

All persons wishing to address the Board must complete a speaker's card, stating their name and the agenda item (including "Open Forum") they wish to address. The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

Oakland Police and Fire Retirement Board meetings are held in wheelchair accessible facilities. Contact the Retirement Unit, 150 Frank Ogawa Plaza, Suite 3349 or call (510) 238-7295 for additional information.



Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

AUDIT COMMITTEE MEMBERS

John C. Speakman
Chairman

Katano Kasaine
Member

Robert J. Muszar
Member

**In the event a quorum of the Board participates in the Committee meeting, the meeting is noticed as a Special Meeting of the Board; however, no final Board action can be taken. In the event that the Audit Committee does not reach quorum, this meeting is noticed as an informational meeting between staff and the Chair of the Audit Committee.*

REGULAR MEETING of the AUDIT / OPERATIONS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

Wednesday, February 27, 2019 – 9:00 am
One Frank H. Ogawa Plaza, Hearing Room 1
Oakland, California 94612

- - - ORDER OF BUSINESS - - -

1. **Subject:** **PFRS Audit Committee Meeting Minutes**
From: Staff of the PFRS Board

Recommendation: **APPROVE** January 30, 2019 Audit Committee meeting minutes.
2. **Subject:** **PFRS Actuary Valuation as of July 1, 2018**
From: Cheiron, Inc., PFRS Plan Actuary

Recommendation: **RECOMMEND BOARD APPROVAL** of the PFRS Actuary Valuation as of July 1, 2018.
3. **Subject:** **Administrative Expenses Report**
From: Staff of the PFRS Board

Recommendation: **ACCEPT** an informational report regarding PFRS administrative expenses from July 1, 2018 through December 31, 2018.
4. **Subject:** **PFRS 2-year Administrative Budget for Fiscal Years 2019/2020 and 2020/2021**
From: Staff of the PFRS Board

Recommendation: **RECOMMEND BOARD APPROVAL** of the PFRS 2-year Administrative Budget for Fiscal Years 2019/2020 and 2020/2021.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR AUDIT COMMITTEE MEETING
FEBRUARY 27, 2019

ORDER OF BUSINESS, continued

5. **Subject:** **Report on closed session hearings concerning change of retirement classification or cause of death**
From: Staff of the PFRS Board and PFRS Legal Counsel
Recommendation: **ACCEPT** an informational report regarding Report on closed session hearings concerning change of retirement classification or cause of death.
6. **Subject:** **RESOLUTION No. 7044 - Travel authorization for Investment Committee Chairperson Jaime Godfrey to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00)**
From: Staff of the PFRS Board
Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 7044 - Travel authorization for Investment Committee Chairperson Jaime Godfrey to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00).
7. **Subject:** **RESOLUTION No. 7045 - Travel authorization for Board Member Martin Melia to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00)**
From: Staff of the PFRS Board
Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 7045 - Travel authorization for Board Member Martin Melia to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00).

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR AUDIT COMMITTEE MEETING
FEBRUARY 27, 2019**

ORDER OF BUSINESS, continued

8. **Subject:** **RESOLUTION No. 7046 - Travel authorization for Plan Administrator David Jones to travel for the due diligence visit with Pension Consulting Alliance (“PCA”), Investment Consultant for the Oakland Police and Fire Retirement System (“PFRS”) on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00)**

From: Staff of the PFRS Board

Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 7046 - Travel authorization for Plan Administrator David Jones to travel for the due diligence visit with Pension Consulting Alliance (“PCA”), Investment Consultant for the Oakland Police and Fire Retirement System (“PFRS”) on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00).

9. **Subject:** **Resolution No. 7047 – Travel authorization for PFRS staff member Teir Jenkins to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00)**

From: Staff of the PFRS Board

Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 7047 – Travel authorization for PFRS staff member Teir Jenkins to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00).

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR AUDIT COMMITTEE MEETING
FEBRUARY 27, 2019**

ORDER OF BUSINESS, continued

10. Subject: Resolution No. 7048 – Travel authorization for PFRS staff member David Jones to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00)

From: Staff of the PFRS Board

Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 7048 – Travel authorization for PFRS staff member David Jones to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00).

11. REVIEW OF PENDING AUDIT AGENDA ITEMS

12. Future Scheduling

13. Open Forum

14. Adjournment of Meeting

AN AUDIT/OPERATIONS COMMITTEE MEETING of the Oakland Police and Fire Retirement System ("PFRS") was held on Wednesday, January 30, 2019 in Hearing Room 1, One Frank Ogawa Plaza, Oakland, California.

Committee Members Present:

- John C. Speakman, Chairman
- Robert J. Muszar, Member
- Katano Kasaine, Member

Additional Attendees:

- David Jones, Plan Administrator
- Teir Jenkins & David Low, Staff Member
- Pelayo Llamas, PFRS Legal Counsel

The meeting was called to order at 9:05 am. Member Kasaine was not present at the start of the Audit Committee meeting; she arrived at 9:13 am.

1. **PFRS Audit Committee Meeting Minutes** – Member Muszar made a motion to approve the November 28, 2018 Audit Committee meeting minutes, second by Chairman Speakman. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAIN – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

2. **Administrative Expenses Report** – Teir Jenkins presented the current status of the administrative expenditures of the PFRS plan through November 30, 2018. Following his review and some committee and staff discussion, Member Muszar made a motion to accept the informational report from staff, second by Chairman Speakman. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAIN – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

3. **Annual Report for Fiscal Year ending June 30, 2018** – Plan Administrator David Jones presented the Audit Committee with PFRS Annual Report for the fiscal year ending June 30, 2018 and reported details about the production of this report. Mr. Jones stated that he intends on taking steps to try to have future PFRS Annual Reports certified by the Government Finance Officers Association (GFOA). The Audit Committee members thanked staff for their work producing the 2018 Annual Report. Following some Committee discussion, member Muszar made a motion to recommend Board approval of the printing and publication of the PFRS Annual report for the fiscal year ending June 30 2018, second by member Kasaine. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAIN – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

Member Muszar suggested agenda items 5-10 be acted upon ahead of discussion on agenda item 4.

5. **Resolution No 7037: R. Steven Wilkinson Travel** – Member Muszar made a motion to recommend Board approval of Resolution No. 7037 - Travel authorization for PFRS Board Member R. Steven Wilkinson for attendance at the 2018 Markets Group California Institutional Forum Conference ("2018 Markets Group Conference") on December 5, 2018 in Sonoma, CA with an estimated budget of Seventy-seven Dollars (\$77.00), second by Member Kasaine. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAIN – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

6. **Resolution No 7038: Martin Melia Travel** – Member Muszar made a motion to recommend Board approval of Resolution No. 7038 - Travel authorization for PFRS board member Martin Melia to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Ninety Dollars (\$290.00), second by Member Kasaine. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAINÉ – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

7. **Resolution No 7039: R. Steven Wilkinson Travel** – Member Muszar made a motion to recommend Board approval of Resolution No. 7039 - Travel authorization for PFRS board member R. Steven Wilkinson to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Ninety Dollars (\$290.00), second by Member Kasaine. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAINÉ – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

8. **Resolution No 7040: Jaime Godfrey Travel** – Member Muszar made a motion to recommend Board approval of Resolution No. 7040 - Travel authorization for PFRS board member Jaime Godfrey to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of One Thousand Four Hundred Dollars (\$1,400.00), second by Member Kasaine. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAINÉ – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

9. **Resolution No 7041: R. Steven Wilkinson Travel** – Member Muszar made a motion to recommend Board approval of Resolution No. 7041 - Travel authorization for PFRS board member R. Steven Wilkinson to travel and attend the 2019 California Association of Public Retirement Systems General Assembly Conference (“2019 CALAPRS Conference”) from March 2, 2019 to March 5, 2019 in Monterey, CA with an estimated budget of One Thousand Two Hundred Fifty Dollars (\$1,250.00), second by Member Kasaine. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAINÉ – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

10. **Resolution No 7042: Katano Kasaine Travel** – Member Muszar made a motion to recommend Board approval of Resolution No. 7042 - Travel authorization for PFRS board Member Katano Kasaine to Travel and Attend The 2019 California Association of Public Retirement Systems General Assembly Conference (“2019 CALAPRS conference”) from March 2, 2019 to March 5, 2019 in Monterey, CA with an estimated budget of One Thousand Two Hundred Fifty Dollars (\$1,250.00), second by Chairman Speakman. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAINÉ – ABSTAIN]
(AYES: 2 / NOES: 0 / ABSTAIN: 1)

4. **PFRS Policy Governing the Overpayment or Underpayment of Member Benefits**
– The Audit Committee continued discussion on the PFRS policy governing the overpayment or underpayment of Member Benefits. The audit committee agreed with

Member Kasaine's recommendation about the structure of the overpayment and underpayment policy sections. Member Muszar clarified that he was satisfied with Member Kasaine's view that the format which addresses all aspects of Overpayment and all aspects of Underpayment be addressed separately. Member Muszar explained that the Overpayment section would need to provide procedures addressing (1) notice, (2) prospective correction, and (3) collection; the Underpayment section would need to provide procedures addressing (1) notice, (2) prospective correction, and (3) repayment to member.

Member Muszar recommended that any member monthly repayment be capped at ten percent (10%) of the value of a member's monthly retirement check amount in order to limit the potential that a member's monthly retirement allowance be consumed by the overpayment collection amount. Member Kasaine asked staff to check if the process of only recouping the overpayment balance never exceeds ten percent (10%) of the members' monthly retirement check amount, and whether such a process is a standard operating procedure of the retirement department. Mr. Jenkins confirmed that a ten percent monthly deduction limit to the retiree's check amount is standard operating procedure.

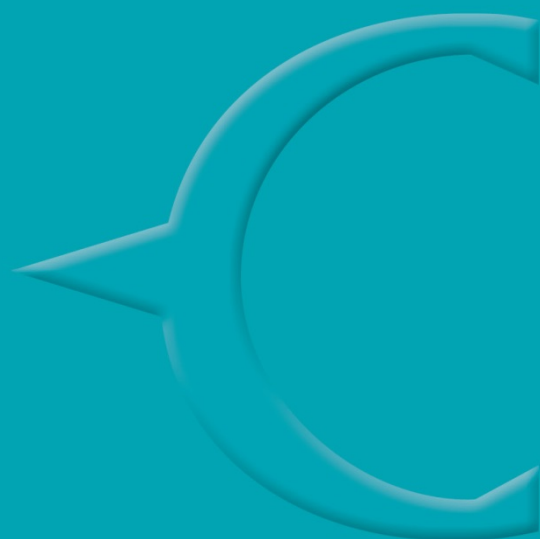
Following additional discussion, Member Kasaine made a motion to carry discussion on this matter to the March 2019 Audit Committee meeting, second by member Muszar. Motion passed.

[SPEAKMAN – Y / MUSZAR – Y / KASAINÉ – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

11. **Pending Audit Agenda List** – The PFRS Staff and Audit Committee commented and discussed the current staff methodology used to note posted upcoming audit committee matters on the pending audit agenda report.
12. **Future Scheduling** – The next Audit Committee meeting was scheduled for February 27, 2019.
13. **Open Forum** – No Report.
14. **Meeting Adjournment** – Meeting adjourned at 10:04 am.

JOHN C. SPEAKMAN, COMMITTEE CHAIRMAN

DATE



Oakland Police and Fire Retirement System

Actuarial Valuation Report as of July 1, 2018

Produced by Cheiron

February 2019

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February 15, 2019

City of Oakland Police and Fire
Retirement System Board
150 Frank H. Ogawa Plaza
Oakland, CA 94612

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Oakland Police and Fire Retirement System (PFRS, the Plan) as of July 1, 2018. This report contains information on the Plan's assets and liabilities. This report also discloses the employer contributions in accordance with the funding agreement between the City of Oakland and PFRS, based on the current financial status of the Plan. Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report.

The purpose of this report is to present the results of the annual actuarial valuation of the Plan. This report is for the use of the Retirement Board and the auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party.

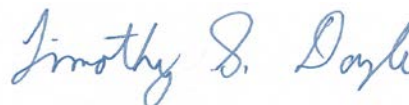
Cheiron's report was prepared solely for the Retirement Board for the purposes described herein, except that the plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron

A handwritten signature in blue ink, reading "Graham A. Schmidt".

Graham A. Schmidt, ASA, EA, FCA, MAAA
Consulting Actuary

A handwritten signature in blue ink, reading "Timothy S. Doyle".

Timothy S. Doyle, ASA, EA, MAAA
Associate Actuary

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

FOREWORD

Cheiron has performed the actuarial valuation of the Oakland Police and Fire Retirement System (PFRS, the Plan) as of July 1, 2018. The valuation is organized as follows:

- In Section I, the **Executive Summary**, we describe the purpose of an actuarial valuation, summarize the key results found in this valuation, and disclose important trends.
- The **Main Body** of the report presents details on the Plan's
 - Section II – Assets
 - Section III – Liabilities
 - Section IV – Contributions
 - Section V – Head Count and Benefit Payment Projections
- In the **Appendices**, we conclude our report with detailed information describing plan membership (Appendix A), actuarial assumptions and methods employed in the valuation (Appendix B), a summary of pertinent plan provisions (Appendix C), and a glossary of key actuarial terms (Appendix D).

The results of this report rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results would vary accordingly.

In preparing our report, we relied on information (some oral and some written) supplied by the Plan's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION I – EXECUTIVE SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe, and identify the following as of the valuation date:

- The financial condition of the Plan,
- Past and expected trends in the financial progress of the Plan, and
- Calculation of the actuarially determined contributions for years beginning in Fiscal Year 2019-2020.

In the balance of this Executive Summary, we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key financial results, (C) an examination of the historical trends, and (D) the projected financial outlook for the Plan.

A. Valuation Basis

This valuation estimates the projected employer contributions in accordance with the funding agreement dated July 1, 2012 between the City of Oakland and the PFRS. Based on that agreement, employer contributions were suspended until fiscal year 2017-2018, at which time they resumed at a level based upon the recommendation of the actuary. Section IV of this report shows the development of the employer contribution for fiscal year 2019-2020.

The Plan's funding policy is to contribute an amount equal to the sum of:

- The normal cost under the Entry Age Normal Cost Method (which is zero, as there are no active members),
- Amortization of the Unfunded Actuarial Liability, and
- The Plan's expected administrative expenses.

This valuation was prepared based on the plan provisions shown in Appendix C. There have been no changes in plan provisions since the prior valuation.

A summary of the assumptions and methods used in the current valuation is shown in Appendix B. New Memorandums of Understanding (MOUs) went into effect for both Police and Fire members since the previous valuation, changing Police and Fire retirees' Cost-of-Living Adjustments (COLAs), and adding a benefit based on Longevity Pay to Fire benefits. There have been no other changes to the assumptions or methods since the prior valuation.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION I – EXECUTIVE SUMMARY

B. Key Findings of this Valuation

The key results of the July 1, 2018 actuarial valuation are as follows:

- The actuarially determined employer contribution amount for Fiscal Year 2019-2020 is \$43.4 million, based on projecting the Actuarial Liabilities and the Actuarial Value of Assets to the end of the 2018-2019 Fiscal Year. This represents a decrease of \$2.3 million from the amount determined in the prior valuation for the same Fiscal Year. The contribution is assumed to be paid in equal installments throughout the year, or on average at approximately January 1, 2020.
- New Memorandums of Understanding (MOUs) went into effect for Police members between the previous and current valuation dates, changing Police retirees' Cost-of-Living Adjustments (COLAs). The change in COLAs from the new Police MOUs lowered the liability by \$6.4 million since the scheduled increases under the new MOUs were lower than the amounts originally assumed, in aggregate.
- New Memorandums of Understanding (MOUs) went into effect for Fire members between the previous and current valuation dates, changing Fire retirees' Cost-of-Living Adjustments (COLAs) and granting Longevity Pay to Fire retirees. The change in COLAs from the new Fire MOUs increased the liability by \$3.4 million since the scheduled increases under the new MOUs were higher than the amounts originally assumed, in aggregate. Longevity Pay increased the liability by about \$1.5 million.
- During the year ended June 30, 2018, the return on Plan assets was 10.22% on a market value basis net of investment expenses, as compared to the 6.00% assumption for the 2017-2018 Plan year. This resulted in a market value gain on investments of \$13.3 million. The Actuarial Value of Assets (AVA) is calculated as the expected AVA plus 20% of the difference between the market value and the expected AVA. This smoothed value of assets returned 8.18%, for an actuarial asset gain of \$7.1 million.
- The Plan experienced a gain on the Actuarial Liability of \$7.5 million, the net result of changes in the population, in particular more deaths than expected among disabled retirees and beneficiaries. Combining the liability losses and asset gains, the Plan experienced a total gain of \$14.6 million.
- The Plan's smoothed funded ratio, the ratio of actuarial assets over Actuarial Liability, increased from 49.5% last year to 53.7% on an AVA basis as of June 30, 2018.
- The Plan's funded ratio increased from 52.4% to 58.1% on a Market Value of Assets (MVA) basis.
- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Actuarial Value of Assets. The Plan experienced a decrease in the UAL from \$340.1 million to \$299.8 million as of July 1, 2018.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION I – EXECUTIVE SUMMARY

- Overall participant membership decreased compared to last year. 41 members died, 19 of whom had their benefits continue to a surviving spouse. In addition, 27 surviving beneficiaries died. There are no active members of the Plan.
- If the contribution were determined using a projected asset value based on the current market (i.e., non-smoothed) value of assets, the contribution for FY 2019-2020 would be \$39.6 million. The contribution is smaller than that determined using the projected AVA, because the current market value reflects the full amount of recent investment gains, while under the AVA projection a portion of those gains are deferred until years after FY 2019-2020.

Below we present Table I-1 that summarizes all the key results of the valuation with respect to membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior plan year.

TABLE I-1				
Summary of Principal Plan Results				
(\$ in thousands)				
	July 1, 2017	July 1, 2018	% Change	
<u>Participant Counts</u>				
Active Participants	0	0		
Participants Receiving a Benefit	886	837		-5.53%
Total	886	837		-5.53%
Annual Pay of Active Members	\$ 0	\$ 0		
<u>Assets and Liabilities</u>				
Actuarial Liability (AL)	\$ 673,441	\$ 647,251		-3.89%
Actuarial Value of Assets (AVA)	333,373	347,467		4.23%
Unfunded Actuarial Liability (UAL)	\$ 340,068	\$ 299,784		-11.85%
Funded Ratio (AVA)	49.5%	53.7%		4.18%
Funded Ratio (MVA)	52.4%	58.1%		5.64%
<u>Contributions</u>				
Employer Contribution (FY2018-19)	\$ 44,821	N/A		
Employer Contribution (FY2019-20)	\$ 45,722	\$ 43,409		-5.06%

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION I – EXECUTIVE SUMMARY

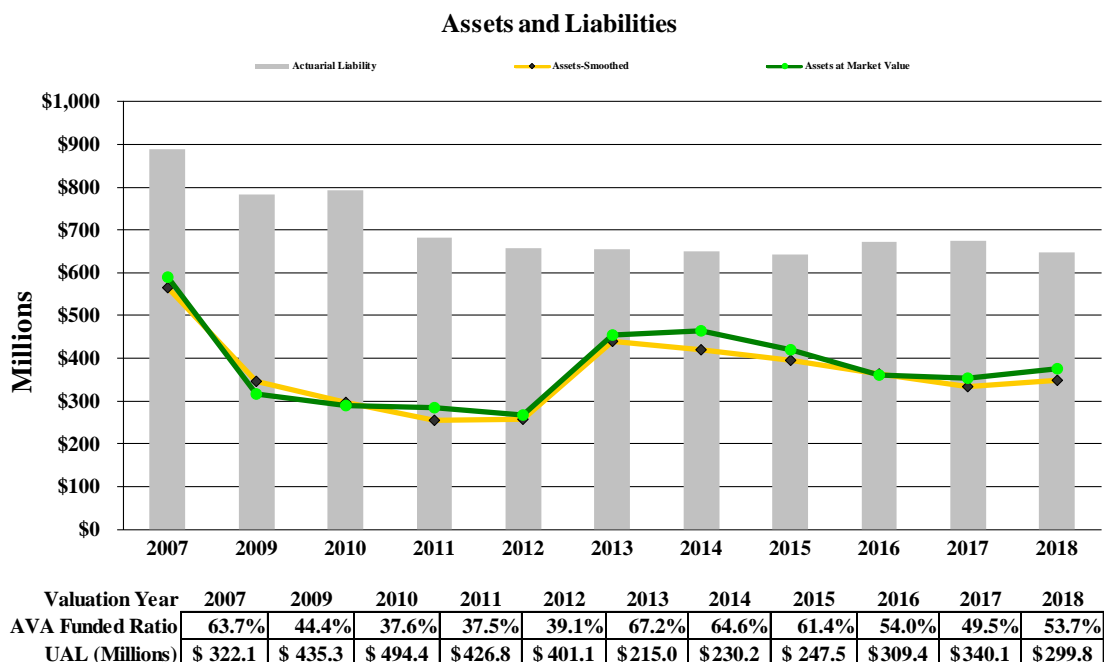
C. Historical Trends

Despite the fact that for most retirement plans the greatest attention is given to the current valuation results and in particular, the size of the current Unfunded Actuarial Liability and the employer contribution, it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is more important to judge a current year's valuation result relative to historical trends, as well as trends expected into the future.

Assets and Liabilities

The chart below compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the Actuarial Liabilities. The percentages shown in the table below the chart are the ratios of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). We note that for the GASB disclosure report, this ratio is now disclosed using the MVA.

The funded ratio declined from 63.7% in 2007 to 37.5% in 2011 due to negative market returns and no contributions being made in that period (\$417 million in proceeds from a POB were deposited in 1997 that acted as prepayments for 15 years of contributions). The funded ratio increased between 2012 and 2013 due to a \$210 million contribution in July 2012. The funded ratio decreased from 67.2% to 49.5% between 2013 and 2017 due to assumption changes, liability losses, new Police MOUs, and the lack of contributions since the July 2012 payment. The funded ratio has increased from 49.5% to 53.7% over the past year due to the commencement of contributions, and to a lesser extent, asset and liability gains.

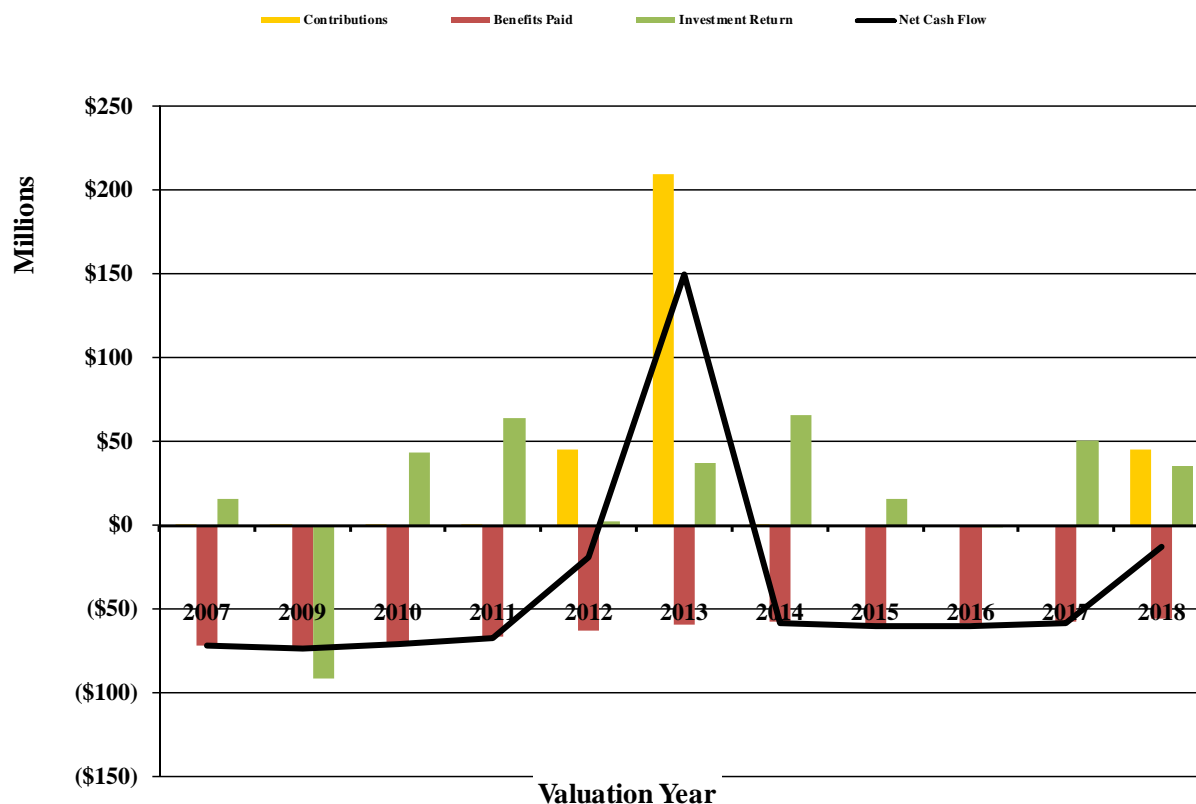


OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018

SECTION I – EXECUTIVE SUMMARY

Cash Flows

The chart below shows the Plan’s cash flow, excluding investment returns (i.e., contributions less benefit payments and expenses). This is a critical measure, as it reflects the ability to have funds available to meet benefit payments without having to make difficult investment decisions, especially during volatile markets.



The contributions, benefit payments, investment returns, and net cash flow (NCF) excluding investment returns and expenses are represented by the scale on the left. The Plan’s net cash flow has been negative six of the last seven fiscal years primarily due to no contributions being made between 2007 and 2011, becoming positive in 2013 when a \$210 million contribution was made.

A negative cash flow magnifies the losses during a market decline, hindering the Plan in its ability to absorb market fluctuations. The implications of a plan in negative cash flow are that the impact of market fluctuations can be more severe: as assets are being depleted to pay benefits in down markets, there is less principal available to be reinvested during favorable return periods. The Plan is expected to remain in a negative cash flow position going forward, since the Plan is closed.

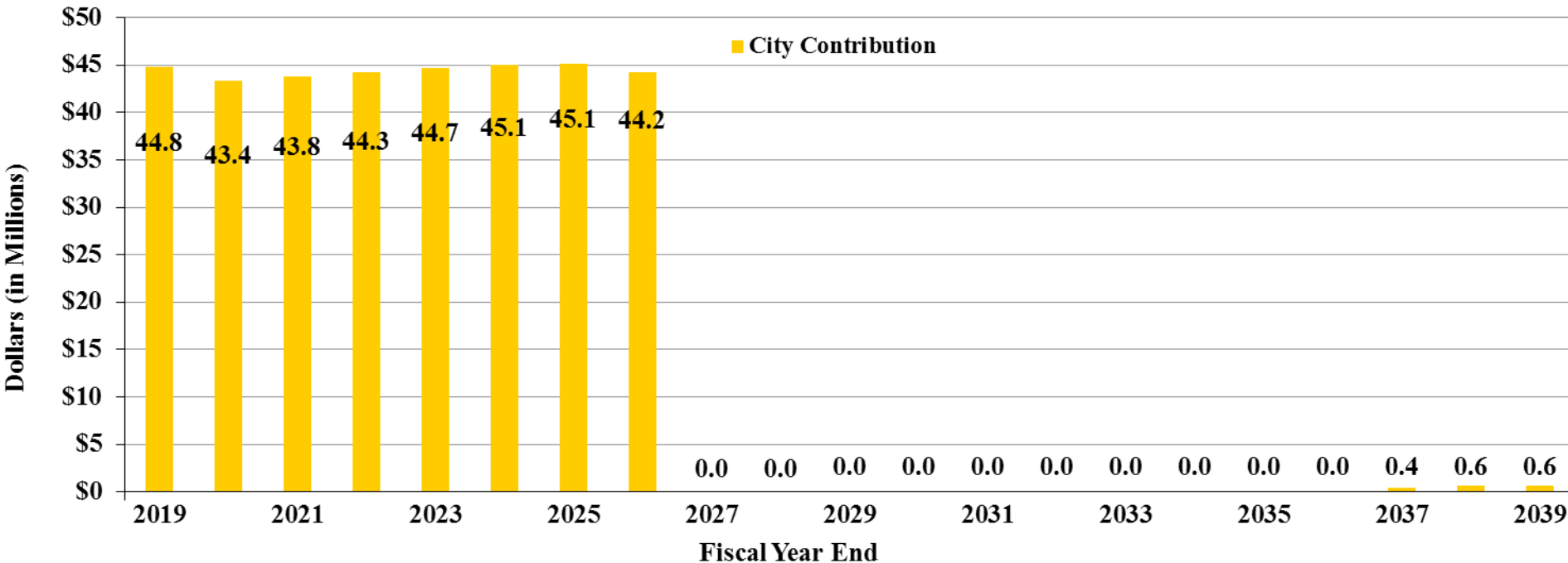
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018

SECTION I – EXECUTIVE SUMMARY

D. Future Expected Financial Trends

The analysis of projected financial trends is perhaps the most important component of this valuation. In this section, we present our assessment of the implications of the July 1, 2018 valuation results in terms of benefit security (assets over liabilities) and contribution levels. All the projections in this section are based on the assumption that the Plan will exactly achieve the assumed rate of return each year (6.0% per year until 2027, then trending down to an annual return of 3.25% over 10 years).

Projection of Employer Contributions



The above graph shows that the City’s required contribution declined from \$44.8 million in fiscal year 2019 to \$43.4 million in fiscal year 2020, and then is expected to increase slightly as the current unfunded liability is fully amortized. This assumes that the annual

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION I – EXECUTIVE SUMMARY

payments by the City will equal the administrative expenses, plus an amount needed to amortize the remaining unfunded liability as a level percentage of overall Safety payroll by July 1, 2026, as is required under the City's charter.

After July 1, 2026, the UAL is expected to be fully amortized, and the contribution would generally be equal to the administrative expense, beginning in 2026-2027. However, under the current asset smoothing method there are still expected to be some deferred asset gains, which will not be recognized until after 2026; the deferred recognition of these gains is expected to offset a small portion of the administrative expenses in the final years of the graph on the previous page.

Note that the graph on the previous page does not forecast any future actuarial gains or losses or changes to the amortization policy. Even relatively modest losses could push the employer contribution over \$50 million in the next few years. We also note that the occurrence of any future gains or losses in the years leading up to or following the required full amortization date (July 1, 2026) may require a reconsideration of the funding policy for those gains or losses, as otherwise these changes would need to be recognized over an extremely short period.

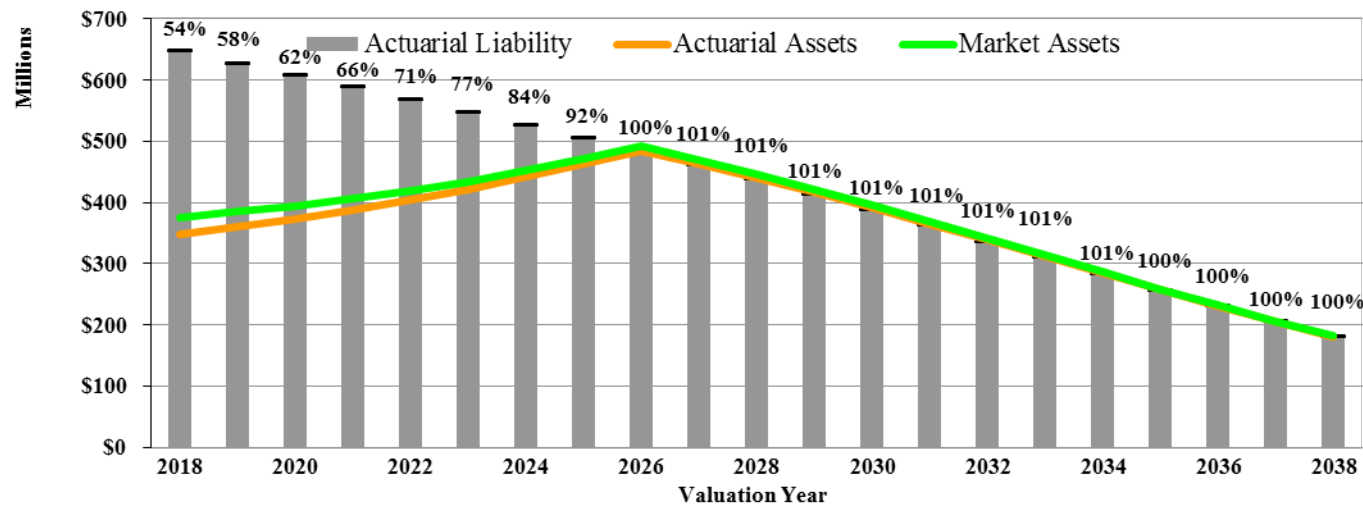
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018

SECTION I – EXECUTIVE SUMMARY

Asset and Liability Projections:

The following graph shows the projection of assets and liabilities assuming that assets will earn the assumed rate of return each year during the projection period.

Projection of Assets and Liabilities



The graph shows that the projected funded status increases as the current unfunded liability is fully amortized, assuming all actuarial assumptions are met.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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SECTION II – ASSETS

Pension Plan assets play a key role in the financial operation of the Plan and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on Plan assets including:

- **Disclosure** of Plan assets as of June 30, 2017 and June 30, 2018,
- Statement of the **changes** in market values during the year, and
- Development of the **Actuarial Value of Assets**.

Disclosure

There are two types of asset values disclosed in the valuation, the Market Value of Assets and the Actuarial Value of Assets. The market value represents “snap-shot” or “cash-out” values which provide the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are sometimes not as suitable for long-range planning as are the Actuarial Value of Assets, which reflect smoothing of annual investment returns.

Table II-1 on the next page discloses and compares each component of the market asset value as of June 30, 2017 and June 30, 2018.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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SECTION II – ASSETS

**TABLE II-1
Statement of Assets at Market Value
June 30,
(in thousands)**

	2017	2018
Cash and Cash Equivalents:	\$ 3,382	\$ 7,821
Receivables:		
Interest Receivable	\$ 355	\$ 671
Dividends Receivable	227	234
Investments Receivable	4,008	3,001
Retired Members and Beneficiaries	2,477	1,641
Miscellaneous	187	136
Total Receivables	7,255	5,683
Investments, at Fair Value:		
Short-term Investments	5,576	4,287
Bonds	63,600	98,313
Domestic Equities and Mutual Funds	168,467	151,601
International Equities and Mutual Funds	44,590	46,770
Alternative Investments	70,511	71,132
Securities Lending Collateral	31,042	43,818
Total Investments	383,785	415,921
Total Assets	394,422	429,425
Liabilities:		
Accounts Payable	23	95
Benefits Payable	4,763	4,609
Investments Payable	5,118	4,586
Accrued Investment Management Fees	281	344
Securities Lending Liabilities	31,034	43,815
Total Liabilities	41,220	53,448
Market Value of Assets	\$ 353,203	\$ 375,976

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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SECTION II – ASSETS

Changes in Market Value

The components of asset change are:

- Contributions (employer and employee)
- Benefit payments
- Expenses (investment and administrative)
- Investment income (realized and unrealized)

Table II-2 shows the components of a change in the Market Value of Assets during 2017 and 2018.

TABLE II-2 Changes in Market Values June 30, (in thousands)		
	<u>2017</u>	<u>2018</u>
Contributions		
Contributions of Plan Members	\$ 0	\$ 0
Contributions from the City	<u>0</u>	<u>44,860</u>
Total Contributions	<u>0</u>	<u>44,860</u>
Investment Income		
Miscellaneous Income	70	20
Investment Income	<u>50,159</u>	<u>35,435</u>
Total Investment Income	<u>50,229</u>	<u>35,455</u>
Disbursements		
Benefit Payments	(57,376)	(55,999)
Administrative Expenses	<u>(1,262)</u>	<u>(1,543)</u>
Total Disbursements	<u>(58,637)</u>	<u>(57,542)</u>
Net increase (Decrease)	(8,408)	22,773
Net Assets Held in Trust for Benefits:		
Beginning of Year	<u>361,611</u>	<u>353,203</u>
End of Year	\$ <u><u>353,203</u></u>	\$ <u><u>375,976</u></u>
Approximate Return	15.1%	10.2%

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION II – ASSETS

Actuarial Value of Assets (AVA)

The Actuarial Value of Assets represents a “smoothed” value developed by the actuary to reduce the volatile results, which could develop due to short-term fluctuations in the Market Value of Assets. For this Plan, the Actuarial Value of Assets is calculated on a modified market-related value. The Actuarial Value of Assets recognizes one-fifth of the difference between the expected asset value (based on the 6.00% return assumption from 2017-2018) and the actual market value each year. The actuarial value is restricted to fall between 90% and 110% of the market value.

**Table II-3
Development of Actuarial Value of Assets
(in thousands)**

1. Calculate Expected Actuarial Value of Assets	
a. Value of Actuarial Value of Assets - July 1, 2017	\$ 333,373
b. Total Contributions and Misc Income	44,880
c. Administrative Expense	(1,543)
d. Benefit Payments	(55,999)
e. Expected Investment Earnings	19,628
f. Expected Actuarial Value of Assets - July 1, 2018	\$ 340,340
[1a + 1b + 1c + 1d + 1e]	
2. Calculate Final Actuarial Value of Assets	
a. Value of Market Value of Assets - July 1, 2018	\$ 375,976
b. Excess of MVA over Expected AVA [2a - 1f]	35,637
c. Preliminary AVA [1f + 0.2 * 2b]	347,467
d. 90% of MVA [90% * 2a]	338,379
e. 110% of MVA [110% * 2a]	413,574
3. Final Actuarial Value of Assets	\$ 347,467
[2c, not less than 2d or greater than 2e]	

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION II – ASSETS

Investment Performance

The following table calculates the investment related gain/loss for the plan year on both a market value and an actuarial value basis. The market value gain/loss is an appropriate measure for comparing the actual asset performance to the previous valuation's 6.00% assumption.

TABLE II-4 Asset Gain/(Loss) (in thousands)		
	Market Value	Actuarial Value
July 1, 2017 value	\$ 353,203	\$ 333,373
Contributions of Plan Members	0	0
Contributions from the City	44,860	44,860
Miscellaneous Income	20	20
Benefit Payments	(55,999)	(55,999)
Administrative Expenses	(1,543)	(1,543)
Expected Investment Earnings (6.00%)	22,183	19,628
Expected Value June 30, 2018	\$ 362,724	\$ 340,340
Investment Gain / (Loss)	13,252	7,127
July 1, 2018 value	375,976	347,467
Return	10.22%	8.18%

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION III – LIABILITIES

In this section, we present detailed information on Plan liabilities including:

- **Disclosure** of Plan liabilities at July 1, 2017 and July 1, 2018
- Statement of **changes** in these liabilities during the year

Disclosure

Several types of liabilities are typically shown in an actuarial valuation report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. Note that these liabilities are not applicable for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future Plan obligations, the obligations of the Plan earned as of the valuation date and those to be earned in the future by current plan participants under the current Plan provisions, if all assumptions are met.
- **Actuarial Liability:** Used for funding calculations, this liability is calculated taking the Present Value of Future Benefits and subtracting the Present Value of Future Normal Costs under an acceptable actuarial funding method. Because the Plan has no active members, the Actuarial Liability is equal to the Present Value of Future Benefits (i.e., all benefits are fully accrued).
- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Actuarial Value of Assets.

Table III-1 below discloses each of these liabilities for the current and prior valuations.

TABLE III-1 Liabilities/Net (Surplus)/Unfunded (in thousands)			
		July 1, 2017	July 1, 2018
<u>Present Value of Future Benefits</u>			
Active Participant Benefits	\$	0	\$ 0
Retiree and Inactive Benefits		<u>673,441</u>	<u>647,251</u>
Present Value of Future Benefits (PVB)	\$	673,441	\$ 647,251
<u>Actuarial Liability</u>			
Present Value of Future Benefits (PVB)	\$	673,441	\$ 647,251
Present Value of Future Normal Costs (PVFNC)		<u>0</u>	<u>0</u>
Actuarial Liability (AL = PVB – PVFNC)	\$	673,441	\$ 647,251
Actuarial Value of Assets (AVA)		<u>333,373</u>	<u>347,467</u>
Net (Surplus)/Unfunded (AL – AVA)	\$	340,068	\$ 299,784

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION III – LIABILITIES

Changes in Liabilities

Each of the liabilities disclosed in the prior table are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation (not applicable for this Plan)
- Benefits accrued since the last valuation (not applicable for this Plan)
- Plan amendments
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, dying, or receiving COLA adjustments at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method or software

Unfunded liabilities will change because of all of the above, and also due to changes in Plan assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure plan assets

**TABLE III-2
Changes in Actuarial Liability
(in thousands)**

Actuarial Liability at July 1, 2017	\$ 673,441
Actuarial Liability at July 1, 2018	\$ 647,251
Liability Increase (Decrease)	\$ (26,190)
Change due to:	
Actuarial Methods / Software Changes	\$ 0
Assumption Change	(1,475)
Accrual of Benefits	0
Actual Benefit Payments	(55,999)
Interest	38,751
Data Corrections	0
Actuarial Liability (Gain)/Loss	\$ (7,467)

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION III – LIABILITIES

Table III-3 Liabilities by Group as of July 1, 2018 (in thousands)			
	Police	Fire	Total
Actuarial Accrued Liability			
Active	\$ 0	\$ 0	\$ 0
Service Retirees	246,781	83,476	330,256
Disabled Retirees	99,538	86,922	186,460
Beneficiaries	<u>68,900</u>	<u>61,635</u>	<u>130,535</u>
Total Accrued Liability	\$ 415,218	\$ 232,033	\$ 647,251

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION III – LIABILITIES

**TABLE III-4
Development of Actuarial Gain / (Loss)
(in thousands)**

1. Unfunded Actuarial Liability at Start of Year (not less than zero)	\$	340,068
2. Employer Normal Cost at Start of Year		0
3. Interest on 1. and 2. to End of Year		20,404
4. Contributions and Miscellaneous Income for Prior Year		44,880
5. Administrative Expenses		(1,543)
6. Interest on 4. and 5. to End of Year		1,281
7. Change in Unfunded Actuarial Liability Due to Changes in Assumptions		(1,475)
8. Change in Unfunded Actuarial Liability Due to Changes in Actuarial Methods		0
9. Change in Unfunded Actuarial Liability Due to Changes in Plan Design		0
10. Change in Unfunded Actuarial Liability Due to Data Corrections		0
11. Expected Unfunded Actuarial Liability at End of Year [1. + 2. + 3. - 4. - 5. - 6. + 7. + 8. + 9. + 10.]	\$	314,379
12. Actual Unfunded Actuarial Liability at End of Year (not less than zero)		299,784
13. Unfunded Actuarial Liability Gain / (Loss) [11. – 12.]	\$	14,595

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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SECTION IV – CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this Plan, the actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the **Entry Age Normal** cost method.

The normal cost rate is determined with the normal cost percentage equal to the total Projected Value of Benefits at Entry Age, divided by Present Value of Future Salary at Entry Age. Since there are no longer any active employees, the normal cost for this plan is \$0.

The Unfunded Actuarial Liability is the difference between the EAN Actuarial Liability and the Actuarial Value of Assets. For the contribution projections, the UAL payment is based on the unfunded liability of the Plan being fully amortized by June 30, 2026, in accordance with the City Charter. Amortization payments are determined based on an assumption that payments will increase by 3.25% each year, reflecting the assumed ultimate rate of increase in overall City Safety member salaries.

An amount equal to the expected administrative expenses for the Plan is added directly to the actuarial cost calculation.

Table IV-1 on the next page shows the employer contribution amount for the 2019-2020 Fiscal Year. The projected assets and liabilities assume that all actuarial assumptions are met and that contributions are made as expected between now and June 30, 2019.

For this calculation, we have shown the contribution amount using both the projected actuarial and Market Value of Assets. The current funding policy uses the AVA to determine the UAL and the associated amortization payment. We have included the contribution amount as determined using the current Market Value of Assets to demonstrate what the actuarial cost would be if all deferred asset gains were fully recognized at the time the contributions commence. In both cases, the contribution is based on an assumption that the investment returns will exactly equal the assumed rate of return during the 2018-2019 Fiscal Year.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION IV – CONTRIBUTIONS

**TABLE IV-I
Development of Projected 2019-2020 Employer Contribution Amount
(in thousands)**

	Actuarial Value of Assets	Market Value of Assets
1. Value of Assets at June 30, 2018:	\$ 347,467	\$ 375,976
a. Expected Contributions and Misc Income	\$ 44,821	\$ 44,821
b. Expected Administrative Expense	\$ (1,007)	\$ (1,007)
c. Expected Benefit Payments	\$ (56,825)	\$ (56,825)
d. Expected Investment Earnings	\$ 20,463	\$ 22,174
2. Expected Value of Assets at June 30, 2019:	\$ 354,920	\$ 385,140
a. Excess of Expected MVA over Expected AVA	\$ 30,220	
b. Preliminary AVA [Expected AVA + 20% * 2a]	\$ 360,964	
c. 90% of Expected MVA	\$ 346,626	
d. 110% of Expected MVA	\$ 423,654	
3. Final Expected AVA [2b, not less than 2c or greater than 2d]	\$ 360,964	\$ 385,140
4. Entry Age Liability at June 30, 2018	\$ 647,251	\$ 647,251
5. Expected Benefit Payments	\$ (56,825)	\$ (56,825)
6. Expected Interest	\$ 37,155	\$ 37,155
7. Expected Entry Age Liability at June 30, 2019	\$ 627,581	\$ 627,581
8. Projected Unfunded Actuarial Liability: (7) - (3)	266,617	242,442
9. Funded Ratio: (3) / (7)	57.5%	61.4%
10. Unfunded Actuarial Liability Amortization at Middle of Year as a Level Percentage of Payroll (7 Years Remaining) as of June 30, 2019	42,373	38,531
11. Expected Administrative Expenses for Fiscal 2018-2019	1,036	1,036
12. Total Contribution: (10) + (11)	43,409	39,567

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION V – HEADCOUNT AND BENEFIT PAYMENT PROJECTIONS

Table V-1 Benefit Payment and Headcount Projection							
Fiscal Year Ending June 30,	Police		Fire		Total		
	Count	Benefits (in thousands)	Count	Benefits (in thousands)	Count	Benefits (in thousands)	
2019	492.0	\$ 34,331	345.0	\$ 22,493	837.0	56,825	
2020	477.2	\$ 33,594	326.3	\$ 21,834	803.5	55,428	
2021	462.3	\$ 33,229	308.3	\$ 21,362	770.6	54,592	
2022	447.4	\$ 32,983	291.1	\$ 20,747	738.5	53,731	
2023	432.4	\$ 32,850	274.6	\$ 20,125	707.0	52,975	
2024	417.3	\$ 32,668	258.8	\$ 19,499	676.2	52,167	
2025	402.3	\$ 32,353	243.6	\$ 18,868	645.9	51,221	
2026	387.2	\$ 31,979	229.1	\$ 18,229	616.2	50,208	
2027	372.0	\$ 31,538	215.1	\$ 17,581	587.0	49,119	
2028	356.6	\$ 31,023	201.6	\$ 16,919	558.1	47,942	
2029	341.0	\$ 30,425	188.5	\$ 16,243	529.5	46,668	
2030	325.1	\$ 29,735	176.0	\$ 15,551	501.0	45,286	
2031	308.8	\$ 28,948	163.8	\$ 14,839	472.6	43,787	
2032	292.3	\$ 28,056	152.0	\$ 14,108	444.3	42,163	
2033	275.3	\$ 27,056	140.5	\$ 13,356	415.8	40,411	
2034	258.0	\$ 25,948	129.4	\$ 12,584	387.4	38,532	
2035	240.4	\$ 24,737	118.6	\$ 11,795	359.0	36,531	
2036	222.7	\$ 23,428	108.1	\$ 10,991	330.8	34,419	
2037	204.9	\$ 22,033	98.0	\$ 10,178	302.8	32,211	
2038	187.1	\$ 20,566	88.2	\$ 9,361	275.3	29,927	
2039	169.5	\$ 19,043	78.9	\$ 8,547	248.4	27,590	
2040	152.4	\$ 17,484	70.0	\$ 7,744	222.4	25,228	
2041	135.7	\$ 15,911	61.7	\$ 6,961	197.4	22,873	
2042	119.9	\$ 14,348	53.9	\$ 6,206	173.7	20,554	
2043	104.8	\$ 12,816	46.6	\$ 5,486	151.4	18,302	
2044	90.8	\$ 11,336	40.0	\$ 4,808	130.8	16,144	
2045	77.9	\$ 9,927	34.0	\$ 4,178	111.9	14,104	
2046	66.1	\$ 8,603	28.7	\$ 3,599	94.8	12,202	
2047	55.5	\$ 7,379	24.0	\$ 3,074	79.5	10,452	
2048	46.1	\$ 6,261	19.9	\$ 2,603	66.0	8,864	

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

SECTION V – HEADCOUNT AND BENEFIT PAYMENT PROJECTIONS

Table V-1 Benefit Payment and Headcount Projection (Continued)							
Fiscal Year Ending June 30,	Police		Fire		Total		
	Count	Benefits (in thousands)	Count	Benefits (in thousands)	Count	Benefits (in thousands)	
2049	37.9	\$ 5,258	16.3	\$ 2,186	54.2	7,444	
2050	30.9	\$ 4,369	13.3	\$ 1,821	44.1	6,190	
2051	24.9	\$ 3,594	10.7	\$ 1,505	35.5	5,100	
2052	19.8	\$ 2,927	8.6	\$ 1,236	28.4	4,163	
2053	15.6	\$ 2,361	6.8	\$ 1,008	22.4	3,369	
2054	12.2	\$ 1,886	5.4	\$ 817	17.6	2,703	
2055	9.5	\$ 1,494	4.2	\$ 659	13.7	2,152	
2056	7.3	\$ 1,173	3.3	\$ 528	10.5	1,701	
2057	5.5	\$ 914	2.5	\$ 421	8.1	1,335	
2058	4.2	\$ 708	1.9	\$ 334	6.1	1,042	
2059	3.1	\$ 545	1.5	\$ 264	4.6	809	
2060	2.3	\$ 417	1.1	\$ 208	3.5	624	
2061	1.7	\$ 317	0.9	\$ 162	2.6	479	
2062	1.3	\$ 239	0.6	\$ 126	1.9	365	
2063	0.9	\$ 179	0.5	\$ 97	1.4	275	
2064	0.7	\$ 132	0.4	\$ 73	1.0	206	
2065	0.5	\$ 97	0.3	\$ 55	0.7	152	
2066	0.3	\$ 70	0.2	\$ 41	0.5	111	
2067	0.2	\$ 50	0.1	\$ 29	0.4	79	
2068	0.2	\$ 34	0.1	\$ 21	0.3	55	
2069	0.1	\$ 23	0.1	\$ 14	0.2	37	
2070	0.1	\$ 14	0.0	\$ 9	0.1	24	
2071	0.0	\$ 9	0.0	\$ 6	0.1	15	
2072	0.0	\$ 5	0.0	\$ 4	0.0	8	
2073	0.0	\$ 2	0.0	\$ 2	0.0	4	
2074	0.0	\$ 1	0.0	\$ 1	0.0	2	
2075	0.0	\$ 0	0.0	\$ 0	0.0	1	
2076	0.0	\$ 0	0.0	\$ 0	0.0	0	
2077	0.0	\$ 0	0.0	\$ 0	0.0	0	
2078	0.0	\$ 0	0.0	\$ 0	0.0	0	

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

Summary of Participant Data as of

Active Participants	July 1, 2017			July 1, 2018		
	Police	Fire	Total	Police	Fire	Total
Number	0	0	0	0	0	0
Number Vested	0	0	0	0	0	0
Average Age	0.0	0.0	0.0	0.0	0.0	0.0
Average Service	0.0	0.0	0.0	0.0	0.0	0.0
Average Pay	\$0	\$0	\$0	\$0	\$0	\$0
Service Retirees						
Number	260	120	380	250	110	360
Average Age	74.3	80.2	76.1	75.0	80.8	76.8
Average Annual Benefit	\$72,011	\$73,308	\$72,420	\$77,420	\$77,216	\$77,358
Disabled Retirees						
Number	117	114	231	109	101	210
Average Age	73.8	75.6	74.6	74.2	75.6	74.9
Average Annual Benefit	\$68,956	\$68,799	\$68,879	\$73,959	\$72,635	\$73,322
Beneficiaries						
Number	139	136	275	133	134	267
Average Age	80.6	83.9	82.2	80.5	83.4	82.0
Average Annual Benefit	\$52,291	\$51,846	\$52,071	\$55,952	\$54,306	\$55,126
All Inactives						
Number	516	370	886	492	345	837
Average Age	75.9	80.1	77.6	76.3	80.3	77.9
Average Annual Benefit	\$66,006	\$64,030	\$65,181	\$70,850	\$66,976	\$69,253

Data pertaining to active and inactive Members and their beneficiaries as of the valuation date was supplied by the Plan Administrator on electronic media.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX A – MEMBERSHIP INFORMATION

Changes in Plan Membership: Police

	Actives	Service Retirees	Disabled Retirees	Beneficiaries	Total
July 1, 2017	0	260	117	139	516
Retired	0	0	0	0	0
Disabled	0	0	0	0	0
Deceased	0	(10)	(8)	(12)	(30)
New Beneficiary	0	0	0	6	6
July 1, 2018	0	250	109	133	492

Changes in Plan Membership: Fire

	Actives	Service Retirees	Disabled Retirees	Beneficiaries	Total
July 1, 2017	0	120	114	136	370
Retired	0	0	0	0	0
Disabled	0	0	0	0	0
Deceased	0	(10)	(13)	(15)	(38)
New Beneficiary	0	0	0	13	13
July 1, 2018	0	110	101	134	345

Changes in Plan Membership: All

	Actives	Service Retirees	Disabled Retirees	Beneficiaries	Total
July 1, 2017	0	380	231	275	886
Retired	0	0	0	0	0
Disabled	0	0	0	0	0
Deceased	0	(20)	(21)	(27)	(68)
New Beneficiary	0	0	0	19	19
July 1, 2018	0	360	210	267	837

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

Service Retired Participants

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	0	\$0	0	\$0	0	\$0
60-64	2	\$180,986	0	\$0	2	\$180,986
65-69	43	\$3,432,355	5	\$293,341	48	\$3,725,697
70-74	97	\$7,193,936	30	\$2,235,561	127	\$9,429,496
75-79	72	\$5,391,215	24	\$1,872,484	96	\$7,263,698
80-84	16	\$1,484,219	18	\$1,473,484	34	\$2,957,703
85-89	10	\$761,713	12	\$864,969	22	\$1,626,682
90-94	8	\$744,746	15	\$1,286,872	23	\$2,031,617
95-99	2	\$165,871	6	\$467,041	8	\$632,911
100+	0	\$0	0	\$0	0	\$0
Total	250	\$19,355,040	110	\$8,493,751	360	\$27,848,791

Disability Retired Participants

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	0	\$0	0	\$0	0	\$0
60-64	0	\$0	0	\$0	0	\$0
65-69	18	\$1,374,158	18	\$1,173,872	36	\$2,548,029
70-74	51	\$3,662,356	38	\$2,664,960	89	\$6,327,317
75-79	25	\$1,817,543	26	\$1,921,611	51	\$3,739,154
80-84	12	\$907,855	9	\$777,041	21	\$1,684,896
85-89	2	\$185,176	8	\$671,763	10	\$856,939
90-94	1	\$114,473	2	\$126,839	3	\$241,312
95-99	0	\$0	0	\$0	0	\$0
100+	0	\$0	0	\$0	0	\$0
Total	109	\$8,061,561	101	\$7,336,085	210	\$15,397,647

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX A – MEMBERSHIP INFORMATION

Beneficiaries

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	2	\$116,871	1	\$81,377	3	\$198,248
60-64	4	\$239,806	4	\$202,166	8	\$441,973
65-69	13	\$702,921	12	\$706,884	25	\$1,409,805
70-74	28	\$1,446,498	13	\$711,007	41	\$2,157,505
75-79	20	\$1,018,632	16	\$827,609	36	\$1,846,241
80-84	14	\$870,859	22	\$1,191,379	36	\$2,062,238
85-89	19	\$1,148,869	26	\$1,217,755	45	\$2,366,624
90-94	25	\$1,425,349	29	\$1,662,162	54	\$3,087,511
95-99	7	\$395,347	7	\$355,737	14	\$751,084
100+	1	\$76,482	4	\$320,966	5	\$397,448
Total	133	\$7,441,635	134	\$7,277,041	267	\$14,718,675

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the actuarial valuation as of July 1, 2018 are:

Actuarial Method

The Entry Age Normal Actuarial Cost Method is used. Under this method, the Plan's Actuarial Liability (AL) is determined as the Present Value of Future Benefits (PVFB) less the Present Value of Future Normal Costs (PVFNC). Since all of the Plan's members are retired, the AL and the PVFB are the same.

The excess of the AL over the Actuarial Value of Assets (AVA) is the Unfunded Actuarial Liability (UAL). In accordance with the Plan's funding agreement with the City of Oakland, the UAL must be amortized by July 1, 2026, with contributions resuming in the 2017-2018 fiscal year. The projected fiscal year 2019-2020 contribution has been calculated using level percent of pay amortization, based on total projected City payroll for all Safety employees.

Actuarial Value of Plan Assets

In determining the recommended employer contribution to the PFRS, we use a smoothed Actuarial Value of Assets. The asset smoothing method dampens the volatility in asset values that could occur because of the fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process. Assets are assumed to be used exclusively for the provision of retirement benefits and expenses.

The Actuarial Value of Assets is equal to 100% of the *expected Actuarial Value of Assets* plus 20% of the difference between the current Market Value of Assets and the expected Actuarial Value of Assets. In no event will the Actuarial Value of Assets ever be less than 90% of the Market Value of Assets or greater than 110% of the Market Value of Assets.

The expected Actuarial Value of Assets is equal to the prior year's Actuarial Value of Assets increased with actual contributions made, decreased with actual disbursements made, all items (prior assets, contributions, and disbursements) further adjusted with expected investment returns for the year.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

The assumptions used in this report reflect the results of an experience study performed by Cheiron covering the period from July 1, 2014 through June 30, 2017 and adopted by the Board. More details on the rationale for the demographic and economic assumptions can be found in the experience analysis presented to the Board on February 28, 2018.

1. Rate of Return

The expected annual rates of return, net of investment expenses, on all Plan assets are shown in the table below. The equivalent single discount rate for these returns using the Plan's expected projected benefit payments is 5.50%.

Benefit Payment Year	Expected Return
2018-2026	6.000%
2027	5.725%
2028	5.450%
2029	5.175%
2030	4.900%
2031	4.625%
2032	4.350%
2033	4.075%
2034	3.800%
2035	3.525%
2036+	3.250%

2. Inflation

The assumed rate of general inflation is 2.75% (entire US) and local inflation is 2.85% (Bay Area). The general inflation rate is used in the determination of the investment return assumptions. The local inflation rate is used in the determination of the growth in expenses and salaries (which determine the COLA increases).

3. Administrative Expenses

Annual administrative expenses are assumed to be \$1,007,070, growing at 2.85% per year.

4. Cost-of-Living Adjustments and Long-Term Salary Increases

Cost-of-living adjustments are based on salary increases for a retiree's rank at retirement.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The long-term rate of salary increase is assumed to be 3.25% (2.85% inflation plus 0.4% productivity). The following schedule shows salary increases based on the current Police contract that expires on June 30, 2023, and the Fire contract which expires on October 31, 2020. All increases shown after those dates are assumptions (we have assumed a 3.25% increase for Fire will occur in FY2020-21).

Post-Retirement Benefit Increases (Based on Salary Increases for Rank at Retirement)		
Date of Increase	Police	Fire
November 1, 2018	0.00%	1.00%
January 1, 2019	2.50%	1.00%
November 1, 2019	0.00%	2.00%
July 1, 2020	2.50%	3.25%
July 1, 2021	3.00%	3.25%
July 1, 2022	3.50%	3.25%
July 1, 2023	3.50%	3.25%
Annual Increases		
Starting	3.25%	3.25%
July 1, 2024		

5. Longevity Pay for Fire Retirees

Longevity Pay payments for Fire retirees are assumed to be the dollar amount below multiplied by the retiree's benefit percentage at retirement. Surviving spouses are assumed to receive the same payment, multiplied by their assumed continuance percentage.

Benefit Payment Year	Fire Longevity Pay
2019	\$ 1,250
2020	\$ 1,300
2021+	\$ 1,350

6. Rates of Termination

None

7. Rates of Disability

None

APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

8. Rates of Retirement

None

9. Rates of Mortality for Healthy Lives

CalPERS Healthy Annuitant Table from the 2012-2015 experience study, excluding the 15-year projection using 90% of Scale MP-2016.

10. Rates of Mortality for Disabled Retirees

CalPERS Industrial Disability Mortality Table from the 2012-2015 experience study, excluding the 15-year projection using 90% of Scale MP-2016.

11. Mortality Improvement

The mortality tables are projected to improve with MP-2017 generational mortality improvement tables, with improvements projected from a base year of 2014 (the mid-point of the CalPERS base tables).

12. Survivor Continuance

30% of disabled retirees' deaths are assumed to be related to injuries arising out of the performance of duty, entitling the surviving spouse to a 100% continuance.

13. Changes in Assumptions Since the Last Valuation

New Memorandums of Understanding (MOUs) went into effect for Police and Fire members after the previous valuation, changing Police and Fire retirees' Cost-of-Living Adjustments (COLAs) and adding benefits tied to Longevity Pay for Fire retirees. No other changes have been made to the actuarial assumptions.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX C – SUMMARY OF PLAN PROVISIONS

1. Plan Year

July 1 to June 30.

2. Membership

The Plan has been closed to new members since June 30, 1976.

3. Salary

Retirement allowances are based on the pensionable compensation attached to the average rank held during the three years immediately preceding retirement.

4. Employee Contributions

There are no active employees in the Plan, and thus no employee contributions.

5. Service Retirement

Eligibility

25 years of service, or 20 years of service and age 55, or age 65. A reduced early retirement is available with 20 years of service.

Benefit Amount

50% of Salary plus 1.67% for each additional year of service beyond that required for service retirement eligibility, to a maximum of 10 years. For retirements with less than 20 years of service, benefits are pro-rated.

6. Duty-Related Disability Retirement

Equivalent to service retirement benefit if 25 or more years of service.

7. Non-Duty Related Disability Retirement

Equivalent to service retirement benefit if age 55 is attained.

8. Post-Retirement Death Benefit

For retirees without a spouse at death, a \$1,000 lump sum is paid to designated beneficiary.

9. Cost-of-Living Adjustments

Benefit increases are based on increases in salary for rank at retirement (see above definition of Salary).

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX C – SUMMARY OF PLAN PROVISIONS

10. Benefit Forms

Benefit is paid for the lifetime of the member. For non-duty related deaths after retirement, a 66-2/3% continuance is paid for the lifetime of the spouse. If the death is duty-related, a continuance of 100% is paid.

11. Changes in Plan Provisions Since the Last Valuation

None

APPENDIX D – GLOSSARY

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs such as mortality, withdrawal, disability, retirement, changes in compensation, and rates of investment return.

2. Actuarial Cost Method

A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an Actuarial Liability.

3. Actuarial Gain (Loss)

The difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

4. Actuarial Liability

The portion of the Actuarial Present Value of Projected Benefits that will not be paid by future normal costs. It represents the value of the past normal costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The actuarial present value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made.

6. Actuarial Valuation

The determination, as of a specified date, of the normal cost, Actuarial 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 used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values.

8. Actuarially Equivalent

Of equal actuarial present value, determined as of a given date, with each value based on the same set of actuarial assumptions.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2018**

APPENDIX D – GLOSSARY

9. Amortization Payment

The portion of the pension plan contribution that is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Entry Age Normal Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Funded Ratio

The ratio of the Actuarial Value of Assets to the Actuarial Liabilities.

12. Normal Cost

That portion of the actuarial present value of pension plan benefits and expenses which is allocated to a valuation year by the actuarial cost method.

13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of actuarial assumptions, taking into account such items as increases in future compensation and service credits.

14. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.



Classic Values, Innovative Advice

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of December 31, 2018

	Approved Budget	December 2018	FYTD	Remaining	Percent Remaining
Internal Administrative Costs					
PFRS Staff Salaries	\$ 1,084,000	\$ 74,906	\$ 471,948	\$ 612,052	56.5%
Board Travel Expenditures	52,500	-	5,073	47,427	90.3%
Staff Training	20,000	-	331	19,669	98.3%
Staff Training - Tuition Reimbursement	7,500	-	1,640	5,860	78.1%
Annual Report & Duplicating Services	4,000	-	-	4,000	100.0%
Board Hospitality	3,600	-	1,194	2,406	66.8%
Payroll Processing Fees	35,000	-	-	35,000	100.0%
Miscellaneous Expenditures	46,700	1,212	3,862	42,838	91.7%
Internal Service Fees (ISF)	65,400	8,970	32,487	32,913	50.3%
Contract Services Contingency	50,000	-	1,200	48,800	97.6%
Office Construction Costs*	75,227	26,417	64,431	10,796	14.4%
Internal Administrative Costs Subtotal :	\$ 1,443,927	\$ 111,505	\$ 582,165	\$ 861,762	59.7%
Actuary and Accounting Services					
Audit	\$ 45,000	\$ 25,837	\$ 25,837	\$ 19,163	42.6%
Actuary	45,000	-	914	44,086	98.0%
Actuary and Accounting Subtotal:	\$ 90,000	\$ 25,837	\$ 26,751	\$ 63,249	70.3%
Legal Services					
City Attorney Salaries	\$ 188,000	\$ 12,338	\$ 76,372	\$ 111,628	59.4%
Legal Contingency	150,000	1,875	1,875	148,125	98.8%
Legal Services Subtotal:	\$ 338,000	\$ 14,213	\$ 78,247	\$ 259,753	76.9%
Investment Services					
Money Manager Fees	\$ 1,301,900	\$ 42,946	\$ 302,378	\$ 999,522	76.8%
Custodial Fee	124,000	-	29,125	94,875	76.5%
Investment Consultant (PCA)	100,000	25,000	50,000	50,000	50.0%
Investment Subtotal:	\$ 1,525,900	\$ 67,946	\$ 381,503	\$ 1,144,397	75.0%
Total Operating Budget	\$ 3,397,827	\$ 219,501	\$ 1,068,665	\$ 2,329,162	68.55%

*Carry Forward from FY 2017-2018

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of December 31, 2018

	December 2018
Beginning Cash as of 11/30/2018	\$ 7,504,459
Additions:	
City Pension Contribution - December	\$ 3,735,083
Investment Draw (Incoming Wire) - 12/1/2018	1,000,000
Misc. Receipts	1,426
Total Additions:	\$ 4,736,509
Deductions:	
Pension Payment (November Pension Paid on 12/1/2018)	(4,501,135)
Expenditures Paid	(146,723)
Total Deductions	\$ (4,647,858)
Ending Cash Balance as of 12/31/2018*	<u><u>\$ 7,593,111</u></u>

* On 1/01/2019, December pension payment of appx \$4,527,000 will be made leaving a cash balance of \$3,066,000

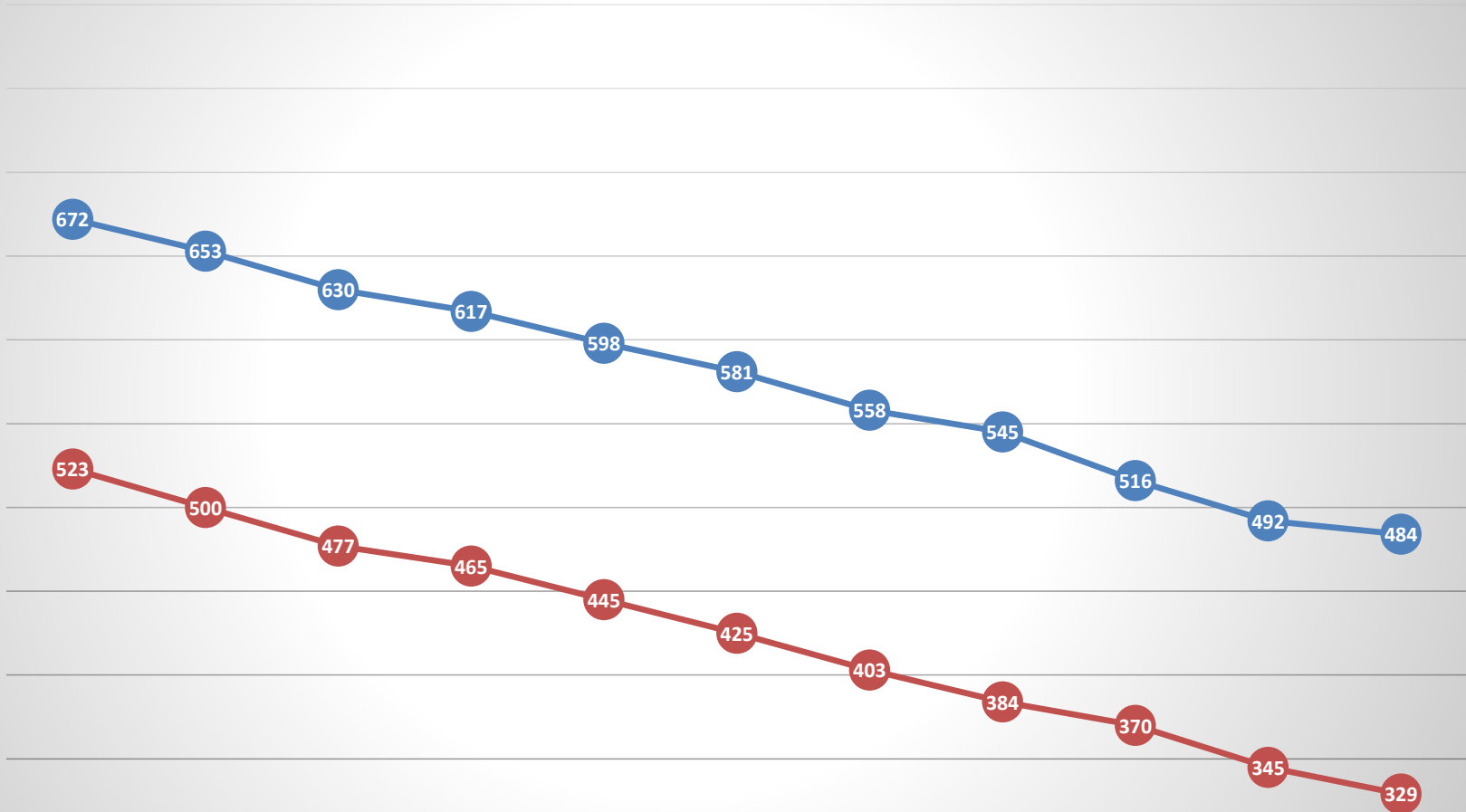
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of December 31, 2018

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	353	203	556
Beneficiary	131	126	257
<i>Total Retired Members</i>	484	329	813
<i>Total Membership:</i>	484	329	813

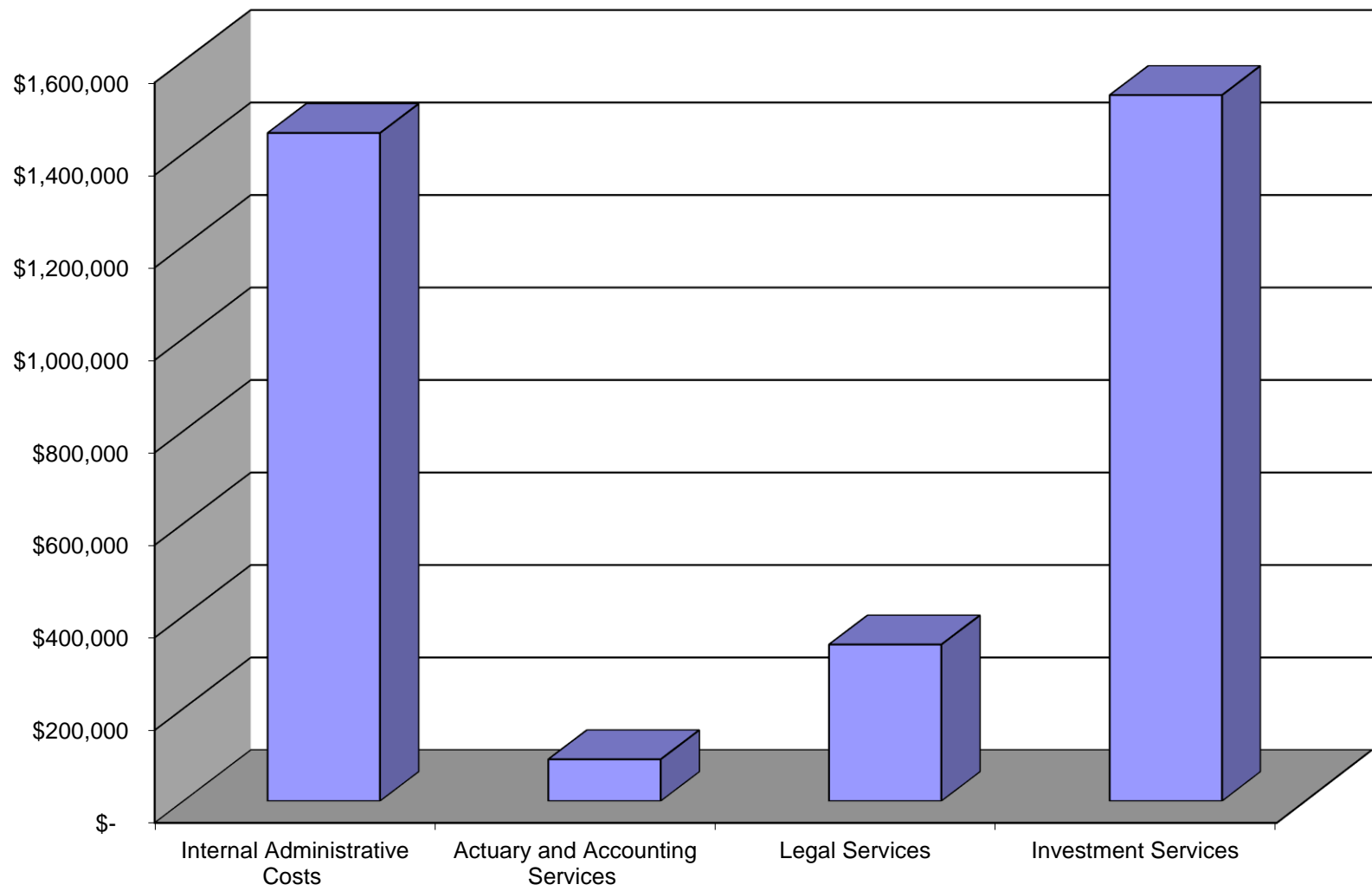
COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	321	171	492
Disability Retirement	149	144	293
Death Allowance	14	14	28
<i>Total Retired Members:</i>	484	329	813
<i>Total Membership as of December 31, 2018:</i>	484	329	813
<i>Total Membership as of June 30, 2018:</i>	492	345	837
<i>Annual Difference:</i>	-8	-16	-24

Oakland Police and Fire Retirement System Pension Plan Membership Count As of December 31, 2018 (FY 2009 - FY 2019)

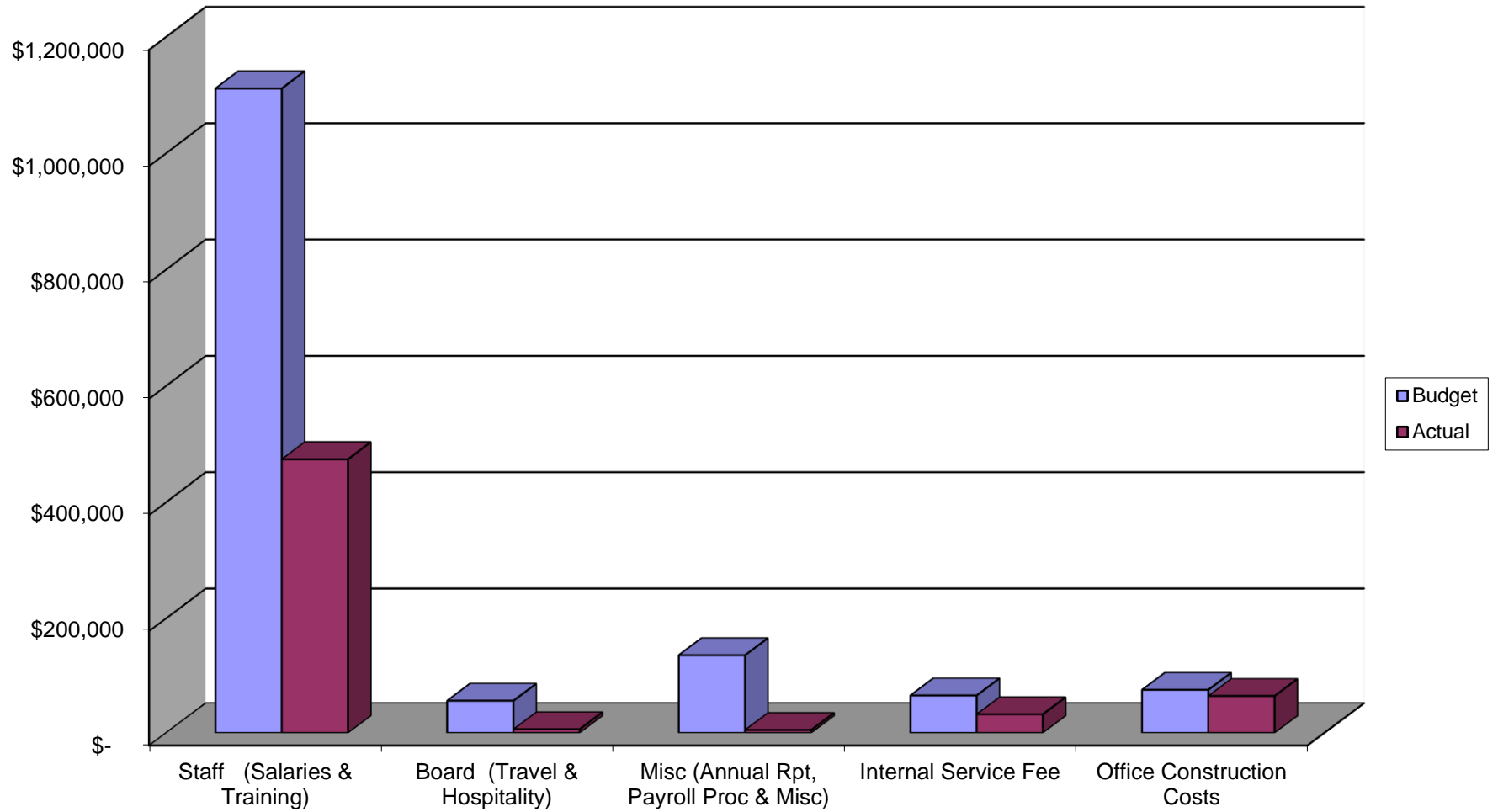


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 FYTD
Police	672	653	630	617	598	581	558	545	516	492	484
Fire	523	500	477	465	445	425	403	384	370	345	329
Total	1195	1153	1107	1082	1043	1006	961	929	886	837	813

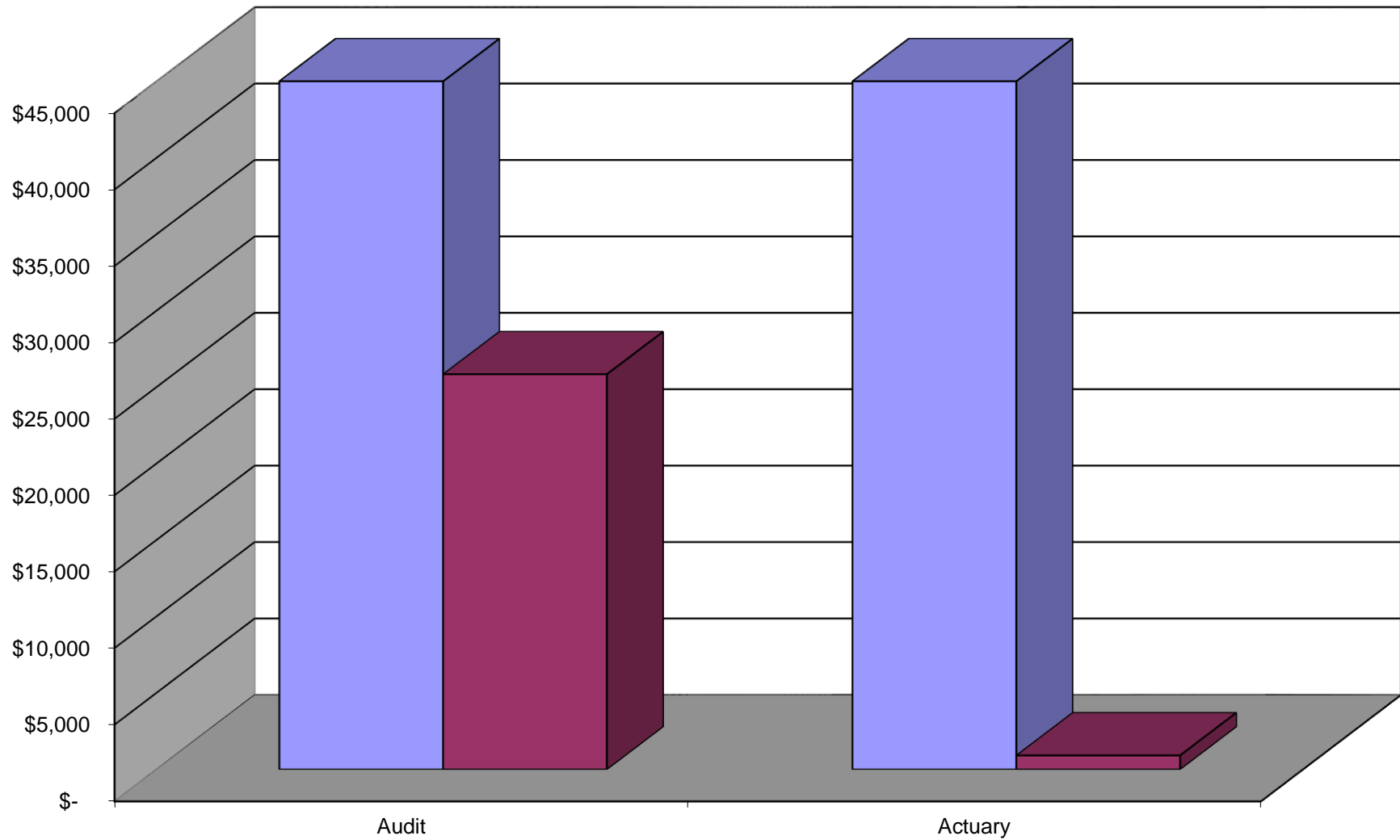
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Approved Budget
FY 2018-2019



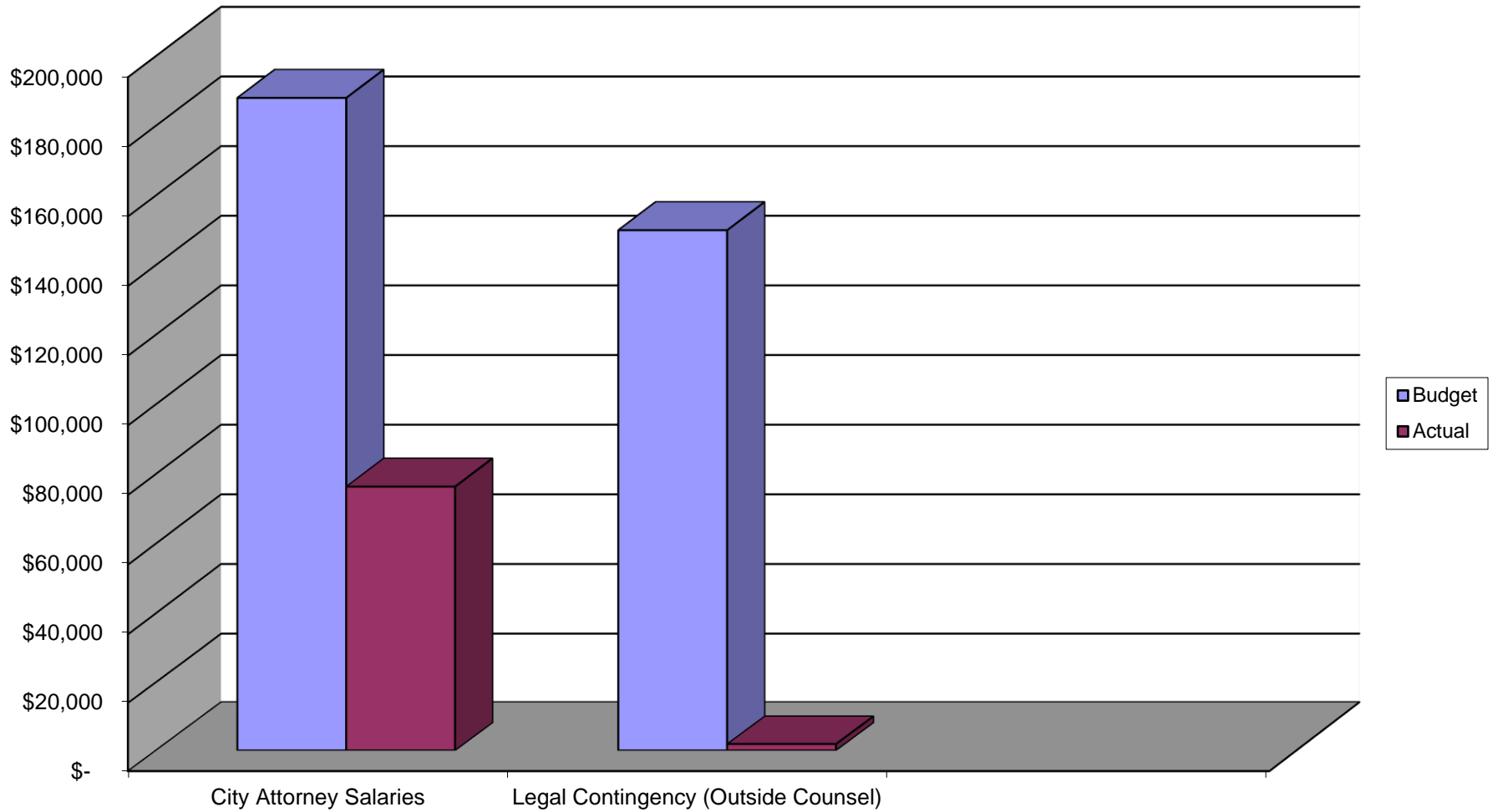
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs Actual as of December 31, 2018
Internal Administrative Costs



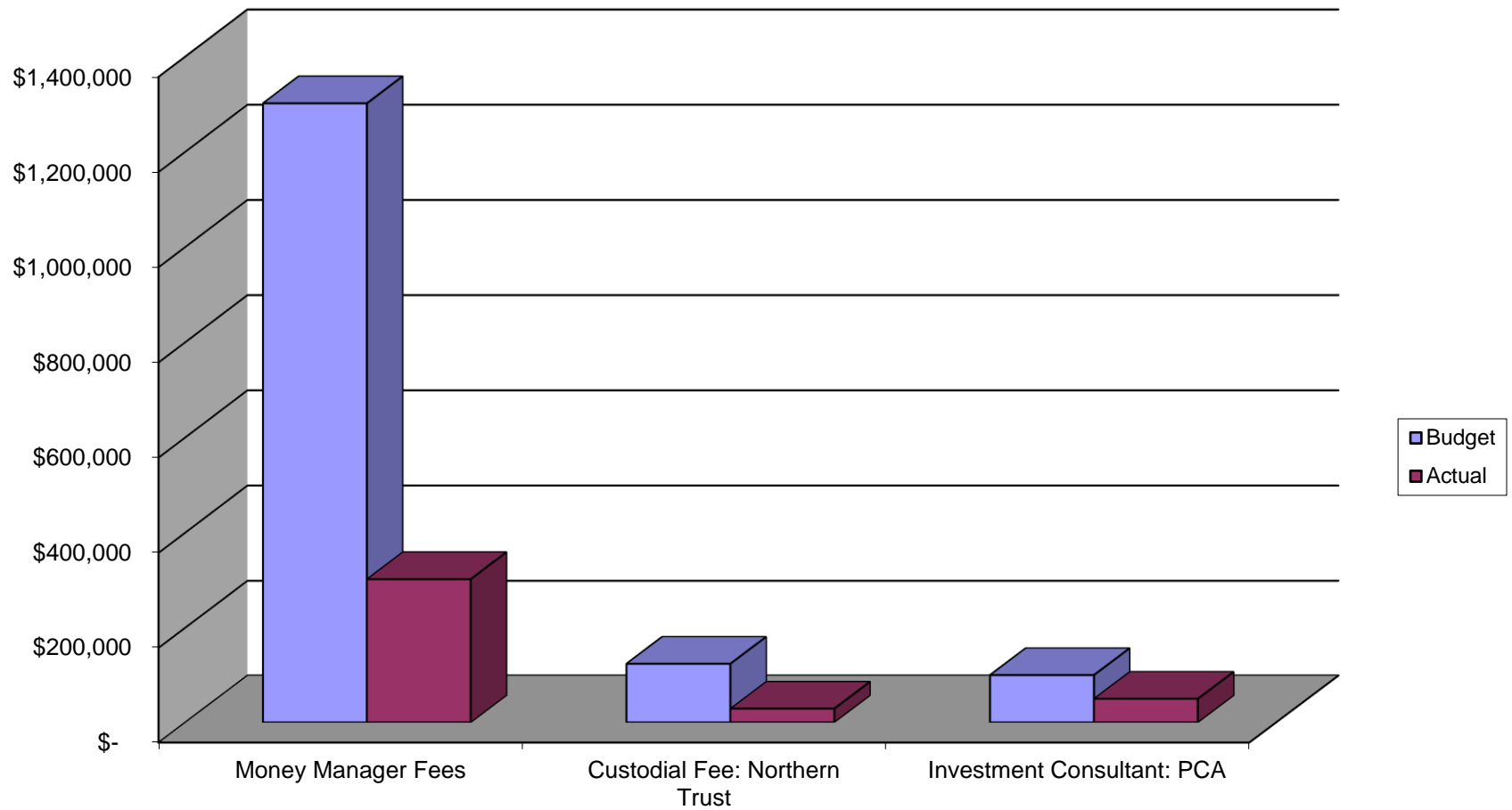
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2018
Actuary and Accounting Services



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2018
Legal Services



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2018
Investment Services





AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board **FROM:** David Jones

SUBJECT: Proposed 2-year PFRS
Administrative Budget for FY
2019/2020 and FY 2020/2021

DATE: February 19, 2019

RECOMENDATION

Staff Recommends that the Board of the Oakland Police and Fire Retirement System ("PFRS Board") Approve the new two-year PFRS administrative budget for FY 2019/2020 and FY 2020/2021 as shown in Table 1.

SUMMARY

In order to be consistent with the City of Oakland budget process, PFRS staff is presenting a two-year administrative budget that reflects proposed PFRS expenditures for FY 2019/2020 and FY 2020/2021. Staff will work to incorporate the Board approved budget into the City of Oakland overall budget.

The overall PFRS budget is projected to be \$3,423,600 in FY 2019/2020 and \$3,504,600 in FY 2020/2021. The proposed budget changes reflect expected costs within the specified line items. The total proposed annual budget is approximately 0.92% of the Plan's current investment portfolio.

KEY CHANGES

Staff costs are projected to increase by \$50,000 in FY 2019/2020 and an additional \$41,000 in FY 2020/2021. These increases are mostly due to projected increases in the City of Oakland staff fringe benefits costs and projected cost of living adjustments. Internal Service Fees ("ISF") are required costs for all City of Oakland funds. These costs are associated with city-wide services such as special setup, facilities general support, city accounting services, city purchasing services, and IT support. The PFRS' share of the ISF costs are projected to be \$77,000 in FY 2019/2020 and \$79,000 in FY 2020/2021. Overall, Internal Administrative costs are projected to decrease in FY 2019/2021, mostly due to the completion of the construction associated with the Retirement Office buildout.

Actuary services are projected to slightly increase based on a contract extension the Board approved at the August 2018 Board meeting (Resolution No. 7020). Investment Services is

PFRS Board Meeting
February 27, 2019

OAKLAND POLICE & FIRE RETIREMENT SYSTEM

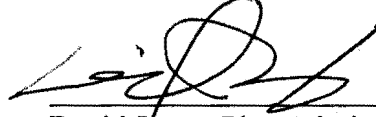
AGENDA REPORT – Proposed 2-year PFRS Administrative Staff Budget for FY 2019/2020 and FY 2020/2021

FEBRUARY 19, 2019

PAGE 2

projected to increase due to recent Board approved investment portfolio reallocations. The Custodial Fee budget and the Investment Consultant's fees are fixed annual amounts based on the current contracts. Overall, the Total PFRS Operating Budget is projected to increase 1.0% in FY 2019/2020 and an additional 2.4% in FY 2020/2021.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (1):

- ***Table 1: Oakland Police and Fire Retirement System – Two-year Proposed Administrative Budgets***

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Two Year Proposed Administrative Budgets

FY 2019-2020 and FY 2020-2021

	FY 2018-2019		Proposed Budget		Budget Changes					
	Approved Budget		FY 2019-2020		FY 2020-2021					
Internal Administrative Costs										
PFRS Staff Salaries	\$	1,084,000	\$	1,134,000	\$	1,175,000	\$	50,000	\$	41,000
Board Travel Expenditures		52,500		52,500		52,500		-		-
Staff Training		20,000		20,000		20,000		-		-
Staff Training - Tuition Reimbursement		7,500		7,500		7,500		-		-
Annual Report & Duplicating Services		4,000		4,000		4,000		-		-
Board Hospitality		3,600		3,600		3,600		-		-
Payroll Processing Fees		35,000		40,000		40,000		5,000		-
Miscellaneous Expenditures		46,700		40,000		40,000		(6,700)		-
Internal Service Fees (ISF)		65,400		77,000		79,000		11,600		2,000
Contract Services Contingency		50,000		50,000		50,000		-		-
Office Construction Costs		75,227		-		-		(75,227)		-
Internal Administrative Costs Subtotal :	\$	1,443,927	\$	1,428,600	\$	1,471,600	\$	(15,327)	\$	43,000
Actuary and Accounting Services										
Audit	\$	45,000	\$	45,000	\$	45,000	\$	-	\$	-
Actuary		45,000		46,500		46,500		1,500		-
Actuary and Accounting Subtotal:	\$	90,000	\$	91,500	\$	91,500	\$	1,500	\$	-
Legal Services										
City Attorney Salaries	\$	188,000	\$	188,000	\$	188,000	\$	-	\$	-
Legal Contingency		150,000		150,000		150,000		-		-
Legal Services Subtotal:	\$	338,000	\$	338,000	\$	338,000	\$	-	\$	-
Investment Services										
Money Manager Fees	\$	1,301,900	\$	1,349,000	\$	1,387,000	\$	47,100	\$	38,000
Custodial Fee		124,000		124,000		124,000		-		-
Investment Consultant (PCA)		100,000		100,000		100,000		-		-
Investment Subtotal:	\$	1,525,900	\$	1,573,000	\$	1,611,000	\$	47,100	\$	38,000
Total Operating Budget	\$	3,397,827	\$	3,431,100	\$	3,512,100	\$	33,273	\$	81,000
								1.0%		2.4%



AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board **FROM:** David Jones

SUBJECT: Report on closed session hearings concerning change of retirement classification or cause of death **DATE:** February 19, 2019

SUMMARY

The Board has requested a report on whether hearings concerning member requests for change of retirement status or cause of a member's death can be conducted in closed session. Because meetings of the PFRS Board are to be held in public in compliance with the Ralph M. Brown Act, the evidence which the Board considers in making a quasi-adjudicatory decision should likewise be open to the public. The Brown Act specifies certain types of matters which can be conducted in a closed session meeting. Because there is no clear authority to conduct these types of hearings in closed session, PFRS staff proposes that they conduct the initial presentation of evidence through a Hearing Officer. If later brought to the Board under section 2603 of the Charter, the Board will serve as an appellate review body in open session, and review whether the Hearing Officer's decision is supported by substantial evidence or constitutes an abuse of discretion.

BACKGROUND

A PFRS retiree may seek a change of their retirement classification (from service retirement to disability or from non-service caused disability to service-caused disability). In addition, a retiree's widow may seek a Board finding that a member's death was caused by an injury or condition arising from the member's performance of service, qualifying the widow for a full-continuance. These inquiries often involve consideration of highly personal evidence about the member's medical or psychological condition. PFRS staff is concerned about avoiding undue exposure of such personal information during the course of a Board hearing on making these determinations.

ANALYSIS

Meetings of the PFRS Board are conducted in accordance with the state open meeting law known as the Ralph M. Brown Act (Gov. Code §§5490 – 54962). According to the Act, closed session meetings may be held when the subject matter to be considered fits certain criteria. Although PFRS would like to avoid public disclosure of highly personal medical or

OAKLAND POLICE & FIRE RETIREMENT SYSTEM

AGENDA REPORT – Report on closed session hearings concerning change of retirement classification or cause of death

February 19, 2019

PAGE 2

psychological information about a member, the Brown Act does not permit¹ the Board to convene in closed session to consider changing his retirement classification, or finding a member's cause of death. If the personal information is necessary to support a decision one way or the other, it must be presented to the fact-finder for consideration. When the fact finder is the Board, the information must be presented in an open meeting.

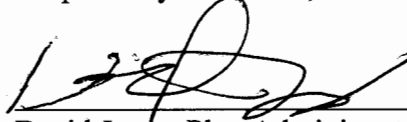
When the fact-finder is a hearing officer, there is no requirement that the hearing be conducted in public. Examination and cross examination of witnesses, and the weighing of evidence in these kind of hearings may be conducted by a hearing officer, who will then issue a decision and recommendation, and inform the retiree or widow. If the retiree or widow contests the decision, then it can be brought as an appeal to the PFRS Board under Charter Section 2603. At that time, the essential evidence should be presented to the Board for consideration. The retiree is always able to present any personal information to the Board.

CONCLUSION

Staff recommends that the Board approve the use of a Hearing Officer to conduct the evidentiary review of the member's sensitive medical or psychological condition. Staff further recommends that the Plan Administrator be appointed as the Plan's Hearing Officer. Upon review of the material in addition to a recommendation from the City Physician, the Hearing Officer will issue the initial decision and communicate directly with the member or widow. If the member or widow disagrees with that decision, then the member or widow may appeal that decision to the PFRS Board under section 2603 of the Charter.

In approved, staff will update the Board's Rules and Regulation, adding Hearing Officer to the duties of the Plan Administrator. In addition, staff would update their internal procedures to incorporate the use of a hearing officer to conduct the evidentiary review and issue a decision and recommendation.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (if any):

¹ A 1982 Attorney General Opinion (65 Ops. Cal. Atty. Gen 412) concluded that the Brown Act did not supercede a provision of the County Employees Retirement Act which allowed retirement boards to examine member medical records in closed session concerning disability. However, a subsequent 2005 Attorney General Opinion (Opinion No. 04-408 Chesbro, 88 Ops. Cal. Atty. Gen 16) concluded its prior opinion was no longer valid due to changes in the laws. However, the 2005 opinion found that the "personnel" exception to the Brown Act allows a retirement board to meet in closed session to consider medical records of an employee's application for disability retirement. However, there is no case law extending the definition of "employee" to include a retiree, much less a deceased retiree.



MEMORANDUM

TO: Oakland Police & Fire Retirement Board

FROM: David Jones

SUBJECT: Authorization and Reimbursement of Board/Staff Travel/Education Expenses

DATE: February 19, 2019

Jaime Godfrey, Board member of the **Oakland Police and Fire Retirement System** board, requests authorization for reimbursement of travel and/or board education related funds for the event detailed below. Staff has verified that budgeted funds are available for this Board member to be reimbursed.

Staff recommends the reimbursement of travel/education funds for the event below be approved by board motion.

Travel / Education Event: On-site meeting with PFRS Inv. Manager, Pension Consulting Alliance

Event Location: PCA Office, Portland, OR

Event Date: February 11, 2019

Estimated Event Expense*: \$ 610.00

Notes: Travel approved by President Johnson Prior to February 2019 Board Meeting

* If enrollment, registration or admission expenses are required, the fund will process a check in advance and pay vendor directly; all other board-approved reimbursements will be made upon delivery of receipts to staff by the traveling party. Cancellation of event attendance requires return of all reimbursed funds paid to attendee to the fund.

Respectfully submitted,

David Jones, Plan Administrator
Oakland Police and Fire Retirement System

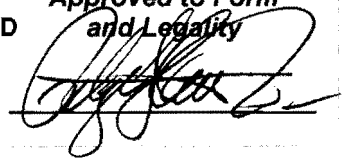
For questions please contact David Low, Administrative Assistant, at 510-238-7295.

Attachments (if any):
Resolution #7044

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 7044

Approved to Form
and Legality



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

TRAVEL AUTHORIZATION FOR INVESTMENT COMMITTEE CHAIRPERSON JAIME GODFREY TO TRAVEL FOR THE DUE DILIGENCE VISIT WITH PENSION CONSULTING ALLIANCE ("PCA"), INVESTMENT CONSULTANT FOR THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS") ON FEBRUARY 11, 2019 IN PORTLAND, OR WITH AN ESTIMATED BUDGET OF SIX HUNDRED TEN DOLLARS (\$610.00)

WHEREAS, PFRS Investment Committee Chairperson Jaime Godfrey conducted a due diligence visit at the Office of Pension Consulting Alliance ("PCA") as a follow-up to the planned merger of PCA and Meketa Investment Group; and

WHEREAS, Chairperson Godfrey seeks Board approval of the fore mentioned estimated costs to travel to Portland, OR to conduct said due diligence visit; and

WHEREAS, Chairperson Godfrey will seek reimbursement of expenses from the Board; and

WHEREAS, in compliance with the Education and Travel Policy, which requires that PFRS Board Members seek PFRS Board approval prior to travel, Chairperson Godfrey requests Board approval to attend said due diligence visit; and

WHEREAS, in compliance with Section IV.(2)(c) of the Education and Travel Policy, Chairperson Godfrey has received advanced approval from PFRS Board President Johnson to attend said due diligence visit prior to PFRS Board approval; and

WHEREAS, in compliance with the Education and Travel Policy, Chairperson Godfrey has presented costs for travel for said Due Diligence visit in the amount of approximately \$610.00; now, therefore, be it

RESOLVED: PFRS Investment Committee Chairperson Jaime Godfrey's travel request, reimbursement, and estimated travel budget of \$610.00 to conduct a due diligence visit with PCA at their Portland, OR office is hereby approved.

IN BOARD MEETING, CITY HALL, OAKLAND, CA _____ **FEBRUARY 27, 2019**

PASSED BY THE FOLLOWING VOTE:

AYES: KASAIN, MELIA, MUSZAR, SPEAKMAN, WILKINSON, AND PRESIDENT JOHNSON

NOES:

ABSTAIN: GODFREY

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY



MEMORANDUM

TO: Oakland Police & Fire
Retirement Board

FROM: David Jones

SUBJECT: Authorization and
Reimbursement of Board/Staff
Travel/Education Expenses

DATE: February 19, 2019

Martin Melia, Board member of the Oakland Police and Fire Retirement System board, requests authorization for reimbursement of travel and/or board education related funds for the event detailed below. Staff has verified that budgeted funds are available for this Board member to be reimbursed.

Staff recommends the reimbursement of travel/education funds for the event below be approved by board motion.

Travel / Education Event: On-site meeting with PFRS Inv. Manager, Pension Consulting Alliance

Event Location: PCA Office, Portland, OR

Event Date: February 11, 2019

Estimated Event Expense*: \$ 610.00

Notes: Travel approved by President Johnson Prior to February 2019 Board Meeting

* If enrollment, registration or admission expenses are required, the fund will process a check in advance and pay vendor directly; all other board-approved reimbursements will be made upon delivery of receipts to staff by the traveling party. Cancellation of event attendance requires return of all reimbursed funds paid to attendee to the fund.

Respectfully submitted,

David Jones, Plan Administrator
Oakland Police and Fire Retirement System

For questions please contact David Low, Administrative Assistant, at 510-238-7295.

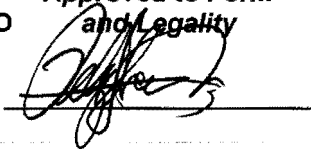
Attachments (if any):
Resolution #7045

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 7045

Approved to Form

and Legality



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

TRAVEL AUTHORIZATION FOR PFRS BOARD MEMBER MARTIN MELIA TO TRAVEL FOR THE DUE DILIGENCE VISIT WITH PENSION CONSULTING ALLIANCE ("PCA"), INVESTMENT CONSULTANT FOR THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS") ON FEBRUARY 11, 2019 IN PORTLAND, OR WITH AN ESTIMATED BUDGET OF SIX HUNDRED TEN DOLLARS (\$610.00)

WHEREAS, PFRS Board Member Martin Melia conducted a due diligence visit at the Office of Pension Consulting Alliance ("PCA") as a follow-up to the planned merger of PCA and Meketa Investment Group; and

WHEREAS, Member Melia seeks Board approval of the fore mentioned estimated costs to travel to Portland, OR to conduct said due diligence visit; and

WHEREAS, Member Melia will seek reimbursement of expenses from the Board; and

WHEREAS, in compliance with the Education and Travel Policy, which requires that PFRS Board Members seek PFRS Board approval prior to travel, Member Melia requests Board approval to attend said due diligence visit; and

WHEREAS, in compliance with Section IV.(2)(c) of the Education and Travel Policy, Member Melia has received advanced approval from PFRS Board President Johnson to attend said due diligence visit prior to PFRS Board approval; and

WHEREAS, in compliance with the Education and Travel Policy, Member Melia has presented costs for travel for said Due Diligence visit in the amount of approximately \$610.00; now, therefore, be it

RESOLVED: PFRS Member Martin Melia's travel request, reimbursement, and estimated travel budget of \$610.00 to conduct a due diligence visit with PCA at their Portland, OR office is hereby approved.

IN BOARD MEETING, CITY HALL, OAKLAND, CA FEBRUARY 27, 2019

PASSED BY THE FOLLOWING VOTE:

AYES: GODFREY, KASAIN, MUSZAR, SPEAKMAN, WILKINSON, AND PRESIDENT JOHNSON

NOES:

ABSTAIN: MELIA

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY



MEMORANDUM

TO: Oakland Police & Fire Retirement Board
FROM: David Jones
SUBJECT: Authorization and Reimbursement of Board/Staff Travel/Education Expenses
DATE: February 19, 2019

David Jones, Staff member of the Oakland Police and Fire Retirement System board, requests authorization for reimbursement of travel and/or board education related funds for the event detailed below. Staff has verified that budgeted funds are available for this staff member to be reimbursed.

Staff recommends the reimbursement of travel/education funds for the event below be approved by board motion.

Travel / Education Event: On-site meeting with PFRS Inv. Manager, Pension Consulting Alliance

Event Location: PCA Office, Portland, OR

Event Date: February 11, 2019

Estimated Event Expense*: \$ 610.00

Notes: Travel approved by President Johnson Prior to February 2019 Board Meeting

* If enrollment, registration or admission expenses are required, the fund will process a check in advance and pay vendor directly; all other board-approved reimbursements will be made upon delivery of receipts to staff by the traveling party. Cancellation of event attendance requires return of all reimbursed funds paid to attendee to the fund.

Respectfully submitted,

Teir Jenkins, Investment Officer
Oakland Police and Fire Retirement System

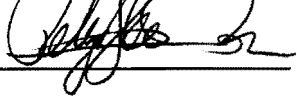
For questions please contact David Low, Administrative Assistant, at 510-238-7295.

Attachments (if any):
Resolution #7046

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 7046

Approved to Form
and Legality



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

TRAVEL AUTHORIZATION FOR PLAN ADMINISTRATOR DAVID JONES TO TRAVEL FOR THE DUE DILIGENCE VISIT WITH PENSION CONSULTING ALLIANCE ("PCA"), INVESTMENT CONSULTANT FOR THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS") ON FEBRUARY 11, 2019 IN PORTLAND, OR WITH AN ESTIMATED BUDGET OF SIX HUNDRED TEN DOLLARS (\$610.00)

WHEREAS, PFRS Plan Administrator David Jones conducted a due diligence visit at the Office of Pension Consulting Alliance ("PCA") as a follow-up to the planned merger of PCA and Meketa Investment Group; and

WHEREAS, PFRS Plan Administrator Jones seeks Board approval of the fore mentioned estimated costs to travel to Portland, OR to conduct said due diligence visit; and

WHEREAS, PFRS Plan Administrator Jones will seek reimbursement of expenses from the Board; and

WHEREAS, in compliance with the Education and Travel Policy, which requires that PFRS Board Members seek PFRS Board approval prior to travel, PFRS Plan Administrator Jones requests Board approval to attend said due diligence visit; and

WHEREAS, in compliance with Section IV.(2)(c) of the Education and Travel Policy, PFRS Plan Administrator Jones has received advanced approval from PFRS Board President Johnson to attend said due diligence visit prior to PFRS Board approval; and

WHEREAS, in compliance with the Education and Travel Policy, PFRS Plan Administrator Jones has presented costs for travel for said Due Diligence visit in the amount of approximately \$610.00; now, therefore, be it

RESOLVED: PFRS Plan Administrator Jones's travel request, reimbursement, and estimated travel budget of \$610.00 to conduct a due diligence visit with PCA at their Portland, OR office is hereby approved.

IN BOARD MEETING, CITY HALL, OAKLAND, CA FEBRUARY 27, 2019

PASSED BY THE FOLLOWING VOTE:

AYES: GODFREY, KASAIN, MELIA, MUSZAR, SPEAKMAN, WILKINSON,
AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY



MEMORANDUM

TO: Oakland Police & Fire
Retirement Board

FROM: David Jones

SUBJECT: Authorization and
Reimbursement of Board/Staff
Travel/Education Expenses

DATE: January 22, 2019

Teir Jenkins, Staff member of the **Oakland Police and Fire Retirement System** board, requests authorization for reimbursement of travel and/or board education related funds for the event detailed below. Staff has verified that budgeted funds are available for this Staff member to be reimbursed.

Staff recommends the reimbursement of travel/education funds for the event below be approved by board motion.

Travel / Education Event: 2019 Pension Bridge Conference

Event Location: Westin St Francis Hotel, San Francisco, CA

Event Date: April 9, 2019 - April 10, 2019

Estimated Event Expense*: \$ 237.00 (estimated)

Notes: _____

* If enrollment, registration or admission expenses are required, the fund will process a check in advance and pay vendor directly; all other board-approved reimbursements will be made upon delivery of receipts to staff by the traveling party. Cancellation of event attendance requires return of all reimbursed funds paid to attendee to the fund.

Respectfully submitted,

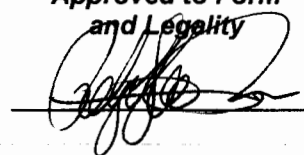
David Jones, Plan Administrator
Oakland Police and Fire Retirement System

For questions please contact David Low, Administrative Assistant, at 510-238-7295.

Attachments (if any):
Resolution #7047
2019 Pension Bridge Agenda

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

Approved to Form
and Legality



RESOLUTION NO. 7047

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

TRAVEL AUTHORIZATION FOR PFRS INVESTMENT OFFICER TEIR JENKINS TO TRAVEL AND ATTEND THE 2019 PENSION BRIDGE CONFERENCE ("2019 PENSION BRIDGE CONFERENCE") FROM APRIL 9, 2019 TO APRIL 10, 2019 IN SAN FRANCISCO, CA WITH AN ESTIMATED BUDGET OF TWO HUNDRED THIRTY-SEVEN DOLLARS (\$237.00)

WHEREAS, PFRS Investment Officer Teir Jenkins wishes to attend the The Pension Bridge Conference in San Francisco, CA from April 9, 2019 to April 10, 2019; and

WHEREAS, PFRS Investment Officer Jenkins is expected to seek reimbursement of expenses from the Board; and

WHEREAS, in compliance with the Board Travel Policy, which requires that PFRS Board/Staff Members seek PFRS Board approval prior to travel; and

WHEREAS, in compliance with the Board Travel Policy, the Board/Staff Member has presented costs for travel, lodging and/or registration fees to the Pension Bridge Conference in the amount of approximately \$237.00; and

WHEREAS, PFRS Investment Officer Jenkins seeks Board approval of the fore mentioned estimated costs to travel to San Francisco, CA to attend the Pension Bridge Conference from April 9, 2019 to April 10, 2019; now, therefore, be it

RESOLVED: PFRS Investment Officer Teir Jenkins's travel request and estimated budget of \$237.00 to attend the 2019 the Pension Bridge Conference is hereby approved.

