows of the Plans will provide sufficient liquidity to enable the Plans to meet all operating requirements which may be reasonably anticipated.

4.0 Authority and Fiduciary Responsibility of the Board

4.1 Legal Authority

The authority and responsibility for the administration, management and operation of the Plans are vested in the Board as described in the City Ordinance # 1802 and City Code, Sections 30-115 and 30-116.

4.2 Prudence

Board members have a fiduciary duty to the Plans and the participants and beneficiaries, which requires integrity and competence. Integrity requires management of the Plans and the assets for the exclusive benefit of the Plans' participants and beneficiaries, and disclosure as outlined in Section 4.3 (below). The required level of competence is that of a prudent person. This standard of competence extends to the retention and supervision of expert investment advice and all other areas of Plans' management. If Board members have special skills or expertise, they are under a duty to use them.

4.3 Ethics and Conflicts of Interest

Board members, staff, investment managers, and consultants shall refrain from engaging in any activity that impairs (or has the potential to impair) their ability to make impartial investment decisions for the Plan. Persons who nevertheless engage in such conduct immediately shall disclose the conduct to the Board. Board members, staff, investment managers, and advisers shall also immediately disclose to the Board any activity engaged in by their respective firms, employers, employees, and agents which conflicts (or has the potential to conflict) with the execution of the Board's investment program for the Plan.

Board members shall be in compliance with the City of Falls Church Retirement Board Ethics Policy that was adopted on August 19, 2010, modified on February 12, 2015 and affirmed on August 17, 2017, February 21, 2019 and February 20, 2020.

5.0 Investment Structure, Responsibilities, and Administration

5.1 Investment Responsibilities

The Board shall review the purchase and sale of the Plans' investments, the hiring and firing of outside professionals to assist the board in fulfilling its obligations to the Plans, the development of investment strategies~~,~~ and the development of investment policies, guidelines, and procedures for all aspects of the Plans, including the external investment managers. Only the Board shall have the authority to make decisions regarding those issues and to oversee the investment program for the Plans.

In the event there are monies of the Plans that have not been allocated to professional investment managers, then the Board will be responsible for reviewing and making allocation regarding such monies.

5.2 Investment Consultant

The Board will engage the services of a professional Investment Consultant to assist the Board in investment related matters, including evaluating and retaining a master custodian, investment managers and other professionals.

5.3 Custodian

The Board shall retain a Custodian to hold the Plans' securities, settle transactions and be the official record keeper for all practical investments and transactions of the Plans. The Custodian shall register all securities in its nominee name and provide the Board with satisfactory evidence that the securities are owned by the Plans.

5.4 Investment Managers

The Board will retain experience professional investment managers to directly manage monies of the Plans and carry out the asset allocation decisions of the Board.

5.5 Investment Transaction Monitoring

The Administrator will monitor monthly all transactions reported by the Custodian and those reported by the Investment Managers.

5.6 Administration

All agreements for services provided to the Plans by the Investment Consultant, the Custodian, the Investment Managers and any other professionals shall be evidenced by a written contract between such professional and the Board. Such contracts shall be approved as to form by the City Attorney or outside Legal Counsel and include all significant operational and performance requirements related to the services that are to be provided.

5.7 Plan Administration Expenses

Any expenses paid from the Trust to reimburse the City for plan administration, performed by City Staff, shall be reviewed annually. Any revisions shall be adopted by the Retirement Board.

Commented [CM3]: Currently the expenses (administration fees are codified in the Plan Exhibit V and not updated in at least 16 years. Current language included at the end of this document within the exhibit and also herein:

"Expenses are assumed to be .5% of plan assets plus an allowance for plan administration performed by Human Resources staff. The allowance equals $20,000 allocated between the Basic and Police pension plans according to the number of participants."

6.0 Authorized Investments

The assets of the Plans may only be invested in the investments described under City Resolution # 2019-34 (TR19-35) as adopted on October 28, 2019.

The Board has adopted and shall maintain specific investment guidelines which further define the nature and scope of investments which are permissible for the total Plans and each Investment Manager.

7.0 Uninvested Cash and Collateralization

If at any time the Plans shall hold uninvested cash, it shall be invested in money market funds designated by the Board from time to time for this purpose. If contrary to the foregoing policy, any monies of the Plans shall be deposited in such accounts, savings accounts, certificates of deposits or other deposits of a bank or other permissible financial institution, such accounts shall be collateralized consistent with the City Charter, State requirements and City policy requiring collateralization of all deposit liability owed to the City.

