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April 28, 2020

Javier Gutierrez

Captain, Operations Division

Pension Board Trustee Chairman, McAllen Firemen's Relief and Retirement Fund

201 N. 21st Street


McAllen, TX 78501

Dear Mr. Gutierrez,

CBIZ Retirement Plan Services was commissioned to review the appropriateness and adequacy of the The City of McAllen Firemen's Pension & Relief Fund's investment practices and activities as laid out in Texas Government Code Section 802.109. CBIZ Retirement Plan Services qualifies as an independent consultant as we do not have discretionary management over any of the plan assets and we have significant institutional investment experience. The service team producing this report averages approximately 20 years industry experience. CBIZ RPS is listed in the 2019 Pension and Investments Consultant ranking in the top 50 largest institutional consulting firms, Plan Adviser's 2019 Top 100 Retirement Plan Advisers, and the Baron's 2020 Top 50 Institutional Consultant Teams.

In reviewing the Code and the recommendations by the Texas Pension Review Board, the report requires an evaluation of certain investment duties and responsibilities. To make this determination, we have reviewed the following materials:

- Investment Policy Statement
- Quarterly Performance Reports
- CBIZ's Quarterly Asset Class Return Forecast
- Actuarial Report for the Plan Year 2018
- Auditor's report for the Plan Year 2019

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- Manager Search Documents
 - Investment Management Agreements and Subscription Agreements for Alternative Investments
 - Investment Consultant Research Guidelines
 - Investment Consultant Firm's Research Organizational Chart

Based upon our review of these materials and our working knowledge of the process employed, it is our opinion that the investment practices, governance, and investment activities are in line with the best practices of public pension plans. The following report is a summary of our review along with certain supporting documents.

Sincerely,



Curtis Williams
Senior Consultant

Executive Summary

The City of McAllen, Texas Firemen's Pension Board (McAllen or the Plan) retained CBIZ Investment Advisory Services, LLC dba CBIZ Retirement Plan Services (CBIZ RPS) to complete a review of investment practices and performance evaluations that are required by Texas Government Code 802.109. This Code was created by Senate Bill 322. Texas Public Retirement Systems valued at \$30 million or greater are required to comply with the Code.

CBIZ, Inc. {"CBIZ"} is a publicly traded professional services company (NYSE: CBZ). CBIZ is one of the nation's leading Accounting Providers, Employee Benefits Specialists, Property & Casualty Agencies, Valuation firms, and Retirement Plan service providers. These services are provided through a network of more than 100 offices and 4,600 associates in major metropolitan and suburban areas throughout the U.S. CBIZ RPS provides institutional investment consulting services to various types of clients including public pension plans. The recommendations and opinions provided herein are based on the firm's knowledge and experience in working with public pension plans.


The Memphis based institutional team at CBIZ RPS has been working with McAllen as its investment consultant since 1994. The only source of revenue received by CBIZ RPS from McAllen is for the investment consulting services it provides to the Retirement Plan. CBIZ RPS has no propriety investment products, nor does it directly or indirectly manage investments of the Retirement Plan.

The Guidance for Investment Practices and Performance Evaluations provided by the Texas Pension Review Board has established the areas to be included in the evaluation process:

- Analysis of any Investment Policy Statement or Strategic Investment Plan
- Detailed review of the retirement system's investment asset allocation
- Review of the appropriateness of investment fees and commissions paid
- Review of the retirement system's governance processes related to investment activities
- Review of the retirement system's investment manager selection and monitoring process

The documents listed below were used in the evaluation and review process conducted by CBIZ RPS:

- Investment Policy Statement
- Quarterly Performance Report(s)

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- CBIZ's Quarterly Asset Class Return Forecast
 - Actuarial Report for the Plan Year 2018
 - Auditor's report for the Plan Year 2019
 - Manager Search Document(s)
 - Investment Management Agreements and Subscription Agreements for Alternative Investments

Conclusion:

After a thorough evaluation and review process of the areas required by the Texas Pension Review Board, it is the opinion of CBIZ RPS that McAllen's investment processes, governance, investment actions, and investment procedures are reasonable and aligned with industry best practices in comparison to other public pension plans.

Evaluation

Investment Policy Statement or Strategic Investment Plan

McAllen does have an Investment Policy Statement (IPS) that has been constructed to suit the requirements and objectives of the Plan. It includes the necessary processes and procedures needed in order to address investment related issues. It is written in a plain and straightforward manner so that each affiliated party's responsibilities are easily understood and the administration, requirements, and objectives of the Plan can be more efficiently achieved. The IPS is shared with all individuals responsible for the oversight, management, and monitoring of the Plan, and separate account managers who invest the assets of the Plan. Areas considered standard processes and procedures contained within the IPS include:

- Delegation of Responsibilities
 - Board
 - Investment Consultant
 - Investment Managers
 - Custodian
- Investment Goals and Objectives
 - Definition of Standards and Objectives defined by the Board
 - Rate of Return Objectives
 - Volatility
 - Performance Measurement
 - Time Horizon
- Overall Fund Guidelines
 - Allowable asset classes for investment
 - Approved Asset Allocation ranges
 - Target Asset Allocations for the broad asset classes
 - Overall governing guidelines
 - General Investment Guidelines
- Plan Component Guidelines
 - Equity Holdings
 - Equity Fund Objectives
 - Fixed Income Holdings
 - Fixed Income Fund Objectives
 - Cash Equivalent Holdings
 - Alternative Investments
- Investment Manager Relations

- Communication
- Meetings
- Proxy Voting
- Commission Designation
- Securities with No Value
- Conclusion

➤ Asset Classes

➤ Glossary of Terms

Included within the quarterly report is a review of the Total Fund's adherence to the asset class target ranges and asset class targets set forth in the IPS. Additionally, a review of the diversification guidelines, as detailed in the IPS, for both the equity and fixed income separate account managers is included. A copy of the most recent IPS is included in the appendix to this review.

Asset Allocation

As McAllen's investment consultant, the team at CBIZ RPS, has been relied upon for producing periodic asset allocation studies which help form the basis of the Plan's strategic asset allocation. The assumed rate of return determined by the Plan's actuary, Rudd and Wilson, Inc., is 7.5%, and it is the return for which the asset allocation studies target.

After the required variables/inputs are entered into the software, thousands of Monte Carlo simulations are run in the analysis to determine the most optimized balance of return per unit of risk. The asset allocation studies are presented to the Board for review and discussion. Generally, the current asset allocation of the Plan is compared to two or three potential asset allocations. When the proper due diligence and consideration is completed by both the Board and the investment consultant, a recommendation is made to the Board. Upon acceptance of the recommended asset allocation for the Plan, it is then implemented under the supervision and direction of the Board and the investment consultant. The asset allocation of the Plan and its adherence to the established targets are monitored on a regular basis via monthly and quarterly investment performance reporting. The investment consultant advises the Board when rebalancing is necessary in order to remain within the established ranges and remain in-line with the targets for each asset class.

Further explanation on the asset allocation process employed by CBIZ RPS is detailed below.

Asset Allocation

CBIZ RPS's Perspectives and Approach to asset allocation is a blend of hard data, theoretical assumptions and common sense powered by technology and supported by over twenty-five years of experience.


PERSPECTIVES

Investment objectives are often generically stated as “maximizing return within acceptable risk parameters.” CBIZ RPS believes whether the desired return is tied to an actuarial assumption, a spending policy, a fixed hurdle rate or a relative benchmark, the probability of achieving the client’s stated investment objective is driven largely by its portfolio’s strategic (long-term) asset allocation and the tactical (short-intermediate term) adjustments made to its allocation over time.

Asset allocation is not merely a statistical exercise in pursuit of “maximized” returns, it is an essential tool for managing volatility and risk. Volatility, the ups and downs of portfolio performance, occurs along the path toward the investment objective, while Risk relates to the probability of ultimately achieving that objective.

For over twenty-five years the CBIZ RPS team has worked with clients to define investment policies and implement asset allocation strategies in pursuit of “maximizing return within acceptable risk parameters.” That experience has taught the team, among other things, the following important points

- Investment policies and asset allocation guidelines (e.g. minimum/maximum tactical ranges) are critical in times of heightened volatility.
- Asset allocation studies and the statistical models that drive the process are only as sound as their underlying assumptions.
- Forward looking relative return relationships among asset classes are more important than simple reliance on past performance.
- Unlike Standard Deviation which does not distinguish between upside and downside volatility, Downside Risk measures (e.g. Downside Deviation) get to the heart of what “risk” truly represents – the loss of wealth.
- Historical “averages” can be deceiving.
- When markets are under stress, the correlations among asset classes often rise – just when the opposite is needed.
- Asset class return patterns rarely fit neatly beneath a symmetrical “bell-shaped curve”.
- Kurtosis and Skewness are not just for Statistics class, but rather serve as important descriptors of an asset class’ distribution of returns.

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- Technological “disruptions” happen – even in asset allocation -- as new software and improved computing power enhance capabilities and challenge long-held methodologies.

APPROACH

Two types of meetings bring together the entire CBIZ RPS investment staff in a formal setting – a “Level 4” meeting, which is the final stage of the team’s investment manager due diligence process, and the team’s Quarterly Asset Allocation Strategy meetings. The purpose of these quarterly allocation meetings is to update, if necessary, CBIZ RPS’s forward-looking total return profiles for both liquid and illiquid asset classes, using moving 3-year and 10-year horizons, respectively.

CBIZ RPS acknowledges that forecasting a specific return number for an asset class is merely an educated guess, so the approach focuses less on the absolute numbers, choosing instead to quantify anticipated relative performance relationships between asset classes. For over two decades the CBIZ RPS team has researched (theory) and experienced (reality) the numerous known and unknown factors that impact client performance; therefore, the team endeavors to keep its analysis and its opinions of the global capital markets informed by three different, yet interdependent perspectives:


- Current Events
- Historical Context
- Future Implications

These three perspectives frame both the pre-meeting research performed by members of the CBIZ RPS investment staff, as well as provide focus for the group to debate on a wide range of fiscal/monetary policy issues and macro-economic factors impacting client portfolio allocations.

PROCESS

Preparation. In preparation for the Quarterly Asset Allocation Strategy meeting, the investment professionals gather economic and market data from a variety of sources, including but not limited to:

- Bloomberg
- Federal Reserve
- FTSE Russell
- J.P. Morgan (Guide to the Market)
- Media (e.g. Barron’s, HedgeWeek, Wall Street Journal, etc.)

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- Morningstar
 - MSCI
 - NAREIT (National Association of Real Estate Investment Trusts)
 - S&P Global

In addition to the collection of “hard data” from the sources above, the CBIZ RPS consultants and analysts meet with a variety of investment professionals (e.g. portfolio managers, directors of research, chief investment officers, etc.) spanning a wide range of asset classes and strategy disciplines.

Meeting. CBIZ RPS’s Quarterly Asset Allocation Strategy meeting is led by the chair of the Research Advisory Board (RAB). As previously stated, Current Events, Historical Context and Future Implications for asset classes and their relative relationships inform the team’s conversations as it examines the drivers of asset class returns. For example:

- Risk-free rate/Yield Curve
- Economic Data (e.g. inflation, GDP, employment, wage, housing, etc.)
- Corporate Earnings
- Dividend Yield
- Valuations
- Credit Spreads
- Foreign Currency Exchange Rates

These and other data inputs allow the team to form an opinion regarding anticipated changes to the true return components of each asset class: Yield, Price Change and Currency Impact. In addition, the team includes Expected Manager Excess Return to highlight the varying impact of active management by asset class.

Modeling. For many years the mean-variance optimization model (“MVO”) of Harry Markowitz has been the “go-to” methodology to demonstrate the ability to trade units of “risk” (standard deviation) for units of “reward” (total return) in a series of optimized portfolio combinations (efficient frontier). While the simplicity of MVO is still useful in communicating the basic tenets of asset allocation, improved methodologies, new software and significantly greater computing power have given the traditional Asset Allocation Study a much-needed upgrade as both financial markets and investment products grow more complex.

The recent CBIZ RPS quarterly asset allocation strategy meeting in April produced the following outlook. It is listed below for the asset classes used by McAllen:

➤ Large Cap US Equity	8.0%
➤ Small Cap US Equity	8.5%
➤ International Equity	8.5%
➤ Emerging Markets Equity	8.3%
➤ Core US Bonds	2.7%
➤ High Yield Fixed Bonds	8.0%
➤ International Bonds	1.2%
➤ Private Debt	12.0%
➤ Hedge Fund of Funds	7.5%
➤ Private Real Estate (Value Add)	8.0%
➤ Cash	0.7%

A copy of the CBIZ RPS asset class return projection sheet is included with this review in the appendix to this review.

For CBIZ RPS's client asset allocation work, the team utilizes the return forecasts listed above and the latest, cloud-based asset allocation tools developed for Morningstar Direct. In addition to traditional MVO, Morningstar Direct provides liability-driven optimization, and includes multiple models to develop and test capital market input assumptions (return, volatility, correlation), including Monte Carlo Simulation, Black-Litterman, CAPM and historical analysis. The following also represents important enhancements to Morningstar Direct's asset allocation capabilities:


- Use of scenario-based analysis to allow for the depiction of "fat-tailed" distributions rather than assuming all asset class returns are normally (equally) distributed on both sides of their average return ("bell-shaped" curve).
- Single period returns can be replaced with the long-term forward-looking geometric mean, thus accounting for the accumulation of wealth.

- Substituting conditional value-at-risk (“CVaR”) or another risk measure for standard deviation.
- Using scenario-based analysis rather than correlation.
- Modeling the impact of inflation, return expectations and cash flows (including any specific liabilities) on portfolio total fund values.

Appropriateness of Investment Fees

The CBIZ RPS investment consultant for McAllen negotiates fees for traditional, long-only separate account strategies and alternatives managers. The goal is to reduce the fees paid by the Plan by as much as possible. Additionally, when recommending a mutual fund, the investment consultant recommends the share class with the lowest expense ratio available at the time of investment, in which the Plan is eligible to invest. At times, because of CBIZ RPS’s relationships with investment managers, CBIZ RPS is able to get minimum investment amounts waived so that McAllen can invest in a share class with a lower expense ratio. The investment consultant monitors fees on an ongoing basis through the quarterly reporting process. See below for an example of the “Investment Expense Analysis”.

McAllen Firemen's Pension & Relief Fund			
Investment Expense Analysis As Of December 31, 2019			
Manager	Fee Schedule	Expense Ratio	Median Fee/Expense Ratio
Wells Capital Management	0.80% on first \$25 million		0.90%
JP Morgan Value Advantage Fund	0.70% on first \$50 million		0.80%
Invesco Oppenheimer International Growth Fund		0.67%	0.80%
Artisan International Small-Mid Cap		1.15%	1.10%
RBC Emerging Markets Equity Fund Class R6		0.88%	1.20%
Optimum Quantvest	0.32% of Assets		0.50%
BrandywineGLOBAL - Global Opportunities Bond Fund Cl I		0.59%	0.70%
Voya Strategic Income Opportunities R6		0.58%	0.80%
Courage Credit Opportunities Offshore Fund III, LP	1.5%; 20.0% incentive fee after an 8.0% preferred return		
Ironwood Capital Partners LP	1.20% of Assets		
Pointer Offshore, Ltd.	1%; 2% incentive fee; additional 1% after a 10% hurdle		
Cielo Realty Partners: CRP 10th Street Ltd.	1.00% of Assets		
TerraCap Partners III, LP	1.5%; 20% incentive fee after a 9.0% preferred return		
CCA Longevity Fund VI, LP	1.5%; 20.0% incentive fee with 6% hurdle		
Cash (Wells Fargo Government Money Market Fund)		0.20%	0.20%



A copy of the quarterly report is included with this document in the appendix to this review. The quarterly report includes the fee schedule for all of the managers included in the Plan's investment line-up, similar to the table above.

With regard to equity trading commissions paid by the Plan, the separate account manager seeks out best execution for securities transactions, as detailed in the investment management agreement.

Governance

The governance of the Plan is carried out by the various parties, as defined in the Delegation of Responsibilities laid out in the IPS. The Board consists of seven voting members, which is deemed appropriate (three firefighters, two city employees, one retired city employee, and one at-large citizen). The Board meets on a monthly basis. Also in attendance are the Controller for the City of McAllen and the City Attorney. The investment consultant attends meetings, in person, on a quarterly basis, and via teleconference on a monthly basis, as needed. This meeting schedule allows for the Plan to be efficiently and effectively managed. Meetings are open to the public and there is full transparency by the Board.

The actuary, Rudd and Wilson, Inc., presented its latest report (for the Plan Year ended September 30, 2018) at the last quarterly meeting, which was held in February 2020. Much of the discussion was focused on the contribution rates of the firefighters and the City of McAllen. The two parties will be working in conjunction with the actuary to determine the best course of action to take to help decrease the amortization period and increase the funded ratio of the Plan. As of September 30, 2018, the Plan had a funded ratio of 68.2%. The most recent actuarial valuation report is included with this review in the appendix to this review.

As an added level of governance, the Plan is audited on an annual basis. The Plan's auditor is Weaver and Tidwell, LLP.

Per the auditor's report, as of September 30, 2019:

"In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Plan as of September 30, 2019, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America."

The latest auditor's report is included in the appendix to this review.

Investment Manager Selection and Monitoring

As the investment consultant for McAllen for over two decades, the team at CBIZ RPS has prepared and provided numerous investment manager searches, for both traditional long-only and alternatives asset classes for the Plan. The process for identifying managers for potential inclusion in the Plan's asset allocation is defined and repeatable, as outlined below.

The RAB directs and oversees the research process for CBIZ RPS's clients' portfolios. The goal of the RAB is to "Guide Better Investment Decisions" by providing guidance and general oversight to the various research activities performed. In addition to the oversight function, the RAB assists in the analysis of capital markets, investment strategy applications, and money manager due diligence.


Investment Manager Research/Due Diligence Services

Level I: Manager Sourcing | Initial Screening

Level I of the RAB process is comprised of a series of quantitative screens designed to generate a short list of managers that meet the minimum screens to be considered as a candidate for approval. The screens are designed to be a straightforward, objective, pass or fail procedure in which a manager's score on each measure either passes or does not pass. To move into the next phase of the due diligence process, a manager must pass all the Level I screens, or a member of the RAB must give that manager an exception accompanied by a written statement as to why such an exception is warranted. Examples of the Level I screens are below:

- Strategy must be open to new investors or have current client capital
- Three-year live track record
- Minimum product assets (determined by asset class)
- Performance information has recently been updated
- Correlation to the benchmark greater than appropriately set target
- Rolling three-year batting average in excess of an appropriately set target
- Rolling three-year excess return greater than an appropriately set target
- Weighted average market capitalization greater than an appropriately set target

Asset classes may have their own unique screens. For example, International Equity Level I screens may require the strategy have a maximum allocation to emerging market equities.



The screens incorporate up to twenty years of history, or since inception. The Level I process is run on both the separate account and mutual fund databases. Level I screens must be approved by the RAB before the research director can proceed.

Level II: Initial Review

After completing Level I, the managers who have passed are evaluated, and those with the most attractive profile are prioritized for further evaluation. Once a strategy is given priority status, the research group creates a report incorporating information and analysis on the firm and strategy. The results of this research report are presented by the research director and are subjectively interpreted and discussed by the RAB.

The broad areas of information typically included in the Level II research report are:

- Firm overview (contact information, ownership status, key employee listing)
- Calendar year performance comparisons to benchmark
- Unit value comparisons to benchmark
- Risk/return graphs
- Peer universe comparisons
- Growth in accounts and assets under management (strategy only)
- Quarterly and rolling year regression charts
- Market cap allocations by year
- Sector weightings compared to benchmark
- Quarterly frequency distribution compared to benchmark
- Upside/downside capture graph
- Investment holdings

After the information is analyzed, a determination is made by the RAB as to whether the manager merits further consideration. If the answer is yes, follow up items from the Level II analysis are discussed, and the manager moves into the final stages of the initial due diligence process.

Level III: On-site | In-depth Evaluation

The Level III process is qualitative and subjective in nature. It typically involves a visit to the money manager's office for an in-depth due diligence review.

Those who conducted the on-site visit create a due diligence report detailing the firm's history, investment philosophy and process, investment operations, compliance, and other pertinent issues. The due diligence report is reviewed by the research director, and a decision is made regarding the investment team's invitation to visit the CBIZ RPS office.

Level IV: Final Approval Process

The final step, Level IV, is a firm-wide, open meeting in which the key investment professional(s) of the strategy under consideration discuss their firm, investment process, and philosophy to the consultants, research analysts, and members of the RAB.


The objective of the meeting is to allow those in attendance the ability to make a final decision as to whether the manager merits approval onto the recommended list. The reports prepared at Levels II and III are provided to each consultant and analyst prior to the meeting with final copies stored in the manager database.

After the meeting concludes, the presenters are excused, and the employees in attendance discuss their opinions, pro and con, with a final vote taken as to whether the manager meets the requirements for approval. A majority vote of those at the meeting is required for approval.

This process serves as a basic outline, but due to client specific factors, not all managers are subjected to the RAB four step process. For example, we have clients that have a preference for and/or a requirement to consider minority/women owned business enterprises, local firms, and/or emerging managers. The CBIZ RPS team has significant experience tailoring its manager search process to help meet these and other specific client needs. Further, the team actively reviews and recommends emerging and minority owned money managers. CBIZ RPS team members also regularly speak at NASP and other emerging and minority focus events as the team is tasked with finding tomorrow's talent.

Ongoing due diligence is performed on the managers employed by the Plan via monthly and quarterly performance reporting (all manager performance is reported net of fees), in-person attendance of quarterly meetings by the managers (as requested), on-site visits by CBIZ investment professionals to the managers' offices (as needed or requested), in-person manager meetings in CBIZ's offices, video and teleconferences with the managers, one on one telephone conversations, and email communications.

Within the quarterly report, are detailed reviews of the individual investment managers that are comprised of a description of the strategy for each individual manager, detailed strategy statistics (for the traditional long-only investment managers and the two hedge fund of funds managers), detailed risk/return statistics (where applicable), quarterly and cumulative excess performance



charts (where applicable), style maps (where applicable), and comparisons relative to the appropriate benchmarks and peer universes (where applicable).

The subscription documents for all alternative investments are reviewed and advised upon by outside legal counsel, Locke Lord LLP.

Valuations for liquid securities are reported by the custodian, Wells Fargo, through commonly used pricing services. McAllen has five allocations to alternative investments, one private debt private partnership vehicle, two hedge fund of funds, one private real estate private partnership vehicle, and one life settlements private partnership vehicle. Also, the Plan has one direct investment in a property in McAllen, TX. All of the alternative investment managers are registered investment advisors with the SEC, and use well-known independent auditors and valuation firms to value their assets. The direct real estate investment was made in conjunction with a private real estate investment firm based in Austin, TX. There are other institutional and high net worth investors in the direct real estate investment. The property is appraised on an as needed basis. The last appraisal was conducted in 2018, when the property was refinanced. Information on the auditors, valuation firms, and the appraisal for the direct real estate investment can be provided upon request.

Observations and Recommendations

Investment Policy Statement or Strategic Investment Plan


McAllen does have an IPS that has been constructed to suit the requirements and objectives of the Plan. It includes the necessary processes and procedures needed in order to address investment related issues. It has been the standard practice of the Board and the investment consultant to review the IPS every two to three years to ensure its ongoing efficacy.

Although the IPS is referred to regularly for questions pertaining to the oversight and management of the Plan, it was observed that the last formal review of the IPS took place during 2017. The IPS was last amended and restated as of August 25, 2017.

It is CBIZ's recommendation to review the IPS formally on a more consistent basis. CBIZ recommends reviewing the IPS biennially, going forward.

Asset Allocation

CBIZ RPS is responsible for and performs analysis of the Plan's strategic asset allocation on a continual basis. This is accomplished through the preparation and review of monthly and quarterly performance reporting. In general, the Plan's assets remain allocated according to the approved ranges and targets. However, when opportunities are created within the markets, for example, an extreme widening of credit spreads in high yield fixed income, the investment consultant advises the Board of the market conditions and presents options for how to tactically adjust the asset allocation of the Plan in order to take advantage of the opportunity. Historically,



the Board has been both nimble and judicious in its approach to taking these actions. Over time, it has resulted in good performance for the Plan. Since the inception of the relationship with the investment consultant), the Plan has exceeded its actuarial assumed rate of return of 7.5%.

Specifically pertaining to formal asset allocation studies, CBIZ RPS, as the investment consultant, has the responsibility for preparing and presenting them. Although the Plan has achieved returns in excess of its actuarial assumed rate of return, it was observed that the last formal asset allocation study was performed more than five years ago.

It is CBIZ RPS recommendation to prepare formal asset allocation studies for presentation to the Board on an interval of three to five years, or if substantial changes to the Plan or actuarial changes occur.

Appropriateness of Investment Fees

As previously stated, the CBIZ RPS investment consultant for McAllen negotiates fees for traditional, long-only separate account strategies and alternatives managers. The goal is to reduce the fees paid by the Plan by as much as possible. Additionally, when recommending a mutual fund, the consultant recommends the share class with the lowest expense ratio available, at the time of investment. At times, because of CBIZ RPS' relationships with investment managers, it is able to get minimum investment amounts waived so that McAllen can invest in a share class with a lower expense ratio. Because of the overall size of CBIZ RPS' assets under advisement, oftentimes when allocating to different managers/strategies, the team is able to negotiate and secure lower fees and better terms for its clients than the standard, published fee schedules and terms. McAllen has benefitted from this in the past. The consultant monitors fees on an ongoing basis via quarterly reporting.


Within the quarterly report, an Expense Summary page is included. This is for the Board's and investment consultant's use in monitoring the fees being paid to the investment managers entrusted with the Plan's assets.

It is CBIZ RPS' recommendation to include the peer universe median fees/expense ratios for the asset classes in which they are available, for comparative purposes, in the quarterly reports going forward.

Governance

McAllen's present governance framework is well-established and well-defined in the IPS. Each party's roles and responsibilities are clearly and concisely defined.

In addition to the three firefighters who are Board members, the City's Director of Finance, the City Manager, the City's former Deputy Finance Director (now retired), and the at-large citizen, who is a financial advisor for Edward Jones, are Board members. In addition to their own personal experiences in providing oversight to the Plan, the Board members attend the TEXPERS and TLFFRA conferences on a regular basis, keeping themselves informed and educated on all



issues and best practices pertaining to public pension plans, including governance. CBIZ RPS confirmed with the Board chairman that McAllen submitted two filings in 2019, with details on the Board members meeting their continuing education requirements.

Upon reviewing the information available to it and through participating in the monitoring and management of the Plan with the Board, it is the opinion of CBIZ RPS that the Board is engaged in a reasonable governance approach for the Plan.

Investment Manager Selection and Monitoring

As delegated in the IPS, the Board has the responsibility of evaluating and selecting investment managers and the investment consultant has the responsibility of screening and recommending investment managers (please see the previously detailed process for identifying and evaluating potential investment managers for inclusion in the Plan's investment line-up).

Monitoring of the investment managers is an ongoing process that is carried out as previously described in this document. As required in the IPS, managers do attend quarterly meetings, as requested.

It is the recommendation of CBIZ RPS to have a different manager in attendance at least semiannually to provide an update to the Board.

Important Disclosures

Rankings/recognition by unaffiliated rating services/publications should not be construed as a guarantee of a certain level of results or qualifications related to CBIZ Investment Advisory Services, LLC and its related entities. Rankings published by media sources are generally based on information prepared by the recognized advisor.

Information is provided to us by custodians, administrators, investment advisors, unregistered money managers and/or other sources as applicable. While the information from third party sources is believed to be reliable, it is not warranted to be accurate, complete or timely. We analyze transactions reflected in the custodian and/or administrator statements as well as review the annual audited market values of the portfolio. This provides us with a reasonable basis, not absolute, that the investment information presented is free from a significant misstatement. We believe that our method of evaluating and measuring performance results referenced herein provides us a reasonable basis for our observations and recommendations. Past investment performance is not indicative of future results.

Appendix

**INVESTMENT POLICY STATEMENT
OF THE
MCALLEN FIREMEN'S RELIEF AND RETIREMENT FUND**

(Amended and Restated as of August 25, 2017)

Introduction

This statement of investment policies and objectives is set forth in order to provide guidance to the McAllen Firemen's Relief and Retirement Fund (the "Fund"). It was originally approved by the Board of Trustees of the Fund (the "Board") on February 9, 2011. The purpose of this document is to establish investment guidelines to ensure that the Fund is managed according to appropriate standards and in a manner consistent with the Fund's financial needs.

The Fund is subject to the provisions of The Texas Local Fire Fighters Retirement Act, Article 6243e Vernon's Texas Civil Statute ("TLFFRA"). The Fund is administered by the Board, which consists of seven members.

This document addresses the following:

- A. Responsibilities of the various parties involved in the management of the Fund.
- B. Overall investment objectives and performance standards.
- C. Overall portfolio guidelines and structure.
- D. Fund component guidelines.
- E. Relationships with Investment Managers.

Delegation of Responsibilities

Responsibility for overall governance of the Fund resides with the Board.

The Board is charged with the responsibility for the investment of the assets of the Fund. Board members shall discharge their duties solely in the interest of the Fund and for the exclusive purpose of meeting the financial needs of the Fund. They shall exercise the judgment and care, under the circumstances prevailing at the time of the investment, that persons of ordinary prudence, discretion, and intelligence exercise in the management of their own affairs, not in speculation but when making a permanent disposition of their funds, considering the probability of achieving the actuarial return assumption.

The duties of the Board include but are not limited to:

1. Complying with all pertinent legal requirements.
2. Evaluating and selecting an Investment Consultant.
3. Developing investment objectives and performance measurement standards which are consistent with the financial needs of the Fund.
4. Periodically reviewing policies and guidelines, and, if needed, making changes after considering the advice and recommendations of the Investment Consultant and others.
5. Determining an asset allocation strategy and investment management structure designed to meet the Fund's investment objectives.
6. Evaluating and selecting Investment Managers as provided in Section 28 of TLFFRA.
7. Communicating investment objectives, portfolio guidelines, and performance standards to the Investment Managers.
8. Holding quarterly meetings for the review of performance reports and financial statements.
9. Authorizing Investment Managers to invest existing assets and new monies.
10. Reviewing and evaluating investment results in the context of predetermined performance standards.
11. Ensuring that Investment Managers are in compliance with all portfolio guidelines and restrictions.

12. Taking necessary corrective action when Investment Managers fail to achieve expected results, and/or the investment philosophy utilized no longer is appropriate for the long-term needs of the Fund.
13. Evaluating, appointing, and monitoring a Custodian to provide safekeeping of Fund assets, timely collection of income and accurate reporting.
14. Evaluating and selecting an actuary.

Approved delegations to Investment Managers and other fiduciaries, prohibited transactions, authorized transactions and liability for breach of fiduciary duties are all set forth in TLFFRA. These provisions are provided by the Fund to all Investment Consultants or Investment Managers.

Investment Consultant

An "Investment Consultant" shall be any individual or entity retained by the Board to serve as a co-fiduciary and to assume and satisfy any or all of the following responsibilities:

1. Assisting the Board in drafting statements of investment policy, objectives and performance measurement standards.
2. Providing the Board with recommendations and supporting data regarding an appropriate asset mix and management structure.
3. Conducting initial screening of Investment Managers and offering recommendations for review and approval by the Board.
4. Providing the Board with relevant performance data.
5. Monitoring portfolios to ensure compliance with policy and discussion of the same with the Board.
6. Assisting in monitoring of the Custodian in the fulfillment of its duties and reporting to the Board.
7. Providing the Board with information on changing industry trends, etc.
8. Preparing and presenting quarterly performance reports.
9. Aiding in any special project requested by the Board.

Investment Managers

The Board is authorized to engage the services of Investment Managers as provided in Section 28 of TLFFRA, who possess the necessary specialized research facilities and skilled manpower to meet these investment objectives and guidelines. To be eligible for appointment under TLFFRA, an Investment Manager must be: (i) registered under the Investment Advisors Act of 1940; (ii) a

bank as defined by that Act; or (iii) an insurance company qualified to perform investment services under the laws of more than one state.

A separate account Investment Manager shall be any individual or entity retained by the Board to serve as a co-fiduciary and to assume and satisfy any or all of the following responsibilities. Accordingly, the Board requires the Investment Managers to adhere to the "prudent man rule" under such federal or state laws as now apply, or may in the future apply, to investments of the Fund.

1. Making investment decisions regarding the assets under management in accordance with the guidelines and restrictions formulated by the Board and set forth in this document, and adhering to written instructions which amend the guidelines and restrictions pertaining to their portion of the Fund. No deviation from stated policy is authorized unless first discussed with the Board and its Investment Consultants.
2. Exercising full discretionary authority over the assets entrusted to them, subject to these guidelines and restrictions.
3. Adhering to written instructions which amend the guidelines and restrictions pertaining to their portion of the Fund.
4. Providing periodic statements of portfolio valuations and performance data to the Board and the Investment Consultants.
5. Establishing and maintaining an effective relationship with the Custodian of the Fund's assets.
6. Attending meetings with representatives of the Board as requested.
7. Acting solely in the interest of the Fund. This includes the voting of all proxy statements, which the Investment Manager must be able to support in written form as requested by the Board.
8. Notifying the Board and Investment Consultants immediately of any litigation or violation of securities regulations in which the Investment Manager is involved.
9. Notifying the Board and Investment Consultants immediately concerning any material change of investment professionals and/or company ownership.

Custodian

The "Custodian" shall be the entity retained by the Board to assume and satisfy the following responsibilities:

1. Providing timely reports detailing investment holdings and account transactions monthly and an annual report to be submitted to the Board within 45 days following

each fiscal year end (i.e., December 31.) The annual report will include but not be limited to the following:

- a. Statement of all property on hand
 - b. Statement of all property received representing contribution to the account
 - c. Statement of all sales, redemption's and principal payments
 - d. Statement of all distributions from the account
 - e. Statement of all expenses paid
 - f. Statement of all purchases.
2. Establishing and maintaining direct relationships with each Investment Manager.
 3. Providing all normal custodial functions including security safekeeping, collection of income, settlement of trades, collection of proceeds of maturing securities, distribution of income, daily investment of uninvested cash, etc.
 4. Preparing additional accounting reports as requested by the Board.

Investment Goals and Objectives

A. The Board has formulated specific performance standards for the overall Fund as well as its components. Underlying these standards is the Board's belief that management of the Fund assets should be directed toward achieving the following investment objectives:

1. The Fund's asset allocation strategy is based on long term investment expectations.
2. The Fund provides annual cash flow sufficient to meet the annual benefit and cash expenditures.
3. Over time, the corpus of the Fund at least meets the actuarial return assumption in order to provide an adequate level of support.
4. The previous objectives are attained with reasoned diversification, and without the assumption of undue investment risk, but equity participation should be maintained in order to ensure asset growth.

B. Rate of Return Objectives

Based on the philosophy expressed above, the overall objective of the Fund is to achieve the actuarial assumptions used by the Fund's actuary to determine the minimum funding requirements for the Fund. The Board believes that a 5-7-year period is appropriate in measuring its progress toward achieving this objective. The Board will also evaluate the ongoing performance of the Investment Manager(s) on a quarterly basis.

The Board is not committed to retaining an Investment Manager for the full 5-7-year period if performance or other circumstances indicate a change is warranted.

In addition to the primary investment objective outlined above, the Board will also measure the *progress of the Fund toward the following:*

1. The total return (net of manager fees) on the Fund assets should exceed the return on a composite of non-managed market indices weighted in proportion to the actual structure of the Fund. In brief, the Fund should benefit from active management.
2. The return of the total Fund should consistently fall in the top half of a peer group universe that is consistent with the asset mix of the total Fund.

C. Volatility

The Board believes the foregoing return objectives can be achieved while assuming “market” volatility. The Board is willing to forgo potential return in strong markets in return for protection against a severe decline during weak periods. The volatility, as measured by standard deviation, should not be in excess of 20% of the standard deviation of an appropriate peer group.

D. Performance Measurement

In measuring and evaluating the performance of the Fund, the following definitions and benchmarks will apply:

1. Domestic equities will be measured against the Russell 3000 Index or other indices, if applicable. International equities will be measured against the MSCI ACWI ex US index or other indices, if applicable.
2. Fixed income returns will be measured against the Barclays Global Aggregate Bond Index or other indices, if applicable.
3. Cash equivalents will be measured against the 90 Day Treasury Bill Index.
4. Alternative investments will be measured against the HFR Fund of Funds Index, or other indices, if applicable.

E. Time horizon

While the Board will focus primarily on the achievement of its objectives over a rolling 5-year time horizon, it will also monitor investment results for the following periods: latest quarter, year to date, trailing one year and since managers’ inception.

Overall Fund Guidelines

Within the guidelines approved, the Board is charged with the responsibility of determining the structure of the Fund that offers the highest probability of achieving its investment objectives.

Moreover, it must update and revise this structure as the financial needs of the Fund and/or the outlook for the capital markets change.

A. The Board and its designees, including Investment Managers, are authorized to invest the assets of the Fund in any kind of real, personal or mixed property, including but not limited to the following:

1. Oil, gas, and other mineral leases;
2. Royalties, overriding royalties, and other interests;
3. Stocks (common or preferred), securities, bonds, notes, debentures, convertible stock, and any other interest in any corporation;
4. Leaseholds and mortgages (including collective or part interests);
5. Certificates of deposit or time deposits (including with any bank serving as a Custodian of the Fund, if the deposits bear a reasonable rate of interest);
6. Shares of investment trusts or companies and mutual funds;
7. Interests in partnerships and trusts;
8. Interests in "Massachusetts business trusts"; and
9. Other contracts.

The assets of the Fund may be invested in common or undivided interests with other persons or entities. The Board and its designees, including Investment Managers, may enter into transactions with any person or entity, unless the transaction would constitute a "prohibited transaction" under the Internal Revenue Code of 1986, as amended. Except as required by law, investment of Fund assets is not restricted to a particular class of investments.

B. The approved asset allocation ranges are as follows:

Domestic Equity	30% - 60%
International Equity	10% - 30%
Global Fixed Income	20% - 50%
Alternative Investments	0% - 25%
Cash & Equivalents	0% - 5%

*Absolute return strategies are defined in the Glossary of Terms section of this document.

C. The target asset allocation of the Plan is designed to portray the equilibrium structure of the Fund over a time horizon. The Target Asset Allocation is as follows:

Domestic Equity	32%
International Equity	23%
Global Fixed Income	24%
Alternative Investments	20%
Cash & Equivalents	1%

The actual structure of the Plan at any time may differ from the target due to:

1. The Board's assessment of the intermediate term outlook for different types of securities.
2. Recent divergences in the performance of different classes of securities.
3. Investment Managers' decisions to raise or lower cash positions.
4. The allocation of cash flows.

D. The Fund will be governed by the following overall guidelines:

1. Subject to the factors mentioned above, the actual structure of the Fund will approximate the long-term asset allocation target.
2. The Fund will be diversified. The equity positions in any one issue cannot exceed 5% at market of the total equities of the Fund except as specified in this document.
3. The corporate bond positions in any one issue cannot exceed 5% at market of the total fixed income of the Fund except as specified in this document. Exceptions: Government and Government Agency securities.
4. Securities should be readily marketable. Except for special categories such as real estate and some alternative investments, no investment should be made in non-marketable securities without prior permission from the Board.
5. Portfolio turnover will not be an evaluative factor if other objectives are met.

6. All cash, wherever and whenever possible, should be invested in interest bearing investments. These investments should be free of risk of loss and price fluctuation, and should be instantly liquid.

E. General Investment Guidelines. In addition to the requirements of Article 6243.e, the following prudent guidelines are adopted by the Board:

1. Liquidity - the Board requires equity managers to reinvest all earnings without consideration of total Fund cash liquidity. However, all Investment Managers must invest in readily marketable securities that are listed on a national securities exchange or traded over the counter (OTC), unless specifically approved in advance.
2. Selling Discipline - Securities should be sold in accordance with prudent evaluation of the investments. Investment Managers must follow their stated selling discipline as presented to the Board.

Plan Component Guidelines

A. Equity Holdings

Equity Investment Pool - The purpose of equity allocations is to build sufficient assets, through growth over a thirty-year period, to reduce any future unfunded liability, assure payment of benefits and expenses, and to create a surplus.

The Board employs Investment Managers based on an evaluation of their investment philosophy, volatility, long-term performance and ability to complement existing portfolio styles. Investment Managers must adhere to their stated investment philosophy. Diversification of management philosophies is actively sought.

The equity pool will be periodically reviewed and, from time to time, the Board will re-balance the assets among the investment philosophies.

1. Permissible Securities - Equity managers may invest in common stocks, convertible securities, ADR's and listed securities of foreign corporations.
2. Diversification - No Investment Manager should invest more than 5% of the total Fund's (to be monitored by the Investment Consultant) assets in the stock of one company at cost. Moreover, separate account Investment Managers are limited to 1.5 times the applicable index's weight in any single economic sector at market value unless elsewhere authorized in this document. Should the overall equity portfolio exhibit undue concentration, the Board reserves the right to provide Investment Managers with further diversification instructions.
3. Income – There are no minimum dividend yield requirements.
4. Marketability – All equity positions will be marketable.

5. Options – Investment Managers must receive written permission from the Board and/or its Investment Consultants to engage in option, futures activity or equity derivatives of any type. Permission is granted for alternative strategies that are selected by the Board.
6. Currency hedging, foreign exchange contracts and similar strategies are permitted as part of a defensive strategy to protect the portfolio assets and enhance return.

Equity Fund Objectives

1. Individual managers should consistently perform in the top half of a peer group of managers with a similar style and philosophy over a 3 to 5-year time period.
2. Equity investment should exceed the return (net of fees) of an appropriate equity index (i.e. S&P 500, DJIA, FRC 2000, etc.) over a 3 to 5-year time period.
3. Investment Managers should accomplish these and other objectives with market volatility not in excess of 125% of the appropriate index.
4. Investment Managers may raise or lower cash positions as deemed appropriate.
5. The maximum weighting (market basis) in any one company of the total equity portfolio holdings is 5% and in any one economic sector in the total equity portfolio holdings, the maximum weighting (market value) is 25% or two times the index weight.
6. Equity Market Capitalization – Investment Managers may invest in large, medium and small market capitalization stocks.

B. Fixed Income Holdings

Active Fixed Income Pool - The Active Fixed Income portion of the Fund concentrates on a total return approach. The performance goal is to exceed the total rate of return of the corresponding index over rolling 3-year periods.