IN BOARD MEETING, CITY HALL, OAKLAND, CA FEBRUARY 27, 2019

PASSED BY THE FOLLOWING VOTE:

AYES: KASAIN, GODFREY, MELIA, MUSZAR, SPEAKMAN, WILKINSON
AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY

THE PENSION BRIDGE ANNUAL

April 9th & 10th, 2019 | Westin St. Francis Hotel, San Francisco



THE PENSION BRIDGE ANNUAL

April 9th & 10th, 2019 | Westin St. Francis Hotel, San Francisco

The Pension Bridge Annual Conference provides the highest level of education and networking to the institutional investment community. A mix of Public Funds, Corporate Funds, Foundations, Endowments, Union Funds, Taft-Hartley Funds, Family Offices, Sovereign Wealth Funds, Consultants and Investment Managers will come together for this exclusive event.

The Pension Bridge Annual provides the industry's only controlled attendance structured event. This helps The Pension Bridge to maintain the best conference ratio in the industry. **There will be over 200 Pension Fund Representatives and Non-Discretionary Consultants in attendance. We have allowed for only 100 Manager Firms.** This better than 2:1 ratio, combined with participation from the most influential industry figures, creates a more enjoyable environment for all.

LEARN FROM THE EXPERTS

ABOUT THE MOST IMPORTANT TRENDS, CHALLENGES, OPPORTUNITIES AND STRATEGIES TO ATTACK THE LONG-AWAITED CYCLE CONTRACTION THAT WILL SHAPE OUR INDUSTRY FOR THE IMMEDIATE AND LONG-TERM FUTURE:

- | | |
|--|--|
| ✓ Options to Ease the Pension Funding Crisis and Unsustainable Costs | ✓ The Benefits and Concerns of Multi-Asset Strategies |
| ✓ Best Strategies and Approaches to Mitigate Tail Risk | ✓ Expected Performance for Various Hedge Fund Strategies during the Next Downturn |
| ✓ Best Implementation and Allocation Strategies for a Public Fund LDI Program | ✓ Where is the Relative Value in Credit Strategies? |
| ✓ Does Risk Parity Make Sense Now? Expectations for Results during the Next Downturn | ✓ Which Sectors and Strategies will create the Best Opportunities in Distressed? |
| ✓ Where are the Greatest Risks and Triggers in the Debt Markets? | ✓ Biggest Concerns for Private Equity and Best Approaches to New Investments |
| ✓ Gender Diversity and Advancement of Women in the Industry | ✓ Lower Return Expectations for Real Estate? Where is the Most Risk? |
| ✓ How can your Future Investment Returns be Impacted by Climate Change? | ✓ Most Appealing Infrastructure Sectors, Geographies and Approaches |
| ✓ What are the Latest Trends and Most Promising Areas for Impact Investing? | ✓ The Portfolio Benefits of Farmland and Benefiting from the Global Food Demand |
| ✓ Why should Plan Sponsors Actively Manage Currency - Hedging vs. Alpha? | ✓ Identifying Water Risks in your Portfolio and Profiting from Water Stress and Scarcity |
| ✓ Challenges and Concerns in China and other EM Regions | ✓ Insights from Impactful CIOs on Risks, Allocations and More |

We remain in a low growth, low return environment with unfavorable demographics in the U.S. The Pension Bridge Annual will uncover various structural transformations and investment ideas that will be beneficial for long-term fiscal sustainability.

In addition to the listed themes above, we will be covering many more challenging issues that are crucial to the investment decision making process during these uncertain economic times. We will learn from the best about how to adapt in our industry which is always evolving and transforming.

THE PENSION BRIDGE ANNUAL HAS TWO GOALS IN MIND

First is to provide the **highest level of education** with the top speaker faculty. This highly regarded group will bring forth influential insights and concepts. The second goal is to help **build relationships** between the pension plans, consultants and investment managers. We have provided the best possible environment for this event which is designed to be conducive for networking. We will cap off the event with a fun and enjoyable networking outing necessary for maintaining relationships and connecting with your peers and prospective business contacts.

We look forward to a strong event and a very productive one from both an educational and relationship perspective. We have structured this conference in a manner that will be most productive and beneficial for you. We hope that you will join us to be amongst your industry peers to learn about the most up-to-date insights, investment strategies and trends.

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TUESDAY, APRIL 9TH
Westin St. Francis Hotel, San Francisco

7:00 AM – BREAKFAST

SPONSORED BY: **JENNISON ASSOCIATES**

8:00 AM – OPENING REMARKS

8:05 AM – KEYNOTE SPEAKER

Speaker:
Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer, **Massachusetts Pension Reserves Investment Management Board, (PRIM)**

8:35 AM – KEYNOTE SPEAKER – MACROECONOMIC VIEW

- Fed Balance Sheet Unwind – Effects for U.S., the Dollar and Globally
- The Everything Bubble
- Longer Term Implication of Tax Cuts Adding to the Deficit
- Debt to GDP Ratio
- Buffett Indicator at an Extreme
- Valuation Levels
- Margin Debt
- Corporate Debt Growth for Financial Engineering
- High Yield Defaults Outlook
- Algos and Passive Investment as a Market Risk
- Inflation/Deflation Debate
- Where are the Most Unfavorable Demographics Globally?
- What Countries Debt and Risks pose the Biggest Threat in Europe? Does that put the EU and Euro at Risk?
- China – Debt Levels, Leverage and Real Estate Bubble
- Japan's Demographics and Debt – what might be the Far-Reaching Effects?
- Which are the Shakier Emerging Market Countries that have High Debt that can be Hurt by a Strong Dollar?
- Derivatives Risk
- Expectations for Equities and Bonds
- Expectations for the Next Black Swan?
- What are the Most Appealing Investments for Low Return Environment?

PRESENTED BY: **BLACKROCK®**
Speaker:
Rick Rieder, Managing Director, Global Chief Investment Officer of Fixed Income, **BlackRock**

9:05 AM – THE DEEPENING CRISIS OF UNFUNDED PENSION PLANS AND ITS FAR REACHING EFFECTS OF FISCAL DISTRESS

- Background on how we got here – what are the Contributing Factors?
- What are some Examples you've seen when Cities, Counties, School Districts and Other Local Entities are Forced to Contribute More to Keep the State System Afloat?
- Have you seen Cut-Backs on Repairing Streets and Bridges or Staffing Police and Teachers due to Pensions Crowding out Budget Spending? Any Other Cut-Backs you've seen in Education, Public Safety and Social Services?
- What sort of Higher Taxes have you seen for Scantier Services in Returns?
- What Recent Controversial Pension Reform Bills have been Passed Into Law? What were some Concessions Received and those they Didn't?
- What Trends have you seen in regards to Court Rulings on Reduced Benefits and Higher Contributions? Are the Courts Hindering Repair of this Funding Crisis?
- Do you Envision Further Credit Downgrades for Particular States due to High Unfunded Pension Liabilities? How much would this Further Complicate the Budget and Hamper Economic Growth?
- If we Face Another Strong Market Decline or Recession, what's the Time Frame for when Particular States or Plans would Face Insolvency?

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- What Actions should be taken by the Joint Select Committee on Solvency of Multiemployer Pension Plans?
- Aside from Raising Taxes, what are some Possible Options to Overcome Unsustainable Pension Costs? Thoughts on Initiating a Tax on Plan Members?
- Is Issuing Bonds to Pay Off Shortfalls a Solution or a Gamble?
- How Far Reaching would a Government Bailout be if Congress included Provision in the Budget Deal for Federal Funds towards Pension Plans?
- What are the Methods of Navigating the Challenges Posed by your Governance Structure?
- Are you Getting Pressured that your Investment Costs are Too High? How do you respond to such Allegations?
- Which Investment Strategies or De-Risking Strategies do you Favor for Decreasing a Pension Plan's Unfunded Liability While Helping to Preserve Cash?
- Will we see a Shift to Hunt for Long-Term Cash Flow Investments through Partnerships and Co-Investment Structures?
- Do you believe Plans in Danger will Cut Illiquid Asset Classes in Favor of More Liquid Investments in order to Meet Benefit Payments?
- Do you see the Benefits of Adopting a Hybrid DB/DC Plan for New Hires? What are the Drawbacks?

Speakers:
David Eager, Executive Director, **Kentucky Retirement Systems**
Dominic Garcia, Chief Investment Officer, **Public Employees Retirement Association of New Mexico, (PERA)**
Glen R. Grell, Executive Director, **Public School Employees' Retirement System, (PSERS)**
Richard W. Ingram, Executive Director, **Teachers' Retirement System of Illinois**

9:55 AM – REFRESHMENT BREAK

SPONSORED BY: **GCM GROSVENOR**

10:25 AM – RISK MANAGEMENT AND ADOPTING A RISK CULTURE

(A) KEY CONSIDERATIONS AND TOOLS FOR MANAGING RISKS

- Overview of the Transformation from an Asset Allocation-Centered Process to a More Comprehensive Risk Allocation-Based Process
- Are there Governance Challenges that have Prevented Wide-Spread Adoption of a Risk Allocation Framework?
- How has taking a Risk Allocation Approach changed the Structure of your Plan's Fixed Income Investments? Understanding Return Seeking Fixed Income and Traditional Risk Reducing Fixed Income
- What Irregularities have we seen in Portfolios as Asset Classes are Redrawn and Renamed via Risk Allocation? Are we still too Over-Reliant on Equities?
- Challenges of Performance Monitoring, Risk Data and Systems – getting good Risk Information Across All Asset Classes and Investment Vehicles
- How can considering Diversification and Risk Independently help Investors Build More Efficient Portfolios?

(B) TOP PENSION RISKS WE SHOULD BE MOST WARY OF

- Drawdown Risk
- Transparency and Liquidity Risk – Basing it on a Cost/Benefit Evaluation
- What's the Best Approach to Liquidity Risk as it applies to Meeting Future Cash Flow Obligations?
- Leverage Risk – what are the Best Approaches to keep these Risks within Acceptable Parameters?
- Equity, Credit, Duration, Inflation/Deflation, Currency, Geopolitical Risk Considerations
- Understanding Asset Class Correlation and Behavior Risk – Tendency of Interest Rate and Inflation Shocks Driving Both Equities and Bonds in the Same Direction, (Correlations Change)
- Other Risks such as Model Risk or Operational Risk
- How does Stress Testing or Scenario Analysis factor into your Process?
- What should Keep CIOs and Staff Up at Night?

(C) COMMUNICATION

- How do you Communicate your Risk Tolerances with your Board, Managers and Media?
- How has the Role of Fiduciary Responsibility Changed?
- What should Boards/Organizations Consider when Building a Risk Culture?
- How do you go about Educating a Board on Risk?
- What Metrics Aid in the Decision-Making Process?
- How does a Plan's Size affect the Approach to Pension Risk Management?

Speakers:
Timothy F. McCusker, FSA, CFA, CAIA, Chief Investment Officer, Partner, **NEPC**
James Nield, CFA, FRM, Chief Risk Officer, **Teacher Retirement System of Texas**

11:15 AM – RISK MITIGATING STRATEGIES

- Understanding Tail Risk Frequency, Severity and Impact
- Why should this be its Own Bucket or Asset Class? What Type of Allocation is Warranted?
- Understanding the Value of Risk Mitigating Strategies – why is it Important to Improve your Risk/Return Profile Now?
- What Risks can be Efficiently Hedged in the Financial Markets?
- What Types of Strategies and Approaches are used to Hedge? Advantages and Disadvantages of Each Approach?
- What are the Merits of an Option Overlay Strategy In Lieu of Owning a Tail Risk Hedge?
- What are the Trend or Momentum Following Strategies that you Prefer for Downside Protection?
- Why is Global Macro the Ideal Hedge Fund Allocation for Diversification and Decreasing the Depth of Drawdowns?
- How has Managed Futures Performed During Periods of Market Stress or Crisis Events?
- Long Duration U.S. Treasuries as a Diversifier in Extreme Market Conditions
- Building a Tactical Portfolio using Futures to Reduce Tail Losses and Enjoy Larger Gains
- Put Options as Insurance
- Using Information from the Derivatives Markets to assess Stress Points – where we are seeing Tail Risks Building?
- Systematic Risk Premia Allocations – does it Enhance Performance Outcomes? Are Short Track Records and Wide Variations in Products Concerning for Trend Risk Premia?
- Are there Alternative Ways to Deal with Equity Risk? How Defensive are these Strategies?
- What's the Most Challenging Aspect of Implementing a Risk Mitigating Strategies Program?
- How do you Measure Success?

11:50 AM – LIABILITY DRIVEN INVESTMENT (LDI), AND HOW IT CAN BE APPLIED TO PUBLIC DB PLANS

- What have Plans done to address the Hurdles of Low Pension Funded Status and Low Interest Rates over the past few years?
- Does LDI Make Sense Now Considering Current and Future Market Conditions? What is the Risk/Return?
- Are Plan Liabilities the only appropriate Benchmark?
- How does a Public Fund Implementation and Liability-Focused Allocation Differ from a Corporate Fund?
- Are some Approaches More Appropriate in a Less Liquid Fixed Income World?
- Do Plans need to Customize their Liability Hedging Allocation?
- For a Public Fund, what Cash Flow Generative Strategies would allow for the Portfolio to Reduce the Funding Ratio Volatility and Meet the Benefit Payment Needs?
- Understanding the Components of Performance Measurement and Evaluation – Risk Budgeting, Scenario Analysis, Liquidity Analysis and Performance Reporting
- What are some Industry Trends that Clients should be aware of in the LDI Market?
- Beyond the Ability to Earn Excess Returns, what should Investors look for in Selecting LDI Managers?
- Will we see a Strategy More Common in Europe with Plan Sponsors Combining an LDI Strategy with the Purchase of Longevity Insurance to Further Reduce Risk?
- What are some Common Myths that are Holding Back Plan Sponsors from Implementing a De-Risking or LDI Strategy?

PRESENTED BY:



Speaker:
Abdallah Nauphal, Chief Executive Officer, Chief Investment Officer, **Insight Investment**

12:20 PM – RISK PARITY

- Risk Parity Explained
- Do you believe Risk Parity can Play a Role In and Contribute to Market Volatility?
- What are the Hidden Risks and Drawbacks of Risk Parity Portfolios?
- Does Risk Parity Make Sense Now if we Expect Low Market Returns in the Future?
- How did Risk Parity Perform during the last Financial Crisis Compared to other Asset Mix Models? Would you Expect Similar or Different Results for the Next Downturn?
- Is it possible that Bonds will Become Less Likely to Protect against a Large Drawdown in Equities?

- Is there an Over-Reliance on Bonds with Current Valuations? Should we be Worried about Leverage or Leveraging the Inappropriate Assets?
- Commodities Role in Risk Parity and Expectations
- Active Strategy? Passive? Extent to which a Risk Parity Portfolio is Managed?
- Leverage and Illiquidity Do Not Mix – any Approaches to Avoid this Combination?
- What Progress have we seen towards Adopting an Appropriate Benchmark?
- Thoughts on Measuring Expected Tail Loss Rather Than Volatility for Tail Risk Parity? Can it be More Effective?
- How do Investors Bucket the Risk Parity Strategy within the Asset Allocation Framework?
- How should Investors think about Differences in Forecasting Volatility when Selecting a Manager?

Speaker:
David Villa, CFA, Chief Investment Officer, Executive Director, **State of Wisconsin Investment Board, (SWIB)**

12:35 PM – LUNCH



1:45 PM – UNCONSTRAINED FIXED INCOME

- Assessing the Current Environment – Implications on Unconstrained for where we are in the Credit Cycle, Interest Rate Cycle and Fed Unwinding of QE
- How do you Approach Portfolio Construction with the Need for Increased Disaggregation of Alpha Sources?
- With the Proliferation of Products which are Diverse, what is the Return Objective?
- How do you Benchmark and Define Success for Unconstrained Fixed Income Strategies?
- With Non-Linearity of Risk Correlations and Volatility Not Being Stable through time, how are you Taking Advantage of Current Market Dislocations?
- How Important is Liquidity Management? Should Investors think about Transparency of Positioning in Unconstrained Fixed Income?
- What are the Implications of Reduced Liquidity? Have you Increased your Use of Bond ETFs to offer Enhanced Liquidity? If so, what were some Other Reasons for this Decision?
- Is the Recent Tilt Towards Higher Carry or Less Carry within specific Spreads such as Bank Loans, High Yield and Syndicated Loans, EM Debt, etc.?
- Where do you see the Greatest Risks in the Debt Markets and what might be the Trigger Points that Enhance that Potential?
- Are you Building Dry Powder at this point in the Credit Cycle?
- What Progress have we seen for a Factor or Risk Premium Approach for Assessing Risk?
- Do you see a Supply/Demand Imbalance in Long-Duration Fixed Income? What does that Imply for Investors?
- Using Structured Products, Swaps and Derivatives to Create Alpha and Hedge Volatility
- Emerging Markets Local Fixed Income – what are the Opportunities? Currency Risk Factors? Should Currency Exposures be Hedged or Unhedged?
- What are your Expectations and Outlook for Corporate Debt? Do you see a Disaster in the Making?
- Taxable Municipals vs. Corporate Bonds – Which Make More Sense Now?
- Do you view Bank Loans as a Hedge in Rising Rate Environment?
- If Trump Moves on GSE Reform, how would that impact the MBS Market?
- Understanding how to Select Alternative Managers – Multi-Sector, Multi-Region, Multi-Currency Skill Set or Duration Range Targets?

Moderator:
Keith M. Berlin, Director of Global Fixed Income and Credit, **Fund Evaluation Group**

2:30 PM – WOMEN AND THEIR INCREASING ROLE IN INVESTMENT MANAGEMENT

We'll revisit this topic as it created quite the buzz at last year's event and we'd like to keep the momentum moving for this initiative. Diversity, specifically for women, is a standard that can be achievable when viewed as a requirement, not a commercial imperative.

- What are some Ways we can Encourage Organizations to Embrace and then Require Gender Diversity?
- What is the Most Common Reason why Investors do not have Specific Women-Owned Investment Mandates? How Big an Issue is Lack of Supply?
- With just 6.5% of Global Private Equity Firms having Partners or Managing Partners that are Women (source: Prequin), how do you approach Beating those Odds?
- How does Diversity Impact your Organization? Any Gender Diversity Experiences you can Share?
- Have we seen any Statistical Performance for Women and Minority-Owned Investing? What about the Performance of Female Hedge Fund and Private Equity Managers?
- What Programs or Organizations do you believe are Helpful in the Advancement of Women in the Industry?

- What Programs or Organizations do you believe are Helpful in the Advancement of Women in the Industry?
- What Can Institutions do to Support Women's Advancement to the Top Levels of Leadership?
- How might Specialization be an Important Way for Women to offer a Diversified Strategy Approach?
- Controversial Topic – Is there a way the MeToo Movement can be Destructive with Quotas Resulting in Distortions of Decision-Making and Passing up Superior Candidates for a Job?
- Thoughts on the FTSE Russell Women on Boards Leadership Index Series and its Ability to Achieve Gender Diversity?
- What Career Advancement Advice would you give to Younger Women who are Passionate and Fairly New to Investment Management?

Moderator:
Meredith A. Jones, Partner & Head of Emerging Manager Research, **Aon Hewitt Investment Consulting**

Speakers:
Ronald D. Peyton, Executive Chairman, **Callan**
Dana S. Johns, MSF, Senior Portfolio Manager, **Maryland State Retirement and Pension System**
Susan E. Oh, CFA, Senior Portfolio Manager, **Pennsylvania Public School Employees' Retirement System**
Kristina P. Koutrakos, CAIA, Director of Portfolio Strategy, **Virginia Retirement System**

3:10 PM – REFRESHMENT BREAK

SPONSORED BY:



3:40 PM – ENVIRONMENTAL, SOCIAL AND GOVERNANCE, (ESG)

- What's the Difference Between ESG, Socially Responsible Investing, (SRI) and Impact Investing?
- Do we have Proof that ESG Integration Adds Value?
- ESG Fund Performance vs. Traditional Funds
- What are Some Common Myths About ESG?
- Do Firms with Good Performance on SASB Topics Outperform Firms with Poor Performance on those Topics?
- How do you Approach ESG from a Fiduciary Standpoint and for the Development of your Plan's Investment Beliefs?
- Why are UN Sustainable Development Goals Important? What Ways are you using them to Help Investing in New Opportunities and Identify Future Areas of Risk?
- How should ESG be best Incorporated into the Investment and Due Diligence Process?
- What Tools, Data or Trends have we seen for ESG Implementation? What Initiatives are Focused on Driving Towards a Sustainable Global Economy?
- What are the Perceived Obstacles to applying an ESG Framework to the Stock Selection Process?
- How do ESG Factors Interact with Credit Quality, Affect the Pricing of Credit and how do they Affect Credit Returns?
- How can your Future Investment Returns be Impacted by Climate Change? Aside from Assessing Risks to Real Estate in Rising Sea Level Coastal Areas, what Risk Factors should we be Analyzing?
- What Approach should be taken to have a Climate Change Action Plan in place to address these Climate Risks?
- How should we approach Carbon Risk Management within an ESG Framework?
- Considerations for Investing in a Passive ESG Index – thoughts on Low Carbon Index? Combining ESG with Smart Beta?
- Will there come a time when Plan Sponsors Only Invest with UN PRI Investment Manager Signatory Firms?
- How are you Integrating ESG into your Real Estate, Private Equity and Infrastructure Investments?
- Understanding Relevant Benchmarks for ESG Risk Measurement

Moderator:
Herman Brill, Director, Office of Investment Management, **United Nations Joint Staff Pension Fund**

Speaker:
Michael McCauley, Senior Officer, Investment Programs & Governance, **Florida State Board of Administration, (SBA)**

4:15 PM – IMPACT INVESTING

Intent to generate a social and/or environmental impact in addition to a financial return. Tackling the toughest societal challenges: global health (treating and preventing disease), sustainable food systems through better agriculture, education, access to water (resource constraints), environment and climate change, diversity and inclusion, economic development, community building and more.

- The Role of UN's Sustainable Development Goals in Impact Investing Strategy
- What does the Future Hold for Impact Investing?
- What are the Top Challenges or Roadblocks for Investors?
- What are the Opportunities for Impact Investing in Emerging Markets versus Developed Markets?
- What are the Latest Trends in Impact Investment Globally? Most Promising Areas?

- Investing in Technology for Social Impact
- Measuring Social Impact – should you verify that the Funds you Invest in have their Portfolios Independently Measured and Verified by B Lab's GIIRS Impact Rating System?
- What are the Biggest Areas Risks of Impact Investing Projects?
- Do Larger Firms have an Advantage in this Space?
- Why is Private Equity Particularly Well-Suited for Impact Investing?
- What are some of the Socially Impact Bonds or Municipal Impact Bonds you've Invested in?
- Do you find it Difficult to Measure the Impact of Public Market Investments?
- What Evidence have we seen that Impact Investments will Reap Healthy Returns?
- How should Impact Investors think about Reporting?
- For the Next Inevitable Downturn or Recession, will Investors Abandon this Space? When and How Will it Become Mainstream?
- Cambridge Associates PE/VC Impact Investing Benchmark – any early Conclusions Despite the Limited Sample Size and Overall Youth of the Funds?

Moderator:
Laura B. Wirick, CFA, CAIA, Principal, Consultant, **Meketa Investment Group**
Speaker:
Falah Madadha, Senior Investment Officer, **Silicon Valley Community Foundation**

4:45 PM – EMERGING MARKETS

- Macro Environment and Recent Developments – how does that affect your Investments?
- With Central Banks Tapering, do you see a Correlation with Weaker EM Returns? What about a Stronger Dollar for a Prolonged Period? Weak Commodity Prices?
- What would be the Effects on Emerging Markets if we see Weak Growth in the U.S.? Instability in the Eurozone? Slowdown in China?
- How will the Trade War affect China and other Emerging Markets? Any Markets that are More Insulated?
- What is an Appropriate Long-Term Allocation to Emerging Markets? What should that Allocation look like, (Public Equity, Fixed Income, Private Equity, Frontier Markets, Alternatives, etc.)?
- What are Realistic Return Expectations? How might that Differ based on Region?
- How do Valuations look Relative to Risk in Different Regions?
- Outlook for China – are you Concerned about their Credit and Real Estate Bubbles? Thoughts on Trade Challenges?
- What are the Key LP Concerns and Challenges in Particular Regions?
- Identify what Country or Region you see Favorable Demographic Trends such as a Growing Middle Class, Urbanization, Promising Consumer Buying Behavior and Economic/Fiscal Reforms
- Which Markets in Frontier Countries can you Profit from Strong Growth and Access a Lower Correlation?
- What can be done to Mitigate Currency Risks?
- After seeing Argentina and Turkey with a Currency Crisis caused by High Debt and Surging Inflation that follows, are there Any EM Countries to Avoid?
- The Case for Emerging Markets Corporate Debt
- What Metrics are you using to Determine Relative Value in Sovereign Bonds?
- Public vs. Private Emerging Markets – Benefits and Drawbacks of each
- Active vs. Passive Debate
- Choosing an Emerging Markets Fund or Manager – should you be Investing by Region, Country or Sector?
- Given the Current Environment, will Emerging Markets Outperform Developed Markets?

Speaker:
Mike Rosborough, Senior Portfolio Manager, Investment Director, Global Fixed Income, **California Public Employees' Retirement System, (CalPERS)**

5:25 PM – COCKTAIL RECEPTION

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PGIM FIXED INCOME

6:40 PM – COCKTAIL RECEPTION CONCLUDES

WEDNESDAY, APRIL 10TH

Westin St. Francis Hotel, San Francisco

7:00 AM – BREAKFAST

8:00 AM – KEYNOTE SPEAKER

The Science and Technology Revolution – Alpha by Investing in Innovation

- Historic Transformation
- Accelerating Pace of Innovation
- Investment Opportunity through Future Innovation
- Future Innovations and their Impact – Transportation as a Service, Artificial Intelligence/Deep Learning, Robotics, Blockchain, Internet of Things, Life Sciences, Improvements in Education
- Economic Modernization of China – Industries with Opportunity
- Economic Modernization of India Coming Into Focus

Speaker:
William J. Coaker Jr., CFA, MBA, Chief Investment Officer, **San Francisco Employees' Retirement System, (SFERS)**

8:30 AM – THE NEXT FRONTIER OF MULTI-ASSET INVESTING

- How has Multi-Asset Investing Evolved over the Years? How do you Navigate the Various Options and Approaches that are available today?
- Do these Strategies Reduce Correlation, Lower Volatility and Limit Downside Risk or Drawdown? If so, by How Much?
- What are the Common Sub-Asset Classes Included in Multi-Asset Strategies?
- Constructing the Portfolio – Risk Factor Approach
- How are Investors Incorporating Multi-Asset Strategies in their Portfolios?
- How do you see this Space Evolving in a more Treacherous/Volatile Market? Do you Worry that Dynamic and Tactical Asset Allocation Decisions that have been Little Tested in Recent Years can Harm Performance with Too Heavy a Reliance on Market Timing?
- Aside from Asset Allocation Skills, what other Skills are Required for the Ability to Generate Alpha and be Successful?
- Are Tactical Tilts More Transparent Today?
- How Worrisome is the Reliance on Stable Correlation Relationships with No Certainty those Relationships will Persist?
- How Much Value can one get Via Tactical Asset Allocation if you have the Right Expertise?
- Do you believe that Multi-Asset Funds have Sufficiently Incorporated Risk Controls into the Design of their Products?
- Understanding Dynamic Tail Risk Management Via Asset Allocation
- Is Excessive Leverage a Concern?
- How do you Measure Performance?
- Any Favorable Trends in Fees for Investors?
- How do Multi-Asset Managers Differentiate Themselves in this Crowded Field?

PRESENTED BY: **Janus Henderson**
INVESTORS

Speaker:
Ashwin Alankar, PhD, Senior Vice President, Global Head of Asset Allocation & Risk Management, **Janus Henderson Investors**

9:00 AM – HEDGE FUNDS

(A) CURRENT AND FUTURE STATE OF THE HEDGE FUND INDUSTRY

- Will Hedge Fund Underperformance Shift and Why?
- With Difficult Investment Conditions Pushing Many Seasoned Firms and Legendary Investors Out of the Business, does that mean some Strategies have Stopped Working or are Less Accurate? How do you approach this Struggle or go about Making your Strategy More Flexible?
- What is an Appropriate Fee Structure for Hedge Funds? Have you Seen More Fee Structures that Reward Alpha and Not Beta for Better Alignment of Interests and Avoid Overpaying for Underperformance?
- As an LP, do you find it Difficult to get Hedge Fund Managers to Provide Accurate Fee Information in a Timely, Efficient Manner? Do you believe we're In Need of a Standardized Reporting Template like ILPA for Private Equity?
- Why do Smaller Hedge Funds Outperform?
- With Crowding in FAANG and other stocks, do you see this as a Risk and a Contrarian Indicator for those Equity Holdings when the Cycle Turns?

What is Driving the Increase in Demand for Strategies Uncorrelated with the Capital Markets? Which Low Correlated Strategies are Most Attractive?

(B) IMPLEMENTATION OPTIONS

- If there was a Hedge Fund Strategy you would Invest in over the next Few Years, which one would it be and why?
- What sort of Downside Protection, Drawdown or Return Range do you expect we'll see from each of the Different Hedge Fund Strategies during the Next Market Downturn?
- Do you find Opportunities within the Global Macro Space Attractive and if so, why?
- Managed Futures – Diversification and Performance during Periods of Market Stress or Crisis Events. How much can it Decrease the Depth of Portfolio Drawdowns and Volatility?
- What is the Future of the Fund of Funds Space? How has it Changed in Recent Years? Where will Fees be? What will it take to Stay Competitive?
- Long-Short Equity Hedge Funds – what Differentiates Managers that have been able to Outperform?
- Liquid Hedge Fund Products such as UCITS, 40 Act and Hedge Fund Replication – are they a Viable Alternative and Under what Circumstances? How has their Performance and the Lower Fees Fared to Hedge Funds?
- The Role of Alternative Beta/Risk Premia Strategies in a Hedge Fund Portfolio – what are the Appropriate Expectations from a Sharpe Perspective?
- How do Emerging Managers Differentiate Themselves in the Quest for Institutional Capital?
- Implementation Considerations for Due Diligence, Portfolio Function and Manager Selection. What are the Key Traits you should be looking for? Key Characteristics for Quantitative Strategies?

(C) PORTFOLIO CONSTRUCTION AND RISK MANAGEMENT

- What is the Role of Separate Managed Accounts? What are the Benefits? Are they Better than Commingled Funds?
- Any Recent Trends you've seen for Pension Plans as far as Fees, Transparency, Customization, Increased Partnership, etc.?
- As an Investor, do you Negotiate the Frequency of Performance Fee Payments (Fee Crystallization), with your Managers so that it Doesn't Lead to Hidden and Higher Costs?
- Importance of Operations Due Diligence. Any recent Developments? How often should Operations be Reviewed?
- What Trends do you see Developing in Regards to the way we Evaluate Liquidity Provisions for Hedge Funds?

Moderator:
David E. Franci, Managing Director, Absolute Return, **San Francisco Employees' Retirement System, (SFERS)**

Speakers:
Dr. John Claisse, CEO, **Albourn America**
Elizabeth T. Burton, Chief Investment Officer, **Employees' Retirement System of the State of Hawaii**

9:45 AM – REFRESHMENT BREAK



10:15 AM – CREDIT STRATEGIES

- Current State of the Credit Market
- What will be the Catalyst that will cause Credit Spreads to Widen and Defaults to Rise?
- What is the Opportunity Set in Credit Strategies? Where is the Relative Value?
- What Subsectors of Credit are Most Attractive given the Stretched Valuations? Any Areas you are Avoiding?
- Do you see Investors being more willing to Trade Liquidity for Yield and should that be of Concern?
- High Yield Market – is it possible to see a High Yield Meltdown with a Lack of Liquidity? Understanding the Corporate Debt Risk Factors and the Strong Correlation to Equities

- Bank Loans Overview
- Outlook and Considerations for Structured – Are CLOs Safer than Pre-Crisis?
- Can Securitized Credit Weather Market Turbulence? How has it Performed During Previous Credit Events? Is there a Lower Correlation to Broader Fixed Income Sectors?
- Outlook for Emerging Market Debt
- Public vs. Private Credit
- Is Direct Lending in a Bubble and how would you Position for that?
- Opportunities and Risks for Europe and Asia
- How much should Plan Sponsors be Allocating to Credit? What is the Optimal Structure to a Credit Portfolio?
- Considerations for Selecting a Manager and Strategy
- Why should Multi-Asset Credit Strategies be a Tactical Asset Allocation with Dynamic Management for Pension Plans?
- How do we Develop Return and Risk Expectation for this Asset Class?
- How do we Benchmark Performance?

Speaker:
Peter E. Ehret, CFA, Director of Internal Credit, **Employees Retirement System of Texas**

10:55 AM – DISTRESSED INVESTING – OPPORTUNISTIC AND SPECIAL SITUATIONS

- How does the Interest Rate Environment and Fed Balance Sheet Unwind Affect your Plans?
- What are your Expectations for Default Rates going forward?
- What is Most Worrisome in Distressed Markets Today Versus a Few Years Ago?
- When will the Vast Sums of Undeployed Capital come in off the Sidelines? Do you Need an Economic Downturn?
- Is Direct Lending a Bubble and if so, how would you Invest When it Pops?
- Where do you see the Largest Demand from Clients? What are they Most Interested in?
- Which Sectors, Strategies and Geographies will create the Best Opportunities? Any Areas that should be Avoided?
- What Distressed Opportunities are we seeing the Energy Sector?
- What's the Potential Impact of the Debt Piled up by Corporations for their Share Buybacks?
- Will the Prevalent Covenant-Lite Deals create Problems during the Next Cycle?
- What are the Opportunities and Risks in Europe? Any Countries, Sectors or Types of Deals that Stand Out?
- Do you see Opportunities in Asia or Elsewhere Globally?
- What are the Recent Leverage Trends?
- Do you worry about a Liquidity Problem in ETFs and other Structured Credit Vehicles if there is Credit Event?
- Has the Regulatory Environment Changed the Opportunity Set? How has it Impacted your Firm?
- How do Investors go about Choosing the Right Distressed Strategy, Size, Investment Style and Approach?
- How will the Different Implementation Approaches affect Expected Returns? Control vs. Non-Control? Private vs. Public?
- Distressed Debt Vehicles in Hedge Fund Format vs. Private Equity Drawdown Structures – what are the Pros and Cons of Each?
- What Skill Sets/Characteristics should Pension Plans look for in a Distressed Manager?

11:30 AM – CURRENCY HEDGING AND CURRENCY ALPHA

(A) CURRENCY MARKET OVERVIEW

- What are the Factors Driving Currencies Today?
- Do you Worry about the Uncertainty Surrounding the Euro and EU?
- What is the Relationship Between Volatility and Currency Returns?
- Can Currencies be Forecasted via Fundamentals, Cycles and Trends?
- Benefits of Active and Dynamic Currency Management
- What are the most Common Reasons Asset Owners give for Not Actively Managing Currency? Are these Reasons Valid or Not?
- What is the Impact Forex can have on Overall Risk and Returns for International Equity and Bond Portfolios?
- Widely Confused Difference Between Currency Hedging and Currency as an Asset Class – how do they Differ in terms of Implementation Approaches?
- What are the Merits and Demerits of Adopting a Hedging Program vs. an Alpha Program?
- Different Skills Required for Currency Hedging vs. Currency Alpha – should a Different Manager be used for Each Approach or is it Possible to be Skilled in Both?

(B) CURRENCY OVERLAY HEDGING

- Given Plan Sponsors Non-U.S. Exposure, what Factors should be Considered in the Determination of Implementing a Currency Hedging Program?
- Is there an Optimum Currency Hedge Ratio for a Plan?
- How much of a Reduction in Portfolio Volatility and Risk should be Expected?
- Can it be More Beneficial to be Unhedged?
- Hedging Costs – how should this factor into your Decision?

(C) CURRENCY ALPHA

- How does Employing a Currency Alpha Strategy fit into an Asset Allocation Framework?
- Benefits of Non-Correlated Returns to Equities, Fixed Income and Alternative Investments
- How does Investing in Currency Diversify and Reduce Risk? Natural Diversifier for the Duration Risk in Bonds?
- How do you Manage Risk Factors?
- What are the Return Expectations?
- When considering Investing in an Active Currency Strategy, what should you look for in a Manager?

Moderator:
Andy T. Iseri, CFA, Senior Vice President, Global Manager Research, **Callan**

12:00 PM – LUNCH

SPONSORED BY:  **Crestline**

1:05 PM – PRIVATE EQUITY

- What's your Biggest Concern – Valuations, Excess Dry Powder, Downturn, etc?
- How are you Positioning Your Portfolio given the Current Market Conditions?
- Any Lessons Learned from the Financial Crisis? What are you doing Differently when Approaching New Investments?
- Protecting your Current Portfolio – how would you Guard Against your Existing Portfolio?
- Where are your Most Optimistic Returns Going Forward as far as Sector, Geography or Niche Strategy? What's your Biggest Worry?
- Which Lower or Non-Correlated PE Strategies have you Allocated to or Favor?
- Where do you see the LP/GP Relationship in the Future when it comes to Separately Managed Accounts, Strategic Partnerships, Co-Investments, LPs Concentrating Portfolios, etc.?
- Transparency and Fees – As an LP, has this Impacted your Ability to Commit Capital? SEC's Impact?
- Have you gotten More Involved in your GP's Valuation Process? How have you Achieved this Transparency Demand? Thoughts on the Fair Value Quality Initiative?
- Thoughts on GPs Selling Minority Stakes to Third Party Investors like Dyal or Petershill? Any Negative Implications that you can Foresee?
- Subscription Lines of Credit and Risk – how can you Better Understand How these Lines have Altered Returns? Thoughts on ILPA's Guidelines?
- Do you believe we're in a Venture Capital/Technology Bubble? How do you View the Venture Space today?
- For Co-Investment Deals that Underperform, what are the Reasons Why?
- Where can we find Good Returns in Private Credit Without Taking Inordinate Risk?
- Why should Secondaries be a Core Holding?
- Issues, Outlook and Opportunities for European PE

Moderator:
Faraz Shooshani, Managing Director, Senior Private Markets Consultant, **Verus**

1:50 PM – INFRASTRUCTURE

- State of the Infrastructure Markets
- Is there Too Much Capital Chasing Too Few Deals?
- With High Competition for Larger Investments, could there be More Return Potential in Smaller Projects?
- How has Performance been and what are the Recent Return Expectations?
- What have been the Effects of the Low Interest Rate Environment on Infrastructure and how might that Affect Returns and Leverage Going Forward?
- Which Sectors are Most Attractive?
- Which Geographies are Most Appealing? Developed or Emerging Economies?
- Approach – Greenfield vs. Brownfield?
- Why is Infrastructure Debt Attractive? Will it deliver for Investors Searching for Yield?

- What are the Biggest Challenges/Risks associated with Infrastructure Investing?
- Do you believe Credit Risk might be Under-Appreciated?
- Opportunities in Public-Private Partnerships?
- How have GPs Adopted ESG Principals?
- What are the Most Attractive Investments within Renewables?
- Listed vs. Unlisted – which do you Favor in a Volatile Market for Downside Protection? Do Rising Interest Rates Favor Either?
- Any Advantages or Limitations for Co-Investments? Separate Accounts?
- What are the Advantages of Open-Ended Funds over Closed-Ended Funds? Will we Continue to see a Surge in Open-Ended Funds in the Coming Years?
- What are the Major Technological Trends that will Shape Infrastructure Investing in the Coming Years?

Moderator:
Todd Lapenna, CFA, CAIA, Partner, Infrastructure & Real Assets, **StepStone Group**

2:25 PM – REAL ESTATE

- Are you Expecting a Drop in Pricing and Lower Returns? What are your Returns Expectations for the next 5-10 Years?
- Where do you See the Most Risk? How are you De-Risking?
- Are you Slowing Down, Maintaining or Increasing your Pace of Investment?
- Where are the Most Crowded Trades? Are there any Less Crowded Trades?
- What are your Return Expectations for Core?
- Within Non-Core, what Risks are Investors Willing to Take?
- What is the Biggest Threat to Commercial in the next few years for this Fully Priced Market?
- Are you Making Pivots or Tilts to Take Advantage of Macro or Socio/Demographic Trends?
- What are you seeing in the Market Today with Respect to Volume of Transactions and Pricing?
- Thoughts on the Bridge Financing Opportunity for Maturing Commercial Real Estate?
- What Real Estate Technology Trends are you Watching Most Closely?
- What's happening with Leverage? LP Preferences for Use of Leverage?
- Any Niche Property Types that you Like?
- Asia and European Real Estate Outlook – Opportunities and Investment Trends
- With the Privatization of Fannie Mae and Freddie Mac a Possibility, what would be the Effect on Real Estate Portfolios?
- Will Co-Investments become more Common?
- Current State of the Real Estate Secondary Market
- Thoughts on Programmatic Joint Ventures?
- Are we still seeing a Decline in Closed-Ended Funds? If so, Why and Will it Continue?
- Larger vs. Smaller Fund Size – which ones will Outperform going forward?
- What Strategies do you see as the Biggest Risks and the Biggest Rewards/Relative Value for the Future?

Moderator:
Christy Fields, Managing Director – Real Estate, **Pension Consulting Alliance, (PCA)**

Speaker:
Anthony Breault, Senior Investment Officer, Real Estate, **Oregon State Treasury**

3:10 PM – REFRESHMENT BREAK

3:35 PM – INVESTING IN FARMLAND

- Demographics, Global Food Demand and Land Scarcity as Macro Drivers
- Is Farmland a Good Investment if we have another Downturn or Financial Crisis?
- How has Historical Performance been?
- What are the Portfolio Benefits?
- Understanding the Evolution of U.S. Farmland Ownership and what the Transition will look like for Institutional Ownership. How might that Compare to Ownership of Timberland?
- What are the Physical-Casualty Risks? Is it a Concern or is it Proactively Managed through Operating Practices of the Farm?
- Would a Drop in Commodities Prices hurt Farmland Returns? Importance of Crop Diversification
- How might this Asset Class be Impacted by Future Regulatory Decisions?
- Thoughts on the Rise in Farmland Debt Strategies that have Attracted Investors?
- Is it Difficult to Access Farmland through Public Markets? Might the Public REIT Market Evolve for Farmland? What are the Pro's and Cons of these REITS?

3:50 PM – INVESTING IN WATER

The World Economic Forum has ranked water as a top global risk for the past several years. The growing focus on water scarcity has many eyeing opportunities. The United Nations estimates that almost half of the world's population will live in areas of high water stress by 2030, with a 40% shortfall between water supply and demand.

- What Factors are Contributing to Water Stress and Risks?
- How are Investors Identifying and Evaluating Water Risks in their Portfolios?
- Does the Ceres Investor Water Toolkit Serve its Purpose to Help Investors Evaluate and Understand Water Risks in their Holdings?
- ESG Social Benefit – Investing in Projects and Companies that will Help Clean, Distribute and Maintain our Water Supply
- Where are the Most Attractive Opportunities?
- Are you Seeing Situations where the Government is Underwriting some of the High Impact Risks of the Project?
- Should Pensions be Seeking Greenfield or Brownfield Investments and Why?
- What are the Biggest Investor Challenges?
- How do you Overcome the Investor Lack of Clarity on the Yield they will Receive once the Project is Built?
- What are your Predictions for Growth in this Space?

4:05 PM – CIO ROUNDTABLE

(A) RISKS, ALLOCATIONS AND MACRO-BASED DECISIONS

- In this Fully-Valued Environment, how are you Balancing the Risk of a Large Drawdown with your Return Goals? Has it Impacted your Asset Allocation?
- Which De-Risking Strategies or Investments with a Low/Non-Correlation have you Allocated to?
- Do you believe your Hedge Fund Strategies will provide a Cushion for the next Market Downturn? How do you use them to Reduce Risk?
- Have you Trended Towards a Passive Equity Allocation? When Volatility Rises, do you Believe Active Managers will Outperform?
- Have you made Long-Term Cash Flow Investments through Partnerships and Co-Investment Structures?
- Do you Believe the Impact of Regulation along with the Shift Towards Passive Management has Created a Reduction in Market Liquidity? Will there be Sufficient Liquidity in the System to Cope with Conditions of Market Stress? Has it Impacted your Fund or Decisions?
- Is there Some Point at which Higher Rates would cause you to Rethink your Asset Allocation or Other Strategies?
- What Percentage of your Pension Fund's External Asset Management uses ESG Factors? Percentage Excluding Hedge Funds? Do you have Plans to Increase the Use of ESG Managers?
- How are you Viewing Emerging Markets Broadly and what do you feel is the proper EM Allocation? Any Regional or Frontier Strategies that interest you?

(B) ALIGNMENT OF INTERESTS

- What Changes or Trends have you noticed in Fee Structures/Terms and your Bargaining Power? Has the Size of your Fund been an Advantage or Disadvantage?
- How can you Overcome Governance Hurdles so that you can Effectively Partner with Outside Providers, Bring a Portion of the Investment Management In-House and Provide Incentive-Based Compensation?
- Have you Taken Steps to Address Diversity within your Investment Programs or your Organization's Staff?
- Do You and Your Investment Departments have the Authority to be a Dynamic, Tactical and Active Investor In Response to Extreme Economic Conditions?
- Have you Addressed Cybersecurity Protection for your Plan? How have you Educated of the Risks with Staff and Taken Steps for Protection with Investment Managers?
- Any Important Lessons Learned that you can Share from your Individual Plan Experiences?
- What Keeps You Up at Night?

Speakers:
Mansco Perry III, CFA, CAIA, Executive Director, Chief Investment Officer, **Minnesota State Board of Investment**
Tom Tull, CFA, Chief Investment Officer, **Employees Retirement System of Texas**
Bruce H. Cundick, CFA, CPA, Chief Investment Officer, **Utah Retirement Systems**

5:00 PM – CONFERENCE CONCLUDES

5:00 PM – TICKETS FOR NETWORKING EVENT HANDED OUT IN CONFERENCE ROOM

ATTENDEES OF THE NETWORKING EVENT MUST BE PRESENT IN THE CONFERENCE ROOM IN ORDER TO RECEIVE TICKETS

6:00 PM – NETWORKING EVENT, TBD

Networking Event – The Waterfront Restaurant Cocktail Reception & Dinner

Hosted by The Pension Bridge – Join our group for a cocktail reception and dinner at the Waterfront Restaurant located adjacent to the Financial District at Pier 7. Experience breathtaking views of San Francisco Bay and the iconic Bay Bridge. The Waterfront Restaurant, one of the city's finest seafood restaurants, has been a top culinary destination for more than 45 years and has been a known favorite for politicians, celebrities and business executives. The Pension Bridge Group will utilize will the waterfront space for meetings and conversation with quality contacts while taking in spectacular views.

9:00 PM – NETWORKING EVENT CONCLUDES

REGISTRATION:

To register or receive more information about The 2019 Pension Bridge Annual:

BOCA RATON OFFICE CONTACT:

Brett Semel

☎ (561) 455-2729

✉ bsemel@pensionbridge.com

NEW YORK OFFICE CONTACT:

Andrew Blake

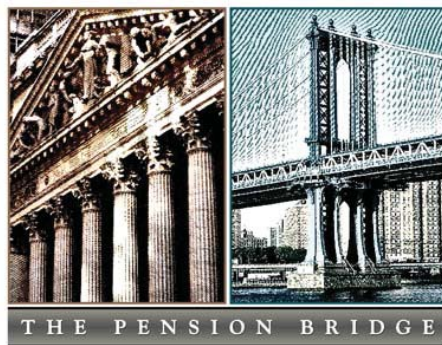
☎ (516) 818-7989

✉ ablake@pensionbridge.com

Please visit www.pensionbridge.com for additional details. **Registration is not available online.**

About The Pension Bridge: We are an innovative company offering educational conferences of the highest quality. Our objective is to provide an education to the institutional investment community while providing an impressive speaker faculty in a setting that is conducive to great networking. We help institutional money managers connect with Pension Funds and Consultants across the country in a fun, enjoyable atmosphere. Our events can act as a stepping stone to a successful financial relationship or simply help build the investment education.

Our management team's unique skills, operating experience, and industry relationships help to make our events the main attraction in the industry. We pride ourselves on being there to cater to our clients' wants and needs. Our ratio of plan sponsor to investment manager allows our events to be the most desirable and accommodating in the conference industry. The Pension Bridge is known for its strength, stability, relationships and operational excellence.



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MEMORANDUM

TO: Oakland Police & Fire
Retirement Board

FROM: David Jones

SUBJECT: Authorization and
Reimbursement of Board/Staff
Travel/Education Expenses

DATE: January 22, 2019

David Jones, Staff member of the Oakland Police and Fire Retirement System board, requests authorization for reimbursement of travel and/or board education related funds for the event detailed below. Staff has verified that budgeted funds are available for this Staff member to be reimbursed.

Staff recommends the reimbursement of travel/education funds for the event below be approved by board motion.

Travel / Education Event: 2019 Pension Bridge Conference

Event Location: Westin St Francis Hotel, San Francisco, CA

Event Date: April 9, 2019 - April 10, 2019

Estimated Event Expense*: \$ 237.00 (estimated)

Notes: _____

* If enrollment, registration or admission expenses are required, the fund will process a check in advance and pay vendor directly; all other board-approved reimbursements will be made upon delivery of receipts to staff by the traveling party. Cancellation of event attendance requires return of all reimbursed funds paid to attendee to the fund.

Respectfully submitted,

Teir Jenkins, Investment Officer
Oakland Police and Fire Retirement System

For questions please contact David Low, Administrative Assistant, at 510-238-7295.

Attachments (if any):

Resolution #7048

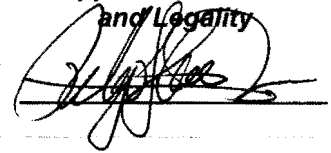
2019 Pension Bridge Agenda

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 7048

Approved to Form

and Legality



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

TRAVEL AUTHORIZATION FOR PFRS PLAN ADMINISTRATOR DAVID JONES TO TRAVEL AND ATTEND THE 2019 PENSION BRIDGE CONFERENCE ("2019 PENSION BRIDGE CONFERENCE") FROM APRIL 9, 2019 TO APRIL 10, 2019 IN SAN FRANCISCO, CA WITH AN ESTIMATED BUDGET OF TWO HUNDRED THIRTY-SEVEN DOLLARS (\$237.00)

WHEREAS, PFRS Plan Administrator David Jones wishes to attend the The Pension Bridge Conference in San Francisco, CA from April 9, 2019 to April 10, 2019; and

WHEREAS, PFRS Plan Administrator Jones is expected to seek reimbursement of expenses from the Board; and

WHEREAS, in compliance with the Board Travel Policy, which requires that PFRS Board/Staff Members seek PFRS Board approval prior to travel; and

WHEREAS, in compliance with the Board Travel Policy, the Board/Staff Member has presented costs for travel, lodging and/or registration fees to the Pension Bridge Conference in the amount of approximately \$237.00; and

WHEREAS, PFRS Plan Administrator Jones seeks Board approval of the fore mentioned estimated costs to travel to San Francisco, CA to attend the Pension Bridge Conference from April 9, 2019 to April 10, 2019; now, therefore, be it

RESOLVED: PFRS Plan Administrator David Jones's travel request and estimated budget of \$237.00 to attend the 2019 the Pension Bridge Conference is hereby approved.

IN BOARD MEETING, CITY HALL, OAKLAND, CA FEBRUARY 27, 2019

PASSED BY THE FOLLOWING VOTE:

AYES: KASAIN, GODFREY, MELIA, MUSZAR, SPEAKMAN, WILKINSON
AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY

THE PENSION BRIDGE ANNUAL

April 9th & 10th, 2019 | Westin St. Francis Hotel, San Francisco



THE PENSION BRIDGE ANNUAL

April 9th & 10th, 2019 | Westin St. Francis Hotel, San Francisco

The Pension Bridge Annual Conference provides the highest level of education and networking to the institutional investment community. A mix of Public Funds, Corporate Funds, Foundations, Endowments, Union Funds, Taft-Hartley Funds, Family Offices, Sovereign Wealth Funds, Consultants and Investment Managers will come together for this exclusive event.

The Pension Bridge Annual provides the industry's only controlled attendance structured event. This helps The Pension Bridge to maintain the best conference ratio in the industry. **There will be over 200 Pension Fund Representatives and Non-Discretionary Consultants in attendance. We have allowed for only 100 Manager Firms.** This better than 2:1 ratio, combined with participation from the most influential industry figures, creates a more enjoyable environment for all.

LEARN FROM THE EXPERTS

ABOUT THE MOST IMPORTANT TRENDS, CHALLENGES, OPPORTUNITIES AND STRATEGIES TO ATTACK THE LONG-AWAITED CYCLE CONTRACTION THAT WILL SHAPE OUR INDUSTRY FOR THE IMMEDIATE AND LONG-TERM FUTURE:

- | | |
|--|--|
| ✓ Options to Ease the Pension Funding Crisis and Unsustainable Costs | ✓ The Benefits and Concerns of Multi-Asset Strategies |
| ✓ Best Strategies and Approaches to Mitigate Tail Risk | ✓ Expected Performance for Various Hedge Fund Strategies during the Next Downturn |
| ✓ Best Implementation and Allocation Strategies for a Public Fund LDI Program | ✓ Where is the Relative Value in Credit Strategies? |
| ✓ Does Risk Parity Make Sense Now? Expectations for Results during the Next Downturn | ✓ Which Sectors and Strategies will create the Best Opportunities in Distressed? |
| ✓ Where are the Greatest Risks and Triggers in the Debt Markets? | ✓ Biggest Concerns for Private Equity and Best Approaches to New Investments |
| ✓ Gender Diversity and Advancement of Women in the Industry | ✓ Lower Return Expectations for Real Estate? Where is the Most Risk? |
| ✓ How can your Future Investment Returns be Impacted by Climate Change? | ✓ Most Appealing Infrastructure Sectors, Geographies and Approaches |
| ✓ What are the Latest Trends and Most Promising Areas for Impact Investing? | ✓ The Portfolio Benefits of Farmland and Benefiting from the Global Food Demand |
| ✓ Why should Plan Sponsors Actively Manage Currency - Hedging vs. Alpha? | ✓ Identifying Water Risks in your Portfolio and Profiting from Water Stress and Scarcity |
| ✓ Challenges and Concerns in China and other EM Regions | ✓ Insights from Impactful CIOs on Risks, Allocations and More |

We remain in a low growth, low return environment with unfavorable demographics in the U.S. The Pension Bridge Annual will uncover various structural transformations and investment ideas that will be beneficial for long-term fiscal sustainability.

In addition to the listed themes above, we will be covering many more challenging issues that are crucial to the investment decision making process during these uncertain economic times. We will learn from the best about how to adapt in our industry which is always evolving and transforming.

THE PENSION BRIDGE ANNUAL HAS TWO GOALS IN MIND

First is to provide the **highest level of education** with the top speaker faculty. This highly regarded group will bring forth influential insights and concepts. The second goal is to help **build relationships** between the pension plans, consultants and investment managers. We have provided the best possible environment for this event which is designed to be conducive for networking. We will cap off the event with a fun and enjoyable networking outing necessary for maintaining relationships and connecting with your peers and prospective business contacts.

We look forward to a strong event and a very productive one from both an educational and relationship perspective. We have structured this conference in a manner that will be most productive and beneficial for you. We hope that you will join us to be amongst your industry peers to learn about the most up-to-date insights, investment strategies and trends.

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TUESDAY, APRIL 9TH
Westin St. Francis Hotel, San Francisco

7:00 AM – BREAKFAST

SPONSORED BY: **JENNISON ASSOCIATES**

8:00 AM – OPENING REMARKS

8:05 AM – KEYNOTE SPEAKER

Speaker:
Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer, **Massachusetts Pension Reserves Investment Management Board, (PRIM)**

8:35 AM – KEYNOTE SPEAKER – MACROECONOMIC VIEW

- Fed Balance Sheet Unwind – Effects for U.S., the Dollar and Globally
- The Everything Bubble
- Longer Term Implication of Tax Cuts Adding to the Deficit
- Debt to GDP Ratio
- Buffett Indicator at an Extreme
- Valuation Levels
- Margin Debt
- Corporate Debt Growth for Financial Engineering
- High Yield Defaults Outlook
- Algos and Passive Investment as a Market Risk
- Inflation/Deflation Debate
- Where are the Most Unfavorable Demographics Globally?
- What Countries Debt and Risks pose the Biggest Threat in Europe? Does that put the EU and Euro at Risk?
- China – Debt Levels, Leverage and Real Estate Bubble
- Japan's Demographics and Debt – what might be the Far-Reaching Effects?
- Which are the Shakier Emerging Market Countries that have High Debt that can be Hurt by a Strong Dollar?
- Derivatives Risk
- Expectations for Equities and Bonds
- Expectations for the Next Black Swan?
- What are the Most Appealing Investments for Low Return Environment?

PRESENTED BY: **BLACKROCK®**
Speaker:
Rick Rieder, Managing Director, Global Chief Investment Officer of Fixed Income, **BlackRock**

9:05 AM – THE DEEPENING CRISIS OF UNFUNDED PENSION PLANS AND ITS FAR REACHING EFFECTS OF FISCAL DISTRESS

- Background on how we got here – what are the Contributing Factors?
- What are some Examples you've seen when Cities, Counties, School Districts and Other Local Entities are Forced to Contribute More to Keep the State System Afloat?
- Have you seen Cut-Backs on Repairing Streets and Bridges or Staffing Police and Teachers due to Pensions Crowding out Budget Spending? Any Other Cut-Backs you've seen in Education, Public Safety and Social Services?
- What sort of Higher Taxes have you seen for Scantier Services in Returns?
- What Recent Controversial Pension Reform Bills have been Passed Into Law? What were some Concessions Received and those they Didn't?
- What Trends have you seen in regards to Court Rulings on Reduced Benefits and Higher Contributions? Are the Courts Hindering Repair of this Funding Crisis?
- Do you Envision Further Credit Downgrades for Particular States due to High Unfunded Pension Liabilities? How much would this Further Complicate the Budget and Hamper Economic Growth?
- If we Face Another Strong Market Decline or Recession, what's the Time Frame for when Particular States or Plans would Face Insolvency?

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- What Actions should be taken by the Joint Select Committee on Solvency of Multiemployer Pension Plans?
- Aside from Raising Taxes, what are some Possible Options to Overcome Unsustainable Pension Costs? Thoughts on Initiating a Tax on Plan Members?
- Is Issuing Bonds to Pay Off Shortfalls a Solution or a Gamble?
- How Far Reaching would a Government Bailout be if Congress included Provision in the Budget Deal for Federal Funds towards Pension Plans?
- What are the Methods of Navigating the Challenges Posed by your Governance Structure?
- Are you Getting Pressured that your Investment Costs are Too High? How do you respond to such Allegations?
- Which Investment Strategies or De-Risking Strategies do you Favor for Decreasing a Pension Plan's Unfunded Liability While Helping to Preserve Cash?
- Will we see a Shift to Hunt for Long-Term Cash Flow Investments through Partnerships and Co-Investment Structures?
- Do you believe Plans in Danger will Cut Illiquid Asset Classes in Favor of More Liquid Investments in order to Meet Benefit Payments?
- Do you see the Benefits of Adopting a Hybrid DB/DC Plan for New Hires? What are the Drawbacks?

Speakers:
David Eager, Executive Director, **Kentucky Retirement Systems**
Dominic Garcia, Chief Investment Officer, **Public Employees Retirement Association of New Mexico, (PERA)**
Glen R. Grell, Executive Director, **Public School Employees' Retirement System, (PSERS)**
Richard W. Ingram, Executive Director, **Teachers' Retirement System of Illinois**

9:55 AM – REFRESHMENT BREAK

SPONSORED BY: **GCM GROSVENOR**

10:25 AM – RISK MANAGEMENT AND ADOPTING A RISK CULTURE

(A) KEY CONSIDERATIONS AND TOOLS FOR MANAGING RISKS

- Overview of the Transformation from an Asset Allocation-Centered Process to a More Comprehensive Risk Allocation-Based Process
- Are there Governance Challenges that have Prevented Wide-Spread Adoption of a Risk Allocation Framework?
- How has taking a Risk Allocation Approach changed the Structure of your Plan's Fixed Income Investments? Understanding Return Seeking Fixed Income and Traditional Risk Reducing Fixed Income
- What Irregularities have we seen in Portfolios as Asset Classes are Redrawn and Renamed via Risk Allocation? Are we still too Over-Reliant on Equities?
- Challenges of Performance Monitoring, Risk Data and Systems – getting good Risk Information Across All Asset Classes and Investment Vehicles
- How can considering Diversification and Risk Independently help Investors Build More Efficient Portfolios?

(B) TOP PENSION RISKS WE SHOULD BE MOST WARY OF

- Drawdown Risk
- Transparency and Liquidity Risk – Basing it on a Cost/Benefit Evaluation
- What's the Best Approach to Liquidity Risk as it applies to Meeting Future Cash Flow Obligations?
- Leverage Risk – what are the Best Approaches to keep these Risks within Acceptable Parameters?
- Equity, Credit, Duration, Inflation/Deflation, Currency, Geopolitical Risk Considerations
- Understanding Asset Class Correlation and Behavior Risk – Tendency of Interest Rate and Inflation Shocks Driving Both Equities and Bonds in the Same Direction, (Correlations Change)
- Other Risks such as Model Risk or Operational Risk
- How does Stress Testing or Scenario Analysis factor into your Process?
- What should Keep CIOs and Staff Up at Night?

(C) COMMUNICATION

- How do you Communicate your Risk Tolerances with your Board, Managers and Media?
- How has the Role of Fiduciary Responsibility Changed?
- What should Boards/Organizations Consider when Building a Risk Culture?
- How do you go about Educating a Board on Risk?
- What Metrics Aid in the Decision-Making Process?
- How does a Plan's Size affect the Approach to Pension Risk Management?

Speakers:
Timothy F. McCusker, FSA, CFA, CAIA, Chief Investment Officer, Partner, **NEPC**
James Nield, CFA, FRM, Chief Risk Officer, **Teacher Retirement System of Texas**

11:15 AM – RISK MITIGATING STRATEGIES

- Understanding Tail Risk Frequency, Severity and Impact
- Why should this be its Own Bucket or Asset Class? What Type of Allocation is Warranted?
- Understanding the Value of Risk Mitigating Strategies – why is it Important to Improve your Risk/Return Profile Now?
- What Risks can be Efficiently Hedged in the Financial Markets?
- What Types of Strategies and Approaches are used to Hedge? Advantages and Disadvantages of Each Approach?
- What are the Merits of an Option Overlay Strategy In Lieu of Owning a Tail Risk Hedge?
- What are the Trend or Momentum Following Strategies that you Prefer for Downside Protection?
- Why is Global Macro the Ideal Hedge Fund Allocation for Diversification and Decreasing the Depth of Drawdowns?
- How has Managed Futures Performed During Periods of Market Stress or Crisis Events?
- Long Duration U.S. Treasuries as a Diversifier in Extreme Market Conditions
- Building a Tactical Portfolio using Futures to Reduce Tail Losses and Enjoy Larger Gains
- Put Options as Insurance
- Using Information from the Derivatives Markets to assess Stress Points – where we are seeing Tail Risks Building?
- Systematic Risk Premia Allocations – does it Enhance Performance Outcomes? Are Short Track Records and Wide Variations in Products Concerning for Trend Risk Premia?
- Are there Alternative Ways to Deal with Equity Risk? How Defensive are these Strategies?
- What's the Most Challenging Aspect of Implementing a Risk Mitigating Strategies Program?
- How do you Measure Success?

11:50 AM – LIABILITY DRIVEN INVESTMENT (LDI), AND HOW IT CAN BE APPLIED TO PUBLIC DB PLANS

- What have Plans done to address the Hurdles of Low Pension Funded Status and Low Interest Rates over the past few years?
- Does LDI Make Sense Now Considering Current and Future Market Conditions? What is the Risk/Return?
- Are Plan Liabilities the only appropriate Benchmark?
- How does a Public Fund Implementation and Liability-Focused Allocation Differ from a Corporate Fund?
- Are some Approaches More Appropriate in a Less Liquid Fixed Income World?
- Do Plans need to Customize their Liability Hedging Allocation?
- For a Public Fund, what Cash Flow Generative Strategies would allow for the Portfolio to Reduce the Funding Ratio Volatility and Meet the Benefit Payment Needs?
- Understanding the Components of Performance Measurement and Evaluation – Risk Budgeting, Scenario Analysis, Liquidity Analysis and Performance Reporting
- What are some Industry Trends that Clients should be aware of in the LDI Market?
- Beyond the Ability to Earn Excess Returns, what should Investors look for in Selecting LDI Managers?
- Will we see a Strategy More Common in Europe with Plan Sponsors Combining an LDI Strategy with the Purchase of Longevity Insurance to Further Reduce Risk?
- What are some Common Myths that are Holding Back Plan Sponsors from Implementing a De-Risking or LDI Strategy?

PRESENTED BY:



Speaker:
Abdallah Nauphal, Chief Executive Officer, Chief Investment Officer, **Insight Investment**

12:20 PM – RISK PARITY

- Risk Parity Explained
- Do you believe Risk Parity can Play a Role In and Contribute to Market Volatility?
- What are the Hidden Risks and Drawbacks of Risk Parity Portfolios?
- Does Risk Parity Make Sense Now if we Expect Low Market Returns in the Future?
- How did Risk Parity Perform during the last Financial Crisis Compared to other Asset Mix Models? Would you Expect Similar or Different Results for the Next Downturn?
- Is it possible that Bonds will Become Less Likely to Protect against a Large Drawdown in Equities?

- Is there an Over-Reliance on Bonds with Current Valuations? Should we be Worried about Leverage or Leveraging the Inappropriate Assets?
- Commodities Role in Risk Parity and Expectations
- Active Strategy? Passive? Extent to which a Risk Parity Portfolio is Managed?
- Leverage and Illiquidity Do Not Mix – any Approaches to Avoid this Combination?
- What Progress have we seen towards Adopting an Appropriate Benchmark?
- Thoughts on Measuring Expected Tail Loss Rather Than Volatility for Tail Risk Parity? Can it be More Effective?
- How do Investors Bucket the Risk Parity Strategy within the Asset Allocation Framework?
- How should Investors think about Differences in Forecasting Volatility when Selecting a Manager?

Speaker:
David Villa, CFA, Chief Investment Officer, Executive Director, **State of Wisconsin Investment Board, (SWIB)**

12:35 PM – LUNCH



1:45 PM – UNCONSTRAINED FIXED INCOME

- Assessing the Current Environment – Implications on Unconstrained for where we are in the Credit Cycle, Interest Rate Cycle and Fed Unwinding of QE
- How do you Approach Portfolio Construction with the Need for Increased Disaggregation of Alpha Sources?
- With the Proliferation of Products which are Diverse, what is the Return Objective?
- How do you Benchmark and Define Success for Unconstrained Fixed Income Strategies?
- With Non-Linearity of Risk Correlations and Volatility Not Being Stable through time, how are you Taking Advantage of Current Market Dislocations?
- How Important is Liquidity Management? Should Investors think about Transparency of Positioning in Unconstrained Fixed Income?
- What are the Implications of Reduced Liquidity? Have you Increased your Use of Bond ETFs to offer Enhanced Liquidity? If so, what were some Other Reasons for this Decision?
- Is the Recent Tilt Towards Higher Carry or Less Carry within specific Spreads such as Bank Loans, High Yield and Syndicated Loans, EM Debt, etc.?
- Where do you see the Greatest Risks in the Debt Markets and what might be the Trigger Points that Enhance that Potential?
- Are you Building Dry Powder at this point in the Credit Cycle?
- What Progress have we seen for a Factor or Risk Premium Approach for Assessing Risk?
- Do you see a Supply/Demand Imbalance in Long-Duration Fixed Income? What does that Imply for Investors?
- Using Structured Products, Swaps and Derivatives to Create Alpha and Hedge Volatility
- Emerging Markets Local Fixed Income – what are the Opportunities? Currency Risk Factors? Should Currency Exposures be Hedged or Unhedged?
- What are your Expectations and Outlook for Corporate Debt? Do you see a Disaster in the Making?
- Taxable Municipals vs. Corporate Bonds – Which Make More Sense Now?
- Do you view Bank Loans as a Hedge in Rising Rate Environment?
- If Trump Moves on GSE Reform, how would that impact the MBS Market?
- Understanding how to Select Alternative Managers – Multi-Sector, Multi-Region, Multi-Currency Skill Set or Duration Range Targets?

Moderator:
Keith M. Berlin, Director of Global Fixed Income and Credit, **Fund Evaluation Group**

2:30 PM – WOMEN AND THEIR INCREASING ROLE IN INVESTMENT MANAGEMENT

We'll revisit this topic as it created quite the buzz at last year's event and we'd like to keep the momentum moving for this initiative. Diversity, specifically for women, is a standard that can be achievable when viewed as a requirement, not a commercial imperative.

- What are some Ways we can Encourage Organizations to Embrace and then Require Gender Diversity?
- What is the Most Common Reason why Investors do not have Specific Women-Owned Investment Mandates? How Big an Issue is Lack of Supply?
- With just 6.5% of Global Private Equity Firms having Partners or Managing Partners that are Women (source: Preqin), how do you approach Beating those Odds?
- How does Diversity Impact your Organization? Any Gender Diversity Experiences you can Share?
- Have we seen any Statistical Performance for Women and Minority-Owned Investing? What about the Performance of Female Hedge Fund and Private Equity Managers?
- What Programs or Organizations do you believe are Helpful in the Advancement of Women in the Industry?

- What Programs or Organizations do you believe are Helpful in the Advancement of Women in the Industry?
- What Can Institutions do to Support Women's Advancement to the Top Levels of Leadership?
- How might Specialization be an Important Way for Women to offer a Diversified Strategy Approach?
- Controversial Topic – Is there a way the MeToo Movement can be Destructive with Quotas Resulting in Distortions of Decision-Making and Passing up Superior Candidates for a Job?
- Thoughts on the FTSE Russell Women on Boards Leadership Index Series and its Ability to Achieve Gender Diversity?
- What Career Advancement Advice would you give to Younger Women who are Passionate and Fairly New to Investment Management?

Moderator:
Meredith A. Jones, Partner & Head of Emerging Manager Research, **Aon Hewitt Investment Consulting**

Speakers:
Ronald D. Peyton, Executive Chairman, **Callan**
Dana S. Johns, MSF, Senior Portfolio Manager, **Maryland State Retirement and Pension System**
Susan E. Oh, CFA, Senior Portfolio Manager, **Pennsylvania Public School Employees' Retirement System**
Kristina P. Koutrakos, CAIA, Director of Portfolio Strategy, **Virginia Retirement System**

3:10 PM – REFRESHMENT BREAK

SPONSORED BY:



3:40 PM – ENVIRONMENTAL, SOCIAL AND GOVERNANCE, (ESG)

- What's the Difference Between ESG, Socially Responsible Investing, (SRI) and Impact Investing?
- Do we have Proof that ESG Integration Adds Value?
- ESG Fund Performance vs. Traditional Funds
- What are Some Common Myths About ESG?
- Do Firms with Good Performance on SASB Topics Outperform Firms with Poor Performance on those Topics?
- How do you Approach ESG from a Fiduciary Standpoint and for the Development of your Plan's Investment Beliefs?
- Why are UN Sustainable Development Goals Important? What Ways are you using them to Help Investing in New Opportunities and Identify Future Areas of Risk?
- How should ESG be best Incorporated into the Investment and Due Diligence Process?
- What Tools, Data or Trends have we seen for ESG Implementation? What Initiatives are Focused on Driving Towards a Sustainable Global Economy?
- What are the Perceived Obstacles to applying an ESG Framework to the Stock Selection Process?
- How do ESG Factors Interact with Credit Quality, Affect the Pricing of Credit and how do they Affect Credit Returns?
- How can your Future Investment Returns be Impacted by Climate Change? Aside from Assessing Risks to Real Estate in Rising Sea Level Coastal Areas, what Risk Factors should we be Analyzing?
- What Approach should be taken to have a Climate Change Action Plan in place to address these Climate Risks?
- How should we approach Carbon Risk Management within an ESG Framework?
- Considerations for Investing in a Passive ESG Index – thoughts on Low Carbon Index? Combining ESG with Smart Beta?
- Will there come a time when Plan Sponsors Only Invest with UN PRI Investment Manager Signatory Firms?
- How are you Integrating ESG into your Real Estate, Private Equity and Infrastructure Investments?
- Understanding Relevant Benchmarks for ESG Risk Measurement

Moderator:
Herman Brill, Director, Office of Investment Management, **United Nations Joint Staff Pension Fund**

Speaker:
Michael McCauley, Senior Officer, Investment Programs & Governance, **Florida State Board of Administration, (SBA)**

4:15 PM – IMPACT INVESTING

Intent to generate a social and/or environmental impact in addition to a financial return. Tackling the toughest societal challenges: global health (treating and preventing disease), sustainable food systems through better agriculture, education, access to water (resource constraints), environment and climate change, diversity and inclusion, economic development, community building and more.

- The Role of UN's Sustainable Development Goals in Impact Investing Strategy
- What does the Future Hold for Impact Investing?
- What are the Top Challenges or Roadblocks for Investors?
- What are the Opportunities for Impact Investing in Emerging Markets versus Developed Markets?
- What are the Latest Trends in Impact Investment Globally? Most Promising Areas?

- Investing in Technology for Social Impact
- Measuring Social Impact – should you verify that the Funds you Invest in have their Portfolios Independently Measured and Verified by B Lab's GIIRS Impact Rating System?
- What are the Biggest Areas Risks of Impact Investing Projects?
- Do Larger Firms have an Advantage in this Space?
- Why is Private Equity Particularly Well-Suited for Impact Investing?
- What are some of the Socially Impact Bonds or Municipal Impact Bonds you've Invested in?
- Do you find it Difficult to Measure the Impact of Public Market Investments?
- What Evidence have we seen that Impact Investments will Reap Healthy Returns?
- How should Impact Investors think about Reporting?
- For the Next Inevitable Downturn or Recession, will Investors Abandon this Space? When and How Will it Become Mainstream?
- Cambridge Associates PE/VC Impact Investing Benchmark – any early Conclusions Despite the Limited Sample Size and Overall Youth of the Funds?

Moderator:
Laura B. Wirick, CFA, CAIA, Principal, Consultant, **Meketa Investment Group**
Speaker:
Falah Madadha, Senior Investment Officer, **Silicon Valley Community Foundation**

4:45 PM – EMERGING MARKETS

- Macro Environment and Recent Developments – how does that affect your Investments?
- With Central Banks Tapering, do you see a Correlation with Weaker EM Returns? What about a Stronger Dollar for a Prolonged Period? Weak Commodity Prices?
- What would be the Effects on Emerging Markets if we see Weak Growth in the U.S.? Instability in the Eurozone? Slowdown in China?
- How will the Trade War affect China and other Emerging Markets? Any Markets that are More Insulated?
- What is an Appropriate Long-Term Allocation to Emerging Markets? What should that Allocation look like, (Public Equity, Fixed Income, Private Equity, Frontier Markets, Alternatives, etc.)?
- What are Realistic Return Expectations? How might that Differ based on Region?
- How do Valuations look Relative to Risk in Different Regions?
- Outlook for China – are you Concerned about their Credit and Real Estate Bubbles? Thoughts on Trade Challenges?
- What are the Key LP Concerns and Challenges in Particular Regions?
- Identify what Country or Region you see Favorable Demographic Trends such as a Growing Middle Class, Urbanization, Promising Consumer Buying Behavior and Economic/Fiscal Reforms
- Which Markets in Frontier Countries can you Profit from Strong Growth and Access a Lower Correlation?
- What can be done to Mitigate Currency Risks?
- After seeing Argentina and Turkey with a Currency Crisis caused by High Debt and Surging Inflation that follows, are there Any EM Countries to Avoid?
- The Case for Emerging Markets Corporate Debt
- What Metrics are you using to Determine Relative Value in Sovereign Bonds?
- Public vs. Private Emerging Markets – Benefits and Drawbacks of each
- Active vs. Passive Debate
- Choosing an Emerging Markets Fund or Manager – should you be Investing by Region, Country or Sector?
- Given the Current Environment, will Emerging Markets Outperform Developed Markets?

Speaker:
Mike Rosborough, Senior Portfolio Manager, Investment Director, Global Fixed Income, **California Public Employees' Retirement System, (CalPERS)**

5:25 PM – COCKTAIL RECEPTION

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6:40 PM – COCKTAIL RECEPTION CONCLUDES

WEDNESDAY, APRIL 10TH

Westin St. Francis Hotel, San Francisco

7:00 AM – BREAKFAST

8:00 AM – KEYNOTE SPEAKER

The Science and Technology Revolution – Alpha by Investing in Innovation

- Historic Transformation
- Accelerating Pace of Innovation
- Investment Opportunity through Future Innovation
- Future Innovations and their Impact – Transportation as a Service, Artificial Intelligence/Deep Learning, Robotics, Blockchain, Internet of Things, Life Sciences, Improvements in Education
- Economic Modernization of China – Industries with Opportunity
- Economic Modernization of India Coming Into Focus

Speaker:
William J. Coaker Jr., CFA, MBA, Chief Investment Officer, **San Francisco Employees' Retirement System, (SFERS)**

8:30 AM – THE NEXT FRONTIER OF MULTI-ASSET INVESTING

- How has Multi-Asset Investing Evolved over the Years? How do you Navigate the Various Options and Approaches that are available today?
- Do these Strategies Reduce Correlation, Lower Volatility and Limit Downside Risk or Drawdown? If so, by How Much?
- What are the Common Sub-Asset Classes Included in Multi-Asset Strategies?
- Constructing the Portfolio – Risk Factor Approach
- How are Investors Incorporating Multi-Asset Strategies in their Portfolios?
- How do you see this Space Evolving in a more Treacherous/Volatile Market? Do you Worry that Dynamic and Tactical Asset Allocation Decisions that have been Little Tested in Recent Years can Harm Performance with Too Heavy a Reliance on Market Timing?
- Aside from Asset Allocation Skills, what other Skills are Required for the Ability to Generate Alpha and be Successful?
- Are Tactical Tilts More Transparent Today?
- How Worrisome is the Reliance on Stable Correlation Relationships with No Certainty those Relationships will Persist?
- How Much Value can one get Via Tactical Asset Allocation if you have the Right Expertise?
- Do you believe that Multi-Asset Funds have Sufficiently Incorporated Risk Controls into the Design of their Products?
- Understanding Dynamic Tail Risk Management Via Asset Allocation
- Is Excessive Leverage a Concern?
- How do you Measure Performance?
- Any Favorable Trends in Fees for Investors?
- How do Multi-Asset Managers Differentiate Themselves in this Crowded Field?

PRESENTED BY: **Janus Henderson**
INVESTORS

Speaker:
Ashwin Alankar, PhD, Senior Vice President, Global Head of Asset Allocation & Risk Management, **Janus Henderson Investors**

9:00 AM – HEDGE FUNDS

(A) CURRENT AND FUTURE STATE OF THE HEDGE FUND INDUSTRY

- Will Hedge Fund Underperformance Shift and Why?
- With Difficult Investment Conditions Pushing Many Seasoned Firms and Legendary Investors Out of the Business, does that mean some Strategies have Stopped Working or are Less Accurate? How do you approach this Struggle or go about Making your Strategy More Flexible?
- What is an Appropriate Fee Structure for Hedge Funds? Have you Seen More Fee Structures that Reward Alpha and Not Beta for Better Alignment of Interests and Avoid Overpaying for Underperformance?
- As an LP, do you find it Difficult to get Hedge Fund Managers to Provide Accurate Fee Information in a Timely, Efficient Manner? Do you believe we're In Need of a Standardized Reporting Template like ILPA for Private Equity?
- Why do Smaller Hedge Funds Outperform?
- With Crowding in FAANG and other stocks, do you see this as a Risk and a Contrarian Indicator for those Equity Holdings when the Cycle Turns?

What is Driving the Increase in Demand for Strategies Uncorrelated with the Capital Markets? Which Low Correlated Strategies are Most Attractive?

(B) IMPLEMENTATION OPTIONS

- If there was a Hedge Fund Strategy you would Invest in over the next Few Years, which one would it be and why?
- What sort of Downside Protection, Drawdown or Return Range do you expect we'll see from each of the Different Hedge Fund Strategies during the Next Market Downturn?
- Do you find Opportunities within the Global Macro Space Attractive and if so, why?
- Managed Futures – Diversification and Performance during Periods of Market Stress or Crisis Events. How much can it Decrease the Depth of Portfolio Drawdowns and Volatility?
- What is the Future of the Fund of Funds Space? How has it Changed in Recent Years? Where will Fees be? What will it take to Stay Competitive?
- Long-Short Equity Hedge Funds – what Differentiates Managers that have been able to Outperform?
- Liquid Hedge Fund Products such as UCITS, 40 Act and Hedge Fund Replication – are they a Viable Alternative and Under what Circumstances? How has their Performance and the Lower Fees Fared to Hedge Funds?
- The Role of Alternative Beta/Risk Premia Strategies in a Hedge Fund Portfolio – what are the Appropriate Expectations from a Sharpe Perspective?
- How do Emerging Managers Differentiate Themselves in the Quest for Institutional Capital?
- Implementation Considerations for Due Diligence, Portfolio Function and Manager Selection. What are the Key Traits you should be looking for? Key Characteristics for Quantitative Strategies?

(C) PORTFOLIO CONSTRUCTION AND RISK MANAGEMENT

- What is the Role of Separate Managed Accounts? What are the Benefits? Are they Better than Commingled Funds?
- Any Recent Trends you've seen for Pension Plans as far as Fees, Transparency, Customization, Increased Partnership, etc.?
- As an Investor, do you Negotiate the Frequency of Performance Fee Payments (Fee Crystallization), with your Managers so that it Doesn't Lead to Hidden and Higher Costs?
- Importance of Operations Due Diligence. Any recent Developments? How often should Operations be Reviewed?
- What Trends do you see Developing in Regards to the way we Evaluate Liquidity Provisions for Hedge Funds?

Moderator:
David E. Franci, Managing Director, Absolute Return, **San Francisco Employees' Retirement System, (SFERS)**

Speakers:
Dr. John Claisse, CEO, **Albourne America**
Elizabeth T. Burton, Chief Investment Officer, **Employees' Retirement System of the State of Hawaii**

9:45 AM – REFRESHMENT BREAK



10:15 AM – CREDIT STRATEGIES

- Current State of the Credit Market
- What will be the Catalyst that will cause Credit Spreads to Widen and Defaults to Rise?
- What is the Opportunity Set in Credit Strategies? Where is the Relative Value?
- What Subsectors of Credit are Most Attractive given the Stretched Valuations? Any Areas you are Avoiding?
- Do you see Investors being more willing to Trade Liquidity for Yield and should that be of Concern?
- High Yield Market – is it possible to see a High Yield Meltdown with a Lack of Liquidity? Understanding the Corporate Debt Risk Factors and the Strong Correlation to Equities

- Bank Loans Overview
- Outlook and Considerations for Structured – Are CLOs Safer than Pre-Crisis?
- Can Securitized Credit Weather Market Turbulence? How has it Performed During Previous Credit Events? Is there a Lower Correlation to Broader Fixed Income Sectors?
- Outlook for Emerging Market Debt
- Public vs. Private Credit
- Is Direct Lending in a Bubble and how would you Position for that?
- Opportunities and Risks for Europe and Asia
- How much should Plan Sponsors be Allocating to Credit? What is the Optimal Structure to a Credit Portfolio?
- Considerations for Selecting a Manager and Strategy
- Why should Multi-Asset Credit Strategies be a Tactical Asset Allocation with Dynamic Management for Pension Plans?
- How do we Develop Return and Risk Expectation for this Asset Class?
- How do we Benchmark Performance?

Speaker:
Peter E. Ehret, CFA, Director of Internal Credit, **Employees Retirement System of Texas**

10:55 AM – DISTRESSED INVESTING – OPPORTUNISTIC AND SPECIAL SITUATIONS

- How does the Interest Rate Environment and Fed Balance Sheet Unwind Affect your Plans?
- What are your Expectations for Default Rates going forward?
- What is Most Worrisome in Distressed Markets Today Versus a Few Years Ago?
- When will the Vast Sums of Undeployed Capital come in off the Sidelines? Do you Need an Economic Downturn?
- Is Direct Lending a Bubble and if so, how would you Invest When it Pops?
- Where do you see the Largest Demand from Clients? What are they Most Interested in?
- Which Sectors, Strategies and Geographies will create the Best Opportunities? Any Areas that should be Avoided?
- What Distressed Opportunities are we seeing the Energy Sector?
- What's the Potential Impact of the Debt Piled up by Corporations for their Share Buybacks?
- Will the Prevalent Covenant-Lite Deals create Problems during the Next Cycle?
- What are the Opportunities and Risks in Europe? Any Countries, Sectors or Types of Deals that Stand Out?
- Do you see Opportunities in Asia or Elsewhere Globally?
- What are the Recent Leverage Trends?
- Do you worry about a Liquidity Problem in ETFs and other Structured Credit Vehicles if there is Credit Event?
- Has the Regulatory Environment Changed the Opportunity Set? How has it Impacted your Firm?
- How do Investors go about Choosing the Right Distressed Strategy, Size, Investment Style and Approach?
- How will the Different Implementation Approaches affect Expected Returns? Control vs. Non-Control? Private vs. Public?
- Distressed Debt Vehicles in Hedge Fund Format vs. Private Equity Drawdown Structures – what are the Pros and Cons of Each?
- What Skill Sets/Characteristics should Pension Plans look for in a Distressed Manager?

11:30 AM – CURRENCY HEDGING AND CURRENCY ALPHA

(A) CURRENCY MARKET OVERVIEW

- What are the Factors Driving Currencies Today?
- Do you Worry about the Uncertainty Surrounding the Euro and EU?
- What is the Relationship Between Volatility and Currency Returns?
- Can Currencies be Forecasted via Fundamentals, Cycles and Trends?
- Benefits of Active and Dynamic Currency Management
- What are the most Common Reasons Asset Owners give for Not Actively Managing Currency? Are these Reasons Valid or Not?
- What is the Impact Forex can have on Overall Risk and Returns for International Equity and Bond Portfolios?
- Widely Confused Difference Between Currency Hedging and Currency as an Asset Class – how do they Differ in terms of Implementation Approaches?
- What are the Merits and Demerits of Adopting a Hedging Program vs. an Alpha Program?
- Different Skills Required for Currency Hedging vs. Currency Alpha – should a Different Manager be used for Each Approach or is it Possible to be Skilled in Both?

(B) CURRENCY OVERLAY HEDGING

- Given Plan Sponsors Non-U.S. Exposure, what Factors should be Considered in the Determination of Implementing a Currency Hedging Program?
- Is there an Optimum Currency Hedge Ratio for a Plan?
- How much of a Reduction in Portfolio Volatility and Risk should be Expected?
- Can it be More Beneficial to be Unhedged?
- Hedging Costs – how should this factor into your Decision?

(C) CURRENCY ALPHA

- How does Employing a Currency Alpha Strategy fit into an Asset Allocation Framework?
- Benefits of Non-Correlated Returns to Equities, Fixed Income and Alternative Investments
- How does Investing in Currency Diversify and Reduce Risk? Natural Diversifier for the Duration Risk in Bonds?
- How do you Manage Risk Factors?
- What are the Return Expectations?
- When considering Investing in an Active Currency Strategy, what should you look for in a Manager?

Moderator:
Andy T. Iseri, CFA, Senior Vice President, Global Manager Research, **Callan**

12:00 PM – LUNCH

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1:05 PM – PRIVATE EQUITY

- What's your Biggest Concern – Valuations, Excess Dry Powder, Downturn, etc?
- How are you Positioning Your Portfolio given the Current Market Conditions?
- Any Lessons Learned from the Financial Crisis? What are you doing Differently when Approaching New Investments?
- Protecting your Current Portfolio – how would you Guard Against your Existing Portfolio?
- Where are your Most Optimistic Returns Going Forward as far as Sector, Geography or Niche Strategy? What's your Biggest Worry?
- Which Lower or Non-Correlated PE Strategies have you Allocated to or Favor?
- Where do you see the LP/GP Relationship in the Future when it comes to Separately Managed Accounts, Strategic Partnerships, Co-Investments, LPs Concentrating Portfolios, etc.?
- Transparency and Fees – As an LP, has this Impacted your Ability to Commit Capital? SEC's Impact?
- Have you gotten More Involved in your GP's Valuation Process? How have you Achieved this Transparency Demand? Thoughts on the Fair Value Quality Initiative?
- Thoughts on GPs Selling Minority Stakes to Third Party Investors like Dyal or Petershill? Any Negative Implications that you can Foresee?
- Subscription Lines of Credit and Risk – how can you Better Understand How these Lines have Altered Returns? Thoughts on ILPA's Guidelines?
- Do you believe we're in a Venture Capital/Technology Bubble? How do you View the Venture Space today?
- For Co-Investment Deals that Underperform, what are the Reasons Why?
- Where can we find Good Returns in Private Credit Without Taking Inordinate Risk?
- Why should Secondaries be a Core Holding?
- Issues, Outlook and Opportunities for European PE

Moderator:
Faraz Shooshani, Managing Director, Senior Private Markets Consultant, **Verus**

1:50 PM – INFRASTRUCTURE

- State of the Infrastructure Markets
- Is there Too Much Capital Chasing Too Few Deals?
- With High Competition for Larger Investments, could there be More Return Potential in Smaller Projects?
- How has Performance been and what are the Recent Return Expectations?
- What have been the Effects of the Low Interest Rate Environment on Infrastructure and how might that Affect Returns and Leverage Going Forward?
- Which Sectors are Most Attractive?
- Which Geographies are Most Appealing? Developed or Emerging Economies?
- Approach – Greenfield vs. Brownfield?
- Why is Infrastructure Debt Attractive? Will it deliver for Investors Searching for Yield?

- What are the Biggest Challenges/Risks associated with Infrastructure Investing?
- Do you believe Credit Risk might be Under-Appreciated?
- Opportunities in Public-Private Partnerships?
- How have GPs Adopted ESG Principals?
- What are the Most Attractive Investments within Renewables?
- Listed vs. Unlisted – which do you Favor in a Volatile Market for Downside Protection? Do Rising Interest Rates Favor Either?
- Any Advantages or Limitations for Co-Investments? Separate Accounts?
- What are the Advantages of Open-Ended Funds over Closed-Ended Funds? Will we Continue to see a Surge in Open-Ended Funds in the Coming Years?
- What are the Major Technological Trends that will Shape Infrastructure Investing in the Coming Years?

Moderator:
Todd Lapenna, CFA, CAIA, Partner, Infrastructure & Real Assets, **StepStone Group**

2:25 PM – REAL ESTATE

- Are you Expecting a Drop in Pricing and Lower Returns? What are your Returns Expectations for the next 5-10 Years?
- Where do you See the Most Risk? How are you De-Risking?
- Are you Slowing Down, Maintaining or Increasing your Pace of Investment?
- Where are the Most Crowded Trades? Are there any Less Crowded Trades?
- What are your Return Expectations for Core?
- Within Non-Core, what Risks are Investors Willing to Take?
- What is the Biggest Threat to Commercial in the next few years for this Fully Priced Market?
- Are you Making Pivots or Tilts to Take Advantage of Macro or Socio/Demographic Trends?
- What are you seeing in the Market Today with Respect to Volume of Transactions and Pricing?
- Thoughts on the Bridge Financing Opportunity for Maturing Commercial Real Estate?
- What Real Estate Technology Trends are you Watching Most Closely?
- What's happening with Leverage? LP Preferences for Use of Leverage?
- Any Niche Property Types that you Like?
- Asia and European Real Estate Outlook – Opportunities and Investment Trends
- With the Privatization of Fannie Mae and Freddie Mac a Possibility, what would be the Effect on Real Estate Portfolios?
- Will Co-Investments become more Common?
- Current State of the Real Estate Secondary Market
- Thoughts on Programmatic Joint Ventures?
- Are we still seeing a Decline in Closed-Ended Funds? If so, Why and Will it Continue?
- Larger vs. Smaller Fund Size – which ones will Outperform going forward?
- What Strategies do you see as the Biggest Risks and the Biggest Rewards/Relative Value for the Future?

Moderator:
Christy Fields, Managing Director – Real Estate, **Pension Consulting Alliance, (PCA)**

Speaker:
Anthony Breault, Senior Investment Officer, Real Estate, **Oregon State Treasury**

3:10 PM – REFRESHMENT BREAK

3:35 PM – INVESTING IN FARMLAND

- Demographics, Global Food Demand and Land Scarcity as Macro Drivers
- Is Farmland a Good Investment if we have another Downturn or Financial Crisis?
- How has Historical Performance been?
- What are the Portfolio Benefits?
- Understanding the Evolution of U.S. Farmland Ownership and what the Transition will look like for Institutional Ownership. How might that Compare to Ownership of Timberland?
- What are the Physical-Casualty Risks? Is it a Concern or is it Proactively Managed through Operating Practices of the Farm?
- Would a Drop in Commodities Prices hurt Farmland Returns? Importance of Crop Diversification
- How might this Asset Class be Impacted by Future Regulatory Decisions?
- Thoughts on the Rise in Farmland Debt Strategies that have Attracted Investors?
- Is it Difficult to Access Farmland through Public Markets? Might the Public REIT Market Evolve for Farmland? What are the Pro's and Cons of these REITS?

3:50 PM – INVESTING IN WATER

The World Economic Forum has ranked water as a top global risk for the past several years. The growing focus on water scarcity has many eyeing opportunities. The United Nations estimates that almost half of the world's population will live in areas of high water stress by 2030, with a 40% shortfall between water supply and demand.

- What Factors are Contributing to Water Stress and Risks?
- How are Investors Identifying and Evaluating Water Risks in their Portfolios?
- Does the Ceres Investor Water Toolkit Serve its Purpose to Help Investors Evaluate and Understand Water Risks in their Holdings?
- ESG Social Benefit – Investing in Projects and Companies that will Help Clean, Distribute and Maintain our Water Supply
- Where are the Most Attractive Opportunities?
- Are you Seeing Situations where the Government is Underwriting some of the High Impact Risks of the Project?
- Should Pensions be Seeking Greenfield or Brownfield Investments and Why?
- What are the Biggest Investor Challenges?
- How do you Overcome the Investor Lack of Clarity on the Yield they will Receive once the Project is Built?
- What are your Predictions for Growth in this Space?

4:05 PM – CIO ROUNDTABLE

(A) RISKS, ALLOCATIONS AND MACRO-BASED DECISIONS

- In this Fully-Valued Environment, how are you Balancing the Risk of a Large Drawdown with your Return Goals? Has it Impacted your Asset Allocation?
- Which De-Risking Strategies or Investments with a Low/Non-Correlation have you Allocated to?
- Do you believe your Hedge Fund Strategies will provide a Cushion for the next Market Downturn? How do you use them to Reduce Risk?
- Have you Trended Towards a Passive Equity Allocation? When Volatility Rises, do you Believe Active Managers will Outperform?
- Have you made Long-Term Cash Flow Investments through Partnerships and Co-Investment Structures?
- Do you Believe the Impact of Regulation along with the Shift Towards Passive Management has Created a Reduction in Market Liquidity? Will there be Sufficient Liquidity in the System to Cope with Conditions of Market Stress? Has it Impacted your Fund or Decisions?
- Is there Some Point at which Higher Rates would cause you to Rethink your Asset Allocation or Other Strategies?
- What Percentage of your Pension Fund's External Asset Management uses ESG Factors? Percentage Excluding Hedge Funds? Do you have Plans to Increase the Use of ESG Managers?
- How are you Viewing Emerging Markets Broadly and what do you feel is the proper EM Allocation? Any Regional or Frontier Strategies that interest you?

(B) ALIGNMENT OF INTERESTS

- What Changes or Trends have you noticed in Fee Structures/Terms and your Bargaining Power? Has the Size of your Fund been an Advantage or Disadvantage?
- How can you Overcome Governance Hurdles so that you can Effectively Partner with Outside Providers, Bring a Portion of the Investment Management In-House and Provide Incentive-Based Compensation?
- Have you Taken Steps to Address Diversity within your Investment Programs or your Organization's Staff?
- Do You and Your Investment Departments have the Authority to be a Dynamic, Tactical and Active Investor In Response to Extreme Economic Conditions?
- Have you Addressed Cybersecurity Protection for your Plan? How have you Educated of the Risks with Staff and Taken Steps for Protection with Investment Managers?
- Any Important Lessons Learned that you can Share from your Individual Plan Experiences?
- What Keeps You Up at Night?

Speakers:
Mansco Perry III, CFA, CAIA, Executive Director, Chief Investment Officer, **Minnesota State Board of Investment**
Tom Tull, CFA, Chief Investment Officer, **Employees Retirement System of Texas**
Bruce H. Cundick, CFA, CPA, Chief Investment Officer, **Utah Retirement Systems**

5:00 PM – CONFERENCE CONCLUDES

5:00 PM – TICKETS FOR NETWORKING EVENT HANDED OUT IN CONFERENCE ROOM

ATTENDEES OF THE NETWORKING EVENT MUST BE PRESENT IN THE CONFERENCE ROOM IN ORDER TO RECEIVE TICKETS

6:00 PM – NETWORKING EVENT, TBD

Networking Event – The Waterfront Restaurant Cocktail Reception & Dinner

Hosted by The Pension Bridge – Join our group for a cocktail reception and dinner at the Waterfront Restaurant located adjacent to the Financial District at Pier 7. Experience breathtaking views of San Francisco Bay and the iconic Bay Bridge. The Waterfront Restaurant, one of the city's finest seafood restaurants, has been a top culinary destination for more than 45 years and has been a known favorite for politicians, celebrities and business executives. The Pension Bridge Group will utilize will the waterfront space for meetings and conversation with quality contacts while taking in spectacular views.

9:00 PM – NETWORKING EVENT CONCLUDES

REGISTRATION:

To register or receive more information about The 2019 Pension Bridge Annual:

BOCA RATON OFFICE CONTACT:

Brett Semel

☎ (561) 455-2729

✉ bsemel@pensionbridge.com

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Andrew Blake

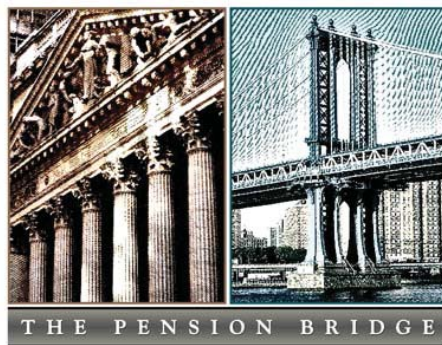
☎ (516) 818-7989

✉ ablake@pensionbridge.com

Please visit www.pensionbridge.com for additional details. **Registration is not available online.**

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CITY OF OAKLAND

AGENDA REPORT

TO: Oakland Police and Fire
Retirement Board

FROM: David Jones
Plan Administrator

SUBJECT: Audit Committee Agenda Pending List

DATE: February 19, 2019

	SUBJECT	TENTATIVE SCHEDULED MTG DATE	STATUS
1	Plan Administrator Status Report regarding status of request to City Administrator to set up Working Group to Address Actuarial Funding date of July 1, 2026	VERBAL	Meetings are Ongoing
2	Discussion of the 2006 Management Audit of the PFRS System	04/24/2019	
3	PFRS Policy Governing the Overpayment or Underpayment of Member Benefits	03/27/2019	

Respectfully submitted,

David Jones, Plan Administrator
Oakland Police and Fire Retirement System

All persons wishing to address the Board must complete a speaker's card, stating their name and the agenda item (including "Open Forum") they wish to address. The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

Oakland Police and Fire Retirement Board meetings are held in wheelchair accessible facilities. Contact the Retirement Unit, 150 Frank Ogawa Plaza, Suite 3349 or call (510) 238-7295 for additional information.



Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

INVESTMENT COMMITTEE MEMBERS

Jaime T. Godfrey
Chairman

R. Steve Wilkinson
Member

Martin J. Melia
Member

**In the event a quorum of the Board participates in the Committee meeting, the meeting is noticed as a Special Meeting of the Board; however, no final Board action can be taken. In the event that the Investment Committee does not reach quorum, this meeting is noticed as an informational meeting between staff and the Chair of the Investment Committee.*

REGULAR MEETING of the INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

Wednesday, February 27, 2019 – 10:00 am
One Frank H. Ogawa Plaza, Hearing Room 1
Oakland, California 94612

- - - ORDER OF BUSINESS - - -

- 1. Subject:** **PFRS Investment Committee Meeting Minutes**
From: Staff of the PFRS Board

Recommendation: **APPROVE** January 30, 2019 Investment Committee meeting minutes.
- 2. Subject:** **Follow-up review and recommendation of Board action regarding Parametric Portfolio Advisors, a PFRS Covered Calls Asset Class Investment Manager**
From: Parametric Portfolio Advisors and PCA

Recommendation: **RECOMMEND BOARD APPROVAL** of PCA follow-up review and recommendation of Board action regarding Parametric Portfolio Advisors, a PFRS Covered Calls Asset Class Investment Manager.
- 3. Subject:** **Investment Market Overview**
From: Pension Consulting Alliance (PCA)

Recommendation: **ACCEPT** an informational report on the global investment markets through February 2019.
- 4. Subject:** **Investment Fund Performance Report for the Quarter Ending December 31, 2018**
From: Pension Consulting Alliance

Recommendation: **RECOMMEND BOARD APPROVAL** of an Investment Fund Performance Report for the Quarter Ending December 31, 2018.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR INVESTMENT COMMITTEE MEETING
FEBRUARY 27, 2019

ORDER OF BUSINESS, continued

5. **Subject:** **Active vs. Passive Management Style overview**
From: Pension Consulting Alliance

Recommendation: **ACCEPT** an informational report from PCA regarding active vs. passive management styles.
6. **Subject:** **Review and recommendation of Board action regarding the PFRS International Equity Investment Asset Class Portfolio**
From: Pension Consulting Alliance

Recommendation: **RECOMMEND BOARD APPROVAL** of the review and recommendation of Board action regarding the PFRS International Equity Investment Asset Class Portfolio.
7. **Subject:** **Review and recommendation of Board Action regarding possible assignment of investment funds to an existing PFRS Investment Manager to manage PFRS Crisis Risk Offset (CRO) – Long Duration Asset Class**
From: Pension Consulting Alliance

Recommendation: **RECOMMEND BOARD APPROVAL** of the review and recommendation of Board action regarding possible assignment of investment funds to an existing PFRS Investment Manager to manage PFRS Crisis Risk Offset (CRO) – Long Duration Asset Class.
8. **Schedule of Pending Investment Committee Meeting Agenda Items**
9. **Future Scheduling**
10. **Open Forum**
11. **Adjournment of Meeting**

AN INVESTMENT AND FINANCIAL MATTERS COMMITTEE MEETING of the Oakland Police and Fire Retirement System ("PFRS") was held January 30, 2019 in Hearing Room 1, One Frank Ogawa Plaza, Oakland, California.

Committee Members Present: • Jaime T. Godfrey, Chairman
• Martin J. Melia, Member

Committee Members Absent: • R. Steven Wilkinson, Member

Additional Attendees: • David Jones, Plan Administrator
• Pelayo Llamas, PFRS Legal Counsel
• David Low & Teir Jenkins, Staff Members
• David Sancewich & Sean Copus, Pension Consulting Alliance

The meeting was called to order at 10:09 am.

1. **Approval of Investment Committee meeting minutes** – Member Melia made a motion to approve the November 28, 2018 Investment Committee meeting minutes, second by Chairman Godfrey. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

2. **Investment Market Overview** – Sean Copus from Pension Consulting Alliance (PCA) reported on the global economic factors affecting the PFRS Fund. Chairman Godfrey made a motion accept the Informational Report from PCA, second by Member Melia. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

3. **Preliminary Investment Fund Performance Report for the Quarter ending December 31, 2018** – Mr. Copus reported the details of the preliminary Investment Fund Performance Report for the Quarter ending December 31, 2018. Following discussion between the Committee and staff, Member Melia made a motion to accept the informational report from PCA, second by Chairman Godfrey. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

4. **Investment Asset Class Review - Crisis Risk Offset (CRO)-Long Duration** – David Sancewich from PCA reported that PCA will review the cost to have a current PFRS investment manager manage this asset class for the PFRS Fund and report back at the next Investment Committee meeting, which may include a resolution for Board action. Following some discussion between the Committee and staff, chairman Godfrey made a motion accept the Informational Report from PCA, second by Member Melia. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

5. **Investment Policy Amendment – Addition of the Description of the Defensive Equity Investment Management Style** – David Sancewich reported the update to the PFRS investment policy and recommended the Committee authorize the Board to approve the updated PFRS Investment Policy. Following some discussion, member

Melia made a motion to recommend the Board approval of the amendment to the PFRS Investment Policy, second by Chairman Godfrey. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

6. **Management change Update Report - Parametric Portfolio Advisors** – Mr. Sancewich reported staff changes with Parametric Portfolio Advisors. Following Committee and staff discussion, Chairman Godfrey made a motion instructing staff to PFRS Staff to invite Parametric Portfolio Advisors to the February or March 2019 Investment Committee meeting to further discuss this management change, second by member Melia. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

7. **Report About A Change of Management and Ownership of PFRS Investment Advisor Pension Consulting Alliance** – Mr. Sancewich reported details of the merger between Meketa Investment Group and Pension Consulting Alliance. Following discussion between the Committee and PCA, member Melia made a motion recommending the Board invite a representative from Meketa Investment Group at a future investment committee meeting, second by Chairman Godfrey. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

8. **Resolution No. 7035 - Resolution authorizing exercise of a one-year option to extend the agreement with Fisher Investment to provide International Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing February 16, 2019 through February 16, 2020** – Member Melia made a motion to recommend Board approval of Resolution No. 7035 - Resolution authorizing exercise of a one-year option to extend the agreement with Fisher Investment to provide International Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing February 16, 2019 through February 16, 2020, second by Chairman Godfrey. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

9. **Resolution No. 7036 - Resolution authorizing exercise of a one-year option to extend the agreement with Earnest Partners to provide Mid Cap Core Domestic Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing March 24, 2019 through March 24, 2020** – Member Melia made a motion to recommend Board approval of Resolution No. 7036 - Resolution authorizing exercise of a one-year option to extend the agreement with Earnest Partners to provide Mid Cap Core Domestic Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing March 24, 2019 through March 24, 2020, second by Chairman Godfrey. Motion passed.

[GODFREY – Y / MELIA – Y / WILKINSON – ABSENT]
(AYES: 2 / NOES: 0 / ABSTAIN: 0)

10. **Investment Committee Pending Agenda Items** – The investment committee and PCA discussed the upcoming agenda items scheduled on PCA's future meeting's agenda.
11. **Future Scheduling** – The next Investment Committee meeting was scheduled for February 27, 2019.
12. **Open Forum** – Michael Mullane from NWQ presented an investment performance review of the PFRS investment Fund managed by NWQ.
13. **Adjournment of Meeting** – The meeting adjourned at 10:58 am.

JAIME T. GODFREY, COMMITTEE CHAIRMAN

DATE

Date: February 27, 2019

To: Oakland Police and Fire Retirement System (OPFRS)

From: Pension Consulting Alliance, LLC (PCA)

CC: David Sancewich – PCA
Sean Copus, CFA – PCA
Teir Jenkins – OPFRS
David Jones – OPFRS

RE: Parametric Organizational Update

Summary

Previously, in late November 2018, it was announced that Jack Hansen, CFA, Parametric's Investment Research & Strategy CIO, will retire on November 1, 2019 and be replaced by a co-CIO structure consisting of Timothy Atwill, PhD, CFA, and Thomas Lee, CFA. However, in late January 2019, Parametric announced a change to their earlier stated succession plan when it was announced that Timothy Atwill has decided to step away from the industry effective June 30, 2019 and resign from Parametric due to personal, health, and family circumstances. In response to Mr. Atwill's surprise departure, Parametric announced that it would be naming Thomas Lee as the sole future CIO of Parametric and abandoning its previously planned co-CIO structure. Until Mr. Hansen's retirement in November 2019, Parametric will keep the current leadership structure in place while Mr. Atwill and Mr. Lee work closely with Brian Langstraat (Parametric CEO), Mr. Hansen, and other senior leaders to execute a successful transition.

Retiring CIO Jack Hansen is based in Minneapolis, MN and is tasked with leading the various investment teams located in Parametric's offices in Seattle, Minneapolis, and Westport, CN. His announced successor, Thomas Lee, is also based in Minneapolis and has worked alongside Mr. Hansen as Director of Investment Strategy & Research for the Minneapolis- and Westport-based investment teams. Timothy Atwill, the previously announced co-CIO who will now be leaving Parametric, is currently based in Seattle and is more closely aligned to the strategies that are managed out of that office. Given his long working relationship with the outgoing CIO, PCA believes that Mr. Lee is a natural choice to succeed Mr. Hansen and that the unexpected loss of Mr. Atwill is not a major cause for concern with respect to the departure's direct effect on OPFRS's two Parametric-managed mandates.

As discussed in our previous memo regarding Parametric's succession plans, PCA was not overly concerned with the planned leadership changes at Parametric. Although the recent developments in January somewhat complicate Parametric's original transition plans, the continued presence of Mr. Lee on Parametric's various investment committees, combined with Parametric's style of investment management will result in minimal disruption to OPFRS's Parametric-managed portfolios while the CIO transition takes place.

Additional Discussion

Parametric currently manages two portfolios on behalf of OPFRS: Covered Calls and Systematic Alternative Risk Premia (SARP). Both portfolios are overseen by teams based in Parametric's Minneapolis, MN office. Like all Parametric portfolios, both strategies can be characterized as quantitative and rules-based while being overseen by investment committees tasked with making sure that previously-developed models underpinning each strategy are being implemented correctly. Given this management structure, individual investment team members do not have as large of an impact on the day-to-day positioning of the portfolios as that of a typical traditional, active, fundamental style manager. Mr. Lee, the future CIO, is based in Minneapolis and is currently directly involved in the management of both the Covered Calls and SARP portfolios as a member of each portfolio's respective investment committees.

Despite the promotion, Mr. Lee is still expected to remain a member of the investment committees overseeing both of OPFRS's mandates; however, he is expected to move away from his current day-to-day operations role and assume higher-level oversight duties. Although Mr. Lee will transition to a high-level oversight role, it should be noted that the other key members of both strategies (Jon Orseck – Covered Calls, Chris Haskamp – SARP) will remain in place. Mr. Lee's gradual transition away from his more direct role with OPFRS's two mandates would normally be more of an issue, but the quantitative nature and committee-based management characteristics of both strategies give PCA less cause for concern.

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Oakland Police & Fire Retirement System

Systematic Alternative Risk Premia Strategy Review

February 27, 2019

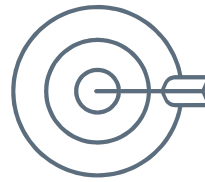
Our Difference

We believe in:



**Questioning
the status quo**

We challenge assumptions and think
markets can't be reliably predicted or timed



**A disciplined,
rules-based approach**

We're focused and methodical, applying scientific
rigor to our cutting-edge execution



**Offering you
customized solutions**

We're dedicated to building partnerships
and delivering tailored strategies

Thoughtful, research-driven solutions designed
to elevate your investment outcomes

Parametric by the Numbers



\$210B+

assets under management¹,
with \$117.4B across
institutional



95+

client-service professionals
across 5 offices



96

investment professionals,
including 85 CFA charterholders
and 7 PhDs



30+ years

of experience across equity
and derivative² strategies

¹As of 12/31/2018. AUM includes the assets of Parametric Investment & Overlay Strategies and Parametric Custom Tax-Managed & Centralized Portfolio Management. Parametric is divided into two segments: Parametric Investment & Overlay Strategies and Parametric Custom Tax-Managed & Centralized Portfolio Management. For compliance with the Global Investment Performance Standards (GIPS®), the Firm is defined and held out to the public as Parametric Investment & Overlay Strategies. Please refer to the Disclosures for additional information.

