

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 Systems, 150 Frank Ogawa Plaza, Suite 3332 or call (510) 238-7295 for additional information.



**Retirement Systems
150 Frank H. Ogawa Plaza
Oakland, California 94612**

AGENDA

AUDIT COMMITTEE MEMBERS

John C. Speakman
Chairman

Christine Daniel
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, March 28, 2018 – 11:30 am
One Frank H. Ogawa Plaza, Hearing Room 3
Oakland, California 94612**

- - - ORDER OF BUSINESS - - -

- 1. Subject: February 28, 2018 PFRS Audit Committee Meeting Minutes**
From: Staff of the PFRS Board

Recommendation: APPROVE February 28, 2018 Audit Committee meeting minutes.
- 2. Subject: PFRS Actuary Valuation as of July 1, 2017**
From: Cheiron, Inc., PFRS Plan Actuary

Recommendation: RECOMMEND BOARD APPROVAL of the PFRS Actuary Valuation as of July 1, 2017.
- 3. Subject: Administrative Expenses Report**
From: Staff of the PFRS Board

Recommendation: ACCEPT an informational report regarding PFRS Administrative Expenses from July 1, 2017 through January 31, 2018.
- 4. Subject: Revision of the PFRS Education & Travel Policy**
From: Staff of the PFRS Board

Recommendation: RECOMMEND BOARD APPROVAL of the revision of the PFRS Education & Travel Policy.
- 5. Subject: Review of and Revisions to PFRS Rules and Regulations**
From: Staff of the PFRS Board

Recommendation: DISCUSSION, review of, and revisions to the PFRS Rules and Regulations.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR AUDIT COMMITTEE MEETING
MARCH 28, 2017**

ORDER OF BUSINESS, continued

6. **Subject:** Discussion regarding PFRS July 1, 2026 Actuary Funding Deadline
From: Staff of the PFRS Board
-
- Recommendation:** **DISCUSSION** regarding PFRS July 1, 2026 Actuary Funding Deadline.
7. **Subject:** Resolution No. 7009 - Travel authorization for PFRS Board Member Jaime Godfrey to travel to and attend the 2018 IMN Global Indexing and ETF Conference ("IMN Conference") from June 26, 2018 to June 28, 2018 in Dana Point, CA with an estimated budget of One Thousand Nine Hundred Eighty-two Dollars (\$1,982.00)
From: Staff of the PFRS Board
-
- Recommendation:** **RECOMMEND BOARD APPROVAL** of Resolution No. 7009 - Travel authorization for PFRS Board Member Jaime Godfrey to travel to and attend the 2018 IMN Global Indexing and ETF Conference ("IMN Conference") from June 26, 2018 to June 28, 2018 in Dana Point, CA with an estimated budget of One Thousand Nine Hundred Eighty-two Dollars (\$1,982.00).
8. **Pending Audit Agenda Items**
9. **Future Scheduling**
10. **Open Forum**
11. **Adjournment of Meeting**

AN AUDIT/OPERATIONS COMMITTEE MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was on held Wednesday, February 28, 2018 in Hearing Room 3, One Frank Ogawa Plaza, Oakland, California.

- Committee Members Present:
- John C. Speakman, Chairman
 - Robert J. Muszar, Member
 - Christine Daniel, Member

- Additional Attendees:
- Katano Kasaine, Plan Administrator
 - Teir Jenkins & David Low, Staff Member
 - Pelayo Llamas, PFRS Legal Counsel

The meeting was called to order at 9:06 am.

1. **Approval of January 31, 2018 Audit Committee meeting minutes** – Member Muszar made a motion to approve the January 31, 2018 Audit Committee meeting minutes, second by Member Daniel. Motion passed.

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

2. **Experience Study for Actuary Valuation of the PFRS Fund through July 1, 2017 and Change of Assumptions** – Graham Schmidt and Tim Doyle from Cheiron, Inc. (PFRS Actuary) presented the results of the Actuary Experience Study of the PFRS Plan through July 1, 2017. Their presentation addressed the reasons for their recommendations regarding changes to the assumed rate of return, inflation rate, and mortality table selections affecting the PFRS plan through June 30, 2017. Following Audit Committee and staff discussion, Member Daniel made a motion to recommend that the Board adopt one of the following two scenarios to be applied to the Actuary Valuation of the PFRS plan as of July 1, 2017, second by member Muszar.

Recommendation No. 1	Recommendation No. 2
Initial Earnings Rate: 6.25%	Initial Earnings Rate: 6.00%
Wage Inflation: 3.25%	Wage Inflation: 3.25%
Mortality Table: CALPERS 2017	Mortality Table: CALPERS 2017

Motion passed.

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

3. **Administrative Expenses Report** – Investment Officer Teir Jenkins presented the administrative expenses report from July 1, 2017 through December 31, 2017. Member Muszar made a motion to accept the report from July 1, 2017 through December 31, 2017, second by member Daniel. Motion passed.

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

4. **Revision to the PFRS Education and Travel Policy** – Plan Administrator Katano Kasaine reviewed the current edits to the PFRS education and travel policy to date. She reported that staff sent via email to each Board member the current edits to the education and travel policy, inviting them to submit additional changes to the current

edited version being discussed by the Audit Committee. Ms. Kasaine reported that only Member Muszar and Member Melia replied. The Committee and staff discussed Member Muszar's comments and indicated that agreed-upon edits approved by the Audit Committee would be added to the master Education and Travel policy draft document for the next meeting. Following additional discussion, Member Muszar made a motion to incorporate updated language to the master draft copy of the Education and Travel Policy and hold continued discussion of the review of the PFRS Education and Travel Policy to the next schedule Audit Committee meeting, second by member Daniel. Motion passed.

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

5. **Review of PFRS Rules and Regulations** – Due to time constraints, the review of the PFRS Rules and Regulations did not progress. Member Daniel made a motion to continue discussion of the review of the PFRS Rules and Regulations to the next schedule Audit Committee meeting, second by member Muszar. Motion passed.

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

6. **Resolution No. 7002 - Travel Authorization for PFRS Board Member Godfrey** – Member Muszar made a motion to recommend Board approval of Resolution No. 7002 – Travel Authorization for PFRS Board Member Jaime Godfrey to Travel and Attend the 2018 The Pension Bridge Conference (“Pension Bridge Conference”) from April 10, 2018 to April 11, 2018 in San Francisco, CA with an estimated budget of Seven Hundred Twenty-seven Dollars (\$727.00), second by Member Daniel. Motion passed.

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

7. **Resolution No. 7003 - Travel Authorization for PFRS Board Member Wilkinson** – Member Muszar made a motion to recommend Board approval of Resolution No. 7003 – travel authorization for PFRS Board Member R. Steven Wilkinson to Travel 2018 CALAPRS General Assembly from March 3, 2018 through March 6, 2018 in Indian Wells, CA with an estimated budget of One Thousand Three Hundred Dollars (\$1,300.00), second by member Daniel. Motion passed.

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

8. **Resolution No. 7004 - Travel Authorization for PFRS Plan Administrator Katano Kasaine** – Member Muszar made a motion to recommend Board Approval of Resolution No. 7004 – Travel Authorization for PFRS Plan Administrator Katano Kasaine to Travel and Attend the 2018 The Pension Bridge Conference (“Pension Bridge Conference”) from April 10, 2018 to April 11, 2018 in San Francisco, CA with an estimated budget of Two Hundred Thirty-nine Dollars (\$239.00), second by Member Daniel. Motion passed.

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

9. **Future Scheduling** – The next Audit Committee meeting was scheduled for March 28, 2018.

10. **Pending Audit Agenda List** – Staff and Audit Committee discussed the pending items list. Member Muszar made a motion to add a discussion item about the 2026 PFRS actuarial funding deadline onto the next committee meeting, second by member Daniel. Motion passed.

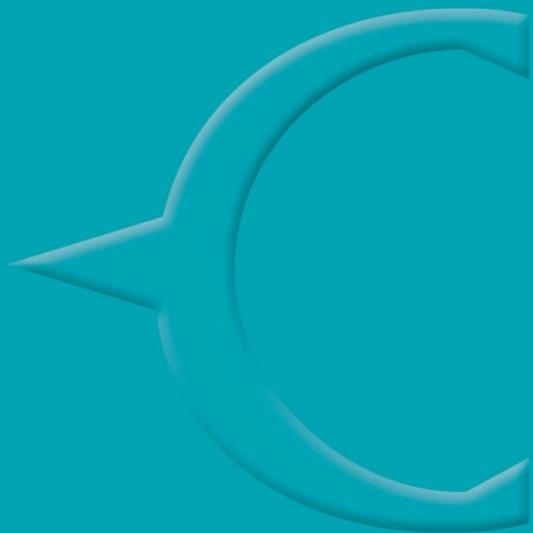
[SPEAKMAN – Y / DANIEL – Y / MUSZAR – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

11. **Open Forum** – No Report.

The meeting adjourned at 10:34 am.

JOHN C. SPEAKMAN, COMMITTEE CHAIRMAN

DATE



Oakland Police and Fire Retirement System

**Actuarial Valuation Report
as of July 1, 2017**

Produced by Cheiron

March 2018

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March 15, 2018

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, 2017. 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.

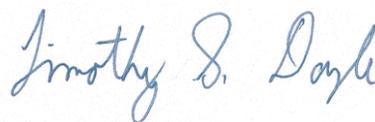
Cheiron's report was prepared solely for the Retirement Board for the purposes described herein, except that the plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial 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



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



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

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

FOREWORD

Cheiron has performed the actuarial valuation of the Oakland Police and Fire Retirement System (PFRS, the Plan) as of July 1, 2017. 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, 2017**

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 2018-2019.

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 2018-2019.

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 mortality tables and generational improvement rates went into effect as per the June 30, 2017 experience study. The initial discount rate changed to 6% from 7%, trending down to 3.25% over 10 years. 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, 2017**

SECTION I – EXECUTIVE SUMMARY

B. Key Findings of this Valuation

The key results of the July 1, 2017 actuarial valuation are as follows:

- The actuarially determined employer contribution amount for Fiscal Year 2018-2019 is \$44.8 million, based on projecting the actuarial liabilities and the Actuarial Value of Assets to the end of the 2017-2018 Fiscal Year. This represents a decrease of \$1.6 million from the amount determined in the prior valuation for the same Fiscal Year.
- During the year ended June 30, 2017, the return on Plan assets was 15.09% on a market value basis net of investment expenses, as compared to the 7.00% assumption for the 2016-2017 Plan year. This resulted in a market value gain on investments of \$26.9 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 8.49%, for an actuarial asset gain of \$5.0 million.
- The Plan experienced a gain on the actuarial liability of \$10.0 million, the net result of changes in the population (primarily from a higher number of beneficiary deaths than expected.) Combining the liability and asset gains, the Plan experienced a total gain of \$14.9 million.
- The Plan's smoothed funded ratio, the ratio of actuarial assets over actuarial liability, decreased from 54.0% last year to 51.2% on an AVA basis as of June 30, 2017 before any changes in assumptions. The reduction in the funded ratio is primarily the result of no contribution being made to the fund during the year. Changes in the discount rate and mortality assumptions further decreased the smoothed funded ratio from 51.2% to 49.5%.
- The Plan's funded ratio decreased from 53.7% to 52.4% on a Market Value of Assets (MVA) basis. The decrease in the Market Value funded ratio was primarily the result of the assumption changes.
- The unfunded actuarial liability (UAL) is the excess of the Plan's actuarial liability over the Actuarial Value of Assets. The Plan experienced an increase in the UAL from \$309.4 million to \$317.3 million as of July 1, 2017 before assumption changes. Changes in assumptions further increased the UAL to \$340.1 million as of July 1, 2017.
- Overall participant membership decreased compared to last year. Twenty-eight members died, 10 of whom had their benefits continue to a surviving spouse. In addition, 25 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 2018-2019 would be \$42.5 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 2018-2019.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

SECTION I – EXECUTIVE SUMMARY

Below we present Table I-1 which 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, 2016	July 1, 2017	% Change	
<u>Participant Counts</u>				
Active Participants	0	0		
Participants Receiving a Benefit	929	886		-4.63%
Total	929	886		-4.63%
Annual Pay of Active Members	\$ 0	\$ 0		
<u>Assets and Liabilities</u>				
Actuarial Liability (AL)	\$ 672,916	\$ 673,441		0.08%
Actuarial Value of Assets (AVA)	363,550	333,373		-8.30%
Unfunded Actuarial Liability (UAL)	\$ 309,366	\$ 340,068		9.92%
Funded Ratio (AVA)	54.0%	49.5%		-4.52%
Funded Ratio (MVA)	53.7%	52.4%		-1.29%
<u>Contributions</u>				
Employer Contribution (FY2017-18)	\$ 44,860	N/A		
Employer Contribution (FY2018-19)	\$ 46,366	\$ 44,821		-3.33%

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.

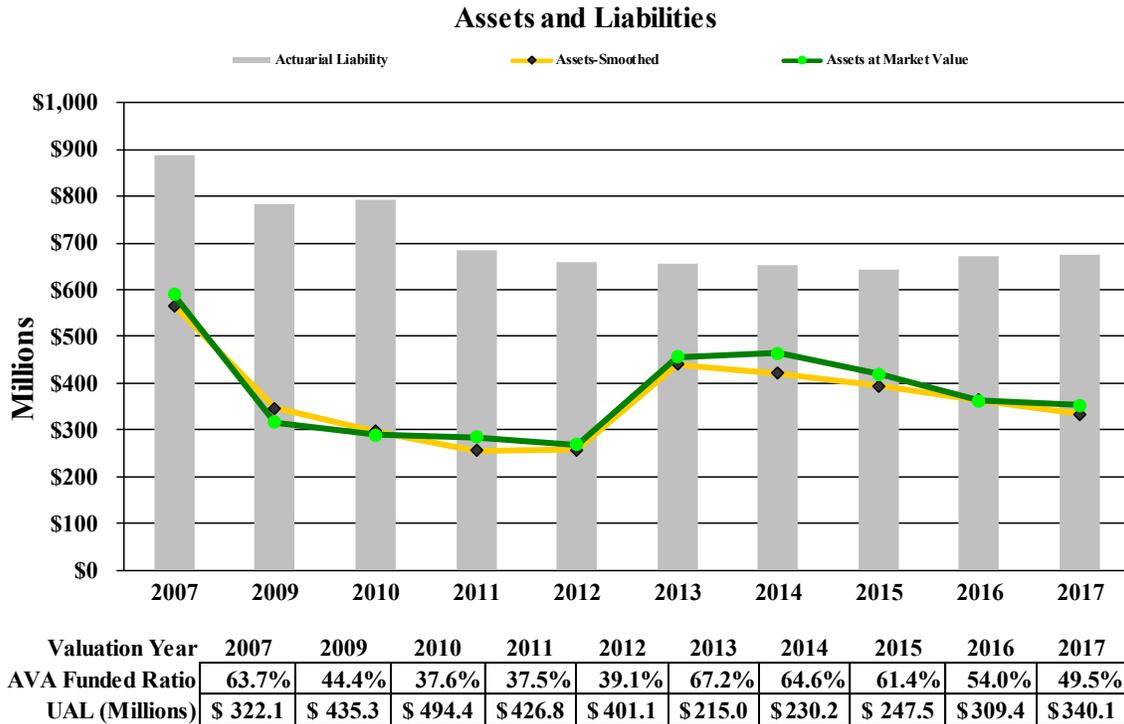
**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

SECTION I – EXECUTIVE SUMMARY

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 which 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 has decreased from 67.2% to 49.5% over the last four years due to assumption changes, liability losses, new Police MOUs, and the lack of contributions since the July 2012 payment.

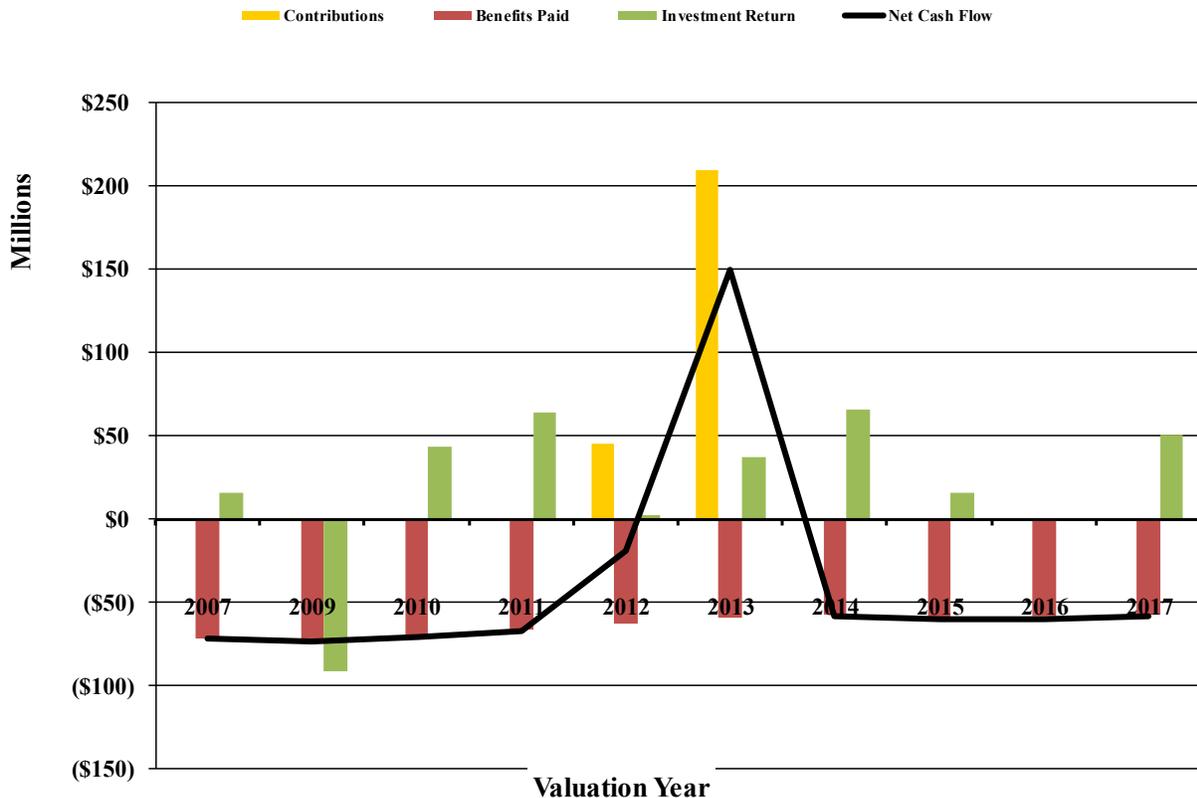


**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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 five of the last six 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.

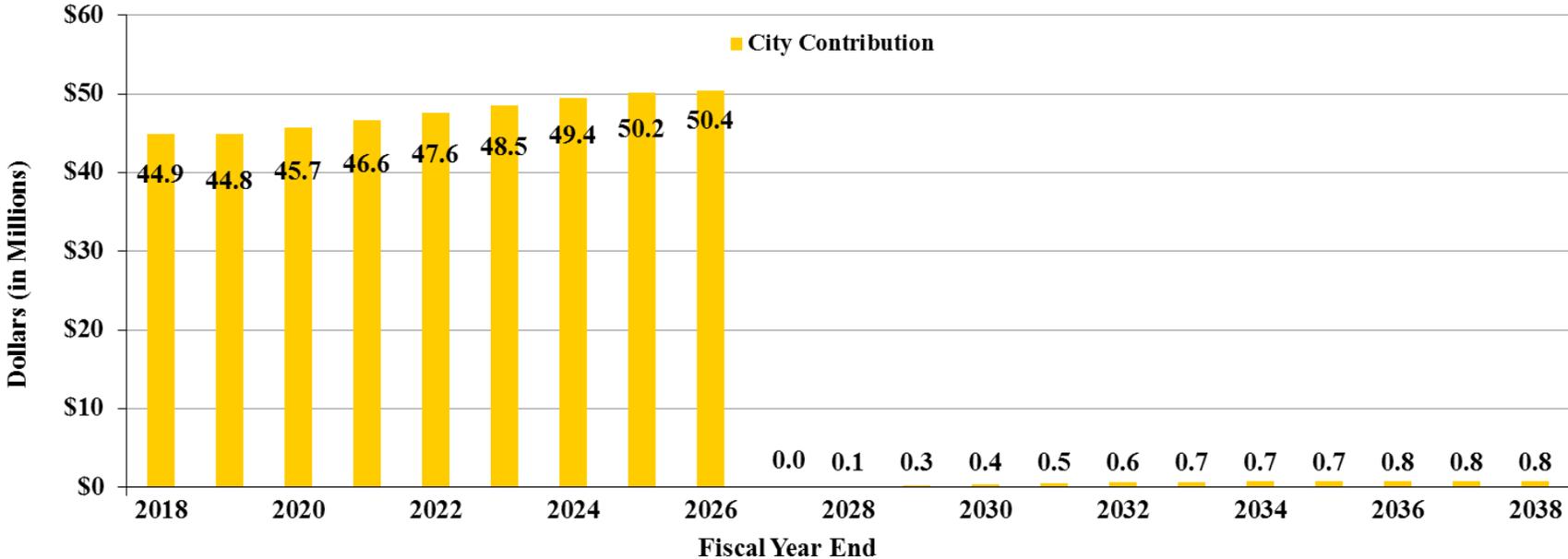
**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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, 2017 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 contributions are expected to resume in fiscal 2017-2018, starting at \$44.9 million and eventually increasing to \$50.4 million as the current unfunded liability is fully amortized. This assumes that the annual 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.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

SECTION I – EXECUTIVE SUMMARY

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 relative to the assumed return could push the employer contribution over \$60 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.

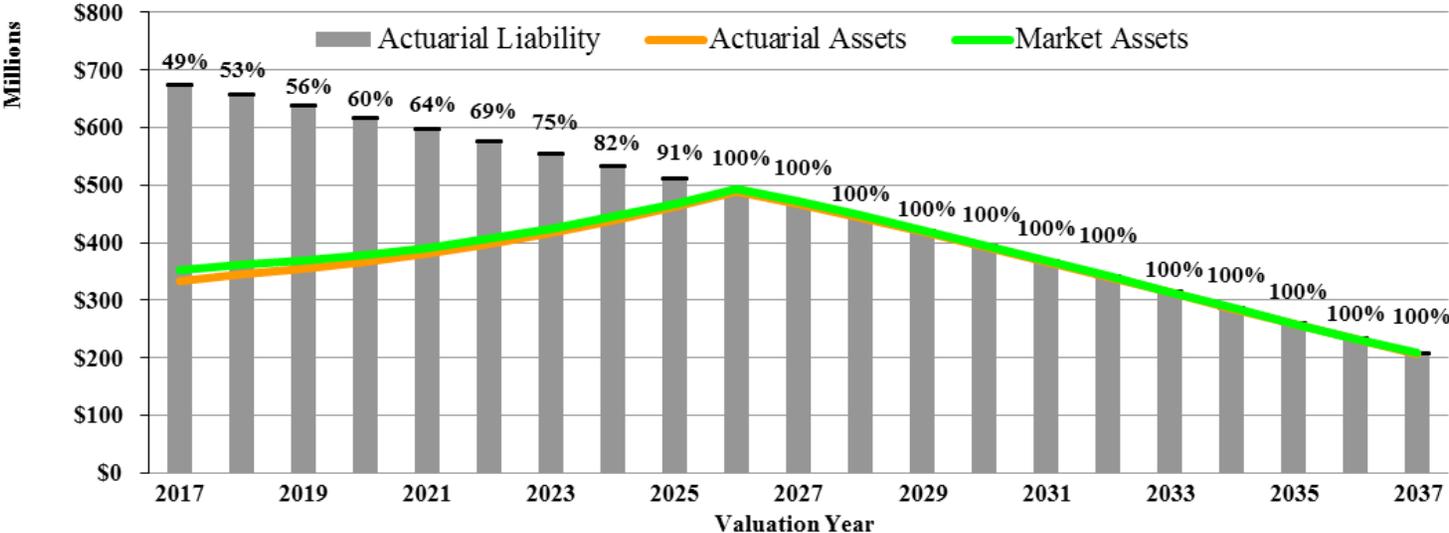
**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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, 2016 and June 30, 2017
- 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, 2016 and June 30, 2017.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

SECTION II – ASSETS

TABLE II-1			
Statement of Assets at Market Value			
June 30,			
(in thousands)			
	2016		2017
Cash and Cash Equivalents:	\$ 2,536	\$	3,382
Receivables:			
Interest Receivable	\$ 271	\$	355
Dividends Receivable	262		227
Investments Receivable	3,743		4,008
Retired Members and Beneficiaries	3,288		2,477
Miscellaneous	167		187
Total Receivables	<u>7,731</u>		<u>7,255</u>
Investments, at Fair Value:			
Short-term Investments	6,897		5,576
Bonds	63,787		63,600
Domestic Equities and Mutual Funds	174,113		168,467
International Equities and Mutual Funds	40,223		44,590
Alternative Investments	73,592		70,511
Securities Lending Collateral	45,042		31,042
Total Investments	<u>403,653</u>		<u>383,785</u>
Total Assets	413,920		394,422
Liabilities:			
Accounts Payable	42		23
Benefits Payable	4,834		4,763
Investments Payable	2,056		5,118
Accrued Investment Management Fees	335		281
Securities Lending Liabilities	45,042		31,034
Total Liabilities	<u>52,309</u>		<u>41,220</u>
Market Value of Assets	\$ 361,611	\$	353,203

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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 2016 and 2017.

TABLE II-2		
Changes in Market Values		
June 30,		
(in thousands)		
	<u>2016</u>	<u>2017</u>
Contributions		
Contributions of Plan Members	\$ 0	\$ 0
Contributions from the City	<u>0</u>	<u>0</u>
Total Contributions	<u>0</u>	<u>0</u>
Investment Income		
Miscellaneous Income	3,593	70
Investment Income	<u>(1,419)</u>	<u>50,159</u>
Total Investment Income	<u>2,174</u>	<u>50,229</u>
Disbursements		
Benefit Payments	(58,441)	(57,376)
Administrative Expenses	<u>(1,376)</u>	<u>(1,262)</u>
Total Disbursements	<u>(59,817)</u>	<u>(58,637)</u>
Net increase (Decrease)	(57,643)	(8,408)
Net Assets Held in Trust for Benefits:		
Beginning of Year	<u>419,254</u>	<u>361,611</u>
End of Year	\$ <u><u>361,611</u></u>	\$ <u><u>353,203</u></u>
Approximate Return	-0.4%	15.1%

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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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 7.00% return assumption from 2016-2017) 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, 2016	\$ 363,550
b) Total Contributions and Misc Income	70
c) Administrative Expense	(1,262)
d) Benefit Payments	(57,376)
e) Expected Investment Earnings	<u>23,433</u>
f) Value of Actuarial Value of Assets - July 1, 2017 [1a + 1b + 1c + 1d + 1e]	\$ 328,416
2) Calculate Final Actuarial Value of Assets	
a) Value of Market Value of Assets - July 1, 2017	\$ 353,203
b) Excess of MVA over Expected AVA [2a - 1f]	24,787
c) Preliminary AVA [1f + 0.2 * 2b]	333,373
d) 90% of MVA [90% * 2a]	317,883
e) 110% of MVA [110% * 2a]	388,523
3) Final Actuarial Value of Assets [2c, not less than 2d or greater than 2e]	\$ 333,373

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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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 7.00% assumption.

TABLE II-4 Asset Gain/(Loss) (in thousands)		
	Market Value	Actuarial Value
July 1, 2016 value	\$ 361,611	\$ 363,550
Contributions of Plan Members	0	0
Contributions from the City	0	0
Miscellaneous Income	70	70
Benefit Payments	(57,376)	(57,376)
Administrative Expenses	(1,262)	(1,262)
Expected Investment Earnings (7.00%)	23,298	23,433
Expected Value June 30, 2017	\$ 326,342	\$ 328,416
Investment Gain / (Loss)	<u>26,861</u>	<u>4,957</u>
July 1, 2017 value	353,203	\$ 333,373
Return	15.09%	8.49%

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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SECTION III – LIABILITIES

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

- **Disclosure** of Plan liabilities at July 1, 2016 and July 1, 2017
- 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, 2016	July 1, 2017
<u>Present Value of Future Benefits</u>		
Active Participant Benefits	\$ 0	\$ 0
Retiree and Inactive Benefits	<u>672,916</u>	<u>673,441</u>
Present Value of Future Benefits (PVB)	\$ 672,916	\$ 673,441
<u>Actuarial Liability</u>		
Present Value of Future Benefits (PVB)	\$ 672,916	\$ 673,441
Present Value of Future Normal Costs (PVFNC)	<u>0</u>	<u>0</u>
Actuarial Liability (AL = PVB – PVFNC)	\$ 672,916	\$ 673,441
Actuarial Value of Assets (AVA)	<u>363,550</u>	<u>333,373</u>
Net (Surplus)/Unfunded (AL – AVA)	\$ 309,366	\$ 340,068

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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, 2016	\$ 672,916
Actuarial Liability at July 1, 2017	\$ 673,441
Liability Increase (Decrease)	\$ 525
Change due to:	
Actuarial Methods / Software Changes	\$ 0
Assumption Change	22,730
Accrual of Benefits	0
Actual Benefit Payments	(57,376)
Interest	45,130
Data Corrections	0
Actuarial Liability (Gain)/Loss	\$ (9,959)

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

SECTION III – LIABILITIES

Table III-3			
Liabilities by Group as of July 1, 2017			
(in thousands)			
	Police	Fire	Total
Actuarial Accrued Liability			
Active	\$ 0	\$ 0	\$ 0
Service Retirees	257,150	89,632	346,782
Disabled Retirees	105,936	94,310	200,246
Beneficiaries	<u>69,919</u>	<u>56,494</u>	<u>126,413</u>
Total Accrued Liability	\$ 433,005	\$ 240,436	\$ 673,441

TABLE III-4		
Development of Actuarial Gain / (Loss)		
(in thousands)		
1. Unfunded Actuarial Liability at Start of Year (not less than zero)	\$	309,366
2. Employer Normal Cost at Start of Year		0
3. Interest on 1. and 2. to End of Year		21,656
4. Contributions and Miscellaneous Income for Prior Year		70
5. Administrative Expenses		(1,262)
6. Interest on 4. and 5. to End of Year		(41)
7. Change in Unfunded Actuarial Liability Due to Changes in Assumptions		22,730
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.]	\$	354,984
12. Actual Unfunded Actuarial Liability at End of Year (not less than zero)		340,068
13. Unfunded Actuarial Liability Gain / (Loss) [11. - 12.]	\$	14,917

**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 2018-2019 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, 2018.

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 2017-2018 Fiscal Year.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

SECTION IV – CONTRIBUTIONS

**TABLE IV-I
Development of Projected 2018-2019 Employer Contribution Amount
(in thousands)**

	Actuarial Value of Assets	Market Value of Assets
1. Value of Assets at June 30, 2017:	\$ 333,373	\$ 353,203
a. Expected Contributions and Misc Income	\$ 44,860	\$ 44,860
b. Expected Administrative Expense	\$ (979)	\$ (979)
c. Expected Benefit Payments	\$ (56,644)	\$ (56,644)
d. Expected Investment Earnings	<u>\$ 19,625</u>	<u>\$ 20,815</u>
2. Expected Value of Assets at June 30, 2018:	\$ 340,235	\$ 361,255
a. Excess of Expected MVA over Expected AVA	\$ 21,019	
b. Preliminary AVA [Expected AVA + 20% * 2a]	\$ 344,439	
c. 90% of Expected MVA	\$ 325,129	
d. 110% of Expected MVA	\$ 397,380	
3. Final Expected AVA [2b, not less than 2c or greater than 2d]	\$ 344,439	\$ 361,255
4. Entry Age Liability at June 30, 2017:	\$ 673,441	\$ 673,441
5. Expected Benefit Payments:	\$ (56,644)	\$ (56,644)
6. Expected Interest:	<u>\$ 38,732</u>	<u>\$ 38,732</u>
7. Expected Entry Age Liability at June 30, 2018:	\$ 655,529	\$ 655,529
8. Projected Unfunded Actuarial Liability: (7) - (3)	311,090	294,275
9. Funded Ratio: (3) / (7)	52.5%	55.1%
10. Unfunded Actuarial Liability Amortization at Middle of Year as a Level Percentage of Payroll (8 Years Remaining) as of June 30, 2018:	43,814	41,446
11. Expected Administrative Expenses for Fiscal 2017-2018:	<u>\$1,007</u>	<u>\$1,007</u>
12. Total Contribution: (10) + (11)	44,821	42,453

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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)	
2018	516.0	\$ 33,561	370.0	\$ 23,082	886.0	56,644	
2019	500.9	\$ 34,112	350.5	\$ 22,486	851.4	56,598	
2020	485.4	\$ 34,442	331.6	\$ 21,882	816.9	56,323	
2021	469.7	\$ 34,289	313.3	\$ 21,274	783.0	55,563	
2022	453.9	\$ 34,086	295.7	\$ 20,663	749.6	54,748	
2023	438.0	\$ 33,832	278.9	\$ 20,047	716.9	53,879	
2024	422.2	\$ 33,529	262.7	\$ 19,425	684.8	52,954	
2025	406.4	\$ 33,173	247.1	\$ 18,796	653.5	51,969	
2026	390.6	\$ 32,759	232.1	\$ 18,157	622.7	50,916	
2027	374.8	\$ 32,280	217.8	\$ 17,507	592.5	49,787	
2028	358.9	\$ 31,730	203.9	\$ 16,843	562.8	48,573	
2029	342.8	\$ 31,098	190.6	\$ 16,165	533.4	47,263	
2030	326.6	\$ 30,377	177.8	\$ 15,469	504.3	45,847	
2031	310.1	\$ 29,560	165.3	\$ 14,755	475.4	44,315	
2032	293.2	\$ 28,640	153.3	\$ 14,021	446.5	42,661	
2033	276.1	\$ 27,612	141.6	\$ 13,267	417.7	40,878	
2034	258.7	\$ 26,476	130.3	\$ 12,493	389.0	38,970	
2035	241.0	\$ 25,237	119.3	\$ 11,704	360.3	36,941	
2036	223.2	\$ 23,899	108.7	\$ 10,901	331.9	34,800	
2037	205.2	\$ 22,474	98.5	\$ 10,089	303.7	32,564	
2038	187.4	\$ 20,976	88.6	\$ 9,275	276.0	30,251	
2039	169.8	\$ 19,421	79.2	\$ 8,465	249.0	27,886	
2040	152.6	\$ 17,830	70.3	\$ 7,667	222.9	25,497	
2041	135.9	\$ 16,225	61.9	\$ 6,890	197.8	23,115	
2042	120.0	\$ 14,630	54.0	\$ 6,140	174.0	20,769	
2043	104.9	\$ 13,067	46.8	\$ 5,426	151.7	18,492	
2044	90.9	\$ 11,557	40.1	\$ 4,754	131.0	16,311	
2045	77.9	\$ 10,119	34.1	\$ 4,129	112.0	14,249	
2046	66.1	\$ 8,770	28.8	\$ 3,556	94.9	12,326	
2047	55.5	\$ 7,521	24.0	\$ 3,036	79.6	10,557	

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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)	
2048	46.2	\$ 6,382	19.9	\$ 2,571	66.0	8,952	
2049	37.9	\$ 5,358	16.3	\$ 2,158	54.3	7,516	
2050	30.9	\$ 4,453	13.3	\$ 1,797	44.1	6,249	
2051	24.9	\$ 3,663	10.7	\$ 1,485	35.5	5,147	
2052	19.8	\$ 2,983	8.6	\$ 1,218	28.4	4,201	
2053	15.6	\$ 2,405	6.8	\$ 993	22.4	3,398	
2054	12.2	\$ 1,921	5.4	\$ 804	17.6	2,725	
2055	9.5	\$ 1,521	4.2	\$ 648	13.6	2,169	
2056	7.3	\$ 1,194	3.3	\$ 519	10.5	1,713	
2057	5.5	\$ 930	2.5	\$ 413	8.0	1,343	
2058	4.2	\$ 720	1.9	\$ 328	6.1	1,048	
2059	3.1	\$ 554	1.5	\$ 259	4.6	813	
2060	2.3	\$ 423	1.1	\$ 204	3.5	627	
2061	1.7	\$ 321	0.9	\$ 159	2.6	481	
2062	1.3	\$ 242	0.6	\$ 123	1.9	366	
2063	0.9	\$ 181	0.5	\$ 95	1.4	276	
2064	0.7	\$ 134	0.4	\$ 72	1.0	206	
2065	0.5	\$ 98	0.3	\$ 54	0.7	152	
2066	0.3	\$ 71	0.2	\$ 40	0.5	111	
2067	0.2	\$ 50	0.1	\$ 29	0.4	79	
2068	0.2	\$ 35	0.1	\$ 20	0.3	55	
2069	0.1	\$ 23	0.1	\$ 14	0.2	37	
2070	0.1	\$ 15	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	

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

Active Participants	July 1, 2016			July 1, 2017		
	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	268	129	397	260	120	380
Average Age	73.6	80.0	75.7	74.3	80.2	76.1
Average Annual Benefit	\$68,602	\$73,664	\$70,247	\$72,011	\$73,308	\$72,420
Disabled Retirees						
Number	124	118	242	117	114	231
Average Age	73.3	74.9	74.1	73.8	75.6	74.6
Average Annual Benefit	\$65,477	\$68,757	\$67,076	\$68,956	\$68,799	\$68,879
Beneficiaries						
Number	153	137	290	139	136	275
Average Age	81.3	83.2	82.2	80.6	83.9	82.2
Average Annual Benefit	\$49,101	\$51,798	\$50,375	\$52,291	\$51,846	\$52,071
All Inactives						
Number	545	384	929	516	370	886
Average Age	75.7	79.6	77.3	75.9	80.1	77.6
Average Annual Benefit	\$62,416	\$64,355	\$63,218	\$66,006	\$64,030	\$65,181

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, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Changes in Plan Membership: Police

	Actives	Service Retirees	Disabled Retirees	Beneficiaries	Total
July 1, 2016	0	268	124	153	545
Retired	0	0	0	0	0
Disabled	0	0	0	0	0
Deceased	0	(8)	(7)	(19)	(34)
New Beneficiary	0	0	0	5	5
July 1, 2017	0	260	117	139	516

Changes in Plan Membership: Fire

	Actives	Service Retirees	Disabled Retirees	Beneficiaries	Total
July 1, 2016	0	129	118	137	384
Retired	0	0	0	0	0
Disabled	0	0	0	0	0
Deceased	0	(9)	(4)	(6)	(19)
New Beneficiary	0	0	0	5	5
July 1, 2017	0	120	114	136	370

Changes in Plan Membership: All

	Actives	Service Retirees	Disabled Retirees	Beneficiaries	Total
July 1, 2016	0	397	242	290	929
Retired	0	0	0	0	0
Disabled	0	0	0	0	0
Deceased	0	(17)	(11)	(25)	(53)
New Beneficiary	0	0	0	10	10
July 1, 2017	0	380	231	275	886

**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	10	\$712,727	0	\$0	10	\$712,727
65-69	52	\$3,884,284	8	\$499,766	60	\$4,384,050
70-74	109	\$7,392,274	38	\$2,758,923	147	\$10,151,197
75-79	52	\$3,720,501	17	\$1,212,351	69	\$4,932,851
80-84	15	\$1,300,441	20	\$1,522,483	35	\$2,822,923
85-89	12	\$860,962	17	\$1,226,312	29	\$2,087,275
90-94	9	\$763,479	15	\$1,188,967	24	\$1,952,446
95-99	1	\$88,182	5	\$388,106	6	\$476,288
100+	0	\$0	0	\$0	0	\$0
Total	260	\$18,722,850	120	\$8,796,908	380	\$27,519,758

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	1	\$66,015	0	\$0	1	\$66,015
65-69	29	\$2,071,511	28	\$1,758,879	57	\$3,830,390
70-74	51	\$3,361,636	32	\$2,133,620	83	\$5,495,256
75-79	20	\$1,383,802	29	\$2,106,765	49	\$3,490,567
80-84	9	\$628,068	13	\$956,646	22	\$1,584,714
85-89	3	\$238,952	7	\$576,699	10	\$815,651
90-94	4	\$317,910	3	\$181,003	7	\$498,913
95-99	0	\$0	2	\$129,521	2	\$129,521
100+	0	\$0	0	\$0	0	\$0
Total	117	\$8,067,894	114	\$7,843,134	231	\$15,911,028

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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	1	\$65,614	2	\$128,511	3	\$194,125
60-64	7	\$396,707	4	\$243,765	11	\$640,472
65-69	16	\$798,228	10	\$559,192	26	\$1,357,421
70-74	23	\$1,080,114	11	\$555,837	34	\$1,635,951
75-79	17	\$838,645	13	\$677,232	30	\$1,515,877
80-84	17	\$993,606	28	\$1,331,647	45	\$2,325,253
85-89	26	\$1,382,746	25	\$1,198,959	51	\$2,581,706
90-94	27	\$1,426,148	32	\$1,668,623	59	\$3,094,771
95-99	4	\$215,222	7	\$407,001	11	\$622,223
100+	1	\$71,395	4	\$280,232	5	\$351,627
Total	139	\$7,268,426	136	\$7,050,999	275	\$14,319,425

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the actuarial valuation as of July 1, 2017 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 2018-2019 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, 2017**

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 5.53%.

Benefit Payment Year	Expected Return
2017-2026	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 \$979,164, 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, 2017**

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 and Fire contracts, which expire on June 30, 2019 and October 31, 2017, respectively. All increases shown after those dates are assumptions.

Post-Retirement Benefit Increases (Based on Salary Increases for Rank at Retirement)		
Date of Increase	Police	Fire
January 1, 2018	2.50% & 1.00%	n/a
July 1, 2018	2.00%	3.25%
January 1, 2019	2.50%	n/a
Annual Increases		
Starting	3.25%	3.25%
July 1, 2019		

5. Rates of Termination

None

6. Rates of Disability

None

7. Rates of Retirement

None

8. 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.

9. 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.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

10. 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 midpoint of the CalPERS base tables).

11. 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.

12. Changes in Assumptions Since the Last Valuation

The mortality rates, mortality improvement projection scales and expected annual rate of return on investments have changed based on the June 30, 2017 experience study.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2017**

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, 2017**

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 which 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.

APPENDIX D – GLOSSARY

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.

9. Amortization Payment

The portion of the pension plan contribution which 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 January 31, 2018

	Amended					
	Budget	January 2018	FYTD	Remaining	Percent Remaining	
Internal Administrative Costs						
PFRS Staff Salaries	\$ 1,052,800	\$ 74,320	\$ 443,504	\$ 609,296	57.9%	
Board Travel Expenditures	52,500	-	5,202	47,298	90.1%	
Staff Training	10,000	51	2,985	7,015	70.1%	
Staff Training - Tuition Reimbursement	7,500	1,640	3,280	4,220	56.3%	
Annual Report & Duplicating Services	4,000	-	932	3,069	76.7%	
Board Hospitality	2,600	-	662	1,938	74.5%	
Payroll Processing Fees	35,000	-	-	35,000	100.0%	
Miscellaneous Expenditures	30,000	1,278	33,282	(3,282)	-10.9%	
Contract Services Contingency	1,200	-	1,200	-	0.0%	
Office Construction Costs	127,143	-	-	127,143	100.0%	
Internal Administrative Costs Subtotal :	\$ 1,322,743	\$ 77,289	\$ 491,047	\$ 831,696	62.9%	
Actuary and Accounting Services						
Audit	\$ 45,000	\$ -	\$ 40,747	\$ 4,253	9.5%	
Actuary	45,000	-	6,992	38,008	84.5%	
Actuary and Accounting Subtotal:	\$ 90,000	\$ -	\$ 47,739	\$ 42,261	47.0%	
Legal Services						
City Attorney Salaries	\$ 178,000	\$ 9,587	\$ 81,382	\$ 96,618	54.3%	
Legal Contingency	150,000	13,063	61,269	88,731	59.2%	
Legal Services Subtotal:	\$ 328,000	\$ 22,649	\$ 142,651	\$ 185,349	56.5%	
Investment Services						
Money Manager Fees	\$ 1,310,857	\$ 160,329	\$ 443,491	\$ 867,366	66.2%	
Custodial Fee	124,000	29,125	58,250	65,750	53.0%	
Investment Consultant (PCA)	100,000	-	50,000	50,000	50.0%	
Investment Subtotal:	\$ 1,534,857	\$ 189,454	\$ 551,741	\$ 983,116	64.1%	
Total Operating Budget	\$ 3,275,600	\$ 289,391	\$ 1,233,178	\$ 2,042,422	62.35%	

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of January 31, 2018

	Jan 2018
Beginning Cash as of 12/31/2017	\$ 8,054,448
Additions:	
City Pension Contribution - January	\$ 3,738,333
Investment Draw (Incoming Wire) - 1/1/2018	1,261,667
Misc. Receipts	1,950
Total Additions:	<u>\$ 5,001,950</u>
Deductions:	
Pension Payment (December Pension Paid on 1/1/2018)	(4,595,530)
Expenditures Paid	(122,915)
Total Deductions	<u>\$ (4,718,446)</u>
 Ending Cash Balance as of 1/31/2018*	 <u><u>\$ 8,337,952</u></u>

* On 02/01/2018, a pension payment of appx \$4,596,000 will be made leaving a cash balance of \$3,742,000

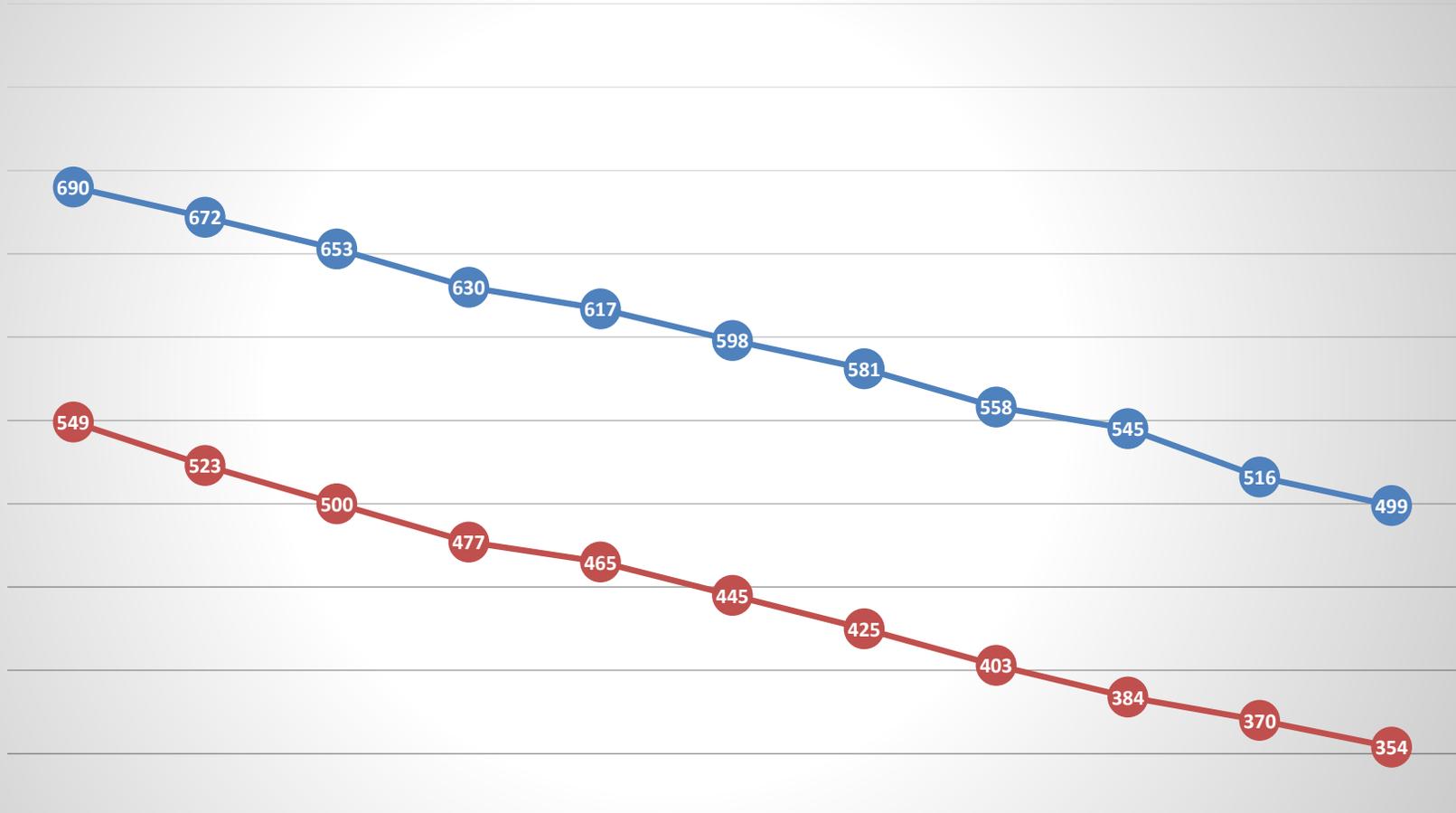
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of January 31, 2018

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	368	226	594
Beneficiary	131	128	259
<i>Total Retired Members</i>	499	354	853
<i>Total Membership:</i>	499	354	853

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	333	188	521
Disability Retirement	152	151	303
Death Allowance	14	15	29
<i>Total Retired Members:</i>	499	354	853
<i>Total Membership as of January 31, 2018:</i>	499	354	853
<i>Total Membership as of June 30, 2017:</i>	516	370	886
<i>Annual Difference:</i>	-17	-16	-33

Oakland Police and Fire Retirement System Pension Plan Membership Count As of January 31, 2018 (FY 2008 - FY 2018)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 FYTD
● Police	690	672	653	630	617	598	581	558	545	516	499
● Fire	549	523	500	477	465	445	425	403	384	370	354
● Total	1239	1195	1153	1107	1082	1043	1006	961	929	886	853



AGENDA REPORT

TO: Oakland Police and Fire
Retirement Board

FROM: Katano Kasaine

SUBJECT: Review of Updated Travel Policy of the
Oakland Police and Fire Retirement
System

DATE: March 19, 2018

OVERVIEW

The PFRS Staff Present the Updated Draft Version of the Updated PFRS Travel Policy for Board approval.

SUMMARY

The Board of Administration of the Oakland Police and Fire Retirement System approved the current PFRS Travel Policy on March 1, 2013. Staff has recently reviewed the travel and education policies of other public retirement systems and have drafted an update to the current PFRS Travel Policy for review and discussion by the PFRS board.

At the November 29, 2017 Board meeting, Staff was directed to deliver to each Board member the current draft version of the Education and Travel Policy so they can add comments. Staff reported the plan to return the edited Education and Travel Policy to the Board for approval at the January 2018 Board meeting.

At the February 28, 2017 Audit Committee meeting, the Audit Committee worked with staff to review the Board recommendations and added approved edits to the working draft of the Education and Travel Policy. The Committee tabled continued discussion until the March Audit Committee meeting to continue discussion and recommend Board Approval.

Respectfully submitted,

Katano Kasaine, Plan Administrator
Oakland Police and Fire Retirement System

Attachment(1):

- Draft version of Education & Travel Policy edited through March 1, 2018
- Recommended Edits to Draft of PFRS Education & Travel Policy by Member Muszar.
- Recommended Edits to Draft of PFRS Education & Travel Policy by Member Melia.

Agenda Item **D3**
PFRS Board Meeting
January 31, 2018

ATTACHMENT 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
EDUCATION AND TRAVEL POLICY
CURRENT EDITED VERSION

I. INTRODUCTION

- 1) The Board of Retirement of the Oakland Police and Fire Retirement System (the "Board") recognizes and affirms its constitutional and statutory fiduciary duty to prudently administer the retirement system for the exclusive benefit of PFRS members and their beneficiaries as set forth below:
 - a) "[T]he retirement board of a public pension or retirement system shall have plenary authority and fiduciary responsibility for investment of moneys and administration of the system..." Cal. Const. Art. XVI, § 17
 - b) "Except as otherwise expressly restricted by the California Constitution and by law, the board may, in its discretion, invest, or delegate the authority to invest, the assets of the fund through the purchase, holding, or sale of any form or type of investment, financial instrument, or financial transaction when prudent in the informed opinion of the board." Cal. Gov. Code § 31595(a)
 - c) "The board and its officers and employees shall discharge their duties with respect to the system...(b) [w]ith the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims." Cal. Gov. Code § 31595(b)

~~2) Travel by multiple Trustees shall be conducted in such a manner as to not violate provisions of the Brown Act (Cal. Gov. Code § 54950 et seq.) or Oakland Sunshine Ordinance (Oakland City Council Resolution No. 12483 C.M.S.).~~

~~3)2) _____~~ The Board ~~also~~ recognizes the need to reimburse Trustees and authorized staff for travel and other expenses reasonably and necessarily incurred while participating in educational programs, conducting due diligence, and other activities on behalf of the retirement system. These expenses are legitimate expenses of the retirement system. The Board adopts this Policy and the accompanying Preapproved Travel Expense Reimbursement Schedule (Exhibit A) to facilitate reimbursement of qualifying travel expenses. ~~This Policy shall also apply to business-related travel of the PFRS Plan Administrator and staff.~~

II. PURPOSE

- 1) The objectives of this PFRS Education and Travel Policy are:
 - a) To ensure all Trustees gain the knowledge necessary to carry out their fiduciary responsibilities.
 - b) To ensure access to relevant information is made available to all Trustees.
 - c) To ensure Trustees possess shared knowledge relevant to pension administration and the investment of trust assets, to enable effective group discussion, debate, and decision-making.
 - d) To enable each Trustee to achieve and maintain proficiency in the conduct of PFRS business by educating themselves in matters central to the prudent administration of the retirement system and the investment of retirement funds.
 - e) To set forth the guidelines by which PFRS will reimburse Trustees, the Retirement Administrator, and staff for qualifying travel expenditures.
 - f) To ensure that travel expenditures incurred are prudent and cost effective, and to mitigate the risk of any impropriety (whether perceived or actual) that could arise from retirement system and/or PFRS business-related travel.

- g) To encourage the continued education of the PFRS Board and staff.
- 2) In order to keep pace with the continued growth and diversification of the retirement fund as well as the increasing complexity of financial and investment management systems, Board members are required to have ongoing training regarding (but not limited to):
 - a) Fiduciary Responsibility;
 - b) Pertinent Pension/Retirement Law and Standards;
 - c) Equity and Security Investing;
 - d) International Investing;
 - e) Asset Allocation; and
 - f) Pension Funding.

III. SCOPE

This policy shall apply to:

- 1) The members serving on the PFRS Board of Administration, also referred to as “Board Members” or “Trustees”,
- 2) The Secretary of the PFRS Board,
- 3) The Plan Administrator,
- 4) The staff assigned to provide administrative support to the Board.

IV. EDUCATION AND TRAVEL POLICY

1) General Provisions

- a) The Audit and Operations Committee of the PFRS Board will review and make recommendations regarding all travel and education reimbursement requests to the PFRS Board. The PFRS Board may act independently of the Committee if the Audit Committee does not meet.
- b) Board members who attend educational programs and travel in their official Board capacity shall be reimbursed for their actual and necessary expenses for event registration, transportation, parking, tolls and other reasonable incidental costs. “Actual and necessary expense” does not include alcoholic beverages nor does it include expenses incurred by a travel companion.
- c) All travel shall be reviewed by the Audit and Operations Committee and approved in advance of travel by the Board, except as described below. Membership in an organization is not of itself, a basis for travel authorization.
- d) Travel by multiple Trustees shall be conducted in such a manner as to not violate provisions of the Brown Act (Cal. Gov. Code § 54950 et seq.) or Oakland Sunshine Ordinance (Oakland City Council Resolution No. 12483 C.M.S.).
- e) Travel by the Plan Administrator and the staff assigned to provide administrative support to the Board are additionally subject to the travel policy of the City of Oakland for any relevant travel associated with the PFRS system.