1. Permissible Securities – Investment Managers may invest in sovereign debt and agency bonds, corporate bonds, convertible securities & preferred stocks.
2. Diversification - Except for AA+ or higher rated sovereign debt and Agency obligations, the total fixed income portfolio should not invest more than 5% of the Fund's assets in the securities of a single issuer at market value, except as otherwise specified in this document. Should the overall portfolio exhibit undue concentration, the Board reserves the right to provide managers with further diversification instructions.
3. Quality – Investment Managers should not purchase securities rated less than investment grade by a nationally recognized rating agency. Should an issue receive

a split rating, the lower rating will apply. In the event of a downgrade below investment grade, the Investment Manager is required to notify the Board in writing of his action to liquidate the position or explain why he wishes to hold the position. If the Investment Manager wishes to hold the position, he must have Board approval.

Permission is granted to invest in high yield (defined in “Glossary of Terms”) strategies as selected by the Board.

4. Marketability – Investment Managers should not purchase non-marketable securities, unless specifically approved in advance.
5. Reinvestment risk – Investment Managers should consider the risk that coupon payments from fixed income may not be reinvested at the same or higher rate.
6. Call risk – Investment Managers are expected to be sensitive to call features.
7. Pooling – Investment Managers may not place Fund assets in commingled investment vehicles without prior permission from the Board and/or its Investment Consultant.
8. Options – Investment Managers must receive written permission from the Board to engage in options, futures, activity or fixed income derivatives of any type.
9. Permitted Currencies – All currencies included in the benchmark, the currencies of all countries classified as low and middle-income countries by the World Bank not included in the benchmark, the U.S. dollar and the Euro.
10. Permitted Instruments – Forward foreign exchange contracts including non-deliverable forward contracts with maturities of less than 1 year are permitted for the purposes of both hedging and gaining outright active exposure to permitted currency markets.

Fixed Income Fund Objectives

1. Individual managers should consistently perform in the top half of a peer group of managers with a similar style and philosophy over a 3 to 5-year time period.
2. Fixed income investment should exceed the return (net of fees) of an appropriate index (i.e. Barclays Aggregate Bond Index, Barclays Government/Corporate Bond Index, etc.) over a 3 to 5-year time period.
3. Investment Managers should accomplish these and other objectives with market volatility not in excess of 125% of the market index.
4. Minimum quality rating is investment grade unless otherwise approved.

5. Maximum weighting to below investment grade and non-rated fixed income is limited to 15% of the total Fund.
6. Investment Managers investing in mortgage backed securities will provide the Board periodic interest rate stress tests.

No holdings in any one security of more than 5% (at market) in the total fixed income portfolio. This does not apply to U.S. Government Agency issues and other AAA-rated sovereign issues.

C. Cash Equivalent Holdings

1. Permissible Securities – Investment Managers may invest in money market funds, and certificates of deposit.
2. Quality - Certificates of deposit should only be purchased from larger, well-capitalized domestic banks.
3. Cash Maximum - As specified by the overall Fund guidelines, the maximum cash to be held in the Fund is 5% of total assets.

D. Alternative Investments

Alternative strategies are defined as those strategies that seek to produce investment returns that may have low correlation to traditional equity and fixed income markets. These strategies can include: venture capital, private equity, hedged equity, multi-manager/multi-strategy fund of funds, real estate, etc. Typically, alternative investment strategies are structured in a limited partnership format and therefore may not conform to the requirements for traditional managers. These strategies may be considered as appropriate investments for the Plan, but must be approved on a case-by-case basis by the Board as part of the Plan's overall asset allocation strategy.

Investment Manager Relations

In addition to the achievement of performance objectives and adherence to investment guidelines, the Board expects to receive a high level of communication and service from its Investment Managers. Specific requirements include:

A. Communication

1. Initially - Each separate account Investment Manager will acknowledge in writing receipt, acceptance and compliance with the Statement of Investment Goals & Objectives.
2. Quarterly - Each Investment Manager should provide a quarterly report containing at least the following:
 - a. Portfolio composition and structure.

- b. Individual security holdings.
 - c. A statement of performance, expressed in percentages, reflecting total gross return and total net return after fees, and net additional contributions, for current quarter, year-to-date and since-inception returns.
 - d. A brief review of any changes in strategy during the quarter, current investment outlook, and expected changes in portfolio strategy.
 - e. Statement of fees.
3. As Requested - Upon request, each Investment Manager should supply:
- a. Documentation in support of any purchase or sell decision.
 - b. Statements of any fiduciary, liability or bonding insurance coverage.
 - c. A copy of its form ADV.
4. As a matter of course - The Board expects to be notified promptly of the following:
- a. A significant change in investment strategy and portfolio structure.
 - b. A material change in the ownership, investment professional personnel, financial condition, or investment approach of the organization.
 - c. Any changes in the regulatory environment that would affect the Fund or the organization's role in its management.
 - d. Any litigation or violation of securities regulations in which the Investment Manager is involved.

B. Meetings

Investment Managers should expect to meet with the Board periodically to review their progress in meeting the investment objectives of the Fund. Additionally, Investment Managers may be asked periodically to make formal presentations to the Board.

Quarterly meetings should include, but not be limited to, the following:

- a. A brief review of the Fund's investment objectives and the role of the Investment Manager in the Plan structure.
- b. A review of performance data versus specified objectives including diagnostic commentary.
- c. A review of current investment strategy with emphasis on major changes since the last meeting.

- d. A brief discussion of the Investment Manager's organization, business plan, etc.
- e. Any suggestions regarding the Fund's investment objectives and guidelines.

C. Proxy voting

The Fund wishes all proxy votes to be exercised by the Investment Manager in the Fund's best interest. The Investment Manager must be able to support all proxy voting in written form as requested by the Board.

D. Commission Designation

Investment Managers will accept instructions from the Board regarding the designation of commissions to pay for services deemed valuable to the attainment of the Fund's objectives. Execution is of prime importance and the Investment Manager should perform trades that are always in the best interest of the Fund.

E. Securities with No Value

In the event that any securities have been determined to be worthless or to have no value, it is the Board's policy for the actuary to write off the securities as worthless. This shall be conducted by the actuary under their formal review on a biannual basis.

F. Conclusion

After the Annual Actuarial Statement has been produced and reviewed, goals and objectives are reviewed and recommendations made for changes to the statement of Investment Policies, the Investment Managers are invited to submit enhancements or revisions for incorporation or consideration.

This statement is a working document structured to accomplish long-term and short-term planning. Investment Managers and other fiduciaries are invited to contact the Board or the Investment Consultant if any questions exist about the interpretation or application of any provisions.

Asset Classes

Investment Managers should only invest Fund assets in a manner consistent with the **Prudent Man** standard. All assets selected for the portfolio must have a readily ascertainable market value and must be readily marketable, unless prior approval has been granted by the Board. Transactions may include long positions and covered short positions in equities or fixed income.

Glossary of Terms

Absolute Return Strategies (Alternative Strategies)

These strategies typically have an absolute return objective (for example 8% to 15% annually) regardless of the direction of the market. These strategies are often referred to as “Hedge Funds” because they hedge against market risk. They can purchase securities and options on securities both long and short and they seek to profit from inefficiencies in the market. In many instances, multiple low correlating strategies are combined to create a “Fund of Funds” which seeks to provide a more stable and consistent rate of return. Some typical strategies include Convertible Arbitrage, Market Neutral, Opportunistic, Merger Arbitrage and Managed Futures.

Agency Issues

Federally sponsored agencies are privately owned, publicly chartered entities that raise funds to provide credit to borrowers, such as farmers, homeowners, and students at a lower cost than would otherwise be available. Although there are no federal guarantees of most of these issues, the general market perceives that the government would “cover” any defaults on these issues, giving them virtually no credit risk.

American Depository Receipts

These are domestically traded securities representing claims to shares of foreign stocks. They provide a way for investors to take advantage of foreign investment opportunities without the risks associated with overseas markets.

Bankers Acceptances

A vehicle created to facilitate commercial trade transactions. They are called “bankers acceptances” because a bank accepts the responsibility to repay a loan to the holder of the vehicle created in a commercial transaction.

Convertible Bonds

A fixed income instrument that can be exchanged for specified amount of common stock in the issuing firm.

Corporate Issues

Corporate bonds are sold by corporations to dealers called underwriters and then to the public in order to raise long-term funds for investment. Corporate bonds are the alternative to issuing stock for raising funds. Corporate bonds are also rated according to the ability of a firm to pay its debt. The rating scale ranges from AAA to D.

Domestic Equities

Commonly referred to as “stock”, equity issues are the most important source of capital for firms, representing a claim on the assets and earnings of a business. The owners of stock are actually owners of the firm. Domestic equities are stocks of companies that are incorporated in the United States.

Emerging Markets Debt

Debt instrument issued by a national government within a given country or by a corporation within a given country. The country that issues the debt instrument or the country in which the corporation that issues the debt instrument is domiciled is considered an emerging markets economy. Emerging Markets Debt can be denominated in the local currency or US dollars.

High Yield Bonds

Bond that has a rating of BB+ or lower and that pays a higher yield to compensate for its higher level of default risk when compared to investment-grade bonds.

International Equities

These stocks are identical to domestic equities, with the exception that they represent ownership of a firm that is incorporated outside the United States.

Investment Contracts

Issued by insurance companies, these pooled investment products have a limited guarantee of principal and a predetermined interest rate to be credited over the investment’s life. Although the guarantee may imply the protection of principal, that guarantee is only as good as the insurer’s claims-paying ability.

Money Market Funds

Customers pool their money into a fund that then purchases short-term debt such as Treasury bills and commercial paper in order to earn a high rate of return while maintaining liquidity.

Mortgage-Backed Securities

A fixed income type investment whose cash flow depends on the cash flow from an underlying pool of mortgages. Examples include: mortgage pass-through securities and mortgage-backed bonds.

Preferred Stock

A type of equity ownership in a corporation that is senior to common stock. For example, the firm may pay a specified dividend to preferred stock before any common stock dividends are paid. Also, preferred owners have a prior claim on any assets of the firm in the event of liquidation.

Real Estate

An investment in land or property, purchased by direct investment, limited partnership or other vehicle. This type of investment is often utilized to further diversify a portfolio.


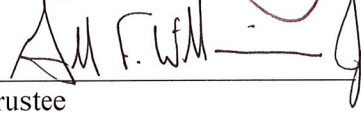
Sovereign Debt

Debt instrument issued by a national government within a given country. Sovereign debt can be denominated in the local currency or US dollars.


U.S. Government Issues

These debt instruments are backed by the full faith and credit of the U.S. Government. They are viewed by market participants as having no credit risk and their interest rates are used as benchmarks throughout the U.S. and international capital markets.

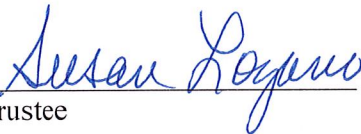
Signatures:

Trustee 
Trustee 

Date 8/25/2017
Date 8/25/17

Trustee 

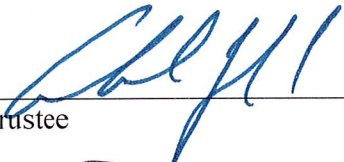
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Date 9/21/17

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Date 20 DEC 17

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Date 12/27/17

THIS INVESTMENT POLICY STATEMENT MUST BE REVIEWED AT LEAST ONCE A YEAR AND CONFIRMED AS APPROPRIATE OR AMENDED AS NECESSARY AT THAT TIME.

Approved at a meeting of the Board on this 25th day of August, 2017.

CBIZ IAS Three Year Asset Class Forecast

Apr-20	Income	Price	Currency	Expected Mgr	Annualized			
Asset Class	Return	Return	Return	Excess Return	Total Return	Bullish	Neutral	Bearish
US Large Cap Equity	2.1%	5.1%	0.0%	0.8%	8.0%			
<i>Large Cap Value</i>								
<i>Large Cap Growth</i>								
US Small Cap Equity	2.0%	4.5%	0.0%	2.0%	8.5%			
<i>Small Cap Value</i>								
<i>Small Cap Growth</i>								
US Public Real Estate (REITs)	4.0%	1.0%	0.0%	1.0%	6.0%			
International Equity - EAFE	3.4%	3.6%	0.5%	1.0%	8.5%			
Emerging Markets Equity	3.1%	3.2%	0.5%	1.5%	8.3%			
US Core Fixed Income	2.8%	-0.5%	0.0%	0.4%	2.7%			
<i>US Government Bonds</i>								
<i>US TIPs</i>								
<i>Securitized Credit</i>								
<i>US Investment Grade Credit</i>								
US High Yield Fixed Income	6.7%	0.6%	0.0%	0.7%	8.0%			
<i>Floating Rate Securities</i>								
<i>US Convertible Bonds</i>								
Cash	0.7%	0.0%	0.0%	0.0%	0.7%			
International Fixed Income - Developed	1.8%	-1.4%	0.0%	0.8%	1.2%			
International Fixed Income - Emerging	5.1%	0.4%	0.5%	0.8%	6.8%			
Directional Hedge Funds^					6.5%			
Non-Directional Hedge Funds^					7.5%			
<i>Long/Short Equity</i>								
<i>Tactical Trading</i>								
<i>Event Driven</i>								
<i>Relative Value</i>								
10 Year Forecasts								
Private Real Estate	5.5%	1.0%	0.0%	1.5%	8.0%			
<i>Core Real Estate</i>								
<i>Value-Add Strategies</i>								
<i>Opportunistic Strategies</i>								
Timber	4.0%	2.0%	0.0%	0.5%	6.5%			
Infrastructure	5.0%	3.5%	0.0%	0.0%	8.5%			
Private Credit	6.0%	3.0%	0.0%	3.0%	12.0%			
<i>Distressed</i>								
<i>Mezzanine</i>								
<i>Debt</i>								
Private Equity		11.0%		4.0%	15.0%			
<i>Venture**</i>								
<i>Buyout*</i>								

* View is neutral on small and mid, bearish on large LBO

**View is bullish on secondary funds

^When accounting for a Fund of Funds allocation, average the two forecasts and reduce the return by 100 bps. (6.50% + 7.50%)/2-1.00%= 6.00%

Forecasts are hypothetical and no assurances can be made that results will occur as projected.

McAllen Firemen's Pension & Relief Fund

Investment Performance Analysis

Period Ended

December 31, 2019



City of McAllen, Texas Firemen's Pension & Relief Fund Investment Committee:

We have compiled the accompanying summary of the market value, performance statistics and performance results of McAllen, Texas Firemen's Pension & Relief Fund as of December 31, 2019. Our responsibility is to evaluate the performance results of the investment advisors or unregistered money managers through comparisons with market indices and other universe performance data deemed appropriate and to make observations and recommendations thereon.

We performed time-weighted rates of return and internal rates of return calculations in accordance with standards recommended by the CFA Institute.

Information is provided to us by custodians, administrators, investment advisors, unregistered money managers and/or other sources as applicable. We analyze transactions reflected in the custodian and/or administrator statements as well as review the annual audited market values of the portfolio. This provides us with a reasonable basis, not absolute, that the investment information presented is free from a significant misstatement. We believe that our method of evaluating and measuring performance results contained herein provides us a reasonable basis for our observations and recommendations.

The investment information referred to above presents the market value as of December 31, 2019 and the performance results of the investment advisors or unregistered money managers for the calendar quarter. Generally, market values and related account performance are based on estimates, especially in instances where independent third party valuations are not available. Pricing sources may differ between Managers and Custodians and in those cases, CBIZ IAS will make a reasonable determination of which pricing source to use unless otherwise directed by the client. Based on our procedures, nothing came to our attention that would cause us to believe the information is significantly misstated; however, we do not warrant the accuracy of the information.

CBIZ IAS does not provide legal, accounting or tax advice to clients. All clients with legal questions, accounting queries, or tax considerations, including the effect of Unrelated Business Taxable Income (UBTI) resulting from alternative investment strategies, are strongly urged to consult a professional with the relevant expertise.

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Past performance is not indicative of future results.

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Index and Selected Terms Descriptions

Index Descriptions

Russell 2000 Index – The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is constructed to provide a comprehensive and unbiased small-cap barometer and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set.

The Morgan Stanley Capital EAFE Index (Net) – MSCI EAFE Index (Net) is a free float-adjusted market capitalization index that is designed to measure developed market equity price performance and income from dividend payments, excluding the US & Canada. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals.

Russell 3000 Index – The Russell 3000 is constructed to provide a comprehensive, unbiased, and stable barometer of the broad market and is reconstituted annually to ensure new and growing equities are reflected.

Russell 1000 Value Index – Frank Russell divides its large cap equity index, the Russell 1000, into 2 components; Growth and Value. The securities included in this Value Index have less-than-average growth orientation. It represents the universe of stocks from which value managers typically select. Securities in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower forecasted growth values than those included in the Growth Index.

S&P 500 Index – This index is a market capitalization weighted index of 500 stocks, designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

Russell 1000 Growth Index – Frank Russell divides its large cap equity index, the Russell 1000 into 2 components; Growth and Value. Those securities included in the Growth Index have greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and P/E ratios, lower dividend yields and higher forecasted growth values than those included in the Value Index.

Barclays Capital Aggregate Bond Index – This index is made up of the Barclays Capital Government/Corporate, the Mortgage-Backed Securities, and the Asset-Backed Securities indexes. All issues in the Aggregate Index are rated investment grade or higher, have at least one year to maturity, and have an outstanding par value of at least \$100 million.

Selected Terms Descriptions

Sharpe Ratio - The Sharpe Ratio, developed by Professor William F. Sharpe, is a measure of reward per unit of risk -- the higher the Sharpe Ratio, the better. It is a portfolio's excess return over the risk-free rate divided by the portfolio's standard deviation. The portfolio's excess return is its geometric mean return minus the geometric mean return of the risk-free instrument (by default, t-bills).

Alpha - Alpha is a risk (beta adjusted) measurement. Officially, alpha measures the difference between a portfolio's actual returns and what it might be expected to deliver based on its level of risk. Higher risk generally means higher reward. A positive alpha means the fund has beaten expectations. A negative alpha means that the manager failed to match performance with risk. If two managers had the same return but one had a lower beta, that manager would have a higher alpha.

Beta - Beta represents the systematic risk of a portfolio and measures its sensitivity to a benchmark. A portfolio with a beta of one is considered as risky as the benchmark and would therefore provide expected returns equal to those of the market during both up and down periods. A portfolio with a beta of two would move approximately twice as much as the benchmark.

Correlation – Correlation is a statistical measure of the relationship, if any, between a series of returns. When there is positive correlation, the returns move in the same direction. Conversely, negative correlation occurs when the negative returns move in opposite directions.

Value Added by Manager Chart – The upper portion of this chart shows the growth of \$100 as invested by the manager for the most recent five year period versus the growth of the index. The lower portion shows the cumulative excess return (green) or cumulative loss (red) versus the benchmark.

Risk / Return Chart – This chart show the manager's annualized return (vertical axis) and volatility (Horizontal axis) for the most recent year.

Peer Comparison – These bar charts and supporting tables show how a manager's performance compares to a universe of managers employing a similar strategy. Both trailing periods and calendar year results are shown for the manager and benchmark index. Color shaded are represents the range for that quartile.

Information Ratio – The ratio of a portfolio's annualized alpha to its annualized residual risk. The ex post information ratio measures how successfully a portfolio manager converts residual risk into out-performance.

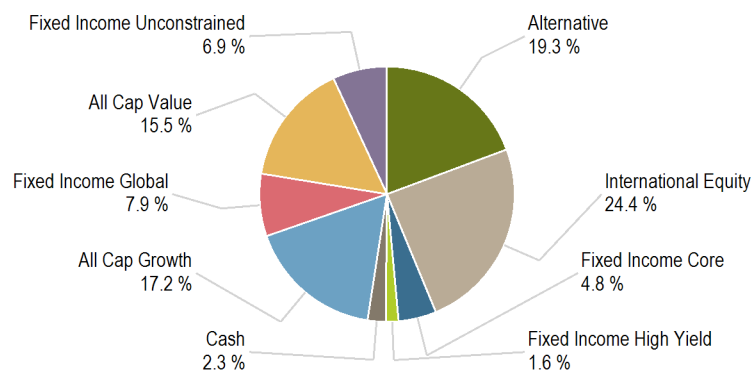
Total Fund Analysis

Ending December 31, 2019								
	Market Value (\$)	% of Portfolio	2019 Q4 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Total Fund	57,066,219	100.0	6.0	18.7	10.1	7.0	7.8	Oct-94
<i>Total Fund Target Mix Benchmark*</i>			5.7	18.0	8.7	6.2	7.4	Oct-94
<i>Composite Benchmark**</i>			5.4	18.9	9.1	6.9	7.3	Oct-94
Total Equity	32,585,046	57.1	9.5	29.5	12.8	8.0	7.0	Dec-98
<i>MSCI ACWI</i>			9.0	26.6	12.4	8.4	5.5	Dec-98
Total Domestic Equity	18,661,438	32.7	7.9	32.1	14.4	9.6	8.1	Nov-98
<i>Russell 3000</i>			9.1	31.0	14.6	11.2	7.3	Nov-98
Wells Capital Management	9,818,939	17.2	8.0	36.7	22.8	13.4	13.8	Jul-11
<i>Russell 3000 Growth</i>			10.7	35.8	19.9	14.2	15.1	Jul-11
JP Morgan Value Advantage Fund	8,842,499	15.5	7.7	27.2	9.8	--	8.4	May-15
<i>Russell 3000 Value</i>			7.5	26.3	9.3	8.2	8.7	May-15
Total International Equity	13,923,609	24.4	11.8	25.9	12.0	5.4	7.3	Oct-94
<i>MSCI ACWI ex USA</i>			8.9	21.5	9.9	5.5	5.2	Oct-94
Invesco Oppenheimer International Growth Fund	6,045,965	10.6	12.5	29.2	10.0	6.2	3.7	May-14
<i>MSCI ACWI ex USA</i>			8.9	21.5	9.9	5.5	3.5	May-14
Artisan International Small-Mid Cap	3,649,094	6.4	13.1	36.7	--	--	36.7	Dec-18
<i>MSCI ACWI Ex USA SMID NR USD</i>			10.3	22.4	9.8	6.6	22.4	Dec-18
RBC Emerging Markets Equity Fund Class R6	4,228,550	7.4	9.8	--	--	--	9.8	Sep-19
<i>MSCI Emerging Markets</i>			11.8	18.4	11.6	5.6	11.8	Sep-19
Total Fixed	12,107,212	21.2	1.0	5.7	3.4	3.2	5.7	Apr-98
<i>BBgBarc Global Aggregate TR</i>			0.5	6.8	4.3	2.3	4.4	Apr-98
Optimum Quantvest	2,754,045	4.8	-0.3	8.0	3.6	2.9	5.3	Mar-98
<i>BBgBarc US Aggregate TR</i>			0.2	8.7	4.0	3.0	4.9	Mar-98
BrandywineGLOBAL - Global Opportunities Bond Fund CI I	4,493,652	7.9	4.1	9.2	--	--	6.6	Oct-18
<i>FTSE WGBI TR</i>			-0.4	5.9	4.1	2.0	6.2	Oct-18
Voya Strategic Income Opportunities R6	3,918,569	6.9	1.0	8.3	--	--	5.8	Oct-18
<i>BBgBarc US Universal TR</i>			0.5	9.3	4.3	3.4	8.4	Oct-18

Ending December 31, 2019

	Market Value (\$)	% of Portfolio	2019 Q4 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Courage Credit Opportunities Offshore Fund III, LP	940,946	1.6						
Total Alternatives	11,037,650	19.3	2.5	9.0	9.3	7.8	5.7	Mar-00
<i>HFRI Fund of Funds Composite Index</i>			3.1	8.4	3.9	2.4	3.1	Mar-00
Ironwood Capital Partners LP	3,010,891	5.3	2.5	8.1	5.6	4.3	5.6	Apr-03
<i>HFRI Fund of Funds Composite Index</i>			3.1	8.4	3.9	2.4	3.5	Apr-03
Pointer Offshore, Ltd.	2,860,000	5.0	5.5	18.7	--	--	5.6	Apr-18
<i>HFRI Equity Hedge (Total) Index</i>			5.6	13.6	6.1	4.5	2.9	Apr-18
Cielo Realty Partners: CRP 10th Street Ltd.	712,702	1.2						
TerraCap Partners III, LP	1,500,421	2.6						
CCA Longevity Fund VI, LP	2,953,636	5.2	1.7	8.4	--	--	10.5	May-18
Total Cash	1,336,310	2.3						

Current Allocation



Fourth Quarter

Inception
10/31/94

Beginning Market Value	\$53,950,680.47	\$8,191,900.00
Contributions	\$1,677,311.91	\$216,598,929.18
Withdrawals	-\$1,806,614.48	-\$220,069,900.85
Fees	-\$37,309.81	-\$3,248,878.32
Net Cash Flow	-\$129,302.57	-\$3,470,971.67
Net Investment Change	\$3,244,840.91	\$52,345,290.48
Ending Market Value	\$57,066,218.81	\$57,066,218.81
Net Change	\$3,078,228.53	\$45,625,440.49

Total Fund	Q4-19	Inception 10/31/94
Time Weighted	6.0%	7.8%
Money Weighted	6.0%	7.0%

* The Target Mix Benchmark is the asset allocation recommended to match. This allocation remains fixed until recommendations change. Currently, it is composed of 32% Russell 3000 Index, 23% MSCI ACWI ex-USA, 24% Bloomberg Barclays Global Aggregate, 20% HFRI Fund of Funds and 1% 91 Day T-Bill.

** The Total Composite Benchmark is composed of the weighted average of each manager's weight and associated benchmark return as that of the total fund actual asset allocation. This benchmark changes with changes in the total fund.

McAllen Firemen's Pension & Relief Fund

Total Fund

As of December 31, 2019

Account Type	Account	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	Takedown (takedowns / commit)	IRR
Private Equity	Courage Credit Opportunities Offshore Fund III, LP	\$2,260,000	\$2,257,283	\$1,206,167	\$940,946	\$2,147,113	\$2,717	99.88%	-1.98
	CCA Longevity Fund VI, LP	\$2,500,000	\$2,500,000	\$0	\$2,953,636	\$2,953,636	\$0	100.00%	10.49
	Total Private Equity	\$4,760,000	\$4,757,283	\$1,206,167	\$3,894,582	\$5,100,749	\$2,717	99.94%	3.36
Real Estate	Cielo Realty Partners: CRP 10th Street Ltd.	\$400,000	\$444,000	\$901,000	\$712,702	\$1,613,702	-\$44,000	111.00%	39.23
	TerraCap Partners III, LP	\$2,260,000	\$2,260,000	\$1,887,697	\$1,500,421	\$3,388,118	\$0	100.00%	10.68
	Total Real Estate	\$2,660,000	\$2,704,000	\$2,788,697	\$2,213,123	\$5,001,820	-\$44,000	101.65%	17.38
	Total Account	\$7,420,000	\$7,461,283	\$3,994,864	\$6,107,706	\$10,102,569	-\$41,283	100.56%	11.74

Cash Flow Summary

Quarter Ending December 31, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
Wells Capital Management	\$9,079,775	\$9,641	\$0	\$9,641	-\$37,310	\$729,523	\$9,818,939
JP Morgan Value Advantage Fund	\$8,221,260	\$0	-\$13,972	-\$13,972	\$0	\$635,211	\$8,842,499
Invesco Oppenheimer International Growth Fund	\$5,374,573	\$0	\$0	\$0	\$0	\$671,392	\$6,045,965
Artisan International Small-Mid Cap	\$3,225,808	\$0	\$0	\$0	\$0	\$423,286	\$3,649,094
RBC Emerging Markets Equity Fund Class R6	\$3,850,000	\$0	\$0	\$0	\$0	\$378,550	\$4,228,550
Optimum Quantvest	\$2,761,709	\$0	\$0	\$0	\$0	-\$7,665	\$2,754,045
BrandywineGLOBAL - Global Opportunities Bond Fund CI I	\$4,316,271	\$0	\$0	\$0	\$0	\$177,381	\$4,493,652
Voya Strategic Income Opportunities R6	\$3,877,866	\$0	\$0	\$0	\$0	\$40,703	\$3,918,569
Courage Credit Opportunities Offshore Fund III, LP	\$1,380,279	\$0	-\$351,323	-\$351,323	\$0	-\$88,010	\$940,946
Ironwood Capital Partners LP	\$2,936,283	\$0	\$0	\$0	\$0	\$74,608	\$3,010,891
Pointer Offshore, Ltd.	\$2,711,733	\$0	\$0	\$0	\$0	\$148,267	\$2,860,000
Cielo Realty Partners: CRP 10th Street Ltd.	\$712,702	\$0	\$0	\$0	\$0	\$0	\$712,702
TerraCap Partners III, LP	\$1,931,409	\$0	-\$439,393	-\$439,393	\$0	\$8,405	\$1,500,421
CCA Longevity Fund VI, LP	\$2,904,147	\$0	\$0	\$0	\$0	\$49,489	\$2,953,636
Cash	\$666,863	\$1,667,671	-\$1,001,926	\$665,745	\$0	\$3,702	\$1,336,310
Total	\$53,950,680	\$1,677,312	-\$1,806,614	-\$129,303	-\$37,310	\$3,244,841	\$57,066,219

Cash Flow Summary

1 Year Ending December 31, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
Wells Capital Management	\$7,415,197	\$9,641	-\$300,000	-\$290,359	-\$106,878	\$2,694,101	\$9,818,939
JP Morgan Value Advantage Fund	\$6,792,327	\$200,000	-\$13,972	\$186,028	-\$39,376	\$1,864,144	\$8,842,499
Invesco Oppenheimer International Growth Fund	\$4,824,520	\$0	-\$165,000	-\$165,000	\$0	\$1,386,445	\$6,045,965
Artisan International Small-Mid Cap	\$2,628,812	\$50,000	\$0	\$50,000	\$0	\$970,282	\$3,649,094
LMCG Emerging Market Equity	\$3,258,610	\$0	-\$3,347,643	-\$3,347,643	\$0	\$89,033	--
RBC Emerging Markets Equity Fund Class R6	--	\$3,850,000	\$0	\$3,850,000	\$0	\$378,550	\$4,228,550
Optimum Quantvest	\$2,549,380	\$0	\$0	\$0	-\$2,549	\$204,665	\$2,754,045
BrandywineGLOBAL - Global Opportunities Bond Fund Cl I	\$4,114,633	\$0	\$0	\$0	\$0	\$379,019	\$4,493,652
Voya Strategic Income Opportunities R6	\$3,618,073	\$0	\$0	\$0	\$0	\$300,496	\$3,918,569
Courage Credit Opportunities Offshore Fund III, LP	\$1,976,121	\$0	-\$833,877	-\$833,877	\$0	-\$201,298	\$940,946
Ironwood Capital Partners LP	\$2,784,799	\$0	\$0	\$0	\$0	\$226,092	\$3,010,891
Pointer Offshore, Ltd.	\$2,408,538	\$0	\$0	\$0	\$0	\$451,462	\$2,860,000
Cielo Realty Partners: CRP 10th Street Ltd.	\$716,741	\$0	-\$32,000	-\$32,000	\$0	\$27,961	\$712,702
TerraCap Partners III, LP	\$2,313,197	\$0	-\$847,126	-\$847,126	\$0	\$34,350	\$1,500,421
CCA Longevity Fund VI, LP	\$2,725,464	\$0	\$0	\$0	\$0	\$228,172	\$2,953,636
Cash	\$803,305	\$8,177,755	-\$7,678,070	\$499,686	\$0	\$33,319	\$1,336,310
Total	\$48,929,717	\$12,287,396	-\$13,217,687	-\$930,291	-\$148,803	\$9,066,793	\$57,066,219

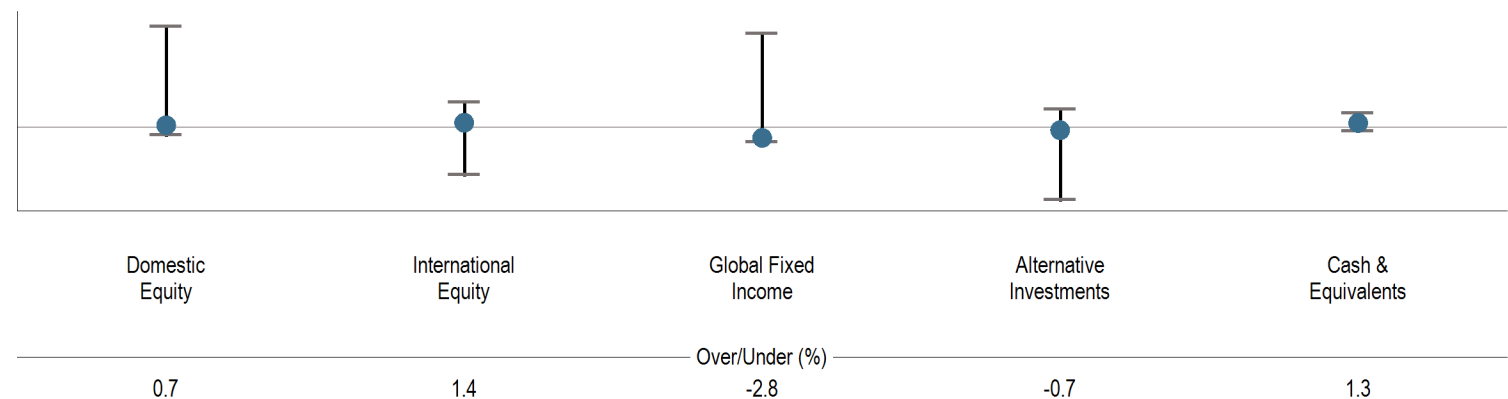
Asset Allocation vs. Target

As Of December 31, 2019

Target	Current		Target	%	Target Range	Current	%	Difference*	%
		Domestic Equity	\$18,261,190	32.0%	30.0% - 60.0%	\$18,661,438	32.7%	\$400,248	0.7%
		International Equity	\$13,125,230	23.0%	10.0% - 30.0%	\$13,923,609	24.4%	\$798,379	1.4%
		Global Fixed Income	\$13,695,893	24.0%	20.0% - 50.0%	\$12,107,212	21.2%	-\$1,588,681	-2.8%
		Alternative Investments	\$11,413,244	20.0%	0.0% - 25.0%	\$11,037,650	19.3%	-\$375,593	-0.7%
		Cash & Equivalents	\$570,662	1.0%	0.0% - 5.0%	\$1,336,310	2.3%	\$765,648	1.3%
		Total	\$57,066,219	100.0%		\$57,066,219	100.0%		

*Difference between Target and Current Allocation

Actual vs. Target

Diversification:Equity:

No one equity position may exceed more than 5% at cost of the total equity & cash portfolio.

No Exceptions

No one economic sector may exceed more than 25% at market value of the Fund's total equity & cash portfolio.

No ExceptionsDiversification:Fixed: Total Fixed Income Wtd. Average Maturity as of 12/31/19 = 6.7 years

Except for U.S. Treasury and Agency obligations, no single fixed income issue shall exceed 5% of the total fixed & cash portfolio.

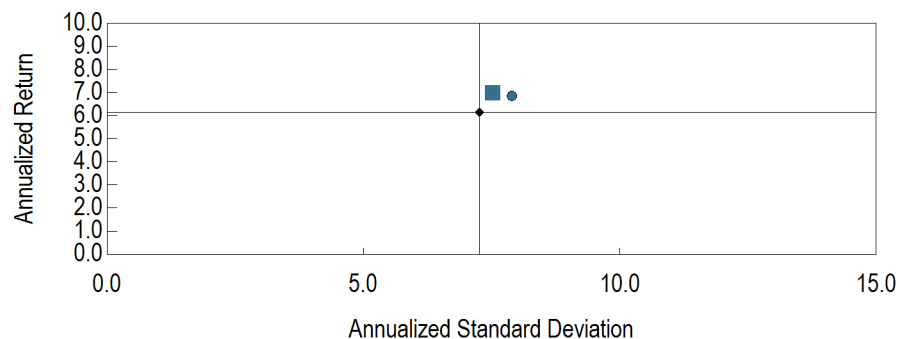
No ExceptionsExcept for approved high yield investments, minimum quality rating "A". **No Exceptions**

Asset Allocation by Manager

As Of December 31, 2019

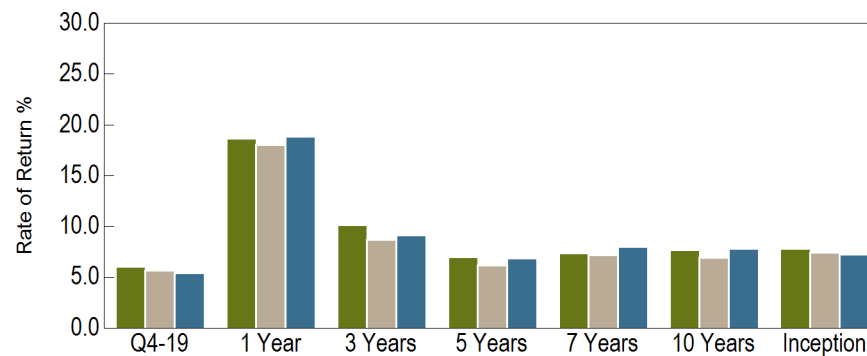
	Total Market Value	% of Portfolio	Alternative	International Equity	Fixed Income Core	Fixed Income High Yield	Cash	All Cap Growth	Fixed Income Global	All Cap Value	Fixed Income Unconstrained
Total Equity											
Total Domestic Equity											
Wells Capital Management	\$9,818,939	17.2%						\$9,818,939			
JP Morgan Value Advantage Fund	\$8,842,499	15.5%								\$8,842,499	
Total International Equity											
Invesco Oppenheimer International Growth Fund	\$6,045,965	10.6%		\$6,045,965							
Artisan International Small-Mid Cap	\$3,649,094	6.4%		\$3,649,094							
RBC Emerging Markets Equity Fund Class R6	\$4,228,550	7.4%		\$4,228,550							
Total Fixed											
Optimum Quantvest	\$2,754,045	4.8%			\$2,754,045						
BrandywineGLOBAL - Global Opportunities Bond Fund CI I	\$4,493,652	7.9%						\$4,493,652			
Voya Strategic Income Opportunities R6	\$3,918,569	6.9%									\$3,918,569
Courage Credit Opportunities Offshore Fund III, LP	\$940,946	1.6%				\$940,946					
Total Alternatives											
Ironwood Capital Partners LP	\$3,010,891	5.3%	\$3,010,891								
Pointer Offshore, Ltd.	\$2,860,000	5.0%	\$2,860,000								
Cielo Realty Partners: CRP 10th Street Ltd.	\$712,702	1.2%	\$712,702								
TerraCap Partners III, LP	\$1,500,421	2.6%	\$1,500,421								
CCA Longevity Fund VI, LP	\$2,953,636	5.2%	\$2,953,636								
Total Cash											
Cash	\$1,336,310	2.3%					\$1,336,310				
Total	\$57,066,219	100.0%	\$11,037,650	\$13,923,609	\$2,754,045	\$940,946	\$1,336,310	\$9,818,939	\$4,493,652	\$8,842,499	\$3,918,569

Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2019



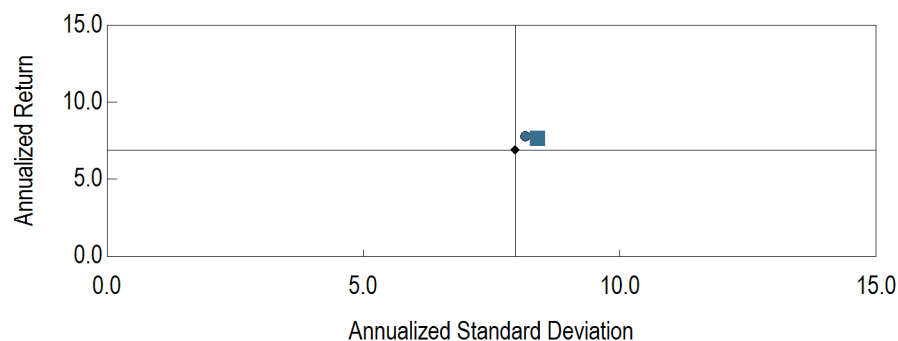
- Total Fund
- ◆ Total Fund Target Mix Benchmark*
- Composite Benchmark**

Return Summary
Ending December 31, 2019



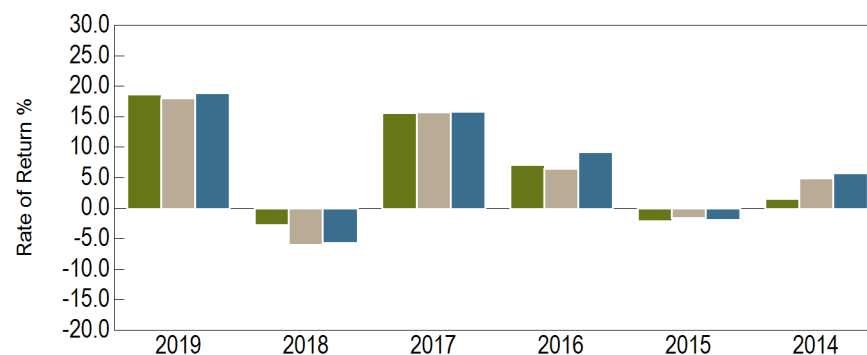
- Total Fund
- Total Fund Target Mix Benchmark*
- Composite Benchmark**