²30 years of derivative experience includes history of The Clifton Group, which was acquired by Parametric Portfolio Associates® on December 31, 2012.

Institutional Capabilities

Customized offerings that meet specific asset class needs and help solve common implementation challenges

Asset Class Solutions

Long-Only Systematic Alpha

- > Emerging Markets
- > Developed International
- > Commodities

Diversifying Risk Premia

- > Equity Volatility Risk Premia
- > Multi-Asset Volatility Harvesting
- > Multi-Asset Factor Premia

Portfolio Implementation

Overlay Strategies

- > Residual Cash Equitization
- > Portfolio Rebalancing
- > Currency Hedging

Advanced Solutions

- > Option Hedges
- > Liability-Driven/Glide-Path
- > Client Determined Exposure

Tailored Exposure

- > Responsible Investing
- > Custom Index
- > Multi-Manager Strategy Implementation

Representative Client List as of December 31, 2018

> **Public**

East Bay Municipal Utility District
Fairfax County Retirement Systems
Houston Police Officers' Pension System
Manhattan & Bronx Surface Transit Operating Authority Pension Plan
Marin County Employees' Retirement Association
Massachusetts Pension Reserves Investment Management Board
New Mexico Public Employees' Retirement Association
Oakland Police and Fire Retirement System
Orange County Employees Retirement System
San Mateo County Employees' Retirement Association
Seattle City Employees' Retirement System
Teachers Retirement System of Louisiana
Utah School & Institutional Trust Funds Office
Wisconsin Investment Board

> **Endowments**

Carnegie Institution of Washington
Florida State University
Indiana University & Foundation
Pepperdine University
Texas Christian University
University of Michigan
University of Minnesota
University of Pittsburgh

> **Faith Based**

Covenant Ministries of Benevolence
Ministers & Missionaries' Benefit Board of American Baptist Churches
Pension Fund of the Christian Church
YMCA Retirement Fund

> **Healthcare**

Advocate Health Care Network
The New York Presbyterian Hospital
North Memorial Health Care
Rush University Medical Center
Trinity Health

> **Taft-Hartley**

Board of Trustees ABC-NABET Retirement Trust Fund
Boilermaker-Blacksmith National Pension Trust
Carpenters, Regional Council, Greater Pennsylvania
Central Laborers' Pension Fund
Chicago Laborers' Pension & Welfare Funds
International Union of Painters and Allied Trades
National Retirement Fund
SEIU Benefit Funds
Teamsters, Western Pennsylvania

> **Foundations**

Auburn University
Doris Duke Charitable Foundation, Inc.
The John D. & Catherine T. MacArthur Foundation
The McKnight Foundation
Strada Education Network, Inc.
Wisconsin Alumni Research Foundation

> **Corporate**

The Boeing Company
Cargill Inc.
Eversource Energy
Macy's Inc.
3M Company
Target Corporation
Texas Instruments Incorporated
United Technologies Corporation

It is not known whether the listed clients approve or disapprove of the adviser. The partial list of clients included herein were selected as being representative of the different types of institutional clients and businesses serviced by Parametric. Performance-based data was not a determining factor in their selection.

Parametric Headlines

Notable Developments¹

- > Parametric hosted webinars to discuss Systematic Alternative Risk Premia, and Emerging Markets strategies
- > Hosted educational sessions with various clients around topics such as derivatives, futures, and alternative risk premia
- > Celebrated three year anniversary of the Parametric-FFV Catholic Values and Parametric Fossil Free strategies
- > Launched enhanced client portal for institutional clients
- > Celebrated one year anniversary of the Parametric Volatility Risk Premium – Defensive Fund
- > Parametric Research Affiliates Systematic Alternative Risk Premia strategy reached the one year milestone
- > Launched Parametric Multi-Asset Volatility Risk Premium strategy

Recent Thought Leadership Pieces

- > *Managing Developed-Country Currency Risks*
- > *Inflation Swaps: What They Are, How They Work, and Why They Matter*
- > *Enhancing Overlay Collateral Efficiency*
- > *The Advantages of Using Block Trades for Index Futures*
- > *Incorporating Passive Equity Strategies via Centralized Exposure Management*
- > *Rebalancing Through an Overlay Strategy During Periods of Volatility*
- > *A Comparison of VRP-Harvesting Derivative Strategies*
- > *How Do Options Work? An Illustrated Guide*
- > *Contango Lessons: Dancing with the Drop in Oil Prices*
- > *Market Volatility Spikes, but What's "Normal"?*
- > Conducted various client-requested research projects, such as development of bespoke client solutions and analyses on a range of topics

¹Notable developments generally occurred in 2018.

Parametric SARP Strategy Overview

Addressing Investor Concerns

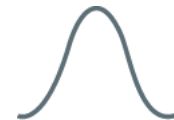
The Parametric Systematic Alternative Risk Premium (SARP) strategy is rooted in years of academic and empirical research¹ and supported by highly efficient implementation. The strategy was designed to exhibit near zero correlation to traditional asset classes and alternative strategies.



Attractive
absolute returns expected
to outperform short term
cash by 7-9%



Moderate volatility
profile expected
to average 10-12%



Target Sharpe
ratio of 0.8,
net of fees



Controlled risk

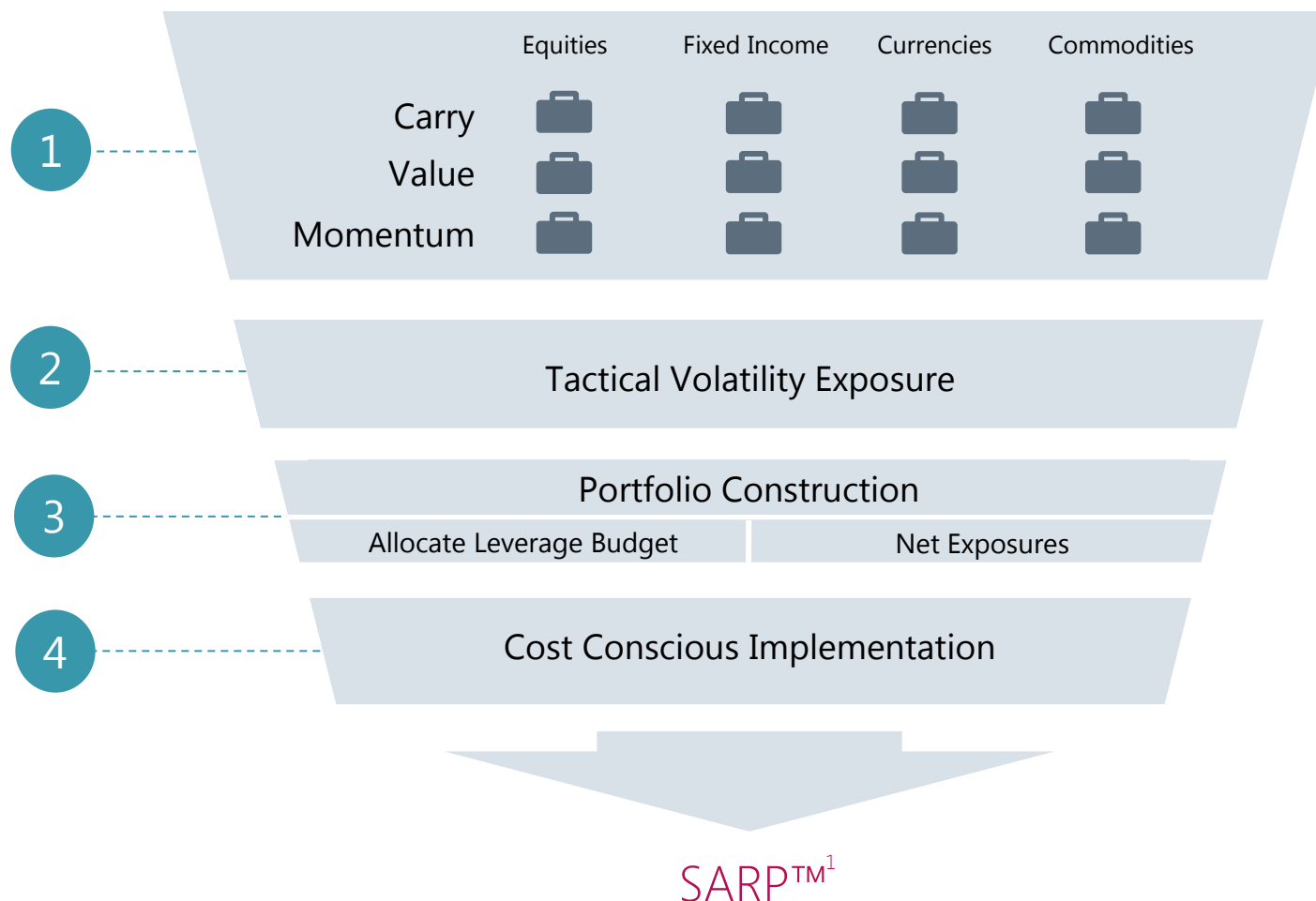


Transparency

¹Available upon request

Investing in the Systematic Alternative Risk Premia Strategy involves risk. Please refer to the SARP Risks and other disclosures included at the end of this presentation.

Investment Process



¹Formerly known as Systematic Global Macro.

Transparent and Liquid Asset Class Universe

Equity Index Futures

AEX Index (Netherlands)
ASX SPI 200 Index (Australia)
CAC40 10 Index (France)
DAX Index (Germany)
FTSE 100 Index (UK)
FTSE/MIB Index (Italy)
Hang Seng Index (Hong Kong)
IBEX 35 Index (Spain)
Nikkei 225 Index (Japan)
OMXS30 Index (Sweden)
S&P 500 Index (US)
S&P/TSX 60 Index (Canada)

VIX Futures

VIX 2nd Contract
VIX 3rd Contract

Government Bond Futures

Australia 10 Year Govt Bond
Canada 10 Year Govt Bond
France 10 Year Govt Bond
Germany 10 Year Govt Bond
Italy 10 Year Govt Bond
Japan 10 Year Govt Bond
UK 10 Year Govt Bond
US 10 Year Govt Bond

Currency Forwards/Futures (vs USD)

Australian Dollar
British Pound
Canadian Dollar
Euro
Japanese Yen
New Zealand Dollar
Norwegian Krone
Swedish Krona
Swiss Franc

Commodity Futures

Aluminum
Brent Crude
Cocoa
Coffee
Copper
Corn
Cotton
Feeder Cattle
Gasoil
Gasoline
Gold
Heating Oil
Kansas Wheat
Lead
Lean Hogs
Live Cattle
Natural Gas
Nickel
Silver
Soybeans
Sugar
Wheat
WTI Crude
Zinc

Total number of contracts = 55

Information as of 12/31/18.

Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

This information is for illustrative purposes only. Actual portfolio holdings will vary and there is no guarantee that a particular client's account will hold any or all of the securities identified. This is not a recommendation or an offer to buy or sell securities. It should not be assumed that any of the securities listed were or will be profitable. Please refer to the Disclosure for further information.

Empirically and Theoretically Sound Factors

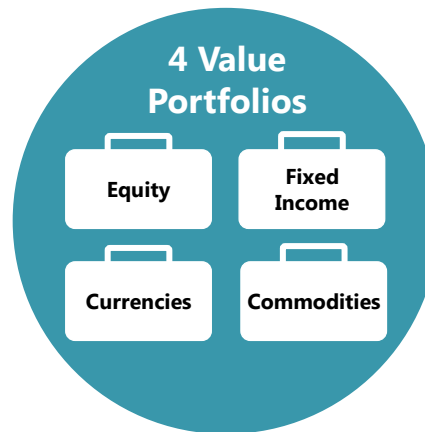
Carry

Return if prices stay the same



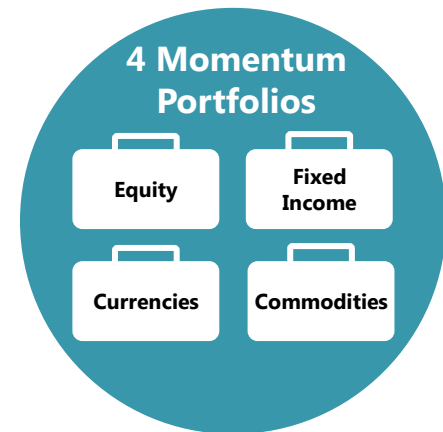
Value

Longer-term mean reversion



Momentum

Shorter-term price trends

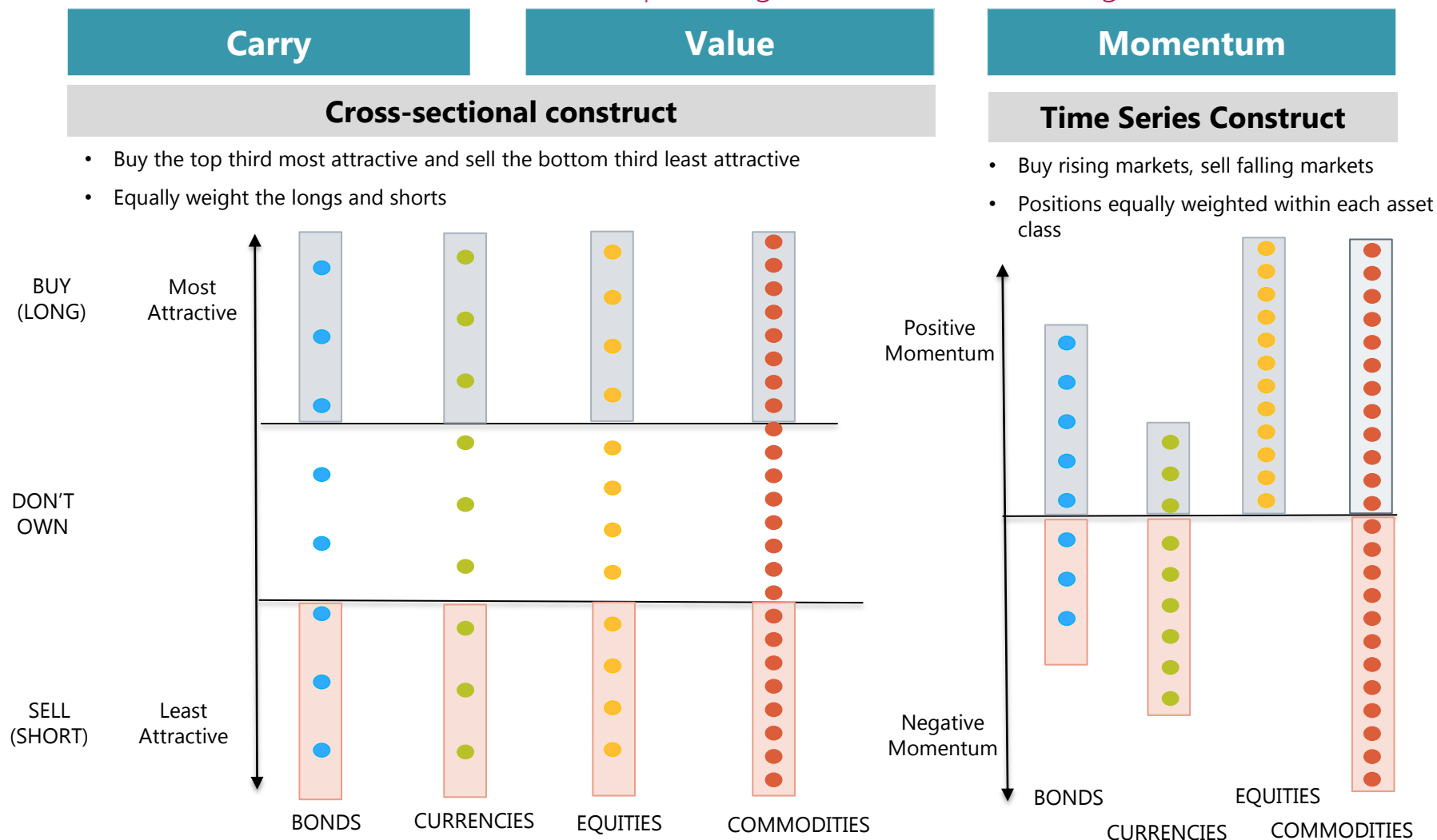


Employ factors that are proven to be robust across multiple asset classes.

Blending of different styles seeks to achieve low correlation to traditional asset class returns.

Factor Construction

We steer clear of over optimizing individual contract weights



For illustrative purposes only to show how the portfolio is constructed in each asset class for each style factor. Plot points illustrate securities within each assets class. Placement of plot points illustrate potential long, short and neutral positioning. Plot points are not based on actual data. Actual portfolio construction will vary and may vary materially from this illustration.

Tactical Volatility Exposure



Structure

Short 2nd VIX contract
Long 3rd VIX contract



Why

Access a diversifying risk premia
Earn a return if VIX is stable or falls
Hedge downside if VIX spikes



Conditions

Reduce crash risk by conditioning on Value and Momentum signals

Portfolio Construction

Theoretical Maximum Exposure = 720%
Effective exposure is significantly lower

Simulated Results ¹ 01/2002 to 12/2018	SARP™
Avg. Gross Exposure	393%
Minimum Exposure	238%
Maximum Exposure	516%

Allocating Exposure:

	Historical Volatility	Assigned Exposure	Contribution to Risk	
Asset Class	Bonds	Lower	Higher	Similar
	Currencies	↕	↕	↕
	Equities	↕	↕	↕
	Commodities	Higher	Lower	Similar
Factor	Carry	Modest	40% ²	Similar
	Value	Modest	40% ²	Similar
	Momentum	High	20% ²	Similar
	Volatility	Higher	Low	Minimal

Elevated exposures occur when opportunities are the most prevalent, not necessarily when markets are calm.

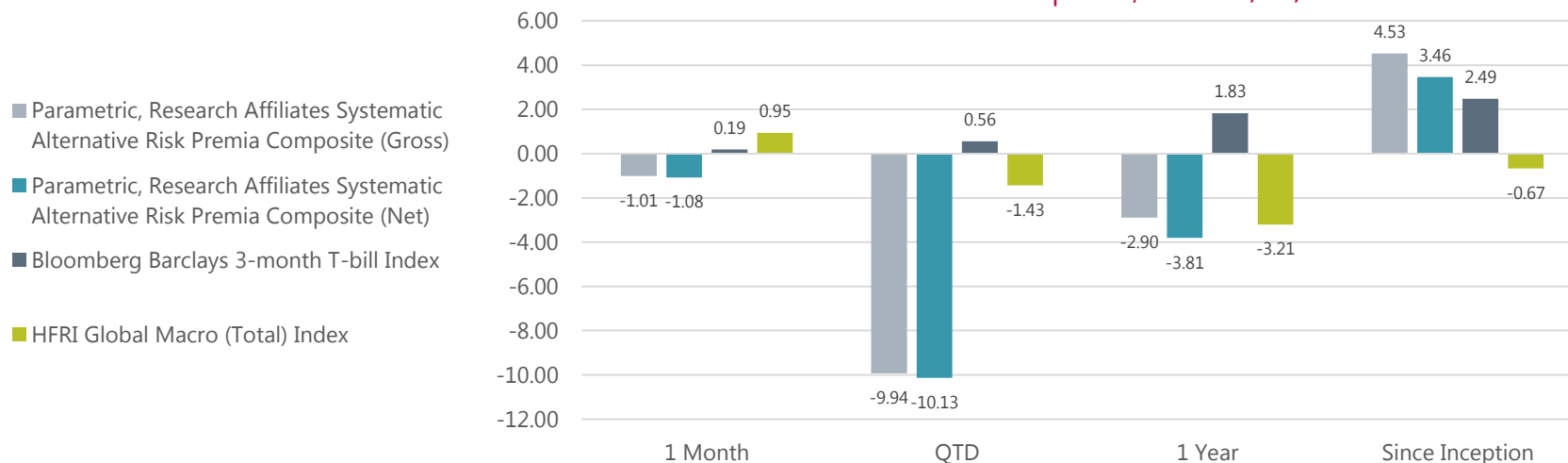
¹Based on results simulated from 1/2002 to 12/2018. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis. ²Percent of assigned exposure to each asset class.

Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

Simulated data is for illustrative purposes only, does not reflect the experience of any investor and may not be relied upon for investment decisions. Actual client results will vary.

Performance

Investment Returns SARP™ Composite, as of 12/31/2018



SARP™: Monthly Total Return (Net %)

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2017	-	-	-	-	2.28	0.11	4.14	0.65	0.26	1.98	-1.74	2.03	10.01
2018	5.11	-3.91	2.85	4.09	-3.22	1.11	1.30	-3.22	3.19	-4.49	-4.89	-1.08	-3.81
SARP Total Return				Standard Deviation				Sharpe Ratio					
Since Inception				3.46				10.31					
								0.19					

¹Net of model management fee. Effective 9/1/2018 the fee for the strategy is 80 bps. Prior to 9/1/2018 the fee for the strategy was 90 bps.

²SARP™ employs an absolute return investment approach which seeks to outperform short term cash by 7-9% and produce returns that are largely independent of broad movements in the stock and bond markets. SARP™ does not have a GIPS® benchmark that closely matches the risk/return characteristics. Benchmark/index information provided is for illustrative purposes only. Thus returns may at times materially differ from the stated benchmark and/or other disciplines provided for comparison.

Source: Bloomberg, Parametric as of 12/31/2018. For illustrative purposes only to show performance relative to return expectations as detailed previously. Past performance is not indicative of future results. All investments are subject to loss. Returns are presented gross and net of management fees. Net returns represent a 80 bps model management fee. Prior to September 1, 2018 the model fee was 90 bps. Returns for periods of less than one year have not been annualized. It is not possible to invest directly in an index. Please refer to the Disclosures for additional important information. Material provided is supplemental to the GIPS® compliant presentation. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

SARP: Oakland Police & Fire Retirement System Performance (as of 1/31/2019)

Total Returns (%)			
	Client Portfolio (Gross)	Client Portfolio (Net)	Bloomberg Barclays U.S. Tr Bills: 1-3 Months TR Index ¹ Value Unhedged USD
January	0.98	0.92	0.20
Q4 2018	-9.94	-10.13	0.56
Partial Year 2018	-7.00	-7.25	0.72
Since Inception ²	-6.09	-6.40	0.93

Oakland Police & Fire Retirement System portfolio value as of 1/31/2019:
\$23.40 Million

¹SARP TM employs an absolute return investment approach which seeks to outperform short term cash by 7-9% and produce returns that are largely independent of broad movements in the stock and bond markets. SARP TM does not have a GIPS® benchmark that closely matches the risk return characteristics. Index information provided is for illustrative purposes only. The returns may at times materially differ from the stated index.

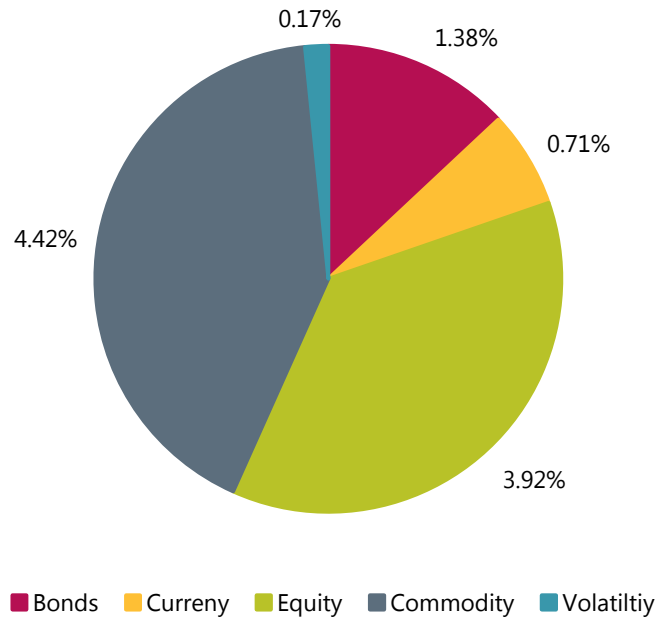
²Inception 9/1/2018

Source: Parametric; Bloomberg Date: 1/23/2018

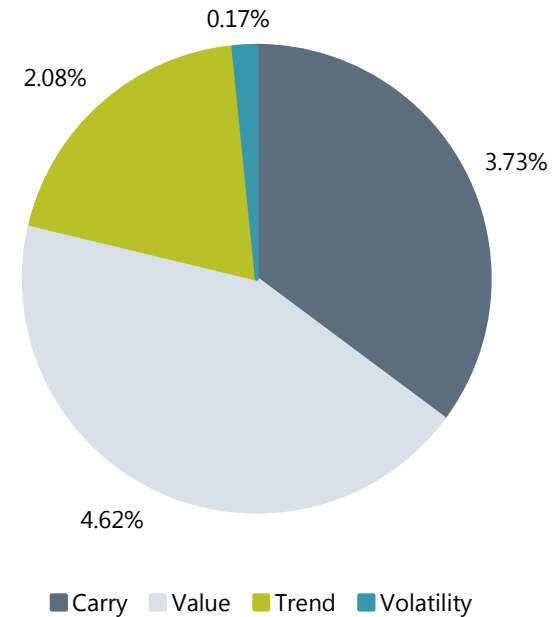
Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. Material provided is supplemental to the GIPS® compliant composite. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

Contribution to Risk

Risk Contribution Per Asset Class



Risk Contributions Per Factor



Source: Parametric. As of 12/31/2018. For illustrative purposes only. Information subject to change.

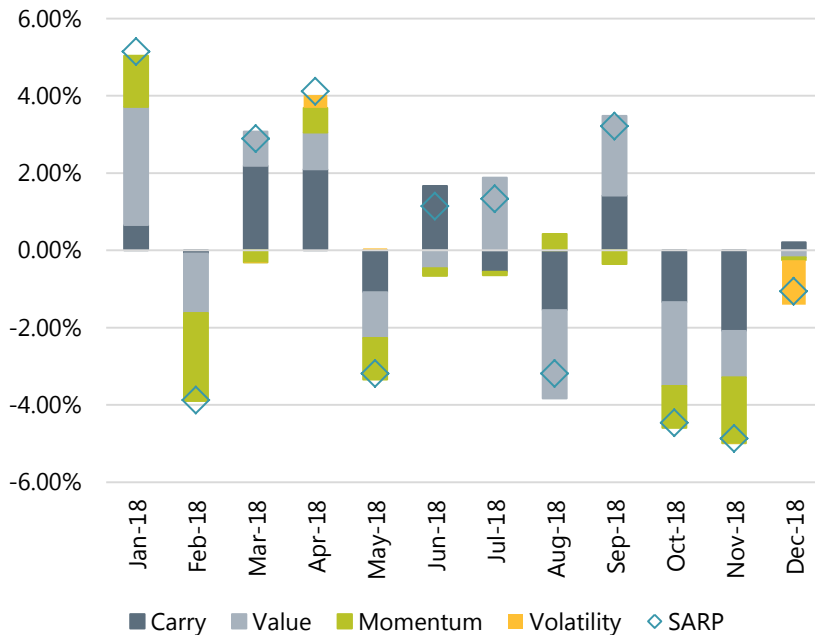
The Quarter in Review (Q418)

- > SARP returned -9.941% gross in Q4
 - Style: Carry (-3.21%), Value (-3.53%), Momentum (-2.86%)
 - Asset Class: Bonds (+0.94%), Currencies (-0.59%), Equities (+0.21%), Commodities (-10.16%)
- > Realized volatility in the quarter was 15.2% annually
- > Gross exposure targets averaged 479%
- > Triple Longs added -7.73%, Triple Shorts added +0.30%

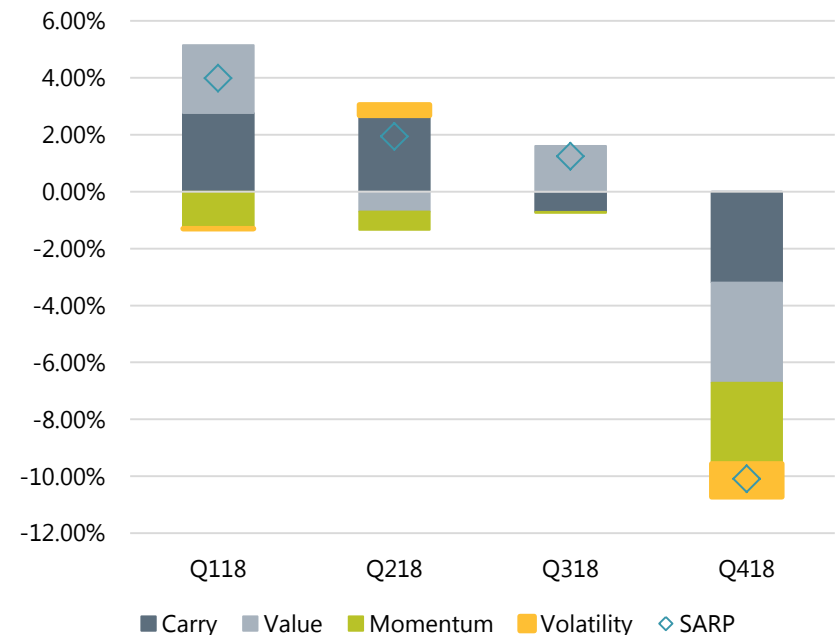
Source: Parametric. Past performance is not indicative of future results. All investments are subject to loss. Please refer to the disclosures for additional information.

Factor Returns

Monthly Return Decomposition



Quarterly Return Decomposition

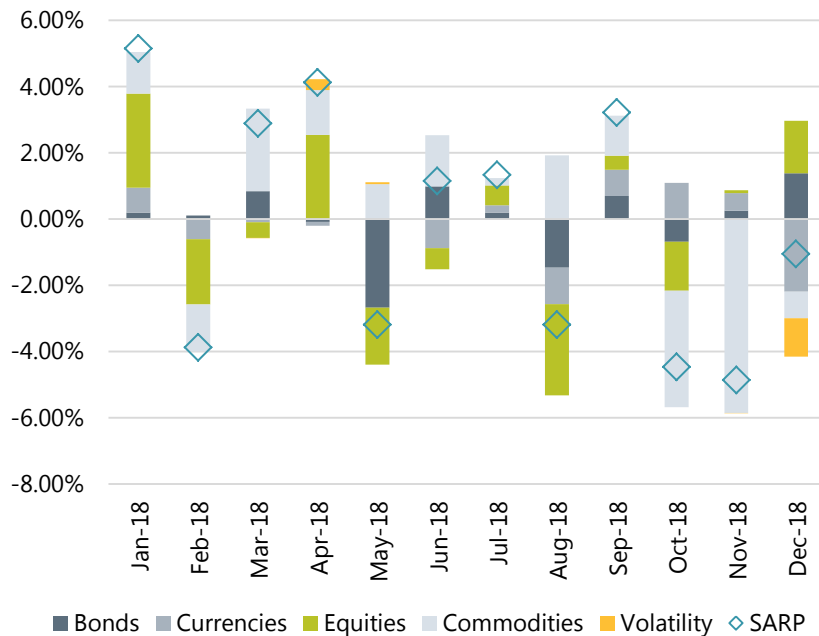


■ Carry ■ Value ■ Momentum ■ Volatility ◆ SARP

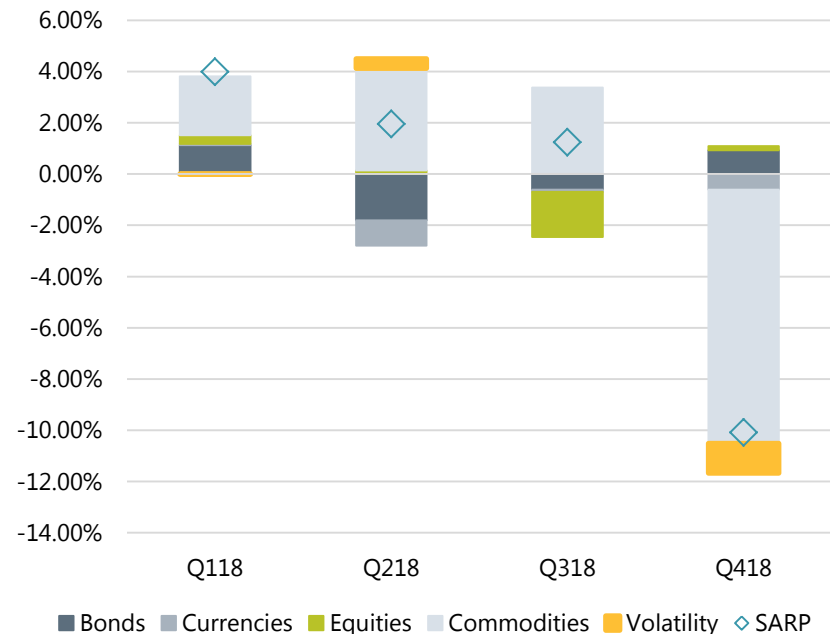
Source: Parametric as of 12/31/18. Information subject to change. Past performance is not indicative of future results. All investments are subject to loss. Factor returns are presented gross of management fees. The deduction of an advisory fee would reduce an investor's return. Please see Disclosures for additional information. SARP returns are presented net of management fees. Material provided is supplemental to the GIPS® compliant presentation. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

Asset Class Returns

Monthly Return Decomposition



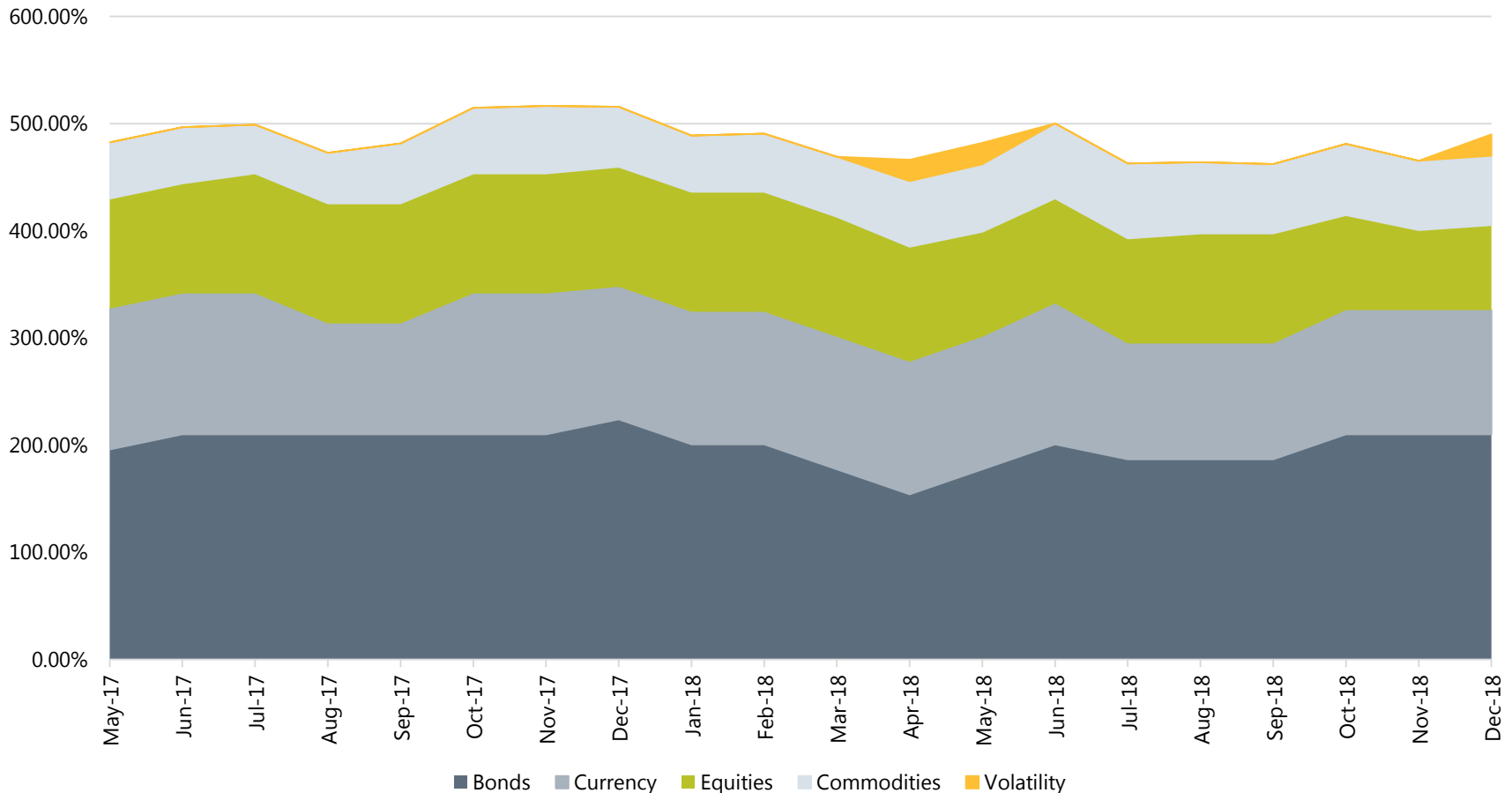
Quarterly Return Decomposition



Source: Parametric as of 12/31/18. Information subject to change. Past performance is not indicative of future results. All investments are subject to loss. Asset Class returns are presented gross of management fees. The deduction of an advisory fee would reduce an investors returns. Please see Disclosures for additional information. SARP returns are presented net of management fees. Material provided is supplemental to the GIPS® compliant presentation. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

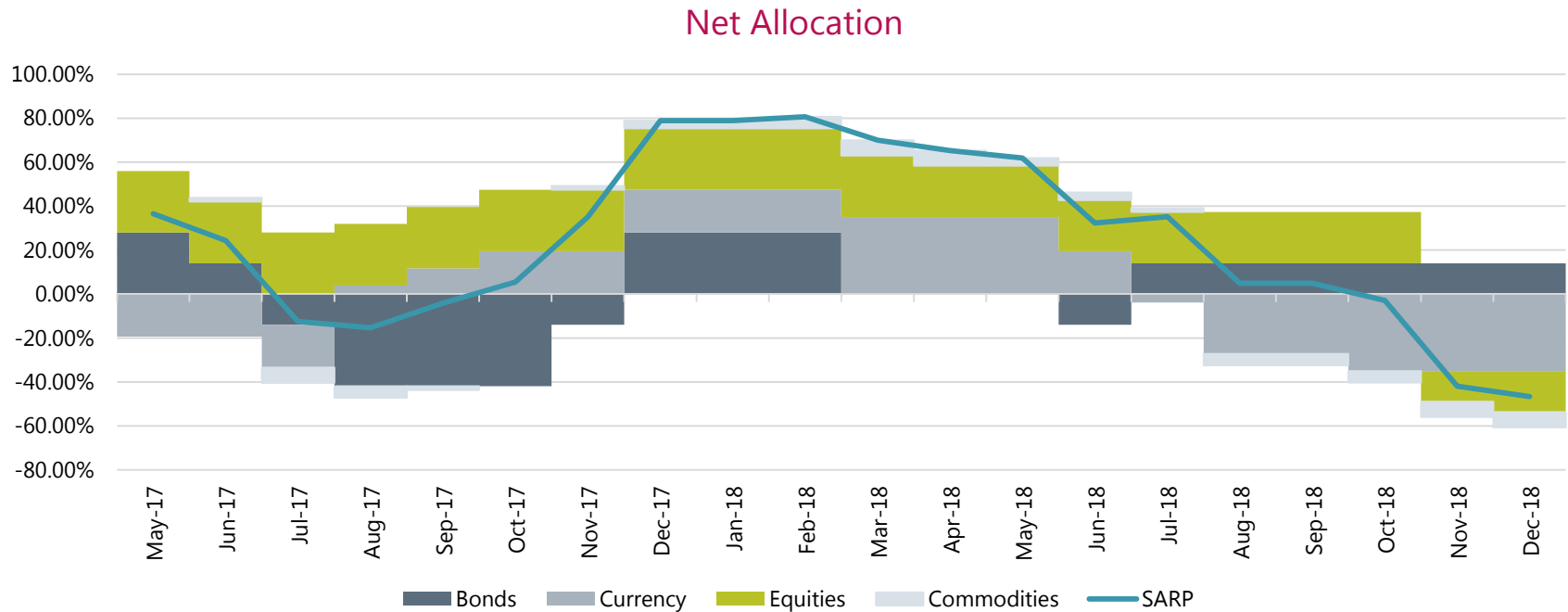
Allocations Including VIX Overlay

Gross Allocations



Source: Parametric as of 12/31/18. For illustrative purposes only. Information subject to change. The information does not constitute investment advice and should not be viewed as a recommendation to buy or sell any particular security or to adopt any investment strategy. All investments are subject to potential loss of principal. Please refer to the Disclosures for additional important information.

Net Long and Short

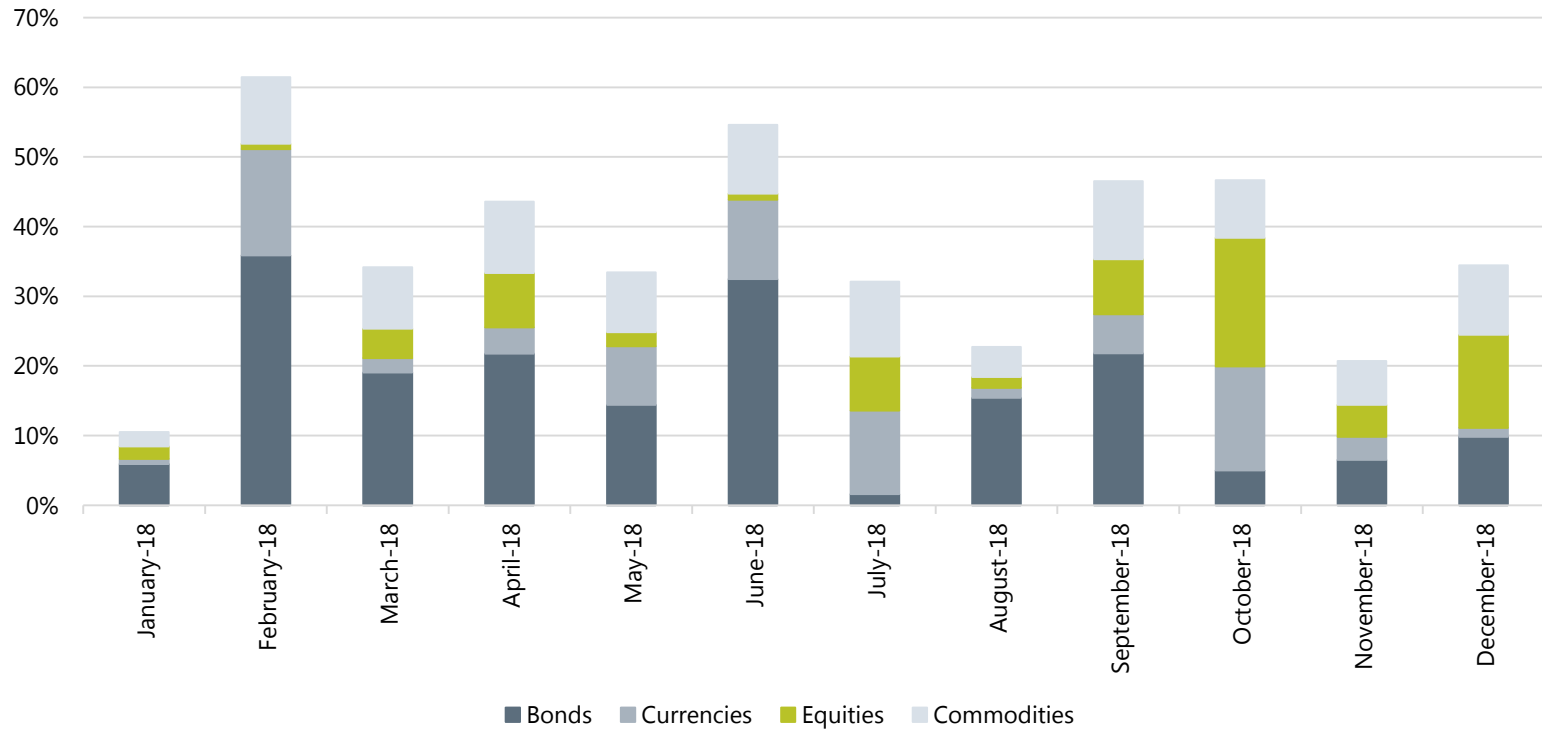


	Currencies	Bonds	Equities	Commodities	Parametric Research Affiliates Systematic Alternative Risk Premia
Average Net Exposure	0.78%	2.10%	21.93%	-0.26%	24.55%
Minimum Weight	-35.00%	-42.00%	-18.67%	-7.00%	-46.67%
Maximum Weight	35.00%	28.00%	28.00%	7.00%	80.69%

Source: Parametric as of 12/31/18. For illustrative purposes only. Information subject to change. The information does not constitute investment advice and should not be viewed as a recommendation to buy or sell any particular security or to adopt any investment strategy. All investments are subject to potential loss of principal. Please refer to the Disclosures for additional important information.

Asset Class Annual Turnover

Asset Class Monthly Turnover

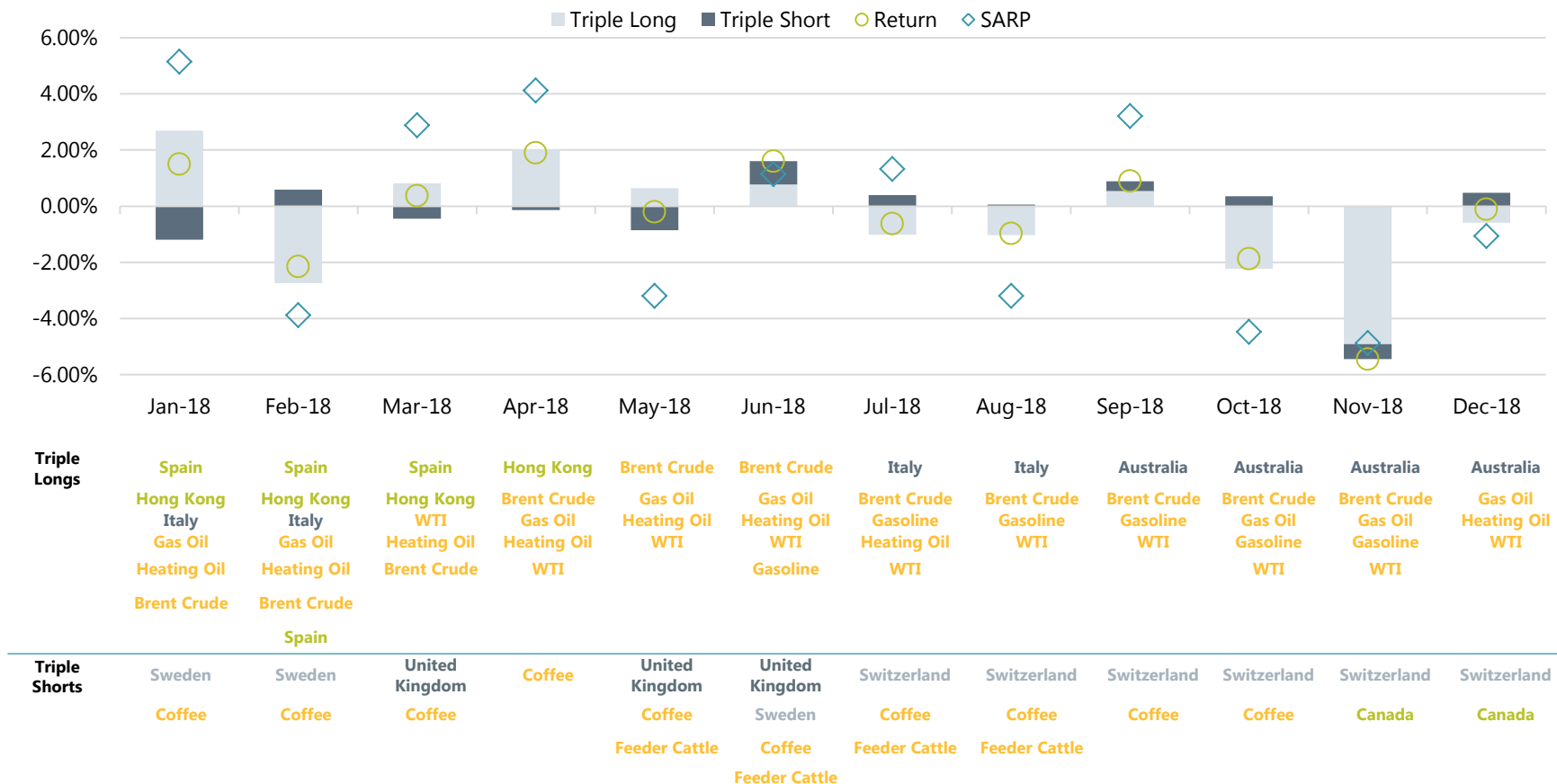


Given historical turnover PPA estimates annual transaction cost of approximately 60bps

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Triple Play

Triple Long/Short



■ Fixed Income ■ Currencies ■ Equities ■ Commodities

Source: Parametric as of 12/31/18. Past performance is not indicative of future results. All investments are subject to loss. Triple Play returns are presented gross of management fees. The deduction of an advisory fee would reduce an investors return. Please see Disclosures for additional information. SARP returns are presented net of management fees. The information does not constitute investment advice and should not be viewed as a recommendations to buy or sell any particular security or to adopt any investment strategy. Material provided is supplemental to the GIPS® compliant presentation. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

SARP: Oakland Police & Fire Retirement System Performance (as of 1/31/2019)

Attribution 8/21/2018-1/31/2019				
	Carry	Value	Momentum	Total
Bonds	1.17%	1.43%	-0.20%	2.40%
Currencies	1.74%	0.05%	0.09%	1.88%
Equities	0.15%	1.11%	-2.85%	-1.59%
Commodities	-2.18%	-2.82%	-3.50%	-8.50%
Volatility				-1.18%
Cash/Other				0.91%
Total	0.88%	-0.22%	-6.46%	-6.08%

Source: Parametric; Bloomberg Date: 1/23/2018

Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. Material provided is supplemental to the GIPS® compliant composite. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

SARP Risks

Risk	Description
Market	Market performs in a way that was not anticipated. For example, cash outperforms a particular market.
Communication/Information	Exposures are maintained based on underlying investment values provided by one or more third parties. There may be delays in the receipt of updated information which can lead to exposure imbalance risks.
Leverage	Creation of market exposure in excess of underlying collateral value may lead to significant capital losses and result in position liquidation.
Margin/Liquidity	Potential that the market moves in a manner adverse to the futures or swap position causing a mark-to-market loss of capital to the fund and a resulting need to raise liquidity or to close positions; this situation could happen at a time when underlying fund or positions are also declining in value.
Commodity	The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs, and international economic, political, and regulatory developments.
Tracking Error	Futures (synthetic) index returns do not perfectly track benchmark index returns. This divergence between the price behavior of a position or portfolio and the price behavior of a benchmark index is tracking error and impacts performance.
Collateral	The program may experience losses on the underlying designated assets in addition to potential losses on the index market exposure overlaying these assets.
Regulatory Risk	Potential and ongoing changes in the regulatory environment may prevent Parametric from being able to execute program as defined by investment guidelines.

Appendices

Factors are Complementary to Each Other

Low correlation across asset classes and factors (simulated)

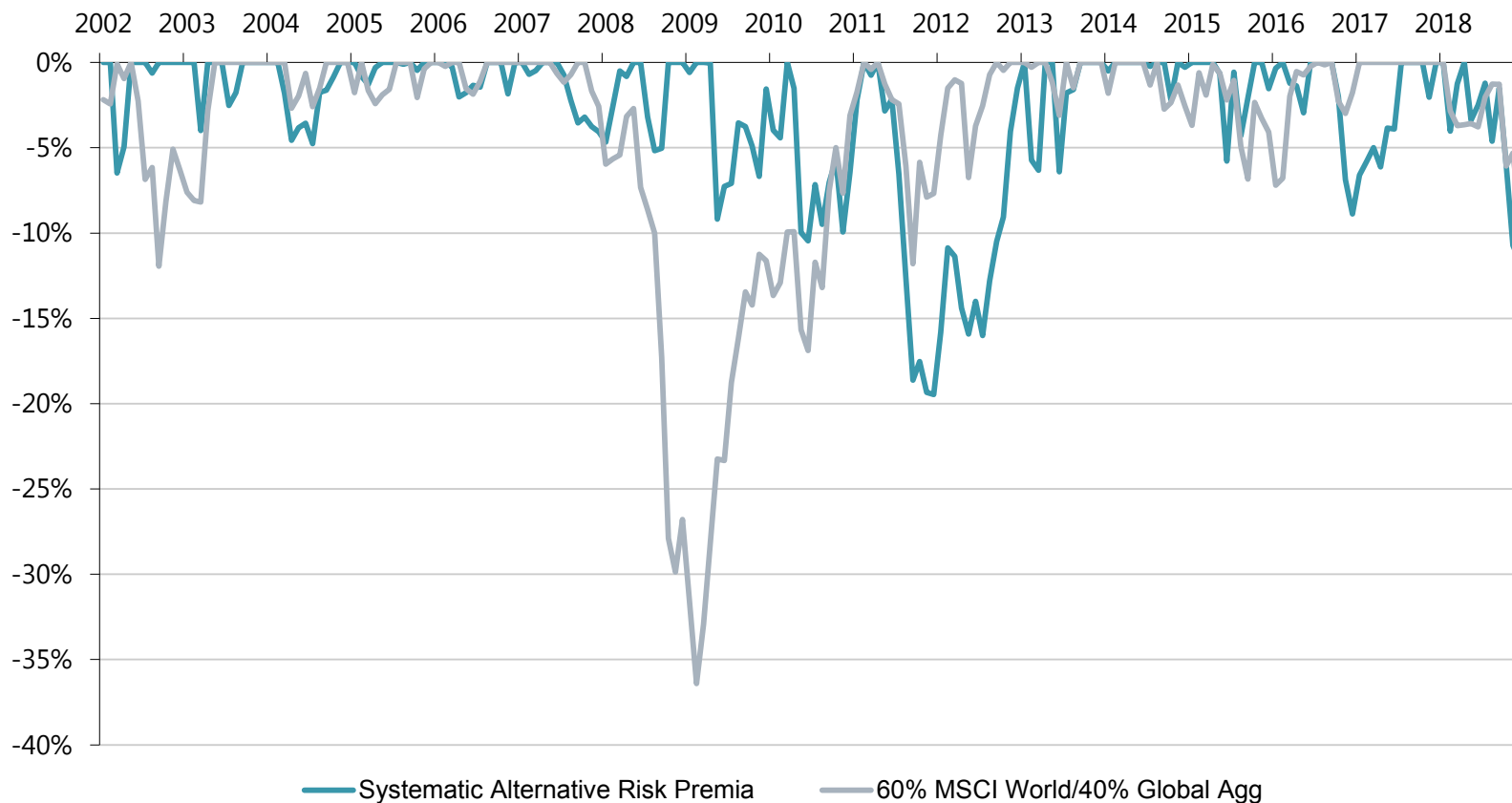
Simulated Results 1/2002 to 12/2018		Carry				Value				Momentum			
		Bonds	Curr	Equities	Comm	Bonds	Curr	Equities	Comm	Bonds	Curr	Equities	Comm
Carry	Bonds	1.00								<div> Average: 0.04 Min: (0.35) Max: 0.43 </div>			
	Currencies	0.25	1.00										
	Equities	0.00	0.01	1.00									
	Commodities	0.08	0.08	-0.06	1.00								
Value	Bonds	0.19	-0.04	0.20	0.05	1.00							
	Currencies	0.07	-0.30	0.20	-0.06	0.11	1.00						
	Equities	0.17	0.19	0.27	0.02	0.25	-0.04	1.00					
	Commodities	-0.05	-0.14	0.10	-0.31	-0.11	0.06	0.00	1.00				
Momentum	Bonds	0.18	-0.16	-0.04	-0.06	-0.35	0.04	-0.14	0.08	1.00			
	Currencies	0.03	-0.01	0.01	0.00	0.09	-0.08	-0.08	0.03	0.16	1.00		
	Equities	0.01	-0.21	-0.04	0.01	0.13	-0.01	0.08	0.04	0.13	0.31	1.00	
	Commodities	0.06	0.02	-0.07	0.37	0.05	-0.12	0.00	-0.12	0.14	0.43	0.28	1.00

Note: Results based on simulation from 1/2002 to 12/2018. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis.
Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

Simulated performance is for illustrative purposes only, does not represent actual returns of any investor, and may not be relied upon for investment decisions. Actual client returns will vary. Past performance not indicative of future results. All investments are subject to loss. Simulated performance is presented gross of management fees. The deduction of an advisory fee would reduce an investor's return. Please refer to the Disclosures for additional information. Material provided is supplemental to the GIPS® compliant presentation. Please refer to the GIPS® compliant presentation and other disclosures at the end of this presentation.

Drawdowns (Simulated)

Cumulative Monthly Drawdown (Net)



Results based on simulation from 1/2002 to 12/2018. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis. Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

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Why SARP™

Lever

Objective

Leverage budgeting rather than volatility targeting



Avoid volatility forecasts that are often unreliable and may require strategy to de-risk when volatility spikes

Cost conscious structure and implementation



Maximize returns to investors through minimization of transaction costs

Focus on factors proven to be robust across multiple asset classes



Avoids over-optimizing and data-mining

Include Value factor in all asset classes



Adds diversification and improves risk-adjusted return

Investing in the Systematic Alternatives Risk Premia strategy involves risk, some of which are described on the proceeding page. Please also refer to the Disclosures for additional information.

The SARP™ Solution

Investor Concerns

Low Return Environment



Risk Diversification



Manager & Performance Fees



Trading Costs



Data Mining & Over Fitting



Black Box



SARP's™ Characteristics

Attractive absolute returns

Near-zero correlation to traditional asset classes & alternative strategies

Competitive management fees, no performance fees

Highly Efficient Implementation

Theoretically Sound, Empirically Robust

Transparency, Controlled Risk

Investing in the Systematic Alternatives Risk Premia strategy involves risk, some of which are described on the proceeding page. Please also refer to the Disclosures for additional information.

Systematic Alternative Risk Premia Composite

Parametric Investment & Overlay Strategies Systematic Alternative Risk Premia Composite Performance Presentation

As of December 31, 2017

Period	Returns			3 Yr. Annualized Standard Deviation		Dispersion	Assets		
	Total Gross Return AWR	Total Net Return AWR	Index	Composite	Index	Internal Equal Wtd.	Number of Portfolios	Composite (MM)	Total Firm (MM)
2017	10.87%	10.01%	-	-	-	-	≤ 5	125	137,760

**Represents data from 05/01/2017 through 12/31/2017*

Index: None

N/A - Internal dispersion is not statistically meaningful for periods shorter than a year or for years in which five or fewer portfolios were included in the Composite for the full year.

Parametric Portfolio Associates® LLC ("Parametric") is an investment advisory firm registered with the U.S. Securities and Exchange Commission. Parametric is headquartered in Seattle, Washington and has investment centers in Seattle, Washington; Minneapolis, Minnesota; and Westport, Connecticut providing investment management services. The Minneapolis Investment Center resulted after the purchase of Clifton Group Investment Management Company in December 2012. The Westport Investment Center was formed in 2007 and resulted after the purchase of Parametric Risk Advisors LLC. Prior to December 2016, Parametric Risk Advisors was separately registered as an investment advisory firm with the U.S. Securities and Exchange Commission.

Parametric is divided into two segments: Parametric Investment & Overlay Strategies and Parametric Custom Tax-Managed & Centralized Portfolio Management. For compliance with the Global Investment Performance Standards (GIPS®), the Firm is defined and held out to the public as Parametric Investment & Overlay Strategies. Parametric Investment & Overlay Strategies provides rules-based investment management services to institutional investors, individual clients and registered investment vehicles, including Engineered Alpha Strategies, Non-Tax Managed Custom Core, and Policy Implementation Overlay Service (PIOS). The Firm has complied with the GIPS standards retroactive to January 1, 2000.

Parametric Investment & Overlay Strategies claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Parametric Investment & Overlay Strategies has been independently verified for the periods January 1, 2000 to December 31, 2017. The verification report is available upon request.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

The Systematic Alternative Risk Premia Composite is comprised of all fully discretionary funded pooled accounts with an absolute return investment approach using systematic investment models and pre-defined trading rules. Investment models are periodically reevaluated and adjusted to assist in construction of investment portfolios consistent with the investment objective and strategies. The strategy takes long and short positions predominantly in futures contracts, such as global currency, commodity, rates, equity index and volatility markets for the purpose of generating returns based on carry, value and momentum signals with limited correlation with long-only stock and bond indices. The strategy also diversifies across assets classes and across style signals (value, carry and momentum) targeting a moderate level of volatility and managed leverage exposure. Included accounts will be invested in a commingled vehicle structure.

Systematic Alternative Risk Premia Composite (Continued)

Composite creation date is May 2017.

This composite is not compared against a benchmark. There is no benchmark that closely matches the risk/return characteristics of this strategy.

Derivative securities are used in the accounts which comprise this composite. Specifically, the accounts expect to achieve investment exposures primarily through derivative transactions, including (but not limited to) foreign exchange forward contracts; futures on securities, indices, currencies, commodities, and other investments; options; interest rate swaps, cross currency swaps, total return swaps; and credit default swaps. In addition, the accounts may also achieve investment exposures through the use of exchange-traded funds ("ETFs"). The accounts may also utilize leverage by entering into repurchase agreements, reverse repurchase agreements, forward commitments, short sales and securities lending. The accounts frequently have significant exposure to foreign investments and derivatives.

The firm's strategies contain derivatives such as futures, options, swaps, and other investment strategies that may involve certain advantages and risks. Futures require the posting of initial and variation margin. Therefore, a portion of risk capital must be preserved for this purpose rather than being allocated to a manager. Swaps require periodic payments, which may be less liquid than futures, and certain swaps may have counterparty/credit risk. Some investment strategies may require a collateral investment equal to the desired amount of exposure.

Portfolio returns reflect the reinvestment of dividend and interest income.

Performance results are expressed in U.S. dollars.

Composite gross returns are after transaction costs, but before other direct expenses and management fees. Net returns reflect the deduction of model investment management fees, 0.90% and fund expenses capped at .08%. The fees for the investment management services described herein are described in the fee schedule.

The pooled account management fee schedule is 0.90%.

The dispersion of annual returns is measured by equal-weighted standard deviation of portfolio returns within the composite for the full year.

Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

A list of composite descriptions is available upon request.

Past performance is not a guarantee of future results.

The three-year annualized Ex-Post Standard Deviation of the Systematic Alternative Risk Premia Composite for the period May, 2017 - December, 2017 is not presented because 36 monthly returns are not available.

Oakland Police & Fire Retirement System Covered Call Portfolio Performance

Oakland Police & Fire Retirement System Portfolio Performance

Blended rates

December 2018	Market Value	MTD	QTD	YTD	Since inception 3/11/14
Oakland PFRS Total Account Return¹	\$45,057,469	-7.40%	-11.00%	-5.08%	6.05%
DeltaShift Strategy Return	\$22,339,458	-8.67%	-13.01%	-6.15%	7.31%
<i>BXM – CBOE S&P 500® Buy Write Index</i>		-7.73%	-10.81%	-4.77%	4.70%
<i>S&P 500® Index (Total Return)</i>		-9.03%	-13.52%	-4.38%	8.52%
PPA DeltaShift Options Sleeve ²		0.37%	0.54%	-2.09%	-1.25%
S&P 500 Equity Sleeve		-9.04%	-13.53%	-4.45%	8.49%
CBOE S&P 500 Buy-Write Replication Strategy Return	\$22,718,011	-6.16%	-8.97%	-4.05%	5.35%
<i>BXM – CBOE S&P 500® Buy Write Index</i>		-7.73%	-10.81%	-4.77%	4.70%
<i>S&P 500® Index (Total Return)</i>		-9.03%	-13.52%	-4.38%	8.52%
Buy-Write Options Sleeve ²		2.87%	4.90%	-0.37%	-3.46%
Equity Sleeve		-9.03%	-13.54%	-4.46%	8.51%

¹Performance is as of 12/31/2018 and is gross of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.

²Returns presented may differ from the Options only returns provided by Parametric due to the inclusion of cash and the effect of portfolio rebalancing.

Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Disclosures for additional information and disclosure.

Source: Parametric; Bloomberg; CBOE®



Proprietary and confidential. This material has been prepared for the exclusive use of Oakland Police & Fire Retirement System in a one-on-one presentation only.

Fourth Quarter 2018

DeltaShift Overview

Oakland Police & Fire Retirement System Portfolio Performance

Parametric DeltaShift (Gross) vs. Parametric BXM (Gross) vs. S&P 500 Index Total Return vs CBOE BXM Index

	S&P 500 Total Return Index ("SPTR")		Parametric Portfolio DeltaShift Account (Gross)		Parametric Portfolio BXM Replication Account (Gross)		CBOE S&P 500 BuyWrite Index ("BXM")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Mar 12, 2014 - Dec 31, 2014	11.98%	11.15%	11.62%	9.98%	3.07%	8.82%	2.76%	8.82%
Jan 1, 2015 - Dec 31, 2015	1.38%	15.49%	3.05%	14.51%	5.53%	11.51%	5.24%	11.75%
Jan 1, 2016 - Dec 31, 2016	11.96%	13.10%	11.85%	11.78%	8.55%	8.86%	7.07%	8.51%
Jan 1, 2017 - Dec 31, 2017	21.83%	6.68%	17.97%	5.28%	13.55%	3.95%	13.00%	3.69%
Jan 1, 2018 - Dec 31, 2018	(4.38%)	17.06%	(5.78%)	15.94%	(3.83%)	13.65%	(4.77%)	13.71%
Annualized Since Inception	8.51%	13.27%	7.73%	12.16%	5.43%	9.94%	4.69%	9.93%

Source: Parametric; Bloomberg; CBOE®

*Performance is as of 12/31/2018.

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Fourth Quarter 2018

DeltaShift Overview

Oakland Police & Fire Retirement System Portfolio Performance

Call writing is expected to have a positive contribution to portfolio performance and corresponding reduction to portfolio volatility over time.

- The source of excess return is the Volatility Risk Premium;
- The source of volatility reduction is the negative correlation between short call options and long equity.

From program inception (March 12, 2014) through the 2016 election (November 7, 2016) the programs performed as expected:

Inception to Election (March 12, 2014 – November 7, 2016), Annualized

	S&P 500 Total Return Index ("SPTR")		Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXM")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Mar. 12, 2014 – Nov. 7, 2016	7.29%	13.74%	8.06%	12.62%	5.44%	10.09%	4.82%	10.08%

Source: Parametric; Bloomberg; CBOE®

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Fourth Quarter 2018 DeltaShift Overview

Oakland Police & Fire Retirement System Portfolio Performance

From the 2016 election (November 7, 2016) through January 26, 2018 (the Trump Rally), the S&P 500 had 14 consecutive positive monthly total returns, the first time that had happened in the previous 90 years.

- This impressive performance resulted in 30.45% annualized total return for the S&P 500® Index.
- Sustained S&P 500 appreciation like that witnessed during the period does not lend itself to call selling.
- Any VRP portfolio contribution was overwhelmed by the directional component of the S&P 500.
- While DeltaShift expectedly underperformed the S&P 500 during the period, the risk management techniques of the strategy resulted in substantial outperformance of the benchmark CBOE S&P 500 BuyWrite Index ("BXM").
- In addition, the added diversification of Parametric's Enhanced BXM replication resulted in outperformance vs the BXM.

Post Election Rally (November 8, 2016 – January 26, 2018), Annualized

	S&P 500 Total Return Index ("SPTR")		Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXM")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Nov. 8, 2016 – Jan. 26, 2018	30.45%	6.88%	22.25%	5.26%	14.76%	3.88%	13.91%	3.60%

Source: Parametric; Bloomberg; CBOE®

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Oakland Police & Fire Retirement System Portfolio Performance

Post rally, from January 26, 2018 through December 31, 2018, call writing was again additive to the portfolio. Both primary goals – excess return and reduced portfolio volatility– were once again successful.

- In this period BXM outperformed DeltaShift (but not the Parametric Enhanced BXM implementation).
- This is expected in downward trending markets as BXM sells at-the-money calls, receiving higher premium than the out-of-the-money calls used in DeltaShift.
- BXM is essentially a bear market strategy.

Post Rally (January 27, 2018 – December 31, 2018)

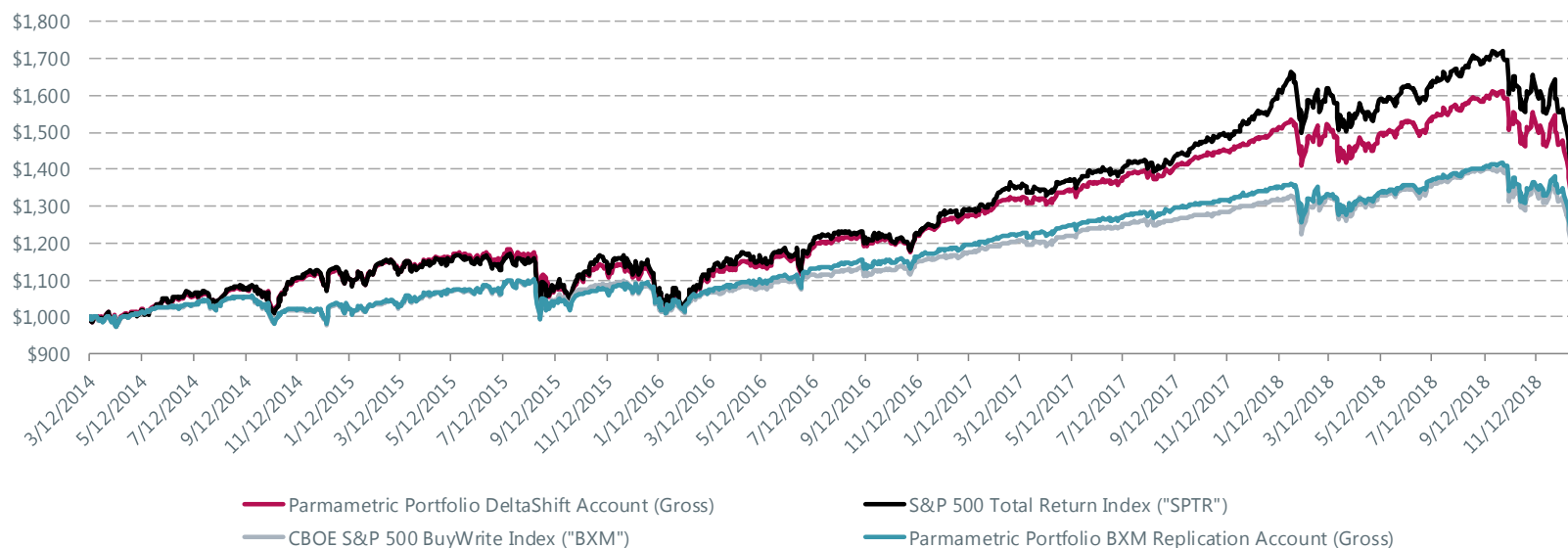
	S&P 500 Total Return Index ("SPTR")		Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXM")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Jan. 27, 2018 – Dec. 31, 2018	(11.09%)	17.51%	(8.843%)	16.49%	(5.25%)	14.14%	(6.14%)	14.22%

Source: Parametric; Bloomberg; CBOE®

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Oakland Police & Fire Retirement System Portfolio Performance¹

Parametric Portfolio DeltaShift Account (Gross) vs.
Parametric Portfolio BXM Replication Account (Gross)
vs. S&P 500 Index Total Return vs CBOE BXM Index
Mar 12, 2014 - Dec 31, 2018



Source: Parametric; Bloomberg; CBOE®

¹Returns presented may differ from the Options only returns provided by Parametric due to the inclusion of cash and the effect of portfolio rebalancing.

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Fourth Quarter 2018

DeltaShift Overview

Disclosures

Parametric Portfolio Associates® LLC ("Parametric"), headquartered in Seattle, Washington, is registered as an investment adviser with the U.S. Securities and Exchange Commission under the Investment Advisers Act of 1940. Parametric is a leading global asset management firm, providing investment strategies and customized exposure management directly to institutional investors and indirectly to individual investors through financial intermediaries. Parametric offers a variety of rules-based investment strategies, including alpha-seeking equity, alternative and options strategies, as well as implementation services, including customized equity, traditional overlay and centralized portfolio management. Parametric is a majority-owned subsidiary of Eaton Vance Corp. and offers these investment capabilities from its offices in Seattle, WA, Minneapolis, MN and Westport, CT. This material may not be forwarded or reproduced, in whole or in part, without the written consent of Parametric Compliance. Parametric and its affiliates are not responsible for its use by other parties.

The strategies discussed herein are strategy is offered by the Parametric Investment & Overlay Strategies segment of Parametric. Parametric Investment & Overlay Strategies AUM as of 12/31/2017 is approximately \$137.8 billion. Parametric Investment & Overlay Strategies provides rules based-investment management services to institutional investors, individual clients and co-mingled vehicles. For a complete list and description of composites, please contact us at 206.694.5575. The GIPS® compliant presentation is included herein along with other supplemental information that further defines or explains the strategy, investment process or composite.

This information is intended solely to report on investment strategies and opportunities identified by Parametric. Opinions and estimates offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. Past performance is not indicative of future results. The views and strategies described may not be suitable for all investors. Investing entails risks and there can be no assurance that Parametric will achieve profits or avoid incurring losses. Parametric does not provide legal, tax and/or accounting advice or services. Clients should consult with their own tax or legal advisor prior to entering into any transaction or strategy described herein.

Charts, graphs and other visual presentations and text information were derived from internal, proprietary, and/or service vendor technology sources and/or may have been extracted from other firm data bases. As a result, the tabulation of certain reports may not precisely match other published data. Data may have originated from various sources including, but not limited to, Bloomberg, MSCI/Barr, FactSet, and/or other systems and programs. Parametric makes no representation or endorsement concerning the accuracy or propriety of information received from any other third party.

Performance may be presented gross of investment advisory fees. The deduction of advisory fees from an investor's portfolio would impact performance adversely. As an example, assuming (a) \$1,000,000 investment, (b) portfolio return of 5% per year, and (c) 1.00% annual investment advisory fee, the cumulative fees paid would be \$10,209.57 in the first year, \$55,254.43 over five years, and \$122,351.51 over ten years. Actual fees charged vary by portfolio due to various conditions, including account size. Parametric's investment advisory fees are described further in Part 2A of Form ADV, which is available upon request.

References to specific securities and their issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities. Any specific securities mentioned are not representative of all securities purchased, sold or recommended for advisory clients. Actual portfolio holdings vary for each client and there is no guarantee that a particular client's account will hold any, or all, of the securities identified. It should not be assumed that any of the securities or recommendations made in the future will be profitable or will equal the performance of the listed securities.

This material contains hypothetical, back-tested and/or model performance data, which may not be relied upon for investment decisions. Hypothetical, back-tested and/or model performance results have many inherent limitations, some of which are described below. Hypothetical returns are unaudited, are calculated in U.S. dollars using the internal rate of return, reflect the reinvestment of dividends, income and other distributions, but may exclude transaction costs and do not take individual investor taxes into consideration. Model/target portfolio information presented, including, but not limited to, objectives, allocations and portfolio characteristics, is intended to provide a general example of the implementation of the strategy and no representation is being made that any client account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, simulated trading does not involve financial risk, and no simulated trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results. Because there are no actual trading results to compare to the hypothetical, back-tested and/or model performance results, clients should be particularly wary of placing undue reliance on these hypothetical results. Perspectives, opinions and testing data may change without notice. Detailed back-tested and/or model portfolio data is available upon request. No security, discipline or process is profitable all of the time. There is always the possibility of loss of investment.

Disclosures (Continued)

The S&P 500® Index represents the top 500 publicly traded companies in the U.S.

The CBOE S&P 500® BuyWrite Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500® Index. The BXM is a passive total return index based on (1) buying an S&P 500® stock index portfolio, and (2) writing (or selling) the near-term S&P 500® Index (SPXSM) covered call option, generally on the third Friday of each month. The SPX call written will have about one month remaining to expiration, with an exercise price just above the prevailing index level (i.e., slightly out of the money). The SPX call is held until expiration and cash settled, at which time a new one-month, near-the-money call is written.

Bloomberg Barclays 1-3 Month Treasury-Bill Index includes all publicly issued zero-coupon US Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in US dollars and must be fixed rate and non convertible.

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The effectiveness of the option strategy is dependent on a general imbalance of natural buyers over natural sellers of index options. This imbalance could decrease or be eliminated, which could have an adverse effect. A decision as to whether, when and how to use options involves the exercise of skill and judgment, and even a well-conceived and well-executed options program may be adversely affected by market behavior or unexpected events. Successful options strategies may require the anticipation of future movements in securities prices, interest rates and other economic factors. No assurances can be given that the judgments of Parametric in this respect will be correct.

Options are not suitable for all investors and carry additional risks. Investors must ensure that they have read and understood the current options risk disclosure document before entering into any options transactions. In addition, investors should consult with a tax, legal and/or financial advisor prior to contemplating any derivative transactions. The options risk disclosure document can be accessed at the following web address: <http://www.optionsclearing.com/about/publications/character-risks.jsp>.

The value of commodities investments will generally be affected by overall market movements and factors specific to a particular industry or commodity, which may include weather, embargoes, tariffs, health, and political, international and regulatory developments. Economic events and other events (whether real or perceived) can reduce the demand for commodities, which may reduce market prices and cause their value to fall. The use of derivatives can lead to losses or adverse movements in the price or value of the asset, index, rate or instrument underlying a derivative due to failure of a counterparty or due to tax or regulatory constraints.

Derivatives such as futures, swaps, and other investment strategies have certain disadvantages and risks. Futures require the posting of initial and variation margin. Therefore, a portion of risk capital must be preserved for this purpose rather than being allocated to a manager. Liquid futures may not exist for published benchmarks which may result in tracking error. Also, some intra-period mispricing may occur. Swaps require periodic payments, may be less liquid than futures, and may have counterparty/credit risk. Some investment strategies require a cash investment equal to the desired amount of exposure.

Global market investing, (including developed, emerging and frontier markets) carries additional risks and/or costs including but not limited to: political, economic, financial market, currency exchange, liquidity, accounting, and trading capability risks. Future investments may be made under different economic conditions, in different securities and using different investment strategies. The currency used in all calculations is the U.S. dollar. Currency exchange may negatively impact performance.

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Parametric is headquartered at 1918 8th Avenue, Suite 3100, Seattle, WA 98101. Parametric's Minneapolis office is located at 3600 Minnesota Drive, Suite 325, Minneapolis, MN 55435. For more information regarding Parametric and its investment strategies, or to request a copy of Parametric's Form ADV, please contact us at 206.694.5575 (Seattle), 952.767.7700 (Minneapolis) or 203.227.1700 (Westport), or visit our website, www.parametricportfolio.com.

PCA INVESTMENT MARKET RISK METRICS

Monthly Report



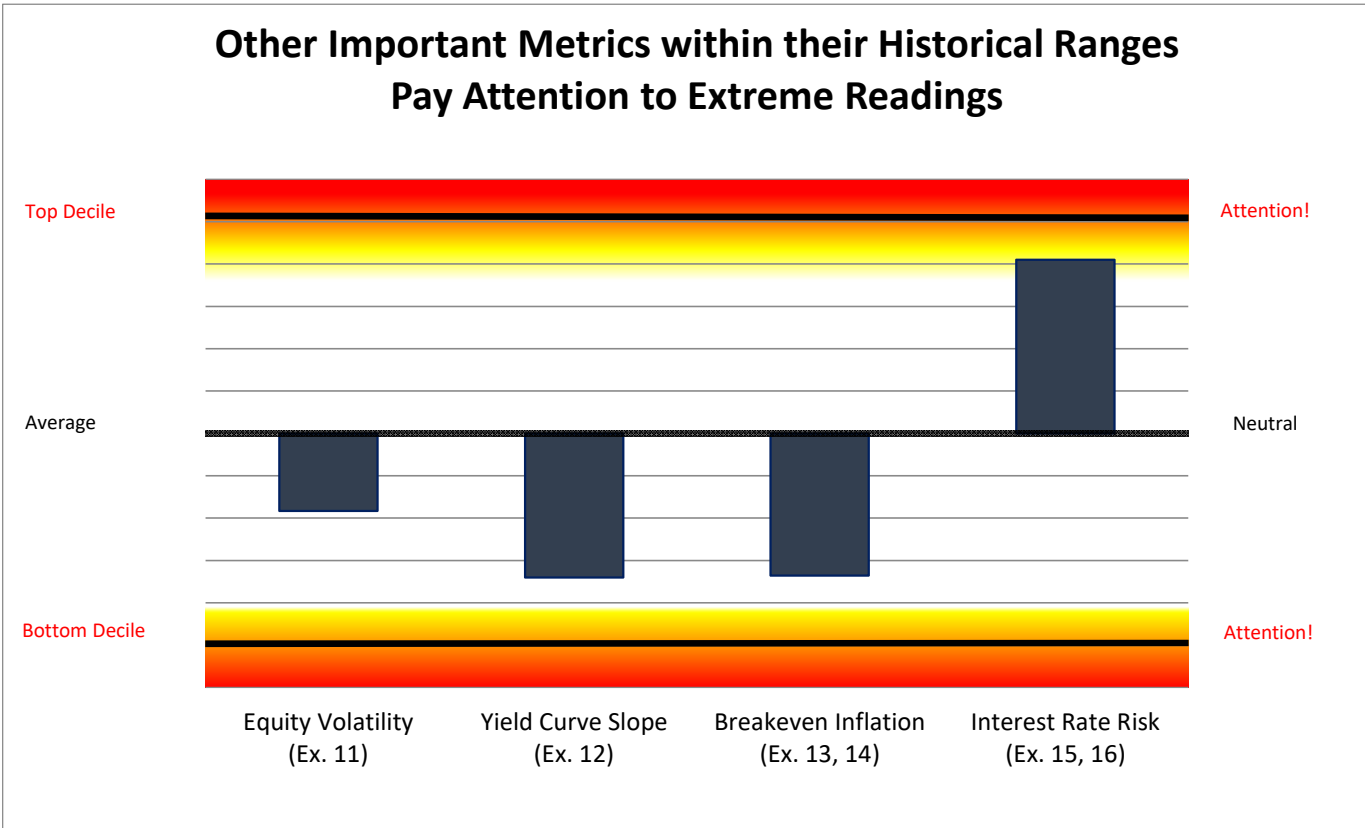
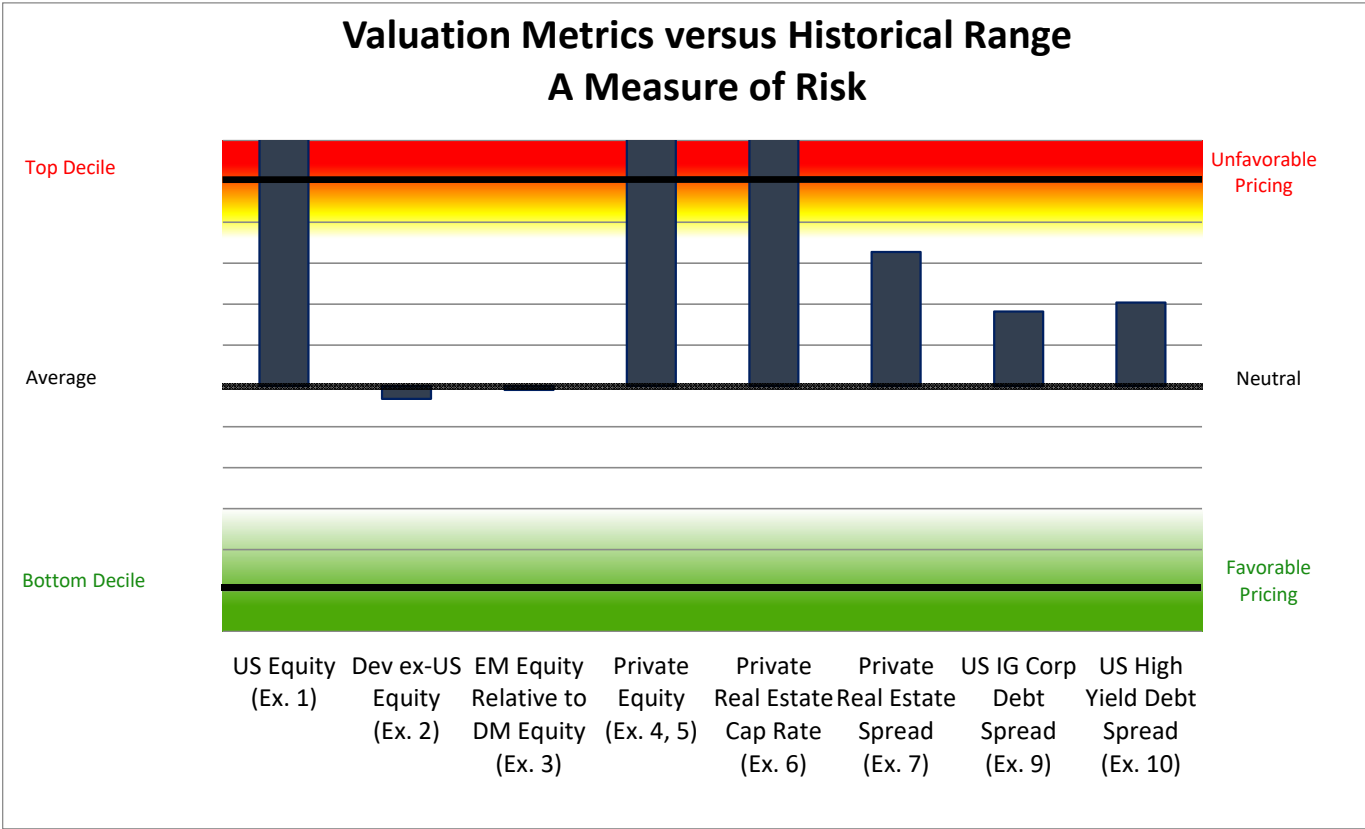
February 2019
(as of 1/31/19)

Takeaways

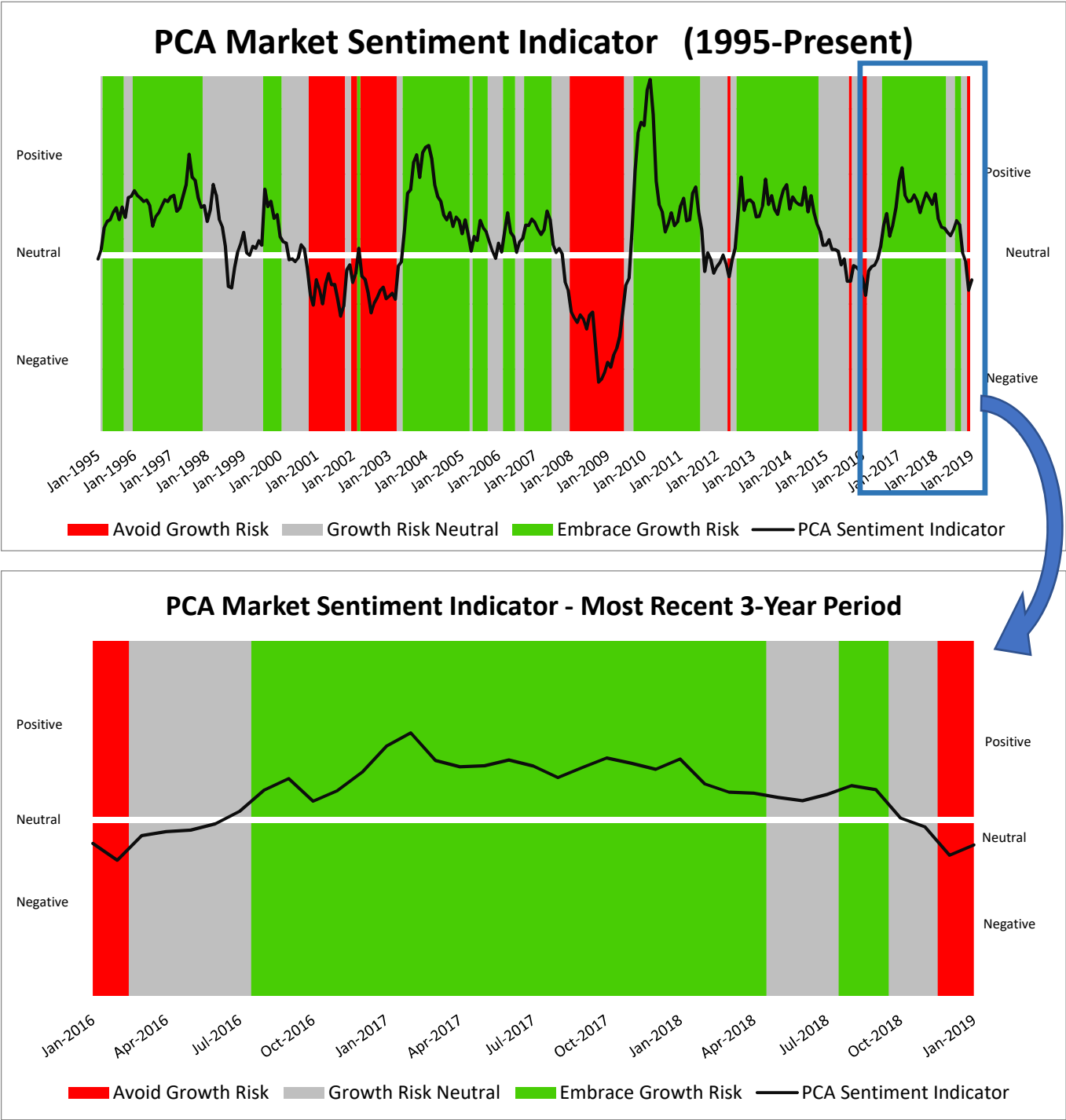
- January was almost a complete mirror-image to December for risk-based assets. Across the globe, equity markets produced high single-digit to low double-digit returns, essentially nullifying the December drawdowns.
- U.S. Equity markets remain expensive whereas non-U.S. Equity markets remain reasonably valued.
- Similar to equity markets, credit markets produced positive returns during January as credit spreads compressed.
- Despite the strong performance of risk-based assets, U.S. Treasury bonds did not sell-off during January. Duration risk remains elevated and the yield curve has continued to flatten.
- Equity volatility decreased during January as the VIX Index declined throughout the month before finishing January below the long-term average level.
- PCA's Market Sentiment Indicator (page 4) remained negative (red) as a result of negative one-year returns in equity markets and corporate bond spreads.
- **Economies and markets appear to be in transition.** Diverging global economic growth, diverging global monetary policy, and ongoing geopolitical turmoil has resulted in a high degree of uncertainty in the global capital markets.

¹See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

Risk Overview



Market Sentiment



Information Behind Current Sentiment Reading

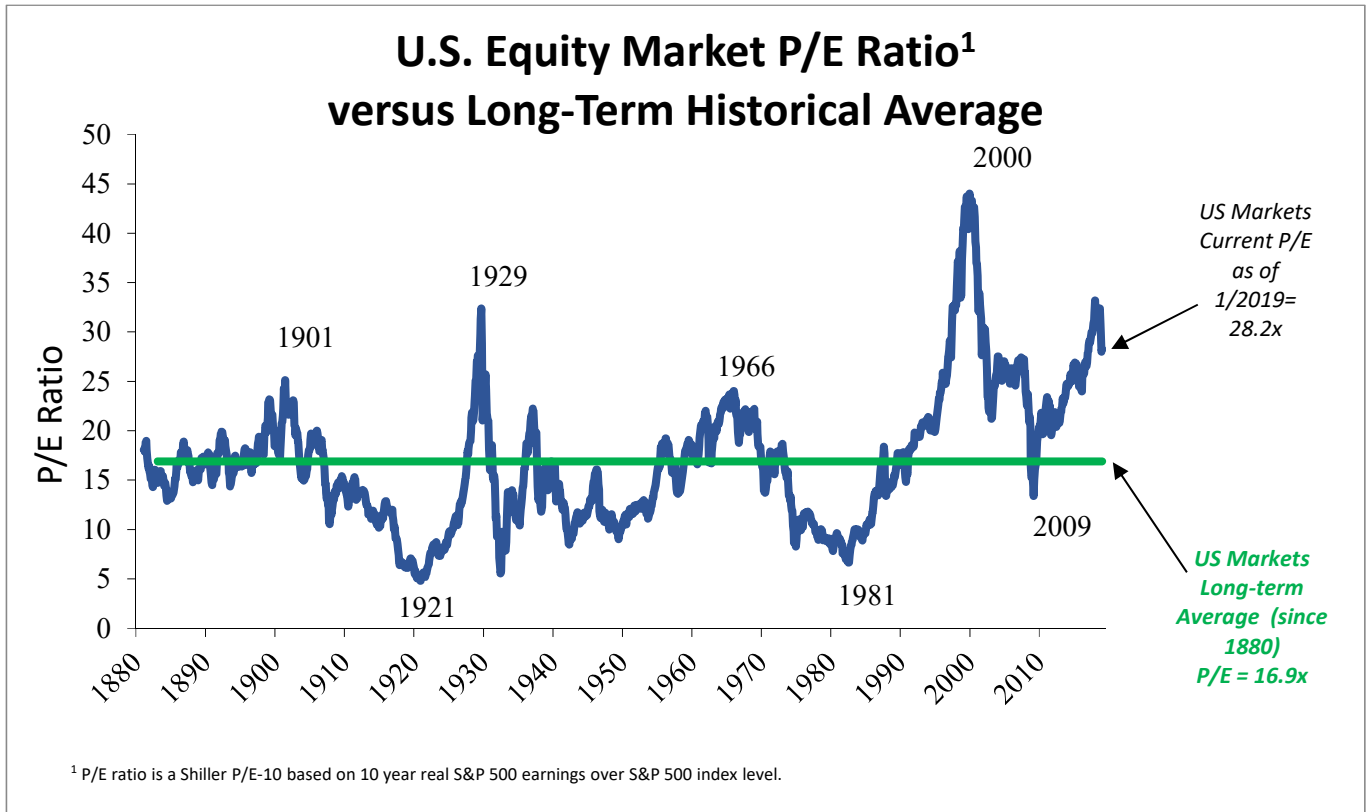
Bond Spread Momentum Trailing-Twelve Months
Equity Return Momentum Trailing-Twelve Months
Agreement Between Bond Spread and Equity Spread Momentum Measures?

Negative	
Negative	
Agree	

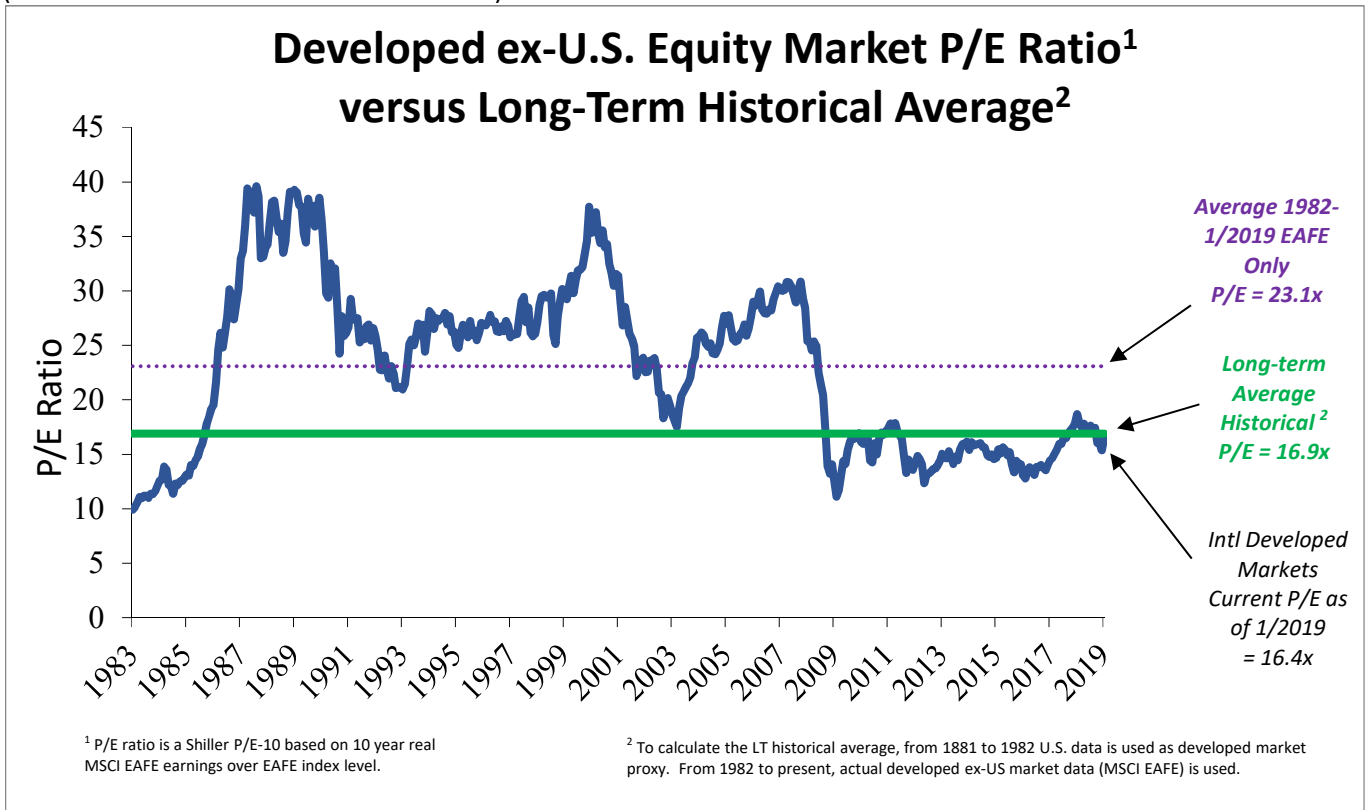
Growth Risk Visibility (Current Overall Sentiment)

Negative	
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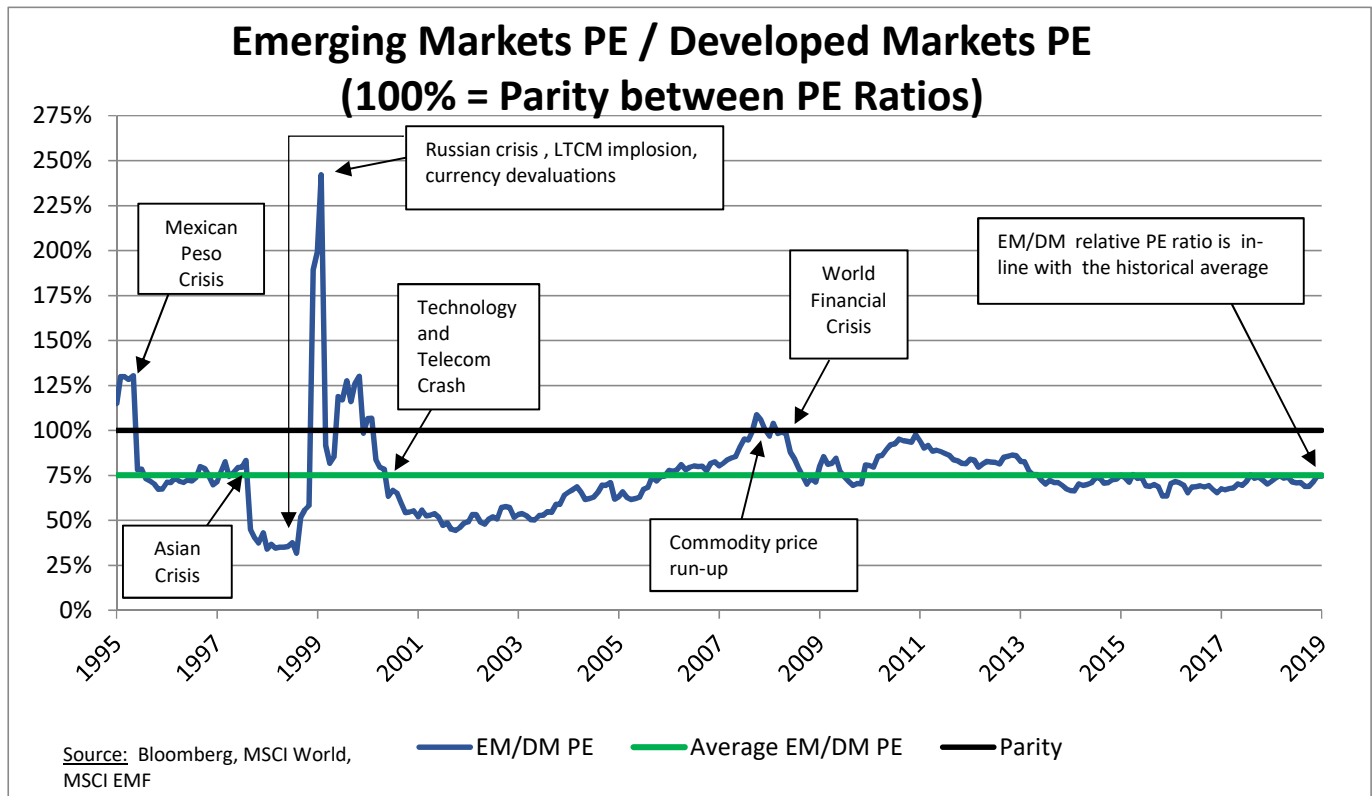
Developed Public Equity Markets



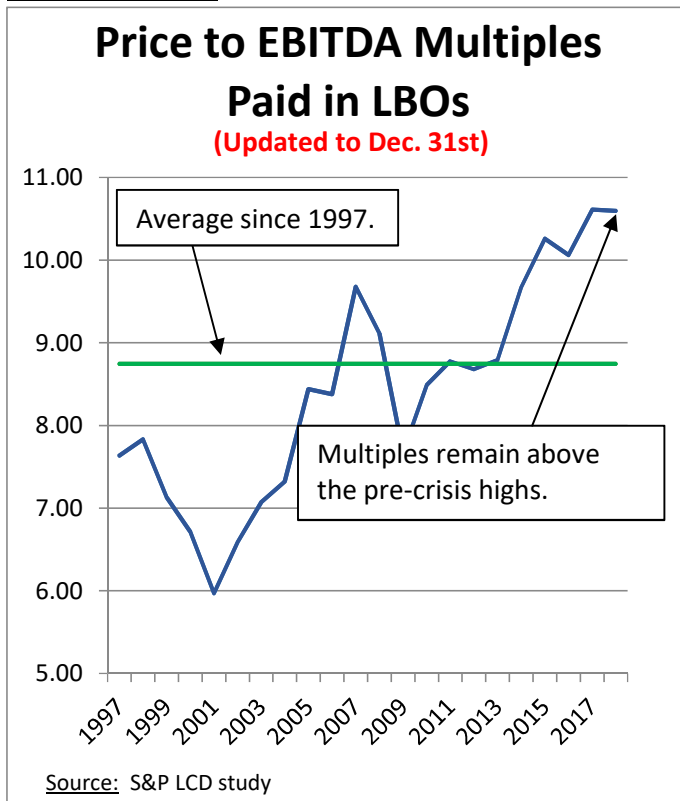
(Please note the difference in time scales)



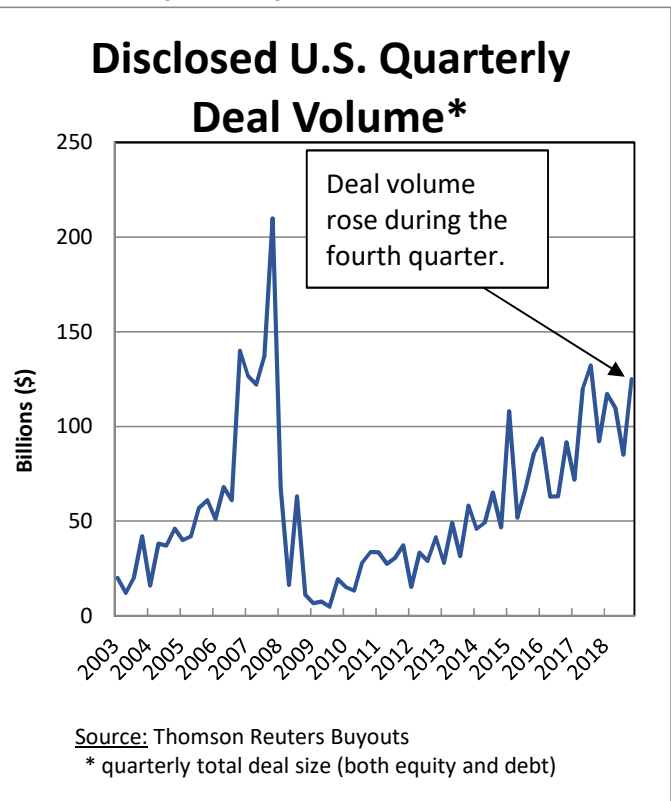
Emerging Market Public Equity Markets



US Private Equity



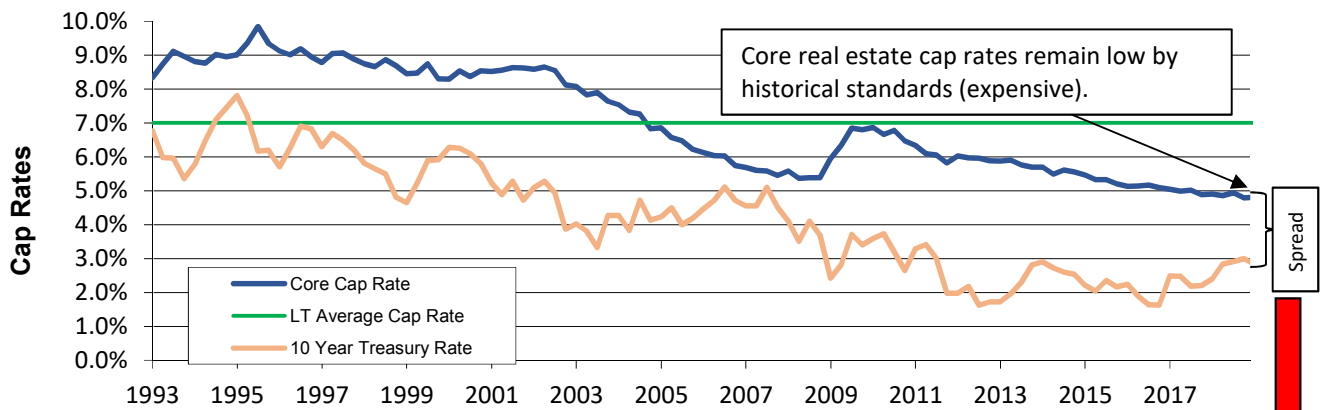
Quarterly Data, Updated to December 31st



Private Real Estate

Quarterly Data, Updated to December 31st

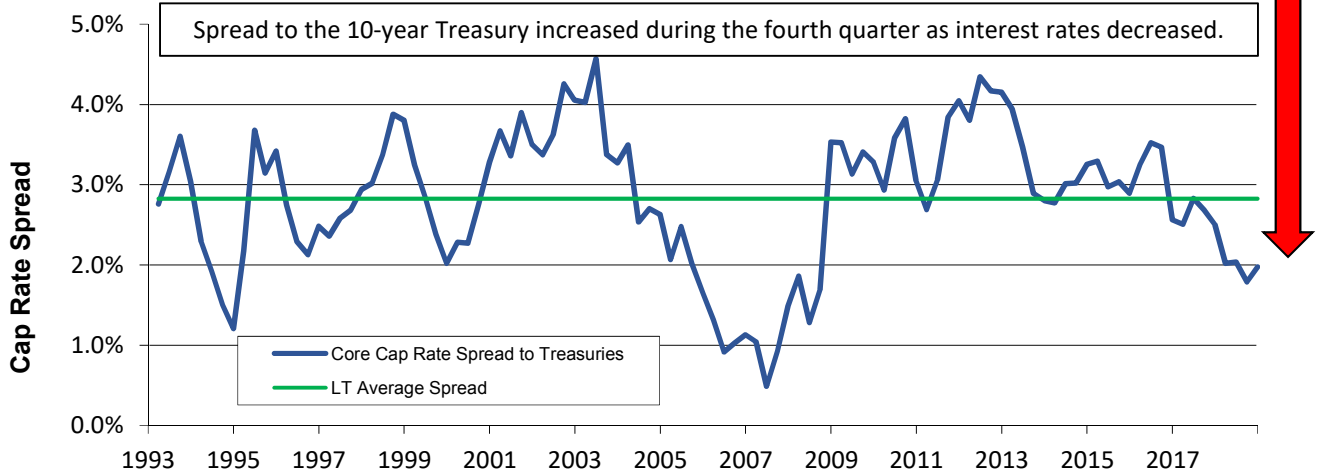
Core Real Estate Current Value Cap Rates¹



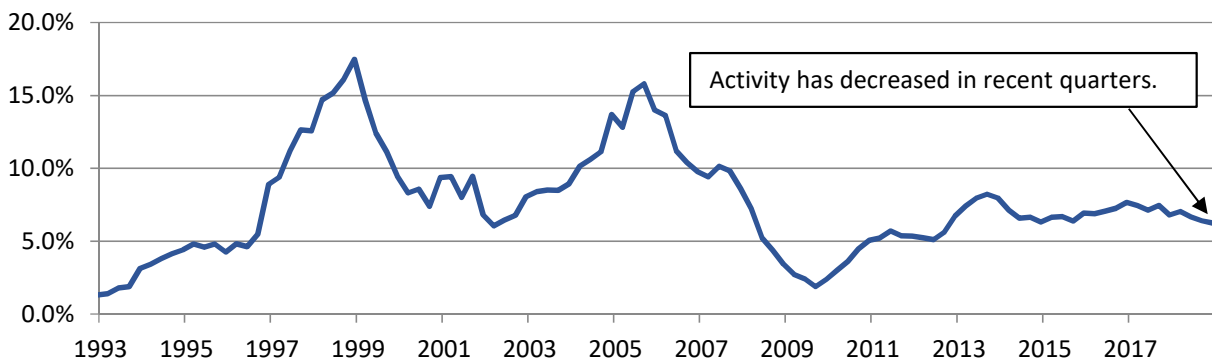
Source: NCREIF, www.ustreas.gov

¹A cap rate is the current annual income of the property divided by an estimate of the current value of the property. It is the current yield of the property. Low cap rates indicate high valuations.