2) Approval

-
- a) Reimbursement of education and travel-related expenses for a Trustee or staff members to attend an educational program, conduct a due diligence site examination, or conduct other PFRS-related business requires the prior review by the Audit and Operations Committee and the approval of the Board.
 - b) PFRS staff will include the education/travel request as an Audit and Operations Committee agenda item, noting the Board member(s) and staff who will be traveling, the purpose of the travel, and the date(s) of the travel. Any PFRS board approval shall be accomplished by resolution.
 - c) The Board President, in consultation with the Plan Administrator, may authorize education or travel without prior approval of the Board in circumstances when Board approval cannot be obtained in advance and subject to the limitations in this Policy. Staff ~~should~~ will place the expense request and authorization on the next regularly scheduled Board and Committee meeting for ratification.
 - d) The Plan Administrator may approve payment of budgeted education and travel claims that do not exceed \$1,000 per item, not specifically covered by the provisions of this policy, provided the Plan Administrator determines such expenses are/were necessary in connection with official business of the Board and staff.
 - e) City staff will process the approved Board education/travel by submitting assembled invoices and reimbursement requests (if any) related to Board travel to the City of Oakland, Controller Bureau.
- 3) Limitation on Attendance
 - a) Trustees are encouraged to seek education that will further the purpose of this Policy. A Trustee may attend additional Board approved educational programs requiring overnight lodging, subject to the criteria of this Policy. The Board, at its sole discretion, may limit Trustee attendance up to the Trustee's annual Travel Expense (not to exceed \$7,500 per fiscal year).
- 4) Travel and Education Expense Allocation Budget
 - a) The travel and education allowance for the PFRS Board and Staff will be budgeted and adopted annually during the Board's budget process.
 - b) Prior to the start of the upcoming fiscal year beginning July 1, the Board will establish an education and travel allowance of up to \$7,500.00 for each Board member. These allowances shall not be exceeded without prior Board approval. However, the Board may pre-authorize expenses associated with education/travel for a Board member whose expenses are expected to exceed \$7,500.00 if, prior to the education program or travel, a cost estimate is submitted for the Board's review and the Board determines the expenses are necessary and are in connection with official Board business.
 - c) The Travel Allowance for the Staff of the PFRS board will be budgeted and adopted annually during the Board's budget process. The Board will establish the next fiscal year travel allowance and education allowance prior to the start of the next fiscal year beginning July 1.
 - d) Staff members whose local bargaining unit has provisions for tuition reimbursement related to professional development shall have budget allocated from the PFRS fund. The Staff Education Allowance shall only apply to tuition and/or registration fees related to class enrollment and textbooks related to enrolled classes. The Staff Education Allowance shall be administered and budgeted separately from the Annual Board and Staff Travel Expense Allowance. The Staff tuition reimbursement requests and authorization related to the Staff Education Allowance shall be administered by the Plan Administrator.
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- 5) Expenses other than Pre-approved Expenses
- a) The Board shall approve ~~or disapprove~~, by ~~a majority~~ the affirmative vote of four members, any travel, education, and other expenses at its discretion. Board decisions are final and denial of travel made by the Board cannot be appealed.
- 6) Requests for Reimbursement
- a) Reimbursement for education or travel by an attendee shall be submitted on the Travel Authorization form. All such forms will be reviewed and approved (or disapproved) in accordance with the provisions of this Policy. All requests for reimbursement shall be submitted within fifteen (15) days following conclusion of event and/or return to Oakland, whichever is first.
 - b) Reimbursements or advances in excess of allowable expenses must be returned to PFRS within thirty (30) days after the excess amounts become evident.
- 7) Gifts
- a) When traveling on official PFRS due diligence business travel, PFRS's trustees, officers, or employees shall not accept payment or gifts of travel or lodging from any person or entity (also, see Honoraria).
 - b) Food and beverages provided during the normal course of the day, as part of due diligence business travel, may be accepted, provided such food and beverages are uniformly offered to all attendees.
- 8) Honoraria
- a) Board members and staff are not permitted to accept honoraria from event sponsors or investment managers in any form for any event included with any request for travel authorization and/or expense reimbursement.
- 9) Cash Advances
- a) Cash advances will not be allowed unless specifically approved by the Board.
- 10) Expenses for Traveling Companions
- a) Expenses of family members and/or traveling companions are not reimbursable by PFRS.
- 11) Limitations on Expense Allowance
- a) Reimbursement for expenses shall not exceed that which is reasonable and necessary for travel to the precise destination and date of the covered occurrence, whether by private automobile, rental vehicle or common carrier. Expense costs for extra days prior to or after a conference will be reimbursed only if such extension results in lower overall trip costs or is necessitated by the conference schedule or available flights. Such cost(s) cannot push travel costs beyond any members' overall annual travel budget allowance.
- 12) Travel and Lodging Cancellations
- a) Trustees are responsible for the timely cancellation of registration fees, as well as travel and lodging reservations made on their behalf that will not be used, so that PFRS will incur no unnecessary expense. ~~Trustees will be personally responsible for paying any fees caused~~
-

~~by their failure to timely cancel any registrations or reservations, unless otherwise determined by the Board. Should the Board determine that a Trustee has consistently failed to timely cancel travel, the Board may require a Trustee to personally pay any fees caused by their failure to timely cancel travel.~~

13) Travel Arrangements

- a) All travel arrangements for which reimbursement is or will be sought shall be coordinated with the office of the Plan Administrator. Staff will process and pay the registration fee for an event (if any) and apply the cost of registration toward the members' annual travel expense allowance.
- b) Travel requests shall be submitted to the Plan Administrator prior to travel and shall include supporting information such as: program announcements, schedules, meeting dates, and an estimate of costs.
- c) The Plan Administrator or designee will assist the Board with travel arrangements when necessary, including arranging for event registration .

14) Travel By Privately-Owned Vehicles

- a) Board members, who use their privately owned vehicles for official travel within a 150-mile radius of ~~City Hall~~point of origin, will be reimbursed at the Federal mileage rate. For trips exceeding a 150-mile radius of point of origin~~City Hall~~, Board members will be reimbursed at the established full coach round trip, unrestricted airfare (as of the date of the claim).

~~a)~~b) Point of origin shall refer to the residence of the Board member.

15) Travel By Common Carrier

- a) When the carrier provides transportation by more than one class of service, the full coach or economy class fare on a major airline must be used. Any costs over and above coach or economy class shall be considered personal, non-reimbursable expenses of the traveler. Whenever possible, the Oakland Airport should be used for air travel. Original receipts and the travel itinerary are required for reimbursement of airfare. Airfare purchased using "frequent flyer miles" will not be reimbursed.

16) Rental Car

- a) The use of a rental car is allowed, provided its use is the most economical and practical means of travel. Original receipts are required for rental car reimbursement (including receipts for tolls, fuel, etc.).

17) Overnight Lodging

- a) The Plan Administrator will be responsible for payment of lodging invoices. Conference discount rates are to be used if offered. Travelers may make independent reservations at a non-conference associated hotel, under unusual circumstances, and are expected to stay in reasonable economical accommodations. A receipt is required for reimbursement of lodging costs.

18) Per Diem

- a) The current Federal per diem rate is used to cover the cost of three meals plus tips. There are no restrictions on how the meal per diem will be divided. Receipts are not necessary, since the

Federal daily rate is the maximum allowable rate. If the conference registration fee includes meals, then the per diem will be reduced according to the current Federal per diem rateschedule shown in Appendix A attached.

- b) The current Federal per diem rate is found at: <https://www.gsa.gov/travel/plan-book/per-diem-rates>

19) Meals

- a) For any full day out-of-city travel, the costs of meals and tips may be reimbursed at the current daily Federal per diem rate [see Section IV(18)(b)] without regard to how much is spent on individual meals (i.e., breakfast, lunch, dinner, snacks) and without receipts, subject to the following limitations:
- i. If a Board member is on travel status for less than a full day, costs may be reimbursed for individual meals occurring within the travel time, using the per diem rates [see Section IV(19)(b)]shown.
 - ii. Meals that are included in a meeting, conference and/or registration fee will be deducted from the per diem rates [see Section IV(18)(b)]below.
 - iii. ~~Meals may be reimbursed without regard to the duration of travel and without regard to a Board member's regular work hours.~~ Breakfast may be reimbursed even if a board member's travel consists of less than two hours in duration before his or her regular work hours. Dinners may be reimbursed even if travel consists of less than two hours duration after his or her regular work hours.

20) Other Expenses

- a) Other reasonable and necessary expenses such as parking, transportation to and from the airport (shuttle, taxi, etc.), will be reimbursed when a receipt is submitted with the Travel Expense Voucher reimbursement claim. For expenses where receipts are not customarily issued, (i.e. BART, bus fare, tips), reasonableness of the expense shall be approved by the Plan Administrator.
- b) Board members who travel on a non per-diem basis must submit receipts for all expenses incurred. If a member chooses not to utilize per diem, reimbursement will be based on the submission of individual itemized receipts (i.e. 1 coffee, 1 salad, 1 sandwich, etc.) Alcoholic beverages charges and charges incurred by a travel companion will not be reimbursed.

21) Expense Submission

- a) Travel Expenses for reimbursement are due within fifteen (15) days of return from a trip. The Plan Administrator may request further justification and documentation and may deny cost claims that are not considered eligible.

22) Cancellations

- a) It is the Board member's responsibility to cancel reservations when travel plans are altered or canceled and refund the Board for all previously advanced expenses. Charges or loss of refunds resulting from failure to cancel reservations will not be reimbursed except when cancellation was not feasible. ~~Cancellation costs and fees will be deducted from the member's annual travel allowance.~~

23) Update of Education and Travel Policy

DRAFT

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
EDUCATION AND TRAVEL POLICY**

DRAFT

- a) The PFRS Education and Travel Policy will be reviewed by the PFRS Board as needed but no ~~sooner~~less than three years from the previous approval date.

WALTER L. JOHNSON, SR.
PRESIDENT
POLICE AND FIRE RETIREMENT SYSTEM BOARD

KATANO KASAINÉ
PLAN ADMINISTRATOR & BOARD SECRETARY
POLICE AND FIRE RETIREMENT SYSTEM BOARD

APPENDIX A – PROCEDURE: Travel Request, Authorization and Reimbursement

The PFRS Board has final approval authority regarding travel authorization and expense reimbursement for Board or staff travel for conferences and educational seminars related to the function of PFRS. Such requests and authorization is reviewed and acted upon by the Board at their Board meetings.

Board members are asked to submit their travel requests to staff no later than fourteen (14) calendar days before the next PFRS Board meeting in order to add the travel request to the upcoming board meeting agenda. Travel requests received after this 14-day window will be added to the next available Board meeting agenda.

Procedures for a travel request, travel authorization and reimbursement for travel expenses are detailed below:

1. Inform PFRS staff of intent to request travel authorization and reimbursement for an event. All reservations which can be made immediately are suggested to be made if full reimbursement can be arranged in the event of the denial of travel request.
2. Staff will create a file for this travel event, which will include the following items:
 - a. **Agenda Report** summarizing travel request (signed by Plan Administrator). This report will be submitted for Board approval at the next available Board meeting.
 - b. **PFRS Board Resolution** detailing the travel request (approved to form and legality by the PFRS Legal Counsel).
 - c. **Event Agenda**. This document must identify the event name, date, location and schedule of events.
 - d. **Travel Authorization Form** (complete; signed by Plan Administrator). The estimated travel expenses will be detailed in this document and will be signed by the Plan Administrator.
 - e. **Travel Expense Voucher** (completed following return from travel event, signed by traveler and Plan Administrator).
 - f. **Travel Reimbursement Summary** (completed by staff). The reimbursement check and itemized travel reimbursement expenses are presented to the traveler.
 - g. All event receipts.

Items A – C above shall be submitted for PFRS Board approval. No education or travel will be approved without Board review and approval.

Exception I: A request for travel authorization and reimbursement that occurs after the 14 calendar day window for submission to the next PFRS Board agenda may be allowed if a request is made and authorized by the PFRS Board President. If the Board President authorizes the travel request for the Board agenda, and there is no violation of the Brown Act or Oakland Sunshine Ordinance, the travel request will be added to the current PFRS Board agenda for review and possible approval. This executive permission will be noted on the agenda report submitted to the Board for approval.

3. Staff will generate and submit at the next available PFRS Audit Committee an Agenda Report and PFRS Resolution requesting authorization for education and travel and reimbursement for the requested event. Staff will estimate the cost for the travel event.
4. The Audit Committee will approve or deny the recommendation for Board approval of the education/travel request. If approved, the Board shall review the travel request and approve, deny or amend it.

-
5. Upon approval, staff will process registration for the event, including any registration fees. Traveler will be responsible to arrange all other related travel actions for this travel event, including airfare, lodging, other related travel expenses involved in traveling to, and returning from, the event. Traveler will need to submit all original receipts to staff upon return from event travel. If receipts are not available, traveler must complete a Lost Receipt form which attests to the loss or unavailability of obtaining a receipt for reimbursement. No reimbursement for expenses can be made without original receipts or signed affidavit.
 6. Upon receiving all receipts following conclusion of event travel, staff will provide the traveler with the expense voucher, which itemizes the travel expenses from the traveler's submitted receipts. The traveler will be required to sign the expense voucher agreeing to its accuracy. Staff will review the signed expense voucher with the Plan Administrator. Upon Plan Administrator approval, staff will take submit the expense voucher to the City of Oakland Controllers department for review and disbursement. If the controller's office has any questions about the submitted expense voucher, they will contact staff before enacting any changes to the reimbursement amount. Following this review, a reimbursement check will be made to the traveler and delivered to staff.

ATTACHMENT 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
EDUCATION AND TRAVEL POLICY
CURRENT VERSION EDITED BY MEMBER MUSZAR

I. INTRODUCTION

- 1) The Board of Retirement Administration of the Oakland Police and Fire Retirement System (the "Board") recognizes and affirms its constitutional and statutory fiduciary duty to prudently administer the retirement system for the exclusive benefit of PFRS members and their beneficiaries as set forth below:
 - a) "[T]he retirement board of a public pension or retirement system shall have plenary authority and fiduciary responsibility for investment of moneys and administration of the system..." Cal. Const. Art. XVI, § 17
 - b) "Except as otherwise expressly restricted by the California Constitution and by law, the board may, in its discretion, invest, or delegate the authority to invest, the assets of the fund through the purchase, holding, or sale of any form or type of investment, financial instrument, or financial transaction when prudent in the informed opinion of the board." Cal. Gov. Code § 31595(a)
 - c) "The board and its officers and employees shall discharge their duties with respect to the system...(b) [w]ith the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims." Cal. Gov. Code § 31595(b)
- ~~2) Travel by multiple Trustees shall be conducted in such a manner as to not violate provisions of the Brown Act (Cal. Gov. Code § 54950 et seq.) or Oakland Sunshine Ordinance (Oakland City Council Resolution No. 12483 C.M.S.).~~
- 3) The Board ~~also~~ recognizes the need to reimburse Trustees and authorized staff for travel and other expenses reasonably and necessarily incurred while participating in educational programs, conducting due diligence, and other activities on behalf of the retirement system. These expenses are legitimate expenses of the retirement system. The Board adopts this Policy and the accompanying Preapproved Travel Expense Reimbursement Schedule (Exhibit A) to facilitate reimbursement of qualifying travel expenses. ~~This Policy shall also apply to business-related travel of the PFRS Plan Administrator and staff.~~

II. PURPOSE

- 1) The objectives of this PFRS Education and Travel Policy are:
 - a) To ensure all Trustees gain the knowledge necessary to carry out their fiduciary responsibilities.
 - b) To ensure access to relevant information is made available to all Trustees.
 - c) To ensure Trustees possess shared knowledge relevant to pension administration and the investment of trust assets, to enable effective group discussion, debate, and decision-making.
 - d) To enable each Trustee to achieve and maintain proficiency in the conduct of PFRS business by educating themselves in matters central to the prudent administration of the retirement system and the investment of retirement funds.
 - e) To set forth the guidelines by which PFRS will reimburse Trustees, the Retirement Administrator, and staff for qualifying travel expenditures.
 - f) To ensure that travel expenditures incurred are prudent and cost effective, and to mitigate the risk of any impropriety (whether perceived or actual) that could arise from retirement system and/or PFRS business-related travel.

- g) To encourage the continued education of the PFRS Board and staff.
- 2) In order to keep pace with the continued growth and diversification of the retirement fund as well as the increasing complexity of financial and investment management systems, Board members are required to have ongoing training regarding (but not limited to):
 - a) Fiduciary Responsibility;
 - b) Pertinent Pension/Retirement Law and Standards;
 - c) Equity and Security Investing;
 - d) International Investing;
 - e) Asset Allocation; and
 - f) Pension Funding.

III. SCOPE

This policy shall apply to:

- 1) The members serving on the PFRS Board of Administration, also referred to as “Board Members” or “Trustees”,
- 2) The Secretary of the PFRS Board,
- 3) The Plan Administrator,
- 4) The staff assigned to provide administrative support to the Board.

IV. EDUCATION AND TRAVEL POLICY

1) General Provisions

a) The Audit and Operations Committee of the PFRS Board will review and recommend make recommendations regarding all travel and education reimbursement requests to the PFRS Board.

a)b) Board members who attend educational programs and travel in their official Board capacity shall be reimbursed for their actual and necessary expenses for event registration, transportation, parking, tolls and other reasonable incidental costs. “Actual and necessary expense” does not include alcoholic beverages nor does it include expenses incurred by a travel companion.

c) All travel shall be reviewed by the Audit and Operations Committee and approved in advance of travel by the Board, except as described below. Membership in an organization is not of itself, a basis for travel authorization.

d) Travel by multiple Trustees shall be conducted in such a manner as to not violate provisions of the Brown Act (Cal. Gov. Code § 54950 et seq.) or Oakland Sunshine Ordinance (Oakland City Council Resolution No. 12483 C.M.S.).

b)e) Where costs are shared by PFRS and the City, travel by the Plan Administrator and the staff assigned to provide administrative support to the Board are additionally subject to the travel policy of the City of Oakland for any relevant travel associated with the PFRS system.

2) Approval

- a) Reimbursement of education and travel-related expenses for a Trustee or staff members to

attend an educational program, conduct a due diligence site examination, or conduct other PFRS-related business requires the prior [review by the Audit and Operations Committee and the](#) approval of the Board.

- b) PFRS staff will include the education/travel request as an [Audit and Operations Committee](#) agenda item, noting the Board member(s) and staff who will be traveling, the purpose of the travel, and the date(s) of the travel. Any PFRS board approval shall be accomplished by resolution.
 - c) The Board President, in consultation with the Plan Administrator, may authorize education or travel without prior approval of the Board in circumstances when Board approval cannot be obtained in advance and subject to the limitations in this Policy. Staff ~~should~~ [will](#) place the expense request and authorization on the next regularly scheduled Board and Committee meeting for ratification.
 - d) The Plan Administrator may approve payment of [budgeted](#) education and travel claims that do not exceed \$1,000 per item, not specifically covered by the provisions of this policy, provided the Plan Administrator determines such expenses are/were necessary in connection with official business of the Board and staff.
 - e) City staff will process the approved Board education/travel by submitting assembled invoices and reimbursement requests (if any) related to Board travel to the City of Oakland, Controller Bureau.
- 3) Limitation on Attendance
- a) Trustees are encouraged to seek education that will further the purpose of this Policy. A Trustee may attend additional Board approved educational programs requiring overnight lodging, subject to the criteria of this Policy. The Board, at its sole discretion, may limit Trustee attendance up to the Trustee's annual Travel Expense (not to exceed \$7,500 per fiscal year).
- 4) Travel and Education Expense Allocation Budget
- a) The travel and education allowance for the PFRS Board and Staff will be budgeted and adopted annually during the Board's budget process.
 - b) Prior to the start of the upcoming fiscal year beginning July 1, the Board will establish an education and travel allowance of up to \$7,500.00 for each Board member. These allowances shall not be exceeded without prior Board approval. However, the Board may pre-authorize expenses associated with education/travel for a Board member whose expenses are expected to exceed \$7,500.00 if, prior to the education program or travel, a cost estimate is submitted for the Board's review and the Board determines the expenses are necessary and are in connection with official Board business.
 - c) The Travel Allowance for the Staff of the PFRS board will be budgeted and adopted annually during the Board's budget process. The Board will establish the next fiscal year travel allowance and education allowance prior to the start of the next fiscal year beginning July 1.
 - d) Staff members whose local bargaining unit has provisions for tuition reimbursement related to professional development shall have budget allocated from the PFRS fund. The Staff Education Allowance shall only apply to tuition and/or registration fees related to class enrollment and textbooks related to enrolled classes. The Staff Education Allowance shall be administered and budgeted separately from the Annual Board and Staff Travel Expense Allowance. The Staff tuition reimbursement requests and authorization related to the Staff Education Allowance shall be administered by the Plan Administrator. [The PFRS share of Education Allowance expenses shall pro-rated in amounts equal to the percentage of a staff member's time has been allocated to PFRS duties.](#)

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- 5) Expenses other than Pre-approved Expenses
- a) The Board shall approve or disapprove, by a majority ~~the~~ vote of four members, any travel, education, and other expenses at its discretion. Board decisions are final and denial of travel made by the Board cannot be appealed.
- 6) Requests for Reimbursement
- a) Reimbursement for education or travel by an attendee shall be submitted on the Travel Authorization form. All such forms will be reviewed and approved (or disapproved) in accordance with the provisions of this Policy. All requests for reimbursement shall be submitted within fifteen (15) days following conclusion of event and/or return to Oakland, whichever is first.
 - b) Reimbursements or advances in excess of allowable expenses must be returned to PFRS within thirty (30) days after the excess amounts become evident.
- 7) Gifts
- a) When traveling on official PFRS due diligence business travel, PFRS's trustees, officers, or employees shall not accept payment or gifts of travel or lodging from any person or entity (also, see Honoraria).
 - b) Food and beverages provided during the normal course of the day, as part of due diligence business travel, may be accepted, provided such food and beverages are uniformly offered to all attendees.
- 8) Honoraria
- a) Board members and staff are not permitted to accept honoraria from event sponsors or investment managers in any form for any event included with any request for travel authorization and/or expense reimbursement.
- 9) Cash Advances
- a) Cash advances will not be allowed unless specifically approved by the Board.
- 10) Expenses for Traveling Companions
- a) Expenses of family members and/or traveling companions are not reimbursable by PFRS.
- 11) Limitations on Expense Allowance
- a) Reimbursement for expenses shall not exceed that which is reasonable and necessary for travel to the precise destination and date of the covered occurrence, whether by private automobile, rental vehicle or common carrier. Expense costs for extra days prior to or after a conference will be reimbursed only if such extension results in lower overall trip costs or is necessitated by the conference schedule or available flights. Such cost(s) cannot push travel costs beyond any members' overall annual travel budget allowance.
- 12) Travel and Lodging Cancellations
- a) Trustees are responsible for the timely cancellation of registration fees, as well as travel and lodging reservations made on their behalf that will not be used, so that PFRS will incur no unnecessary expense. ~~Trustees will be personally responsible for paying~~ Any fees
-

caused by ~~their~~ a Trustee's failure to timely cancel any registrations or reservations, will be charged against the Trustee's annual travel expense allowance unless otherwise determined by the Board.

13) Travel Arrangements

- a) All travel arrangements for which reimbursement is or will be sought shall be coordinated with the office of the Plan Administrator. Staff will process and pay the registration fee for an event (if any) and apply the cost of registration toward the members' annual travel expense allowance.
- b) Travel requests shall be submitted to the Plan Administrator prior to travel and shall include supporting information such as: program announcements, schedules, meeting dates, and an estimate of costs.
- c) The Plan Administrator or designee will assist the Board with travel arrangements when necessary, including arranging for event registration .

14) Travel By Privately-Owned Vehicles

- a) Board members, who use their privately owned vehicles for official travel including travel to and from the airport, within a 150-mile radius of ~~City Hall~~point of origin, will be reimbursed at the Federal mileage rate. For trips exceeding a 150-mile radius of ~~point of origin~~City Hall, Board members will be reimbursed at the Federal mileage rate not to exceed the established full coach round trip, unrestricted airfare (as of the date of the claim).

a)b) Point of origin shall refer to the residence of the Board member.

15) Travel By Common Carrier

- a) When the carrier provides transportation by more than one class of service, the full coach or economy class fare on a major airline must be used. Any costs over and above coach or economy class shall be considered personal, non-reimbursable expenses of the traveler. Whenever possible, the Oakland Airport should be used for air travel. Original receipts and the travel itinerary are required for reimbursement of airfare. Airfare purchased using "frequent flyer miles" will not be reimbursed.

16) Rental Car

- a) The use of a rental car is allowed, provided its use is the most economical and practical means of travel. Original receipts are required for rental car reimbursement (including receipts for tolls, fuel, etc.).

17) Overnight Lodging

- a) The Plan Administrator will be responsible for payment of lodging invoices. Conference discount rates are to be used if offered. Travelers may make independent reservations at a non-conference associated hotel, under unusual circumstances, and are expected to stay in reasonable economical accommodations. A receipt is required for reimbursement of lodging costs.

18) Per Diem

- a) The current Federal per diem rate is used to cover the cost of three meals plus tips. There are no restrictions on how the meal per diem will be divided. Receipts are not necessary, since the

Federal daily rate is the maximum allowable rate. If the conference registration fee includes meals, then the per diem will be reduced according to the [current Federal per diem rateschedule shown in Appendix A attached](#).

- b) [The current Federal per diem rate is found at: https://www.gsa.gov/travel/plan-book/per-diem-rates](https://www.gsa.gov/travel/plan-book/per-diem-rates)

19) Meals

- a) For any full day out-of-city travel, the costs of meals and tips may be reimbursed at the current daily [Federal per diem](#) rate [\[see Section IV\(18\)\(b\)\]](#) without regard to how much is spent on individual meals (i.e., breakfast, lunch, dinner, snacks) and without receipts, subject to the following limitations:
- i. If a Board member is on travel status for less than a full day, costs may be reimbursed for individual meals occurring within the travel time, using the per diem rates [\[see Section IV\(19\)\(b\)\]shown](#).
 - ii. Meals that are included in a meeting, conference and/or registration fee will be deducted from the per diem rates [\[see Section IV\(18\)\(b\)\]below](#).
 - iii. Meals may be reimbursed without regard to the duration of travel ~~and without regard to a Board member's regular work hours~~. Breakfast may be reimbursed even if a board member's travel consists of less than two hours in duration before ~~his or her regular work normal business~~ hours. Dinners may be reimbursed even if travel consists of less than two hours duration ~~after his or her regular work hours~~ [following normal business hours](#).

20) Other Expenses

- a) Other reasonable and necessary expenses such as parking, transportation to and from the airport (shuttle, taxi, etc.), will be reimbursed when a receipt is submitted with the Travel Expense Voucher reimbursement claim. For expenses where receipts are not customarily issued, (i.e. BART, bus fare, tips), reasonableness of the expense shall be approved by the Plan Administrator.
- b) Board members who travel on a non per-diem basis must submit receipts for all expenses incurred. If a member chooses not to utilize per diem, reimbursement will be based on the submission of individual itemized receipts (i.e. 1 coffee, 1 salad, 1 sandwich, etc.) Alcoholic beverages charges and charges incurred by a travel companion will not be reimbursed.

21) Expense Submission

- a) Travel Expenses for reimbursement are due within fifteen (15) days of return from a trip. The Plan Administrator may request further justification and documentation and may [subject to Board approval](#), deny cost claims that are not considered eligible.

22) Cancellations

- a) It is the Board member's responsibility to cancel reservations when travel plans are altered or canceled and refund the Board for all previously advanced expenses. Charges or loss of refunds resulting from failure to cancel reservations will not be reimbursed except when cancellation was not feasible. ~~Cancellation costs and fees will be deducted from the member's annual travel allowance.~~

23) Update of Education and Travel Policy

DRAFT

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
EDUCATION AND TRAVEL POLICY**

DRAFT

- a) The PFRS Education and Travel Policy will be reviewed by the PFRS Board as needed but no ~~sooner~~less than three years from the previous approval date.

WALTER L. JOHNSON, SR.
PRESIDENT
POLICE AND FIRE RETIREMENT SYSTEM BOARD

KATANO KASAINÉ
PLAN ADMINISTRATOR & BOARD SECRETARY
POLICE AND FIRE RETIREMENT SYSTEM BOARD

APPENDIX A – PROCEDURE: Travel Request, Authorization and Reimbursement

The PFRS Board has final approval authority regarding travel authorization and expense reimbursement for Board or staff travel for conferences and educational seminars related to the function of PFRS. Such requests and authorization is reviewed and acted upon by the Board at their Board meetings.

Board members are asked to submit their travel requests to staff no later than fourteen (14) calendar days before the next PFRS Board meeting in order to add the travel request to the upcoming board meeting agenda. Travel requests received after this 14-day window will be added to the next available Board meeting agenda.

Procedures for a travel request, travel authorization and reimbursement for travel expenses are detailed below:

1. Inform PFRS staff of intent to request travel authorization and reimbursement for an event. All reservations which can be made immediately are suggested to be made if full reimbursement can be arranged in the event of the denial of travel request.
2. Staff will create a file for this travel event, which will include the following items:
 - a. **Agenda Report** summarizing travel request (signed by Plan Administrator). This report will be submitted for Board approval at the next available Board meeting.
 - b. **PFRS Board Resolution** detailing the travel request (approved to form and legality by the PFRS Legal Counsel).
 - c. **Event Agenda**. This document must identify the event name, date, location and schedule of events.
 - d. **Travel Authorization Form** (complete; signed by Plan Administrator). The estimated travel expenses will be detailed in this document and will be signed by the Plan Administrator.
 - e. **Travel Expense Voucher** (completed following return from travel event, signed by traveler and Plan Administrator).
 - f. **Travel Reimbursement Summary** (completed by staff). The reimbursement check and itemized travel reimbursement expenses are presented to the traveler.
 - g. All event receipts.

Items A – C above shall be submitted for PFRS Board approval. No education or travel will be approved without Board review and approval.

Exception 1: A request for travel authorization and reimbursement that occurs after the 14 calendar day window for submission to the next PFRS Board agenda may be allowed if a request is made and authorized by the PFRS Board President. If the Board President authorizes the travel request for the Board agenda, and there is no violation of the Brown Act or Oakland Sunshine Ordinance, the travel request will be added to the current PFRS Board agenda for review and possible approval. This executive permission will be noted on the agenda report submitted to the Board for approval.

3. Staff will generate and submit at the next available PFRS Audit Committee an Agenda Report and PFRS Resolution requesting authorization for education and travel and reimbursement for the requested event. Staff will estimate the cost for the travel event.
4. The Audit Committee will approve or deny the recommendation for Board approval of the education/travel request. If approved, the Board shall review the travel request and approve, deny or amend it.

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5. Upon approval, staff will process registration for the event, including any registration fees. Traveler will be responsible to arrange all other related travel actions for this travel event, including airfare, lodging, other related travel expenses involved in traveling to, and returning from, the event. Traveler will need to submit all original receipts to staff upon return from event travel. If receipts are not available, traveler must complete form **XXX** which attests to the loss or unavailability of obtaining a receipt for reimbursement. No reimbursement for expenses can be made without original receipts or signed affidavit.
 6. Upon receiving all receipts following conclusion of event travel, staff will provide the traveler with the expense voucher, which itemizes the travel expenses from the traveler's submitted receipts. The traveler will be required to sign the expense voucher agreeing to its accuracy. Staff will review the signed expense voucher with the Plan Administrator. Upon Plan Administrator approval, staff will take submit the expense voucher to the City of Oakland Controllers department for review and disbursement. If the controller's office has any questions about the submitted expense voucher, they will contact staff before enacting any changes to the reimbursement amount. Following this review, a reimbursement check will be made to the traveler and delivered to staff.

ATTACHMENT 3

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
EDUCATION AND TRAVEL POLICY
CURRENT VERSION EDITED BY MEMBER MELIA

Low, David

From: Martin Melia <melia401@gmail.com>
Sent: Thursday, January 25, 2018 12:44 PM
To: Low, David
Subject: Re: PFRS DRAFT Education & Travel Policy for edit

My only suggestion is to put a cap on tips. Perhaps 18%.

Martin

On Jan 2, 2018 12:50 PM, "Low, David" <DLow@oaklandnet.com> wrote:

Attention PFRS Board Members:

Attached here is the current working draft of the PFRS Education and Travel Policy. Please review and submit to me any comments and edits for submission at the January 31, 2018 audit committee meeting for review and possible approval.

Please respond by Friday, January 12, 2017 by 4:00 pm. Thank you.

DAVID LOW

Retirement Systems

City of Oakland

150 Frank Ogawa Plaza, Ste 3332

Oakland CA 94612

p: [510.238.7295](tel:510.238.7295) f: [510.238.7129](tel:510.238.7129)

dlow@oaklandnet.com



AGENDA REPORT

TO: Oakland Police and Fire
Retirement Board

FROM: Katano Kasaine

SUBJECT: Rules and Regulations Review

DATE: March 21, 2018

EXECUTIVE SUMMARY

As directed by the Audit Committee at their September 27, 2017 meeting, the PFRS staff presents the attached draft changes approved by consensus of the Audit Committee to date. The committee has completed its review of the PFRS Rules and Regulations through Section 8 and continues to discuss and edit the PFRS Rules and Regulations.

BACKGROUND

The Audit Committee has been reviewing and editing the PFRS Rules and Regulations during their Audit Committee meetings since May 31, 2017. Staff was directed to bring the updated draft of the Rules and Regulations back to each meeting for continued discussion (**Attachment 1**). Also attached are Member Muszar's notes regarding the Rules and Regulations (**Attachment 2**).

Respectfully submitted,

Katano Kasaine, Plan Administrator
Oakland Police and Fire Retirement System

Attachment(2):

- Draft PFRS Rules and Regulations approved by consensus of the Audit Committee through September 27, 2017
- Edited Draft PFRS Rules and Regulations submitted by Member Robert Muszar

ATTACHMENT 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

Article 1: IDENTIFICATION

Section 1.1: Name

The Oakland Police and Fire Retirement Systems (“PFRS”) Board

Section 1.2: Office Location

Retirement Systems, 150 Frank H. Ogawa Plaza, Suite 3332, Oakland, CA 94612

Section 1.3: Authority, Statutory Requirements

The PFRS Board shall comply with all applicable laws, including but not limited to Article XVI, Section 17 of the California Constitution, Article XXVI of the Oakland City Charter, the Oakland Sunshine Ordinance (Oakland Municipal Code (“OMC”) Chapter 2.20, the Ralph M. Brown Act (Government Code section 54950 et seq.), the California Public Records Act (Government Code section 6250 et seq.), and the Oakland Conflict of Interest Code (OMC Chapter 3.16).

Article 2: MISSION STATEMENT

It is the mission of the Board of the Oakland Police and Fire Retirement System to manage and administer the Oakland Police and Fire Retirement System and Fund. In order to fulfill this mission, the PFRS Board shall:

1. Possess power to make all necessary rules and regulations for its guidance;
2. Have exclusive control of the administration and investment of the fund established for the maintenance and operation of the System;
3. Administer the System in accordance with the provisions of Article XXVI of the Oakland City Charter;
4. Exercise its plenary authority and fiduciary responsibility for investment of the Plan’s funds in accordance with Article XVI, Section 17 of the California Constitution.

Article 3: BOARD OF TRUSTEES

Section 3.1: Board Membership

The Board of the Police and Fire Retirement System consists of seven members, appointed or elected as set forth in Oakland City Charter section 2601: the Mayor (or a designated representative), a life insurance executive of a local office, a senior officer of a local bank, a community representative, an elected retired member of the Police Department, an elected retired member of the Fire Department, and an elected retired member position that alternates between the Police Department and Fire Department memberships. ~~A retired police or fire member may be elected by the active and retired~~

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

RULES AND REGULATIONS

~~membership to serve if no active member is elected to serve on the Board from their respective department.~~

Section 3.2: Procedure to Fill Vacancy of Elected Members

In the event a vacancy occurs before the end of a full term in any of the three (3) elected offices of the Board which are filled by retired members of the Retirement System, a successor shall be elected for the unexpired portion of the term vacated In accordance with Section 11.12.

Section 3.3: Procedure to Fill Vacancy of Appointed Members

In the event a vacancy occurs before the end of a five (5) year term in any of the three (3) appointed offices of the Board, the Mayor's office will be notified of the vacancy by the Retirement office. The new appointee shall be appointed by the Mayor, confirmed by Oakland City Council and sworn-in by the Oakland City Clerk's office. A successor appointed under this Section shall be appointed for the remainder of the vacated term.

Section 3.4: Holdover

In the event of a failure to appoint a successor to the Board seat held by the life insurance representative, bank representative, or community representative after the expiration of a five (5) year term, the Board member most recently filling that seat may continue to serve as a Board member during the following term in a holdover capacity for up to one year.

Section 3.5: Compensation

All Board members shall serve without compensation.

Article 4: BOARD MEMBER RESPONSIBILITIES AND CORE COMPETENCIES

Section 4.1: Attendance

All Board members are expected to attend all board and applicable committee meetings. While attendance is not always possible, board members should, once the calendar for a year is set, immediately identify any scheduling conflicts and thereafter manage their schedules to avoid creating additional conflicts. Absences for medical or other substantial reasons shall be deemed to be excused absences in the discretion of the Board President.

Section 4.2: Preparation

Board members should come to Board and committee meetings having already read the materials prepared and circulated by staff and/or consultants, and having already asked any questions of staff necessary for their understanding.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

RULES AND REGULATIONS

Section 4.3: Integrity

Board members shall conduct themselves with integrity and dignity, maintaining the highest ethical conduct at all times. They should understand system objectives and exercise care, prudence and diligence in handling confidential information.

Section 4.4: Conflict of Interest

No Board member and no employee of the Board shall have any interest, direct or indirect in the making of any investment, or in the gains or profits accruing there from. No member or employee of the Board, directly or indirectly, for himself or herself or as an agent or partner of others, shall borrow any of its funds or deposits or in any manner use the same except to make such current and necessary payments as are authorized by the Board; nor shall any member or employee of the Board become an endorser or surety or become in any manner an obligor for moneys invested by the Board.

Board members, staff and specified consultants are subject to the conflict of interest provisions the Oakland Municipal Code (OMC Chapter 3.16) and California state law, including but not limited to the Political Reform Act (Government Code section 81000 et seq) and Government Code section 1090.

Board members shall timely file annually the Statement of Economic Interests (Fair Political Practices Commission Form 700) as required by the City of Oakland's Conflict of Interest Code.

Section 4.5: Knowledge

Board members should develop and maintain their knowledge and understanding of the issues involved in the management of the system. The specific areas in which board members should develop and maintain a high level of knowledge should include:

- Public pension plan governance.
- Asset allocation and investment management.
- Actuarial principles and funding policies.
- Financial reporting, controls and audits.
- Benefits administration.
- Vendor selection process.
- Open meeting and public records laws.
- Fiduciary responsibility.
- Ethics and conflicts of interest.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

RULES AND REGULATIONS

Section 4.6: Education

Board members are expected to pursue educational opportunities that will assist them in the fulfillment of their fiduciary duties to the retirement plan and its beneficiaries. Each Board member will be allocated an educational allowance on an annual basis.

Section 4.7: Collegiality

Board members shall make every effort to engage in collegial deliberations, and to maintain an atmosphere in which board or committee members can speak freely, explore ideas before becoming committed to positions and seek information from staff and other members.

Article 5: MEETINGS

Section 5.1: Open Meetings / Quorum

Public notice of all meetings shall be provided as required by the Brown Act and the Sunshine Ordinance. Four members of the Board shall constitute a quorum for the transaction of business. Two Board Members constitute a quorum for the purpose of a Committee meeting. The powers conferred by the Charter upon the Board shall be exercised by order or resolution adopted by the affirmative votes of at least four (4) Board members. The affirmative votes of five (5) members of the Board are required for all investment decisions excluding Board approved drawdowns for benefits payments or administrative expenses.

Section 5.2: Time and Place of Regular Meetings

Section 5.2a: Full Board

The regularly scheduled meetings of the PFRS Board shall take place at Oakland City Hall on the last Wednesday of each month.

Section 5.2b: Standing Committee

The regularly scheduled meetings of the Audit/Operations Committee shall take place at Oakland City Hall on the last Wednesday of each month, at a specified time.

The regularly scheduled meetings of the Investment Committee shall take place at Oakland City Hall on the last Wednesday of each month, at a specified time.

Section 5.3: Special Meetings

The President or a majority of the members of the Board may schedule a Special Meeting of the board at any time, with notice given in accordance with the notice provisions of the Sunshine Ordinance and Brown Act.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

Article 6: FISCAL YEAR

The fiscal year of the Board shall commence upon the first day of July each year and terminate on the thirtieth day of June of the following year.

Article 7: OFFICERS

Section 7.1: Elective Officers

At the regular meeting in September of each year, the Board shall elect one of its members to act as President for the ensuing year, and one to act as Vice President. ~~The Board shall also appoint a Secretary who shall hold office at its pleasure.~~

Section 7.2: Terms of President and Vice-President

The President and Vice-President shall take office at the close of the September meeting following their election and shall serve for one year or until their successors have been elected and take office.

Section 7.3: Duties of President and Vice-President

The President of the Board shall preside at all Board meetings. In his or her absence, the Vice-President shall preside. In the absence of both the President and the Vice-President, when the President has not selected a President Pro Tem in advance, the Board shall select one of its own members to preside.

The President shall also:

- Appoint the members of the Board's standing committees annually prior to the October meeting;
- ~~Add or delete items from~~ Manage the Full Board Meeting Agenda and Committee Agendas in accordance with Article 9 of the PFRS Rules and Regulations;
- Ensure that Committee Chairpersons manage committee agendas in accordance with Article 9 of the PFRS Rules and Regulations;
- Schedule a Special Meeting of the Board,
- Create ad hoc committees for a limited duration and purpose, which shall be comprised of at least one but less than a quorum of board members, and may include a non-board member(s),
- Sign authorized contracts, agreements and financial documents on the Board's behalf; and
- Perform other duties as directed by the Board.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

The Vice President shall also:

- Assume and discharge the President's duties when the President is absent or otherwise unable to perform them, or when directed by the President; and
- Perform other duties as directed by the Board.

Section 7.4: Duties of the Secretary of the Board

The Board shall also appoint a Secretary who shall hold office at its pleasure. The Secretary shall have the power to:

- Administer oaths and affirmations
- Issue subpoenas in all matters pertaining to the administration and operation of the System

Section 7.5: Duties of the Plan Administrator

The Plan Administrator is authorized to:

- Approve the withdrawal of funds for the purpose of making benefit payments to retirees and their beneficiaries in the event that the Board is unable to do so in a timely manner and submit to the board for ratification.
- Approve all demands for payment of claims against the administrative appropriation as approved by the Board.

The Plan Administrator shall also:

- Submit a monthly report to the Board that shall summarize plan expenses and membership count of the Retirement System.
- Prepare an annual report for the Board and the City Council.
- Annually submit a budget for approval by the Board and to be submitted to the City Administrator for the bi-annual budget.

Article 8: STANDING COMMITTEES

Section 8.1: Investment Committee

The Investment Committee shall be a Standing Committee of the Board, consisting of three members, whose chairperson shall be the banker representative on the Board. If

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

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the banker representative position is vacant, the Board President shall appoint a chairperson. Annually, before the October meeting, the President of the Board shall appoint the additional members of the committee, who shall serve until their successors have been appointed.

The Investment Committee shall have the responsibility for making recommendations to the Board in the following areas:

- Review the Plan's overall investment objectives, risk tolerance and performance standards and recommend changes to the Board.
- Recommend the hire or termination of investment managers to the PFRS Board.
- Keep the Board apprised of the performance of the Plan's investment portfolio.
- Recommend the asset allocation of the Plan to the Board.
- Recommend to the Board which investments to target for the purpose of making benefit payments under the Plan.
- Review the Investment Policy and recommend changes to the Board.

Section 8.2: Audit/Operations Committee

The Audit/Operations Committee shall be a Standing Committee of the Board, consisting of three members. Annually, before the October meeting, the President of the Board shall appoint the members of the committee, who shall serve until their successors have been appointed. The President shall appoint a Committee chairperson from one of the three Committee members.

The Audit/Operations Committee shall have the responsibility for making recommendations to the Board in the following areas:

- Review the Plan's administrative procedures for the purpose of ensuring prompt delivery of benefits and related services to participants and their beneficiaries and recommend necessary changes to the full Board.
- Review and recommend solutions to specific issues raised by the Board that relate to administration of the PFRS Plan.
- Review the actuarial valuation report and the annual financial audit report of the Plan and recommend approval by the Board, unless the Board President determines that a report should be reviewed in the first instance by the full Board.
- Review the annual budget and recommend approval by the Board.

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- Monitor the Plan's administrative budget and assist the Board in defraying reasonable expenses.
- Develop and recommend changes to Board rules, regulations and policies in non-investment areas.
- Review PFRS Rules and Regulations every three years.
- Other duties and/ or issues as directed by the Board.
- Approve-Recommend approval of Board Member Travel and staff travel in accordance with the PFRS Travel Policy.
- Periodically rReview PFRS Travel Policy- every three years.

Article 9: MEETING PROCEDURES AND BOARD ACTION

Section 9.1: Board and Committee Time Management

The Board President or Committee Chair person is responsible for time management of the applicable body. To the greatest extent feasible, all items on Board and Committee agendas shall be supported by concise, easily accessible written information.

Section 9.2: Speakers' Cards

Members of the public wishing to speak must submit their name and the item on the agenda they wish to discuss, if any, to staff before being recognized by the presiding officer.

Members of the public who wish to speak must complete a speaker card for each agenda item he/shes/he wishes to speak on. Multiple agenda items cannot be listed on one speaker card.

Section 9.3: Public Speaker Procedures

Members of the public addressing the Board shall state their name. They shall confine their remarks to the agenda item under discussion, unless they are speaking during the Open Forum portion of the agenda.

Section 9.4: Time Limits for Public Speakers

Any member of the public who has submitted a speaker card on an agenda item, other than open forum, shall be allotted three (3) minutes to speak prior to any vote or action by the Board.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

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Subject to the provisions of this Rule that apply to ~~public~~-speakers who submit multiple speaker's cards, all ~~public~~-speakers on any one item shall be allotted the same amount of speaking time on that item, unless given ceded time, or unless more time must be given to comply with due process or other legal requirements or in circumstances where the Board is acting in a quasi-adjudicatory capacity.

Section 9.5: Speakers Submitting Speaker's Cards on Multiple Items

Subject to Section 9.4 and the discretion of the presiding officer, which discretion must be exercised in accordance with Section 9.4, a speaker who submits his or her name to speak on four or more items (other than open forum) will be instructed to address all items concurrently and shall be allotted 2 minutes per item up to a maximum of 10 minutes; if the presiding officer exercises his/her discretion under Section 9.4 to reduce each speaker's time to one (1) minute, speakers who submit four or more speaker's cards shall be allotted one (1) minute per item up to a maximum of 5 minutes.

Section 9.6: Ceding Time

In case the allotted time for each ~~public~~-speaker is less than two (2) minutes on an agenda item, a ~~public~~-speaker may extend his or her speaking time if other ~~public~~ speakers who have submitted their names to speak agree to cede their time to the recipient ~~public~~-speaker. The recipient ~~public~~-speaker will receive one (1) minute speaking time from each ceding ~~public~~-speaker, up to a maximum of five (5) minutes. At the presiding officer's discretion, a ~~public~~-speaker may be allotted more than five (5) minutes based on ceded time. The recipient public speaker must submit the ceding ~~public~~ speakers' speaking cards, and the ceding ~~public~~-speakers must be present at the time the recipient ~~public~~-speaker speaks.

Section 9.7: Open Forum

~~Public~~-speakers submitting their names to speak under open forum shall be allotted a maximum of three (3) minutes. A ~~public~~-speaker may speak only once under open forum during any one meeting, subject to the discretion of the presiding officer. The presiding officer may reduce each ~~public~~-speaker's allotted time to one (1) minute if he or she publicly states all reasons justifying any reduction in speaker time, which reasons shall be based at least on consideration of the time allocated or anticipated for the meeting, the number and complexity of agenda items and the number of persons wishing to address the local body, and whether there will be sufficient time available during the meeting to consider all agenda items if all ~~public~~-speakers are allowed two (2) minutes to speak.

The Board cannot take any action under Open Forum unless it is deemed an emergency or urgency matter under the Sunshine Ordinance and Brown Act by a vote of the Board.

Section 9.8: Procedure for Placing New Items on an Agenda

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For any new business by any board member, the full Board is authorized to add the item to future agendas of any meeting by an affirmative vote of a majority of the quorum of Board members present.

Section 9.9: Procedure to Add, Remove Agenda Items

For Board items, any Board member wishing to add (or remove) a Board agenda item after the Board has met, but before the agenda is published, must obtain authorization from the President of the Board.

For Committee items, any Board member wishing to add (or remove) a Committee agenda item after the Committee has met, but before the agenda is published, must obtain authorization from the President of the Board and the Chair of the Committee.

Section 9.10: Minutes

The Secretary shall cause to be recorded in the minutes, the time and place of each meeting of the Board, the names of Board members present and all official acts of the Board along with a summation of the Board discussion along with the votes, and shall cause the minutes to be written and presented for approval no later than the second succeeding regular meeting.

Draft minutes shall be prepared and forwarded to Board members for review by the 15th business day following each meeting. The minutes or a true copy thereof, submitted and signed by the Secretary after approval by the Board shall form part of the permanent records of the Board.

Section 9.11: Other Requests

Other requests by the plan sponsor, other entities or the public will be directed to the Plan Administrator, who will review and respond administratively. To the extent the request need to be addressed to or by the Board, the request will be brought to the full board for further direction or authorization.

Section 9.12: Requests by the Board

Any research, analyses and reports from staff as are necessary for the Board's effective oversight of PFRS operations shall be initiated by placing that item on a future agenda in accordance with section 9.8. Such requests will be agendized and considered at regularly scheduled Board meetings. If approved, the Plan Administrator will be responsible for coordinating the completion of the approved project or report within a reasonable time or by the completion date specified in the Board action.

Section 9.13: Requests by Individual Board Members

Board members making individual requests for information will be advised to place the item on the Board meeting agenda in accordance with section 9.8 unless the information

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is readily available and the Plan Administrator determines that a response will not require any significant commitment of staff time or other PFRS resources.

Section 9.14: Resolutions

The Board shall act either by order or by resolutions, numbered in sequence of passage. In every instance, authorization by Board resolution shall be required for the following:

- Retirement of active members of the Police and Fire Retirement System;
- Setting of Retirement and Disability Allowances;
- Reinstatement of members from the Disability Allowance Roll to active status;
- Approval of Death Benefits;
- Approval of continuation of allowances to eligible surviving spouse.
- Authorization of Contracts

The Board may, in its discretion, act by resolution in other matters not listed above. Actions taken by the Board by way of order shall be set forth in the minutes of the Board.

Section 9.15: Ayes and Noes

The Board shall pass resolutions or orders only by taking the ayes and noes by an audible vote, which shall be entered in its minute book. Each resolution shall show on its face the ayes and noes vote thereon and the members so voting.

Section 9.16: Subject and Title

Every resolution of the Board shall be confined to one subject, which shall be clearly expressed in its title.

Article 10: RULES OF ORDER

Roberts' Rules of Order shall be the final authority on all questions of procedure and parliamentary law, not otherwise provided for by the City Charter, (Article XXVI) or these rules.

Article 11: ELECTION OF MEMBERS OF THE BOARD REPRESENTING ~~ACTIVE AND~~ RETIRED MEMBERS OF THE RETIREMENT SYSTEM

Section 11.1: Day for Counting of Ballots

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

The fourth Wednesday in August of the year in which such election is required to be held is hereby designated as the day for counting of ballots.

In the event of a vacancy of one or more of the elected PFRS Retirement Board seats before the completion of the full term, the day for counting ballots for the election to fill the vacant PFRS Retirement Board seat shall be the fourth Wednesday of the month that follows 90 days after the date of being informed of the vacancy.

Section 11.2: Notice of Nomination

On or before the first business day in June of each year in which an election is required, the office of the Police and Fire Retirement Board shall send a notice stating that nomination papers may be obtained at the office of said Police and Fire Retirement Board, the place where nomination papers shall be filed and the final date of filing thereof, the date when ballots will be counted and such other information as may be appropriate to the following organizations:

- Retired Oakland Police Officers' Association (ROPOA)
- International Association of Fire Fighters, Local 55 (IAFF Local 55)

In the event of a vacancy of one of the elected PFRS Retirement Board seats before the completion of the full term, the office of the Police and Fire Retirement Board shall send notice as stated above no later than ten (10) calendar days after the date of being informed of the vacancy.

Section 11.3: Nomination for Membership

Nomination for membership on the Police and Fire Retirement Board ~~form from~~ the ~~active~~ ~~retired~~ membership of the Police and Fire Department shall be in writing on forms supplied by the office of said Police and Fire Retirement Board upon request ~~therefore~~. Nomination papers shall be substantially in the form shown in Appendix A. Nomination papers shall be signed by at least ten retired members of the Police or Fire Department, as the case may be, who are members of the POLICE AND FIRE RETIREMENT SYSTEM, other than the person nominated. Each signator of a nominating paper shall write the date of his/her signature at the end of the line opposite his/her signature. Beneficiaries of deceased members are not eligible to vote in elections.

Section 11.4: Date of Filing Nomination Papers

Nominating papers shall be filed in the Office of the Oakland City Clerk, Room 306 of the Oakland City Hall, not less than thirty-five days before the day of counting ballots. If said date falls on a non-business day for the City of Oakland, it shall be filed on the next business day.

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Section 11.5: Determination of Sufficiency of Nominating Papers

The City Clerk of the City of Oakland will determine when a member is nominated and for this purpose shall have access to the records of the Police and Fire Retirement Board the names of those ~~active or~~ retired members of the respective departments determined by him to have been nominated.

Section 11.6: Winner by Default

In the event that only one person is nominated in accordance with this Article 11 as a member of the Board, that person shall be declared a winner.

Section 11.7: Mailing of Ballots

Not less than fifteen days before the day for the counting of the ballots that shall be prepared by and mailed for the office of the Police and Fire Retirement Board to each ~~active or~~ retired member of the Police Department of Fire Department who is a member of the Police and Fire Retirement System a ballot addressed to his or her address as shown by the records of the Police and Fire Retirement Board. The Ballots shall contain the names in alphabetical order of the candidates certified by the City Clerk as nominated. Such ballot, sealed in a blank envelope provided for this purpose, which shall be enclosed in another envelope, also provided for such purpose, upon which the voter shall place his or her name, may be returned to the City Clerk not later than 10:00 a.m. of the day for the counting of ballots.

Section 11.8: Roster of Eligible Voters

There shall be prepared in the office of the Police and Fire Retirement Board a roster of eligible voters which shall contain the names of the ~~active or~~ retired members of the Police or Fire Department who are members of the Police and Fire Retirement System, excluding beneficiaries of deceased members. Such roster of eligible voters shall be delivered to the City Clerk not less than fifteen days before the day for the counting of ballots and shall be in such form as to permit appropriate asking thereon by the City Clerk to indicate that an eligible member has voted.

Section 11.9: Counting of Ballots

On the day for the counting of ballots at the hour of 10:00 A.M. thereof, the ballot box shall be opened and no ballot received after said hour shall be counted. The ballots will be counted under the supervision and control of the City Clerk in such manner that the identity of the individual casting any ballot will not be disclosed. No ballot shall be counted unless it is enclosed in an envelope bearing the name of the voter. No ballot shall be counted which contains a vote for a person not nominated in accordance with Article 12. Upon the conclusion of the counting of the ballots, the City Clerk will certify the count and the candidate elected, and notify each candidate thereof by mail.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

Section 11.10: Vote Necessary for Election

The candidate receiving the highest number of eligible votes shall be declared elected.

Section 11.11: Disposition of Ballots after Counting

Upon conclusion of the counting of the ballots they shall be kept by the City Clerk in the manner and for the period the ballots of municipal elections are kept.

Section 11.12: Procedure to Fill Vacancy of Elected Members

In the event a vacancy occurs before the end of a full term in any of the three (3) elected offices of the Board which are filled by retired members of the Retirement System, a successor shall be elected for the unexpired portion of the term vacated. The successor shall be elected from the same department of the member who is vacating the seat for the remainder of said unexpired three (3) year, or five (5) year, term. The election shall be governed by Article 11.

Article 12: RECALL OF MEMBER OF THE BOARD REPRESENTING ~~ACTIVE~~ ~~AND~~ RETIRED MEMBERS OF THE RETIREMENT SYSTEM

Section 12.1: Day for Counting Recall Ballots

The Ballots shall be counted not less than 90 days from receiving Recall Petition.

Section 12.2: Notice of Recall Petition

Upon receiving a Notice of Recall, the office of the Police and Fire Retirement Board shall send to the Retired Oakland Police Officers' Association (ROPOA), International Association of Fire Fighters, Local 55 (IAFF Local 55) and the City Clerk a notice stating that a recall petition had been received, the date when ballots will be counted and such other information as may be appropriate.

The Petition for recall of ~~an active or~~ retired member on the Police and Fire Retirement Board shall be in writing on forms supplied by the Secretary of the Board upon request. Recall petitions shall be substantially in the form as shown in Appendix B.

Recall petition shall be signed by 10 ~~active or~~ retired members of the Police or Fire Department (as the case may be). And who are members of the POLICE AND FIRE RETIREMENT SYSTEM, other than the person recalled. Each signator of a recall petition shall write the date of his/her signature at the end of the line opposite his/her signature. Beneficiaries of deceased retired members are not eligible to sign or vote on recall.

Section 12.3: Date of Filing Recall Petition Paper

Petition papers shall be filed in the Office of the Oakland City Clerk, Room 306 of the Oakland City Hall, not more than thirty (30) days after filing the notice of recall petition.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

Within seven (7) days after filing of petition the board member sought for recall may file with the City Clerk, a response, in not more than 200 words, to the statement of the proponents. If a response is filed, the City Clerk shall serve a copy by Certified Mail, to one of the proponents named in the petition.

Copies of the Petition and Response shall be distributed and posted within the offices of ROPOA, IAFF Local 55 and the City Clerk. The statement and answers shall be for voter's information and will be mailed to them upon the request.