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2019



- Total Fund
- ◆ Total Fund Target Mix Benchmark*
- Composite Benchmark**

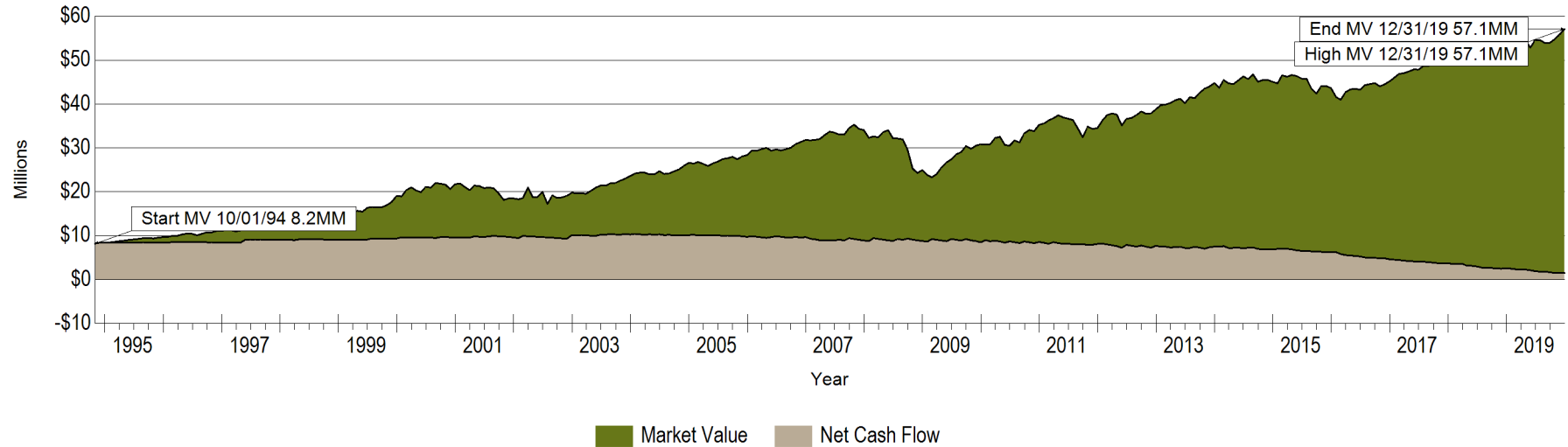
Return Summary
Ending December 31, 2019



- Total Fund
- Total Fund Target Mix Benchmark*
- Composite Benchmark**

Growth of Assets Analysis

Market Value History
25 Years 3 Months Ending December 31, 2019

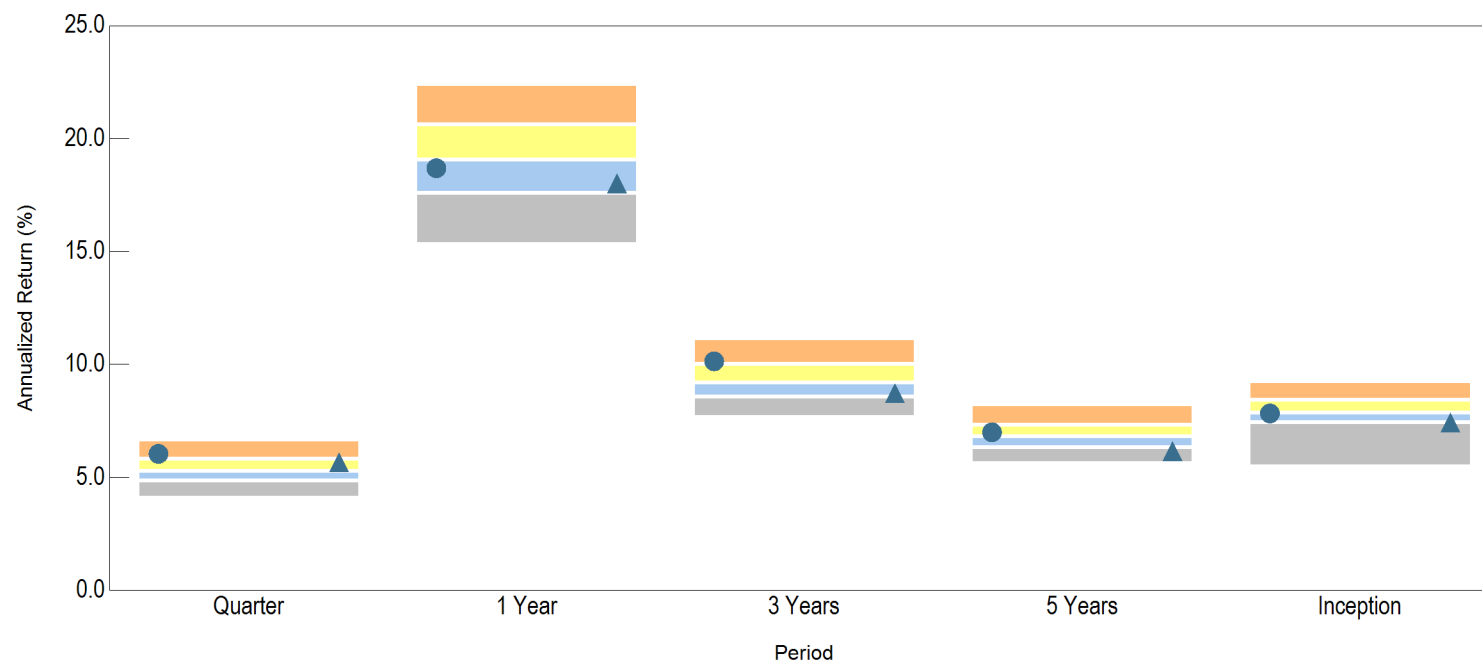


	2019	2018	2017	2016	2015	2014
Total Fund	18.7 %	-2.7 %	15.6 %	7.1 %	-2.0 %	1.6 %
Total Fund Target Mix Benchmark*	18.0	-5.9	15.7	6.5	-1.5	4.9
Composite Benchmark**	18.9	-5.7	15.9	9.2	-1.8	5.8

	2013	2012	2011	2010	2009	2008
Total Fund	15.5 %	13.5 %	-1.1 %	13.4 %	23.7 %	-26.7 %
Total Fund Target Mix Benchmark*	15.1	10.4	-1.2	9.9	20.3	-24.3
Composite Benchmark**	16.3	13.0	-0.3	9.7	18.0	-24.8

	2007	2006	2005	2004	2003	2002
Total Fund	8.6 %	11.3 %	7.5 %	13.1 %	18.6 %	-6.5 %
Total Fund Target Mix Benchmark*	7.9	14.6	6.7	11.0	22.2	-8.5
Composite Benchmark**	8.5	12.8	5.6	8.6	15.5	-4.6

InvMetrics Public DB \$50mm-\$250mm Net Return Comparison
Ending December 31, 2019



	Return (Rank)									
5th Percentile	6.7		22.4		11.2		8.2		9.2	
25th Percentile	5.8		20.6		10.1		7.3		8.4	
Median	5.3		19.1		9.2		6.8		7.9	
75th Percentile	4.9		17.6		8.6		6.4		7.5	
95th Percentile	4.1		15.3		7.7		5.7		5.5	
# of Portfolios	157		157		149		137		16	
● Total Fund	6.0	(17)	18.7	(56)	10.1	(24)	7.0	(44)	7.8	(53)
▲ Total Fund Target Mix Benchmark*	5.7	(34)	18.0	(67)	8.7	(68)	6.2	(83)	7.4	(76)

Individual Manager Analysis

Wells Capital Management

Investment Philosophy

The Heritage Growth team's philosophy is based on the belief that the best companies exhibit both robust and sustainable growth; and opportunities to invest in these companies arise when the market underestimates one or both of these characteristics. The strategy was developed more than 30 years ago. The investment process is repeatable and has consistently generated alpha.

Investment Process

The foundation of the process is built upon all cap research and continuous risk management. By researching companies across the market cap spectrum, Wells Capital gains an informational advantage that's used to find companies where growth is robust, sustainable and underappreciated by the market. Investment ideas come from a variety of sources including management meetings, industry contacts, investment conferences, sell side research, and proprietary screens. They assess business models, competitive advantages and capital structures, among other things, in an attempt to determine if a company's growth is robust and sustainable. In determining whether or not growth is underappreciated, they use a basket of valuation to growth metrics relative to history, the benchmark and peers to interpolate what the market's expectations for growth are. Then they compare the market's expectations for growth to their internal expectations. Continuous risk management, including a successful sell discipline, is utilized throughout the life of an investment to monitor the gap between the market's expectations for growth and the team's assessment of growth. When this gap becomes too narrow, they trim or sell the position. In addition to monitoring investor expectations, there are additional elements to their risk management process. They continuously and rigorously stress test their investment assumptions. And they run proprietary quantitative screens to combat human biases. Ultimately, they construct diversified portfolios consisting of 80 - 100 securities.

Characteristics

	Portfolio	Russell 3000 Growth	Top Holdings	
			AMAZON.COM	5.9%
			ALPHABET A	4.4%
			MICROSOFT	4.3%
			MICROCHIP TECH.	3.4%
			MASTERCARD	3.3%
			VISA 'A'	3.0%
			APPLE	2.8%
			ENVESTNET	2.5%
			BURLINGTON STORES	2.4%
			FACEBOOK CLASS A	2.4%
Number of Holdings	96	1,702		
Weighted Avg. Market Cap. (\$B)	222.8	339.4		
Median Market Cap. (\$B)	14.3	1.9		
Price To Earnings	35.8	29.6		
Price To Book	8.2	8.2		
Price To Sales	4.0	2.9		
Return on Equity (%)	18.4	30.5		
Yield (%)	0.6	1.1		

RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

	Wells Capital Management	Russell 3000 Growth
RETURN SUMMARY STATISTICS		
Number of Periods	60	60
Maximum Return	11.3	9.2
Minimum Return	-10.4	-9.2
Annualized Return	13.4	14.2
Total Return	87.1	94.5
Annualized Excess Return Over Risk Free	12.3	13.2
Annualized Excess Return	-0.9	0.0

	Portfolio	Russell 3000 Growth	Characteristics	Portfolio	Russell 3000 Growth
INDUSTRY SECTOR DISTRIBUTION (% Equity)					
Energy	0.0	0.3			
Materials	1.7	1.5			
Industrials	12.7	9.9			
Consumer Discretionary	17.7	13.7			
Consumer Staples	1.7	4.6			
Health Care	9.9	15.8			
Financials	5.0	3.3			
Information Technology	41.3	37.5			
Communication Services	9.3	11.0			
Utilities	0.0	0.1			
Real Estate	0.0	2.5			
Cash	0.5	0.0			
Unclassified	0.2	0.0			
COMPANY SIZE DISTRIBUTION					
Weighted Avg. Market Cap. (\$B)	222.8	339.4			
Median Market Cap. (\$B)	14.3	1.9			
Large Cap. (%)	34.5	54.1			
Medium/Large Cap. (%)	13.3	22.3			
Medium Cap. (%)	22.3	11.9			
Medium/Small Cap. (%)	15.6	6.0			
Small Cap. (%)	12.6	5.7			
Unclassified	1.7	0.0			

RISK SUMMARY STATISTICS

Beta	1.1	1.0
Upside Deviation	8.9	8.0
Downside Deviation	12.0	10.1

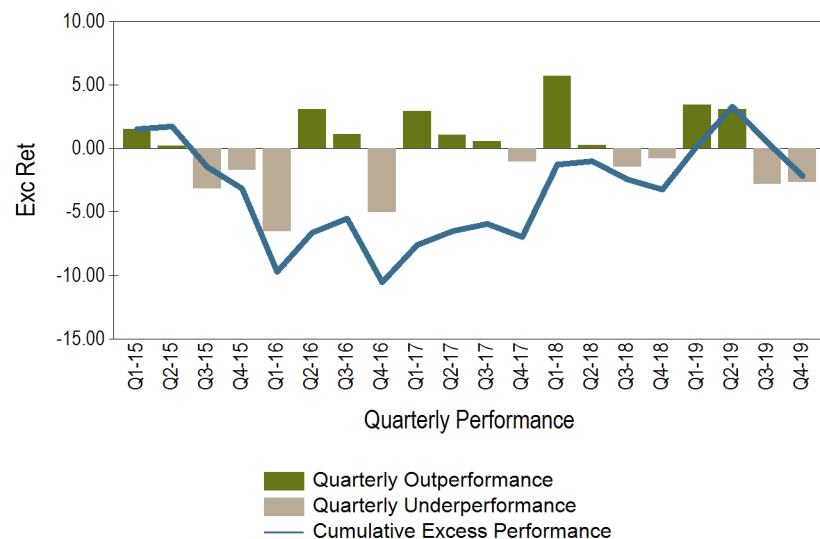
RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	14.7	13.1
Alpha	-0.1	0.0
Sharpe Ratio	0.8	1.0
Excess Return Over Market / Risk	-0.1	0.0
Tracking Error	5.0	0.0
Information Ratio	-0.2	--

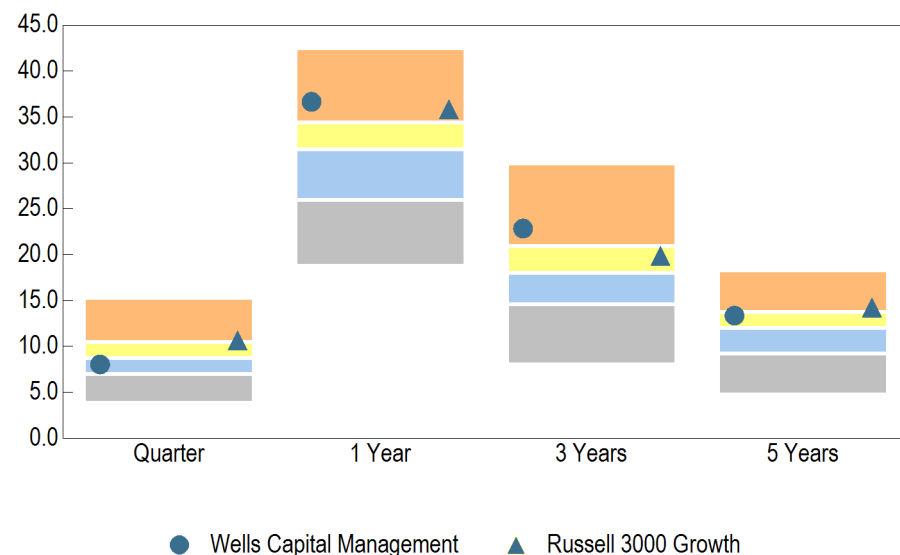
CORRELATION STATISTICS

R-Squared	0.9	1.0
Correlation	0.9	1.0

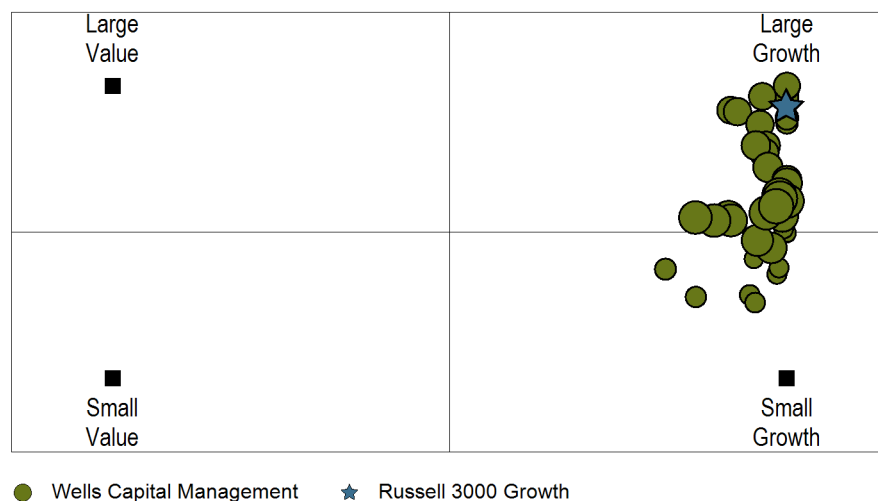
Quarterly and Cumulative Excess Performance



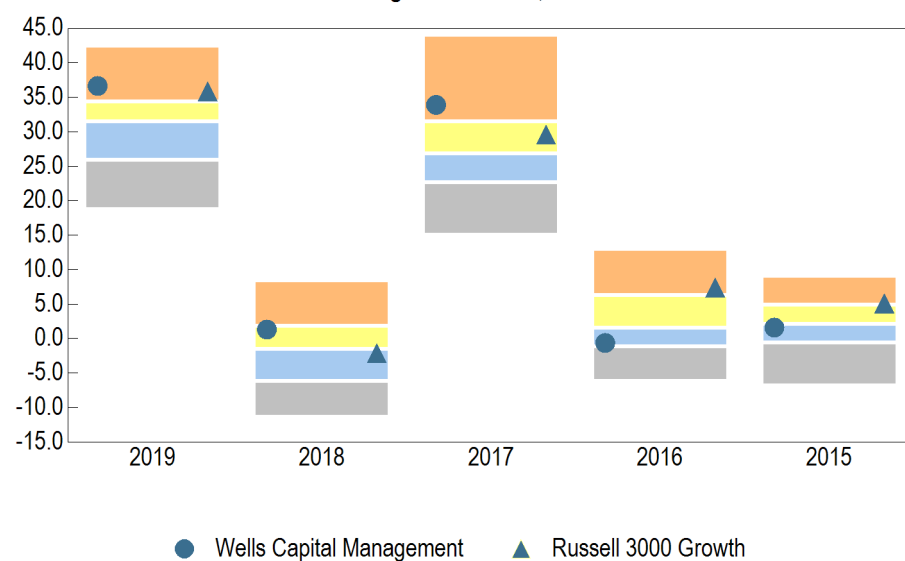
eV US All Cap Growth Equity Net Return Comparison
Ending December 31, 2019



U.S. Effective Style Map
5 Years Ending December 31, 2019



eV US All Cap Growth Equity Net Return Comparison
Ending December 31, 2019



JP Morgan Value Advantage Fund

Investment Philosophy

The J.P. Morgan Value Advantage Strategy's investment philosophy is based on the belief that companies possessing the ability to generate significant free cash flow and effectively allocate capital to generate growth in value per share may, over the long term, outperform stock market averages. The Firm seeks to discover those companies that offer the greatest potential against their current market value. While many companies may be considered cheap, its research process helps them to eliminate those that do not possess the characteristics of a sound, long-term business and to identify those that they feel have been underrated or overlooked by the market.

Investment Process

The Firm employs a bottom-up approach to portfolio construction, focusing on individual stocks rather than economic or sector-specific factors. In order to provide clients with the benefits of diversification, the J.P. Morgan Value Advantage Strategy typically holds between 80 and 120 securities. Security position size is normally between 0.5% and 5.0% and is driven by their calculation of the risk-adjusted expected returns, their level of confidence in the company and their assessment of valuation. The maximum weighting permitted in any one stock is limited to 10% of the portfolio. To allow the portfolio manager the utmost flexibility in finding attractive investment opportunities, there are currently no formal sector constraints in place. Maximum industry exposure is limited to 25% of the portfolio at market. The Firm's investable universe consists of all publicly traded companies listed on U.S. equity markets. Idea generation is a multi-faceted effort that includes qualitative inputs such as information gathered by its in-house research analysts, reviewing trade publications, attendance at industry conferences and communication with various leading industry experts. The end goal of its research process is to discover those companies that offer the greatest potential against their current market value. While many companies may be considered cheap, its fundamental research helps them to eliminate those that do not possess the characteristics of a sound, long-term business and to identify those that they feel have been underrated or overlooked by the market.

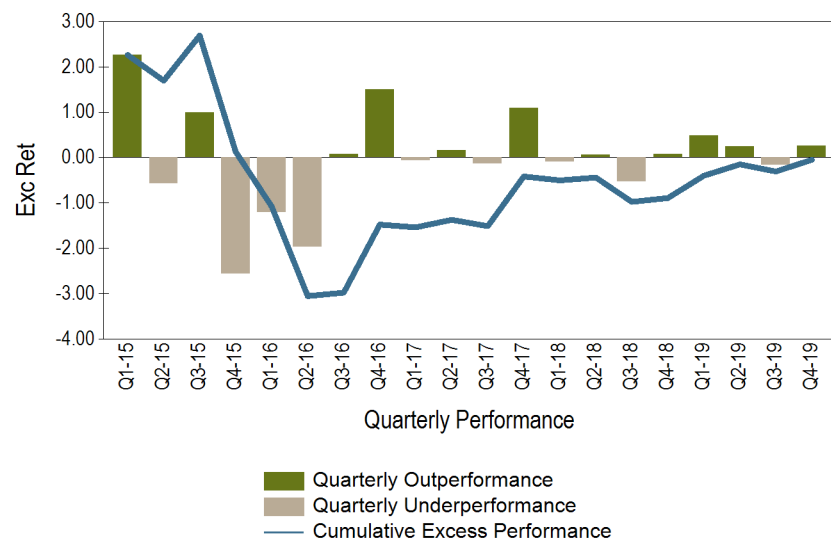
Characteristics**Top Holdings****RISK RETURN STATISTICS**

January 1, 2015 Through December 31, 2019

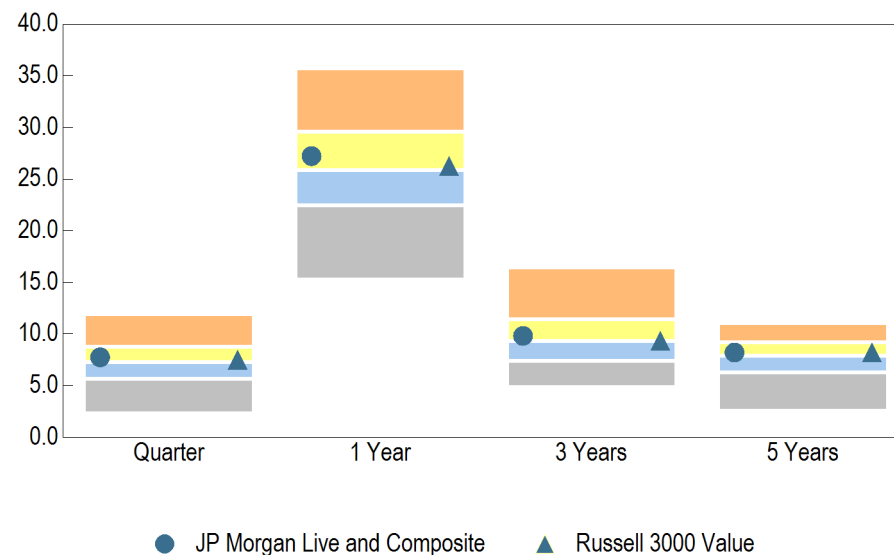
	Portfolio	Russell 3000 Value			JP Morgan Live and Composite	Russell 3000 Value
Number of Holdings	113	2,166	BANK OF AMERICA	4.0%	RETURN SUMMARY STATISTICS	
Weighted Avg. Market Cap. (\$B)	100.1	115.3	CAPITAL ONE FINL.	2.3%		
Median Market Cap. (\$B)	27.6	1.6	PNC FINL.SVS.GP.	2.2%	Number of Periods	60
Price To Earnings	17.6	18.2	WELLS FARGO & CO	2.0%	Maximum Return	7.9
Price To Book	2.4	2.3	LOEWS	1.9%	Minimum Return	-9.7
Price To Sales	1.4	1.4	CHEVRON	1.9%	Annualized Return	8.2
Return on Equity (%)	17.4	12.6	PFIZER	1.7%	Total Return	48.3
Yield (%)	2.4	2.5	DELTA AIR LINES	1.6%	Annualized Excess Return	7.1
			CONOCOPHILLIPS	1.6%	Over Risk Free	7.2
			VERIZON COMMUNICATIONS	1.6%	Annualized Excess Return	0.0

	Portfolio	Russell 3000 Value		Portfolio	Russell 3000 Value		
INDUSTRY SECTOR DISTRIBUTION (% Equity)			COMPANY SIZE DISTRIBUTION			RISK SUMMARY STATISTICS	
Energy	9.1	8.1	Weighted Avg. Market Cap. (\$B)	100.1	115.3	Beta	1.0
Materials	4.5	4.3	Median Market Cap. (\$B)	27.6	1.6	Upside Deviation	6.9
Industrials	7.3	9.9	Large Cap. (%)	28.8	35.9	Downside Deviation	8.9
Consumer Discretionary	7.4	6.1	Medium/Large Cap. (%)	32.3	28.3	RISK/RETURN SUMMARY STATISTICS	
Consumer Staples	5.0	8.5	Medium Cap. (%)	22.6	16.7	Annualized Standard Deviation	12.0
Health Care	10.8	12.5	Medium/Small Cap. (%)	11.1	10.4	Alpha	0.0
Financials	32.7	24.3	Small Cap. (%)	5.1	8.6	Sharpe Ratio	0.6
Information Technology	5.1	6.5	Unclassified	0.0	0.0	Excess Return Over Market / Risk	0.0
Communication Services	5.3	7.8				Tracking Error	1.9
Utilities	5.9	6.6				Information Ratio	0.0
Real Estate	7.1	5.6				CORRELATION STATISTICS	
Unclassified	0.0	0.0				R-Squared	1.0
						Correlation	1.0

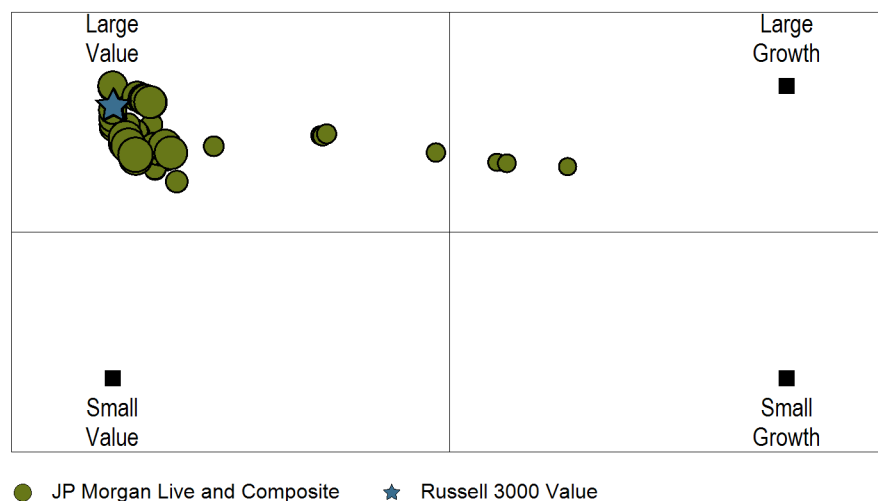
Quarterly and Cumulative Excess Performance



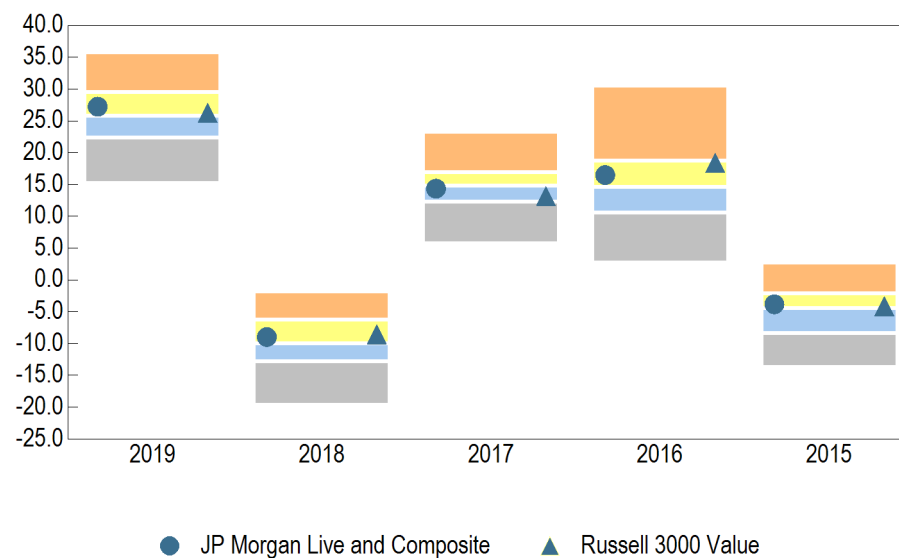
eV US All Cap Value Equity Net Return Comparison
Ending December 31, 2019



U.S. Effective Style Map
5 Years Ending December 31, 2019



eV US All Cap Value Equity Net Return Comparison
Ending December 31, 2019



Invesco Oppenheimer International Growth Fund

Investment Philosophy

The Global Equity team's investment philosophy is based on the notion that superior investment returns can potentially be generated by identifying companies that will benefit from long-term demographic and technological trends. The team expects the global themes that they call MANTRA - Mass Affluence, New Technology, Restructuring and Aging - to play a significant role in the long-term future direction of international equity markets

Investment Process

The Global Equity team utilizes a disciplined, bottom-up, research-intensive approach to identify companies with strong growth prospects in key industries at attractive prices, regardless of their location. The portfolio managers rely on the collaborative participation of the investment professionals to make innovative, high conviction investment decisions in selecting securities and constructing portfolios, but are solely responsible for the investment strategy, asset allocation, portfolio construction, and security selection for the strategy. The portfolio managers seek stocks that will provide returns from a combination of earnings growth and valuation expansion. The investment team screens for companies with favorable forward earnings growth rates and attractive valuations. The portfolio's thematic approach focuses on companies with strong revenue growth and sustainable margins. To identify appropriate growth companies, the portfolio managers conduct an extensive amount of management visits in New York and overseas, and use a combination of fundamental research and quantitative screens.

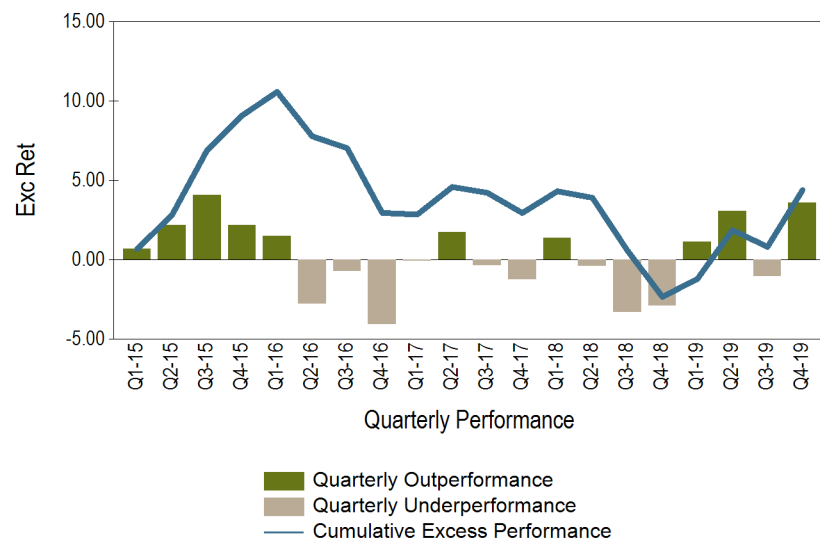
RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

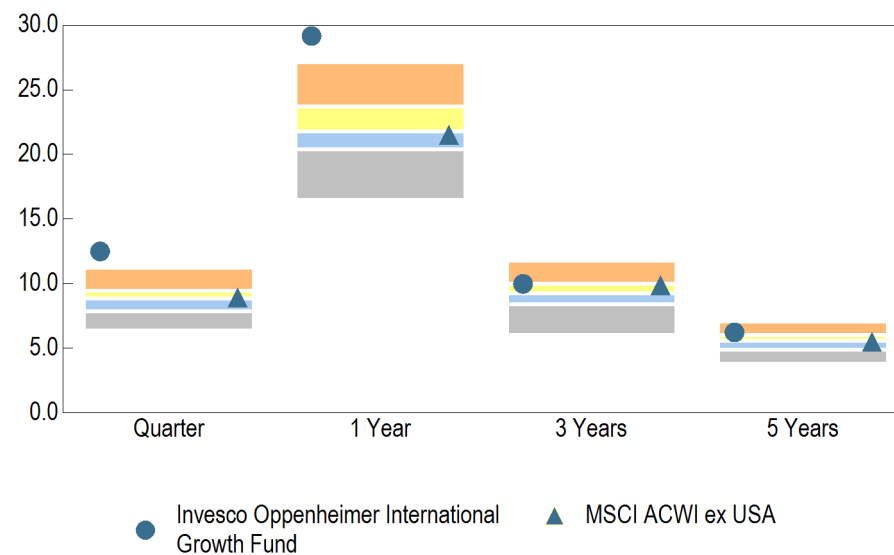
Fund Characteristics as of December 31, 2019		Top Holdings as of December 31, 2019		Invesco Oppenheimer International Growth Fund		MSCI ACWI ex USA
Versus MSCI ACWI ex USA		HITACHI LTD	2.9%	RETURN SUMMARY STATISTICS		
Sharpe Ratio (3 Year)	0.6	SAP SE	2.9%	Number of Periods	60	60
Average Market Cap (\$mm)	31,558.5	ASML HOLDING NV	2.8%	Maximum Return	8.0	8.1
Price/Earnings	22.7	HERMES INTERNATIONAL SA	2.8%	Minimum Return	-9.5	-8.1
Price/Book	3.5	STMICROELECTRONICS NV	2.5%	Annualized Return	6.2	5.5
Price/Sales	2.0	GRIFOLS SA A	2.5%	Total Return	35.3	30.7
Price/Cash Flow	16.4	HOYA CORP	2.5%	Annualized Excess Return	5.2	4.5
Dividend Yield	1.8	KEYENCE CORP	2.3%	Over Risk Free	0.7	0.0
Number of Equity Holdings	76	NOVO NORDISK A/S B	2.2%	Annualized Excess Return	0.7	0.0
R-Squared (3 Year)	0.9	ROCHE HOLDING AG DIVIDEND RIGHT CERT.	2.0%	RISK SUMMARY STATISTICS		
Alpha (3 Year)	0.0%			Beta	1.0	1.0
				Upside Deviation	7.9	7.4
				Downside Deviation	8.3	7.6
				RISK/RETURN SUMMARY STATISTICS		
				Annualized Standard Deviation	13.0	12.5
				Alpha	0.1	0.0
				Sharpe Ratio	0.4	0.4
				Excess Return Over Market / Risk	0.1	0.0
				Tracking Error	5.0	0.0
				Information Ratio	0.1	--
				CORRELATION STATISTICS		
				R-Squared	0.9	1.0
				Correlation	0.9	1.0
Top Countries as of December 31, 2019		Sector Allocation as of December 31, 2019				
France	14.2%	BASIC MATERIALS	2.6%			
Japan	12.7%	COMMUNICATION SERVICES	1.2%			
Switzerland	11.2%	CONSUMER CYCLICAL	14.2%			
United Kingdom	8.9%	CONSUMER DEFENSIVE	12.5%			
United States	7.8%	ENERGY	1.0%			
Germany	7.7%	FINANCIAL SERVICES	6.4%			
Netherlands	5.5%	HEALTHCARE	18.5%			
Canada	5.5%	INDUSTRIALS	19.2%			
Spain	4.8%	REAL ESTATE	0.0%			
Sweden	4.1%	TECHNOLOGY	24.4%			
		UTILITIES	0.0%			

Cash Excluded from Sector Breakdown

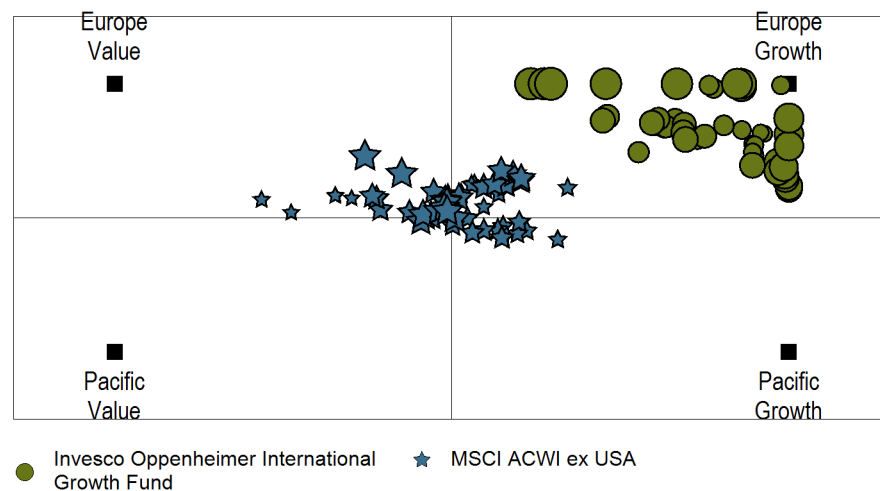
Quarterly and Cumulative Excess Performance



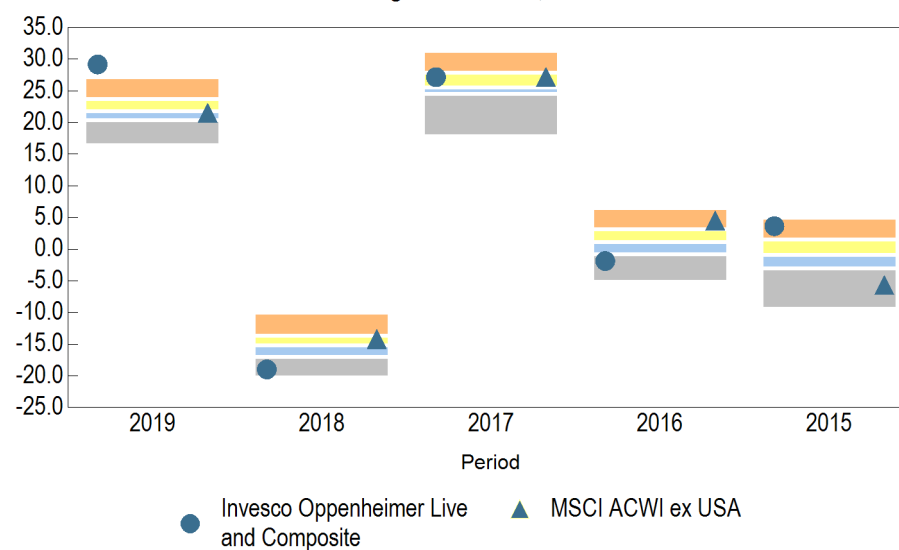
Foreign Large Blend MStar MF Return Comparison
Ending December 31, 2019



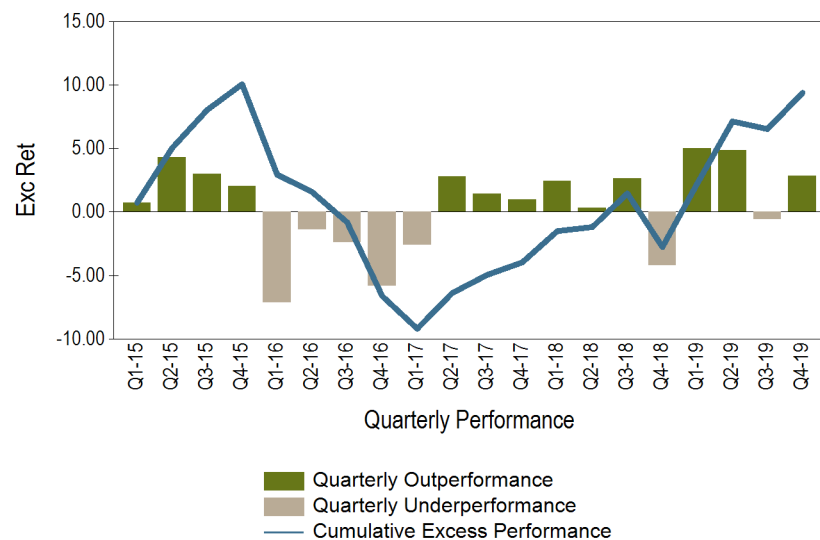
Non U.S. Regional Effective Style Map
5 Years Ending December 31, 2019



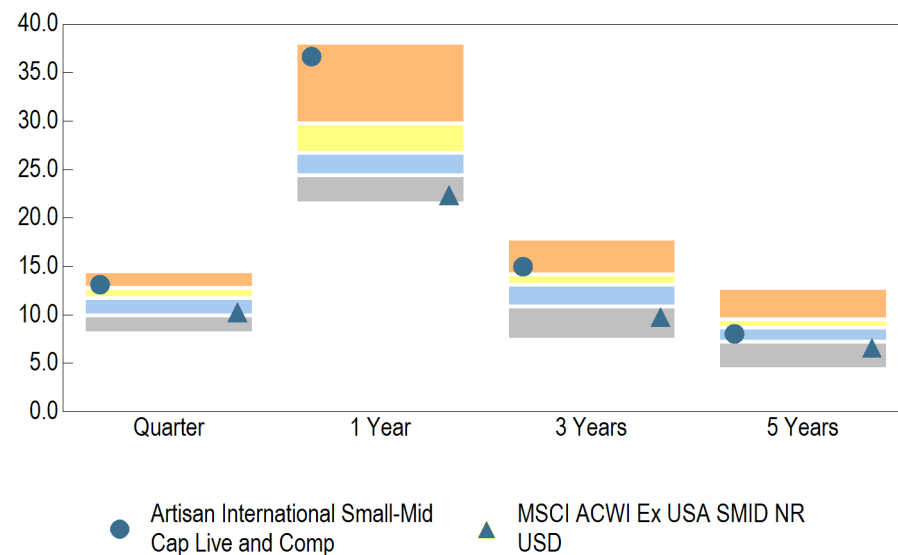
Foreign Large Blend MStar MF Return Comparison
Ending December 31, 2019



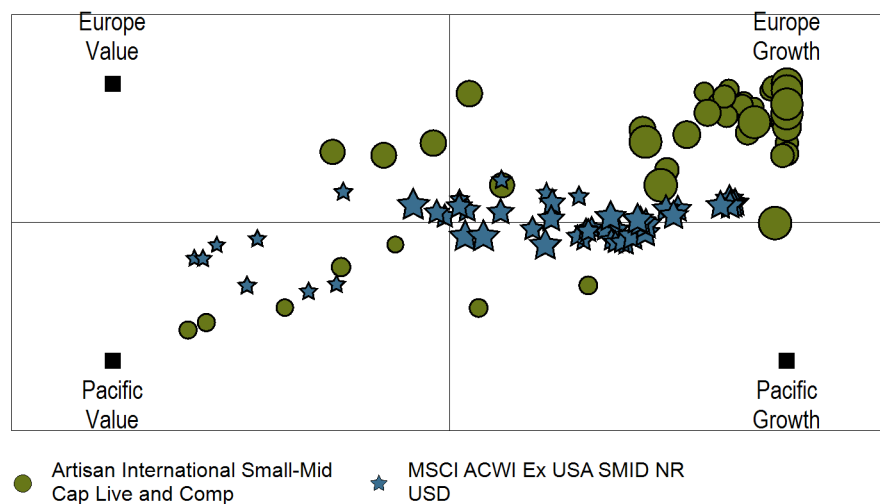
Quarterly and Cumulative Excess Performance



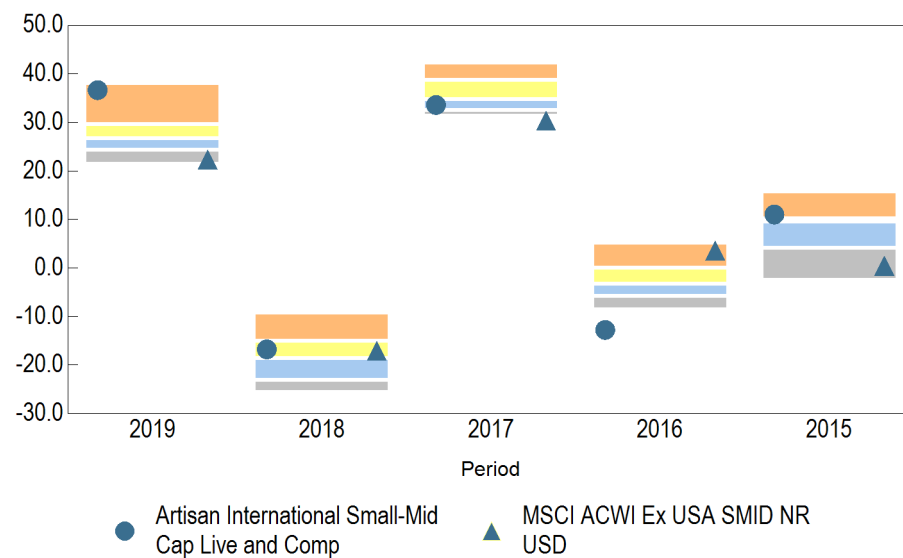
Foreign Small/Mid Growth MStar MF Return Comparison
Ending December 31, 2019



Non U.S. Regional Effective Style Map
5 Years Ending December 31, 2019



Foreign Small/Mid Growth MStar MF Return Comparison
Ending December 31, 2019



RBC Emerging Markets Equity Fund Class R6

Investment Philosophy

RBC's investment philosophy for the Emerging Markets Equity Strategy is: 1) Strong management is fundamental to a stock's performance 2) Quality franchises outperform over time and 3) Sustainability matters.