8.0 Asset Allocation

Each asset class, such as stocks and bonds, will be broadly diversified. The market for domestic stocks shall be represented by the Russell 3000 index, for international/ emerging stocks by the MSCI AC World ex USA index, for real estate by the NCREIF-ODCE indexes, the market for bonds shall be represented by the Bloomberg Barclays Aggregate Bond Index and Infrastructure by the S&P Global Infrastructure index.

Short term fixed income investments, defined as fixed income issues maturing in less than one year, will be managed to add value.

Multiple investment managers will be employed. Allocations among the Investment Managers will be controlled by the Board, based upon market values, to maintain diversification and ensure investment policy guidelines are followed.

(1) The investment funds of the City's Basic and Police Pension Plans shall be invested in accordance with the following provisions:

(a) The investment plan assets shall maintain a "target" not to deviate outside an "allowable range" as follows:

Asset Class	Target	Allowable Range
Total Domestic Equities	**51%**	**45%-59%**
Consisting of:		
Large Capitalization Equities	39%	34%-44%
Mid Capitalization Equities	5%	3%-7%
Small Capitalization Equities	7%	5%-11%
Domestic Fixed Investments	**16%**	**12%-20%**
Total International Equities	**19%**	**15%-23%**
Consisting of:		
Developed Markets	15%	10%-20%
Emerging Markets	4%	2%-6%
Real Estate/Infrastructure	**13%**	**11%-15%**
Consisting of:		
Real Estate/REITS	8%	6.5%-10%
Infrastructure	5%	3%-7%
Cash	**1%**	**0%-5%**

(b) Drift in asset class value, which result in exceeding the above allowable range limits shall be corrected as soon as possible, but not less than quarterly.

9.0 Maturities

No restrictions will exist for maturities of fixed income securities. Fixed Income Investment Managers will manage their respective funds with characteristics as defined within their investment guidelines.

10.0 Internal Controls

The Board will establish, maintain and review prudent internal controls for the assets of the Plans, including those utilized by staff, investment managers and the Plans' master Custodian.

The City's Independent Auditor will annually review the adequacy and compliance of these control procedures and report their findings to the Board at the first meeting upon completion of the annual audit which is usually completed in November**.**

11.0 Performance Standards

All Investment Managers are expected to perform in the top half of managers with a similar orientation/style over time, with the exception of Passive Index Managers which should closely track the target index fund.

12.0 Reporting

12.1 Legal Requirement

All reporting and legal requirements noted in City, State or Federal law will be complied with.

12.2 Investment Consultant

The Board will have the Plans' Investment Consultant present to the Board a review of each Investment Manager's performance on a quarterly basis. This presentation will focus on how the current asset allocation mix and the Investment Managers accomplish their objectives, and will include an analysis of the Plans' total performance as compared to other plans and plans of similar asset allocation. In addition, the presentation will evaluate each Investment Manager's performance relative to Investment Managers with similar styles.

12.3 Investment Managers

At least annually, the Board will require each separately managed active Investment Manager to provide a report discussing its performance to the Board. The report shall describe whether and how each manager accomplished its objectives as defined in the applicable investment guidelines delivered to the Board.

In addition, on at least an annual basis, each separately managed active equity Investment Manager will be required to deliver to the Board a report on their voting of all proxies. Each separately managed active Investment Manager will also provide the Board with a written report on their use of brokerage commissions.

12.4 Custodian

On a monthly basis, the Plans' Custodian will provide to the City's Finance Department, the Plans' Investment Consultant and Investment Managers a complete account of all investment and cash related activity of the Plans, by manager, and for the Plans' assets under their supervision. This reporting will

include a market valuation of assets which will be used as a basis for evaluating performance.

12.5 Broker Commissions

The Board will annually review the Plans' cost of brokerage commissions at the first meeting of the New Year.

12.6 Actuarial Review

Each year the Board will obtain an actuarial valuation of the Plans which will include, per the Actuarial Standards of Practice, a description of the assumptions and methods as well as the rationale for each significant assumption.