Section 12.4: Determination of Recall Petition

The City Clerk of the City of Oakland will determine when a member is recalled and for this purpose shall have access to the records of the Police and Fire Retirement Board. The City Clerk, within five (5) days after the last day for filing Recall Petition papers will certify to the office of the Police and Retirement Board the names of those ~~active or~~ retired members of the respective departments determined by him to have been recalled.

Section 12.5: Mailing of Ballots

Not less than fifteen (15) days before the day the counting of the ballots shall be prepared by and mailed from the office of the Police and Fire Retirement Board to each retired member of the Police or Fire Department and who is a member of the Police and Fire Retirement System a ballot addressed to his or her address as shown by the records of the Police and Fire Retirement Board. The ballots shall contain the name of the member to be recalled, as certified by the City Clerk. Such ballot, sealed in a blank envelope provided for this purpose, which shall be enclosed in another envelope, also provided for such purpose, upon which the voter shall place his/her name, may be returned to the City Clerk not later than 10:00 A.M. of the day for counting of ballots.

Section 12.6: Roster of Eligible Voters

The Roster of Eligible Voters described in Section 11.8 shall be delivered to the City Clerk not less than fifteen (15) days before the day for counting of the ballots and shall be in such form as to permit appropriate marking thereon by the City Clerk to indicate that an eligible member has voted on the recall.

Section 12.7: Counting of Ballots

On the day for counting of ballots at the hour of 10:00 A.M. thereof the ballot box shall be opened and no ballots received after said hour shall be counted. Upon the conclusion of the counting of the ballots, the City Clerk will certify the count and notify the Retirement Board of the results.

Section 12.8: Vote Necessary for Recall

The majority of eligible votes counted and cast to recall or not recall the board member shall prevail.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM RULES AND REGULATIONS

Section 12.9: Disposition of Ballots after Counting

Upon conclusion of the counting of the ballots, they shall be kept by the City Clerk in the manner and for the period, the ballots of municipal recalls are kept.

Article 13: PROCEDURE TO FILL VACANCY OF RECALLED MEMBER

A vacancy created after a successful recall pursuant to Article 12 shall be filled by the procedure set forth in Article 11.12.

These rules may be amended by a majority vote of the Board at any regular meeting or special meeting called for that purpose.

Article 14: AMENDMENT OF RULES AND REGULATIONS

These Rules and Regulations may be amended under the following procedures:

- Amendments shall be read at a regular meeting.
- No vote may be taken earlier than the next regular meeting.
- At least four (4) members of the Board must vote in favor of the amendments.

The Rules and Regulations of the Oakland Police and Fire Retirement System have been approved by vote of the Board of Administration, effective SEPTEMBER 24, 2014.

WALTER L. JOHNSON, SR.
PRESIDENT
OAKLAND POLICE & FIRE RETIREMENT SYSTEM BOARD

KATANO KASAINÉ
SECRETARY
OAKLAND POLICE & FIRE RETIREMENT SYSTEM BOARD

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APPENDIX A

Nomination Form – Elected PFRS Member

OAKLAND POLICE AND FIRE RETIREMENT BOARD

I, undersigned, am a retired member of the Oakland Police Department (or Fire Department as the case may be), and a member of the POLICE AND FIRE RETIREMENT SYSTEM, and I hereby nominate _____, PRINT NOMINEE NAME, a member of the POLICE AND FIRE RETIREMENT SYSTEM, as a candidate for membership on the Police and Fire Retirement Board from the retired membership of the Oakland Police Department (or Fire Department as the case may be), for the term expiring August 31, _____.

	Name	Signature	Date
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

I accept the nomination and consent to serve if elected.

Signature of Nominee

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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APPENDIX B

Board Member Recall Form – Elected PFRS Member

OAKLAND POLICE AND FIRE RETIREMENT BOARD

I, undersigned, am an ~~active~~ retired member of the Oakland Police or Fire Department (as the case may be), and a member of the POLICE AND FIRE RETIREMENT SYSTEM. I hereby request that _____, a member of the POLICE AND FIRE RETIREMENT BOARD as representative for the Police or Fire Department (as the case may be), be recalled by the retired membership of said department, for the unexpired term ending _____, for the following reasons:

	Name	Signature	Date
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
RULES AND REGULATIONS

DIRECTORY OF AMENDMENTS

Amendment ID	Date	Notes
	09/24/2014	Creation of New Rules and Regulations approved by PFRS Board.
	07/29/2015	Passage of PFRS Board Resolution No. 6856 affirming, “that the September 24, 2014 Rules and Regulations are the only Rules the PFRS board uses to govern, until amended.”

ATTACHMENT 2

Date: July 5, 2017

To: Audit/Operations Committee

From: Robert J. Muszar

Subject: Audit/Operations Committee Review of PFRS Rules and Regulations - Draft Recommendations

The Audit and Operations Committee began its review of the System's Rules and Regulations on May 31, 2017 with the goal of submitting its recommendations to the full Board at the Board's October 2017 meeting.

At the May 31, 2017 Committee meeting I volunteered to draft proposed modifications to Article 9 of the Rules as they apply to placing items onto Board and committee agendas. I also took the liberty to expand my effort to include proposed language regarding most of the Rules sections flagged for review. This material was submitted to PFRS staff on Jun 15, 2017 for inclusion in the June 28, 2017 agenda package. However, the material was not included as requested.

At the June 28, 2017 Audit/Operations Committee meeting it was agreed that I would consolidate all of my suggestions (May 15, May 31 and June 14 memos) into a single set of recommendations. It was further agreed that: staff would prepare and maintain a second document which included only those recommendations that have been approved by the Committee for submission to the full Board; the City Attorney would provide advice/guidance regarding Sections 3.4 and the second paragraph of Section 9.10; and; both my updated recommendations and staff's document reflecting the Committee's recommendations would be included in the July 26 agenda package. Lastly, it was agreed that discussion of the material would be put over until the August 30 meeting.

I would like to thank the Committee for providing this opportunity. I look forward to our discussions.

Attachment

cc: Katano Kasaine
Pelayo Llamas

1 **Article 3: BOARD OF TRUSTEES**

2
3 Section 3.1: Board Membership

4
5 The Board of the Police and Fire Retirement System consists of seven members,
6 appointed or elected as set forth in Oakland City Charter section 2601: the Mayor (or
7 a designated representative), a life insurance executive of a local office, a senior
8 officer of a local bank, a community representative, an elected retired member of the
9 Police Department, an elected retired member of the Fire Department, and an elected
10 member position that alternates between the Police Department and Fire Department
11 memberships. ~~A retired police or fire member may be elected by the active and retired~~
12 ~~membership to serve if no active member is elected to serve on the Board from their~~
13 ~~respective department.~~

14
15 Section 3.4: Holdover

16
17 *(Referred to Deputy City Attorney for research).*

18
19 **Article 4: BOARD MEMBER RESPONSIBILITES AND CORE COMPETENCES**

20
21 Section 4.6: Education

22 Board members are expected to pursue educational opportunities that will assist them
23 in the fulfillment of their fiduciary duties to the retirement plan and its beneficiaries.
24 Each Board member will be allocated an educational allowance on an annual basis.
25 **The amount of individual training allotments will be detailed in the PFRS budget**
26 **and each Board member's expenditures will be reported to the Audit/Operations**
27 **Committee monthly.**

1 **Article 7: OFFICERS**

2
3 Section 7.1: Elective Officers

4
5 *(Request further discussion)*

6
7 Section 7.3: Duties of President and Vice-President

8
9 The President of the Board shall preside at all Board meetings. In his or her absence,
10 the Vice-President shall preside. In the absence of both the President and the Vice
11 President, when the President has not selected a President Pro Tem in advance, the
12 Board shall select one of its own members to preside.

13 The President shall also:

- 14
15 • Appoint the members of the Board's standing committees annually prior to the
16 October meeting;
- 17
18 • ~~Add or delete items from the Full~~ **Manage** Board Meeting Agendas **in accordance**
19 **with Article 9 of these Rules.** ~~and, Committee Agendas;~~
- 20
21 • **Ensure that Committee Chairs manage committee agendas in accordance with**
22 **Article 9 of these Rules.**
- 23
24 • Schedule a Special Meeting of the Board,
- 25
26 • Create ad hoc committees for a limited duration and purpose, which shall be
27 comprised of at least one but less than a quorum of board members, and may
28 include a non-board member(s),
- 29

1 • Sign authorized contracts, agreements and financial documents on the Board's
2 behalf; and

3
4 • Perform other duties as directed by the Board.
5

6 Section 7.4: Duties of the Secretary of the Board

7
8 ***(Request further discussion)***
9

10 Section 7.5: Duties of the Plan Administrator

11
12 ***(Request further discussion)***
13

14 **Article 8: STANDING COMMITTEES**

15
16 Section 8.2: Audit/Operations Committee
17

18 The Audit/Operations Committee shall be a Standing Committee of the Board,
19 consisting of three members. Annually, before the October meeting, the President of
20 the Board shall appoint the members of the committee, who shall serve until their
21 successors have been appointed. The President shall appoint a Committee
22 chairperson from one of the three Committee members.
23

24 The Audit/Operations Committee shall have the responsibility for making
25 recommendations to the Board in the following areas:
26

27 • Review the Plan's administrative procedures for the purpose of ensuring prompt
28 delivery of benefits and related services to participants and their beneficiaries and
29 recommend necessary changes to the full Board.
30

- 1 • Review and recommend solutions to specific issues raised by the Board that relate
2 to administration of the PFRS Plan.
3
- 4 • Review the actuarial valuation report and the annual financial audit report of the Plan
5 and recommend approval by the Board, unless the Board President determines that
6 a report should be reviewed in the first instance by the full Board.
7
- 8 • Review the annual budget and recommend approval by the Board.
9
- 10 • Monitor the Plan's administrative budget and assist the Board in defraying
11 reasonable expenses.
12
- 13 • Develop and recommend changes to Board rules, regulations and policies in
14 noninvestment areas. **At a minimum, review Board rules and make**
15 **recommendations to the Board as deemed appropriate every three years with**
16 **the first review to be conducted in 2020.**
17
- 18 • Other duties and/ or issues as directed by the Board.
19
- 20 • **Recommend approval of ~~Approve~~ Board Member Travel and staff travel in**
21 **accordance with the PFRS Travel Policy and individual training allotments.**
22
- 23 • Periodically review PFRS Travel Policy. **At a minimum, review the Board travel**
24 **policy and make recommendations to the Board as deemed appropriate every**
25 **three years with the first review to be conducted in 2020.**
26
27

1 **Article 9: MEETING PROCEDURES AND BOARD ACTION**

2
3 Section 9.1: Board and Committee Time Management

4
5 The Board President or Committee Chair is responsible for time management of the
6 applicable body. To the greatest extent feasible, all items on Board and Committee
7 agendas shall be supported by concise, easily accessible written information **which**
8 **shall be submitted pursuant to Section 9.11, below.**

9
10 Section 9.2: Speakers' Cards

11
12 ~~Members of the public~~ **Except as provided in Section 9.7 below, Individuals**
13 wishing to speak must submit their name and the item on the agenda they wish to
14 discuss, if any, to staff ~~before being recognized by the presiding officer~~ **prior to the**
15 **beginning of the meeting.**

16
17 ~~Members of the public who wish to speak must complete a speaker~~ **A speaker's card**
18 **must be completed** for each agenda item ~~he/she wishes to speak on.~~ **Speakers'**
19 **cards listing multiple agenda items cannot be listed on one speaker card will not be**
20 **accepted. If the intent is to cede time to another speaker, the name of the**
21 **individual to whom time is being ceded shall also be listed on the speaker card.**

22
23 Section 9.3: Public Speaker Procedures

24
25 ~~Members of the public~~ **Individuals** addressing the Board shall state their name. They
26 shall confine their remarks to the agenda item under discussion, unless they are
27 speaking during the Open Forum ~~portion of the agenda.~~

1 Section 9.4: Time Limits for Public Speakers

2
3 **The Board President or Committee Chair may impose reasonable time limits on**
4 **speakers. In making this determination the number of speakers' cards**
5 **submitted, the complexity of the issues to be addressed and the number of**
6 **items on the agenda will be considered. If time limits are to be imposed they**
7 **will be announced at the beginning of the meeting.**

8
9 **If time limits have not been imposed, speakers are expected to be respectful of**
10 **the Board/Committee's time limiting presentations to concise, on-point**
11 **comments. Generally presentations should not exceed five minutes. If a**
12 **presentation exceeds five minutes the Board President or Committee Chair may**
13 **direct the speaker to conclude his/her remarks and may impose a time limit for**
14 **so doing.**

15
16 ~~Any member of the public who has submitted a speaker card on an agenda item, other~~
17 ~~than open forum~~ **If time limits have been imposed, each speaker normally will**
18 **shall be allotted three (3) minutes to speak prior to any vote or action by the Board. If**
19 **more than five (5) individuals have submitted speakers' cards on the same item,**
20 **the Board President or Committee Chair may limit time to two (2) minutes per**
21 **speaker. If more than ten (10) speakers have submitted speakers cards on the**
22 **same item, time may be limited to one (1) minute per speaker.**

23
24 ~~Subject to the provisions of this Rule that apply to public speakers who submit multiple~~
25 ~~speaker's cards~~ **ceding time**, all public speakers on any one item shall be allotted the
26 same amount of speaking time on that item, ~~unless given ceded time, or unless more~~
27 ~~time must be given to comply with due process or other legal requirements or in~~
28 ~~circumstances where the Board is acting in a quasi adjudicatory capacity.~~

29
30 Section 9.5: Speakers Submitting Speaker's Cards on Multiple Items

1

2 Subject to Section 9.4 and the discretion of the presiding officer, which discretion must
3 be exercised in accordance with Section 9.4, a speaker who submits his or her name
4 to speak on four or more items (other than open forum) will be instructed to address
5 all items concurrently and shall be allotted 2 minutes per item up to a maximum of 10
6 minutes; if the presiding officer exercises his/her discretion under Section 9.4 to
7 reduce each speaker's time to one (1) minute, speakers who submit four or more
8 speaker's cards shall be allotted one (1) minute per item up to a maximum of 5
9 minutes.

10

11 Section 9.6 9.5: Ceding Time

12

13 In case the allotted time for each public speaker is less than two (2) minutes on an
14 agenda item **If time limits have been imposed**, a public speaker may extend his
15 or her speaking time if other public speakers who have submitted speakers' cards
16 cede their time to the recipient public speaker. The recipient public speaker will receive
17 one-half of the allotted (1) minute speaking time from each ceding public speaker,
18 up to a maximum of five (5) minutes **three times the allotted time**.

19

20 At the presiding officer's discretion, a public speaker may be allotted more than five
21 (5) minutes **three times the allotted time** based on ceded time. The recipient public
22 speaker must submit the ceding public speakers' speaking cards, and the **Speakers**
23 ceding public speakers **time** must be present at the time the recipient public speaker
24 speaks.

25

26 Section 9.7 9.6: Open Forum

27

28 Public Speakers submitting their names to speak under open forum shall be allotted
29 a maximum of three (3) minutes. A public speaker may speak only once under open
30 forum during any one meeting, subject to the discretion of the presiding officer. **If more**

1 **than five (5) individuals have submitted speakers' cards for open forum, the**
2 **Board President or Committee Chair may** ~~The presiding officer may reduce limit~~
3 ~~each public speaker's allotted time to one (1) minute~~ **two (2) minutes. . If more than**
4 **ten (10) speakers have submitted speakers cards for open forum, time may be**
5 **limited to one (1) minute per speaker.** ~~if he or she publicly states all reasons~~
6 ~~justifying any reduction in speaker time, which reasons shall be based at least on~~
7 ~~consideration of the time allocated or anticipated for the meeting, the number and~~
8 ~~complexity of agenda items and the number of persons wishing to address the local~~
9 ~~body, and whether there will be sufficient time available during the meeting to consider~~
10 ~~all agenda items if all public speakers are allowed two (2) minutes to speak.~~

11
12 The Board cannot take any action, **other than scheduling the item for future**
13 **consideration**, under Open Forum unless it is deemed an emergency or urgency
14 matter under the Sunshine Ordinance and Brown Act by a vote of the Board. **Board**
15 **members and staff representatives may ask clarifying questions of the speaker**
16 **but will engage in no substantive discussion of the issue.**

17
18 **Sections 9.7: Exceptions**

19
20 **The provisions of Section 9.4 above, shall not apply to the following:**

- 21
22
 - **Speakers who are presenting an agenda item or making a report to the**
23 **Board or a committee.**
- 24
25
 - **Individuals or the representatives of individuals who are the subject of or**
26 **directly impacted by the subject matter of a public hearing held by the**
27 **Board or a committee.**

- 1 • **Individuals or the representatives of individuals who are the subject of a**
2 **hearing of the Board held pursuant to Sections 2603 or 2604 of the City**
3 **Charter.**

4
5 Section 9.8: Procedure for Placing New Items on an Agenda – Board Members

6
7 **During the Future Scheduling (*or New Business*) portion of Board/Committee**
8 **meetings and subject to Section 9.11, below** ~~For any new business by any board~~
9 ~~member, the full Board is authorized to may add the~~ **have** an item **that is within the**
10 **subject matter responsibility of the Board/Committee placed onto a future**
11 **Board/Committee** ~~agendas of any meeting by an affirmative vote of a majority of the~~
12 ~~quorum of Board members present.~~ **Discussion during Future Scheduling will be**
13 **limited to scheduling issues and seeking clarity as to proper titling of the future**
14 **agenda item. There shall be no substantive discussion of the topic.**

15
16 Section 9.9: Procedure to Add, Remove Agenda Items Between Meetings – Board
17 Members

18
19 For Board items, any Board member wishing to add a Board agenda item (or remove
20 **an item which he/she has had added**) after the Board has met, but before the
21 agenda is published, must obtain authorization from the President of the Board.

22
23 For Committee items, any Board member wishing to add a Committee agenda item
24 (or remove **an item which he/she has had added**) after the Committee has met, but
25 before the agenda is published, must obtain authorization from the ~~President of the~~
26 ~~Board~~ and the Chair of the Committee **who may consult with the Board President**
27 **before responding.**

1 **Section 9.10: Procedure for Placing New Items on Agenda – Non Board**
2 **Members**

3
4 **Subject to Section 9.11 below, requests from other entities/individuals to have**
5 **an item that is within the subject matter responsibility of the Board/Committee**
6 **placed onto a Board/Committee agenda will be submitted in writing to the Plan**
7 **Administrator. The Board President or Committee Chair, in consultation with**
8 **the Plan Administrator will decide whether to place the item on a future agenda.**
9 **The decision of the Board President/Committee Chair will be communicated in**
10 **writing to the requesting entity/individual by the Plan Administrator.**

11
12 **The provisions of Section 9.10 are not intended to apply to scheduled reports**
13 **provided to the Board and/or its Committees by PFRS staff or the Board's**
14 **professional advisers. These items may be placed on the appropriate agenda**
15 **by the Plan Administrator as a matter of routine.**

16
17 **Section 9.11: Submission of Agenda Materials**

18
19 **Items which are placed onto a Board or Committee agenda pursuant to the**
20 **processes described in Sections 9.8, 9.9 and 9.10 above, normally will be**
21 **supported by written materials submitted to the Plan Administrator by close of**
22 **business on the Wednesday that is two (2) weeks prior to the scheduled**
23 **Board/Committee meeting. If such materials are received following this**
24 **deadline, the item will not be placed onto the appropriate agenda until the**
25 **following month.**

26
27 **This Section is not intended to prohibit oral-only submissions, but unless**
28 **specifically approved by the Plan Administrator with the concurrence of the**
29 **Board President/Committee Chair written materials that do not conform to the**

1 **above-described schedule will not be accepted for inclusion in agenda**
2 **packages.**

3
4 Section 9.12: Minutes

5
6 The Secretary shall cause to be recorded in the minutes, the time and place of each
7 meeting of the Board, the names of Board members present and all official acts of the
8 Board along with a summation of the Board discussion along with the votes, and shall
9 cause the minutes to be written and presented for approval no later than the second
10 succeeding regular meeting.

11
12 Draft minutes shall be prepared and forwarded to Board members for review by the
13 ~~15th~~ **10th** business day following each meeting. The minutes or a true copy thereof,
14 submitted and signed by the Secretary after approval by the Board shall form part of
15 the permanent records of the Board.

16
17 *(Should we consider adding a provision for the preparation and distribution*
18 *of action minutes?)*

19
20 Section 9.13: Other Requests

21
22 Other requests by the plan sponsor, **retirees/beneficiaries**, other entities or the public
23 will be directed to the Plan Administrator, who will review and respond
24 administratively. To the extent the request needs to be addressed to or by the Board
25 **or a Committee**, the request will be brought to the full board/**committee** for further
26 direction or authorization.

1 Section 9.14: Other Requests by the Board

2
3 Any research, analyses and reports from staff as are necessary for the Board's
4 effective oversight of PFRS operations shall be initiated by placing that item on a future
5 agenda in accordance with section 9.8. Such requests will be agendized and
6 considered at regularly scheduled Board meetings. If approved, the Plan Administrator
7 will be responsible for coordinating the completion of the approved project or report
8 within a reasonable time or by the completion date specified in the Board action.

9
10 Section 9.15: Other Requests by Individual Board Members

11
12 Board members making individual requests for information will be advised to place the
13 item on the Board meeting agenda in accordance with section 9.8 unless the
14 information is readily available and the Plan Administrator determines that a response
15 will not require any significant commitment of staff time or other PFRS resources.

16
17 Section 9.16: Resolutions and Orders

18
19 The Board shall act either by order or by resolutions, numbered in sequence of
20 passage. In every instance, authorization by Board resolution shall be required for the
21 following:

- 22
23 • ~~Retirement of active members of the Police and Fire Retirement System;~~
24
25 • ~~Setting of Retirement and Disability Allowances;~~
26
27 • **Changes to the types of compensation to be included as “Compensation”**
28 **and/or “Compensation Attached to the Average Rank Held”**
29
30 • ~~Reinstatement of members from the Disability Allowance Roll to active status;~~

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- Approval of Death Benefits;
- Approval of continuation of allowances to eligible surviving spouse;
- Authorization of Contracts.

The Board may, in its discretion, act by resolution in other matters not listed above. Actions taken by the Board by way of order shall be set forth in the minutes of the Board.

Section 9.17: Ayes and Noes

The Board shall pass resolutions or orders only by taking the ayes and noes by an audible vote, which shall be entered in its minute book. Each resolution shall show on its face the ayes and noes vote thereon and the members so voting.

Section '9.18: Resolutions - Subject and Title

Every resolution of the Board shall be confined to one subject, which shall be clearly expressed in its title.

Article 10: RULES OF ORDER

Roberts' Rules of Order shall be the final authority on all questions of procedure and parliamentary law, not otherwise provided for by the City Charter, (Article XXVI) or these rules. **The deputy City Attorney in attendance will serve as the Parliamentarian for the Board and its Committees.**

1 **Article 11: ELECTION OF MEMBERS OF THE BOARD REPRESENTING**
2 **~~ACTIVE AND RETIRED~~ MEMBERS OF THE RETIREMENT**
3 **SYSTEM**

4
5 *(Referred to staff to remove references to active members and other possible*
6 *clean-up)*

7
8 *(Request further discussion on possible provision to allow police or fire*
9 *representative to fill position designated for the other if no one from appropriate*
10 *department is available to serve)*

11
12 **Article 12: RECALL OF MEMBER OF THE BOARD REPRESENTING ~~ACTIVE~~**
13 **~~AND RETIRED~~ MEMBERS OF THE RETIREMENT SYSTEM**

14
15 *(Referred to staff to remove references to active members and other possible*
16 *clean-up)*

17
18 *(Request further discussion regarding combining recall and replacement*
19 *elections into a single election with two questions)*

20
21 Request further discussion regarding the following:

- 22
- 23 • Hearing procedures for hearings conducted pursuant to Sections 2603 and
24 2604 of the Charter.
 - 25
 - 26 • Hearing procedures for public hearings that are not conducted pursuant to
27 Sections 2603/2604 of the Charter.



AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board **FROM:** Katano Kasaine

SUBJECT: Discussion regarding PFRS July 1, 2026 Actuary Funding Deadline **DATE:** March 21, 2018

At their February 28, 2018 meeting, the PFRS Audit Committee requested that staff schedule a discussion item regarding a potential voter ballot measure to change City Charter section 2619(6) which requires that the City contribute to the Police and Fire Retirement System (PFRS) to actuarially fund all liabilities for all PFRS members by July 1, 2026.

For informational purposes, Staff has included the last ballot measure that attempted to make a similar change. In 2011 then Councilwoman Libby Schaaf sponsored a PFRS-related ballot (Measure J) for the November 15, 2011 General Election. Measure J attempted to change the Charter of the City of Oakland regarding its deadline for fully funding the Police and Fire Retirement Plan to a financially responsible deadline. The Measure did not pass. The election results were as follows:

Election Results

Measure J - City of Oakland Needs majority Yes votes to pass		
Total Precincts: 345	Precincts Reported: 345	Percent Reported: 100.00
Contest	# of Votes	% of Total
Yes	22,946	46.72
No	26,164	53.28

Respectfully submitted,

Katano Kasaine, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (1):

(1) November 11, 2011 County of Alameda Sample Ballot for Measure J

Agenda Item D5
PFRS Board Meeting
March 28, 2018

ATTACHMENT 1



COUNTY OF ALAMEDA

**Sample Ballot and
Voter Information Pamphlet
City of Oakland
Special Vote by Mail
Municipal Election**

TUESDAY, NOVEMBER 15, 2011

001



Sample Ballot

OFFICIAL BALLOT BALOTA OFICIAL

CITY OF OAKLAND SPECIAL VOTE BY MAIL MUNICIPAL ELECTION
CIUDAD DE OAKLAND ELECCIÓN ESPECIAL
MUNICIPAL DE VOTACIÓN POR CORREO
ALAMEDA COUNTY, NOVEMBER 15, 2011
CONDADO DE ALAMEDA, 15 DE NOVIEMBRE DE 2011

INSTRUCTIONS TO VOTERS: USE BLACK OR BLUE

BALLPOINT PEN ONLY. To vote on any measure, complete the arrow after the word "Yes" or "No."



INSTRUCCIONES PARA LOS VOTANTES: USE UN

BOLÍGRAFO CON TINTA NEGRA O AZUL SOLAMENTE. Para votar por cualquier medida, complete la flecha después de la palabra "Sí" o "No."

CA01-1-213000-1-0001-S

MEASURES SUBMITTED TO THE VOTERS	YES / SÍ	NO / NO
CITY OF OAKLAND CIUDAD DE OAKLAND		
H Shall the Oakland City Charter be amended to return the City Attorney to an appointed position? ¿Deberá modificarse el Estatuto Municipal de Oakland para devolver al Abogado Municipal a un puesto designado?	<input type="checkbox"/>	<input type="checkbox"/>

J Shall the Charter be amended to allow the City of Oakland to change the deadline for fully funding its Police and Fire Retirement Plan to a new financially responsible deadline? ¿Deberá modificarse el Estatuto para permitir que la Ciudad de Oakland cambie la fecha límite para el financiamiento total del Plan de Retiro de la Policía y de los Bomberos a una nueva fecha límite que sea responsable desde el punto de vista financiero?	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------

CITY OF OAKLAND MEASURE J

J Shall the Charter be amended to allow the City of Oakland to change the deadline for fully funding its Police and Fire Retirement Plan to a new financially responsible deadline?	YES
	NO

A “yes” vote will approve the changes to the Police and Fire Retirement System; a “no” vote will reject the changes.

s/BARBARA J. PARKER
City Attorney

CITY ATTORNEY’S BALLOT TITLE AND SUMMARY

BALLOT TITLE:

A Proposed Charter Amendment Extending the City’s Deadline for Fully Funding the Police and Fire Retirement System Plan, and Granting the Police and Fire Retirement Board the Authority to Set the Amortization Period for the Plan’s Gains and Losses

BALLOT SUMMARY:

This measure would give the City of Oakland more time to fully fund the Police and Fire Retirement System (“PFRS”) if (1) the PFRS Board and the City Council agree to a later full funding deadline and (2) the PFRS Board determines the new deadline will not detrimentally affect the fund’s ability to pay retirement benefits and costs for PFRS members and their beneficiaries. Currently, the City is required to fund all costs, liabilities and retirement benefits for all PFRS members by July 1, 2026.

In addition, beginning ten years prior to the City’s deadline for fully funding the retirement plan, this measure would grant the PFRS Board the authority to set an amortization period for the retirement plan’s gains and losses. The PFRS Board would be allowed to spread significant gains and losses resulting from events, such as fluctuations in the stock market and unexpected decreases in the retirement plan’s membership, over a greater number of years.

The City Charter and the California Constitution grant the PFRS Board the sole authority to manage and administer PFRS. PFRS provides retirement benefits for police officers and firefighters who were hired by the City from July 1, 1951 through June 30, 1976. The City Charter mandates that the PFRS Board obtain a study from an actuary every three years to determine the schedule and the amounts that the City is required to contribute each year to fully fund PFRS by the full funding deadline.

Implementation of the proposed Charter amendment is contingent upon findings by the PFRS Board that each proposed extension of the funding deadline and each proposed change in the amortization period and payment schedule and amounts would protect the assets of PFRS and the benefits of the retirees and beneficiaries. The findings would be the result of actuarial studies commissioned by the PFRS Board.

This measure is not a tax. It does not create a new tax or authorize the extension of any existing tax.

**CITY ATTORNEY'S IMPARTIAL
ANALYSIS OF MEASURE J**

**CITY AUDITOR'S IMPARTIAL
FINANCIAL ANALYSIS OF MEASURE J**

This proposed City Charter amendment would amend Charter Section 2619(6) to allow the City and the City of Oakland Police and Fire Retirement Board (“PFRS Board”), by mutual agreement, to extend the deadline for the City to fully fund the Police and Fire Retirement System (“PFRS”). PFRS provides retirement benefits for police officers and firefighters who were hired by the City from July 1, 1951 through June 30, 1976.

The current City Charter requires that the City fully fund all costs, liabilities and retirement benefits for all members of PFRS and their beneficiaries by July 1, 2026. The City must contribute sufficient amounts each year to provide retirement benefits and to fully fund PFRS by July 1, 2026.

This proposed amendment would extend the deadline for fully funding PFRS from July 1, 2026 to a later date(s) that is mutually agreeable to the City Council and the PFRS Board, which manages and administers PFRS. The extension would have to be supported by an actuarial study showing that the new deadline will not detrimentally affect the City’s ability to fund retirement benefits and costs for PFRS members and their beneficiaries.

The proposed Charter amendment also authorizes the PFRS Board to adjust the way that gains and losses are amortized. The PFRS Board would be allowed to spread system gains and losses resulting from events, such as losses in the stock market and unexpected decreases in the retirement plan’s membership, over a greater number of years.

Ten years from the date by which the City is required to fully fund PFRS, the PFRS Board would be allowed to set an amortization period for gains and losses based upon an actuarial study secured by the PFRS Board. Any change in the schedule or amounts must be approved by the PFRS Board and its actuary.

The implementation of the proposed Charter amendment is contingent upon a finding by the PFRS Board that the proposed extension and amortization would protect the benefits of PFRS retirees and the assets of PFRS. The findings would be based upon an actuarial study commissioned by the PFRS Board.

This is not a tax. The proposed Charter amendment would not result in the increase or extension of any tax currently levied by the City.

s/BARBARA J. PARKER
City Attorney

SUMMARY

The Police and Fire Retirement System (PFRS) was established by Oakland City Charter Article XXVI in 1951 to provide retirement benefits for sworn Police and Fire personnel.

The PFRS fund was closed in 1976 when the City elected to utilize the California Public Employees’ Retirement System (PERS) for all subsequent City employees, both for sworn Police and Fire personnel and non-sworn employees.

The City must continue to contribute to the closed PFRS Plan each year so that all PFRS financial liabilities are fully-funded by July 1, 2026 (Full-Funding Deadline), as currently defined in Article XXVI, Section 2619 (6) of the City Charter.

Voter approval of Measure J would authorize the City to extend the Full-Funding Deadline to a later date if mutually agreed upon by the PFRS Board and the City Council and supported by an actuarial study. Such extension(s) would reduce the City’s current annual payment obligation to PFRS however it would not reduce the plan’s unfunded liability.

Additionally, to mitigate market volatility, Measure J states that beginning 10 years prior to the Full-Funding Deadline, each year’s gains and losses shall be amortized over a period of years from the year such gains or losses are incurred. The amortization period shall be set by the Board based on an actuarial study commissioned by the Board.

FINANCIAL IMPACT

Measure J would likely extend the City’s pension obligation over a longer period of time, thereby reducing the City’s annual payment obligation currently at \$45.6 million starting July 1, 2011. The current actuary projects that benefit payments to PFRS beneficiaries may extend beyond 2050.

Measure J, however, does not produce savings as the City’s total obligation to fund PFRS over the life of the PFRS Plan - currently estimated to be \$494 million - remains the same. Instead, Measure J reduces the City’s current obligation by spreading its annual payments to PFRS over a longer period.

The magnitude of the City’s annual payment reduction depends on several factors, including market volatility and the extension of the Full-Funding Deadline. An actuarial study, as required in Measure J to reset the Full-Funding Deadline, would determine the date the plan could be extended to that assures the ability of the PFRS assets to provide for the members’ retirement benefits.

Measure J would also smooth gains and losses over an actuarially sound period of time approved by the PFRS Board and the City Council beginning ten years prior to the Full-Funding Deadline. This could reduce large swings in the City’s annual cash payments due to market performance as the Full-Funding Deadline nears, thereby miti-

gating the City's exposure to market volatility. However, actual impact on the City's cash flow from the smoothing mechanism cannot be estimated given unpredictable market conditions.

We relied on the best data available at this time; however, actual results would be dependent upon variables such as the actuarial studies, Full-Funding Deadline, and market volatility as described above.

ARGUMENT IN FAVOR OF MEASURE J POLICE AND FIRE RETIREMENT PLAN FUNDING REFORM

This Retirement Plan Reform Measure creates better financial stability for the City of Oakland, while keeping its promise to pay police and fire retirees the benefits they've earned. It could reduce the City's yearly pension contribution requirement by millions of dollars over the next few years - all without increasing taxes, adding debt or cutting City Services.

More than 25 years ago Oakland closed its Police and Fire Retirement System to new hires and over 20 years ago set the year 2026 as the system's full-funding deadline. 2026 may well be an unnecessarily early deadline, making the City's current contribution requirement higher than it needs to be – especially in times of financial hardship. Additionally, since contributions a stock market crash near the 2026 deadline could force the City into having to make unreasonably high contributions. This risk gets higher the closer we get to a fixed deadline of 2026.

This Reform Measure would replace the arbitrary deadline of 2026 with one that is flexible and reasonable. It would also spread-out impacts from the stock market, so the City's contribution payments remain smoother and more predictable. All changes under this Measure would require approval and on-going review by an independent financial expert.

Please improve Oakland's financial stability-vote "Yes" on this Retirement Plan Reform Measure.

s/Libby Schaaf
Oakland City Councilmember, District 4
s/Rebecca Kaplan
Oakland Councilmember At-Large
s/Robert J. Muszar
Retired Oakland Police Officers Association
s/Jay Ashford
Member, Budget Advisory Committee
s/Bruce Nye
Chair, Make Oakland Better Now!

REBUTTAL TO ARGUMENT IN FAVOR OF MEASURE J

Lies, Lies, Lies, and more Lies

For obvious reasons the proponents opted not to submit a Rebuttal Argument, their claims are simply too outrageous.

Even the OPFRS actuary, Bartell and Associates questions their “*extension*” scheme, suggesting it actually does add debt.

Save millions while not increasing taxes. What are they smoking? The slick 1988 Measure O, Pension Savings Act, by *its* 10 year "extension" is costing Oakland taxpayers an additional \$1,000,000,000.00 (billion). Individual home owners will each pay an additional \$10,000.00.

But, the biggest "Whopper" comes from the City Attorney, Barbara Parker. She falsely proclaims Councilmember Schaaf's Charter amendment would not result in an increase or extension of taxes.

It is not rocket science - when payments are extended, you pay longer, resulting in more money. The payments are not reduced, they are fixed at 0.1575% and increase with your assessed property value - the tax is continually increased and extended.

Truth be told - this is a scheme to sell additional Pension Bonds. Oakland foolishly pioneered the Pension Bond scheme in 1985 with the sale of millions in bonds. It purchased New York Life Annuities, but rather than use the annuities to pay retirees, they are used to pay additional bond debt.

Those bonds were restructured in 1988, and three more times, 1998, 2005, and 2008. In 1998 the City entered into an interest rate "Swap" agreement, now costing \$17 mil. Compounding their mismanagement, additional bonds were sold in 1997, for \$437 mil., and restructured in 2001.

Vote NO! on Measure J.

s/David Mix
Native Oaklander
s/Ken Pratt
Native Piedmont Pines Activist

ARGUMENT AGAINST MEASURE J

Don't Be Fooled

This proposal, marketed as Police and Fire Pension Reform, is a HIDDEN TAX. Columnist, Daniel Borenstein authored an enlightening article, (September 5, 2010) elaborating on the deception and the enormity of this tax.

As Borenstein pointed out - this TAX is HUGE - it is more than your tax assessments for LLAD, the Library, Measure Y, and OUSD (\$195.00) combined. In fact, if your home value is \$520,000. This hidden tax is more than the total of all the special assessments on your Tax bill. The City takes in over \$62 mil. annually - more than the Library, Parks/Rec and Violence Prevention budgets combined.

This tax is quietly tucked away on your tax bill under Voter Approved Debt Service. The rate, 0.1575% of property value, amounts to \$787.00 on a \$500,000 home, and \$1,181.00 on a \$750,000 home.

The accompanying Resolution, by Councilwoman Schaaf, is patently false. She unabashedly states, this proposal *will not authorize collection* of this property tax beyond 2026. Originally, it would have ended in 2016. But, by a 1988 deceptive ballot measure, cleverly titled, "Pension Savings Act", it was extended to 2026 - ten years of additional TAXES.

Don't be fooled - the "Resolution" is not controlling, it carries no weight. Libby can make whatever outrageous statements she likes - the electorate votes on the Proposed Charter Amendment, not the Resolution, nor the ballot arguments. The only thing that matters is the proposed language in Section 2619(6) - nothing else.

Not surprisingly, there is no language in the body of the "proposed amendment" indicating the tax will be terminated. More importantly, Municipalities don't terminate tax collections - they perpetuate them. This proposal is a sham - **Vote No!**

FYI, see Valentine v. City of Oakland (1983) 148 Cal. App. 3d 139.

s/David Mix
Native Oaklander

s/Ken Pratt
Native Piedmont Pines Activist

NO REBUTTAL TO ARGUMENT AGAINST MEASURE J WAS SUBMITTED

FULL TEXT OF MEASURE J

WHEREAS, City Charter Article XXVI established the Oakland Police and Fire Retirement System (“PFRS”) in 1951 to provide retirement benefits for Police and Fire Department sworn (uniformed) employees and created an independent Police and Fire Retirement Board (“PFRS Board”) to manage and administer the funds of the PFRS; and

WHEREAS, pursuant to Article 16 of the California Constitution public retirement boards are independent boards and the Constitution, accordingly (1) grants the PFRS Board plenary authority and the sole and exclusive fiduciary responsibility over the assets of the PFRS and the sole and exclusive responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to the participants and their beneficiaries and (2) mandates that the PFRS Board discharge its duties with respect to the PFRS solely in the interest of, and for the exclusive purposes of providing benefits to participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system; and

WHEREAS, in 1976 the PFRS was closed and all subsequent sworn police and fire personnel that the City hired became members of the California Public Employees’ Retirement System (“PERS”); and

WHEREAS, City Charter section 2619(6) requires that the City contribute to the PFRS, periodically during the year such amounts as may be necessary, when added to member contributions to actuarially fund all liabilities for all PFRS members by July 1, 2026, hereafter referred to as the “Full-Funding Deadline”; and

WHEREAS, while actuaries project that payments to beneficiaries of the PFRS may extend beyond 2050, the City Charter currently requires that the PFRS Plan be fully funded by 2026, resulting in the possible front-loading of the City’s payment obligations to the retirement system, which may not be fiscally necessary; and

WHEREAS, use of a later date may be possible without jeopardizing the payment of future pensions from the trust; and

WHEREAS, an extension of the contribution period justified by an actuarial valuation, could result in significant savings to the City without affecting its duty and ability to fund the PFRS and pay retirement benefits to its members; and

WHEREAS, market volatility puts the City at risk of having unreasonably large contributions as the Full-Funding Deadline draws near and this risk may be reduced in a fiscally sound manner by amortizing yearly gains and losses over an actuarially sound period of time from the year such gains or losses are realized beginning ten years preceding the Full-Funding Deadline; and

WHEREAS, it is financially and administratively prudent to amend the City Charter to authorize the City and the PFRS Board to approve extensions of the Full-Funding Deadline in the future by mutual agreement, provided that such extensions are supported by actuarial reports; and

WHEREAS, for the foregoing reasons, the City Council desires to submit to the qualified electors of the City of Oakland at its next municipal election, a proposed Charter amendment, now, therefore be it

RESOLVED: That the City Council hereby authorizes and directs the City Clerk, at least 88 days prior to the next special or general municipal election date, to file with the Alameda County Board of Supervisors and the County Clerk certified copies of this resolution; and be it

FURTHER RESOLVED: That the proposed Charter Amendment shall be contingent upon the findings of an actuarial study to be commissioned by the PFRS Board; and be it

FURTHER RESOLVED: That any extension of the Full-Funding Deadline pursuant to this proposed City Charter amendment will not authorize the collection of the property tax levied annually by the City for the purpose of funding its obligations to PFRS known as the “tax override” beyond the year 2026, unless there is a separate two-thirds vote of the people, pursuant to California Law; and be it

FURTHER RESOLVED: That the implementation of the Charter Amendment by the City, if it is approved by the voters, shall and will be contingent upon a finding by the PFRS Board that the proposed extension of the Full-Funding Deadline, which is approved by the PFRS Board and the City, would not have a detrimental or compromising effect on the members’ retirement benefits or rights; and be it

FURTHER RESOLVED: That any further extensions of the Full-Funding Deadline by mutual agreement of the City and the PFRS Board, shall and will be contingent upon an actuarial report that supports each such extension; and be it

FURTHER RESOLVED: That the City Charter hereby is amended, to add, delete, or modify sections as set forth below (sections number and titles are indicated in **bold type**; additions are indicated by underscoring and deletions are indicated by strikethrough type; portion of the provisions not cited or not shown in underscoring or strikethrough type are not changed); and be it

FURTHER RESOLVED: That the proposed Charter Amendment text shall be as follows:

Article XXVI: POLICE AND FIRE RETIREMENT SYSTEM

Section 2619(6)

The City shall contribute to the Retirement System such amounts as may be necessary, when added to the contributions referred to in the preceding paragraphs of this Section, to provide the benefits payable under this Article and Articles XIV and XV. The City contributions made periodically during the year shall be such as when added to member contributions will actuarially fund all liabilities for all members prior to July 1, 1976, by July 1, 2026. The date of July 1, 2026 may be changed, provided that both the City and Board approve and provided that such full-funding deadline is based on and supported by an actuarial study commissioned by the Board, known hereafter as “Full-Funding Deadline”. Additionally, notwithstanding

any other language or provision of this Article XXVI or the City Charter, the Board and the City shall have authority by mutual agreement to approve further extensions of the Full-Funding Deadline, provided that actuarial studies commissioned by the Board support each such subsequent change. The Board's and the City's approvals must be authorized by separate resolutions of the Board and the City Council. Any findings by the PFRS Board shall be consistent with their fiduciary responsibility to assure the competency of the PFRS assets and to provide the members' retirement benefits and rights conferred by the Oakland City Charter, Article XXVI. Additionally, to protect the City from market volatility, beginning ten years prior to the Full-Funding Deadline, each year's gains and losses shall be amortized over a period of years from the year such gains or losses are realized. The amortization period shall be set by the Board based on an actuarial study commissioned by the Board. Nothing in this section shall prevent the City from paying more than its minimum obligation to the Fund.

Any fund established pursuant to the 1971 amendment to this subsection and implemented by Retirement Board Resolution No. 3968 which provided for payment of improved or additional benefits shall continue only for the purposes stated herein. Any monies held in such fund as of July 1, 1976, and any interest credited thereon pursuant to Section 2602(a) shall continue to be payable to members of this system as follows: [remaining text not amended].



MEMORANDUM

TO: Oakland Police & Fire
Retirement Board

FROM: Katano Kasaine

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

DATE: March 9, 2018

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: 2018 IMN Global Indexing & ETF Conference

Event Location: Monarch Beach Resort, Dana Point, CA

Event Date: June 24-26, 2018

Estimated Event Expense*: \$ 1,982.00 (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,

Katano Kasaine, Plan Administrator
Oakland Police and Fire Retirement System

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

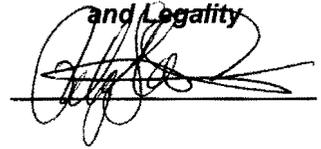
Attachments (if any):

Resolution #7009

2018 IMN Global Indexing & ETF Event Info

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

Approved to Form
and Legality



RESOLUTION No. 7009

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

TRAVEL AUTHORIZATION FOR PFRS BOARD MEMBER JAIME GODFREY TO TRAVEL TO AND ATTEND THE 2018 IMN GLOBAL INDEXING AND ETF CONFERENCE ("IMN CONFERENCE") FROM JUNE 26, 2018 TO JUNE 28, 2018 IN DANA POINT, CA WITH AN ESTIMATED BUDGET OF ONE THOUSAND NINE HUNDRED EIGHTY-TWO DOLLARS (\$1,982.00)

WHEREAS, PFRS Board Member Jaime Godfrey wishes to attend the 2018 IMN Conference in Dana Point, CA from June 24, 2018 through June 26, 2018; and

WHEREAS, PFRS Board Member Godfrey 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 2018 IMN Conference in the amount of approximately \$1,982.00; and

WHEREAS, PFRS Board Member Godfrey seeks Board approval of the aforementioned estimated costs to travel to Dana Point, CA to attend the 2018 IMN Conference from June 24, 2018 through June 26, 2018; now, therefore, be it

RESOLVED: PFRS Board Member Jaime Godfrey's travel request and estimated budget of \$1,982.00 to attend the 2018 IMN Conference is hereby approved.

IN BOARD MEETING, CITY HALL, OAKLAND, CA _____ **MARCH 28, 2018**

PASSED BY THE FOLLOWING VOTE:

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

NOES:

ABSTAIN: GODFREY

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY



THE CONFERENCE

For the past two decades, IMN has created some of the most essential industry events for the asset management space and we are proud to continue that tradition in 2018 with our flagship event. Serving as the industry's longest running indexing and ETF event, Global Indexing & ETFs 2018 will once again return to Dana Point, CA, on June 24-26.

Building on the success of the 2017 program, which featured speakers including Michael Mauboussin (Credit Suisse), Jeffrey Gundlach (DoubleLine), Eduardo Repetto (Dimensional Fund Advisors), Robert Arnott (Research Affiliates, LLC), and Meir Statman (Santa Clara University), the conference will once again provide a timely, and in-depth, program led by some of the industry's most influential participants.

We look forward to hosting a cross-section of industry practitioners - institutional investors and asset owners, index providers, ETF issuers, asset managers, exchanges, technology solutions providers, retail investment advisors, academics and more – in California this June as we turn the next page on this fantastic industry's exciting story.

WHO SHOULD ATTEND

- Index Providers
- ETF Issuers
- Asset Managers
- Public & Corporate Pension Plans
- Retail Investment Advisors
- Endowments
- Foundations
- Sovereign Funds
- Family Offices
- High Net Worth Individuals
- Hedge Fund Managers
- Regulators
- Traders
- Investment Consultants
- Investment Analysts
- Financial Advisors
- Planners
- Brokers
- Technology Solutions Providers
- Insurance Companies
- Private Banks
- Venture Capitalists
- Liquidity Providers
- Academics

Sunday, June 24th, 2018

Preliminary Agenda

The preliminary discussion topics below will take place over the three days of the conference (June 24-26). Specific times and final panel topics have not yet been determined; please re-visit this page for agenda and scheduling updates.

Allocating to Emerging Markets

- Looking beyond BRICS: Which markets are hot and worth the risk?
 - How to effectively understand local markets, which sectors to avoid?
 - Which type of product generates the most gains? ETF? ETN?
 - Hot new product launches: taking a look at the most successful new EM ETF launches.
-

Trends in ESG & SRI

- There is no shortage of ESG themed products available for investors, with the majority of flows coming from institutional investors. When will Advisors adopt ESG products as a method of generating alpha?
 - How large can the segment grow? Will the advent of better AI driven inclusive strategies remove any remaining bottlenecks?
 - How will factor investing driven ESG/SRI products create wider acceptance?
 - How new product launches: taking a look at the most successful new ESG/SRI launches.
-

Machine Learning & Smart Beta

- Using AI to build bigger, faster, strong, better product. How deep learning and neural-links are changing investing.
 - How much of investing will eventually done by AI? What will happen to the industry as a result? How much human oversight is needed?
 - How advanced are the various AI methods behind the strategies? Can they adequately separate signal v noise, in other words—is the quality of data good enough?
 - How traditional (non-quant) manager are implementing AI driven techniques? How smart will smart beta become as a result?
-

The Return of Vol?

- In the aftermath of a meltup—will volatility return to the market?
 - If vol makes a comeback—which products and sectors are poised to benefit?
 - How to profit from rising vol?
 - How to protect from its downside?
-

Building a Yielding Portfolio

- With yields continuing to be sclerotic, how can investors build a yielding portfolio?
 - Which products have the best yield? ETFs or ETNs?
 - Should investors seek out alternatives? REITS? BDCs?
 - What pitfalls need to be avoided?
-

Do Greeks Matter in Passive Portfolios?

- Active managers obsess over their greeks, and use them as bragging tools. We ask our panel if passive investors should care as much.
 - Other than beta—which symbol carries the most significance?
 - If delta and gamma are not so important, then is it all about ratios? Sharpe's ratio or Sortino—which ratio carries the most weight?
-

Allocating to Alternatives

- Which off-the-run investments offer the most upside for investors today?
 - Are there any liquidity traps in today's market—or are things fairly liquid?
 - What is the research and education process like? What are allocations like?
 - Which products are investors allocating to? How much of their portfolios are being allocated?
-

Building a Diverse Allocation to Commodities

- Looking beyond oil and gas—how can investors create a robust and diversified commodities portfolio?
 - How has the smartphone market, and electric cars changed the commodity landscape?
 - Will China always drive demand?
 - What headwinds should investors be wary of? Which niche needs to be explored further?
-

Building a Robust Multi-Factor Model

- What are today's managers doing to increase the strength of their factor models?
 - How many signals are needed?
 - Is data quality stronger than ever?
 - Which factors need not be included?
-

Finding Alpha With ESG & SRI

- Studies have illustrated that companies that meet ESG/SRI guidelines have markedly better performance than firms that fall short of such metrics. We ask the panel—how do you build an alpha generating portfolio of ESG/SRI names?
-

Overlooked Opportunities in US Equities

- Will a massive bull run sending flows into primarily large caps stocks, have smaller capitalized stocks been overlooked?
 - Which sectors need to be re-thought? How much alpha is hiding in plain sight? Are industrials due for a second look?
 - What dangers lurk in these underexplored corners of the market?
 - What is the product landscape like? Any buy recommendations?
-

Tactical Passive Strategies

- In the event of a market decline—tactical strategies can help preserve portfolio value. Which strategies work best?
 - How can tactical strategies create truly non-correlated portfolios and drive success?
 - What sort of portfolio allocation model is best? 70% 30%? 50% 50%? 40%30%20%?
 - What do you need to consider when building a tactical portfolio? Liquidity? Performance? Benchmarking? Repeatable?
-

Nurturing Your Clients

- What does today's advisor need to do (other than not lose money) to retain client loyalty?
 - How important is education, promotion and web presence? What extras do you need to offer?
 - Is there such a thing as too much communication or information?
 - Name the one thing you'd recommend to everyone in this room. Name the one thing you'd warn against.
-

Factor Based Portfolios: Avoiding the Kitchen Sink

- There is much debate about how many factors and signals are needed for an advanced and robust factor modeled portfolio. But can there ever be bloat or redundant factors? Our panel lays out what really counts, what's nice to have and

what you can do without.

Making Sense of a Bitcoin ETF

- The SEC has made no secret to its aversion to cryptocurrency linked ETFs and several backers have withdrawn their applications. We ask our panel if we have dodged a bullet or if it only a matter of time?
 - What would it take to get the regulators' approval? Is it a problem of perception?
 - How much money could flow into there? Given that each "coin" is finite, how can an ETF work? Will it be size restrained? Are we investing in coins or companies?
 - What happens in the event of a coin meltdown? How do people get their money out?
-

Investing for 2020

- With 2020 looming large in the public's mind, what trends and opportunities should investors begin preparing for?
 - How will female lead businesses change the investing landscape? Will the industry be more socially conscious?
 - How will AI & FinTech continue to make reverberations? How will that change the investment set?
 - What opportunities are available now, that people should jump into?
-

The Launchpad: Exploring New Offerings

- 2017 was a tremendous year (yet again) for new product offerings, 2018 has been a good year as well. In this session we explore several of the most exciting new launches.
 - What does it take to successfully launch a new ETF in this market? Is competition blindingly fierce? Are investors picky? Or do you just need good marketing?
 - Which strategies & styles have seen the most growth?
 - How should 2018 shape up in comparison to 2017?
-

Investing in the Next Wave

- As the industry grows and gains ever more assets, new managers, new products and new leaps in technology enter the market as a rapid pace. We ask ourselves—what will the next wave of investments and investors look like?
 - How portfolios driven by the needs of baby boomers will look relative to the portfolios of Millennials or Gen Z?
 - Where will fund flows come from? Will the developing world be a bigger player?
 - What are your predictions?
-

Off The Growth Chart

- Should the record breaking inflows force the ETF industry to take a pause to consider—how big is too big and are ETFs at risk of becoming systemically dangerous?
 - Is this a FOMO market? How much money in the market is professional v amateur?
 - Has the market systematically been restructured to withstand a crash? With the amount of AUM at play—is a bear market even a possibility?
 - What is the case for continued growth? Conversely, is there even a doubt that the market will continue to grow? What is underpinning this?
-

The Modern Index

- Index investing was and remains a revolutionary tool for investors, how has the growth in the industry, plus the technological advancement of the past decade changes the landscape of indexing? We ask our panel to layout for us what makes a modern index.
-

Institutional Portfolios: Creating Value & Driving Innovation

- How are today's portfolio managers staying competitive?
 - What products are they using? Where are funds flowing away from?
 - How can a large portfolio extract value? Where might a smaller allocator be more nimble?
 - Do allocators drive product creation?
-

Lessons from the Rise of Smart Beta

- Smart Beta has had a meteoric rise in recognition, acceptance and allocation, we explore what went into making that success and what other strategies and styles can learn from it.
-

Understanding Europe

- How much money flows from US manager to Europe? Why should that number be higher?
 - Exploring the differences between developed and developing Europe—which markets have the most opportunity?
 - Are negative interest rates a thing of the past? Will the ECB decouple from the Fed? How will this impact product offerings?
 - Which sectors are the best to explore?
-

Interest Rates & The Impact of a New Fed

- With rates set to rise at least four times this year, how will the bond market shift and change? Will this be a good or year for debt? How will ETFs and ETNs react?
 - What will the Fed's new policies be? How do they avoid a securities dump?
 - Will treasuries be the new hot thing?
 - What is the best case/worst case scenario?
-

Liquidity & Yield: Can You Have Both?

- For credit related investments, investors often have to sacrifice yield for liquidity or vice versa. Will there ever be a perfect equilibrium for these two factors? What products get us there the closest?
-

RIA Marketplace Consolidation: A New Reality?

- Team spin outs have been a hot trend for a few years, but with Private Equity firms scooping up RIAs left and right—will the market eventually consolidate?
 - Would a consolidation wave be seen along the lines of established absorbing a start-up or Robo? How would this play out?
 - Will investors benefit? Will they get better options and service?
 - Is consolidation counterintuitive?
-

Weightings: Moving Beyond Sectors & Market Caps

- Sector weighting and market caps may be an irrelevant way of looking at portfolio construction with advances in technology and the volume of fund flows. We ask our experts if it is time to reconsider.
-

Endowment Portfolios: What's in & What's Out

- Under the new tax plan, College Endowments are facing a steep tax hike, coupled with the ever increasing need to generate alpha—how do today's portfolio management teams keep competitive and drive returns?
 - With fee pressure in mind—how can ETFs, Indexes and Smart Beta products build a low cost core?
 - How is technology fitting into your operations? What processes have you augmented with new tech?
 - Where are you allocating to? Where can you not allocate to? What's on your wish list?
-

Robo Advisors: Growing By Leaps & Bounds

- With AUM expected to reach \$2trillion dollars by 2020 (that's two years away folks!) the segment will eventually shift away from mass affluent and encompass other parts of the retail spectrum—how much more AUM can they capture?
 - How are Robo Advisors expected to behave in a bear market? Would a bear market shake them off or will AI be adaptive and firm their position?
 - How do Robo Advisors differentiate from each other? Is it all about the algo?
 - How can a traditional advisors remain competitive? Are JV's and sub advisories the way forward?
-

Growing Your Practice: Driving New Business and Deepening Existing Relationships

- How to create scale, efficiency and repeatable processes: automating functions such as marketing, reporting and back offices, devising and following a marketing/pr plan and optimizing a sales process.
 - What does the Rule of 15 mean in today's Tech enabled world? What types of services do you need to offer your clients (and at no cost!)?
 - How will M&A change the landscape? Are you looking to buy or be bought out? Will M&A spur or impede industry growth?
 - What is your best advice for the audience—what three things do wish to impart?
-



AGENDA REPORT

TO: Oakland Police and Fire
Retirement Board

FROM: Katano Kasaine

SUBJECT: Audit Committee Agenda Pending List

DATE: March 21, 2018

In an effort to keep the PFRS Audit Committee informed of outstanding items to be scheduled for an upcoming audit committee meeting. When staff has received enough information on the agenda items below, staff will add it to the next agenda for Audit Committee review and/or action.