Investment Process

Central to the EME Team's approach is a belief in quality, value, patience and researched conviction. The EME Team takes a fundamental, bottom-up approach to stock selection augmented by a top-down macroeconomic overlay driven by long-term secular themes. ESG analysis is embedded in the team's research. In emerging markets, the difference between higher and lower quality companies is more marked than it is in developed markets, but the premium paid for that quality is not commensurately higher. The EME Team targets 60–80% contribution to relative performance from bottom-up stock selection. They look for companies with the ability to continually compound cash flow return on investment (CFROI). This is generally driven by above-average revenue, earnings and cash flow growth over the intermediate to long term. They also focus on profitability, visibility, balance sheet strength and cash flow generation.

Fund Characteristics as of December 31, 2019

Versus MSCI Emerging Markets		Top Holdings as of December 31, 2019	
Sharpe Ratio (3 Year)		TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	7.0%
Average Market Cap (\$mm)	34,964.0	AIA GROUP LTD	4.7%
Price/Earnings	16.1	HOUSING DEVELOPMENT FINANCE CORP LTD	4.4%
Price/Book	2.4	NASPERS LTD CLASS N	4.4%
Price/Sales	2.2	PING AN INSURANCE (GROUP) CO. OF CHINA LTD CLASS H	3.9%
Price/Cash Flow	7.2	TATA CONSULTANCY SERVICES LTD	3.7%
Dividend Yield	2.5	UNILEVER PLC	3.4%
Number of Equity Holdings	48	TENCENT HOLDINGS LTD	3.2%
R-Squared (3 Year)		ANTOFAGASTA PLC	3.1%
Alpha (3 Year)		SM INVESTMENTS CORP	3.1%

RISK RETURN STATISTICS

December 1, 2016 Through December 31, 2019

	RBC Emerging Markets Equity Fund Class R6 Live and Composite	MSCI Emerging Markets
RETURN SUMMARY STATISTICS		
Number of Periods	37	37
Maximum Return	7.8	8.8
Minimum Return	-6.9	-8.7
Annualized Return	11.9	11.3
Total Return	41.3	39.2
Annualized Excess Return Over Risk Free	10.2	9.7
Annualized Excess Return	0.5	0.0

RISK SUMMARY STATISTICS

Beta	0.8	1.0
Upside Deviation	6.7	8.8
Downside Deviation	7.7	9.1

RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	12.4	14.2
Alpha	0.2	0.0
Sharpe Ratio	0.8	0.7
Excess Return Over Market / Risk	0.0	0.0
Tracking Error	3.8	0.0
Information Ratio	0.1	--

CORRELATION STATISTICS

R-Squared	0.9	1.0
Correlation	1.0	1.0

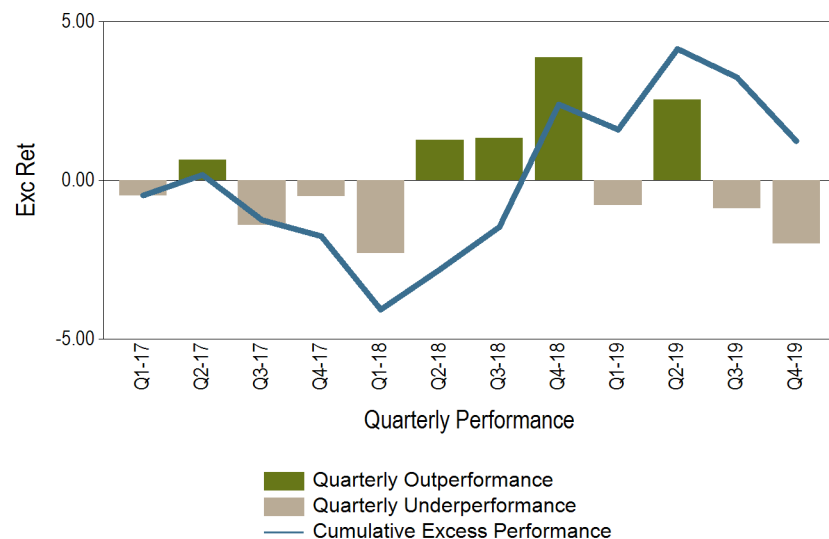
Top Countries as of December 31, 2019

Taiwan	16.7%
India	14.9%
China	14.0%
South Korea	9.9%
South Africa	8.4%
United Kingdom	8.2%
Brazil	6.7%
Hong Kong	4.8%
Indonesia	3.2%
Philippines	3.1%

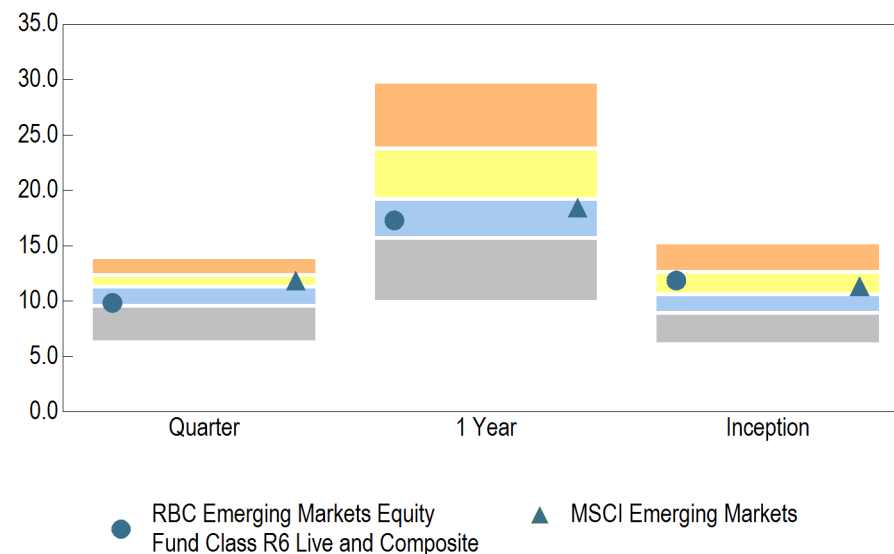
Sector Allocation as of December 31, 2019

BASIC MATERIALS	4.8%
COMMUNICATION SERVICES	10.5%
CONSUMER CYCLICAL	12.2%
CONSUMER DEFENSIVE	10.6%
ENERGY	0.0%
FINANCIAL SERVICES	31.8%
HEALTHCARE	8.5%
INDUSTRIALS	3.4%
REAL ESTATE	1.8%
TECHNOLOGY	16.6%
UTILITIES	0.0%

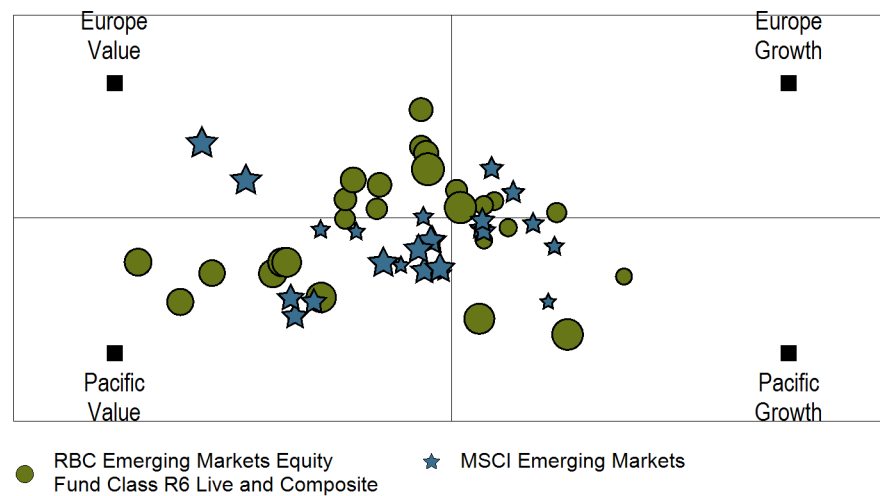
Quarterly and Cumulative Excess Performance



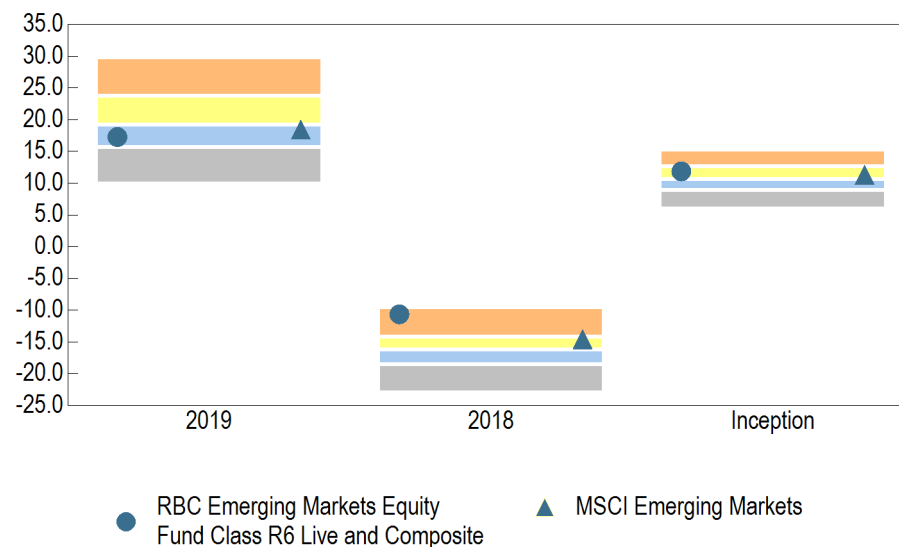
eV Emg Mkts Equity Net Return Comparison
Ending December 31, 2019



Non U.S. Regional Effective Style Map
3 Years 1 Month Ending December 31, 2019



eV Emg Mkts Equity Net Return Comparison
Ending December 31, 2019



Investment Philosophy

Optimum Quantvest Corporation manages fixed income portfolios in a top-down approach, wherein they seek to structure the portfolios so as to reflect the assessment of the investment attractiveness of currently available yields and spreads in view of their absolute levels and in view of the changes in those levels that they expect will occur over an intermediate (six to twelve month) time frame. They seek to maximize the expected total return over a medium term horizon without incurring risks that entail suffering permanent loss of principal.

Investment Process

They focus on U.S. Treasury securities, other U.S. Government and Agency debt, as well as on U.S. dollar-denominated AA or AAA rated corporate or super national/sovereign issues, always maintaining at least an 85% weighting in U.S. government and agency debt. The sector weightings between Treasuries/Agencies/Corporate reflect the assessment of the attractiveness of the spreads (risk premiums) available on non-Treasury securities relative to their historical range, as well as the anticipated change in such spreads over the next six to twelve months. They typically do not trade the entire portfolio when making adjustments to the portfolio posture; rather they usually own a number of core holdings that may remain in the portfolio for a period of several years, while they may utilize 25 - 50% of the holdings as vehicles for restructuring the portfolio profile from time to time. Typically at least half of the portfolio is invested in US Treasury securities, with the balance in Government Agency debentures, issues guaranteed by the US Government or collateralized by Government debt. From time to time, when they find credit spreads particularly attractive, a benchmark weighting or even slight overweighting could be assigned to US dollar denominated debt issued by AA or AAA-rated corporations or supranational agencies (such as World Bank) or top quality foreign governments.

Hillswick Asset Management Fixed Income**Characteristics**

vs. BBgBarc US Aggregate TR

	Portfolio Q4-19	Index Q4-19
Fixed Income Characteristics		
Number of Issues	40	11,037
Yield to Maturity	2.1	2.3
Years to Maturity	8.2	8.2
Average Duration	6.3	6.3
Effective Duration	6.2	6.2
Average Mod Duration	6.3	6.3
Average Quality	AA	AA
Weighted Average Maturity	11.4	13.1

US Sector Allocation

UST/Agency	69.0	42.1
Corporate	10.9	25.1
MBS	18.2	29.1
ABS	--	0.5
Foreign	1.3	2.3
Muni	--	1.0
Cash	0.6	--

Top Holdings

UST 1.625 08/15/22	12.6%
UST 3.750 11/15/43	9.0%
UST 2.125 08/31/20	8.7%
FNMA CONV 30 YR SF	8.4%
UST 2.000 02/15/23	7.2%
UST 5.375 02/15/31	6.6%
UNITED STATES TREASURY	6.5%
UST 1.875 01/31/22 When Iss	5.4%
UST 6.500 11/15/26	5.2%
UST 1.500 10/31/23 When Iss	2.4%

Hillswick Asset Management Fixed Income**Characteristics**

vs. BBgBarc US Aggregate TR

	Portfolio Q4-19	Index Q4-19
Maturity Allocation		
<1 Year	8.7	0.0
1-3 Years	18.0	21.1
3-5 Years	19.3	21.1
5-7 Years	23.7	25.9
7-10 Years	2.3	11.6
10-15 Years	8.6	1.4
15-20 Years	5.5	2.8
20-30 Years	12.1	12.8
>30 Years	1.3	0.7
NA/Unknown	0.6	2.7

RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

	Optimum Quantvest	BBgBarc US Aggregate TR
RETURN SUMMARY STATISTICS		
Number of Periods	60	60
Maximum Return	2.9	2.6
Minimum Return	-2.3	-2.4
Annualized Return	2.9	3.0
Total Return	15.6	16.2
Annualized Excess Return	1.9	2.0
Over Risk Free		
Annualized Excess Return	-0.1	0.0

RISK SUMMARY STATISTICS

Beta	1.1	1.0
Upside Deviation	2.7	2.3
Downside Deviation	1.7	1.8

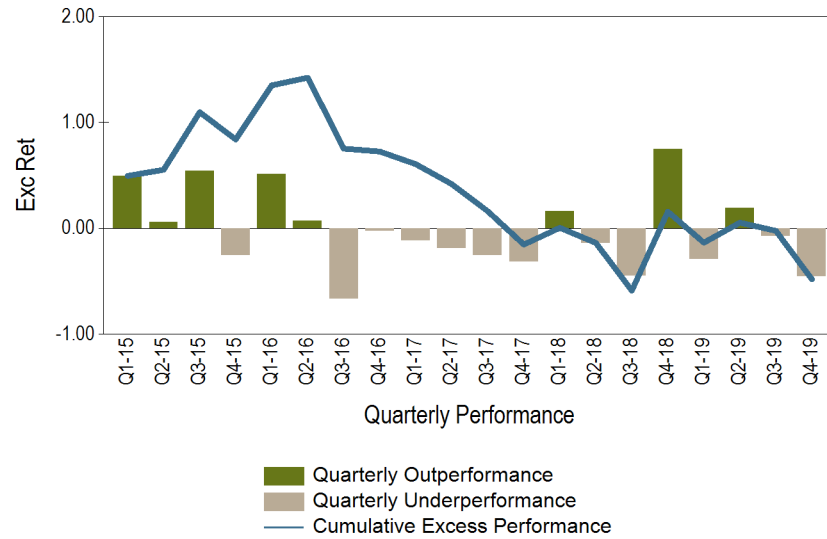
RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	3.5	3.1
Alpha	0.0	0.0
Sharpe Ratio	0.5	0.7
Excess Return Over Market / Risk	0.0	0.0
Tracking Error	0.8	0.0
Information Ratio	-0.1	--

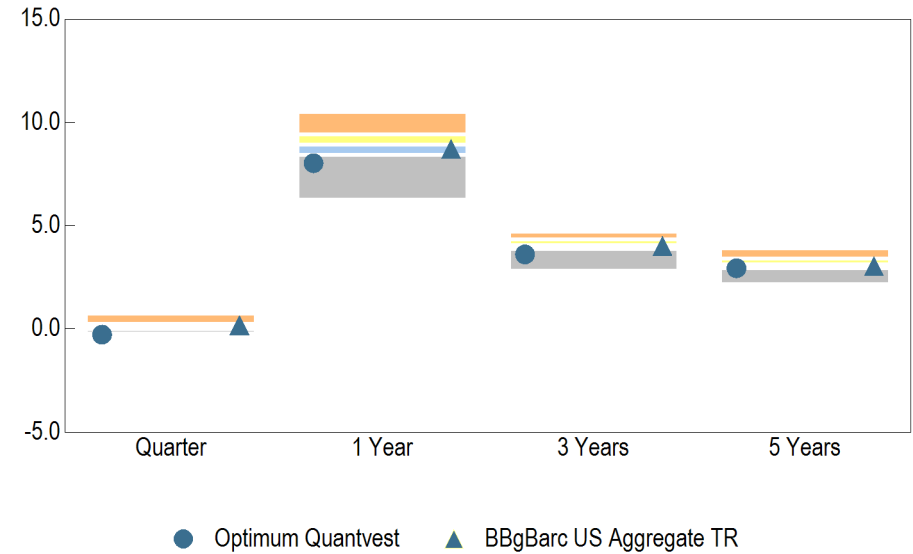
CORRELATION STATISTICS

R-Squared	1.0	1.0
Correlation	1.0	1.0

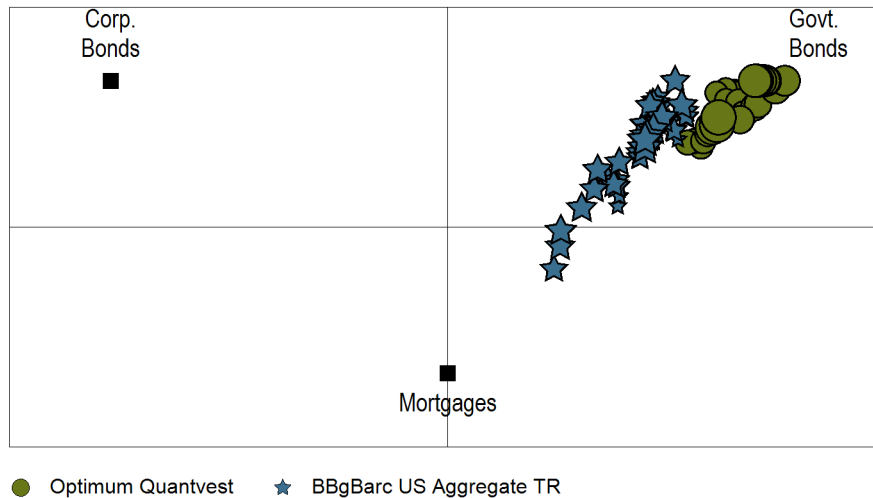
Quarterly and Cumulative Excess Performance



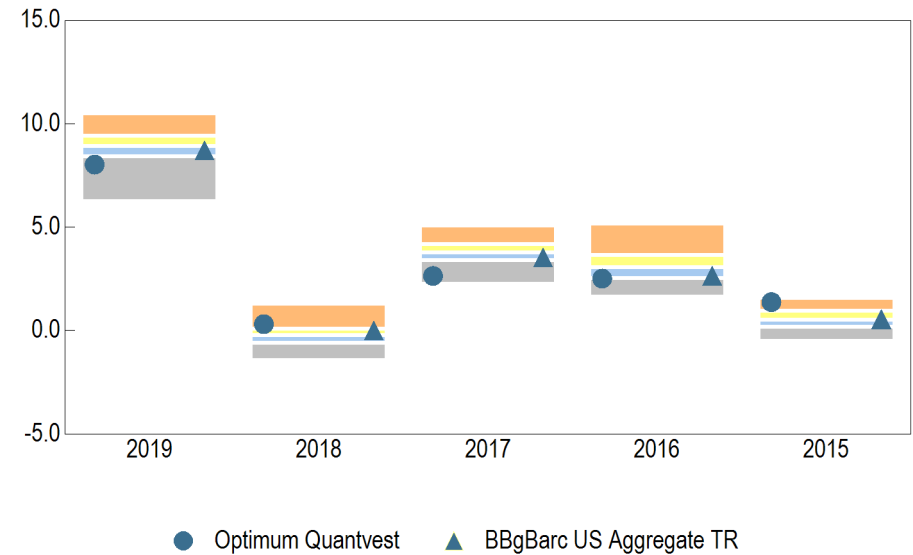
eV US Core Fixed Inc Net Return Comparison
Ending December 31, 2019



Fixed Income Style Map
5 Years Ending December 31, 2019



eV US Core Fixed Inc Net Return Comparison
Ending December 31, 2019



BrandywineGLOBAL - Global Opportunities Bond Fund CI I

Investment Overview

Brandywine applies a top-down, value-driven process when structuring global fixed income portfolios. Their Opportunistic Fixed Income strategy allows for allocation to emerging markets and for allocation to high yield debt. Real (inflation-adjusted) yield is Brandywine's primary measure of value. Currency valuation is next in importance, as the real yield must be captured in the investor's local currency (dollars for U.S. investors and euros for many of those in Europe, for example). Brandywine focuses on appreciating, undervalued currencies and overvalued currencies that can be hedged. Inflation trends, political risks, monetary trends, and business cycle and liquidity measures are also considered. Brandywine typically concentrates investments in 6-10 countries that appear to offer the best total return potential.

Portfolio Fund Information as of December 31, 2019

Ticker	GOBSX
Morningstar Category	World Bond
Average Market Cap (\$mm)	
Net Assets (\$mm)	1,887.4
% Assets in Top 10 Holdings	51.1
Total Number of Holdings	85
Manager Name	David F. Hoffman
Manager Tenure	13
Expense Ratio	0.6%
Closed to New Investors	No

Top Holdings as of December 31, 2019

UNITED STATES TREASURY NOTES 1.78%	13.5%
UNITED STATES TREASURY NOTES 1.7%	10.3%
UNITED STATES TREASURY NOTES 1.86%	5.6%
MEXICO (UNITED MEXICAN STATES) 7.75%	3.8%
UNITED STATES TREASURY BONDS 3%	3.5%
MEXICO (UNITED MEXICAN STATES) 8.5%	3.1%
MEXICO (UNITED MEXICAN STATES) 8.5%	3.1%
REPUBLIC OF COLOMBIA 6%	3.0%
GOLDMAN SACHS GROUP, INC. 2.66%	2.8%
AUSTRALIA (COMMONWEALTH OF) 5.75%	2.5%

Fixed Income Sectors as of December 31, 2019

GOVERNMENT	48.6%
MUNICIPAL	0.0%
CORPORATE	8.1%
SECURITIZED	0.6%
CASH & EQUIVALENTS	1.3%
DERIVATIVE	41.4%

Credit Quality as of December 31, 2019

AAA	40.0%
AA	2.3%
A	29.0%
BBB	18.0%
BB	9.9%
B	0.6%
Below B	0.0%
Not Rated	0.0%

RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

**BrandywineGLOBAL -
Global Opportunities Bond
Fund CI I Live and
Composite**

FTSE WGBI TR

RETURN SUMMARY STATISTICS

Number of Periods	60	60
Maximum Return	6.0	3.7
Minimum Return	-5.6	-4.6
Annualized Return	2.5	2.0
Total Return	12.9	10.6
Annualized Excess Return Over Risk Free	1.4	1.0
Annualized Excess Return	0.4	0.0

RISK SUMMARY STATISTICS

Beta	1.0	1.0
Upside Deviation	4.7	3.0
Downside Deviation	4.4	3.5

RISK/RETURN SUMMARY STATISTICS

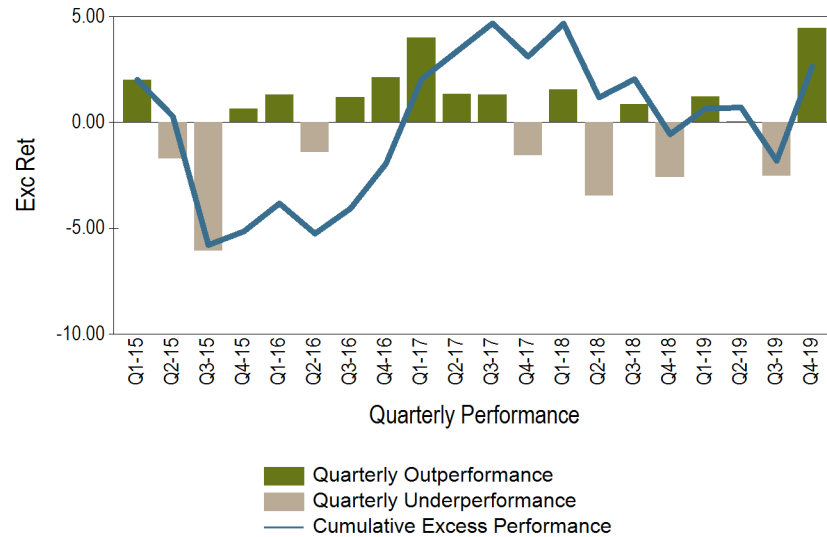
Annualized Standard Deviation	7.8	5.4
Alpha	0.0	0.0
Sharpe Ratio	0.2	0.2
Excess Return Over Market / Risk	0.1	0.0
Tracking Error	5.4	0.0
Information Ratio	0.1	--

CORRELATION STATISTICS

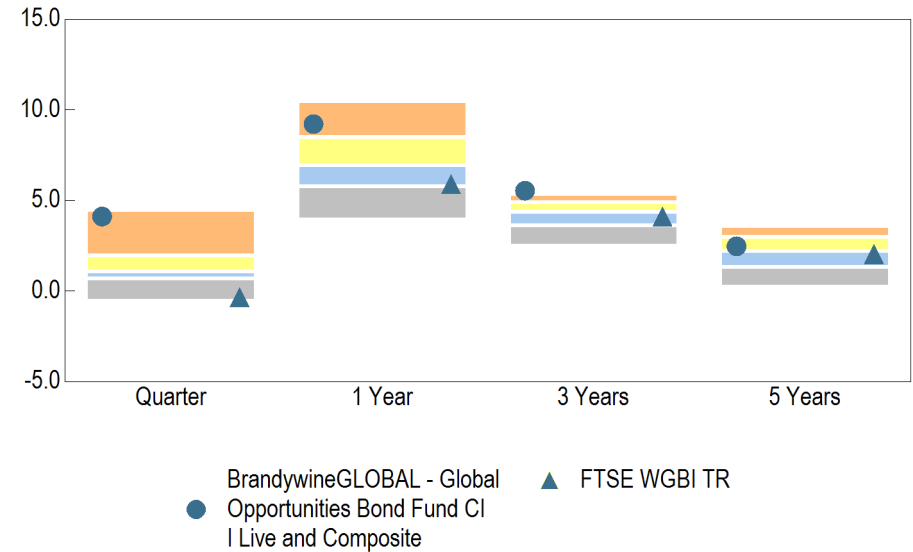
R-Squared	0.5	1.0
Correlation	0.7	1.0

Market Proxy: FTSE WGBI TR

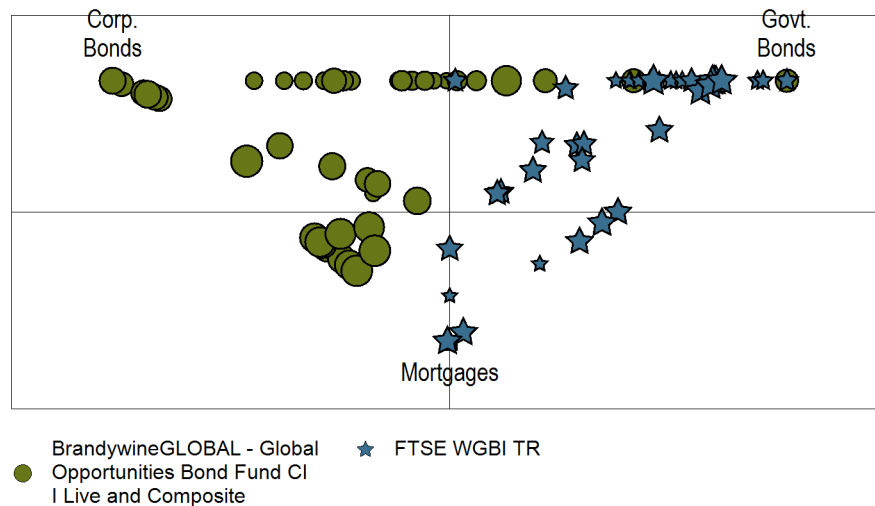
Quarterly and Cumulative Excess Performance



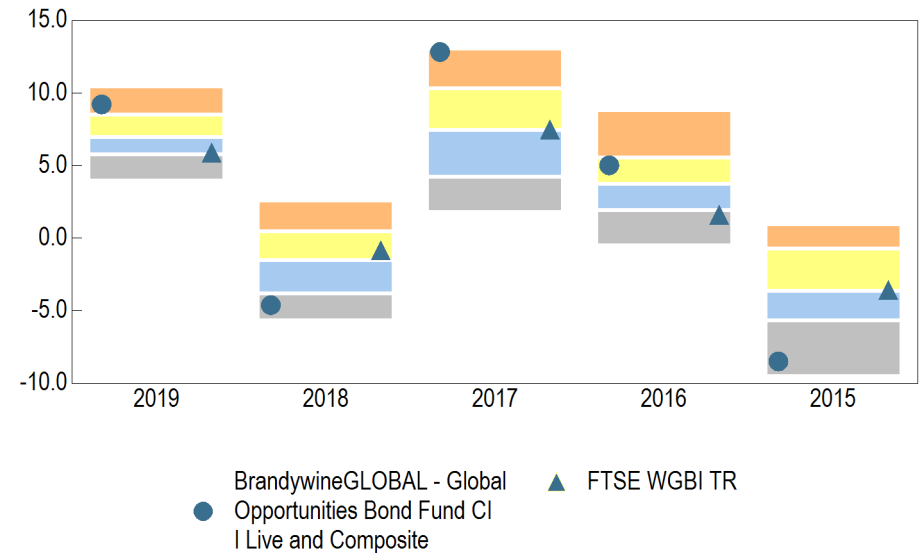
World Bond MStar MF Return Comparison
Ending December 31, 2019



Fixed Income Style Map
5 Years Ending December 31, 2019



World Bond MStar MF Return Comparison
Ending December 31, 2019



Voya Strategic Income Opportunities R6

Investment Overview

The Fund employs an investment process that includes three steps that leverage the collective insights from across Voya's Fixed Income platform. Incorporating both top-down and bottom-up research insights, their Asset Allocation committee deliberates and prioritizes investment themes impacting fixed income markets, offers unencumbered views regarding sectors and overall risk posturing. Voya defines the product style as unconstrained portfolio construction within a constrained risk objective. While the investment universe is broad, they focus solely on fixed income investment opportunities in cash and related derivative markets. Further, all portfolio construction decisions are made within a defined fixed-income-like risk budget. This ensures that all investment decisions are made with extreme discipline through the lens of maximizing risk-adjusted returns. They believe this approach limits undue correlation to traditional fixed income and equity markets. The strategy's objective is to deliver consistent risk-adjusted returns, with low correlation to traditional fixed income and equity, across all market environments utilizing an unconstrained fixed income universe with fixed income-like risk exposures and volatility.

Portfolio Fund Information as of December 31, 2019

Ticker	VSIRX
Morningstar Category	Nontraditional Bond
Average Market Cap (\$mm)	
Net Assets (\$mm)	255.2
% Assets in Top 10 Holdings	36.0
Total Number of Holdings	1,609
Manager Name	Matthew Toms
Manager Tenure	7
Expense Ratio	0.6%
Closed to New Investors	No

Fixed Income Sectors as of December 31, 2019

GOVERNMENT	15.2%
MUNICIPAL	0.0%
CORPORATE	18.7%
SECURITIZED	50.0%
CASH & EQUIVALENTS	16.1%
DERIVATIVE	0.0%

Top Holdings as of December 31, 2019

FUTURE ON US 10 YEAR NOTE (CBT)	12.5%
FUTURE ON US 10 YEAR NOTE (CBT)	6.8%
2 YEAR TREASURY NOTE FUTURE MAR20	6.0%
ULTRA 10 YEAR US TREASURY NOTE FUTURE MAR20	4.3%
GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 0%	1.5%
ULTRA US TREASURY BOND FUTURE MAR20	1.4%
FEDERAL NATIONAL MORTGAGE ASSOCIATION 0%	1.3%
GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 0%	0.8%
FUTURE ON US 5 YEAR NOTE (CBT)	0.7%

Credit Quality as of December 31, 2019

AAA	18.3%
AA	5.7%
A	11.5%
BBB	20.3%
BB	19.5%
B	19.8%
Below B	3.6%
Not Rated	1.4%

RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

Voya Strategic Income Opportunities R6 Live and Composite **BBgBarc US Universal TR**

RETURN SUMMARY STATISTICS

Number of Periods	60	60
Maximum Return	2.0	2.3
Minimum Return	-0.8	-2.2
Annualized Return	4.8	3.4
Total Return	26.7	18.4
Annualized Excess Return Over Risk Free	3.8	2.4
Annualized Excess Return	1.4	0.0

RISK SUMMARY STATISTICS

Beta	0.1	1.0
Upside Deviation	1.3	2.0
Downside Deviation	0.7	1.8

RISK/RETURN SUMMARY STATISTICS

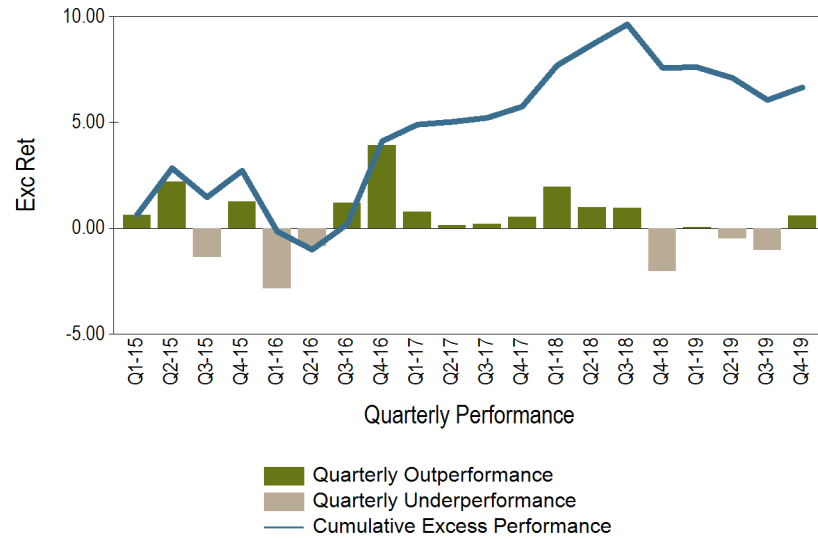
Annualized Standard Deviation	1.6	2.8
Alpha	0.4	0.0
Sharpe Ratio	2.3	0.8
Excess Return Over Market / Risk	0.9	0.0
Tracking Error	2.9	0.0
Information Ratio	0.5	--

CORRELATION STATISTICS

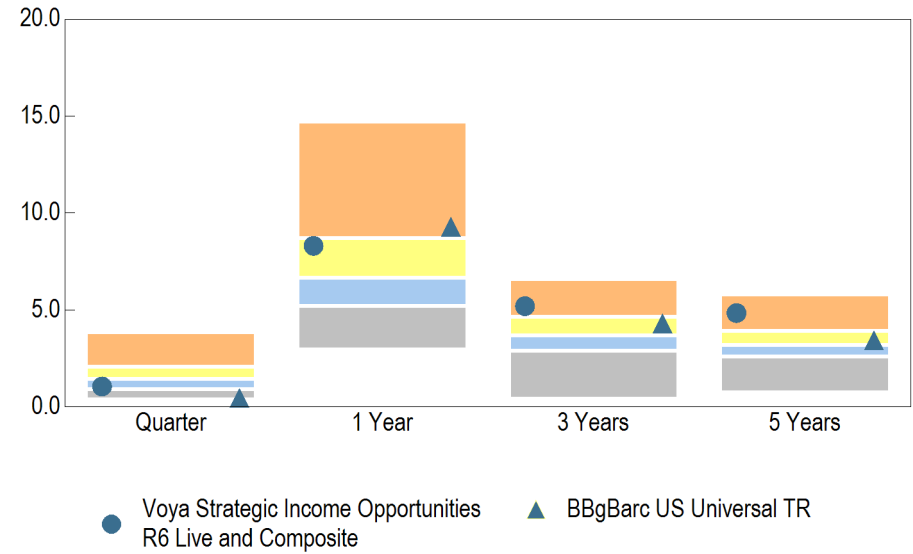
R-Squared	0.0	1.0
Correlation	0.2	1.0

Market Proxy: BBgBarc US Universal TR

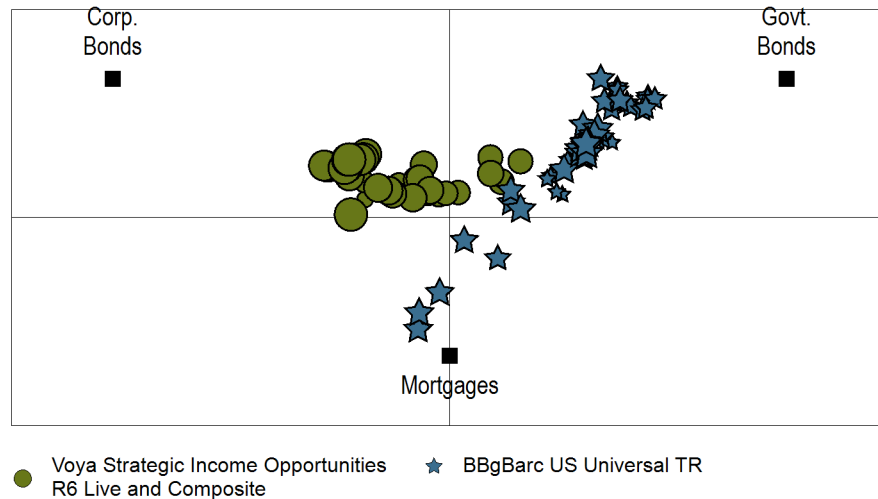
Quarterly and Cumulative Excess Performance



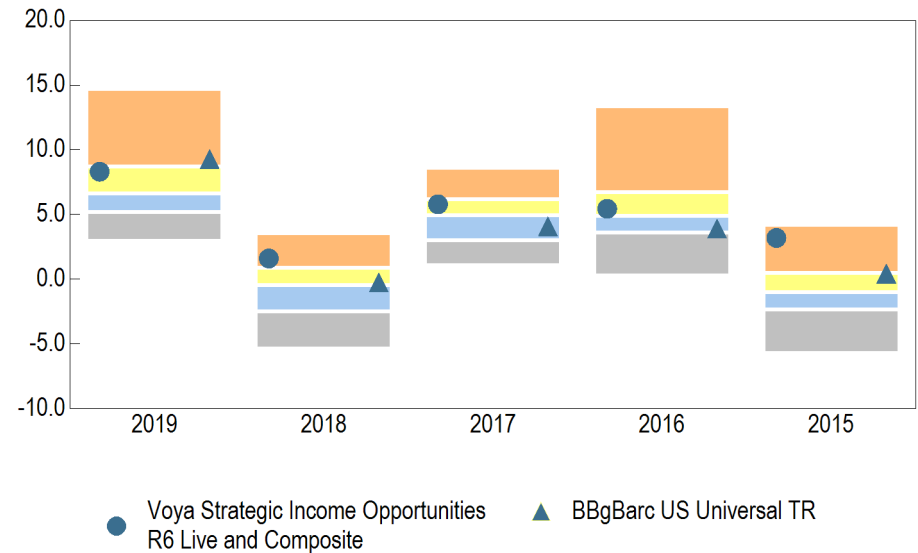
Nontraditional Bond MStar MF Return Comparison
Ending December 31, 2019



Fixed Income Style Map
5 Years Ending December 31, 2019



Nontraditional Bond MStar MF Return Comparison
Ending December 31, 2019



Courage Credit Opportunities Offshore Fund III, LP

Investment Overview

Courage Credit Opportunities focuses on distressed securities of middle-market U.S. companies with an emphasis on non-control positions in secured and senior debt instruments. The Fund employs an active approach to influence the process and enhance value. The portfolio targets 20 to 30 long positions, generally between 2% and 7% of assets, focused on secured and other senior debt, which provide collateral and legal safeguards. Courage will incorporate a rigorous and detailed understanding of enterprise value, corporate and legal structure, bankruptcy law, credit, debt capacity, fundamental equity valuation, and above all, risk pricing.