Core Cap Rate Spread over 10-Year Treasury Interest Rate



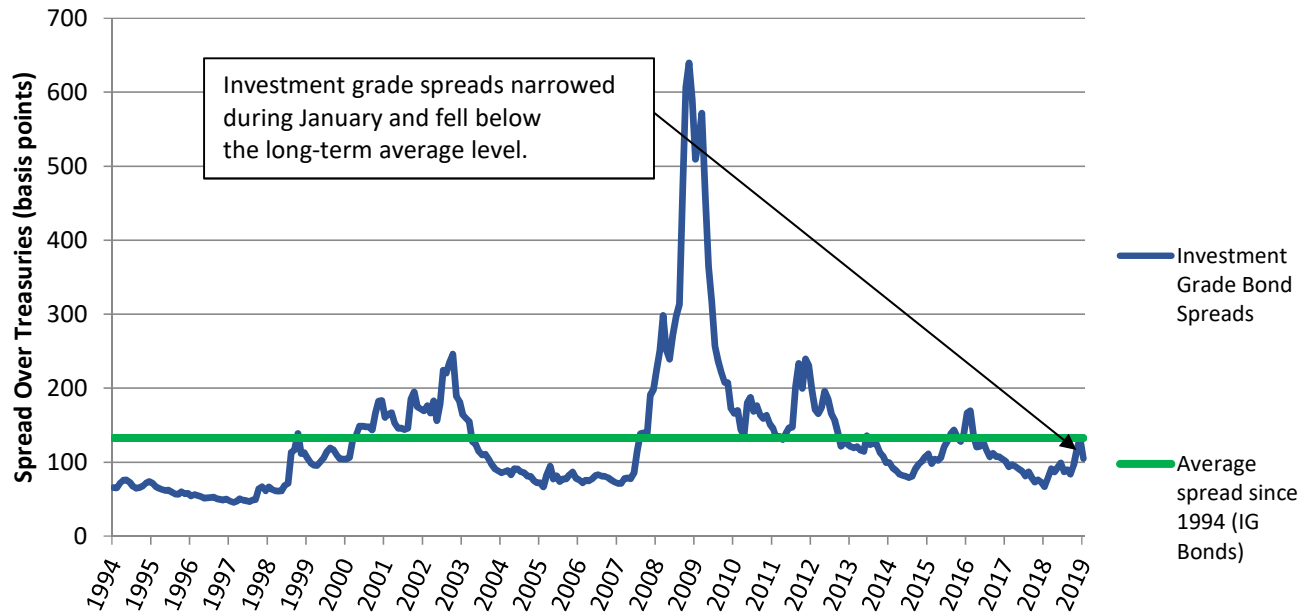
Transactions as a % of Market Value Trailing-Four Quarters (a measure of property turnover activity)



Source: NCREIF, PCA calculation

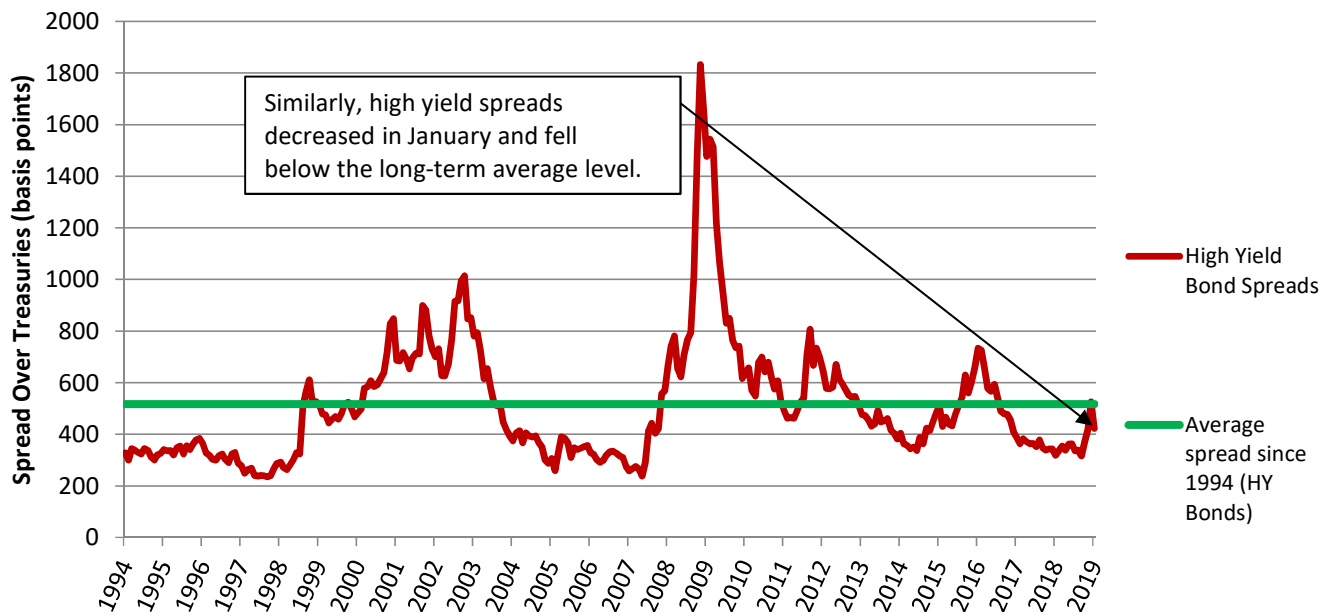
Credit Market US Fixed Income

Investment Grade Corporate Bond Spreads



Source: LehmanLive: Barclays Capital US Corporate Investment Grade Index Intermediate Component.

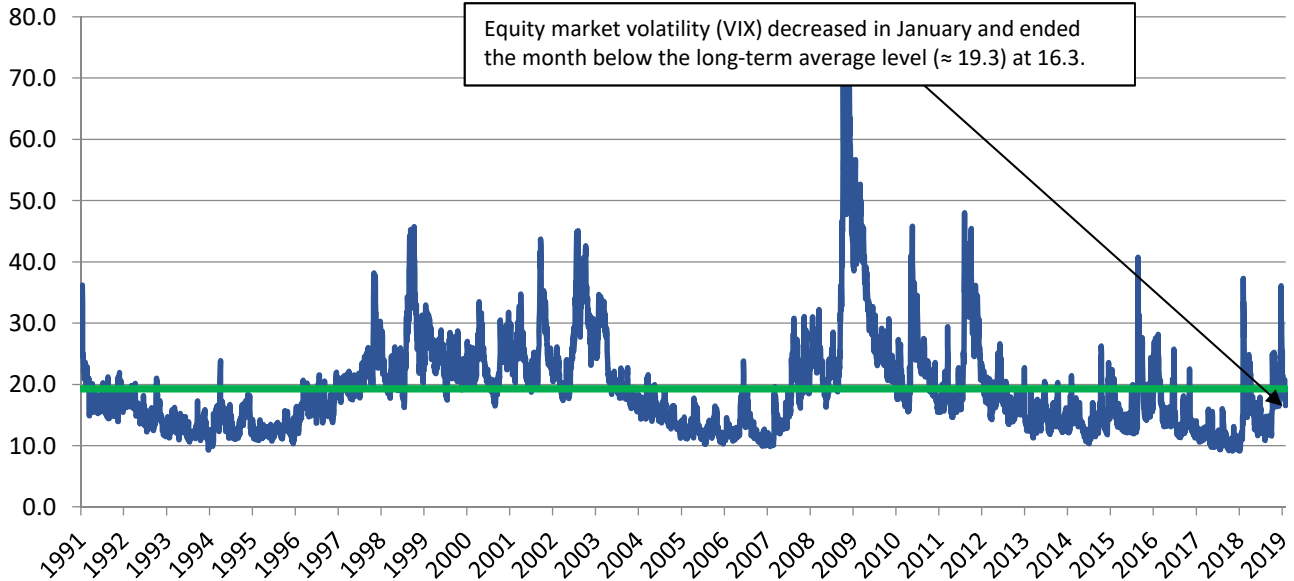
High Yield Corporate Bond Spreads



Source: LehmanLive: Barclays Capital U.S. Corporate High Yield Index.

Other Market Metrics

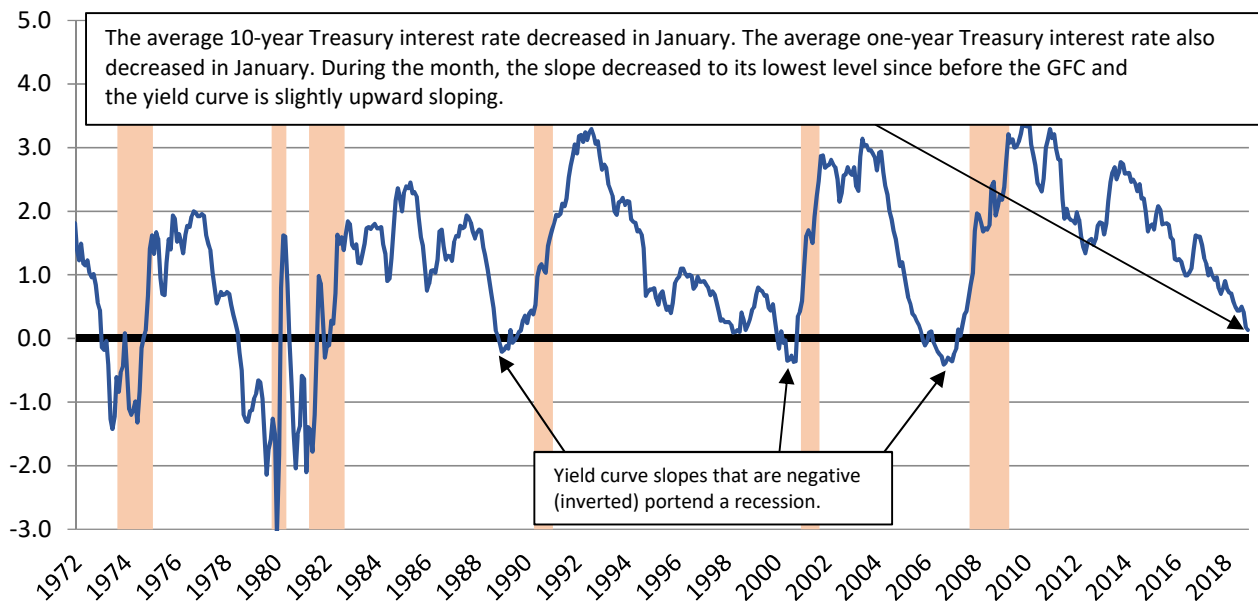
VIX - a measure of equity market fear / uncertainty



Source: <http://www.cboe.com/micro/vix/historical.aspx>

(Please note the difference in time scales)

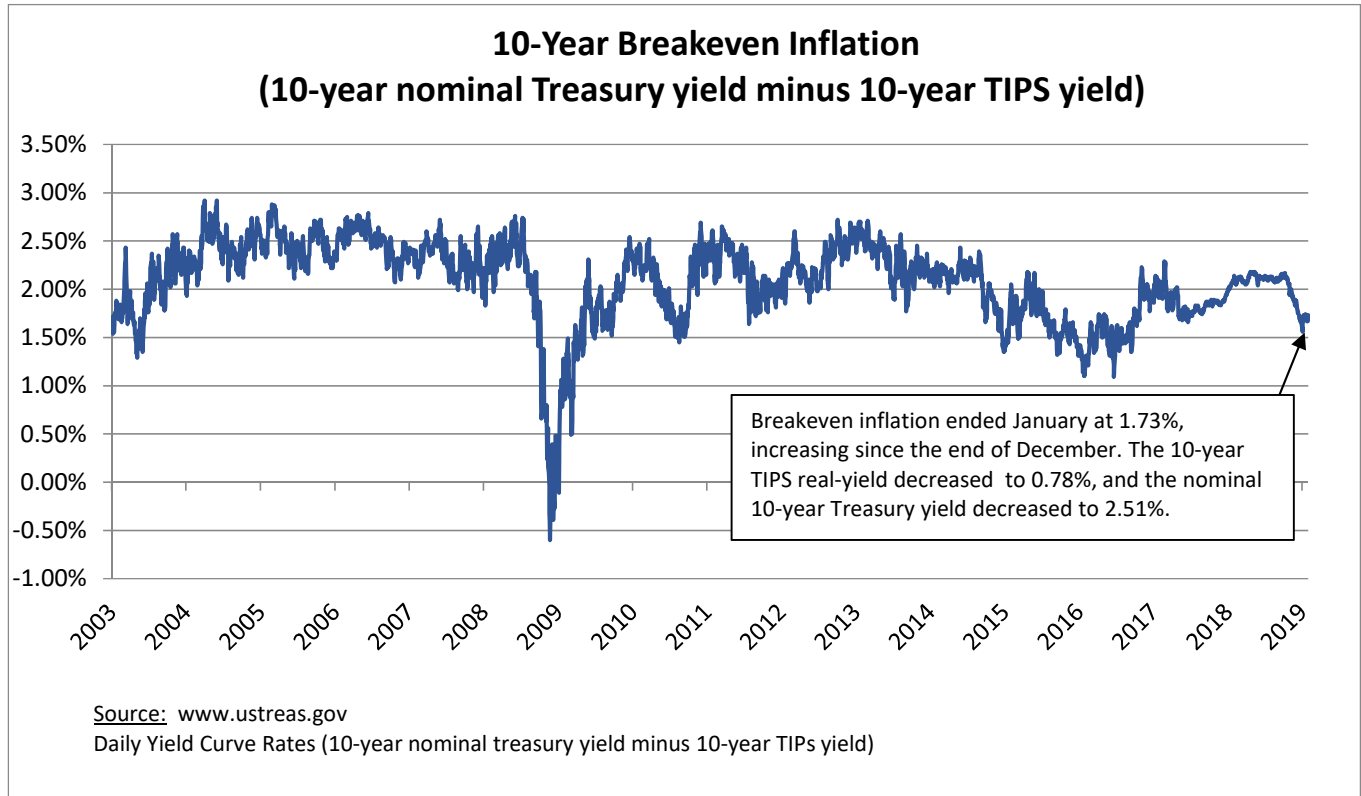
Yield Curve Slope



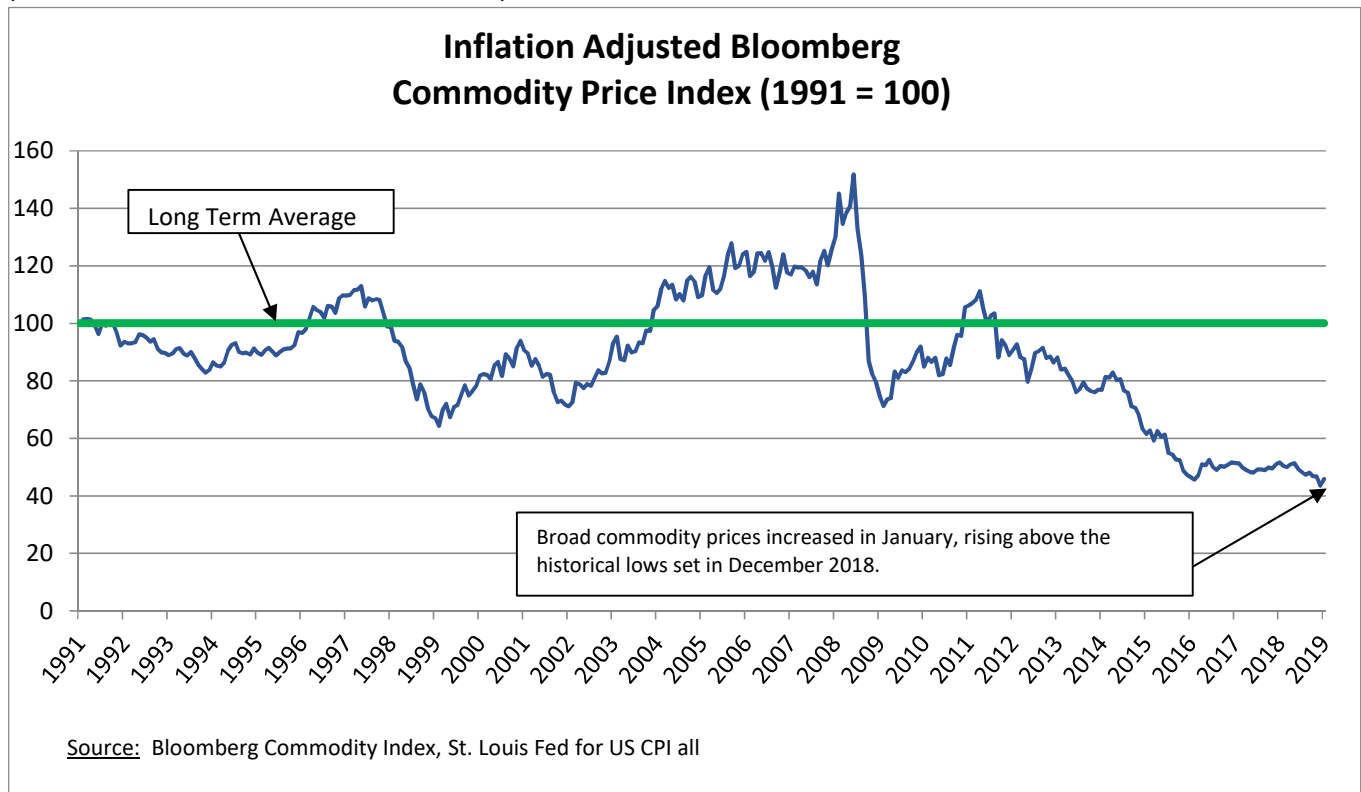
Source: www.ustreas.gov (10-year treasury yield minus 1-year treasury yield)

Recession Dating: NBER <http://www.nber.org/cycles.html>

Measures of Inflation Expectations

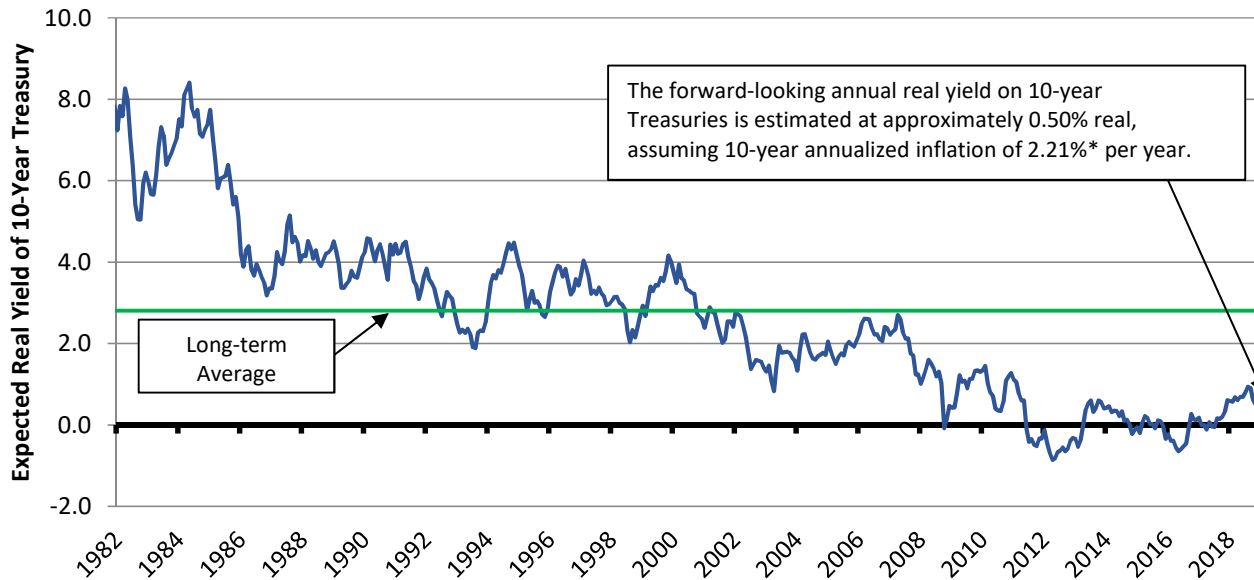


(Please note the difference in time scales)



Measures of U.S. Treasury Interest Rate Risk

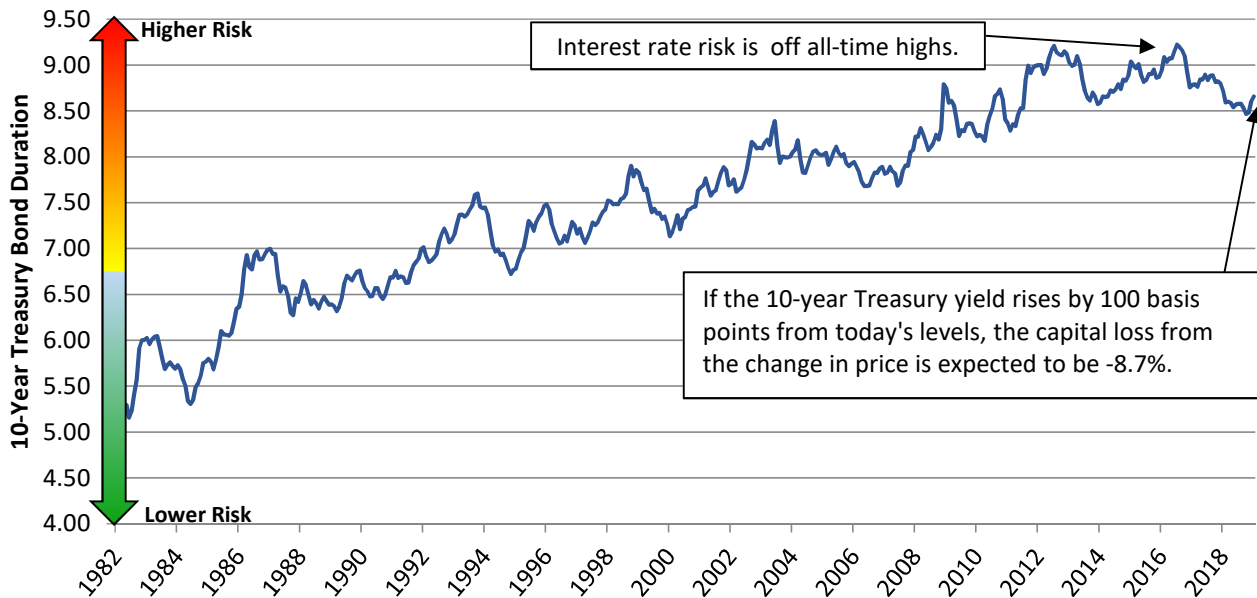
Estimate of 10-Year Treasury Forward-Looking Real Yield



Sources: www.ustreas.gov for 10-year constant maturity rates

*Federal Reserve Bank of Philadelphia survey of professional forecasts for inflation estimates

10-Year Treasury Duration (Change in Treasury price with a change in interest rates)



Source: www.ustreas.gov for 10-year constant maturity rates, calculation of duration

Appendix

Appendix

METRIC DESCRIPTION, RATIONALE FOR SELECTION AND CALCULATION METHODOLOGY

US Equity Markets:

Metric: P/E ratio = Price / "Normalized" earnings for the S&P 500 Index

To represent the price of US equity markets, we have chosen the S&P 500 index. This index has the longest published history of price, is well known, and also has reliable, long-term, published quarterly earnings. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the S&P 500 index). Equity markets are very volatile. Prices fluctuate significantly during normal times and extremely during periods of market stress or euphoria. Therefore, developing a measure of earnings power (E) which is stable is vitally important, if the measure is to provide insight. While equity prices can and do double, or get cut in half, real earnings power does not change nearly as much. Therefore, we have selected a well known measure of real, stable earnings power developed by Yale Professor Robert Shiller known as the Shiller E-10. The calculation of E-10 is simply the average real annual earnings over the past 10 years. Over 10 years, the earnings shenanigans and boom and bust levels of earnings tend to even out (and often times get restated). Therefore, this earnings statistic gives a reasonably stable, slow-to-change estimate of average real earnings power for the index. Professor Shiller's data and calculation of the E-10 are available on his website at <http://www.econ.yale.edu/~shiller/data.htm>. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book *Irrational Exuberance* [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].

Developed Equity Markets Excluding the US:

Metric: P/E ratio = Price / "Normalized" earnings for the MSCI EAFE Index

To represent the price of non-US developed equity markets, we have chosen the MSCI EAFE index. This index has the longest published history of price for non-US developed equities. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the MSCI EAFE index). The price level of this index is available starting in December 1969. Again, for the reasons described above, we elected to use the Shiller E-10 as our measure of earnings (E). Since 12/1972, a monthly price earnings ratio is available from MSCI. Using this quoted ratio, we have backed out the implied trailing-twelve month earnings of the EAFE index for each month from 12/1972 to the present. These annualized earnings are then inflation adjusted using CPI-U to represent real earnings in US dollar terms for each time period. The Shiller E-10 for the EAFE index (10 year average real earnings) is calculated in the same manner as detailed above.

However, we do not believe that the pricing and earnings history of the EAFE markets are long enough to be a reliable representation of pricing history for developed market equities outside of the US. Therefore, in constructing the Long-Term Average Historical P/E for developed ex-US equities for comparison purposes, we have elected to use the US equity market as a developed market proxy, from 1881 to 1982. This lowers the Long-Term Average Historical P/E considerably. We believe this methodology provides a more realistic historical comparison for a market with a relatively short history.

Appendix

METRIC DESCRIPTION, RATIONALE FOR SELECTION AND CALCULATION METHODOLOGY

Emerging Market Equity Markets:

Metric: Ratio of Emerging Market P/E Ratio to Developed Market P/E Ratio

To represent the Emerging Markets P/E Ratio, we have chosen the MSCI Emerging Market Free Index, which has P/E data back to January 1995 on Bloomberg. To represent the Developed Markets PE Ratio, we have chosen the MSCI World Index, which also has data back to January 1995 on Bloomberg. Although there are issues with published, single time period P/E ratios, in which the denominator effect can cause large movements, we feel that the information contained in such movements will alert investors to market activity that they will want to interpret.

US Private Equity Markets:

Metrics: S&P LCD Average EBITDA Multiples Paid in LBOs and US Quarterly Deal Volume

The Average Purchase Price to EBITDA multiples paid in LBOs is published quarterly by S&P in their LCD study. This is the total price paid (both equity and debt) over the trailing-twelve month EBITDA (earnings before interest, taxes, depreciation and amortization) as calculated by S&P LCD. This is the relevant, high-level pricing metric that private equity managers use in assessing deals. Data is published monthly.

US quarterly deal volume for private equity is the total deal volume in \$ billions (both equity and debt) reported in the quarter by Thomson Reuters Buyouts. This metric gives a measure of the level of activity in the market. Data is published quarterly.

U.S Private Real Estate Markets:

Metrics: US Cap Rates, Cap Rate Spreads, and Transactions as a % of Market Value

Real estate cap rates are a measure of the price paid in the market to acquire properties versus their annualized income generation before financing costs (NOI=net operating income). The data, published by NCREIF, describes completed and leased properties (core) on an unleveraged basis. We chose to use current value cap rates. These are capitalization rates from properties that were revalued during the quarter. This data relies on estimates of value and therefore tends to be lagging (estimated prices are slower to rise and slower to fall than transaction prices). The data is published quarterly.

Spreads between the cap rate (described above) and the 10-year nominal Treasury yield, indicate a measure of the cost of properties versus a current measure of the cost of financing.

Transactions as a % of Market Value Trailing-Four Quarters is a measure of property turnover activity in the NCREIF Universe. This quarterly metric is a measure of activity in the market.

Credit Markets US Fixed Income:

Metric: Spreads

The absolute level of spreads over treasuries and spread trends (widening / narrowing) are good indicators of credit risk in the fixed income markets. Spreads incorporate estimates of future default, but can also be driven by technical dislocations in the fixed income markets. Abnormally narrow spreads (relative to historical levels) indicate higher levels of valuation risk, wide spreads indicate lower levels of valuation risk and / or elevated default fears. Investment grade bond spreads are represented by the Barclays Capital US Corporate Investment Grade Index Intermediate Component. The high yield corporate bond spreads are represented by the Barclays Capital US Corporate High Yield Index.

Appendix

METRIC DESCRIPTION, RATIONALE FOR SELECTION AND CALCULATION METHODOLOGY

Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for U.S. equity markets

The VIX is a key measure of near-term volatility conveyed by implied volatility of S&P 500 index option prices. VIX increases with uncertainty and fear. Stocks and the VIX are negatively correlated. Volatility tends to spike when equity markets fall.

Measure of Monetary Policy

Metric: Yield Curve Slope

We calculate the yield curve slope as the 10 year treasury yield minus the 1 year treasury yield. When the yield curve slope is zero or negative, this is a signal to pay attention. A negative yield curve slope signals lower rates in the future, caused by a contraction in economic activity. Recessions are typically preceded by an inverted (negatively sloped) yield curve. A very steep yield curve (2 or greater) indicates a large difference between shorter-term interest rates (the 1 year rate) and longer-term rates (the 10 year rate). This can signal expansion in economic activity in the future, or merely higher future interest rates.

Measures of US Inflation Expectations

Metrics: Breakeven Inflation and Inflation Adjusted Commodity Prices

Inflation is a very important indicator impacting all assets and financial instruments. Breakeven inflation is calculated as the 10 year nominal treasury yield minus the 10 year real yield on US TIPS (treasury inflation protected securities). Abnormally low long-term inflation expectations are indicative of deflationary fears. A rapid rise in breakeven inflation indicates an acceleration in inflationary expectations as market participants sell nominal treasuries and buy TIPS. If breakeven inflation continues to rise quarter over quarter, this is a signal of inflationary worries rising, which may cause Fed action and / or dollar decline.

Commodity price movement (above the rate of inflation) is an indication of anticipated inflation caused by real global economic activity putting pressure on resource prices. We calculate this metric by adjusted in the Dow Jones UBS Commodity Index (formerly Dow Jones AIG Commodity Index) by US CPI-U. While rising commodity prices will not necessarily translate to higher US inflation, higher US inflation will likely show up in higher commodity prices, particularly if world economic activity is robust.

These two measures of anticipated inflation can, and often are, conflicting.

Measures of US Treasury Bond Interest Rate Risk

Metrics: 10-Year Treasury Forward-Looking Real Yield and 10-Year Treasury Duration

The expected annualized real yield of the 10 year U.S. Treasury Bond is a measure of valuation risk for U.S. Treasuries. A low real yield means investors will accept a low rate of expected return for the certainty of receiving their nominal cash flows. PCA estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

Duration for the 10-Year Treasury Bond is calculated based on the current yield and a price of 100. This is a measure of expected percentage movements in the price of the bond based on small movements in percentage yield. We make no attempt to account for convexity.

Definition of “extreme” metric readings

A metric reading is defined as “extreme” if the metric reading is in the top or bottom decile of its historical readings. These “extreme” reading should cause the reader to pay attention. These metrics have reverted toward their mean values in the past.

PCA Market Sentiment Indicator

Explanation, Construction and Q&A

By:

Pension Consulting Alliance, LLC.

PCA has created the PCA Market Sentiment Indicator (PMSI) to complement our valuation-focused PCA Investment Market Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This paper explores:

- What is the PCA Market Sentiment Indicator (PMSI)?
- How do I read the indicator graph?
- How is the PCA Market Sentiment Indicator (PMSI) constructed?
- What do changes in the indicator mean?



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PCA Market Sentiment Indicator

PCA has created a market sentiment indicator for monthly publication (the PMSI – see below) to complement PCA's Investment Market Risk Metrics.

PCA's Investment Market Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market corrections take place. The PMSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation based concerns. Once the PMSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, PCA believes the Risk Metrics and PMSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the PCA PMSI:

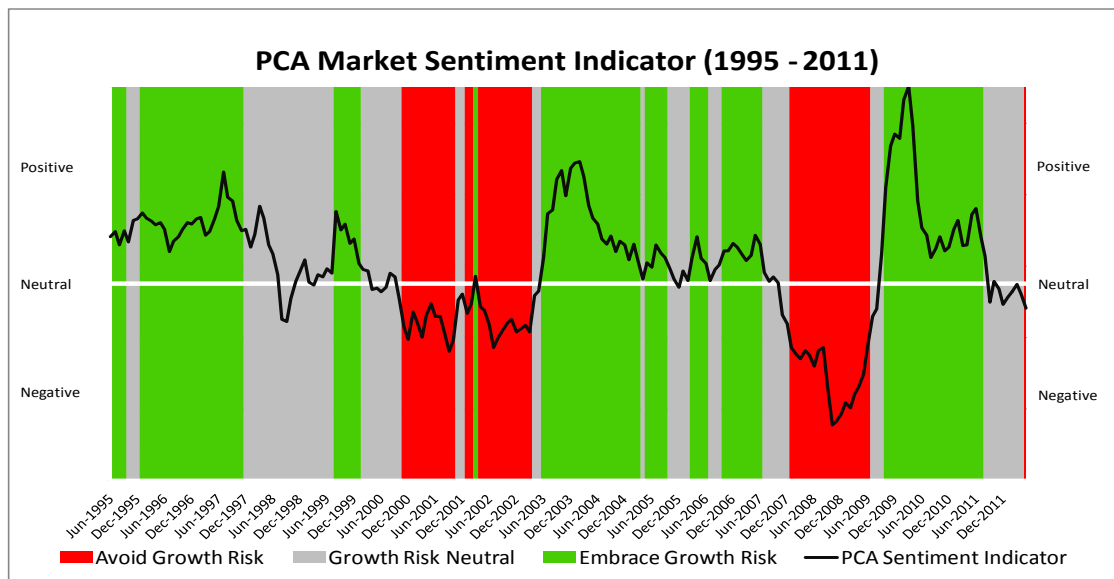
What is the PCA Market Sentiment Indicator (PMSI)?

The PMSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The PMSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the PCA Market Sentiment Indicator (PMSI) graph?

Simply put, the PMSI is a color coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the PMSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the PMSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.

Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



PCA Market Sentiment Indicator

How is the PCA Market Sentiment Indicator (PMSI) Constructed?

The PMSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

1. Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
2. Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration U.S. Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight). The scale of this measure is adjusted to match that of the stock return momentum measure.

The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure. The color reading on the graph is determined as follows:

1. If both stock return momentum and bond spread momentum are positive = GREEN (positive)
2. If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
3. If both stock return momentum and bond spread momentum are negative = RED (negative)

What does the PCA Market Sentiment Indicator (PMSI) mean? Why might it be useful?

There is strong evidence that time series momentum is significant and persistent. In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12 month period. The PMSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

ⁱ Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.

ⁱⁱ "Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010
<http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>



PENSION
CONSULTING
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Q4 2018

Oakland Police and Fire Retirement System

Quarterly Report

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C	INVESTMENT MARKET RISK METRICS
D	TOTAL PORTFOLIO REVIEW
E	MANAGER MONITORING / PROBATION LIST
F	INDIVIDUAL MANAGER PERFORMANCE
	Appendix

TOTAL PORTFOLIO SUMMARY

As of December 31, 2018, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$350.1million. This represents a (\$38.3) million decrease in investment value, and (\$3.2) million in benefit payments, over the quarter. During the previous one-year period, the OPFRS Total Portfolio decreased in value by (\$17.6) million and withdrew (\$12.8) million for benefit payments.

Asset Allocation Trends

The asset allocation targets (see table on page 21) reflect those as of December 31, 2018. Target weightings reflect the interim phase (CRO = 10%) of the Plan's previously approved asset allocation (effective 5/31/2017).

With respect to policy targets, the portfolio ended the latest quarter **overweight Covered Calls and Cash, while underweight Domestic Equity, International Equity, Fixed Income, and Crisis Risk Offset.**

Recent Investment Performance

During the most recent quarter, the OPFRS Total Portfolio generated an absolute return of (9.8%), gross of fees, outperforming its policy benchmark by 40 basis points. The portfolio outperformed its benchmark by 20 and 42 basis points over the 1- and 3-year periods, respectively, while underperforming by (5) basis points over the 5-year period.

The Total Portfolio underperformed the Median fund's return over the quarter and 1-year periods but outperformed the median fund over the 3- and 5-year periods. Performance differences with respect to the Median Fund continue to be attributed largely to differences in asset allocation.

	Quarter	Fiscal YTD	1 Year	3 Year	5 Year
Total Portfolio ¹	-9.8	-6.2	-4.8	7.0	5.5
Policy Benchmark ²	-10.2	-6.2	-5.0	6.6	5.6
Excess Return	0.4	0.0	0.2	0.4	-0.1
Reference: Median Fund ³	-8.6	-5.5	-4.6	5.6	4.7
Reference: Total Net of Fees ⁴	-9.9	-6.3	-5.0	6.7	5.2

¹ Gross of Fees. Performance since 2005 includes securities lending.

² Evolving Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% Bbg BC Universal, and 20% CBOE BXM

³ Investment Metrics < \$1 Billion Public Plan Universe.

⁴ Longer-term (>1 year) Net of fee returns are estimated based on OPFRS manager fee schedule (approximately 34 bps)

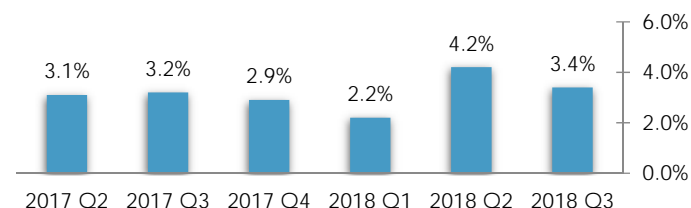
ECONOMIC & MARKET OVERVIEW – 4Q 2018

Overview: Real U.S. GDP increased by 3.4% (third estimate) in the third quarter of 2018. GDP growth was driven by increases in personal consumption expenditures, private inventory investments, government spending, and nonresidential fixed investment, while a decrease in exports and residential fixed investments detracted from GDP growth over the quarter. At quarter-end, the unemployment rate increased to 3.9%. The seasonally adjusted Consumer Price Index for All Urban Consumers increased by 1.2% on an annualized basis during the quarter. Commodities fell during the second quarter, and the 1-year return for a basket of commodities was negative at -11.2%. Global equity returns were negative for the quarter at -12.7% (MSCI ACWI). The U.S. Dollar appreciated against the Euro and Pound by 1.2% and 2.1%, respectively. The Dollar depreciated against the Yen by 3.5%.

Economic Growth

- Real GDP increased at an annualized rate of 3.4 percent in the third quarter of 2018.
- Real GDP growth was driven by increases in personal consumption expenditures, private inventory investments, government spending, and nonresidential fixed investment.
- GDP growth was partially offset during the quarter by a decrease in exports and residential fixed investments.

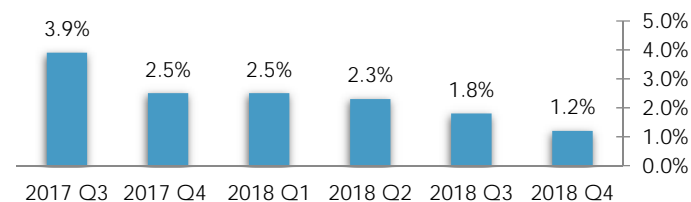
Annualized Quarterly GDP Growth



Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) increased by 1.2 percent during the fourth quarter on an annualized basis after seasonal adjustment.
- Quarterly percentage changes may be adjusted between data publications due to periodic updates in seasonal factors.
- Core CPI-U increased by 2.5 percent for the quarter on an annualized basis after seasonal adjustment.
- Over the last 12 months, core CPI-U increased by 2.2 percent after seasonal adjustment.

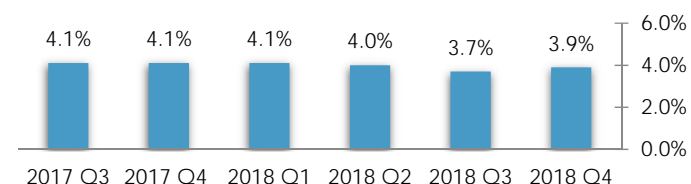
CPI-U After Seasonal Adjustment



Unemployment

- The U.S. economy gained approximately 762,000 jobs in the fourth quarter of 2018.
- The unemployment rate increased to 3.9% at quarter-end.
- The majority of jobs gained occurred in education and health services, professional and business services, and leisure and hospitality. No sectors suffered from job loss, however, information and utilities had the lowest job growth over the quarter.

Unemployment Rate

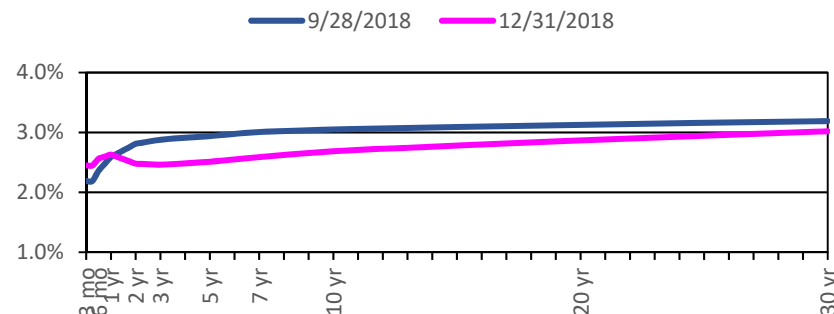


ECONOMIC & MARKET OVERVIEW – 4Q 2018

Interest Rates & US Dollar

- Certain parts of the yield curve slightly inverted over the quarter with shorter yields rising while intermediate and long-term yields decreased over the quarter.
- On December 19th, the Federal Reserve raised the federal funds rate for the third time in 2018. The current target is between 2.25 and 2.50 percent.
- The U.S. Dollar appreciated against the Euro and Pound by 1.2% and 2.1%, respectively, but depreciated against the Yen by 3.5%.

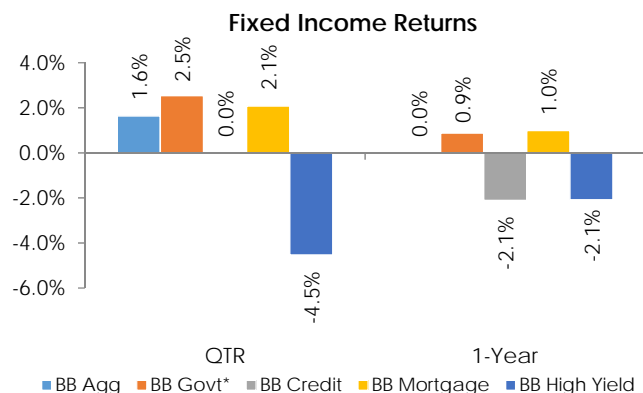
Treasury Yield Curve Changes



Source: US Treasury Department

Fixed Income

- Investment Grade bonds performed well over the quarter. High Yield provided relatively weak performance as they were down -4.5% for the quarter while Government bonds provided the strongest returns during the period with a return of 2.5%.
- Over the trailing 1-year period, High Yield and Credit lagged all other sectors with a -2.1% return. Conversely, Mortgages provided the strongest return over the 1-year period with 1.0%.



*U.S. Treasuries and Agencies

US Fixed Income Sector Performance (BB Aggregate Index)

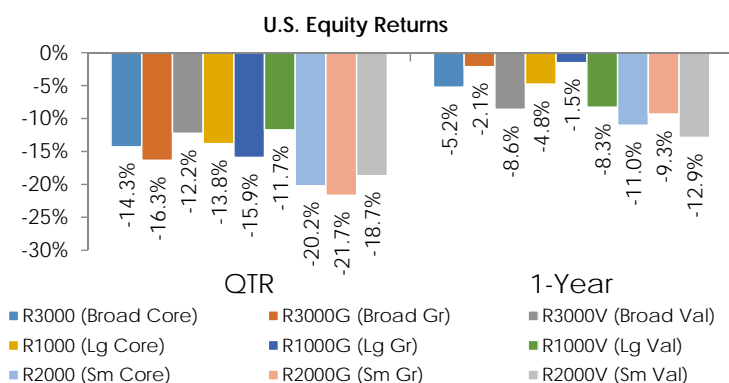
Sector	Weight	QTR	1 Year
Governments*	42.2%	2.4%	0.8%
Agencies	2.8%	1.2%	0.3%
Inv. Grade Credit	24.3%	-0.2%	-2.5%
MBS	28.2%	2.1%	1.0%
ABS	0.5%	1.2%	1.8%
CMBS	2.0%	1.7%	0.8%

*U.S. Treasuries and Government Related

ECONOMIC & MARKET OVERVIEW – 4Q 2018

U.S. Equities

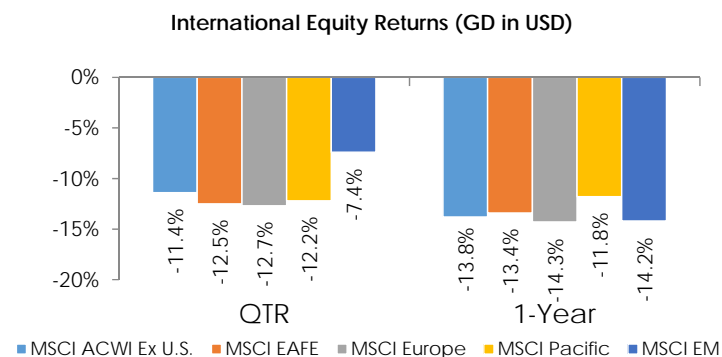
- U.S. equities performed poorly over the quarter as they provided double digit negative returns across market capitalization and style. Value outperformed growth stocks across market capitalizations. In terms of market capitalization, large cap stocks provided the strongest returns across styles. Large cap value stocks returned this quarter's strongest return at -11.7%, and small cap growth stocks provided the weakest result at -21.7%.
- During the trailing 1-year period, U.S. equities produced negative returns. Large cap growth stocks were the top performer, returning -1.5%. Conversely, small cap value trailed all other market caps and styles with a return of -12.9%.



U.S. Equity Sector Performance (Russell 3000 Index)			
Sector	Weight	QTR	1 Year
Information Tech.	19.8%	-17.4%	3.2%
Health Care	15.1%	-10.9%	-12.8%
Financials	14.2%	-13.5%	5.2%
Consumer Disc.	10.2%	-16.4%	-14.2%
Industrials	10.1%	-18.1%	-1.0%
Comm. Services	8.9%	-13.3%	-6.2%
Consumer Staples	6.6%	-5.6%	-8.3%
Energy	5.2%	-25.8%	-19.7%
Real Estate	3.8%	-6.3%	-4.5%
Utilities	3.1%	0.8%	-17.0%
Materials	3.0%	-14.9%	4.4%

International Equities

- International equities provided negative returns across the board in the fourth quarter. Europe modestly trailed all other regions with a return of -12.7%.
- Over the trailing 1-year period, the Pacific led all other regions with a return of -11.8%, while Europe slightly trailed all other regions with a -14.3% return.



International Equity Region Performance (GD in USD) (MSCI ACWI ex US)			
Sector	Weight	QTR	1 Year
Europe Ex. UK	30.7%	-13.0%	-14.4%
Emerging Markets	26.0%	-7.4%	-14.2%
Japan	16.6%	-14.2%	-12.6%
United Kingdom	11.4%	-11.8%	-14.1%
Pacific Ex. Japan	8.4%	-7.9%	-10.2%
Canada	6.5%	-15.1%	-16.6%

ECONOMIC & MARKET OVERVIEW – 4Q 2018

Market Summary – Multi-term Performance*

Indexes	Month	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Global Equity							
MSCI AC World Index	-7.0%	-12.7%	-8.9%	7.2%	4.8%	10.0%	5.0%
Domestic Equity							
S&P 500	-9.0%	-13.5%	-4.4%	9.3%	8.5%	13.1%	5.6%
Russell 3000	-9.3%	-14.3%	-5.2%	9.0%	7.9%	13.2%	6.0%
Russell 3000 Growth	-8.8%	-16.3%	-2.1%	10.9%	10.0%	15.2%	5.1%
Russell 3000 Value	-9.8%	-12.2%	-8.6%	7.0%	5.8%	11.1%	6.3%
Russell 1000	-9.1%	-13.8%	-4.8%	9.1%	8.2%	13.3%	5.9%
Russell 1000 Growth	-8.6%	-15.9%	-1.5%	11.1%	10.4%	15.3%	5.1%
Russell 1000 Value	-9.6%	-11.7%	-8.3%	7.0%	5.9%	11.2%	6.2%
Russell 2000	-11.9%	-20.2%	-11.0%	7.4%	4.4%	12.0%	7.4%
Russell 2000 Growth	-11.7%	-21.7%	-9.3%	7.2%	5.1%	13.5%	6.1%
Russell 2000 Value	-12.1%	-18.7%	-12.9%	7.4%	3.6%	10.4%	8.2%
Russell Microcap	-12.1%	-22.1%	-13.1%	5.8%	3.1%	11.7%	---
Alerian MLP Index	-9.4%	-17.3%	-12.4%	-1.1%	-7.3%	9.6%	---
CBOE BXM Index	-7.7%	-10.8%	-4.8%	4.8%	5.1%	8.0%	5.0%
International Equity							
MSCI AC World Index ex USA	-4.5%	-11.4%	-13.8%	5.0%	1.1%	7.1%	4.6%
MSCI EAFE	-4.8%	-12.5%	-13.4%	3.4%	1.0%	6.8%	4.0%
MSCI Europe	-4.6%	-12.7%	-14.3%	2.7%	0.0%	6.8%	3.7%
MSCI Pacific	-5.1%	-12.2%	-11.8%	4.8%	3.0%	7.0%	4.5%
MSCI EM (Emerging Markets)	-2.6%	-7.4%	-14.2%	9.7%	2.0%	8.4%	8.8%
Fixed Income							
BB Universal	1.6%	1.2%	-0.3%	2.6%	2.7%	4.1%	4.8%
Global Agg. - Hedged	1.4%	1.7%	1.8%	2.9%	3.4%	3.8%	4.6%
BB Aggregate Bond	1.8%	1.6%	0.0%	2.1%	2.5%	3.5%	4.5%
BB Government	2.1%	2.5%	0.9%	1.4%	2.0%	2.1%	4.1%
BB Credit Bond	1.5%	0.0%	-2.1%	3.2%	3.2%	5.5%	5.2%
BB Mortgage Backed Securities	1.8%	2.1%	1.0%	1.7%	2.5%	3.1%	4.6%
BB High Yield	-2.1%	-4.5%	-2.1%	7.2%	3.8%	11.1%	6.6%
BCBWGIL All Maturities - Hedged	1.2%	0.5%	0.1%	4.5%	4.2%	4.6%	---
Emerging Markets Debt	1.4%	-0.2%	-2.5%	5.1%	4.2%	8.5%	9.0%
Real Estate							
NCREIF	0.6%	1.8%	8.4%	8.2%	10.4%	7.0%	8.6%
FTSE NAREIT All Equity Index	-7.7%	-6.1%	-4.1%	4.6%	8.3%	12.4%	9.6%
Commodity Index							
Bloomberg Commodity Index	-6.9%	-9.4%	-11.2%	0.3%	-8.8%	-3.8%	1.8%

*Performance is annualized for periods greater than one year.

ECONOMIC & MARKET OVERVIEW – 4Q 2018

Annual Asset Class Performance

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Best	26.0	34.5	32.6	39.8	36.3	79.0	35.9	29.9	18.6	33.6	27.4	15.2	18.3	37.8	8.3
	20.7	20.2	28.0	16.1	24.0	76.4	19.2	16.0	17.9	27.6	25.1	4.4	17.5	25.6	0.0
	16.7	14.0	26.9	12.7	5.2	57.5	16.9	13.9	16.8	23.4	12.6	0.5	12.7	24.6	-1.3
	15.8	11.4	26.1	12.5	-2.4	35.4	16.1	13.6	16.4	23.3	12.3	0.5	11.6	21.1	-1.8
	12.6	8.1	21.5	12.2	-10.4	32.5	15.2	7.8	15.6	13.3	6.0	-0.4	9.3	8.5	-2.3
	11.9	6.5	16.1	11.6	-26.4	28.3	13.2	4.4	11.0	12.8	4.8	-1.2	8.5	7.8	-5.2
	10.9	6.3	15.7	11.6	-36.9	11.4	9.4	1.0	7.0	7.4	4.7	-1.4	5.1	7.5	-8.9
	8.5	6.1	11.8	9.8	-37.3	5.9	8.2	-6.9	4.8	-2.0	3.6	-1.8	4.7	3.5	-10.0
	7.7	2.8	4.3	7.0	-41.8	1.5	8.2	-8.7	4.2	-2.3	2.5	-4.6	2.6	3.0	-12.4
	5.2	2.7	1.8	5.1	-43.1	-12.9	6.5	-11.7	3.6	-8.6	-1.8	-14.6	1.5	-4.5	-13.4
Worst	4.3	2.4	0.5	2.2	-53.2	-30.7	6.3	-18.2	-14.3	-12.7	-4.5	-32.6	1.3	-6.5	-14.2
	MSCI ACWI	Russell 3000 Index	Alerian MLP Index	MSCI EAFE Index	MSCI Emerging Markets	BB Agg	ICE BofAML High Yield	BB Long Treasury	BB TIPS Index	CS MF 18% Vol Index	NCREIF ODCE				

Investment Market Risk Metrics

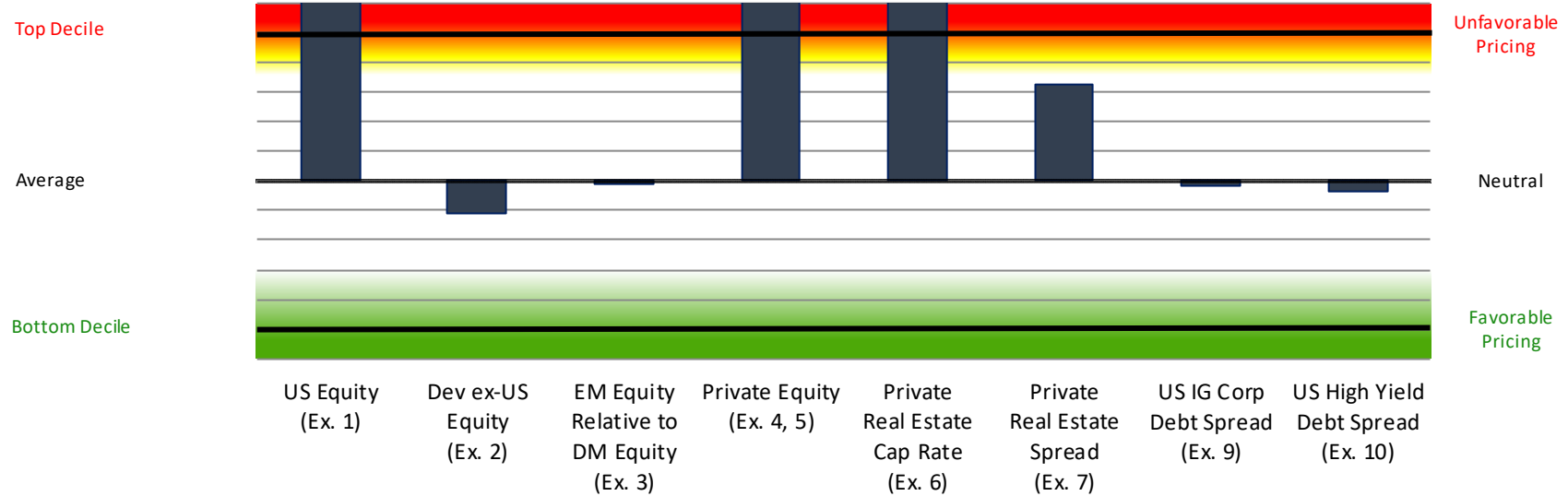
Takeaways

- The fourth quarter completed what proved to be a challenging year for nearly all risk-based assets. While calendar year returns for most markets were well within expectations (albeit negative), the rampant volatility of October and December culminated in a historically poor quarter for global equity markets.
- Despite recent market declines, U.S. Equity markets remain expensive whereas non-U.S. markets remain reasonably valued.
- U.S. Credit spreads have widened to historical average levels.
- Coinciding with severe equity market declines in December was the strong performance of U.S. Treasury bonds. As a result of this activity, duration risk has increased and the yield curve has continued to flatten.
- Risk assets have entered a higher risk regime that appears to be gaining traction. Implied equity market volatility(i.e.,VIX) spent the majority of the fourth quarter above its long-term average level of 19.3, including spending several days above 30 near quarter-end.
- PCA's Market Sentiment Indicator flipped to negative (**red**) in December as a result of negative one-year returns in equity markets and corporate bond spreads.
- **Economies and markets appear to be in transition.** Diverging global economic growth, diverging global monetary policy, and ongoing geopolitical turmoil has resulted in a high degree of uncertainty in the global capital markets.

¹ See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

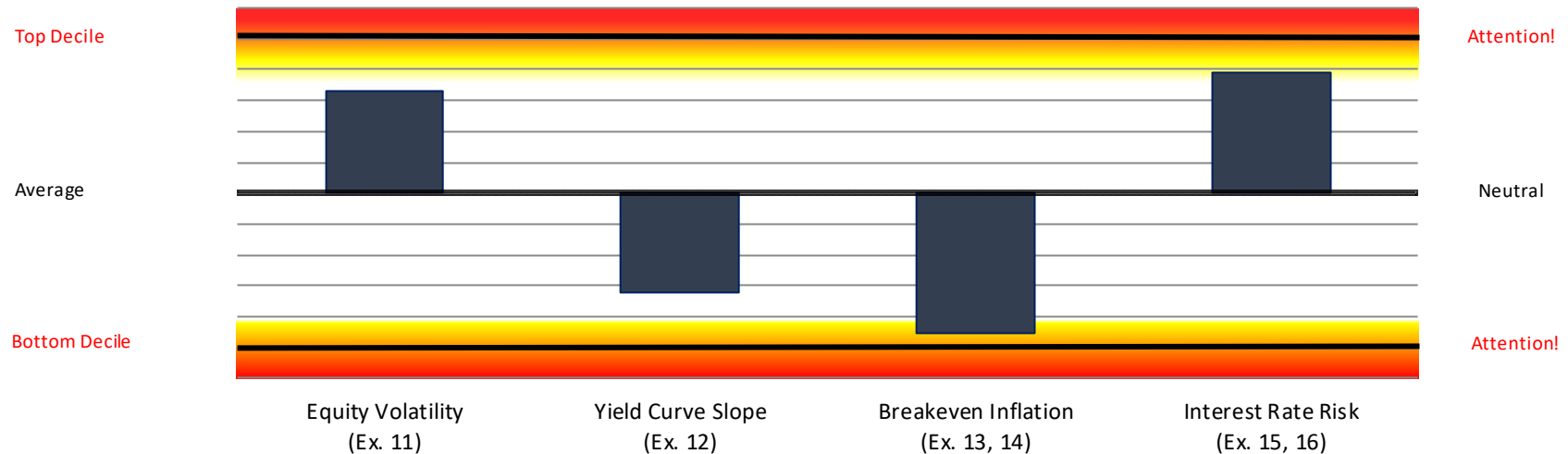
Valuation Metrics versus Historical Range

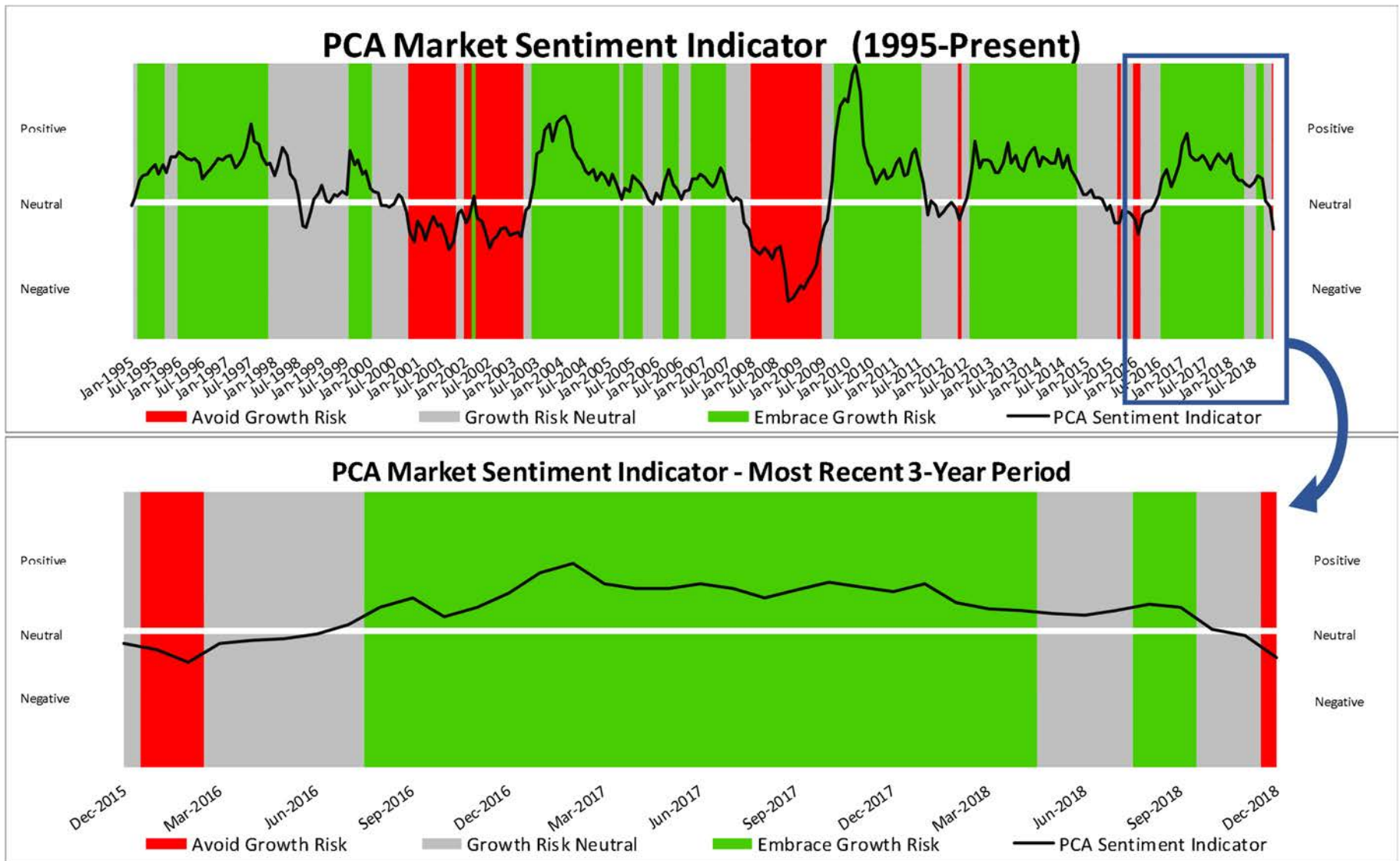
A Measure of Risk



Other Important Metrics within their Historical Ranges

Pay Attention to Extreme Readings





Information Behind Current Sentiment Reading

Bond Spread Momentum Trailing-Twelve Months

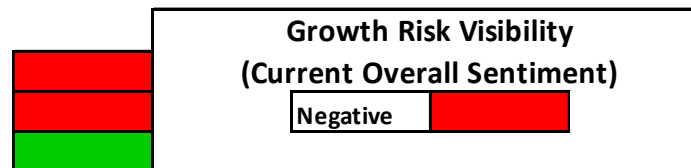
Equity Return Momentum Trailing-Twelve Months

Agreement Between Bond and Equity Momentum Measures?

Negative

Negative

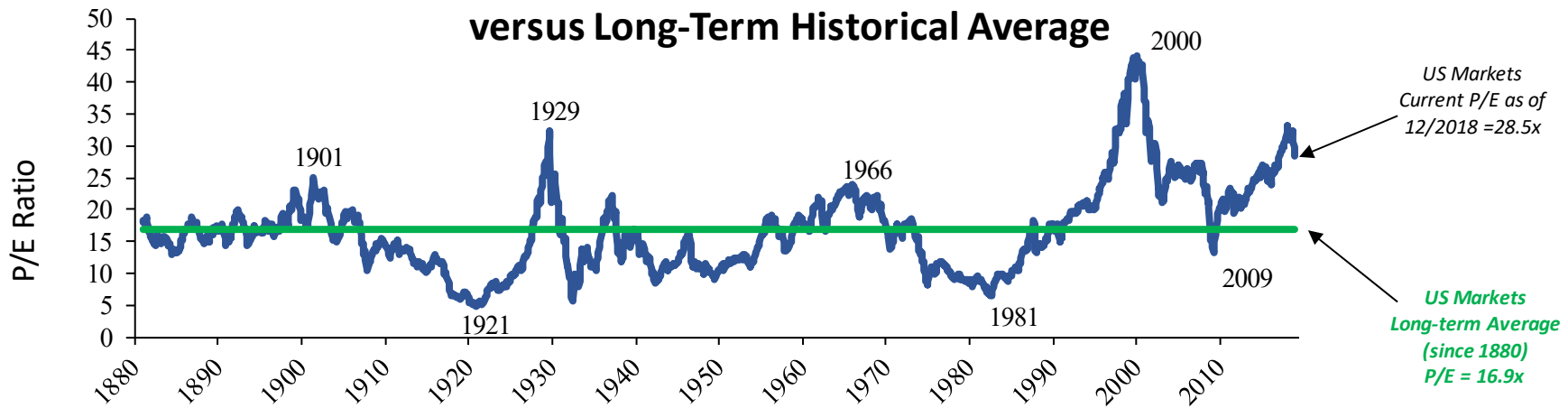
Agree



Developed Public Equity Markets

Exhibit 1

U.S. Equity Market P/E Ratio¹ versus Long-Term Historical Average

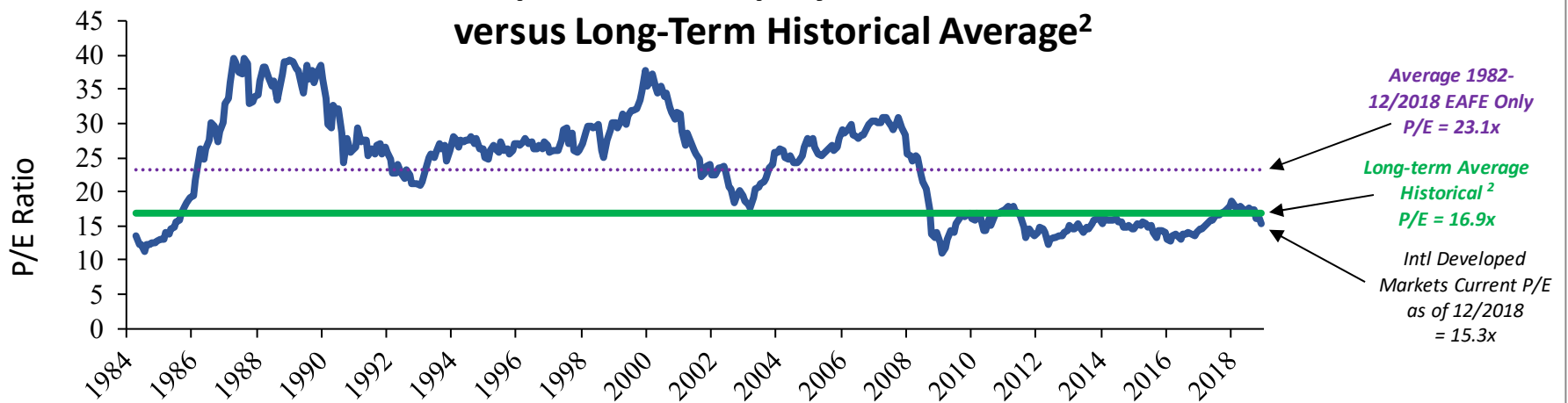


¹ P/E ratio is a Shiller P/E-10 based on 10 year real S&P 500 earnings over S&P 500 index level.

(Please note different time scales)

Exhibit 2

Developed ex-U.S. Equity Market P/E Ratio¹ versus Long-Term Historical Average²



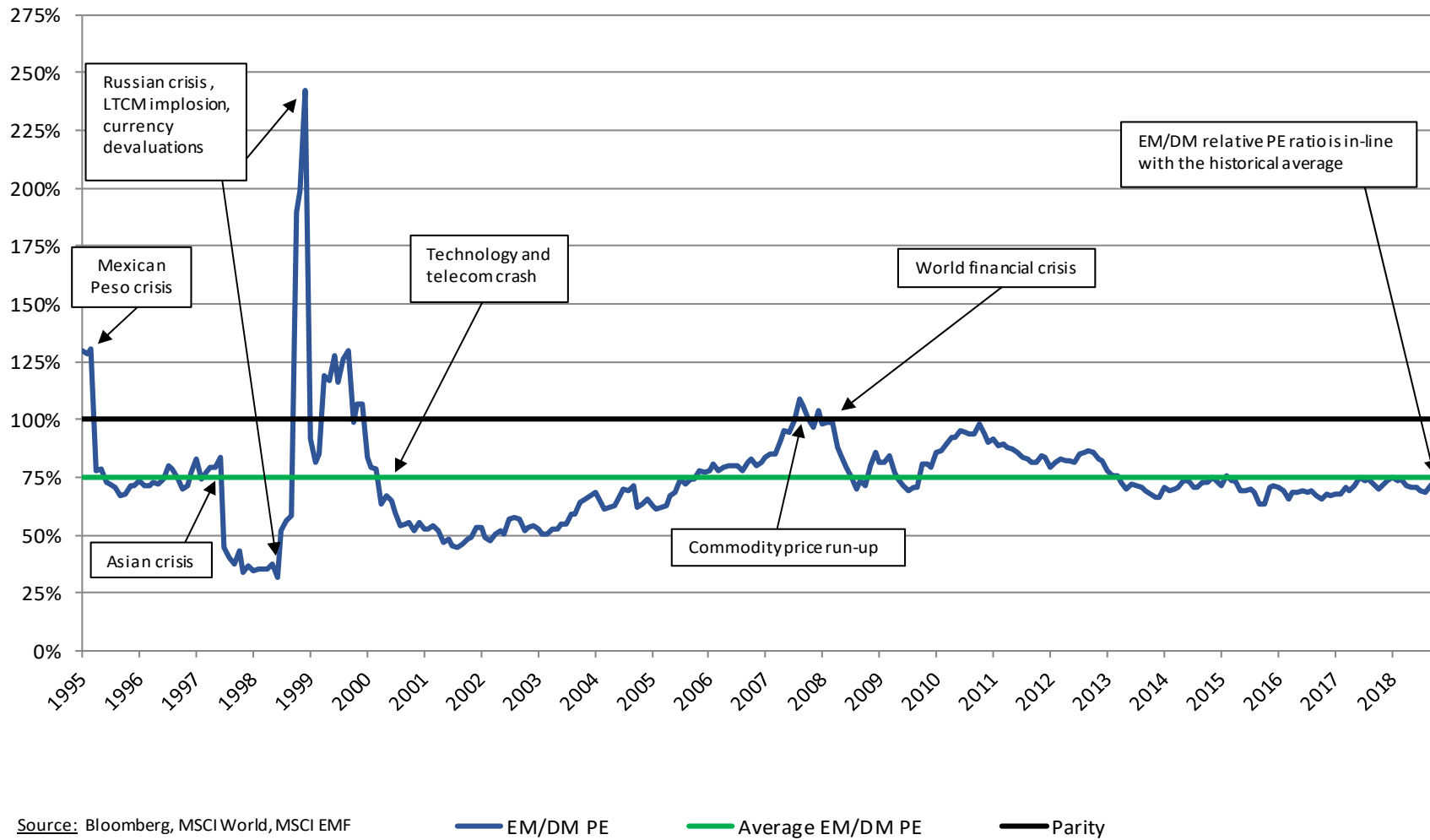
¹ P/E ratio is a Shiller P/E-10 based on 10 year real MSCI EAFE earnings over EAFE index level.

² To calculate the LT historical average, from 1881 to 1982 U.S. data is used as developed market proxy. From 1982 to present, actual developed ex-US market data (MSCI EAFE) is used.

Emerging Markets Public Equity Markets

Exhibit 3

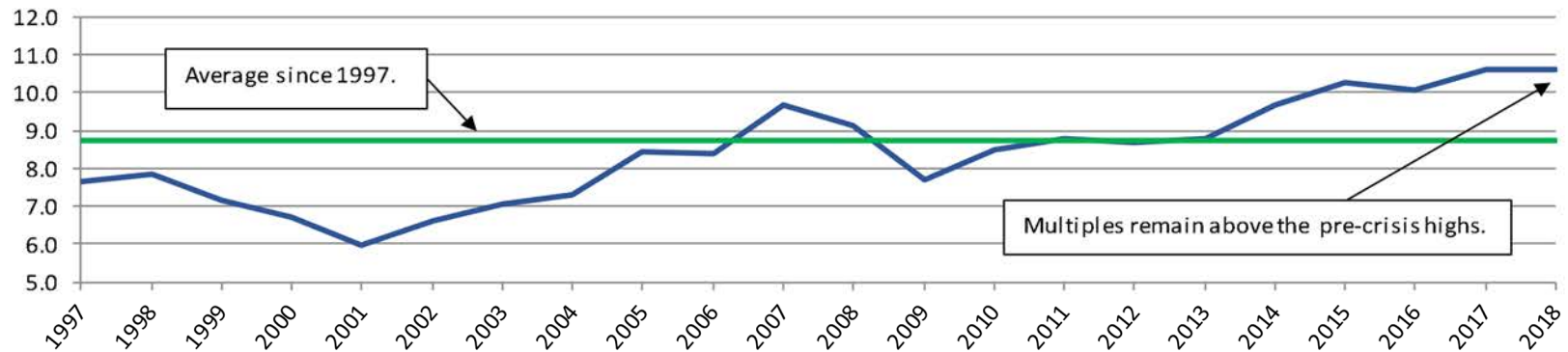
Emerging Markets PE / Developed Markets PE (100% = Parity between PE Ratios)



U.S. Private Equity Markets

Exhibit 4

Price to EBITDA Multiples Paid in LBOs

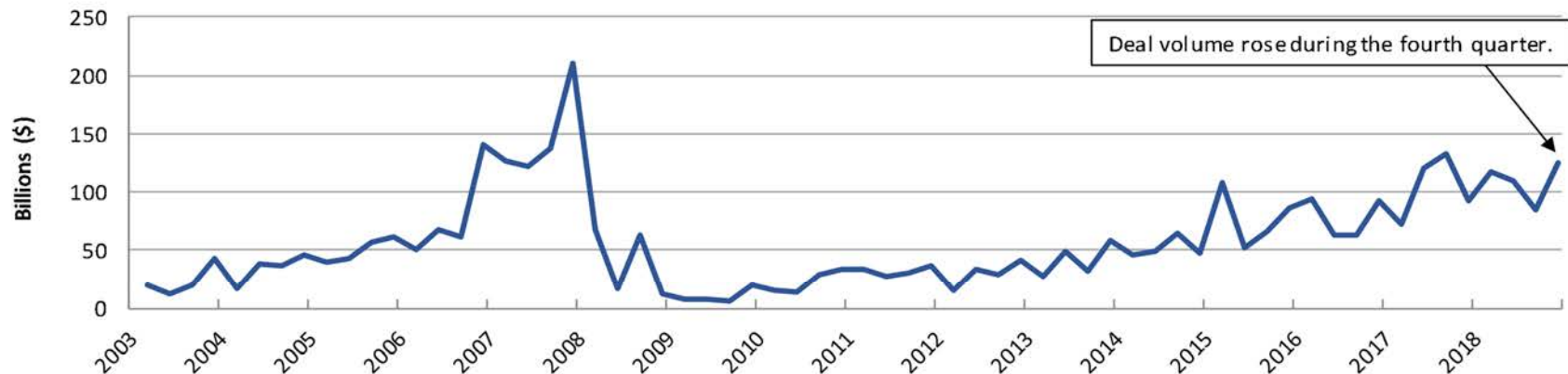


Source: S&P LCD study

(Please note different time scales)

Exhibit 5

Disclosed U.S. Quarterly Deal Volume*



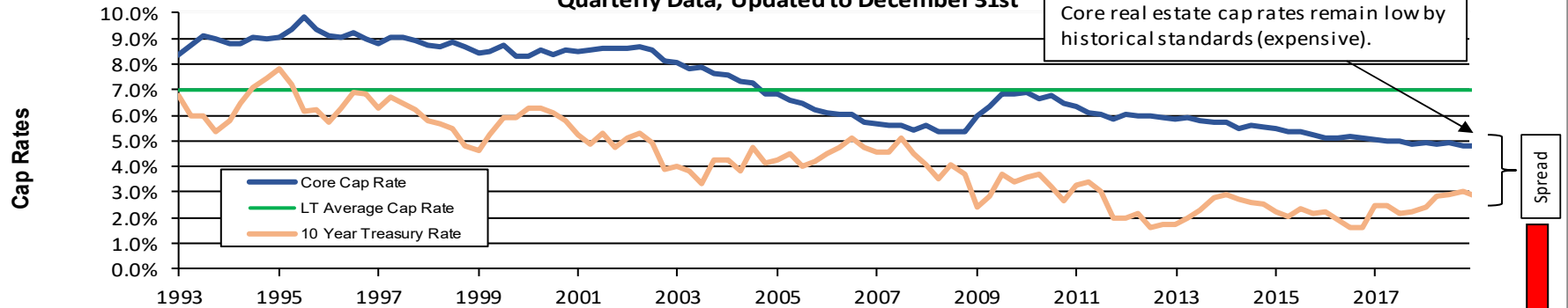
Source: Thomson Reuters Buyouts

* quarterly total deal size (both equity and debt)

Private Real Estate Markets

Exhibit 6

Current Value Cap Rates¹ Quarterly Data, Updated to December 31st



Source: NCREIF

¹A cap rate is the current annual income of the property divided by an estimate of the current value of the property. It is the current yield of the property. Low cap rates indicate high valuations.

Exhibit 7

Core Cap Rate Spread over 10-Year Treasury Interest Rate

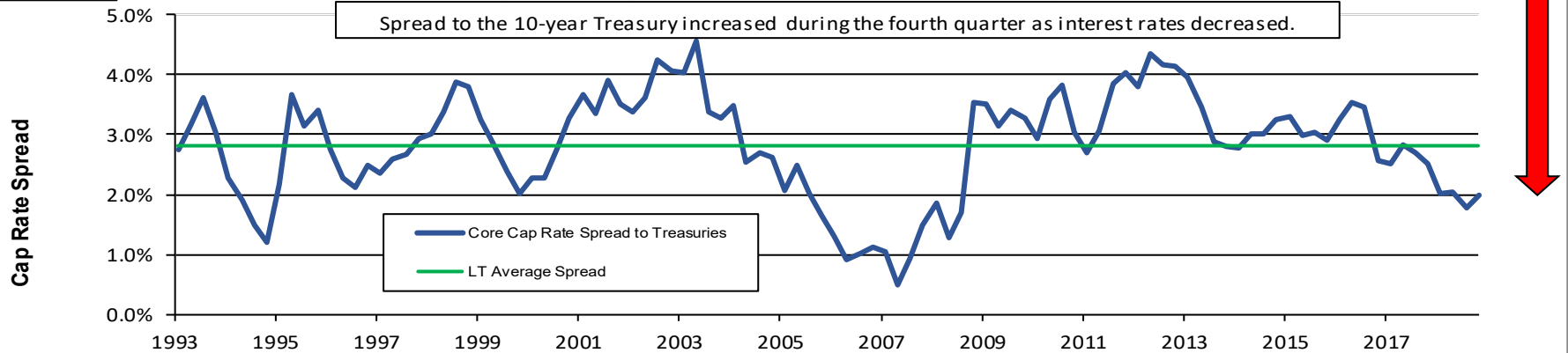
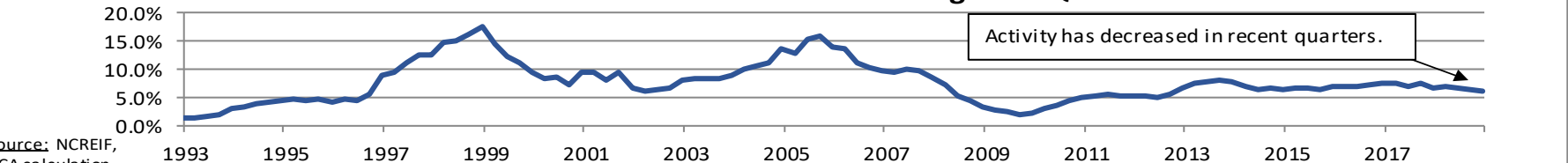


Exhibit 8

Transactions as a % of Market Value Trailing-Four Quarters

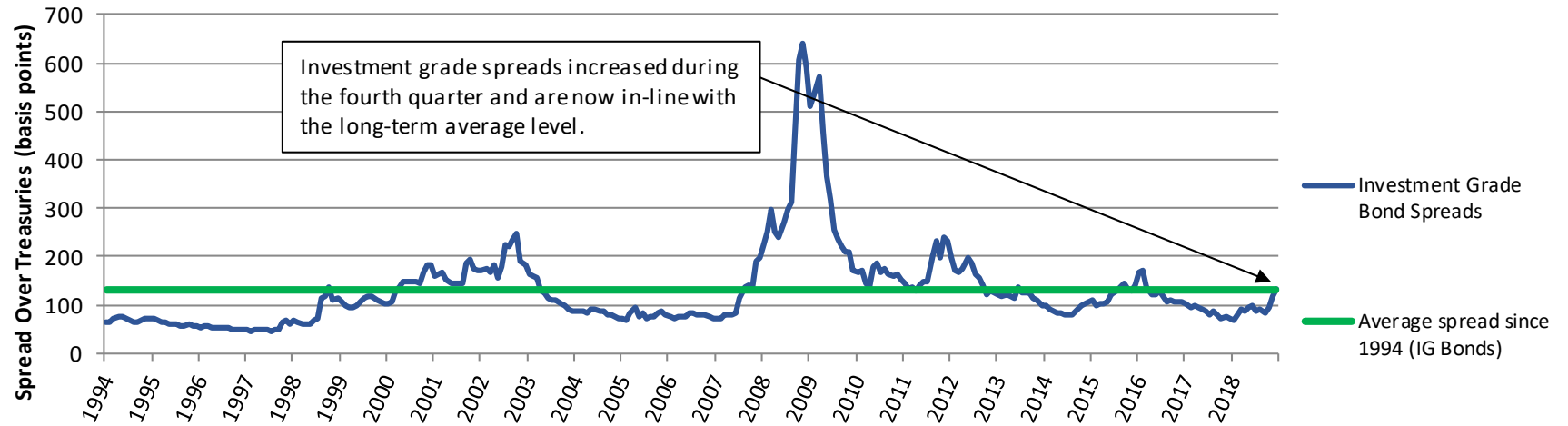


Source: NCREIF,
PCA calculation

Credit Markets U.S. Fixed Income

Exhibit 9

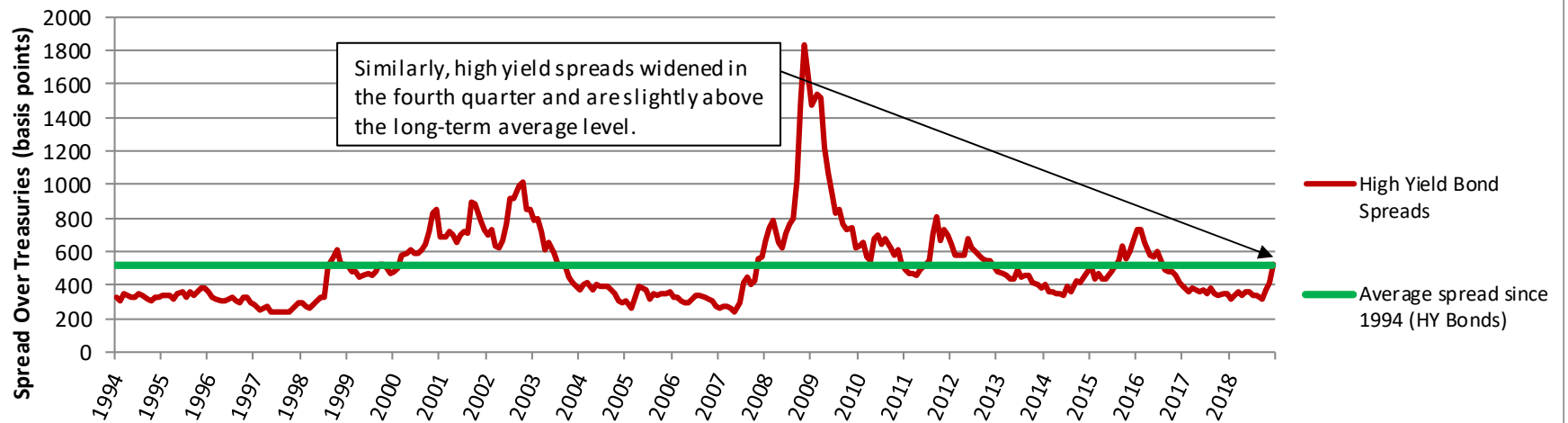
Investment Grade Corporate Bond Spreads



Source: LehmanLive: Barclays Capital US Corporate Investment Grade Index Intermediate Component.

Exhibit 10

High Yield Corporate Bond Spreads

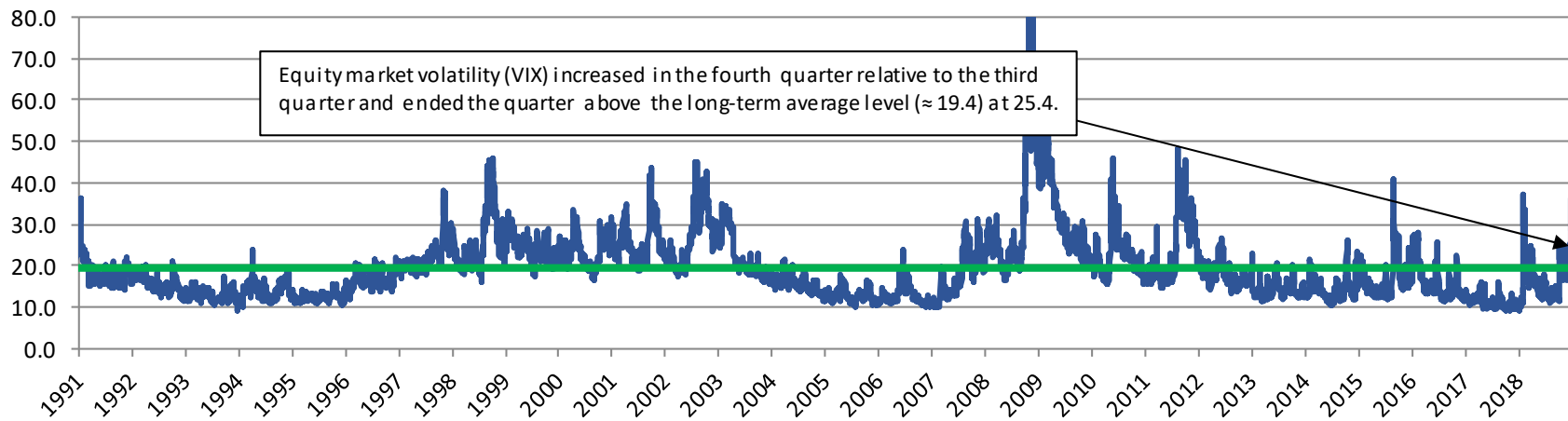


Source: LehmanLive: Barclays Capital U.S. Corporate High Yield Index.

Other Market Metrics

Exhibit 11

VIX - a measure of equity market fear / uncertainty

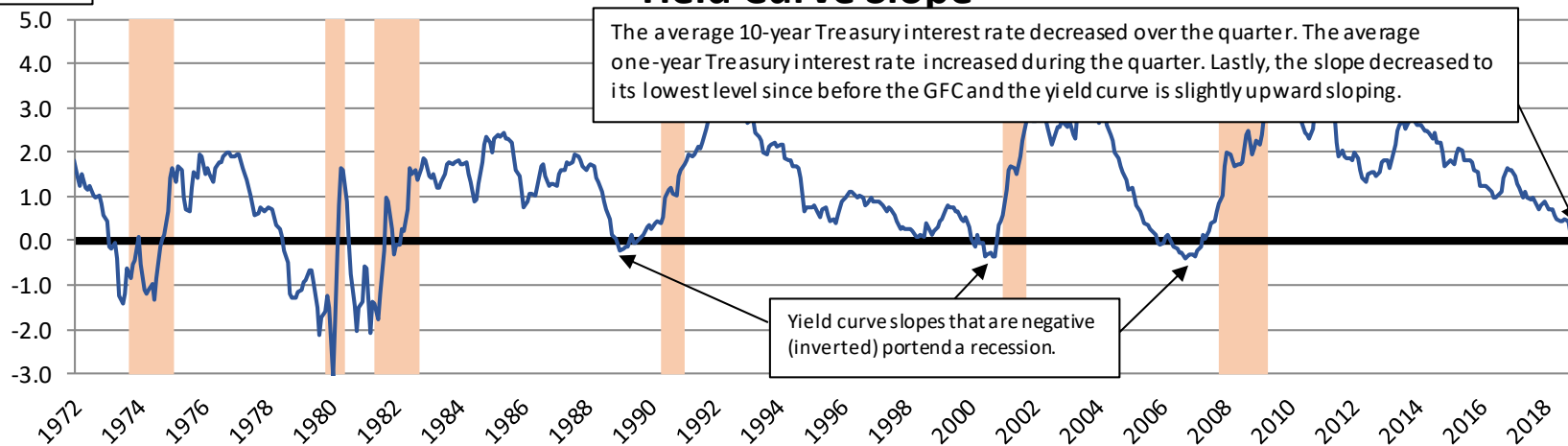


Source: <http://www.cboe.com/micro/vix/historical.aspx>

(Please note different time scales)

Exhibit 12

Yield Curve Slope



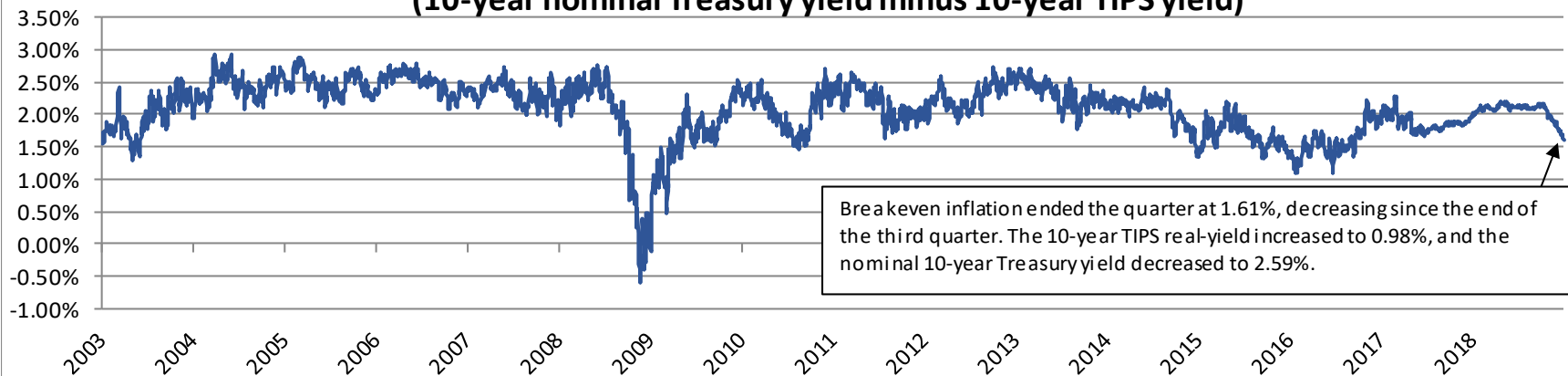
Source: www.ustreas.gov (10-year treasury yield minus 1-year treasury yield)

Recession Dating: NBER <http://www.nber.org/cycles.html>

Measures of Inflation Expectations

Exhibit 13

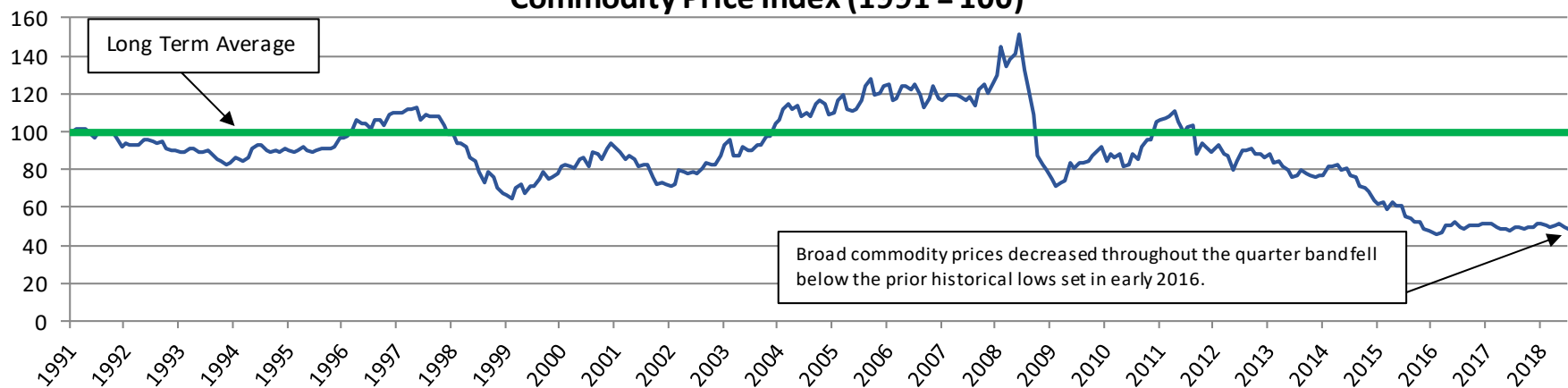
10-Year Breakeven Inflation (10-year nominal Treasury yield minus 10-year TIPS yield)



(Please note different time scales)

Exhibit 14

Inflation Adjusted Bloomberg Commodity Price Index (1991 = 100)

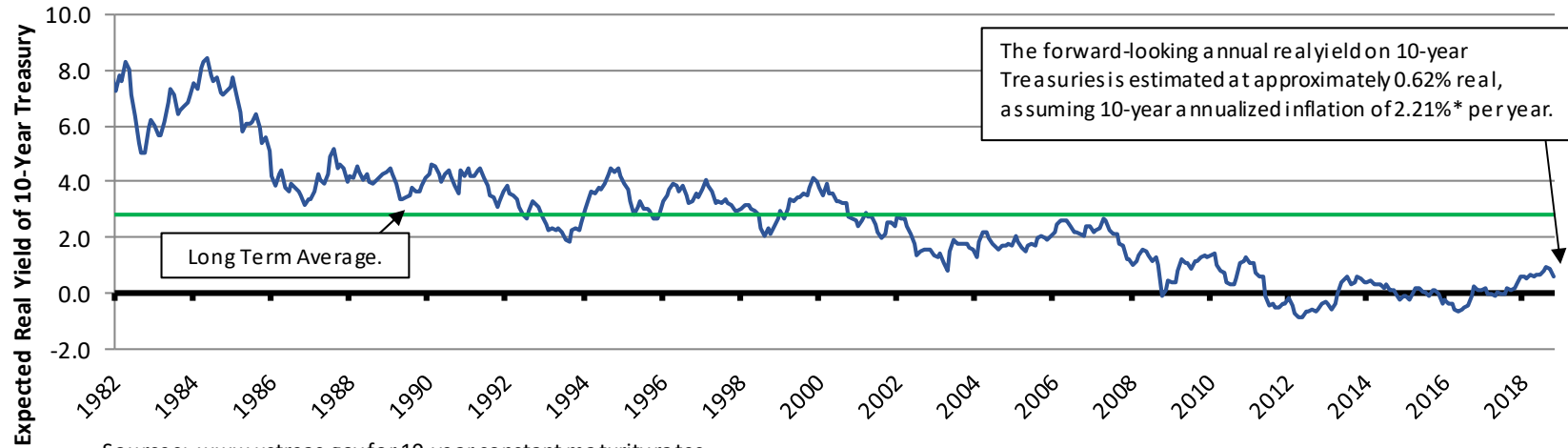


Source: Bloomberg Commodity Index, St. Louis Fed for US CPI all urban consumers.

Measures of U.S. Treasury Interest Rate Risk

Exhibit 15

Estimate of 10-Year Treasury Forward-Looking Real Yield

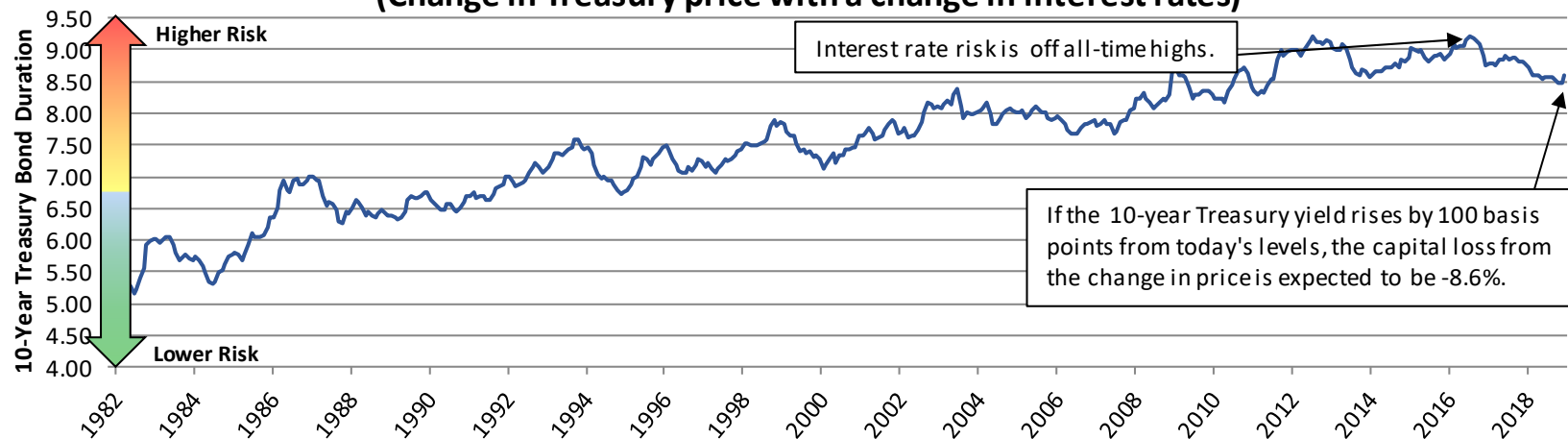


Sources: www.ustreas.gov for 10-year constant maturity rates

*Federal Reserve Bank of Philadelphia survey of professional forecasts for inflation estimates

Exhibit 16

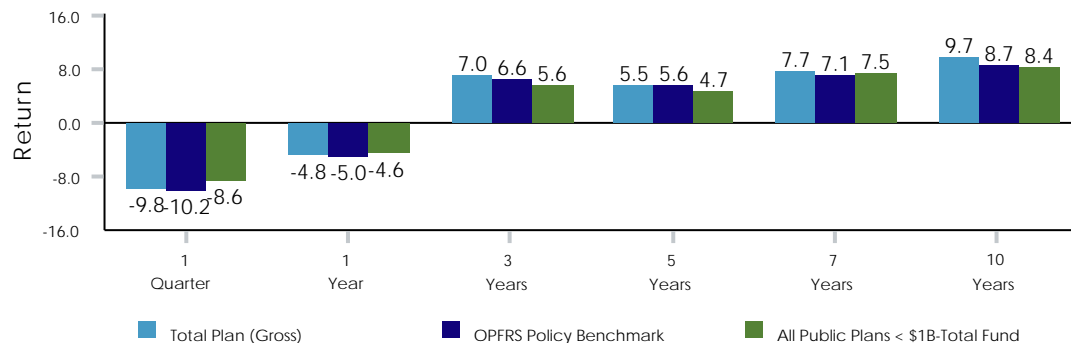
10-Year Treasury Duration (Change in Treasury price with a change in interest rates)



Source: www.ustreas.gov for 10-year constant maturity rates, calculation of duration

Performance and Market Values As of December 31, 2018

Investment Performance



Portfolio Valuation (000's)

	1 Quarter	1 Year
OPFRS Total Plan		
Beginning Market Value	391,498	380,459
Net Contributions	-3,180	-12,777
Gain/Loss	-38,264	-17,629
Ending Market Value	350,053	350,053

Asset Class Performance (gross of fees)

	1 Quarter	1 Year	3 Years	5 Years	7 Years	10 Years
OPFRS Total Plan	-9.8	-4.8	7.0	5.5	7.7	9.7
OPFRS Policy Benchmark*	-10.2	-5.0	6.6	5.6	7.1	8.7
Excess Return	0.4	0.2	0.4	-0.1	0.6	1.0
Domestic Equity	-15.6	-6.4	8.9	7.7	12.3	13.6
Russell 3000 (Blend)**	-14.3	-5.2	9.0	7.9	12.5	13.2
Excess Return	-1.3	-1.2	-0.1	-0.2	-0.2	0.4
International Equity	-13.1	-15.2	4.4	1.6	6.2	7.5
MSCI ACWI Ex US (Blend)^	-11.4	-13.8	5.0	1.1	5.3	7.1
Excess Return	-1.7	-1.4	-0.6	0.5	0.9	0.4
Fixed Income	1.0	0.4	3.4	3.2	2.9	5.5
Bloomberg Barclays Universal (Blend)^^	1.2	-0.3	2.6	2.7	2.5	4.1
Excess Return	-0.2	0.7	0.8	0.5	0.4	1.4
Crisis Risk Offset	-10.0	-	-	-	-	-
SG Multi Alternative Risk Premia	-0.6	-	-	-	-	-
Excess Return	-9.4	-	-	-	-	-
Covered Calls	-11.0	-4.8	6.6	-	-	-
CBOE BXM	-10.8	-4.8	4.8	-	-	-
Excess Return	-0.2	0.0	1.8	-	-	-
Cash	0.6	1.9	1.2	0.7	0.5	-
FTSE 3 Month T-Bill	0.6	1.9	1.0	0.6	0.5	-
Excess Return	0.0	0.0	0.2	0.1	0.0	-

* Starting on 5/1/2016, Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% BC Universal, 20% CBOE BXM

** Domestic Equity Benchmark consists of S&P 500 thru 3/31/98, 10% R1000, 20% R1000V, 5% RMC from 4/1/98 - 12/31/04, and Russell 3000 from 1/1/05 to present

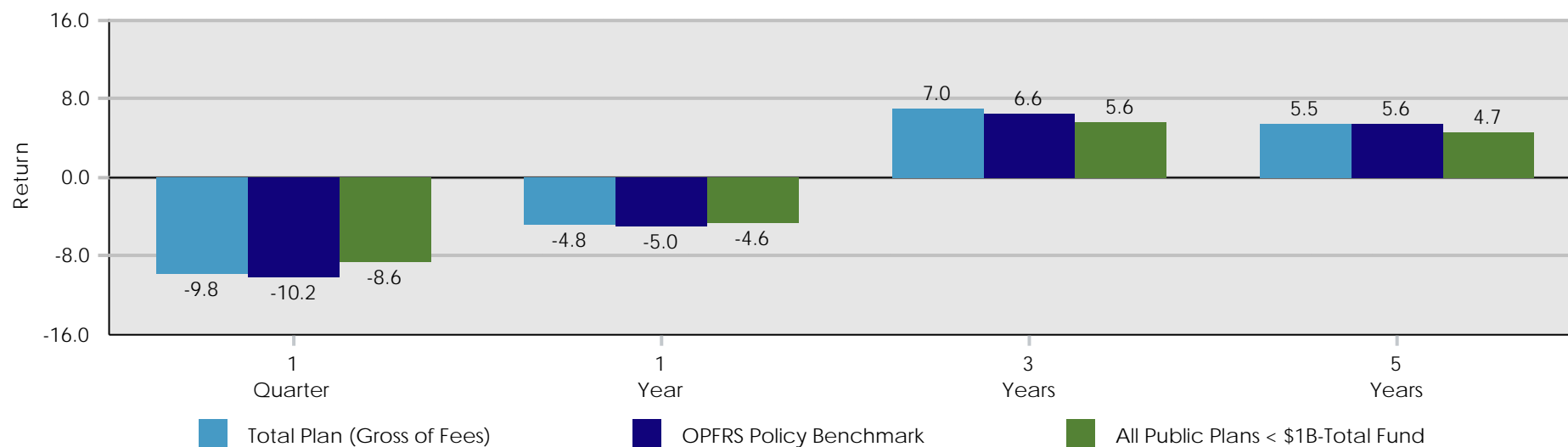
^ International Equity Benchmark consists of MSCI EAFE thru 12/31/04, and MSCI ACWI x US thereafter.

^^ Fixed Income Benchmark consists of Bbg BC Aggregate prior to 4/1/06, and Bbg BC Universal thereafter.

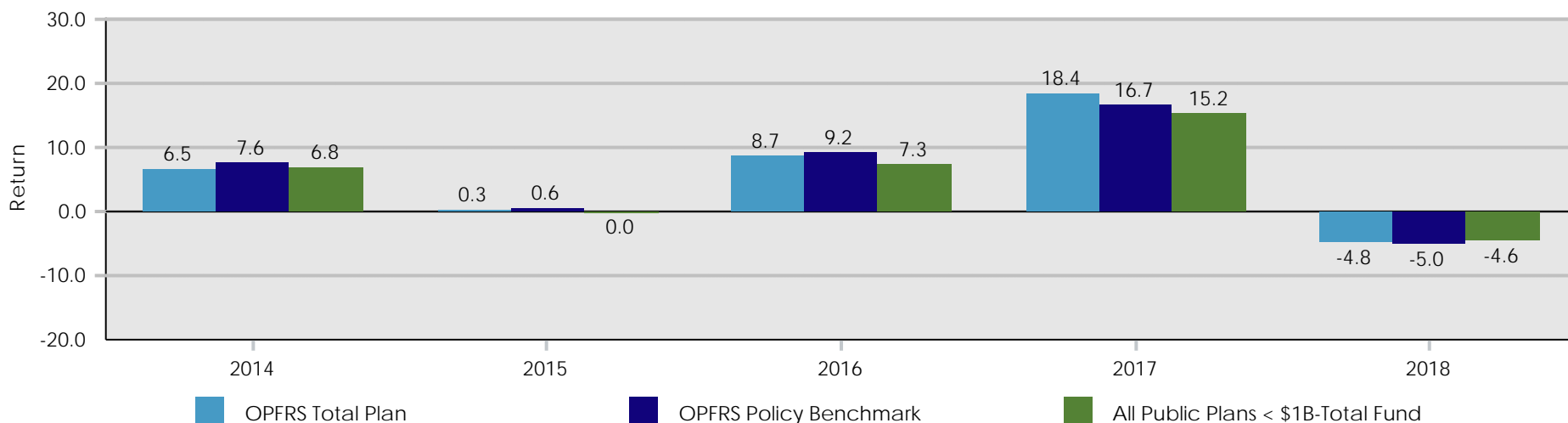
OPFRS Portfolio Relative Performance Results

As of December 31, 2018

Trailing Period Performance (annualized)



12-month Performance- As of December 31, 2018



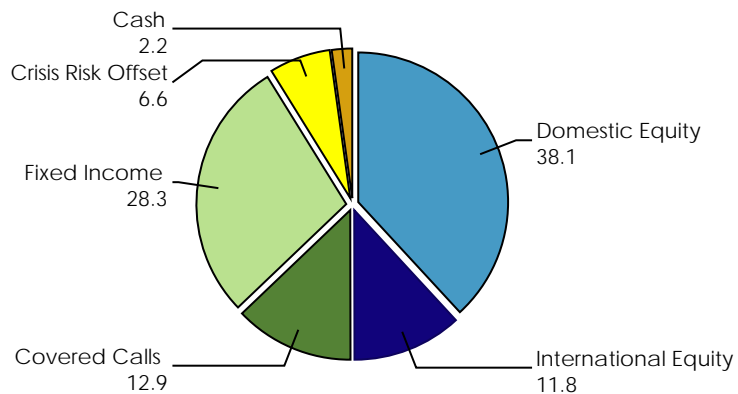
Actual vs. Target Allocation
As of December 31, 2018

	Asset Allocation (\$000)	Asset Allocation (%)	Target Allocation* (%)	Variance (%)
OPFRS Total Plan	350,053	100.0	100.0	0.0
Domestic Equity	133,535	38.1	40.0	-1.9
International Equity	41,411	11.8	12.0	-0.2
Total Fixed Income	99,109	28.3	33.0	-4.7
Covered Calls	45,110	12.9	5.0	7.9
Crisis Risk Offset	23,187	6.6	10.0	-3.4
Cash	7,701	2.2	0.0	2.2

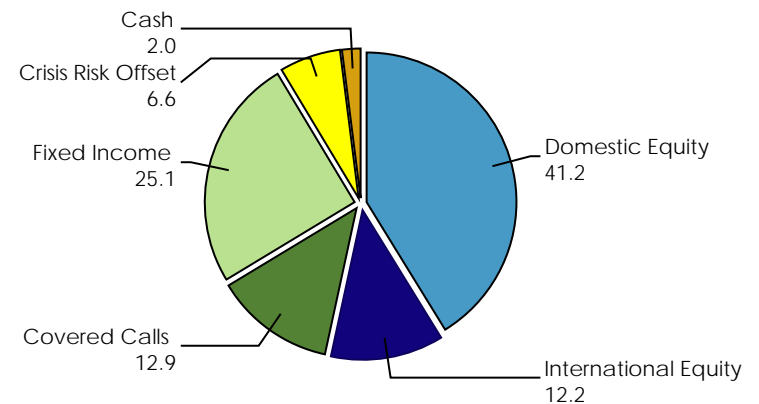
*Target weightings reflect the Plan's evolving asset allocation (effective 3/31/2014).
Differences due to rounding

Actual Asset Allocation Comparison

December 31, 2018 : \$350,053,340



September 30, 2018 : \$391,497,604



Manager Performance - Gross of Fees

As of December 31, 2018

Domestic Equity

Manager - Style	Mkt Value (\$000)	1 Quarter	1 Year	3 Years	5 Years	Since Inception*	Inception Date
Large Cap Core							
Northern Trust Russell 1000 Index	72,965	-13.8	-4.7	9.0	8.2	12.4	06/2010
<i>Russell 1000 Index</i>		-13.8	-4.8	9.1	8.2	12.4	
Excess Return		0.0	0.1	-0.1	0.0	0.0	
Large Cap Value							
SSgA Russell 1000 Value Index	7,287	-11.7	-8.2	7.0	---	4.7	11/2014
<i>Russell 1000 Value Index</i>		-11.7	-8.3	7.0	---	4.6	
Excess Return		0.0	0.1	0.0	---	0.1	
Large Cap Growth							
SSgA Russell 1000 Growth Index	8,338	-15.9	-1.5	11.2	---	9.9	11/2014
<i>Russell 1000 Growth Index</i>		-15.9	-1.5	11.1	---	9.9	
Excess Return		0.0	0.0	0.1	---	0.0	
Mid Cap Core							
EARNEST Partners - Active	25,676	-16.7 (42)	-9.7 (37)	9.9 (8)	8.2 (19)	8.2 (26)	04/2006
<i>Russell Midcap Index</i>		-15.4	-9.1	7.0	6.3	7.3	
Excess Return		-1.3	-0.6	2.9	1.9	0.9	
Small Cap Value							
NWQ - Active	8,203	-21.3 (83)	-17.8 (81)	4.4 (80)	3.9 (57)	6.1 (82)	02/2006
<i>Russell 2000 Value Index</i>		-18.7	-12.9	7.4	3.6	5.4	
Excess Return		-2.6	-4.9	-3.0	0.3	0.7	
Small Cap Growth							
Rice Hall James - Active	11,066	-22.0 (69)	-6.2 (61)	---	---	3.7 (54)	07/2017
<i>Russell 2000 Growth Index</i>		-21.7	-9.3	---	---	0.5	
Excess Return		-0.3	3.1	---	---	3.2	

Over the latest three-month period ending December 31, 2018, all three of OPFRS's active Domestic Equity managers underperformed their respective benchmarks.

All of OPFRS's passive Domestic Equity mandates continue to perform in-line with their respective benchmarks.

Northern Trust, the Plan's passive large cap core transition account, continues to perform in-line with its benchmark over all time periods measured. This performance is within expectations for a passive mandate.

Manager Performance - Gross of Fees

As of December 31, 2018

Domestic Equity

SSgA Russell 1000 Value, the Plan's passive large cap value account, has continued to perform within expectations for a passive mandate.

SSgA Russell 1000 Growth, the Plan's passive large cap growth account, has continued to perform within expectations for a passive mandate.

EARNEST Partners, the Plan's mid cap core manager, underperformed its Russell Midcap benchmark by (1.3%), placing it in the 42nd percentile of its peer group. The portfolio has also underperformed its benchmark over the 1-year period by (0.6%) but continues to outperform over the 3- and 5-year periods by 2.9% and 1.9% respectively.

NWQ, the Plan's small cap value manager, underperformed the Russell 2000 Value Index by (2.6%) over the latest quarter, placing the portfolio in the 83rd percentile of its peer group. NWQ has also underperformed over the 1- and 3-year periods by (4.9%) and (3.0%), respectively. NWQ continues to outperform its benchmark over the 5-year period by 0.3% with an annualized return of 3.9%.

Rice Hall James, the Plan's small cap growth manager, underperformed its Russell 2000 Growth benchmark over the most recent quarter by (0.3%), placing the portfolio in the 69th percentile of its peer group. The portfolio was down (6.2%) over the most recent 1-year period but did outperform its benchmark by 3.1%.

Manager Performance - Gross of Fees

As of December 31, 2018

International Equity

Manager - Style	Mkt Value (\$000)	1 Quarter	1 Year	3 Years	5 Years	Since Inception	Inception Date
Active International							
Fisher Investments	14,306	-13.3 (57)	-15.5 (65)	3.9 (33)	1.6 (41)	2.9 (82)	04/2011
<i>MSCI AC World ex USA</i>		<i>-11.4</i>	<i>-13.8</i>	<i>5.0</i>	<i>1.1</i>	<i>2.4</i>	
Excess Return		-1.9	-1.7	-1.1	0.5	0.5	
Hansberger	14,150	-13.5 (38)	-16.5 (74)	5.8 (26)	2.3 (48)	3.6 (73)	02/2006
<i>MSCI AC World ex USA</i>		<i>-11.4</i>	<i>-13.8</i>	<i>5.0</i>	<i>1.1</i>	<i>3.2</i>	
Excess Return		-2.1	-2.7	0.8	1.2	0.4	
Passive International							
SSgA	12,955	-12.5	-13.5	3.2	0.9	6.5	08/2002
<i>MSCI EAFE Index</i>		<i>-12.5</i>	<i>-13.4</i>	<i>3.4</i>	<i>1.0</i>	<i>6.5</i>	
Excess Return		0.0	-0.1	-0.2	-0.1	0.0	

Over the latest three-month period ending December 31, 2018, both of OPFRS's two active International Equity managers underperformed their respective benchmark.