	SUBJECT	PROPOSED SCHEDULED MEETINGS	STATUS
1	PFRS Benefits Overpayment / Plan Underpayment Policy	4/25/2018	Pending additional discussion with City Attorney
2	City of Oakland Insurance for PFRS Board Members	4/25/2018	Pending additional information from City Ins. Broker
3	Mid-Cycle PFRS Administrative Budget	4/25/2018	
4	Approval of Write-offs for uncollectable accounts	not scheduled	Pending approval of PFRS Over/ Under Policy
5	Discussion of possible Update of 2007 IFS Management Audit Report	5/30/2018	

Respectfully submitted,

Katano Kasaine, 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 Retirement Systems, 150 Frank Ogawa Plaza, Suite 3332 or call (510) 238-7295 for additional information.



**Retirement Systems
150 Frank H. Ogawa Plaza
Oakland, California 94612**

AGENDA

AUDIT 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, March 28, 2018 – 9:00 am
One Frank H. Ogawa Plaza, Hearing Room 3
Oakland, California 94612**

- - - ORDER OF BUSINESS - - -

- 1. Subject:** February 28, 2018 PFRS Investment Committee Meeting Minutes
From: Staff of the PFRS Board

Recommendation: **APPROVE** February 28, 2018 Investment Committee meeting minutes.
- 2. Subject:** (1) Review of Alternative Risk Premia/Trend section of Crisis-Risk Offset Strategy, (2) Interview and Selection of New Alternative Risk Premia/Trend Manager
From: PCA and Staff of the PFRS Board

Recommendation: **ACCEPT** the Review of Alternative Risk Premia/Trend section of Crisis-Risk Offset Strategy, **ACCEPT** the presentations by firms AQR, Lombard Odier, and Parametric Portfolio Managers, and **RECOMMEND BOARD APPROVAL** of the a new Alternative Risk Premia/Trend Investment Strategy Manager.
- 3. Subject:** Resolution No. 7007 – Authorization for Service Agreement with Northern Trust Investments (large-cap core domestic equity asset class manager) using a comingled fund
From: Staff of the PFRS Board and PCA

Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 7007 – Authorization for Service Agreement with Northern Trust Investments (large-cap core domestic equity asset class manager) using a comingled fund.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR INVESTMENT COMMITTEE MEETING
MARCH 28, 2018**

ORDER OF BUSINESS, continued

4. **Subject:** **\$14.2 million 2nd Quarter 2018 Member Benefits Drawdown**
From: Staff of the PFRS Board & Pension Consulting Alliance
Recommendation: **RECOMMEND BOARD APPROVAL** of PCA recommendation of \$14.2 million drawdown to be used to pay for April 2018 through June 2018 member retirement benefits.
5. **Subject:** **Investment Market Overview**
From: Pension Consulting Alliance (PCA)
Recommendation: **ACCEPT** an informational report on the global investment markets through January 31, 2018.
6. **Future Scheduling**
7. **Open Forum**
8. **Adjournment of Meeting**

AN INVESTMENT AND FINANCIAL MATTERS COMMITTEE MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was held February 28, 2018 in Hearing Room 3, 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: • Katano Kasaine, Plan Administrator
• Pelayo Llamas, Deputy City Attorney / PFRS Legal Counsel
• David Low & Teir Jenkins, Staff Members
• David Sancewich & Sean Copus, Pension Consulting Alliance (PCA)

The meeting was called to order at 10:39 am.

1. **Approval of Investment Committee meeting minutes** – Member Melia made a motion to approve the January 31, 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 Manager Performance Review – Northern Trust Asset Management** – Tamara Doi Beck presented the investment manager performance and management review of Northern Trust Asset Management, a PFRS Large Cap Core Domestic Equities Investment Manager. Following Committee and investment manager discussion, member Melia made a motion to accept the informational report, second by Chairman Godfrey. Motion passed.

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

3. **Investment Manager Overview – Northern Trust Asset Management** – Sean Copus from Pension Consulting Alliance (PCA) presented its review of Northern Trust Asset Management. Following some discussion by the Investment Committee and PCA, Member Melia made a motion to recommend Board approval of the PCA review, second by Chairman Godfrey. Motion passed.

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

4. **Investment Manager Report presented by new representative from NWQ** – Michael Mullane of NWQ introduced himself as the new Relationship Manager of NWQ for PFRS. Following Mr. Mullane’s presentation and committee discussion, member Melia made a motion to accept the informational report presented by NWQ, second by Chairman Godfrey. Motion passed.

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

5. **Resolution No. 7008 - Placement of Investment Manager to Watch Status** – Investment Officer Teir Jenkins reported that the PFRS Board approved the

placement of NWQ onto Watch Status by board motion at their January 2018 Board meeting. Mr. Jenkins said Resolution No. 7008 memorializes this action. Chairman Godfrey made a motion to recommend Board approval of Resolution No. 7008, second by member Melia. Motion passed.

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

6. **(1) Informational report from PCA & Staff regarding On-site visit of Hansberger Growth Investors and (2) Recommendation for Request for Information for an active International Equity Investment Manager** – David Sancewich from PCA presented his report of the on-site visit he conducted with Chairman Godfrey of Hansberger Growth Investors' Toronto office. Following committee discussion, Member Melia made a motion to accept the information report from PCA, second by Chairman Godfrey. Motion passed.

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

Member Melia made a motion recommending that PCA be authorized to conduct a Request for Information (RFI) seeking candidates to serve as PFRS' International Equity Investment manager, second by Chairman Godfrey. Motion passed.

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

7. **Investment Market Overview** – Mr. Copus 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)

8. **Investment Fund Performance Report for the Quarter Ending December 31, 2017** – Mr. Copus presented the complete details of the Investment Fund Performance Report for the Quarter Ending December 31, 2017. Chairman Godfrey made a motion to recommend Board approval of the Report, second by member Melia. Motion passed.

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

9. **Resolution No. 7007 - Renewal of Service Contract – Northern Trust Investments** – The Committee and staff discussed the pending expiration of the service agreement between Northern Trust Asset Management and the PFRS Board. The Committee discussed potential change in fees and the possibility of switching to a comingled account. Staff was directed to further discuss the issues with Northern Trust. Chairman Godfrey made a motion to table discussion and committee recommendation of Resolution No. 7007 until the March investment committee meeting, second by member Melia. Motion passed.

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

10. **Alternative Risk Premia/Trend Manager Search – Proposed Finalists to be interviewed at an upcoming PFRS Investment Committee Meeting** – Mr. Sancewich presented a report regarding the Crisis Risk Offset (CRO) strategic investment manager class search and PCA’s analysis of the firms who submitted their credentials. He recommended that three prospective managers be interviewed at the March 2018 meeting to serve as the Alternative Risk Premia/Trend manager for the PFRS Fund. Following some discussion, Member Melia made a motion to interview AQR, Lombard Odier, and Parametric Portfolio Managers for the Alternative Risk Premia/Trend manager, second by Chairman Godfrey. Motion passed.

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

11. **2018 Capital Market Returns memo** – Mr. Sancewich presented the 2018 Capital Market Returns memo to the Committee. Following some discussion, Chairman Godfrey made a motion to accept the memo, second by Member Melia. Motion passed.

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

12. **PFRS Calendar Year 2018 Strategic Investment Plan** – Mr. Sancewich presented PCA’s Strategic Investment Plan and Calendar of upcoming PFRS-related investment meeting items. Member Melia made a motion to recommend Board approval of the Plan and Calendar, second by Chairman Godfrey. Motion passed.

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

13. **Future Scheduling** – The next Investment Committee meeting was scheduled for March 28, 2018.

14. **Open Forum** – No Report

The meeting adjourned at 11:57 am.

JAIME T. GODFREY, COMMITTEE CHAIRMAN

DATE

Date: March 28, 2018

To: Oakland Police and Fire Retirement System (“OPFRS”)

From: Pension Consulting Alliance, LLC (“PCA”)

CC: David Sancewich | Sean Copus – PCA
Katano Kasaine | Teir Jenkins - OPFRS

RE: Alternative Risk Premia Manager Interviews

During the fourth quarter of 2017, the OPFRS Board directed PCA to begin a manager search to identify high quality managers to begin building out the Crisis Risk Offset class, as part of a new strategic asset allocation. As highlighted in the CRO Educational Overview in fall 2017, these strategies are designed to be exposed to certain alternative risk premia that when combined are intended to be uncorrelated with traditional markets. While PCA has been researching this market segment for several years and has intimate knowledge of the major participants, a publicly released Request for Information (“RFI”) was utilized to obtain as wide of a distribution as possible. On October 23, 2017, PCA released an RFI to the institutional marketplace with a response deadline of October 31, 2017. The RFI was advertised in FinDaily’s marketing production and on PCA’s website along with various other publications. PCA received responses from 48 firms. These firms represent the primary participants with respect to ARP investment management, and as such, PCA was completely satisfied with the responses. The remaining candidates were then analyzed on a quantitative and qualitative basis to determine a recommended list of three finalists to be interviewed by OPFRS.

At the February 28, 2018 OPFRS Board meeting, PCA discussed, and the Board approved, a recommendation to interview three finalists: AQR Capital, Lombard Odier, and Parametric. This document serves to further implement the Board’s decision and to provide an overview of the candidates and their portfolios, including ownership, investment strategy, personnel, client base, and performance.

The three Alternative Risk Premia finalist candidates, and their abbreviations used throughout this report, are presented below in alphabetical order:

Firm	Strategy	Abbreviation
AQR	Liquid Enhanced Alternative Premia (“LEAP”)	AQR
Lombard Odier	Alternative Risk Premia	Lombard
Parametric	Systematic Alternative Risk Premia (“SARP”)	Parametric

All three managers and their products (i) are alternative risk premia strategies, and (ii) possess the abilities to provide OPFRS with the appropriate services. Summaries of each firm are provided on the following page.

AQR has been managing alternative investment strategies since the firms' inception in 1998 and offered its first alternative risk premia strategy in 2001. AQR is more than 70% owned by principals at the firm, with the remainder owned by Affiliated Managers Group. The firm has 871 employees based in Greenwich, CT with offices in Boston, Chicago, Hong Kong, London, Los Angeles, and Sydney. The LEAP strategy is managed by a team of 11 investment professionals that oversee research and portfolio management, including the refinement of existing alternative risk premia strategies and the pursuit of new strategies. AQR is seen as a pioneer and leader in the ARP space and has a strong team led by Ronen Israel, a Principal at AQR, and several award-winning researchers.

Lombard Odier has six partners of Compagnie Odier SCA that ultimately own Lombard Odier Investment Management (LOIM). LOIM is a \$47 billion global multi-asset boutique with expertise across traditional and alternative strategies. The team has been managing systematic investment strategies since 1994 and launched their first hedge fund replication strategy in 2009. Laurent Joué and Marc Pellaud, two senior portfolio managers, manage the firm's alternative risk premia and commodity strategies. They have been working together since 2009, and they currently manage approximately \$1.1 billion. They are a part of the broader systematic team, which totals 29 employees who oversee approximately \$19 billion. Each team individual is involved in research, driven either by specific needs or the Academic Board, which appoints research heads and team members from across divisions.

Parametric has a strategy based on investment research developed by Research Affiliates. Parametric has reviewed and validated the research and is responsible for managing the strategy. Research Affiliates acts as a non-discretionary sub-advisor and, on a regular basis, provides Parametric with a model portfolio with constituents and target weights based upon the SARP strategy. Parametric independently verifies the model before making any adjustments. Research Affiliates and Parametric collaborate on ongoing research to support the strategy, but the Parametric Investment Committee has ultimate responsibility for the oversight of the strategy, and all potential modifications must be approved by the Investment Committee. Parametric and Research Affiliates have been partners since 2009 on approximately \$12.3 billion in liquid equities as of June 30, 2017. Parametric's main offices are located in Seattle, WA and Minneapolis, MN. The firm focuses on custom beta, systematic strategies and overlays. Research Affiliates is based in Newport Beach, CA. The firm focuses on developing research in a variety of asset classes and partnering with asset managers to offer them to clients. As of September 30, 2017, over \$199 billion in assets are managed using investment strategies developed by Research Affiliates.

Finalist Summary Comparison

	Strengths	Weaknesses
AQR Firm AUM: ~\$200B Product AUM: ~\$312M Product Incept.: 1/2017 Fees: 150bps	<ul style="list-style-type: none"> • Longest and most successful track record of managing a more traditional style premia strategy • Arguably the most well-known player in the alternative risk premia space • High quality investment team with a long bench of professionals who have published academic research on alternative risk premia 	<ul style="list-style-type: none"> • Highest proposed fees • This is the third iteration of their original “style premia” product and as such trades less markets and could be less robust than their original offering (which is now closed) • High firm AUM concentrated in alternative risk premia products, which has experienced considerable growth over the last few years
Lombard Odier Firm AUM: ~50B Product AUM: ~\$517M Product Incept.: 8/2014 Fees: 100bps	<ul style="list-style-type: none"> • Long standing firm with a breadth of resources • Investment process rooted in academic research and risk allocation • Differentiated risk allocation process focusing on allocating between market neutral strategies designed to be uncorrelated and directional (i.e., trend, etc.) strategies designed to perform well in extended equity crises 	<ul style="list-style-type: none"> • Includes other arguably less robust or esoteric risk premia such as ESG/Carbon • An investment arm of a large Bank, which could bring headline risk non-related to the investment team and strategy • Higher allocation to Trend strategies, which exhibit higher volatility and suffer during sharp market reversals
Parametric Firm AUM: ~224B Product AUM: ~\$123M Product Incept.: 4/2017 Fees: 65bps	<ul style="list-style-type: none"> • Lowest proposed fee • Most straight forward approach, which leads to more simple understanding of investment performance drivers and expectations • Highest allocation to Trend, which would be expected to provide the highest return relative to other premia in prolonged equity crises 	<ul style="list-style-type: none"> • Newer strategy for the firm as a joint venture with Research Affiliates • Attempts to harvest a lower amount of risk premia, which could lead to higher volatility • Higher allocation to Trend strategies, which exhibit higher volatility and suffer during sharp market reversals

Scope of Review

Although PCA has been researching this market segment for several years and has intimate knowledge of the major participants, an RFI was released to the institutional marketplace in October 2017 to obtain as wide of a distribution as possible. All in all, PCA believes the RFI was well received by the institutional marketplace, and the responding firms represent best-in-class managers within the ARP segment. As alternative risk premia is an opaque term that can be interpreted in a variety of different ways, PCA constructed the RFI to pertain directly to strategy design and the OPFRS mandate. After receiving information from 48 firms on 51 strategies, PCA performed an initial review that focused on the criteria below:

- Harvests multiple risk premia (e.g., value, momentum, carry, defensive, etc.)
- Utilizes multiple asset classes (e.g., equities (stocks), fixed income, currencies, commodities)
- Mostly market neutral implementation (excluding allocations to trend following strategies)
- Favorable liquidity terms
- Low flat fee implementation

Following the initial review, PCA removed 33 strategies from further consideration for one or more of the following reasons: implemented in only one asset class, harvests only one risk premium, significant exposure to directional strategies, poor liquidity terms (>1-month), high fees (>1.5% estimated flat fee), and no commingled fund format available.

PCA then performed a more detailed review of the remaining 18 strategies by assessing portfolio construction, experience of the firm and team, proposed fees, liquidity terms, and available investment vehicles. Through this process, PCA viewed firms and strategies with the following attributes more favorably:

- Harvests a robust set risk premia with a straight-forward approach
- De minimums allocation to "alpha" components
- Mostly market neutral implementation, aside from any directional trend following allocation
- Straight-forward portfolio construction with a bias towards equal risk weighting concepts
- Reasonable level of volatility (10-12% on average)
- Firm and team with robust experience managing alternative risk premia and / or other systematic alternative trading strategies

Through the secondary review process, eight firms / strategies below were identified as semi-finalists. These eight firms were reviewed further with a focus on the six major areas below and a focus on the best fit with OPFRS.

- **Organization:** Focuses on the capacity of the firm to provide the required services. Also includes consideration of issues that may impact a firm's operational stability, such as litigation brought against firm.
- **Investment Professionals:** Explores the experience, capacity, and depth of firm's professionals, particularly with respect to the mandate under consideration.

- **Investment Strategy:** Review of investment philosophy, approach, strategy, and risk management to ensure they are consistent with the considered mandate.
- **Client Base/Services:** Seeks to identify whether the manager has experience servicing mandates similar in size and type to the one considered by OPFRS.
- **Quantitative Analysis of Historical Performance and Characteristics:** An analysis of actual and back-tested representative portfolio performance and characteristics to determine whether management of the portfolio has been consistent with results expected under the considered mandate.
- **Fees:** The costs of implementing the mandate deserve separate consideration and can vary substantially across a subset of candidates. Fees were computed based on an assumed mandate size of roughly \$40 million.

All three recommended finalists were identified as possessing the abilities to provide OPFRS with the appropriate services. Further comparisons of the three finalists can be found on the following pages.

Table 1: Firm and Strategy Comparison

Firm Name	AQR	Lombard Odier	Parametric
Firm Inception	1998	1963 ¹	1987
Firm AUM	~\$208 billion	~\$50 billion	~\$224 billion
Location	Greenwich, CT	Geneva, Switzerland	Minneapolis, MN
Total Employees	~871	~120	~350+
Ownership	70% employee owned	100% owned by six partners of parent	Majority owned by Eaton Vance, <10% employee owned
Strategy Name	LEAP	Alternative Risk Premia	SARP
Strategy Employees	97	29	7 ²
Strategy Inception	Jan-17	Aug-14	Apr-17
Strategy AUM	~\$312 million ³	~\$517 million	~\$123 million
Trading Similar Strategies Since	2000	2009	2009 ⁴
Target Volatility	12%	14%	10-13%
Management Fee	1.50%	1.00%	0.65%
Liquidity	2x/Month	Monthly	Monthly
Markets Traded	Single Stocks	✓	X
	Equity Indices	✓	✓
	Fixed Income	✓	✓
	Currencies	✓	✓
	Commodities	X	✓
	Other	X	Credit
Risk Premia Harvested	Value	✓	✓
	Momentum	✓	✓
	Carry	✓	✓
	Defensive	✓	✓
	Trend	✓	✓
	Volatility	✓	✓
	Other	X	ESG/ Carbon

¹ In current form in 2010. Lombard Odier has been managing institutional mandates since 1963, and the origins of Lombard Odier bank date back to 1796

² Four professionals from Parametric and three from Research Affiliates

³ \$22.5 billion in total analogous style premia products

⁴ Marks date that Parametric and Research Affiliates have been partnering on various product offerings

Table 2: Annual Returns (Includes both live and back test results, performance notes in table 6)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
AQR	4.9	-2.8	1.2	12.5	22.8	1.0	6.0	4.0	2.1	8.7
Lombard Odier	10.9	2.2	-1.4	9.3	11.9	10.5	14.2	25.0	4.7	21.3
Parametric	13.3	-0.6	13.9	10.3	17.6	22.2	-10.4	-1.8	2.0	26.5
<i>MSCI ACWI</i>	24.6	8.5	-1.8	4.7	23.4	16.8	-6.9	13.2	35.4	-41.8
<i>BB Barclays Aggregate Bond</i>	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2
<i>HFRI FOF Composite</i>	7.7	0.5	-0.3	3.4	9.0	4.8	-5.7	5.7	11.5	-21.4

Table 3: Trailing Returns (Annualized for >1-year, includes both live and carve-out results, performance notes in table 6)

	4Q 2017	1-Year	3-Years	5-Years	Since Incept. (SI)	SI Standard Deviation	SI Return / Risk	Inception Date
AQR	2.5	4.9	1.0	7.3	7.4	8.0	0.93	Sept-12
Lombard Odier	3.0	10.9	3.8	---	5.7	6.5	0.87	Aug-14
Parametric	2.2	---	---	---	8.7	6.4	1.36	Apr-17
<i>MSCI ACWI</i>	5.8	24.6	9.9	11.4	---	---	---	---
<i>BB Barclays Aggregate Bond</i>	0.4	3.5	2.2	2.1	---	---	---	---
<i>HFRI FOF Composite</i>	2.0	7.7	2.6	4.0	---	---	---	---

Table 4: Performance Statistics (Includes both live and back test results, performance notes in table 6)

	Begin Data Date	Max Drawdown (DD)	DD Length (months)	Time to Recover (months)	5-Year Ann Return	5-Year Ann StDev	5-Year Return / Risk	5-Year Equity Beta
AQR	Jun-96	-32.2	18	18	7.3	8.3	0.89	0.07
Lombard Odier	Jan-07	-9.4	7	21	6.5	6.7	0.96	0.14
Parametric	Jan-02	-19.5	8	13	10.7	9.8	1.09	0.34
<i>MSCI ACWI IMI</i>	Jan-88	-54.6	16	50	11.4	9.9	1.15	---
<i>BB Barclays Aggregate Bond</i>	Jan-86	-5.2	5	8	2.1	2.9	0.74	0.02
<i>HFRI FOF Composite</i>	Jan-90	-22.2	14	66	4.0	3.3	1.22	0.26

Table 5: 5-Year Correlations (Includes both live and back test results, performance notes in table 6)

	AQR	Lomb. Odier	Param.	MSCI ACWI	BBB Agg.	HFRI FOF
AQR	1.00					
Lombard Odier	0.29	1.00				
Parametric	0.33	0.33	1.00			
<i>MSCI ACWI IMI</i>	0.08	0.21	0.35	1.00		
<i>BB Barclays Aggregate Bond</i>	0.22	0.41	0.43	0.06	1.00	
<i>HFRI FOF Composite</i>	0.13	0.28	0.39	0.79	-0.01	1.00

Table 6: Performance Notes: All Monthly Returns Provided by the Mangers

AQR	Actual performance from 1/1/2017 to present. Performance from 9/1/2012 to 12/31/2016 is representative of a carve-out from other strategies. Prior to 9/1/2012, performance is representative of backtest returns. All returns are estimated as net of 1.5% management fee per annum.
Lombard Odier	Time series is representative of a 7% volatility version. They are proposing 14% volatility for this mandate. Actual net of fees performance from August 2014 to present, net of a 0.85% annual management fee. Prior to this date, returns are backtested net of a 0.85% annual management fee.
Parametric	Actual performance from 4/28/2017 to present, net of a 0.90% annual management fee. Prior to this date, returns are backtested net of a 0.90% annual management fee.

Firm:	AQR
AUM:	\$208 billion

Strategy:	LEAP
AUM:	\$312 million
Inception:	January 2017
Target Volatility:	12%
Liquidity:	2x Per Month
Management Fee:	1.50%

Firm / Team Overview:

AQR has been managing alternative investment strategies since the firms’ inception in 1998 and offered its first alternative risk premia strategy in 2001. AQR is more than 70% owned by principals at the firm, with the remainder owned by Affiliated Managers Group. The firm has 871 employees based in Greenwich, CT with offices in Boston, Chicago, Hong Kong, London, Los Angeles, and Sydney. The LEAP strategy is managed by a team of 11 investment professionals that oversee research and portfolio management, including the refinement of existing alternative risk premia strategies and the pursuit of new strategies. AQR is seen as a pioneer and leader in the ARP space and has a strong team led by Ronen Israel, a Principal at AQR, and several award-winning researchers.

Portfolio Construction:

The team focuses on identifying robust return sources and diversifying across as many uncorrelated risk premia as possible. Portfolio construction is a systematic process that begins with scoring each investment universe based on each identified risk premia. AQR then uses these ranks to build a market neutral portfolio where they are long the highest ranked securities and short the lowest ranked securities. Within each asset group (individual stocks, equity indices, fixed income and currencies) each premia receives a roughly equal risk weighting. At the total portfolio level, each asset group is also sized to receive a roughly equal risk weighting. Some adjustments are made to balance maximum diversification with liquidity, leverage, and market breadth considerations. Trend is the only piece of the portfolio that is not managed in a market neutral fashion. The strategy seeks to achieve a net Sharpe Ratio of 0.7 over a complete market cycle with a 12% volatility and low correlation to traditional asset classes.

Risk Premia Summary:

Asset Classes → Risk Premia ↓	Individual Stocks	Equity Indices	Fixed Income	Commodities	Currencies
Value	✓	✓	✓		✓
Momentum	✓	✓	✓		✓
Carry			✓		✓
Defensive	✓	✓	✓		
Trend		✓	✓		✓
Volatility		✓	✓		

Firm:	Lombard Odier
AUM:	\$50 billion

Strategy:	Alternative Risk Premia
AUM:	\$517 million
Inception:	August 2014
Target Volatility:	14%
Liquidity:	Monthly
Management Fee:	1.00%

Firm / Team Overview:

Six partners of Compagnie Odier SCA ultimately own LOIM. LOIM is a \$47 billion global multi-asset boutique with expertise across traditional and alternative strategies. The team has been managing systematic investment strategies since 1994 and launched their first hedge fund replication strategy in 2009. Laurent Joué and Marc Pellaud, two senior portfolio managers, manage the firm’s alternative risk premia and commodity strategies. They have been working together since 2009, and they currently manage approximately \$1.1 billion. They are a part of the broader systematic team, which totals 29 employees who oversee approximately \$19 billion. Each team individual is involved in research, driven either by specific needs or the Academic Board, which appoints research heads and team members from across divisions.

Portfolio Construction:

The team first categorizes each premia as either left or right tail based on their return distribution profile. Left tail strategies tend to be market neutral and typically include income/carry strategies, while right tail strategies tend to be directional, including both trend and momentum strategies. As a further comparison, left tail strategies tend to exhibit low volatility but negative skew from being exposed to potential large losses during risk-off scenarios, while right tail strategies exhibit positive skew with the potential to deliver outsized returns during periods of prolonged (negative or positive) trends. However, right tail strategies will suffer in trendless markets or periods of sharp reversals. Risk is allocated equally between the two categories of premia that are believed to be complimentary. The team does not believe in timing premia and relies on a risk allocation process instead, which targets smoother returns in different market conditions. Proprietary risk measures are used that focus on the potential for extreme losses, skewness, conditional correlations, and liquidity.

Risk Premia Summary:

<i>Asset Classes</i> →	Individual	Equity	Rates &	Commodities	Currencies
<i>Risk Premia</i> ↓	Stocks	Indices	Credit		
Value	✓	✓		✓	✓
Momentum	✓				
Carry		✓	✓	✓	✓
Quality & Low Risk	✓				
Trend		✓	✓	✓	✓
ESG/Carbon	✓				
Volatility		✓			✓

Firm:	Parametric
AUM:	\$224 billion

Strategy:	SARP
AUM:	\$123 million
Inception:	April 2017
Target Volatility:	10-13%
Liquidity:	Monthly
Management Fee:	0.65%

Firm / Team Overview:

SARP is a Parametric strategy based on investment research developed by Research Affiliates. Parametric has reviewed and validated the research and is responsible for managing the strategy. Research Affiliates acts as a non-discretionary sub-advisor and, on a regular basis, provides Parametric with a model portfolio with constituents and target weights based upon the SARP strategy. Parametric independently verifies the model before making any adjustments. Research Affiliates and Parametric collaborate on ongoing research to support the strategy, but the Parametric Investment Committee has ultimate responsibility for the oversight of the strategy, and all potential modifications must be approved by the Investment Committee. Parametric and Research Affiliates have been partners since 2009 on approximately \$12.3 billion in liquid equities as of June 30, 2017. Parametric’s main offices are located in Seattle, WA and Minneapolis, MN. The firm focuses on custom beta, systematic strategies and overlays. Research Affiliates is based in Newport Beach, CA. The firm focuses on developing research in a variety of asset classes and partnering with asset managers to offer them to clients. As of September 30, 2017, over \$199 billion in assets are managed using investment strategies developed by Research Affiliates.

Portfolio Construction:

On a monthly basis, Parametric rank orders the investible universe for each of the 12 style indices, which drives target allocations for the following month. Both value and carry are implemented by going long the top third and short the bottom third of the ranked securities in an equal size so that the total exposure nets to zero. Momentum style indices are implemented in a time series format that is long all securities with positive momentum and short those with negative momentum (trailing 12-month return) and thus does not net to zero. Implementation of the volatility premium is conditional based on profitable momentum factors during the previous month and a VIX level of greater than 15, which historically results to a volatility overlay 50% of the time. The strategy is expected to have a long-term volatility of 10-12% with a target Sharpe ratio of 0.8, net of fees.

Risk Premia Summary:

Asset Classes → Risk Premia ↓	Individual Stocks	Equity Indices	Fixed Income	Commodities	Currencies
Value		✓	✓	✓	✓
Momentum					
Carry		✓	✓	✓	✓
Defensive					
Trend		✓	✓	✓	✓
Volatility		✓			

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OVERVIEW: Alternative Risk Premia

City of Oakland Police and Fire Retirement System (“OPFRS”)

March 2018

PCA

PENSION
CONSULTING
ALLIANCE

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Traditional Risk Premia & Basic Concepts

What is a Risk Premium?

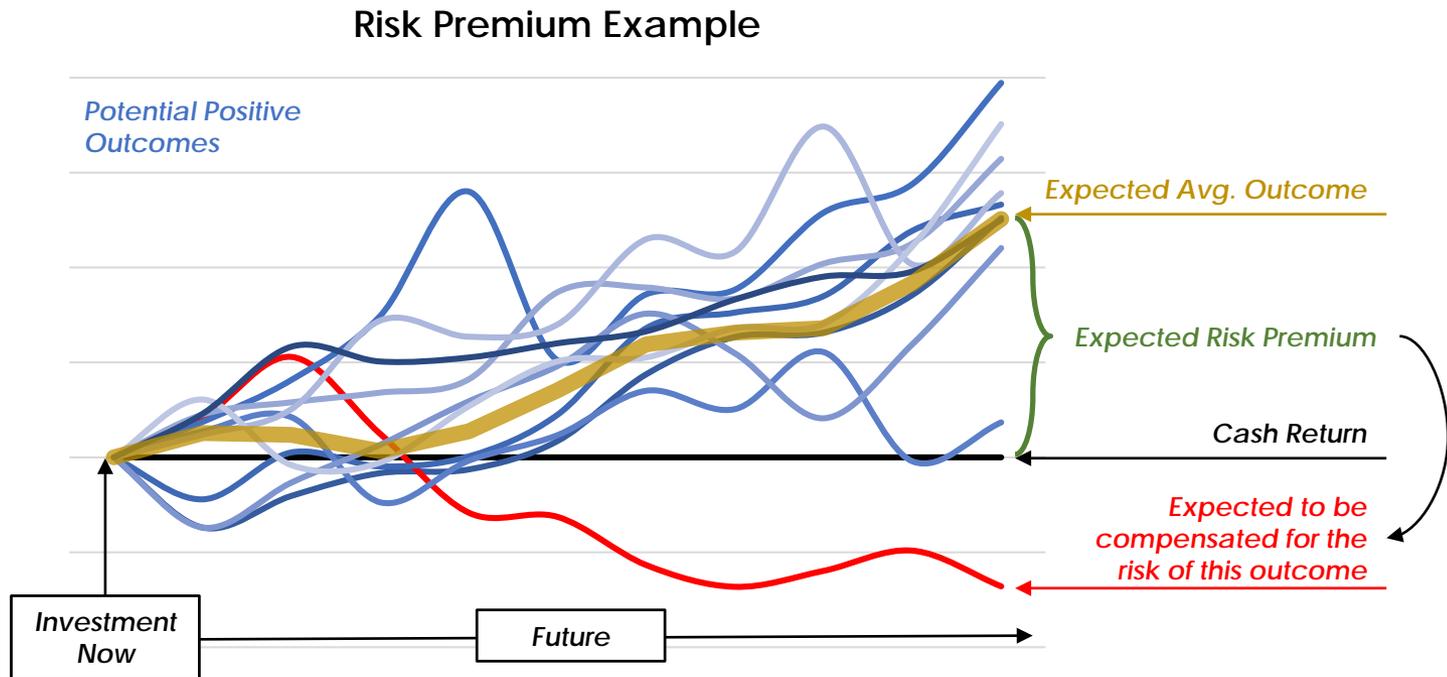
- Risk and return are inherently related
- Economic investments generate positive returns because of risk premiums
- Risk premium = a positive payment for being exposed to a risk
 - Analogy => insurance
 - Monthly premiums in exchange for downside coverage
 - Insurance company generates a profit/return because the premiums cover the payouts (over time / on average)
- Multiple risk premiums exist that can reward investors

How Are Risk Premiums Measured?

- Risk premiums are measured by comparing one investment return versus another (foregone) investment return
 - Foregoing one investment is mathematically identical to short selling
 - i.e., opportunity cost
- For example, the Equity Risk Premium is the difference between the return that equities generate in comparison to the return that T-bill generates
 - Ex. S&P 500 = 7% return
T-bill = 1% return
Equity Risk Premium = 6% return (7% - 1%)
- In the above example, 6% represents the return that the investor earned for bearing equity risk (as opposed to investing solely in T-bill)
 - i.e., the “premium” relative to T-bill

Risk Premium Investment Example

- To receive a risk premium above (“riskless”) cash, you must accept additional risk

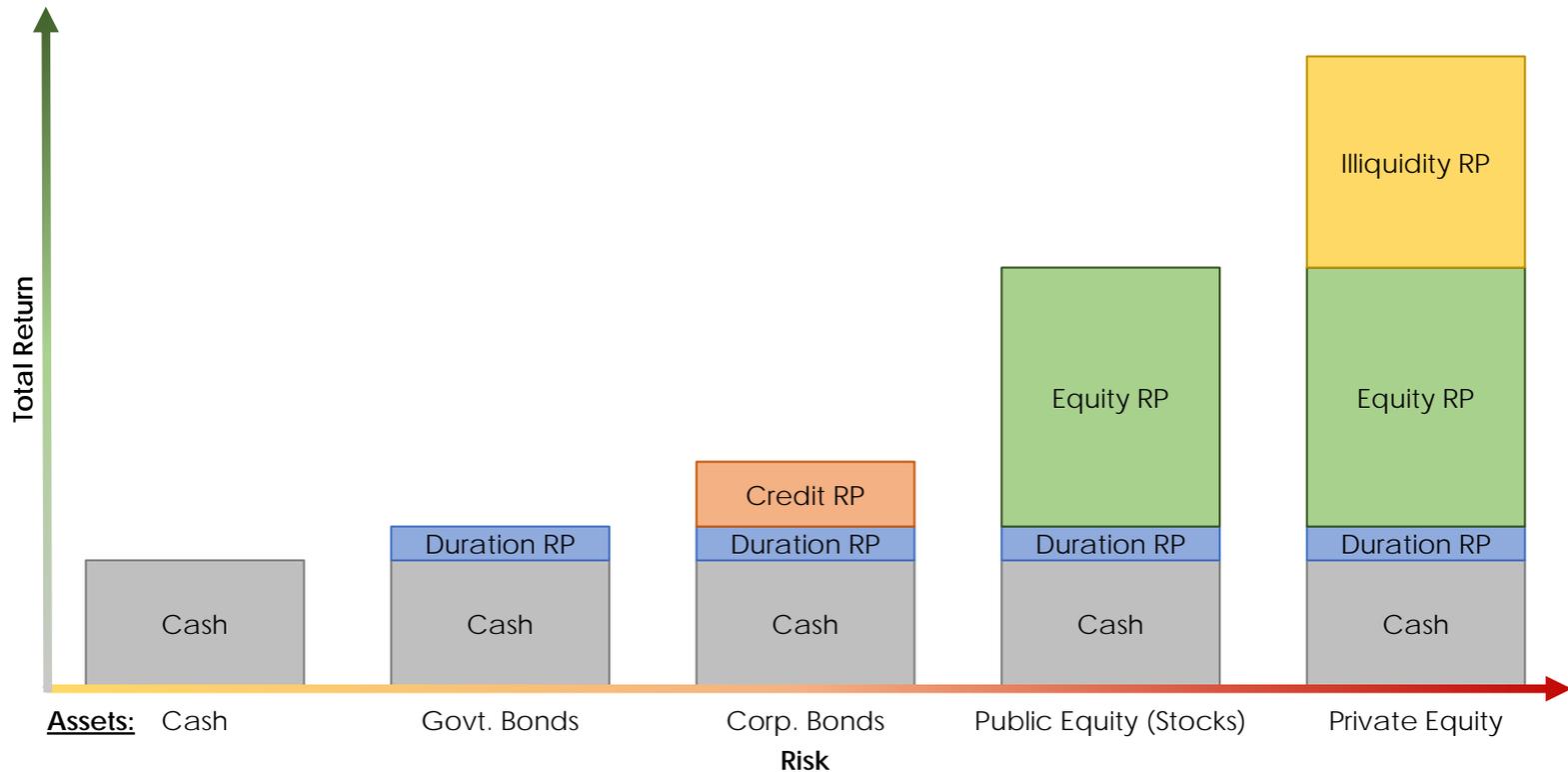


Traditional Risk Premiums

- There are four traditional risk premiums that dominate most investors portfolios
 - 1. Duration Risk Premium**
 - Example: 10-year government bond return – cash return = Duration RP
 - 2. Credit Risk Premium**
 - Example: Nike 10-year bond return – 10-year government bond return = Credit RP
 - 3. Equity Risk Premium**
 - Example: S&P 500 return – cash return = Equity RP
 - 4. Illiquidity Risk Premium**
 - Example: Private Equity Return – S&P 500 Return = Illiquidity RP
- These are also called “traditional” because they are obtainable via long-only investing

Mapping Traditional Risk Premiums

Mapping Traditional Risk Premiums¹



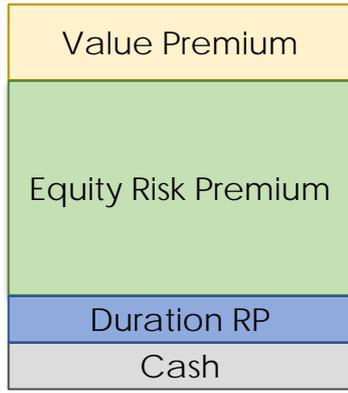
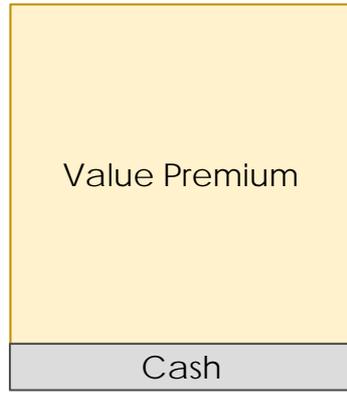
- Referred to as “traditional” because they are obtained via long-only investing

¹Adapted from Unigestion Research Paper: Alternative risk premia investing: from theory to practice, Exhibit 1
<https://www.unigestion.com/app/uploads/2017/02/VF-Alternative-risk-premia-investing-from-theory-to-practice.pdf>

What is an Alternative Risk Premium?

- Alternative Risk Premiums = not Traditional Risk Premiums!
 - Ex. Value Risk Premium = the risk premium that investors receive by buying value stocks/assets instead of growth stocks/assets
- Most Alternative Risk Premiums are obtainable via tilting a long-only portfolio or by using long-short portfolio constructs
 - Tilting example = in an equity portfolio, buying only value stocks
 - Long-short example = buying value stocks and selling short growth stocks
- Alternative Risk Premiums are commonly present across the four major asset classes (equities, bonds, currencies, and commodities)

Traditional → Alternative Risk Premia

	Complexity →		
Return Attribution			
Strategy:	Core Market Index	Value Investing (Tilting)	Value Risk Premium
Implementation:			
Index Example:	MSCI ACWI IMI	MSCI ACWI IMI Value	N/A
Description:	Buying the total global stock market index (passive investing)	Buying only "cheap" (value) stocks OR buying more "cheap" stocks than "expensive" stocks	Buying "cheap" stocks and selling (shorting) "expensive" stocks, in equal amounts
Other Terms:	Passive, market cap, core, etc.	Fundamental Indexing, Factor Investing, Smart Beta, etc.	Style premia, alternative risk premia, etc.
Return Attribution	Mostly driven by Equity Risk Premium	Slight contribution from Value Premium but still mostly driven by the Equity Risk Premium	Mostly driven by Value Risk Premium

Risk Premia Exposure: Tilting versus Long-Short

- Tilting a portfolio to a risk premium is effective but has its limitations
 - Pros
 - Marginally increases the expected return of the investment versus non-tilting
 - Cons
 - Maintains exposure to the Traditional Risk Premium
 - Limits the impact of the Alternative Risk Premium due to long-only restraint
- Capturing Alternative Risk Premiums in a long-short construct is a more robust approach
 - Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets
 - The long-short (market-neutral) construct allows for an element of leverage to enhance the overall return of the strategy

Sustainability of Risk Premiums

- Constant debate amongst academics/practitioners as to whether premiums are risk-based or behavioral-based
 - i.e., does the market reward investors because the activity is risky or because the market makes a mistake?
- The more important idea is whether this will continue
 - Risk premiums are more likely to continue but behavior biases may as well
- As such, the “bad times” may be when the risk is evident or when the behavioral issue is corrected
 - Example: Value stocks
 - Value = distress risk; value companies are inherently more risky (risk-based)
 - Value = investors overpay for growth; thus, value stocks are undervalued (behavioral-based)

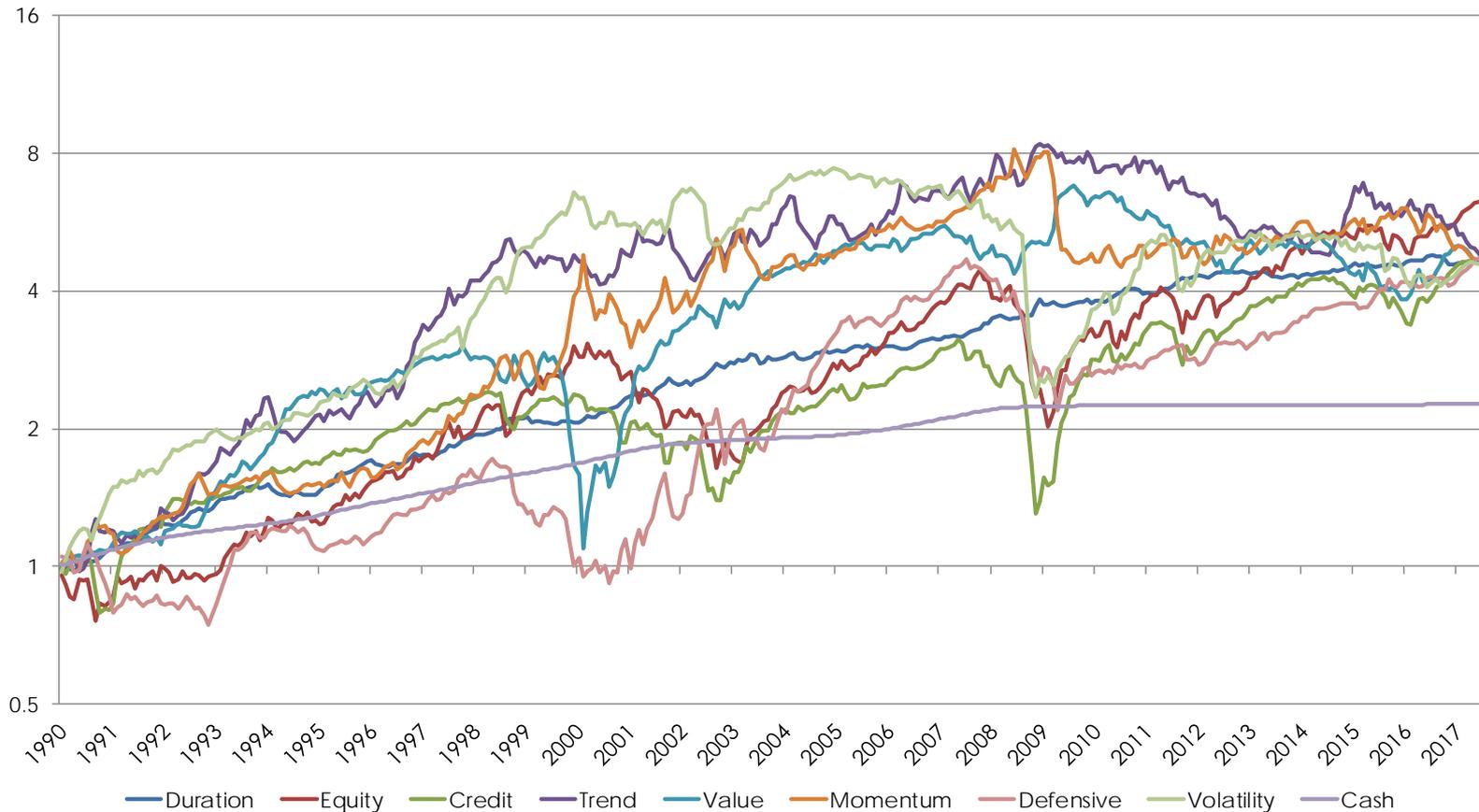
What are Common Risk Premiums?

Traditional Risk Premiums	Alternative Risk Premiums	
<p><u>Equity</u></p> <ul style="list-style-type: none"> ○ Ownership in a company <p><u>Duration / Interest Rate Risk</u></p> <ul style="list-style-type: none"> ○ Exposure to interest rate movements <p><u>Credit</u></p> <ul style="list-style-type: none"> ○ Lending money to a company as opposed to the government <p><u>Illiquidity</u></p> <ul style="list-style-type: none"> ○ Lending money to a company as opposed to the government 	<p><u>Value</u></p> <ul style="list-style-type: none"> ○ Long “cheap” assets and short “expensive” assets <p><u>Momentum</u></p> <ul style="list-style-type: none"> ○ Buying recent “winners” and selling recent “losers” <p><u>Trend</u></p> <ul style="list-style-type: none"> ○ Similar to momentum, but “winning” and “losing” is relative to each assets’ own history 	<p><u>Carry</u></p> <ul style="list-style-type: none"> ○ Long high-yielding assets and short low-yielding assets <p><u>Defensive</u></p> <ul style="list-style-type: none"> ○ Long lower risk assets and short higher risk assets <p><u>Volatility</u></p> <ul style="list-style-type: none"> ○ Selling volatility (i.e., losing when volatility rises)

Each of these premiums should be measured in a naive way

Performance of Common Risk Premiums

Growth of \$1 - Various Risk Premium Portfolios*



Source: PCA, Bloomberg, Barclays, S&P, AQR, Merrill Lynch, Credit Suisse, MPI Stylus

* See Appendix for specific factor descriptions. Factor portfolios include cash returns.

Duration and Equity represent the actual histories of the BB Government and MSCI ACWI GD indices.

The histories of the Alternative Risk Premiums have been altered to reflect more conservative returns. Additionally, their respective volatilities have been modified to roughly match Global Equity over this time period ($\approx 15\%$).

Correlations Amongst Common Risk Premiums

Historical (1/1990-6/2017) Monthly Correlations

	Duration	Equity	Credit	Trend	Value	Momentum	Defensive
Equity	-0.09						
Credit	-0.43	0.61					
Trend	0.30	-0.12	-0.27				
Value	-0.11	0.02	0.13	-0.17			
Momentum	0.19	-0.22	-0.30	0.41	-0.68		
Defensive	0.14	-0.22	-0.09	0.17	0.06	0.26	
Volatility	-0.14	0.56	0.56	-0.07	-0.05	-0.02	-0.08

- The majority of the risk premiums are complementary to one another
- *Equity, Credit, and Volatility* move similarly with one another (as expected)
- *Trend and Momentum* move similarly with one another (as expected)

Green = correlations less than 0.1

Yellow = correlations between 0.1 and 0.4

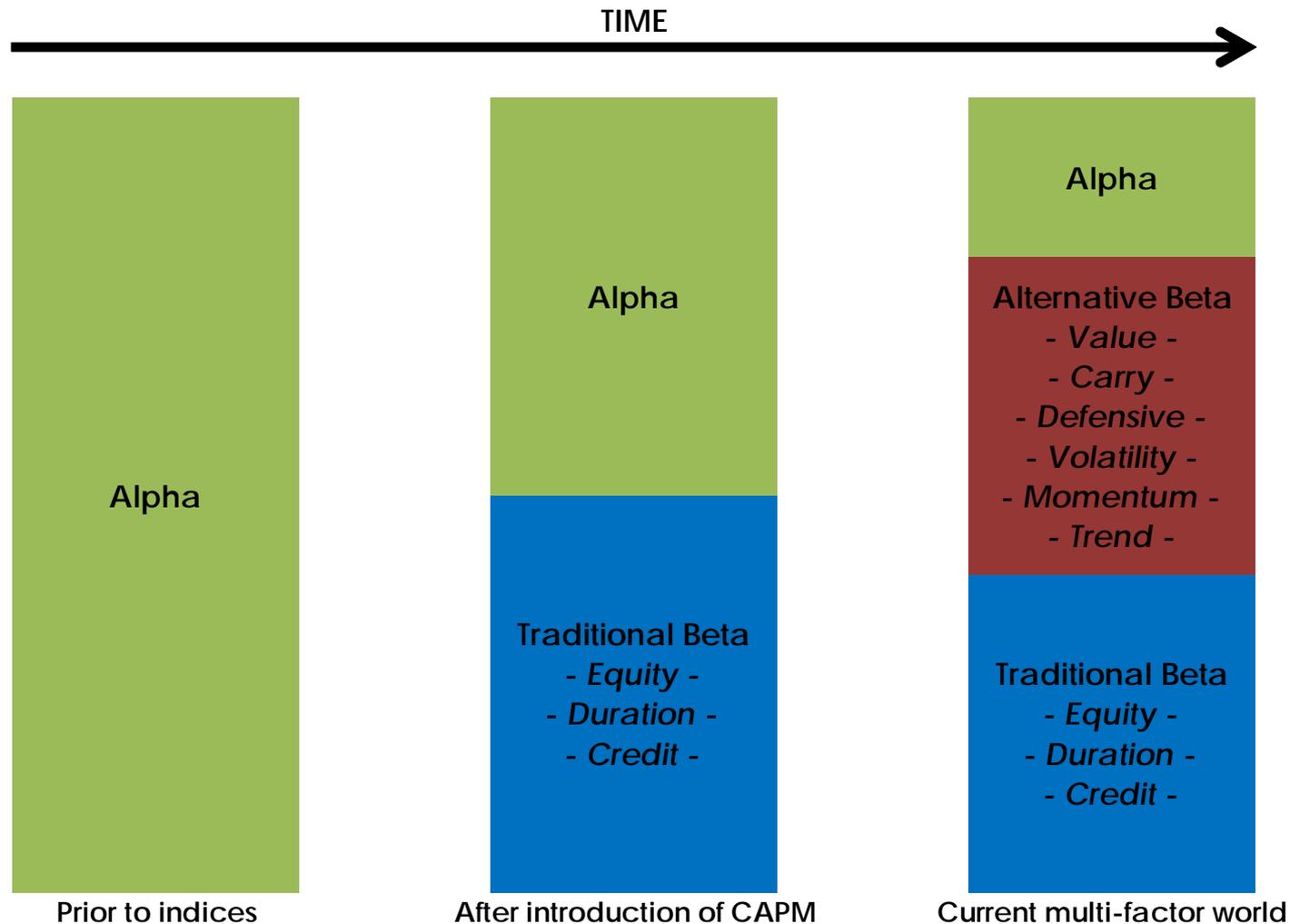
Red = correlations above 0.4

Evolution of Risk Premia

Evolution of Alpha into Beta (aka Risk Premia)

- Overtime, “alpha” has continued to morph into “beta”
 - Alpha = risk-adjusted excess return
- This concept indicates that active manager “skill” may be merely due to exposure to other risk premiums
 - e.g., much of Warren Buffett’s success is due to *Value & Defensive* risk premia
- 1st portfolio consideration = exposure to risk premiums
2nd portfolio consideration = pursuit of alpha
- The key to designing a strategic allocation (i.e., investment portfolio) is to obtain exposures to as many economic, unrelated risk premiums as possible

Evolution of Alpha into Beta (aka Risk Premia)



Risk Premiums in a Macroeconomic/Functional Framework

- Rather than focusing on lower-level specifics, risk premiums can be grouped based on their macroeconomic drivers
- Macroeconomic/functional framework is more holistic & conceptual
 - Similar to the concept of “correlations moving to 1”
 - i.e., very difficult to predict how premiums will work in a normal market but easier to predict how they will work in an economic crisis

Economic Growth

- Equity -
- Credit -
- Volatility -
- Carry -
- Illiquidity -

Interest Rates / Diversifiers

- Duration -
- Trend -
- Defensive -

Dynamic / Variable

- Value -
- Momentum -

Alternative Risk Premia Strategies

- Alternative Risk Premia strategies now exist as standalone products
- These strategies provide robust/pure exposures to risk premiums that many institutional investors do not currently have
 - If they do have them, they are often hidden in expensive hedge funds
- These strategies typically combine three to six alternative risk premia across a global universe of investors
 - Ex. *Harvest Value*, *Momentum*, and *Carry* across global equity, global bonds, currencies, and commodities
- An aggregate fee near 1% is standard (this will likely decrease overtime as more firms enter the marketplace)

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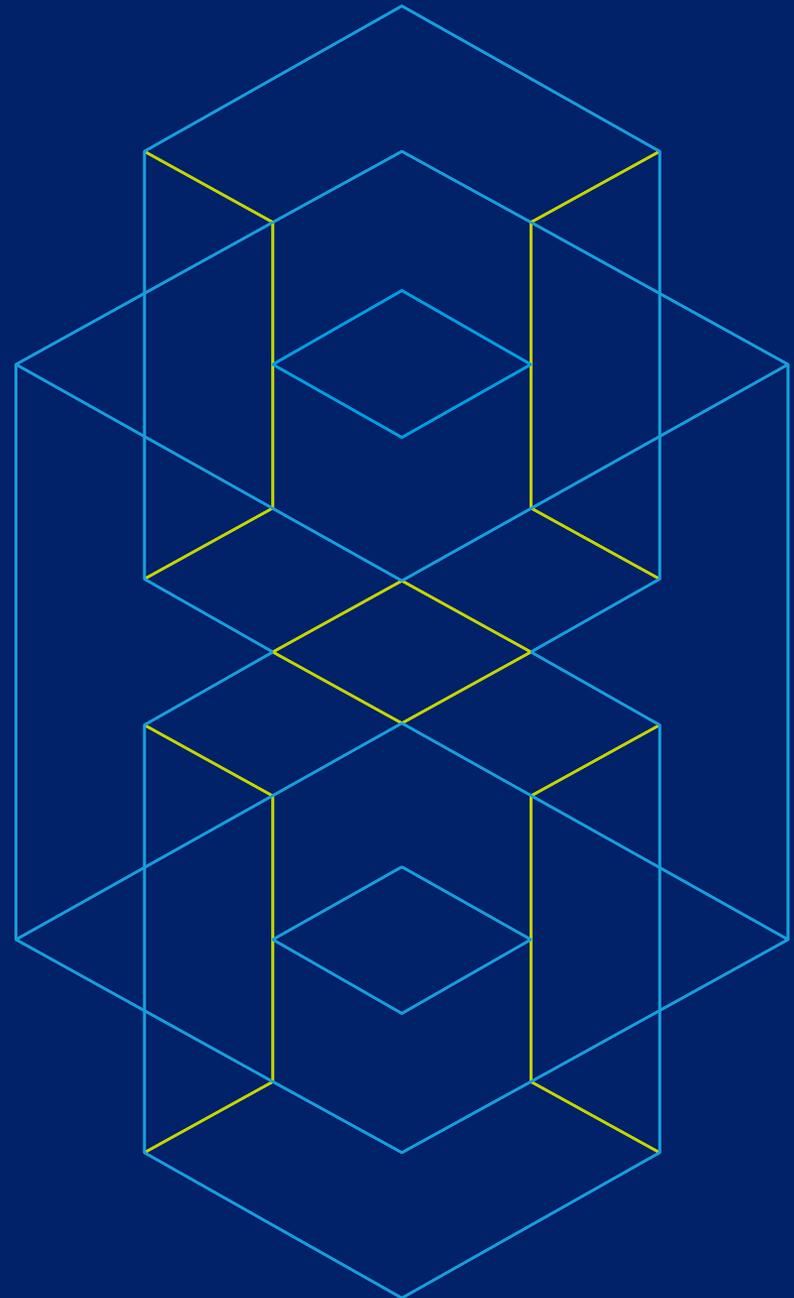
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AQR Liquid Enhanced Alternative Premia (LEAP)

Prepared exclusively for the City of
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System

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March 28, 2018



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Principal, Client Strategies

Jeremy leads AQR's North America institutional team within Business Development, working with and advising clients throughout the United States and Canada. Prior to AQR, Jeremy was a vice president of Allstate Financial and a consultant with Mercer Investment Consulting, advising pension plans on asset allocation and investment-manager selection. He earned an A.B. in politics from Princeton University, graduating cum laude, and an M.B.A. with high honors from the University of Chicago's Graduate School of Business, where he was named a Siebel Scholar as one of the top 25 M.B.A. students annually. He is a CFA charterholder.