Cash Flows

5 Years 1 Month Ending December 31, 2019

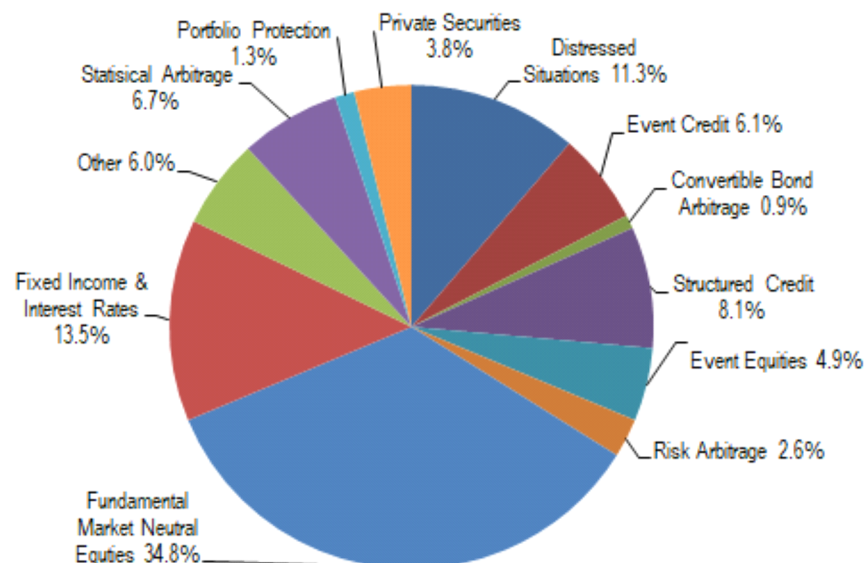
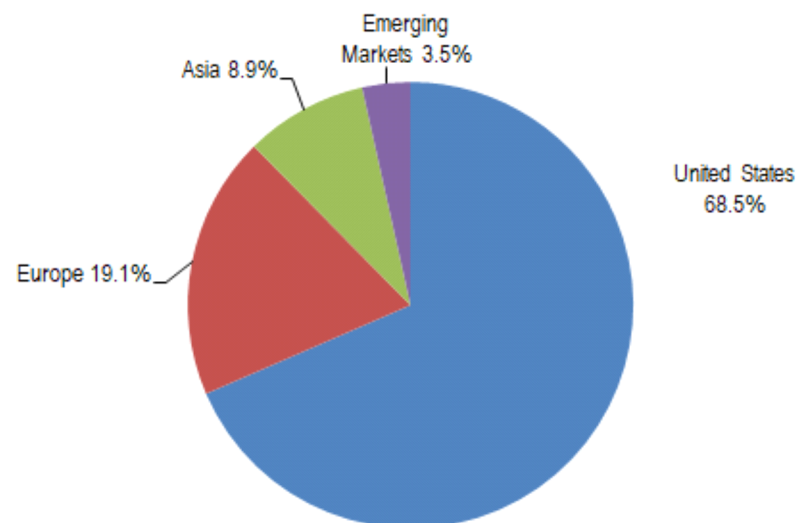
Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Dec-14	--	\$427,470.00	\$0.00	\$427,470.00	-\$51,627.00	\$375,843.00
Mar-15	\$375,843.00	\$0.00	\$0.00	\$0.00	\$12,648.00	\$388,491.00
Jun-15	\$388,491.00	\$0.00	\$0.00	\$0.00	\$335.00	\$388,826.00
Sep-15	\$388,826.00	\$118,427.00	\$0.00	\$118,427.00	-\$11,538.00	\$495,715.00
Dec-15	\$495,715.00	\$0.00	-\$72,615.00	-\$72,615.00	-\$9,968.00	\$413,132.00
Mar-16	\$413,132.00	\$0.00	\$0.00	\$0.00	-\$5,036.00	\$408,096.00
Jun-16	\$408,096.00	\$262,467.00	\$0.00	\$262,467.00	\$23,338.00	\$693,901.00
Sep-16	\$693,901.00	\$206,375.00	\$0.00	\$206,375.00	-\$19,698.00	\$880,578.00
Dec-16	\$880,578.00	\$0.00	-\$57,312.00	-\$57,312.00	\$29,980.00	\$853,246.00
Mar-17	\$853,246.00	\$0.00	\$0.00	\$0.00	\$58,976.00	\$912,222.00
Jun-17	\$912,222.00	\$0.00	\$0.00	\$0.00	-\$72,693.00	\$839,529.00
Sep-17	\$839,529.00	\$362,752.00	-\$39,722.00	\$323,030.00	\$16,281.00	\$1,178,840.00
Dec-17	\$1,178,840.00	\$457,222.00	-\$93,129.00	\$364,093.00	\$111,253.00	\$1,654,186.00
Mar-18	\$1,654,186.00	\$422,570.00	\$0.00	\$422,570.00	\$34,902.00	\$2,111,658.00
Jun-18	\$2,111,658.00	\$0.00	\$0.00	\$0.00	\$58,467.00	\$2,170,125.00
Sep-18	\$2,170,125.00	\$0.00	-\$109,512.00	-\$109,512.00	\$114,301.00	\$2,174,914.00
Dec-18	\$2,174,914.00	\$0.00	\$0.00	\$0.00	-\$198,793.00	\$1,976,121.00
Mar-19	\$1,976,121.00	\$0.00	-\$320,877.00	-\$320,877.00	\$29,947.00	\$1,685,191.00
Jun-19	\$1,685,191.00	\$0.00	-\$161,677.00	-\$161,677.00	-\$52,538.00	\$1,470,976.00
Sep-19	\$1,470,976.00	\$0.00	\$0.00	\$0.00	-\$90,697.00	\$1,380,279.00
Dec-19	\$1,380,279.00	\$0.00	-\$351,323.00	-\$351,323.00	-\$88,010.00	\$940,946.00

Company Background

Ironwood Capital Management (Ironwood) was founded in January 1996 as an alternative asset management firm. Ironwood's sole line of business is the management of low volatility funds of hedge funds. Since Ironwood's 1996 inception, the firm has sought to provide consistent returns with low volatility and little or no correlation to the broader debt and equity markets. Jonathan Gans, Chief Executive Officer & President, oversees Ironwood on a day-to-day basis. The investment professionals manage the portfolio, source and hire managers, and are responsible for risk management. This group includes the Investment & Risk Committee, which is made up of Jonathan Gans, Frederick Gans (Chairman), and Benjamin Zack (Managing Director). All non-portfolio allocation decisions are handled by Ironwood's Management Committee. This committee is comprised of Jonathan Gans, Frederick Gans, and Alison Sanger (Chief Operating Officer). Alison heads a group that encompasses accounting, investor relations, legal, operational due diligence, and administration. On the operational side of Ironwood's business, there is a Director of Finance, a Director of Investor Relations, and a Vice President of Operational Due Diligence.

Investment Process

Ironwood believes that market neutral and uncorrelated investment strategies offer great potential for long-term investment success. Ironwood's operating history dating to 1996 gives us a unique expertise on this specific subset of the hedge fund universe. Ironwood's investment objective is to earn consistent, low volatility returns with little or no correlation to the broader debt or equity markets. Ironwood's target annual return is 8% to 12% with a target annualized standard deviation of 3% to 5%. Ironwood focuses on institutional quality managers who invest in historically uncorrelated strategies such as relative value, event-driven, equity market neutral, credit opportunities, distressed securities, and various arbitrage based approaches. Ironwood places great emphasis on its due diligence process, which includes frequent on-site manager visits by Ironwood's senior most investment professionals, both before and during the course of investment. Ironwood's investment focus has remained consistent since its 1996 inception. The firm has always held a preference for larger, institutional quality, multi-strategy firms that trade in strategies that are market neutral or uncorrelated to the broader debt and equity markets. Ironwood remains committed to a selective portfolio of the highest quality managers in its clearly defined areas of strategy focus: relative value, event-driven, equity market neutral, credit opportunities, and distressed securities. Ironwood built its track record with a portfolio of 20 to 35 managers and the intention is to maintain this same concentration going forward. Ironwood's focus allows for frequent on-site visits and helps to ensure a continued level of excellence in the portfolio Ironwood delivers to clients.

Sector Allocations as of December 31, 2019**Geographic Allocation as of December 31, 2019**

RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

Ironwood Capital Partners
LP

HFRI Fund of Funds
Composite Index

RETURN SUMMARY STATISTICS

Number of Periods	60	60
Maximum Return	2.0	2.6
Minimum Return	-1.8	-2.9
Annualized Return	4.3	2.4
Total Return	23.2	12.4
Annualized Excess Return Over Risk Free	3.2	1.3
Annualized Excess Return	1.9	0.0

RISK SUMMARY STATISTICS

Beta	0.6	1.0
Upside Deviation	1.6	2.0
Downside Deviation	1.9	2.9

RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	2.6	3.7
Alpha	0.2	0.0
Sharpe Ratio	1.2	0.4
Excess Return Over Market / Risk	0.7	0.0
Tracking Error	2.2	0.0
Information Ratio	0.9	--

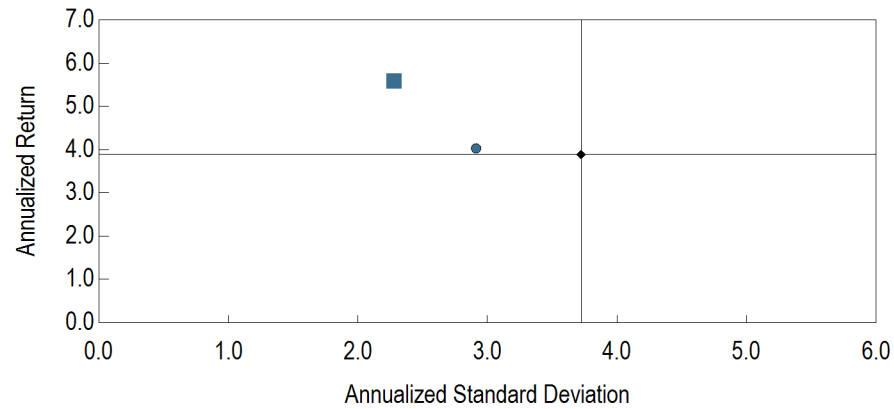
CORRELATION STATISTICS

R-Squared	0.7	1.0
Correlation	0.8	1.0

Market Proxy: HFRI Fund of Funds Composite Index

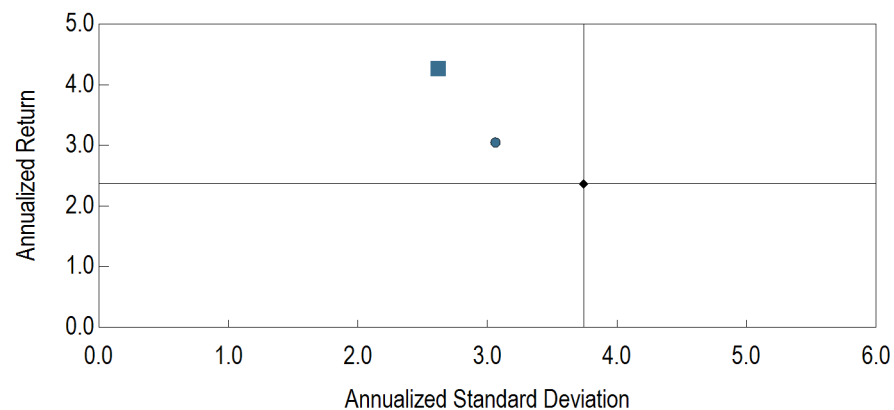
Risk-Free Proxy: 91 Day T-Bills

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2019



- Ironwood Capital Partners LP
- ◆ HFRI Fund of Funds Composite Index
- BBgBarc US Aggregate TR

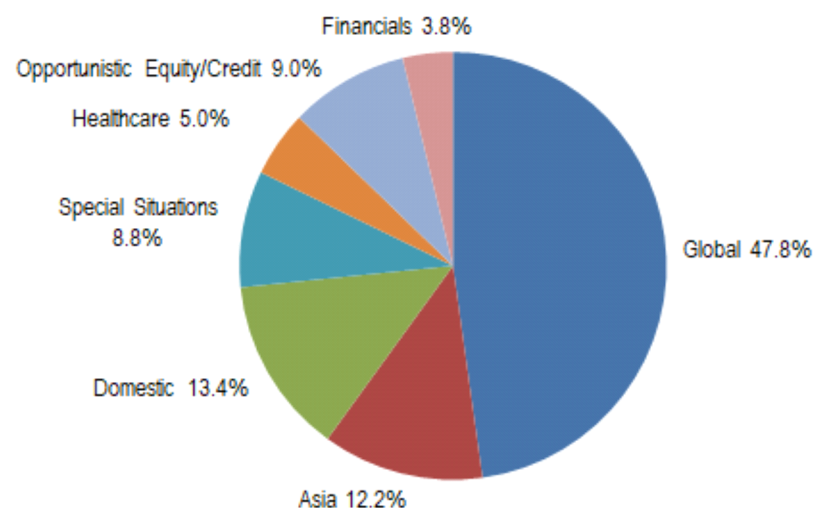
Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2019



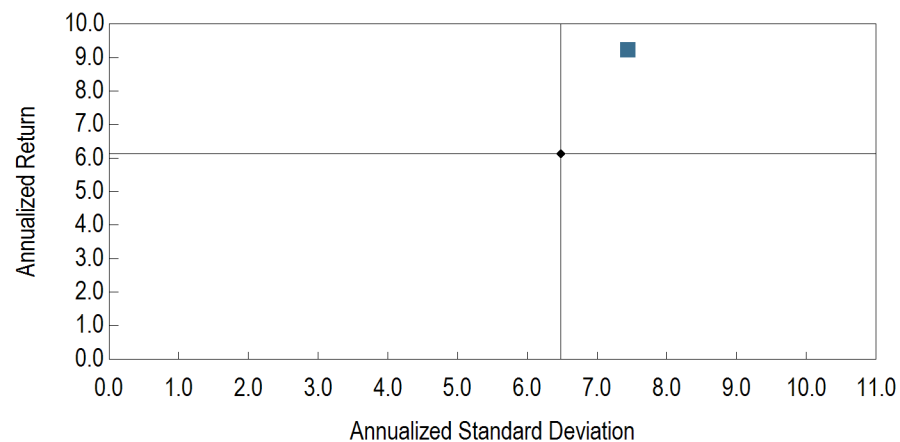
- Ironwood Capital Partners LP
- ◆ HFRI Fund of Funds Composite Index
- BBgBarc US Aggregate TR

Investment Overview

The principals and senior management team at Pointer Management, LLC average well over 15 years of investment management and consulting experience. The Partnership's primary objective is to preserve capital in all markets and provide a 12 - 15% net return over rolling 5 year periods. The firm achieves these objectives by constructing a portfolio of premier, fundamentally based, long/short equity hedge funds. Pointer only invests in managers which utilize a bottom-up, research intensive, long/short equity style. The fund expense is equal to 1.0% plus incentives (2% with a 10% hurdle rate).

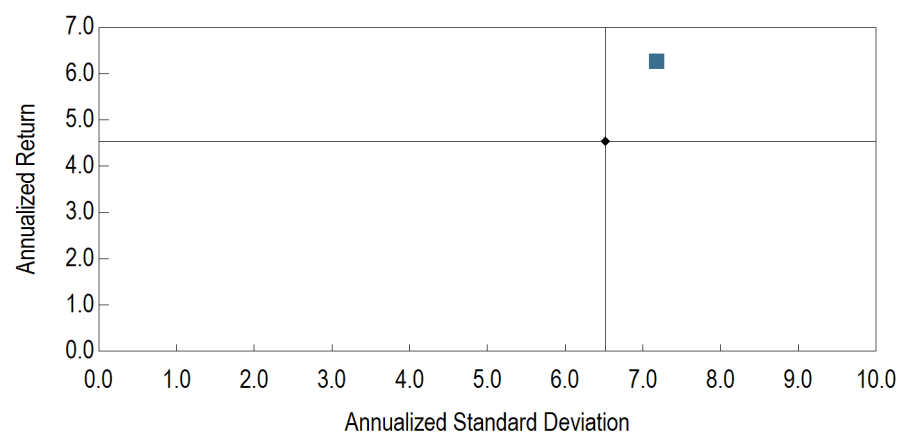
Sector Allocation as of December 31, 2019

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2019



- Pointer Offshore, Ltd Live and Composite
- ◆ HFRI Equity Hedge (Total) Index

Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2019



- Pointer Offshore, Ltd Live and Composite
- ◆ HFRI Equity Hedge (Total) Index

RISK RETURN STATISTICS

January 1, 2015 Through December 31, 2019

Pointer Offshore, Ltd Live and Composite HFRI Equity Hedge (Total) Index

RETURN SUMMARY STATISTICS

Number of Periods	60	60
Maximum Return	4.9	5.1
Minimum Return	-6.4	-4.7
Annualized Return	6.3	4.5
Total Return	35.5	24.8
Annualized Excess Return Over Risk Free	5.2	3.5
Annualized Excess Return	1.7	0.0

RISK SUMMARY STATISTICS

Beta	0.9	1.0
Upside Deviation	3.7	3.7
Downside Deviation	6.2	5.0

RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	7.2	6.5
Alpha	0.2	0.0
Sharpe Ratio	0.7	0.5
Excess Return Over Market / Risk	0.2	0.0
Tracking Error	4.3	0.0
Information Ratio	0.4	--

CORRELATION STATISTICS

R-Squared	0.7	1.0
Correlation	0.8	1.0

Market Proxy: HFRI Equity Hedge (Total) Index

Risk-Free Proxy: 91 Day T-Bills

Cielo Realty Partners: CRP 10th Street Ltd.

Investment Overview

Cielo is a real estate investment company that focuses heavily on Texas and in situations where it has a competitive advantage due to dislocations in price and or information in specific market environments. CRP 10th Street Limited is an entity that owns the Neuhaus Tower at 200 South 10th Street in McAllen, TX.

Cash Flows**6 Years 7 Months Ending December 31, 2019**

Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Jun-13	--	\$400,000.00	\$0.00	\$400,000.00	\$0.00	\$400,000.00
Sep-13	\$400,000.00	\$0.00	\$0.00	\$0.00	\$11,630.00	\$411,630.00
Dec-13	\$411,630.00	\$0.00	-\$20,000.00	-\$20,000.00	\$4,326.00	\$395,956.00
Mar-14	\$395,956.00	\$0.00	-\$20,000.00	-\$20,000.00	\$12,235.00	\$388,191.00
Jun-14	\$388,191.00	\$0.00	-\$16,000.00	-\$16,000.00	\$20,867.00	\$393,058.00
Sep-14	\$393,058.00	\$0.00	\$0.00	\$0.00	-\$4,867.00	\$388,191.00
Dec-14	\$388,191.00	\$0.00	-\$20,000.00	-\$20,000.00	\$1,955.87	\$370,146.87
Mar-15	\$370,146.87	\$0.00	-\$336,000.00	-\$336,000.00	\$5,899.23	\$40,046.10
Jun-15	\$40,046.10	\$0.00	\$0.00	\$0.00	\$795.42	\$40,841.52
Sep-15	\$40,841.52	\$0.00	\$0.00	\$0.00	-\$1,066.98	\$39,774.54
Dec-15	\$39,774.54	\$0.00	\$0.00	\$0.00	\$290,658.23	\$330,432.77
Mar-16	\$330,432.77	\$0.00	\$0.00	\$0.00	-\$1,692.76	\$328,740.01
Jun-16	\$328,740.01	\$44,000.00	\$0.00	\$44,000.00	-\$51,365.30	\$321,374.71
Sep-16	\$321,374.71	\$0.00	-\$8,000.00	-\$8,000.00	\$4,706.50	\$318,081.21
Dec-16	\$318,081.21	\$0.00	\$0.00	\$0.00	\$17,616.97	\$335,698.18
Mar-17	\$335,698.18	\$0.00	\$0.00	\$0.00	-\$4,351.96	\$331,346.22
Jun-17	\$331,346.22	\$0.00	-\$6,000.00	-\$6,000.00	\$3,871.36	\$329,217.58
Sep-17	\$329,217.58	\$0.00	\$0.00	\$0.00	\$5,076.39	\$334,293.97
Dec-17	\$334,293.97	\$0.00	-\$28,000.00	-\$28,000.00	\$34,987.81	\$341,281.78
Mar-18	\$341,281.78	\$0.00	\$0.00	\$0.00	\$499.97	\$341,781.75
Jun-18	\$341,781.75	\$0.00	-\$12,000.00	-\$12,000.00	\$13,219.70	\$343,001.45
Sep-18	\$343,001.45	\$0.00	\$0.00	\$0.00	\$371,816.33	\$714,817.78
Dec-18	\$714,817.78	\$0.00	-\$403,000.00	-\$403,000.00	\$404,923.02	\$716,740.80
Mar-19	\$716,740.80	\$0.00	-\$24,000.00	-\$24,000.00	\$23,408.96	\$716,149.76

Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Jun-19	\$716,149.76	\$0.00	-\$8,000.00	-\$8,000.00	\$7,239.36	\$715,389.12
Sep-19	\$715,389.12	\$0.00	\$0.00	\$0.00	-\$2,686.96	\$712,702.16
Dec-19	\$712,702.16	\$0.00	\$0.00	\$0.00	\$0.00	\$712,702.16

Investment Overview

TerraCap Management LLC was founded in 2008 and is an SEC registered investment adviser (2014). TerraCap Partners III, a value-add commercial real estate fund (closed end), will seek to acquire main stream property types with a focus on the Southern US, particularly Florida, as the population growth is rapid, supply is limited and prices are low. Emphasis will be on well-established, well-built properties in strong locations, where the investment manager believes that potential for future competition will be limited and the acquisition price has been well below the cost of replacement.

*In June 2016, McAllen received a distribution from TerraCap Partners III in the amount of \$294,515.69. This amount represented true-up of notional interest charges that TerraCap calculated incorrectly as well as interest from investors who entered the Fund at subsequent holdings and subsequent management fees incorrectly charged. This was described in a letter dated April 13, 2016 from TerraCap and McAllen elected to take a cash distribution to correct the issue.

Cash Flows
5 Years Ending December 31, 2019

Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Mar-15	\$0.00	\$2,260,000.00	\$0.00	\$2,260,000.00	-\$242,156.40	\$2,017,843.60
Jun-15	\$2,017,843.60	\$0.00	\$0.00	\$0.00	\$120,647.23	\$2,138,490.83
Sep-15	\$2,138,490.83	\$0.00	\$0.00	\$0.00	\$64,954.49	\$2,203,445.32
Dec-15	\$2,203,445.32	\$0.00	\$0.00	\$0.00	\$130,560.37	\$2,334,005.69
Mar-16	\$2,334,005.69	\$0.00	\$0.00	\$0.00	\$62,286.06	\$2,396,291.75
Jun-16	\$2,396,291.75	\$0.00	-\$294,515.69	-\$294,515.69	-\$76,280.86	\$2,025,495.20
Sep-16	\$2,025,495.20	\$0.00	-\$41,138.76	-\$41,138.76	\$121,801.56	\$2,106,158.00
Dec-16	\$2,106,158.00	\$0.00	-\$30,890.45	-\$30,890.45	\$516,414.45	\$2,591,682.00
Mar-17	\$2,591,682.00	\$0.00	-\$334,958.00	-\$334,958.00	\$19,479.00	\$2,276,203.00
Jun-17	\$2,276,203.00	\$0.00	\$0.00	\$0.00	\$19,959.00	\$2,296,162.00
Sep-17	\$2,296,162.00	\$0.00	-\$74,500.49	-\$74,500.49	\$19,208.49	\$2,240,870.00
Dec-17	\$2,240,870.00	\$0.00	-\$12,719.59	-\$12,719.59	\$186,917.59	\$2,415,068.00
Mar-18	\$2,415,068.00	\$0.00	\$0.00	\$0.00	-\$148.00	\$2,414,920.00
Jun-18	\$2,414,920.00	\$0.00	-\$251,847.98	-\$251,847.98	-\$131,184.02	\$2,031,888.00
Sep-18	\$2,031,888.00	\$0.00	\$0.00	\$0.00	\$88,082.00	\$2,119,970.00
Dec-18	\$2,119,970.00	\$0.00	\$0.00	\$0.00	\$193,227.00	\$2,313,197.00
Mar-19	\$2,313,197.00	\$0.00	\$0.00	\$0.00	-\$5,532.00	\$2,307,665.00
Jun-19	\$2,307,665.00	\$0.00	-\$104,573.24	-\$104,573.24	-\$35,391.76	\$2,167,700.00
Sep-19	\$2,167,700.00	\$0.00	-\$303,159.10	-\$303,159.10	\$66,868.10	\$1,931,409.00
Dec-19	\$1,931,409.00	\$0.00	-\$439,393.29	-\$439,393.29	\$8,405.29	\$1,500,421.00

Investment Overview

Corry Capital Advisors ("CCA") was founded in 2007 by William Corry. CCA's principal objective is to achieve long-term capital appreciation with reduced risk, primarily by investing in a portfolio of individual, non-variable, life insurance policies. Using sophisticated actuarial models, CCA typically purchases in force life insurance policies with death benefits in excess of \$1mm from US residents over 80 years old with life expectancies of 2-7 years. CCA's portfolio is not correlated to economic cycles and not influenced by political developments.

Cash Flows**1 Year 8 Months Ending December 31, 2019**

Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Jun-18	--	\$2,500,000.00	\$0.00	\$2,500,000.00	\$0.00	\$2,500,000.00
Sep-18	\$2,500,000.00	\$0.00	\$0.00	\$0.00	\$271,203.18	\$2,771,203.18
Dec-18	\$2,771,203.18	\$0.00	\$0.00	\$0.00	-\$45,739.31	\$2,725,463.87
Mar-19	\$2,725,463.87	\$0.00	\$0.00	\$0.00	\$97,676.80	\$2,823,140.67
Jun-19	\$2,823,140.67	\$0.00	\$0.00	\$0.00	\$46,227.84	\$2,869,368.51
Sep-19	\$2,869,368.51	\$0.00	\$0.00	\$0.00	\$34,778.96	\$2,904,147.47
Dec-19	\$2,904,147.47	\$0.00	\$0.00	\$0.00	\$49,488.87	\$2,953,636.34

Expense Summary


Expense Summary

Total Fund

Investment Expense Analysis

As Of December 31, 2019

Name	Fee Schedule	Expense Ratio
Wells Capital Management	0.80% of First 25.0 Mil, 0.70% of Next 25.0 Mil, 0.60% of Next 50.0 Mil, 0.50% Thereafter	
JP Morgan Value Advantage Fund	0.70% of First 50.0 Mil, 0.65% Thereafter	
Invesco Oppenheimer International Growth Fund		0.67%
Artisan International Small-Mid Cap		1.15%
RBC Emerging Markets Equity Fund Class R6		0.88%
Optimum Quantvest	0.32% of Assets	
BrandywineGLOBAL - Global Opportunities Bond Fund CI I		0.59%
Voya Strategic Income Opportunities R6		0.58%
Courage Credit Opportunities Offshore Fund III, LP	1.5%; 20.0% incentive fee after an 8.0% preferred return	
Ironwood Capital Partners LP	1.20% of Assets	
Pointer Offshore, Ltd.	1%; 2% incentive fee; additional 1% after a 10% hurdle	
Cielo Realty Partners: CRP 10th Street Ltd.	1.00% of Assets	
TerraCap Partners III, LP	1.5%; 20% incentive fee after a 9.0% preferred return	
CCA Longevity Fund VI, LP	1.5%; 20.0% incentive fee with 6% hurdle	
Cash	0.20% of Assets	0.20%



CBIZ Retirement Plan Services is a trade name under which certain subsidiaries of CBIZ, Inc. (NYSE Listed: CBZ) market investment advisory, investment management, third party administration, actuarial and other retirement plan services. Investments, investment advisory and investment management services offered through CBIZ Financial Solutions, Inc., Member FINRA, SIPC and SEC Registered Investment Adviser, dba CBIZ Retirement Plan Advisory Services. Investment advisory and investment management services may also be offered through CBIZ Investment Advisory Services, LLC, SEC Registered Investment Adviser. Third party administration, actuarial and other consulting services offered through CBIZ Benefits & Insurance Services, Inc.

McAllen Firemen's Relief and Retirement Fund

Actuarial Valuation as of September 30, 2018

February 7, 2020



Rudd and Wisdom, Inc.

Rudd and Wisdom, Inc.

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February 7, 2020

Board of Trustees
McAllen Firemen's Relief and
Retirement Fund
201 North 21st Street
McAllen, TX 78501

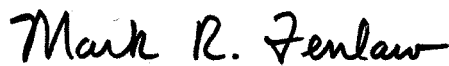
Members of the Board of Trustees:

At the request of the Board of Trustees of the McAllen Firemen's Relief and Retirement Fund, we have prepared this report of the results of the actuarial valuation of the fund as of September 30, 2018. This valuation was prepared to determine whether the fund has an adequate contribution arrangement.

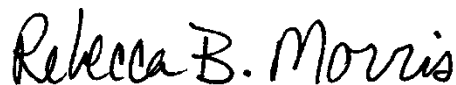
In a separate report, the prior actuary provided the necessary disclosures for the fund's compliance with the Governmental Accounting Standards Board (GASB) Statement No. 67 for the plan year ending September 30, 2018. We will provide a separate report containing the pension expense, net pension liability, and disclosure information for the city's compliance with GASB 68 for the fiscal year ending September 30, 2019. GASB 68 prescribes the city's accounting for your fund, while this actuarial valuation report reflects the assumed continuation of the current funding policy.

We certify that we are members of the American Academy of Actuaries who meet Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report.

Sincerely,



Mark R. Fenlaw, F.S.A.



Rebecca B. Morris, A.S.A.

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Section I

Valuation Summary

An actuarial valuation of the assets and liabilities of the McAllen Firemen's Relief and Retirement Fund as of September 30, 2018 has been completed. The valuation was based on the Present Plan (plan effective January 1, 2016) and the provisions of the Texas Local Fire Fighters' Retirement Act (TLFFRA) which were in effect on September 30, 2018. Section II shows the summary of key results of the actuarial valuation as of September 30, 2018 and discusses the significant changes since the prior valuation as of September 30, 2016 prepared by your prior actuary.

This valuation reflects an actuarially assumed total contribution rate of 25%, comprised of 12% by the firefighters and 13% by the city. The total contribution rate of 25% exceeds the normal cost rate of 16.89%, leaving 8.11% available to amortize the unfunded actuarial accrued liability (UAAL) of \$24,240,176. Assuming that the total payroll increases at the rate of 3% per year in the future, the contributions in excess of the normal cost **will never amortize the UAAL.**

In order for a retirement plan to have an adequate contribution arrangement, contributions must be made that are sufficient to pay the plan's normal cost and to amortize the plan's UAAL over a reasonable period of time. Based on the Texas Pension Review Board guidelines for pension funding, our professional judgment, and the actuarial assumptions and methods used in making this valuation, we consider periods of 10 years to 25 years to be preferable and 40 years to be the current maximum acceptable period. The PRB guidelines will be changing to a maximum of 30 years allowing for phase in through 2025. Since the total contributions are not sufficient to pay the fund's normal cost and to amortize the fund's UAAL within the maximum acceptable period, we are of the opinion that the fund, based on present levels of benefits and contributions, **has an inadequate contribution arrangement. Section III presents considerations for restoring an adequate contribution arrangement.**

Projected Actuarial Valuation Results

In addition to completing this actuarial valuation, we estimated the amortization periods as of September 30, 2020 and as of September 30, 2022 by making projections from the September 30, 2018 actuarial valuation. These projections examine the effect on the amortization period in the next two actuarial valuations of the actuarial investment gains and losses that the fund experienced in the four years prior to the valuation date (a loss in 2015 and gains in 2016, 2017, and 2018) that have been only partially recognized as of September 30, 2018. As shown in Exhibit 8, a smoothing method is used to determine the actuarial value of assets (AVA) for this valuation. This method phases in over a five-year period any investment gains or losses (net actual investment return greater or less

than the actuarially assumed investment return) that the fund has had. The AVA used in this current valuation is deferring recognition of various portions of the gains and losses in 2015-2018 that the fund experienced. The AVA used in this valuation is \$51,901,271. The market value of assets (MVA) is \$52,675,409. The \$774,138 difference between the MVA and the AVA is the net of the deferred gains and losses over the past four years that will be recognized in the next two actuarial valuations.

The theory behind the AVA method is to allow time for investment gains and losses to partially offset each other and thereby dampen the volatility associated with the progression of the MVA over time. In practice, the timing and amounts of investment gains and losses can result in irregular effects on the AVA in a given year. However, as intended, the pattern of the AVA is smoother over time than the pattern of the market value of assets, as seen in Exhibit 9.

For the purpose of projecting the amortization period through 2022 we used six scenarios of various assumed annual rates of investment return, net of investment-related expenses, over the 2019-2022 projection period. The projected amortization periods will not be the same as the actual amortization periods from completed future actuarial valuations but are the result of projected future actuarial valuation results based on the completed September 30, 2018 actuarial valuation. These projections show the expected effects over the next four years after the valuation date (1) of the recognition of the portions of the investment gains and losses over the past four years that are deferred as of September 30, 2018, (2) of investment returns over the next four years different from the 7.5% assumption used in this valuation, and (3) the city contribution rate beginning October 1, 2020 that would be required to have an amortization period of 30 years (Scenarios 1-3) or 25 years (Scenarios 4-6).

	Scenario					
	1	2	3	4	5	6
Assumed Investment Return for Fiscal Year						
2018-2019	7.5%	3.0%	3.0%	7.5%	3.0%	3.0%
2019-2020	7.5	7.5	10.0	7.5	7.5	10.0
2020-2021	7.5	7.5	7.5	7.5	7.5	7.5
2021-2022	7.5	7.5	7.5	7.5	7.5	7.5
2022-2023 and later	7.5	7.5	7.5	7.5	7.5	7.5
City Contribution Rate	17.2%	17.2%	17.2%	18.6%	18.6%	18.6%
Amortization Period in Years as of September 30:						
2018 (actual)	30.0	30.0	30.0	25.0	25.0	25.0
2020 (projected)	27.4	29.8	29.2	22.6	24.4	24.0
2022 (projected)	24.1	28.6	26.7	19.7	22.9	21.5

The projected future September 30, 2022 valuation in Scenario 1 reveals that the amortization period is projected to decrease by 5.9 years instead of the expected 4-year reduction to 26.0. This is the result of the deferred net gain of \$774,000 that the fund has as of September 30, 2018. However, we already know that the fund did not earn 7.5% in the year ending September 30, 2019. Scenario 2 is a rough estimate of what the result might have been in that year. The primary conclusion from Scenario 2 is that unless there are some investment gains in the next three years from returns greater than 7.5%, the amortization period will stay near 30 years in the next two valuations with the increased city contributions. Scenario 3 shows what the effects of a moderately favorable return of 10% in the current year would be to offset the estimated loss in 2018-2019. Scenarios 4-6 are similar to the first three except based on a city contribution rate of 18.6% and a starting amortization period of 25 years.

We do not know what the investment experience will be for each of the next three fiscal years. In addition, variations in experience from the underlying assumptions, other than investment return, will cause the actual amortization periods to be different from the periods shown above. The future investment experience in each of the next three fiscal years could be better or worse than the assumed rates shown. These scenarios present a range of optimistic scenarios for the next two valuations assuming the higher city contribution rates and no changes in benefits.

The primary conclusion from the scenarios is that since the fund has an inadequate contribution arrangement requiring a significant increase in the contribution rate to reestablish an adequate contribution arrangement, the board needs to consider benefit reductions in addition to increases in contribution rates. We address this subject in more detail in Section III.

Participant and Asset Data

We have relied on and based our valuation on the active firefighter data, pensioner data, and asset data provided on behalf of the board of trustees by the fund's board chairman, Mr. Javier Gutierrez. We have not audited the data provided but have reviewed it for reasonableness and consistency relative to the data provided for the September 30, 2016 actuarial valuation. Exhibit 1 is a distribution of the active firefighters by age and service. The salaries used for projecting future contributions and benefits in the valuation were based on the actual pay for the 2017-2018 fiscal year, adjusted to fully reflect the 1.75% general pay increase effective in October 2018. The total of these salaries is our assumed annualized covered payroll for the fiscal year beginning October 1, 2018 and is used in the valuation to determine the UAAL amortization period. The averages of the assumed salaries for the 2018-2019 fiscal year are shown in Exhibit 1.

Exhibit 2 contains summary information on the pensioners. The monthly benefit payments are generally based on the amounts paid September 30, 2018. Exhibit 3 is a reconciliation of firefighters and pensioners from September 30, 2016 to September 30, 2018. Exhibit 4 shows a breakdown of the dollar amount of the monthly benefits for retirees and surviving spouses. Exhibit 5 shows a historical comparison of the actuarial accrued liability and the actuarial value of assets.

The summary of assets contained in Exhibit 6 is based on the September 30, 2019 market value of assets because it was more in line with the target allocation than the September 30, 2018 allocation due to a transition in some of the money managers. This exhibit also shows a comparison with the market values and actuarial values of assets as of September 30, 2016 and September 30, 2018. Exhibit 7 contains the statement of changes in assets for fiscal years ending September 30, 2018 and September 30, 2017. Exhibit 8 shows the development of the actuarial value of assets. Exhibit 9 shows a historical comparison between the market value and actuarial value of assets. A comparison of the market value asset allocation by asset class as of September 30, 2018 and September 30, 2019 is shown in Exhibit 10.

Assumptions

As a part of each actuarial valuation, we review the actuarial assumptions used in the prior actuarial valuation. As a result of our review and discussion with the board of trustees at your February 5 meeting, we have selected and used actuarial assumptions we consider to be reasonable and appropriate estimates of future experience for the fund for the long-term future. Their selection complies with the applicable actuarial standards of practice. Significant actuarial assumptions used in the valuation are:

1. 7.5% annual investment return (interest rate) net of investment-related expenses;
2. 3% annual general compensation increase plus an average of 2.42% per year for promotion, step, and longevity increases over a 30-year career;
3. Retirement rates which result in an average expected age at retirement of 56.3;
4. PubS-2010 (safety employees) total dataset mortality tables projected for mortality improvement using scale MP-2018; and
5. A payroll increase assumption of 3% per year for determining the UAAL amortization period.

The following actuarial assumption changes have been made, and the new assumptions are compared to those used in the September 30, 2016 valuation:

1. We changed the investment return assumption from 7.75% net of all expenses to 7.5% net of investment-related expenses. Administrative expenses are now

recognized explicitly as required for GASB 67 and 68. They are an assumed percent of payroll (0.40%) based on the average historical relationship in the last four years. It is added to the normal cost. We believe these assumptions are more reasonable for the long-term future.

2. The mortality assumption was changed from the RP-2000 Combined Healthy Mortality Tables projected to 2024 with Scale AA to the PubS-2010 (safety employees) total dataset mortality tables for employees and for retirees, projected for mortality improvement generationally using the projection scale MP-2018. The rationale for the change is to use the results of a new, first-ever study of the mortality of public employee pension plan participants by the Society of Actuaries. The new mortality assumption is more appropriate for the fund for the long-term future than the prior assumption.
3. We changed the aggregate payroll increase assumption used for determining the UAAL amortization period from 4% to 3%. The 3% assumption is more reasonable for the fund for the long-term future, reflecting the general compensation increase assumption in item 4 below and assuming no growth in number of actives.
4. We changed the compensation increase assumption for projecting future benefits to the combination of assumed general increases of 3% per year plus assumed promotion, step, and longevity increases that vary by year of service, and average 2.42% per year over a 30-year career. The assumption in the prior actuarial valuation consisted of the combination of assumed general increases of 4% per year plus assumed promotion, step, and longevity increases that averaged 1.27% per year over a 30-year career. This change had a decreasing effect on projected compensation and benefits. We believe this compensation increase assumption is more reasonable for the long-term future.
5. We changed the demographic assumptions of termination, disability, and retirement to ones which we believe are somewhat more appropriate. However, the aggregate effect was similar to the assumptions of the prior actuary.

The effects of these changes in assumptions on the UAAL amortization period are identified in Section II. A summary of all the assumptions and methods used in the valuation is shown in Exhibits 11 and 12. In our opinion, the assumptions used, both in the aggregate and individually, are reasonably related to the experience of the fund and to reasonable expectations. The assumptions represent a reasonable estimate of anticipated experience of the fund over the long-term future, and their selection complies with the applicable actuarial standards of practice.

Actuarially Determined Contributions by the City

GASB 68 is all about accounting for pensions and did away with the concept of annually required contributions, referred to as the ARC. The GASB made a point of separating their accounting standard for public employee defined benefit plans from the actual funding of those plans. In other words, the city's GASB 68 pension expense will usually be very different from its actual contributions. That is why separate reports are needed each year to provide the required GASB 68 actuarial information.

As a result of GASB getting out of the business of providing a funding standard, the PRB recommended in their report to the Texas Legislature at the end of 2014 that actuarial valuation reports for fixed contribution rate plans should disclose contribution levels required for a variety of appropriate amortization periods. Since the preferred range for the UAAL amortization period is 10 to 25 years in the PRB's pension funding guidelines and since the PRB's new maximum amortization period is 30 years, we have shown the city contribution rate that would be required beginning October 1, 2020 for amortization periods of 25 and 30 years based on this September 30, 2018 actuarial valuation.

UAAL Amortization Period	Actuarially Determined Contribution Rate by the City	Firefighter Contribution Rate	Total Contribution Rate
25 Years	18.6%	12.0%	30.6%
30 Years	17.2%	12.0%	29.2%

In 2015, the Legislature passed HB 3310 which amended Sections 801 and 802 of the Government Code. It included a new sentence in Section 802.101(a) which requires an actuarial valuation to include a recommended rate needed to have an amortization period for the UAAL that does not exceed 30 years. Since the current contribution policy (12% of pay by the firefighters and 13% of pay by the city) results in an amortization period of more than 40 years, we recommend the 17.2% rate effective October 1, 2020 to comply with H.B. 3310. However, with such a significant increase alone required for a 30-year amortization period, it is more practical for the recommended rate to be accompanied by some suggestions for reductions in future benefit accruals in order to restore an adequate contribution arrangement, which we have included in Section III.

Variability in Future Actuarial Measurement

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the current economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, changes in economic or demographic assumptions, and changes in plan

provisions. Analysis of the potential range of such future measurements resulting from the possible sources of measurement variability is typically outside the scope of an actuarial valuation for funding purposes. However, we provided projected amortization periods for the next two biennial actuarial valuations under six scenarios. Additional or other sensitivity analysis could be performed in a subsequent report if desired by the board of trustees.

Respectfully submitted,
RUDD AND WISDOM, INC.