The SSgA account has performed roughly in-line with its benchmark over all time periods measured. This performance is within expectations for a passive mandate.

Hansberger, one of OPFRS' active international equity managers, underperformed the MSCI ACWI x US Index during the quarter by (2.1%), placing the fund in the 38th percentile of its peer group. Over the 12-month period, Hansberger underperformed its benchmark by (2.7%) with an absolute return of (16.5%). Hansberger continues to outperform over the 3- and 5-year periods with excess returns of 0.8% and 1.2%, respectively.

Fisher, one of OPFRS' active international equity managers, underperformed the MSCI ACWI x US Index by (1.9%) during the quarter, ranking the fund in the 57th percentile of its peer group. Over the most recent 1- and 3-year periods, Fisher has underperformed its benchmark by (1.7%) and (1.1%), respectively, but continues to outperform by 0.5% over the five year period.

Manager Performance - Gross of Fees

As of December 31, 2018

Fixed Income

Manager - Style	Mkt Value (\$000)	1 Quarter	1 Year	3 Years	5 Years	Since Inception	Inception Date
Core Fixed Income							
Ramirez	68,493	1.0 (81)	-0.1 (73)	---	---	2.5 (15)	01/2017
<i>Bloomberg Barclays U.S. Aggregate Index</i>		1.6	0.0	---	---	1.8	
Excess Return		-0.6	-0.1	---	---	0.7	
Core-Plus Fixed Income							
Reams	23,000	2.5 (1)	1.5 (3)	2.9 (60)	2.8 (68)	5.5 (47)	02/1998
<i>Bbg Barclays Universal (Hybrid)</i>		1.2	-0.3	2.6	2.7	4.8	
Excess Return		1.3	1.8	0.3	0.1	0.7	
High Yield / Bank Loans							
DDJ Capital	7,616	-3.4 (29)	0.6 (21)	9.3 (6)	---	5.8 (5)	02/2015
<i>ICE BofAML High Yield Master II</i>		-4.7	-2.3	7.3	---	4.1	
Excess Return		1.3	2.9	2.0	---	1.7	

Over the latest three-month period, ending December 31, 2018, two of OPFRS's three active Fixed Income managers outperformed their respective benchmarks.

Ramirez, the Plan's core fixed income manager, returned 1.0% compared to the benchmark return of 1.6% during the quarter. Over the 1-year period, Ramirez has slightly underperformed its benchmark by (0.1%) and ranked in the 73rd percentile of its peer group.

Reams, the Plan's core plus fixed income manager, outperformed its benchmark by 1.3% during the quarter and ranked in the top percentile of its peer group. Strong recent performance has allowed Reams to outperform its benchmark over the 1-, 3-, and 5-year periods by 1.8%, 0.3% and 0.1%, respectively.

DDJ, the Plan's High Yield & Bank Loan manager, returned (3.4%) during the most recent quarter while outperforming its benchmark by 1.3% and ranking in the 29th percentile of its peer group. DDJ has also outperformed over the 1- and 3-year periods by 2.9% and 2.0%, respectively.

Manager Performance - Gross of Fees

As of December 31, 2018

Covered Calls

Manager - Style	Mkt Value (\$000)	1 Quarter	1 Year	3 Years	5 Years	Since Inception	Inception Date
Covered Calls Composite							
Covered Calls	45,110	-11.0	-4.8	6.6	---	6.2	04/2014
CBOE BXM		-10.8	-4.8	4.8	---	4.8	
Excess Return		-0.2	0.0	1.8	---	1.4	
CC - Passive Allocation							
Parametric BXM	22,745	-9.0	-3.9	5.8	---	5.6	04/2014
CBOE BXM		-10.8	-4.8	4.8	---	4.8	
Excess Return		1.8	0.9	1.0	---	0.8	
CC - Active Allocation							
Parametric DeltaShift	22,366	-12.9	-5.8	7.4	---	7.5	04/2014
CBOE BXM		-10.8	-4.8	4.8	---	4.8	
Excess Return		-2.1	-1.0	2.6	---	2.7	

During the latest three-month period ending December 31, 2018, OPFRS' aggregate Covered Calls portfolio underperformed its benchmark by (0.2%).

Parametric BXM Portfolio, the Plan's passive covered calls allocation outperformed its CBOE BXM index by 1.8% over the most recent quarter. Over the most recent 1-year period the portfolio has outperformed by 0.9% and has also outperformed over the 3-year period by 1.0%.

Parametric Delta Shift Portfolio, the Plan's active covered calls allocation has underperformed the CBOE BXM benchmark by (2.1%) over the most recent quarter and has underperformed by (1.0%) over the 1-year period. The portfolio continues to outperform over the 3-year period with an annualized 7.4% absolute return.

Manager Performance - Gross of Fees

As of December 31, 2018

Crisis Risk Offset

Manager - Style	Mkt Value (\$000)	1 Quarter	1 Year	3 Years	5 Years	Since Inception	Inception Date
Crisis Risk Offset Composite							
Crisis Risk Offset	23,187	-10.0	---	---	---	-7.0	09/2018
<i>CRO Composite Benchmark</i>		-0.6	---	---	---	-0.4	
Excess Return		-9.4	---	---	---	-6.6	
CRO - Risk Premia / Trend Following							
Parametric S.A.R.P.	23,187	-10.0	---	---	---	-7.0	09/2018
<i>SG Multi Alternative Risk Premia</i>		-0.6	---	---	---	-0.4	
Excess Return		-9.4	---	---	---	-6.6	
CRO - Long Duration							
Pending Long Duration Manager	---	---	---	---	---	---	12/2018

During the latest three-month period ending December 31, 2018, OPFRS's partially funded aggregate Crisis Risk Offset portfolio underperformed its benchmark by (9.4%).

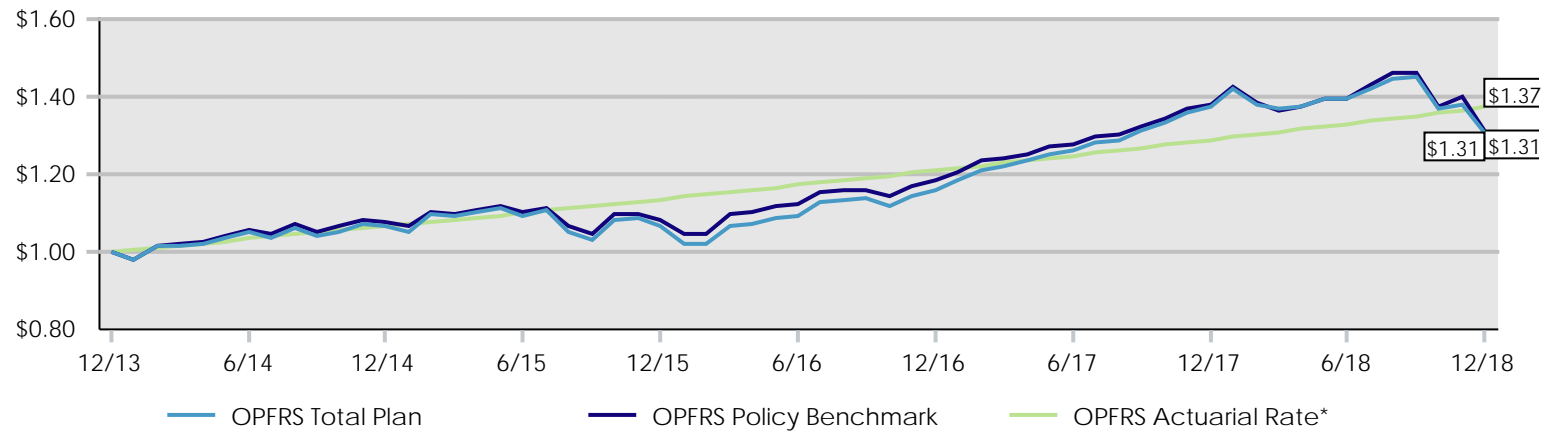
Parametric Systematic Alternative Risk Premia, the Plan's Risk Premia / Trend Following manager underperformed its benchmark by (9.4%) during its first full quarter in the portfolio. The portfolio's negative return was due almost entirely to its long positions in commodities markets which suffered heavy losses during the quarter.

Pending Long Duration Manager, the Plan's Long Duration manager remains unfunded pending upcoming discussions with OPFRS's current fixed income managers.

OPFRS Total Portfolio 5-Year Performance

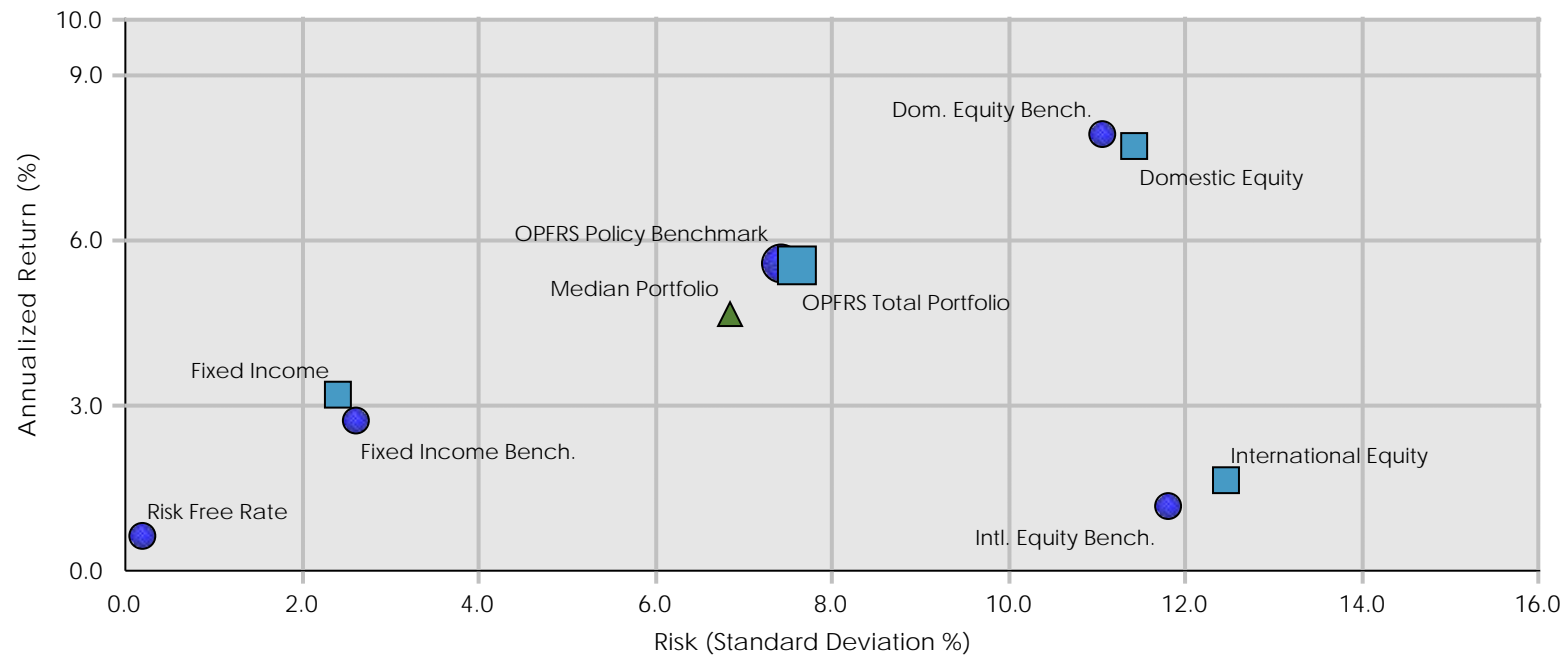
As of December 31, 2018

Growth of \$1 (5-year)

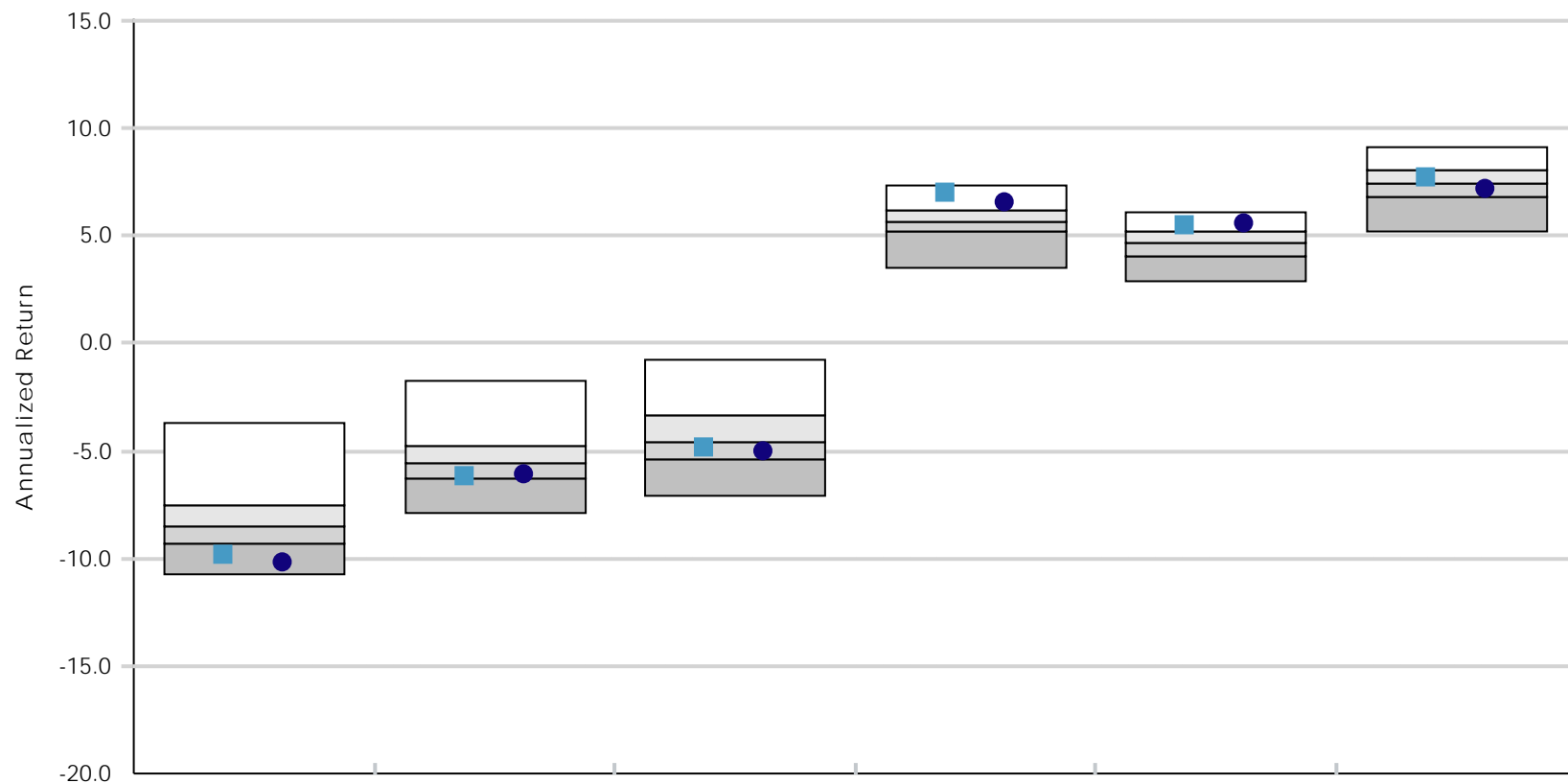


* The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, and 6.5% currently

Risk/Return Performance (5-year)



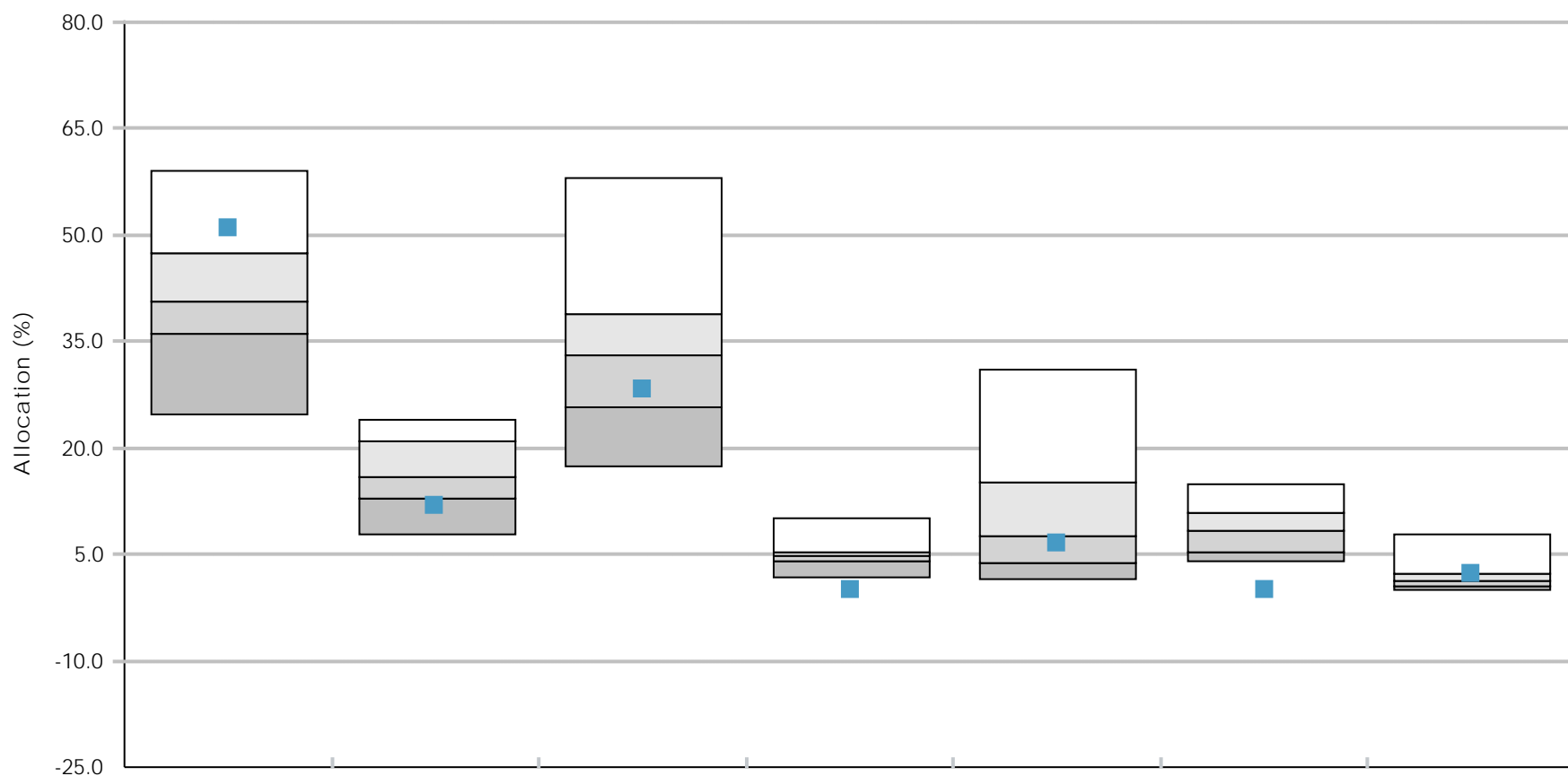
Plan Sponsor Peer Group Analysis
As of December 31, 2018



	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years
■ OPFRS Total Plan	-9.8 (89)	-6.2 (73)	-4.8 (61)	7.0 (10)	5.5 (14)	7.7 (41)
● OPFRS Policy Benchmark	-10.2 (92)	-6.2 (73)	-5.0 (67)	6.6 (16)	5.6 (13)	7.1 (62)
5th Percentile	-3.7	-1.7	-0.7	7.3	6.1	9.1
1st Quartile	-7.6	-4.7	-3.4	6.2	5.2	8.0
Median	-8.6	-5.5	-4.6	5.6	4.7	7.5
3rd Quartile	-9.3	-6.3	-5.4	5.2	4.0	6.8
95th Percentile	-10.8	-7.9	-7.1	3.5	2.9	5.2
Population	426	425	423	412	400	387

Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor TF Asset Allocation
As of December 31, 2018



	US Equity	Intl. Equity	US Fixed Income	Intl. Fixed Income	Alternative Inv.	Real Estate	Cash
■ OPFRS Total Plan	51.0 (14)	11.8 (80)	28.3 (69)	0.0	6.6 (57)	0.0	2.2 (28)
5th Percentile	59.0	24.0	58.0	10.1	30.9	14.9	7.8
1st Quartile	47.3	20.8	38.9	5.4	15.1	10.8	2.4
Median	40.5	15.8	33.1	4.8	7.6	8.4	1.4
3rd Quartile	36.1	12.8	25.7	4.1	3.9	5.4	0.4
95th Percentile	24.8	7.9	17.3	1.9	1.5	4.0	0.1
Population	561	526	562	126	95	277	510

Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Monitoring/Probation Status

As of December 31, 2018
Return vs. Benchmark since Corrective Action

Portfolio	Status	Concern	Months Since Corrective Action	Performance [^] Since Corrective Action (Gross)	Peer Group Percentile Ranking	Date of Corrective Action*
Hansberger	On Watch	Organizational	13	-13.3%	64	11/30/2017
MSCI ACWI ex-USA	---	---	13	-11.0%		
NWQ	On Watch	Organizational	11	-16.2%	81	1/31/2018
Russell 2000 Value	---	---	11	-12.7%		

[^]. Annualized performance if over one year.

* Approximate date based on when Board voted to either monitor a manager at a heightened level or place it on probation.

Investment Performance Criteria
For Manager Monitoring/Probation Status

Asset Class	Short-term (rolling 12 mth periods)	Medium-term (rolling 36 mth periods)	Long-term (60 + months)
Active Domestic Equity	Fd return < bench return – 3.5%	Fd annlzd return < bench annlzd return – 1.75% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Active International Equity	Fd return < bench return – 4.5%	Fd annlzd return < bench annlzd return – 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Passive International Equity	Tracking Error > 0.50%	Tracking Error > 0.45% for 6 consecutive months	Fd annlzd return < bench annlzd return – 0.40% for 6 consecutive months
Fixed Income	Fd return < bench return – 1.5%	Fd annlzd return < bench annlzd return – 1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months

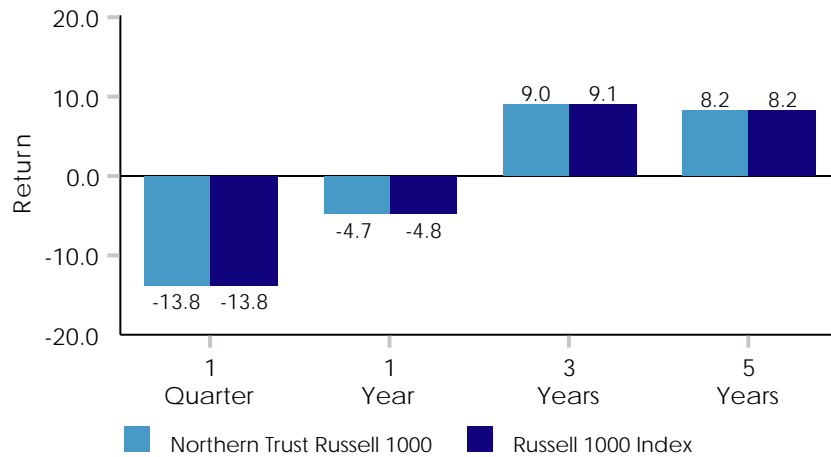
VRR – Value Relative Ratio – is calculated as: manager cumulative return / benchmark cumulative return.

Northern Trust Russell 1000 - gross of fees

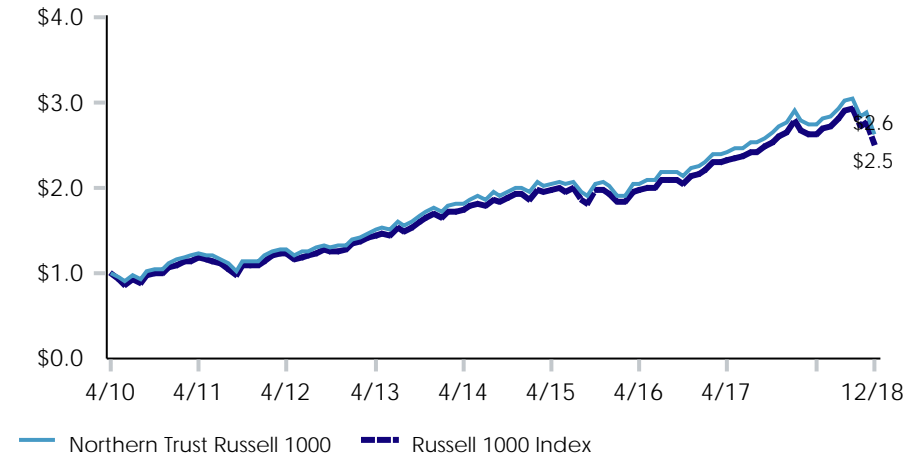
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
Northern Trust Russell 1000	0.82	0.97	0.33	0.95	1.35	0.99	99.53	95.23	05/01/2010
Russell 1000 Index	0.00	1.00	-	0.89	0.00	1.00	100.00	100.00	05/01/2010

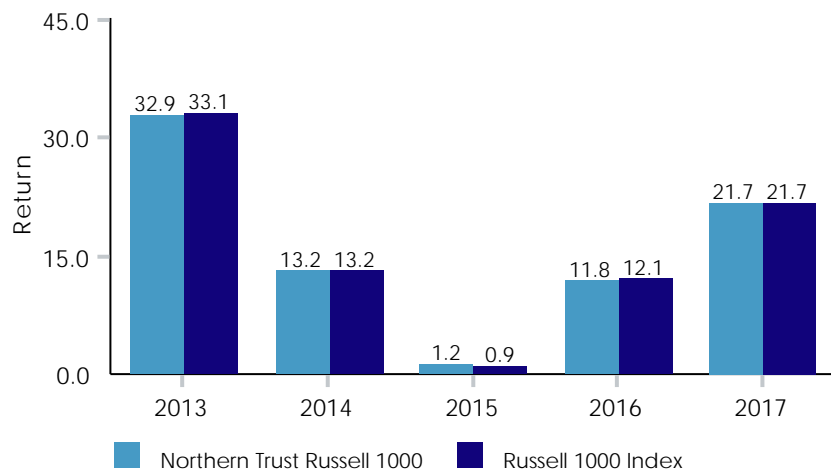
Trailing Period Performance



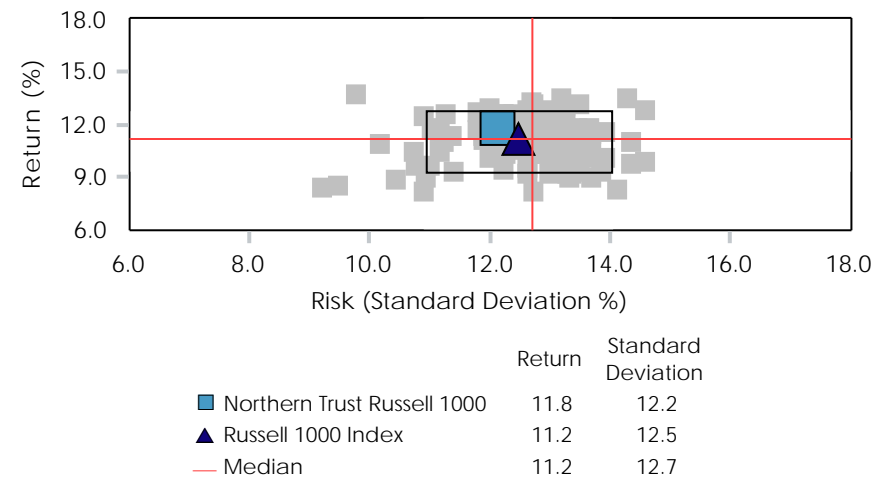
Growth of \$1 - Since Inception



Calendar Year Performance



Risk/Return - Since Inception

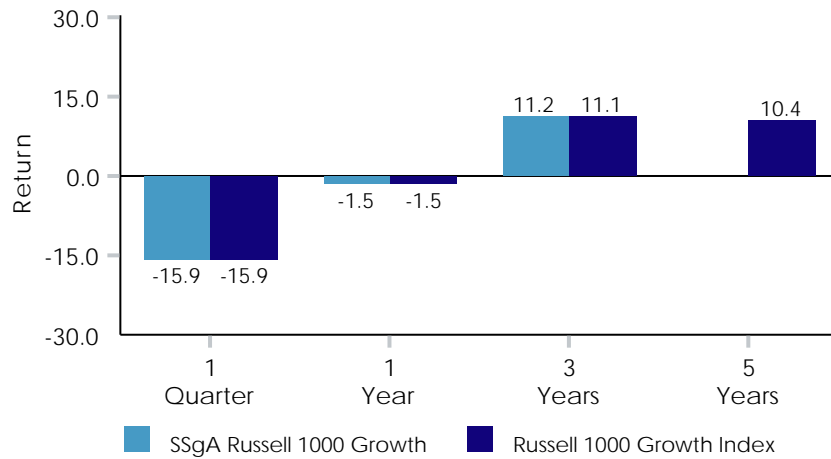


SSgA Russell 1000 Growth - gross of fees

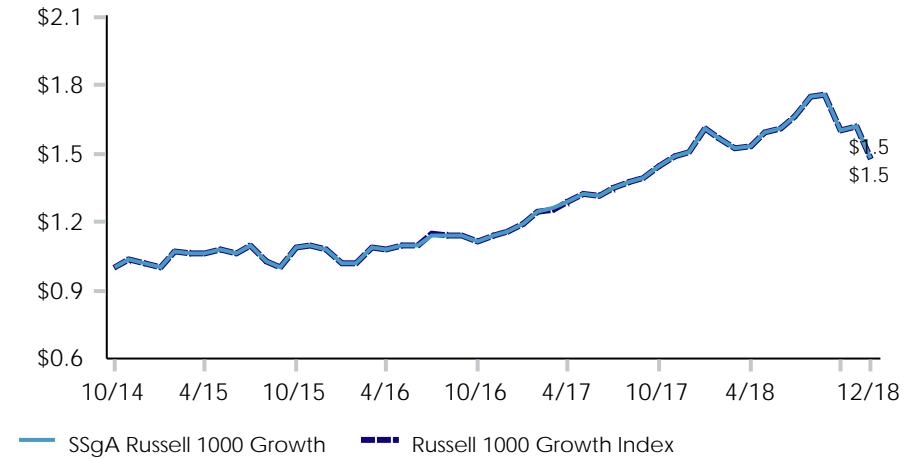
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
SSgA Russell 1000 Growth	0.01	1.00	0.14	0.77	0.04	1.00	100.00	99.96	11/01/2014
Russell 1000 Growth Index	0.00	1.00	-	0.77	0.00	1.00	100.00	100.00	11/01/2014

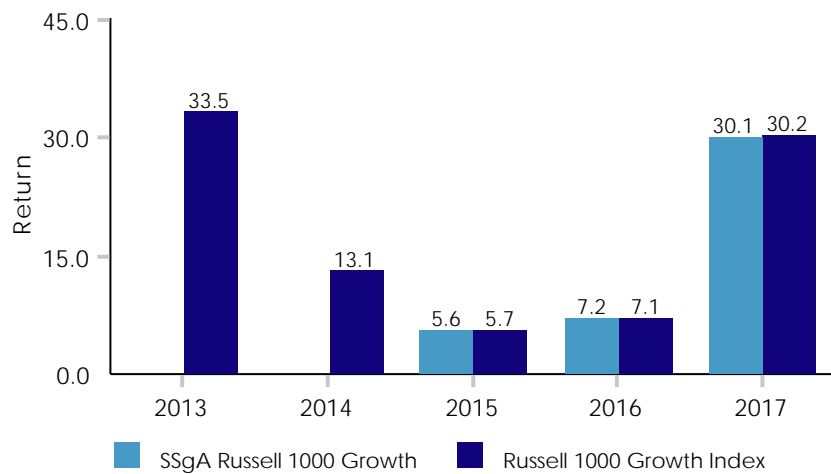
Trailing Period Performance



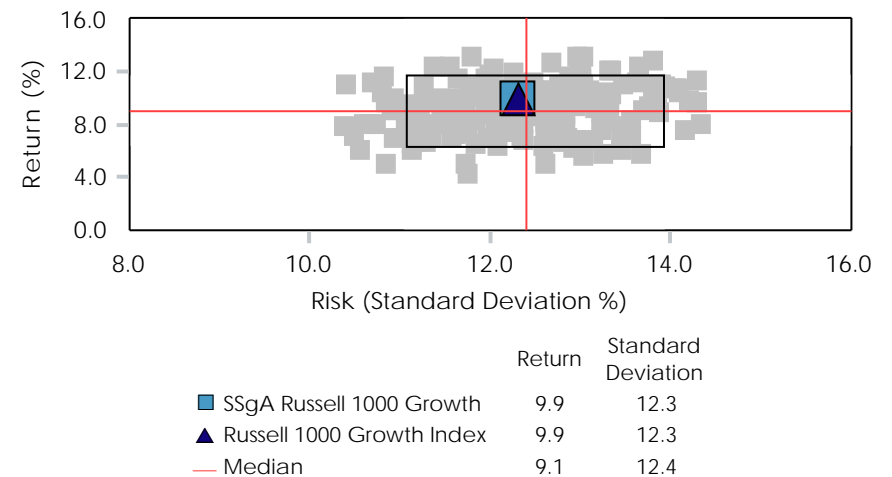
Growth of \$1 - Since Inception



Calendar Year Performance



Risk/Return - Since Inception

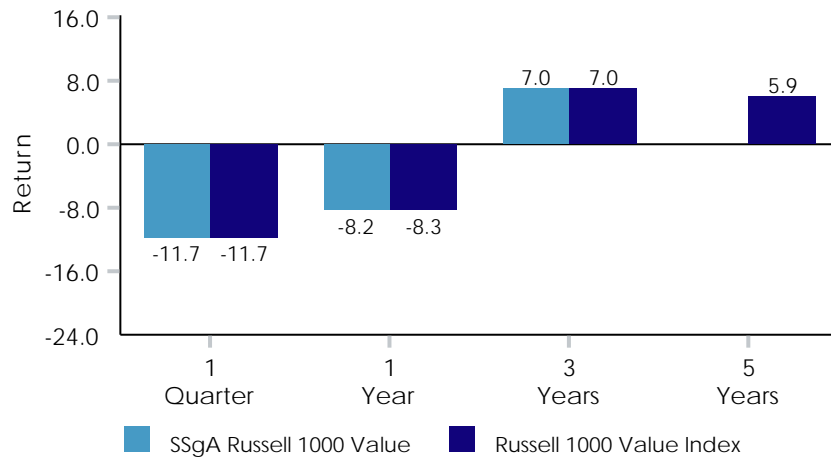


SSgA Russell 1000 Value - gross of fees

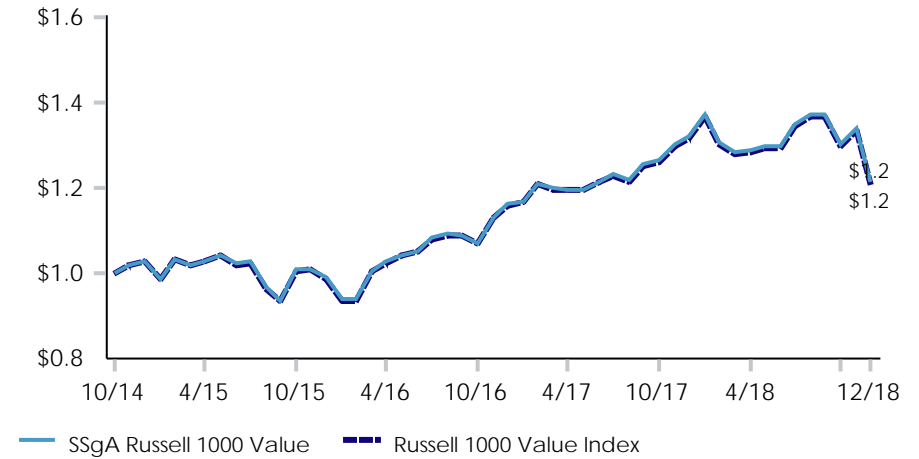
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
SSgA Russell 1000 Value	0.10	1.00	1.40	0.41	0.07	1.00	100.25	99.57	11/01/2014
Russell 1000 Value Index	0.00	1.00	-	0.40	0.00	1.00	100.00	100.00	11/01/2014

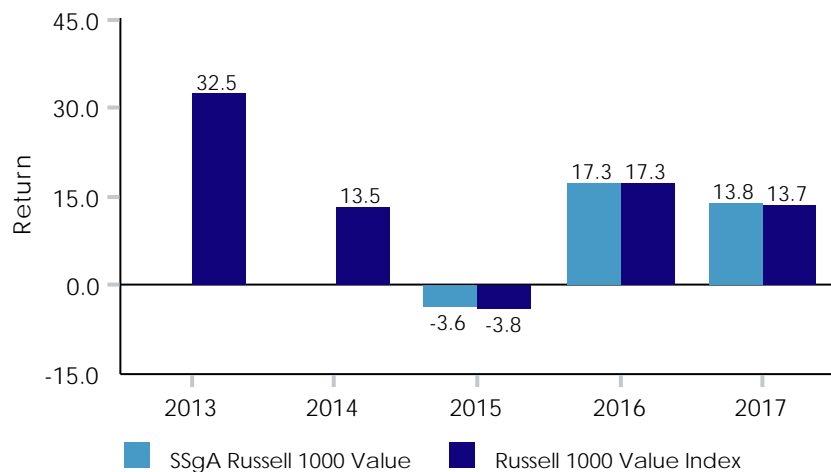
Trailing Period Performance



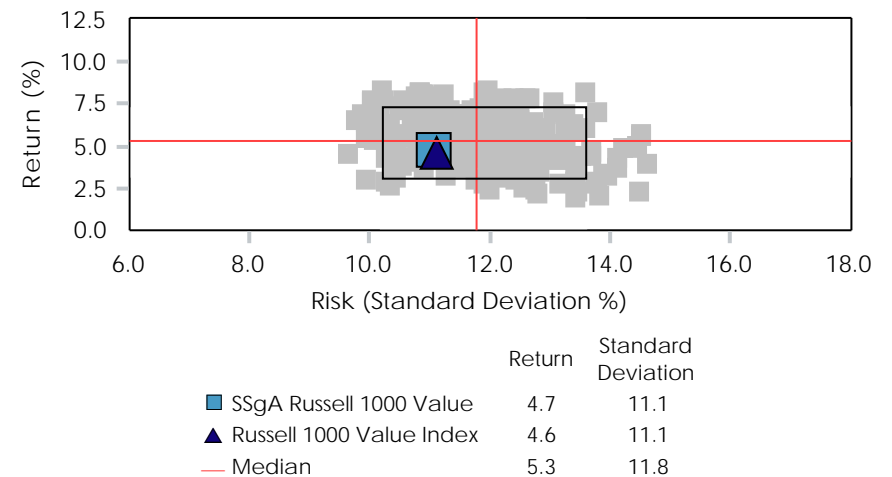
Growth of \$1 - Since Inception



Calendar Year Performance



Risk/Return - Since Inception

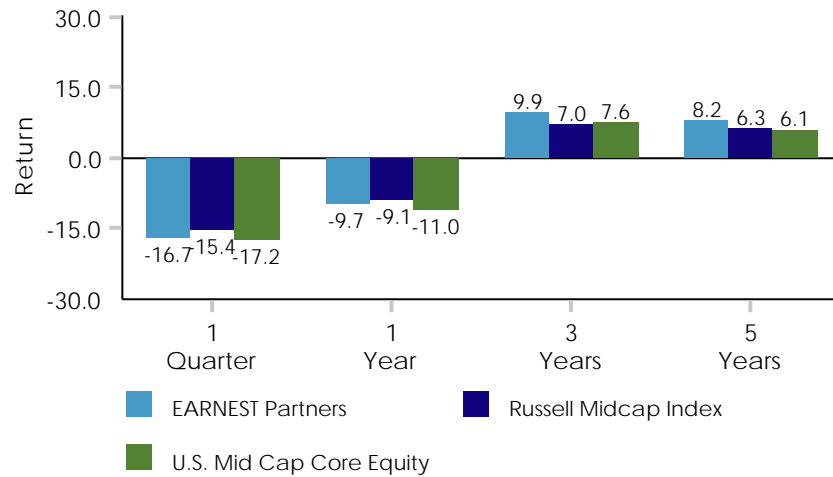


EARNEST Partners - gross of fees

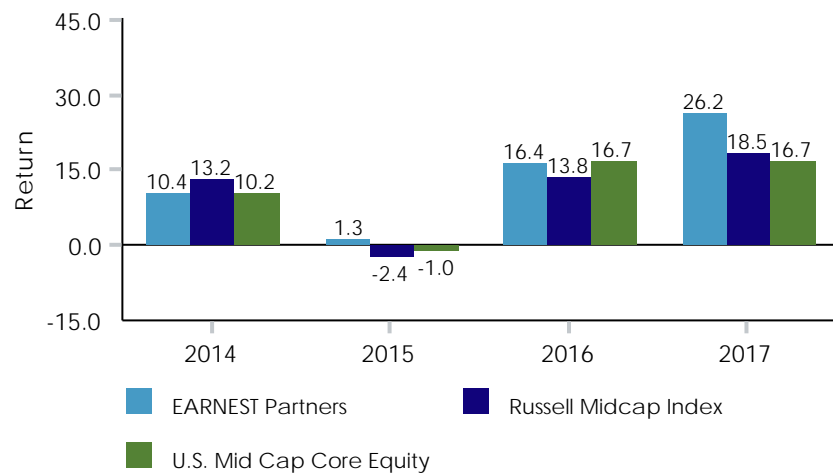
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
EARNEST Partners	0.75	1.00	0.21	0.49	3.37	0.96	99.74	95.42	03/01/2006
Russell Midcap Index	0.00	1.00	-	0.45	0.00	1.00	100.00	100.00	03/01/2006
U.S. Mid Cap Core Equity Median	-	-	-	-	-	-	-	-	-

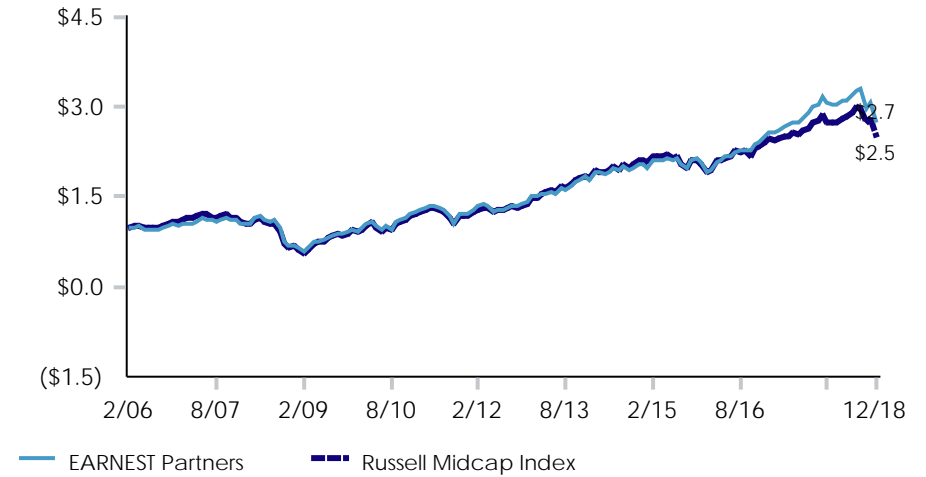
Trailing Period Performance



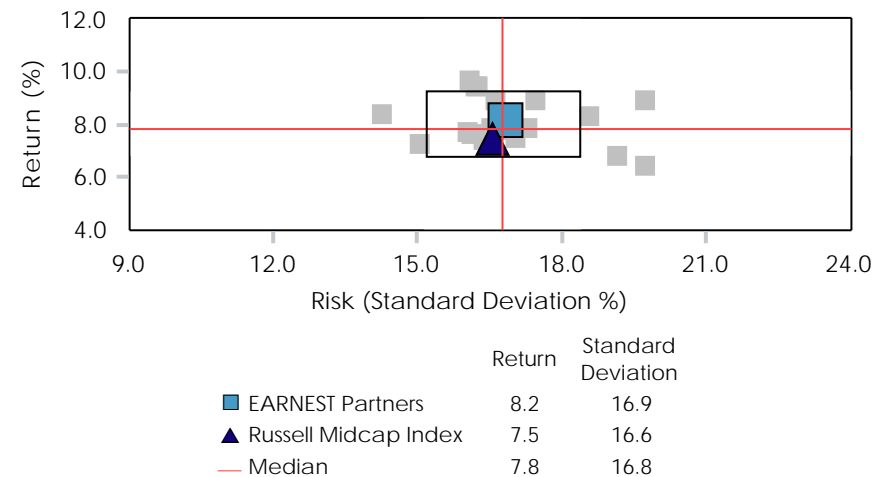
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception

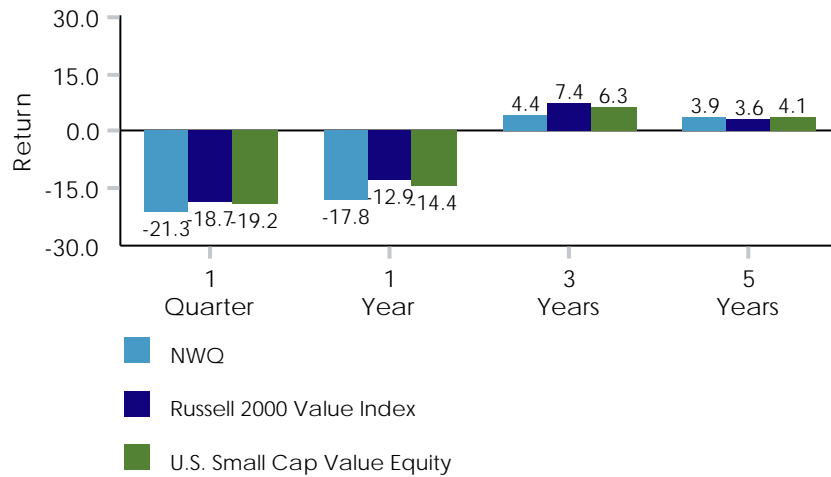


NWQ - gross of fees

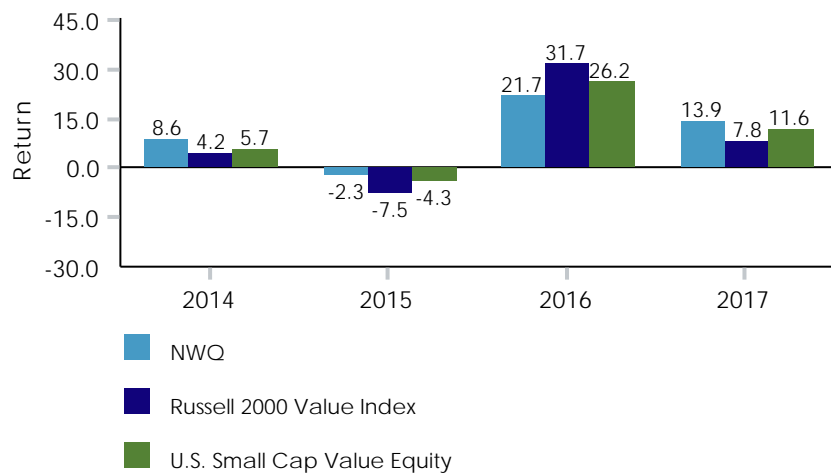
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
NWQ	0.27	1.01	0.05	0.34	6.84	0.89	101.64	100.52	01/01/2006
Russell 2000 Value Index	0.00	1.00	-	0.34	0.00	1.00	100.00	100.00	01/01/2006
U.S. Small Cap Value Equity Median	-	-	-	-	-	-	-	-	-

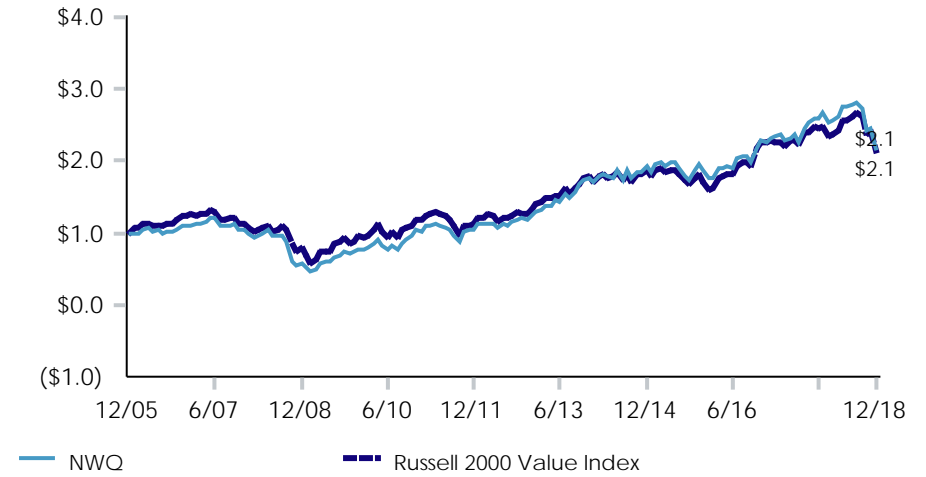
Trailing Period Performance



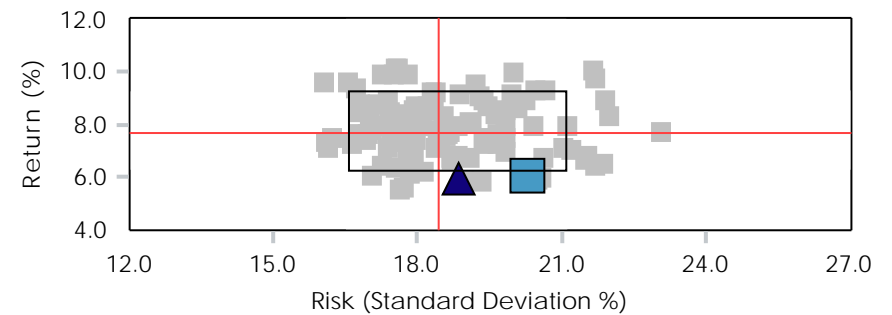
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception



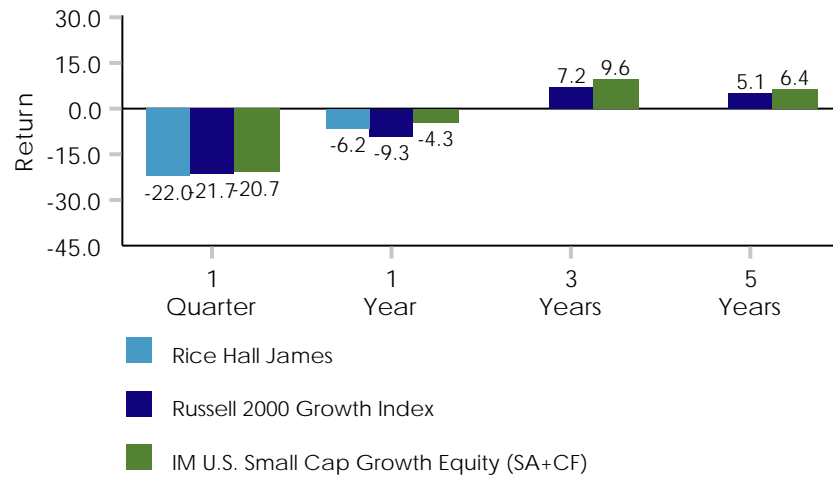
	Return	Standard Deviation
NWQ	6.0	20.3
Russell 2000 Value Index	6.0	18.9
Median	7.7	18.4

Rice Hall James - gross of fees

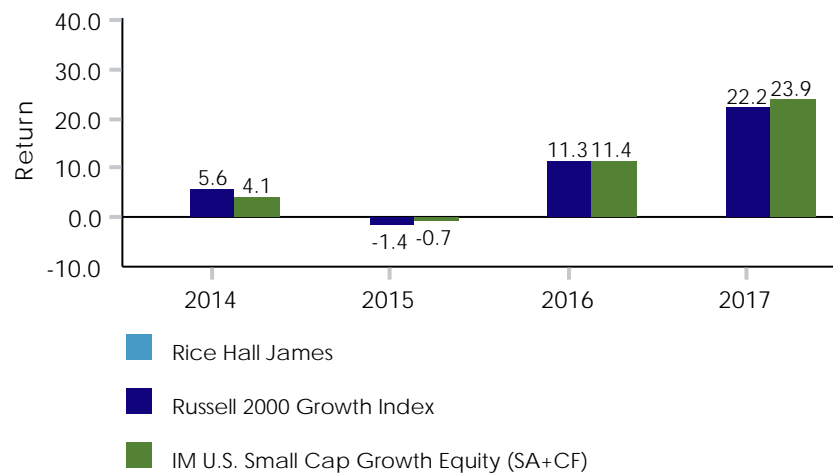
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
Rice Hall James	3.26	0.97	0.68	0.21	4.63	0.93	103.21	87.55	07/01/2017
Russell 2000 Growth Index	0.00	1.00	-	0.03	0.00	1.00	100.00	100.00	07/01/2017
IM U.S. Small Cap Growth Equity (SA+CF) Median	-	-	-	-	-	-	-	-	-

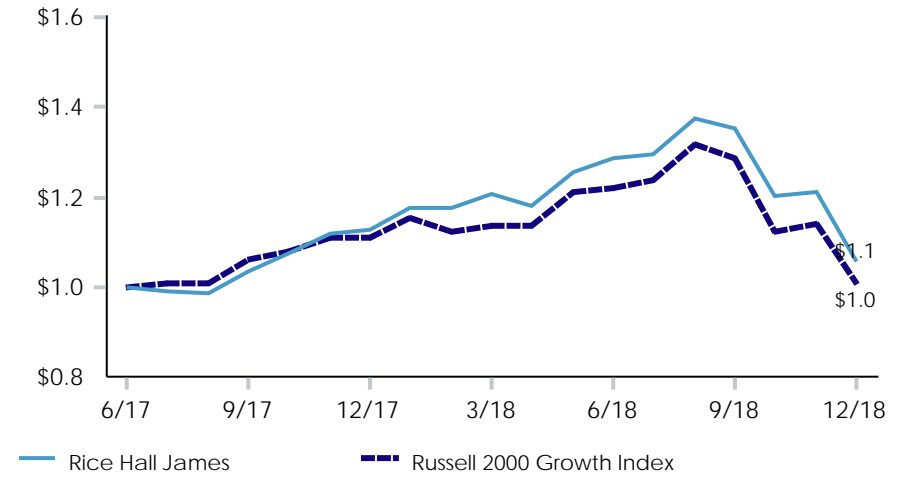
Trailing Period Performance



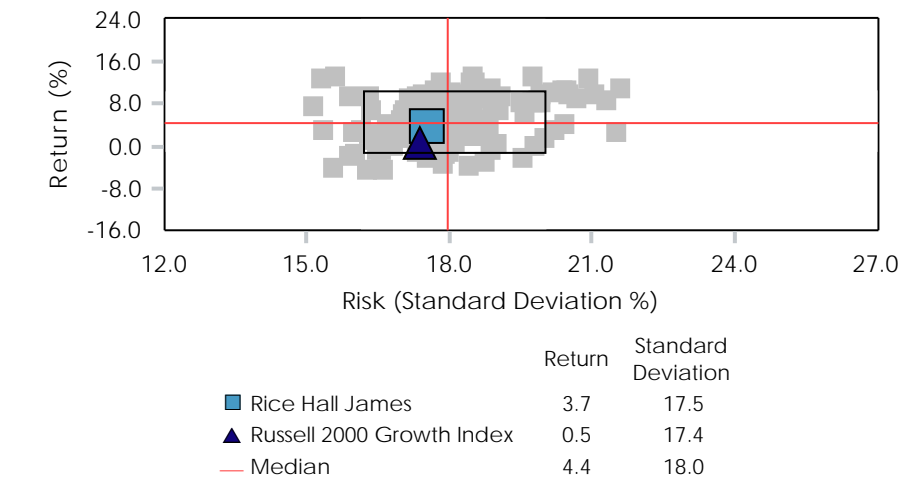
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception

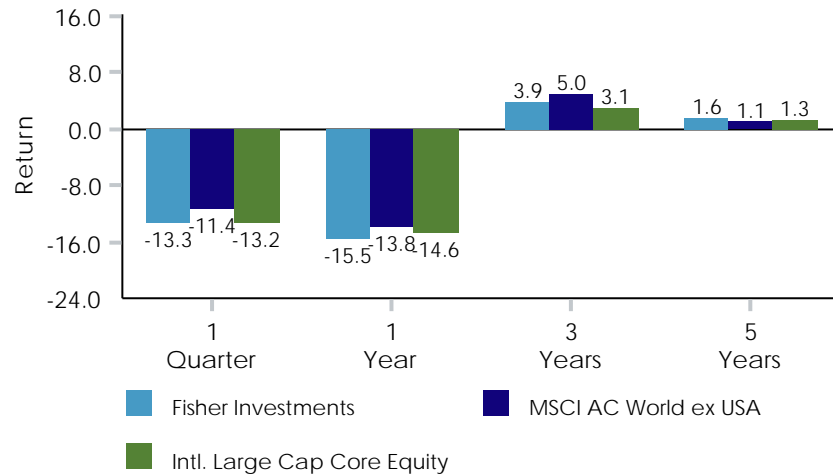


Fisher Investments - gross of fees

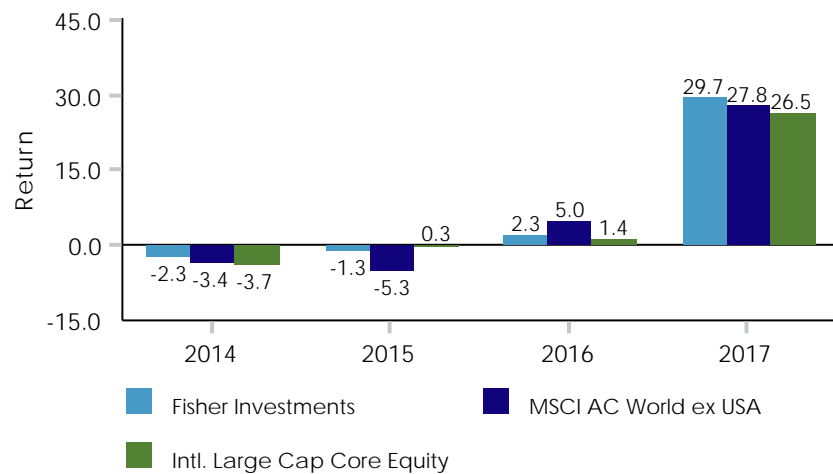
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
Fisher Investments	0.39	1.09	0.20	0.23	3.48	0.96	105.85	102.88	03/01/2011
MSCI AC World ex USA	0.00	1.00	-	0.21	0.00	1.00	100.00	100.00	03/01/2011
Intl. Large Cap Core Equity Median	-	-	-	-	-	-	-	-	-

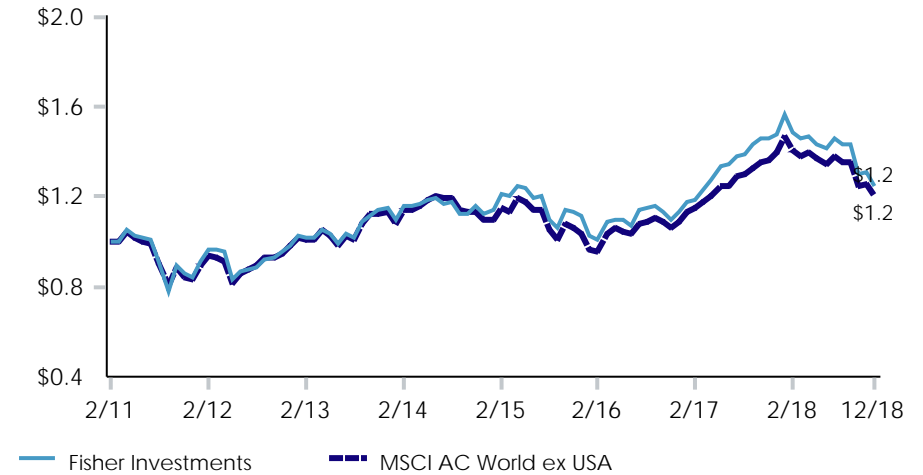
Trailing Period Performance



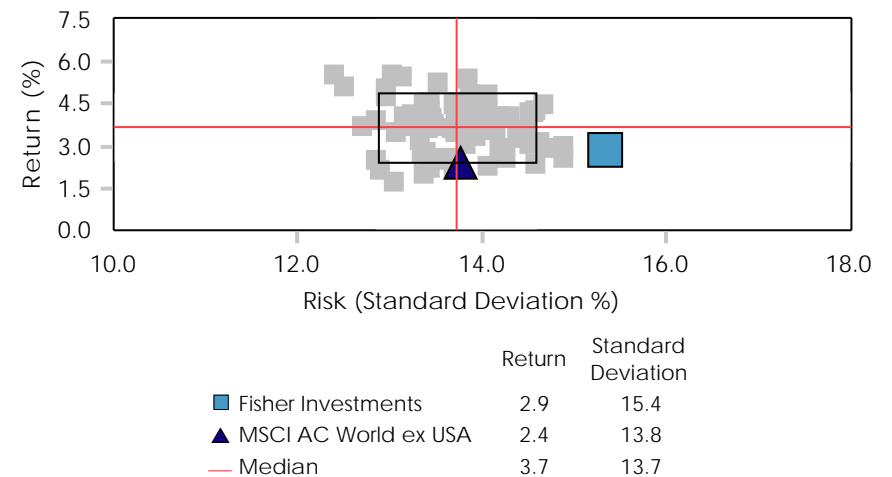
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception

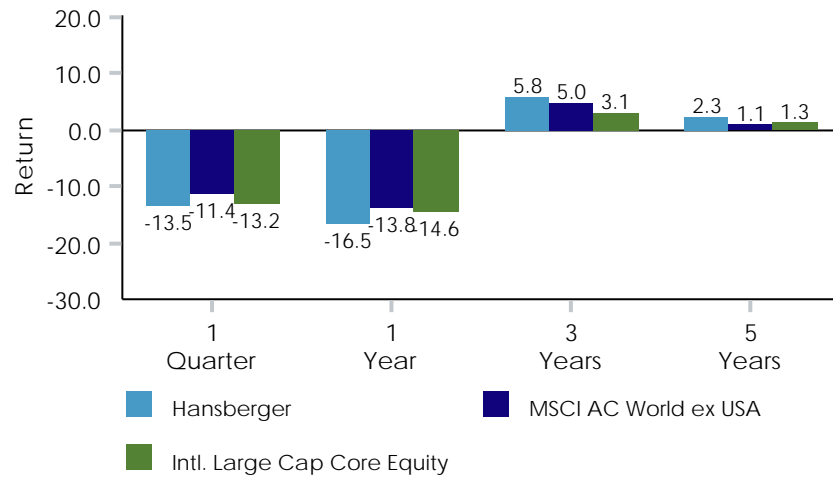


Hansberger - gross of fees

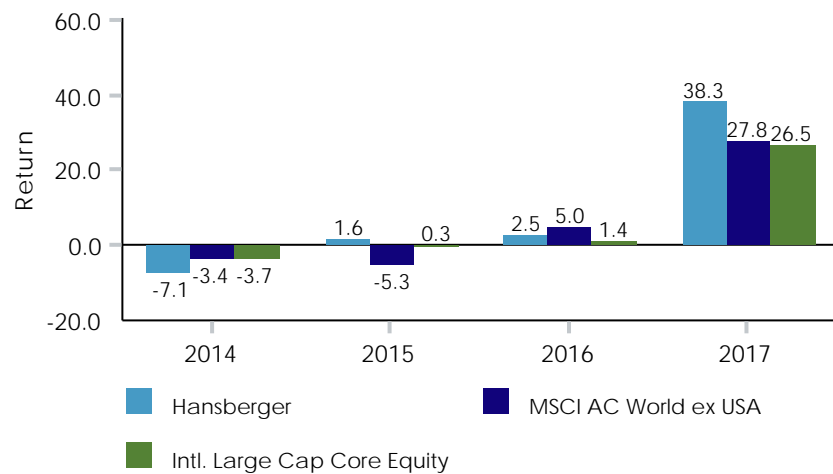
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
Hansberger	-0.24	1.08	0.04	0.22	4.43	0.95	105.34	105.81	01/01/2006
MSCI AC World ex USA	0.00	1.00	-	0.24	0.00	1.00	100.00	100.00	01/01/2006
Intl. Large Cap Core Equity Median	-	-	-	-	-	-	-	-	-

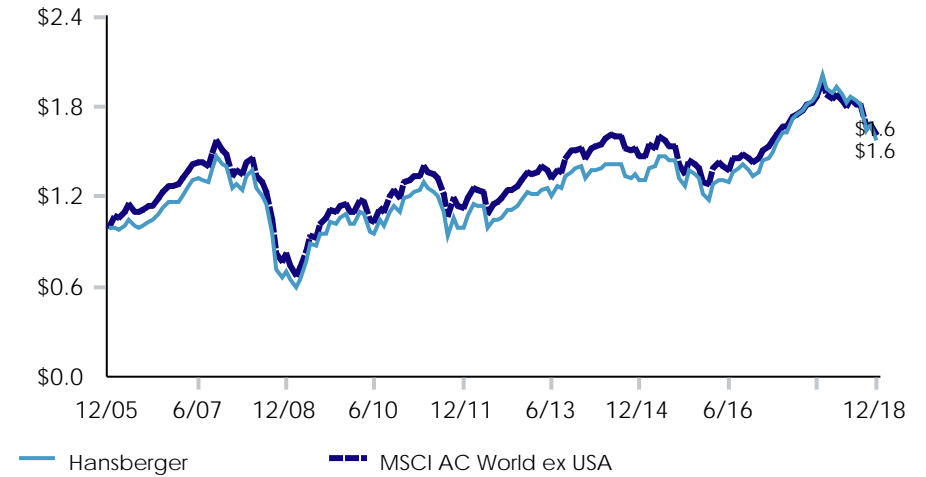
Trailing Period Performance



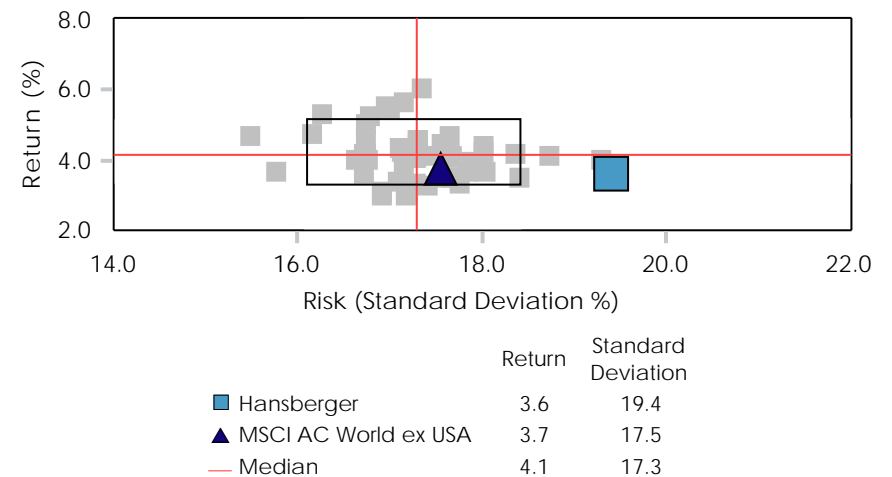
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception

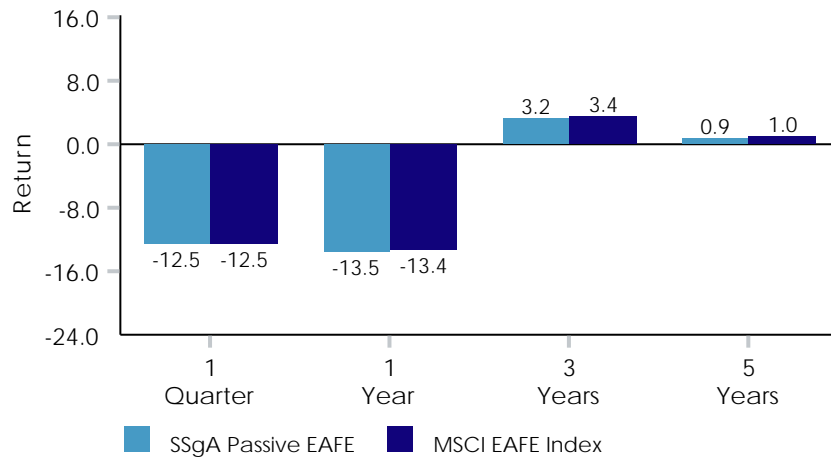


SSgA Passive EAFE - gross of fees

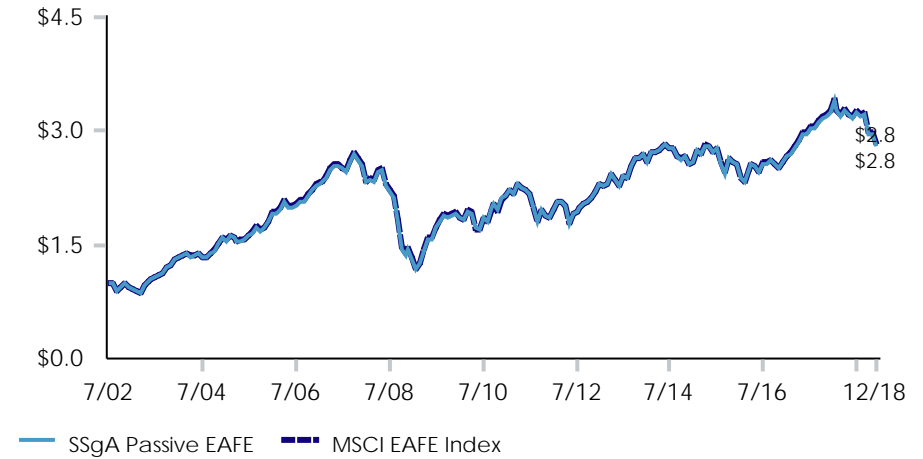
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
SSgA Passive EAFE	-0.01	0.99	-0.15	0.39	0.43	1.00	99.28	99.34	08/01/2002
MSCI EAFE Index	0.00	1.00	-	0.40	0.00	1.00	100.00	100.00	08/01/2002

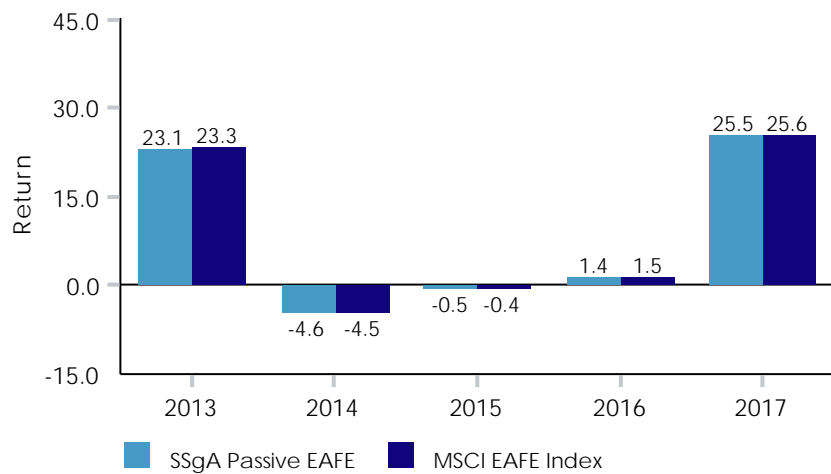
Trailing Period Performance



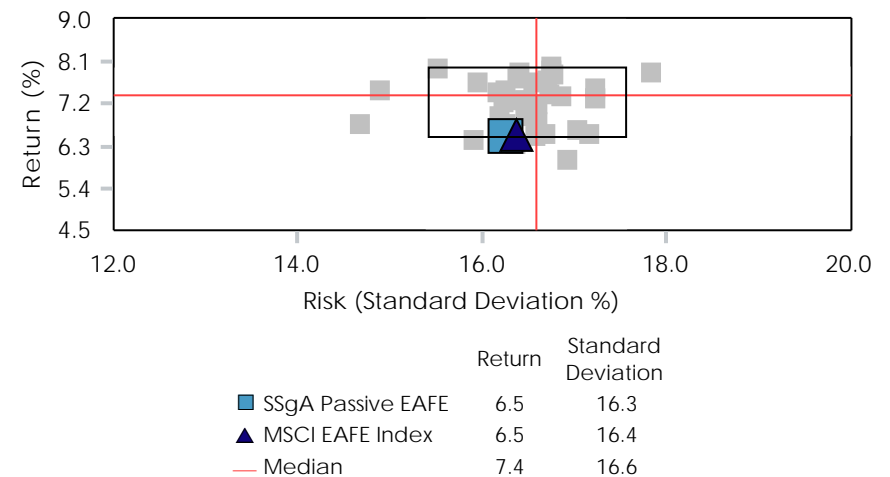
Growth of \$1 - Since Inception



Calendar Year Performance



Risk/Return - Since Inception

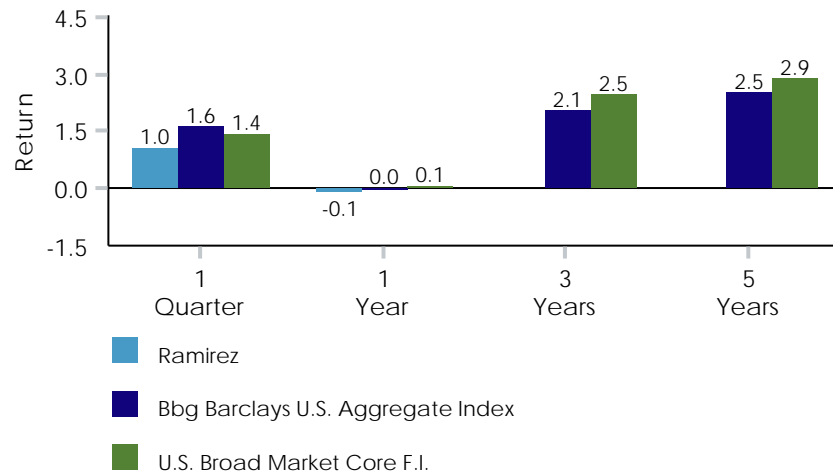


Ramirez - gross of fees

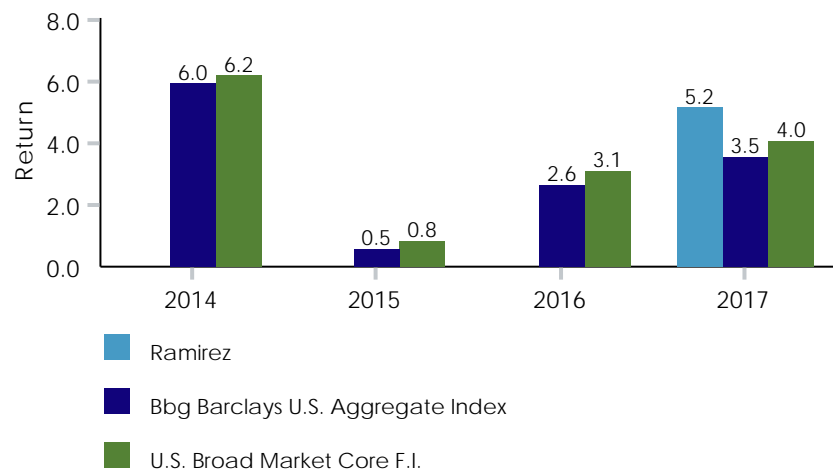
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
Ramirez	0.98	0.85	1.13	0.54	0.63	0.94	103.56	78.25	01/01/2017
Bbg Barclays U.S. Aggregate Index	0.00	1.00	-	0.18	0.00	1.00	100.00	100.00	01/01/2017
U.S. Broad Market Core F.I. Median	-	-	-	-	-	-	-	-	-

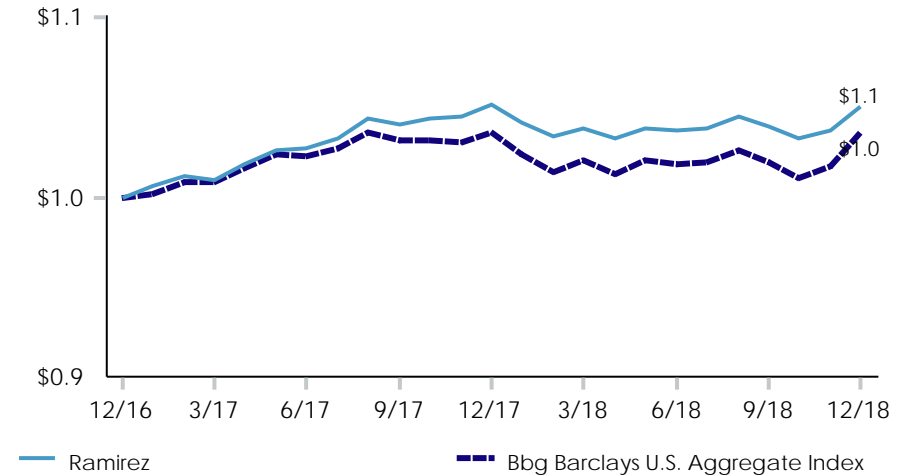
Trailing Period Performance



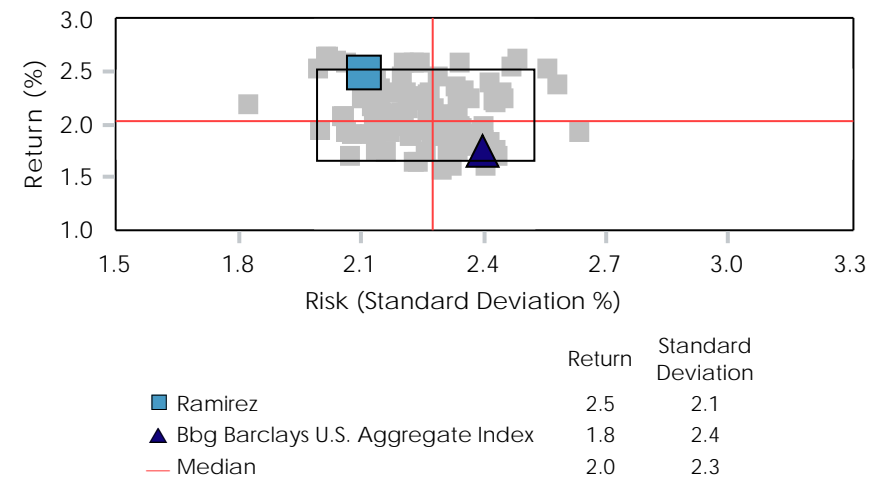
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception

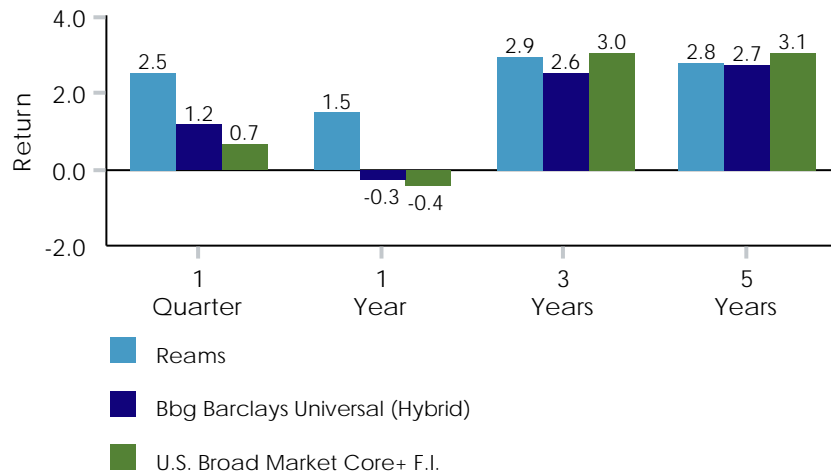


Reams - gross of fees

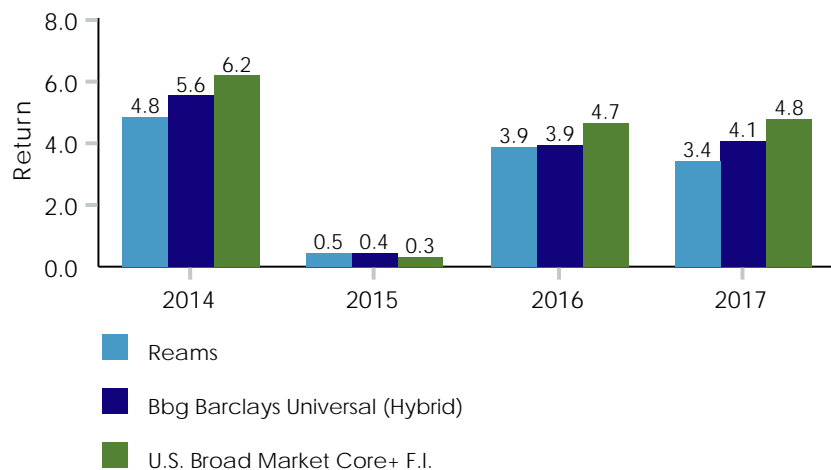
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
Reams	0.34	1.06	0.15	0.65	4.00	0.44	109.57	103.42	01/01/1998
Bbg Barclays Universal (Hybrid)	0.00	1.00	-	0.86	0.00	1.00	100.00	100.00	01/01/1998
U.S. Broad Market Core+ F.I. Median	-	-	-	-	-	-	-	-	-

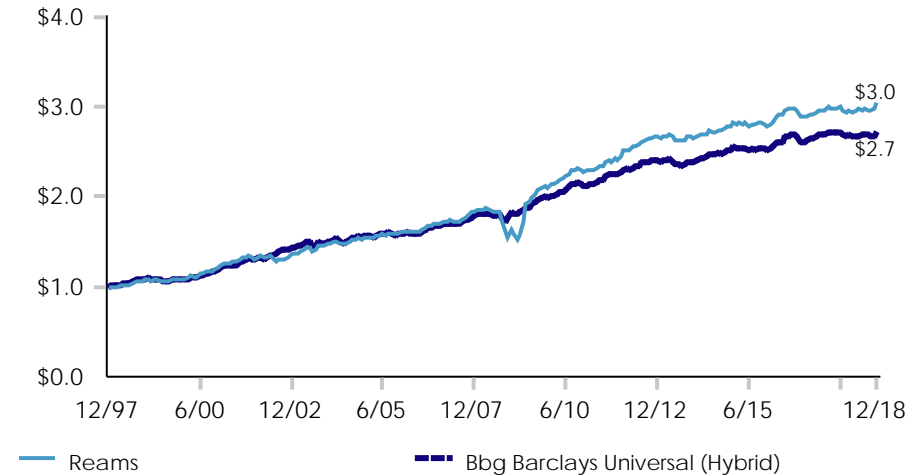
Trailing Period Performance



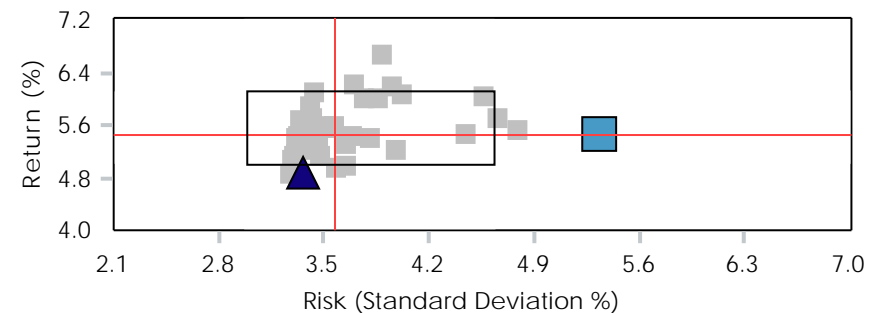
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception



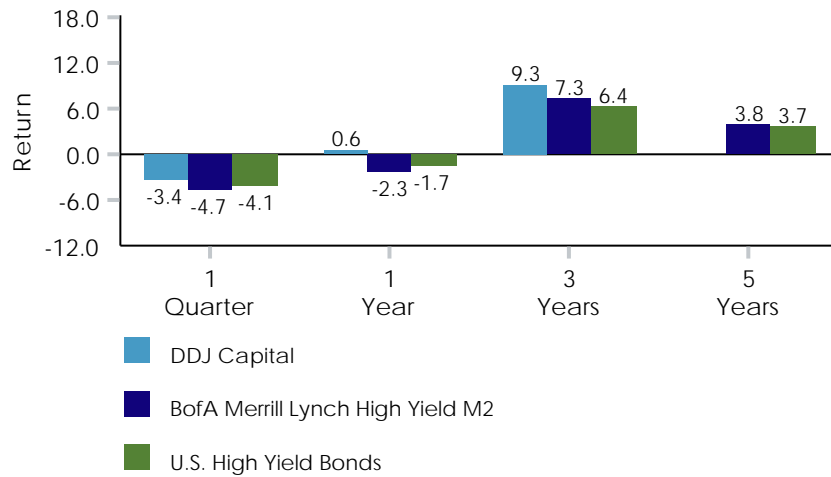
	Return	Standard Deviation
Reams	5.4	5.3
Bbg Barclays Universal (Hybrid)	4.9	3.4
Median	5.4	3.6

DDJ Capital - gross of fees

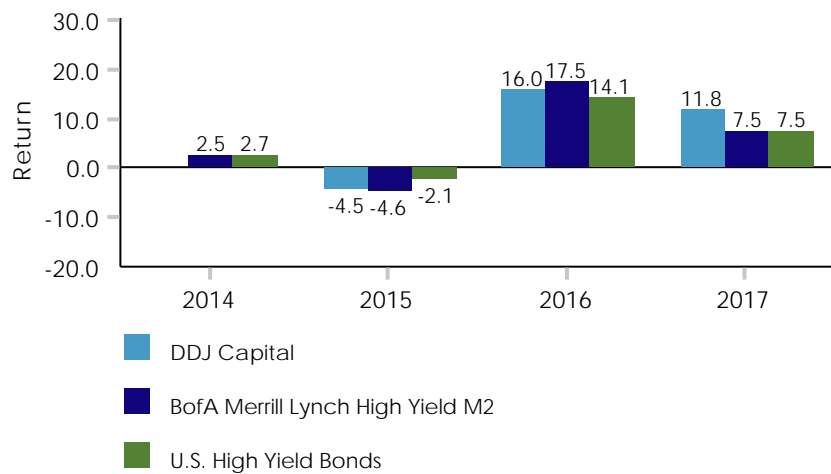
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
DDJ Capital	2.60	0.72	0.49	1.07	2.82	0.71	95.31	64.46	01/01/2015
BofA Merrill Lynch High Yield M2	0.00	1.00	-	0.65	0.00	1.00	100.00	100.00	01/01/2015
U.S. High Yield Bonds Median	-	-	-	-	-	-	-	-	-

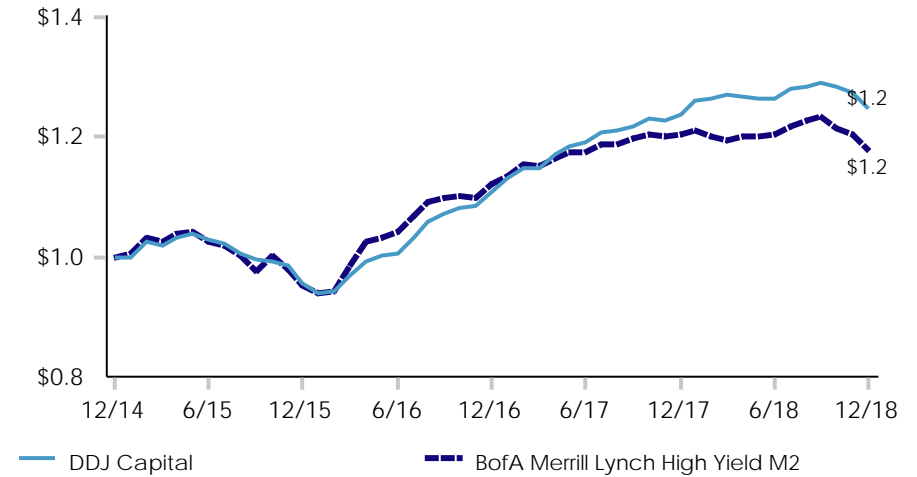
Trailing Period Performance



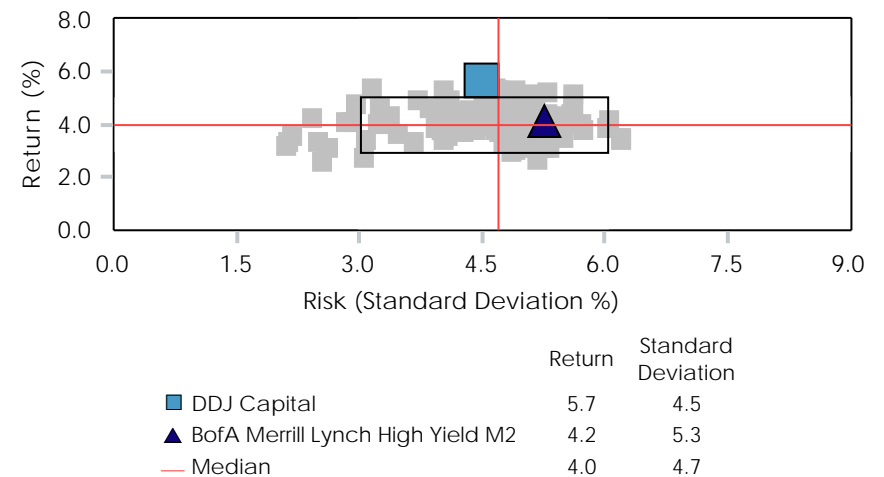
Calendar Year Performance



Growth of \$1 - Since Inception



Risk/Return - Since Inception

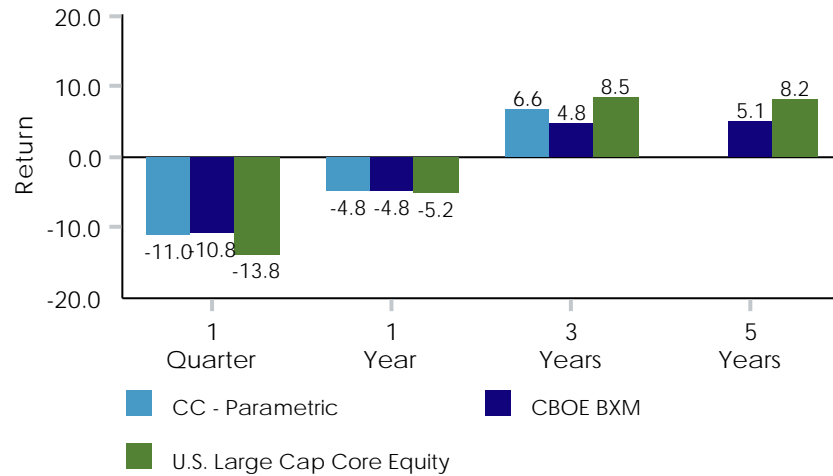


CC - Parametric - gross of fees

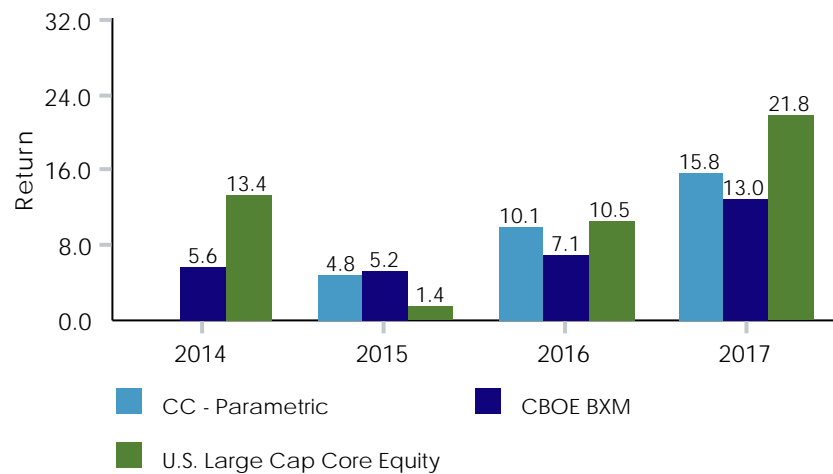
As of December 31, 2018

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Market Capture	Down Market Capture	Inception Date
CC - Parametric	0.96	1.05	0.55	0.71	2.16	0.92	114.12	106.51	03/01/2014
CBOE BXM	0.00	1.00	-	0.61	0.00	1.00	100.00	100.00	03/01/2014
U.S. Large Cap Core Equity Median	-	-	-	-	-	-	-	-	-

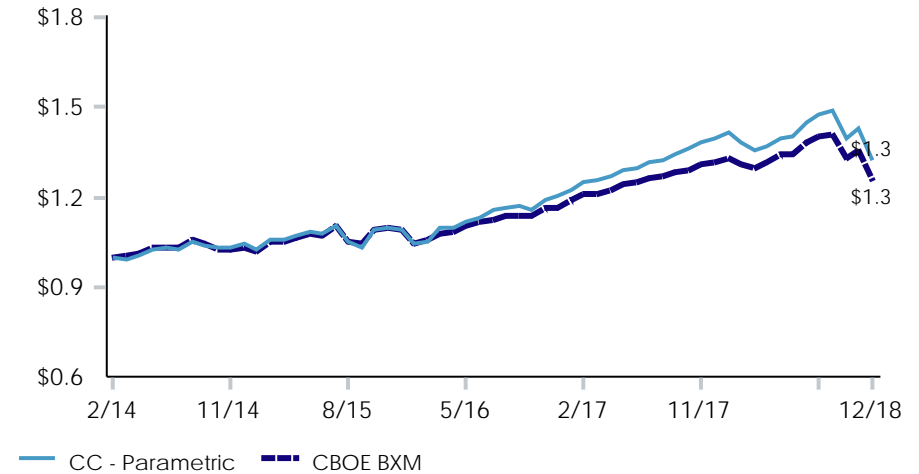
Trailing Period Performance



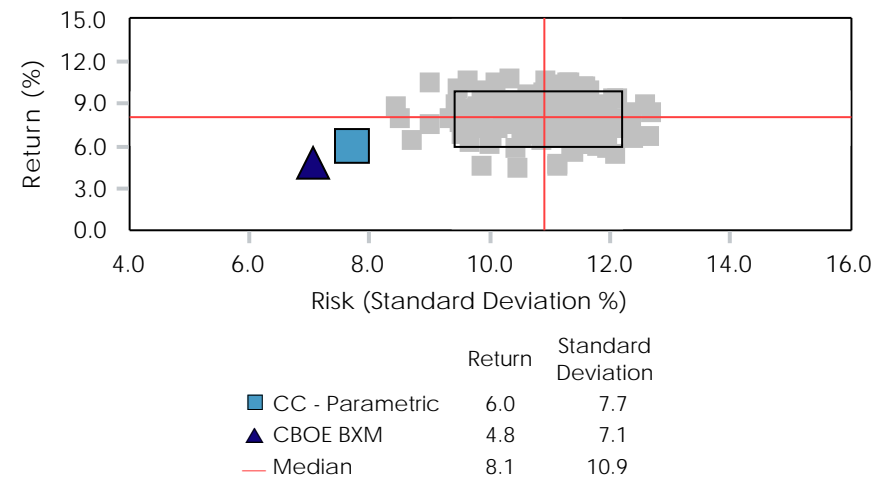
Calendar Year Performance



Growth of \$1 - Since Inception

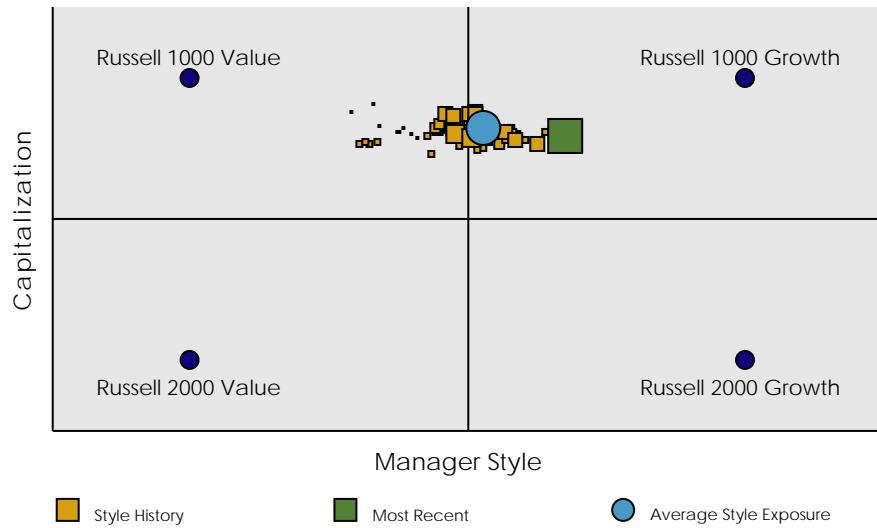


Risk/Return - Since Inception

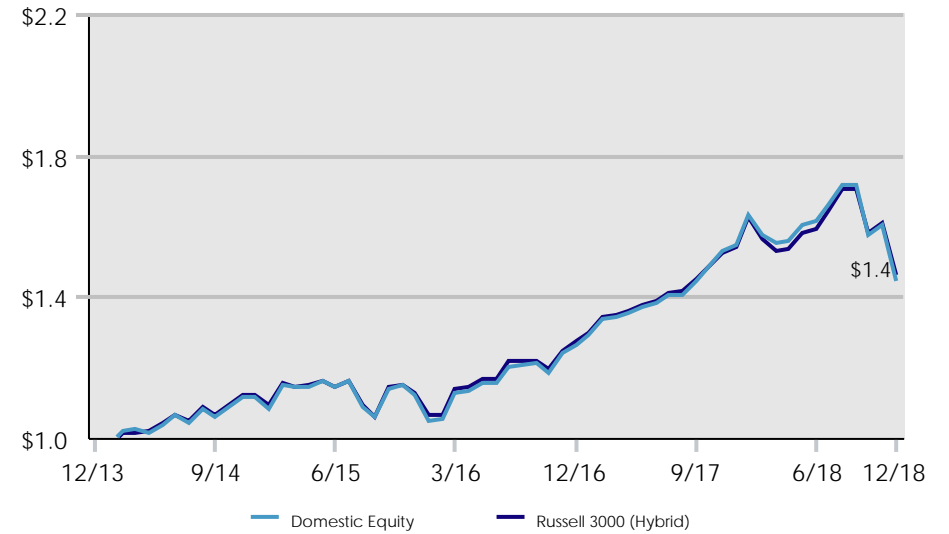


Domestic Equity Analysis As of December 31, 2018

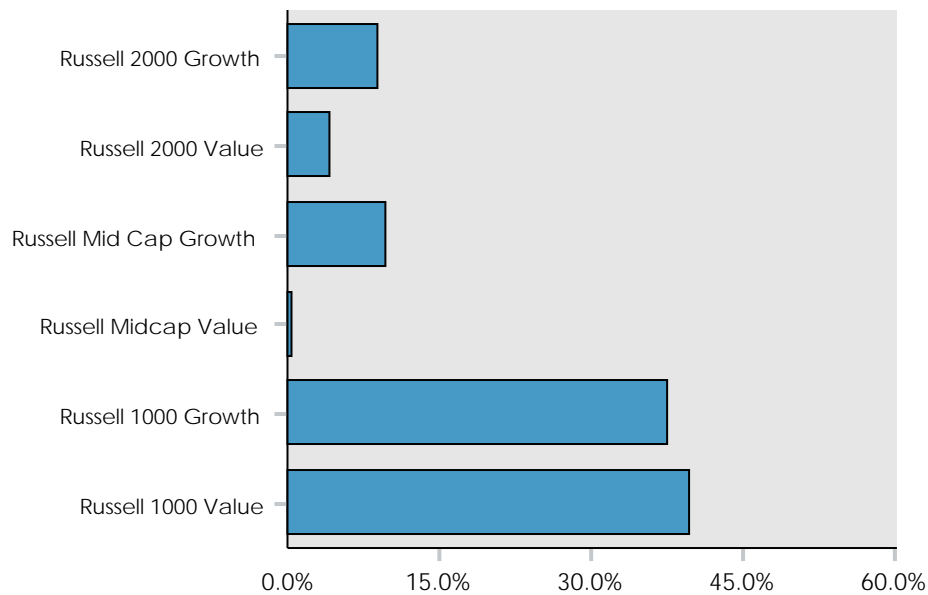
Style Map (5-Year)



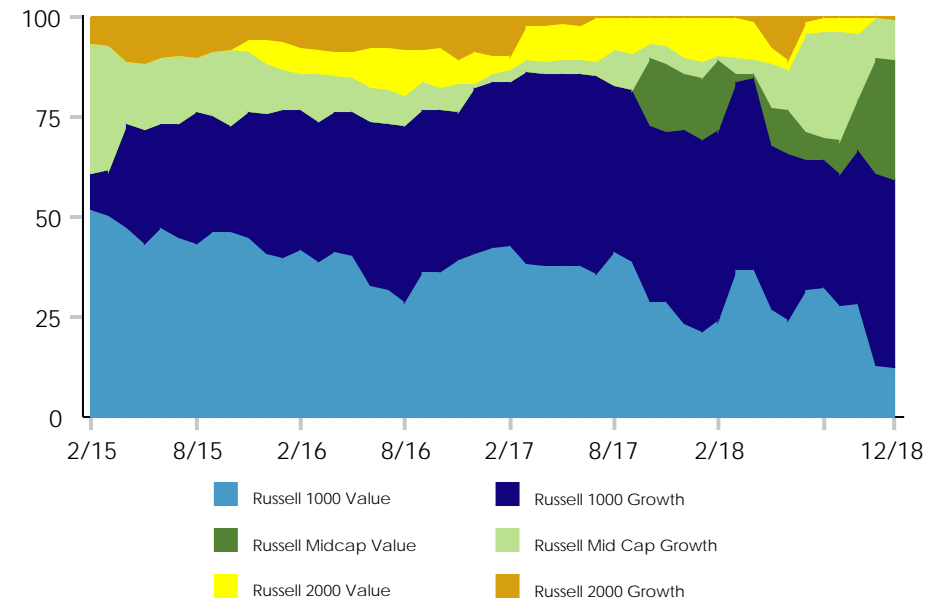
Growth of \$1 (5-Year)



Style Exposure

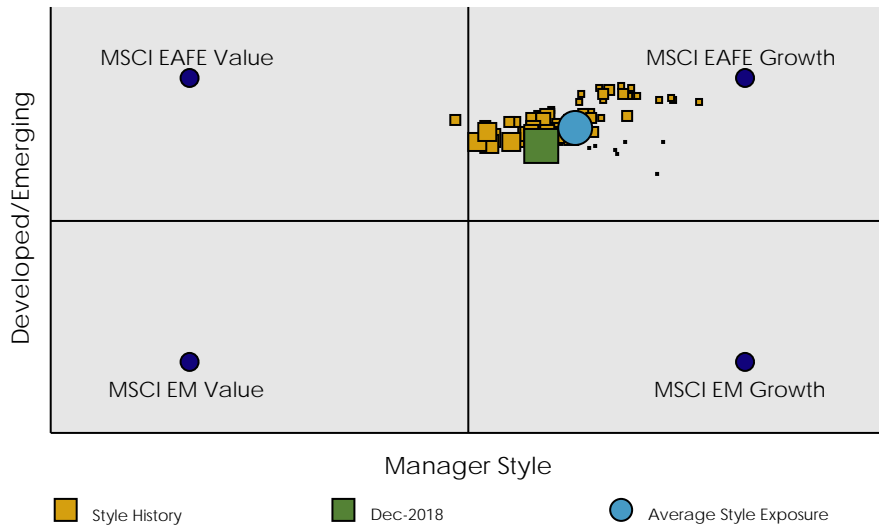


Style History (5-Year)

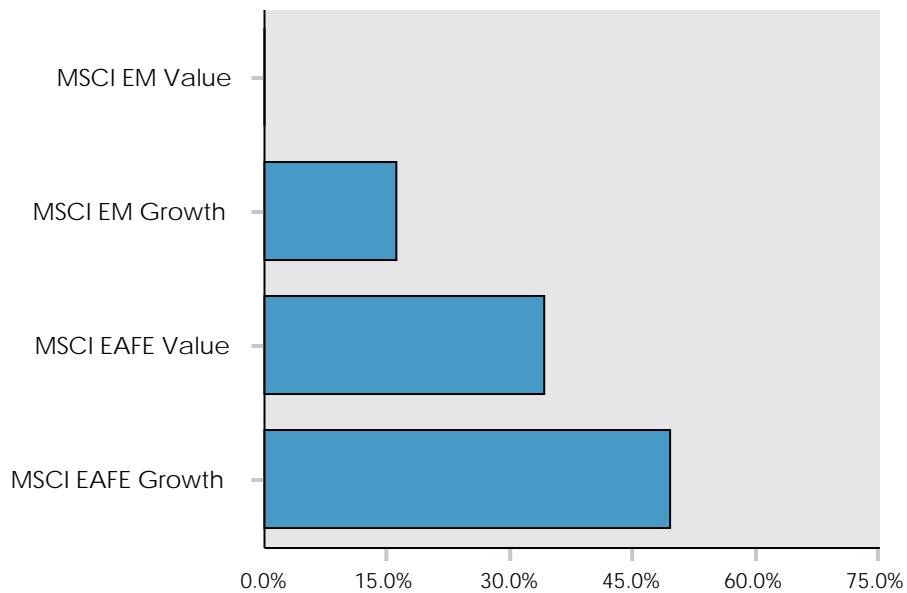


International Equity Analysis
As of December 31, 2018

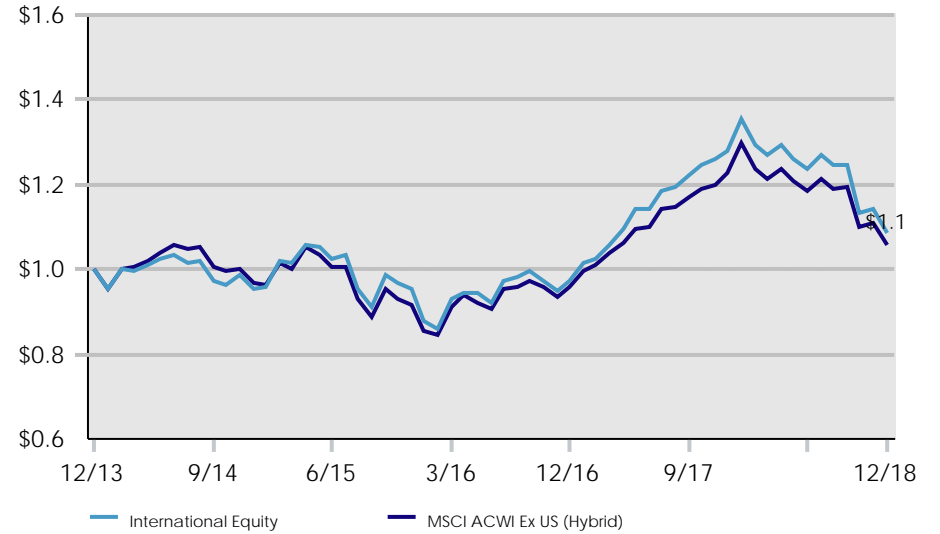
Style Map (5-Year)



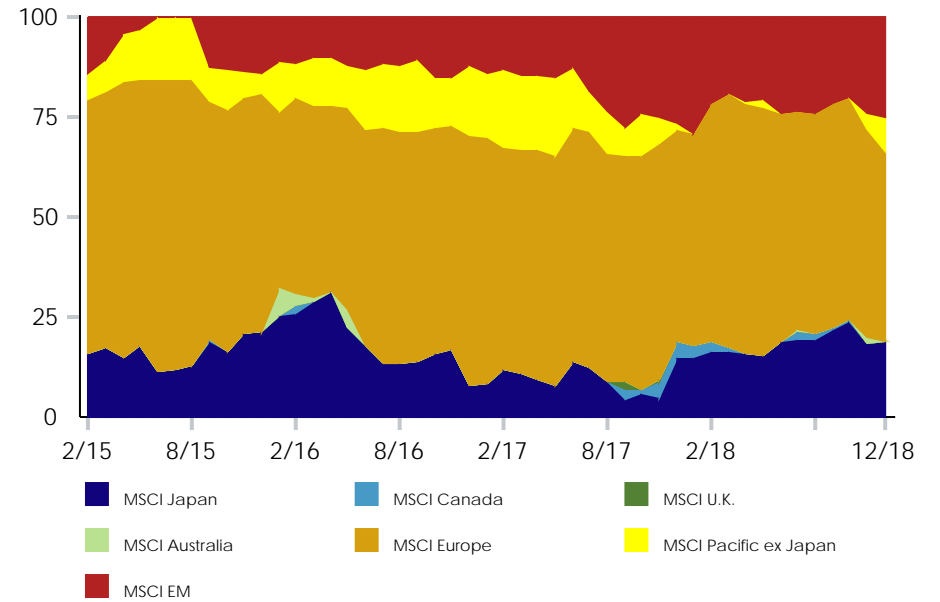
Style Exposure



Growth of \$1 (5-Year)

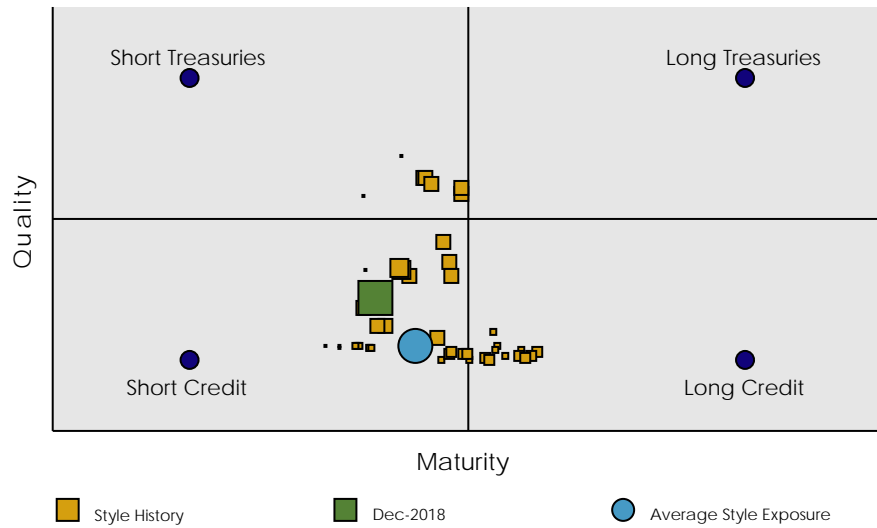


Style History (5-Year)

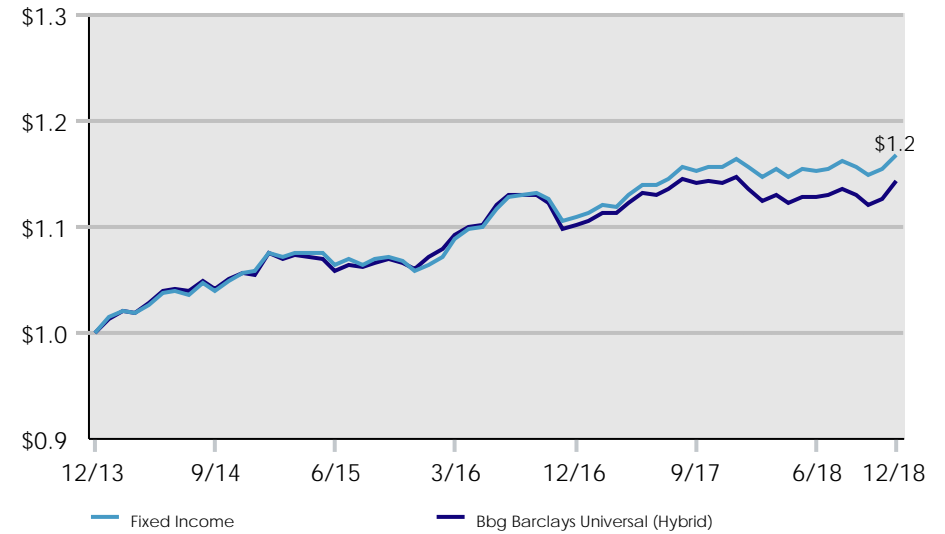


Fixed Income Analysis As of December 31, 2018

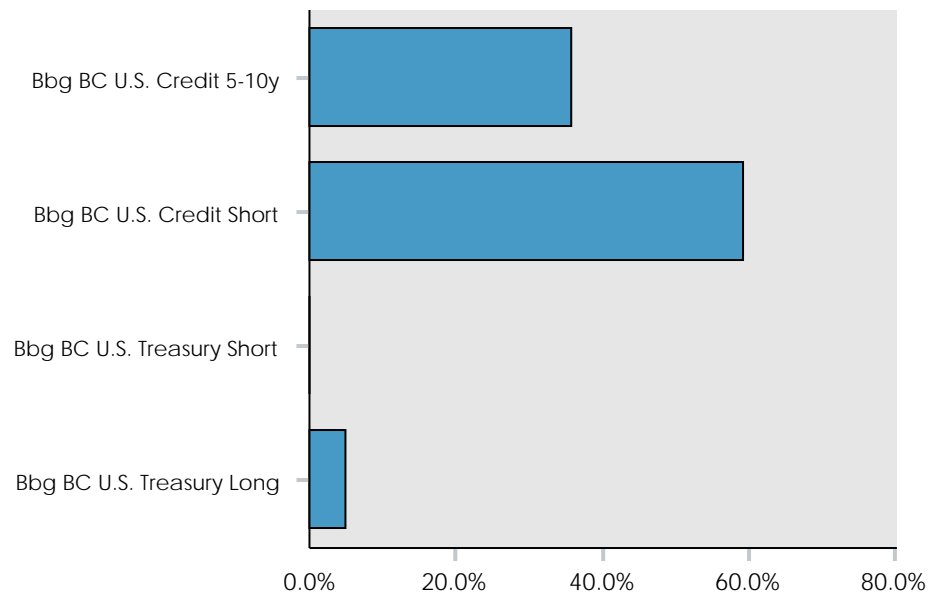
Style Map (5-Year)



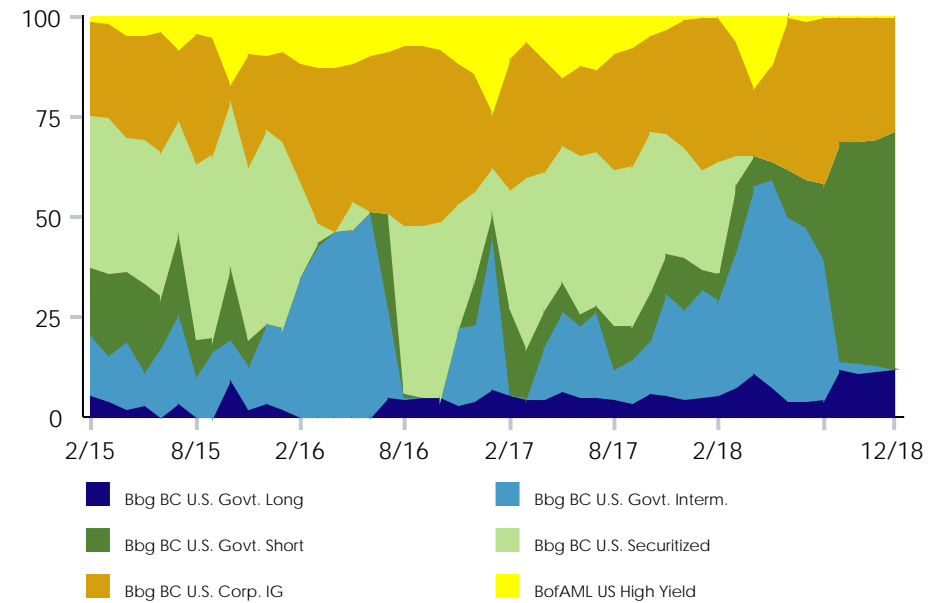
Growth of \$1 (5-Year)



Style Exposure



Style History (5-Year)



Glossary

Alpha

The premium an investment earns above a set standard. This is usually measured in terms of a common index (i.e., how the stock performs independent of the market). An Alpha is usually generated by regressing excess return on the S&P 500 excess return.