The demographic assumptions will be based on a regular Experience Study commissioned by the Retirement Board, as well as the professional judgment of the Plan's Actuary.~~.~~ In consultation with the Plan's actuary, the Experience Study will be completed every three to eight years. Based on the Experience Study results and recommendations of the Plan's Actuary, the Retirement Board shall adopt revisions to the demographic assumptions.

The economic assumptions shall be reviewed annually with the input of the Plan's Actuary and the Investment Consultant, Based upon their input, the Retirement Board shall adopt revisions to the economic assumptions.

13.0 Adoption, Review & Modification

The Plans' investment policy shall be adopted by Board action. The policy shall be reviewed annually with the assistance of the Plans' Investment Consultant, and upon the occurrence of one of the following events:

- Change in Investment Manager
- Change in financial adviser
- A significant change in asset allocation
- Occurrence of significant and/or material market event.

All modifications will be approved by the Board.

Excerpt from Basic Pension Plan pages 57 -59, Exhibit V, for reference; (Police similar but not identical, recommend aligning)

EXHIBIT V

ACTUARIAL ASSUMPTIONS

Economic Assumptions

(i) Interest Rate	8% per year
(ii) Salary Increases	
Across-the Board	5.0% per year
Merit and Longevity	None
(iii) Social Security Wage Base	4.0% per year
(iv) Consumer Price Index	3.0% per year
(v) Expenses	Expenses are assumed to be .5% of plan assets plus an allowance for plan administration performed by Human Resources staff. The allowance equals $20,000 allocated between the Basic and Police pension plans according to the number of participants.

Demographic Assumptions

(i) Mortality — 1983 Group Annuity Mortality Table (set ahead 3 years for post-disablement).

Sample Ages	Value of $1 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
55	$125.07	$135.24	25.32	30.74
60	115.54	127.74	21.14	26.17
65	103.76	118.11	17.19	21.79
70	90.68	106.03	13.68	17.63
75	72.90	92.07	10.65	13.87
80	66.15	77.66	8.14	10.70

(ii) Disability 50% of the 1964 OASDI Table

Sample Ages	Percent Becoming Disabled Within Next Year
20	0.03%
25	0.04
30	0.06
35	0.07
40	0.11
45	0.18
50	0.30
55	0.50
60	0.81

(iii) Termination of Employment Age-related rates

Sample Ages	Percent Terminating
18	22%
20	20
22	18
24	16
26	14
28	11
30	9
35	5
40	2
15	1
50	1
55	0

(iv) Retirement Rates Age-related rates

Active Members Retiring within Year Following Attainment of Indicated Retirement Age

Sample Age	Percent Retiring
55	20%
56	10
57	10
58	10
59	10

60	10
61	10
62	100

Actuarial Method Used for the Valuation

Normal Cost. The normal cost under the aggregate method is the amortization of the difference between the actuarial present value of future benefits over the actuarial value of assets. The amortization factor equals the present value of future compensation divided by current compensation. All gains and losses are rolled into the normal cost and are not calculated separately.

For this plan the actuarial present value of future benefits is less than the actuarial value of assets, so the normal cost is zero. As new participants are added to the plan, their present value of future benefits will decrease the surplus, and at some point in the future, there will be a normal cost.

Asset Method Used for the Valuation

The actuarial value of assets equals the market value of assets as of the valuation date, plus or minus an adjustment. The adjustment is based on the difference between the actual market value of assets and the expected value of assets in each of the last four years. A weight of 20% is given to the difference from 4 years ago, 40% to the difference 3 years ago, 60% to the difference 2 years ago and 80% to last year's difference. The actuarial value of assets must be within a 20% corridor of the actual market value of assets.

City of Falls Church Pension Plans and OPEB Trust
CY 2019/2020 Plan Administrator Quarterly Operational Report
Period: May 8, 2020—September 3, 2020

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Appendix 3: Invoiced Pension Expenses YTD

Executive Summary:

The past quarter continued to be extremely complex and busy largely due to the COVID-19 health emergency. The COVID-19 pandemics continues to impact global, US, VA and City of Falls Church economy and service delivery. The Virginia Governor Executive Orders for stay at home orders, business shut down as well as major operational changes for City governmental operations are still in affect but now at Phase 3 status. That said staff continue to administer the Pension Plans and OPEB Trust and serve participants albeit remotely and through new virtual methods.