Mark R. Fenlaw

Mark R. Fenlaw
Fellow, Society of Actuaries
Member, American Academy of Actuaries

Rebecca B. Morris

Rebecca B. Morris
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Member, American Academy of Actuaries

Section II

Key Results of the Actuarial Valuation

	September 30, 2016 ¹	September 30, 2018
1. Actuarial present value of future benefits		
a. Those now receiving benefits or former firefighters entitled to receive benefits	\$ 33,854,812	\$ 39,476,623
b. Firefighters	<u>54,572,852</u>	<u>59,914,973</u>
c. Total	\$ 88,427,664	\$ 99,391,596
2. Actuarial present value of future normal cost contributions	\$ 18,595,815	\$ 23,250,149
3. Actuarial accrued liability (Item 1c – Item 2)	\$ 69,831,849	\$ 76,141,447
4. Actuarial value of assets	\$ 48,260,416	\$ 51,901,271
5. Unfunded actuarial accrued liability (UAAL) (Item 3 - Item 4)	\$ 21,571,433	\$ 24,240,176
6. Contributions (percent of pay)		
a. Firefighters	12.00%	12.00%
b. City of McAllen	<u>13.00%</u>	<u>13.00%</u>
c. Total	25.00%	25.00%
7. Normal cost (percent of payroll)	15.53%	16.89%
8. Percent of payroll available to amortize the UAAL (Item 6c - Item 7)	9.47%	8.11%
9. Annualized covered payroll	\$ 11,520,022	\$ 12,334,389
10. Present annual amount available to amortize the UAAL (Item 8 x Item 9)	\$ 1,090,946	\$ 1,000,319
11. Years to amortize the UAAL	33.4 years	never
12. Funded ratio (Item 4 ÷ Item 3) ²	69.1%	68.2%

¹ All items are based on the September 30, 2016 actuarial valuation of the prior actuary revised to reflect the increase in the firefighters' contribution rate from 11% to 12% and its effect on item 11 if the increase had been effective October 1, 2016.

² The funded ratio is not appropriate for assessing either the need for or the amount of future contributions or the adequacy of the assumed contribution rates. Using the market value of assets instead of the actuarial value of assets for Item 12 would have resulted in funded ratios of 64.1% as of September 30, 2016 and 69.2% as of September 30, 2018. **The best indicator of the fund's health is item 11.**

Change in Amortization Period

The amortization period, based on the Present Plan provisions, was determined in the prior actuarial valuation as of September 30, 2016 to be 33.4 years reflecting the increase in the firefighter contribution rate to 12% as if it had been effective October 1, 2016. Since two years have passed since that valuation date, a 31.4-year amortization period would be expected if all actuarial assumptions had been exactly met, no changes had occurred (other than those expected) in the firefighter and pensioner data, and no changes in assumptions or methods had been made. The amortization period is now “never” based on the same plan provisions. The actual experience occurring between September 30, 2016 and September 30, 2018 differed from the expected experience, and in combination with the changes in actuarial firms and in assumptions, the resulting amortization period is “never” for the following reasons:

1. There were differences in the determination of the actuarial liabilities and the normal cost that resulted from the change in actuarial firms. It is not uncommon that the calculation of the liabilities varies somewhat between actuarial firms because of a range of accepted practices, methods, valuation software, etc. The replication of the December 31, 2016 actuarial valuation using all of the prior actuary's assumptions resulted in a **decrease** in the amortization period of 5.5 years.
2. The average annual rate of investment return, net of investment-related expenses, on the market value of assets during the two fiscal years 2017 and 2018 was 10.6%. However, the actuarial value of assets (AVA) used in the valuation and the determination of the amortization period is based on an adjusted market value. The average annual rate of return on the AVA, net of investment-related expenses, for fiscal years 2017 and 2018 was 5.6%, less than the assumed rate of return of 7.5%. This resulted in an **increase** in the amortization period of 4.5 years.
3. The aggregate payroll increased at an average rate of 3.4% per year instead of the assumed 4% per year rate, which caused the amortization period to **increase** by 0.7 of a year.
4. The net result of all experience other than the investment experience and the aggregate payroll experience had the combined effect of **decreasing** the amortization period by 2.7 years. This was primarily the result of somewhat lower-than-expected pay increases.
5. The result of the change in the mortality assumption resulted in an **increase** in the amortization period of 6.4 years.
6. The change in the other demographic assumptions (retirement, termination, and disability) had the effect of **increasing** the amortization period by 3.0 years.

7. The changes in the economic assumptions (investment return, general compensation increases, and promotion, step, and longevity increases) had the combined net effect of **increasing** the amortization period by 13.8 years.
8. The reduction in the aggregate payroll increase assumption from 4% to 3% per year caused the already elevated amortization period (51.6 years) to become "never."

The table below summarizes the effects of the events described above. The order selected for recognizing the events has an effect on the magnitude of the change in the amortization period. This is because the greater the amortization period, especially over 30 years, the more sensitive it is to changes. For example, if we had reversed the order of the last two events, the new payroll growth assumption would increase the amortization period by 22.6 years from 37.8 years to 60.4 years. Then the new economic assumptions would have resulted in the "never" amortization period.

Description of Event	Change in Amortization Period	Resulting Amortization Period
Prior actuary's 9/30/2016 actuarial valuation	--	33.4 years
R&W's replication of 9/30/2016 actuarial valuation	-5.5 years	27.9
Expected two-year reduction	-2.0	25.9
AVA investment return	+4.5	30.4
Payroll growth	+0.7	31.1
All other experience	-2.7	28.4
New mortality assumption	+6.4	34.8
Other new demographic assumptions	+3.0	37.8
New economic assumptions	+13.8	51.6
New payroll growth assumption	+99.9	never

Section III

Restoring an Adequate Contribution Arrangement

The results of this actuarial valuation as of September 30, 2018 reveal that the fund, based on the Present Plan of benefits and the current contribution rates, has an inadequate contribution arrangement. There are three options for restoring an adequate contribution arrangement: (1) a sufficient increase in the total contribution rate, (2) a package of sufficient decreases in benefits, or (3) a sufficient combination of increases in contributions and decreases in benefits.

Section I of this report included the effect of two different increases in the city's contribution rate. For example, an increase from 13% to 17.2% beginning October 1, 2020 would result in an amortization period of 30 years. This 4.2% increase would be sufficient for restoring an adequate contribution rate for the long-term future. Alternatively, a city contribution rate of 16.3% and a firefighter contribution rate of 13%, both beginning October 1, 2020, would result in an amortization period of 30 years. We recommend either one of these alternatives that would result in an amortization period of 30 years.

Since it is probably too much of a challenge to increase the total contribution rate by 4.2% by October 1, 2020, the board needs to consider combining contribution rate increases with some decreases in benefits. Changes in benefit eligibility and reductions in future benefit accruals are painful, but here are some examples of options:

- Increase the earliest retirement age from 50 to 52, and increase the minimum age and service requirement for the RETRO DROP benefit calculation date from age 53 and 20 years of service to age 55 and 22 years of service.
- Reduce the benefit formula multiplier from 2.9% per year of service to 2.7% per year of service for the first 22 years.
- Solve for a different benefit formula so every year of service would be a percentage of the final average salary, thereby reducing the value of the first 22 years in order to significantly increase the value of years beyond the first 22 years, but with an overall reduction in benefits.

Any changes in plan provisions to reduce future benefit accruals would be designed by the board of trustees and Rudd and Wisdom working together to protect vested accrued benefits as of the effective date of change and to give some lead time before the effective date. The effect of any of these potential changes would have to be studied before any vote of the firefighters so the board and firefighters would know the potential effect and how it might be combined with other potential changes and with an increase in contribution rates.

Exhibit 1
Distribution of Firefighters by Age and Service on September 30, 2018
with Average Annual Salary

Years of Service	Age									Total	Average Salary
	Under 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 or Over		
0	1	6	4	2	0	0	0	0	0	13	\$ 38,000
1	1	5	1	1	0	0	0	0	0	8	42,000
2	2	6	5	0	0	0	0	0	0	13	55,645
3	0	0	0	0	0	0	0	0	0	0	0
4	1	2	2	2	0	0	0	0	0	7	55,767
5	0	3	2	2	0	0	0	0	0	7	57,707
6	0	3	6	1	0	0	0	0	0	10	58,235
7	0	0	1	0	2	0	0	0	0	3	65,298
8	0	1	3	1	0	0	0	0	0	5	65,818
9	0	0	2	4	0	0	0	0	0	6	70,951
10	0	0	2	2	0	0	0	0	0	4	61,483
11	0	0	4	6	3	0	0	0	0	13	74,664
12	0	0	3	5	1	1	0	0	0	10	76,986
13	0	0	1	3	2	1	1	0	0	8	69,865
14	0	0	0	4	2	2	0	0	0	8	79,129
15	0	0	0	7	0	0	0	0	0	7	81,234
16	0	0	0	0	3	1	0	0	0	4	87,808
17	0	0	0	0	3	1	1	0	0	5	79,414
18	0	0	0	0	2	0	0	0	0	2	85,381
19	0	0	0	0	3	1	0	0	0	4	86,875
20-24	0	0	0	0	0	11	2	1	1	15	83,496
25-29	0	0	0	0	0	6	8	2	0	16	99,508
30-34	0	0	0	0	0	0	2	0	0	2	108,818
35+	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>2</u>	<u>4</u>	<u>94,471</u>
Totals	5	26	36	40	21	24	14	5	3	174	\$ 70,887

Average	\$50,301	\$58,859	\$82,180	\$97,915	\$87,576
Salary	\$50,478	\$70,472	\$85,566	\$83,951	\$70,887

Average age	38.4
Average years of service	12.2
Average age at hire	26.2

Exhibit 2
Summary of Pensioner Data

Type of Benefit	Pensioner Data Used in September 30, 2018 Valuation	
	Number of Recipients	Total Monthly Benefit Payments
Service Retirement	85	\$ 262,397
Disability Retirement	3	3,092
Vested Terminated	7	13,567
Surviving Spouse	18	24,586
Surviving Child	<u>2</u>	<u>788</u>
Total	115	\$ 304,430

Type of Benefit	Comparison of Pensioner Count by Type as of The Prior and Current Actuarial Valuations			
	September 30, 2016	New	Ceased	September 30, 2018
Service Retirement	77	+9	-1	85
Disability Retirement	2	+1	0	3
Vested Terminated	5	+3	-1	7
Surviving Spouse	20	+1	-3	18
Surviving Child	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
Total	106	+14	-5	115

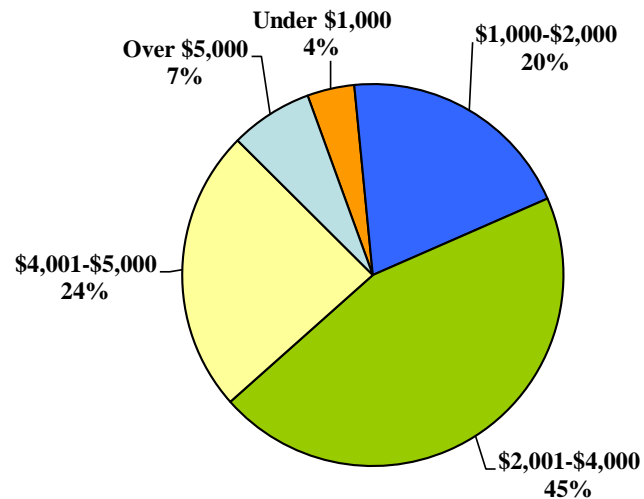
Exhibit 3
Firefighter and Pensioner Reconciliation

	Firefighters	Current Payment Status	Vested Terminated Firefighters	Total
1. As of September 30, 2016	164	101	5	270
2. Change of status				
a. retirement	(6)	7	(1)	0
b. disability	(1)	1	0	0
c. death	0	(4)	0	(4)
d. survivor payment begins	0	1	0	1
e. withdrawal	(3)	0	0	(3)
f. vested termination	(3)	0	3	0
g. completion of payment	0	0	0	0
h. QDRO alternate payee	0	0	0	0
i. correction	<u>1</u>	<u>2</u>	<u>0</u>	<u>3</u>
j. net changes	(12)	7	2	(3)
3. New firefighters	<u>22</u>	<u>0</u>	<u>0</u>	<u>22</u>
4. As of September 30, 2018	174	108	7	289

Exhibit 4

Breakdown of Pensioners by Monthly Benefit Amounts as of September 30, 2018

Retirees



Surviving Spouses

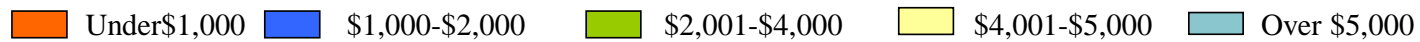
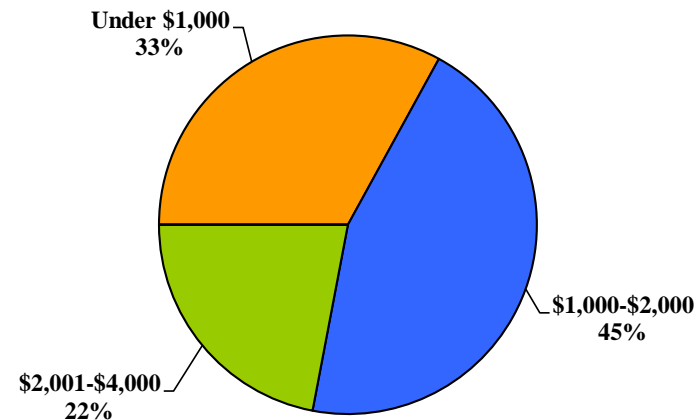
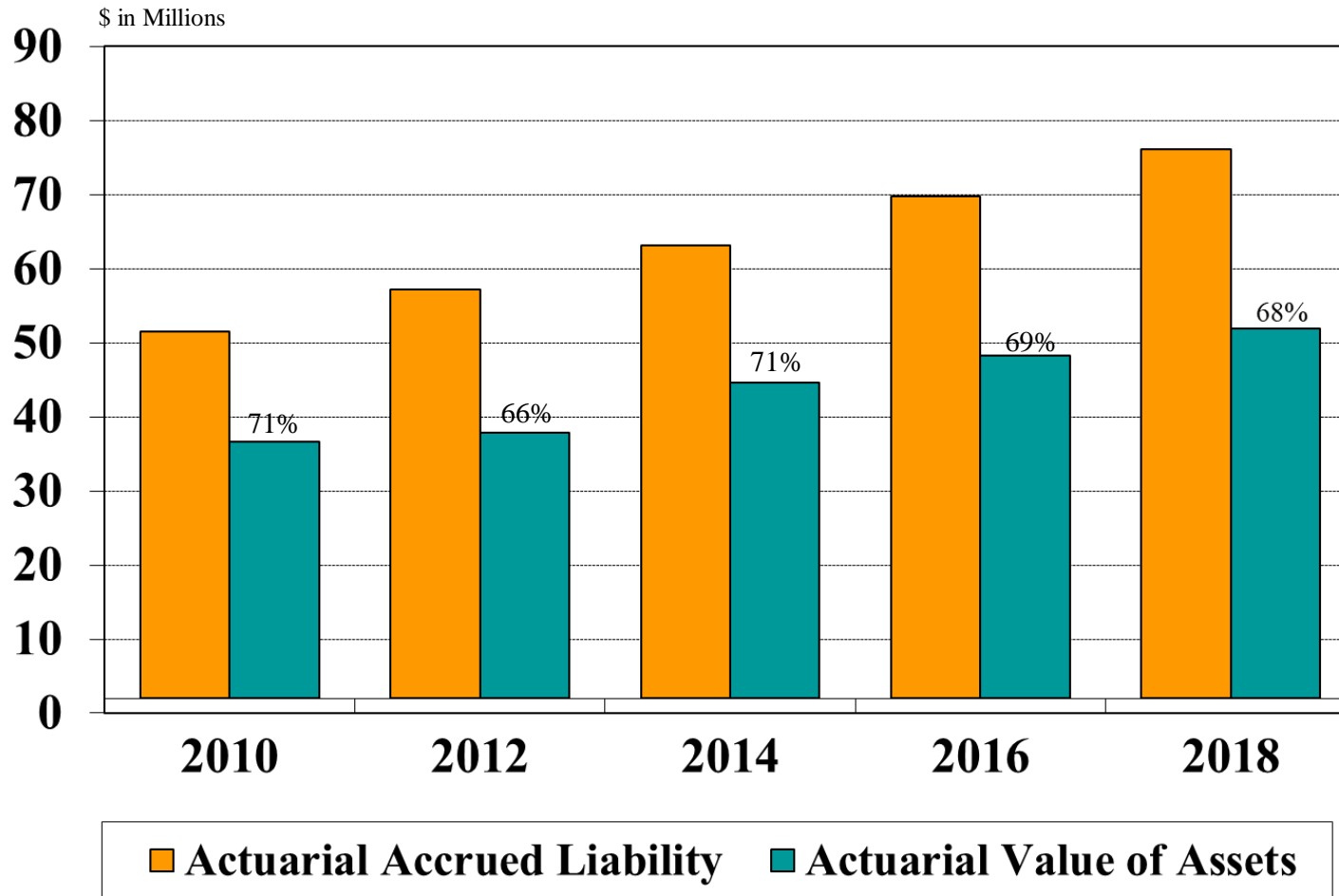


Exhibit 5
Historical Comparison of Actuarial Accrued Liability and Actuarial Value of Assets
(Valuation as of September 30)



**Exhibit 6
Summary of Asset Data**

Asset Type	Market Value of Assets as of September 30, 2019 ¹	Allocation as a Percent of Grand Total
Domestic Equities		
All Cap	\$ 17,301,035	32.0%
International Equities		
Developed Large Cap	5,374,573	10.0
Developed Small/Mid	3,225,808	6.0
Emerging Markets	3,850,000	7.1
Total	12,450,381	23.1
Fixed Income		
Global	4,316,271	8.0
Domestic Core	2,761,709	5.1
Nontraditional	3,877,867	7.2
Distressed	1,380,279	2.6
Total	12,336,126	22.9
Alternatives		
Hedge Funds	5,646,916	10.5
Private Real Estate	5,560,404	10.3
Total	11,207,320	20.8
Cash and Equivalents	666,863	1.2
Grand Total	\$ 53,961,726	100.0%

Comparison of Asset Values as of the Prior and Current Actuarial Valuation Dates		
	September 30, 2016	September 30, 2018
Market Value	\$44,759,055	\$52,675,409
Actuarial Value	\$48,260,416	\$51,901,271
Actuarial Value as a Percent of Market Value	107.8%	98.5%

¹ The market value of assets for each asset class and the grand total was from the investment consultant's report as of September 30, 2019. The asset allocation as of that date was more representative of the target asset allocation than the September 30, 2018 allocation due to a large cash allocation at that time. See Exhibit 10.

Exhibit 7
Statement of Changes in Audited Assets
for the Years Ended September 30, 2018 and 2017

	<u>9/30/2018</u>	<u>9/30/2017</u>
Additions		
1. Contributions		
a. Employer	\$ 1,547,133	\$ 1,498,194
b. Employees	<u>1,360,361</u>	<u>1,266,209</u>
c. Total	\$ 2,907,494	\$ 2,764,403
2. Investment Income		
a. Interest and dividends	\$ 645,139	\$ 1,016,954
b. Net appreciation in fair value	<u>3,865,434</u>	<u>4,768,847</u>
c. Total	\$ 4,510,573	\$ 5,785,801
3. Other Additions	<u>0</u>	<u>0</u>
Total Additions	\$ 7,418,067	\$ 8,550,204
Deductions		
4. Benefit Payments	\$ 3,898,550	\$ 3,520,297
5. Expenses		
a. Direct investment-related	\$ 253,898	\$ 295,831
b. Administrative	<u>49,519</u>	<u>33,822</u>
c. Total	\$ 303,417	\$ 329,653
Total Deductions	\$ 4,201,967	\$ 3,849,950
Net Increase in Assets	\$ 3,216,100	\$ 4,700,254
Market Value of Assets (Plan Net Position)		
Beginning of Year	\$ 49,459,309	\$ 44,759,055
End of Year	\$ 52,675,409	\$ 49,459,309
Rate of Return		
Net of All Expenses	8.59%	12.29%
Net of Investment-Related Expenses	8.70%	12.37%
Gross	9.24%	13.09%
Direct Investment-Related Expenses	0.54%	0.72%

Exhibit 8
Development of Actuarial Value of Assets

Calculation of Actuarial Investment Gain/(Loss) Based on Market Value for Plan Years Ending September 30				
	2018	2017	2016	2015
1. Market Value of Assets as of Beginning of Year	\$ 49,459,309	\$ 44,759,055	\$ 42,300,964	\$ 45,283,837
2. Firefighter Contributions	1,360,361	1,266,209	1,265,734	1,223,445
3. City Contributions	1,547,133	1,498,194	1,554,567	1,477,483
4. Benefit Payments and Administrative Expenses ¹	(3,948,069)	(3,554,119)	(3,933,872)	(3,216,778)
5. Expected Investment Return ²	<u>3,670,427</u>	<u>3,327,315</u>	<u>3,130,813</u>	<u>3,376,943</u>
6. Expected Market Value of Assets as of End of Year	52,089,161	47,296,654	44,318,206	48,144,930
7. Actual Market Value of Assets as of End of Year	<u>52,675,409</u>	<u>49,459,309</u>	<u>44,759,055</u>	<u>42,300,964</u>
8. Actuarial Investment Gain/(Loss)	\$ 586,248	\$ 2,162,655	\$ 440,849	\$ (5,843,966)
9. Market Value Rate of Return Net of Expenses	8.70%	12.37%	8.56%	(5.48)%
10. Rate of Actuarial Investment Gain/(Loss)	1.20%	4.87%	1.06%	(12.98)%

¹ Administrative expenses are included for all years to retroactively make the investment return assumption net of investment-related expenses.

² Assuming uniform distribution of contributions and payments during the plan year and investment return assumption of 7.5% per year.

Plan Year	Investment Gain/(Loss)	Deferral Percentage	Deferred Gain/(Loss) as of 9/30/2018
2018	\$ 586,248	80%	\$ 468,998
2017	2,162,655	60%	1,297,593
2016	440,849	40%	176,340
2015	(5,843,966)	20%	<u>(1,168,793)</u>
Total			\$ 774,138

Actuarial Value of Assets as of September 30, 2018	
11. Market Value of Assets as of September 30, 2018	\$ 52,675,409
12. Deferred Gain/(Loss) to be Recognized in Future	<u>774,138</u>
13. Preliminary Value (Item 11 – Item 12)	\$ 51,901,271
14. Corridor for Actuarial Value of Assets	
a. 90% of Market Value as of September 30, 2018 (minimum)	\$ 42,140,327
b. 110% of Market Value as of September 30, 2018 (maximum)	\$ 63,210,491
15. Actuarial Value as of September 30, 2018	\$ 51,901,271
16. Write Up/(Down) of Assets (Item 15 – Item 11)	\$ (774,138)

Exhibit 9

Historical Comparison of Market and Actuarial Value of Assets
(Valuation as of September 30)

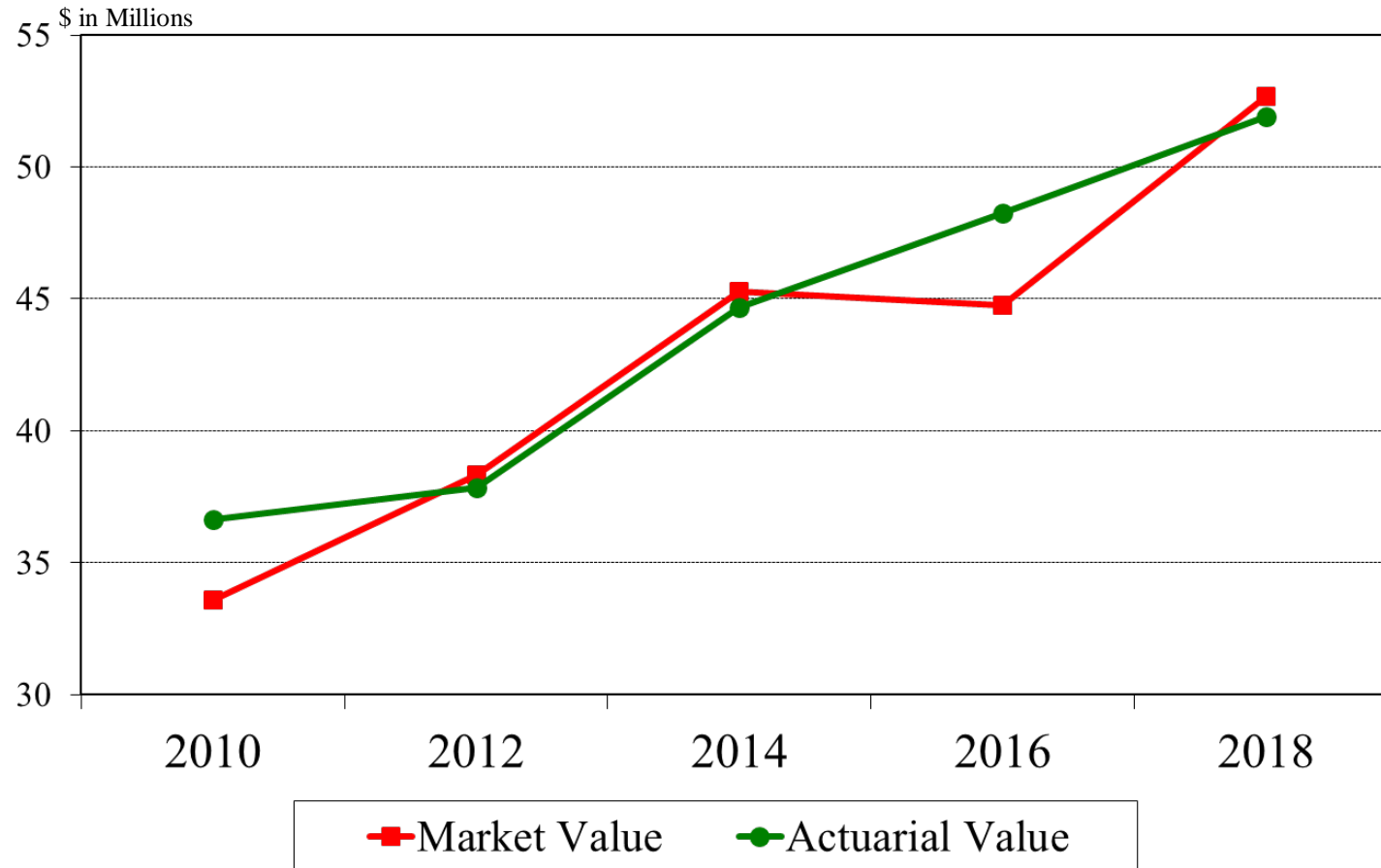
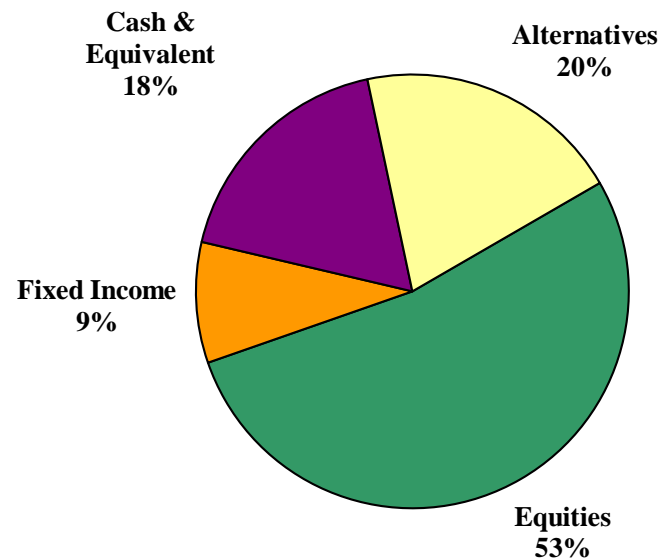


Exhibit 10

**Comparison of Market Value Asset Allocation as of the Current Actuarial Valuation
Date and the Most Recent Year End**

September 30, 2018



September 30, 2019

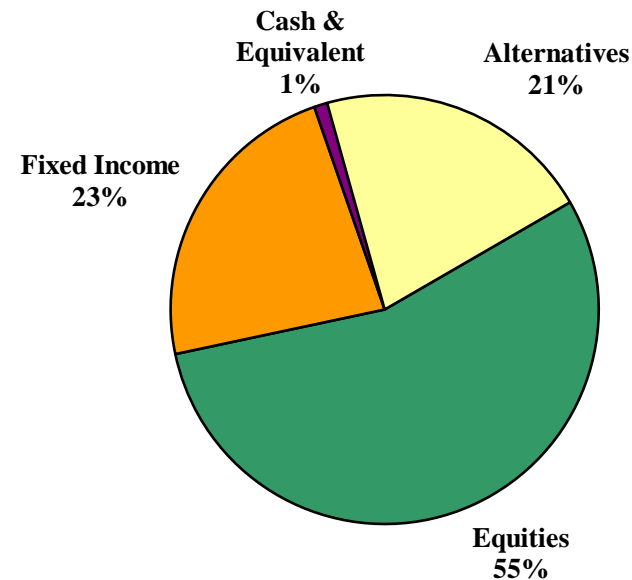


Exhibit 11

Actuarial Methods and Assumptions

A. Actuarial Methods

1. Actuarial Cost Method

The Entry Age Actuarial Cost Method is an actuarial cost method in which the actuarial present value of projected benefits of each active firefighter included in the valuation is allocated as a level percentage of compensation between age at hire and assumed termination. Each active firefighter's normal cost is the current annual contribution in a series of annual contributions which, if made throughout the firefighter's total period of employment, would fund his expected benefits. Each firefighter's normal cost is calculated to be a constant percentage of his expected compensation in each year of employment. The normal cost for the fund is the sum of the normal costs for each active firefighter for the year following the valuation date. The normal cost as a percent of covered payroll reflects that contributions are made biweekly.

The fund's actuarial accrued liability is the excess of the actuarial present value of projected benefits over the actuarial present value of all future remaining normal cost contributions. The unfunded actuarial accrued liability (UAAL) is the amount by which the actuarial accrued liability exceeds the actuarial value of assets. The UAAL is recalculated each time a valuation is performed. Experience gains and losses, which represent deviations of the UAAL from its expected value based on the prior valuation, are determined at each valuation and are amortized as part of the newly calculated UAAL.

2. Amortization Method

The UAAL is assumed to be amortized with level percentage of payroll contributions (total assumed contribution rate less normal cost contribution rate) based on assumed payroll growth of 3% per year. The actuarial determination of the amortization period reflects that contributions are made biweekly.

3. Actuarial Value of Assets Method

All assets are valued at market value with an adjustment made to uniformly spread actuarial gains or losses (as measured by actual market value investment return vs. expected market value investment return) over a five-year period. The total adjustment amount shall be limited as necessary such that the actuarial value of assets shall not be less than 80% of market value nor greater than 120% of market value.

B. Actuarial Assumptions

As a part of each actuarial valuation, we review the actuarial assumptions used in the prior actuarial valuation. The investment return assumption is reviewed using the building block approach that includes several asset allocations, assumed real rates of return for each asset class, an assumed rate of investment-related expenses, and an assumed rate of inflation, with all assumptions for the long-term future. Our economic assumptions are influenced both by long-term historical experience and by future expectations of investment consultants and economists, but we select the economic assumptions and discuss them with the board as a part of completing the actuarial valuation.

We review the termination and retirement experience since the prior valuation and periodically look back more than two years. We also periodically review the average salaries by years of service to get insights into the promotion, step, and longevity compensation patterns for the purpose of reviewing our compensation increase assumption. For the mortality assumptions, we use an appropriate published mortality table with projections for improvement beyond the valuation date. We are guided in our review and selection of assumptions by the relevant actuarial standards of practice. As a result of our review, we have selected actuarial assumptions we consider to be reasonable and appropriate estimates of future experience for the fund for the long-term future.

1. Investment Return

7.5% per year net of investment-related expenses.

2. Inflation

3% per year included in compensation increases and investment return assumptions.

3. Mortality Rates

PubS-2010 (public safety) total dataset mortality tables for employees and for retirees (sex distinct), projected for mortality improvement generationally using the projection scale MP-2018.

4. Compensation Increases

General increases of 3% per year in addition promotion, step, and longevity increases that average 2.42% per year over a 30-year career. See Exhibit 3.

5. Retirement Rates

Age	Rate per Year for Paid Firefighters Eligible to Retire
50-54	3%
55	40
56	30
57-61	25
62	100

The average expected retirement age for firefighters not yet eligible to retire based on these rates is 56.3.

6. RETRO DROP Election

- a. Percent of firefighters eligible electing RETRO DROP: 100% of service retirements eligible to elect at least a 12-month lump sum.
- b. Months assumed for lump sum: maximum they are eligible for, up to 24 months.

7. Termination Rates

See Exhibit 3.

8. Disability Rates

See Exhibit 3.

9. Reduction in Benefit after 2½ Years of Disability Retirement

15% average reduction in benefit.

10. Percent Married

85% of the active firefighters are assumed to be married at retirement or death while employed, with male firefighters having a spouse three years younger and female firefighters having a spouse three years older. Actual marital status and spouse date of birth are used for retirees.

11. Payment Form for Retirement Benefits Due to Service Retirement, Disability Retirement, or Vested Termination

- Joint and 2/3 to surviving spouse for the 85% assumed to be married.
- Life annuity for the 15% assumed to be single.

12. Surviving Child's Death Benefit

None are assumed as a result of future deaths.

13. Firefighters' Contribution Rate

12% of covered pay.

14. City's Assumed Contributions

13% of covered payroll for firefighters.

15. Covered Payroll for First Year Following Valuation Date

Actual (or annualized) pay for the plan year ending September 30, 2018 increased by 1.75% to reflect the effect of the general pay increase effective October 1, 2018.

16. Administrative Expenses

The expenses paid by fund assets for other than investment-related expenses are assumed to be 0.40% of payroll. The normal cost rate as a percent of payroll is assumed to be 0.40% of payroll higher to reflect these expenses.

Exhibit 12

**Disability and Termination Rates per 1,000 Active Members
Compensation Increases by Years of Service**

Disability Rates ¹		Termination Rates		Compensation Increases	
Attained Age	Rate per 1,000	Years of Service	Rate per 1,000	Years of Service	Increase Percent
20	0.14	0	60	1	18.45%
21	0.15	1	54	2	18.45
22	0.16	2	48	3	4.55
23	0.17	3	42	4	4.55
24	0.18	4	37	5	4.55
25	0.19	5	32	6	8.15
26	0.21	6	27	7	8.15
27	0.23	7	24	8	8.15
28	0.25	8	21	9	8.15
29	0.28	9	19	10	8.15
30	0.31	10	17	11	4.55
31	0.35	11	14	12	4.55
32	0.40	12	12	13	4.55
33	0.45	13	11	14	4.55
34	0.49	14	10	15	4.55
35	0.52	15	9	16	4.55
36	0.54	16	9	17	4.55
37	0.57	17	8	18	4.55
38	0.62	18	8	19	4.55
39	0.73	19	8	20	4.55
40	0.92	20 & Over	0	21	3.00
41	1.14			22	3.00
42	1.32			23	3.00
43	1.48			24	3.00
44	1.73			25	3.00
45	2.09			26	3.00
46	2.55			27	3.00
47	2.98			28	3.00
48	3.34			29	3.00
49	3.62			30	3.00
50	3.79			31	3.00
51	3.92			32	3.00
52	4.04			33	3.00
53	4.24			34	3.00
54	4.56			35	3.00
55	0.00			36	3.00
56	0.00			37	3.00
57	0.00			38	3.00
58	0.00			39	3.00
59	0.00			40	3.00

¹ The on-duty and off-duty rates are each 50% of the total rate shown at each age.

Exhibit 13

Definitions

- | | |
|--------------------------------|---|
| 1. Actuarial Accrued Liability | That portion, as determined by the particular actuarial cost method used, of the Actuarial Present Value of future pension plan benefits as of the Valuation Date that is not provided for by the Actuarial Present Value of future Normal Costs. |
| 2. Actuarial Assumptions | Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, termination, disablement and retirement; changes in compensation; rates of investment earnings and asset appreciation; and other relevant items. |
| 3. Actuarially Equivalent | Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions. |
| 4. Actuarial Gain (Loss) | A measure of the difference between actual experience and that expected based on the Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with the particular actuarial cost method used. |
| 5. Actuarial Present Value | The value of an amount or series of amounts payable or receivable at various times, determined as of a given date (the Valuation Date) by the application of the Actuarial Assumptions. |
| 6. Actuarial Valuation | The determination, as of a Valuation Date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets and related Actuarial Present Values for a pension plan. |
| 7. Actuarial Value of Assets | The value of cash, investments and other property belonging to a pension plan, as determined by a method and used by the actuary for the purpose of an Actuarial Valuation. |

- | | |
|--|--|
| 8. Entry Age Actuarial Cost Method | An actuarial cost method under which the Actuarial Present Value of the Projected Benefits of each individual included in the Actuarial Valuation is allocated as a level percentage of earnings between entry age and assumed termination. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a Valuation Date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability. Under this method, Actuarial Gains (Losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability. |
| 9. Plan Year | A 12-month period beginning October 1 and ending September 30. |
| 10. Normal Cost | That portion of the Actuarial Present Value of pension plan benefits that is allocated to a valuation year by the actuarial cost method. |
| 11. Projected Benefits | Those pension plan benefit amounts that are expected to be paid at various future times according to the Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future qualified service. |
| 12. Overfunded Actuarial Accrued Liability | The excess, if any, of the Actuarial Value of Assets over the Actuarial Accrued Liability. |
| 13. Unfunded Actuarial Accrued Liability | The excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets. |
| 14. Valuation Date | The date upon which the Normal Cost, Actuarial Accrued Liability and Actuarial Value of Assets are determined. Generally, the Valuation Date will coincide with the end of a Plan Year, but it does not have to coincide. |
| 15. Years to Amortize the Unfunded Actuarial Accrued Liability | The period is determined in each Actuarial Valuation as the number of years, beginning with the Valuation Date, to amortize the Unfunded Actuarial Accrued Liability with a level percent of payroll that is the difference between the expected total contribution rate and the Normal Cost contribution rate. |

Exhibit 14
Summary of Present Plan

1. Service Retirement and Duty-Related Disability Monthly Benefit
 - (a) Percent of Highest 60-Month Average Salary for each year of service for first 22 years (20-year minimum for disability retirements) 2.90%
 - (b) Additional benefit for each year in excess of 22 years \$58.00
2. Off-Duty Disability Retirement Benefit is equal to the Duty-Related Disability Retirement Benefit multiplied by 5% for each year of service as of the date of employment termination (100% maximum).
3. Normal Service Retirement Eligibility Age 50 and 20 Years
4. RETRO DROP
 - (a) Earliest RETRO DROP benefit calculation date Age 53 and 20 Years
 - (b) Maximum RETRO DROP Benefit Accumulation Period 24 Months
 - (c) Earliest employment termination date with maximum RETRO DROP accumulation period Age 55 and 22 Years
 - (d) RETRO DROP lump sum includes
 - (i) monthly benefits that would have been received between RETRO DROP benefit calculation date and termination of employment,
 - (ii) accumulated contributions made by the firefighter after the RETRO DROP benefit calculation date, and
 - (iii) no interest
5. Vested Terminated Benefit Eligibility
(Benefit deferred to age 50 or when member would have had at least 20 years of service, if later) 10 Years
6. Disability Retirement Monthly Benefit for Firefighters Who Become Totally Disabled
 - (a) For initial 30-month period:
 - (i) For duty-related disability, benefit in item 1
 - (ii) For off-duty disability, benefit in item 2
 - (iii) Board may terminate benefit if member recovers enough to perform duties in the department
 - (b) Following initial 30-month period, the Board may terminate benefit if member recovers enough to perform the duties of any occupation for which he is reasonably suited
 - (c) Upon attaining eligibility for normal retirement, the member's vested retirement benefit becomes payable if the disability benefit has been terminated

7. Surviving Spouse's Monthly Death Benefit for a Firefighter Dying While an Employee
 - (a) Portion of monthly retirement benefit member was entitled to receive had he retired on his date of death (benefit calculated with a minimum of 20 years of service) Two-Thirds
8. Surviving Children's Monthly Benefit as a Percent of Highest 60-Month Average Salary
 - (a) When the spouse is receiving a benefit per unmarried child 7.73%
 - (b) When the spouse is not receiving a benefit 15.47%
9. Contributions as a Percent of Pay by:
 - (a) Firefighters 12%
 - (b) City of McAllen 13%
10. The normal form of benefit payment at retirement is a Joint and Two-Thirds to Surviving Spouse, and payment is the last day of each month.
11. Salary used to determine the Highest 60-Month Average Salary includes all elements of pay except for all lump sum distributions for unused sick leave or vacation upon termination. The average is based on the 130 or 131 consecutive biweekly pay dates that occurred within the 60-month period during the member's service that produce the highest average.
12. Refund of firefighters' accumulated contributions without interest will be paid to firefighters who terminate employment and either are not eligible for any other benefit from the fund or request a refund from the fund.

Appendix A

Review of the Actuarial Economic Assumptions for the September 30, 2018 Actuarial Valuation

Section 1. Asset Allocation and Investment Return Assumption Development

	Gross Annual Real Rate of Investment Return (ROR) ¹	Estimated Investment Expenses ²	Net Real ROR	Asset Allocation		
				9/30/19 Actual ³	Current Target ⁴	More in Equity
Domestic Equity						
All Cap Growth (Wells Capital Management)	6.5%	1.05%	5.45%	16.8%	17%	20%
All Cap Value (JP Morgan Value Advantage)	6.5	0.95	5.55	<u>15.2</u> 32.0	<u>15</u> 32	<u>16</u> 36
International Equity						
Developed Large Cap (Oppenheimer)	7.0	0.92	6.08	10.0	10	10
Developed Small-Mid Cap (Artisan)	7.5	1.40	6.10	6.0	6	6
Emerging Markets (RBC)	8.5	1.13	7.37	<u>7.1</u> 23.1	<u>7</u> 23	<u>7</u> 23
Fixed Income						
Global (Brandywine)	2.5	0.84	1.66	8.0	8	5
Domestic Core (Optimum)	2.0	0.57	1.43	5.1	5	5
Nontraditional (Voya)	3.0	0.83	2.17	7.2	7	5
Distressed Debt (Courage Credit)	4.5	1.75	2.75	<u>2.6</u> 22.9	<u>4</u> 24	<u>5</u> 20
Alternatives						
Private Real Estate (TerraCap Partners)	6.0	1.75	4.25	3.6	4	4
Private Real Estate (Cielo Partners)	6.0	1.25	4.75	1.3	1	1
Private Real Estate (CCA Longevity)	6.0	1.75	4.25	5.4	5	5
Multistrategy Fund (Ironwood)	4.0	1.45	2.55	5.5	5	5
Equity Hedge (Pointer Offshore)	5.0	1.25	3.75	<u>5.0</u> 20.8	<u>5</u> 20	<u>5</u> 20
Cash	0.5	0.35	0.15	<u>1.2</u> 100.0%	<u>1</u> 100%	<u>1</u> 100%
Weighted Average Net Real ROR Assumption				4.46%	4.46%	4.61%
Possible Theoretical Annual Investment Return Assumption – Net Real ROR Plus Assumed Annual Rate of Inflation						
Assumed 3.00% Inflation				7.46%	7.46%	7.61%
Assumed 2.75% Inflation				7.21	7.21	7.36

¹ A gross annual real rate of investment return is the long-term total average annual rate of investment return, before any expenses, that is in excess of the assumed annual inflation rate. These are assumptions made by Rudd and Wisdom, Inc.