Joey Lee

Managing Director, Client Strategies

Joey is a senior member of AQR's Business Development team, collaborating with institutional investors throughout the Western and Southwestern U.S. In this role, she is responsible for identifying and developing relationships with prospective investors and communicating AQR's investment philosophy and process across a range of traditional and alternative investment strategies. Prior to AQR, Joey worked in the White House as an aide in the Executive Office of the President, helping senior officials with communications and strategic planning. She earned a B.A., with distinction, in political science from Yale University, where she was a recipient of the Yale University–New Asia College Undergraduate Exchange fellowship and the Academic All-Ivy award, and was a four-year starter on the women's volleyball team; she earned an M.B.A. with concentrations in analytic finance and economics from the University of Chicago's Graduate School of Business, where she received the Lehman Brothers Fellowship.



Our Firm

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At a Glance

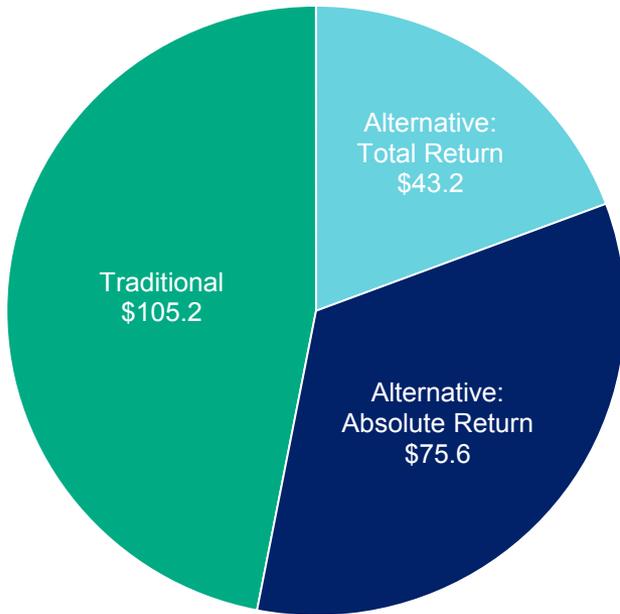
- AQR takes a systematic, research-driven approach to managing alternative and traditional strategies
- We apply quantitative tools to process fundamental information and manage risk
- Our clients include institutional investors, such as pension funds, defined contribution plans, insurance companies, endowments, foundations, family offices and sovereign wealth funds, as well as RIAs, private banks and financial advisors
- The firm has 36 principals and 900 employees; over half of employees hold advanced degrees
- AQR is based in Greenwich, Connecticut, with offices in Boston, Chicago, Hong Kong, London, Los Angeles, and Sydney
- Approximately \$224 billion in assets under management as of December 31, 2017*



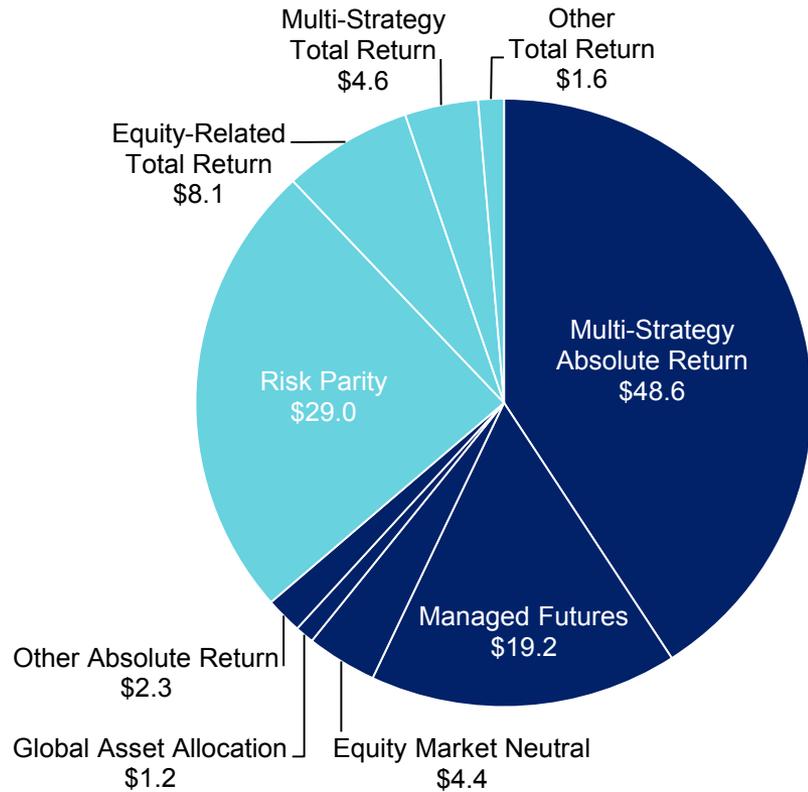
*Approximate as of 12/31/2017, includes assets managed by AQR and its advisory affiliates.

Assets Under Management

Total Assets
\$224 Billion*



Alternative Investment Assets
\$119 Billion*



*Approximate as of 12/31/2017, includes assets managed by AQR and its advisory affiliates.

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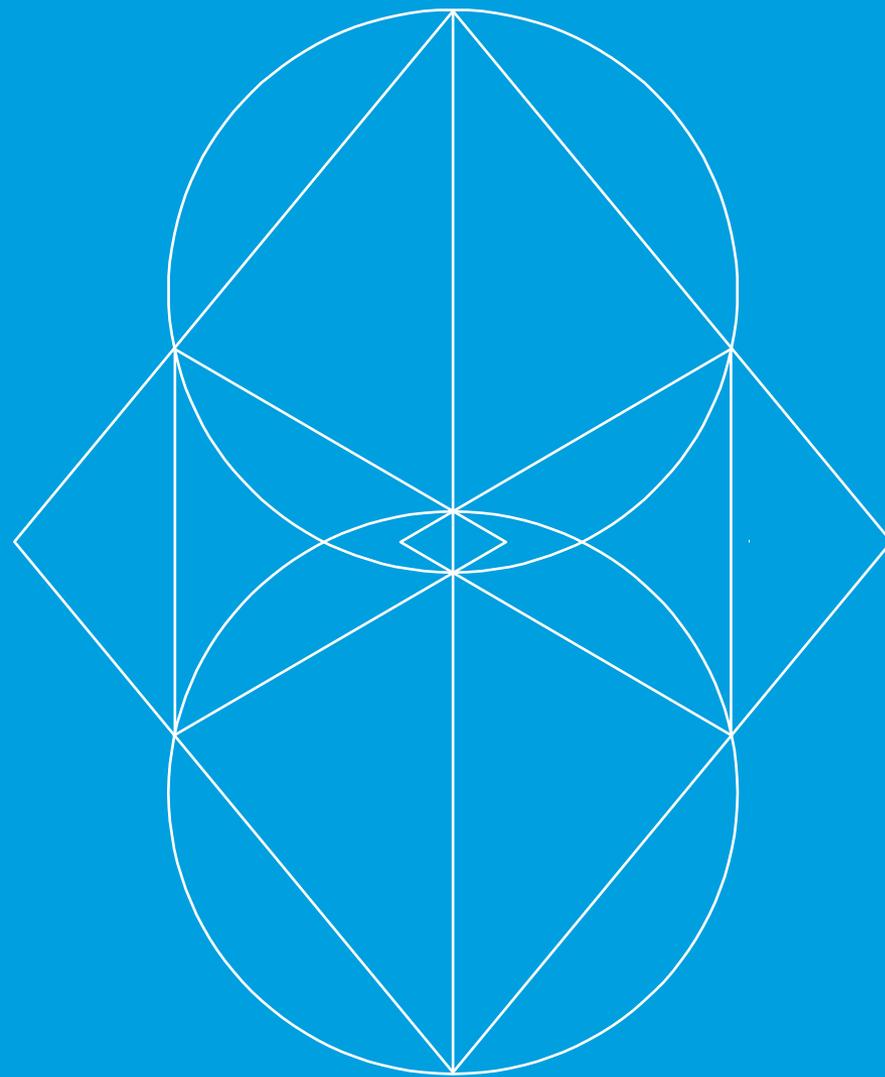
Lars Nielsen
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Front Office Technology

Neal Pawar
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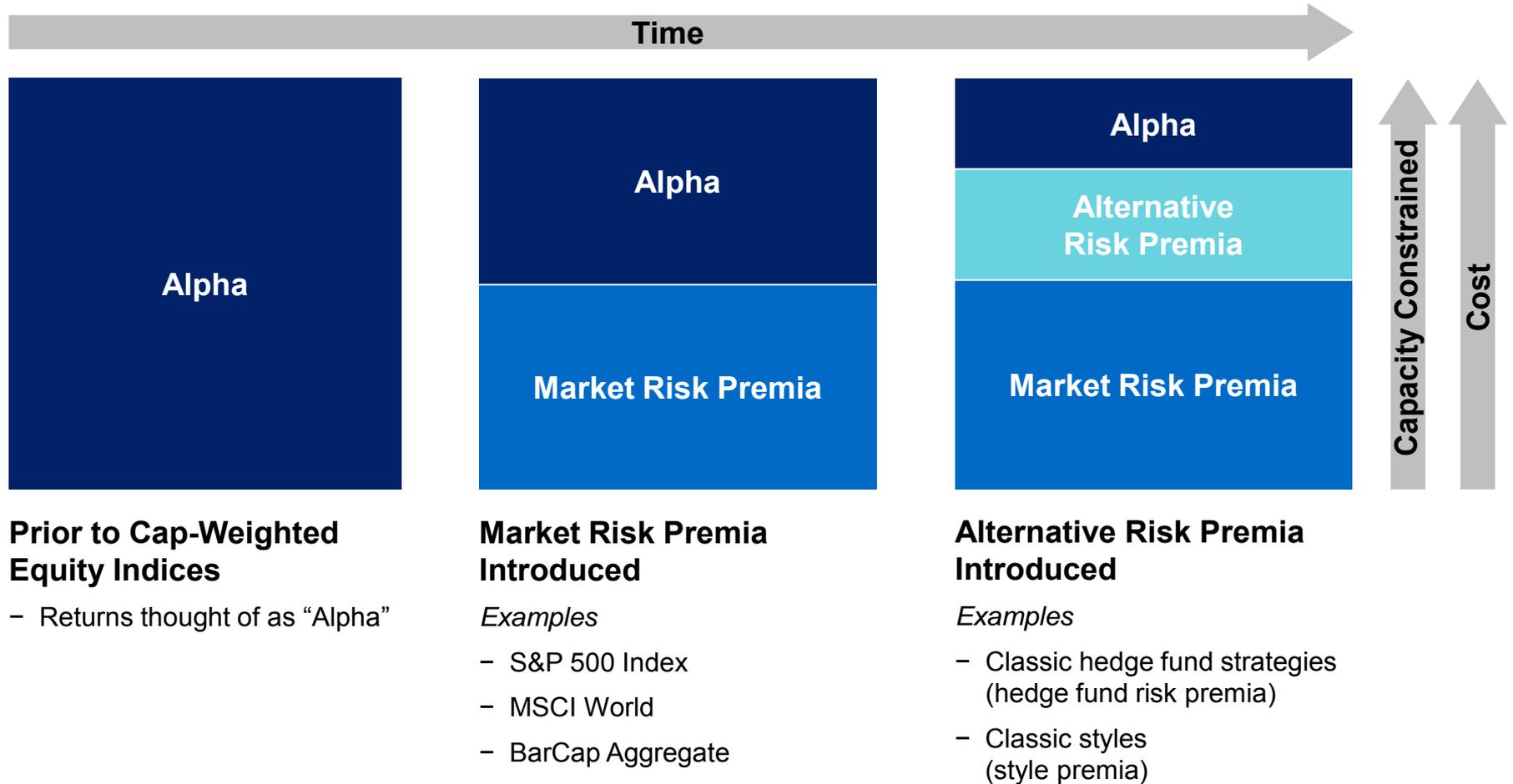


Introduction to Alternative Premia



Introduction to Alternative Premia

Evolution of return character



Source: AQR. For illustrative purposes only. Alternative risk premia are also sometimes referred to as exotic or smart betas. BarCap Aggregate is the Barclays Capital Aggregate Bond Index.

Liquid Enhanced Alternative Premia

Focusing on broad alternative premia

These alternative premia have historically generated positive long-run returns across a variety of asset groups.

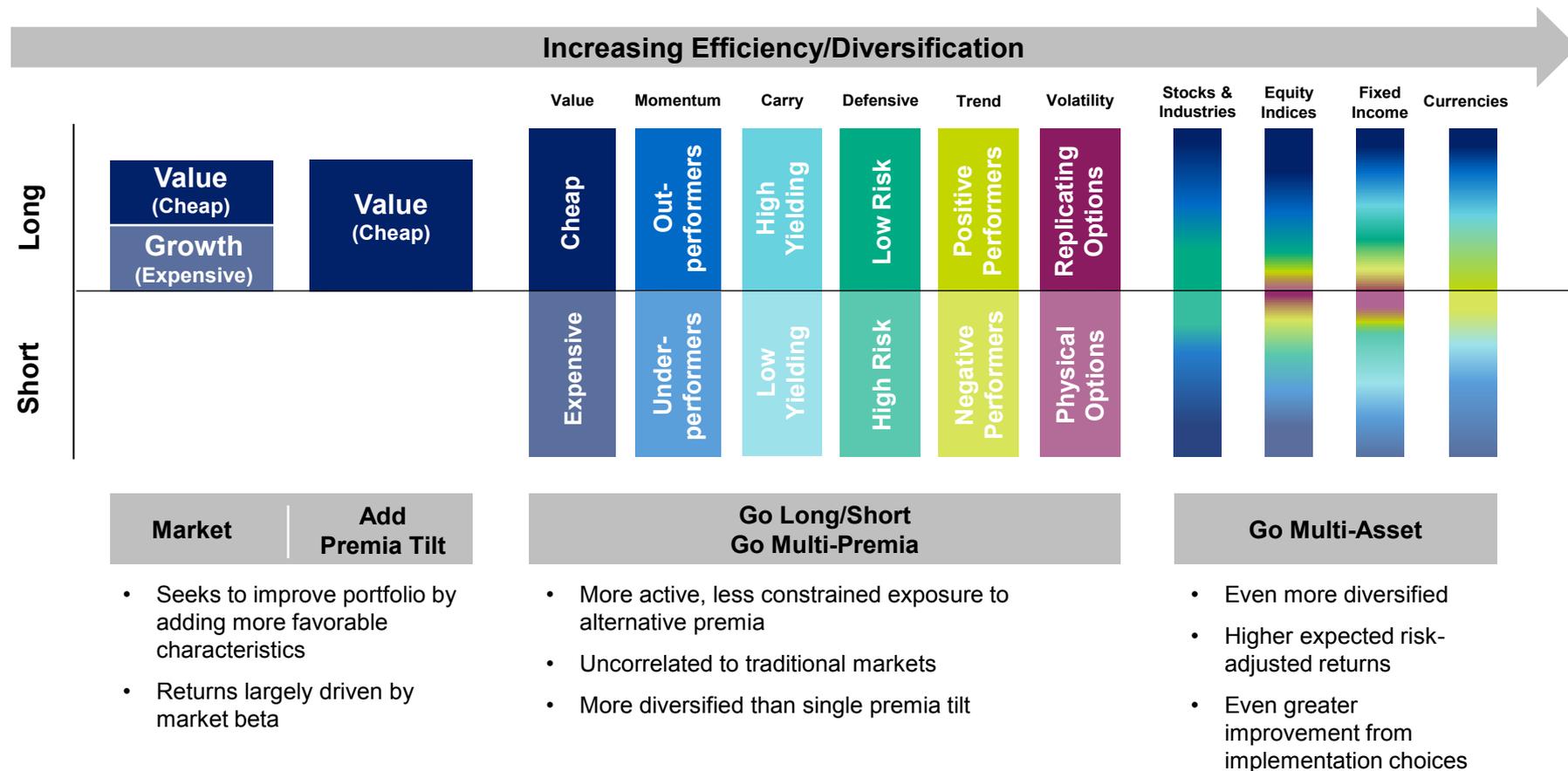
Value	Relatively cheap assets tend to outperform relatively expensive ones	Characteristics of Alternative Premia: Persistent Long-term evidence supported by economic intuition Pervasive Exist broadly across regions and asset groups Liquid Can be captured by trading liquid instruments Dynamic Limited static exposure to any asset or market
Momentum	An asset's recent <i>relative</i> performance tends to continue in the near future	
Carry	Higher-yielding assets tend to provide higher returns than lower-yielding assets	
Defensive	Lower-risk and higher-quality assets tend to generate higher risk-adjusted returns	
Trend	An asset's recent performance tends to continue in the near future	
Volatility	Options tend to be richly priced due to financial insurance premium	



Accessing Alternative Premia

Increased efficiency in capturing alternative premia

Alternative premia investing exists along a spectrum



AQR's Long History of Alternative Risk Premia Research

2015	Asness, Frazzini, Israel and Moskowitz summarize what we know and dispel myths about value in "Fact, Fiction, and Value Investing"
	Israelov and Nielsen investigate the relationship between option richness and volatility in "Still Not Cheap: Portfolio Protection in Calm Markets"
2014	Asness, Frazzini, Israel, Moskowitz and Pedersen resurrect the size premium in "Size Matters, if You Control Your Junk"
	Ilmanen, Maloney and Ross explore the macro sensitivities of styles in "Exploring Macroeconomic Sensitivities"
	Israelov and Nielsen review the underlying risk and returns of covered call strategies in "Cover Calls: Eight Myths and One Fact"
2013	Asness, Frazzini, Israel and Moskowitz summarize what we know and dispel myths about momentum in "Fact, Fiction, and Momentum Investing"
	Hurst, Hua Ooi and Pedersen evaluate over 100 years of return data on trend following in "A Century of Evidence on Trend-Following Investing"
2012	Asness, Frazzini and Pedersen examine the quality factor in "Quality Minus Junk"
	Frazzini, Israel and Moskowitz evaluate trading costs in "Trading Costs of Asset Pricing Anomalies"
	Koijen, Moskowitz, Pedersen and Vrugt document pervasiveness of carry strategies in "Carry"
	Frazzini and Pedersen demonstrate pervasiveness of low-risk style in "Betting Against Beta"
	Asness and Frazzini challenge the traditional construction of the value premium in "The Devil in HML's Details"
2010	Israel and Moskowitz show robustness of equity styles in "How Tax Efficient Are Equity Styles" and "The Role of Shorting, Firm Size and Time on Market Anomalies"
	Israel, Ilmanen and Moskowitz combine four styles in multiple contexts in "Investing with Style"
2009	Asness, Frazzini and Pedersen examine applications of the low-risk style in "Leverage Aversion and Risk Parity"
	Ilmanen presents long-term evidence for major strategy styles in his book, <i>Expected Returns</i>
2008	Berger, Israel and Moskowitz describe potential role for momentum in "The Case for Momentum Investing"
	Gârleanu, Pedersen and Poteshman explore demand-pressure effects on option prices in "Demand-Based Option Pricing"
2006	Asness, Moskowitz and Pedersen demonstrate the pervasiveness of value and momentum in "Value and Momentum Everywhere"
	Brunnermeier, Nagel and Pedersen analyze risks to carry strategies in "Carry Trades and Currency Crashes"
1998	Frazzini investigates behavioral explanations for momentum in "The Disposition Effect and Under-Reaction to News"
	Moskowitz and Grinblatt document the momentum effect in industries in "Do Industries Explain Momentum?"
1994	Asness documents case for two major styles in "The Interaction of Value and Momentum Strategies"
	Asness shows the implications for a combined value/momentum approach in his Ph.D. dissertation

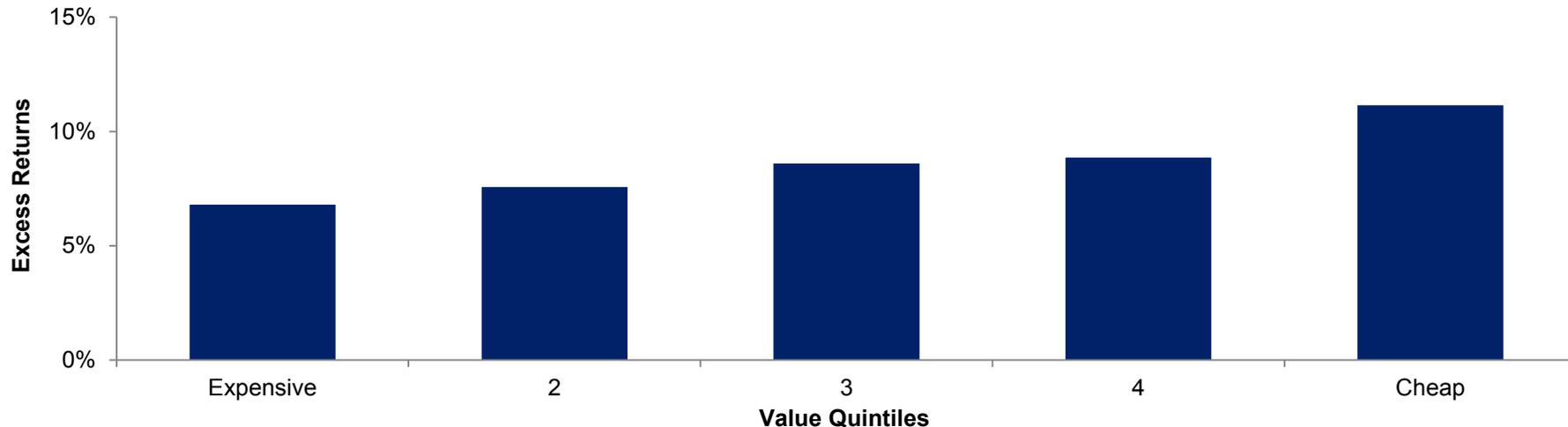


Value

Intuition and academic evidence

Annualized Return of U.S. Stocks Sorted by Book-to-Market

1951 – 2016



Intuition

- Value securities are “beaten up,” distressed, “unglamorous” or less-favored by investors
- Investors may overextrapolate growth prospects, resulting in overpricing of growth/glamour stocks
- Value strategies tend to perform poorly when liquidity dries up and are short a structural break, and value assets may have greater default risk and tend to co-move

Stocks

Equity Indices

Fixed Income

Currencies



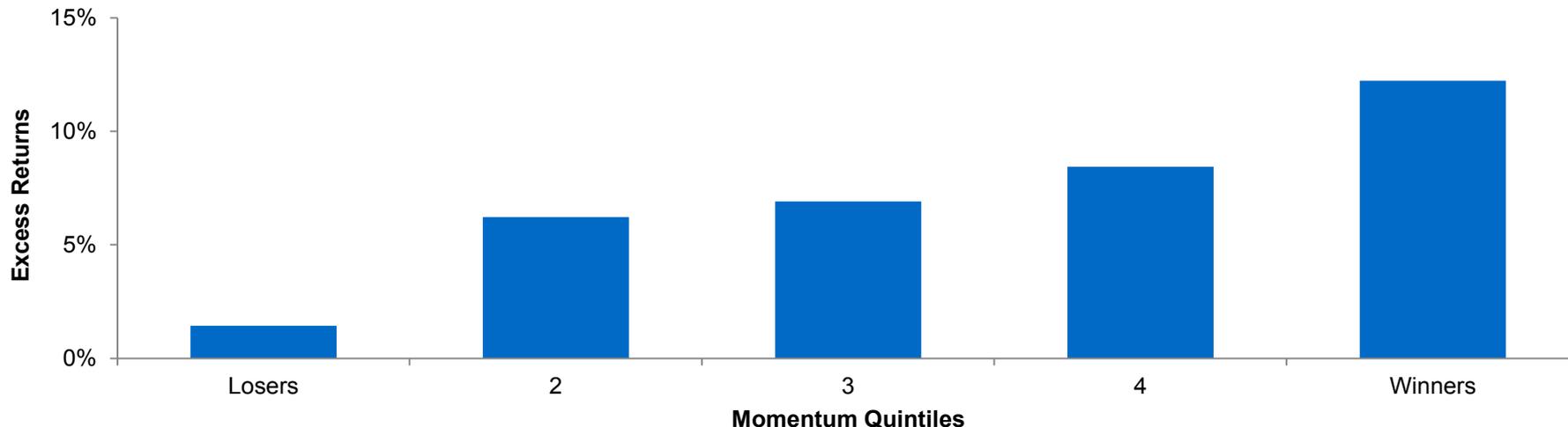
Sources: AQR and Kenneth R. French Data Library. Portfolios from Kenneth R. French Data Library formed based on book-to-market, quintiles are equal-weighted; returns are excess of cash. Returns sourced from “Portfolios Formed on Book-to-Market.” See Kenneth R. French Data Library for further details. These are not the returns of an actual portfolio AQR manages and are for illustrative purposes only. Past performance is not a guarantee of future performance.

Momentum

Intuition and academic evidence

Annualized Return of U.S. Stocks Sorted by Price Momentum

1951 – 2016



Intuition

- Securities or investments that have performed relatively well (or poorly) over the past year tend to continue to perform well (or poorly) over the short term
- May be explained by investor initial underreaction to news and subsequent herding/continued overreaction, and other behavioral biases like the disposition effect
- Momentum securities tend to move together, which may denote a common risk

Stocks

Equity Indices

Fixed Income

Currencies



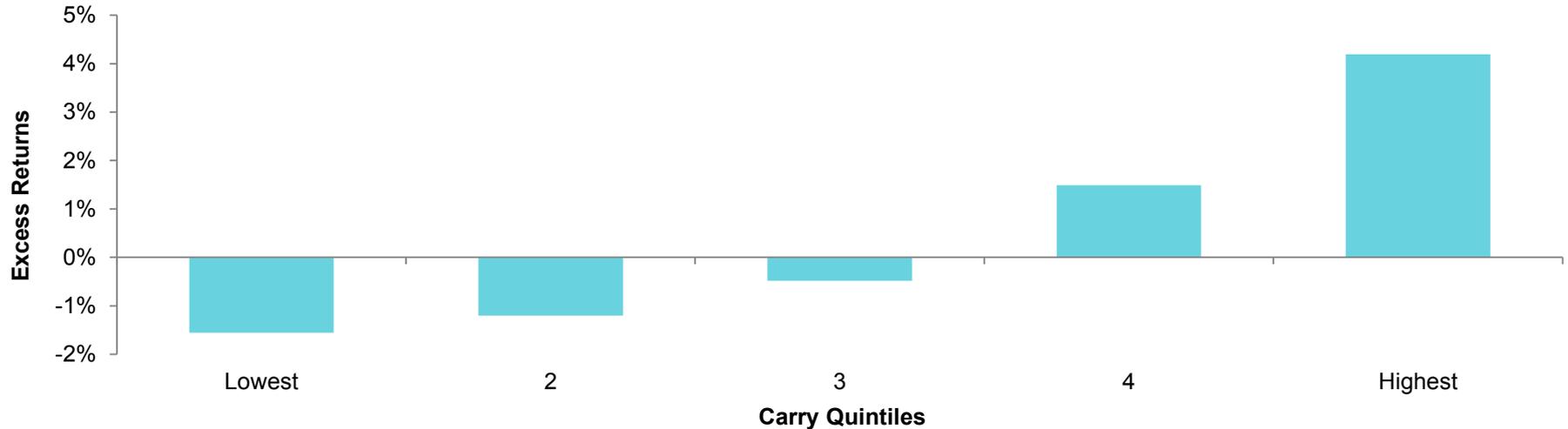
Source: AQR and Kenneth R. French Data Library. Portfolios from Kenneth R. French Data Library formed based on 12 month momentum, skipping most recent month; quintiles are equal-weighted; returns are excess of cash. Returns sourced from "10 Portfolios Formed on Momentum." See Kenneth R. French Data Library for further details. These are not the returns of an actual portfolio AQR manages and are for illustrative purposes only. Past performance is not a guarantee of future performance.

Carry

Intuition and academic evidence

Annualized Return of G-10 Currencies Sorted by Carry

1978 – 2016



Intuition

- High (or low) yields may indicate excess demand for (or supply of) capital
- In currencies, for example, expected capital offsets (appreciation/depreciation) have not materialized, possibly due to inefficiencies of non-profit-seeking participants such as central banks
- May be compensation for negative skewness and losses in “bad times,” especially currencies

Stocks

Equity Indices

Fixed Income

Currencies



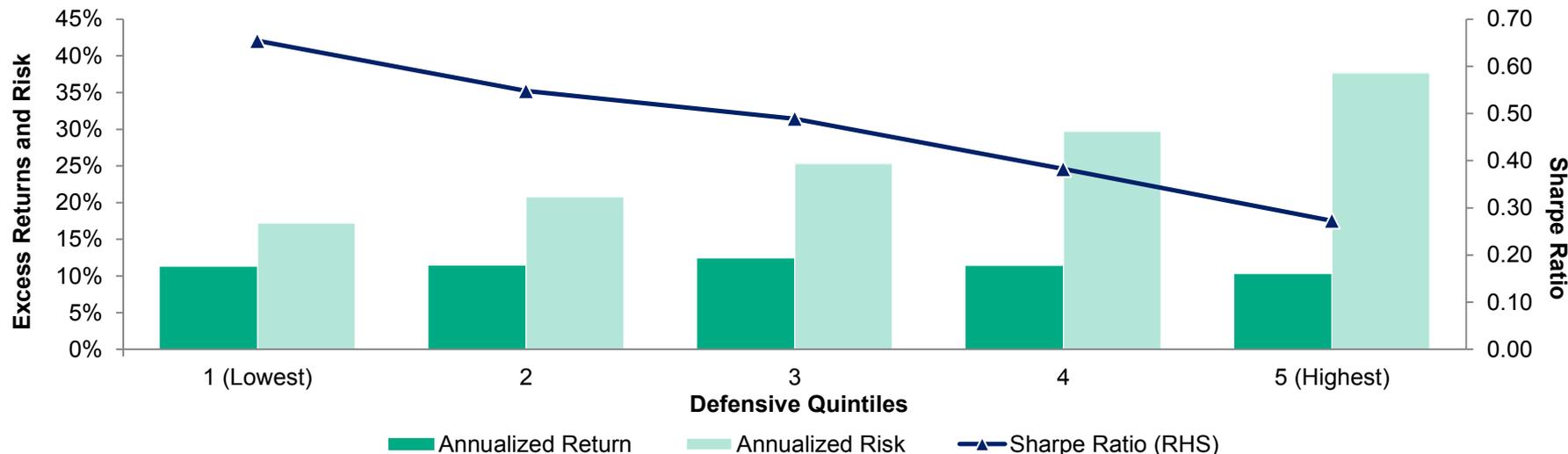
Source: AQR. Portfolios are formed by sorting G-10 currencies on short-term interest rates and dividing the currencies into quintile portfolios; returns are excess of cash. Quintile portfolio returns are equal-weighted returns of the currencies in that portfolio. These are not the returns of an actual portfolio AQR manages and are for illustrative purposes only. Please read important disclosures in the Appendix.

Defensive

Intuition and academic evidence

Annualized Risk, Return and Sharpe Ratio of U.S. Stocks Sorted by Beta

1951 – 2016



Intuition

- Leverage aversion may explain why low-risk assets offer higher risk-adjusted returns
- Unlevered investors typically seek high-beta assets for more “bang for the buck”
- Investors tend to overpay for “lottery” characteristics

Stocks

Equity Indices

Fixed Income

Currencies



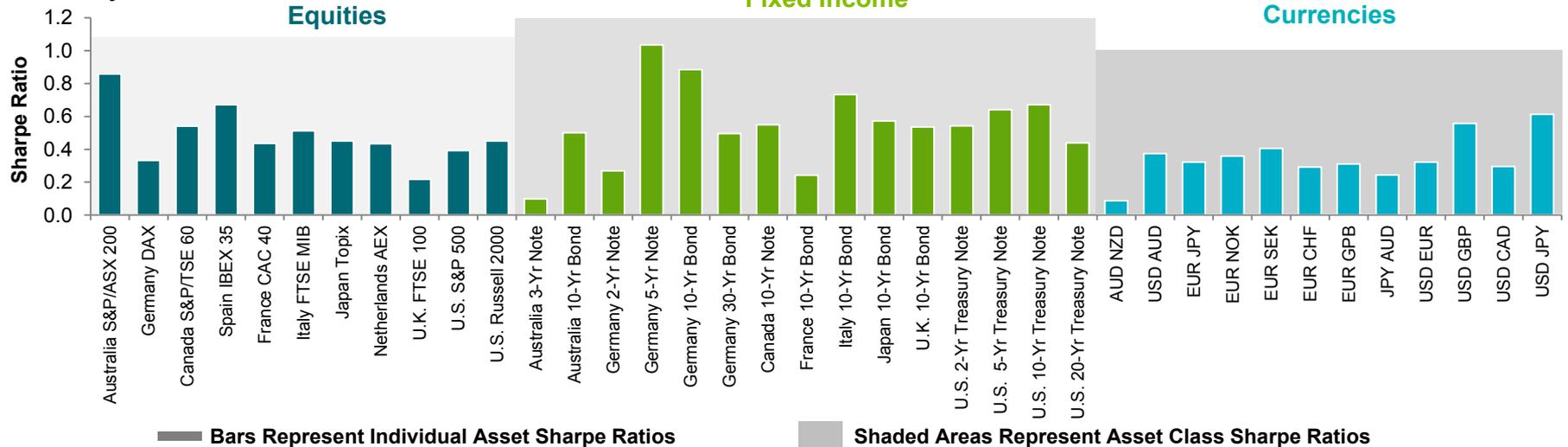
Source: AQR. U.S. Equities is the Russell 3000. Prior to 1980, U.S. Equities is represented by the CRSP U.S. Index. Portfolios are formed by sorting stocks on realized market beta and dividing the stocks into quintile portfolios; returns are excess of cash. Quintile portfolio returns are equal-weighted returns of the stocks in that portfolio. These are not the returns of an actual portfolio AQR manages and are for illustrative purposes only. Please read important disclosures in the Appendix.

Trend

Intuition and empirical evidence

Trend-Following Sharpe Ratios for Individual Assets and Asset Classes

January 1880 – December 2016



Intuition

- Investor behavioral biases and non-profit-seeking market participants may explain why trends exist
- Slow adjustment to news, anchoring to recent prices, portfolio rebalancing, and central bank actions can cause initial underreactions
- Herding, performance chasing and hedging/risk management can exacerbate trends past fundamentals

Stocks

Equity Indices

Fixed Income

Currencies



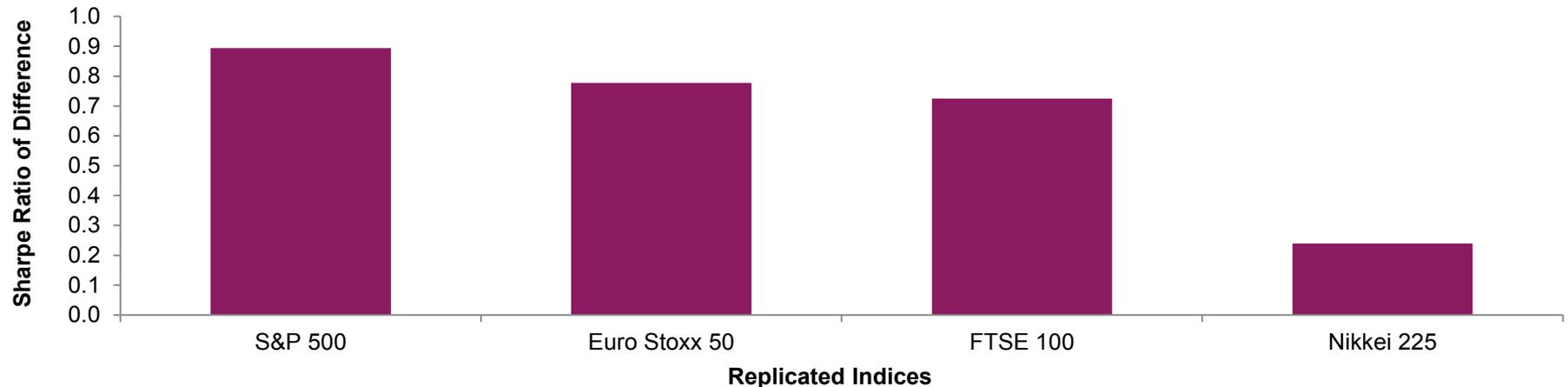
Source: AQR. The Sharpe ratios are based on the Hypothetical Trend-Following Strategy backtest, gross of fees and estimated transaction costs. The 3-Month T-Bill is the risk-free rate used to derive the Sharpe ratio. This analysis is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Markets considered only where data existed during the time period. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix. Sharpe ratios are based on the average annual return and volatility for the full period that asset class data is available.

Volatility

Intuition and empirical evidence

Hypothetical Average Volatility Risk Premium Sharpe Ratios: Difference between Replicating & Physical Options

May 1996 – December 2016



Intuition

- Options may provide financial insurance
- Buyers seek financial insurance and often overestimate the likelihood of tail events
- Sellers need to be enticed to underwrite this financial insurance, especially since losses may be correlated to other parts of portfolio in bad times
- We expect options to be richly priced and sellers to profit on average

Stocks

Equity Indices

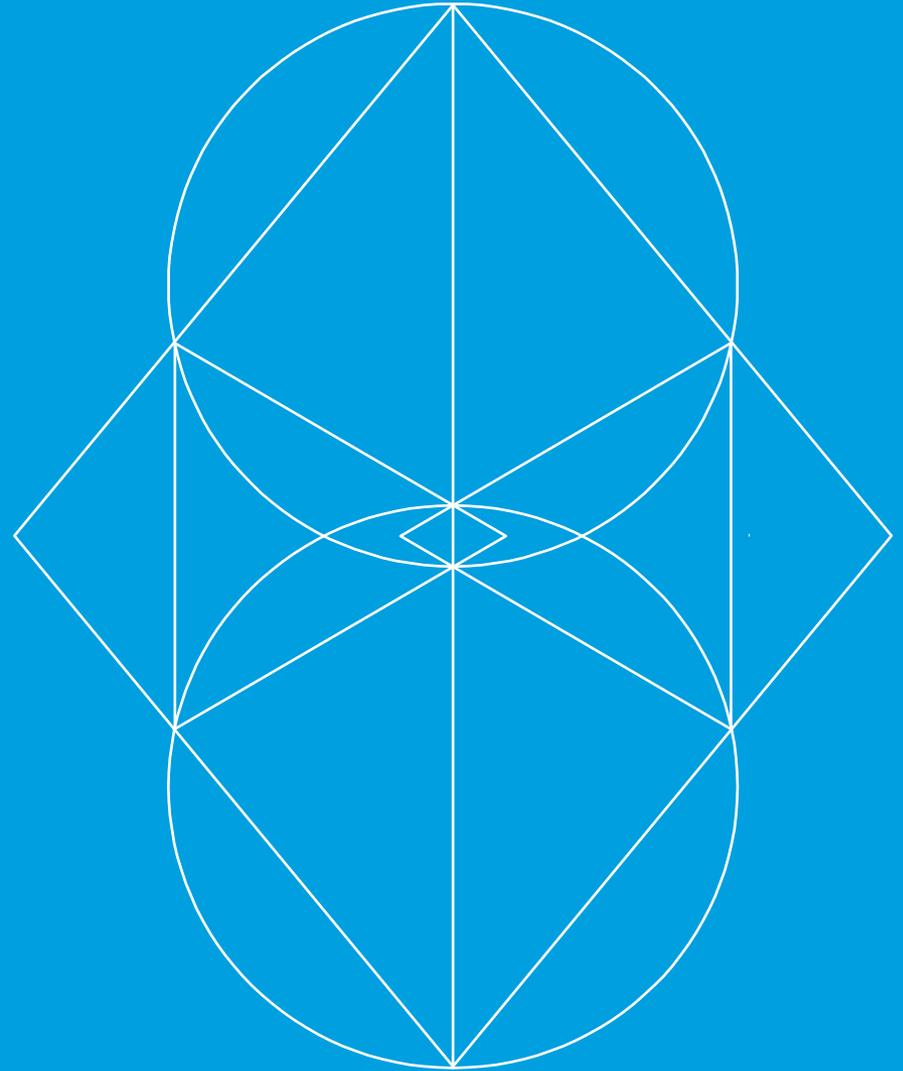
Fixed Income

Currencies



Source: AQR. Includes data for 4 indices: S&P 500 Index (May 1996-December 2015), Eurostoxx 50 Index (January 2002-December 2015), FTSE 100 Index (January 2002-December 2015), and Nikkei 225 Index (July 2004-December 2015). Returns were created by selling a diversified basket of options across multiple strikes and with less than or equal to 2 months to expiry, and using equity index futures to replicate the options' equity exposure. Options were sized to target a constant 5-7% stress loss. The risk-free rate used is US 3-month LIBOR. For illustrative purposes only. Please read important disclosures in the Appendix. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

AQR Liquid Enhanced Alternative Premia



Objectives of the AQR LEAP Strategy

The AQR Liquid Enhanced Alternative Premia Strategy seeks to deliver efficient, well-diversified exposure to six long/short alternative premia across four asset groups.

Objectives

Achieve a long-term net Sharpe ratio of 0.7 over a full market cycle

Combining multiple uncorrelated sources of return brings potential diversification benefits

Target annualized volatility at various levels (ranging up to 12%)

Moderately levered, capital-efficient exposure

Deliver diversifying returns to traditional asset classes

All strategies are long/short and designed to be market neutral on average

Maintain attractive liquidity characteristics

We seek to omit illiquidity premia and less-liquid assets



Overview of Alternative Premia and Asset Groups

Harvest alternative premia across multiple asset groups

This strategy implements 6 different alternative premia across 4 asset classes, resulting in 18 distinct potential sources of return. Certain alternative premia are not applicable across all asset classes.

	Value	Momentum	Carry	Defensive	Trend	Volatility
Stocks & Industries	✓	✓		✓		
Equity Indices	✓	✓		✓	✓	✓
Fixed Income	✓	✓	✓	✓	✓	✓
Currencies	✓	✓	✓		✓	

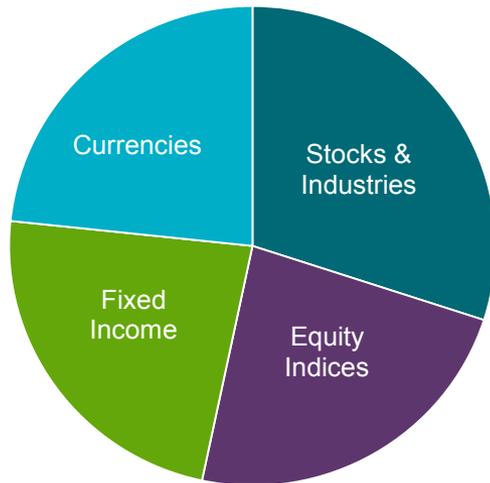
Instruments Used Stocks, Futures, Swaps, Currency Forwards, and Options



Diversification across Asset Groups and Alternative Premia

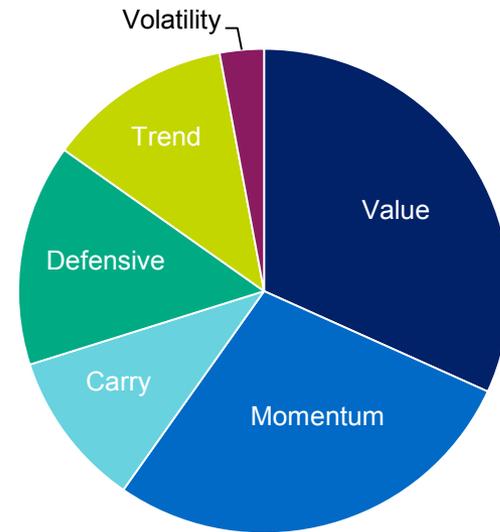
Target strategic risk allocation

Target Asset Group Risk Allocation



- Risk is first allocated to asset groups to take advantage of natural netting and alternative premia interaction.
- Asset group allocation seeks to balance maximum diversification with breadth, liquidity and leverage considerations.

Resulting Alternative Premia Risk Allocation



- Within each asset group, risk is allocated in a balanced manner to available alternative premia.
- Resulting overall alternative premia exposure is balanced and diversified.



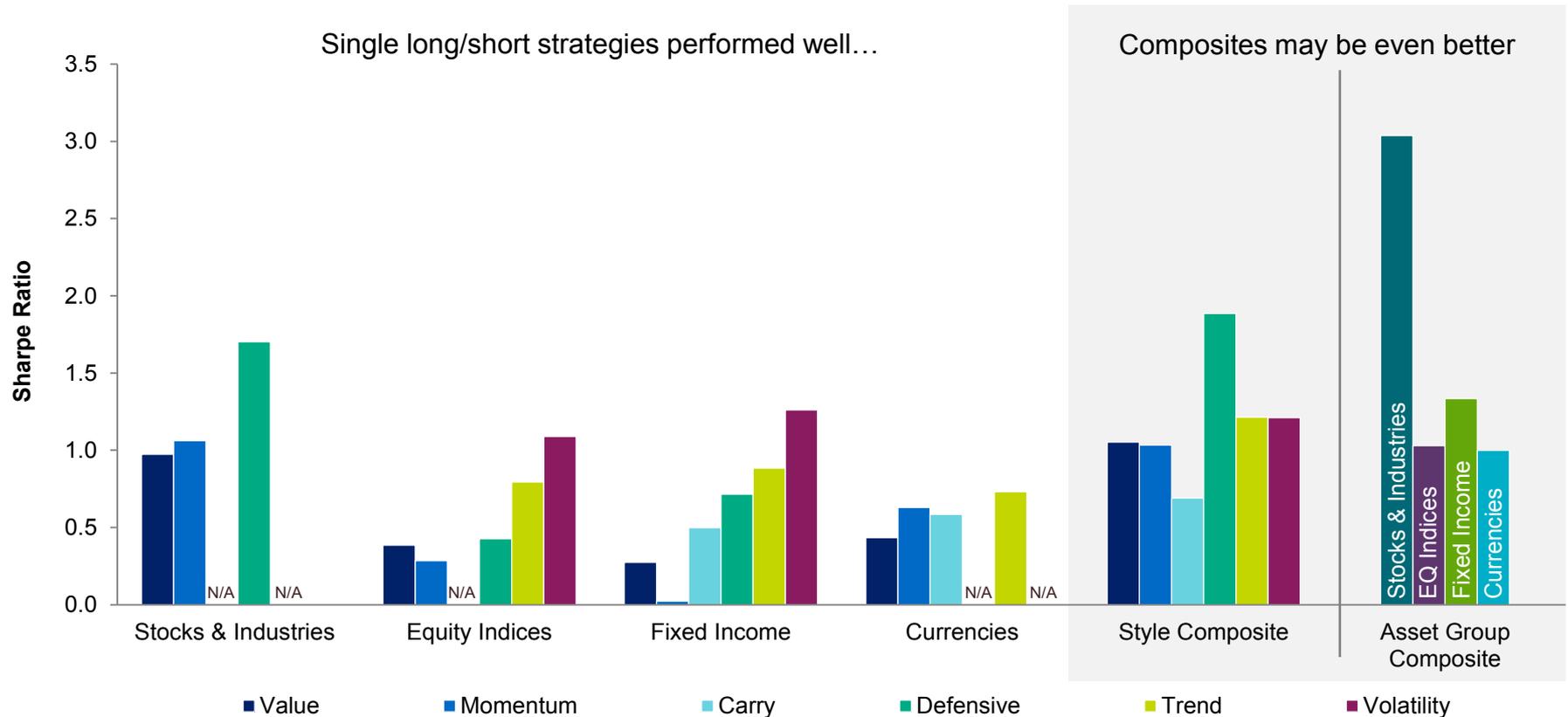
Source: AQR. There is no guarantee that the target risk allocations will be achieved, and actual allocations may be significantly different than that shown here. The risk allocations above are the long term target risk allocation for the AQR Liquid Enhanced Alternative Premia strategy and are subject to change. The risk allocation represents the ratio of strategy/alternative premia volatility allocations relative to the total sum of volatilities. Variance contributions are an alternative and also useful way of viewing risk allocations. Diversification does not eliminate the risk of experiencing investment losses.

Evidence across Many Asset Groups and Alternative Premia

Single long/shorts and composites

Hypothetical Gross Sharpe Ratios of Long/Short Alternative Premia Components Across Asset Groups

January 1990 – December 2017



Source: AQR. Above analysis reflects a backtest of theoretical long/short alternative premia components based on AQR definitions across identified asset groups, and is for illustrative purposes only and not based on an actual portfolio AQR manages. Risk-free rate used to calculate the Sharpe ratios shown above is the Merrill Lynch 3-Mo. T-bill. The results shown do not include advisory fees or transaction costs; if such fees and expenses were deducted the Sharpe ratios would be lower; returns are excess of cash. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the backtest and composites. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

Low Correlations

Among alternative premia and asset groups

Hypothetical Correlations Between Alternative Premia

January 1990 – December 2017

	Value	Momentum	Carry	Defensive	Trend	Volatility
Value	1.00					
Momentum	-0.61	1.00				
Carry	-0.10	0.09	1.00			
Defensive	-0.05	0.11	-0.15	1.00		
Trend	-0.12	0.33	0.12	0.17	1.00	
Volatility	0.04	0.02	0.16	-0.12	-0.10	1.00

Hypothetical Correlations Between Alternative Premia Asset Portfolios

January 1990 – December 2017

	Stocks & Industries	Equity Indices	Fixed Income	Currencies
Stocks & Industries	1.00			
Equity Indices	0.06	1.00		
Fixed Income	0.06	0.12	1.00	
Currencies	0.10	0.14	0.10	1.00

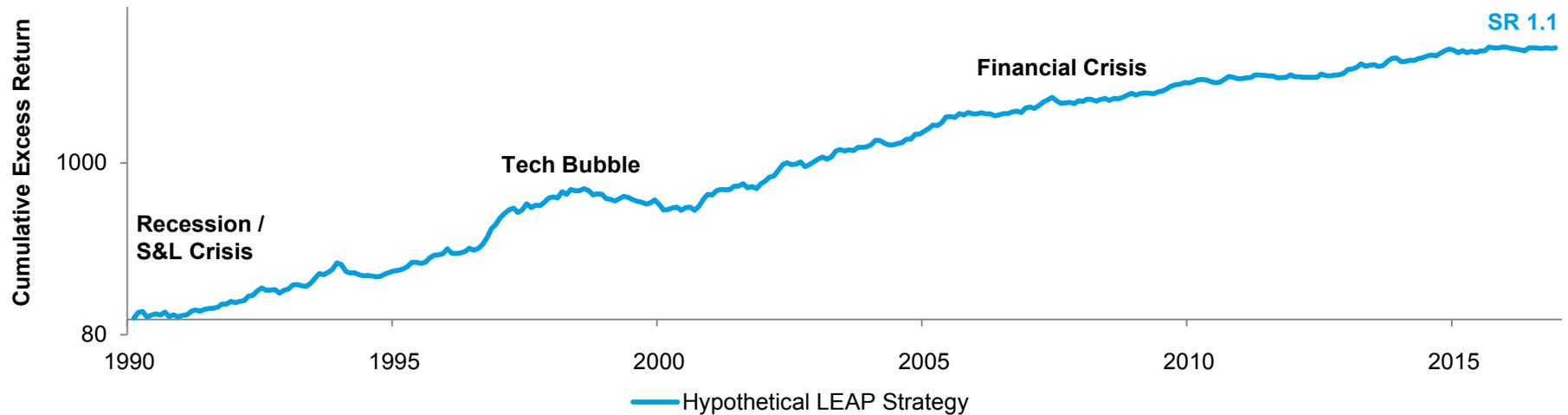


Source: AQR. The Trend-Following Strategy, Volatility Strategy, and theoretical long/short alternative premia components are based on AQR definitions across identified asset groups and reflect undiscounted results. Correlations are from January 1, 1990 to December 31, 2017. Chart is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Please see the Appendix for further details on the investment universe and the allocation methodology used to construct the backtests. Hypothetical data has certain inherent limitations, some of which are disclosed in the Appendix. All correlations based on monthly data, excess of cash.

AQR LEAP Across Economic Periods

Cumulative Hypothetical Excess Returns of AQR LEAP Strategy (Log-Scaled)

January 1990 – December 2016



Correlations to Indices

January 1990 – December 2016

Global 60/40	HFRI	Equities	Bonds
0.03	0.09	0.00	0.24

Source: AQR. 'Global 60/40' is 60% MSCI World Index, 40% Barclays Capital Global Aggregate Bond Index (hedged); 'Equities' is MSCI World Index; 'Bonds' is Barclays Capital Global Aggregate Bond Index (hedged); and 'HFRI' is HFRI Fund Weighted Composite Index. Above analysis reflects a heavily discounted backtest of the AQR Liquid Enhanced Alternative Premia Strategy, gross of fees, excess of cash and net of estimated transaction costs, targeting 12% annualized volatility. This analysis is for illustrative purposes only and is not based on an actual portfolio AQR manages. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the backtests. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix. All correlations based on monthly data, excess of cash. The data presented herein is supplemental to the GIPS® compliant presentation for the Liquid Enhanced Alternative Premia Composite inception on 1/1/2017, the Style Premia Composite, the Managed Futures Full Volatility Private Composite and the Volatility Risk Premium Composite included in the Appendix.



AQR LEAP Proforma Returns

September 1, 2012 – December 31, 2016

Hypothetical Proforma Returns* (Gross)

2012	3.1%
2013	24.6%
2014	14.2%
2015	2.7%
2016	-1.3%

Summary (Since 9/1/2012)

Full Period (Ann.)	9.6%
Volatility (Ann.)	8.6%
Sharpe Ratio	1.1
Beta to MSCI World	0.1

Source: AQR. Returns in USD. Proforma performance from September 1, 2012 through December 31, 2016 of the Liquid Enhanced Alternative Premia Strategy based on the combination of the following: carve-out performance for Relative Value Alternative Premia (Value, Momentum, Carry and Defensive) starts in September 2012 from the AQR Style Premia Strategy, adjusted by selecting single stocks, developed equity indices, developed government bonds and developed currencies strategies and scaled to the appropriate volatility target; carve-out performance for Trend starts in September 2009 from the AQR Managed Futures Strategy, adjusted by selecting government bonds, developed currencies, and developed equities strategies and scaled to the appropriate volatility target; and performance for Volatility starts in December 2015 from the AQR Volatility Risk Premium Strategy and scaled to the appropriate volatility target.

Risk-free rate is the Merrill Lynch 3-Month T-Bill Index. Beta is calculated using returns from the MSCI World (Net) Index. Net total return indices reinvest dividends after the deduction of withholding taxes. Please see the Appendix for further details on the carve-out construction. Carve-out performance results are based upon a segment of the strategy and were not managed separately but rather as part of a larger strategy. Volatility adjusted performance has been scaled to match a different volatility target and is not the actual performance of the respective portfolio(s). All carve-out and volatility scaled performance is hypothetical and for illustrative purposes only. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix. The data presented herein is supplemental to the GIPS® compliant presentation for the Liquid Enhanced Alternative Premia Composite included in the Appendix.

* Returns do not include the Volatility Risk Premia Strategy prior to December 2015.



Performance: AQR LEAP Composite

January 1, 2017 – December 31, 2017

AQR Liquid Enhanced Alternative Premia Composite

1.5% Fixed Fee

AQR Liquid Enhanced Alternative Premia Composite

0.75% Fixed Fee and

10% Performance Fee

Q1 2017	-1.9%	-1.7%
Q2 2017	-0.9%	-0.7%
Q3 2017	5.1%	5.0%
Q4 2017	2.5%	2.4%

Summary (Since 1/1/2017)

Since Inception	4.8%	5.1%
Volatility	5.1%	4.9%
Sharpe Ratio	0.8	0.9
Beta to MSCI World	0.1	



Source: AQR. Net returns in USD. Performance for the month ending December 31, 2017 is estimated and subject to change. Risk-free rate is the Merrill Lynch 3 Month T-Bill. Beta to MSCI World above is calculated using gross cumulative overlapping 3-day returns. This information is supplemental to the GIPS® compliant presentation for the Liquid Enhanced Alternative Premia Composite inception on January 1, 2017. Past performance is not a guarantee of future performance. Please read important disclosures in the Appendix.