Annualized Performance

The annual rate of return that when compounded (t) times generates the same (t) period holding return as actually occurred from periods (1) to period (t).

Batting Average

Percentage of periods a portfolio outperforms a given index.

Beta

The measure of an asset's risk in relation to the Market (for example, the S&P 500) or to an alternative benchmark or factors. Roughly speaking, a security with a Beta of 1.5 will have moved, on average, 1.5 times the market return.

Bottom-up

A management style that de-emphasizes the significance of economic and market cycles, focusing instead on the analysis of individual stocks.

Dividend Discount Model

A method to value the common stock of a company that is based on the present value of the expected future dividends.

Growth Stock

Common stock of a company that has an opportunity to invest money and earn more than its opportunity cost of capital.

Information Ratio

The ratio of annualized expected residual return to residual risk. A central measurement for active management, value added is proportional to the square of the information ratio.

R - Squared

Square of the correlation coefficient. The proportion of the variability in one series that can be explained by the variability of one or more other series in a regression model. A measure of the quality of fit. 100% R-square means a perfect predictability.

Standard Deviation

The square root of the variance. A measure of dispersion of a set of data from its mean

Sharpe Ratio

A measure of a portfolio's excess return relative to the total variability of the portfolio.

Style Analysis

A returns-based analysis using a multi-factor attribution model. The model calculates a product's average exposure to particular investment styles over time (i.e., the products normal style benchmark).

Top-Down

Investment style that begins with an assessment of the overall economic environment and makes a general asset allocation decision regarding various sectors of the financial markets and various industries.

Tracking Error

The standard deviation of the difference between the returns of a portfolio and an appropriate benchmark.

Turnover

For mutual funds, a measure of trading activity during the previous year, expressed as a percentage of the average total assets of the fund. A turnover rate of 25% means that the value of trades represented (1/4) of the assets of the fund.

Value Stock

Stocks with low price/book ratios or price/earnings ratios. Historically, value stocks have enjoyed higher average returns than growth stocks (stocks with high price/book or price/earnings ratios) in a variety of countries.

Benchmark Definitions

Bloomberg Barclays Capital Universal: includes market coverage by the Aggregate Bond Index fixed rate debt issues, which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investor's Service, in that order with all issues having at least one year to maturity and an outstanding par value of at least \$100 million) and includes exposures to high yield CMBS securities. All returns are market value weighted inclusive of accrued interest.

MSCI ACWI x US: MSCI ACWI (All Country World Index) Free excluding US (gross dividends): is a free-floating adjusted market capitalization index designed to measure equity performance in the global developed and emerging markets. As of April 2002, the index consisted of 49 developed and emerging market country indices.

MSCI EAFE (Europe, Australasia, Far East): is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada.

Russell 1000: measures the performance of the 1,000 largest securities in the Russell 3000 Index. Russell 1000 is highly correlated with the S&P 500 Index and capitalization-weighted.

Russell 1000 Growth: measures the performance of those Russell 1000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-earnings ratios, lower dividend yields and higher forecasted growth values than the Value universe.

Russell 1000 Value: measures the performance of those Russell 1000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower forecasted growth values than the Growth universe.

Russell Mid-Cap: measures the performance of the smallest 800 companies in the Russell 1000 Index, as ranked by total market capitalization.

Russell 2000: measures the performance of the 2,000 smallest securities in the Russell 3000 Index. Russell 2000 is market capitalization-weighted.

Russell 2000 Growth: measures the performance of those Russell 2000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-to-earnings ratios.

Russell 2000 Value: measures the performance of those Russell 2000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-to-earnings ratios.

CBOE BXM: measures the performance of a hypothetical buy-write strategy on the S&P 500 Index.

BofA ML U.S. High Yield Master II: Tracks the performance of US dollar denominated below investment grade rated corporate debt publically issued in the US domestic market. To qualify for inclusion in the index, securities must have a below investment grade rating (based on an average of Moody's, S&P, and Fitch) and an investment grade rated country of risk (based on an average of Moody's, S&P, and Fitch foreign currency long term sovereign debt ratings). Each security must have greater than 1 year of remaining maturity, a fixed coupon schedule, and a minimum amount outstanding of \$100 million.

RISK METRIC DESCRIPTION – Rationale for selection and calculation methodology

US Equity Markets:

Metric: $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the S\&P 500 Index}$

To represent the price of US equity markets, we have chosen the S&P 500 index. This index has the longest published history of price, is well known, and also has reliable, long-term, published quarterly earnings. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the S&P 500 index). Equity markets are very volatile. Prices fluctuate significantly during normal times and extremely during periods of market stress or euphoria. Therefore, developing a measure of earnings power (E) which is stable is vitally important, if the measure is to provide insight. While equity prices can and do double, or get cut in half, real earnings power does not change nearly as much. Therefore, we have selected a well known measure of real, stable earnings power developed by Yale Professor Robert Shiller known as the Shiller E-10. The calculation of E-10 is simply the average real annual earnings over the past 10 years. Over 10 years, the earnings shenanigans and boom and bust levels of earnings tend to even out (and often times get restated). Therefore, this earnings statistic gives a reasonably stable, slow-to-change estimate of average real earnings power for the index. Professor Shiller's data and calculation of the E-10 are available on his website at <http://www.econ.yale.edu/~shiller/data.htm>. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book *Irrational Exuberance* [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].

Developed Equity Markets Excluding the US:

Metric: $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the MSCI EAFE Index}$

To represent the price of non-US developed equity markets, we have chosen the MSCI EAFE index. This index has the longest published history of price for non-US developed equities. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the MSCI EAFE index). The price level of this index is available starting in December 1969. Again, for the reasons described above, we elected to use the Shiller E-10 as our measure of earnings (E). Since 12/1972, a monthly price earnings ratio is available from MSCI. Using this quoted ratio, we have backed out the implied trailing-twelve month earnings of the EAFE index for each month from 12/1972 to the present. These annualized earnings are then inflation adjusted using CPI-U to represent real earnings in US dollar terms for each time period. The Shiller E-10 for the EAFE index (10 year average real earnings) is calculated in the same manner as detailed above.

However, we do not believe that the pricing and earnings history of the EAFE markets are long enough to be a reliable representation of pricing history for developed market equities outside of the US. Therefore, in constructing the Long-Term Average Historical P/E for developed ex-US equities for comparison purposes, we have elected to use the US equity market as a developed market proxy, from 1881 to 1982. This lowers the Long-Term Average Historical P/E considerably. We believe this methodology provides a more realistic historical comparison for a market with a relatively short history.

Emerging Market Equity Markets

Metric: $\text{Ratio of Emerging Market } P/E \text{ Ratio to Developed Market } P/E \text{ Ratio}$

To represent the Emerging Markets P/E Ratio, we have chosen the MSCI Emerging Market Free Index, which has P/E data back to January 1995 on Bloomberg. To represent the Developed Markets P/E Ratio, we have chosen the MSCI World Index, which also has data back to January 1995 on Bloomberg. Although there are issues with published, single time period P/E ratios, in which the denominator effect can cause large movements, we feel that the information contained in such movements will alert investors to market activity that they will want to interpret.

RISK METRIC DESCRIPTION – Rationale for selection and calculation methodology

US Private Equity Markets:

Metrics: S&P LCD Average EBITDA Multiples Paid in LBOs and US Quarterly Deal Volume

The Average Purchase Price to EBITDA multiples paid in LBOs is published quarterly by S&P in their LCD study. This is the total price paid (both equity and debt) over the trailing-twelve month EBITDA (earnings before interest, taxes, depreciation and amortization) as calculated by S&P LCD. This is the relevant, high-level pricing metric that private equity managers use in assessing deals. Data is published monthly.

US quarterly deal volume for private equity is the total deal volume in \$ billions (both equity and debt) reported in the quarter by Thomson Reuters Buyouts. This metric gives a measure of the level of activity in the market. Data is published quarterly.

U.S Private Real Estate Markets:

Metrics: US Cap rates and Annual US Real Estate Deal Volume

Real estate cap rates are a measure of the price paid in the market to acquire properties versus their annualized income generation before financing costs (NOI=net operating income). The date is published by NCREIF. We chose to use current value cap rate. These are capitalization rates from properties that were revalued during the quarter. While this data does rely on estimates of value and therefore tends to be lagging, (estimated prices are slower to rise and slow to fall than transaction prices), the data series goes back to 1979, providing a long data series for valuation comparison. Data is published quarterly.

Annual US real estate deal volume is the total deal transaction volume in \$ billions (both equity and debt) reported by Real Capital Analytics during the trailing-twelve months. This metric gives the level of activity in the market. Data is published monthly.

Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for U.S. equity markets

The VIX is a key measure of near-term volatility conveyed by implied volatility of S&P 500 index option prices. VIX increases with uncertainty and fear. Stocks and the VIX are negatively correlated. Volatility tends to spike when equity markets fall.

Measure of Monetary Policy

Metric: Yield Curve Slope

We calculate the yield curve slope as the 10 year treasury yield minus the 1 year treasury yield. When the yield curve slope is zero or negative, this is a signal to pay attention. A negative yield curve slope signals lower rates in the future, caused by a contraction in economic activity. Recessions are typically preceded by an inverted (negatively sloped) yield curve. A very steep yield curve (2 or greater) indicates a large difference between shorter-term interest rates (the 1 year rate) and longer-term rates (the 10 year rate). This can signal expansion in economic activity in the future, or merely higher future interest rates.

RISK METRIC DESCRIPTION – Rationale for selection and calculation methodology

Definition of “extreme” metric readings

A metric reading is defined as “extreme” if the metric reading is in the top or bottom decile of its historical readings. These “extreme” reading should cause the reader to pay attention. These metrics have reverted toward their mean values in the past.

Credit Markets US Fixed Income:

Metric: Spreads

The absolute level of spreads over treasuries and spread trends (widening / narrowing) are good indicators of credit risk in the fixed income markets. Spreads incorporate estimates of future default, but can also be driven by technical dislocations in the fixed income markets. Abnormally narrow spreads (relative to historical levels) indicate higher levels of valuation risk, wide spreads indicate lower levels of valuation risk and / or elevated default fears. Investment grade bond spreads are represented by the Barclays Capital US Corporate Investment Grade Index Intermediate Component. The high yield corporate bond spreads are represented by the Barclays Capital US Corporate High Yield Index.

Measures of US Inflation Expectations

Metrics: Breakeven Inflation and Inflation Adjusted Commodity Prices

Inflation is a very important indicator impacting all assets and financial instruments. Breakeven inflation is calculated as the 10 year nominal treasury yield minus the 10 year real yield on US TIPS (treasury inflation protected securities). Abnormally low long-term inflation expectations are indicative of deflationary fears. A rapid rise in breakeven inflation indicates acceleration in inflationary expectations as market participants sell nominal treasuries and buy TIPS. If breakeven inflation continues to rise quarter over quarter, this is a signal of inflationary worries rising, which may cause Fed action and / or dollar decline.

Commodity price movement (above the rate of inflation) is an indication of anticipated inflation caused by real global economic activity putting pressure on resource prices. We calculate this metric by adjusted in the Dow Jones UBS Commodity Index (formerly Dow Jones AIG Commodity Index) by US CPI-U. While rising commodity prices will not necessarily translate to higher US inflation, higher US inflation will likely show up in higher commodity prices, particularly if world economic activity is robust.

These two measures of anticipated inflation can, and often are, conflicting.

Measures of US Treasury Bond Interest Rate Risk

Metrics: 10-Year Treasury Forward-Looking Real Yield and 10-Year Treasury Duration

The expected annualized real yield of the 10 year US Treasury Bond is a measure of valuation risk for US Treasuries. A low real yield means investors will accept a low rate of expected return for the certainty of receiving their nominal cash flows. PCA estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

Duration for the 10-Year Treasury Bond is calculated based on the current yield and a price of 100. This is a measure of expected percentage movements in the price of the bond based on small movements in percentage yield. We make no attempt to account for convexity.

RISK METRIC DESCRIPTION – Rationale for selection and calculation methodology

What is the PCA Market Sentiment Indicator (PMSI)?

The PMSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The PMSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the PCA Market Sentiment Indicator (PMSI) graph?

Simply put, the PMSI is a color coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the PMSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the PMSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.

How is the PCA Market Sentiment Indicator (PMSI) Constructed?

The PMSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

1. Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
2. Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration U.S. Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight). The scale of this measure is adjusted to match that of the stock return momentum measure.

The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure. The color reading on the graph is determined as follows:

1. If both stock return momentum and bond spread momentum are positive = GREEN (positive)
2. If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
3. If both stock return momentum and bond spread momentum are negative = RED (negative)

What does the PCA Market Sentiment Indicator (PMSI) mean? Why might it be useful?

There is strong evidence that time series momentum is significant and persistent. In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12 month period. The PMSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

Momentum is defined as the persistence of relative performance. There is a significant amount of academic evidence indicating that positive momentum (e.g., strong performing stocks over the recent past continue to post strong performance into the near future) exists over near-to-intermediate holding periods. See, for example, "Understanding Momentum," *Financial Analysts Journal*, Scowcroft, Sefton, March, 2005.

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ACTIVE vs. PASSIVE DISCUSSION – 2019

Oakland Police and Fire Retirement System



PENSION
CONSULTING
ALLIANCE

Executive Summary

- In the majority of market segments, active management has not added consistent value
- Difficult to identify persistent long-term outperforming managers before the fact
- Active management can add value in certain market segments
 - Research shows outperformance in certain segments is persistent (e.g. Non-U.S. Equity and Core/Core Plus Fixed Income)
- Successful manager selection requires multi-tiered analysis
 - e.g., factoring macroeconomic trends
 - examining trends in fundamental characteristics
 - portfolio holding analysis
 - not based solely on (or over-emphasize) past performance

Management Styles Defined

Management Style	Definition
Active	Attempting to add value over the returns of an index by selecting securities within that index based on qualitative models and/or fundamental research.
Passive	Attempting to replicate the returns of an index or benchmark by owning the same securities, in the same proportions, as the index.
Hybrid-Passive	Very low-cost strategies that attempt to mirror rule-based (not buy-and-hold) indices. Also, strategies that implement alternative weighting schemes in order to provide returns that are meaningfully different, yet track very close to, an index.

Management Styles Defined

	Advantages	Disadvantages
Active	<ul style="list-style-type: none">• Potential to beat the index• Potential for down market protection	<ul style="list-style-type: none">• Higher costs and fees• Risk and unpredictability• People/organization risk
Passive	<ul style="list-style-type: none">• Reduced active management risk – no underperformance surprise risk• Close correlation to the policy benchmark• Low fees and low monitoring costs	<ul style="list-style-type: none">• No possibility for positive alpha• Possibility of underperforming the index due to implementation/fees• No downside protection
Hybrid-Passive	<ul style="list-style-type: none">• Low cost relative to active management• Potential for alpha• Increased transparency	<ul style="list-style-type: none">• Potential to underperform• Modest organizational risk

Preferred Attributes of Good Benchmarks

Representative

Benchmark is appropriate and relevant to the portfolio's investment strategy

Investable

Should be able to invest in all of the securities included in the benchmark

Transparent

Names and weights of securities comprising the benchmark are available and understandable

Measurable

Benchmark is readily calculable on a frequent basis

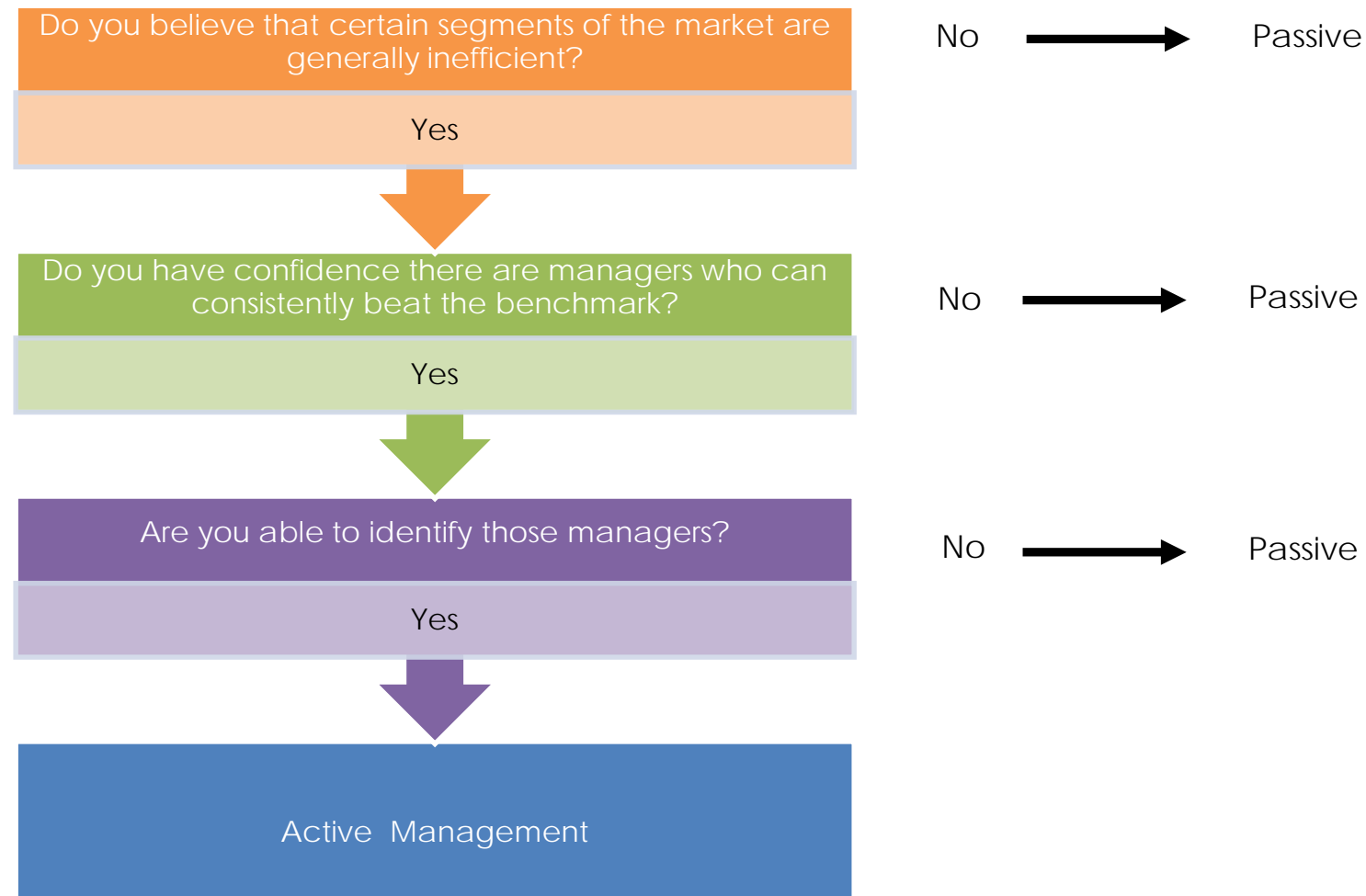
Independent

Calculated by an independent third party to ensure a fair comparison

Key Considerations for Active Management

- Added value by active management can vary depending on market segment
- In the public investment markets, outperformance occurring more than 60% of the time is rare
- Empirical public-market evidence shows past winners have difficulty repeating success
 - Ability for active managers to outperform benchmarks is often cyclical
 - On average, it has been extremely difficult to capture persistent outperformance

Active vs. Passive Decision Making



- Selecting active managers that will consistently outperform is extremely difficult

Other Considerations for Active Management

Data

- Universe data has survivorship bias
- Universe returns are typically overstated
- Lack of transparency among managers
- Monitoring managers is costly

Benchmarking

- Some market segment benchmarks do not exhibit good benchmark attributes
- Benchmark replication is not realistic

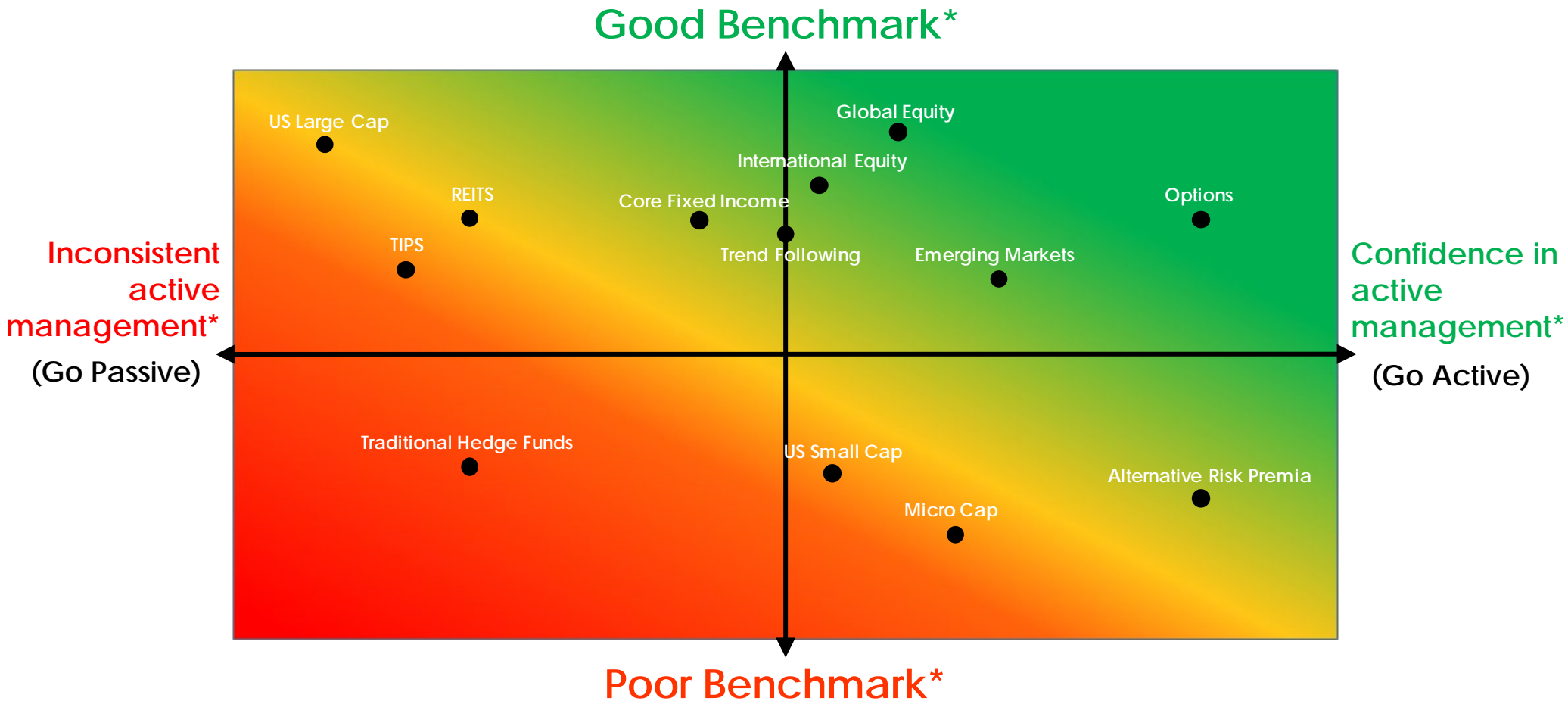
Risk Tolerance

- Underperformance surprise risk
- People/organizational risks
- Potential for strategy drift

Conviction

- Confidence that active managers can provide consistent outperformance net of fees

Active Management Spectrum



The availability/quality of an investable benchmark as well as the efficiency of the market segment inform where market segments lie on the active to passive spectrum

*CFA Institute; Mid-Year 2018 Standard & Poor's Indices Versus Active Funds Scorecard (SPIVA®); PCA; eVesmentAlliance

Active Management Spectrum

- Active vs. Passive management is not binary; it should be viewed on a continuum
 - As such, portfolio construction should not be entirely active or entirely passive
- Sometimes active management is the only reasonable/prudent solution
- Many view basic tilts (*rules based investment strategy used to deviate from a given index in order to provide excess returns*) away from traditional benchmarks as active management; that should not be the default position
- DO NOT overdiversify with and overpay for active management

Added Value Trends of Active Management

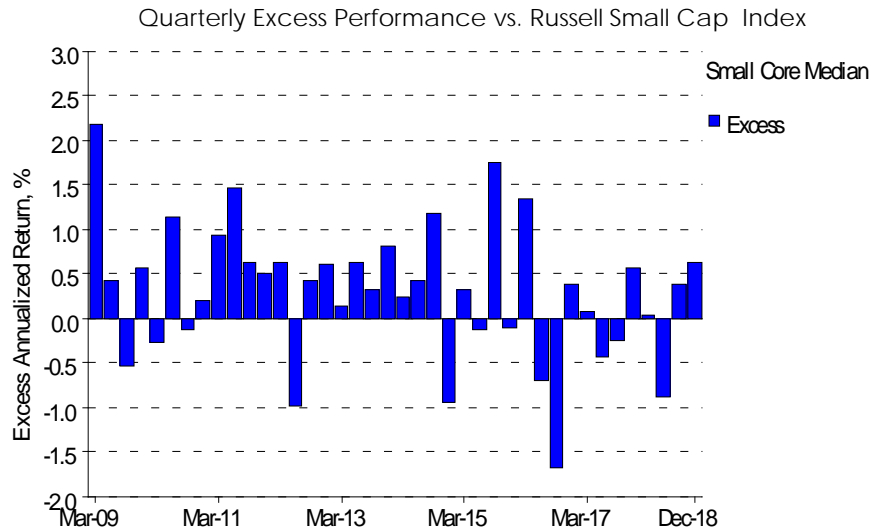
PCA Summary of Observed Trends of Added Value Results over the Last 10 Years

Manager Mandate	% of Time Median Outperformed (Qtrs)		Results: Rolling 36-months		
	Last 10 Years	Last 3 Years	Trend of Distribution	Median vs. Benchmark	3 rd Quartile vs. Benchmark
Large Core Equity	38%	42%	Tightening; Lower	Recent Underperformance	Recent Underperformance
Large Value Equity	50%	67%	Tightening; Lower	Mixed	Mixed
Large Growth Equity	43%	33%	Consistent; Lower	Underperformance	Competitive
Mid Cap Equity	48%	33%	Consistent; Flat	Recent Outperformance	In-line
Small Core Equity	70%	58%	Consistent; Flat	Competitive	Competitive
Small Value Equity	73%	58%	Tightening; Lower	Somewhat Competitive	Mixed
Small Growth Equity	65%	75%	Widening; Higher	Recent Outperformance	Mixed
Global Equity	60%	25%	Widening; Lower	Competitive	Mixed
International Equity	60%	58%	Consistent; Flat	Recent Outperformance	Mixed
Emerging Markets Equity	63%	33%	Consistent; Flat	Competitive	Mixed
Core Fixed Income	80%	83%	Tightening; Flat	Competitive	Competitive
Core Plus Fixed Income	80%	83%	Tightening; Flat	Competitive	Competitive
High Yield	43%	33%	Tightening; Lower	Underperformance	Underperformance
TIPS	40%	50%	Tightening; Flat	Underperformance	Underperformance
REITS	38%	50%	Tightening; Higher	Recent Outperformance	Underperformance

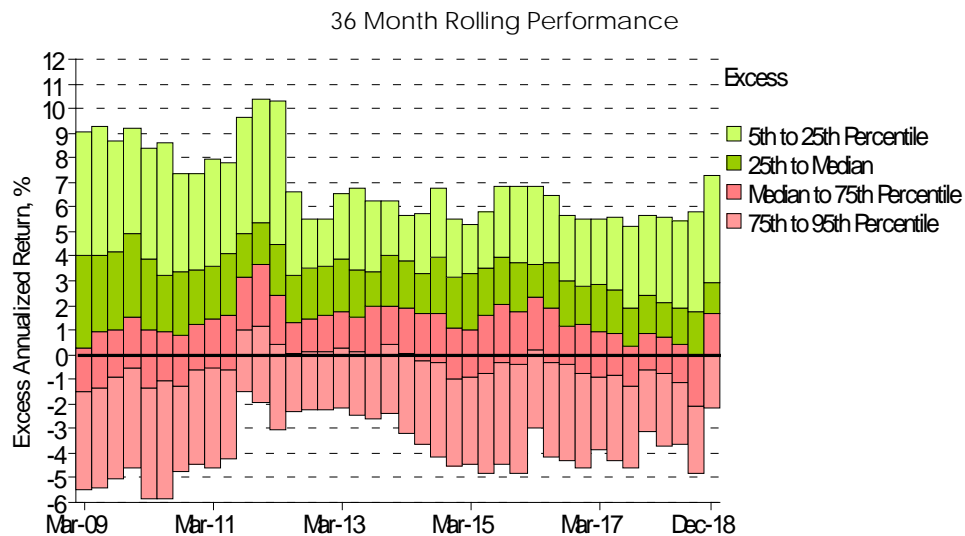
Source: MPI, eVestment Alliance, Lipper, PCA
Returns are presented gross of fees, except for REITs

- Added value trends pose significant challenges for plan sponsors when selecting the next set of successful active managers
- While observations show the median manager outperforming the benchmark around 60% or more in certain mandates, individual managers can move from one quartile to another over time (i.e. drop from top quartile to bottom quartile)

Added Value Trends: Small Core Equity Managers



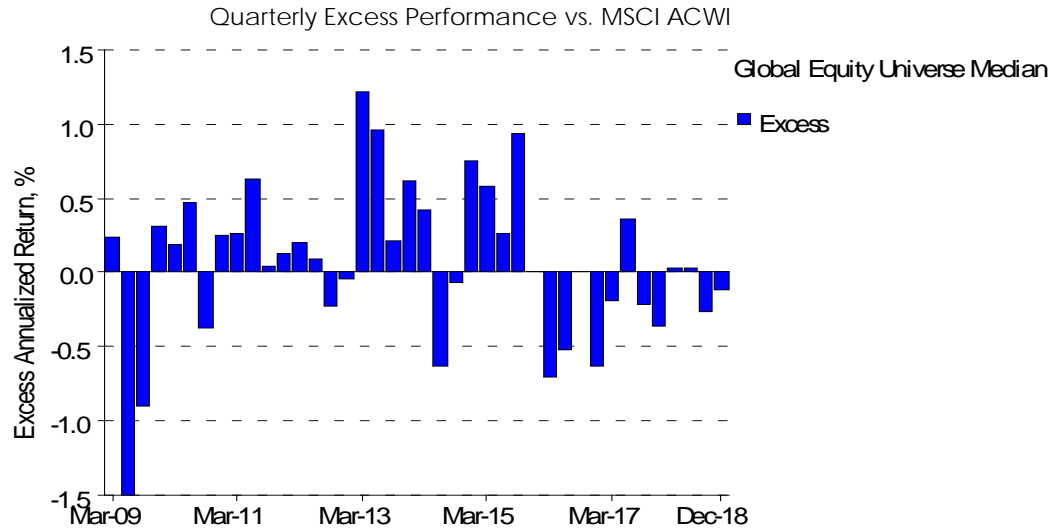
- Median small cap manager has outperformed 70% of the time over the long-term
- Median manager outperformed in 7 of last 12 quarters



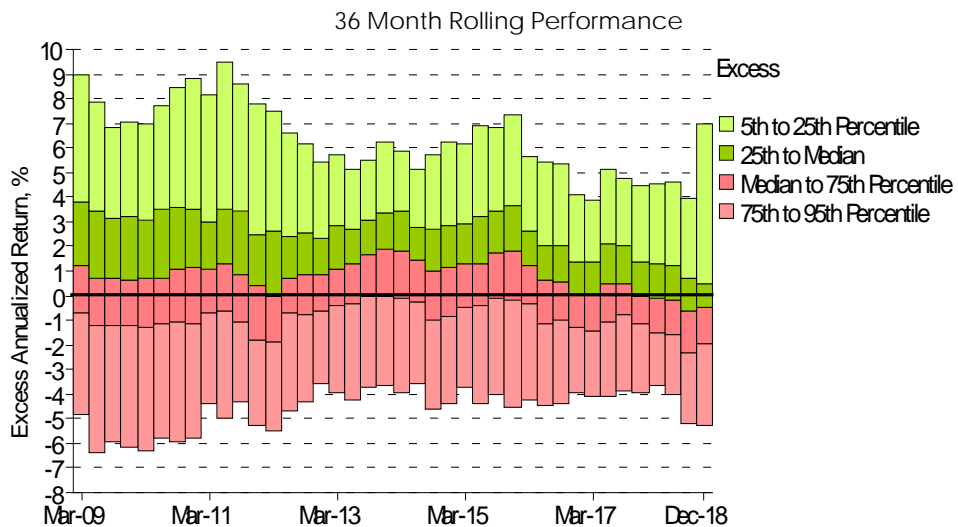
- Distribution among managers has tightened since 2009
- Median manager's ability to add value has been relatively consistent

Source: MPI, eVestmentAlliance

Added Value Trends: Global Equity Managers



- Median global equity manager outperformed roughly 60% of the time over the long-term
- Median manager outperformed in 3 of last 12 quarters

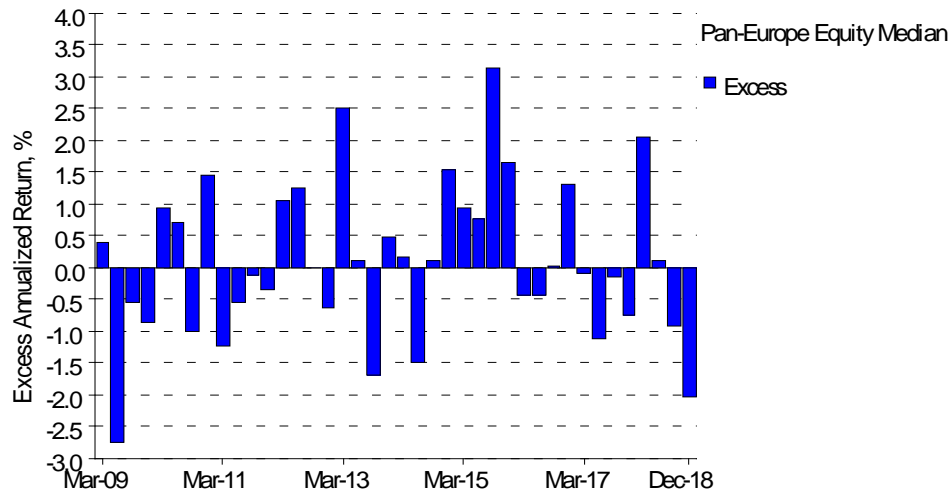


- Distribution among managers has widened recently
- Median manager has historically added value, but has struggled in recent periods

Source: MPI, eVestmentAlliance

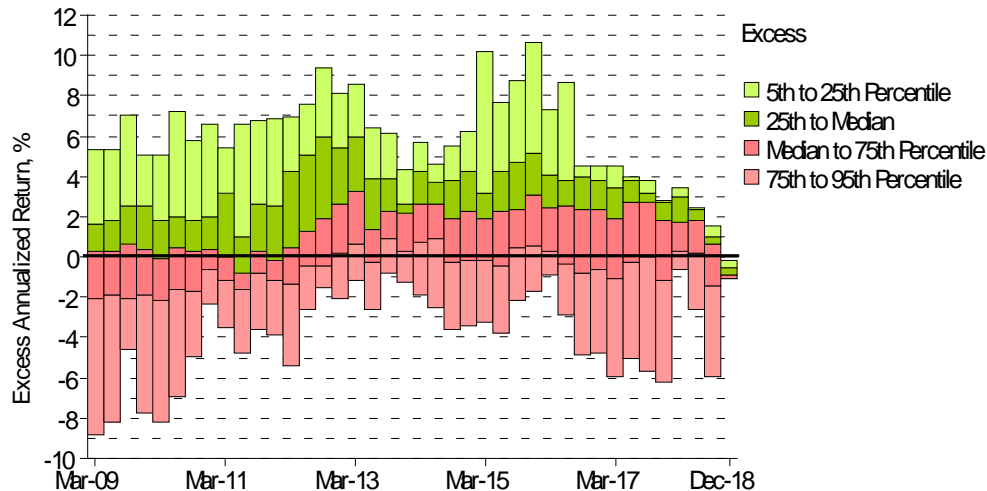
Added Value Trends: European Equity Managers

Quarterly Excess Performance vs. MSCI Europe



- Median European equity manager outperformed roughly 50% of the time over the long-term
- Median manager outperformed in 4 of last 12 quarters

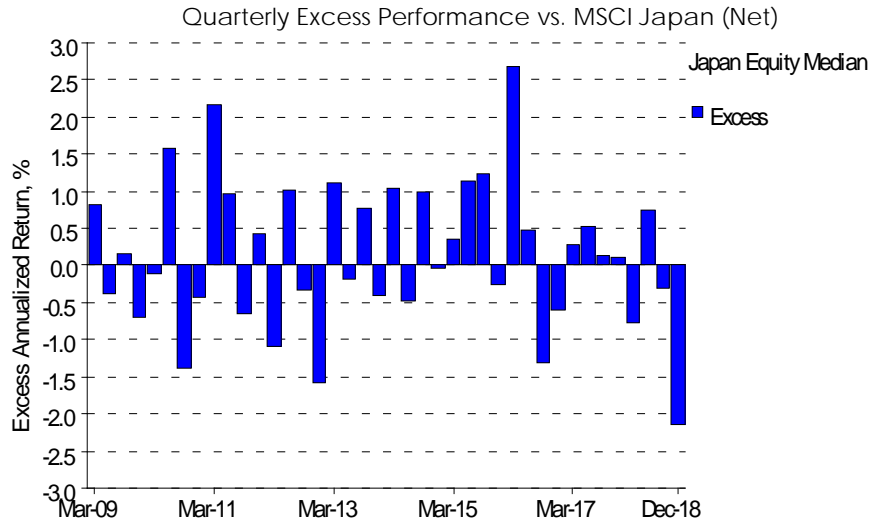
36 Month Rolling Performance



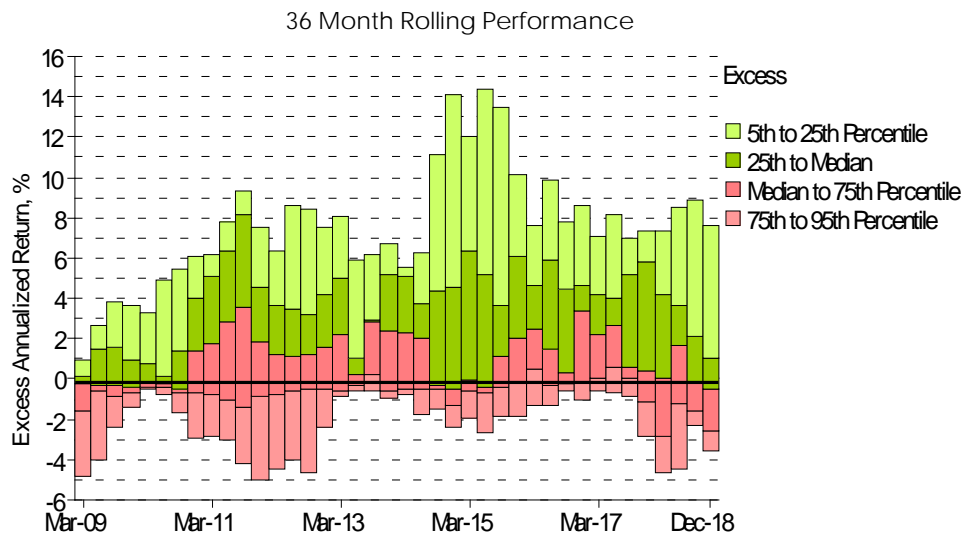
- Distribution of managers has narrowed since 2009
- Median manager has historically added value

Source: MPI, eVestmentAlliance, Nelson

Added Value Trends: Japanese Equity Managers



- Median Japanese equity manager outperformed roughly 53% of the time over the long-term
- Median manager outperformed in 7 of last 12 quarters

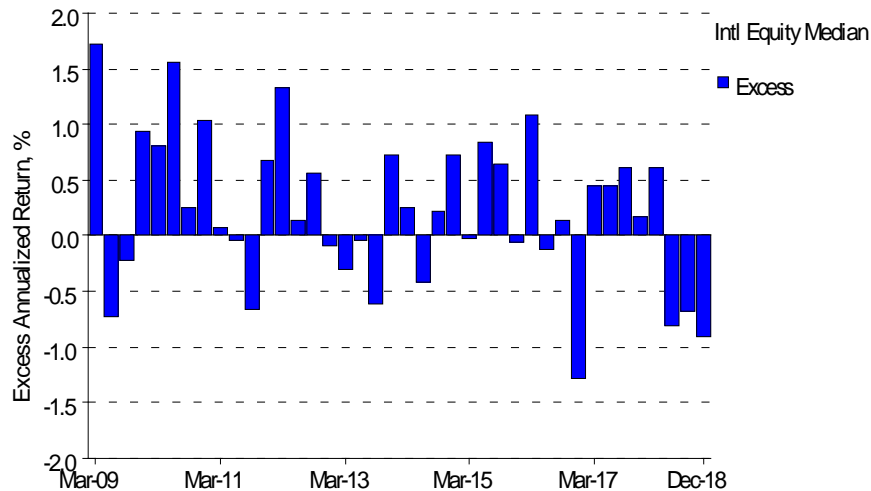


- Distribution among managers has widened since 2009
- Median manager has added value through various cycles

Source: MPI, Lipper

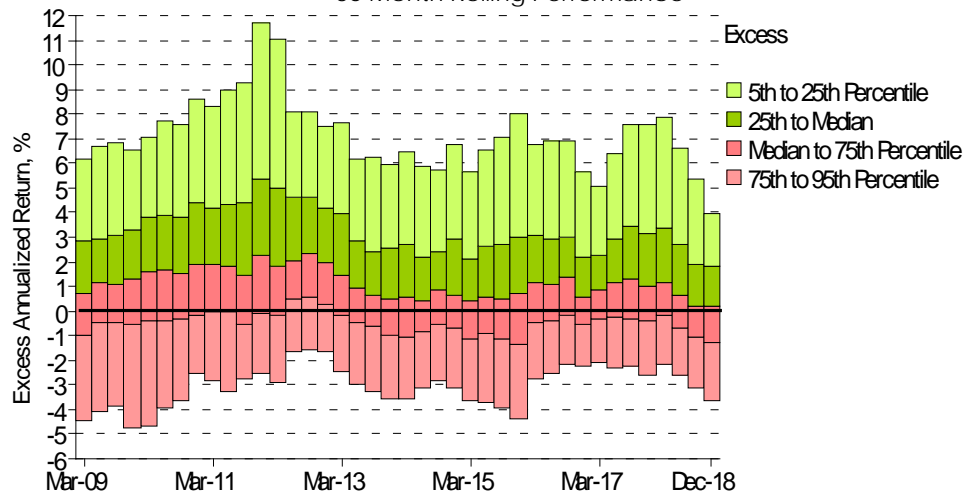
Added Value Trends: International Equity Managers

Quarterly Excess Performance vs. MSCI EAFE Index



- Median international equity manager outperformed roughly 60% of the time over the long-term
- Median manager outperformed in 7 of last 12 quarters

36 Month Rolling Performance

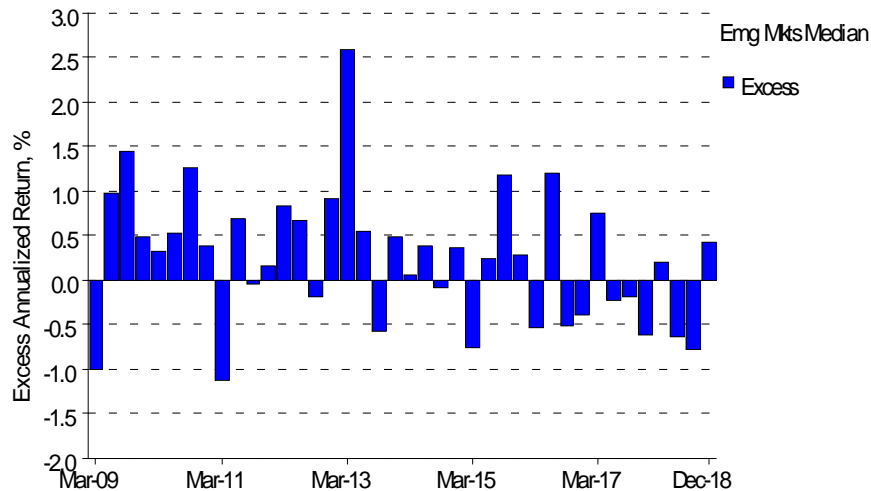


- Distribution among managers has tightened
- Median manager has historically added value

Source: MPI, eVestmentAlliance

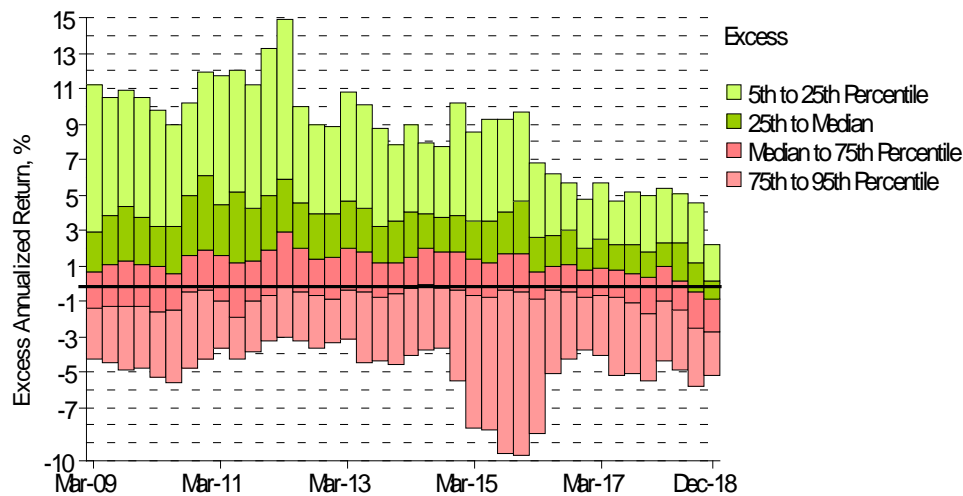
Added Value Trends: Emerging Markets Equity Managers

Quarterly Excess Performance vs. MSCI Emerging Markets Index



- Median emerging markets manager outperformed roughly 63% of the time over the long-term
- Median manager outperformed in 4 of last 12 quarters

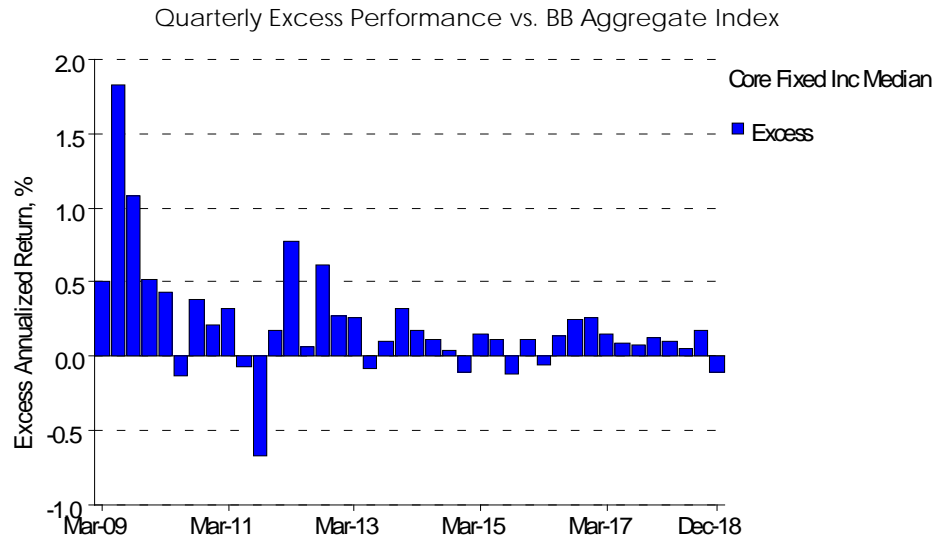
36 Month Rolling Performance



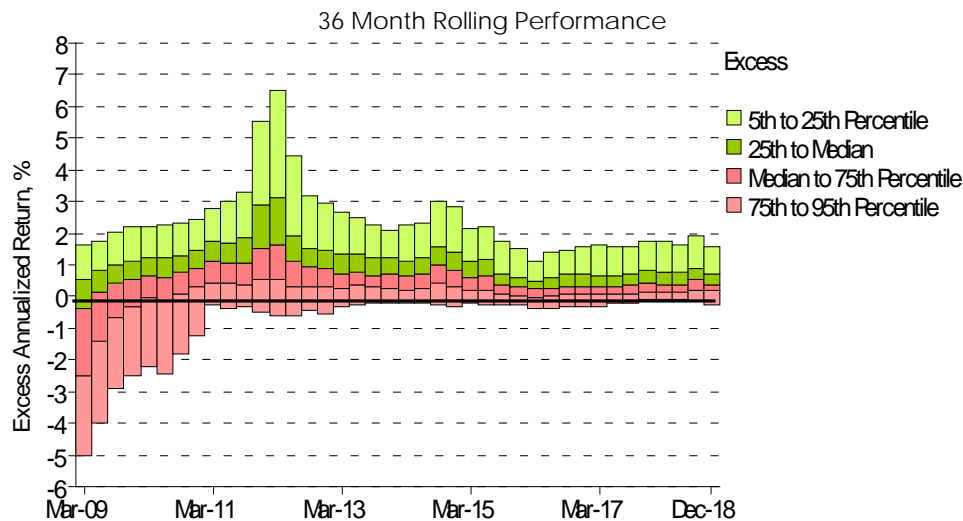
- Median manager has added value in various cycles
- Distribution among managers has tightened
- Median manager added value has been relatively consistent

Source: MPI, eVestmentAlliance

Added Value Trends: Core Fixed Managers



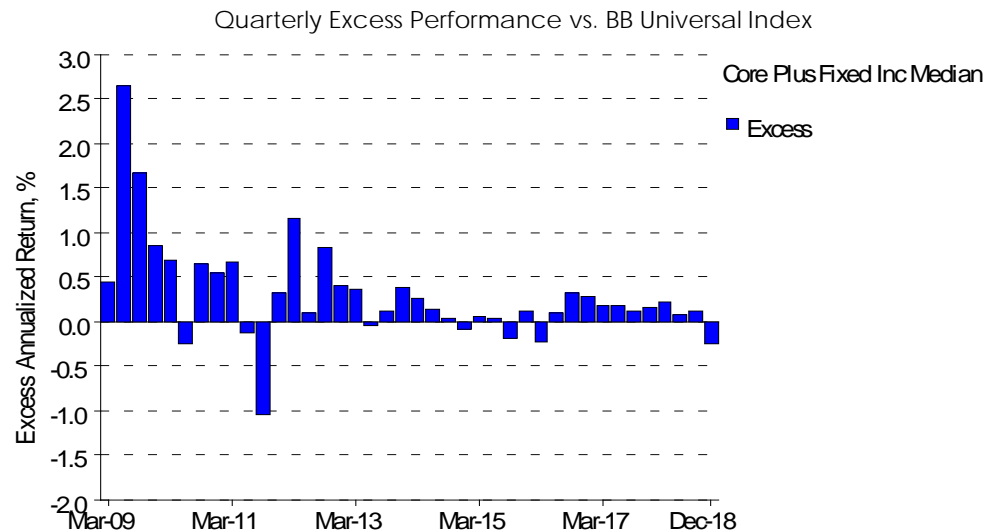
- Median core fixed income manager outperformed 80% of the time over the long-term
- Median manager outperformed in 10 of last 12 quarters



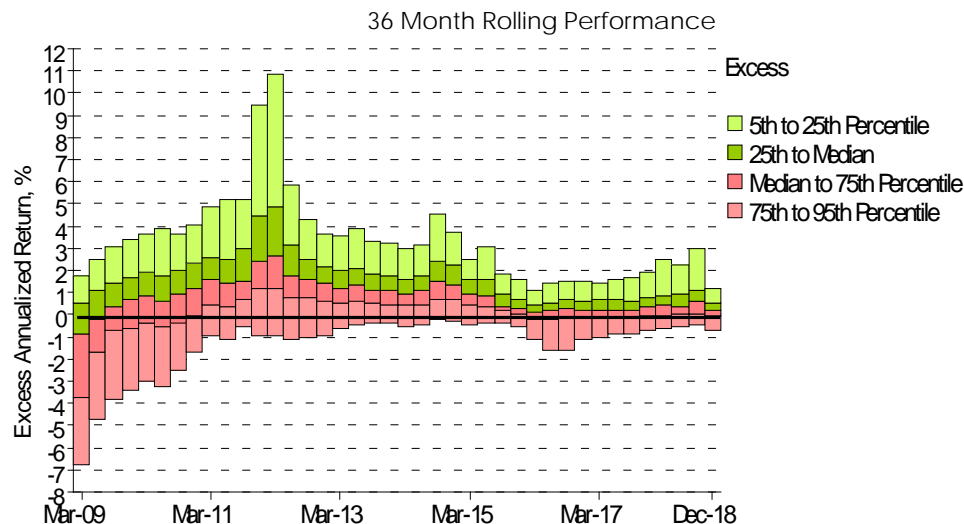
- Median manager added value has been cyclical
- Distributions among managers has tightened
- The median manager has consistently added since 2009

Source: MPI, eVestmentAlliance

Added Value Trends: Core Plus Fixed Managers



- Median core plus fixed income manager outperformed roughly 80% of the time over the long-term
- Median manager outperformed in 10 of last 12 quarters



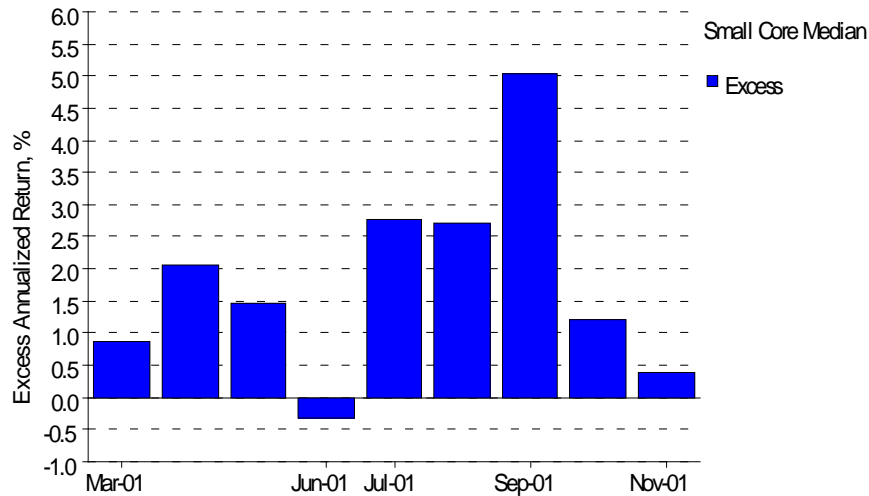
- Median manager added value has been cyclical
- Dislocation in credit markets during 2008 widened the distribution of returns
- Results of above median managers has tightened in recent periods

Source: MPI, eVestmentAlliance

Appendix

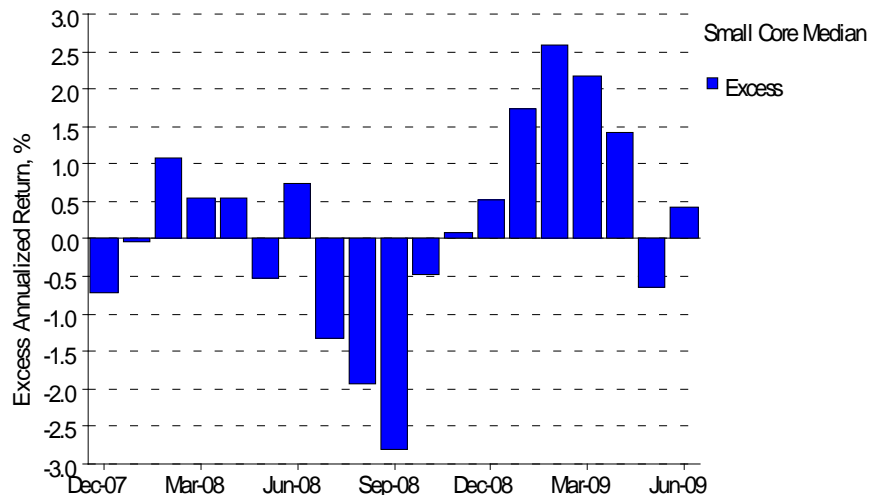
Downside Protection: Small Cap Core Managers

Monthly Excess Performance vs. Russell 2000 (3/2001 - 11/2001)



- Median manager outperformed in 8 out of the 9 months during the recession of 2001

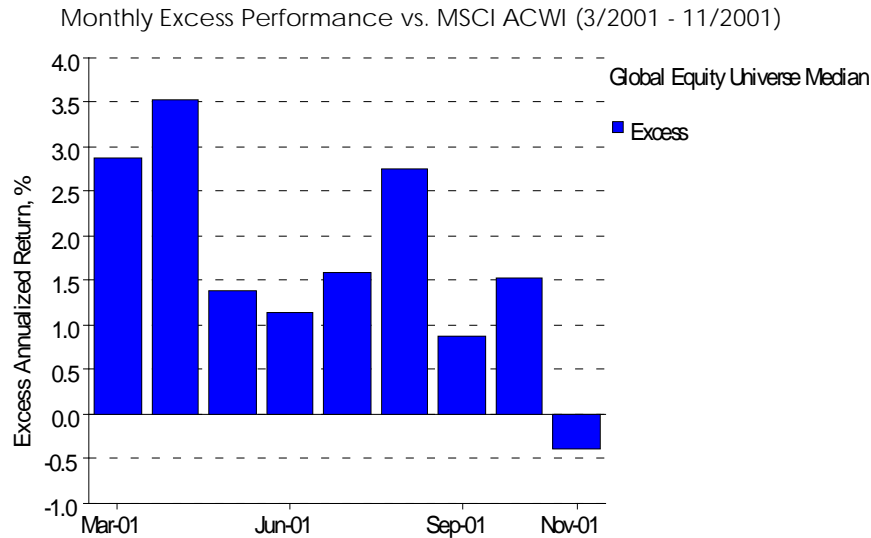
Monthly Excess Performance vs. Russell 2000 (12/2007 - 6/2009)



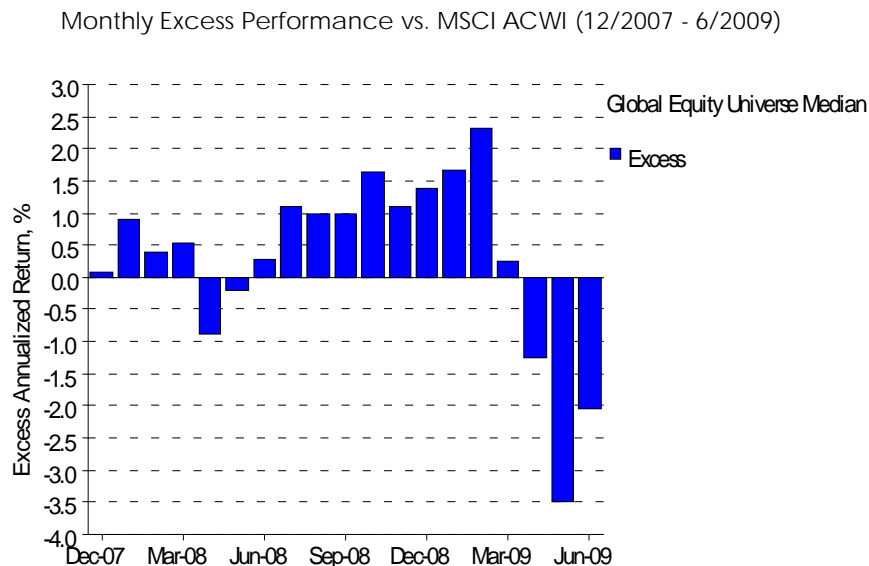
- Median manager outperformed in 11 out of the 19 months during the GFC

Source: MPI, eVestmentAlliance

Downside Protection: Global Equity Managers



- Median manager outperformed in 8 out of the 9 months during the recession of 2001

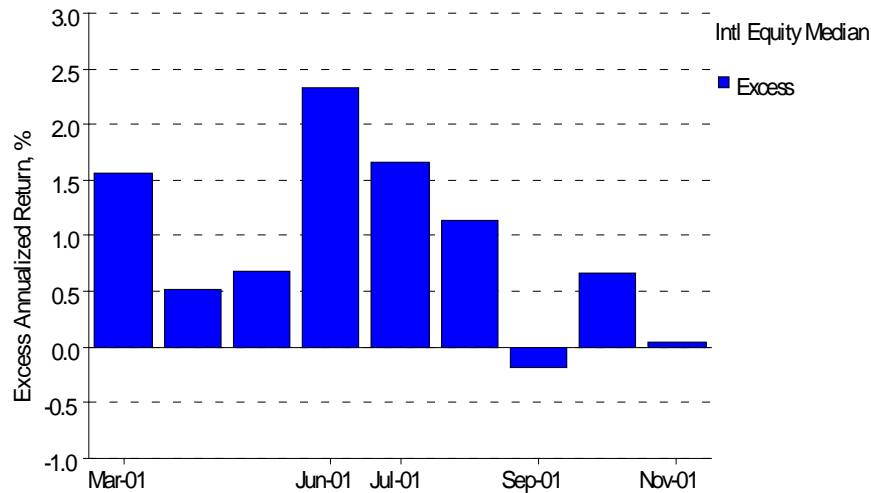


- Median manager outperformed in 14 out of the 19 months during the GFC

Source: MPI, eVestmentAlliance

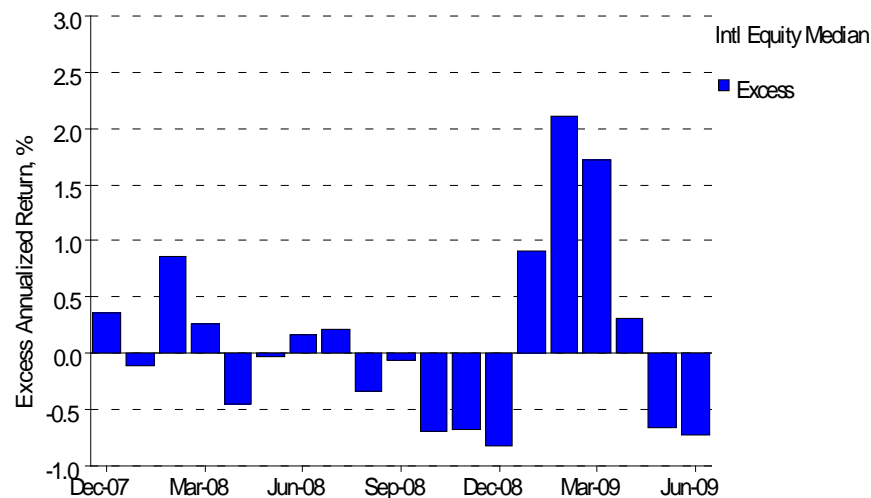
Downside Protection: International Equity Managers

Monthly Excess Performance vs. MSCI EAFE (3/2001 - 11/2001)



- Median manager outperformed in 7 out of the 9 months during the recession of 2001

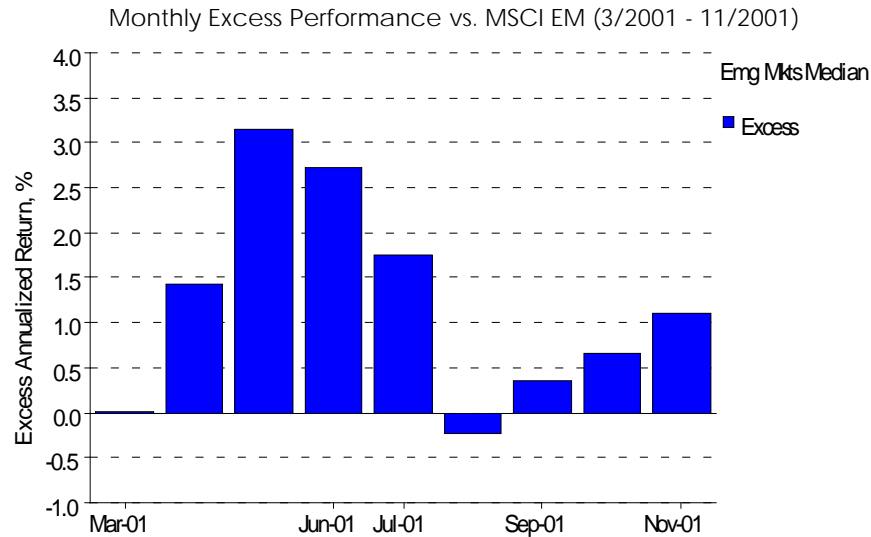
Monthly Excess Performance vs. MSCI EAFE (12/2007 - 6/2009)



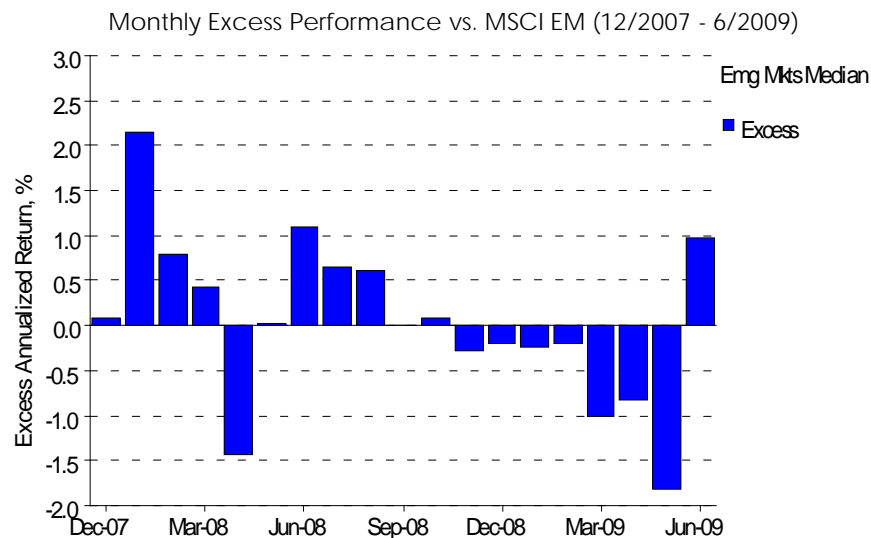
- Median manager outperformed in 9 out of the 19 months during the GFC

Source: MPI, eVestmentAlliance

Downside Protection: Emerging Markets Managers



- Median manager outperformed in 8 out of the 9 months during the recession of 2001

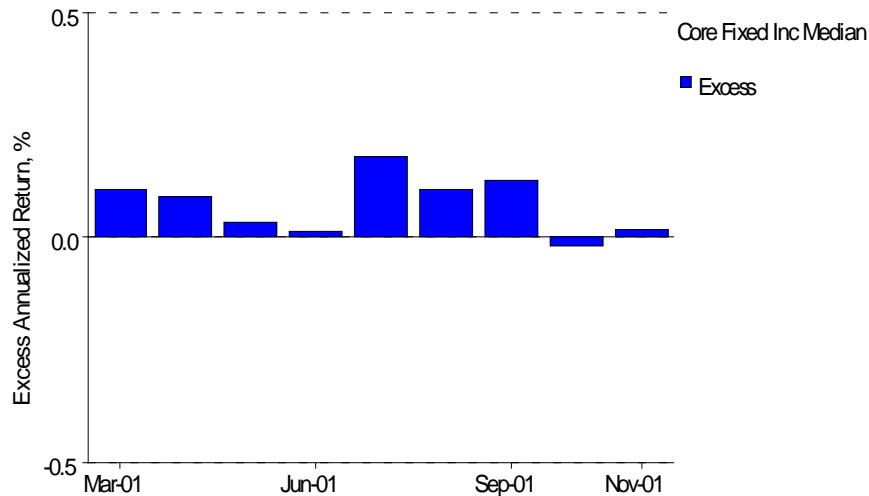


- Median manager outperformed in 11 out of the 19 months during the GFC

Source: MPI, eVestmentAlliance

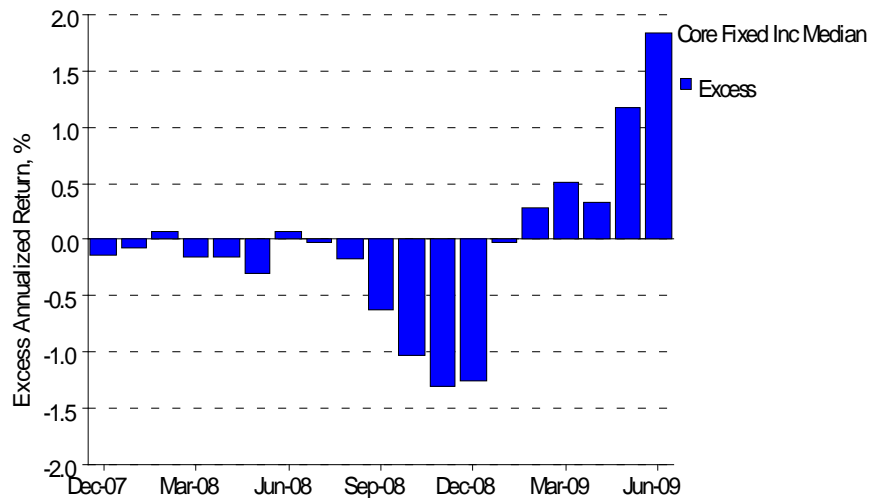
Downside Protection: Core Fixed Income

Monthly Excess Performance vs. BB Aggregate (3/2001 - 11/2001)



- Median manager outperformed in 8 out of the 9 months during the recession of 2001

Monthly Excess Performance vs. BB Aggregate (12/2007 - 6/2009)

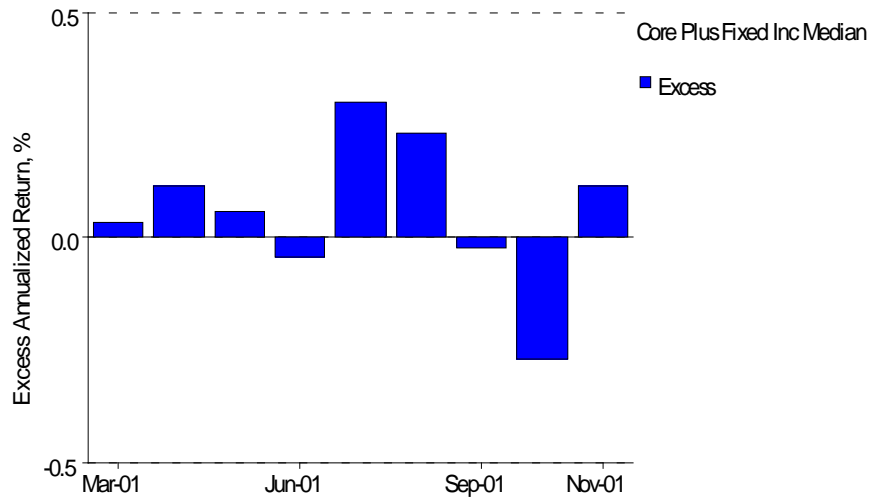


- Median manager outperformed in 7 out of the 19 months during the GFC

Source: MPI, eVestmentAlliance

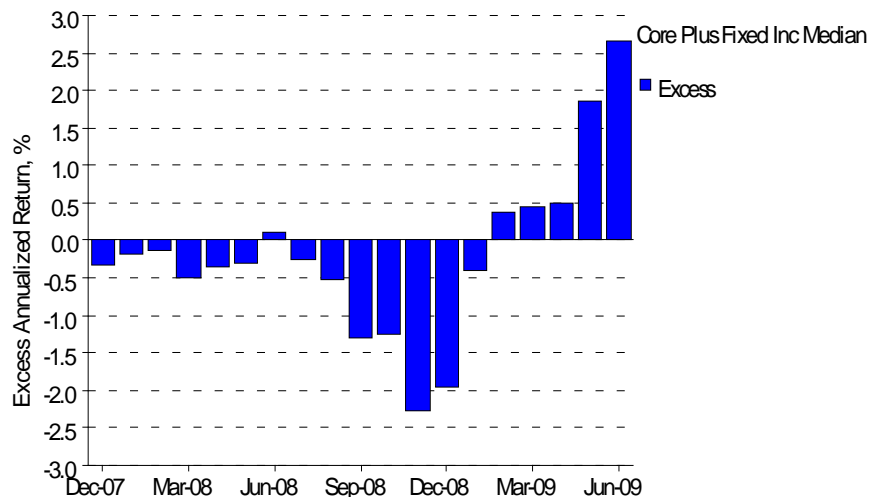
Downside Protection: Core Fixed Income

Monthly Excess Performance vs. BB Universal (3/2001 - 11/2001)



- Median manager outperformed in 6 out of the 9 months during the recession of 2001

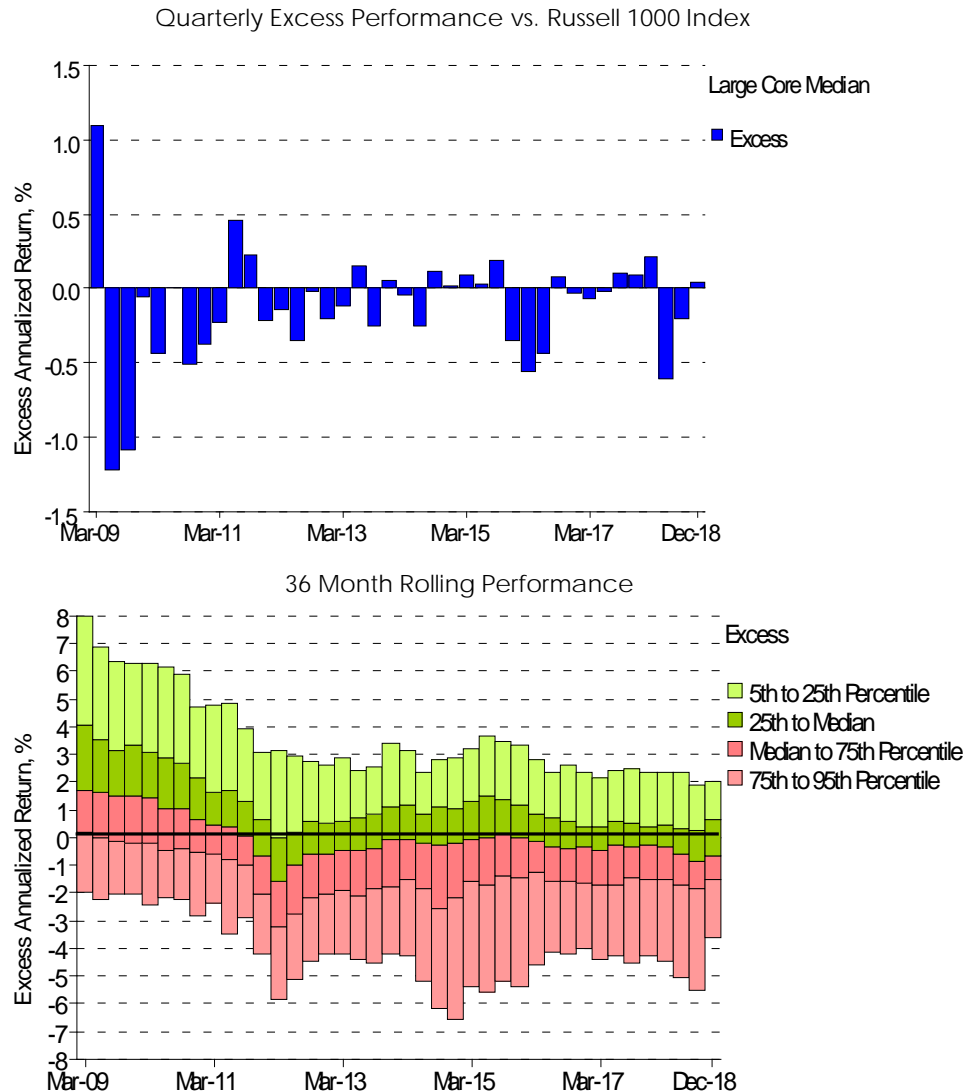
Monthly Excess Performance vs. BB Universal (12/2007 - 6/2009)



- Median manager outperformed in 6 out of the 19 months during the GFC

Source: MPI, eVestmentAlliance

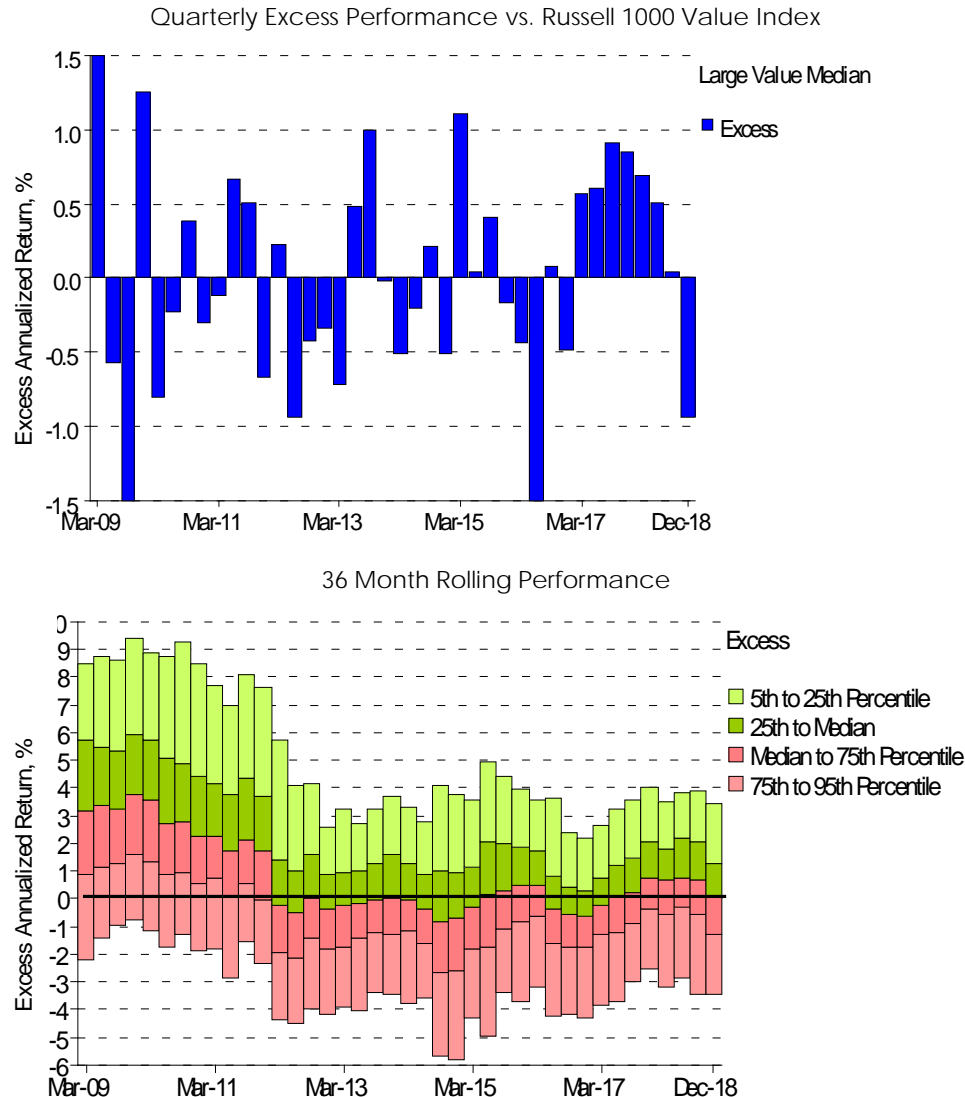
Added Value Trends: Large Core Equity Managers



Source: MPI, eVestmentAlliance

- Median large core manager has outperformed 38% of the time over the long-term
 - Median manager outperformed in 5 of last 12 quarters
 - Range of over/underperformance within approximately +/- 1.5%
-
- Median manager's ability to add value has diminished since 2009
 - Slight uptick in median manager's performance since period low; but still below the benchmark

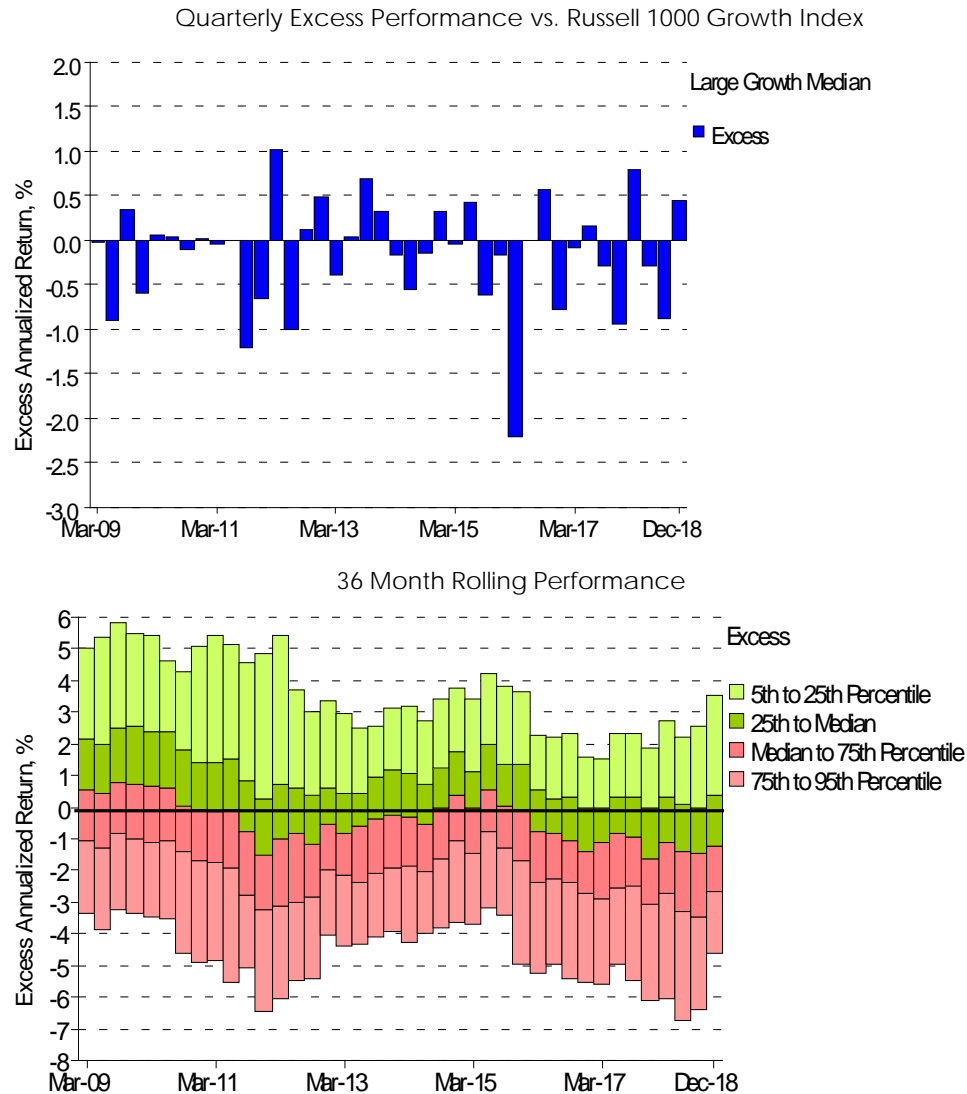
Added Value Trends: Large Value Equity Managers



- Median large value manager has outperformed 50% of the time over the long-term
- Median manager outperformed in 8 of last 12 quarters
- Three-year rolling added value is cyclical and volatile
- Distribution among managers has tightened
- Median manager's ability to add value has diminished over time

Source: MPI, eVestmentAlliance

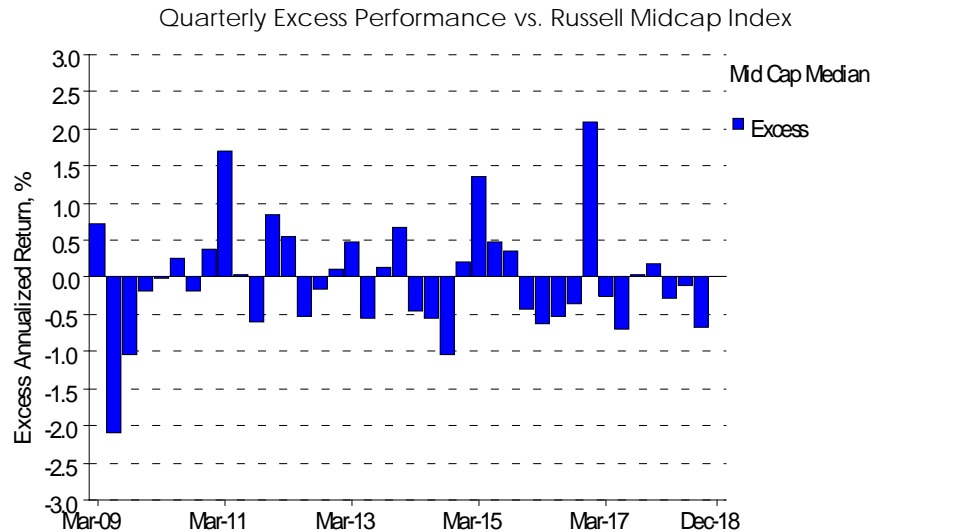
Added Value Trends: Large Growth Equity Managers



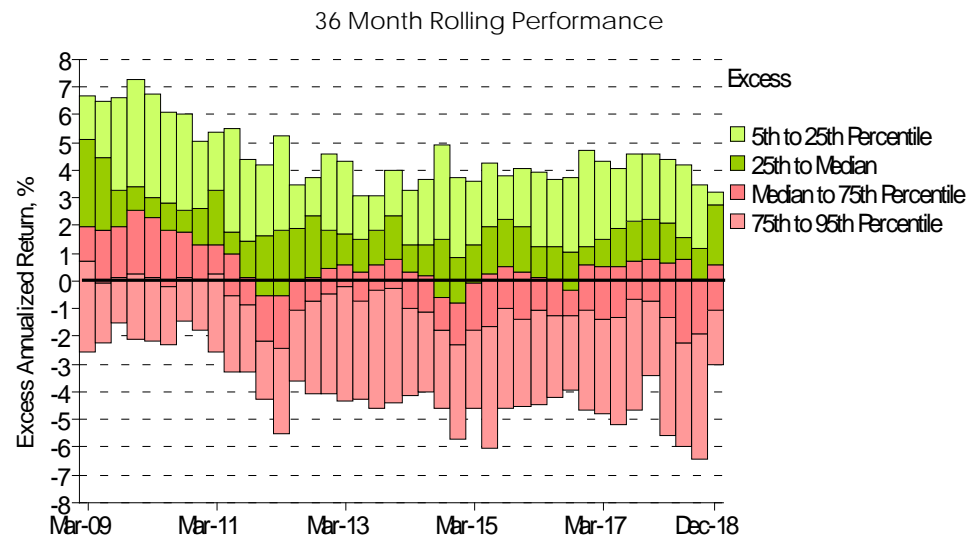
Source: MPI, eVestmentAlliance

- Median large growth manager has outperformed 43% of the time over the long-term
- Median manager outperformed in 4 of 12 quarters
- Distribution among managers has tightened
- Median manager's ability to add value has declined since 2009
- Median manager has lagged the benchmark since 2015

Added Value Trends: Mid Cap Equity Managers



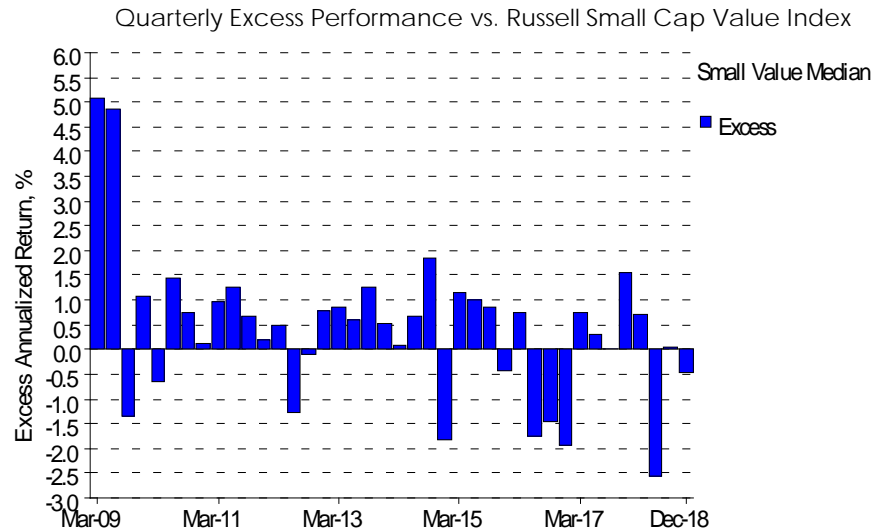
- Median midcap manager has outperformed 48% of the time over the long-term
- Median manager outperformed in 4 of last 12 quarters



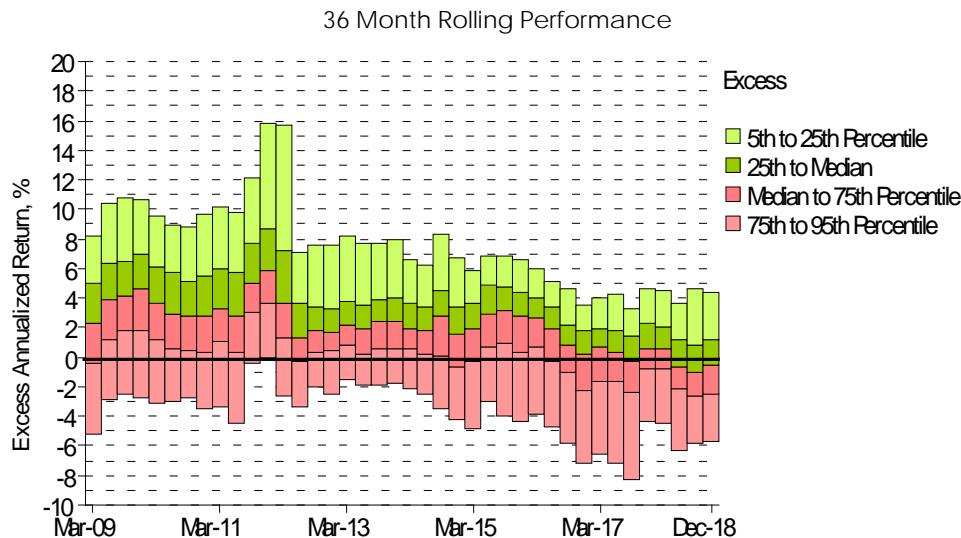
- Three-year rolling added value is cyclical and volatile
- Distribution among above median managers has tightened
- Median manager's ability to add value is trending higher over the last 3 years

Source: MPI, eVestmentAlliance

Added Value Trends: Small Value Equity Managers



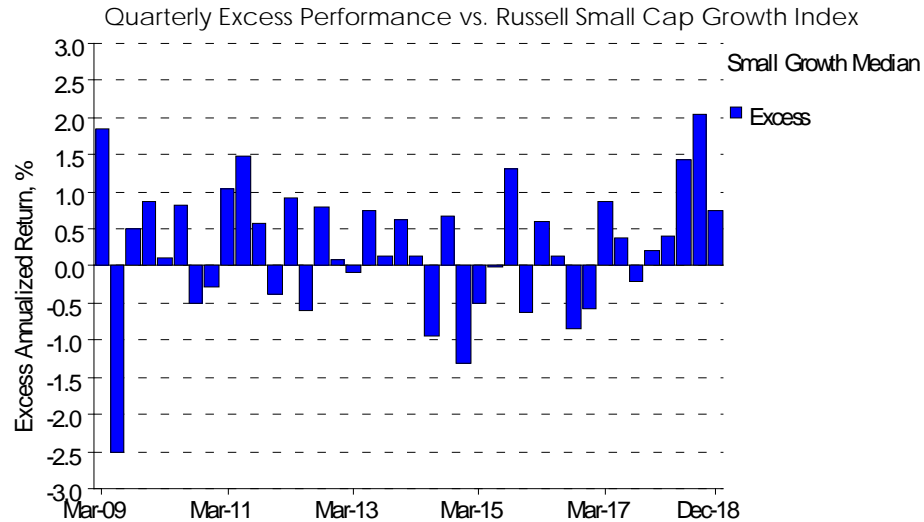
- Median small value manager has outperformed 73% of the time over the long-term
- Median manager outperformed in 7 of last 12 quarters



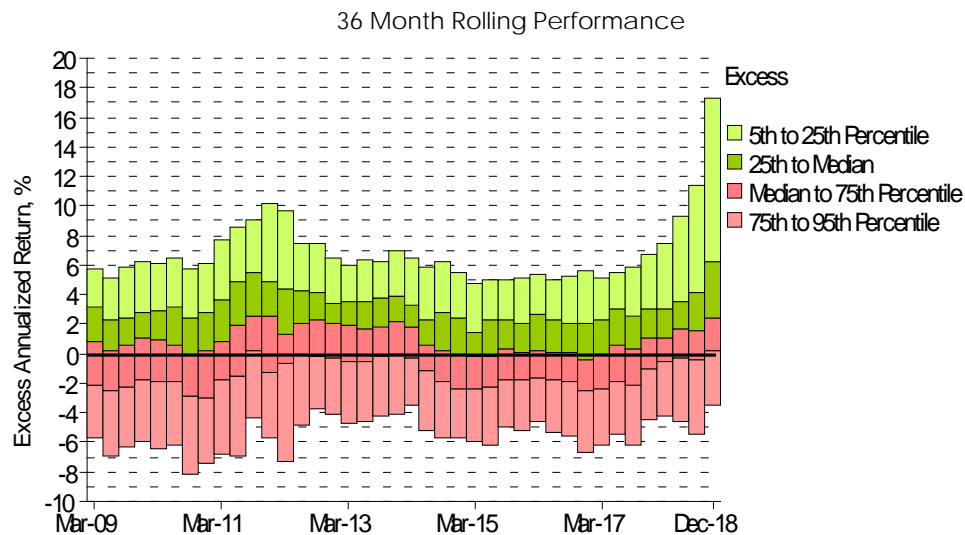
- Distribution among managers has significantly tightened
- Median manager has added value through various cycles

Source: MPI, eVestmentAlliance

Added Value Trends: Small Growth Equity Managers



- Median small growth manager outperformed roughly 65% of the time over the long-term
- Median manager outperformed in 9 of last 12 quarters

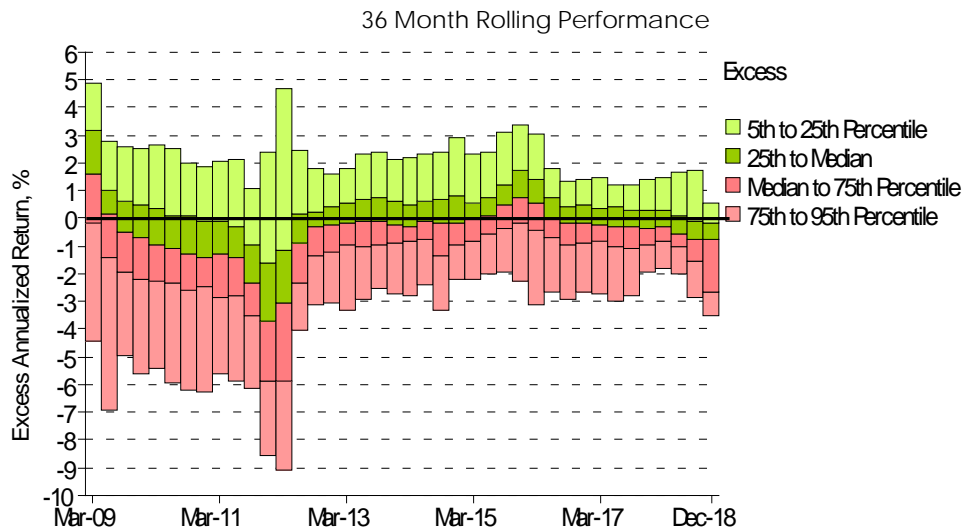
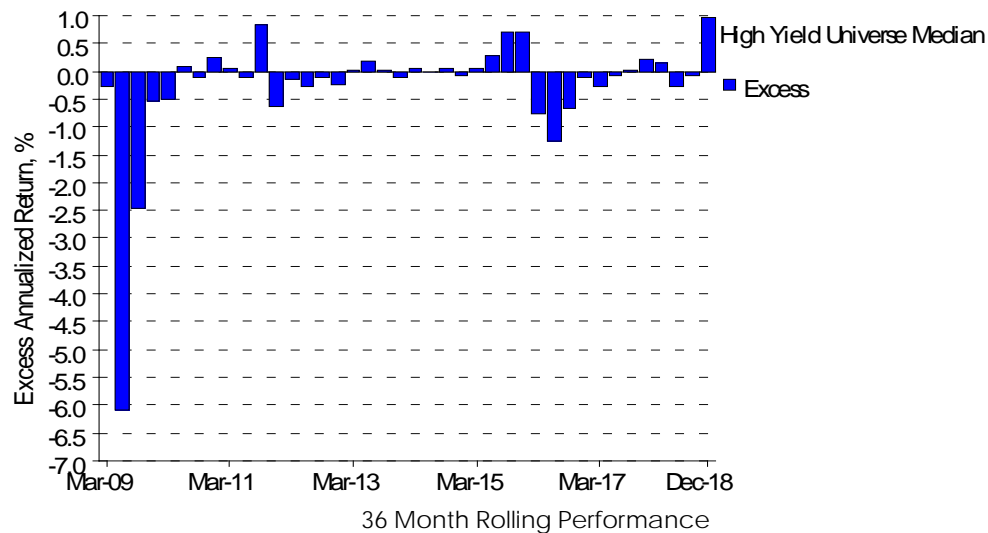


- Distribution among above median managers has widened significantly
- Median manager added value has been increasing over the last year

Source: MPI, eVestmentAlliance

Added Value Trends: High Yield Fixed Managers

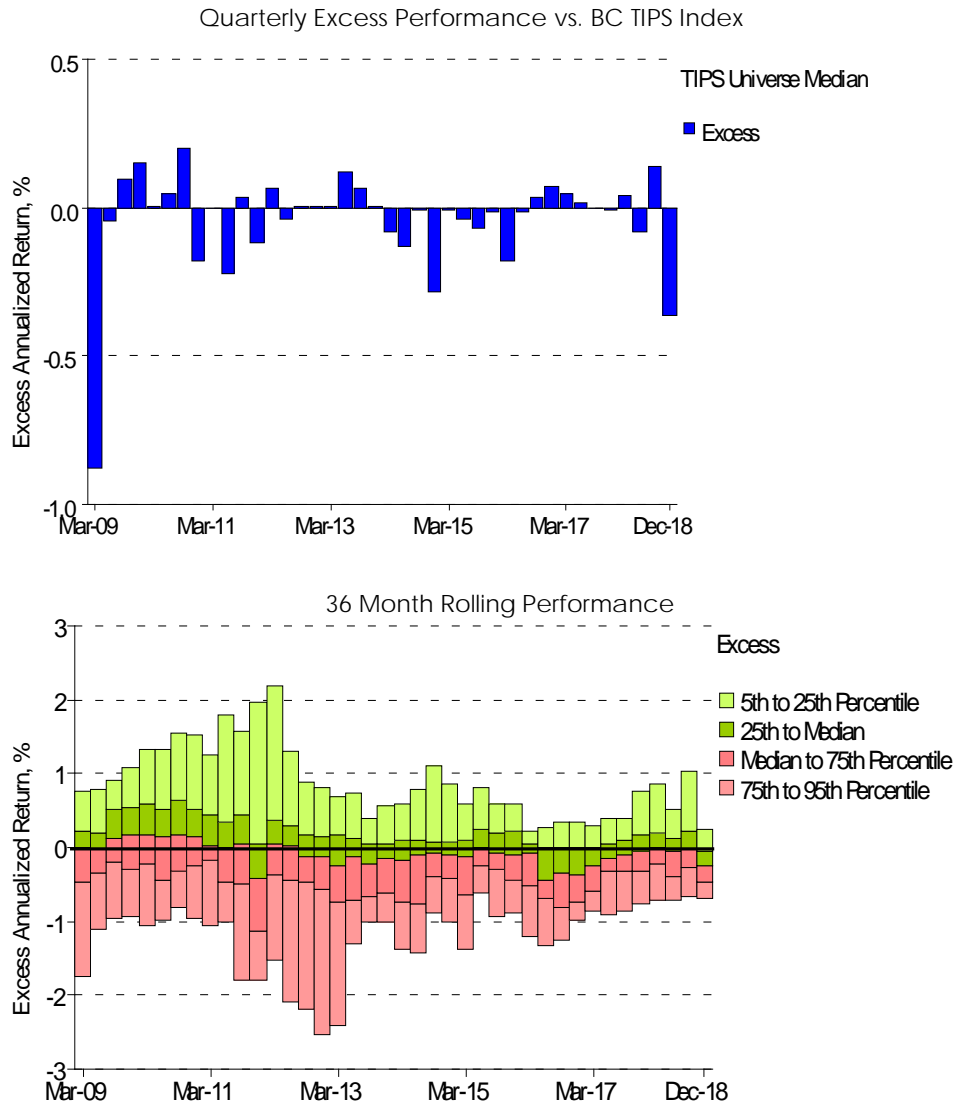
Quarterly Excess Performance vs. BC High Yield Index



- Median high yield fixed income manager outperformed 43% of the time over the long-term
- Median manager outperformed in 4 of last 12 quarters
- Distribution amongst above median managers has narrowed significantly
- Median manager has not provided added value in recent periods
- Upward trend from period lows in 2012

Source: MPI, eVestmentAlliance

Added Value Trends: TIPS Managers

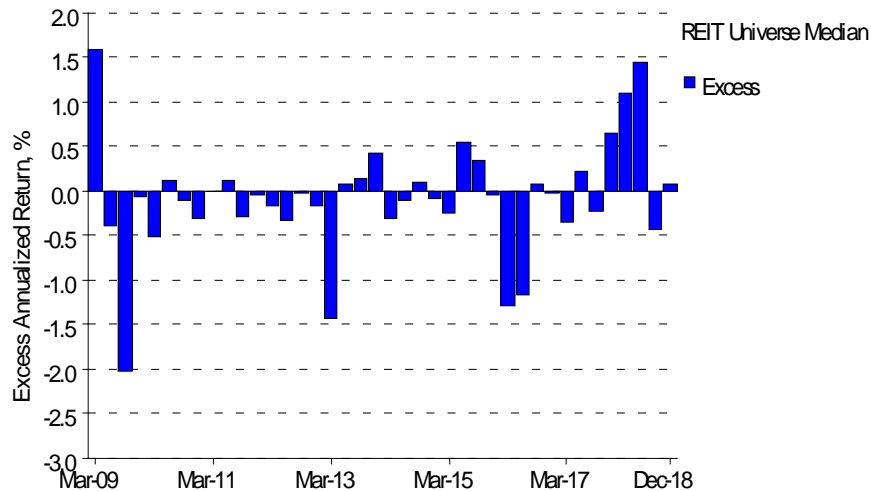


- Median TIPS manager outperformed 40% of the time over the long-term
- Median manager outperformed in 6 of last 12 quarters
- Distribution of managers has significantly narrowed in recent periods
- Median manager has not added value since 2012

Source: MPI, eVestmentAlliance

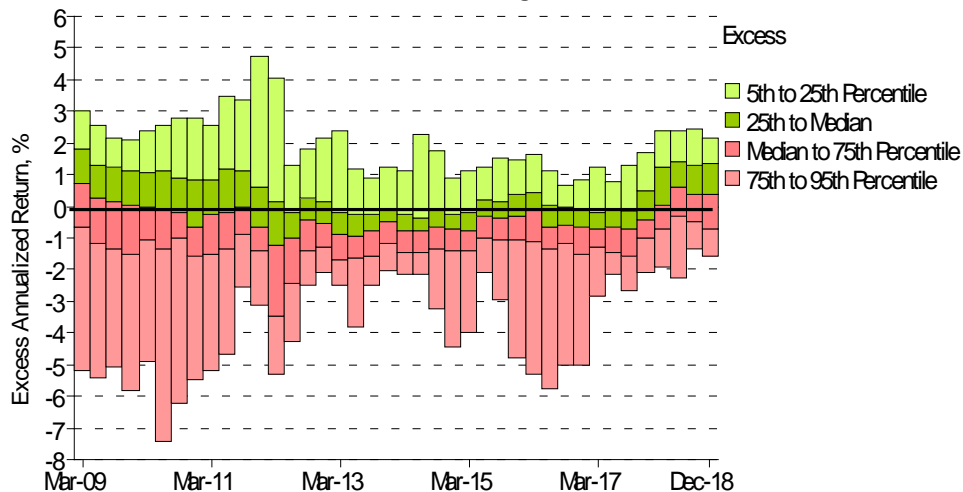
Added Value Trends: REIT Managers

Quarterly Excess Performance vs. MSCI US REIT Index



- Median REIT manager matched or outperformed 38% of the time over the long-term
- Median manager outperformed in 6 of last 12 quarters

36 Month Rolling Performance



- Distribution of managers has tightened in recent periods
- Median manager's ability to add value is trending slightly upwards

Source: MPI, Lipper

Persistence of Performance of Active Management

- Recent research conducted by Standard & Poor's reveals interesting findings
 - As of June 30, 2018 it has been difficult for active management to outperform across most major asset classes
 - On average, approximately 78% of the actively managed funds lagged their benchmark over the recent 5-year period
 - Over the 1-year period, in excess of 50% of actively managed funds with the exception of investment grade fixed income, trailed their respective benchmarks
 - Over the 3- and 5-year periods actively managed investment grade fixed funds performed well versus their benchmarks

% of Funds Outperformed by Benchmarks (As of 6/30/18)

Fund Category	Comparison Index	One Year	Three Years	Five Years
All Large Cap Funds	S&P 500	63.46	78.64	76.49
All Mid Cap Funds	S&P MidCap 400	54.18	83.28	81.74
All Small Cap Funds	S&P SmallCap 600	72.88	93.59	92.90
Global Equity Funds	S&P Global 1200	62.13	75.42	75.44
International Equity Funds	S&P 700	68.60	76.78	74.05
International Sm Eq Funds	S&P Developed Ex-US Small Cap	58.33	67.53	71.93
Emerging Markets Funds	S&P/IFCI Composite	72.02	73.89	86.19
Investment Grade Inter Funds	BB Intermediate Govt/Credit	47.98	31.61	39.37
High Yield Fixed Income Funds	BB High Yield	73.33	92.79	94.27
Emerging Market Debt Funds	BB Emerging Markets	88.14	69.64	94.87
Real Estate Funds	S&P United States REIT	53.66	74.12	67.09

Study Overview

- Analysis of mutual fund net-of-fee performance equal-weighted and corrected for survivor bias
- Underlying data is obtained from the CRSP Survivor-Bias-Free U.S. Mutual Fund Database

Source: Mid-Year 2018 Standard & Poor's Indices Versus Active Funds Scorecard (SPIVA®); <https://us.spindices.com/spiva/#/reports>

Persistence of Performance of Active Management

- From a style perspective
 - Active mid growth funds have been the most successful in beating the benchmark over the 1-year
 - Active management struggled over the 3-year period; on average only 15% of the funds outperformed
 - Active large and mid growth funds proved relatively successful over the 5-year period

% of Equity Funds Outperformed by Benchmarks				
Fund Category	Comparison Index	One Year	Three Years	Five Years
Large Cap Growth Funds	S&P 500 Growth	36.29	66.67	66.31
Large Cap Core Funds	S&P 500	71.38	89.67	88.10
Large Cap Value Funds	S&P 500 Value	42.01	68.73	75.08
Mid Cap Growth Funds	S&P MidCap 400 Growth	31.54	81.13	73.08
Mid Cap Core Funds	S&P MidCap 400	77.59	88.98	91.06
Mid Cap Value Funds	S&P MidCap 400 Value	75.47	87.93	87.88
Small Cap Growth Funds	S&P SmallCap 600 Growth	42.05	86.60	86.49
Small Cap Core Funds	S&P SmallCap 600	93.31	99.15	99.56
Small Cap Value Funds	S&P SmallCap 600 Value	90.72	93.16	100.00

Source: Mid-Year 2018 Standard & Poor's Indices Versus Active Funds Scorecard (SPIVA®); <https://us.spindices.com/spiva/#/reports>

Persistence of Performance of Active Management

- Persistent above-median performers are isolated to a small sub-set of the Fund universe
 - Essentially no Funds were able to maintain top-quartile performance in year three
 - Few Funds manage to consistently repeat top-half performance in year three

Performance Persistence over Five Consecutive 12-Month Periods			
Fund Category	Fund Count at Start	% Remaining in Top	
	March 2016	March 2017	March 2018
Top Quartile			
All Domestic Funds	557	8.08	2.33
All Large Cap Funds	214	5.61	0.93
All Mid Cap Funds	79	16.46	0.00
All Small Cap Funds	130	16.92	3.85
All Multi Cap Funds	134	17.16	2.24
Top Half			
All Domestic Funds	1,114	34.56	16.25
All Large Cap Funds	428	38.32	21.96
All Mid Cap Funds	158	42.41	7.59
All Small Cap Funds	260	49.62	13.46
All Multi Cap Funds	268	42.54	20.90

Source: Mid-Year 2018 Standard & Poor's Indices Versus Active Funds Scorecard (SPIVA®); <https://us.spindices.com/spiva/#/reports>

Persistence of Performance of Active Management

- The odds of a Fund remaining first-quartile over a five year period is no better than chance
 - It is difficult to identify persistent long-term outperformers;
 - conversely there is consistency in the death rate of 4th quartile funds

Performance over Two Non-Overlapping Five-Year Periods (Based on Quartiles)

	Fund Count at Start	% Remaining in Top						
	March 2013	1 st Quartile	2 nd Quartile	3 rd Quartile	4 th Quartile	Merged/ Liquidated	Style Change	Total

Large Cap Funds

1 st Quartile	133	28.57	20.30	18.80	17.29	6.02	9.02	100
2 nd Quartile	133	15.04	18.80	16.54	18.80	18.05	12.78	100
3 rd Quartile	132	12.12	15.15	11.36	15.15	24.24	21.97	100
4 th Quartile	133	9.02	10.53	18.05	13.53	33.83	15.04	100

Mid Cap Funds

1 st Quartile	53	11.32	16.98	18.87	20.75	7.55	24.53	100
2 nd Quartile	53	18.87	13.21	20.75	15.09	15.09	16.98	100
3 rd Quartile	52	15.38	15.38	13.46	9.62	23.08	23.08	100
4 th Quartile	53	13.21	13.21	5.66	13.21	33.96	20.75	100

Small Cap Funds

1 st Quartile	87	22.99	20.69	21.84	22.99	8.05	3.45	100
2 nd Quartile	86	23.26	23.26	15.12	22.09	15.12	1.16	100
3 rd Quartile	87	13.79	24.14	24.14	18.39	16.09	3.45	100
4 th Quartile	86	19.77	12.79	18.60	16.28	29.07	3.49	100

Source: Mid-Year 2018 Standard & Poor's Indices Versus Active Funds Scorecard (SPIVA®); <https://us.spindices.com/spiva/#/reports>

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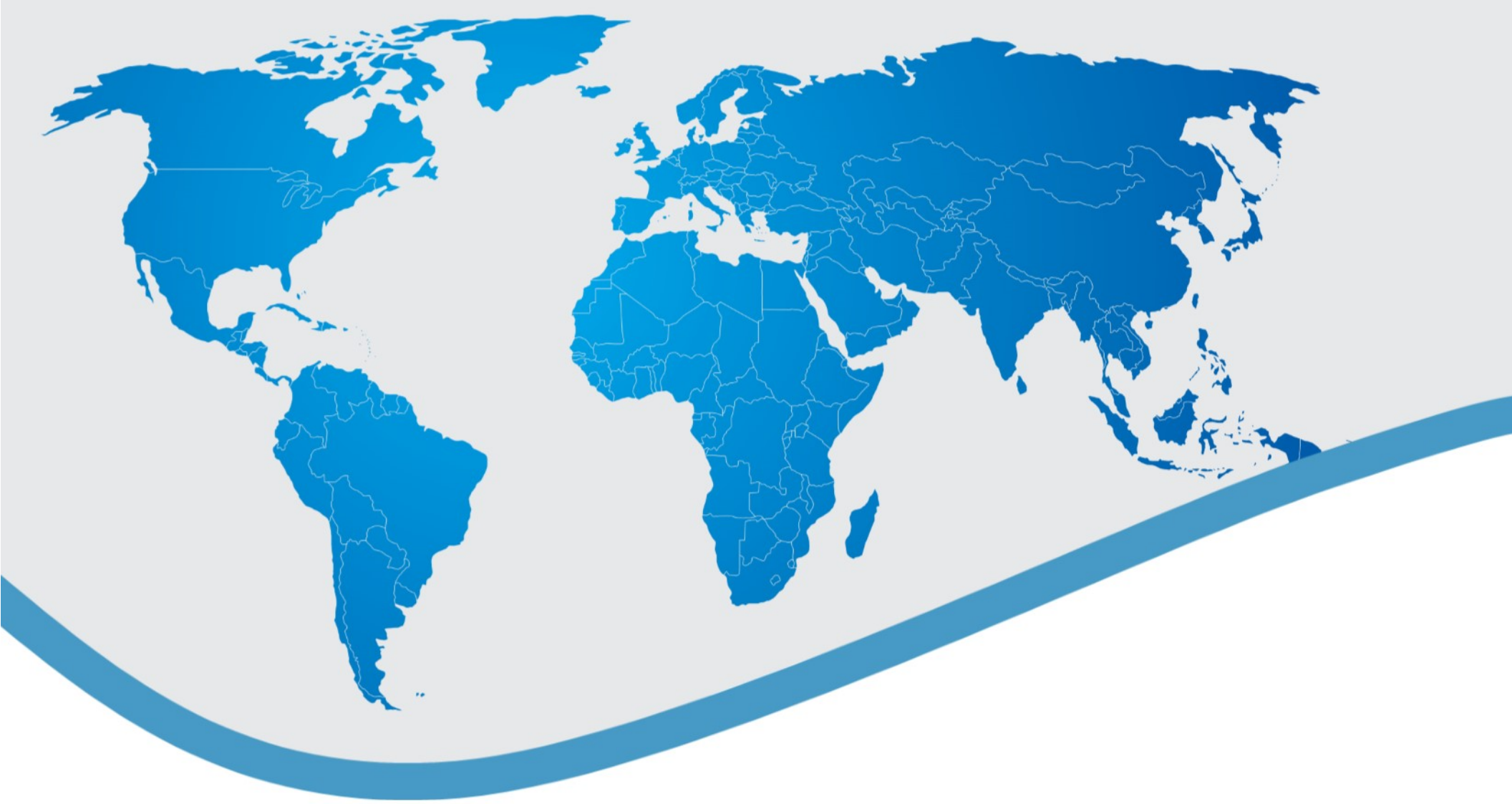
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REVIEW OF INTERNATIONAL EQUITY MARKETS

Oakland Police and Fire Retirement System (OPFRS)

February 2019

PCA

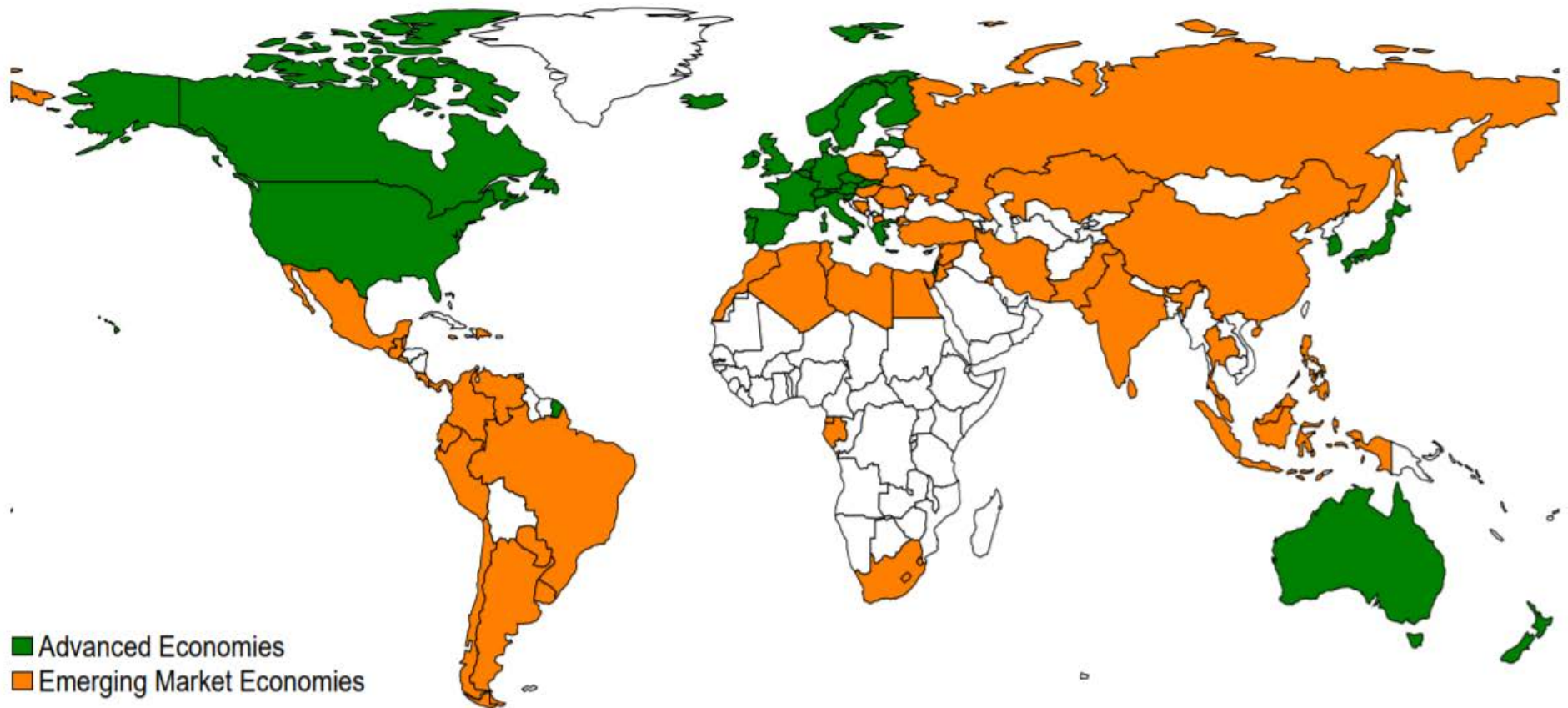
PENSION
CONSULTING
ALLIANCE

Agenda Items

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International Equity – Introduction	3
International Equity Manager Universe	14
International Equity – OPFRS Portfolio	17
Recommendations	21

Section 1: International Equity – Introduction

International Equity – Introduction



Source: IMF

International Equity – Introduction

- International Equities enables investors to gain exposure to different markets, each with their own market dynamics
 - Different market conditions
 - Different economic growth trends
 - Different monetary and fiscal policy
 - Different business cycle
 - Different demographics
 - Different industry concentrations
- As economic globalization continues, there is strong evidence that global market integration continues to unfold
- Market liberalization has systematically reduced the barriers to capital mobility and enhanced the quality of market information and execution
- Three-quarters of world GDP and 95% of world population is outside the U.S.