² These assumed investment-related expenses are based on information from the investment consulting firm CBIZ in their 9/30/2019 report and include both direct and indirect expenses, with an addition of 0.25% for bank custody fees and the fees of CBIZ.

³ This allocation is from the investment consultant's 9/30/2019 report.

⁴ The current target asset allocation was in investment consultant's 9/30/2019 report.

Appendix A (continued)

**Section 2. Price Inflation in the USA
Average Annual Rates of Increase in the CPI-U**

<u>Years (Dec. to Dec.)</u>	<u>Number of Years</u>	<u>Average Annual Increase</u>
1954 – 2019	65	3.54%
1959 – 2019	60	3.68
1964 – 2019	55	3.91
1969 – 2019	50	3.91
1974 – 2019	45	3.62
1979 – 2019	40	3.07
1984 – 2019	35	2.58
1989 – 2019	30	2.40
1994 – 2019	25	2.18
1999 – 2019	20	2.14

Most inflation forecasts are for 10 years or less. For example, the average 10-year forecast in the December 2019 Livingston Survey published by the Federal Reserve Bank of Philadelphia was 2.22%. Similarly, the 2020 Wall Street Consensus Survey for the next decade included an average inflation forecast of 2.1%. However, 10 years is much too short a forecast period for a public employee defined benefit pension plan. In the 2019 annual report of the OASDI Trust Funds (Social Security), the ultimate inflation assumptions for their 75-year projections are 3.2%, 2.6%, and 2.0% for the low-cost, intermediate, and high-cost assumptions, respectively. Looking at the average annual increase in the CPI-U over historical periods of 30 to 65 years above and considering the Social Security forecasts, we believe that reasonable assumed rates of inflation for the long-term future would range from 2.5% to 3.5%. Shorter term considerations make the lower part of that range more desirable.

Section 3. Expenses Paid from Fund

<u>Plan Year Ending 9/30</u>	<u>Beginning of Year Assets</u>	<u>Expenses</u>		<u>Expenses as a % of Assets</u>	
		<u>Admin.</u>	<u>Direct Investmt</u>	<u>Admin. (3) ÷ (2)</u>	<u>Investmt (4) ÷ (2)</u>
(1)	(2)	(3)	(4)	(5)	(6)
2018	\$ 49,459,309	\$ 49,519	\$ 253,898	0.10%	0.51%
2017	44,759,055	33,822	295,831	0.08	0.66
2016	42,300,964	56,906	296,057	0.13	0.70
2015	45,283,837	46,070	275,928	0.10	0.61
2015-2018	\$ 181,803,165	\$ 186,317	\$ 1,121,714	0.10%	0.62%

Appendix A (continued)

Section 4. Administrative Expenses as a Percent of Payroll

<u>Plan Year Ending 9/30</u>	<u>Administrative Expenses Paid by the Fund</u>	<u>Covered Payroll</u>	<u>% of Payroll (2) ÷ (3)</u>
(1)	(2)	(3)	(4)
2018	\$ 49,519	\$11,901,023	0.42%
2017	33,822	11,524,569	0.29
2016	56,906	11,515,311	0.49
2015	46,070	11,365,262	0.41
2015-2018	\$186,317	\$46,306,165	0.40%

For the September 30, 2018 actuarial valuation, we recommend that the administrative expenses not be reflected in the investment return assumption but be reflected as a percent of payroll that is added to the normal cost contribution rate. We recommend 0.40%, which is the average developed above for the last four plan years. (The covered payroll was determined as the city contributions for the plan year divided by the city contribution rate during the plan year from the GASB 67 report.)

**Section 5. Comparison of 9/30/2016 Actuarial Economic Assumptions
With 9/30/2018 Recommended Actuarial Economic Assumptions**

<u>Actuarial Assumption¹</u>	<u>9/30/2016</u>	<u>9/30/2018</u>
Inflation (Price)	3.00%	3.00%
Net real rate of return ²	<u>4.75</u>	<u>4.50</u>
Net total investment return ²	7.75%	7.50%
Firefighter pay increase ³	5.27%	5.42%
Aggregate payroll increase	4.00%	3.00%
Administrative expenses as a percent of payroll	netted out of return	0.40%

¹ All assumptions are annual rates.

² Net of all expenses for the prior actuary's 9/30/2016 assumption, and net of investment-related expenses for the 9/30/2018 assumption.

³ The 5.27% for 9/30/2016 is comprised of a 4% annual general pay increase plus annual promotion, step, and longevity pay increases that vary by length of service (highest in early years) and that average 1.27% per year over a 30-year career. For 9/30/2018, the 5.42% is comprised of a 3% annual general pay increase plus annual promotion, step, and longevity pay increases that average 2.42% per year over a 30-year career.

Firemen's Relief and Retirement Fund
A Fiduciary Fund of the City of McAllen, Texas

Financial Statements and Required
Supplementary Information
And Independent Auditor's Report

September 30, 2019

**Firemen's Relief and Retirement Fund
of McAllen, Texas
September 30, 2019
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Independent Auditor's Report

To the Pension Board of Trustees of the
Firemen's Relief and Retirement Fund
City of McAllen, Texas

Report on the Financial Statements

We have audited the accompanying financial statements of the Firemen's Relief and Retirement Fund of the City of McAllen, Texas (the Plan), a fiduciary fund of the City of McAllen, which comprise the statement of fiduciary net position as of September 30, 2019, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

The Plan's Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Plan as of September 30, 2019, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

The Pension Board of Trustees of the
Firemen's Relief and Retirement Fund
City of McAllen, Texas

Emphasis of Matters

Fund Financial Statements

As discussed in Note 1, the financial statements present only the Plan, a fiduciary fund of the City of McAllen, Texas (the City) and do not purport to, and do not, present fairly the financial position of the City as of September 30, 2019, and the changes in its financial position for the year then ended in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplemental Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Schedules of Changes in Net Pension Liability and Related Ratios, Schedule of Investment Returns, Schedule of Contributions and Notes to Required Supplementary Information be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplemental information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated February 28, 2020 on our consideration of the Plan's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Plan's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Plan's internal control over financial reporting and compliance.

Weaver and Tidwell, L.L.P.

WEAVER AND TIDWELL, L.L.P.

Austin, Texas
February 28, 2020

MANAGEMENT'S DISCUSSION AND ANALYSIS

The following is management's discussion and analysis of the financial performance of the Firemen's Relief and Retirement Fund the ("Plan") of McAllen, Texas. It is presented as a narrative overview and analysis for the purpose of assisting the reader with interpreting key elements of the financial statements, notes to the financial statements, and required supplementary information.

OVERVIEW OF THE FINANCIAL STATEMENTS

Management's discussion and analysis is intended to serve as an introduction to the Plan basic financial statements, together with the related notes to the financial statements, required supplementary information, and the supporting schedules, all of which are described below:

Fund Financial Statements:

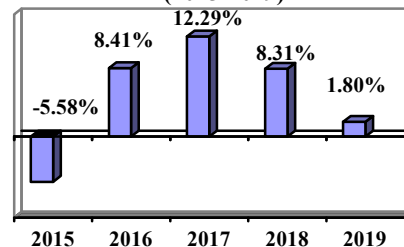
Statement of Fiduciary Net Position – This statement reports the assets, liabilities, and resultant net position restricted for pension benefits. This statement should be read with the understanding that it discloses the Plan's financial position on September 30, 2019.

Statement of Changes in Fiduciary Net Position – This statement reports the results of operations during the years, categorically disclosing the additions to and deductions from plan net position. The net increase to plan assets on this statement support the change in net position restricted for pension benefits on the Statement of Fiduciary Net Position.

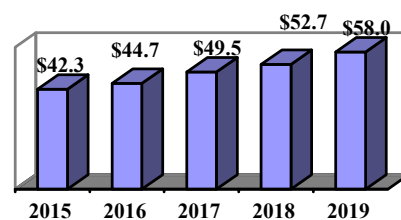
Notes to the Financial Statements:

The financial statement notes provide additional information that is essential to a full understanding of the date provided in the fund financial statements.

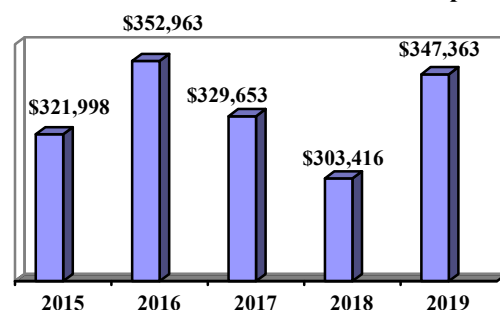
Money Weighted Avg. rate of Return
(2015-2019)



\$ Assets (millions)



Investments and administrative expenses



Firemen's Relief and Retirement Fund
of McAllen, Texas
Management's Discussion and Analysis
September 30, 2019

THE PLAN FINANCIAL ANALYSIS

The plan provides retirement benefits to essentially all eligible firefighter employees. These benefits are funded through member contributions, employer contributions, and earnings on investments. Total net position held in trust for pension benefits at September 30, 2019 amounted to \$53,972,127.

Additions to Net Position

Additions to the Plan net position held in trust for pension benefits include contributions from members and employer and net investment income. Member contributions totaled \$1,499,346 and employer contributions amounted to \$1,625,691. The Plan recognized net investment gain of \$2,006,816. This net investment gain was attributable to a combination of the following: a market depreciation of (\$460,638); interest and dividends of the portfolio in the amount of \$1,442,240; gain in the sale of investments during the year amounting to \$1,335,174; and investment management expenses in the amount of \$309,960.

<u>Additions to Net Position</u>	<u>2019</u>	<u>2018</u>
Member contributions	\$ 1,499,346	\$ 1,360,361
Employer contributions	1,625,691	1,547,133
Net investment income	2,006,816	4,256,675
Other	<u>89</u>	<u>-</u>
Total net additions	<u>\$ 5,131,942</u>	<u>\$ 7,164,169</u>

Deductions From Plan Net Position

Deductions from the Plan net position held in trust for pension benefits are comprised primarily of retirement benefit payments to the Plan retirees, survivors, and beneficiaries. Administrative expenses and refunds of contributions are also included as deductions. For 2019, benefit payments to retirees, survivors, and beneficiaries amounted to \$3,518,772. The administrative expenses amounted to \$37,403; and refunds to terminated employees—\$140,882 and DROP distribution—\$138,167. This combined refunds and DROP distributions amount totaled \$279,049. Three beneficiaries were added during the year including a widow; one retiree died during this time period. The combination of these events will add a net additional cost to the plan of approximately \$106,590.

Firemen's Relief and Retirement Fund
of McAllen, Texas
Management's Discussion and Analysis
September 30, 2019

<u>Deductions From Net Position</u>	<u>2019</u>	<u>2018</u>
Benefit payments	\$ 3,518,772	\$ 3,393,986
Refund to terminated employees	140,882	5,736
Drop payments	138,167	498,828
Administrative expenses	<u>37,403</u>	<u>49,519</u>
Total deductions	<u>\$ 3,835,224</u>	<u>\$ 3,948,069</u>

Investments

Upon approval by the board of trustees, several realignments in the portfolio were made without changing the investment strategy. Total investments, exclusive of cash holdings and accrued interest receivable, amounted to \$53,240,990 at September 30, 2019. The estimated rate of return of the Plan was approximately 1.80% for the current year. The Plan's board of trustees and its consultant remain confident in the long-term potential of the portfolio to deliver upon the desired results of performance in excess of the actuarial requirement with appropriate levels of risk. The approach has served the Plan well historically and the Plan sees no reason to believe it is not attainable going forward.

The following table represents the fair value of investments of the Plan:

<u>Investments at Fair Value</u>	<u>2019</u>	<u>2018</u>
Fixed income	\$ 2,712,942	\$ 2,463,494
Domestic and international equities	9,074,670	8,875,709
Mutual funds	20,644,518	8,049,992
Common collective trusts	8,221,260	11,035,383
Alternative investments	<u>12,587,600</u>	<u>12,369,121</u>
Total investments	<u>\$ 53,240,990</u>	<u>\$ 42,793,699</u>

REQUESTS FOR INFORMATION

This Annual Financial Report is designed to provide a general overview of the Firemen's Relief and Retirement Fund of McAllen, Texas finances for interested parties. Questions concerning any of the information provided herein, or requests for additional financial information, should be addressed to Firemen's Relief and Retirement Fund of McAllen, Texas, P.O. Box 220, McAllen, Texas 78505-0220.

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Financial Statements

**Firemen's Relief and Retirement Fund
of McAllen, Texas**

Statement of Fiduciary Net Position

September 30, 2019

Assets

Cash and cash equivalents	\$ 4,476,661
---------------------------	--------------

Receivables

Due from broker for investments sold	196,129
--------------------------------------	---------

Investments at fair value

Fixed income	2,712,942
Domestic and international equities	9,074,670
Mutual funds	20,644,518
Common collective trusts	8,221,260
Alternative investments	<u>12,587,600</u>

Total investments	53,240,990
-------------------	------------

Receivables

Accrued interest receivable	21,198
-----------------------------	--------

Total assets	<u>57,934,978</u>
--------------	-------------------

Liabilities

Due to broker for investments purchased	<u>3,962,851</u>
---	------------------

Total liabilities	<u>3,962,851</u>
-------------------	------------------

Net position restricted for pension	<u><u>\$ 53,972,127</u></u>
--	-----------------------------

The accompanying notes are an integral part of these statements.

**Firemen's Relief and Retirement Fund
of McAllen, Texas**

Statement of Changes in Fiduciary Net Position

Year Ended September 30, 2019

Additions

Contributions:

Members	\$ 1,499,346
Employer	1,625,691
Other	89

Total contributions	3,125,126
---------------------	-----------

Investment income:

Net depreciation in fair value of investments	874,536
Interest and dividends	1,442,240

Total investment income	2,316,776
-------------------------	-----------

Less investment expense	(309,960)
-------------------------	-----------

Net investment income	2,006,816
-----------------------	-----------

Total additions	5,131,942
-----------------	-----------

Deductions

Benefits paid directly to participants or beneficiaries	3,518,772
Refunds to terminated employees	140,882
DROP payments	138,167
Administrative expenses	37,403

Total deductions	3,835,224
------------------	-----------

Net increase in net position	1,296,718
------------------------------	-----------

Net position restricted for pension

Beginning of year	52,675,409
-------------------	------------

End of year	\$ 53,972,127
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The accompanying notes are an integral part of these statements.

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Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

1. Plan Description

The provisions of Firemen's Relief and Retirement Fund of McAllen, Texas (the "Plan") are authorized by the Texas Local Fire Fighters' Retirement Act ("TLFFRA"). The following brief description of the Plan is provided for general information purposes only. The Plan agreement should be referred to for more complete information. The Plan has an actuarial valuation performed biennially in accordance with Governmental Accounting Standards Board ("GASB") Statement No. 67, *Financial Reporting for Pension Plans— an amendment of GASB Statement No. 25*. The most recent actuarial valuation was performed as of September 30, 2018. This valuation was rolled forward to September 30, 2019 in accordance with GASB No. 67.

Reporting Entity

The plan is sponsored by the City of McAllen, Texas (the "City"). The Plan does not purport and does not present the financial position or changes in financial position of the City as of any time or for any period. The Plan meets the criteria of a "fiduciary fund" of the City as established by GASB, and certain information regarding the Plan is included in the City's financial statements.

Plan Membership

The Pension Board of Trustees is the administrator of the Plan, which consists of seven board members, current and former fire fighters of the City, as well as certain beneficiaries of current and former fire fighters. The City is the only contributing employer. The fire fighters covered by the Plan also contribute to the Plan. The types of employees covered, as well as Plan membership data, are as follows:

Number of participants:		
Active members		169
Retirees and beneficiaries entitled to benefits		110
Retirees and beneficiaries entitled to, but not yet receiving benefits		<u>0</u>
Total Participants		<u>279</u>

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

1. Plan Description (continued)

Plan Benefits

Service Retirement Benefits

A member is eligible for service retirement upon completion of 20 years of service and attainment of age 50. A member who retires under the service retirement provisions of the fund will receive a monthly benefit equal to the sum of (a), (b), and (c) where: (a) equal to 2.9 percent of the member's highest 60-month average salary for each of the member's years of service up to and including the 20th year of service and (b) equals the greater of 2.9 percent of the member's highest 60-month average salary, or \$58.00 per month for each of the member's 21st and 22nd years of service, and (c) equals \$58.00 per month for each year of service in excess of 22 years.

Disability Benefits

An active member who becomes disabled as defined in the plan will receive a monthly disability benefit. Separate disability benefits are provided for duty-related and off-duty disabilities. Disability benefits are payable in the same joint-and-survivor form as service retirement benefits. However, disability benefits stop if the member recovers to the point that he no longer meets the definition of disability under the fund. If the total monthly amount a disabled member receives from (a) the fund, (b) workers compensation, and (c) the City of McAllen, exceeds the member's monthly rate of pay as of his date of disability, the amount payable from the fund will be reduced so that the member's benefit from all three sources, combined, does not exceed such rate of pay.

Duty-related death benefits, payable to a member's spouse for as long as they are living, equal the sum of (a) 38.67% of the member's highest 60-month average salary, (b) plus two-thirds of any additional service benefit earned by the member as of the date of their death. The death benefit is payable for life, but it ceases upon remarriage. Effective January 1, 2006 the widowed spouse of a member who completed 10 or more years of service prior to their death will have the death benefit payments terminated in the event of remarriage. In addition to the above spousal death benefit, each unmarried child of the member will receive a monthly benefit of 7.73 percent of the fire fighter's highest 60-month average salary. Orphan benefits continue until the child reaches age 18. However, benefits will continue until age 22 for a child who is a full-time student. If the member's spouse dies or remarries, or if the member has no spouse on the date of their death, each eligible orphan will receive a monthly benefit of 15.47 percent of the member's highest 60-month average salary. Orphan benefits are continued for life for disabled children. The total of all benefits paid as a result of the death of an active fund member may not exceed the disability or retirement benefits such member had earned as of the date of their death. The total of all benefits paid as a result of the death of a retired member may not

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

1. Plan Description (continued)

exceed the retirement benefit the member was receiving as of the date of their death. Benefits are reduced pro rata, if necessary, in order to satisfy these limitations.

Termination Benefits

Members who terminate employment with less than 10 years of service will be entitled to the return of the excess of their contributions to the fund over the amount of any benefits they have received from the Plan. Such refunds will not include any interest on the members' contributions. If members terminate on or after the date they have completed 10 years of service but prior to the date they complete 20 years of service, they will be entitled to receive a monthly benefit, starting on the date they would have both completed 20 years of service and attained age 50, had they remained in the service of the fire department.

The amount the members will receive will equal the monthly service retirement benefit they had accumulated on the date they separated from service with the fire department, multiplied by the vested percentage of the members.

The Deferred Retirement Option Plan (DROP)

A member is eligible to receive their benefits under the plan's DROP provision after they have both completed 20 years of service and attained age 53. The election to participate in the DROP may be made at the time the member elects to retire. The monthly retirement income payable to a member who retires under the DROP will equal their service retirement benefits under the plan based on highest 60-month average salary and years of service as of the member's DROP Eligibility Date. The member's benefit will be calculated, however using the benefit formula in effect on the member's actual date of retirement. A member's DROP Eligibility Date is the later of (a) the date the member meets the eligibility requirements for the DROP or (b) the date which is two years prior to the member's actual retirement date: Upon retirement, the member will receive—in addition to their monthly retirement benefit—a single payment equal to the sum of: (a) the total of the monthly retirement benefits the member would have received between his DROP Eligibility Date and the time they retired under the plan, and (b) the amount of monthly contributions that the member has made to the fund between their DROP Eligibility Date and the time they retired under the Plan. Since the member does not elect a DROP until actual retirement, Plan does not have any DROP accounts or liabilities reported for DROPS at September 30, 2019.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

2. Summary of Significant Accounting Policies and Plan Asset Matters

Organization

The Plan was created pursuant to the TLFFRA. The Plan provides pension, disability, death, and severance benefits to employees of the City's fire department and former volunteer firemen eligible to receive benefits pursuant to a single-employer defined benefit pension plan.

Basis of Accounting

The financial statements are prepared in conformity with accounting principles generally accepted in the United States of America for local governmental units as prescribed by the GASB. The financial statements are prepared using the accrual basis of accounting. Employee and employer contributions are recognized as revenues in the period in which employee services are performed. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

Cash Equivalents

For purposes of the statement of fiduciary net position, short-term, highly liquid investments are considered cash equivalents. Highly liquid investments are defined as investments with a maturity date of three months or less at time of purchase.

Valuation of Plan Investments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Plan's investments are stated at fair value and, accordingly, unrealized appreciation and depreciation are reported in the statement of changes in fiduciary net position. The fair value of money market funds is considered to be the same as the cost of these investments due to their highly liquid nature. The fair value of common stocks and foreign equities are based on quoted market prices. The fair value of United States Government securities and corporate and foreign bonds are based on quotes from broker dealers or are valued using interest rate curves and credit spreads applied to the terms of the debt instrument (maturity and coupon interest rate) and considering the counter party rating. The Plan values investments in alternative funds based on its percentage investment in each such fund and are reported at net asset value (NAV). The estimated fair value of each fund is based on market conditions and information reported by the fund manager, and is generally based on the estimated fair value of each funds' underlying investments at the end of the reporting period.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

2. Summary of Significant Accounting Policies and Plan Asset Matters (continued)

Purchases and sales of investments are recorded on a trade-date basis and, accordingly, the related receivables and payables for any unsettled trades are recorded. Interest income and dividends are recorded on the accrual basis.

Federal Income Tax

The Plan is exempt from federal income tax pursuant to applicable regulations.

Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Plan administrator to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results may differ from those estimates.

3. Fiduciary Fund of the City of McAllen, Texas

Due to the level of oversight responsibility exercised, the Plan is included in the City's basic financial statements in the fiduciary fund section. Certain administrative functions are performed for the Plan by the City at no cost. The City is under no legal obligation to fund any unfunded pension obligations related to the Plan, other than to fund the actuarially determined annual required contribution. See note 10 for additional information.

4. Net Pension Liability of the City

Total pension liability is developed by subtracting the present value of future service costs from the present value of future benefits. The net pension liability is calculated by subtracting the plan fiduciary net position from the total pension liability. The components of the net pension liability of the City at September 30, 2019 were as follows:

Total pension liability	\$ 99,613,743
Plan fiduciary net pension	<u>53,968,087</u>
City's net pension liability	<u><u>\$ 45,645,656</u></u>
Fiduciary net position	
as a percentage of total pension liability	54.2%

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

4. Net Pension Liability of the City (continued)

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of September 30, 2018 which was rolled forward to the measurement date of September 30, 2019 revised to use a discount rate of 5.67%.

Valuation date	2019
Measurement date	September 30, 2018
Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, open
Actuarial assumptions:	
Investment rate of return	7.5% per annum, net of pension plan investment expense, including inflation
Projected salary increases	3.0% plus merit, step and longevity increases that vary by service
Inflation	3.00% per year
Cost-of-living adjustment	None
Municipal bond rate	2.66%
Mortality	PubS-2010 (public safety) total dataset mortality tables for employees and for retirees (sex distinct), projected for mortality improvement generationally using the projection scale MP-2018.
Other information	There have been no benefit changes since the September 30, 2018 valuation date

The investment rate of return and the projected salary increases both used the same assumptions with regard to inflation. The long-term expected rate of return on pension plan investments was determined using a building-block method in which best estimates of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target allocation percentage and by adding expected inflation. Best estimates or arithmetic real rates of return for each major asset class included in the Plan's target allocation as of September 30, 2019 are summarized in the following table:

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

4. Net Pension Liability of the City (continued)

<u>Asset class:</u>	<u>Target allocation</u>	<u>Long-term expected real rate of return</u>
Equities		
Domestic all cap	32%	5.50%
International developed	16%	6.09%
Emerging markets	7%	7.37%
Fixed Income		
Global	8%	1.66%
Domestic core	5%	1.43%
Nontraditional	11%	2.38%
Alternatives		
Private real estate	10%	4.30%
Hedge funds	10%	3.15%
Cash	1%	0.15%
Total	<u>100%</u>	<u> </u>
Weighted average		4.46%

Discount Rate

The discount rate used to measure the total pension liability was 5.67%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from the City will be made at contractually required rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members and inactive plan members through 2062. Therefore, the discount rate of 5.67% is the single rate of return that results in a present value of all projected benefits equal to the sum of (a) the present value of benefits through 2062 discounted at the long-term expected rate of return of 7.5% and (b) the present value of benefits after 2062 discounted at the 2.66% discount rate based on the Bond Buyer Index of general obligation bonds with 20 years to maturity near the end of September 2019.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

4. Net Pension Liability of the City (continued)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The table below presents the net pension liability of the City calculated using the discount rate of 5.67%, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (4.67%) or one percentage point higher (6.67%).

	One Percent Decrease (4.67 Percent)	Current Discount Rate (5.67 Percent)	One Percent Increase (6.67 Percent)
Net pension liability	\$ 59,697,287	\$ 45,645,656	\$ 34,109,833

Money-weighted rate of return

For the year ended September 30, 2019, the annual money weighted rate of return was calculated at 3.83%. The calculation was determined based on rate of return on pension plan investments, net of pension plan investment expense. Inputs to the money-weighted internal rate of return calculation were determined at least monthly.

5. Benefits

Benefit provisions are established under authority of the TLFFRA. Specific plan provisions are governed by a Plan document and a trust agreement executed by the Board of Trustees. The Plan document may be amended as provided in Section 7 of the Texas Fire Fighters' Retirement Act (Article 6243e. V.T.C.S.). Amending the Plan requires approval of any proposed change by an eligible actuary and a majority of the participating members of the Plan. Both the City and the members of the Plan have specific authority to appoint members of the Board of Trustees under the TLFFRA.

6. Contributions

The Plan's minimum required contribution provisions are established under Title 8, Subtitle A, Chapter 802, Subchapter B, Section 802.101 of the Texas Government Code and under Texas Pension Review Board Guidelines for Actuarial Soundness. Specific Plan contribution rates are governed by the Plan document. Changes in the members' or the City's contribution rate requires a plan amendment.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

6. Contributions (continued)

The contribution rates of the Plan members and the City are established under the terms of the Plan. An actuarial valuation is performed biennially to verify that Plan benefits and Plan contributions are in balance. Costs of administering the fund are paid from Plan assets.

Pursuant to the Plan document, a legal instrument binding both the City and its firefighters, the City of McAllen is required to match members' contributions. Benefits paid to former volunteer firefighters are funded by the City when paid to the former volunteer firefighters or beneficiaries. The City's contribution rate for the fiscal year ended September 30, 2019 was 13.00% of annual compensation and the member contribution rate was 12.00% respectively. Contributions required and paid into the fund as of September 30, 2019 were \$1,499,346 (members) and \$1,625,691 (employer).

7. Deposits with Financial Institutions and Investments

The deposits and investments of the Plan are held separately from those of the City. The TLFFRA authorizes the Plan to invest in:

- Obligations and securities of the United States, the state of Texas, or any county, city, or other political subdivision of the state of Texas;
- Savings and loan association accounts insured by the Federal Deposit Insurance Corporation;
- First lien real estate mortgage securities insured by the Federal Housing Administration;
- Corporate bonds and stocks;
- Guaranteed investment contracts offered by insurance companies;
- Money market funds;
- Mutual funds and other pooled funds;
- International stocks traded as American Depositary Receipts;
- Derivatives; and
- Alternative investments.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

7. Deposits with Financial Institutions and Investments (continued)

Investments

Investments at fair value as of September 30, 2019 are as follows:

	Fair Value	% of Portfolio	Investment Policy of Asset Allocation
Equities:			
Domestic	\$ 17,295,930	32%	20-50%
International	20,644,518	39%	30-60%
Total equities	<u>37,940,448</u>		
Fixed income:			
Treasury and agency securities corporate bonds and mutual funds	<u>2,712,942</u>		
Total fixed income	<u>2,712,942</u>	5%	0-20%
Alternative funds	<u>12,587,600</u>	24%	10-30%
Total investment portfolio	<u><u>\$ 53,240,990</u></u>	100%	

The Plan categorizes its fair value measurements within the fair value hierarchy established by *GASB Statement No. 72, Fair Value Measurement and Application*. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs, quoted market prices of similar assets in non-active markets, and inputs other than quoted that are observable either directly or indirectly; Level 3 are significant unobservable inputs and may include situations where there is minimal, if any, market activity.

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

The Plan uses a matrix pricing model to measure the fair value of its government security investments, classified in Level 2 of the fair value hierarchy.

Commercial real estate securities classified in Level 3 are valued at fair value.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

7. Deposits with Financial Institutions and Investments (continued)

Fair Value Measurement

Investments at fair value as of September 30, 2019 using the fair value measurement are as follows:

Investment Type	Total Fair Value	Level 1	Level 2	Level 3
Equities				
Domestic Equity	\$ 9,074,670	\$ 9,074,670	\$ -	\$ -
Mutual Funds	20,644,518	20,644,518	-	-
Fixed Income				
US Treasury Notes	1,958,677	1,958,677	-	-
Mortgage Backed Securities	416,286	-	416,286	-
Corporate Bonds	299,591	-	299,591	-
Municipal Bonds	38,388	-	38,388	-
Real Estate	716,741	-	-	716,741
Total Investments at Fair Value	<u>\$ 33,148,871</u>	<u>\$ 31,677,865</u>	<u>\$ 754,265</u>	<u>\$ 716,741</u>

Investments measured at the net asset value (NAV)

		Unfunded Commitments	Redemption Frequency	Redemption Notice
Hedge Funds				
Courage Credit Opportunities Offshore Fund III LP	1,380,280	-	(1)	(1)
Ironwood	2,936,283	-	Semi-annual	95 days
Terracap	1,939,516	-	(1)	(1)
Corry Capital	2,904,147	-	(2)	(2)
Pointer	2,710,633	-	(3)	(3)
Collective Investment Funds	<u>8,221,260</u>	-	Typically Daily	Less than 1 month
Total of Investments Measured at NAV	<u>20,092,120</u>			
Total Investments	<u><u>\$ 53,240,990</u></u>			

(1) These hedge funds are not redeemable. The Firemen's Relief and Retirement Fund receives distributions as the underlying assets of investments are sold/liquidated. Management estimates that the remaining two hedge funds (\$3,319,795 or 16.52%) will liquidate in 5-7 years.

(2) The money invested with Corry Capital is locked up because the investment is a private equity style fund. It is a self-liquidating fund that will make distributions when there are realizations.

(3) All capital is subject to an initial 24-month lockup, so the lockup on McAllen Firemen's Relief and Retirement Fund's initial investment of \$2.6M made on 4/1/18 expires on 4/1/20. Pointer has semi-annual redemptions at 6/30 and 12/31, where an investor has access to up to 50% of their capital at each date, with signed notification due by 3/15 and 9/15, respectively.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

7. Deposits with Financial Institutions and Investments (continued)

Courage Credit Opportunities Offshore Fund III, L.P.

The Fund invests all or substantially all of its investable assets in the Master Fund. The Master Fund's investment objective is to achieve investment returns while emphasizing stressed and distressed investments in financially troubled companies, including those of companies that may, or have, become involved in reorganization or bankruptcy proceedings. The fair value of the investment has been determined using the NAV per share (or its equivalent) of the investment.

Ironwood International Ltd.

The Fund was created for the purpose of trading and investing in investment funds. The Fund's investment objective is capital appreciation with limited variability of returns. The fund invests substantially all of its assets in Ironwood Partners LP (the Master Fund). The Master Fund invests in a number of pooled investment vehicles, which are each managed by a separate investment manager, and include investment strategies such as relative value, market neutral and low net equity, event-driven, and distressed and credit securities. The fair value of the investment has been determined using the NAV per share (or its equivalent) of the investment.

TerraCap Partners III

The Partnership is engaged in the acquisition and resale of value-add investments in real-estate and real-estate backed assets with a focus on opportunities in Florida and the Southeast. The fair value of the investment has been determined using the NAV per share (or its equivalent) of the investment.

CCA Longevity Fund VI, LP (Corry Capital)

The Partnership's primary investments consist of in-force, non-variable universal life insurance policies insuring the lives of individuals of at least seventy years of age who have a life expectancy as of the date of purchase between two and nine years at a price greater than the cash surrender value offered by the life insurance companies, but less than the face amount of or the death benefit payable under such policies. The fair value of the investment has been determined using the NAV per share (or its equivalent) of the investment.

Pointer Offshore, LTD

The Fund invests all or substantially all of its investable assets in the Master Fund. The Master Fund's investment objective is trading and investing in securities, private investment companies and other investments. The fair value of the investment has been determined using the NAV per share (or its equivalent) of the investment.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

7. Deposits with Financial Institutions and Investments (continued)

Common Collective Investment Funds

This category includes investments in JP Morgan US Equity Value Advantage Fund. Common Collective Trusts may have active or passive strategies in publicly traded equity and fixed income securities. The fair value of Common Collective Trust investments have been determined using the NAV provided by the administrators of the common collective trust. Common Collective Trusts usually have higher liquidity than other investment strategies valued at NAV.

Because of the complexity of the portfolio, the Board of Trustees uses a consultant to provide the guidance to accomplish the Plan's objectives. The Board also understands that return objectives can be achieved while assuming "market" volatility. The Board is willing to forgo potential return in strong markets in return for protection against a severe decline during weak periods.

Concentration of credit risk. As noted page 20, none of the sectors exceed their percentage of asset allocation. The Plan is diversified; with no one issue exceeding 5% of fiduciary net position. Under normal market conditions, the portfolio can be liquidated within one to two days if so desired. One of our alternate investments is Ironwood. Ironwood is eligible for redemption on a semi-annual basis with a 95-day formal notice.

Interest rate risk. Only the fixed income securities of the Plan are subject to interest rate risk due to the possibility that prevailing interest rates could change before the securities reach maturity. Securities that are subject to interest rate risk as of September 30, 2019 amount to \$2,712,942 and have weighted-average duration of 16.09 years. Duration is defined as the change in the value of a fixed income security that will result from a 1% change in interest rates. Duration is stated in years. For example, five year duration means the bond will decrease in value by 5% if interest rates rise 1% and increase in value by 5% if interest rates fall 1%. The investment policy is silent on the subject of interest risk. Securities that are subject to interest rate risk are shown in the following table.

Interest Rate Risk:		Weighted-Average	
Investment Type	Fair Value	Percentage of Total	Duration (Years)
Corporate bonds	\$ 299,591	11.04%	15.64
US Treasury Notes	1,958,677	72.20%	7.26
Government Mortgage Back Securities	416,286	15.35%	4.95
Municipal Bonds	38,388	1.41%	36.50
Total fixed income investments	<u>\$ 2,712,942</u>	100.00%	<u>16.09</u>

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

7. Deposits with Financial Institutions and Investments (continued)

Custodial credit risk. Custodial credit risk is the risk that in the event of a failure of the counterparty, the Plan will not be able to recover the value of investments or collateral in possession of the counterparty. The Plan does not have a policy regarding custodial credit risk. The Plan does not have any cash deposits held with financial institutions and all investments are held in the name of the Plan.

Credit risk. Using Standard and Poor's rating system for fixed income securities as of September 30, 2019 the Plan's fixed income investments were rated as noted below. The investment policy is silent on the subject of credit risk.

Investment Type	Fair Value	A	A-, A+,AA, AA-, AA+	BBB+
US Treasury Notes	\$ 1,958,677	\$ -	\$ 1,958,677	\$ -
Mortgage Back Securities	416,286	-	416,286	-
Corporate Bonds	299,591	33,474	196,236	69,881
Municipal Bonds	38,388	-	38,388	-
	<u>\$ 2,712,942</u>	<u>\$ 33,474</u>	<u>\$ 2,609,587</u>	<u>\$ 69,881</u>

8. Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market rate, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the value of investment securities will occur in the near term and those changes could materially affect the amounts reported in the statement of fiduciary net position.

Plan contributions are made and the actuarial present value of accumulated plan benefits are reported based on certain assumptions pertaining to interest rates, inflation rates, and employee demographics, all of which are subject to change. Due to uncertainties inherent in the estimations and assumptions process, it is at least reasonably possible that changes in these estimates and assumptions in the near term would be material to the financial statements.

9. Change in State Oversight Agency

An agency from the State of Texas conducted a sunset review of the Texas Local Fire Fighters' Retirement agency. After the review, it was determined that this agency should be abolished and its duties were transferred to the Pension Review Board, another state agency. The Pension Review Board agency is currently assessing its additional responsibilities towards the local pension plans, which will now fall under its jurisdiction.

Firemen's Relief and Retirement Fund of McAllen, Texas

Notes to Financial Statements

September 30, 2019

10. Funding Responsibility

In September 2003, Texas voters approved an amendment to the Texas Constitution, which provided that once certain benefits are granted to retirees, those benefits may not be subsequently reduced. It was codified as Article XVI, Section 66, of the Texas Constitution. The amendment applies only to the City of McAllen Firefighters' Relief and Retirement Plan. It further provided that the City and the retirement system that finance benefits under the retirement system are jointly responsible for ensuring that benefits are not reduced or otherwise impaired, which could potentially require the City to involuntarily increase its funding due to under-performing investments, plan improvements as well as other factors outside the control of the City. The amendment also permitted the City to be exempt from its requirements upon holding an election in which the majority of the votes favored the exemption. On May 15, 2004, a special City election was held, in which the majority of the voters voted in favor of exempting the City of McAllen and the McAllen Firefighters' Relief and Retirement Plan from the application of this amendment, Article XVI, Section 66 of the Texas Constitution.

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Required Supplementary Information

Firemen's Relief and Retirement Fund of McAllen, Texas

Required Supplementary Information – (Unaudited)

Schedule of: Changes in Net Pension Liability and Related Ratios; Investment Returns

Discount Rate	7.50%	7.50%	7.50%	7.50%	7.50%	5.67%
Annual Increase in Payroll	4.25%	4.00%	4.00%	4.00%	4.00%	3.00%
Measurement Date	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019
Total Pension Liability						
1. a. Service Cost (Pension benefits)	\$ 1,549,238	\$ 1,778,456	\$ 1,544,544	\$ 1,536,125	\$ 1,636,993	\$ 1,612,284
b. Service Cost (Administrative expenses)	23,959	46,070	352,963	329,653	303,416	347,363
c. Adjustment For Change in Attribution Period	-	-	982,134	-	-	-
2. Interest	4,841,219	4,884,830	5,130,946	5,361,757	5,631,214	5,715,164
3. Changes in Benefit Terms	-	-	-	-	-	-
4. Difference Between Expected and Actual Experience	-	221,439	-	(1,202,731)	-	(6,083,899)
5. Changes in Assumptions	-	(3,414,995)	-	-	-	23,055,865
6. Benefit Payments (including refunds of member contributions)	(2,588,586)	(3,170,707)	(3,876,966)	(3,520,297)	(3,898,551)	(3,797,821)
7. Net Change In Total Pension Liability	3,825,830	345,093	4,133,621	2,504,507	3,673,072	20,848,956
8. Total Pension Liability-Beginning of the Year	64,282,664	68,108,494	68,453,587	72,587,208	75,091,715	78,764,787
9. Total Pension Liability-End of the Year	<u>\$ 68,108,494</u>	<u>\$ 68,453,587</u>	<u>\$ 72,587,208</u>	<u>\$75,091,715</u>	<u>\$78,764,787</u>	<u>\$99,613,743</u>
Plan Fiduciary Net Position						
10. Contributions - employer	\$ 1,435,293	\$ 1,477,483	\$ 1,554,567	\$ 1,498,194	\$ 1,547,133	\$ 1,625,691
11. Contributions - members	1,214,786	1,223,445	1,265,734	1,266,209	1,360,361	1,499,435
12. Expected Net Investment Income	2,525,951	3,376,943	3,119,711	5,489,970	4,256,675	2,002,776
13. Gain or (Loss) Due to Difference in Projected vs Actual Earnings	-	(5,843,966)	748,008	-	-	-
14. Benefit Payments (including refunds of member contributions)	(2,588,586)	(3,170,707)	(3,876,966)	(3,520,297)	(3,898,550)	(3,797,821)
15. Expected Administrative Expenses	(23,959)	(46,070)	(352,963)	(33,822)	(49,519)	(37,403)
16. Other	(1)	(1)	-	-	-	-
17. Net Changes in Plan Fiduciary Net Position	2,563,484	(2,982,873)	2,458,091	4,700,254	3,216,100	1,292,678
18. Plan Fiduciary Net Position-Beginning of the Year	42,720,353	45,283,837	42,300,964	44,759,055	49,459,309	52,675,409
Plan Fiduciary Net Position-End of the Year	<u>45,283,837</u>	<u>42,300,964</u>	<u>44,759,055</u>	<u>49,459,309</u>	<u>52,675,409</u>	<u>53,968,087</u>
19. Net Position Liability-End of the Year (line 9 minus line 18)	<u>\$ 22,824,657</u>	<u>\$ 26,152,623</u>	<u>\$ 27,828,153</u>	<u>\$25,632,406</u>	<u>\$26,089,378</u>	<u>\$45,645,656</u>
20. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability-End of the Year	66.49%	61.80%	61.66%	65.87%	66.88%	54.18%
21. Covered Payroll						
22. Net Pension Liability-End of the Year as a Percentage of Covered Payroll	\$ 11,043,509	\$ 11,365,262	\$ 11,515,311	\$11,524,569	\$11,901,023	\$12,505,315
23. Annual Money-weighted Rate of Return Net of Pension Plan	206.68%	230.11%	241.66%	222.42%	219.22%	365.01%
	5.90%	-5.44%	8.54%	12.37%	8.70%	3.83%

Note 1: In accordance with Paragraph 50 GASB Statement No. 67, this schedule only includes information which has been measured in conformity with Statement No. 67. Disclosures for years in which information was not developed in accordance with GASB 67 Statement have not been included.