Appendices

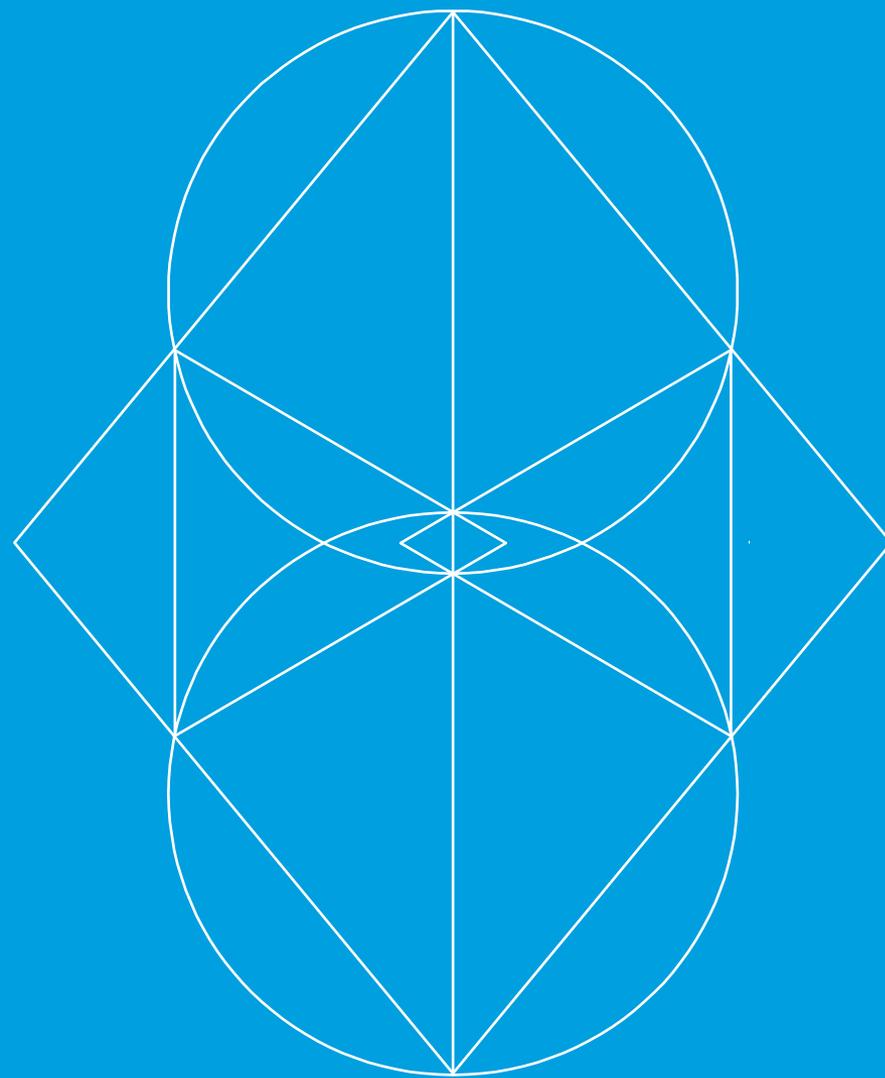


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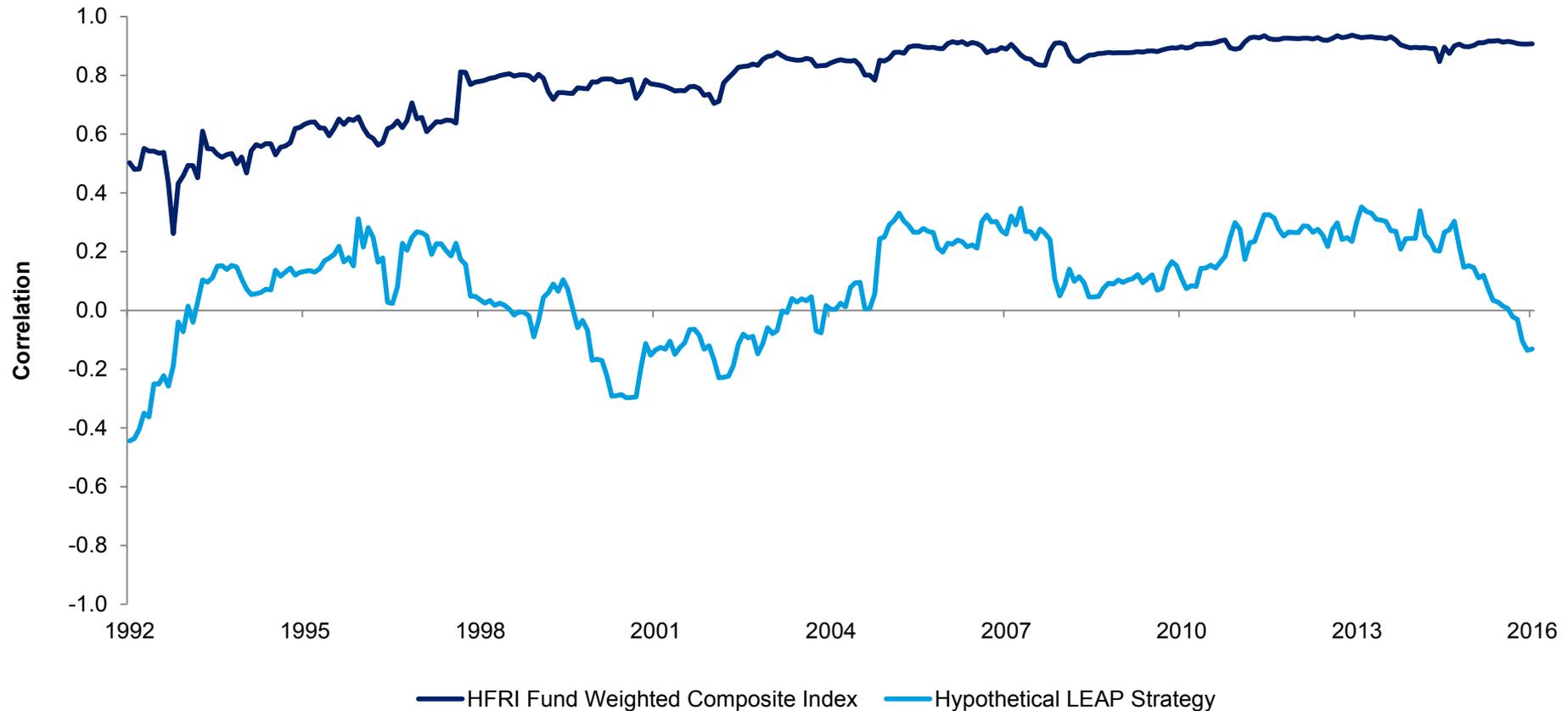


A1. AQR LEAP Hypothetical Correlations

To traditional equity markets

Hypothetical Rolling 3-Year Correlation to Equities

January 1990 – December 2016



Source: AQR and Bloomberg. The hypothetical AQR Liquid Enhanced Alternative Premia Strategy is based on the previously discussed allocation. Correlations are based on returns from June 1996 to December 2016. Please note that the hypothetical backtest returns provided for the hypothetical Liquid Enhanced Alternative Premia Strategy are heavily discounted. Returns are net of t-cost but gross of fees for each strategy. 'Correlation to Equities' is the correlation to the MSCI World Index. Performance of the AQR Liquid Enhanced Alternative Premia Strategy is based on hypothetical performance. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix. The data presented herein is supplemental to the GIPS® compliant presentation for the Liquid Enhanced Alternative Premia Composite inception on 1/1/2017, the Style Premia Composite, the Managed Futures Full Volatility Private Composite and the Volatility Risk Premium Composite included in the Appendix.

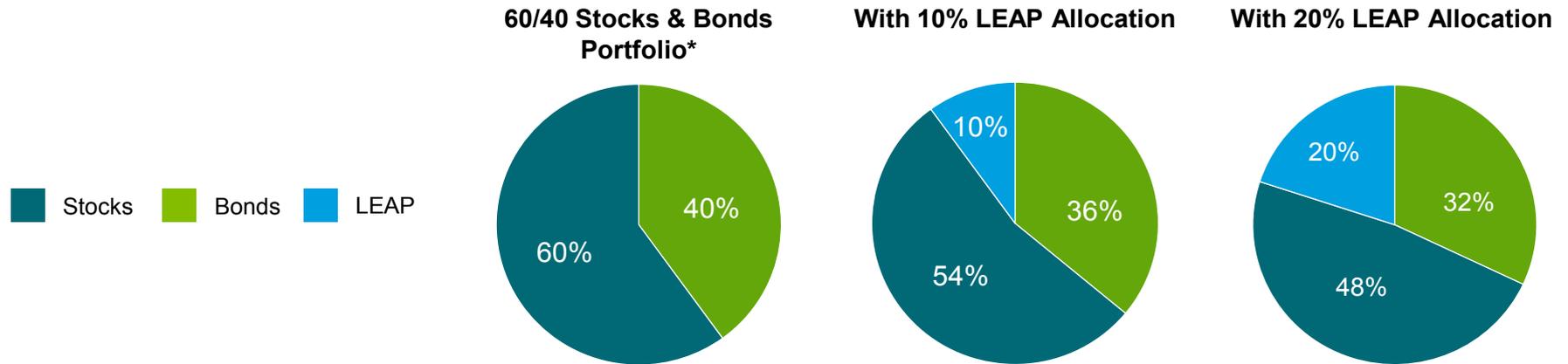


A1. Low Correlations

To traditional 60/40 portfolios

Hypothetical Returns of a Portfolio of Stocks, Bonds, and LEAP

January 1990 – December 2016



Returns (Ann.)	6.8%	7.7%	8.6%
Volatility (Ann.)	9.1%	8.3%	7.7%
Sharpe Ratio	0.4	0.6	0.7
Beta to Equities	0.6	0.5	0.5
Worst Month	-11.6%	-10.3%	-8.9%
Worst Drawdown	-34.9%	-31.0%	-27.0%



Source: AQR and Bloomberg. 'Global 60/40' is 60% MSCI World Index, 40% Barclays Capital Global Aggregate Bond Index (hedged); all returns in USD. Above analysis reflects a heavily discounted backtest of the AQR Liquid Enhanced Alternative Premia Strategy. Returns are net of estimated transactions costs but gross of advisory and/or management fees; risk-free rate in Sharpe Ratio Calculation is 3m U.S. Treasury Bills. Chart is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Please see the Appendix for further details on the investment universe and the allocation methodology used to construct the backtests. Hypothetical data has certain inherent limitations, some of which are disclosed in the Appendix. The data presented herein is supplemental to the GIPS® compliant presentation for the Liquid Enhanced Alternative Premia Composite inception on 1/1/2017, the Style Premia Composite, the Managed Futures Full Volatility Private Composite and the Volatility Risk Premium Composite included in the Appendix.

A2. Performance Disclosures

This document has been provided to you solely for information purposes and does not constitute an offer or solicitation of an offer or any advice or recommendation to purchase any securities or other financial instruments and may not be construed as such. The factual information set forth herein has been obtained or derived from sources believed to be reliable but it is not necessarily all-inclusive and is not guaranteed as to its accuracy and is not to be regarded as a representation or warranty, express or implied, as to the information's accuracy or completeness, nor should the attached information serve as the basis of any investment decision. This document is intended exclusively for the use of the person to whom it has been delivered and it is not to be reproduced or redistributed to any other person.

Actual performance figures contained herein reflect the reinvestment of dividends and all other earnings and represent unaudited estimates of realized and unrealized gains and losses prepared by AQR Capital Management, LLC ("AQR"). There is no guarantee as to the above information's accuracy or completeness. **PAST PERFORMANCE IS NOT A GUARANTEE OF FUTURE PERFORMANCE.** There is no guarantee, express or implied, that long-term return and/or volatility targets will be achieved. Realized returns and/or volatility may come in higher or lower than expected. Diversification does not eliminate the risk of experiencing investment losses.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH, BUT NOT ALL, ARE DESCRIBED HEREIN. NO REPRESENTATION IS BEING MADE THAT ANY FUND OR ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN HEREIN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY REALIZED 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, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL 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 THAT CAN 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, ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The hypothetical performance results contained herein represent the application of the quantitative models as currently in effect on the date first written above and there can be no assurance that the models will remain the same in the future or that an application of the current models in the future will produce similar results because the relevant market and economic conditions that prevailed during the hypothetical performance period will not necessarily recur. Discounting factors may be applied to reduce suspected anomalies. This backtest's return, for this period, may vary depending on the date it is run. Hypothetical performance results are presented for illustrative purposes only. In addition, our transaction cost assumptions utilized in backtests, where noted, are based on AQR Capital Management, LLC's, ("AQR")'s historical realized transaction costs and market data. Certain of the assumptions have been made for modeling purposes and are unlikely to be realized. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. Changes in the assumptions may have a material impact on the hypothetical returns presented. Actual advisory fees for products offering this strategy may vary.

There is a risk of substantial loss associated with trading commodities, futures, options, derivatives and other financial instruments. Before trading, investors should carefully consider their financial position and risk tolerance to determine if the proposed trading style is appropriate. Investors should realize that when trading futures, commodities, options, derivatives and other financial instruments one could lose the full balance of their account. It is also possible to lose more than the initial deposit when trading derivatives or using leverage. All funds committed to such a trading strategy should be purely risk capital.



A2. Performance Disclosures

AQR backtests of Value, Momentum, Carry, Defensive, Trend and Volatility theoretical alternative premia components are based on monthly returns, undiscounted, gross of fees and estimated transaction costs, excess of a cash rate proxied by the Merrill Lynch 3-Month T-Bill Index, and scaled to 12% annualized volatility. Value, Momentum, Carry and Defensive strategies are designed to take long positions in the assets with the strongest style attributes and short positions in the assets with the weakest style attributes, while seeking to ensure each portfolio is market-neutral. The Trend strategy will take long or short positions in assets based on short-term and long-term trend signals in addition to over-extended signals. It will typically buy when prices rise and sell when prices decline. The Volatility Strategy trades a diversified basket of options across multiple strikes and with less than or equal to 2 months to expiry. Options are sized so that the strategy targets a constant stress loss level, defined as the expected loss over a day on which the SP500 loses 20%. The Alternative Risk Premia and Asset Group Composites, are based on an allocation to the alternative premia components and asset group components based on their liquidity and breadth. Please see below for a description of the Universe selection.

Stock and Industry Selection: approximately 2,000 stocks across Europe, Japan, and U.S. **Country Equity Indices:** Australia, Canada, Eurozone, Hong Kong, Japan, Singapore, Sweden, Switzerland, U.K., U.S. **Within Europe:** Italy, France, Germany, Netherlands, Spain. **Bond Futures:** Australia, Canada, France, Germany, Italy, Japan, U.K., U.S. **Currencies:** Australia, Canada, Euro, Japan, New Zealand, Norway, Singapore, Sweden, Switzerland, U.K., U.S. **Country Index Options:** S&P 500, Euro Stoxx 50, FTSE 100, Nikkei 225.

Broad-based securities indices are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly in an index.

The MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

S&P 500 Index: The S&P 500 Index is the Standard & Poor's composite index of 500 stocks, a widely recognized, unmanaged index of common stock prices.

Euro Stoxx 50 Index: The Euro Stoxx 50 Index is a stock index of Eurozone stocks, covering 50 stocks from 12 Eurozone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

FTSE 100 Index: The FTSE 100 Index is an index composed of the 100 largest companies by market capitalization listed on the London Stock Exchange.

Nikkei 225 Index: The Nikkei 225 is a price-weighted index comprised of Japan's top 225 blue-chip companies on the Tokyo Stock Exchange.

The Barclays Global Aggregate Index is a flagship measure of global investment grade debt from 23 different local currency markets. This multicurrency benchmark includes fixed-rate Treasury, government-related, corporate and securitized bonds from both developed and emerging markets issuers. There are material differences between an index and the strategy. One significant difference between the indices and the performance presented is that the index performance is weighted on the basis of capitalization whereas the strategy performance reflects a risk-weighted calculation. This difference may have a material affect on the comparison of the indices with the performance of the strategy.



A2. Performance Disclosures

LEAP Strategy Hypothetical Returns Methodology

The AQR Liquid Enhanced Alternative Premia Strategy aims to deliver well balanced, diversified exposure to a set of alternative premia, across several asset groups. The long term risk weighting to asset groups is 30% to Stocks and Industries, 23% to Equity Indices, 23% to Fixed Income and 23% to Currencies. Within each asset group, the strategy will allocate risk roughly evenly to the alternative premia within that asset group. Combining the risk weights to asset groups, with the risk weight to alternative premia within each asset group results in the following long term risk allocation to alternative premia: 32% to Value, 28% to Momentum, 15% to Defensive, 12% to Trend, 10% to Carry and 3% to Volatility. The strategy's long term risk target is 12% volatility. The strategy may take long and short positions across the following investment universe, all within developed markets: single stocks, equity index futures, government bond futures, interest rate futures, currency forwards and futures, equity index options and government bond options.

The AQR Liquid Enhanced Alternative Premia Strategy hypothetical returns are calculated by appending, when and where available, proforma performance to the backtest, as described below. Hypothetical returns are calculated on a monthly basis, in excess of a cash rate proxied by the Merrill Lynch 3-Month T-Bill Index. Backtest returns are calculated net of estimated transaction costs and are heavily discounted to reflect uncertainty in historical costs and opportunities. The proforma performance is undiscounted and net of transaction costs.

Proforma performance is based on: Carve-out performance for relative value alternative premia (Value, Momentum, Carry and Defensive) starts in September of 2012, from the AQR Style Premia Strategy, adjusted by selecting single stocks, developed equity indices, developed government bonds and developed currencies strategies and scaled to the appropriate volatility target. Carve-out performance for Trend starts in September 2009 from the AQR Managed Futures Strategy, adjusted by selecting government bonds, developed currencies, and developed equities strategies and scaled to the appropriate volatility target. Performance for Volatility starts in December 2015 from the AQR Volatility Risk Premium Strategy and scaled to the appropriate volatility target.

The Style Premia strategy seeks to deliver efficient exposure to a well-diversified portfolio of long-short style strategies across six asset group contexts including Stock and Industry Selection, Equity Indices, Bonds, Interest Rates, and Currencies. AQR pursues these goals by investing in instruments not limited to Stocks, Futures, Swaps, and Currency Forwards. The Composite's strategy targets the highest ex ante volatility relative to all of the Firm's Style Premia Composites.

The Managed Futures strategy includes investments in a diversified portfolio of equity, currency, and fixed-income instruments, both long and short, in an effort to provide exposure and performance that is, on average, lowly correlated to the equity markets. Accounts included target the highest volatility level relative to the all Firm's Managed Futures Composite. The positions taken in each instrument are based on a systematic, quantitative investment process that pursues short to intermediate-term price trends in the corresponding market for the instrument, while mitigating risk by assessing short or long-term over-extensions of trends in that market.

The Volatility Risk Premium Strategy seeks to capture the volatility risk premium across multiple asset classes. The strategy is implemented through selling exchange-traded options. The strategy seeks to be market neutral by hedging options with listed futures and/or ETFs. Option positions are sized based on stress scenarios, and therefore the strategy does not have a volatility target. The strategy currently trades equity and fixed income options, and will potentially expand to additional asset classes in the future.

Carve-out performance results are based upon a segment of the strategy and were not managed separately but as part of a larger strategy. Volatility adjusted performance has been scaled to match a different volatility target and is not the actual performance of the respective portfolio(s). All carve-out and volatility scaled performance are hypothetical and for illustrative purposes only.



Performance Disclosures

Trend-Following Strategy

The Trend-Following Strategy was constructed with an equal-weighted combination of 1-month, 3-month, and 12-month trend-following strategies for 67 markets across 4 major asset classes – 29 commodities, 11 equity indices, 15 bond markets, and 12 currency pairs – from January 1880 to December 2017. Since not all markets have return data going back to 1880, we construct the strategies using the largest number of assets for which return data exist at each point in time. We use futures returns when they are available. Prior to the availability of futures data, we rely on cash index returns financed at local short rates for each country. The strategy targets a long-term volatility target of 17% but does not limit volatility during periods where realized volatility may be higher or lower than this number.

In order to calculate net-of-fee returns for the time series momentum strategy, we subtracted a 2% annual management fee and a 20% performance fee per annum from the gross-of-fee returns to the strategy. The performance fee is calculated and accrued on a monthly basis, but is subject to an annual high-water mark. In other words, a performance fee is subtracted from the gross returns in a given year only if the returns in the fund are large enough that the fund's NAV at the end of the year exceeds every previous end of year NAV. The transactions costs used in the strategy are based on AQR's 2012 estimates of average transaction costs for each of the four asset classes, including market impact and commissions. The transaction costs are assumed to be twice as high from 1993 to 2002 and six times as high from 1880–1992, based on Jones (2002). The transaction costs used are as follows:

Asset Class	Time Period	One-Way Transaction Costs (as a % of notional traded)
Equities	1880 – 1992	0.34%
	1993 – 2002	0.11%
	2003 – Present	0.06%
Fixed Income	1880 – 1992	0.06%
	1993 – 2002	0.02%
	2003 – Present	0.01%
Currencies	1880 – 1992	0.18%
	1993 – 2002	0.06%
	2003 – Present	0.03%
Commodities	1880 – 1992	0.58%
	1993 – 2002	0.19%
	2003 – Present	0.10%



A2. Performance Disclosures

AQR Capital Management, LLC
Style Premia Composite
8/31/2012 – 12/31/2016

Year	Gross Return %	Net Return %	Benchmark * Return %	Number of Portfolios	Composite 3-Yr StDev %	Benchmark * 3-Yr StDev %	Composite Assets (\$M)	Total Firm Assets (\$M)
2012	-1.20	-1.44	0.05	1	N/A	N/A	6.76	71,122.42
2013	29.84	26.15	0.07	1	N/A	N/A	1,041.75	98,302.69
2014	13.36	11.27	0.03	1	N/A	N/A	3,038.15	122,655.99
2015	8.37	6.81	0.05	1	9.93	0.02	6,626.91	142,173.39
2016	0.00	-0.74	0.33	1	8.06	0.05	11,540.40	175,089.36

* Merrill Lynch 3-Month U.S. Treasury Bill Index

This presentation cannot be used in a general solicitation or general advertising to offer or sell interest in its Funds. As such, this information cannot be included in any advertisement, article, notice or other communication published in any newspaper, magazine, or similar media or broadcast over television or radio; and cannot be used in any seminar or meeting whose attendees have been invited by any general solicitation or general advertising.

AQR claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. AQR has been independently verified for the period August 1998 through December 2016. 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. The Style Premia Composite has been examined for the periods from its inception through December 31, 2016. The verification and performance examination reports are available upon request.

Firm Information: AQR Capital Management, LLC ("AQR") is a Connecticut based investment advisor registered with the Securities and Exchange Commission under the Investment Advisors Act of 1940. AQR conducts trading and investment activities involving a broad range of instruments, including, but not limited to, individual equity and debt securities, currencies, futures, commodities, fixed income products and other derivative securities.

For purposes of firm-wide compliance and firm-wide total assets, AQR defines the "Firm" as entities controlled by or under common control with AQR (including voting right). The Firm is comprised of AQR and its advisory affiliates, including CNH Partners, LLC ("CNH").

Upon request AQR will make available a complete list and description of all of Firm composites, as well as additional information regarding the policies for valuing portfolios, calculating performance, and preparing compliant presentations.

Past performance is not an indication of future performance.



A2. Performance Disclosures

AQR Capital Management, LLC
Style Premia Composite
8/31/2012 – 12/31/2016

Composite Characteristics: The Style Premia Composite (The “Composite”) was created September 2012. The Composite's strategy seeks to deliver efficient exposure to a well-diversified portfolio of long-short style strategies across six asset group contexts including Stock and Industry Selection, Equity Indices, Bonds, Interest Rates, Currencies, and Commodities. AQR pursues these goals by investing in instruments not limited to stocks, futures, swaps, and currency forwards. The Composite's strategy targets the highest ex-ante volatility relative to all of the Firm's Style Premia Composites. The Composite is denominated in USD. The Composite benchmark is the Merrill Lynch 3-Month U.S. Treasury Bill Index (the “Benchmark”). The index measures the rate of return an investor would realize when purchasing a single U.S. 3-month treasury bill, holding it for one month, selling it, and rolling it into a newly selected issue at the beginning of the next month. The investments in the Composite vary substantially from those in the Benchmark. The index has not been selected to represent an appropriate benchmark to compare an investor's performance, but rather is disclosed to allow for comparison of the investor's performance to that of a certain well-known and widely recognized index. Benchmark returns are not covered by the report of independent verifiers.

New accounts that fit the Composite definition are added at the start of the first full calendar month after the assets come under management, or after it is deemed that the investment decisions made by the investment advisor fully reflect the intended investment strategy of the portfolio. Composites will exclude terminated portfolios after the last full calendar month performance measurement period that the assets were under management. The Composite will continue to include the performance results for all periods prior to termination. Effective for periods beginning July 1, 2010 through February 28, 2015, the Composite defined a significant cash flow as an external cash flow within a portfolio of 50%. Additional information is available upon request.

Calculation Methodology: All portfolios except mutual funds and UCITS are valued monthly and intra-month for large cash flows as defined by Firm policy. The Modified Dietz calculation methodology is used when calculating monthly and intra-month returns. Mutual funds and UCITS are valued daily and performance is calculated on a daily basis. Gross of fees returns are calculated gross of management and performance fees, administrative and custodial costs and net of transaction costs beginning January 1, 2010. Prior to January 1, 2010, gross of fees returns are gross of management and performance fees, and net of administrative, custodial, and transaction costs. Additional information regarding fees and the calculation of gross and net performance is available upon request.

Composite net of fees returns are calculated by deducting the maximum management or advisory fee charged by AQR from the gross composite monthly returns to all portfolios in the Composite. The standard model management and performance fees per annum for this Composite are 0.75 and 10.00%, respectively. Composite assets may have been exposed to the impact of performance fees.

The dispersion measure is the equal-weighted standard deviation of accounts in the Composite for the entire year. Dispersion is not considered meaningful for periods shorter than one year or for periods during which the Composite contains five or fewer accounts for the full period. The three-year annualized ex-post standard deviation measure is inapplicable when 36 monthly returns are not available.

Fees: Returns are calculated net of all withholding taxes on foreign dividends. Accruals for fixed income and equity securities are included in calculations. AQR's management or advisory fees are described in Part 2A of its Form ADV. In addition, AQR funds may have a redemption charge up to 2.00% based on gross redemption proceeds that may be charged upon early withdrawals. Consultants supplied with gross results are to use this data in accordance with SEC, CFTC and NFA guidelines.

AQR's asset-based fees for portfolios within the Composite may range up to 1.50% of assets under management and are generally billed monthly or quarterly at the commencement of the calendar month or quarter during which AQR will perform the services to which the fees relate.

Other Disclosures: AQR may engage in leveraged, derivative, and short positions in order to meet its performance objectives. The use of these positions may have a material impact on performance results. Additionally, there may be subjective unobservable inputs used in the valuation of certain financial instruments utilized by certain AQR managed investment vehicles. The risks inherent to the strategies employed by accounts included are set forth in the applicable offering documents and other information provided to potential subscribers, from where more detailed information regarding the extent to which leverage, derivatives, and short positions can be obtained. These are available on request, if not provided along with this presentation itself.



A2. Performance Disclosures

AQR Capital Management, LLC
Managed Futures Full Volatility Private Composite
8/31/2009 – 12/31/2016

Year	Gross Return %	Net Return %	Benchmark * Return %	Number of Portfolios	Composite 3-Yr StDev %	Benchmark * 3-Yr StDev %	Composite Assets (\$M)	Total Firm Assets (\$M)	% Non-Fee Paying Portfolios
2009	4.01	3.30	0.07	1	N/A	N/A	5.20	23,571.55	100
2010	11.57	9.42	0.13	1	N/A	N/A	22.82	32,701.21	-
2011	-10.91	-11.80	0.10	1	N/A	N/A	22.66	43,540.99	-
2012	4.35	3.31	0.11	1	15.37	0.03	205.58	71,122.42	-
2013	19.18	17.18	0.07	1	14.72	0.03	546.22	98,302.69	-
2014	23.99	20.50	0.03	1	15.81	0.02	1,113.78	122,655.99	-
2015	6.51	4.91	0.05	1	16.42	0.02	1,464.87	142,173.39	-
2016	-14.55	-15.42	0.33	1	17.92	0.05	1,907.55	175,089.36	-

* Merrill Lynch 3-Month U.S. Treasury Bill Index

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Past performance is not an indication of future performance.



A2. Performance Disclosures

AQR Capital Management, LLC
Managed Futures Full Volatility Private Composite
8/31/2009 – 12/31/2016

Composite Characteristics: The Managed Futures Full Volatility Private Composite (the “Composite”) was created in September 2009. Accounts included invest in a diversified portfolio of equity, currency, fixed-income and commodity-linked instruments, both long and short, in an effort to provide exposure and performance that is, on average, lowly correlated to the equity markets. Accounts included target the highest volatility level relative to all of the Firm’s Managed Futures Composites. The positions taken in each instrument are based on a systematic, quantitative investment process that pursues short to intermediate-term price trends in the corresponding market for the instrument, while mitigating risk by assessing short or long-term over-extensions of trends in that market. There is no guarantee that these objectives will be met. It is expected that the strategy will invest primarily in financial futures, commodity futures and currency forwards, but it may also invest in option and swap contracts, fixed income securities, pooled investment vehicles (largely money market funds), and other investments intended to serve as margin or collateral for the derivative positions held by accounts included. Accounts included utilize an instrument set and risk allocation geared to best suit private investors. The Composite is denominated in USD. The Composite benchmark is the Merrill Lynch 3 Month Treasury Bill Index (the “Benchmark”). The index measures the rate of return an investor would realize when purchasing a single U.S. 3 month treasury bill, holding it for one month, selling it, and rolling it into a newly selected issue at the beginning of the next month. The investments in the Composite vary substantially from those in the Benchmark. The index has not been selected to represent an appropriate benchmark to compare an investor’s performance, but rather is disclosed to allow for comparison of the investor’s performance to that of a certain well-known and widely recognized index.

New accounts that fit the Composite definition are added at the start of the first full calendar month after the assets come under management, or after it is deemed that the investment decisions made by the investment advisor fully reflect the intended investment strategy of the portfolio. Composites will exclude terminated portfolios after the last full calendar month performance measurement period that the assets were under management. The Composite will continue to include the performance results for all periods prior to termination. Effective for periods beginning July 1, 2010 through February 28, 2015, the Composite defined a significant cash flow as an external cash flow within a portfolio of 50%. Additional information is available upon request.

Calculation Methodology: All portfolios except mutual funds and UCITS are valued monthly and intra-month for large cash flows as defined by Firm policy. The Modified Dietz calculation methodology is used when calculating monthly and intra-month returns. Mutual funds and UCITS are valued daily and performance is calculated on a daily basis. Gross of fees returns are calculated gross of management and performance fees, administrative and custodial costs and net of transaction costs beginning January 1, 2010. Prior to January 1, 2010, gross of fees returns are gross of management and performance fees, and net of administrative, custodial, and transaction costs. Additional information regarding fees and the calculation of gross and net performance is available upon request.

Composite net of fees returns are calculated by deducting the maximum management or advisory fee charged by AQR from the gross composite monthly returns to all portfolios in the Composite. The standard model management and performance fees per annum for the Composite are 1.00 and 10.00%, respectively. Composite assets may have been exposed to the impact of performance fees.

The dispersion measure is the equal-weighted standard deviation of accounts in the Composite for the entire year. Dispersion is not considered meaningful for periods shorter than one year or for periods during which the Composite contains five or fewer accounts for the full period. The three-year annualized ex-post standard deviation measure is inapplicable when 36 monthly returns are not available.

Fees: Returns are calculated net of all withholding taxes on foreign dividends. Accruals for fixed income and equity securities are included in calculations. AQR’s management or advisory fees are described in Part 2A of its Form ADV. In addition, AQR funds may have a redemption charge of 2.00% based on gross redemption proceeds that may be charged upon early withdrawals. Consultants supplied with gross results are to use this data in accordance with SEC, CFTC and NFA guidelines.

AQR’s asset-based fees for portfolios within the Composite may range up to 1.70%** of assets under management and are generally billed monthly or quarterly at the commencement of the calendar month or quarter during which AQR will perform the services to which the fees relate.

Other Disclosures: AQR may engage in leveraged, derivative, and short positions in order to meet its performance objectives. The use of these positions may have a material impact on performance results. Additionally, there may be subjective unobservable inputs used in the valuation of certain financial instruments utilized by certain AQR managed investment vehicles. The risks inherent to the strategies employed by accounts included are set forth in the applicable offering documents and other information provided to potential subscribers, from where more detailed information regarding the extent to which leverage, derivatives, and short positions can be obtained. These are available on request, if not provided along with this presentation itself.

The Composite was formerly known as the Managed Futures High Volatility Composite.

** AQR retroactively revised the Composite’s highest model management fee from 2.00% to 1.70% per annum in August 2015.



A2. Performance Disclosures

AQR Capital Management, LLC
Volatility Risk Premium Composite
11/30/2015 – 12/31/2016

Year	Gross Return %	Net Return %	Benchmark * Return %	Number of Portfolios	Composite 3-Yr StDev %	Benchmark * 3-Yr StDev %	Composite Assets (\$M)	Total Firm Assets (\$M)	% Non-Fee Paying Portfolios
2015	0.67	0.54	0.03	1	N/A	N/A	11.13	142,173.39	100
2016	3.58	2.04	0.33	1	N/A	N/A	11.52	175,089.36	100

* Merrill Lynch 3-Month U.S. Treasury Bill Index

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For purposes of firm-wide compliance and firm-wide total assets, AQR defines the "Firm" as entities controlled by or under common control with AQR (including voting right). The Firm is comprised of AQR and its advisory affiliates, including CNH Partners, LLC ("CNH").

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Past performance is not an indication of future performance.



A2. Performance Disclosures

AQR Capital Management, LLC
Volatility Risk Premium Composite
11/30/2015 – 12/31/2016

Composite Characteristics: The Volatility Risk Premium Composite (the “Composite”) was created in December 2015. The Composite strategy intends to capture the volatility risk premium across multiple asset classes. The positions that provide volatility exposure will be hedged to be unconditionally market (equity) neutral. The expected long-run volatility of the strategy is 7%; however, the strategy does not have a volatility target. The accounts will initially focus on capturing volatility risk premium in global equity indices, and will potentially expand to additional asset classes in the future. The strategy will be implemented through listed options and potentially volatility futures. Options will be hedged with listed futures and ETFs. The Composite is denominated in USD. The Composite benchmark is the Merrill Lynch 3 Month Treasury Bill Index (the “Benchmark”). The index measures the rate of return an investor would realize when purchasing a single U.S. 3 month treasury bill, holding it for one month, selling it, and rolling it into a newly selected issue at the beginning of the next month. The investments in the Composite vary substantially from those in the Benchmark. The index has not been selected to represent an appropriate benchmark to compare an investor’s performance, but rather is disclosed to allow for comparison of the investor’s performance to that of a certain well-known and widely recognized index.

New accounts that fit the Composite definition are added at the start of the first full calendar month after the assets come under management, or after it is deemed that the investment decisions made by the investment advisor fully reflect the intended investment strategy of the portfolio. Composites will exclude terminated portfolios after the last full calendar month performance measurement period that the assets were under management. The Composite will continue to include the performance results for all periods prior to termination. Effective for periods beginning July 1, 2010 through February 28, 2015, the Composite defined a significant cash flow as an external cash flow within a portfolio of 50%. Additional information is available upon request.

Calculation Methodology: All portfolios except mutual funds and UCITS are valued monthly and intra-month for large cash flows as defined by Firm policy. The Modified Dietz calculation methodology is used when calculating monthly and intra-month returns. Mutual funds and UCITS are valued daily and performance is calculated on a daily basis. Gross of fees returns are calculated gross of management and performance fees, administrative and custodial costs and net of transaction costs beginning January 1, 2010. Prior to January 1, 2010, gross of fees returns are gross of management and performance fees, and net of administrative, custodial, and transaction costs. Additional information regarding fees and the calculation of gross and net performance is available upon request.

Composite net of fees returns are calculated by deducting the maximum management or advisory fee charged by AQR from the gross composite monthly returns to all portfolios in the Composite. The standard model management fee per annum for this Composite is specified below. Composite assets may have been exposed to the impact of performance fees.

The dispersion measure is the equal-weighted standard deviation of accounts in the Composite for the entire year. Dispersion is not considered meaningful for periods shorter than one year or for periods during which the Composite contains five or fewer accounts for the full period. The three-year annualized ex-post standard deviation measure is inapplicable when 36 monthly returns are not available.

Fees: Returns are calculated net of all withholding taxes on foreign dividends. Accruals for fixed income and equity securities are included in calculations. AQR’s management or advisory fees are described in Part 2A of its Form ADV. In addition, AQR funds may have a redemption charge up to 2.00% based on gross redemption proceeds that may be charged upon early withdrawals. Consultants supplied with gross results are to use this data in accordance with SEC, CFTC and NFA guidelines.

AQR’s asset-based fees for portfolios within the Composite may range up to 1.50% of assets under management and are generally billed monthly or quarterly at the commencement of the calendar month or quarter during which AQR will perform the services to which the fees relate.

Other Disclosures: AQR may engage in leveraged, derivative, and short positions in order to meet its performance objectives. The use of these positions may have a material impact on performance results. Additionally, there may be subjective unobservable inputs used in the valuation of certain financial instruments utilized by certain AQR managed investment vehicles. The risks inherent to the strategies employed by accounts included are set forth in the applicable offering documents and other information provided to potential subscribers, from where more detailed information regarding the extent to which leverage, derivatives, and short positions can be obtained. These are available on request, if not provided along with this presentation itself.



A2. Performance Disclosures

AQR Capital Management, LLC
Liquid Enhanced Alternative Premia Composite
12/31/16 – Present

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A2. Performance Disclosures

AQR Capital Management, LLC
Liquid Enhanced Alternative Premia Composite
12/31/16 – Present

Composite Characteristics: The Liquid Enhanced Alternative Premia Composite (the “Composite”) was created in January 2017. The Composite’s strategy seeks to deliver efficient exposure to a well-diversified portfolio of long-short alternative risk premia across four asset group contexts including Stock and Industry Selection, Equity Indices, Bonds, and Currencies. AQR pursues these goals by investing in instruments not limited to stocks, futures, swaps, currency forwards, equity index options and options on bond futures. The Composite’s strategy targets the highest ex-ante volatility relative to all of the Firm’s Liquid Enhanced Alternative Premia composites. The Composite is denominated in USD. The Composite strategy is benchmark-agnostic and therefore this composite has no benchmark.

New accounts that fit the Composite definition are added at the start of the first full calendar month after the assets come under management, or after it is deemed that the investment decisions made by the investment advisor fully reflect the intended investment strategy of the portfolio. Composites will exclude terminated portfolios after the last full calendar month performance measurement period that the assets were under management. The Composite will continue to include the performance results for all periods prior to termination. Effective for periods beginning July 1, 2010 through February 28, 2015, the Composite defined a significant cash flow as an external cash flow within a portfolio of 50%. Additional information is available upon request.

Calculation Methodology: All portfolios except mutual funds and UCITS are valued monthly and intra-month for large cash flows as defined by Firm policy. The Modified Dietz calculation methodology is used when calculating monthly and intra-month returns. Mutual funds and UCITS are valued daily and performance is calculated on a daily basis. Gross of fees returns are calculated gross of management and performance fees, administrative and custodial costs and net of transaction costs beginning January 1, 2010. Prior to January 1, 2010, gross of fees returns are gross of management and performance fees, and net of administrative, custodial, and transaction costs. Additional information regarding fees and the calculation of gross and net performance is available upon request.

The dispersion measure is the equal-weighted standard deviation of accounts in the Composite for the entire year. Dispersion is not considered meaningful for periods shorter than one year or for periods during which the Composite contains five or fewer accounts for the full period. The three-year annualized ex-post standard deviation measure is inapplicable when 36 monthly returns are not available.

Fees: Returns are calculated net of all withholding taxes on foreign dividends. Accruals for fixed income and equity securities are included in calculations. AQR’s management or advisory fees are described in Part 2A of its Form ADV. In addition, AQR funds may have a redemption charge up to 2.00% based on gross redemption proceeds that may be charged upon early withdrawals. Consultants supplied with gross results are to use this data in accordance with SEC, CFTC and NFA guidelines.

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LOMBARD ODIER
INVESTMENT MANAGERS

ALTERNATIVE RISK PREMIA

PREPARED FOR CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

MARCH 28, 2018

Alkesh Gianchandani, Senior Manager

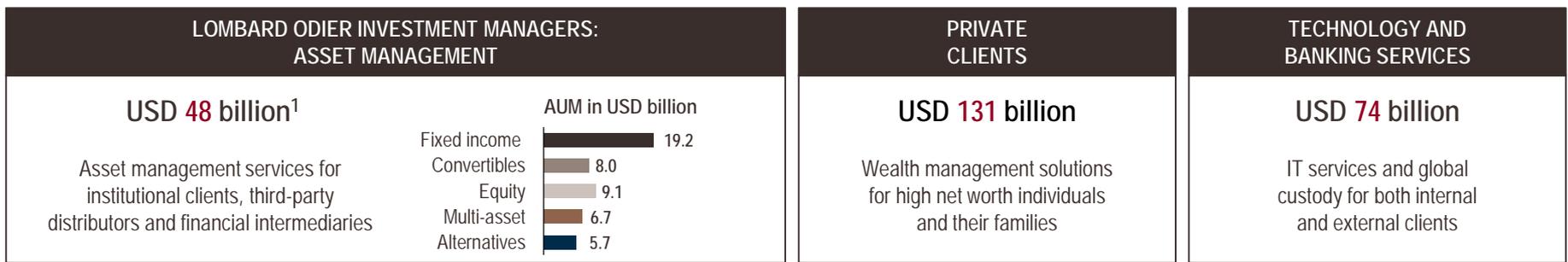
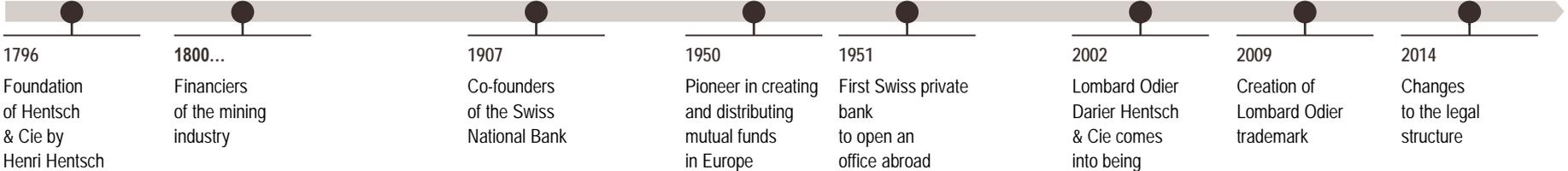
Agenda

- Who we are
- Why work with us
- What we do
- Questions / Discussion

The Firm - Independent and Privately Owned

Strategic Diversification Across Three Business Lines

- Includes the oldest private bank in Geneva and one of the largest in Europe
- The Firm has always been wholly owned by its partners who are responsible for the day-to-day management of the Firm
- We believe this management structure brings tangible benefits for our clients
 - Independent ownership brings an entrepreneurial approach to our business strategy and the ability to take a longer-term outlook
 - Our focus is 100% on our clients rather than shareholders
 - We are able to respond with agility to market events



AUM as at 30 June 2017. CET1 fully loaded Basel III capital ratio figures are correct as at 30 June 2017.¹ Lombard Odier Group annual results do not include an additional USD 0.8 billion of assets for Lombard Odier IM, which result from FINMA reporting requirements.

3 · Lombard Odier Investment Managers. Please see important information at the end of the document.

The Systematic Team - Premia Research and Portfolio Management

Stable team, managing liquid alternative systematic strategies since 2009

TEAM KEY CHARACTERISTICS

- Integrated Systematic team with a collaborative approach
- 26 professionals managing USD 19bn
- Two dedicated ARP Portfolio Managers have been working together at Lombard Odier for over 10 years
- Academic Board drives research process and sharing
- Quant Platform drives investment analysis and implementation

ALTERNATIVE RISK PREMIA MANAGEMENT TEAM



Laurent Joué
Senior Portfolio
Manager
12 yrs experience



Marc Pellaud, PhD
Senior Portfolio
Manager
10 yrs experience

ACADEMIC BOARD

QUANT PLATFORM

SYSTEMATIC TEAM (EQUITIES, FIXED INCOME, MULTI-ASSETS, ALTERNATIVES)

Foort Hamelink, PhD
Head Systematic Equities

5 Portfolio Managers &
Research Analysts

Jerome Collet, PhD
Head Systematic Fixed
Income

7 Portfolio Managers &
Research Analysts

Aurèle Storno, CFA
Senior Portfolio Manager

11 Portfolio Managers &
Research Analysts

Marc Pellaud, PhD
Laurent Joué
Co-Head Systematic
Alternatives

+ 3 Portfolio Managers &
Research Analyst

Why work with us

- Systematic Asset Management team of 26 investment professionals managing \$19 BN of AUM
- Product was launched in 2014 so we now have more than 3 ½ years of live track record
- Respectable client base with global perspective from institutions from all over the world
- We believe that we are the 'Right Size'
 - Large enough to provide excellent institutional infrastructure and services
 - Small enough that you will be a most important client
 - Size benefits are supported by the capacity constraint
- Customization of the solution for your needs
 - Will work closely with PCA for your needs
- Our Objectives
 - Deliver stable returns uncorrelated to traditional asset classes in a liquid and cost efficient structure
 - Offer exposure to multiple Alternative Risk Premia by investing Long/Short across asset classes in developed markets
- Other benefits and features
 - Act as a fiduciary, best execution, best pricing, cost efficiencies
 - Premia are pure and simple, providing liquidity, flexibility, diversification, and non-correlation
 - Fully transparent

Alternative Risk Premia - Provide Diversification

Seeking to build an all weather Alternative Risk Premia solution

- Premia selection aims to maximize diversification and return opportunities
- Premia are developed in house
 - Academic literature is reviewed by the systematic team
 - Research and tests are performed through our quant platform
 - Selected premia need to have a clear rationale, be persistent, implementable and add value to the portfolio
- Team avoids overfitting to ensure better understanding of premia
- For risk consideration, the focus is on the most liquid premia and Emerging Markets are excluded
- Equity Market Neutral strategy includes ESG and Carbon concerns

8 STRATEGIES ENCOMPASS MULTIPLE PREMIA

	Carry	Value	Momentum	Others
Credit	√			
FX	√	√		
Fixed Income	√	√		
Equities		√	√	√
Volatility	√		√	√
Commodities	√		√	
Cross Asset Trend			√	
Macro Tail Hedge			√	

Alternative Risk Premia - Provide Low Correlations

Low Correlations facilitate maximizing diversification and return opportunities¹

Diversification among risk premia :

- Reduce drawdown and idiosyncratic risk
- Improve global risk/return profile
- Generate stable returns across market regimes

LOMBARD ODIER PREMIA STRATEGIES' SHARPE RATIOS AND CORRELATIONS

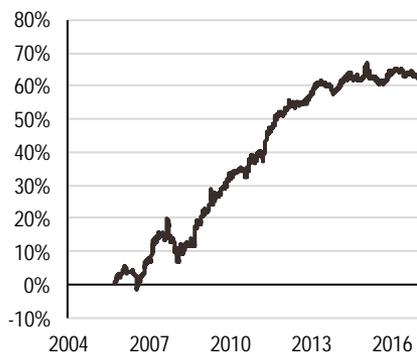
	SHARPE	CORRELATION									Global Equities	Global Agg
		ARP FX	ARP Bonds	ARP Credit	ARP Equity	ARP Commo	ARP Volatility	ARP Trend	ARP Tail			
ARP FX	0.31		0.10	0.12	0.05	0.02	0.39	-0.03	-0.38	0.36	-0.18	
ARP Bonds	0.94			0.02	0.08	0.06	0.03	0.03	0.00	0.01	0.27	
ARP Credit	0.74				0.00	0.06	0.01	0.05	-0.11	0.09	-0.10	
ARP Equity	0.53					0.12	0.25	0.00	-0.30	0.22	0.05	
ARP Commo	0.91						-0.03	0.10	-0.08	0.00	0.00	
ARP Volatility	2.18							0.00	-0.72	0.00	0.00	
ARP Trend	0.60								-0.02	-0.02	0.21	
ARP Tail	0.30									-0.80	0.22	
Global Equities	0.34											
Global Agg	0.97										-0.18	

¹Source: Lombard Odier internal calculations. Backtest inception date December 2004 except ARP Eq Mkt Neutral February 2006, ARP Credit September 2006, ARP Volatility December 2007, ARP Tail May 2005. This material contains hypothetical (simulated) backtested performance results and other related information ("Hypothetical Results"). Data shown is backtested prior to the Related Fund's launch on August 6, 2014 using the same current fee structure as the Related Fund. Data shown from August 6, 2014 through January 31, 2018 reflects performance for the Share Class N-A USD of the Related Fund. The period shown for the Hypothetical Results is based on available information and LOIM believes the period to be representative and statistically valid. Changes in the assumptions would have a material impact on the Hypothetical Results and other statistical information based on the Hypothetical Results.

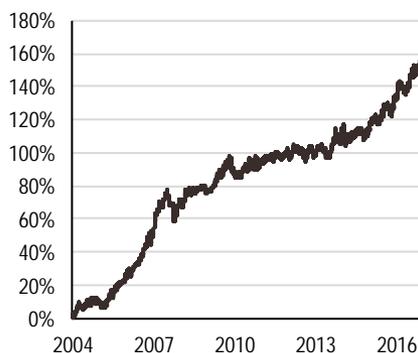
Alternative Risk Premia - Provide Performance

Performance is obtained by combining 8 complementary premia strategies¹

ARP CREDIT



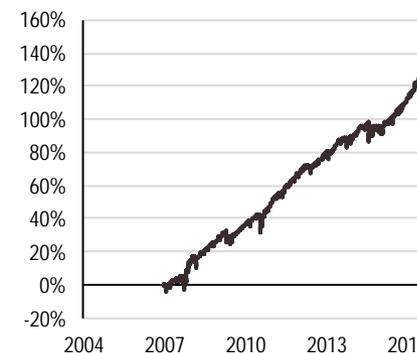
ARP FIXED INCOME



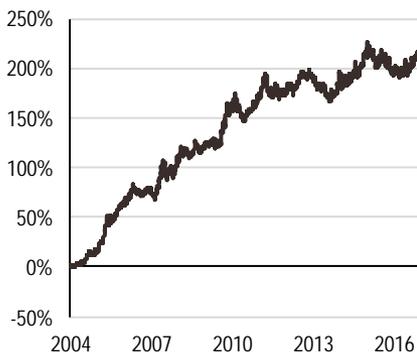
ARP FX



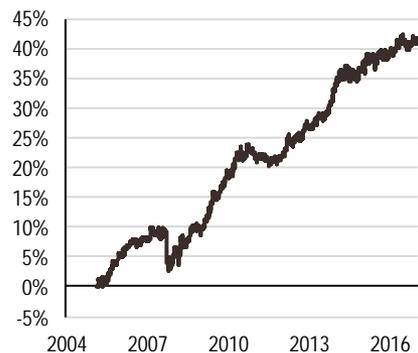
ARP VOLATILITY



ARP COMMODITIES



ARP EQ MKT NEUTRAL



ARP CROSS ASSET TREND



ARP MACRO TAIL HEDGE



¹Source: Lombard Odier internal calculations. Backtest inception date December 2004 except ARP Eq Mkt Neutral February 2006, ARP Credit September 2006, ARP Volatility December 2007, ARP Tail May 2005. This material contains hypothetical (simulated) backtested performance results and other related information ("Hypothetical Results"). Data shown is backtested prior to the Related Fund's launch on August 6, 2014 using the same current fee structure as the Related Fund. Data shown from August 6, 2014 through January 31, 2018 reflects performance for the Share Class N-A USD of the Related Fund. The period shown for the Hypothetical Results is based on available information and LOIM believes the period to be representative and statistically valid. Changes in the assumptions would have a material impact on the Hypothetical Results and other statistical information based on the Hypothetical Results.

Multiple Premia are Grouped into Two Categories

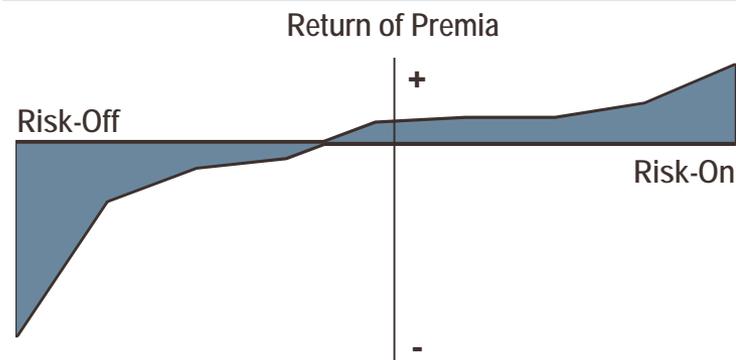
These two categories have complementary profile objectives

INCOME RISK PREMIA – LEFT TAIL

- Insurance seller profile
- Seeks to deliver stable returns with low volatility
- Typically market neutral strategies
- Can be exposed to large losses notably during risk off periods



INCOME RISK PREMIA PROFILE

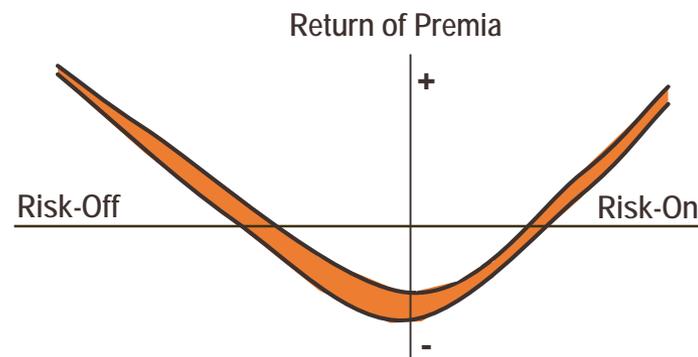


RISK MITIGATION PREMIA – RIGHT TAIL

- Insurance buyer profile
- Seeks to deliver higher positive returns in extreme scenarios
- Typically directional strategies
- Can be exposed to smaller losses in trendless markets, but tend to benefit in prolonged trends and/or sharp reversals



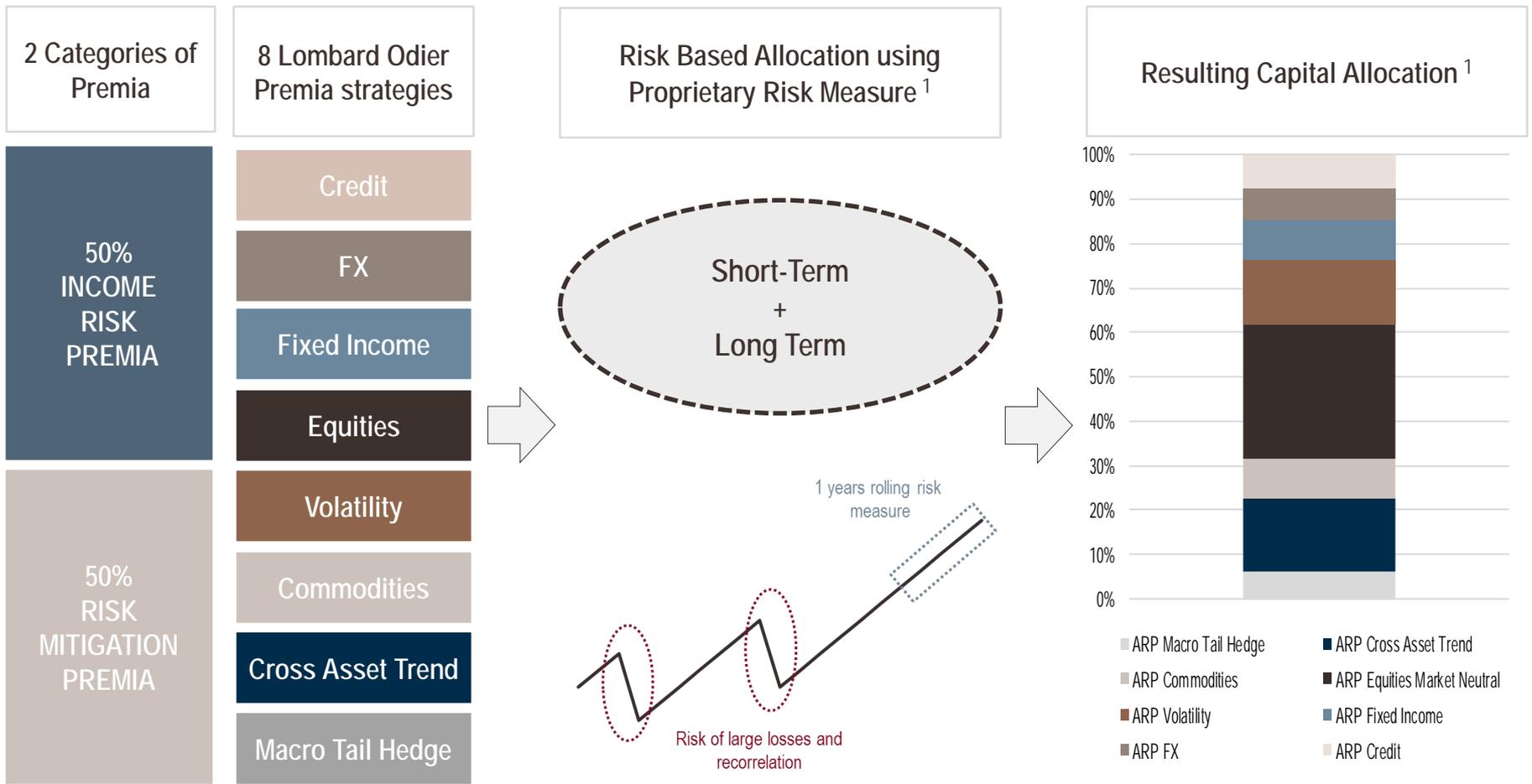
RISK MITIGATION PREMIA PROFILE



Source LOIM. For illustrative purposes only. Past performance is not a guarantee of future results..