International Equity – Introduction

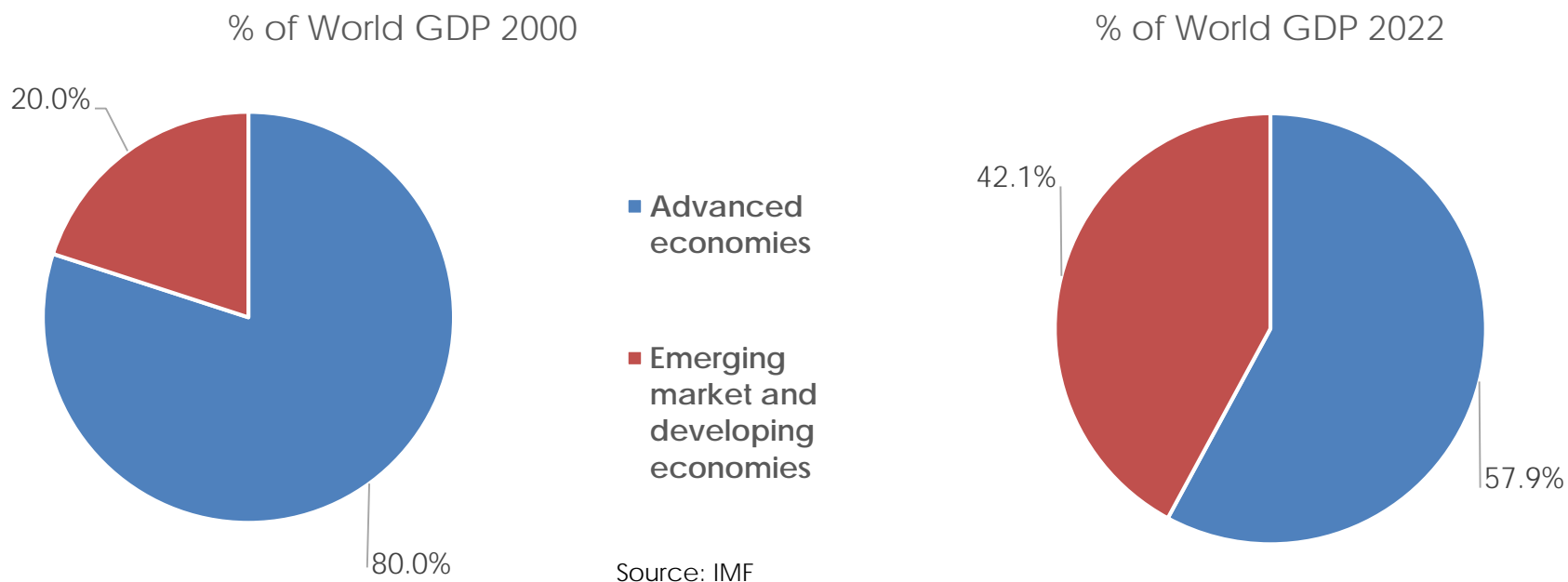
- International equities are divided into segments: developed and emerging
 - Developed markets are economies that exhibit relatively high income, openness to foreign ownership, ease of capital movement, and efficiency of market institutions
 - Emerging markets are economies that exhibit intermediate relative income, moderate openness in capital controls , and institutional development
- Emerging market economies have experienced rapid growth over the past 30 years and now represent half of the global economy
 - Exposure to international equities, both developed and emerging, allow investors to invest in this growth
- Emerging market equities experience significantly more volatility than developed equities
 - Due to:
 - Less stable political environments
 - Less developed capital markets
 - More concentrated industry exposure
 - Contagion
 - Capital controls / capital flight

International Equity Asset Class

- Investing in International Equities opens up a much larger opportunity set than would be available to a U.S.-only investor
- Many large, household name companies are headquartered outside the U.S.
- Not having exposure to these companies greatly limits an investor's opportunities



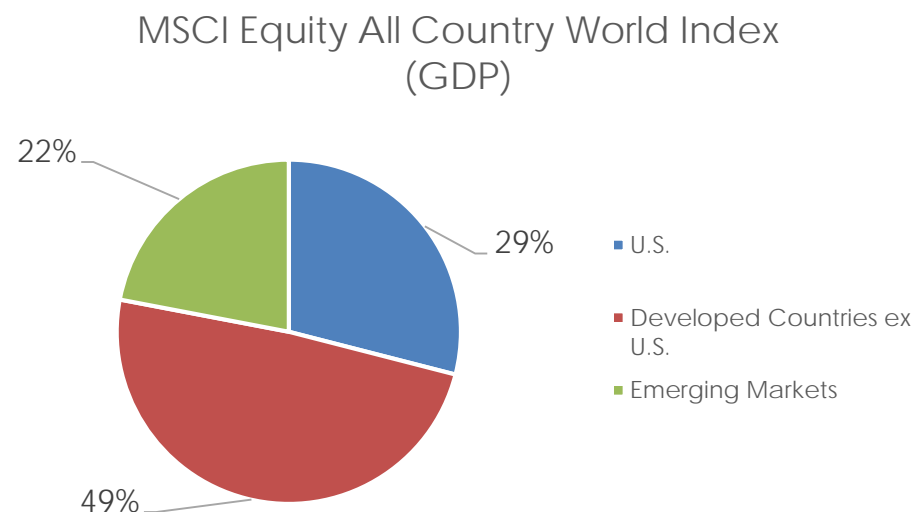
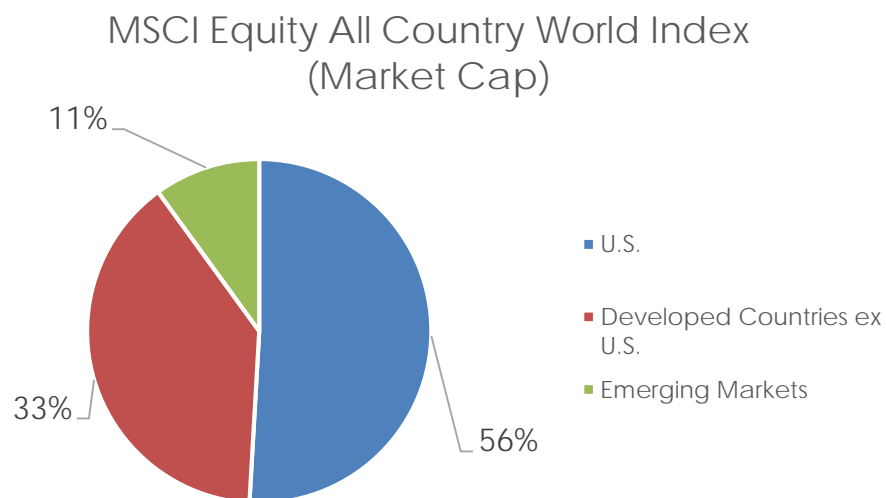
International Equity – Introduction



- The higher growth rate is on a much larger base today
- The increase in share of world GDP from 20% to 42% is a material increase over two decades

International Equity – Introduction

- World Equity Market Capitalization, according to the MSCI ACWI Index, was \$43.3 trillion as of 10/31/2018
- Only \$4.7 trillion of this market cap was in emerging market (11%)
- However, EM countries represent 22% of index GDP



Source: MSCI Barra, 10/31/2018 data

International Equity – MSCI Countries

- The international countries as listed by MSCI

MSCI ACWI & FRONTIER MARKETS INDEX										
MSCI ACWI INDEX						MSCI EMERGING & FRONTIER MARKETS INDEX				
MSCI WORLD INDEX			MSCI EMERGING MARKETS INDEX			MSCI FRONTIER MARKETS INDEX				
DEVELOPED MARKETS			EMERGING MARKETS			FRONTIER MARKETS				
Americas	Europe & Middle East	Pacific	Americas	Europe, Middle East & Africa	Asia	Americas	Europe & CIS	Africa	Middle East	Asia
Canada United States	Austria Belgium Denmark Finland France Germany Ireland Israel Italy Netherlands Norway Portugal Spain Sweden Switzerland United Kingdom	Australia Hong Kong Japan New Zealand Singapore	Brazil Chile Colombia Mexico Peru	Czech Republic Egypt Greece Hungary Poland Qatar Russia South Africa Turkey United Arab Emirates	China India Indonesia Korea Malaysia Pakistan Philippines Taiwan Thailand	Argentina	Croatia Estonia Lithuania Kazakhstan Romania Serbia Slovenia	Kenya Mauritius Morocco Nigeria Tunisia WAEMU ²	Bahrain Jordan Kuwait Lebanon Oman	Bangladesh Sri Lanka Vietnam
MSCI STANDALONE MARKET INDEXES ¹										
				Saudi Arabia		Jamaica Panama ³ Trinidad & Tobago	Bosnia Herzegovina Bulgaria Ukraine	Botswana Ghana Zimbabwe	Palestine	

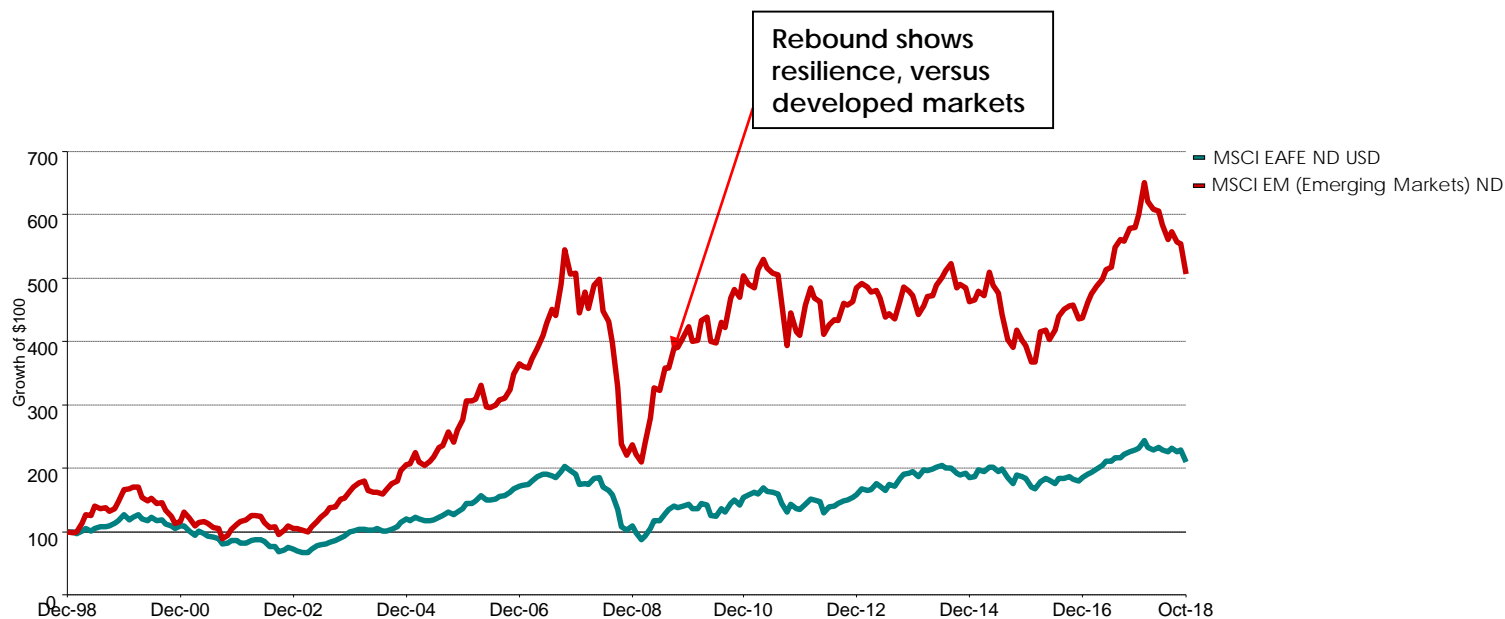
Source: MSCI

International Equity – Performance

- U.S. markets have fared better than developed markets but with more volatility

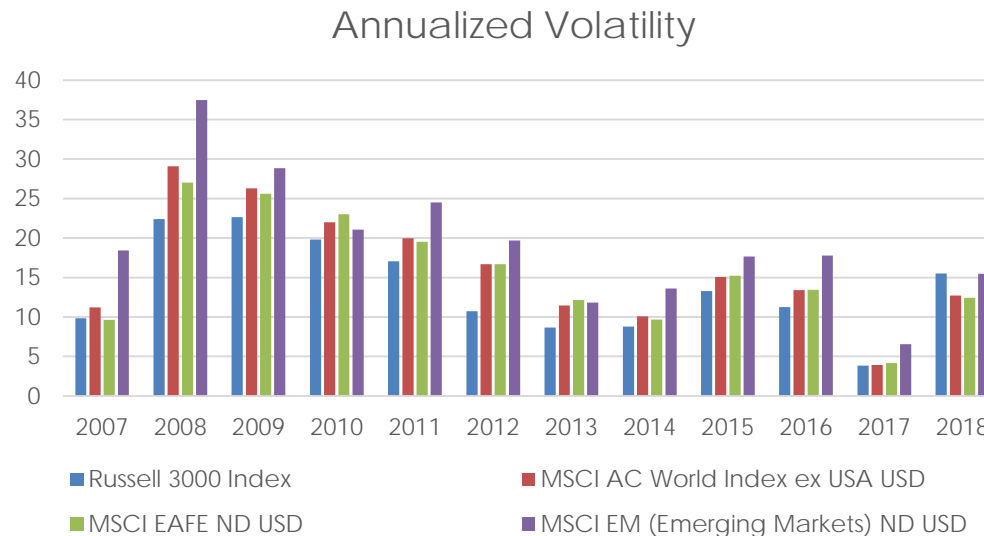
	1 Year	3 Years	5 Years	10 Years
Russell 3000 Index	-5.24	8.97	7.91	13.18
MSCI AC World Index ex USA USD	-13.78	4.98	1.14	7.06
MSCI EAFE ND USD	-13.79	2.87	0.53	6.32
MSCI EM (Emerging Markets) ND USD	-14.58	9.25	1.65	8.02

Source: MSCI Barra, 12/31/2018 data



International Equity – Risks

- Risks
 - Market risks – price decline
 - Structural risk from deflation
 - Currency risk
 - Counterparty risk
 - Liquidity risk
 - Political risk
 - Liability hedging risk
 - Liabilities denominated in U.S. dollars
 - Benchmark risk
 - Regulatory risk
 - Firm specific risk
 - Higher volatility (see chart below)



International Equity – China

- China is expected to become a larger allocation of the emerging markets with the introduction of A-shares



Source: MSCI

Section 2: International Equity Manager Universe

International Equity – Active Universe

eVestment All ACWI ex-US Equity

Annualized Returns as of 12/31/2018

Percentiles	Quarter	YTD	1-Year	3-Years	5-Years
High	-0.97	-1.05	-1.05	14.85	13.43
5th Percentile	-9.34	-8.29	-8.29	8.98	6.07
25th Percentile	-11.50	-12.83	-12.83	5.78	3.17
Median	-13.04	-14.78	-14.78	4.46	1.65
75th Percentile	-14.88	-17.06	-17.06	2.92	0.68
95th Percentile	-18.28	-21.25	-21.25	0.47	-0.95
Low	-23.74	-33.68	-33.68	-6.87	-3.24
Observations	354	352	352	339	294

Firm Name	Quarter	YTD	1-Year	3-Years	5-Years
Fisher Investments	-13.35	-15.55	-15.55	3.91	1.59
Hansberger Growth Investors	-13.48	-16.45	-16.45	5.83	2.27
MSCI ACWI ex-US-ND	-11.46	-14.20	-14.20	4.48	0.68
State Street Global Advisors	-12.53	-13.49	-13.49	3.23	0.87
MSCI EAFE-ND	-12.50	-13.36	-13.36	3.38	1.00

- Active manager performance has been mixed relative to the MSCI ACWI ex U.S. index

International Equity – Country Exposure

Comparison of Hansberger and Fisher versus the MSCI ACWI ex U.S. index:

Overweight:

- Euroland
- Germany
- Netherlands

Underweight:

- Emerging Markets
- Far East and Australasia
- Belgium

Description	Hansberger	Fisher	MSCI ACWI ex U.S.
North America	6.13%	0.83%	6.39%
United States (Dollars)	0.00%	0.00%	0.00%
Canada (Dollars)	6.13%	0.83%	6.39%
United Kingdom	10.38%	16.38%	11.45%
United Kingdom (Pounds)	10.38%	16.38%	11.45%
Euroland(EU) Countries	27.72%	39.44%	21.34%
Austria (Euro)	0.00%	0.00%	0.16%
Belgium (Euro)	0.00%	1.40%	0.64%
Finland (Euro)	0.00%	0.00%	0.70%
France (Euro)	7.02%	17.39%	7.44%
Germany (Euro)	10.03%	9.34%	5.96%
Ireland (Euro)	1.44%	0.00%	0.36%
Italy (Euro)	0.00%	2.41%	1.57%
Luxembourg (Euro)	0.00%	0.00%	0.00%
Netherlands (Euro)	5.17%	6.87%	2.31%
Portugal (Euro)	0.00%	0.00%	0.11%
Spain (Euro)	4.06%	2.03%	2.09%
Non-Euroland(EU) Countries	13.74%	7.63%	9.35%
Denmark (Kroner)	5.26%	2.32%	1.18%
Norway (Kroner)	0.00%	1.40%	0.49%
Sweden (Krona)	2.70%	0.95%	1.83%
Switzerland (Francs)	5.78%	2.96%	5.85%
Far East & Australasia	19.85%	13.50%	25.15%
Australia (Dollars)	1.13%	3.69%	4.68%
Hong Kong (Dollars)	2.36%	0.56%	2.64%
Japan (Yen)	13.95%	9.25%	16.75%
New Zealand (Dollars)	0.00%	0.00%	0.16%
Singapore (Dollars)	2.41%	0.00%	0.92%
Other	22.18%	22.20%	26.30%
Iceland (Krónas)	0.00%	0.00%	0.00%
Israel (New Shekel)	0.00%	0.00%	0.36%
Developed Markets	0.00%	0.00%	0.00%
Emerging Markets (Various Countries)	22.18%	22.20%	25.94%
Total	100.00%	100.00%	100.00%

Section 3: International Equity – OPFRS Portfolio

OPFRS Structure – By Manager

CURRENT MANAGER STRUCTURE

OPFRS International Equity Exposure

(Relative to Global Equity Allocation)

As of 12/31/2018

Manager	Benchmark	Market Value	%
Northern Trust	Russell 1000	\$72,965	42%
SSgA	Russell 1000 Growth	\$8,338	5%
SSgA	Russell 1000 Value	\$7,287	4%
Earnest Partners	Russell Midcap	\$25,676	15%
NWQ	Small Cap Value	\$8,203	5%
Rice Hall James	Small Cap Growth	\$11,066	6%
Total U.S. Equity		\$133,535	76%
Fisher	MSCI ACWI ex U.S.	\$14,306	8%
Hansberger	MSCI ACWI ex U.S.	\$14,150	8%
SSgA	MSCI EAFE	\$12,955	7%
Total Non-U.S. Equity		\$41,411	24%
Total Global Equity		\$174,946	100%

- Roughly \$41 million or 24% of the global equity portfolio is in international equity markets
- SSgA and Northern Trust are passive strategies in both U.S. and international markets

OPFRS Structure – By Class

CURRENT MANAGER STRUCTURE

OPFRS Global Equity Manager Structure *As of 12/31/2018*

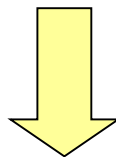
Global Equity	OPFRS	MSCI ACWI	Difference
U.S.	76%	56%	20%
Non - U.S. Dev. (including EM)	24%	44%	-20%
Total	100%	100%	

Differences due to rounding

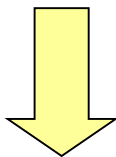
- Broad regional allocations are over-weight U.S. Equities and underweight International Equity

OPFRS Structure – Observations

Portfolio structure should reflect available opportunity set of investments



Benchmarks and policy related issues should conform to adopted policy structure



Managers should be given broad mandates subject to their areas of expertise

Section 4: Recommendations

Recommendations

- Maintain current passive exposure relative to the MSCI EAFE index
- Eliminate the growth and value exposures of both Hansberger and Fisher
- PCA recommends conducting a search (RFP) for a core active international equity manager in 2019 – benchmarked to the MSCI ACWI ex U.S. IMI index

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Date: February 27, 2019

To: Oakland Police and Fire Retirement System (OPFRS)

From: Pension Consulting Alliance, LLC (PCA)

CC: David Sancewich – PCA
Sean Copus, CFA – PCA
Teir Jenkins – OPFRS
David Jones – OPFRS

RE: Crisis Risk Offset (CRO) Implementation – Long Duration

Summary and Recommendation:

At the January 2019 OPFRS meeting, the Board approved a recommendation from PCA to research and utilize one of the plan's current investment managers for its Long Duration component of CRO. After further review, PCA recommends that OPFRS utilize State Street Global Advisors (SSgA) and its passively managed strategy to the U.S. Long Treasury index.

Discussion:

As part of a recent OPFRS asset-liability study, the Board approved a new long-term strategic allocation policy. A key feature of the new strategic allocation policy is its allocation to a CRO strategic class. When fully structured and funded, the CRO class will be comprised of three equally weighted components: Long Duration, Systematic Trend Following, and Alternative Risk Premia. The CRO class is expected to (i) have a high probability of producing material appreciation during equity-crisis periods, and (ii) maintain its long-term purchasing power in the intervening market cycles.

As PCA has discussed at prior meetings, one segment of this new class is Long Duration. Long Duration portfolios are those that generally consist of long-dated (maturities in excess of 10 years) high-quality bonds (such as Treasuries and Government-backed high-quality agencies).

Long term Asset Allocation, Period ending 12/31/2018

Asset Class	12/31/2018 Actual	Long-Term Targets
Cash	2	0
Fixed Income	26	21
Credit	2	2
Covered Calls	13	5
Domestic Equity	38	40
International Equity	12	12
CRO	7	20

Unlike the two other components of CRO (Trend Following and Alternative Risk Premia), the Long Duration segment of the asset class can be managed by most reputable fixed income investment firms and is relatively inexpensive to manage. Rather than conduct a full Long Duration manager search, PCA recommends OPFRS utilize one of its current investment managers to run this portion of the asset class.

PCA recommends that OPFRS engage SSgA for this mandate. Specifically, the passively managed U.S. Long Treasury Index. The reasons for this recommendation are 1) the simplicity of the mandate (there is no credit exposure), 2) the low cost of providing the allocation, 4bps for the commingled fund, and 3) SSgA is a current OPFRS manager that already runs mandates for the system.

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MEMORANDUM

Date: February 27, 2019

To: Oakland Police and Fire Retirement System (OPFRS)

From: Pension Consulting Alliance, LLC. (PCA)

CC: David Sancewich - PCA
 Sean Copus, CFA - PCA
 Kristen Chase - PCA
 Teir Jenkins - OPFRS
 David Jones - OPFRS

RE: 2019 Preliminary Strategic Investment Agenda

Approximately once a year, PCA develops a list of projects that we expect to work closely with OPFRS to complete over the next twelve-plus months (see table below). In an attempt to coordinate the scheduling of these tasks, this memo details a Preliminary Investment Project Agenda by calendaring and prioritizing the expected tasks and deliverables that would be required to fulfill the Agenda. PCA welcomes any suggestions and/or modifications to the proposed timeline.

2019 Preliminary Investment Project Agenda

Expected Completion Date	Task
March 2019	<ul style="list-style-type: none"> Manager Update: SSgA 2019 Capital Market Assumptions Update: International Equity Update (if needed) Cash Flow Report (2Q 2019)
April 2019	<ul style="list-style-type: none"> Flash Performance (1Q 2019) Manager Update: DDJ
May 2019	<ul style="list-style-type: none"> Quarterly Performance Report (1Q 2019) TBD: Educational topic Manager Update: Rice Hall James
June 2019	<ul style="list-style-type: none"> Asset Allocation Review and Update Cash Flow Report (3Q 2019)
July 2019	<ul style="list-style-type: none"> Flash Performance Report (2Q2019) Asset Class Review: Fixed Income TBD: Educational Topic

Expected Completion Date	Task
August 2019	<ul style="list-style-type: none"> PCA Performance Report (2Q 2019) Manager Update: Reams
September 2019	<ul style="list-style-type: none"> TBD: Educational Topic Cash Flow Report (4Q2019) Thermal Coal List Report - Update
October 2019	<ul style="list-style-type: none"> Flash Performance Report (3Q 2019) Manager Update: Parametric Service Contract Extension - Parametric
November 2019	<ul style="list-style-type: none"> PCA Performance report (3Q2019) Manager Update: Ramirez
December 2019	<ul style="list-style-type: none"> TBD: Depends on meeting schedule Cash Flow Report (1Q2020)

Bold are priority strategic items.

This agenda continues forward with the implementation of a new potential asset allocation as a result of the asset liability modeling in 2017.

This agenda includes only major strategic items. PCA also expects to work with the Staff and Board to complete more routine tasks and projects, as expected.

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Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

RETIREMENT BOARD MEMBERS

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President

Jaime T. Godfrey
Vice President

Katano Kasaine
Member

Martin J. Melia
Member

Robert J. Muszar
Member

John C. Speakman
Member

Steven Wilkinson
Member

REGULAR MEETING of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

Wednesday, February 27, 2019 – 11:30 am
One Frank H. Ogawa Plaza, Hearing Room 1
Oakland, California 94612

- - - ORDER OF BUSINESS - - -

A. CLOSED SESSION

B. Report of PFRS Board Action from Closed Session (if any)

C. Subject: PFRS Board Meeting Minutes
From: Staff of the PFRS Board

Recommendation: APPROVE January 30, 2019 PFRS Board meeting minutes.

D. Subject: An Analysis of Other Pay and Benefits Received by Active Officers based on the current OPMA MOU
From: Staff of the PFRS Board

Recommendation: ACCEPT an informational report regarding An Analysis of Other Pay and Benefits Received by Active Officers based on the current OPMA MOU.

E. Subject: Report of the Merger of Pension Consulting Alliance and Meketa Investment Group
From: Pension Consulting Alliance, Meketa Investment Group, and staff of the PFRS Board

Recommendation: ACCEPT an informational report regarding the Merger of PCA and Meketa Investment Group.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 27, 2019

ORDER OF BUSINESS, continued

F. AUDIT AND OPERATIONS COMMITTEE AGENDA – FEBRUARY 27, 2019

- F1. Subject:** PFRS Actuary Valuation as of July 1, 2018
From: Cheiron, Inc., PFRS Plan Actuary
-
- Recommendation:** **APPROVE** the PFRS Actuary Valuation as of July 1, 2018.
- F2. Subject:** Administrative Expenses Report
From: Staff of the PFRS Board
-
- Recommendation:** **ACCEPT** an informational report regarding PFRS administrative expenses from July 1, 2018 through December 31, 2018.
- F3. Subject:** PFRS 2-year Administrative Budget for Fiscal Years 2019/2020 and 2020/2021
From: Staff of the PFRS Board
-
- Recommendation:** **APPROVE** the PFRS 2-year Administrative Budget for Fiscal Years 2019/2020 and 2020/2021.
- F4. Subject:** Report on closed session hearings concerning change of retirement classification or cause of death
From: Staff of the PFRS Board and PFRS Legal Counsel
-
- Recommendation:** **ACCEPT** an informational report regarding Report on closed session hearings concerning change of retirement classification or cause of death.
- F5. Subject:** RESOLUTION No. 7044 - Travel authorization for Investment Committee Chairperson Jaime Godfrey to travel for the due diligence visit with Pension Consulting Alliance (“PCA”), Investment Consultant for the Oakland Police and Fire Retirement System (“PFRS”) on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00)
From: Staff of the PFRS Board
-
- Recommendation:** **APPROVE** Resolution No. 7044 - Travel authorization for Investment Committee Chairperson Jaime Godfrey to travel for the due diligence visit with Pension Consulting Alliance (“PCA”), Investment Consultant for the Oakland Police and Fire Retirement System (“PFRS”) on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00).

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 27, 2019

ORDER OF BUSINESS, continued

F6. Subject: RESOLUTION No. 7045 - Travel authorization for Board Member Martin Melia to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00)

From: Staff of the PFRS Board

Recommendation: **APPROVE** Resolution No. 7045 - Travel authorization for Board Member Martin Melia to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00).

F7. Subject: RESOLUTION No. 7046 - Travel authorization for Plan Administrator David Jones to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00)

From: Staff of the PFRS Board

Recommendation: **APPROVE** Resolution No. 7046 - Travel authorization for Plan Administrator David Jones to travel for the due diligence visit with Pension Consulting Alliance ("PCA"), Investment Consultant for the Oakland Police and Fire Retirement System ("PFRS") on February 11, 2019 in Portland, OR with an estimated budget of Six Hundred Ten Dollars (\$610.00).

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 27, 2019

ORDER OF BUSINESS, continued

F8. Subject: Resolution No. 7047 – Travel authorization for PFRS staff member Teir Jenkins to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00)

From: Staff of the PFRS Board

Recommendation: **APPROVE** Resolution No. 7047 – Travel authorization for PFRS staff member Teir Jenkins to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00).

F9. Subject: Resolution No. 7048 – Travel authorization for PFRS staff member David Jones to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00)

From: Staff of the PFRS Board

Recommendation: **APPROVE** Resolution No. 7048 – Travel authorization for PFRS staff member David Jones to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Thirty-seven Dollars (\$237.00).

**G. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA –
FEBRUARY 27, 2019**

G1. Subject: Follow-up review and recommendation of Board action regarding Parametric Portfolio Advisors, a PFRS Covered Calls Asset Class Investment Manager

From: Parametric Portfolio Advisors and PCA

Recommendation: **APPROVE** PCA follow-up review and recommendation of Board action regarding Parametric Portfolio Advisors, a PFRS Covered Calls Asset Class Investment Manager.

G2. Subject: Investment Market Overview
From: Pension Consulting Alliance (PCA)

Recommendation: **ACCEPT** an informational report on the global investment markets through February 2019.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 27, 2019

ORDER OF BUSINESS, continued

- G3. Subject:** Investment Fund Performance Report for the Quarter Ending December 31, 2018
From: Pension Consulting Alliance
-
- Recommendation:** **APPROVE** an Investment Fund Performance Report for the Quarter Ending December 31, 2018.
- G4. Subject:** Active vs. Passive Management Style overview
From: Pension Consulting Alliance
-
- Recommendation:** **ACCEPT** an informational report from PCA regarding active vs. passive management styles.
- G5. Subject:** Review and recommendation of Board action regarding the PFRS International Equity Investment Asset Class Portfolio
From: Pension Consulting Alliance
-
- Recommendation:** **APPROVE** the review and recommendation of Board action regarding the PFRS International Equity Investment Asset Class Portfolio.
- G6. Subject:** Review and recommendation of Board Action regarding possible assignment of investment funds to an existing PFRS Investment Manager to manage PFRS Crisis Risk Offset (CRO) – Long Duration Asset Class
From: Pension Consulting Alliance
-
- Recommendation:** **APPROVE** the review and recommendation of Board action regarding possible assignment of investment funds to an existing PFRS Investment Manager to manage PFRS Crisis Risk Offset (CRO) – Long Duration Asset Class.
- H. Subject:** Resolution No. 7050 – Resolution of appreciation to Pelayo A. Llamas, Jr. for six years of service as Legal Counsel to the Oakland Police and Fire Retirement System Board
From: Staff of the PFRS Board
-
- Recommendation:** **APPROVE** Resolution No. 7050 – Resolution of appreciation to Pelayo A. Llamas, Jr. for six years of service as Legal Counsel to the Oakland Police and Fire Retirement System Board.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 27, 2019**

ORDER OF BUSINESS, continued

- | | | |
|------------|------------------------|--|
| I. | Subject: | Member Resolution(s) No. 7051 |
| | From: | Staff of the PFRS Board |
| | Recommendation: | APPROVE Member Resolution(s) No. 7051 |
| II. | Resolution No. | Resolution approving death benefit payments and directing warrants thereunder in the total sum of \$1,000.00 payable to the beneficiaries of deceased members as follows: Shellie R. Robertson & Sandra L. Gaillard. |
- J. NEW BUSINESS**
- K. OPEN FORUM**
- L. FUTURE SCHEDULING**

A BOARD MEETING of the Oakland Police and Fire Retirement System ("PFRS") was held on January 30, 2019 in Hearing Room 1, One Frank Ogawa Plaza, Oakland, California.

Board Members Present:

- Walter L. Johnson, President
- Jaime T. Godfrey, Vice President
- Katano Kasaine, Member
- John C. Speakman, Member
- Robert J. Muszar, Member
- Martin J. Melia, Member

Board Members Present:

- R. Steven Wilkinson, Member

Additional Attendees:

- David Jones, PFRS Plan Administrator
- Pelayo Llamas, Jr., PFRS Legal Counsel
- David Low & Teir Jenkins, Staff Member
- David Sancewich & Sean Copus, Pension Consulting Alliance

The meeting was called to order at 11:05 am.

A. Closed Session – PFRS Retiree Ned Ubben addressed the Board with a question regarding what Board action will take place, or what follow-up report will be provided, as result of the Board Action from the November 28, 2018 meeting to approve Resolution No. 7030. President Johnson said that Mr. Ubben's questions was not appropriate for the Closed Session agenda item for which he submitted his speaker card and invited him to ask his question at a later point in the Board meeting. With no additional speakers, President Johnson convened the closed session meeting at 11:07 am.

B. Report of Board Actions from Closed Session – The PFRS Board meeting reconvened at 11:48 pm following the conclusion of Closed Session. No reportable action by the Board was made during closed session.

C. Approval of PFRS Board Meeting Minutes – Mr. Ubben asked if any report or action would be follow-up upon regarding the action taken by the Board related to Resolution No. 7030 affecting PFRS Police Retiree who were ranks of Captains and Deputy Chiefs. Plan Administrator David Jones said a report would be submitted at the February 2019 Board Meeting. Additionally, member Muszar reminded the Board he had some concerns and was making a 'point-of-order' about the November 2018 meeting, and he asked when he should bring his concerns for discussion relating to Robert's Rules of Order and the validity of the substitute motion's passage. PFRS legal counsel, Pelayo Llamas, stated that any point of order alleging an irregularity in the November 28 action should have been raised immediately at that time, and it is now too late. Additionally, Mr. Muszar's participation by voting on the resolution constituted a waiver of the irregularity. According to Robert's Rules, the point of order is ruled on by the chairperson and is not subject to debate. President Johnson ruled that the point of order was incorrect.

Member Speakman made a motion to approve the November 28, 2018 PFRS Board meeting minutes, second by Member Godfrey. Motion Passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

D. PFRS AUDIT COMMITTEE MEETING – JANUARY 30, 2019

D1. Administrative Expenses Report – Teir Jenkins presented the current status of the administrative expenditures of the PFRS plan through November 30, 2018. Member Speakman made a motion to accept the informational report from staff, second by member Muszar. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

D2. Annual Report for Fiscal Year ending June 30, 2018 – Plan Administrator David Jones presented the PFRS Board with PFRS Annual Report for the fiscal year ending June 30, 2018 and reported details about the production of this report. Mr. Jones stated that he intends on taking steps to try to have future PFRS Annual Reports certified by the Government Finance Officers Association (GFOA). The Board members thanked staff for their work producing the 2018 Annual Report. Following some Board discussion, member Muszar made a motion to recommend Board approval of the printing and publication of the PFRS Annual report for the fiscal year ending June 30 2018, second by member Speakman. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

D3. PFRS Policy Governing the Overpayment or Underpayment of Member Benefits – Member Speakman reported that the Audit Committee and staff worked to refine the policy Governing the Overpayment or Underpayment of Member Benefits. Member Speakman said the Audit Committee would continue discussion at the March 2019 Audit Committee meeting.

D4. Resolution No 7037: R. Steven Wilkinson Travel – Member Speakman made a motion to approve Resolution No. 7037 - Travel authorization for PFRS Board Member R. Steven Wilkinson for attendance at the 2018 Markets Group California Institutional Forum Conference (“2018 Markets Group Conference”) on December 5, 2018 in Sonoma, CA with an estimated budget of Seventy-seven Dollars (\$77.00), second by Member Muszar. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

D5. Resolution No 7038: Martin Melia Travel – Member Speakman made a motion to approve Resolution No. 7038 - Travel authorization for PFRS board member Martin Melia to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Ninety Dollars (\$290.00), second by Member Muszar. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – ABSTAIN / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 1)

D6. Resolution No 7039: R. Steven Wilkinson Travel – Member Speakman made a motion to approve Resolution No. 7039 - Travel authorization for PFRS board member R. Steven Wilkinson to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of Two Hundred Ninety Dollars (\$290.00), second by Member Muszar. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

D7. Resolution No 7040: Jaime Godfrey Travel – Member Speakman made a motion to approve Resolution No. 7040 - Travel authorization for PFRS board member Jaime Godfrey to travel and attend the 2019 Pension Bridge Conference (“Pension Bridge Conference”) from April 9, 2019 to April 10, 2019 in San Francisco, CA with an estimated budget of One Thousand Four Hundred Dollars (\$1,400.00), second by Member Muszar. Motion passed.

[GODFREY – ABSTAIN / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 1)

D8. Resolution No 7041: R. Steven Wilkinson Travel – Member Speakman made a motion to approve Resolution No. 7041 - Travel authorization for PFRS board member R. Steven Wilkinson to travel and attend the 2019 California Association of Public Retirement Systems General Assembly Conference (“2019 CALAPRS Conference”) from March 2, 2019 to March 5, 2019 in Monterey, CA with an estimated budget of One Thousand Two Hundred Fifty Dollars (\$1,250.00), second by Member Muszar. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

D9. Resolution No 7042: Katano Kasaine Travel – Member Speakman made a motion to approve Resolution No. 7042 - Travel authorization for PFRS board Member Katano Kasaine To Travel and Attend The 2019 California Association of Public Retirement Systems General Assembly Conference (“2019 CALAPRS conference”) from March 2, 2019 to March 5, 2019 in Monterey, CA with an estimated budget of One Thousand Two Hundred Fifty Dollars (\$1,250.00), second by Chairman Muszar. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – ABSTAIN / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 1)

E. PFRS INVESTMENT COMMITTEE MEETING – JANUARY 30, 2019

E1. Investment Market Overview – Sean Copus from Pension Consulting Alliance (PCA) reported on the global economic factors affecting the PFRS Fund. Member Godfrey made a motion accept the Informational Report from PCA, second by Member Speakman. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

E2. Preliminary Investment Fund Performance Report for the Quarter ending December 31, 2018 – Sean Copus reported the details of the preliminary Investment Fund Performance Report for the Quarter ending December 31, 2018. Member Godfrey made a motion to accept the informational report from PCA, second by member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

E3. Investment Asset Class Review - Crisis Risk Offset (CRO)-Long Duration – David Sancewich from PCA reported that PCA will review the cost to have a current PFRS investment manager manage this asset class for the PFRS Fund and report back at the next Investment Committee meeting, which may include a resolution for Board action. Member Godfrey made a motion accept the Informational Report from PCA, second by Member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

E4. Investment Policy Amendment – Addition of the Description of the Defensive Equity Investment Management Style – David Sancewich reported the details of the amendment to the PFRS investment policy. Member Godfrey made a motion to approve the amendment to the PFRS Investment Policy, second by member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

E5. Management change Update Report - Parametric Portfolio Advisors – Mr. Sancewich reported staff changes at Parametric Portfolio Advisors. Member Godfrey made a motion instructing PFRS Staff to invite Parametric Portfolio Advisors to the February 2019 Investment Committee meeting to further discuss the management change, second by member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

- E6. Report About A Change of Management and Ownership of PFRS's Investment Consultant - Pension Consulting Alliance** – Mr. Sancewich reported details of the merger between Meketa Investment Group and Pension Consulting Alliance and requested that the Board consider authorizing execution of a letter consenting to Meketa providing continued professional services to PFRS. Legal Counsel Pelayo Llamas suggested that the Board perform some due diligence investigation into Meketa and the merger based on independent information. Member Godfrey proposed that a few PFRS Board members and staff travel to the Portland, OR office of the new company to perform an on-site inspection. Following discussion between the PFRS Board and PCA, member Godfrey made a motion to authorize a site visit and to accept the report regarding a change in management and ownership of PFRS Investment Consultant, second by Member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAIN – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

- E7. Resolution No. 7035 - Resolution authorizing exercise of a one-year option to extend the agreement with Fisher Investment to provide International Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing February 16, 2019 through February 16, 2020** – Member Godfrey made a motion to approve Resolution No. 7035 - Resolution authorizing exercise of a one-year option to extend the agreement with Fisher Investment to provide International Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing February 16, 2019 through February 16, 2020, second by Member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAIN – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

- E8. Resolution No. 7036 - Resolution authorizing exercise of a one-year option to extend the agreement with Earnest Partners to provide Mid Cap Core Domestic Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing March 24, 2019 through March 24, 2020** – Member Godfrey made a motion to approve Resolution No. 7036 - Resolution authorizing exercise of a one-year option to extend the agreement with Earnest Partners to provide Mid Cap Core Domestic Equity asset class investment manager services for the City of Oakland Police and Fire Retirement System Board commencing March 24, 2019 through March 24, 2020, second by member Melia. Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAIN – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

F. Member Resolutions – Member Speakman made a motion to approve Resolution No. 7043 – a Resolution approving death benefit payments and directing warrants thereunder in the total sum of \$1,000.00 payable to the beneficiaries of deceased members as follows: (1) Estate of Frederick R. Lietzke, (2) Estate of Melvin Lawrence, and (3) Steven Moyles, second by member Muszar, Motion passed.

[GODFREY – Y / JOHNSON – Y / KASAINÉ – Y / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 6 / NOES: 0 / ABSTAIN: 0)

G. NEW BUSINESS – No Report.

H. OPEN FORUM – No Report.

I. FUTURE SCHEDULING – The next PFRS Board meeting was scheduled for Wednesday, February 27, 2019.

The meeting adjourned at 12:31 pm.

DAVID JONES, BOARD SECRETARY

DATE



A G E N D A R E P O R T

TO: Oakland Police and Fire
Retirement Board

FROM: David Jones

SUBJECT: An Analysis of Other Pay and Benefits
Received by Active Officers based on the
current OPMA MOU

DATE: February 19, 2019

BACKGROUND

At the November 28, 2018 Board Meeting of the Oakland Police and Fire Retirement System ("PFRS"), staff presented a report to the PFRS Board regarding Holiday Pay for PFRS Police members in the ranks of Captain and Deputy Chief. The PFRS Agenda Report recommended a revised methodology to calculate Retiree Holiday Pay benefits for PFRS police members in the ranks of Captain and Deputy Chief based on the Oakland Police Management Association (OPMA) MOU in effect from 2015 - 2019. Staff also recommended that the Board find that the "Floating Holiday" benefit offered to active police in these ranks is not compensation attached to rank for PFRS police retirees.

The PFRS Board passed a motion adopting Resolution No. 7030, thereby implementing staff's recommended methodology to prospectively calculate (fiscal year 2018-2019) the retiree Holiday Pay compensation for PFRS police members who are classified in the ranks of Captain and Deputy Chief as detailed in Resolution No. 7030 (with each rank calculated separately) effective in the February 1, 2019 allowance payment for the month of January 2019. Resolution No. 7030 also disallowed the Floating Holiday benefit as compensation attached to rank. This report is brought according to the Board's motion directing staff to come back to a future meeting with a report addressing any other elements of the OPMA MOU (aside from base pay, holiday pay, uniform allowance, and longevity pay) that could be construed as compensation attached to the rank for the purpose of calculating retirement allowances of PFRS police retirees classified in the ranks of Captains and Deputy Chiefs.

EXECUTIVE SUMMARY

The purpose of this report is to provide information so that the Board may consider if any of the pay and/or benefit elements included in the OPMA MOU (aside from base pay, holiday pay, uniform allowance, and longevity pay) constitute compensation attached to rank for the purpose of calculating retirement allowances of PFRS police retirees classified in the ranks of Captain and/ or Deputy Chief. A December 12, 2018 correspondence from the attorneys for the Retired Oakland Police Officer's Association's ("ROPOA") asserted that the following elements in the OPMA MOU are compensation attached to rank for PFRS police captains and deputy chiefs, and should be included in retiree allowances. (**Exhibit H - ROPOA letter**)

PFRS Board Meeting
February 27, 2019

1. Cashout of Vacation Accrual (Vacation Buy Back).
2. Management Leave Pay.
3. Education Incentive 5% Premium Pay for obtaining a Bachelor's Degree.
4. Peace Officer Standards and Training (POST) Management Certificate 5% Premium Pay.

APPLICABLE PRINCIPLES AND HISTORY

In order to facilitate the Board's understanding of the claims, data, and issues raised, the fundamental principles applicable to PFRS police retiree allowances and benefits are summarized in this section.

A. THE PFRS FLUCTUATING RETIREMENT BENEFIT SYSTEM.

The PFRS retirees receive a monthly allowance based on a fraction of the compensation attached to the average rank held by each retiree during his final three years of active service. (City Charter section 2607 and 2608) By tying a retiree's benefits to the compensation "attached" to the rank of active duty police officers holding the same rank, the Charter established a fluctuating pension system in which pension compensation increases or decreases as the compensation paid to active employees increases or decreases. This fluctuation maintains a direct linkage between retirement allowances and active duty police officer pay. The primary purpose of a fluctuating pension plan is to guarantee the pensioner a fairly constant standard of living despite inflation, and to maintain equality of position between the retired member and the person (or persons) currently holding the rank the pensioner attained before his retirement. (Kreeft v. City of Oakland (1998) 68 Cal.App.4th 46, 54.)

City Charter section 2607 provides:

The following words and phrases, as used in this Article, unless a different meaning is plainly required by the context, shall have the following meaning:

"Retirement allowance," "Death allowance," or "allowance" shall mean equal monthly payments, beginning to accrue upon the date of retirement, or upon the day following the date of death, as the case may be, and continuing for life, unless a different term of payment is definitely provided by the context.

"Compensation" as distinguished from benefits under the Labor Code of the State of California, shall mean the monthly remuneration payable in cash, by the City, without deduction, for time during which the individual receiving such remuneration is a member of the Police or Fire Department, but excluding remuneration paid for overtime and for special details or assignments as provided

in Sections 91 and 97* of the Charter.

“Compensation attached to the average rank held” shall mean the compensation attached to the lowest rank held during the three years immediately preceding retirement plus one thirty-sixth (1/36) of the difference between it and the compensation attached to any higher rank held during that period of each month, and fraction thereof, the higher rank was held.

* This reference is to the Section or Article so designated in the former Charter.

Police pay for active officers includes a number of components such as base pay, overtime pay, holiday pay, vacation pay, uniform allowance, longevity pay, and premium pay (fractional increases above base pay that vary based on assignment or obtaining special educational certificates). These components vary with each periodic agreement negotiated between the City of Oakland and the OPOA or OPMA unions, and memorialized in Memoranda of Understanding (“MOU”).

There have been a multitude of lawsuits over whether certain of these pay components are “compensation attached to rank”, and if so how they should be included in the calculation of the Retirement Allowance of PFRS members. In Kreeft v. City of Oakland (1998) 68 Cal.App.4th 46, 55, the First District Court of Appeal interpreted Charter section 2607 and held that for an element of compensation to be “attached” to rank, “the compensation must ‘adhere to’ the rank ‘as an appertaining quality or circumstance.’ That is, **the employee must be entitled to the compensation by virtue of the rank, and not his individual efforts over and above what are required to obtain the rank.**” Kreeft at p. 58. (emphasis added)

Currently, PFRS police retirees of all ranks (except Chiefs or their equivalent) receive the following elements of pay, as confirmed by case law:

- Base pay
- Holiday Pay (OPFRS 2014¹, Buck², Arca II³)
- Longevity Pay (aka Special Premium Pay in Arca I⁴)
- Uniform Allowance (Buck)

Over the years, courts have determined that the following types of premium pay or benefits were not compensation attached to rank for PFRS police retirees:

¹ City of Oakland v Oakland Police and Fire Retirement System (2014, First District, Division Four) 224 Cal.App.4th 210 and Alameda County Superior Court Action No. RG11580626.

² Frank Buck et al v City of Oakland et al California Court of Appeal No. 1 Civ. 28402 (8/25/1971 First District, Division Four) and Alameda County Superior Court Action No. 396386.

³ Oakland Police and Fire Retirement Association and Jon Arca v City of Oakland et al Alameda County Superior Court Action No. 763859-0, Class Action Settlement entered August 30, 1996.

⁴ Jon Arca et al v City of Oakland et al, Alameda County Superior Court Action No 579832-8. Class action lawsuit. Judgment entered November 9, 1984; Statement of Decision August 16, 1984.

- shift differential pay (OPFRS 2014)
- overtime pay (Arca I)
- self-improvement pay (aka education incentive in Arca I, Sever⁵)
- voluntary day off for pay (Arca I)
- motorcycle premium pay (Arca I)
- standby pay (Arca I)
- field training officers' pay (Arca I),
- meal allowance (Arca I)

ANALYSIS

Current ranks within the police department (in ascending order) are officer, sergeant, lieutenant, captain, deputy chief, assistant-chief and chief of police. The ranks below captain are unionized and represented by the Oakland Police Officers Association "OPOA." The ranks of captain and deputy chief are unionized and represented by the Oakland Police Management Association "OPMA." Prior to 2006, the unionized ranks were all within the OPOA. In large part, the MOU terms were identical for said ranks, except captains and deputy chiefs are not entitled to overtime.

The City Council passed Resolution No. 80211 on October 17, 2006 providing a mechanism for removing sworn police management employees from the OPOA. This was followed by a November 20, 2006 letter from the City Administrator to the president of the OPOA, stating the City Administrator's decision to place those employees holding the ranks of captain and deputy chief into a separate bargaining unit (to be referred to as "UN2" in the MOUs) and becoming the subject of a separate MOU starting July 1, 2006. These ranks formed the OPMA. Since then, the City and OPMA have entered into three MOUs (effective 2006-2015, 2015-2019, and 2019 – 2024). This analysis focuses on the provisions of the 2006-2015 and 2015-2019 OPMA MOUs.

A. CASHOUT OF ACCRUED VACATION HOURS

The ROPOA has asserted "*Vacation Buy Back - 120 hours: This is a cash benefit payable to all active captains, deputy chiefs, and the Chief of Police meaning its and is clearly compensation attached to the rank. No individual effort is required to obtain this benefit*". (**Exhibit H - ROPOA letter**)

The OPMA MOU states that employees may sell back up to 120 hours of accrued vacation leave each calendar year, and ROPOA asserts that PFRS police retirees should receive this as part of their retirement allowance. Staff disagrees. This benefit is not tied to any particular rank, and

⁵ Francis Sever et al v City of Oakland et al; California Court of Appeal No. A098727 (11/27/2000, First District, Division Four) and Alameda County Superior Court Action No. 791693-1. Class Action status granted October 1, 1998.

varies greatly between individuals (regardless of rank) depending on how many years an employee has worked, and how much vacation time he or she takes off each year.

Per the OPMA MOU, an employee may only sell back the vacation as long as the employee has taken at least forty (40) hours of vacation leave during the prior preceding calendar year and must have a residual accrued balance of at least one (1) year after the sell back has occurred (See **Exhibits A** - page 9 attached hereto). Thus, a sworn employee is not eligible to participate in vacation sell back if he or she does not meet the criteria. In fact, a review of the actual active police payroll records over the past four years (2015-2019) showed that most active police captains and deputy chiefs did not sell back any vacation. PFRS Retirees would not meet the accrued vacation minimum threshold needed to cash out vacation. Additionally, retirees are paid the cash equivalent of their accrued vacation upon retirement and therefor have no accrued balances

There is no legal authority supporting the treatment of vacation pay as compensation attached to rank. Furthermore, staff research has shown that vacation accrual, use (taking paid vacation days off), and cash out are highly varied per individual. The amount of vacation accrual varies depending on the number of years of service, the amount of vacation actually used per year, and the criteria for buy back as stated in the active police employee's MOU. This variation is incongruent with the "attached to rank" criteria set forth in Kreeft ("must adhere to the rank as an appertaining quality or circumstance"). On the contrary, the evidence indicates that vacation cash out has absolutely no correlation with rank. Staff's recommendation is that there is currently insufficient evidence and legal basis to support a finding that the "Vacation Buy Back - 120 hours" benefit is compensation attached to rank under the PFRS system.

B. MANAGEMENT LEAVE

The ROPOA has asserted "*Management Leave - 15 days (120 hours): On information and belief, the additional requirements for this leave is pro forma, and this leave can be banked and paid out in cash. Thus, this is a cash benefit payable to all active captains, deputy chiefs, and the Chief of Police meaning it attaches to the rank*" (**Exhibit H - ROPOA letter**)

Staff has researched Management Leave for the applicable sworn members (captains and deputy chiefs) in both the 2006-2015 and the 2015-2019 OPMA MOUs (See **Exhibits A** and **B** attached hereto.) Said MOUs contain identical language:

"Section VII.A. Management Leave

Management Leave may be granted pursuant to AI 516. (Appendix A for informational purposes)."

The details contained in Administrative Instruction (AI) 516 (See **Exhibit C** attached hereto.) indicate that Management Leave is not compensation attached to rank because an employee is not entitled to receive it "by virtue of the rank and not his individual efforts over and above what are required to obtain the rank." Kreeft at p. 58. The sworn OPMA ranks (UN2 - captains and deputy chiefs) may receive up to 10 days (not 15 days as asserted by ROPOA) of Management

Leave each Fiscal Year. If awarded, this Leave is credited at the straight time 1.0x rate, and is in addition to existing base pay. Once it is credited, an employee may take Management Leave as paid time off or may cash it out.

AI 516 states that Management pay may be granted for two reasons (1) zero to five days leave in lieu of overtime worked and (2) zero to five days leave for superior performance. For the applicable sworn ranks in the AI 516 (UN2) the award of Management Leave is completely discretionary and is based on individual efforts and merit.⁶ AI 516 specifies that for UN2, Management Leave cannot be awarded without the recommendation of the Department Head, review of the Director of Human Resources, and the approval of the City Administrator.

Staff position is that that Management Leave per AI 516 is not “compensation attached to the rank.” The first category “in lieu of overtime worked” is prohibited by the plain language of Charter section 2607, which excludes “overtime” from PFRS compensation. See Arca I. The second category of this pay based on “superior performance” is not compensation attached to rank under the Kreeft test, because it is based on individual efforts unrelated to rank.

A review of the Oakland Active Police members in the ranks of captain and deputy chief for FY 2017/2018 identified that a few officers in those ranks who worked the entire fiscal year, appeared to have been eligible to receive (10) days of management leave, but were only awarded (2) two days. Based on staff research and the applicable law, we believe that Management Leave for PFRS police retirees is either prohibited (if awarded in lieu of overtime) or is of a discretionary nature, based on personal performance, and is therefore not attached to the rank.

C. EDUCATION INCENTIVE PREMIUM PAY

The ROPOA has asserted “*Bachelor’s Degree – 5% of pay: ROPOA, on information and belief, believes that every active captain and deputy chief holds a bachelor’s degree, and that Bachelor’s Degrees are either actual or de-facto requirements for these ranks. This is a cash benefit and compensation attached to the rank for PFRS retirees.*” (**Exhibit H - ROPOA letter**)

OPMA MOU 2015-2019 section IX.A.2 (**Exhibit A** attached hereto) makes available to the ranks of captain or deputy chief a 5% premium over base pay for those who obtain a bachelor’s degree. Neither degree is a condition of employment or a minimum qualification for holding either of these ranks. There is nothing to indicate that this premium pay is given to a person ‘by virtue of the rank and not his individual efforts over and above what are required to obtain the rank.’” (Kreeft at p. 57-58.) Legal precedent supports this conclusion. In 1997, PFRS police retiree Francis Sever (and four others) sued to obtain an order compelling PFRS to add to their retirement allowances, the self-improvement premium pay they had received while on active duty, which they had qualified for by obtaining various educational degrees or certificates. Sever alleged that for PFRS, rank is not just a job title, but includes seniority level within a job that affects “compensation” while active. After certifying the lawsuit as a class action, the trial court judge denied the claim, finding that education incentive pay does not attach to rank. The Court of Appeal (See **Exhibit D** attached hereto) also disagreed with Sever, holding that Self-

⁶ For certain non-OPD management classifications in AI 516, a portion of the Management Leave is mandated.

Improvement Pay “is not given to every officer of a particular rank, but is available to anyone who earns a specific degree or certificate.” Relying on the holding of Kreeft, the Court of Appeal found that Sever was trying to create sub-ranks which are not found in the Charter. Also, because eligibility for this premium was based on one’s individual efforts, it was not attached to rank. There is no basis to depart from the Court’s decisions in Kreeft and Sever here, and the Board should conclude that the 5% premium for obtaining a Bachelor’s Degree is not compensation attached to rank for PFRS retirees.

D. P.O.S.T. MANAGEMENT CERTIFICATE PREMIUM PAY

The ROPOA has asserted *“POST Management Certificate – 5% of pay: It is undisputable that every active captain and deputy chief has qualified for a POST Management Certificate by virtue of their tenure in the Department and completion of required training. Every retired PFRS captain and deputy chief also holds a POST management Certificate and should be paid accordingly.”* (**Exhibit G - ROPOA letter**)

Peace Officer Standards and Training (POST) is an agency of the State of California which is tasked with developing a common set of standards and training to for all sworn peace officers in the State. POST also conducts trainings and courses on a variety of subjects for sworn peace officers. Among their classes they offer a POST Management Class and offer a Certificate of completion. The current OPMA MOU (see **Exhibit A** attached hereto) offers a 5% premium above base pay to a captain or deputy chief “who has obtained the POST Management certificate.”

Staff’s research into the job descriptions and criteria for captain and deputy chief, and other factual research, support a conclusion that POST Management Certificate premium pay is not compensation attached to the rank because captains and deputy chiefs are not entitled to the extra pay “by virtue of the rank and not his individual efforts over and above what are required to obtain the rank.” (Kreeft at p. 57-58.)

The City’s job specifications and recruitment announcements are inconsistent. According to their respective job specifications (**Exhibit E** attached hereto) a POST Management Certificate is required for the Deputy Chief classification. However, the POST Management certificate is not required for the Captain of Police rank. The POST Minimum Training Requirements (11 California Code of Regulations §1005 (which is not binding on the City) attached hereto as **Exhibit F**) states that an officer must meet some minimum requirements to qualify for this certificate. However, the City has different minimum requirements to qualify for a promotion to the Deputy Chief provision. As a result, it is possible for a deputy chief to hold the rank and not have the POST management certificate. In other words, obtaining the certificate is not a requirement to obtain the ranks of captain or deputy chief. Furthermore, staff’s factual research revealed that some deputy chiefs do not possess a POST Management certificate.

POST’s own criteria contain a sliding scale of variables by which one can obtain the qualifications to receive a POST Management Certificate. There is overlap between years/credits of post-secondary education, of training points, of law enforcement experience, etc. (See POST

Commission Regulations 11 CCR § 1011(a)(10), attached hereto as **Exhibit G**) Additionally, POST's criteria do not mention holding a certain "rank" as a criteria for the certificate.

Aside from the inconsistencies between various documents from human resources and POST, research into the City's actual practices currently in place revealed that some active Oakland police deputy chiefs do not possess a POST Management Certificate. This shows that ROPOA's "indisputable" assertion is clearly unsupported by the facts – qualification for POST Management Certificates is not ubiquitous among active OPD captains and deputy chiefs.

No legal decision or authority supports finding that POST Management Certificate premium pay is compensation attached to rank for PFRS retirees. Because possession of such a certificate is not a minimum qualification to be promoted to or to maintain the ranks of police captain or deputy chief, this premium appears to be another form of education incentive pay, and under the Sever decision, would not be compensation attached to rank. In 2007, the San Francisco Superior Court denied a virtually identical claim made by the Veteran Police Officers Association which claimed that retirement pay should be increased for some police retirees after the San Francisco Charter was amended to create additional ranks for active officers who qualified for and obtained POST Intermediate and Advanced certificates. Citing to the Kreeft decision, the San Francisco Superior Court found in 2007 that these additional pay classifications were in recognition of additional training and educational accomplishments tied to efforts and not to rank. See Veteran Police Officers Association et al v Retirement Board of the City and County of San Francisco et al, San Francisco Superior Court Action No. CGC-02-043550 and CPF-02-500548 filed 2002.

Staff research concludes that this this premium pay is not compensation attached to the rank.

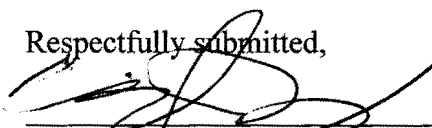
CONCLUSION

Staff has researched Cash Out of accrued Vacation pay, awarded Management Leave, , Education Incentive Premium Pay, and POST Management Certificate Premium Pay, and concluded based on our research and applicable legal principles that these pay elements are not compensation attached to the rank for PFRS retirees.

1. Cashout of Vacation Accrual is not compensation attached to the rank for any PFRS police retirees because vacation accrual, usage, and cashout are highly varied among active police, is unrelated to rank, and do not necessarily increase base compensation.
2. Management Leave is not compensation attached to the rank for Captains and Deputy Chiefs PFRS retirees, because the Charter prohibits using overtime pay towards compensation attached to rank, and it is otherwise based on varied individual performance.

3. Education Incentive 5% Premium Pay for obtaining a Bachelor's Degree is not compensation attached to the rank because it has been disallowed by the Sever court decision, such degree is not a job requirement, and is based on individual efforts unrelated to rank.
4. Peace Officer Standards and Training (POST) Management Certificate 5% Premium Pay is not compensation attached to the rank for PFRS Captain and Deputy Chief retirees because it is a type of education incentive pay disallowed by the Sever court decision, such Certificate is not a job requirement, and is based on individual efforts unrelated to rank.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

For questions please contact Teir Jenkins, Investment Officer, at 510-238-6481.

Attachments (8):

1. **Exhibit A:** OPMA MOU "Management Leave" - Effective July 1, 2015 through June 30, 2019
2. **Exhibit B:** OPMA MOU "Management Leave" - Effective July 1, 2006 through June 30, 2015
3. **Exhibit C:** City of Oakland Administrative Instruction (AI) 516 effective May 16, 2011
4. **Exhibit D:** Francis Sever et al v. City of Oakland et al (2000) Court of Appeal for the State of California (First District) Case # A089727.
5. **Exhibit E:** City of Oakland Captain and Deputy Chief Job specifications
6. **Exhibit F:** 11CCR§1005, POST Minimum Standards For Training
7. **Exhibit G:** 11CCR§1011, POST Management Certificate Criteria
8. **Exhibit H:** Interim Response from Retired Oakland Police Officers Association to November 28, 2018 PFRS Agenda Report – *"A report regarding the method of calculating PFRS Police Retiree Holiday Pay for Captains and Deputy Chiefs; And a Resolution Adopting a Revised Method for Calculating Police Holiday Retirement Allowances for Captains and Deputy Chiefs"*, McCracken, Stemerman & Holsberry, LLP, December 12, 2018.

EXHIBIT A

**OAKLAND POLICE MANAGEMENT ASSOCIATION
MEMORANDUM OF UNDERSTANDING EFFECTIVE
JULY 1, 2015 THROUGH JUNE 30, 2019
(EXCERPT)**

MEMORANDUM OF UNDERSTANDING

Between

CITY OF OAKLAND

And

OAKLAND POLICE MANAGEMENT ASSOCIATION

Effective July 1, 2015 through June 30, 2019

- c. Any modification of section 1 hereinabove, specifically health plans, providers, premiums, or benefits are subject to mutual agreement of the parties.

B. Dental Insurance

For Department employees, OPOA will continue to provide dental insurance. Upon verification by Delta Dental the City shall contribute the amount the City would be required to pay to obtain the current benefit level under a plan covering active employees administered by the City through Delta Dental. Until such time as verification is provided, the City shall continue to pay one hundred thirty six dollars and eighty-seven cents (\$136.87) per month per employee to OPOA.

Both parties agree to provide all waivers necessary to determine and verify the appropriate amount of the City's contribution. The City agrees to provide the OPOA with Delta Dental's written estimate of premiums.

The parties agree that for the purposes of establishing the dental benefit / premium obligation for the term of the MOU (2015 – 2019), that they will continue to negotiate and if no agreement is reached within 120 days, the matter will be submitted to binding arbitration.

C. Life Insurance

The City agrees to contribute the amount of twelve dollars (\$12.00) per month per represented employee toward the cost of employee life insurance coverage.

ARTICLE VII LEAVES AND HOLIDAYS

A. Management Leave

Management Leave may be granted pursuant to AI 516 (Appendix A for informational purposes).

B. Vacation Leave

1. Benefit

- a. Employee shall be credited with vacation leave from the date of his/her appointment by the City as a member of the Police Department, at the rates enumerated in subsections (i) through (iv) below. Such leave shall be at his/her base

by the City. Further, employees shall be entitled to a voucher only in accordance with the normal schedule for replacement of body armor, unless otherwise approved by the Chief of Police or his/her designee.

ARTICLE IX SELF IMPROVEMENT INCENTIVES

City and Association recognize the importance and the desirability of creating self-improvement incentives to motivate employees to upgrade their skills and develop their careers throughout the department, resulting in mutual benefits to the employee and to the City. It is agreed by the parties that these objectives can best be met through special training and continuing higher education. To this end, the following incentives are established. Effective July 1, 2008, these incentives will be treated as separate incentives.

A. Education Incentives

1. P.O.S.T. Management Certificate

Effective July 1, 2008, a bargaining unit member covered by this MOU who has obtained the Post Management Certificate shall receive five percent (5%) of his/her regular base salary. Employees who qualify shall be eligible beginning with the first full pay period after submission of verification of eligibility.

2. Bachelor's Degree

Effective July 1, 2008, a bargaining unit member covered by this MOU who has obtained a Bachelor's degree from an accredited college or university shall receive an additional five percent (5%) of his/her regular base salary. Employees who qualify shall be eligible beginning with the first full pay period after submission of verification of eligibility.

3. Masters Degree

Effective July 1, 2008, a bargaining unit member covered by this MOU who has obtained a Master's degree from an accredited college or university shall receive an additional five percent (5%) of his/her regular base salary. Employees who qualify shall be eligible beginning with the first full pay period after submission of verification of eligibility.

B. Tuition Reimbursement

The City shall reimburse, upon notice of completion, an employee for the cost of a job-related academic course, approved in advance by the Chief of Police or his/her designated representative, in accordance with the following table:

GRADE REIMBURSEMENT:

- A - 100% of the cost of a course.
- B - 75% of the cost of a course.
- C - 50% of the cost of a course.

An employee failing or not completing a course, or receiving a grade lower than C, shall not be reimbursed. In the event that the course is graded on a Pass/Fail basis, reimbursement shall be made at fifty percent (50%) of the cost of the course. An employee shall be allowed to take up to two (2) courses eligible for reimbursement at any one time. The combined cost of the courses shall not exceed the cost of part-time enrollment (0-6 units) in the California State University System at the current tuition rate (semester and quarter). The employee shall be required to provide proof of registration costs at the time they seek reimbursement.

Tuition Reimbursement will be paid through regular payroll check or in a manner specified by the City.

C. Bilingual Pay

An employee who has been certified as a bilingual speaker by the Office of Personnel shall receive an additional Fifty Dollars (\$50.00) per pay period. Bilingual pay may be discontinued if and when the Chief of Police or his/her designee determines that an employee receiving bilingual pay is in an assignment that does not have significant public contact with speakers of the qualifying languages. Determinations made by the Chief of Police and his/her designee under this provision shall not be subject to the grievance procedure.

ARTICLE X SPECIAL PROVISIONS

A. Employee Health Assistance Programs

1. Psychological Counseling

The City agrees to provide the services outlined and detailed in the attached exhibit Appendix C, for the term of this agreement. The City agrees to maintain confidentiality of medical records as provided by law. No data concerning this information or participation in any approved employee assistance program will be made part of the bargaining unit member's personnel file or will be provided to any party without the written consent of the bargaining group member.

2. Substance Abuse Treatment Program

a. Substance Abuse Counseling

The City agrees to provide the services outlined and detailed in the attached exhibit Appendix C, for the term of this agreement.

EXHIBIT B

**OAKLAND POLICE MANAGEMENT ASSOCIATION
MEMORANDUM OF UNDERSTANDING EFFECTIVE
JULY 1, 2006 THROUGH JUNE 30, 2015
(EXCERPT)**

MEMORANDUM OF UNDERSTANDING
Between
CITY OF OAKLAND
and
OAKLAND POLICE MANAGEMENT ASSOCIATION



July 1, 2006 through June 30, 2015

amount equal to one hundred percent (100%) of the premium cost of employee and dependent health insurance coverage in the applicable Bay Area Kaiser (PEMHCA) plan.

B. Dental Insurance

For Department employees, OPOA will continue to provide dental insurance. Upon verification by Delta Dental the City shall contribute the amount the City would be required to pay to obtain the current benefit level under a plan covering active employees administered by the City through Delta Dental. Until such time as verification is provided, the City shall continue to pay one hundred thirty six dollars and eighty-seven cents (\$136.87) per month per employee to OPOA.

Both parties agree to provide all waivers necessary to determine and verify the appropriate amount of the City's contribution. The City agrees to provide the OPOA with Delta Dental's written estimate of premiums.

C. Life Insurance

The City agrees to contribute the amount of twelve dollars (\$12.00) per month per represented employee toward the cost of employee life insurance coverage.

ARTICLE VII LEAVES AND HOLIDAYS

A. Management Leave

Management Leave may be granted pursuant to AI 516 (Appendix A for informational purposes).

B. Vacation Leave

1. Benefit

- a. Employee shall be credited with vacation leave from the date of his/her appointment by the City as a member of the Police Department, at the rates enumerated in subsections (i) through (iv) below. Such leave shall be at his/her base rate of pay, plus any applicable premium rate of pay and/or self-improvement incentive pay.
 - (i) One hundred twenty hours (120 hours) per year through the first ten (10) continuous years of service.
 - (ii) One hundred forty-four hours (144 hours) per year beginning with the eleventh (11th) year of service, up to and including the thirteenth (13th) continuous full year of service.

ARTICLE VIII ALLOWANCES

A. Annual Uniform Allowance

Effective the first pay period after July 1, 2008, the City shall provide an annual uniform allowance of eight hundred dollars (\$800.00) to represented employees covered by this Memorandum.

In the event that an employee separates from City service, for whatever cause (except in the case of death resulting from on-the-job injury), during the fiscal year for which the annual uniform allowance has been paid, such payment shall be adjusted on a pro rata basis in relationship to the period of service in the final fiscal year of employment.

The annual Uniform Allowance shall be paid in combination with Longevity Premium Pay, as a separate check.

B. Uniform Boots

An employee who becomes regularly assigned as a motorcycle officer after the effective date of this MOU shall receive one pair of approved boots which shall meet specifications set forth in the pertinent Police Department General Order.

C. Body Armor

Employees who elect to purchase body armor in-lieu-of standard City issued body armor shall receive a voucher for the cost of standard City issued body armor provided however that all body armor worn by employees and eligible for reimbursement under this provision must meet minimum safety requirements set by the City. Further, employees shall be entitled to a voucher only in accordance with the normal schedule for replacement of body armor, unless otherwise approved by the Chief of Police or his/her designee.

ARTICLE IX SELF IMPROVEMENT INCENTIVES

City and Association recognize the importance and the desirability of creating self-improvement incentives to motivate employees to upgrade their skills and develop their careers throughout the department, resulting in mutual benefits to the employee and to the City. It is agreed by the parties that these objectives can best be met through special training and continuing higher education. To this end, the following incentives are established. Effective July 1, 2008, these incentives will be treated as separate incentives.

A. Education Incentives

1. P.O.S.T. Management Certificate

Effective July 1, 2008, a bargaining unit member covered by this MOU who has obtained the Post Management Certificate shall receive five percent (5%) of his/her regular base salary.

Employees who qualify shall be eligible beginning with the first full pay period after submission of verification of eligibility.

2. Bachelor's Degree

Effective July 1, 2008, a bargaining unit member covered by this MOU who has obtained a Bachelor's degree from an accredited college or university shall receive an additional five percent (5%) of his/her regular base salary. Employees who qualify shall be eligible beginning with the first full pay period after submission of verification of eligibility.

3. Masters Degree

Effective July 1, 2008, a bargaining unit member covered by this MOU who has obtained a Master's degree from an accredited college or university shall receive an additional five percent (5%) of his/her regular base salary. Employees who qualify shall be eligible beginning with the first full pay period after submission of verification of eligibility.

B. Tuition Reimbursement

The City shall reimburse, upon notice of completion, an employee for the cost of a job-related academic course, approved in advance by the Chief of Police or his/her designated representative, in accordance with the following table:

GRADE REIMBURSEMENT:

- A - 100% of the cost of a course.
- B - 75% of the cost of a course.
- C - 50% of the cost of a course.

An employee failing or not completing a course, or receiving a grade lower than C, shall not be reimbursed. In the event that the course is graded on a Pass/Fail basis, reimbursement shall be made at fifty percent (50%) of the cost of the course. An employee shall be allowed to take up to two (2) courses eligible for reimbursement at any one time. The combined cost of the courses shall not exceed the cost of part-time enrollment (0-6 units) in the California State University System at the tuition rate applicable as of Spring 2008 (semester and quarter). The employee shall be required to provide proof of registration costs at the time they seek reimbursement.

Tuition Reimbursement will be paid through regular payroll check or in a manner specified by the City.

C. Bilingual Pay

An employee who has been certified as a bilingual speaker by the Office of Personnel shall receive an additional Fifty Dollars (\$50.00) per pay period. Bilingual pay may be discontinued if and when the Chief of Police or his/her designee determines that an employee receiving bilingual pay is in an assignment that does not have significant public

EXHIBIT C

**CITY OF OAKLAND
ADMINISTRATIVE INSTRUCTION NO 516
MANAGEMENT, PROFESSIONAL AND EXECUTIVE LEAVE**

CITY OF OAKLAND



ADMINISTRATIVE INSTRUCTION

SUBJECT	Management, Professional & Executive Leave	NUMBER	516
REFERENCE	Ordinance No. 12903 C.M.S. and Ordinance No. 12918 C.M.S.	EFFECTIVE	May 16 2011
SUPERSEDE	AI 516 Dated June 1, 2010		

I. PURPOSE

This Administrative Instruction sets forth the policies and procedures for awarding Management/ Professional Leave and Executive Leave to eligible employees, in accordance with the Memoranda of Understanding (MOU) between the City and the respective bargaining units; and City Council Ordinances No. 12903 C.M.S. and No. 12918 C.M.S.

II. POLICY

MANAGEMENT OR PROFESSIONAL LEAVE. Management or Professional Leave is a paid leave, fringe benefit that may be awarded to employees in representation units UK1, UM1, UM2, UN1, UN2, UR1, UU1, TM2, U31, and U51 (Management Leave); and TM1, U41, (Professional Leave). Management or Professional Leave, unless otherwise noted, is retroactively granted on July 1 based upon the employee's work/performance during the prior fiscal year. This award may be granted to an individual for two reasons: (a) leave in lieu of overtime hours worked and/or (b) leave for superior performance. A total of ten (10) days maximum may be granted each fiscal year (this amount is prorated for employees hired after July 1 of the preceding year).

Represented employees in units TM2, UM1, UM2, and U41 may cash out up to ten (10) days of Management Leave each fiscal year at the discretion of the employee; Management Leave not used or cashed out will be carried forward to the next fiscal year, subject to limitations detailed under "Use of Management Leave" below.

Represented employees in Units TM1, TM2, UM1, UM2 and U41, shall be awarded five (5) days of Management Leave July 1st of each year, as set forth in the MOU, and may be awarded up to an additional five (5) days for overtime worked or superior performance. For employees in units UK1, UN1, UN2, UR1, UU1, U51 ("unrepresented") and U31, a maximum of ten (10) days Management Leave may be granted to employees who work irregular hours or who demonstrated superior performance during the eligibility period. Department recommendations for Management or Professional Leave awards must be reviewed by the Director of Human Resources and approved by the City Administrator.

EXECUTIVE LEAVE. Executive Leave is a paid leave, fringe benefit that the City Administrator may award as a hiring incentive to new agency or department heads. Executive Leave may be awarded for up to ten (10) days and must be documented in a hiring agreement, a copy of which shall be kept in the employee's personnel file.

Executive Leave must be used in the year in which it is awarded, although the provisions of Ordinances 12903 C.M.S. and 12918 C.M.S. allow the City Administrator to permit an employee to carry over Executive Leave for up to two years from their date of hire if the employee is not able to use the leave because the employee's services are or were needed on a time-sensitive or urgent project.

III. DEFINITIONS

A. MANAGEMENT OR PROFESSIONAL LEAVE

<u>Term</u>	<u>Definition</u>												
Management or Professional Leave Eligibility Period	The eligibility period for Management or Professional Leave is July 1 through June 30. An employee's award is based on overtime worked and superior performance during the eligibility period and is awarded retroactively the July 1 <i>following</i> the eligibility period.												
Management or Professional Leave in Lieu of Overtime for Units UK1, UN1, UR1, UU1, UN2, U31, and U51	May be granted on July 1 from zero to five (5) days based upon the prior year's work schedule and upon the recommendation of the Department/Agency Head, review of the Director of Human Resources, and with final approval from the City Administrator. If the employee was hired during the fiscal year, the following proration schedule applies to Management Leave awards (these awards are granted on July 1 following the date of hire): <table> <tr> <th><u>Date of Hire between:</u></th><th><u>Days Awarded:</u></th></tr> <tr> <td>July 1 and Sept. 12</td><td>5</td></tr> <tr> <td>Sept. 13 and Nov. 24</td><td>4</td></tr> <tr> <td>Nov. 25 and Feb. 7</td><td>3</td></tr> <tr> <td>Feb. 8 and Apr. 19</td><td>2</td></tr> <tr> <td>Apr. 20 and Jun. 30</td><td>1</td></tr> </table> <p>If an individual's employment is terminated during the fiscal year for any reason, he/she will not be awarded any prorated Management or Professional Leave for that fiscal year.</p>	<u>Date of Hire between:</u>	<u>Days Awarded:</u>	July 1 and Sept. 12	5	Sept. 13 and Nov. 24	4	Nov. 25 and Feb. 7	3	Feb. 8 and Apr. 19	2	Apr. 20 and Jun. 30	1
<u>Date of Hire between:</u>	<u>Days Awarded:</u>												
July 1 and Sept. 12	5												
Sept. 13 and Nov. 24	4												
Nov. 25 and Feb. 7	3												
Feb. 8 and Apr. 19	2												
Apr. 20 and Jun. 30	1												
Management Leave in Lieu of Overtime for Units TM2, UM1, UM2, U41, and TM1	Represented employees in Units TM2, UM1 and UM2 shall be awarded five (5) days of Management Leave July 1st of each year, as set forth in the MOU. If an individual's employment is terminated prior to July 1 and during the fiscal year for any reason, he/she will not be awarded any Management Leave for that fiscal year.												
Management or Professional Leave for Superior Performance	If the employee has sustained performance at a superior level the prior fiscal year and the employee's performance appraisal of April 30 of that year supports it, an additional zero to five (5) days of												

for units TM1, TM2, UM1, UM2, UK1, UN1, UR1, UU1, UN2, U31, U41, and U51

Management or Professional Leave may be granted on July 1 at the discretion of the Department/Agency Head and with approval of the City Administrator. The prorating schedule listed below for superior performance is not required for the Local 21 bargaining units.

If the employee was hired during the fiscal year, the award for **Superior Performance** should not exceed the following proration schedule (awarded retroactively July 1):

<u>Date of Hire between:</u>	<u>Maximum Days Awarded:</u>
July 1 and Sept. 12	5
Sept. 13 and Nov. 24	4
Nov. 25 and Feb. 7	3
Feb. 8 and Apr. 19	2
Apr. 20 and Jun. 30	1

If an individual's employment is terminated prior to July 1 and during the fiscal year for any reason, he/she will not be awarded any Management Leave for that fiscal year

Use of Management Leave for Units TM2, UM1, UM2, and U41

Represented employees in units TM2, UM1, UM2, and U41 may cash out up to ten (10) days of Management Leave each fiscal year at the discretion of the employee; Management Leave not used or cashed out will be carried forward to the next fiscal year, subject to the following limitations:

- a) In fiscal years 2009-10 and 2010-11, represented employees in units TM2, UM1, UM2, and U41 with a carry forward balance of 150-200 hours as of June 30, 2009 shall be entitled to cash out accrued Management Leave in an amount not to exceed fifteen (15) days in each fiscal year.
- b) In fiscal years 2009-10 and 2010-11, represented employees in units TM2, UM1, UM2, and U41 with a carry forward balance greater than 200 hours as of June 30, 2009 shall be entitled to cash out accrued Management Leave in an amount not to exceed twenty-five (25) days in each fiscal year.
- c) Effective June 30, 2011, represented employees in units TM2, UM1, UM2, and U41 with a Management Leave balance of 200 hours or greater as of June 30, 2009 may carry forward twenty (20) days on June 30, 2011. For all other employees, the maximum amount of Management Leave that may be carried forward is ten (10) days.

Use of Management or Professional Leave for units TM1, UK1, UN1, UN2, UR1, UU1, U31, and U51

Prior balances may be carried forward into Fiscal Year 2009-2010. Management Leave not used or cashed out will be carried forward to the next fiscal year, subject to the following limitations:

- a) In fiscal years 2009-10 and 2010-11, unrepresented employees in units TM1, UK1, UN1, UN2, UR1, UU1, U31, and U51 with a carry forward balance of

150-200 hours as of June 30, 2009 shall be entitled to cash out accrued Management Leave in an amount not to exceed fifteen (15) days in each fiscal year.

- b) In fiscal years 2009-10 and 2010-11, unrepresented employees in units TM1, UK1, UN1, UN2, UR1, UU1, U31, and U51 with a carry forward balance greater than 200 hours as of June 30, 2009 shall be entitled to cash out accrued Management Leave in an amount not to exceed twenty-five (25) days in each fiscal year.
- c) Effective June 30, 2011, unrepresented employees in units TM1, UK1, UN1, UN2, UR1, UU1, U31, and U51 with a Management Leave balance of 200 hours or greater as of June 30, 2009 may carry forward twenty (20) days on June 30, 2011. For all other employees, the maximum amount of Management Leave that may be carried forward is ten (10) days.

B. EXECUTIVE LEAVE

Executive Leave as a
Hiring Incentive
UK1, UN1, UR1, UU1

May be awarded to new agency or department heads at the time of hire and memorialized in a written hiring agreement maintained in the employee's personnel file. Leave may be awarded for zero (0) to ten (10) days as an incentive for new executive management employees. Executive Leave is awarded at the sole discretion of the City Administrator.

Use of Executive Leave

Executive Leave must be used in the year in which it is awarded or it will be forfeited unless the City Administrator allows an employee to carry over Executive Leave for a maximum of two years from the employee's date of hire if the employee is not able to use Executive Leave because the employee's services are or were needed on a time-sensitive or urgent project. The determination must be in writing and a copy of the determination must be placed in the employee's personnel file. A separate determination must be made for each employee and for each fiscal year for which the leave balance is being carried forward.

IV. PROCEDURES

Responsible Party

FMA/ Payroll

Action

1. Enters Management or Professional Leave award of five (5) days (or prorated amount based on the date of hire) into Oracle Payroll system for represented employees in Units TM2, UM1 and UM2 July 1 of each year.
2. By May 15 of each year, distributes a report to each Department Head that provides (a) the current Management or Professional Leave balances for its employees; (b) a Management or Professional Leave Worksheet displaying all

employees within the organization who are eligible for Management or Professional Leave and the maximum possible award days for each eligible employee; and (c) the prior year's Management or Professional Leave award for eligible employees.

3. Instructs Department Heads to indicate their recommendation for awarding eligible employees leave (a) in lieu of overtime, and/or (b) for superior performance, and to forward recommendations to the Director of Human Resources for review by June 1 of each year.
4. Upon receipt of the City Administrator's approval of employees to whom Management or Professional Leave is to be granted, enters Management or Professional Leave awards into the Oracle Payroll system. Awards are reflected on the paycheck stubs for the second pay period of July.
5. Enters Executive Leave award into the Oracle Payroll system upon receipt of written hiring agreements that specify the Executive Leave awarded.

Department Head

1. Reviews reports provided by Payroll of outstanding Management or Professional Leave balances and informs employees of amounts remaining to be taken or cashed out.
2. By June 1 of each year, reviews Payroll reports of department employees eligible to receive Management or Professional Leave. Makes recommendation for current year award for the two types of Management or Professional Leave, provides copies of current year performance appraisals to support "Superior Performance" leave awards, and submits to the Department of Human Resources for review.

Department of Human
Resources

1. By June 15 of each year, reviews Department Heads' recommendations for Management or Professional Leave awards.
 - a. Ensures compliance with MOUs, City Ordinances, and this Administrative Instruction;
 - b. Ensures that eligible employees' current year performance appraisals support "Superior Performance" Management or Professional Leave awards;
 - c. Annotates any concerns on the form provided by Department Heads; and
 - d. Forwards reviewed forms to the City Administrator's Office.
2. Ensures that hiring agreements are maintained in employees' personnel files.
3. Provides written hiring agreements to Payroll that specify the Executive Leave awarded at the time of hire.
4. By September 30 provides an annual report to City Council in compliance with reporting requirements set forth in Ordinances No. 12903 C.M.S. and No. 12918 C.M.S. pertaining to Executive Leave.
- 5.

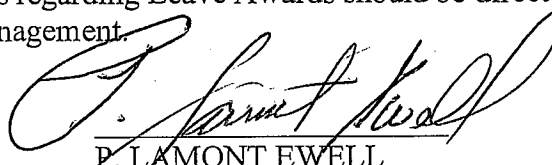
City Administrator

1. By June 30 of each year, provides final approval of all Management or Professional Leave awards, based on Department Heads' recommendations and Director of Human Resources review; forwards lists to Payroll for processing.
2. Provides written authorization to Human Resources if it is determined that an employee may carry over Executive Leave in accordance with the provisions of Ordinances No. 12903 C.M.S. and No. 12918 C.M.S.

V. ADDITIONAL INFORMATION

Any leave that an eligible employee takes without pay for more than a month is deducted from the total Management Leave eligibility period, and may result in prorating.

Once awarded, employees may cash out Management Leave in lieu of time off at any time during the year and until June 30 of the current year. Cash-out forms are available through department payroll representatives. Any questions regarding Leave Awards should be directed to the Department of Human Resources Management.



P. LAMONT EWELL
Interim City Administrator

EXHIBIT D

**FRANCIS SEVER ET AL v. CITY OF OAKLAND ET AL,
COURT OF APPEALS OF THE STATE OF CALIFORNIA
FIRST APPELLATE DISTRICT, DIVISION FOUR
CASE NO. A089727**

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FILED
Court of Appeal - First App. Dist
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RON D. BARROW, CLERK
By _____ RECEIVED

EXHIBIT D

(PFRS),² that allowance was calculated on a compensation figure that did not include his self-improvement incentive pay. In September 1997, he sought a hearing from the Board of Administration of the Oakland PFRS. A hearing was held on the matter in October 1997, but the board did not respond to his claim for an additional retirement allowance based on the self-improvement incentive pay he earned before retirement by December 1997. A board member advised Sever's counsel that the claim had been denied.

In December 1997, Sever filed a verified petition for writ of mandate and a complaint for injunctive and declaratory relief and damages, alleging that the calculation of his retirement allowance without consideration of the self-improvement incentive pay violated the Charter. The action was filed as a class action on behalf of Sever, the other named petitioners and other city retirees who were similarly situated. The petition was filed against the City of Oakland and various related parties.³

In May 1999, Sever moved for a writ of mandate. In July 1999, the city opposed the motion and objected to Sever's evidence, arguing inter alia that the motion should be denied on collateral estoppel grounds. Sever filed his own objections to the city's evidence. In January 2000, the trial court denied the petition for writ of mandate on the merits, finding that self-improvement incentive pay was not "compensation attached to the average rank held" within the meaning of the Oakland PFRS provisions of the Charter. Thus, the trial court dismissed the petition for writ of mandate.

II. CALCULATION OF RETIREMENT ALLOWANCE

In his primary contention on appeal, Sever contends that the Charter requires that self-improvement incentive pay be included when calculating a retirement allowance. He

² Membership in this system, which was established in 1951, was closed in 1976. Police officers and firefighters hired after June 30, 1976, are members of the state's Public Employees Retirement System. (Charter, art. XXIV, § 2600; see *Kreeft v. City of Oakland* (1998) 68 Cal.App.4th 46, 49 [firefighters] (*Kreeft*).)

³ Respondents City of Oakland, the Board of Administration of the Oakland PFRS, and the Oakland PFRS will be referred to collectively as "the city."

urges us to recognize retired officers who received self-improvement incentive pay before retirement as a separate rank from similar officers who did not earn this pay for purposes of computing a PFRS retirement allowance under the Charter. He argues that the term “rank” as used in the Charter does not refer merely to job title, but also includes the seniority within a job title which affected his or her “compensation attached to the rank” before retirement.

Sever’s claim is a legal one—that the trial court erred when it interpreted the Charter to mean other than that which he urges us to conclude. The parties do not raise any factual issues. Thus, the issue presented for our review on appeal—the interpretation of the Charter—is a question of law. As such, we consider the legal construction of this writing anew on appeal and are not bound by the trial court’s interpretation of the Charter. (See *Kreeft, supra*, 68 Cal.App.4th at p. 53.)

The Charter governs Oakland’s PFRS. (See Charter, art. XXVI, §§ 2600-2619.) The Charter sets a retired police officer’s or firefighter’s retirement allowance as a percentage of the “compensation attached to the average rank held” at retirement. (Charter, § 2608(a).) It defines “compensation” as the “monthly remuneration payable . . . for [the] time during which the individual receiving such remuneration is a member of the Police or Fire Department, but excluding remuneration paid for overtime and for special details or assignments” (Charter, § 2607.) The Charter defines the term “compensation attached to the average rank held” to mean “the compensation attached to the lowest rank held during the three years immediately preceding retirement plus one thirty-sixth (1/36) of the difference between it and the compensation attached to any higher rank held during that period of each month, and fraction thereof, the higher rank was held.” (*Ibid.*; see *Kreeft, supra*, 68 Cal.App.4th at p. 49.)

We must construe the Charter in order to determine the legislative intent, giving effect to the plain meaning of its language. If the Charter’s language is clear, we may not add to or alter it in order to accomplish a purpose that does not appear on the face of the charter or in its legislative history. If the language is ambiguous, it must be resolved in

favor of the petitioners as long as that construction must be consistent with the clear purpose and language of the statute. (*Kreeft, supra*, 68 Cal.App.4th at p. 54.)

Although Sever argues that the focus of our inquiry should be directed to the meaning of the term “rank,” we disagree. As Division Three of our court has explained when presented with an issue arising in a similar context, the issue in our case turns on whether the self-improvement incentive pay is compensation *attached* to the average rank at retirement. (*Kreeft, supra*, 68 Cal.App.4th at p. 55.) In this context, the term “attach” means “to adhere *to*” or “to be incident *to*” the retirement rank. (1 Oxford English Dict. (2d ed. 1989) p. 759; see *Kreeft, supra*, at p. 55.)

To establish that self-improvement incentive pay was attached to his rank, Sever must establish that he was entitled to self-improvement incentive pay by virtue of that rank, not because of any individual efforts over and above what was required to obtain the rank. (See *Kreeft, supra*, 68 Cal.App.4th at pp. 57-58.) However, self-improvement incentive pay is not given to every officer in a particular rank, but is available to anyone who earns the specified degree or certificate. Sever concedes that the city has *not* created different ranks for those who have earned self-improvement incentive pay and those who have not. To paraphrase the decision of Division Three, self-improvement incentive pay is dependent on an individual’s actual education and thus does not “adhere” to a rank—that is, although all officers are eligible to receive self-improvement incentive pay, they do not receive this pay merely because they hold that particular rank. (See *Kreeft, supra*, 68 Cal.App.4th at p. 55.) As self-improvement incentive pay is not compensation attached to rank, it does not fall within the meaning of compensation used to calculate a retirement allowance as defined by the Charter. Thus, the trial court properly concluded that the city prevailed on the merits of its interpretation of the Charter governing the calculation of Sever’s retirement allowance.

III. OTHER LEGAL ISSUES

Sever also urges us to conclude that, at a minimum, this self-improvement incentive pay should be included in the retirement allowance of officers in job titles in which nearly everyone receives this self-improvement incentive pay. However, the

Charter which governs the calculation of retirement allowances does not include self-improvement incentive pay within the meaning of “compensation attached to the average rank held.” The legal question before us is whether the city, in its Charter, intended to treat self-improvement incentive pay as compensation attached to the rank. (See *Kreeft, supra*, 68 Cal.App.4th at p. 54.) In essence, Sever asks us to rewrite the Charter—to do an act that is beyond our judicial authority. We decline to do so. We conclude that the trial court correctly dismissed the petition for writ of mandate on the merits.⁴

The dismissal order is affirmed.

⁴ In light of this conclusion, we need not address Sever’s other claims—that the petition is not barred by res judicata or collateral estoppel and that the trial court correctly rejected the city’s defense that he failed to exhaust his administrative remedies.

THE STATE OF CALIFORNIA
COUNTY OF ALAMEDA
JUL 23 1:00
JAMES H. WILLIAMS,
CITY ATTORNEY
Bw

Reardon, J.

We concur:

Hanlon, P.J.

Sepulveda, J.

Sever v. City of Oakland
A089727

A089727

Barbara Jean Parker
Office of the City Attorney
One City Hall Plaza - Sixth Floor
Oakland, CA 94612

NOTICE

Our new Website is now available to the public. The address is

<http://appellatecases.courtinfo.ca.gov>

dr

adda

EXHIBIT E

**CITY OF OAKLAND
CAPTAIN AND DEPUTY CHIEF JOB SPECIFICATIONS**



CITY OF OAKLAND

CITY OF OAKLAND
Revision Date: Sep 1, 2011

DEPUTY CHIEF OF POLICE (PERS)

Class Code:
EM135

Bargaining Unit: UN2 - Sworn Police Mgmt, Deputy
Chief & Captain of Police

SALARY RANGE

\$18,829.26 Monthly
\$225,951.12 Annually

DEFINITION:

Under administrative direction in the Oakland Police Department, uses operational decision making in the direction and coordination of work. Plans, organizes, manages and directs the review and implementation of the Police Department's major departmental bureaus and/or divisions; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS:

The Deputy Chief of Police is a division head classification with responsibility for the overall administration of major departmental bureaus and/or divisions within the Police Department. Pursuant to the Oakland Charter 902(b) and Oakland Municipal Code, this position is exempt from the regulations of the Civil Service Board. This classification is distinguished from the Chief of Police, which is a department head with overall responsibility for the entire agency, and the Chief of Police, Assistant, which is responsible for providing highly responsible and complex administrative support to the Chief of Police. The incumbent receives administrative direction from the Chief of Police and Chief of Police, Assistant, and exercises direction over sworn and non-sworn professional, technical and clerical staff.

EXAMPLES OF DUTIES:

- Plan, organize, coordinate, administer and direct the work of a departmental bureau and/or division of the Police Department including patrol, in-depth investigation of crimes, pursuit of criminal activity, and various operational and support services including evidence, warrants, records, property, incidents and criminal investigations.
- Develop and direct the implementation of goals, objectives, policies, procedures and work standards for a departmental bureau and/or division.
- Develop and implement management systems, major projects and programs.
- Prepare or direct the preparation of a variety of studies and reports related to current issues and long range City needs; develop specific proposals to meet proposed goals.
- Direct the preparation and administration of the division budget including report generation, budget plans and recommendations for rotations and purchases.
- Plan, delegate and oversee execution of division programs and procedures.
- Direct the selection, supervision and work evaluation of division staff and provide for their training and development.
- Prepare or review reports and make presentations to City Administration, City Council, boards, commissions, community groups and other organizations.
- Ensure compliance of departmental bureau and/or division activities with pertinent codes, regulations and guidelines.

- Monitor developments related to division activities, evaluate their impact and implement policy and procedure improvements.

MINIMUM QUALIFICATIONS:

The following qualifications are guidelines, as the appointing authority has broad discretion in filling positions in this classification.

Education:

Equivalent to the completion of the twelfth grade. Bachelor's degree from an accredited college or university in police science, criminology, psychology, business administration or a related field is highly desirable.

Experience:

Six (6) years of responsible supervisory/management experience in a municipal police force, including at least three (3) years of command-level (Lieutenant or higher rank) experience in an organization comparable to Oakland or larger. Completion of a post-graduate degree in an applicable field is desirable.

KNOWLEDGE AND ABILITIES:

Knowledge of:

- Principles, practices, procedures and methods of police science, police administration and personnel management.
- Federal, state and local laws, regulations and ordinances affecting programs and functions of the department.
- Principles of modern law enforcement management including Community Oriented Policing and Problem Solving and the Code of Ethics.
- Principles and practices of budget development and administration.
- Principles, practices and methods of law enforcement including patrol, enforcement procedures, crime investigation techniques and prevention, information systems, and equipment.
- Court legal and administrative processes.
- Program development and implementation.
- Cultural diversity and philosophy and strategies of community policing; social and economic factors that contribute to crime; juvenile welfare and rehabilitation.
- Delegation and employee supervision.

Ability to:

- Plan, organize, and manage the operations of a large and complex law enforcement agency.
- Analyze reports and statistics regarding crime, trends, juvenile delinquency, and other subjects.
- Effectively budget, allocate, and utilize agency resources.
- Recognize and be sensitive to the political environment and related issues.
- Work effectively with a diverse population including executive managers, elected officials, labor organizations, members of boards and commissions, Department and City staff, neighborhood and community groups, and the general public to build consensus and foster cooperation.
- Identify issues and concerns, develop alternatives, and achieve consensus among diverse interests.
- Develop and implement goals, objectives, policies, and priorities.
- Work in a collaborative and cooperative team environment.
- Understand, interpret, and apply laws, administrative policies, rules, and procedures.
- Prepare clear and concise records, reports, correspondence and other written materials
- Communicate clearly, concisely, and persuasively both orally and in writing including presentations at meetings.
- Lead, select, supervise, motivate, and evaluate staff.
- Establish and maintain effective work relationships with those contacted in the performance of required duties.

LICENSE OR CERTIFICATE / OTHER REQUIREMENTS:

Must be able to meet physical, psychological and background standards.

Must be willing to work evening, night, weekend and holiday call ins.

Must be able to maintain firearms qualification.

Must possess P.O.S.T. advanced certificate. Possession of P.O.S.T. management certificate is required.

Individuals who are appointed to this position will be required to maintain a valid California Driver's License throughout the tenure of employment OR demonstrate the ability to travel to various locations in a timely manner as required in the performance of duties.

CLASS HISTORY:

Established: 9-8-2011; CSB Reso#:44395



CITY OF OAKLAND

CITY OF OAKLAND
invites applications for the position of:
Captain of Police (Promotional)

SALARY: \$16,030.77 - \$16,030.77 Monthly
\$192,369.24 - \$192,369.24 Annually

OPENING DATE: 02/01/18

CLOSING DATE: 02/15/18 04:00 PM

THE POSITION:

Candidate Orientation: February 7, 2018 at 10:00 am

Interested applicants may attend. No other written notification will be provided.

Stage I of Examination: February 22, 2018 at 9:00 am

Stage II of Examination: February 28, 2018 - March 2, 2018 (Time TBD)

**All events will be held at Human Resources Management
150 Frank H. Ogawa Plaza, 2nd Floor**

The Oakland Police Department (OPD) is currently seeking candidates for the position of Captain of Police. Under administrative direction, a Captain of Police plans, organizes, and directs through subordinate supervisors, an area or major organizational unit for the OPD. Incumbents are responsible for formulating and interpreting policies and procedures, developing goals and objectives, supervising and training staff; developing and administering a division budget, developing and reviewing reports, representing the agency in public forums, and directing the day-to-day activities of assigned staff.

MINIMUM REQUIREMENTS FOR APPLICATION:

In accordance with the terms of Sign-Up and Examination Eligibility, in the current Memorandum of Understanding on Promotional Examinations between the City of Oakland and the Oakland Police Officers' Association, OPD Lieutenants who have completed at least one (1) year as an OPD Lieutenant by February 15, 2018, and who have applied according to the instructions below for the exam are eligible.