Meaghan has now returned from family leave and as previously shared as welcomed her daughter, Lucy, to the family. We are both grateful for the administrative support by Andrea Farinelli, employee in the Treasurer's Office with an HR degree, who supported our participants and the Plan Administrator during this time.

This quarterly report continues to provide updates on the operational actions executed by staff, in the administration of the Basic and Police Pension Plans and the OPEB Trust, in order for the Retirement Board to monitor the actions of and compliance by the Plan Administrator. The report provides an executive summary and information on administrative activities, training summary as well as pension administration expenses.

The major functions worked this quarter included:

1) Obtained Council approval for the IPS updates recommended by the Retirement Board at the May meeting
2) Monitored investment with AndCo monthly investment returns based on COVID-19 market volatility;
3) Completed legal review on post-retirement employment to formulate a recommendation for pension plan amendment to ensure financial sustainability and qualified tax status;
4) Provided all Basic/Police Pension Plan and OPEB annual valuation census data to Segal;
5) Researched proper documentation and tracking of valuation assumptions for Retirement Board consideration;
6) Collaborated with Segal for the 2020 Fiduciary Training;
7) Pursued additional Trustee virtual, affordable and safe training opportunities; and
8) Plan Administrator completed the 7 hour Investment in Today's Climate IFEBP conference;

This meeting's agenda format is again structured to implement the adopted 2020 Work Plan, such as the annual fee review, and follow up from the May 2020 meeting. Additionally, review of potential pension plan amendments will be presented for discussion.

Respectfully submitted,

Cindy L. Mester, Plan Administrator
Deputy City Manager/ Pension Plan Administrator

Cc: Meaghan DeCelle, HR Generalist

Appendix 1: **Membership Administrative Activity Summary Chart**

Activity Type		5/15/19-9/11/19 count	9/12/19-11/13/19 count	11/14/19-2/12/20 count	2/13/20-5/7/20 count	5/8/20-9/3/20 count	estimated time per action (Hours)	current quarter estimated time
Buyback		**0**	**0**	**0**	**1**	**0**	1	0
	Police	0	0	0	0	0		
	City	0	0	0	0	0		
	NVCJA	0	0	0	1	0		
	Schools	0	0	0	0	0		
Deferred Retirement		**4**	**0**	**0**	**0**	**2**	5	10
	Police	2	0	0	0	1		
	City	1	0	0	0	1		
	NVCJA	1	0	0	0	0		
	Schools	0	0	0	0	0		
income projection (separate from Retirement)		**24**	**18**	**4**	**6**	**5**	3	15
	Police	3	1	2	1	3		
	City	17	16	2	4	1		
	NVCJA	3	1	0	1	1		
	Schools	1	0	0	0	0		
new enrollment		**6**	**7**	**14**	**6**	**4**	0.5	2
	Police	0	1	4	1	1		
	City	4	6	7	5	3		
	NVCJA	2	0	1	0	0		
	Schools	0	0	2	0	0		
retirement		**6**	**6**	**3**	**2**	**3**	8	24
	Police	1	2	1	0	0		
	City	4	2	1	2	1		
	NVCJA	1	1	1	0	0		
	Schools	0	1	0	0	2		
non-vested cash out		**3**	**5**	**7**	**1**	**1**	1	1
	Police	0	1	2	0	0		
	City	3	4	3	1	0		
	NVCJA	0	0	0	0	1		
	Schools	0	0	2	0	0		
terminated vested		**0**	**2**	**1**	**2**	**6**	4	24
	Police	0	0	0	0	0		
	City	0	2	1	2	1		
	NVCJA	0	0	0	0	0		
	Schools	0	0	0	0	5		
totals		**43**	**38**	**29**	**18**	**21**		76

Appendix 2: Year to Date Training Summary and Expenditures

FY 2020					
Event	**Training Fees**	**Transportation**	**Lodging**	**Per Diem/other**	**Total Spent**
IFEBP Annual Conference (1 attendee)	$1,595.00	$988.96	$1,163.00	$162.00	$3,908.96
AAA Annual Meeting	$820.00	$23.20			$843.20
Fiduciary Training by AndCo	Included in annual fee				$ -
ICMA Webinar: OPEB Liabilities	$149.00				$149.00
IFEBP Annual Membership Dues				$1,465.00	$1,465.00
IFEBP Online Courses (1 attendee)	$539.00				$539.00
YTD Total					**$6,905.16**
Initial Training Budget					$12,000.00
Remaining for period					$5,094.84