Risk is Allocated

Risk contributions are translated into capital weights. The higher the risk, the lower the allocation¹



¹ Note: Allocation is subject to future changes. Source LOIM. Provided for illustrative purposes only to demonstrate the investment process undertaken by the Manager..

Related Fund: LO Funds–Alternative Risk Premia (N-A USD)

Historical Performance

LO FUNDS–ALTERNATIVE RISK PREMIA – TOTAL RETURN¹



Annualized - ITD (Since 06.08.2014)

Performance Statistics	FUND
Ann. Return	5.81%
Ann. Volatility	6.85%
Sharpe Ratio	0.74
Alpha Statistics	
Months up	64%
Maximum monthly gain	5.66%
Maximum monthly loss	-3.32%
Max. Drawdown	-12.55%
Recovery Period	24 months

LO FUNDS–ALTERNATIVE RISK PREMIA – HISTORICAL PERFORMANCE¹

CLASS N-A USD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	FUND
2018	0.99%												0.99%
2017	0.58%	2.55%	0.42%	0.67%	0.01%	1.53%	1.06%	-0.46%	1.07%	2.00%	1.05%	-0.04%	10.89%
2016	1.23%	1.67%	1.06%	-1.88%	-1.67%	2.12%	2.10%	-1.09%	-0.20%	-2.30%	0.18%	1.12%	2.21%
2015	5.66%	0.31%	1.20%	-1.05%	-0.84%	-3.32%	-1.76%	-1.62%	0.83%	-2.04%	0.86%	0.60%	-1.44%
2014	-	-	-	-	-	-	-	4.87%	-0.18%	-1.42%	4.66%	0.06%	8.06%

¹ Data shown for the LO Funds – Alternative Risk Premia – gross of management fees only and based on GIPS Compliance methodology as of January 31, 2018. Strategy inception date 6 August 2014.

Source: Bloomberg, Lombard Odier. Performance is shown net of fees; including reinvestment of earnings, capital gains, interest and dividends. Source Lombard Odier, figures unaudited. Sharpe ratio and Volatility are calculated using daily figures and the annualised performance, over the appropriate period, of the Citigroup 3M USD Tbill Index as risk-free rate. HFRI Macro Systematic Diversified Index includes more than 180 funds employing an investment process designed to identify opportunities in markets exhibiting trending or momentum characteristics across individual instruments or asset classes. Strategies typically employ quantitative process which focus on statistically robust or technical patterns in the return series of the asset, and typically focus on highly liquid instruments. HFRI Index methodology and definition are available at <http://www.hedgufundresearch.com>. Past performance is not a guarantee of future results.

Conclusion

- Why work with Lombard Odier Investment Managers Alternative Risk Premia
 - Team
 - Product
 - Size
- We are dedicated to this business, and that same dedication will translate to you
- Thank you for your consideration



APPENDIX

Alternative Risk Premia Definitions¹

Focus on the most Liquid Premia

8 Premia Strategies	Focus on Liquid Premia	Definition
Credit	Carry	Long high yield / Short investment grade risk adjusted
FX	Value, Carry	Long the highest yielding / Short the lowest yielding currencies Long undervalued / Short overvalued currencies
Fixed Income	Value, Carry	Long the steepest curves / Short the flattest curves
Equities	Value, Momentum, High Quality, Low Beta	Long stock selection based on 6 factors (value, quality, low risk momentum, ESG, carbon) / Short global equity index, beta adjusted
Volatility	Carry, Momentum, Reversal	Implied vs. realized volatility on equities and bonds + satellite strategies
Commodities	Carry, Momentum	Global commodities relative value premia. Long commodities in backwardation / Short commodities in contango
Cross Asset Trend	Momentum	Long and short positions to capture directional moves in Equities, Bonds, Credit, Currencies and Volatility
Macro Tail Hedge	Momentum/Reversal	Short equity and Long volatility positions activated based on changes in US financial conditions

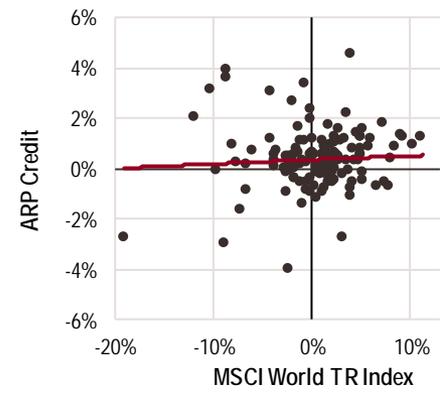
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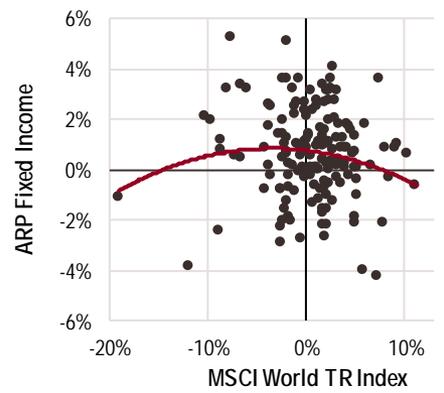
Alternative Risk Premia Strategies Scatter Diagram

Diversification is obtained by combining ARP with different return patterns during equity market stress¹

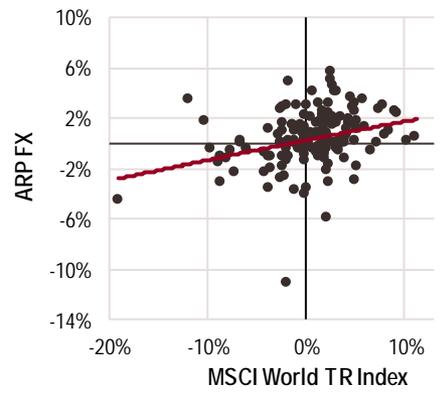
ARP CREDIT



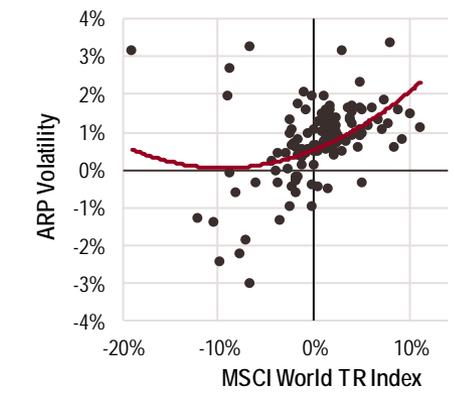
ARP FIXED INCOME



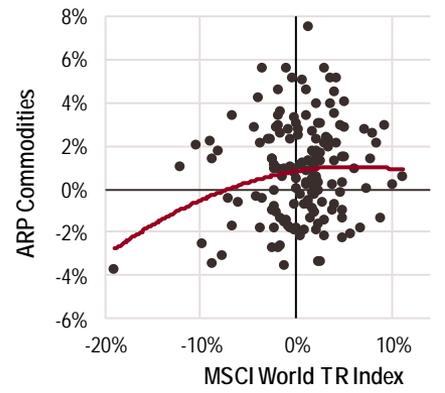
ARP FX



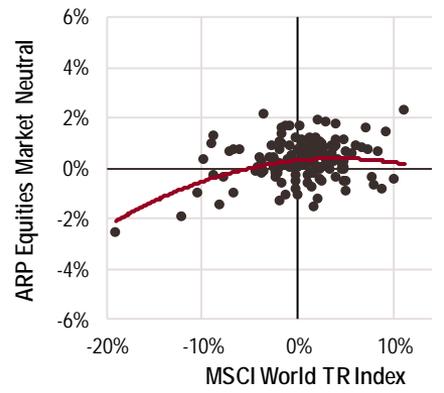
ARP VOLATILITY



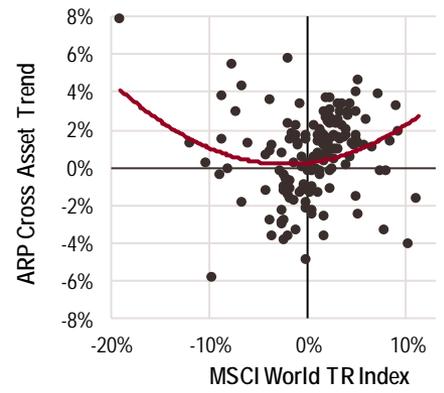
ARP COMMODITIES



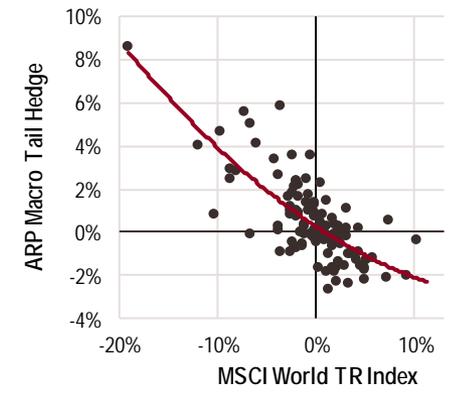
ARP EQ MKT NEUTRAL



ARP CROSS ASSET TREND



ARP MACRO TAIL HEDGE

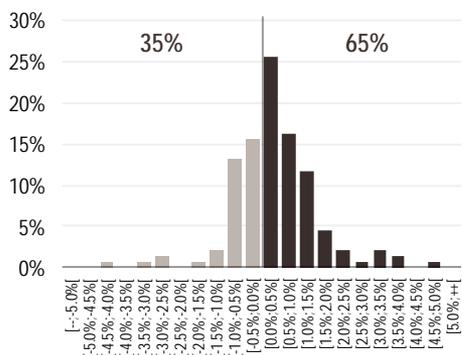


¹Source: Lombard Odier internal calculations. Backtest inception date December 2004 except ARP Eq Mkt Neutral February 2006, ARP Credit September 2006, ARP Volatility December 2007, ARP Tail May 2005. This material contains hypothetical (simulated) backtested performance results and other related information ("Hypothetical Results"). Data shown is backtested prior to the Related Fund's launch on August 6, 2014 using the same current fee structure as the Related Fund. Data shown from August 6, 2014 through January 31, 2018 reflects performance for the Share Class N-A USD of the Related Fund. The period shown for the Hypothetical Results is based on available information and LOIM believes the period to be representative and statistically valid. Changes in the assumptions would have a material impact on the Hypothetical Results and other statistical information based on the Hypothetical Results.

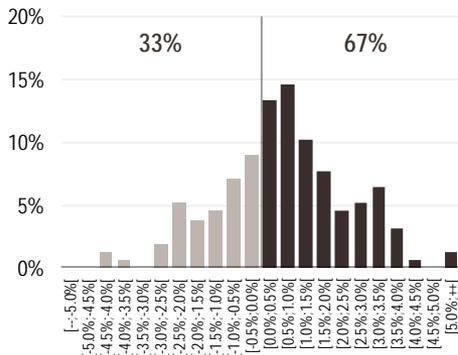
Premia Strategy Distribution

A proprietary risk measure designed to effectively combine strategies with non-normal distribution¹

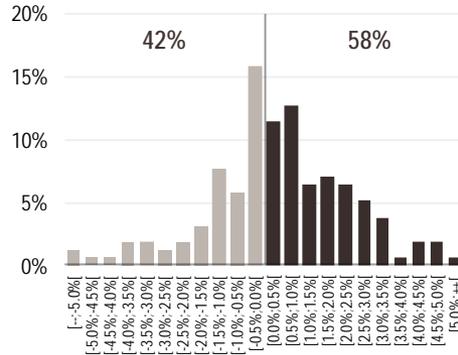
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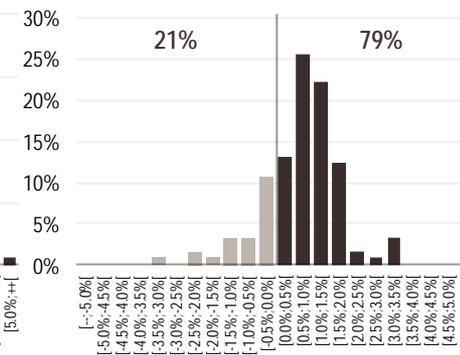
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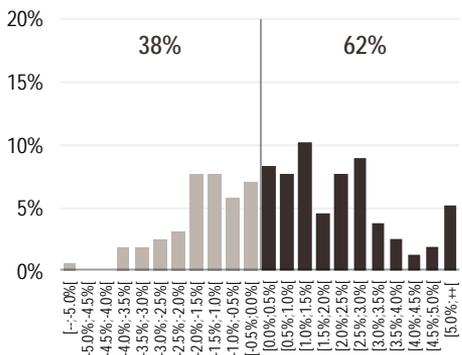
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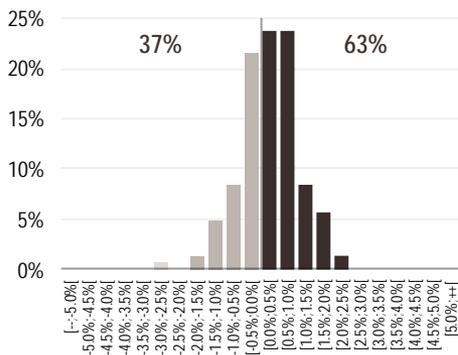
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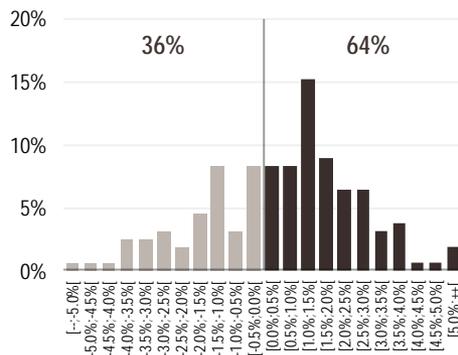
ARP COMMODITIES



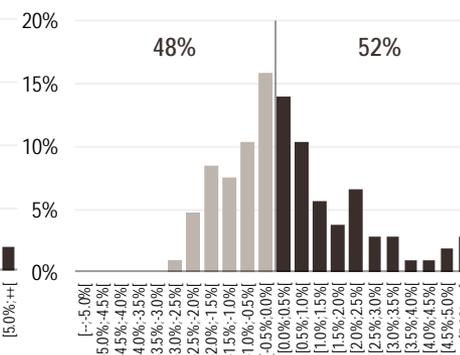
ARP EQ MKT NEUTRAL



ARP CROSS ASSET TREND



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Team Overview



LAURENT JOUÉ
Senior Portfolio Manager

Laurent Joué is a Senior Portfolio Manager in the Systematic Alternatives team within LOIM, managing LO Funds–Alternative Risk Premia, LO Funds–Alternative Risk Premia v300, LO Funds–Commodity Risk Premia and LO Funds (CH)–Commodities Risk Parity ex-agri. He joined LOIM in July 2008. He is also involved in various research projects for the Systematic Team. Laurent started his professional career in 2005 at Géa in Paris, the ADI-LODH joint-venture specialized in Hedge Fund multi-management where he worked as an Assistant Portfolio Manager. Before joining the Systematic team in November 2009, he was in the Fund of Hedge Funds Team as a Portfolio Manager. Laurent earned a master's degree in Market Finance from the Institut Supérieur Européen de Gestion in 2005



MARC PELLAUD, PHD
Senior Portfolio Manager

Marc Pellaud is a Senior Portfolio Manager in the Systematic Alternatives team within LOIM, managing LO Funds–Alternative Risk Premia, LO Funds–Alternative Risk Premia v300, LO Funds–Commodity Risk Premia and LO Funds (CH)–Commodities Risk Parity ex-agri. He is also involved in various research projects for the Systematic Team. He initially joined LOIM in June 2007, managing equity portfolios. Marc earned a PhD in life sciences from the Swiss Federal Institute of Technology in Lausanne (EPFL) in 2007.

Team Overview



CLÉMENT LETURGIE, CFA
Client Portfolio Manager

Clément Leturgie is the head of Product Specialists for the 1798 Alternatives Platform within LOIM Group. He joined in May 2010. Prior to joining, Clément was an assistant portfolio manager for equities, bonds and fund of funds investment managers at BNP Paribas. Previously, he was a credit analyst at Credit Agricole in 2007. He began his career working in the aerospace industry in Montreal in 2006.

Clément earned a master's degree in finance from ESCP-Europe in 2010. He also holds a bachelor's degree in Business Management from McGill University in 2006 in Québec and is a CFA Charterholder



SMITI NIGAM
Product Specialist

Smiti is a Product Specialist in Lombard Odier's 1798 Alternatives Platform. Prior to joining Lombard Odier, Smiti worked for JP Morgan as an Associate in the Hedge Funds Advisory Team. Smiti began her career at the World Trade Organisation as an intern before becoming a Junior Trust Officer at Rawlinson and Hunter. Smiti earned a master's degree in Finance from Imperial College Business School and also holds a master's in Engineering Business Management from the University of Warwick. She gained a bachelor's degree in Electronic Engineering from the University of Sheffield.



ALKESH GIANCHANDANI
Senior Manager

Alkesh Gianchandani is the head of Investor Relations for North America for Lombard Odier Investment Managers, specializing in the 1798 Alternatives Platform. Prior to LOIM, Alkesh was a Senior Member of the Institutional Sales team and a Lead Product Expert in the Hedge Fund and Alternative Risk Premia business at Deutsche Bank. Prior to Deutsche Bank, Alkesh held senior marketing roles at private equity and hedge funds, focusing on distribution efforts exclusively to Institutional Investors. Alkesh started his Alternatives career by building out the hedge fund business at RiskMetrics Group (now MSCI) and spearheading the work on the HedgePlatform risk transparency reporting services. After RiskMetrics, Alkesh headed up Institutional Sales at Robeco Asset Management. Alkesh is a graduate of New York University (MBA) and Lehigh University (BS).

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The historical performance results are calculated net of applicable management fees and other fees and expenses. The past performance of the Related Fund is no indication of an Investment Product's future results and no representation is made that an Investment Product will achieve comparable results.

The Related Fund's performance results may be considered hypothetical even though based on the actual trading of the Related Fund because the performance of the Related Fund does not reflect the actual trading or performance of any Investment Product. The investments in the Related Fund and the investments in an Investment Product will not be identical. Investments for an Investment Product are made in the discretion of the Investment Manager and will vary over time.

Important information (2/2)

Related performance such as the Related Fund results have inherent limitations, some of which are described below. One limitation is that they do not reflect actual trading by an Investment Product and therefore do not reflect the impact that economic and market factors, including concentration, lack of liquidity or market disruptions, may have on investment decisions for an Investment Product. In fact, there may be sharp differences between the Related Fund results and the actual results of any Investment Product. There also may be a material difference between the amount of an Investment Product's assets at any time and the amount of the assets managed in the Related Fund, which difference may have an impact on the management of an Investment Product. No representation is made that an Investment Product's performance would have been the same as the Related Fund results had the Investment Product been in existence during such time or that such investment strategy will be maintained in the future; the Investment Manager may choose to implement a different investment strategy, make different investments or have an Investment Product invest in other investments in which it chooses not to have the Related Fund invest or vice versa. To the extent there are any material differences between the Investment Manager's management of an Investment Product and the Investment Manager's management of the Related Fund, the Related Fund's performance results will no longer be as representative and their illustration value will decrease substantially. A decision to invest in an Investment Product should not be based on the returns of the Related Fund. Past Performance is not indicative of future results.

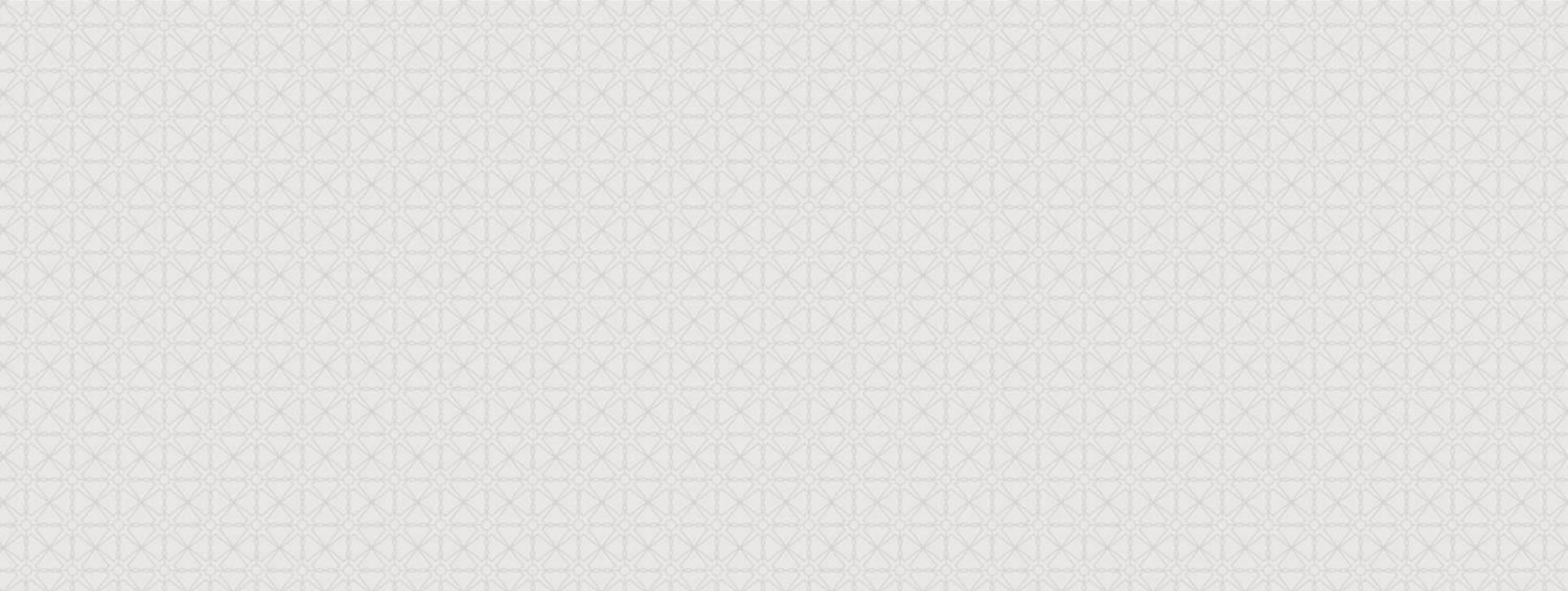
The information presented herein is intended to be a summary only and LOIM makes no representation as to the accuracy of such information. This presentation may contain targeted returns and forward-looking statements. "Forward-looking statements," can be identified by the use of forward-looking terminology such as "may", "should", "expect", "anticipate", "project", "estimate", "intend", "continue" or "believe" or the negatives thereof, or variations thereon, or other comparable terminology. Investors are cautioned not to place undue reliance on such returns and statements, as actual returns and results could differ materially due to various risks and uncertainties. In considering any transactional history or prior performance information contained herein, investors should bear in mind that transactional history or prior performance is not necessarily indicative of future results, and there can be no assurance that the Fund will achieve comparable results. Such descriptions are provided for illustrative purposes only and there can be no assurance that LOIM will be able to implement its investment strategies in a similar manner or pursue similar transactions or be able to avoid losses.

Historical results, exposure, allocations, and trading are not indicative of future results, exposures, allocations, and trading, or for the full fiscal year. In addition, no limitation on the current or future use of the net assets of the Fund or any other investment or investment vehicle is created or implied by the information in this presentation.

The categorizations, estimates, quantifications, sensitivities and other information provided in this presentation may not reflect the criteria employed by LOIM to evaluate exposure, risks, or trading strategies. No representation is made that the categorizations, estimates, quantifications, sensitivities and any other information in this presentation are complete or adequate, or that they would be useful in successfully limiting exposure or risk,

identifying and/or evaluating profitable or risky trading strategies, or constructing a profitable or limited-risk portfolio. The presentation of the exposures or risks identified in this presentation is not intended to be complete. There may be other exposures or risks, of which LOIM may or may not be aware, that would affect the performance or risks of a Strategy. In addition, trading strategies may involve, among other techniques, leverage, short selling and various derivatives, each of which entails separate and distinct risks.

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About Lombard Odier Investment Managers

Lombard Odier Investment Managers is the asset management business of Lombard Odier, focused on institutional investors, third-party distributors and financial intermediaries. Lombard Odier has always been wholly owned and managed by its partners who are responsible for the day-to-day management of the firm. This independent structure means that we are able to focus 100% on our clients rather than shareholders. And our size and focus mean that we can respond with agility to market events.



Systematic Alternative Risk Premia

City of Oakland Police and Fire Retirement System

March 28, 2018

This presentation is intended solely for use with U.S. investors who have been pre-qualified by Parametric personnel. Not intended for public use.

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Dan Ryan

Managing Director – Client
Relationship Management
Parametric

Brandon Kunz

Senior Vice President
Multi-Asset Strategies
Research Affiliates

Chris Haskamp, CFA

Senior Portfolio Manager
Parametric

A Natural Partnership

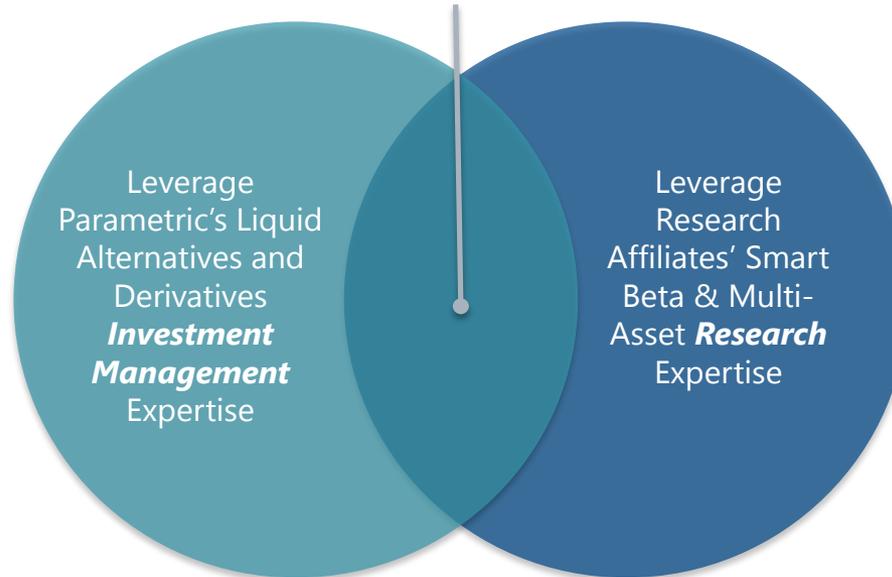
Shared mission to deliver value to investors based on robust investment research and cost-efficient implementation

Partners
since 2009
\$14.1B+
in liquid equities*

Systematic Alternative Risk Premia Strategy (SARP)

PARAMETRIC

Parametric is a leading asset manager in Custom Beta, systematic strategies and overlays, trusted for delivering investor value transparently and cost-effectively by leveraging investment science and technology.

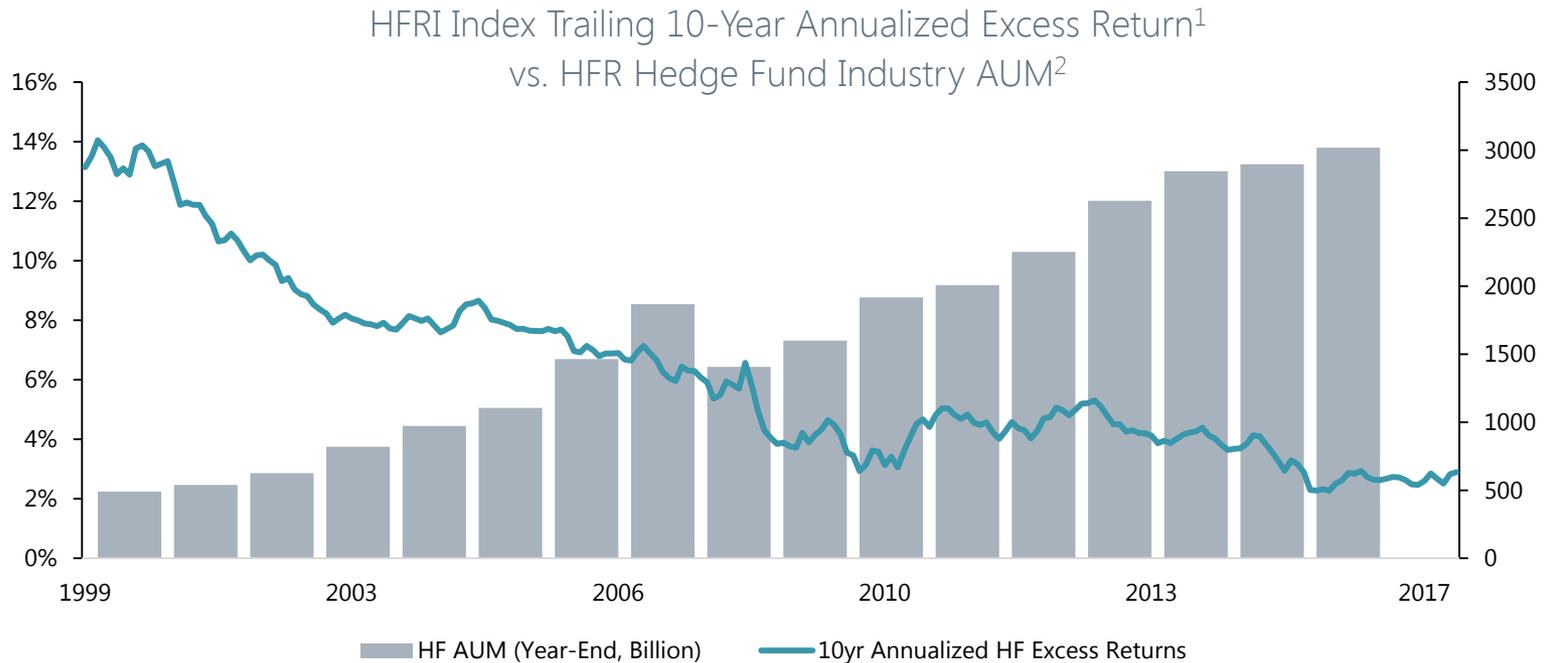


Research Affiliates is a global leader in investment research dedicated to creating value for investors over a long-term horizon through replicable sources of excess return.

*As of December 31, 2017. Represents assets managed by Parametric using Research Affiliates' indexes and/or models.

Investors Are Experiencing Increased Frustration

Since 1999, hedge funds grew assets while their returns steadily declined.



¹ HFRI Index Annualized Excess Returns calculated using HFRI Fund Weighted Composite Index returns minus Barclays 1-3 Month T-Bill Index returns.

² HFR Hedge Fund Industry AUM sourced using HFR Hedge Fund Industry estimated assets under management through December 31, 2016.

Index/benchmark performance is provided for illustrative purposes only. It is not possible to invest directly in an index. Indexes are unmanaged and do not reflect the deduction of advisory fees and expenses. Past performance is not indicative of future results. All investments are subject to the risk of loss.

Source: Hedge Fund Research, Inc. www.hedgefundresearch.com, Bloomberg; Date: 2/21/17.

Addressing Investor Concerns



Attractive
absolute returns



Moderate volatility
profile expected
to average 10-12%



Target Sharpe
ratio of 0.8,
net of fees



Near-zero correlation
to traditional asset
classes & alternative
strategies



Competitive Fees, No
Performance Fees



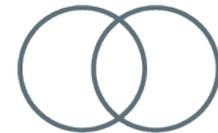
Rooted in years
of academic
and empirical
research¹



Highly efficient
implementation



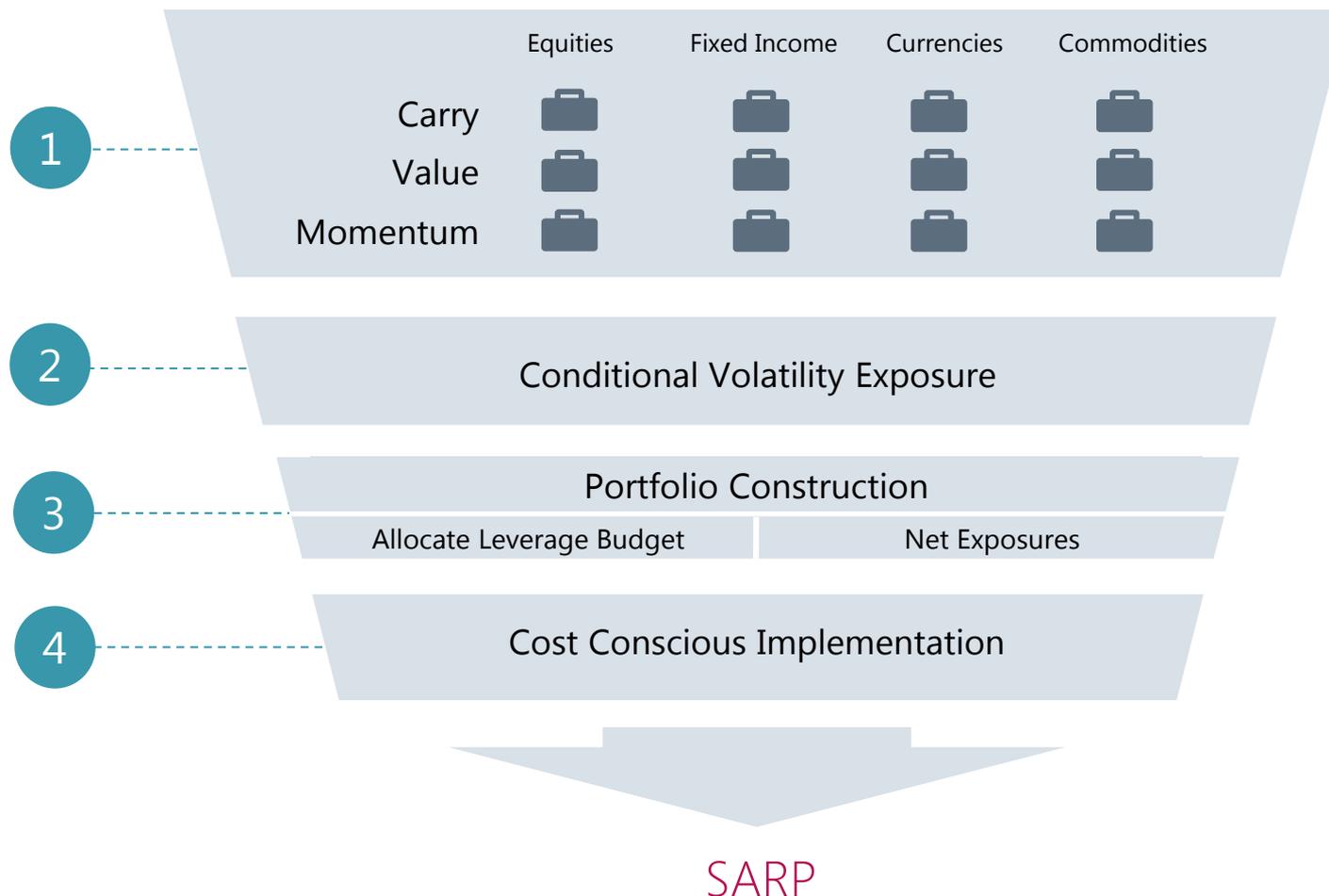
Controlled risk



Transparency

¹Available upon request

Investment Process



Empirically and Theoretically Sound Factors

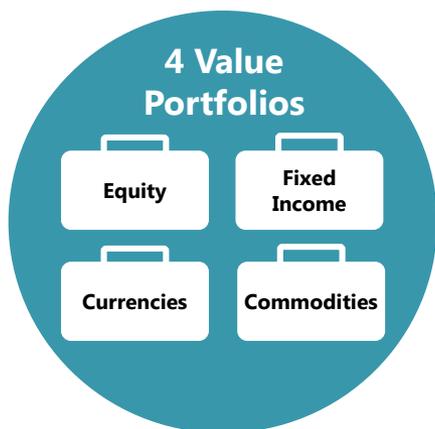
Carry

Return if prices stay the same



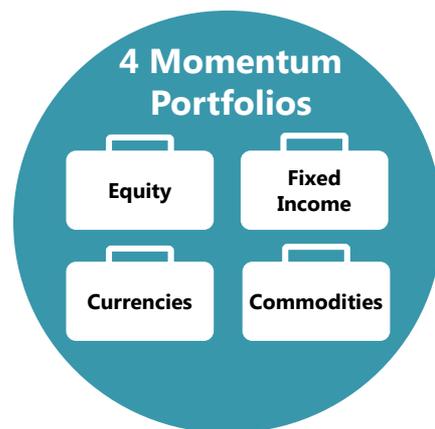
Value

Longer-term mean reversion



Momentum

Shorter-term price trends

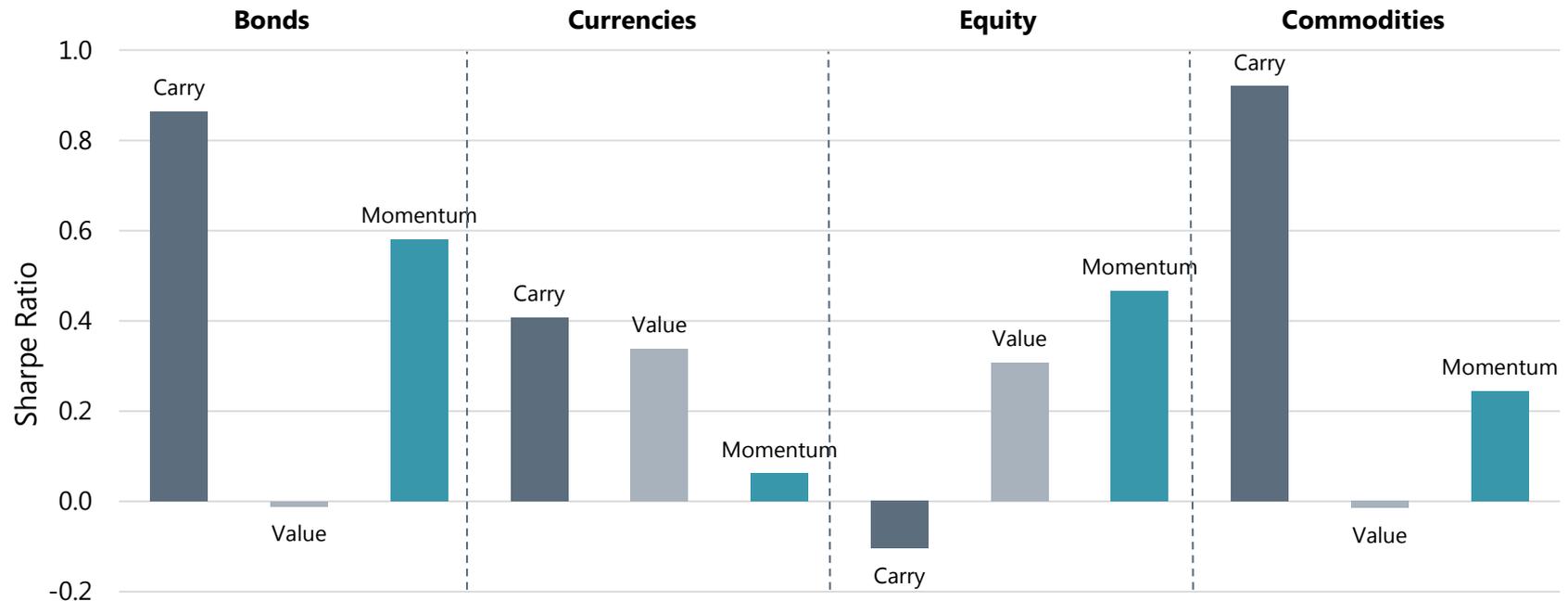


Incorporating factors that are exploitable across all asset classes.

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

Factor Sharpe Ratios

Simulated Sharpe Ratios



Include out-of-favor factors for improved diversification and risk-adjusted returns

Note: Results based on simulation from 1/2002 to 12/2017. 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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Factors are Complementary to Each Other

Low correlation across asset classes and styles (simulated)

Simulated Results 1/2002 to 12/2017		Carry				Value				Momentum			
		Bonds	Curr	Equities	Comm	Bonds	Curr	Equities	Comm	Bonds	Curr	Equities	Comm
Carry	Bonds	1.00											
	Currencies	0.28	1.00										
	Equities	-0.02	0.01	1.00									
	Commodities	0.06	0.12	-0.06	1.00								
Value	Bonds	0.16	-0.01	0.20	0.04	1.00							
	Currencies	0.06	-0.31	0.20	-0.08	0.11	1.00						
	Equities	0.13	0.20	0.26	0.02	0.24	-0.07	1.00					
	Commodities	-0.05	-0.14	0.11	-0.37	-0.10	0.06	0.01	1.00				
Momentum	Bonds	0.16	-0.17	-0.05	-0.06	-0.36	0.04	-0.16	0.09	1.00			
	Currencies	0.04	0.00	0.01	0.01	0.09	-0.09	-0.10	0.03	0.16	1.00		
	Equities	0.00	-0.21	-0.05	-0.02	0.12	-0.02	0.05	0.04	0.14	0.32	1.00	
	Commodities	0.06	0.03	-0.07	0.35	0.06	-0.12	0.00	-0.14	0.14	0.44	0.28	1.00

Average: 0.03
Min: (0.37)
Max: 0.44

Note: Results based on simulation from 1/2002 to 12/2017. 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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Conditional Volatility Exposure

Objective

- Incremental return
- Further diversification of returns

Structure

- Short 2nd VIX future contract
- Long 3rd VIX future contract

Conditions

- Value: $VIX > 15$
- Momentum: Momentum factors must have been profitable in the previous month

Why

- Capture incremental and diversifying return

Theoretical Maximum Leverage of 720%...

...Effective Leverage Significantly Lower

Leverage Budget By Asset Class

	Historical Volatility	Assigned Leverage
Bonds	Lowest	Highest
Currencies	↕	↕
Equities	↕	↕
Commodities	Highest	Lowest

Simulated Results 01/2002 to 12/2017

	SARP
Avg. Gross Exposure	388%
Minimum Exposure	238%
Maximum Exposure	516%
Avg. Net Exposure	50%

Leverage Budget By Factor

Carry	40%
Value	40%
Momentum	20%
Total	100%

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

Note: Historical volatility based on results simulated from 1/2002 to 12/2017. 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.

Hypothetical data is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be used to make investment decisions. Actual results may vary and may vary substantially from the simulated data presented. See Disclosures for additional information.

SARP Representative Holdings List

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

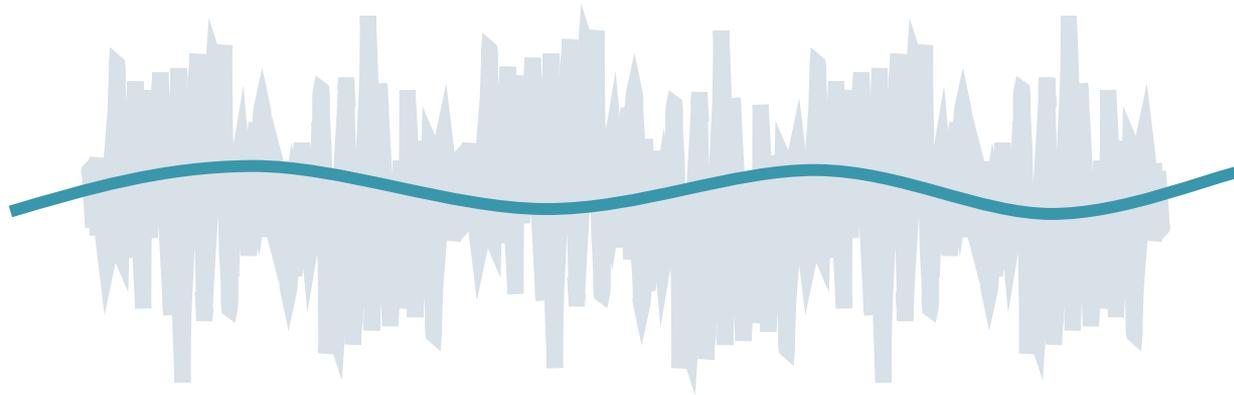
Aluminum
Brent Crude
Cocoa
Coffee
Copper
Corn
Cotton
Feeder Cattle
Gasoil
Gasoline
Gold
Heating Oil
Kansas Wheat
Lead
Lean Hogs
Live Cattle
Natural Gas
Nickel
Silver
Soybeans
Sugar
Wheat
WTI Crude
Zinc

Information as of 12/31/2017.

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.

Banding reduces turnover and transaction costs



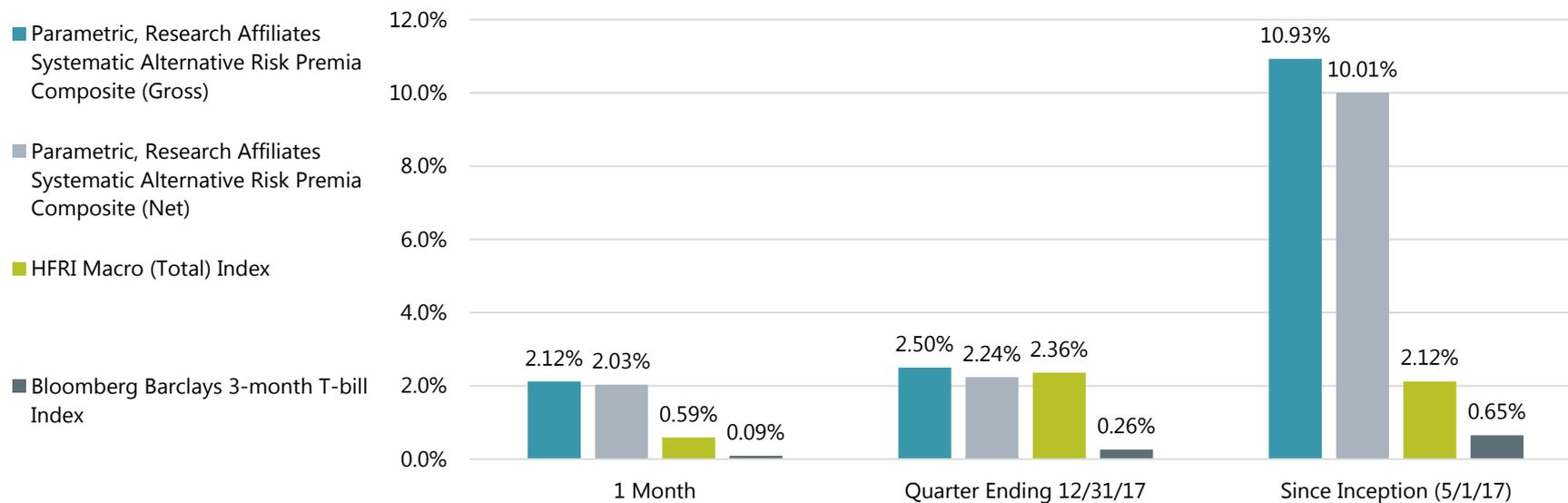
- Signal persistence across time periods
- Relative ranking strength across contracts

Minimized Implementation Drag

For illustrative purposes only. Graph depicts theoretical benefits from banding vs trading on identified signals. Not all benefits may be achieved with this approach.

Performance

Investment Returns SARP Composite, as of 12/31/2017



SARP: Monthly Total Return (Net %)

	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

Source: Hedge Fund Research, Inc. www.hedgefundresearch.com, Parametric as of 12/31/2017. This 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. Returns are presented gross and net of management fees. Net returns represent a 90bps management fee. Returns are calculated in U.S. dollars, include the reinvestment of dividends, income and other distributions, and are after transaction costs and any foreign withholding taxes. Returns for periods of less than one year have not been annualized. Indexes are unmanaged, may not be invested in directly and do not reflect the deduction of fees or expenses. Past performance is not indicative of future returns. All investments are subject to potential loss of principal. Please refer to the Disclosures for additional important information.

Performance Summary

Simulated Returns

01/2002 to 12/2017	Modeled Returns (Annualized)	Volatility (Annualized)	Sharpe Ratio
Gross of fees ¹	13.57%	10.93%	1.13
Management fees	0.90%		
Net of costs, fees and expenses	12.57%	10.93%	1.04

- **Benchmark:** 3-month T-bill, annualized return from 01/2002 to 12/2017: 1.23%

¹Gross of management fees and net of expected transaction costs.

Note: Results based on simulation from 1/2002 to 12/2017. 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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Complementary to Traditional and Alternative Options

Simulated Correlation

Correlation 01/2002 - 12/2017	Parametric Research Affiliates SARP	MSCI World	Bloomberg Barclays Global Aggregate	USD (DXY Index)	Bloomberg Commodities	HFRI Composite	HFRI Macro
Parametric Research Affiliates SARP	1.00						
MSCI World	0.16	1.00					
Bloomberg Barclays Global Aggregate	0.20	0.28	1.00				
USD (DXY Index)	-0.09	-0.64	-0.29	1.00			
Bloomberg Commodities	-0.02	0.47	0.05	-0.66	1.00		
HFRI Composite	0.19	0.88	-0.02	-0.56	0.61	1.00	
HFRI Macro	0.33	0.27	0.20	-0.27	0.45	0.51	1.00

Note: Results based on simulation from 01/2002 to 12/2017. 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, Hedge Fund Research, Inc. www.hedgefundresearch.com, Bloomberg, Commodities Research Board.

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SARP Can Potentially Improve Portfolio Performance

Simulated Net Results
(01/2002 to 12/2017)

Portfolio Allocations

MSCI World	60%	55%	57%	45%
Bloomberg Barclays Global Aggregate	40%	35%	23%	25%
Parametric / Research Affiliates SARP	0%	10%	20%	30%
Return	6.3%	7.0%	7.9%	8.4%
Volatility	9.8%	9.2%	9.6%	8.5%
Sharpe Ratio	0.6	0.8	0.8	1.0
Skewness	(0.8)	(0.7)	(0.6)	(0.5)

Note: Results based on simulation from 01/2002 to 12/2017. 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 Systematic Alternative Risk Premia returns are net of management fees and expected transaction costs (assumed 90bps management fee). Simulated performance is hypothetical and is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be used to make investment decisions. Actual client returns may vary and may vary substantially from the simulated performance presented. Past performance is not indicative of future results. All investments are subject to loss. Performance reflects the reinvestment of dividends and other earnings. See Disclosures for additional information about the limitations of hypothetical performance.

Why Parametric, Research Affiliates

Leverage budgeting vs. volatility targeting



No volatility forecasts and no excess leverage when markets appear calm

Cost conscious implementation



Investors do not lose return due to excessive transaction costs or illiquid trades

Focus on robust factors that are exploitable across multiple asset classes



Avoids over-optimizing and data-mining

Include Value factor in all asset classes



Adds diversification and improves risk-adjusted return

See Risks section.

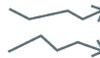
The SARP Solution

Investor Concerns

Low Return Environment



Risk Diversification



Manager & Performance Fees



Trading Costs



Lock-up Periods



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

Cost-Conscious Implementation

Monthly liquidity

Theoretically Sound, Empirically Robust

Transparency

The SARP strategy involves risk, some of which are described on the preceding page. Also see Disclosures for additional information.

Appendices

Research & Portfolio Management Team

Dan Ryan

Managing Director –
Client Relationship Management

Mr. Ryan is responsible for the direct oversight of our U.S. institutional client servicing efforts. This includes managing and directing the day-to-day activities of our relationship management team. Dan is also responsible for managing client relationships throughout the Western U.S. Prior to joining Parametric in 2013, Dan was Vice President and Senior Relationship Manager at State Street Global Advisors. He earned a B.A. in History from the University of Michigan.

Brandon Kunz

Senior Vice President
Multi-Asset Strategies

Brandon Kunz is responsible for external communication of Research Affiliates' insights and products, with an emphasis on multi-asset solutions. In this role, he is responsible for managing Research Affiliates' multi-asset partnerships with key affiliates, which includes regular interaction with portfolio managers, product strategists, and client facing professionals. This role also entails working closely with Research Affiliates' Asset Allocation, Macro Research, and Product Management teams to address market feedback.

Previously, he was a portfolio specialist and director of business development at Dorchester Capital, a fund-of-hedge-funds manager. In this role, he developed a global tactical asset allocation (GTAA) model suite providing systematic asset class forecasts to aid in asset deployment. Prior to working for Dorchester, Brandon was a portfolio manager of the flagship GTAA overlay at the Teacher Retirement System of Texas.

Brandon holds an undergraduate degree from the Marriott School of Management at Brigham Young University and an MBA from the Eller College of Management at the University of Arizona.

Chris Haskamp, CFA

Senior Portfolio Manager

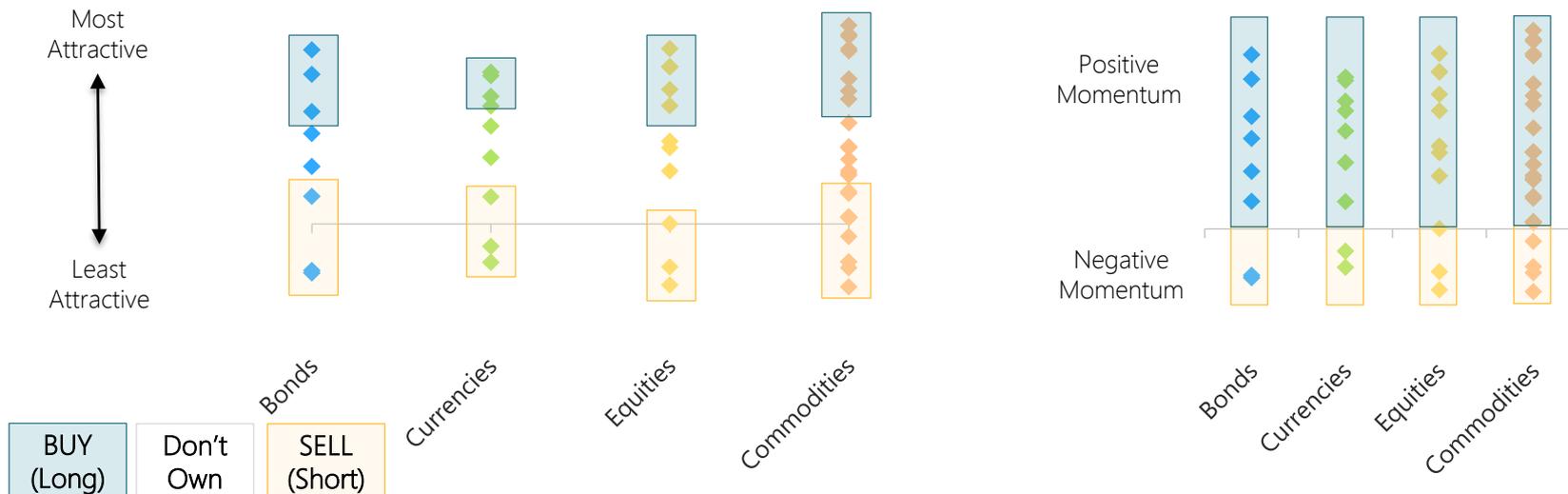
Mr. Haskamp is dedicated to portfolio management and leading research projects in the area of risk management. Chris manages portfolios for the Liability Driven Investing program as well as for the enhanced index programs. Prior to joining Parametric in 2006*, he spent three years as a scientist at the medical device firm Beckman Coulter Inc. Chris earned a B.S. in Biochemistry from the University of Minnesota and a M.S. in Chemistry from the University of California, San Diego. Chris earned an MBA in Finance from the University of Minnesota, Carlson School of Management in May of 2007 and started full time at Parametric in June of 2007. He is a CFA® charterholder and a member of the CFA Society of Minnesota.

*Reflects the year employee was hired by The Clifton Group, which was acquired by Parametric Portfolio Associates® LLC on December 31, 2012.

Factor Portfolio Construction

We steer clear of over optimizing individual contract weights and use appropriate constructs for each factor.

Carry	Value	Momentum
Cross-sectional construct		Time Series Construct
<ul style="list-style-type: none"> Buy the top third most attractive and sell the bottom third least attractive Equally weight the buys and sells 		<ul style="list-style-type: none"> Buy what's up, sell what's down All positions sized the same



For illustrative purposes only. Chart is illustrative of portfolio construction in each asset class for each style factor. Plotted points represent the securities universe within each asset class. Placement of plotted points on the graph are representative of long, short or neutral positions incorporated into overall portfolio construction. Information subject to change.