Note 2: The Plan adjusted the Total Pension Liability for the estimated effect of a reduction in attribution period for employees expected to elect a BackDrop. The estimated effect is accounted for under item 1.c. above.

**Firemen's Relief and Retirement Fund
of McAllen, Texas**

Required Supplementary Information - (Unaudited)
Schedule of Contributions

Fiscal Year	(1) Actuarial determined contribution	(2) Contributions in relation to the actuarially determined contribution	(3) Contribution excess (deficiency) (2) -(1)	(4) Covered payroll	(5) Contributions as a percentage of covered payroll (2)/(4)
2010	\$ 1,144,532	\$ 1,144,532	\$ -	\$ 8,199,849	13.96%
2011	1,234,674	1,234,674	-	8,996,407	13.72%
2012	1,287,288	1,287,288	-	8,996,407	14.31%
2013	1,337,910	1,337,910	-	9,361,646	14.29%
2014	1,435,293	1,435,293	-	11,043,509	13.00%
2015	1,477,483	1,477,483	-	11,365,262	13.00%
2016	1,554,567	1,554,567	-	11,515,311	13.50%
2017	1,498,194	1,498,194	-	11,524,569	13.00%
2018	1,547,133	1,547,133	-	11,901,023	13.00%
2019	1,625,691	1,625,691	-	12,505,315	13.00%

**Firemen's Relief and Retirement Fund
of McAllen, Texas**
Required Supplementary Information - (Unaudited)
Schedule of Contributions

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of September 30, 2018, which was rolled forward to the measurement date of September 30, 2019 revised to use a discount rate of 5.67%.

Valuation date	2019
Measurement date	September 30, 2018
Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, open
Actuarial assumptions:	
Investment rate of return	7.5% per annum, net of pension plan investment expense, including inflation
Projected salary increases	3.0% plus merit, step and longevity increases that vary by service
Inflation	3.00% per year
Cost-of-living adjustment	None
Municipal bond rate	2.66%
Mortality	PubS-2010 (public safety) total dataset mortality tables for employees and for retirees (sex distinct), projected for mortality improvement generationally using the projection scale MP-2018.
Other information	There have been no benefit changes since the September 30, 2018 valuation date

Change in Actuarial Assumptions Since Last Actuarial Valuation

The Plan changed to a new actuary for fiscal year 2019 and a new actuarial valuation was performed as of September 30, 2018. The following changes in assumptions were made in the new actuarial valuation:

- The Plan -Long term expected rate of return changed from 7.75% to 7.5%.
- Mortality assumption was changed from using the RP-2000 combined healthy mortality tables projected to 2024 with Scale AA to PubS-2010 (safety employees) total dataset mortality tables for employees and retirees, projected for mortality improvement generationally using the projection scale MP-2018.
- Aggregate annual payroll increase assumption changed from 4% to 3%.
- Compensation increase assumption changed from 4% per year plus assumed promotion, step, and longevity increase averages of 1.27% per year, to 3% and 2.42% respectively.
- Demographic assumptions of termination, disability, and retirement were updated, however aggregate effect of new assumptions was similar to prior assumptions.

**Independent Auditor's Report on Internal Control over Financial Reporting
and on Compliance and Other Matters Based on
an Audit of Financial Statements Performed
in Accordance with *Government Auditing Standards***

To the Pension Board of Trustees of the
Firemen's Relief and Retirement Fund
City of McAllen, Texas

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Firemen's Relief and Retirement Fund (the Plan), a fiduciary fund of the City of McAllen, Texas (the City) as of and for the year ended September 30, 2019, and the related notes to the financial statements, which collectively comprise the Plan's basic financial statements, and have issued our report thereon dated February 28, 2020. The financial statements present only the financial position of the Plan, a fiduciary fund of the City, and do not purport to, and do not, present the financial position of the City, as of September 30, 2019, and the changes in financial position for the year then ended.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Plan's internal control over financial reporting (internal control) to determine audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of internal control. Accordingly, we do not express an opinion on the effectiveness of the Plan's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Plan's financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in the Plan's internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Plan's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

The Pension Board of Trustees of the
Firemen's Relief and Retirement Fund
City of McAllen, Texas

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Plan's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Plan's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Weaver and Tidwell, L.L.P.

WEAVER AND TIDWELL, L.L.P.

Austin, Texas
February 28, 2020

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Period Ended Á
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Firm Information & Characteristics

as of June 30, 2019

Firm Name	Baron	RBC	UBS
Firm Name	Baron Capital Management	RBC Global Asset Management	UBS Asset Management
Firm City	New York, NY	Toronto, Canada	New York, NY
Firm AUM (mm)	\$29,900.0*	\$349,600.0	\$823,927.6
Strategy Name	Baron Emerging Markets	RBC Emerging Markets Equity	UBS Emerging Market Equity
Strategy Inception	1/31/2011	12/20/2013	9/2/2008
Strategy AUM (mm)	\$5,170.0	\$1,210.0	\$4,551.5
Mutual Fund Minimum	\$5,000,000.0	\$250,000.0	\$5,000,000.0
Ticker Symbol	BEXUX	RREMX	UEMPX
Expense Ratio	1.11%	0.88%	1.16%
Availability	Open	Open	Open

*Firm AUM as of April 30, 2019

**UBS information updated through March 31, 2019

Equity Characteristics	Baron	RBC	UBS	MSCI EM NR USD
Current Number of Holdings	120	58	35	1,193.00
% Holdings in Top 10 Largest Positions	21.34%	42.04%	45.55%	23.52%
Annual Turnover	43.27%	19.00%	36.20%	N/A
Morningstar Institutional Category	Diversified Emerging Mkts	Diversified Emerging Mkts	Diversified Emerging Mkts	N/A
Investment Analysis	Fundamental	Fundamental	Fundamental	N/A
Security Allocation	Bottom-Up	Bottom-Up	Bottom-Up	N/A
Dividend Yield	2.50%	2.58%	3.21%	2.81%
Trailing 12-mo P/E	18.19	16.60	11.62	13.00
Current P/B	2.16	2.44	1.94	1.59
Avg Market Cap (million)	\$19,764.6	\$30,404.2	\$81,456.0	\$30,892.2

Sector Weights

as of June 30, 2019

Sector Weights	Baron	RBC	UBS	MSCI EM NR USD
Consumer Discretionary	16.63%	16.25%	9.07%	11.60%
Consumer Staples	10.83%	15.74%	11.94%	7.02%
Energy	5.53%	0.00%	6.71%	7.56%
Financials	20.44%	34.82%	28.07%	24.78%
Healthcare	6.98%	4.00%	2.05%	2.49%
Industrials	6.62%	4.87%	0.00%	4.83%
Information Technology	14.30%	12.31%	25.05%	23.71%
Materials	3.02%	4.81%	8.68%	7.51%
Communication Services	13.19%	5.85%	3.60%	4.67%
Utilities	1.06%	0.00%	2.19%	2.66%
Real Estate	1.41%	1.33%	2.64%	3.17%
Total	100.00%	100.00%	100.00%	100.00%

Excess Sector Weights	Baron	RBC	UBS
Consumer Discretionary	5.03%	4.65%	-2.53%
Consumer Staples	3.81%	8.72%	4.92%
Energy	-2.04%	-7.56%	-0.85%
Financials	-4.34%	10.04%	3.29%
Healthcare	4.49%	1.51%	-0.44%
Industrials	1.79%	0.04%	-4.83%
Information Technology	-9.41%	-11.40%	1.34%
Materials	-4.49%	-2.70%	1.17%
Telecom Services	8.52%	1.18%	-1.07%
Utilities	-1.60%	-2.66%	-0.47%
Real Estate	-1.76%	-1.84%	-0.53%
Total	0.00%	0.00%	0.00%

Region Weights

as of June 30, 2019

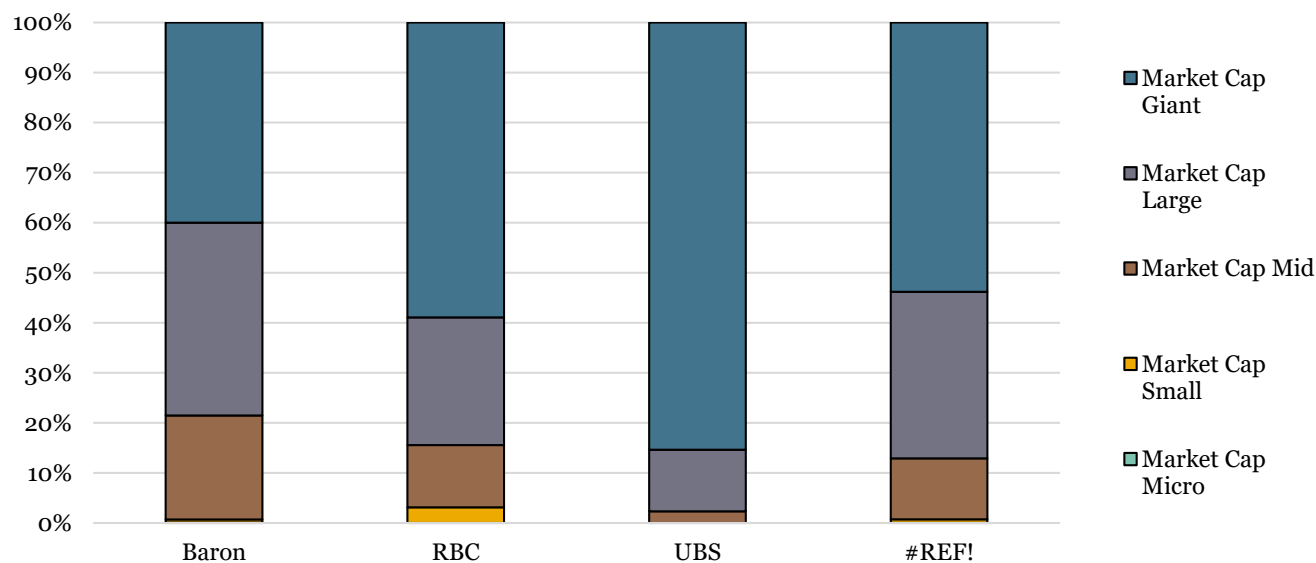
Region Weights	Baron	RBC	UBS	MSCI EM NR USD
North America	2.80%	0.98%	0.00%	0.29%
Latin America	16.29%	13.24%	10.61%	12.17%
United Kingdom	1.73%	7.26%	1.97%	0.08%
Europe	4.44%	1.36%	7.32%	6.45%
Africa/Middle East	6.62%	12.61%	4.09%	9.03%
Japan	0.00%	2.36%	0.00%	0.00%
Australia	0.00%	0.00%	0.00%	0.00%
Asia	68.12%	62.19%	76.01%	71.99%
Total	100.00%	100.00%	100.00%	100.00%
% Developed	22.33%	37.56%	26.18%	27.12%
% Emerging	77.67%	62.44%	73.82%	72.87%
Total	100.00%	100.00%	100.00%	100.00%

Market Cap Breakdown

as of June 30, 2019

Market Cap Weights	Baron	RBC	UBS	MSCI EM NR USD
Market Cap Giant	40.01%	58.94%	85.35%	53.81%
Market Cap Large	38.51%	25.51%	12.33%	33.28%
Market Cap Mid	20.78%	12.42%	2.32%	12.20%
Market Cap Small	0.62%	3.12%	0.00%	0.68%
Market Cap Micro	0.08%	0.00%	0.00%	0.03%
Total	100.00%	100.00%	100.00%	100.00%

Market Cap Breakdown Comparison



Return Analysis

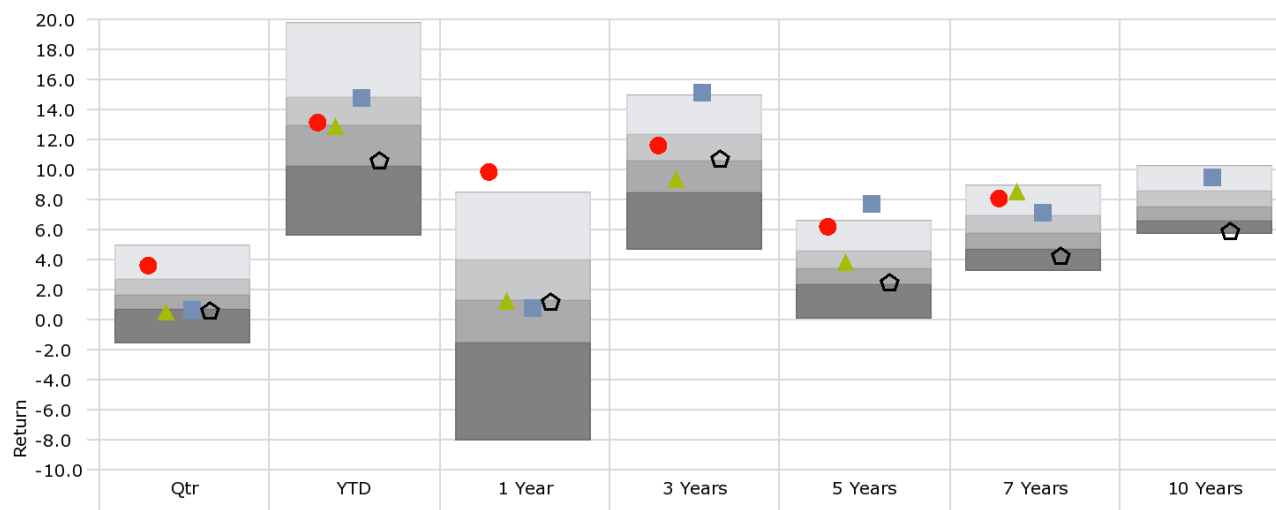
as of June 30, 2019

Performance Relative to Universe

As of Date: 6/30/2019 Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile

▲ Baron Emerging Markets Strategy
 ■ UBS Emerging Markets Equity HALO
 ● RBC Emerging Markets Equity
 ☆ MSCI EM NR USD



Annualized Return to Date %

As of Date: 6/30/2019 Peer Group: Separate Accounts - U.S. - Diversified Emerging Mkts

	Qtr	Rank	YTD	Rank	1 Year	Rank	3 Years	Rank	5 Years	Rank	7 Years	Rank	10 Years	Rank
Baron Emerging Markets Strategy	0.57	77	12.90	49	1.24	51	9.43	62	3.84	40	8.57	9	—	—
UBS Emerging Markets Equity HALO	0.73	74	14.82	27	0.75	57	15.16	4	7.72	2	7.13	23	9.48	11
RBC Emerging Markets Equity	3.67	14	13.18	44	9.85	2	11.66	34	6.24	7	8.03	15	—	—
MSCI EM NR USD	0.61	76	10.58	72	1.21	52	10.66	48	2.49	69	4.15	86	5.81	93
5th Percentile	4.95		19.77		8.39		14.89		6.57		8.91		10.24	
25th Percentile	2.70		14.84		3.98		12.34		4.51		6.95		8.60	
50th Percentile	1.59		12.86		1.32		10.53		3.35		5.70		7.50	
75th Percentile	0.67		10.20		-1.54		8.48		2.36		4.73		6.56	
95th Percentile	-1.54		5.61		-8.07		4.68		0.07		3.33		5.71	

Return Analysis

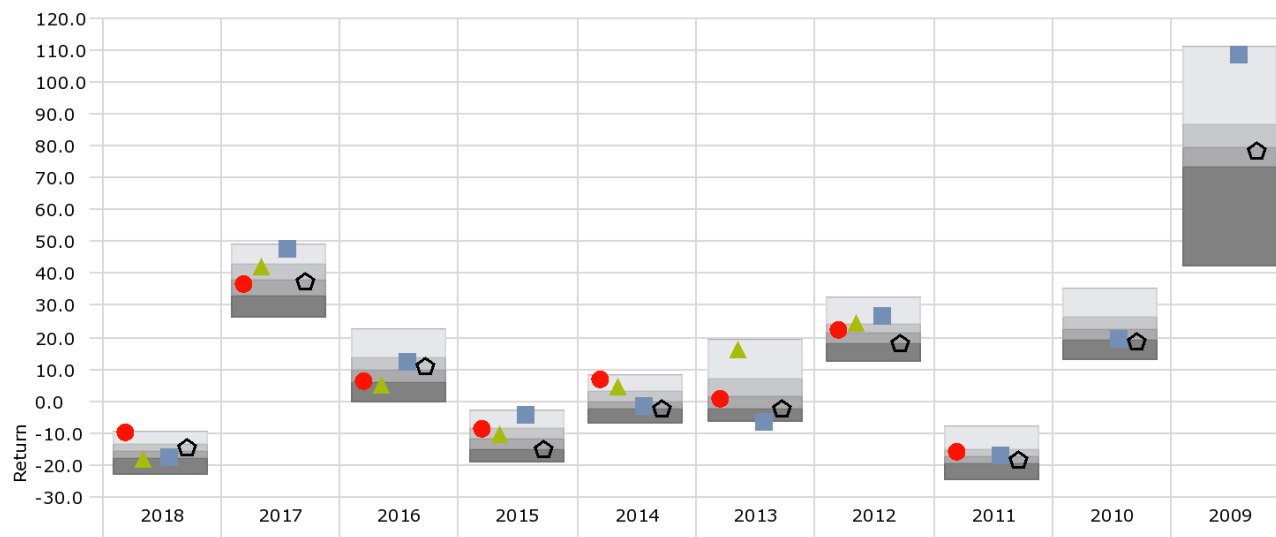
as of June 30, 2019

Performance Relative to Peer Group

Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Calculation Benchmark: MSCI EM NR USD

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile

▲ Baron Emerging Markets Strategy
 ■ UBS Emerging Markets Equity HALO
 ● RBC Emerging Markets Equity
 ☆ MSCI EM NR USD



Annual Annualized Return, %

Peer Group: Separate Accounts - U.S. - Diversified Emerging Mkts

	2018	Rank	2017	Rank	2016	Rank	2015	Rank	2014	Rank	2013	Rank	2012	Rank	2011	Rank	2010	Rank	2009	Rank
Baron Emerging Markets Strategy	-17.63	72	42.24	28	5.26	78	-9.89	36	5.02	15	16.47	8	24.75	23	—	—	—	—	—	—
UBS Emerging Markets Equity HALO	-17.25	67	48.11	8	12.35	33	-3.84	6	-1.13	63	-6.36	96	27.10	16	-16.62	41	19.79	68	108.85	6
RBC Emerging Markets Equity	-9.70	6	36.92	56	6.32	72	-8.15	24	7.31	7	0.80	58	22.78	35	-15.43	28	—	—	—	—
MSCI EM NR USD	-14.57	34	37.28	54	11.19	42	-14.92	75	-2.19	73	-2.60	79	18.22	73	-18.42	64	18.88	75	78.51	58
5th Percentile	-9.31		49.16		22.55		-3.14		8.34		19.05		32.31		-7.66		35.22		111.12	
25th Percentile	-13.65		42.82		13.72		-8.42		3.08		7.04		24.20		-14.89		26.20		86.39	
50th Percentile	-15.78		37.79		9.66		-11.78		0.06		1.65		21.16		-17.14		22.30		79.54	
75th Percentile	-18.09		33.05		5.96		-14.83		-2.30		-2.16		17.97		-19.59		19.33		73.63	
95th Percentile	-22.93		26.26		-0.18		-19.03		-6.85		-6.15		12.55		-24.55		13.37		42.40	

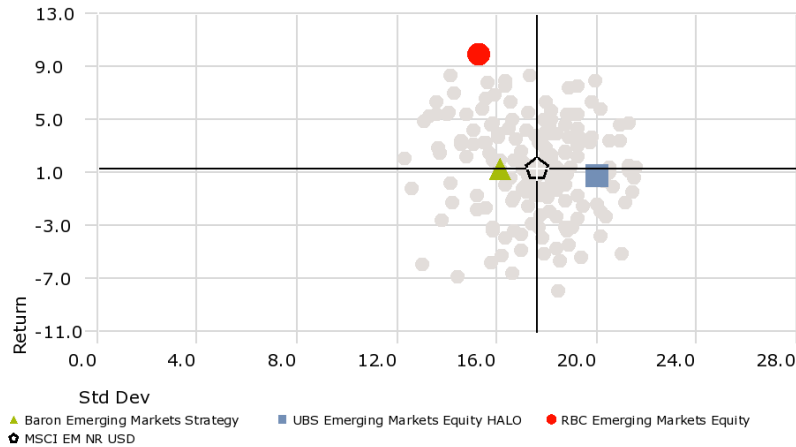
Return Analysis

as of June 30, 2019

Risk-Reward (1 years)

Time Period: 7/1/2018 to 6/30/2019

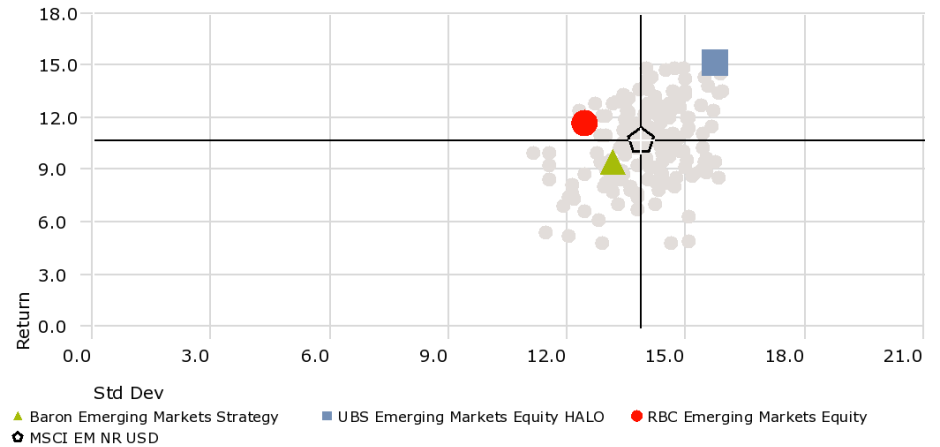
Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Calculation Benchmark: MSCI EM NR USD



Risk-Reward (3 years)

Time Period: 7/1/2016 to 6/30/2019

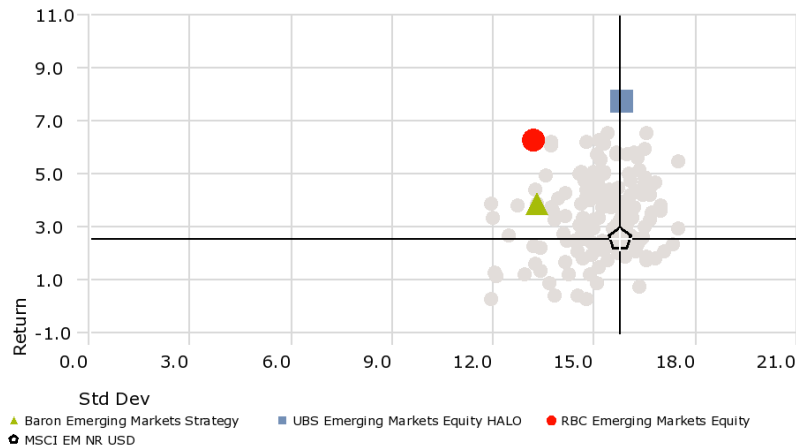
Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Calculation Benchmark: MSCI EM NR USD



Risk-Reward (5 years)

Time Period: 7/1/2014 to 6/30/2019

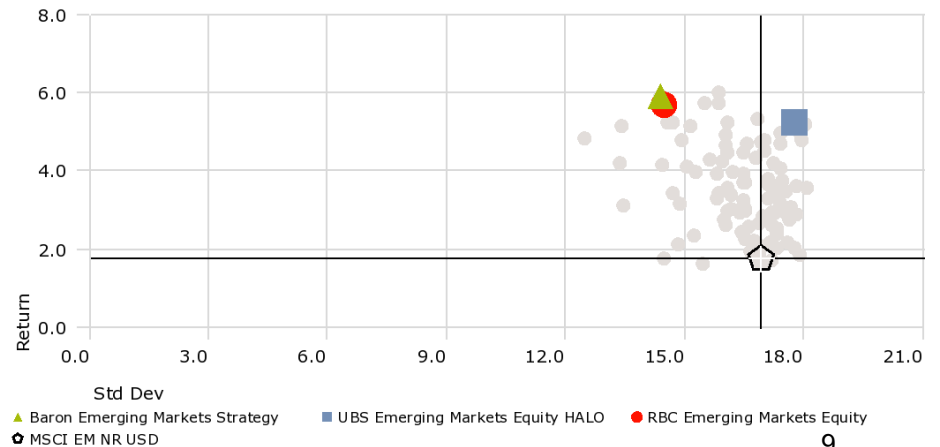
Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Calculation Benchmark: MSCI EM NR USD



Risk-Reward (Common)

Time Period: Since Common Inception (2/1/2011) to 6/30/2019

Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Calculation Benchmark: MSCI EM NR USD

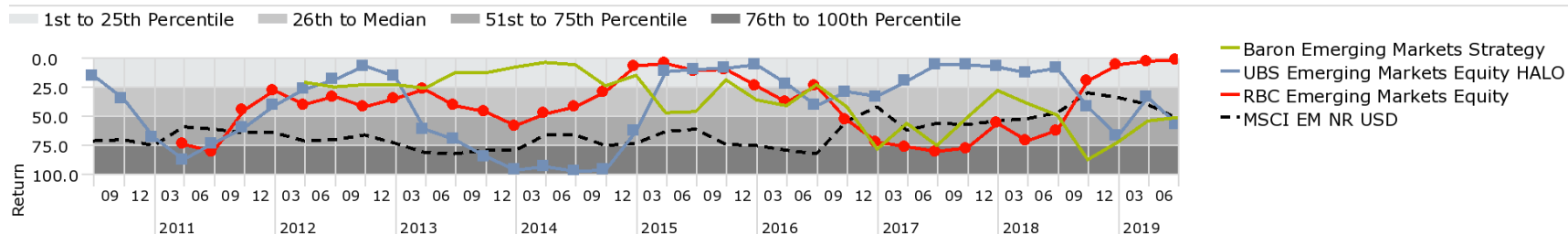


as of June 30, 2019

Manager vs Peer Group (12 month rolling)

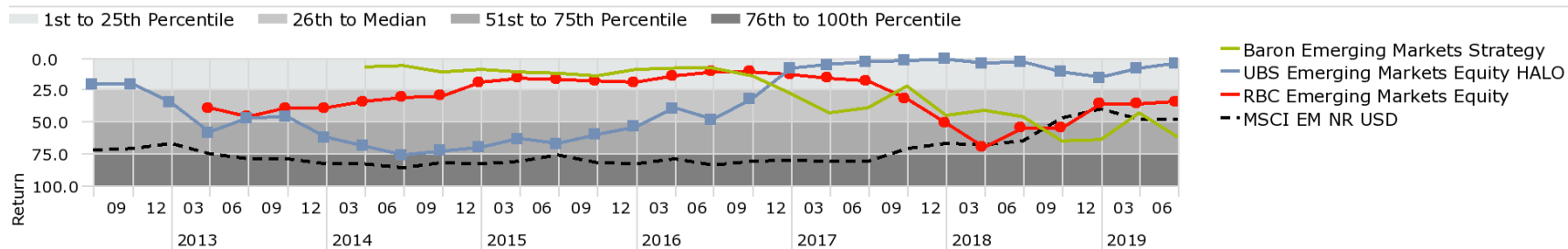
Time Period: 7/1/2009 to 6/30/2019

Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Rolling Window: 1 Year 3 Months shift

**Manager vs Peer Group (36 month rolling)**

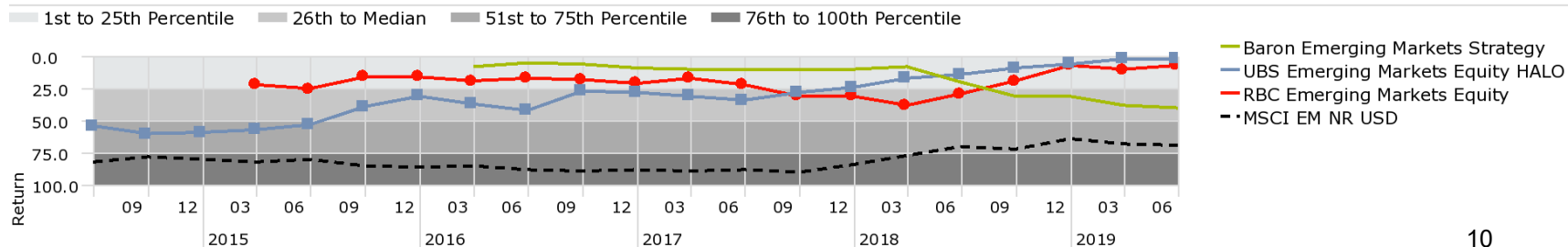
Time Period: 7/1/2009 to 6/30/2019

Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Rolling Window: 3 Years 3 Months shift

**Manager vs Peer Group (60 month rolling)**

Time Period: 7/1/2009 to 6/30/2019

Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Rolling Window: 5 Years 3 Months shift



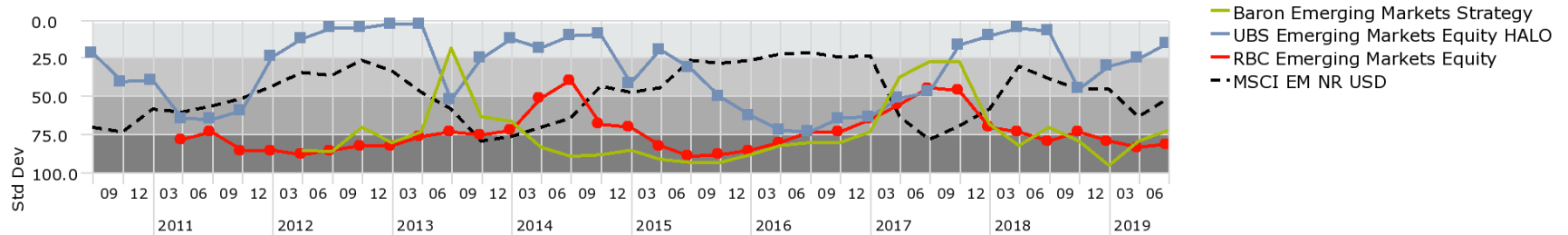
Return Analysis

as of June 30, 2019

Manager vs Peer Group (12 month rolling)

Time Period: 7/1/2009 to 6/30/2019

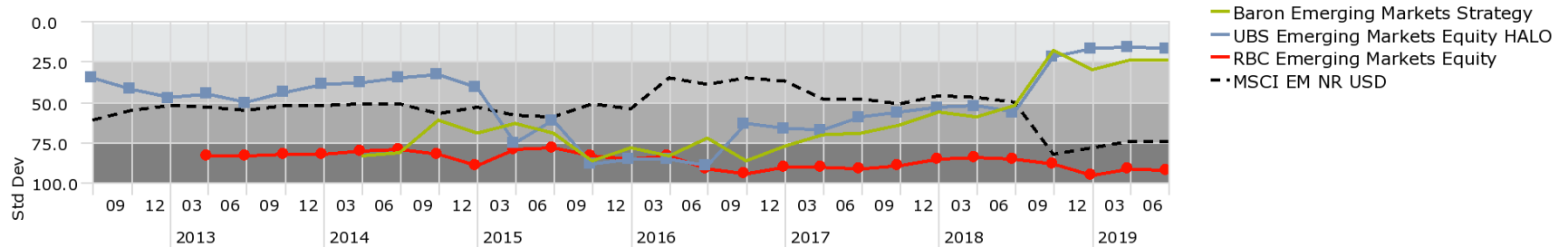
Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Rolling Window: 1 Year 3 Months shift



Manager vs Peer Group (36 month rolling)

Time Period: 7/1/2009 to 6/30/2019

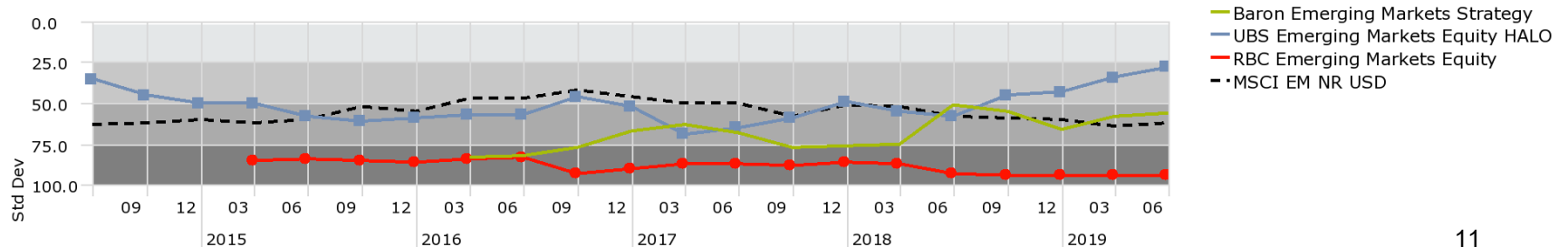
Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Rolling Window: 3 Years 3 Months shift



Manager vs Peer Group (60 month rolling)

Time Period: 7/1/2009 to 6/30/2019

Peer Group (5-95%): Separate Accounts - U.S. - Diversified Emerging Mkts Rolling Window: 5 Years 3 Months shift

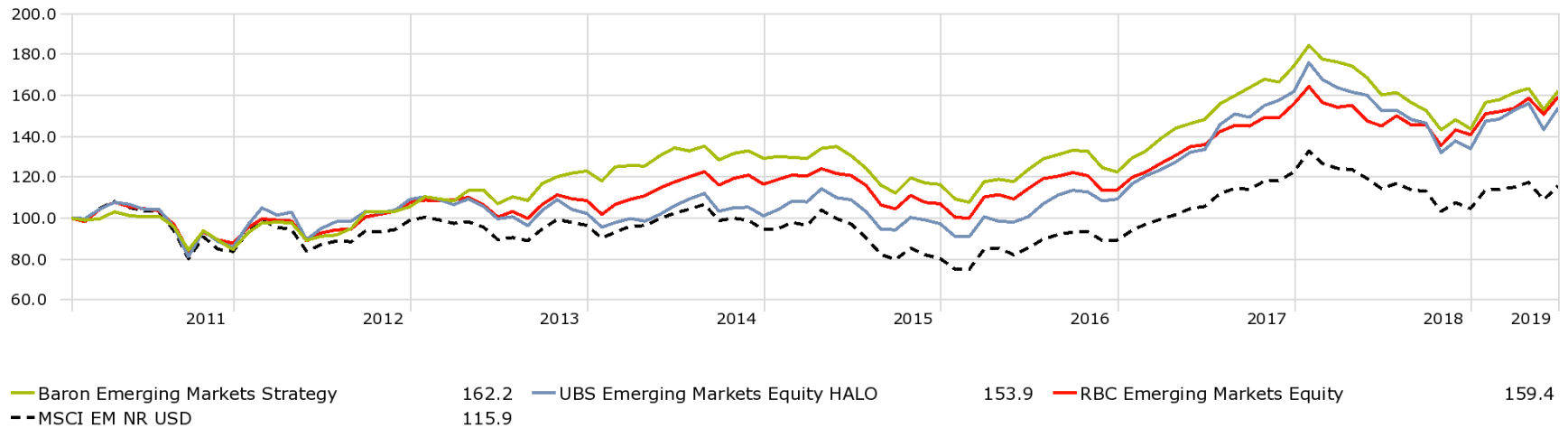


Return Analysis

as of June 30, 2019

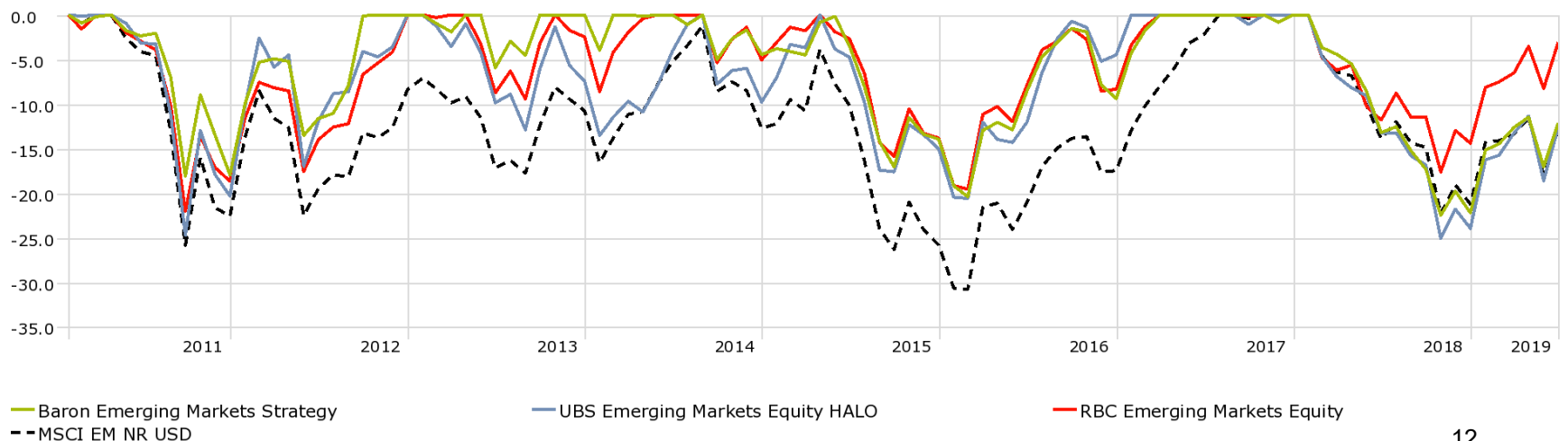
Investment Growth

Time Period: 2/1/2011 to 6/30/2019



Drawdown

Time Period: Since Common Inception (2/1/2011) to 6/30/2019



Return Analysis

as of June 30, 2019

Performance Statistics (Common)

Time Period: Since Common Inception (2/1/2011) to 6/30/2019 Calculation Benchmark: MSCI EM NR USD Peer Group: Separate Accounts - U.S. - Diversified Emerging Mkts

	Return	Excess Return	Std Dev	Information Ratio (arith)	Alpha	Beta
Baron Emerging Markets Strategy	5.92	4.15	14.39	0.62	4.18	0.78
UBS Emerging Markets Equity HALO	5.25	3.49	17.77	0.77	3.48	1.02
RBC Emerging Markets Equity	5.69	3.93	14.48	0.84	3.87	0.83
MSCI EM NR USD	1.77	0.00	16.92	—	0.00	1.00
Median	3.39	1.62	16.61	0.36	1.64	0.96

Performance Statistics (Common)

Time Period: Since Common Inception (2/1/2011) to 6/30/2019 Calculation Benchmark: MSCI EM NR USD Peer Group: Separate Accounts - U.S. - Diversified Emerging Mkts

	R2	Sharpe Ratio	Tracking Error	Batting Average	Up Capture Ratio	Down Capture Ratio
Baron Emerging Markets Strategy	84.74	0.43	6.71	59.41	87.81	68.81
UBS Emerging Markets Equity HALO	93.45	0.34	4.56	58.42	109.66	94.65
RBC Emerging Markets Equity	93.65	0.42	4.66	60.40	93.78	76.09
MSCI EM NR USD	100.00	0.15	0.00	100.00	100.00	100.00
Median	93.61	0.25	4.56	54.46	99.67	92.14

Drawdown Statistics (Common)

Time Period: Since Common Inception (2/1/2011) to 6/30/2019 Calculation Benchmark: MSCI EM NR USD Peer Group: Separate Accounts - U.S. - Diversified Emerging Mkts

	Max Drawdown	Max Drawdown # of Periods	Max Drawdown Peak Date	Max Drawdown Valley Date	Max Drawdown Recovery # of Periods
Baron Emerging Markets Strategy	-22.38	9.00	2/1/2018	10/31/2018	—
UBS Emerging Markets Equity HALO	-24.96	9.00	2/1/2018	10/31/2018	—
RBC Emerging Markets Equity	-21.93	5.00	5/1/2011	9/30/2011	16.00
MSCI EM NR USD	-30.63	58.00	5/1/2011	2/29/2016	17.00
Median	-27.75	17.00	—	—	17.00

Baron Description

Baron's approach to growth equity investing is active, fundamental, bottom up, and research driven. They identify companies that have strong fundamentals, regardless of the macroeconomic environment and invest for the long term. They look at a company's future growth potential, not just its current valuation. They look for companies with unique business models and invest in them when their prices are below their estimates of intrinsic value. Their investment philosophy is summarized as follows:

- Long-term investing creates an advantage
- Independent and exhaustive research is essential to understanding a business
- Successful growth businesses have open-ended opportunities and sustainable competitive advantages
- People are the key drivers of a successful business
- Purchase price matters
- Research and risk management are continuous processes

RBC Description

The investment philosophy for the RBC Emerging Markets Equity Strategy is:

- Strong management is fundamental to a stock's performance
- Quality franchises outperform over time
- Sustainability matters

Central to the EME Team's approach is a belief in quality, value, patience and researched conviction. The EME Team takes a fundamental, bottom-up approach to stock selection augmented by a top-down macroeconomic overlay driven by long-term secular themes. ESG analysis is embedded in the team's research. In emerging markets, the difference between higher and lower quality companies is more marked than it is in developed markets, but the premium paid for that quality is not commensurately higher. The EME Team targets 60–80% contribution to relative performance from bottom-up stock selection. They look for companies with the ability to continually compound cash flow return on investment (CFROI). This is generally driven by above-average revenue, earnings and cash flow growth over the intermediate to long term. They also focus on profitability, visibility, balance sheet strength and cash flow generation.

UBS Description

The Emerging Markets HALO portfolio is a concentrated and unconstrained portfolio. It invests in emerging markets using a disciplined fundamental investment process based on bottom-up stock selection. The investment process is highly flexible to take focused views on significant opportunities that seek to provide higher returns. This results in a concentrated portfolio (25 to 35 stocks) with a high active share. The team monitors macro warning indicators across the emerging markets, but the country and sector allocation is primarily the result of the bottom-up driven investment process and an outcome of stock selection. The team's price to intrinsic value approach supports their ability to maintain discipline in the face of short-term noise and is forward looking so as to incorporate structural change and key trends. The investment philosophy is based on the following:

- Intrinsic value is determined by the fundamentals that drive a security's future cash flow
- Discrepancies between market price and intrinsic value arise from market behavior and market structure providing opportunities to outperform

Disclosures


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