FY 2021					
Event	**Training Fees**	**Transportation**	**Lodging**	**Per Diem/other**	**Total Spent**
Fiduciary Training by Segal 9/10/2020	$2,000.00				$ 2,000.00
Investments in Today's Climate	$495				$ 495.00
*IFEBP Annual Conference (3 or 4 attendees)**	*$2,085 - $2,780*	$ -	$ -	$ -	$ -
*IFEBP Annual Membership Dues**				*$1,500*	$ -
					$ -
					$ -
YTD Total					**$2,495**
Initial Training Budget 20/21					$12,000.00
Remaining for period					$9,505.00

**Anticipated spending in September 2020*

Earned Training Hours by Trustee for Current Terms

Connie Rydberg	**Term: May 2018-April 2021**
Term Requirement:	12 hours
2018-2019:	2.5
2019-2020:	13.25
2020-2021:	1
total complete:	16.75

Rick Campbell	**Term: May 2019-April 2022**
Term Requirement:	12 hours
2019-2020:	1
2020-2021:	1
2021-2022:	
total complete:	2

Charles Collier	**Term: May 2019-April 2022**
Term Requirement:	12 hours
2019-2020:	1
2020-2021:	1
2021-2022:	
total complete:	2

Marshall Jarrett	**Term: May 2018-April 2021**
Term Requirement:	12 hours
2018-2019:	19
2019-2020:	1
2020-2021:	1
total complete:	21

Jason Widstrom	**Term: May 2018-April 2021**
Term Requirement:	12 hours
2018-2019:	23.75
2019-2020:	1
2020-2021:	1
total complete:	24.75

Larry Little	**Term: May 2019-April 2022**
Term Requirement:	12 hours
2019-2020:	1
2020-2021:	1
2021-2022:	
total complete:	2

Ryan Davis	**Term: May 2018-April 2021**
Term Requirement:	12 hours
2018-2019:	2.5
2019-2020:	15
2020-2021:	1
total complete:	18.5

2020-2021 Training Hours Summary	Count of hours
Connie Rydberg	**1**
Segal Consultants Fiduciary Training	1
Charles Collier	**1**
Segal Consultants Fiduciary Training	1
Larry Little	**1**
Segal Consultants Fiduciary Training	1
Jason Widstrom	**1**
Segal Consultants Fiduciary Training	1
Ryan Davis	**1**
Segal Consultants Fiduciary Training	1
Rick Campbell	**1**
Segal Consultants Fiduciary Training	1
Marshall Jarrett	**1**
Segal Consultants Fiduciary Training	1
Cindy Mester	**8**
Investments in Today's Climate and Beyond (virtual)	7
Segal Consultants Fiduciary Training	1
Meaghan DeCelle	**1**
Segal Consultants Fiduciary Training	1
Kiran Bawa	**1**
Segal Consultants Fiduciary Training	1
Grand Total	17

Appendix 3: Invoiced Pension Expenses Fiscal YTD

Pension Plan (Basic & Police) and OPEB Administration Expenses

FY 2020					
Vendor	**FY20 July-Sept**	**FY20 Oct-Dec**	**FY20 Jan-Mar**	**FY20 Apr-Jun**	**YTD Total**
Cheiron (transition)	$4,686.25	$ -	$ -	$ -	**$4,686.25**
Williams Mullen	$ -	$ -	$ -	*$25,973.00***	**$25,973.00**
Segal Consulting	$14,625.00	$9,625.00	$44,625.00*	$9,625.00	**$78,500.00**
AndCo	$18,750.00	$18,750.00	$18,750.00	$18,750.00	**$75,000.00**
Northern Trust	$2,828.57	$2,880.20	$2,888.13	$2,298.65	**$10,895.55**
MFS	$20,720.59	$22,145.39	$20,284.03	$20,590.26	**$83,740.27**
Summit Creek	$28,810.21	$28,596.92	$25,640.98	$19,537.10	**102,585.21**
SKBA (closed)	$40,724.99	$6,380.25	$ -	$ -	**$47,105.24**
Lazard	$19,992.49	$20,497.75	$19,259.00	$18,479.17	**$78,228.41**
Securian	$ -	$ -	$31,604.16	$ -	**$31,604.16**
Brown, Edwards and Co. (Auditors)	$ -	$5,600.00	$ -	$ -	**$5,600.00**
CFC Admin Fee			$20,000.00		**$20,000.00**
YTD Fees Total	**$151,138.10**	**$114,475.51**	**$183,051.30**	**$106,633.68**	**$555,298.59**
YTD Training Total	$3,397.80	$2,819.36	$688.00		$6,905.16
Less Recaptured Commission (Abel Noser)	$(638.50)	$(1,852.40)	$(140.40)	$(345.80)	$(2,977.10)