Qualified and interested OPD Lieutenants may apply by completing and submitting a Notice of Intent form. The form is available in the Personnel Section, Police Administration Building, Room 704. **In order to apply for the examination, an original completed copy of the Notice of Intent form must be submitted to the Personnel Section NO LATER THAN 4:00 PM, February 15, 2018.**

SUPPLEMENTAL INFORMATION:

The Selection Process

The examination will be administered in two stages. All candidates will participate in both stages of testing.

STAGE I

Stage I of the examination will be administered on February 22, 2018 at 9:00 AM, at Human Resources Management, 150 Frank H. Ogawa Plaza, 2nd Floor, Computer Lab. Qualified candidates who meet the minimum qualifications will be notified electronically and must bring photographic identification and report to the check-in station no later than **9:00 AM**. Late attendees will not be admitted to the examination.

This stage will consist of a series of written critical thinking exercises that will be **weighted 25%** of a candidate's overall score. The following **equally weighted** assessment dimensions will be evaluated in this stage: Problem Analysis (4.167%), Decision Making (4.167%), Management Skills (4.167%), Leadership (4.167%), Written Communication (4.167%), and Technical Knowledge (4.167%).

STAGE II

The Stage II of the examination is tentatively scheduled on February 28, 2018 - March 2, 2018, at Human Resources Management, 150 Frank H. Ogawa Plaza, 2nd Floor, (candidates will be notified of exact date and check-in time). The City of Oakland reserves the right to modify the selection process as necessary to conform to administrative or business necessity.

This stage will consist of a series of job-related assessment center exercises that will be **weighted 75%** of a candidate's overall score. The following **equally weighted** assessment dimensions will be evaluated in this stage: Problem Analysis (12.5%), Decision Making (12.5%), Management Skills (12.5%), Leadership (12.5%), Oral Communication (12.5%), and Technical Knowledge (12.5%).

General Information

Stage I will consist of a series of written critical thinking exercises. There will be a clock at the site, which will serve as the official time keeping mechanism, but you may want to wear a watch to monitor the time. Candidates may dress casually; appearance will not be evaluated. All supplies necessary for the test will be provided. Once the test has begun, candidates will not be allowed to leave the facility, so plan accordingly.

Candidates will be required to complete a confidentiality agreement, which precludes sharing test information until all stages of the examination have been complete. Candidates violating the confidentiality agreement will have their names removed from the eligibility list.

Candidates must achieve a minimum score of 70 to be placed on the eligibility list. Scoring is based on Section 4.17 of the Personnel Manual of the Civil Service Board. The examination will be conducted in accordance with Attachment 3 of the current Memorandum of Understanding on Promotional Examinations between the City of Oakland and Oakland Police Officers' Association.

How to apply:

Qualified and interested Lieutenants may apply by completing and submitting an original copy of the Notice of Intent form available from the Personnel Section, Room 704, Oakland Police Department, no later than 4:00 PM, February 15, 2018.

The City of Oakland is an EEO/ADA Employer.

Captain of Police Reading List 2018:

The following material may serve as information sources for the 2018 Captain of Police promotional examination. They are not intended to be all inclusive nor a guarantee of success. Any Oakland Police Department publication active through January 31, 2018, may be used on the examination. Any of the items on the reading list may be useful in preparing for the entire testing process.

Administrative & Operational Procedures:

- Oakland Police Department General Orders
- All Active Oakland Police Department Special Orders
- Oakland Police Department Manual of Rules
- Oakland Police Department Training Bulletins (excluding Volume II)
- Current OPOA, OPMA, Local 21 and Local 1021 Memoranda of Understanding
- Forty-Ninth Quarterly Report of the Independent Monitor of the Oakland Police Department
- Government Code Sections 3300-3312, Public Safety Officers Procedural Bill of Rights Act
- Point of View: A Publication of the Alameda County District Attorney's Office (Fall 2017 edition, Spring-Summer 2017 edition, and Winter 2017 edition)

Contemporary Principles & Practices of Policing:

- Trustworthy Leaders, John Hamm, ICMA Press, PM Magazine, October 2011, Volume 93, Number 9
- Seven Lessons for Leading in Crisis, Bill George, Wiley, John & Sons, Incorporated, 2009
- President's Task Force on 21st Century Policing 2015: Office of Community Oriented Policing Services. USDOJ
- Defining Moments for Police Chiefs. Police Executive Research Forum <http://www.policeforum.org/assets/definingmoments.pdf>
- Don't Shoot: One Man, A Street Fellowship, and the End of the Violence in Inner-City America, David M. Kennedy, October 2012
- Leadership Lessons from the Thin Blue Line, Dean Crisp, July 2017

Note - The Administrative & Operational Procedures will be available to you during the Stage I examination. The Contemporary Principles & Practices of Policing will not be available to you during the Stage I examination and you may not bring copies.

ADVISORIES

Immigration and Reform Control Act: In compliance with the Immigration and Reform Control Act of 1986 the City of Oakland will only hire individuals who are legally authorized to work in the United States.

Exam Access Accommodation: In compliance with local, state and federal laws and regulations, the City of Oakland will employ and promote qualified individuals without regard to disability. The City is committed to making reasonable accommodations in the examination process and in the work environment. Individuals requesting reasonable accommodations in the examination process must do so no later than five working days after the final filing date for receipt of applications, otherwise it may not be possible to arrange accommodations for the selection process. Such requests should be addressed to the Department of Human Resources Management, 150 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612-2019 or call (510) 238-3112 or TDD (510) 238-3254.

The City of Oakland is an EEO/ADA Employer.

<http://www2.oaklandnet.com/Government/o/HumanResources/index.htm>

150 Frank H. Ogawa Plaza - 2nd Floor
Oakland, CA 94612
(510) 238-3112

EXHIBIT F

CALIFORNIA CODE OF REGULATION

TITLE 11. LAW

**DIVISION 2. COMMISSION ON PEACE OFFICER STANDARDS
AND TRAINING**

ARTICLE 1.

SECTION 1005. MINIMUM STANDARDS FOR TRAINING

[Home](#) [Table of Contents](#)

§ 1005. Minimum Standards for Training (Refer to Regulation 1007 and PAM Section H for reserve ...
11 CA ADC § 1005

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS

Barclays Official California Code of Regulations [Currentness](#)

Title 11. Law

Division 2. Commission on Peace Officer Standards and Training

Article 1. General

11 CCR § 1005

§ 1005. Minimum Standards for Training (Refer to Regulation 1007 and PAM Section H for reserve peace officer training standards).

(a) Minimum Entry-Level Training Standards (Required)

(1) Basic Course Requirement

Every peace officer, except Reserve Levels II and III, those peace officers listed in subsections 1005(a)(3) [peace officers whose primary duties are investigative], 1005(a)(4) [coroners or deputy coroners], and 1005(a)(7) [jail deputies], shall complete the Regular Basic Course before being assigned duties which include the exercise of peace officer powers. Requirements for the Regular Basic Course are set forth in PAM Section D-1-3.

(A) Field Training Program Requirement

Every peace officer, except Reserve Levels II and III, jail deputies, and those officers described in subsections 1005(a)(1)(B)1-5, following completion of the Regular Basic Course and before being assigned to perform general law enforcement uniformed patrol duties without direct and immediate supervision, shall complete a POST-approved Field Training Program as set forth in PAM Section D-13.

(B) Exemptions to the Field Training Program Requirement

An officer is exempt from the Field Training Program requirement following completion of the Regular Basic Course:

1. While the officer's assignment remains custodial related, or
2. If the officer's employing department does not provide general law enforcement uniformed patrol services and the department has been granted an exemption as specified in Regulation 1004, or
3. If the officer is a lateral entry officer possessing a POST Basic Certificate and who has either:
 - a. Completed a POST-approved Field Training Program, or
 - b. One year previous experience performing general law enforcement uniformed patrol duties, or
4. If the officer was a Level I Reserve and is appointed to a full-time peace officer position within the same department and has previously completed the department's entire POST-approved Field Training Program within the last 12 months of the new appointment, or has the signed concurrence of the department head attesting to the individual's competence, based upon experience and/or other field training as a solo general law enforcement uniformed patrol officer, or
5. If the officer's employing department has obtained approval of a field training compliance extension request provided for in Regulation 1004.

More specific information regarding basic training requirements is located in PAM Section D-1.

(C) Basic Course Waiver

A Basic Course Waiver (BCW) provides an exemption from the Regular Basic Course (RBC) or Specialized Investigator Basic Course (SIBC) training requirements and is granted to individuals from another state, with no prior California law enforcement experience, whose law enforcement training, experience and education are deemed by POST to demonstrate sufficient law enforcement knowledge, skill and proficiency. The prescribed course of training appropriate to the individual's appointment is determined by the Commission and is specified in sections 1005(a) or 1007(a). The requirements for the RBC and SIBC are specified in POST Administrative Manual (PAM) Section D-1.

Acceptance of the BCW in lieu of successful completion of a RBC or SIBC is at the discretion of the employing agency. The BCW does not determine an individual's employability, nor is it a means of requalifying training. Individuals with prior California law enforcement experience are not eligible for the BCW and must complete requalification as defined in Regulation 1008.

A BCW is valid for three years from the date it is granted. After three years, the requirements for requalification or attendance in a RBC or SIBC attach, as specified in Regulation 1008. Individuals may not apply for a second BCW.

A waiver of attendance for the RBC will satisfy attendance at SIBC. However, a waiver of attendance for SIBC training does not satisfy the RBC training requirement.

1. Eligibility

a. Regular Basic Course Waiver

To be eligible for a waiver of the RBC, an individual must meet the following training, education and experience requirements:

- i. Successful completion of a 200 hour minimum basic general law enforcement training course certified or approved by California POST or a similar standards agency of another state, or a federal agency general law enforcement basic course, and
- ii. At least 664 hours of general law enforcement training, which includes the basic course requirement listed in Regulation 1005(a)(1)(A) and
- iii. Legislatively mandated training included in the POST-certified RBC, and
- iv. At least one year of out-of-state general law enforcement experience as defined in Regulation 1001. Experience must have been acquired subsequent to the completion of basic training.

b. Specialized Investigators' Basic Course (SIBC) Waiver

To be eligible for a waiver of the SIBC, an individual must meet the following training, education and experience requirements:

- i. Successful completion of a basic investigative course similar in content to the SIBC, certified or approved by California POST or a similar standards agency of another state, or a federal agency general or investigative basic course.
- ii. At least 591 hours of investigative or general law enforcement training, which includes the basic course requirement listed in Regulation 1005(a)(1)(a), and
- iii. Legislatively mandated training included in the POST-certified SIBC, and
- iv. At least one year of out-of-state investigative or general law enforcement experience. Experience must have been acquired subsequent to the completion of basic training and, as determined by POST, commensurate with law enforcement duties of California investigative agencies.

2. Basic Course Waiver Process

A Basic Course Waiver shall be determined through a four-step process: (1) Application/Self-Assessment, Documentation, and Fee Requirements; (2) POST Training Evaluation; (3) Basic Course Waiver Assessment; and (4) Waiver Issuance.

Step 1: Basic Course Waiver Application/Self-Assessment and Documentation and Fee Requirements

a. Self-Assessment: Prior to submitting an application for a Basic Course Waiver, an individual must conduct a self-assessment to verify successful completion of the requirements listed in the applicable section above.

b. Documentation Requirements: The BCW Application, POST 2-267(Rev. 04/2015), must be submitted together with the supporting training, education, and experience documentation described below. The application form must be signed by the individual and the department head, when appropriate. Each application must be accompanied by the following supporting documentation:

- i. Basic Course: A certificate of completion and copy of the course curriculum that outlines course content and hours that is consistent with the date of completion on the certificate.
- ii. Other Training: Certificates of completion, training records, or similar documentation of related training.
- iii. Education: Official transcripts. One semester unit shall be equivalent to a maximum of 20 training hours and one quarter unit shall be equivalent to a maximum of 14 training hours.
- iv. Experience: Written verification of experience shall be listed on agency letterhead from the department head, training manager, or personnel department for which the applicant was employed. The document must specifically state that the applicant completed at least one year of general law enforcement following completion of basic training (or investigative experience, if appropriate). The letter must be accompanied by a duty statement for the position held by the applicant.

v. Fee: Certified check or money order, payable to the Commission on POST, in the amount specified on the Basic Course Waiver Application (POST 2-267) (Rev. 04/2015).

Incomplete application packets will not be considered for review and will be returned to the applicant.

Step 2: POST Training Evaluation

Upon receipt of the completed BCW Application POST 2-267(Rev. 04/2015), all supporting documents and the appropriate fee, POST will evaluate the individual's prior training, education and experience.

Individuals will be notified if additional supporting documents are necessary and/or if application is deficient in one or more areas. An individual shall have up to 180 days from date of notification to provide additional verification without the payment of an additional evaluation fee. Failure to provide the additional verification within that time period will result in closure of the application process. Once closed, a new application (including training certification information) must be filed, subject to the training standards, testing, and fee requirements in effect at the time of submission of the new application.

The individual and the agency, when appropriate, will be notified of the results of the evaluation. If the application is approved, the individual will be eligible to complete the BCW Assessment Process.

Step 3: Basic Course Waiver Assessment Process

a. Assessment Methods

There are two methods by which the BCW assessment can be accomplished:

(1) Attendance and successful completion of a POST-certified Requalification Course; or

(2) Successful completion of the BCW Testing Process. The BCW Testing Process is only available to individuals who have less than a three year break from the last date of service as a peace officer.

Once an assessment method is chosen, an individual may not switch to the other option. The BCW assessment process must be successfully completed within one hundred eighty days of notification by POST of approval of the evaluation.

Assessment Method 1: POST-Certified Requalification Course.

i. The one hundred thirty six hour Requalification Course must be taken through a qualified presenter.

ii. Course content and testing requirements can be found in the POST Training and Testing Specifications.

Assessment Method 2: Basic Course Waiver Testing Process.

The testing process consists of the two components identical to the Requalification Course examinations:

i. A comprehensive test designed to evaluate an individual's knowledge of basic course content.

ii. Exercise tests designed to evaluate an individual's manipulative skills acquired in the basic course.

iii. The testing process is to be administered through a POST Testing Center. Both components are graded pass/fail and must be successfully completed.

b. Retest

i. A comprehensive retest shall be allowed one time only. Arrangements for the comprehensive retest must be made directly with the same POST-certified Requalification Course presenter or POST Testing Center at which the initial comprehensive test was taken. Retesting must take place within ninety days of the initial test. An individual who fails the retest must, before exercising peace officer powers, successfully complete the appropriate POST-certified basic course.

ii. Retest of one or more modules of the exercise shall be allowed one time only. Arrangements for the skills retest must be made directly with the same POST-certified Requalification Course presenter or POST Testing Center in which the skills examination was originally taken. Retesting must take place within ninety days of the initial test. An individual who does not pass the failed module(s) of the skills retest must, before exercising peace officer powers, successfully complete the appropriate POST-certified basic course (RBC or SIBC).

iii. If the testing requirement is not met due to non-completion or failure of the initial test and retest, the individual is no longer eligible for a waiver and will be required to complete the appropriate POST-certified basic course.

Step 4: Issuance of Waiver/Waiver of Attendance

a. Upon successful completion of the waiver process, a Waiver of Attendance of the appropriate POST-certified basic course will be granted by POST.

b. Acceptance of a waiver for meeting the appropriate Basic Course training standard shall be at the discretion of the employing agency.

(2) Every district attorney investigator or inspector (Penal Code section 830.1), regularly employed and paid as such, in addition to the Regular Basic Course training requirement set forth in Regulation 1005(a)(1) shall complete a POST-certified Investigation and Trial Preparation Course, PAM Section D-14, within 12 months from the date of appointment.

(3) Every peace officer whose primary duties are investigative, except district attorney investigators or inspectors, shall complete, within 12 months from the date of appointment, the Regular Basic Course or the Specialized Investigators' Basic Course, PAM Section D-1-4, as elected by the department head. Departments in the following categories have been identified as primarily investigative and may exercise the option provided in this section: 1) state investigative agencies including the Supreme Court of California, 2) welfare investigations, 3) welfare fraud, 4) social services, 5) human assistance/services, and 6) District Attorney child support divisions or welfare fraud units (appointed under P.C. 830.35).

(4) Every coroner or deputy coroner [as defined in Penal Code section 830.35(c)], regularly employed and paid as such, shall satisfactorily complete the Penal Code section 832 (PC 832) Arrest and Firearms Course, PAM Section D-1-7, before the exercise of peace officer powers. In addition to the PC 832 Arrest and Firearms Course, satisfactory completion of the POST-certified Coroners' Death Investigation Course, PAM Section D-1-6, is also required within 12 months from date of appointment. The Coroners' Death Investigation Course requirement shall only apply to peace officer coroners hired on or after the agency enters the POST program.

(5) Every school police officer employed by a K-12 school district or California Community College district before July 1, 1999, in addition to the Regular Basic Course requirement set forth in subsection 1005(a)(1), shall complete a POST-certified Campus Law Enforcement Course [(Regulation 1081(a)) no later than July 1, 2002. Every school police officer employed by a K-12 school district or California Community College district after July 1, 1999, in addition to the Regular Basic Course, shall complete a POST-certified Campus Law Enforcement Course within two years of the date of first appointment.

(6) Every airport peace officer (Penal Code section 830.33) regularly employed and paid as such, in addition to the Regular Basic Course training requirement set forth in Regulation 1005(a)(1), shall complete a POST-certified Aviation Security Course [Regulation 1081(a)], after appointment. Pursuant to Penal Code section 832.1, any airport peace officer who has not satisfactorily completed the Aviation Security Course within the prescribed time shall not continue to have the powers of a peace officer until the officer has satisfactorily completed the course.

(7) Every jail deputy [Penal Code section 830.1(c)] shall satisfactorily meet the training requirements of the PC 832 Arrest and Firearms Course, PAM Section D-1-7; and within 120 days after the date of appointment, shall complete the training required by the Board of State and Community Corrections for custodial personnel pursuant to Penal Code Section 6035, and the training required for custodial personnel of local detention facilities pursuant to Division 1 (commencing with Section 100) of Title 15 of the California Code of Regulations.

(8) Every limited function peace officer shall satisfactorily meet the training requirements of the PC 832 Arrest and Firearms Course, PAM Section D-1-7; however training in the carrying and use of firearms shall not be required when an employing agency prohibits limited function peace officers the use of firearms.

(9) Every peace officer prior to exercising peace officer powers shall complete the requirements of Penal Code Section 832, which may be part of the minimum basic training standard or a separately certified course.

(b) Supervisory Course (Required)

(1) Every peace officer (except jail deputies) promoted, appointed, or transferred to a first-level supervisory position shall satisfactorily complete a certified Supervisory Course prior to promotion or within 12 months after the initial promotion, appointment, or transfer to such position. An officer who will be appointed within 12 months to a first-level supervisory position or an officer assigned to a quasi-supervisory position may attend a Supervisory Course, if authorized by the department head. Requirements for the Supervisory Course are set forth in PAM Section D-3.

(2) Every department participating in the POST reimbursement program may be reimbursed for completion of the Supervisory Course by an officer as described in Subsection 1005(b)(1), provided that the officer is full time and has been awarded or is eligible for the award of the Basic Certificate.

(c) Management Course (Required)

(1) Every peace officer (except all jail deputies) promoted, appointed, or transferred to a middle management position shall satisfactorily complete a certified Management Course prior to promotion or within 12 months after the initial promotion, appointment, or transfer to such position. An officer who will be appointed within 12 months to a middle management or higher position or an officer who is assigned to a first-level supervisory position may attend a Management Course, if authorized by the department head. Completion of the Supervisory Course is a prerequisite to attending the Management Course. Requirements for the Management Course are set forth in PAM Section D-4.

(2) Every department participating in the POST reimbursement program may be reimbursed for completion of the Management Course by an officer described in subsection 1005(c)(1), provided the officer is full time and has satisfactorily completed the Supervisory Course.

(3) Every regular officer who is duly elected or appointed to the Board of Directors or Executive Board of a local Peace Officer Association or Deputy Sheriff Association may attend a certified Management Course if authorized by their department head. The officer's jurisdiction may be reimbursed following satisfactory completion of such training provided that the officer has satisfactorily completed the training requirements of the Supervisory Course.

(4) Every regular officer who is duly elected or appointed to the Board of Directors of a local Peace Officer Association or Deputy Sheriff Association and is on 100% release from their organization may attend the Management Course without prior approval of

their department head.

(d) Continuing Professional Training (CPT) (Required)

CPT is required for certain peace officer and dispatcher personnel who are employed by POST participating departments. The purpose of CPT is to maintain, update, expand, and/or enhance an individual's knowledge and/or skills. CPT is training that exceeds the training required to meet or requalify in entry-level minimum standards. Qualifying and non-qualifying courses are described in Subsection 1005(d)(3) below.

(1) Requirement

Every peace officer (other than a Level III Reserve Peace Officer), every Public Safety Dispatcher, and every Public Safety Dispatch Supervisor shall satisfactorily complete the CPT requirement of 24 or more hours of POST-qualifying training during every two-year CPT cycle, based on the statewide CPT Anniversary Date as specified in Subsection 1005(d)(2) below. Completion by jail deputies of in-service training required by Standards and Training for Corrections (STC) for custodial officers [Section 100 et seq. of Title 15] is considered to meet the POST CPT requirement.

Effective January 1, 2009, certain peace officers in specific duty assignments must satisfy a portion of the CPT requirement by completing Perishable Skills and Communications training as specified in Subsection 1005(d)(4).

(2) Determination of Two-Year Cycle

The beginning date for the two-year CPT cycle for all POST participating agencies will be January 1, 2009.

(A) CPT Cycle Start

Effective January 1, 2009, the CPT Anniversary Date is used to start a peace officer's or dispatcher's CPT training cycle. The actual CPT cycle will start only after the employing department is an authorized participant in the POST Program.

1. One Time Transition Period

For purposes of implementing the CPT Anniversary Date, a transition period, with no CPT requirement, is granted to all personnel appointed to any California peace officer or dispatcher position identified in subsection 1005(d)(1).

2. First-Time Appointments

A grace period with no CPT requirements, is granted when an individual is appointed for the first time to one of the subsection 1005(d)(1) positions. This grace period is the time period between the individual's appointment date and the first occurrence of the CPT Anniversary Date. It is granted to allow completion of entry-level requirements that do not count towards CPT.

3. Reappointments/Lateral Transfers

A grace period, with no CPT requirement, is granted for an individual rehired into one of the subsection 1005(d)(1) positions with the same department or who transfers to a different department. This grace period is the time between the date reappointed and the next cycle CPT Anniversary Date.

4. Reappointments

A grace period, with no CPT requirement, is granted for an individual rehired into one of the subsection 1005(d)(1) positions with the same department. This grace period is the time between the date reappointed and the next cycle CPT Anniversary Date.

(B) Status Changes

As the CPT Anniversary Date is a statewide permanently assigned date, it does not change with status changes within a peace officer or dispatcher classification series (e.g., promotion, lateral transfer, probation, military leave, or administrative leave, etc.)

(C) Dual Employment

In some situations, an individual may have dual employment as a peace officer/peace officer, a dispatcher/dispatcher, or as a peace officer and a dispatcher.

1. Within the Same Classification

The same requirement applies to a dispatcher working for two departments simultaneously. The individual holding two positions in the same classification (i.e., dispatcher/dispatcher classification) shall be held to the statewide CPT cycle.

2. Within Two Different Classifications

The same requirement applies to an individual employed as a peace officer and a dispatcher whether within the same or different departments (e.g., a peace officer who is also a dispatcher). In such cases, the CPT remains separate for the peace officer job and the dispatcher job. The CPT training must be job-related to qualify. See the examples in subsection 1005(a)(2)(C)3.

3. Dual CPT Credit POST-certified training courses attended by an individual in dual employment, such as a peace officer and dispatcher, may count for CPT credit for both positions/classifications if the training course is job related for both a peace officer and a dispatcher. For example, a Tactical Shotgun course would not qualify as CPT for dispatchers. A Missing Persons course is job-related for both dispatcher and peace officer classifications and would qualify for dual CPT credit.

(D) CPT Training in Excess of 24 Hours

POST-qualifying CPT training in excess of 24 hours during a two-year cycle shall not be credited toward any future or prior CPT cycles.

Subsection 1005(d) CPT requirement is met by satisfactory completion of one or more POST-certified courses totaling a minimum of 24 hours, as referenced below.

(A) While recommended topics for CPT are listed in PAM Section D-2, POST-certified training courses may be used for CPT credit, with the exception of the following POST-certified courses that do not qualify for CPT:

Regular Basic Course - Standard Format

Regular Basic Course - Modular Format (all components)

Field Training Program

Investigation and Trial Preparation Course

Specialized Investigators' Basic Course

PC 832, Arrest and Firearms Course

Coroners' Death Investigation Course

Campus Law Enforcement Course

Aviation Security Course

Public Safety Dispatcher's Basic Course

POST Recertification Course

POST Workshops (those designed to provide input or advice to POST)

Field Management Training

Team Building Workshops

(B) The CPT requirement may be satisfied by an alternative method of compliance as determined by the Commission, i.e., non-POST-certified courses (refer to Regulation 1060 and PAM Section D-2-3).

(4) Perishable Skills/Communications Requirements for CPT

Effective January 1, 2002, all peace officers (except reserve officers and jail deputies) below the middle management position and assigned to patrol, traffic, or investigation who routinely effect the physical arrest of criminal suspects are required to complete Perishable Skills and Communications training. In-lieu of completing the training, the requirement may be met by successfully passing a presenter-developed test that measures the approved training objectives.

(A) Perishable Skills training shall consist of a minimum of 12 hours in each two-year period. Of the total 12 hours required, a minimum of 4 hours of each of the three following topical areas shall be completed:

1. Arrest and Control
2. Driver Training/Awareness or Driving Simulator*
3. Tactical Firearms* or Force Options Simulator

*Refer to PAM Section D-2 for minimum requirements.

(B) Communications training, either tactical or interpersonal, shall consist of a minimum of 2 hours in each two-year period as specified in PAM Section D-2.

It is recommended that managers and executives complete, within their two-year compliance cycle, two hours of CPT devoted to updates in the perishable skills topical areas enumerated above.

(C) Agency Exemptions

Agencies may request an exemption from all or part of the Perishable Skills and Communications training requirement. Agencies must request an exemption in writing and provide an attestation that their peace officers do not carry firearms, or they infrequently interact with or effect physical arrests of criminal suspects, or do not utilize marked emergency vehicles during normal course of business.

(D) Perishable Skills Program (PSP) Instruction Exemptions

Instructors who are certified or qualified (see section 1070 or 1004(a)(5)(A), respectively) to instruct a Perishable Skills course are exempt from attending a PSP course as a student in the topic they are qualified or certified to instruct, and are exempt from being required to demonstrate their competency by successfully passing a presenter-developed test that measures the approved training objectives for PSP credit, if they have presented a course in this topic within the same two-year Continuous Professional Training (CPT) cycle.

Instructors who have not presented a course in their topic area within the same CPT cycle must attend a course in that topic as a student or demonstrate their competency by successfully passing a presenter-developed test that measures the approved training objectives for PSP credit.

The agency must maintain and be able to provide documentation that an instructor has presented a course within the same CPT cycle during the POST compliance check.

The agency head may establish a higher training requirement for their instructors.

(e) Executive Development Course (Optional)

(1) The Executive Development Course is designed for department heads and their executive staff positions. An officer who will be appointed within 12 months to a department head or executive position may attend the Executive Development Course, provided the officer has satisfactorily completed the Management Course. Requirements for the Executive Development Course are set forth in PAM Section D-5.

(2) Every department participating in the POST reimbursement program may be reimbursed for completion of the Executive Development Course by an officer as described in subsection 1005(e)(1), provided the officer is full time and has satisfactorily completed the Management Course.

(3) The Executive Director may waive the Management Course completion prerequisite for a chief executive who has completed training comparable to a POST Management Course. The application and evaluation processes are described in PAM Section D-15, Management Course Prerequisite Waiver Process for Attending the Executive Development Course.

(f) Legislatively-Mandated Training

(1) Specific training mandated by the legislature is specified in Regulation 1081.

(g) Field Management Training (Optional)

(1) Field Management Training is designed to assist in the solution of specific management problems within individual Regular Program departments.

(2) Requirements for Field Management Training are set forth in PAM Section D-9.

(h) Records Supervisor Training (The following courses are required only for records supervisors applying for the Records Supervisor Certificate.)

(1) Public Records Act (minimum 16 hours) and

(2) Records Supervisor Course (minimum 40 hours)

(i) Rifle and Shotgun Training

(1) Every peace officer shall satisfactorily complete the POST-certified 16 hour minimum Rifle Course in order to possess a long or short barrel rifle in the course and scope of their duties. Requirements for the Rifle Course are set forth in Regulation 1081.

(2) Every peace officer shall satisfactorily complete the POST-certified 16 hour minimum Shotgun Course or the Regular Basic Course - Standard Format, Regular Basic Course - Modular Format, Modules III and II, the Specialized Investigators' Basic Course, or Reserve Modules A, B, and C in order to possess a long or short barrel shotgun in the course and scope of their duties. Requirements for the Shotgun Course are set forth in Regulation 1081.

PAM Section D-1-1 adopted effective September 26, 1990, and amended January 14, 1994, August 7, 1996, January 1, 2001, January 1, 2004, and September 15, 2004, is herein incorporated by reference.

PAM Section D-1-2 adopted effective September 26, 1990, and amended January 11, 1992, January 14, 1994, August 7, 1996, February 13, 1997, September 25, 1998, January 1, 2004, September 15, 2004, and August 26, 2006, is herein incorporated by reference.

PAM Section D-1-3 adopted effective April 15, 1982, and amended January 24, 1985, September 26, 1990, January 14, 1994, July 16, 1994, December 16, 1994, August 16, 1995, August 7, 1996, November 27, 1996, February 22, 1997, August 16, 1997, December 4, 1997, January 1, 2001, January 1, 2002, April 10, 2002, January 1, 2004, September 15, 2004, January 1, 2006, January 19, 2007, July 1, 2007, January 1, 2009, May 3, 2012, July 21, 2012, April 1, 2014, October 1, 2014, April 1, 2016, and February 15, 2017, is herein incorporated by reference.

PAM Section D-1-4 adopted effective October 20, 1983, and amended September 26, 1990, October 27, 1991, January 14, 1994, May 7, 1995, July 21, 2000, January 1, 2001, July 1, 2002, September 15, 2004, January 1, 2006, January 19, 2007, July 1, 2007, January 1, 2009, May 3, 2012, October 1, 2014, April 1, 2016, and February 15, 2017, is herein incorporated by reference.

PAM Section D-1-6 adopted effective February 4, 1993, is herein incorporated by reference.

PAM Section D-1-7 adopted effective January 1, 2004, and amended September 15, 2004, January 1, 2006, January 1, 2009, May 3, 2012, October 1, 2014, April 1, 2016, and February 15, 2017, is herein incorporated by reference.

PAM Section D-2 adopted effective April 15, 1982, and amended January 24, 1985, July 1, 2000, September 11, 2000, November 11, 2000, January 1, 2002, September 12, 2002, May 7, 2003, August 7, 2003, January 29, 2004, September 12, 2005, August 26, 2006, and January 29, 2011, is herein incorporated by reference.

PAM Section D-3 adopted effective April 15, 1982, and amended October 20, 1983, January 29, 1988, and March 8, 2003, is herein incorporated by reference.

PAM Section D-4 adopted effective April 15, 1982, and amended November 2, 2000, and January 20, 2006, is herein incorporated by reference.

PAM Section D-13 adopted effective June 15, 1990, and amended February 22, 1996, January 1, 1999, July 1, 2004, January 1, 2012, January 1, 2013, and November 23, 2016, is herein incorporated by reference.

PAM Section D-14 adopted effective January 1, 2002, amended January 1, 2006, and January 1, 2009, is herein incorporated by reference.

PAM Section D-15 adopted effective January 20, 2006, is herein incorporated by reference.

PAM Section H-3 adopted effective June 15, 1990, and amended effective July 1, 1992, is herein incorporated by reference.

The document, Training Specifications for the Investigation and Trial Preparation Course adopted effective January 1, 2002, and amended January 1, 2009, is herein incorporated by reference.

The document, Training and Testing Specifications for Peace Officer Basic Courses adopted effective January 1, 2001, and amended effective October 1, 2001, January 1, 2002, July 1, 2002, January 1, 2003, January 1, 2004, August 15, 2004, September 15, 2004, July 1, 2005, January 1, 2006, January 19, 2007, July 1, 2007, August 8, 2007, January 1, 2008, July 1, 2008, January 1, 2009, July 1, 2009, January 1, 2010, July 1, 2010, July 1, 2011, January 1, 2012, July 1, 2012, January 1, 2013, August 1, 2013, February 1, 2014, August 1, 2014, August 1, 2015, February 1, 2016, August 1, 2016, February 1, 2017, February 15, 2017, and August 1, 2017, is herein incorporated by reference.

The document, Instructor's Guide to Learning Activities for Leadership, Ethics and Community Policing December 2005 adopted effective January 1, 2006, is herein incorporated by reference.

The document POST Basic Courses Test Management and Security Protocols 2017 adopted effective January 1, 2009, amended May 3, 2012, October 1, 2014, April 1, 2016, and February 15, 2017, is herein incorporated by reference.

The document Work Sample Test Battery Proctor Manual - 2012 adopted effective July 21, 2012, is herein incorporated by reference.

Note: Authority cited: Sections 832.1, 832.3, 832.6, 13503, 13506, 13510, 13510.3, 13510.5, 13515.26 and 13519.8, Penal Code. Reference: Sections 830.33, 832, 832.1, 832.3, 832.3(f), 832.3(h), 832.6, 13506, 13510, 13510.3, 13510.5, 13511, 13513, 13514, 13515.29, 13515.295, 13516, 13517, 13519.8, 13520 and 13523, Penal Code.

HISTORY

1. Renumbering of former subsections (a)(5) and (a)(6) to subsections (a)(6) and (a)(7), and new subsection (a)(5) filed 12-18-89; operative 1-17-90 (Register 89, No. 51). For prior history, see Register 88, No. 3.
2. Amendment of subsection (g)(2) filed 4-26-90; operative 5-26-90 (Register 90, No. 21).
3. Amendment filed 5-16-90; operative 6-15-90 (Register 90, No. 21).
4. Amendment of subsection (a) and PAM sections D-1-3, D-1-4, D-1-5, and D-1-6 and the adoption and incorporation by reference of PAM D-1-1, D-1-2, the POST Basic Academy Physical Conditioning Manual (February 1990), and Performance Objectives for the POST Basic Course - 1989, filed 8-27-90; operative 9-26-90 (Register 90, No. 42).
5. Amendment of Performance Objectives for the POST Basic Course (1989) filed 5-30-91; operative 6-29-91 (Register 91, No. 28).
6. Amendment filed 9-27-91; operative 10-28-91 (Register 91, No. 51).
7. Amendment of subsection (j)(2) filed 12-12-91; operative 1-13-92 (Register 92, No. 9).
8. Amendment of subsection (j)(2) filed 12-23-91; operative 7-1-92 (Register 92, No. 19).
9. Amendment of subsection (j)(2) filed 9-28-92; operative 10-28-92 (Register 92, No. 40).
10. New subsection (a)(5), subsection renumbering, and adoption and incorporation by reference of PAM D-1-8 filed 1-5-93; operative 2-4-93 (Register 93, No. 2).
11. Amendment of subsection (j)(2) and adoption and incorporation by reference of document Performance Objectives for the POST Basic Course filed 3-29-93; operative 4-28-93 (Register 93, No. 14).
12. Amendment of subsection (j)(2) and incorporated by reference of Commission Procedure D-1 filed 12-15-93; operative 1-14-94 (Register 93, No. 51).

13. Amendment of subsection (j)(2) and documents PAM section D-1-3 and Training Specifications for the Regular Basic Course incorporated by reference filed 6-16-94; operative 7-16-94 (Register 94, No. 24).
14. Amendment of subsection (j)(2) and documents PAM section D-1-3 and Training Specifications for the Regular Basic Course incorporated by reference filed 11-16-94; operative 12-16-94 (Register 94, No. 46).
15. Amendment of subsection (a)(4), amendment of PAM section D-1-6 (incorporated by reference), and repealer and new document, Training Specifications for the Specialized Investigators' Basic Course - 1995 (incorporated by reference), filed 4-7-95; operative 5-8-95 (Register 95, No. 14).
16. Amendment of subsections (d)(1)-(2) filed 4-17-95; operative 5-17-95 (Register 95, No. 16).
17. Amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 7-13-95; operative 8-12-95 (Register 95, No. 28).
18. Amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 7-17-95; operative 8-16-95 (Register 95, No. 29).
19. Amendment of document, Training Specification for the Regular Basic Course (incorporated by reference) filed 7-24-95; operative 8-23-95 (Register 95, No. 30).
20. Amendment of document, Training Specification for the Regular Basic Course (incorporated by reference) filed 7-25-95; operative 8-24-95 (Register 95, No. 30).
21. Amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) and Note filed 8-21-95; operative 9-20-95 (Register 95, No. 34).
22. Amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 10-11-95; operative 11-10-95 (Register 95, No. 41).
23. Amendment of penultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 1-18-96; operative 2-17-96 (Register 96, No. 3).
24. Amendment of subsection (d)(1), PAM section D-13 (incorporated by reference) and Note filed 1-23-96; operative 2-22-96 (Register 96, No. 4).
25. Amendment of penultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 2-28-96; operative 3-29-96 (Register 96, No. 9).
26. Amendment of subsections (a)(3)-(5), repealer of PAM section D-1-5 and PAM section renumbering (incorporated by reference) and amendment of Note filed 4-2-96; operative 5-2-96 (Register 96, No. 14).
27. Amendment of penultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 4-17-96; operative 5-17-96 (Register 96, No. 16).
28. Amendment of PAM sections D-1-1, D-1-2 and D-1-3 (incorporated by reference), and adoption of the Training Specifications for the Reserve Module "D" - 1995 (incorporated by reference) filed 7-8-96; operative 8-7-96 (Register 96, No. 28).
29. Amendment of PAM section D-1-3 (incorporated by reference) and amendment of Post Administrative Manual , Commission Procedure D-1, (incorporated by reference) filed 10-28-96; operative 11-27-96 (Register 96, No. 44).
30. Amendment of antepenultimate paragraph and amendment of document, Training Specification for the Regular Basic Course (incorporated by reference) filed 11-13-96; operative 12-13-96 (Register 96, No. 46).
31. Amendment of subsection (d)(2) filed 11-20-96; operative 12-20-96 (Register 96, No. 47).
32. Amendment of antepenultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 1-13-97; operative 2-12-97 (Register 97, No. 3).
33. Amendment of subsection (h)(2) and PAM section D-1-2 (incorporated by reference) filed 1-14-97; operative 2-13-97 (Register 97, No. 3).
34. Amendment of subsection (j)(2), PAM section D-1-3 (incorporated by reference), and The POST Basic Academy Physical Conditioning Manual (incorporated by reference) filed 1-23-97; operative 2-22-97 (Register 97, No. 4).
35. Change without regulatory effect amending subsection (j)(2) and PAM section D-1-3 (incorporated by reference) filed 2-13-97; operative 3-15-97 pursuant to section 100, title 1, California Code of Regulations (Register 97, No. 7).
36. Amendment of antepenultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 4-16-97; operative 5-16-97 (Register 97, No. 16).
37. Amendment of antepenultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 6-5-97; operative 7-5-97 (Register 97, No. 23).

38. Amendment of subsection (j)(2) and PAM section D-1-3 (incorporated by reference) filed 7-17-97; operative 8-16-97 (Register 97, No. 29).
39. Amendment of last paragraph and amendment of the document, Training Specifications for the Reserve Training Module "D" (incorporated by reference) filed 7-25-97; operative 8-24-97 (Register 97, No. 30).
40. Amendment of subsections (j)(2) and PAM section D-1-3 (incorporated by reference) filed 11-4-97; operative 12-4-97 (Register 97, No. 45).
41. Amendment of antepenultimate paragraph and amendment of document Training Specifications for the Regular Basic Course (incorporated by reference) filed 12-15-97; operative 1-14-97 (Register 97, No. 51).
42. New subsections (k)-(k)(2) and amendment of Note filed 1-9-98; operative 2-8-98 (Register 98, No. 2).
43. Editorial correction of subsection (k)(2) (Register 98, No. 9).
44. Amendment of antepenultimate paragraph and amendment of document, Training Specifications for the Regular Basic Course (incorporated by reference) filed 3-12-98; operative 4-11-98 (Register 98, No. 11).
45. Editorial change amending History 35 (Register 98, No. 20).
46. Amendment of subsections (a)-(a)(1) and (a)(1)(C) and (D), new subsections (a)(2)-(a)(2)(D), subsection renumbering, amendment of newly designated subsections (a)(3)-(5) and (a)(9), amendment of subsection (k)(2), and amendment of Form 2-229 and PAM section D-13 (incorporated by reference) filed 7-15-98; operative 1-1-99 (Register 98, No. 29).
47. Editorial correction of History 46 (Register 98, No. 35).
48. Amendment of subsections (a)(3) and (k)(2) and PAM section D-1-4 (incorporated by reference) filed 8-25-98; operative 9-24-98 (Register 98, No. 35).
49. Amendment of last paragraph and amendment of document, Training Specifications for the Reserve Training Module "D" (incorporated by reference) filed 8-27-98; operative 9-26-98 (Register 98, No. 35).
50. Amendment of antepenultimate and last paragraphs and amendment of document, Training Specifications for the Reserve Training Module "D" (incorporated by reference) filed 10-27-98; operative 11-26-98 (Register 98, No. 44).
51. Amendment of subsections (g)-(g)(2) filed 3-22-99; operative 4-21-99 (Register 99, No. 13).
52. Amendment of subsections (d)(1)-(2), repealer of subsection (d)(3), new subsections (d)(3)-(4), subsection renumbering, repealer of subsections (f)-(f)(2) and (h)-(h)(2), subsection relettering, and amendment of PAM section D-2 (incorporated by reference) filed 8-19-99; operative 7-1-2000 (Register 99, No. 34).
53. Amendment of PAM section D-1-5 and amendment of document Training Specifications for the Specialized Investigators' Basic Course (both incorporated by reference) filed 7-21-2000; operative 7-21-2000 pursuant to Government Code section 11343.4(d) (Register 2000, No. 29).
54. Amendment of section heading, section and Note filed 8-10-2000; operative 9-9-2000 (Register 2000, No. 32).
55. Amendment of subsection (h)(2) and PAM section D-4 (incorporated by reference) filed 10-3-2000; operative 11-2-2000 (Register 2000, No. 40).
56. Amendment of subsections (d)(2) and (h)(2) and PAM section D-2 (incorporated by reference) filed 10-12-2000; operative 11-11-2000 (Register 2000, No. 41).
57. Amendment of PAM sections D-1-1, D-1-3 and D-1-5 (incorporated by reference), repealer and new antepenultimate paragraph and replacement of the document Training Specifications for the Regular Basic Course with the new document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of last two paragraphs filed 12-29-2000; operative 1-1-2001 pursuant to Government Code section 11343.4(d) (Register 2000, No. 52).
58. Amendment of PAM section D-1-3 (incorporated by reference) filed 1-3-2001; operative 1-1-2002 (Register 2001, No. 1).
59. Amendment of subsection (d)(2) and amendment of PAM section D-2 (incorporated by reference) filed 5-22-2001; operative 1-1-2002 (Register 2001, No. 21).
60. New subsections (c)(3)-(4) filed 8-2-2001; operative 9-1-2001 (Register 2001, No. 31).
61. Editorial correction of document titles in penultimate and antepenultimate paragraphs (Register 2001, No. 33).
62. Amendment of antepenultimate paragraph and amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 8-16-2001; operative 10-1-2001 (Register 2001, No. 33).
63. Editorial correction of subsection (h)(2) (Register 2001, No. 38).

64. Repealer of PAM section D-1-4, renumbering of PAM sections, new PAM section D-14 and new document Training Specifications for the Investigation and Trial Preparation Course (all incorporated by reference) filed 10-17-2001; operative 1-1-2002 (Register 2001, No. 42).
65. Amendment of PAM section D-1-3 and amendment of the document, Training and Testing Specifications for Peace Officer Basic Courses (both incorporated by reference) and amendment of the antepenultimate paragraph filed 12-5-2001; operative 1-1-2002 pursuant to Government Code section 11343.4 (Register 2001, No. 49).
66. Change without regulatory effect amending subsection (d)(2) and PAM section D-2 (incorporated by reference) filed 1-14-2002 pursuant to section 100, title 1, California Code of Regulations (Register 2002, No. 3).
67. Change without regulatory effect amending subsection (d)(2) and PAM section D-2 (incorporated by reference) filed 1-14-2002 pursuant to section 100, title 1, California Code of Regulations (Register 2002, No. 3).
68. Amendment of PAM section D-1-3 (incorporated by reference) and repealer of the document Training Specifications for the Reserve Training Module "D" - Modular Format (incorporated by reference) filed 3-11-2002; operative 4-10-2002 (Register 2002, No. 11).
69. Amendment of penultimate paragraph and amendment of the document, Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 4-26-2002; operative 7-1-2002 (Register 2002, No. 17).
70. Amendment of subsection (h)(2), amendment of PAM section D-1-4, amendment of the document, Training and Testing Specifications for Peace Officer Basic Courses and elimination of the document, Training Specifications for the Specialized Investigators' Basic Course (all incorporated by reference) filed 5-21-2002; operative 7-1-2002 (Register 2002, No. 21).
71. Amendment of subsection (h)(2) and amendment of Learning Domains #23 and #36 within the document, Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 5-24-2002; operative 7-1-2002 (Register 2002, No. 21).
72. Amendment of subsection (h)(2) and amendment of PAM section D-2 (incorporated by reference) filed 8-13-2002; operative 9-12-2002 (Register 2002, No. 33).
73. Amendment of subsections (a) and (a)(1)(A), redesignation and amendment of portion of subsection (a)(1)(A) and subsections (a)(1)(A)1.-4. as new subsections (a)(1)(B)-(a)(1)(B)5., amendment of PAM section D-13 (incorporated by reference) and repealer of the POST Field Training Guide (incorporated by reference) filed 10-7-2002; operative 7-1-2003 (Register 2002, No. 41).
74. Amendment of last paragraph and amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 11-26-2002; operative 1-1-2003 (Register 2002, No. 48).
75. Amendment of PAM section D-3 (incorporated by reference) and amendment of subsection (h) filed 2-6-2003; operative 3-8-2003 (Register 2003, No. 6).
76. Amendment of subsections (d)(1)-(4) and (h)(2) and amendment of PAM section D-2 (incorporated by reference) filed 4-7-2003; operative 5-7-2003 (Register 2003, No. 15).
77. Amendment of subsection (h)(2) and amendment of PAM section D-13 (incorporated by reference) filed 5-5-2003 as an emergency; operative 5-5-2003 (Register 2003, No. 19). A Certificate of Compliance must be transmitted to OAL by 9-2-2003 or emergency language will be repealed by operation of law on the following day.
78. Amendment of subsection (d)(3) filed 7-8-2003; operative 8-7-2003 (Register 2003, No. 28).
79. Amendment of subsections (a)(4), (a)(6), (h)(2) and PAM sections D-1-1 and D-1-3, new PAM section D-1-7 (PAM sections incorporated by reference) and amendment of last paragraph filed 8-21-2003; operative 1-1-2004 (Register 2003, No. 34).
80. Editorial correction inserting inadvertently omitted text in subsection (a)(1)(B)4. and correcting History 76 (Register 2003, No. 40).
81. Certificate of Compliance as to 5-5-2003 order, including amendment of subsections (a), (a)(1)(B)1.b and (a)(1)(B)4., transmitted to OAL 8-26-2003 and filed 10-7-2003 (Register 2003, No. 41).
82. Amendment of last paragraph and further amendment of version of document Training and Testing Specifications for Peace Officer Basic Courses effective 1-1-2004 (incorporated by reference) filed 11-13-2003; operative 1-1-2004 (Register 2003, No. 46).
83. Amendment of subsection (d)(3) and amendment of Commission Procedure D-2 (incorporated by reference) filed 12-30-2003; operative 1-29-2004 (Register 2004, No. 1).
84. Amendment of last paragraph and amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 7-7-2004; operative 8-15-2004 (Register 2004, No. 28).
85. Amendment of PAM sections D-1-1, D-1-2, D-1-3, D-1-4 and D-1-7, amendment of last paragraph and amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 8-26-2004; operative 9-15-2004 pursuant to Government Code section 11343.4 (Register 2004, No. 35).

85. Amendment of last paragraph and amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 6-15-2005; operative 7-1-2005 pursuant to Government Code section 11343.4 (Register 2005, No. 24).
86. Amendment of subsections (d)-(d)(1), new subsections (d)(2)-(3)(F), subsection renumbering and amendment of newly designated subsections (d)(4)-(d)(5)(C) filed 8-1-2005; operative 8-1-2005 pursuant to Government Code section 11343.4 (Register 2005, No. 31).
87. Amendment of PAM section D-2 (incorporated by reference) and amendment of subsection (h)(2) filed 8-12-2005; operative 9-11-2005 (Register 2005, No. 32).
88. Amendment of PAM sections D-1-3, D-1-4, D-1-7 and D-14 and document Training and Testing Specifications for Peace Officer Basic Courses , new document Instructor's Guide to Learning Activities for Leadership, Ethics and Community Policing December 2005 (all incorporated by reference) and amendment of subsection (h)(2) filed 12-22-2005; operative 1-1-2006 pursuant to Government Code section 11343.4 (Register 2005, No. 51).
89. New subsection (e)(3), new PAM section D-15 (incorporated by reference) and amendment of subsection (h)(2) filed 1-19-2006; operative 1-20-2006 pursuant to Government Code section 11343.4 (Register 2006, No. 3).
90. Amendment of PAM sections D-1-2 and D-2 (incorporated by reference) and amendment of subsection (h)(2) filed 7-27-2006; operative 8-26-2006 (Register 2006, No. 30).
91. Amendment of PAM sections D-1-3 and D-1-4, and document Training and Testing Specifications for Peace Officer Basic Courses (all incorporated by reference) and amendment of subsection (h)(2) filed 1-19-2007; operative 1-19-2007 pursuant to Government Code section 11343.4(c) (Register 2007, No. 3).
92. Amendment of subsections (h) and (h)(2) filed 2-2-2007; operative 3-4-2007 (Register 2007, No. 5).
93. Amendment of PAM sections D-1-3 and D-1-4 and document Training and Testing Specifications for Peace Officer Basic Courses (all incorporated by reference) and amendment of subsection (h)(2) filed 6-1-2007; operative 7-1-2007 (Register 2007, No. 22).
94. Amendment of penultimate paragraph and document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 8-8-2007; operative 8-8-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 32).
95. Amendment of penultimate paragraph and document Training and Testing Specifications for Peace Officer Basic Courses filed 12-10-2007; operative 1-1-2008 pursuant to Government Code section 11343.4 (Register 2007, No. 50).
96. Amendment of penultimate paragraph and document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 6-17-2008; operative 7-1-2008 pursuant to Government Code section 11343.4 (Register 2008, No. 25).
97. Amendment of PAM section D-14 and document Training Specifications for the Investigation and Trial Preparation Course (incorporated by reference) and amendment of subsection (h)(2) filed 10-14-2008; operative 11-13-2008 (Register 2008, No. 42).
98. Amendment of subsections (a)(3)-(4), (a)(6) and (h)(2) and PAM sections D-1-3, D-1-4 and D-1-7 (incorporated by reference), new document POST Basic Courses Test Administration and Security Guidelines 2009 (incorporated by reference) and new final paragraph filed 10-28-2008; operative 1-1-2009 (Register 2008, No. 44).
99. New subsection (a)(6), subsection renumbering and amendment of Note filed 11-7-2008; operative 12-7-2008 (Register 2008, No. 45).
100. Amendment of antepenultimate paragraph and document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 12-2-2008; operative 1-1-2009 (Register 2008, No. 49).
101. Amendment of subsection (d)(1), repealer of subsections (d)(2), (d)(2)(C) and (d)(2)(F), subsection renumbering and relettering, amendment of newly designated subsections (d)(2)-(d)(2)(A)(3) and (d)(2)(C)1.-2. and new subsection (d)(2)(A)(4) filed 12-31-2008; operative 1-1-2009 pursuant to Government Code section 11343.4 (Register 2009, No. 1).
102. Amendment of antepenultimate paragraph and amendment of the document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 5-21-2009; operative 7-1-2009 (Register 2009, No. 21).
103. Amendment of antepenultimate paragraph and amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 11-9-2009; operative 1-1-2010 (Register 2009, No. 46).
104. Amendment establishing correct hierarchy of subsection designators within subsection (d)(2), renumbering former subsection (d)(4) to (d)(3) and renumbering former subsection (d)(5) to (d)(4) filed 6-9-2010; operative 7-1-2010 pursuant to Government Code section 11343.4 (Register 2010, No. 24).
105. Amendment of the document, Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of antepenultimate paragraph filed 6-9-2010; operative 7-1-2010 pursuant to Government Code section 11343.4 (Register 2010, No. 24).

106. Amendment of subsections (d)(1) and (d)(3)(A)-(B) filed 12-29-2010; operative 1-1-2011 pursuant to Government Code section 11343.4 (Register 2010, No. 53).
107. Amendment of subsections (d) and (d)(3)(B) and PAM section D-2-3 (incorporated by reference) filed 12-30-2010; operative 1-29-2011 (Register 2010, No. 53).
108. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of antepenultimate paragraph filed 4-19-2011; operative 7-1-2011 (Register 2011, No. 16).
109. Amendment of PAM section D-13 filed 9-28-2011; operative 1-1-2012 (Register 2011, No. 39).
110. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of antepenultimate paragraph filed 10-25-2011; operative 1-1-2012 (Register 2011, No. 43).
111. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of antepenultimate paragraph filed 3-14-2012; operative 7-1-2012 (Register 2012, No. 11).
112. Amendment of PAM sections D-1-3, D-1-4 and D-1-7 (incorporated by reference), redesignation and amendment of document POST Basic Courses Test Administration and Security Guidelines 2009 as POST Basic Courses Test Management and Security Protocols 2012 (incorporated by reference) and amendment of final paragraph filed 4-3-2012; operative 5-3-2012 (Register 2012, No. 14).
113. Amendment of subsection (h)(2) and PAM Section D-1-3 (incorporated by reference), removal of POST Basic Academy Physical Conditioning Manual and adoption of Work Sample Test Battery Proctor Manual -2012 (incorporated by reference) filed 6-21-2012; operative 7-21-2012 (Register 2012, No. 25).
114. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) filed 6-26-2012; operative 7-1-2012 pursuant to Government Code section 11343.4 (Register 2012, No. 26).
115. Amendment of PAM section D-13 (incorporated by reference) and amendment of subsection (h)(2) filed 11-15-2012; operative 1-1-2013 (Register 2012, No. 46).
116. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) filed 11-15-2012; operative 1-1-2013 (Register 2012, No. 46).
117. Change without regulatory effect amending section filed 11-26-2012 pursuant to section 100, title 1, California Code of Regulations (Register 2012, No. 48).
118. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) filed 7-8-2013; operative 8-1-2013 pursuant to Government Code section 11343.4(b)(3) (Register 2013, No. 28).
119. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) filed 11-25-2013; operative 2-1-2014 (Register 2013, No. 48).
120. Amendment of PAM section D-1-3 (incorporated by reference) and amendment of subsection (h)(2) filed 12-12-2013; operative 4-1-2014 (Register 2013, No. 50).
121. Amendment of PAM sections D-1-3, D-1-4, D-1-7 and document POST Basic Courses Test Management and Security Protocols 2014 (all incorporated by reference) and amendment of subsection (h)(2) and penultimate paragraph filed 6-5-2014; operative 10-1-2014 (Register 2014, No. 23).
122. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) filed 6-11-2014; operative 8-1-2014 pursuant to Government Code section 11343.4(b)(3) (Register 2014, No. 24).
123. Amendment of document, Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) filed 6-24-2015; operative 8-1-2015 pursuant to Government Code section 11343.4(b)(3) (Register 2015, No. 26).
124. Amendment of document, Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) filed 10-20-2015; operative 2-1-2016 pursuant to Government Code section 11343.4(b)(3) (Register 2015, No. 43).
125. Change without regulatory effect amending section heading and section filed 12-9-2015 pursuant to section 100, title 1, California Code of Regulations (Register 2015, No. 50).
126. New subsections (i)-(i)(2) and amendment of Note filed 2-17-2016; operative 4-1-2016 (Register 2016, No. 8).
127. Amendment of PAM section D-1-3, PAM section D-1-4, PAM section D-1-7 and the document, POST Basic Courses Test Management and Security Protocols (all incorporated by reference) and amendment of subsection (i)(2) filed 2-24-2016; operative 4-1-2016 (Register 2016, No. 9).

128. Change without regulatory effect amending subsections (a)(1), (a)(5), (a)(6), and(d)(2)(C)2. and (d)(3)(A) filed 6-9-2016 pursuant to section 100, title 1, California Code of Regulations (Register 2016, No. 24).

129. Amendment of document Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (h)(2) and Note filed 7-28-2016; operative 8-1-2016 pursuant to Government Code section 11343.4(b)(3) (Register 2016, No. 31).

130. Amendment of PAM section D-13, subsection (i)(2) and Note filed 11-22-2016; operative 11-22-2016 pursuant to Government Code section 11343.4(b)(3) (Register 2016, No. 48).

131. Amendment of PAM sections D-1-3, D-1-4 and D-1-7, amendment of the documents Training and Testing Specifications for Peace Officer Basic Courses and POST Basic Courses Test Management and Security Protocols (all incorporated by reference) and amendment of subsections (a)(4) and (i)(2) filed 1-27-2017; operative 2-15-2017 pursuant to Government Code section 11343.4(b)(3) (Register 2017, No. 4).

132. Amendment of document, Training and Testing Specifications for Peace Officer Basic Courses, chapters 18, 19, 20, 23, 34 and 39 (incorporated by reference) and amendment of subsection (i)(2) filed 2-1-2017; operative 2-1-2017 pursuant to Government Code section 11343.4(b)(3) (Register 2017, No. 5).

133. Amendment of subsections (a)(1) and (a)(1)(A), new subsection (a)(7), subsection renumbering, amendment of newly designated subsection (a)(9) and subsections (b)(1)-(2), (c)(1), (d)-(d)(1) and (d)(4) filed 5-23-2017; operative 7-1-2017 (Register 2017, No. 21).

134. Amendment of document, Training and Testing Specifications for Peace Officer Basic Courses (incorporated by reference) and amendment of subsection (i)(2) filed 6-28-2017; operative 8-1-2017 pursuant to Government Code section 11343.4(b)(3) (Register 2017, No. 26).

135. Amendment of subsection (d)(4)(C) and new subsection (d)(4)(D) filed 7-31-2017; operative 10-1-2017 (Register 2017, No. 31).

136. New subsections (a)(1)(C)-(a)(1)(C)2. filed 2-22-2018; operative 4-1-2018 (Register 2018, No. 8).

This database is current through 5/4/18 Register 2018, No. 18

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EXHIBIT G

CALIFORNIA CODE OF REGULATION

TITLE 11. LAW

DIVISION 2. COMMISSION ON PEACE OFFICER

STANDARDS AND TRAINING

ARTICLE 1. GENERAL

SECTION 1011. CERTIFICATES

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Title 11. Law

Division 2. Commission on Peace Officer Standards and Training

Article 1. General

11 CCR § 1011

§ 1011. Certificates.

(a) Professional Certificates - Peace Officers

(1) Professional Certificates - Overview

POST Professional Certificates are awarded to peace officers who achieve increasingly higher levels of education, training, and experience in their pursuit of professional excellence.

(A) The Commission-awarded certificate is a “professional” certificate pursuant to Penal Code section 13510.1, and is distinct from a “certificate of completion” which is awarded by a training presenter when an individual successfully completes a course.

(B) Attainment of the POST Basic Certificate is required [refer to subsection 1011(a)(5)].

(C) Attainment of other professional certificates is voluntary.

(2) Certificate Categories and Levels

Professional certificates for full-time peace officers are awarded by category and level.

(A) Categories

There are three categories of certificates:

1. General Certificates
2. Specialized Certificates
3. Coroners Certificates

The certificate category is based on the basic training standard completed by the individual (i.e., completion of a Regular Basic Course constitutes “General Certificates,” completion of the Specialized Investigators' Basic Course constitutes “Specialized Certificates,” and completion of both the PC 832 Course Arrest and Firearms and the Coroners' Death Investigation Course constitutes “Coroner's Certificates”). For example, if the individual works for a specialized law enforcement agency and has completed a Regular Basic Course, as well as, the other required certificate award criteria, the individual is awarded a “General” category certificate.

(B) Levels

There are six certificate levels in each category (above):

1. Basic Certificate
2. Intermediate Certificate
3. Advanced Certificate
4. Supervisory Certificate
5. Management Certificate
6. Executive Certificate

(C) Reserve Peace Officer Certificates

Professional certificates for reserve peace officers are awarded in one category and one level. Requirements for the Reserve Peace Officer Certificate are specified in subsection 1011(a)(12).

(3) Certificate Terminology and Policy

Except as noted, the following terms and policies apply to all certificate categories and levels:

(A) College Degree or College Unit Criteria

Accreditation shall be by a national or regional accrediting body that is recognized by the Secretary of the United States Department of Education. For the award of a certificate, all degrees or units:

1. Shall be issued by and recorded on the transcript of an *accredited* community college, college, or university; or
2. When issued by a *non-accredited* community college, college, or university; the degree or units shall have been accepted and recorded on the transcript of an accredited community college, college, or university.

(B) Education Units

For purposes of certificate qualifications:

1. One college semester unit equals one education unit, or
2. One college quarter unit equals two-thirds of an education unit.

(C) Training Points

For purposes of certificate qualifications:

1. Twenty (20) hours of law enforcement training are equal to one training point. Only completed courses with verifiable hours are accepted.
2. The Commission shall determine acceptable law enforcement training.

(D) Education Unit Conversions

When education units exceed the number needed to qualify for a certificate, the excess education units may be converted to training points to meet training point requirements. One education unit shall equal one training point. POST will make the conversion when it is to the advantage of the applicant.

(E) Law Enforcement Experience

Law enforcement experience described in subsection 1011(a)(3)(E)1. is accepted if it is recorded on the POST Profile in the POST database. POST may accept the experience described in subsection 1011(a)(3)(E)2., 3., and 4. when the law enforcement experience is: 1) documented on the employing department's/agency's letterhead, signed by the department head, 2) includes an attestation that the applicable requirements stated in experience categories subsection 1011(a)(3)(E)2., 3., or 4. have been met, and 3) includes the type of appointment, time base, dates of service, and types of duties performed.

1. Full-time peace officer experience that is/was with a California POST-participating department.
2. Full-time peace officer experience with a California law enforcement department that is/was not a POST-participating department, and during the time of the appointment, the law required completion of the Regular Basic Course or Specialized Investigator's Basic Course for the position held.
3. Full-time peace officer experience with an out-of-state law enforcement department that participates in its state's "POST type" program, and the "POST-type" program awarded the individual a Basic Certificate or license. The maximum credit allowed for this experience category is five years. "POST-type" means any department/agency that is a member of the International Association of Directors of Law Enforcement Standards and Training.
4. Full-time law enforcement experience with a federal law enforcement agency and the individual satisfactorily completed a basic law enforcement academy presented by the Federal Law Enforcement Training Center (FLETC) or the Federal Bureau of Investigation (FBI) academy. The maximum credit allowed for this experience category is five years.

(F) Multiple Certificates at Same Level

Peace officers who qualify may be awarded a certificate in more than one category and at the same level (e.g., a General Basic Certificate and a Specialized Basic Certificate).

(4) Certificate Award Requirements - All Levels

Each certificate applicant, except the applicant for a Reserve Peace Officer Certificate, shall satisfy the following requirements:

(A) Employment Requirement

At the time of application, an applicant shall be employed as a full-time peace officer by a POST-participating department. EXCEPTION: When a POST Basic Certificate is required to continue to exercise peace officer powers pursuant to Penal Code section 832.4, employment with a participating department is not required at the time of application.

(B) Basic Course Training Requirement

When applying for any level of certificate, an applicant shall have satisfied the basic course training requirement, as specified in Regulation 1005, for the applicant's current appointment.

(C) Requalification Requirement

1. Applicants for general or specialized category certificates must possess basic training that has not expired as specified in Regulation 1008(b), Basic Course Requalification Requirement.
2. Applicants for coroner's category certificates must possess Penal Code (PC) 832 Arrest and Firearms training that has not expired, as specified in Regulation 1080, PC 832 Arrest and Firearms Course Requalification.

(D) Application Requirements

An applicant (or an applicant's employing department) shall submit a completed Certificate Application, POST 2-116 (Rev 06/2014), herein incorporated by reference, along with supporting documents as follows:

1. Documentation that supports the required education and experience (i.e., official transcripts, diplomas, certificates of course completion, and proof of law enforcement experience).
2. When the units of credit are transferred from one educational institution to another, supporting documentation from all educational institutions is required.
3. Supporting documents are not required if the education and/or experience information needed to support the current certificate request is already reflected on the applicant's POST Profile. Any education or experience that is not reflected on the POST Profile must be supported as described in subsection 1011(a)(4)(D)1. and/or 2.

(5) Basic Certificate Possession Requirement

The Basic Certificate is required for:

(A) Specified Peace Officers

Pursuant to Penal Code section 832.4(b), every peace officer listed in Penal Code section 830.1(a) [except a sheriff, an elected marshal, or a custodial deputy appointed pursuant to Penal Code 830.1(c)] shall obtain the POST Basic Certificate in order to continue to exercise peace officer powers. PC 832.4 requires possession upon completion of probation, but in no case later than 24 months after appointment. However, if the department's probation period is 24 months, an additional three months is authorized.

(B) Police Chiefs/Persons in Charge

Pursuant to Penal Code section 832.4(c), as a *condition of continued employment*, each police chief, or any other person in charge of a local law enforcement agency, who is appointed on or after January 1, 1999, shall possess the POST Basic Certificate within two years of appointment.

(C) Peace Officers Employed by a Participating Department

Every peace officer appointed by a department participating in the POST Program shall possess the appropriate Basic Certificate within the time limits described in subsection 1011(a)(5)(A), unless an exception in subsection 1011(a)(5)(D) pertains to the officer.

(D) Exception to Basic Certificate Requirement

There are three exceptions to the Basic Certificate possession requirements specified in subsection 1011(a)(5)(A)-(C):

1. Peace officers appointed prior to the employing department's entry date into the POST Program and who are not required to possess a POST Basic Certificate pursuant to the requirements of Penal Code section 832.4, and
2. Custodial peace officers appointed pursuant to Penal Code section 830.1(c), and
3. Peace officers first appointed prior to January 1, 1974, and who have not changed departments since that date and who are not included in exceptions subsection 1011(a)(1) or (2).

(6) Basic Certificate Award Requirements

Applicants for the award of a Basic Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(a)(4).

(B) Complete the current employing department's probationary period of not less than 12 months.

(C) Satisfy the minimum entry-level basic course training standard for the applicant's current position [i.e., one of the following: 1) Regular Basic Course, 2) Specialized Investigator's Basic Course, or 3) a PC 832 Course and Coroner's Death Investigation Course].

(7) Intermediate Certificate Award Requirements

Applicants for the award of an Intermediate Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(a)(4).

(B) Possess or be eligible to possess the Basic Certificate.

(C) Satisfy one of the following eligibility combinations:

<i>Degree or Education</i>		<i>Law Enforcement</i>		
<i>Units</i>		<i>Experience</i>		<i>Training Points</i>
Bachelor Degree	<i>and</i>	2 years	<i>plus</i>	0
Associate Degree	<i>and</i>	4 years	<i>plus</i>	0
45 Education Units	<i>and</i>	4 years	<i>plus</i>	45
30 Education Units	<i>and</i>	6 years	<i>plus</i>	30
15 Education Units	<i>and</i>	8 years	<i>plus</i>	15

*Excess education units may be applied towards training points on a unit-for-point basis [refer to subsection 1011(a)(3)(D).].

(8) Advanced Certificate Award Requirements

Applicants for the award of an Advanced Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(a)(4).

(B) Possess or be eligible to possess the Intermediate Certificate.

(C) Satisfy one of the following eligibility combinations:

<i>Degree or Education</i>		<i>Law Enforcement</i>		
<i>Units*</i>		<i>Experience</i>		<i>Training Points</i>
Master Degree	<i>and</i>	4 years	<i>plus</i>	0
Bachelor Degree	<i>and</i>	6 years	<i>plus</i>	0
Associate Degree	<i>and</i>	9 years	<i>plus</i>	0
45 Education Units	<i>and</i>	9 years	<i>plus</i>	45
30 Education Units	<i>and</i>	12 years	<i>plus</i>	30

*Excess education units may be applied towards training points on a unit-for-point basis [refer to subsection 1011(a)(3)(D).].

(9) Supervisory Certificate Award Requirements

Applicants for the award of a Supervisory Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(a)(4).

(B) Possess or be eligible to possess an Intermediate Certificate.

(C) Complete a minimum of 60 semester units or possess an accredited degree (i.e., AA, BA, MA, etc.).

(D) Successfully complete a POST-certified Supervisory Course.

(E) Possess a minimum of two years law enforcement experience as a permanent first-level supervisor or higher.

(10) Management Certificate Award Requirements

Applicants for the award of a Management Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(a)(4).

(B) Possess or be eligible to possess an Advanced Certificate.

(C) Complete a minimum of 60 semester units or possess an accredited degree (i.e., AA, BA, MA, etc.).

(D) Successfully complete a POST-certified Management Course.

(E) Possess a minimum of two years law enforcement experience as a permanent middle manager or higher.

(F) In order to be awarded both the Supervisory and Management Certificates, possess two years of law enforcement experience as a permanent first-level supervisor or higher, plus two years of law enforcement experience as a permanent middle manager or higher.

(11) Executive Certificate Award Requirements

Applicants for the award of an Executive Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(a)(4).

(B) Possess or be eligible to possess an Advanced Certificate.

(C) Complete a minimum of 60 semester units or possess an accredited degree (i.e., AA, BA, MA, etc.).

(D) Successfully complete a POST-certified Executive Development Course.

(E) Possess a minimum of two years law enforcement experience as a permanent department head with the current employing agency

(F) In order to be awarded three certificates, Supervisory, Management, and Executive, or any combination of two, possess a minimum of two years experience at the levels stated in subsections 1011(a)(9)(E), 1011(a)(10)(E), and 1011(a)(11)(E) respectively, as appropriate for the award.

(12) Reserve Peace Officer Certificate Requirements

(A) Requirements

Applicants for the award of a Reserve Peace Officer Certificate shall:

1. Be currently employed as a (designated or non-designated) Level I Reserve Officer with a department participating in the POST program.
2. Have been selected in accordance with the minimum selection standards specified in Commission regulations for reserve officers.
3. Have completed a POST-certified Regular Basic Course in any delivery format.
4. Have satisfactorily completed a minimum of 200 hours of general law enforcement experience.
5. If appointed on or after January 1, 1999, but prior to June 30, 1999, shall have completed 200 hours of field training. If appointed on or after July 1, 1999, shall have completed 400 hours of field training.

(B) Application Requirements

An applicant (or an applicant's employing department) shall submit a completed *Certificate Application - Reserve Peace Officer*, POST 2-256 (10/2010). If the training required in subsection 1011(a)(12)(A)3. is not reflected on the applicant's POST Profile, the application shall include supporting documentation that verifies the training has been completed (i.e., a certificate of completion).

(b) Peace Officer Disqualification and Certificate Records

(1) Disqualification from Peace Officer Employment

Except as provided in subdivision (2), (3), or (4), Government Code section 1029(a) summarily states that a person is disqualified from holding office as, or being employed as, a peace officer of the state, if the person is:

(A) Convicted of a felony.

(B) Convicted in any other jurisdiction of an offense that would have been a felony if committed in California.

(C) After January 1, 2004, been convicted of a crime based upon a verdict or finding of guilt of a felony by the trier of fact, or upon the entry of a plea of guilty or *nolo contendere* to a felony. This paragraph shall apply regardless of whether, pursuant to Penal Code section 17(b), the court declares the offense to be a misdemeanor or the offense becomes a misdemeanor by operation of law. [Note: when this section applies, also review text in Government Code section 1029(b).]

(D) Charged with a felony and adjudged to be mentally incompetent by a superior court.

(E) Found not guilty of a felony by reason of insanity.

(F) Determined to be a mentally disordered sex offender pursuant to Article 1 (commencing with Section 6300) of Chapter 2, Part 2 of Division 6 of the Welfare and Institutions Code.

(G) Convicted of addiction or in danger of becoming addicted to narcotics and committed to a state institution, pursuant to Section 3051 of the Welfare and Institutions Code.

(2) Employing Agency Responsibility

When department personnel have knowledge that a peace officer employee has been disqualified from holding office or being employed as a peace officer of the state pursuant to Government Code section 1029, the person with knowledge shall notify POST immediately. The notification shall be in writing and include as attachments copies of official documents that substantiate the disqualification.

(3) Disqualification Recorded

When a peace officer or former peace officer has been determined to be disqualified from holding office or being employed as a peace officer pursuant to Government Code section 1029, POST shall record the following admonition on the individual's POST Profile:

"THIS PERSON IS INELIGIBLE TO BE A PEACE OFFICER IN CALIFORNIA PURSUANT TO GOVERNMENT CODE SECTION 1029(a)."

If that same individual possesses a POST Basic Certificate, the Commission shall also note on the individual's POST Profile record in the "certificate section" of the record:

"THE BASIC CERTIFICATE IS NULL AND VOID."

(4) Notification to Employing Law Enforcement Department

When POST has been officially notified through receipt of official court documents that a currently employed peace officer is ineligible to be a peace officer pursuant to Government Code section 1029(a), the Commission shall notify the law enforcement agency that employs the officer.

(5) Overturned or Reversed Convictions and Peace Officer Profile Records

An individual whose felony conviction is overturned or reversed is personally responsible for requesting an amendment of POST records. The individual desiring that his/her POST record be corrected shall:

(A) Provide POST with a written request to remove the statement(s) regarding ineligibility to be a peace officer and/or the voided Basic Certificate.

(B) Provide POST with certified court documentation that proves the felony conviction has been overturned or reversed.

(c) Professional Certificates - Public Safety Dispatcher

(1) Dispatcher Certificates

Dispatcher Certificates are professional certificates awarded in recognition of meeting specified training and service requirements. Possession of these certificates is voluntary, and is not required to perform dispatcher duties.

(2) Application Requirements

An applicant (or an applicant's employing department) shall submit a completed Certificate Application - POST Public Safety Dispatcher, POST 2-289 (Rev 06/2014), herein incorporated by reference. The application's attestation must be signed by the department head. If the training required is not reflected on the applicant's POST Profile, the application shall include supporting documentation that verifies the training has been completed (i.e., a certificate of completion).

(3) Dispatcher Basic Certificate Award Requirements

Each certificate applicant shall satisfy the requirements specified below:

(A) Be employed with a department participating in the POST Dispatcher Program.

(B) Be appointed as a full-time public safety dispatcher.

(C) Have been selected in accordance with the minimum selection requirements specified in Regulation 1018.

EXCEPTION: This requirement does not apply, if the dispatcher was appointed prior to the department's participation in the POST program.

(D) Have successfully completed a POST-certified Public Safety Dispatcher's Basic Course of no less than 80 hours.

(E) Have satisfactorily completed the current department's probationary period of at least 12 months.

EXCEPTION: Upon entry into the program, departments with a probation period of less than 12 months, when established by ordinance, charter, or memorandum of understanding, shall be granted a waiver of this requirement until a 12-month probation period can be established.

(4) Dispatcher Intermediate Certificate Award Requirements

Applicants for the award of a Dispatcher Intermediate Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(c)(3) for all certificates.

(B) Possess or be eligible to possess the Dispatcher Basic Certificate.

(C) Satisfy one of the following eligibility combinations:

<i>Degree or Education</i>		<i>Dispatcher</i>		<i>Training</i>
<i>Units*</i>		<i>Experience</i>		<i>Points</i>
Bachelor Degree	and	3 years	plus	0
Associate Degree	and	5 years	plus	0
45 Education Units	and	5 years	plus	12
30 Education Units	and	7 years	plus	11
15 Education Units	and	9 years	plus	10

*Excess education units may be applied towards training points on a unit-for-point basis [refer to subsection 1011(a)(3)(D).].

(5) Dispatcher Advanced Certificate Award Requirements

Applicants for the award of a Dispatcher Advanced Certificate shall:

(A) Satisfy the requirements specified in subsection 1011(c)(3) for all certificates.

(B) Possess or be eligible to possess the Dispatcher Intermediate Certificate.

(C) Satisfy one of the following eligibility combinations:

<i>Degree or Education</i>		<i>Dispatcher</i>		<i>Training</i>
<i>Units*</i>		<i>Experience</i>		<i>Points</i>
Master Degree	and	5 years	plus	0
Bachelor Degree	and	7 years	plus	0
Associate Degree	and	9 years	plus	0
45 Education Units	and	9 years	plus	12
30 Education Units	and	11 years	plus	11

*Excess education units may be applied towards training points on a unit-for-point basis [refer to subsection 1011(a)(3)(D)].

(6) Dispatcher Supervisory Certificate Award Requirements

Applicants for the award of a Dispatcher Supervisory Certificate shall:

(A) Satisfy the requirements specified in Regulation 1018.

(B) Possess or be eligible to possess the Dispatcher Intermediate Certificate.

(C) Complete a minimum of 60 semester units or possess a degree from an accredited college.

(D) Successfully complete a POST-certified Supervisory Course. (The Dispatcher Supervisory Course is highly recommended.)

(E) Possess a minimum of two years experience as a permanent first-level Dispatcher Supervisor or higher.

(d) Professional Certificates - Records Supervisor

(1) Records Supervisor Certificate

The Records Supervisor Certificate is a professional certificate awarded to a records supervisor in recognition of meeting specified training and service requirements. Possession of this certificate is voluntary, and is not required to perform record supervisor duties.

(2) Prior to submitting an application for a POST Records Supervisor Certificate, POST shall have been notified of the records supervisor's appointment pursuant to the requirements in Regulation 1003(a)(1)(A)4.

(3) Application Requirements

An applicant (or an applicant's employing department) shall submit a completed Certificate Application - Records Supervisor, POST 2-117 (Rev 06/2014), herein incorporated by reference. The application's attestation must be signed by the department head. If the training required is not reflected on the applicant's POST Profile, the application shall include supporting documentation that verifies the training has been completed (i.e., a certificate of completion).

(4) Records Supervisor Certificate Award Requirements

Each certificate applicant shall satisfy the requirements specified below:

(A) Be currently employed with a department participating in the POST Program.

(B) Be appointed as a records supervisor as defined in Regulation 1001.

(C) Have satisfactorily completed the current department's probationary period for a records supervisor.

(D) Have completed a minimum of two years satisfactory service with the current department as a records supervisor.

(E) Be a high school graduate or have successfully passed the General Education Development (GED) test for high school graduation.

(F) Have satisfactorily completed the Public Records Act course (minimum 16 hours) and the Records Supervisor Course (minimum 40 hours).

(e) Certificates of Course Completion

(1) These certificates are awarded by training presenters to students who successfully complete a POST-certified course. The issuance of these types of certificates by training presenters are highly recommended but are not required except as specified in subsection 1011(e)(3). The certificate of course completion alone does not grant or bestow any powers on any individual who is the bearer of such a certificate.

(2) Peace Officer Powers

The combination of an appointment to a peace officer position by a law enforcement agency authorized to appoint peace officers, and the possession of a certificate of course completion for certain basic courses (e.g., PC 832 Arrest and Firearms) may bestow peace officer powers to an individual (refer to Penal Code section 832).

(3) Certificate Issuance Requirement for Specified Courses

Any presenter of a POST-certified instructor development course listed in Regulation 1070 or presenters of the Academy Director/Coordinator Workshop or Recruit Training Officer Workshop shall issue a certificate of completion to all students who successfully complete the training.

(4) Certificate Content Requirement

A certificate of completion issued by the training institution shall include:

- (A) Name of the training institution
- (B) POST title of the course
- (C) Ending date of the course
- (D) Number of hours completed by the individual
- (E) POST course control number

(f) Certificate Replacement

Individuals who have lost or misplaced a professional certificate or who possess a damaged professional certificate may request a replacement. The request must be submitted on a Request for Reissuance of POST Certificate, POST 2-250 (06/2014), herein incorporated by reference, to the POST Certificates Unit.

(g) Certificate Cancellation

(1) Cancellation Reasons

POST shall cancel a professional certificate(s) for the following reasons:

- (A) The certificate was obtained through misrepresentation, fraud, or
- (B) The certificate was issued as a result of administrative error on the part of POST or the employing agency.

(2) Notification Requirement

Department personnel who possess information that a certificate was obtained through misrepresentation, fraud, or administrative error shall notify POST immediately.

(3) Investigation of Circumstances

The Executive Director may initiate an investigation of the circumstances under which the certificate was issued. The Executive Director has the authority to approve or deny certificate cancellation.

(4) Cancellation Appeal

An individual whose certificate has been cancelled may appeal the cancellation to the Commission.

At the Commission's discretion, a hearing shall be held either before the Commission or before a qualified hearing officer. The hearing officer shall prepare a proposed decision in such form that it may be adopted as the decision in the case. All hearings shall be conducted in conformance with the Administrative Procedures Act (Government Code.C. section 11340 et seq.). At the conclusion of the appeal hearing, the Commission shall render a decision to uphold or overturn the decision to cancel the certificate.

(5) Cancellation Recorded

When the decision to cancel is upheld through the appeal process, the POST Profile record shall indicate the appropriate reason for the cancellation.

(6) Return of Certificate

Upon notification of cancellation, the individual to whom a cancelled certificate was issued shall return the certificate to POST.

Note: Authority cited: Sections 1029, Government Code; Sections 13503, 13506, 13510(c), 13510.1, 13510.1(e), 13510.2 and 13510.7, Penal Code. Reference: Section 1031, Government Code; and Sections 832.4, 13503, 13506, 13510(c), 13510.1, 13510.3 and 13510.7(a)-(b), Penal Code.

HISTORY

1. Change without regulatory effect renumbering and amending former section 9070 to new subsections 1011(a)-(a)(15), renumbering and amending former section 9071 to new subsections 1011(b)-(b)(5)(B), renumbering and amending former section 9072 to new subsections 1011(c)-(c)(7), renumbering and amending former section 9073 to new subsections 1011(d)-(d)(6), renumbering and amending former section 9076 to new subsections 1011(e)-(e)(4), renumbering and amending former section 9077 to new subsections 1011(f)-(f)(1) and renumbering and amending former section 9078 to new subsections 1011(g)-(g)(6) filed 11-26-2012 pursuant to section 100, title 1, California Code of Regulations (Register 2012, No. 48). For prior history, see Register 2007, No. 5.

2. Amendment of section and Note and POST Forms 2-116, 2-117, 2-250 and 2-289 (incorporated by reference) filed 8-26-2015; operative 10-1-2015 (Register 2015, No. 35).

3. Change without regulatory effect amending section and Note filed 12-9-2015 pursuant to section 100, title 1, California Code of Regulations (Register 2015, No. 50).

4. Change without regulatory effect amending subsections (a)(4)(D)3. and (a)(5)(D)3. and footnotes to tables in subsections (a)(8)(C) and (c)(4)(C) filed 6-9-2016 pursuant to section 100, title 1, California Code of Regulations (Register 2016, No. 24).

5. Amendment of Certificate Application - Reserve Peace Officer application form (POST 2-256) and Request for Reissuance of POST Certificate form (POST 2-250) (both incorporated by reference) and amendment of subsections (a)(12)(B) and (f) filed 6-22-2016; operative 10-1-2016 (Register 2016, No. 26).

This database is current through 2/8/19 Register 2019, No. 6

11 CCR § 1011, 11 CA ADC § 1011

END OF DOCUMENT

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EXHIBIT H

**Interim Response from Retired Oakland Police
Officers Association to November 28, 2018 PFRS
Agenda Report – “*A Report Regarding the Method of
Calculating PFRS Police Retiree Holiday Pay for
Captains and Deputy Chiefs; and a Resolution
Adopting a Revised Method for Calculating Police
Holiday Retirement Allowances for Captains and
Deputy Chiefs*”**

**McCraken, Stemerman & Holsberry, LLP
December 12, 2018**

McCRACKEN, STEMERMAN & HOLSBERRY, LLP

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MANAGEMENT

Counselors and Attorneys at Law

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December 12, 2018

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Sarah Varela (CA, AZ, NV)
Sarah Grossman-Swenson (CA, NV)
Yuval Miller (CA, NV)
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Via E-Mail (DLow@oaklandnet.com) and U.S. Mail

Oakland Police and Fire Retirement System Board
c/o David Low
150 Frank Ogawa Plaza, Ste. 3332
Oakland, CA 94612

Re: Interim Response from Retired Oakland Police Officers Association to November 28, 2018 PFRS Agenda Report – “A Report Regarding The Method of Calculating PFRS Police Retiree Holiday Pay for Captains and Deputy Chiefs; And A Resolution Adopting a Revised Method for Calculating Police Holiday Retirement Allowances for Captains and Deputy Chiefs”

Dear Oakland Police and Fire Retirement System Board:

Our firm represents the Retired Oakland Police Officers Association (“ROPOA”). On behalf of ROPOA, we hereby submit this response to the above-referenced PFRS Staff Report dated November 28, 2018. This response supplements the November 15, 2017 Response from ROPOA & Petitioners to the October 16, 2017 PFRS Agenda Report on Holiday Pay, and the June 20, 2018 Letter from ROPOA Secretary Mr. Robert W. Nichelini on behalf of ROPOA, previously submitted to the PFRS Board.

ROPOA urges the PFRS Board to refrain from taking the staff’s recommended adverse action against captain and deputy chief PFRS retirees. The Staff Report significantly overstates the amount of any overpayment. Taking the adverse action would be premature as the parties continue to have productive dialogue on these issues in the hopes of avoiding further litigation.

Oakland Police and Fire Retirement System Board

December 12, 2018

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I. The Staff Report has dramatically under-reported the amount of holiday pay that attaches to the ranks of captain and deputy chief retirees.

A. The Staff Report ignores the 96 hours of “straight-time holiday pay” that management ranks are entitled to in addition to their annual base pay.

Under Article VII Section H.3 of the PMA MOU:

“[a]ll bargaining unit members will be paid eight (8) hours of straight time for each holiday as defined in Article VII Section H. In addition to the straight-time holiday pay, if the member works on the holiday, the employee shall accrue one hour of extra vacation for every hour worked on a holiday.”

Under Article VII Section H.3 of the PMA MOU:

“[a]ll bargaining unit members will be paid eight (8) hours of straight time for each holiday as defined in Article VII Section H. In addition to the straight-time holiday pay, if the member works on the holiday, the employee shall accrue one hour of extra vacation for every hour worked on a holiday.”

Thus, actives are entitled to 96 hours of straight-time holiday pay annually, based on the twelve (12) designated holidays set forth in Article VII Section H.

The Staff Report analysis completely ignores the 96 hours of holiday pay that is required to be paid to captains and deputy chiefs. Contrary to the plain language of the MOU, the Staff Report inconceivably asserts that “all holidays are already included in the 2080 hours of base pay,” seemingly claiming that the “straight-time holiday pay” is either paid to actives *in lieu* of base pay or not paid at all. (See page 14 and footnote 13.)

This makes no sense. First, under basic principles of contract construction, this cannot be the case. If the Staff Report’s unfounded assertion were true, then Article VII Section H.3 of the MOU would be rendered entirely superfluous: there would be absolutely no reason to include this language, because the MOU already provides actives with base pay. The fact that there is a special provision that unequivocally states that all members **“will be paid eight (8) hours of straight time for each holiday”** means that actives in these ranks are entitled to 96 hours of holiday pay under the MOU. Retirees are thus entitled to the inclusion of this holiday pay in their benefits calculation. If payroll records show that actives are not receiving this pay, either by an intentional act by the City or due to errors in reporting pay, the actives should file a grievance and get the pay they are owed.

Second, the pay could only be *in lieu* of base pay if it was paid on a day where an active was regularly scheduled to work, and the City paid the active “holiday pay” for that day *instead* of paying the active regular base pay. But the City is arguing that captain and

Oakland Police and Fire Retirement System Board

December 12, 2018

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deputy chief actives work very *few* holidays—so if they are paid for these holidays where they aren't working, this would necessarily be pay in *addition* to the their regular pay because they normally would not receive pay for days they don't work.

B. If PFRS uses averages to calculate holiday pay, on average captains and deputy chiefs should be credited with 113.22 hours of holiday pay, not 17.22 hours of holiday pay.¹

The PFRS report does acknowledge the extra vacation actives accrue in addition to the straight-time holiday pay if the member actually works on the holiday, finding that police captains and deputy chiefs have been credited with working an average of 17.22 holiday hours over the last three fiscal years.

If PFRS wishes to calculate holiday pay using the average hours worked by actives, then based on Article VII Section H.3, retirees should be credited with approximately 113.22 hours of holiday pay in addition to their 2080 hours of base pay, based on the 96 hours they are owed under the MOU, and the 17.22 average for hours worked on holidays.

C. The City of Oakland's persons most knowledgeable about payroll practices for actives acknowledge that there are frequent errors in self-reported holiday pay payroll data.

The City of Oakland's own persons most knowledgeable about payroll practices for active officers admitted in sworn deposition testimony that the City's self-reported payroll system contains inaccuracies and that there is widespread confusion among active officers about how to code holiday pay. (See Depositions of Karl Carstensen and Leticia Gonzalez (May 23, 2018), Case No. RG 16838274.) For example, Ms. Gonzalez explained:

Q [by ROPOA counsel]. Have you ever had any problems with officers failing to select the [holiday pay] codes correctly?

A [by Ms. Gonzalez]. Yes.

Q. And how frequently is that a problem?

A. Every holiday.

(Tr. 53, excerpts attached as Exhibit B.) She estimated that they identified more than 10 errors every holiday. (Tr. 55.) She also explained that if officers reported their own hours

¹ ROPOA agrees with the PFRS Board that it is improper to combine captains and deputy chiefs for purposes of calculating an average, and understands PFRS Staff is working to fix this error. ROPOA uses the 17.22 average for illustrative purposes, as the City has not yet responded to ROPOA's November 28, 2018, Public Records Act request for relevant data (attached hereto as Exhibit A).

Oakland Police and Fire Retirement System Board

December 12, 2018

Page 4

worked incorrectly, “there’s no way we would know that.” (Tr. 58.) It may be that the low numbers of holidays worked or any failure to pay holiday pay in addition to base pay to actives may be due to confusion about how holiday pay is supposed to be reported by actives. Accordingly, the PFRS Board should proceed with caution in relying solely on the payroll data provided by the City of Oakland.

II. The Staff Report ignores other holiday and premium pay provisions that should attach to captain and deputy chief retirees if the PMA MOU controls.

ROPOA is awaiting a response to the Public Records Act Request it filed on November 28, 2018 (Request #18-4186) seeking payroll information on the below categories of pay and premium compensation that it believes should attach to captain and deputy chief retirees. ROPOA has been informed that captains and deputy chiefs were provided with additional compensation to make up for the seemingly lower holiday pay. ROPOA urges the PFRS Board to consider and analyze all possible forms of compensation that may attach to retirees.

These categories of pay and compensation include:

- **Floating Holiday – 8 hours:** Oakland person most qualified Leticia Gonzalez unequivocally admitted that the floating holiday can be cashed out at any time, contrary to the assertion set forth in the Staff Report. (PMA MOU Article VII Section H.2; Gonzalez Depo. Tr. 35 (active officers are automatically crediting with the floating holiday by central payroll); 37-38 (actives can take 8 hours off that they would otherwise have to use some sort of paid leave to take or can be paid out for the eight hours without taking time off (up to 300 hours per year).) This means the floating holiday is “payable in cash” – meaning, it *can* be paid in cash, and thus, attaches to the rank.
- **Vacation Buy Back – 120 Hours:** This is a cash benefit payable to all active captains, deputy chiefs and the Chief of Police, meaning it attaches to the rank. (PMA MOU Article VII Section 3.)
- **Management Leave – 15 Days (120 hours):** On information and belief, the additional requirements for this leave are pro forma, and this leave can be banked and paid out in cash. Thus, this is a cash benefit payable to all active captains, deputy chiefs and the Chief of Police, meaning it attaches to the rank. (PMA MOU Article VII Section A and PMA MOU Appendix A.)
- **POST Management Certificate – 5% of pay:** It is undisputable that every active captain and deputy chief has qualified for a POST Management Certificate by virtue

McCRACKEN, STEMERMAN & HOLSBERRY, LLP

Oakland Police and Fire Retirement System Board

December 12, 2018

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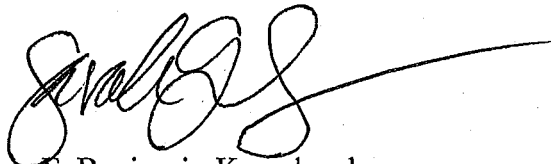
of their tenure in the Department and completion of required training. Every retired PFRS captain and deputy chief also holds a POST Management Certificate and should be paid accordingly. (PMA MOU Article IX Section A.1.)

- **Bachelor's Degree – 5% of pay:** ROPOA, on information and belief, believes that every active captain and deputy chief holds a bachelor's degree, and that Bachelor's Degrees are either actual or de-facto requirements for these ranks. This is a cash benefit and compensation attached to the rank for PFRS retirees. (PMA MOU Article IX, Section A.2)

If the Board decides to rely on the PMA MOU to determine how holiday and holiday premium pay is calculated for retired captains and deputy chiefs, all other PMA benefits that are attached to the rank and included in the PMA MOU must be paid to retirees.

We look forward to discussing these issues with you and hope to reach a reasonable resolution. Thank you for your time and consideration.

Best regards,

A handwritten signature in black ink, appearing to read 'F. Benjamin Kowalczyk', with a long horizontal line extending to the right.

F. Benjamin Kowalczyk
Sarah Grossman-Swenson



MEKETA INVESTMENT GROUP OVERVIEW FOR THE



February 27, 2019

MEKETA INVESTMENT GROUP

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ILLINOIS

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FLORIDA

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Firm and Team Overview

Experienced, Stable, and Independent Consulting Firm

- Since 1978, Meketa Investment Group has served as an independent fiduciary.
- Today, we are a full service investment consulting and advisory firm.
- We are 100% independently owned by senior professionals of the firm.
- We currently work with 173 clients and advise on \$640 billion. Median Client size \$300 mil
- We operate from six offices: Boston, Chicago, Miami, Portland, San Diego, and London.

Our Services

- Our services fall into three primary categories:

General (Non-Discretionary) Consulting Services

- Initial Fund Review
- Investment Policy Design
- Strategic Asset Allocation
- Liability & Liquidity Studies
- Rebalancing
- Manager Evaluation & Selection
- Fund Coordination
- Performance & Fund Evaluation
- Risk Monitoring & Control
- Manager Guidelines
- Client Education
- Client Meeting Attendance

Outsourced CIO / Discretionary Services

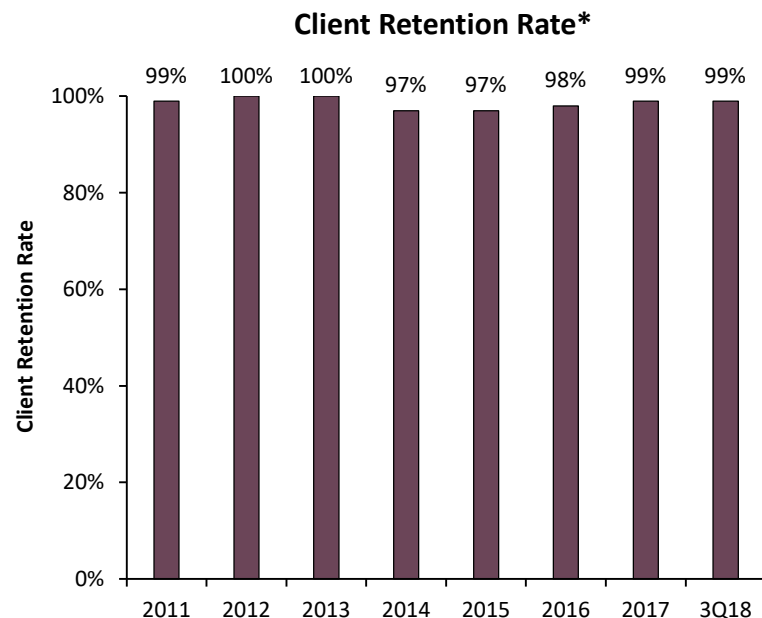
- Initial Fund Review
- Investment Policy Design
- Strategic & Tactical Asset Allocation
- Liability & Liquidity Studies
- Rebalancing
- Manager Evaluation & Selection
- Fund Coordination
- Performance & Fund Evaluation
- Risk Management
- Manager Guidelines
- Client Education
- Client Meeting Attendance

Private Markets Advisory Services

- Strategic Planning
- Pacing Analysis
- Partnership Analysis
- Legal Review
- Cash Flow Coordination
- Program Monitoring & Review
- Client Education

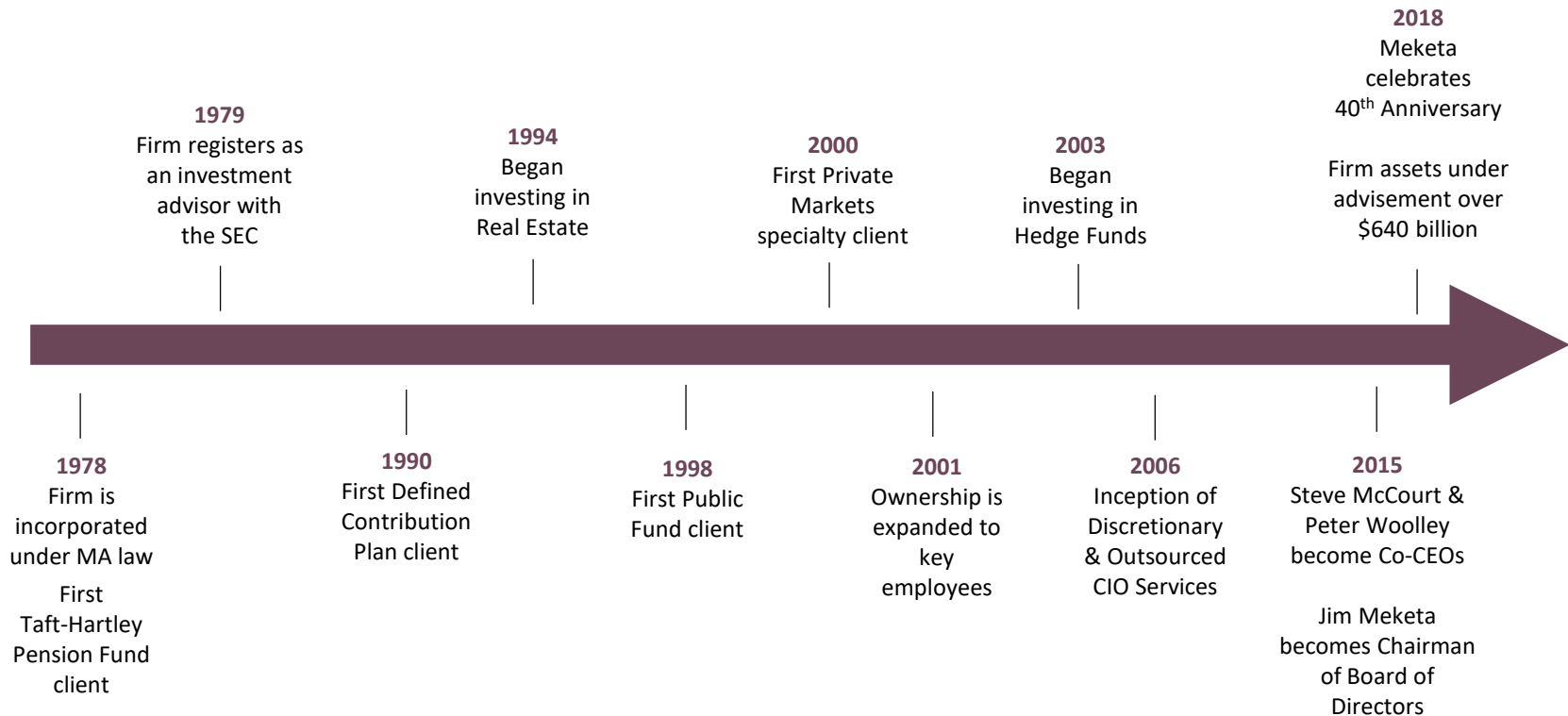
Deep & Growing Team at Meketa

- We have experienced consistent and controlled growth.
- Staff of 153 currently, including 101 investment professionals.
- 44 consultants with an average of 10 years with the firm and 20 years in the industry.
- Highly experienced staff, including: 31 CFA Charterholders, 21 CAIAs, 1 FSA, 21 MBAs, 13 Masters, 1 PhD, and 1 JD.
- We maintain a low client to employee ratio, contributing to high client retention.



* Client Retention Rate is one minus the number of clients lost divided by the number clients at prior year end.

40-Year History of Independence, Investment Excellence, and Innovation



Public

City of Ann Arbor Employees' Retirement System (MI)
Arizona State Retirement System
Austin Fire Fighters Relief & Retirement Fund (TX)
Bloomington Fire Department Relief Association Pension Fund, MN
California Public Employees' Retirement System
California State Teachers' Retirement System
California's Valued Trust
CalOptima (CA)
Dallas Police & Fire Pension Fund
District of Columbia Retirement Board
El Paso Firemen & Policemen's Pension Fund (TX)
Employees' Retirement System of the Government of the Virgin Islands
Fire and Police Retiree Health Care Fund, San Antonio (TX)
Hingham Contributory Retirement System (MA)
Illinois State Board of Investment
Industrial Commission of Arizona
Los Angeles County Employees Retirement Association (CA)
City of Marlborough Contributory Retirement System (MA)
Maryland State Retirement and Pension System
Merced County Employees Retirement Association
Metropolitan Water District of Southern California
Municipal Employees' Retirement System of Louisiana
New Mexico Public Employees Retirement Association
Orange County Employees Retirement System (CA)
City of Phoenix Employees' Retirement System (AZ)
Plymouth County Retirement Association (MA)
Rhode Island Resource Recovery Corporation
City and County of San Francisco Retiree Health Care Trust Fund (CA)
City of San Jose Police and Fire Department (CA)
San Jose Federated City Employees' Retirement System (CA)
South Carolina Retirement System Investment Commission
Washington State Investment Board
State of Wyoming, Wyoming Retirement System

Endowment, Foundation, and Non-Profit

Albuquerque Academy
Arizona's Permanent State Land Funds Endowment
Arizona State University
Coe College
Community College League of California
Gumpert Foundation
Illinois Wesleyan University
Jacksonville University
Joint Center for Radiation Therapy Foundation, Inc.
League of Voluntary Hospitals and Homes of New York Retired Employees
Massachusetts Medical Society
Neighborhood Health Plans of Rhode Island, Inc.
Pfaffinger Foundation
Rady Children's Hospital and Health Center
South Shore Hospital
USA Volleyball Foundation
United States Polo Association
University of Wyoming Foundation
Utah State University
Utah Valley University
Warren Wilson College
Wells College

Corporate and Other For Profit

Argon Medical Devices, Inc.
Dedert Corporation
Fitch Even Tabin & Flannery
Gemalto, Inc.
The Marnell Companies, LLC
Marnell Sher Companies Associates, Inc.
The O'Connell Companies, Inc.
Solymar, Inc.

Multi-Employer and Taft-Hartley

I.A.T.S.E. Local 33
I.A.T.S.E. National Benefit Funds
Airconditioning and Refrigeration Industry
Alaska United Food and Commercial Workers
American Federation of Musicians and Employers
American Federation of Television and Radio Artists
Building Service 32BJ
Communication Workers of America
Five Rivers Carpenters
Heat & Frost Insulators Local 6
Heat and Frost Insulators and Allied Workers Local 25
Heat and Frost Insulators and Allied Workers Local 47
IBEW Local 117
IBEW Local No. 9 and Line Clearance Contractors
IBEW Local Union No. 461
International Brotherhood of Electrical Workers Local No. 150
International Union of Operating Engineers Local No. 98
Iron Workers of Western Pennsylvania
Laborers' District Council and Contractors of Ohio
Local 6 Club Employees
Local Union No. 131 International Brotherhood of Electrical Workers
Lucent Supplemental Healthcare Benefits Trust
for Formerly Represented Retirees
Massachusetts Construction Advancement Program
Massachusetts Laborers
Michigan Laborers
Minnesota Laborers
Minnesota Teamsters Construction Division
NECA-IBEW Local 364
New England Carpenters
New York State Nurses Association
New York State Teamsters

Multi-Employer and Taft-Hartley, (cont.)

New York State Teamsters Council –
United Parcel Service Retiree Health Fund
Northwest Ohio Carpenters
OCU Pension and Health & Welfare Trusts
Painters and Allied Trades District Council No. 35
Plumbers & Pipefitters, Local Union #51
Plumbers Local Union No. 1
Producer-Writers Guild of America
Retail Food Employers and UFCW Local 711
Service Employees 32BJ North
Sheet Metal Workers' Local No. 9
Sheet Metal Local 10
Sheet Metal Workers' Local 219
Social Service Employees Union Local 371
Southern California Pipe Trades
Southern California Plastering Institute
Southern California United Food & Commercial Workers Unions
Southern Nevada Carpenters
Southern New England Carpenters
Teamsters Local 251
Teamsters Union 25
Teamsters Union Local 170
Twin City Iron Workers
UA Local 125
UNITE HERE Local 25 and Hotel Association of Washington, D.C.
Western States Insulators and Allied Workers

VEBA

Goodyear Retiree Healthcare Trust
National Steel Retiree VEBA Benefit Plan
VEBA for Retirees of Kaiser Aluminum
Union Pacific Railroad Employee Health Systems

M E K E T A I N V E S T M E N T G R O U P

BOSTON

100 Lowder Brook Drive
Suite 1100
Westwood, MA 02090

Tel: (781) 471-3500

CHICAGO

One E Wacker Drive
Suite 1210
Chicago, IL 60601

Tel: (312) 474-0900

SAN DIEGO

5796 Armada Drive
Suite 110
Carlsbad, CA 92008

Tel: (760) 795-3450

PORTLAND

205 SE Spokane Street
Suite 300
Portland, OR 97202

Tel: (971) 202-5082

MIAMI

5200 Blue Lagoon Drive
Suite 120
Miami, FL 33126

Tel: (305) 341-2900

LONDON

25 Green Street
London W1K 7AX
U.K.

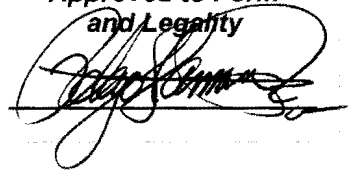
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OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 7050

Approved to Form
and Legality



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

**RESOLUTION OF APPRECIATION TO PELAYO A. LLAMAS, JR. FOR
SIX YEARS OF SERVICE AS LEGAL COUNSEL TO THE OAKLAND
POLICE AND FIRE RETIREMENT SYSTEM BOARD**

WHEREAS, Pelayo A. Llamas, Jr. served as Legal Counsel to the Oakland Police and Fire Retirement System ("PFRS") Board from April 24, 2013 to February 27, 2019 pursuant to section 401(6) and 2601(a) of the Oakland City Charter; and

WHEREAS, Pelayo Llamas has ably performed his duties as Legal Counsel to the PFRS Board with continuous professionalism, including perfect attendance at all Committee and Board meetings; and

WHEREAS, during his time as Legal Counsel of the PFRS Board, Attorney Llamas provided invaluable assisted on a large and varied number of legal issues, such as Article XXVI of the Oakland City Charter, the Ralph M. Brown Act and parliamentary procedure, the conduct of hearings, revisions to the Board's Rules and Regulations, conflicts of interest, family law issues, and managing outside counsel in four lawsuits; and

WHEREAS, Pelayo Llamas' professionalism, judgment, dedication and discretion were commendable; and

WHEREAS, at the conclusion of the February 27, 2019 Board meeting, Attorney Llamas completed his service to the PFRS Board in order to start new duties as a Court Commissioner of the Superior Court of California, County of Alameda; therefore be it

RESOLVED: that the PFRS Board hereby recognizes Pelayo Llamas for his six years of service as Legal Counsel to the Oakland Police and Fire Retirement Board and expresses its sincere appreciation for his dedication and valuable contributions in that role; and be it;

FURTHER RESOLVED: That the members of the Oakland Police and Fire Retirement System Board express their sincere best wishes to Pelayo A. Llamas, Jr. for a healthy and successful future in service to the people of Alameda County

IN BOARD MEETING, CITY HALL, OAKLAND, CA FEBRUARY 27, 2019

PASSED BY THE FOLLOWING VOTE:

AYES: GODFREY, KASAIN, MELIA, MUSZAR, SPEAKMAN, WILKINSON,
AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

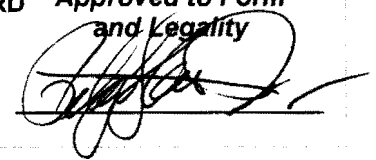
ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

Approved to Form
and Legality



RESOLUTION No. 7051

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

**RESOLUTION APPROVING DEATH BENEFIT PAYMENTS AND
DIRECTING WARRANTS THEREUNDER IN THE TOTAL SUM OF
\$1,000.00 PAYABLE TO THE BENEFICIARIES OF DECEASED
MEMBERS AS FOLLOWS: SHELLIE R. ROBERTSON & SANDRA L.
GAILLARD**

WHEREAS, due proof having been received of the death of the persons named in Column (1) below, retired members of the Oakland Police or Fire Department, under Article XXVI of the Charter of the City of Oakland; and

WHEREAS, the beneficiaries to whom the death benefit provided in Charter Section 2612 are payable, are the persons whose names are stated in Column (2) opposite the respective names of the deceased retired member; and

WHEREAS, the amount of said death benefit is stated in Column (4) opposite said respective names; now, therefore, be it

RESOLVED: That the Retirement Board does hereby approve the Death Benefit payment to the persons named in Column (2); and be it

FURTHER RESOLVED: That the Director of Finance, be and is hereby directed to draw and sign warrants for the amount in Column (4) payable to the respective persons whose name(s) appear(s) in Column (2):

(1) Name of Deceased Member	(2) Name of Beneficiary(ies)	(3) Relationship of Beneficiary(ies)	(4) Death Benefit Amount
Martin C. Gaillard (F)	Shellie R. Robertson	daughters	\$500.00
	Sandra L. Gaillard		\$500.00

IN BOARD MEETING, CITY HALL, OAKLAND, CA FEBRUARY 27, 2019

PASSED BY THE FOLLOWING VOTE:

AYES: GODFREY, KASAIN, MELIA, MUSZAR, SPEAKMAN, WILKINSON,
AND PRESIDENT JOHNSON

NOES:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY

All persons wishing to address the Board must complete a speaker's card, stating their name and the agenda item (including "Open Forum") they wish to address. The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

Oakland Police and Fire Retirement Board meetings are held in wheelchair accessible facilities. Contact Retirement Unit, 150 Frank Ogawa Plaza, Suite 3349 or call (510) 238-7295 for additional information.



Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Katano Kasaine
Member

Martin J. Melia
Member

Robert J. Muszar
Member

John C. Speakman
Member

R. Steven Wilkinson
Member

CLOSED SESSION of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

Wednesday, February 27, 2019 –during regular meeting starting at 11:30 am
One Frank H. Ogawa Plaza, Hearing Room 1
Oakland, California 94612

- - - ORDER OF BUSINESS - - -

THE PFRS BOARD WILL MEET IN CLOSED SESSION DURING ITS SCHEDULED BOARD MEETING

Please see the meeting agenda for open session items. The board will convene in open session prior to the closed session. Speakers may address the items of business on the closed session agenda prior to closed session. All speakers must fill out a speaker's card and submit it to the Secretary to the Board. The Board will reconvene in open session following the closed session to report any final decisions that the board makes in closed session.

Pursuant to California Government Code Section 54956.9(a) and 54956.9(d)(1):

1. CONFERENCE WITH LEGAL COUNSEL – PENDING LITIGATION

Retired Oakland Police Officers Association v. Oakland Police and Fire Retirement System, et al.,
Alameda County Superior Court Action No. RG16838274