Fees deducted directly from fund:

US Bank, Principle Real Estate, Clarion Real Estate, JPM Equity Inc, Vanguard Equity Inc.

*Contract amount for Segal Experience Study and Asset Valuation is $35,000; quarterly fees = $9625

** Final invoice of $13,388 still pending. Expected to clear in Sept 2020.

FY 2021					
Vendor	**FY21 July-Sept**	**FY21 Oct-Dec**	**FY21 Jan-Mar**	**FY21 Apr-Jun**	**YTD Total**
Williams Mullen					**$ -**
Segal Consulting	$9,625.00				**$9,625.00**
AndCo	$18,750.00				**$18,750.00**
Northern Trust					**$ -**
MFS					**$ -**
Summit Creek					**$ -**
Lazard					**$ -**
Securian					**$ -**
Brown, Edwards and Co. (Auditors)					**$ -**
CFC Admin Fee					**$ -**
YTD Fees Total	**$28,375.00**	**$ -**	**$ -**	**$ -**	**$28,375.00**
YTD Training Total	$2,495				$2,495
Less Recaptured Commission (Abel Noser)					$ -

Fees deducted directly from fund:

US Bank, Principle Real Estate, Clarion Real Estate, JPM Equity Inc, Vanguard Equity Inc

Draft prepared: November 12, 2019
Revised and adopted November 12, 2109
Updated May 07 & 13, 2020
Updated September 3, 2020

Retirement Board
2020 Work Plan

Quarterly Meeting	Annual Activities	Special Projects	Status Update

February	• Investment Performance Review
	• Member Terms- elections/ appointments
	• Ethics Policy- reaffirm
	• Investment Manager Report (IPS Section 12.3)
	• Adopt CFC administrative fee budget allocation
	• Disability Re-evaluation, as needed
		• Adopt WSP admin manual
		• Actuarial 5-Year Experience Study: Basic/Police (Segal)
		  ○ Assumptions review
		• Actuarial 5-Year Experience Study: OPEB (Segal)
		  ○ Assumptions review
			As of 02-14-2020:
			• Qtrly Investment Reports distributed prior to next meeting
			• WSP draft for review 02-20-2020
			• Experience Study for Basic/ Police/ OPEB recommendations to be reported at 02-20-2020 meeting
			• Ethics policy on agenda for action
			• No action required for elections or disability re-evaluation

May	• Investment Performance Review
	• Training Budget- adoption
	• Officer Election
	• Basic/Police & OPEB IPS
		• Adopt Actuarial 5-Year Experience Study Recommendations, as needed Asset Allocation Study (AndCo)
		• Basic/Police Investment Policy- revisions
		  ○ WSP per finalized admin manual
		  ○ Asset Allocation (AndCo)
		• OPEB Investment Policy- revisions
		  ○ ADC/MCO/Asset smoothing
			As of 05-07-2020:
			• Actuarial Valuation recommendation adopted in Feb 2020
			• Asset Allocation Study to be presented at 5-14-2020 meeting
			• Basic/Police/OPEB IPS to be reviewed and revised at May meeting
			• WSP draft admin manual deferred for final review and action at May meeting
			• Annual activities on May agenda

September	• Investment Performance Review • Fiduciary Training • Investment Commission/Fee Review	• Pension Plan Amendment-review options • CFC administrative fee allocation methodology (added Feb 2020)	As of 9-3-2020: • Fiduciary training by Segal on Sept 10th • Pension Plan Amendments on 9-10-2020 agenda for consideration • AndCo requested to update previous fee report
November	• Investment Performance Review • Actuarial Valuation Basic/Police/OPEB Reports • Council Annual Report	• Record Keeping Services- review • CFC administrative fee methodology and allocation adoption (added Feb 2020)	