Net Long And Short (Simulation)

Historical Net Allocation



	Currencies	Bonds	Equities	Commodities	Parametric Research Affiliates SARP
Average Net Exposure	10%	30%	9%	0%	50%
Minimum Weight	-41%	-56%	-28%	-21%	-48%
Maximum Weight	63%	56%	28%	18%	151%

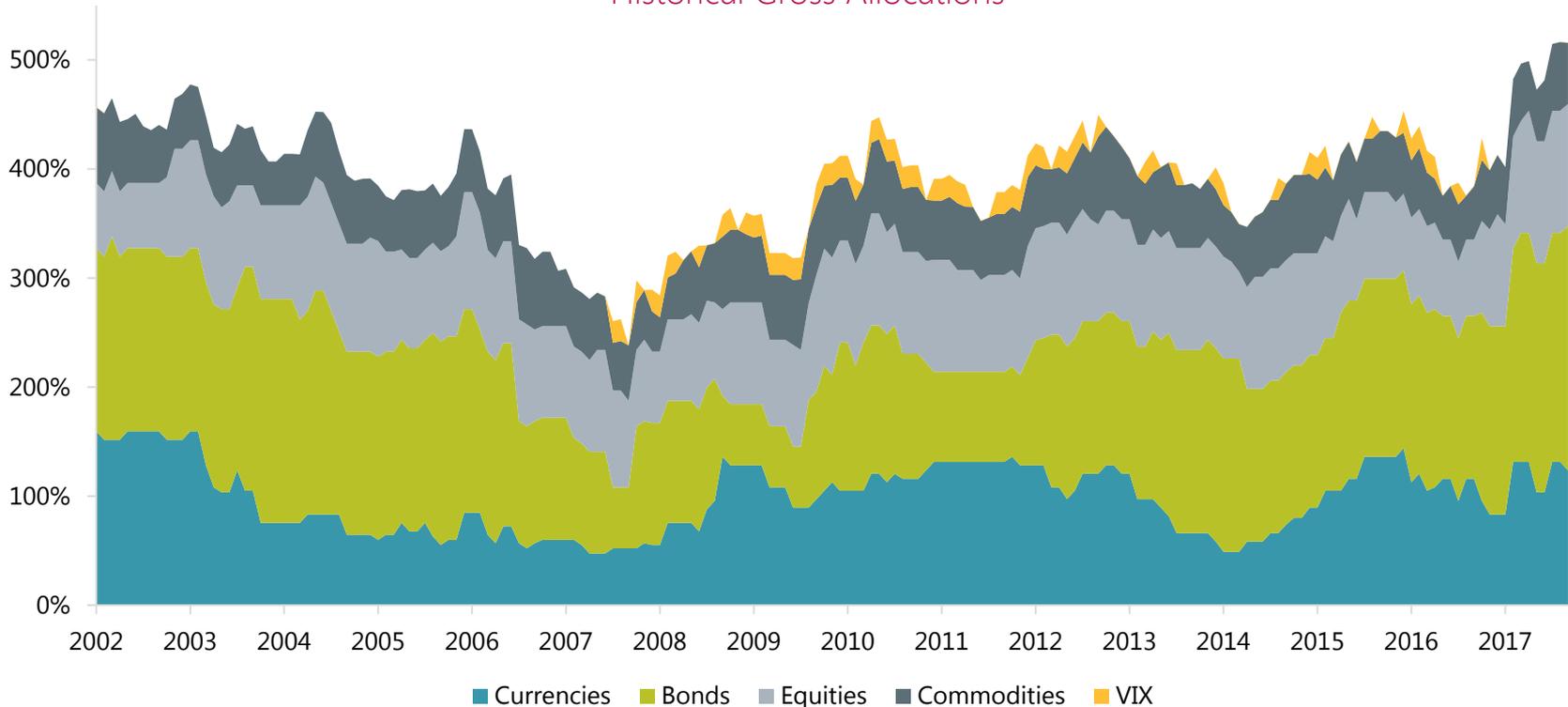
Results based on simulation from 1/2002 to 12/2017. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis. Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

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Allocations Including VIX Overlay (Simulation)

Sell hedged VIX strategy when front-month contract is above \$15 and hedged VIX strategy has positive one-month momentum

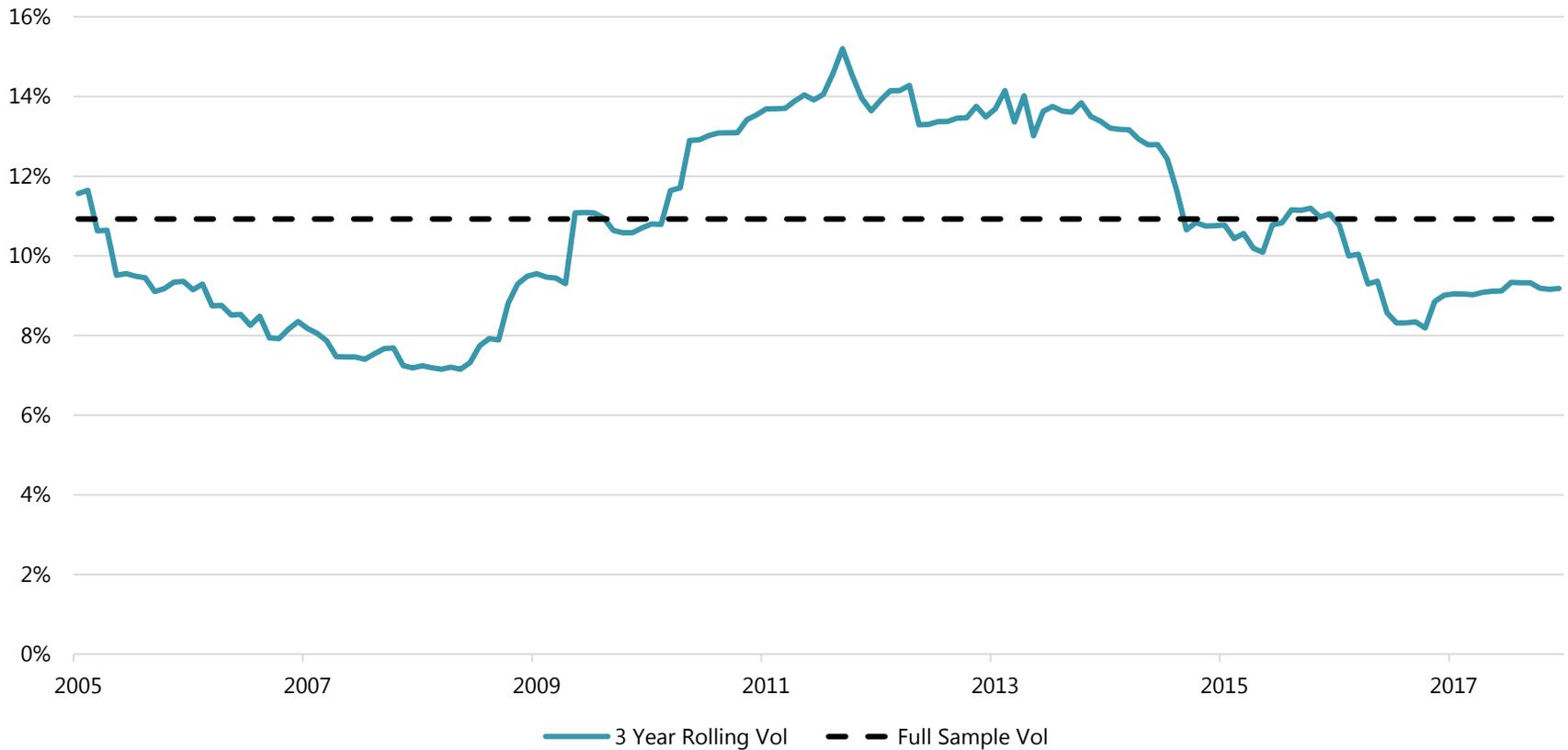
Historical Gross Allocations



Simulated results from 1/2002 to 12/2017. 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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SARP: 3-Year Rolling Volatility (Simulation)

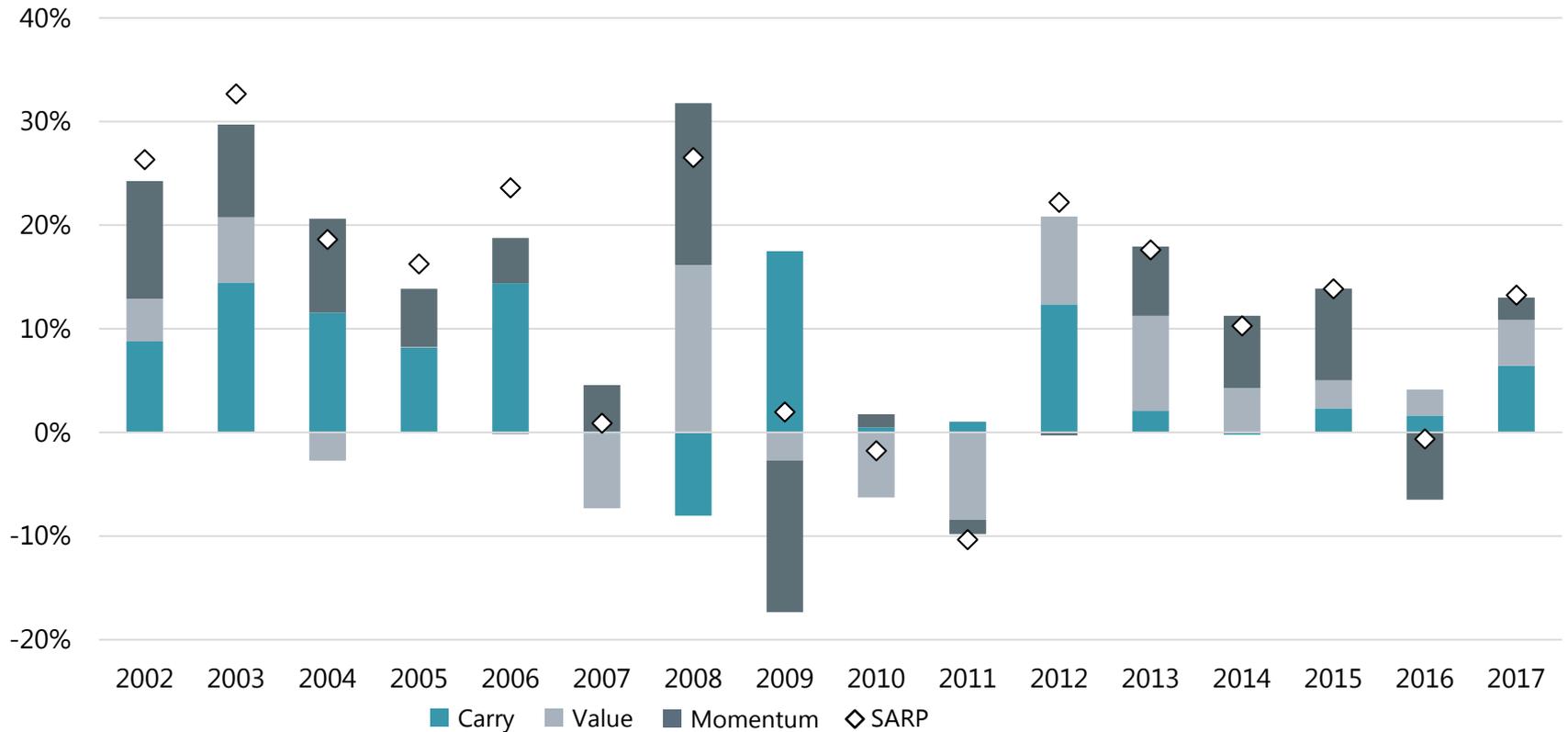


Note: Results based on simulation from 01/2002 to 12/2017. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis
 Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

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Factor Returns (Simulation)

Annual Return Decomposition

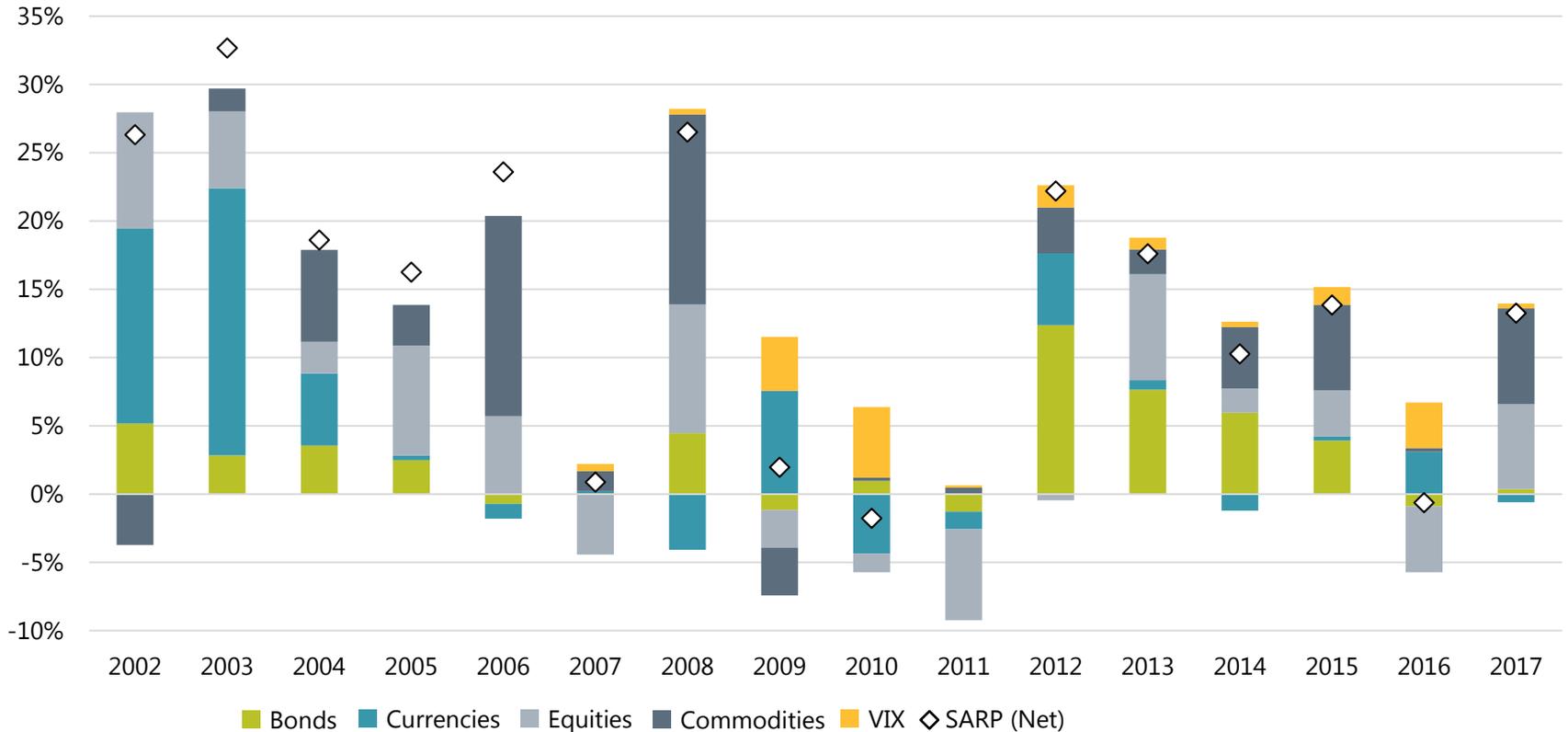


Note: Net results based on simulation from 1/2002 to 12/2017. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis. Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

Systematic Alternative Risk Premia Strategy performance is hypothetical and provided for illustrative purposes only. It does not reflect the experience of any investor and should not be used to make investment decisions. Actual client performance may vary and may vary substantially from the simulated performance presented. Past performance is not indicative of future results. All investments are subject to loss. Simulated performance is presented net of investment advisory fees and transaction costs. See Disclosures for additional information about the limitations of hypothetical performance.

Asset Class Returns (Simulation)

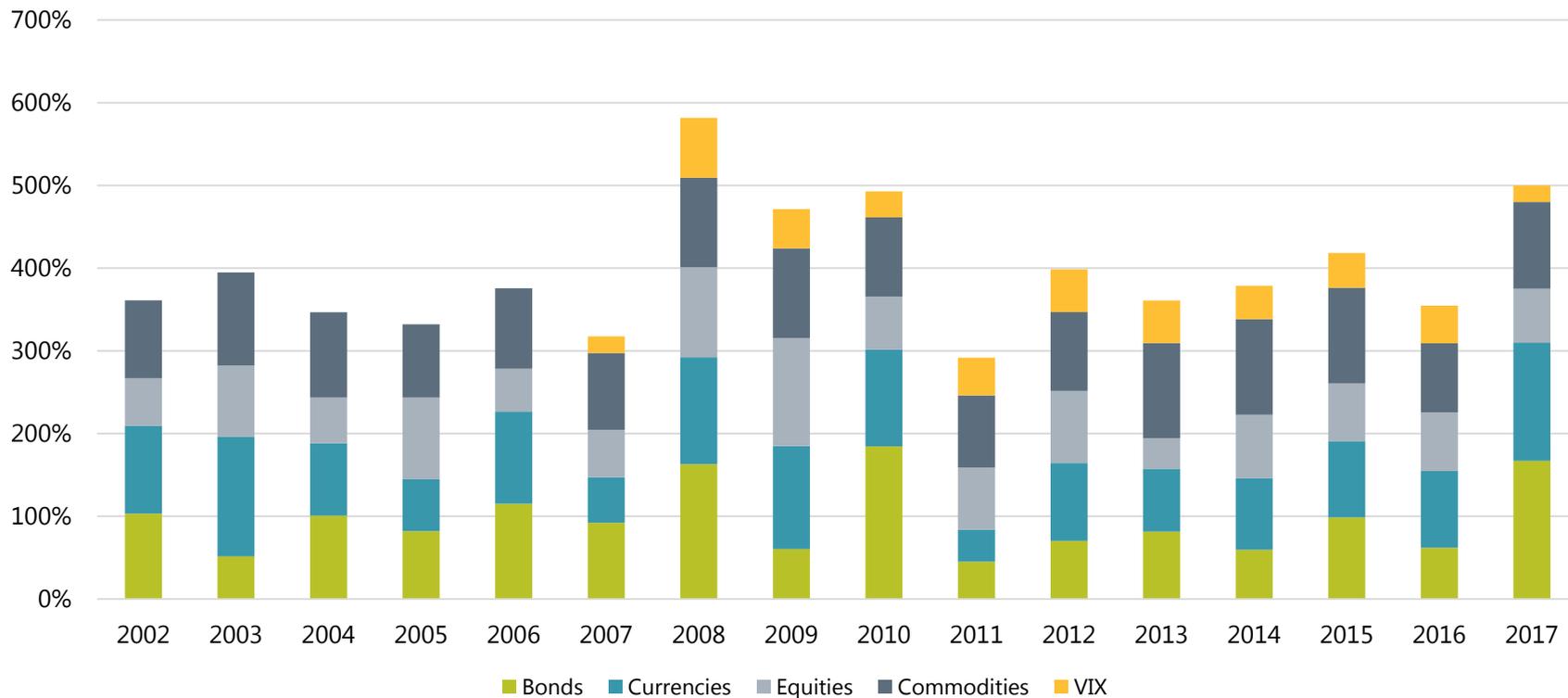
Annual Return Decomposition



Note: Net results based on simulation from 1/2002 to 12/2017. 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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Asset Class Annual Turnover (Simulation)



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

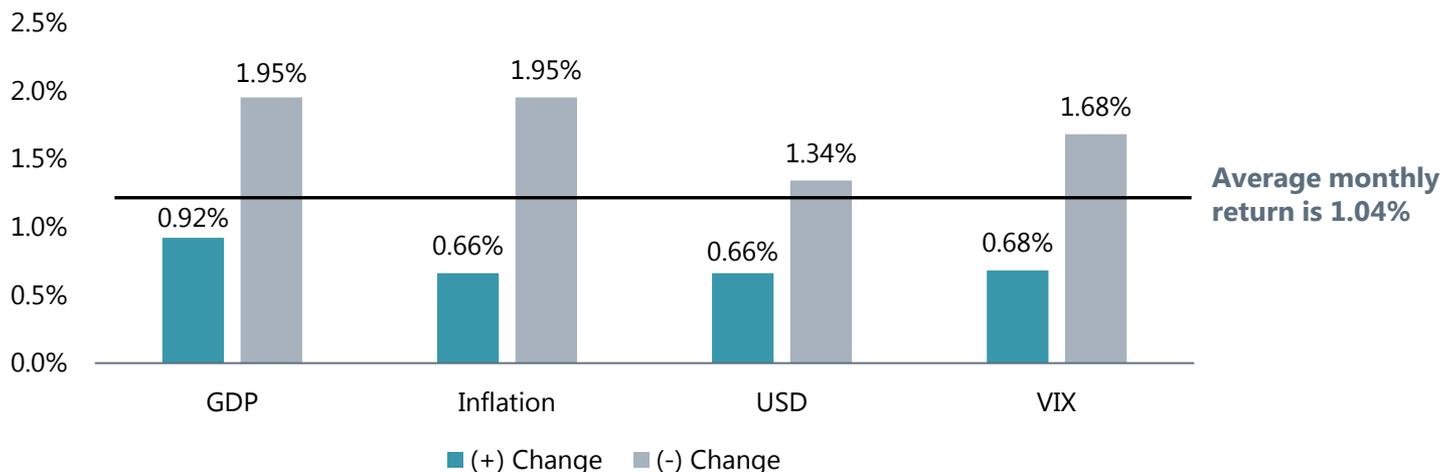
Note: Gross results based on simulation from 1/2002 to 12/2017. 2002 to present represents the time period for which reliable data is available for material portion of futures in analysis. Source: Research Affiliates, LLC, Datastream, Bloomberg, Commodities Research Board.

Hypothetical data is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be used to make investment decisions. Actual results may vary and may vary substantially from the simulated data presented. See Disclosures for additional information.

Environmental Analysis

Simulated Performance in Rising and Falling Environments

Model has exhibited average positive monthly returns



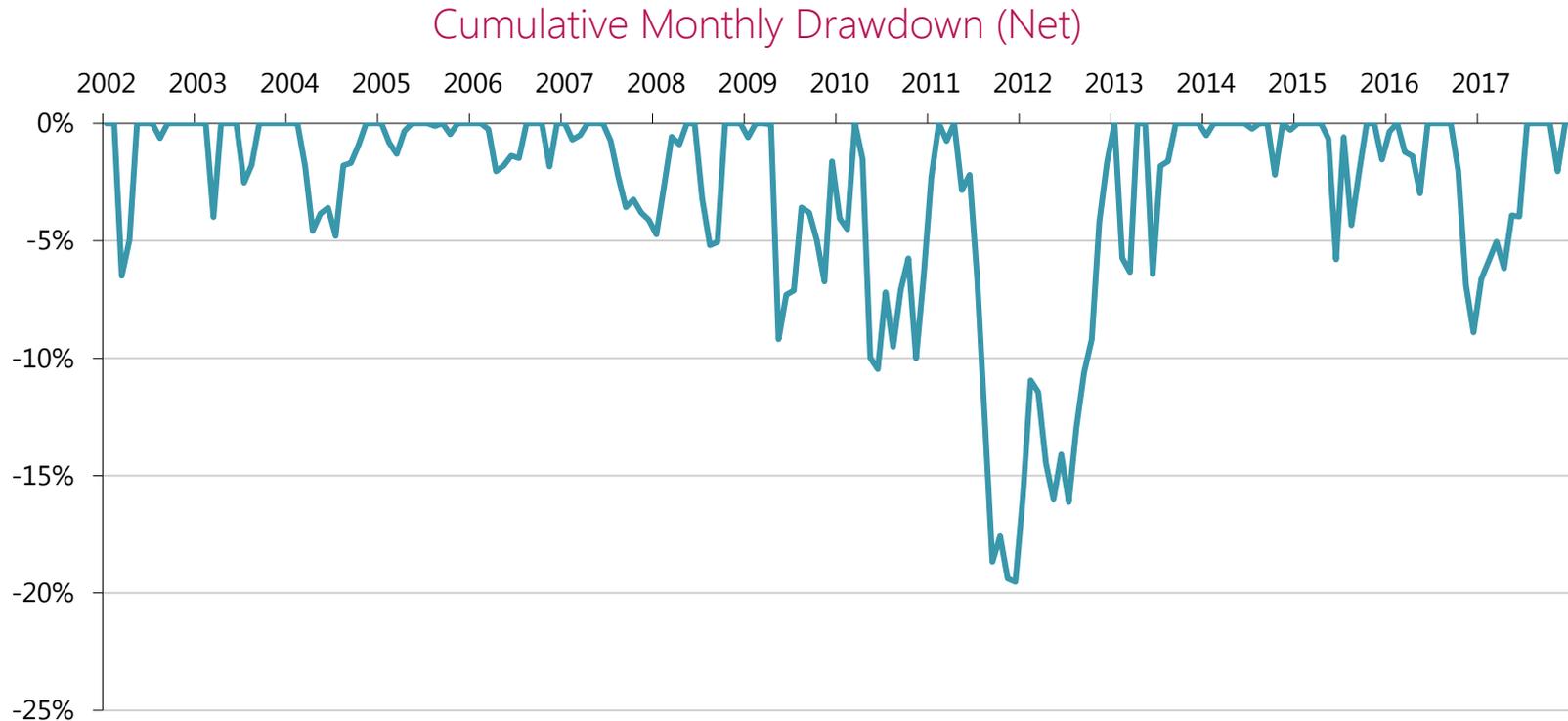
Using simulated excess returns from 01/2002-12/2017.

Quarterly Data = GDP (Real) with 59 observations

Monthly Data = USD (DXY Index), Inflation, and VIX with 181 observations

Simulated performance is hypothetical and is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be used to make investment decisions. Actual client returns may vary and may vary substantially from the simulated performance presented. Past performance is not indicative of future results. All investments are subject to loss. Simulated performance is presented net of management fees and transaction costs. See Disclosures for additional information about the limitations of hypothetical performance.

Drawdowns (Simulated)



Results based on simulation from 1/2002 to 12/2017. 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 hypothetical and is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be used to make investment decisions. Actual client returns may vary and may vary substantially from the simulated performance presented. Past performance is not indicative of future results. All investments are subject to loss. Simulated performance in this exhibit is presented net of management fees and expenses (90 bps) and expected transaction costs. See Disclosures for additional information about the limitations of hypothetical performance.

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.

Parametric SARP

Simulated returns are calculated utilizing a proprietary model. The model is constructed utilizing general inputs defined below. Please see additional risks and disclosures at the end of the presentation.

Model Inputs:

- **Time period selected:** January 2002 – December 2017 to reflect longest reliable data history
 - Eligible VIX futures month end data not utilized in the model until 2007.
- **Instruments Utilized:** Listed futures and currency forwards held to maturity, unless model signals a rebalance
- **Frequency of updates:** Model inputs refreshed monthly
- **Pricing:** Closing price of individual securities used for security evaluation
- **Rebalancing:** Banding approach applied which considers strength and persistence of signal before making the adjustment.
- **Collateral:** All collateral assumed to earn a 3 month Treasury bill rate

Simulated performance is hypothetical in nature. Hypothetical performance results have many inherent limitations, some of which are described below. No representation is being made that any 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.

Important Information

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The Systematic Alternative Risk Premia Strategy (SARP) strategy is intended to be offered by the Parametric Investment & Overlay Strategies segment of Parametric. Parametric Investment & Overlay Strategies AUM as of 12/31/2017 is approximately \$111.47 billion. The GIPS® compliant presentation will be available upon request when it has been created. The GIPS compliant presentation along with other supplemental information will further define or explain 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.

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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.

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.

Important Information (Continued)

The HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of \$50 Million under management or a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

The HFRI Macro (Total) Index: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

The Standard and Poor's 500 Index is a capitalization-weighted index of 500 stocks. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index was developed with a base level of 10 for the 1941-43 base period.

The Bloomberg Barclays Global Aggregate Bond Index is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

The MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of global developed markets.

The Bloomberg Commodity Index (BCOM) is formerly known as the Dow Jones-UBS Commodity Index. BCOM is a broadly diversified index composed of futures contracts on physical commodities.

The HFRI Composite, HFRI Fund of Funds, HFRI Equity Hedge, HFRI Equity Market Neutral, HFRI Event Driven, HFRI Relative Value, HFRI Macro, HFRI Macro: Systematic Diversified and HFRI Fund Weighted Composite Indexes are being used under a license from Hedge Fund Research, Inc., which does not approve of or endorse Parametric's Systematic Alternative Risk Premia product.

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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.

Important Information (Continued)

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Parametric is headquartered at 1918 8th Avenue, Suite 3100, Seattle, WA 98101. Parametric's Minneapolis investment center 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) or 952.767.7700 (Minneapolis), or visit our website, www.parametricportfolio.com.

Date: March 28, 2018

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
 Katano Kasaine – OPFRS

RE: Northern Trust – Recommendation to Change Account Structure

Manager: Northern Trust

Inception Date:	6/01/2010	OPFRS AUM (1/31/2018):	\$80.8 million (21.2%)
Product Name:	Russell 1000 Index Strategy	Management Fee:	6 bps (\$48,474.41)*
Investment Strategy:	Large Cap Core Equity	Firm-wide AUM (12/31/17):	\$1,161 billion
Benchmark:	Russell 1000 Index	Strategy AUM (12/31/17):	\$29.3 billion

*Estimated \$ amount based on manager account AUM as of 1/31/2018

Summary & Recommendation

Northern Trust has served as OPFRS’s passive large cap core equity manager since June 2010 through a separately managed account vehicle. In that time Northern Trust performed within expectations for a passive manager and has experienced no major organizational changes. However, as the AUMs of the OPFRS Northern Trust portfolios have fallen, the need to consider more cost-efficient investment vehicles is apparent. As a result, **PCA recommends that OPFRS transfer the assets in the current separately managed account into the equivalent commingled fund with Northern Trust.**

Discussion

As noted above, OPFRS currently has roughly \$80 million in a separately managed account vehicle with Northern Trust. This portfolio is passively managed and designed to replicate the Russell 1000 index as part of the portfolio’s U.S. equity asset class. The current fee for this investment is 6 bps, with a \$50,000 minimum. As the allocation amount to this portfolio has dropped, the current account structure has become cost prohibitive, which has resulted in a current fee based on the bps allocation that is lower than the \$50,000 minimum.

As shown below, Northern Trust offers two commingled fund products that eliminate the minimum fee requirement and result in significant savings to OPFRS. The difference between the two funds is securities lending, which OPFRS currently participates in its separately managed account format.

The two commingled versions of the fund have the same investment and return objectives as the current separately managed account.

PCA and OPFRS staff has also confirmed with Northern that there is no cost to transition these assets to the either of the new portfolios, including daily liquidity.

Fee Comparison

OPFRS Portfolio Fee Comparison (as of 1/31/2018)

	Current (\$M)	Commingled (Non Lending)	Commingled (Lending)
1/31/2018 AUM	\$80.8	\$80.8	\$80.8
Fee	6 bps	3 bps	2 bps
Min. Fee	\$50,000	\$0	\$0
Current Fee	\$48,474	\$0.00	\$0.00
Total Fee	\$50,000	\$24,240	\$16,160

Product and Organization Review Summary

Northern Trust		Areas of Potential Impact			
	Level of Concern [^]	Investment process (client portfolio)	Investment Team	Performance Track Record	Team/ Firm Culture
Product					
Key people changes	None				
Changes to team structure/individuals' roles	None				
Product client gain/losses	None				
Changes to the investment process	None				
Personnel turnover	None				
Organization					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
Recommended Action	None - X	Watch Status		Termination	

[^]None, low, medium, or high

Organizational Changes

Since Northern Trust's previous contract renewal in 2017, there have been minimal changes to the passive strategy portfolio management team. During 2017, two portfolio managers left the team and were promptly replaced. This amount of turnover is consistent with previous years and is not considered an issue given that the team consists of 25 total portfolio managers. Brent Reeder,

who is considered the primary manager for the Russell 1000 Core product, has been with the fund since 1998.

Investment Process, per manager

The Northern Trust Russell 1000 Index fund seeks investment results, before expenses, approximating the aggregate price and dividend performance of the securities included in the Russell 1000 Index. The fund invests at least 80% of its net assets in equity securities in the index and uses proprietary quantitative techniques to minimize trading costs.

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The information contained in this report may include forward-looking statements. Forward-looking statements include a number of risks, uncertainties and other factors beyond the control of the Firm, which may result in material differences in actual results, performance or other expectations. The opinions, estimates and analyses reflect PCA's current judgment, which may change in the future.

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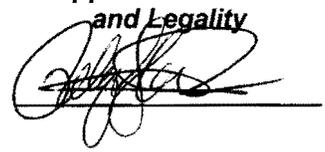
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OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

Approved to Form
and Legality



RESOLUTION No. 7007

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

RESOLUTION AUTHORIZING AN AGREEMENT WITH NORTHERN TRUST INVESTMENTS, N.A. TO MANAGE THE LARGE-CAP CORE DOMESTIC EQUITY CLASS ASSETS IN A COMINGLED ACCOUNT

WHEREAS, the City of Oakland Police and Fire Retirement System Board ("Board") approved a motion on October 28, 2009 to enter an agreement ("The Agreement") with Northern Trust Investments, effective April 19, 2010, to provide management, advice, and counsel to the Police and Fire Retirement Fund ("Fund") for the investment of the Fund's Large Cap Core Domestic Equity Asset Class; and

WHEREAS, on March 29, 2017, the Board approved by Resolution No. 6959 to exercise a one-year term extension option, which expires on April 19, 2018; and

WHEREAS, Section V of said Agreement charges the Fund a flat fee of six (6) basis points or 0.06% of assets under management with a minimum annual fee of \$50,000 per year; and

WHEREAS, the current value of the Large Cap Core Domestic Equity Asset Class investment portfolio has lowered to a level in which the \$50,000 minimum fee is no longer of benefit to the Fund; and

WHEREAS, the Northern Trust Investments Collective Russell 1000 Index Comingled Fund charges a flat fee of up to three (3) basis points (0.03%) of assets under management and does not have a minimum annual fee; and

WHEREAS, the Board wishes to transfer the PFRS' assets from the Northern Trust Investments Large-Cap Core Domestic Equity Separate Account, to the Northern Trust Investments Collective Russell 1000 Index Comingled Fund; now, therefore, be it

RESOLVED: That the Board authorizes entering an agreement with Northern Trust Investments, N.A. to manage its Large Cap Core Domestic Equity Class assets in a Northern Trust Investments Collective Russell 1000 Index Comingled Lending Fund; and be it;

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

FURTHER RESOLVED, that the Board authorizes the transfer of PFRS Large Cap Core Domestic Equity Class assets from the existing Northern Trust Investments Large-Cap Core Domestic Equity Separate Account to the Northern Trust Investments Collective Russell 1000 Index Comingled Lending Fund.

IN BOARD MEETING, CITY HALL, OAKLAND, CA **MARCH 28, 2018**

PASSED BY THE FOLLOWING VOTE:

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

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY

Northern Trust COLLECTIVE RUSSELL 1000 INDEX FUND - LENDING

As Of December 31, 2017

EQUITIES

Key Facts

Fund Size (\$M)	5,991.85
Portfolio Turnover (%)	13
Benchmark	Russell 1000

Fees and Expenses

Total Admin Expenses (%)	0.0100
Total Annual Operating Expense (%)	0.0100
Per \$1000 Investment (\$)	0.1000

Portfolio Information

	Fund	Index
Number of Equity Securities	979	978
Weighted Avg. Cap. (\$B)	178.9	177.6
Price to Earnings	23.59	23.59
Price to Book	3.22	3.21
Dividend Yield (%)	1.84	1.82
3-Year EPS (%)	11.76	11.66
Return on Equity (%)	18.43	18.28

Top Holdings (% of fund)

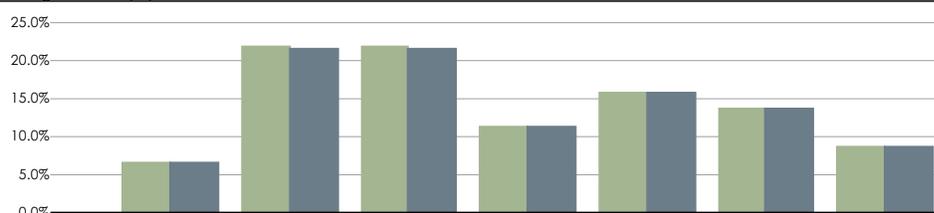
	Fund	Index
Apple Inc.	3.43	3.43
Microsoft Corporation	2.53	2.53
Amazon.com, Inc.	1.84	1.83
Facebook, Inc. Class A	1.63	1.63
Berkshire Hathaway Inc. Class B	1.50	1.50
Johnson & Johnson	1.49	1.49
JPMorgan Chase & Co.	1.46	1.46
Exxon Mobil Corporation	1.40	1.40
Alphabet Inc. Class C	1.25	1.25
Alphabet Inc. Class A	1.24	1.24

INVESTMENT OBJECTIVE

The primary objective of the Northern Trust Russell 1000 Index Fund is to approximate the risk and return characteristics of the Russell 1000 Index. This Index is commonly used to represent the large cap segment of the U.S. equity market.

Fund Performance

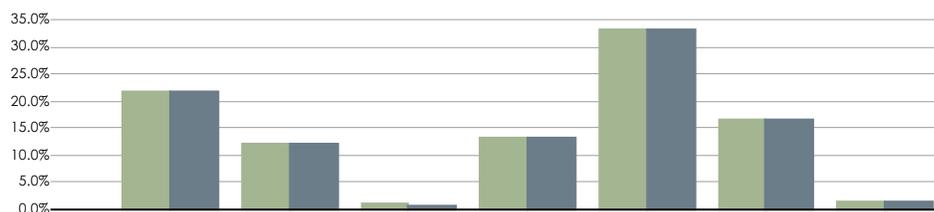
Trailing Returns (%)



as of 12/31/2017	3 Month	Year-to-Date	1-Year	3-Year	5-Year	7-Year	10-Year
Fund	6.59	21.72	21.72	11.28	15.76	13.73	8.70
Benchmark	6.59	21.69	21.69	11.23	15.71	13.66	8.59

Calendar Year Returns (%)

All performance periods greater than 1-year are annualized.



	2017	2016	2015	2014	2013	2012	2011
Fund	21.72	12.10	0.99	13.30	33.14	16.49	1.60
Benchmark	21.69	12.05	0.92	13.24	33.11	16.42	1.50

INVESTOR STRATEGY

To achieve its objective, the Fund employs a replication technique which generally seeks to hold each index constituent in its proportional index weight. The Fund may make limited use of futures and/or options for the purpose of maintaining equity exposure. This Fund may participate in securities lending.

INVESTMENT MANAGER

Northern Trust is a global multi-asset class investment manager serving clients worldwide. Through the combined resources of the Northern Trust Company, Northern Trust Investments, Inc., Northern Trust Global Investments Limited, and its subsidiaries, a broad range of investment products and services are offered to personal and institutional markets around the globe.



COLLECTIVE RUSSELL 1000 INDEX FUND - LENDING

Sector Breakdown (% of fund)			
	Fund	Index	
Information Technology	23.34	23.33	
Financials	14.90	14.91	
Health Care	13.15	13.15	
Consumer Discretionary	12.51	12.50	
Industrials	10.59	10.59	
Consumer Staples	7.70	7.70	
Energy	5.91	5.91	
Real Estate	3.62	3.62	
Materials	3.37	3.37	
Utilities	2.93	2.93	
Telecommunication Services	1.99	1.99	

3-Year Risk Statistics

Tracking Error*	0.03	Tracking error is a measure of the volatility of the differences in the return between a fund and its benchmark. The smaller the tracking error, the more the fund resembles the benchmark regarding risk and return characteristics.
Beta*	1.00	Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole.
Annualized Standard Deviation	9.97	Standard deviation is a measure of risk. In this case risk is represented by the fund's price movements up or down over time.

*Measured against the Fund's benchmark

For More Information

Please contact Northern Trust at 877-651-9156.

Fees and expenses are one of several factors that participants and beneficiaries should consider when making investment decisions. The cumulative effect of fees and expenses can substantially reduce the growth of a retirement account; beneficiaries can visit the Employee Benefit Security Administration's website for an example demonstrating the long term effect of fees and expenses.

The information provided in the Investment Profile and this disclosure statement should not be considered a recommendation to purchase or sell a particular security. The fund is a collective investment fund and is privately offered. Prospectuses are not required and prices are not available in local publications. To obtain pricing information, please contact your service representative. **Please note that the information provided in the Investment Profile and this disclosure statement may not meet all of the disclosure requirements for an ERISA "section 404(c) plan", as described in the Department of Labor regulations under section 404(c). In addition, the information disclosed in the Investment Profile and this disclosure statement may not meet the requirements of Department of Labor Rule 404a-5 of ERISA ("Rule 404a-5"). Plan Sponsors intending to comply with such regulations will need to provide Plan participants with additional information.** The performance information shown represents past performance and is not a guarantee of future results. Current performance may be lower or higher than the information shown. Performance is shown gross of investment management, but net of total administrative expenses (see additional disclosure information). Periods greater than one year are annualized except where indicated. Returns reflect the reinvestment of dividends and other earnings and are shown before the deduction of your investment management fees, unless indicated otherwise. Returns would be further reduced by investment management fees. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index. There are risks involved in investing including possible loss of principal. There is no guarantee that the investment objectives of any fund or strategy will be met. Risk controls and models do not promise any level of performance or guarantee against loss of principal. The information provided herein does not constitute individual investment advice for a Plan participant or investor, is only informational in nature and should not be used by a Plan participant or investor as a primary basis for making an investment decision.

NOT FDIC INSURED

May lose value/No bank guarantee



COLLECTIVE RUSSELL 1000 INDEX FUND - LENDING

Additional Disclosure Information

Total Administrative Expense reflects the maximum level at which (i) the direct expenses as well as external audit fees for the Fund and (ii) the direct expenses and external audit fees of the underlying Funds in which it invests, will be assessed and indirectly impact the Fund. The trustee does not assess or charge any fee in connection with the purchase or redemption of units of the Fund. NTI may at any time modify or discontinue the above-described caps on Total Administrative Expenses. These expenses do not include additional amounts, if any, that may be charged to your account for plan administration. Please contact your Plan administrator or plan recordkeeper for further information regarding the total expense of investing in the Fund.

Investment Risks- The following Risks are for Collective Russell 1000 Index Fund - Lending.

Capitalization Risk: Concentrating assets in stocks of one or more capitalizations (small, mid, or large) may be subject to both the specific risks of those capitalizations as well as increased volatility because stocks of specific capitalizations tend to go through cycles of beating or lagging the market as a whole.

Country or Region Risk: Investments in securities from a particular country or region may be subject to the risk of adverse social, political, regulatory, or economic events occurring in that country or region.

Derivatives Risk: Investments in derivatives may be subject to the risk that the advisor does not correctly predict the movement of the underlying security, interest rate, market index, or other financial asset, or that the value of the derivative does not correlate perfectly with either the overall market or the underlying asset from which the derivative's value is derived.

Equity Securities Risk: The value of equity securities, which include common, preferred, and convertible preferred stocks, will fluctuate based on changes in their issuers' financial conditions, as well as overall market and economic conditions, and can decline in the event of deteriorating issuer, market, or economic conditions.

Futures Risk: Investments in futures contracts and options on futures contracts may increase volatility and be subject to additional market, active management, interest, currency, and other risks if the contract cannot be closed when desired.

Increase in Expenses Risk: The actual cost of investing may be higher than the expenses listed in the expense table for a variety of reasons, including termination of a voluntary fee waiver or losing portfolio fee breakpoints if average net assets decrease.

Index Correlation/Tracking Error Risk: A portfolio that tracks an index is subject to the risk that certain factors may cause the portfolio to track its target index less closely, including if the advisor selects securities that are not fully representative of the index.

Issuer Risk: A stake in any individual security is subject to the risk that the issuer of that security performs poorly, resulting in a decline in the security's value.

Lending Risk: Investing in loans creates risk for the borrower, lender, and any other participants.

Long-Term Outlook and Projections Risk: The investment is intended to be held for a substantial period of time, and investors should tolerate fluctuations in their investment's value.

Loss of Money Risk: Because the investment's market value may fluctuate up and down, an investor may lose money, including part of the principal, when he or she buys or sells the investment.

Market/Market Volatility Risk: The market value of the portfolio's securities may fall rapidly or unpredictably because of changing economic, political, or market conditions, which may reduce the value of the portfolio.

Not FDIC Insured Risk: The investment is not a deposit or obligation of, or guaranteed or endorsed by, any bank and is not insured by the Federal Deposit Insurance Corporation, the Federal Reserve Board, or any other U.S. governmental agency.

Options Risk: Investments in options may be subject to the risk that the advisor does not correctly predict the movement of an option's underlying stock.

Pricing Risk: Some investments may not have a market observed price; therefore, values for these assets may be determined through a subjective valuation methodology.

Regulation/Government Intervention Risk: The business of the issuer of an underlying security may be adversely impacted by new regulation or government intervention, impacting the price of the security.

Suitability Risk: Investors are expected to select investments whose investment strategies are consistent with their financial goals and risk tolerance.

Underlying Fund/Fund of Funds Risk: A portfolio's risks are closely associated with the risks of the securities and other investments held by the underlying or subsidiary funds, and the ability of the portfolio to meet its investment objective likewise depends on the ability of the underlying funds to meet their objectives.

COLLECTIVE RUSSELL 1000 INDEX FUND - LENDING

Comparative Benchmark Definitions

Russell 1000® Index is an unmanaged index which measures the performance of the 1,000 largest companies in the Russell 3000® Index, based on market capitalization.

**City of Oakland Police and Fire Retirement System
Cash Flow Recommendation Summary**

Asset Class / Manager / Liquidity April - June 2018 Report		
		Tier
Domestic Equity	Northern Trust	1
Domestic Equity	R1000 Growth (SSgA)	3
Domestic Equity	R1000 Value (SSgA)	3
Domestic Equity	EARNEST Partners	3
Domestic Equity	NWQ	3
Domestic Equity	Rice Hall James	3
	<i>Total Domestic Equity</i>	
International Equity	Passive/Enhanced (SSgA)	3
International Equity	Fisher	3
International Equity	Hansberger	3
	<i>Total International Equity</i>	
	<i>Total Public Equity</i>	
Covered Calls	Parametric	2
	<i>Total Covered Calls</i>	
Credit Risk Offset	<i>New/Current Manager</i>	3
Credit Risk Offset	<i>New/Current Manager</i>	3
Credit Risk Offset	<i>New/Current Manager</i>	3
	<i>Total Credit Risk Offset</i>	
Domestic Fixed Income	Reams	2
Domestic Fixed Income	DDJ	2
Domestic Fixed Income	Ramirez	2
	<i>Total Public Fixed</i>	
Cash	Cash	1
	<i>Total Stable</i>	
	<i>Total Portfolio</i>	

Description of Liquidity Tiers

<u>Tier</u>	<u>Description</u>	<u>Amount</u>	<u>in Months</u>
Tier 1	Public, Scheduled Withdrawal Allowances	\$86.1	14.4
Tier 2	Public, Accommodating of Withdrawals	169.1	28.2
Tier 3	Public, Must Plan Withdrawals	124.4	20.7
Tier 4	Closely Held	<u>0.0</u>	-
		\$379.6	

City of Oakland Police and Fire Retirement System Cash Flow Recommendation Summary

PFRS Asset Allocation (February 28th Market Values)*					Actual Cash Flows (For Jan.- Mar. Benefits) Payable the 1st of each month		Suggested Cash Flows (For Apr. - June Benefits) Payable the 1st of each month	
	Market Value (\$mm)	Market Value (%)	Target (%)	\$ Variance (from basic target)	Inflow (\$mm)	Outflow (\$mm)	Inflow \$mm	Outflow (\$mm)
Northern Trust	77.8	20.5%	26.0%	(21,084,020)				
R1000 Growth (SSgA)	11.8	3.1%	0.0%	11,771,000		(1.10)		
R1000 Value (SSgA)	9.9	2.6%	0.0%	9,902,000		(1.10)		
EARNEST Partners	29.6	7.8%	8.0%	(815,160)				
NWQ	9.8	2.6%	3.0%	(1,657,310)				
Rice Hall James	12.3	3.2%	3.0%	895,690				
Total Domestic Equity	151.2	39.7%	40.0%	(987,800)				
Passive/Enhanced (SSgA)	15.0	3.9%	3.6%	1,321,828				
Fisher	17.9	4.7%	4.2%	1,917,966				(0.825)
Hansberger	18.1	4.8%	4.2%	2,143,966				(0.825)
Total International Equity	51.0	13.4%	12.0%	5,383,760				
Total Public Equity	202.2	53.2%	52.0%	4,395,960				
Parametric	71.8	18.9%	5.0%	52,727,150				(1.35)
Total Covered Calls	71.8	18.9%	5.0%	52,727,150				
Long Duration Manager	0.0	0.0%	3.3%	(12,682,554)				
Trend Following Manager	0.0	0.0%	3.3%	(12,682,440)				
Risk Premia/Global Macro Man:	0.0	0.0%	3.3%	(12,682,440)				
Credit Risk Offset	0.0	0.0%	10.0%	(38,047,434)				
Reams	22.2	5.8%	12.0%	(23,414,240)				
DDJ	7.7	2.0%	2.0%	118,460				
Ramirez	67.4	17.7%	19.0%	(4,931,630)				
Total Public Fixed	97.3	25.6%	33.0%	(28,227,410)				
Cash with Custodian	0.9	0.2%	0.0%	851,000		(0.90)		
Cash in Treasury**	8.3	2.2%	0.0%	8,301,000	11.20	(11.20)	11.20	(11.20)
Total Stable	106.5	28.0%	33.0%	(19,926,410)				
Total Portfolio	380.5	100.0%	100.0%	---	11.20	(14.30)	11.20	(14.20)

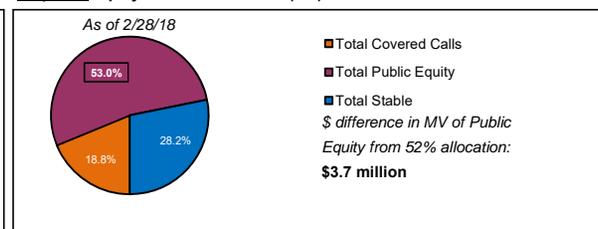
February 28th Market Values by Portfolio Segment

Portfolio Segment	MV (\$mm)
Total Domestic Equity	151.2
Total International Equity	51.0
Total Public Equity	202.2
Total Covered Calls	71.8
Total Credit Risk Offset	0.0
Total Public Fixed	97.3
Total Stable	106.5
Total Portfolio	380.5

Suggested Cash Withdrawals

Manager	Amount
Cash in Treasury	\$11.20 Million
Fisher	\$0.825 million
Hansberger	\$0.825 million
Parametric	\$1.35 million

Projected Equity to Fixed Allocation (MV)



* Estimated based on PFRS February 28, 2018 Northern Trust statement.

** Preliminary value as of February 28, 2018 per OPFRS staff.

**City of Oakland Police and Fire Retirement System
Cash Flow Recommendation Summary**

Projected PFRS Asset Allocation (As of June 30th)					
	Est Mkt Value (\$mm)	Est Mkt Value (%)	Target (%)	Projected % Variance <i>(from target)</i>	Projected \$ Variance <i>(from target)</i>
Northern Trust	77.8	20.8%	26.0%	-5.2%	(19,510,760)
R1000 Growth (SSgA)	10.7	2.8%	0.0%	2.8%	10,671,000
R1000 Value (SSgA)	8.8	2.4%	0.0%	2.4%	8,802,000
EARNEST Partners	29.6	7.9%	8.0%	-0.1%	(331,080)
NWQ	9.8	2.6%	3.0%	-0.4%	(1,475,780)
Rice Hall James	12.3	3.3%	3.0%	0.3%	1,077,220
Total Domestic Equity	149.0	39.8%	40.0%	-0.2%	(767,400)
Passive/Enhanced (SSgA)	15.0	4.0%	3.6%	0.4%	1,539,664
Fisher	17.1	4.6%	4.2%	0.4%	1,347,108
Hansberger	17.3	4.6%	4.2%	0.4%	1,573,108
Total International Equity	49.4	13.2%	12.0%	1.2%	4,459,880
Total Public Equity	198.4	53.0%	52.0%	1.0%	3,692,480
Parametric	70.4	18.8%	5.0%	13.8%	51,679,700
Total Covered Calls	70.4	18.8%	5.0%	13.8%	51,679,700
New/Current Manager	0.0	0.0%	3.3%	-3.3%	(12,480,854)
New/Current Manager	0.0	0.0%	3.3%	-3.3%	(12,480,742)
New/Current Manager	0.0	0.0%	3.3%	-3.3%	(12,480,742)
Total Credit Risk Offset	0.0	0.0%	10.0%	-10.0%	(37,442,338)
Reams	22.2	5.9%	12.0%	-6.1%	(22,688,120)
DDJ	7.7	2.1%	2.0%	0.1%	239,480
Ramirez	67.4	18.0%	19.0%	-1.0%	(3,781,940)
Total Public Fixed	97.3	26.0%	33.0%	-7.0%	(26,230,580)
Cash with Custodian	0.0	0.0%	0.0%	0.0%	(49,000)
Cash in Treasury**	8.3	2.2%	0.0%	2.2%	8,301,000
Total Stable	105.6	28.2%	33.0%	-4.8%	(17,929,580)
Total Portfolio	374.4	100.0%	100.0%	---	---

Notes

- February 28th market values are those listed by Northern Trust.
- Report reflects change in asset allocation and beneficiary payments of rebalancing on a quarterly basis. (Estimated at \$14.2 million per OPFRS).
- Report reflects monthly City of Oakland contributions of approximately \$3.74 million.
- As of December 31st, the projected public equity portfolio represents 53% of the portfolio (\$3.7 million more than the target allocation of 52.0%).
- Target Policy Allocations represent interim-target allocations approved in June 2017.

PCA INVESTMENT MARKET RISK METRICS

Monthly Report



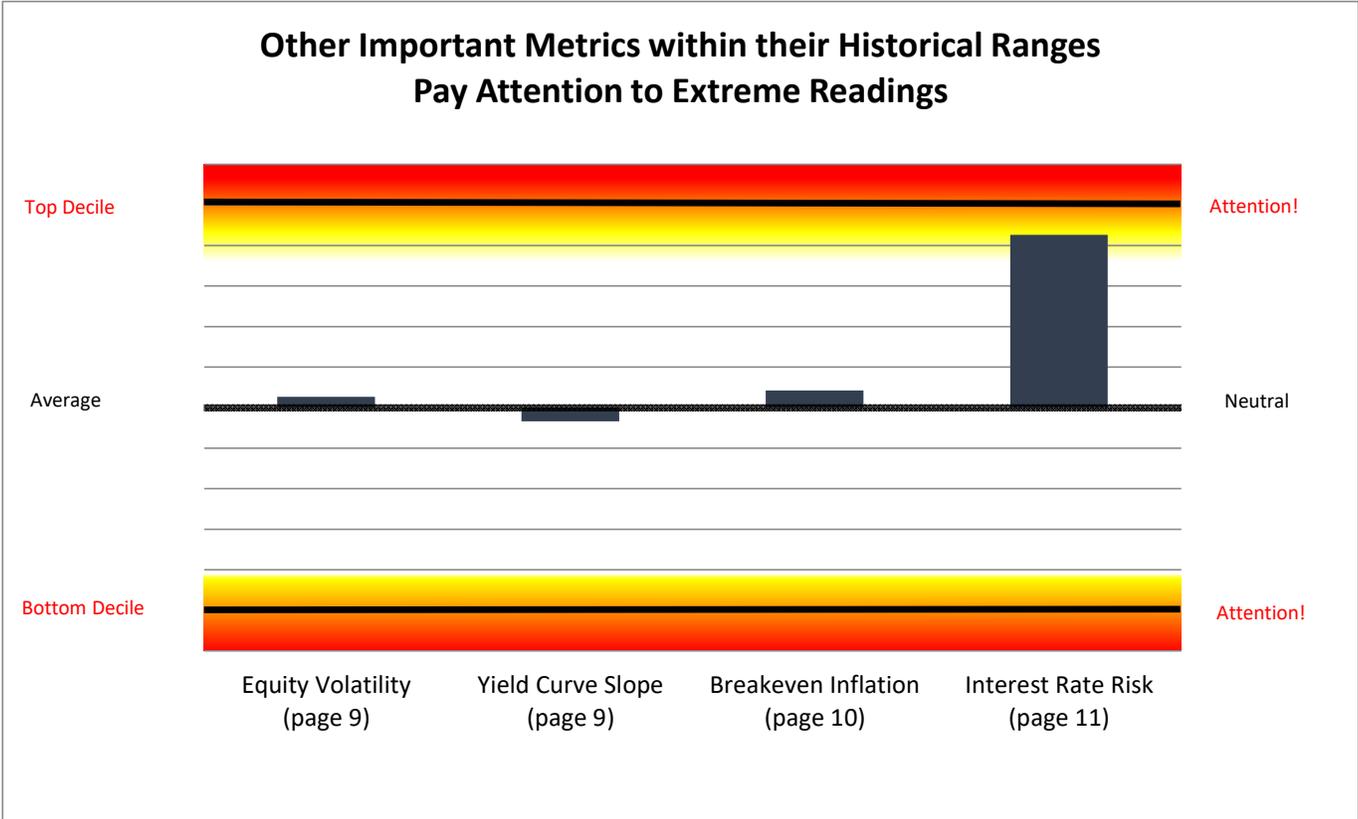
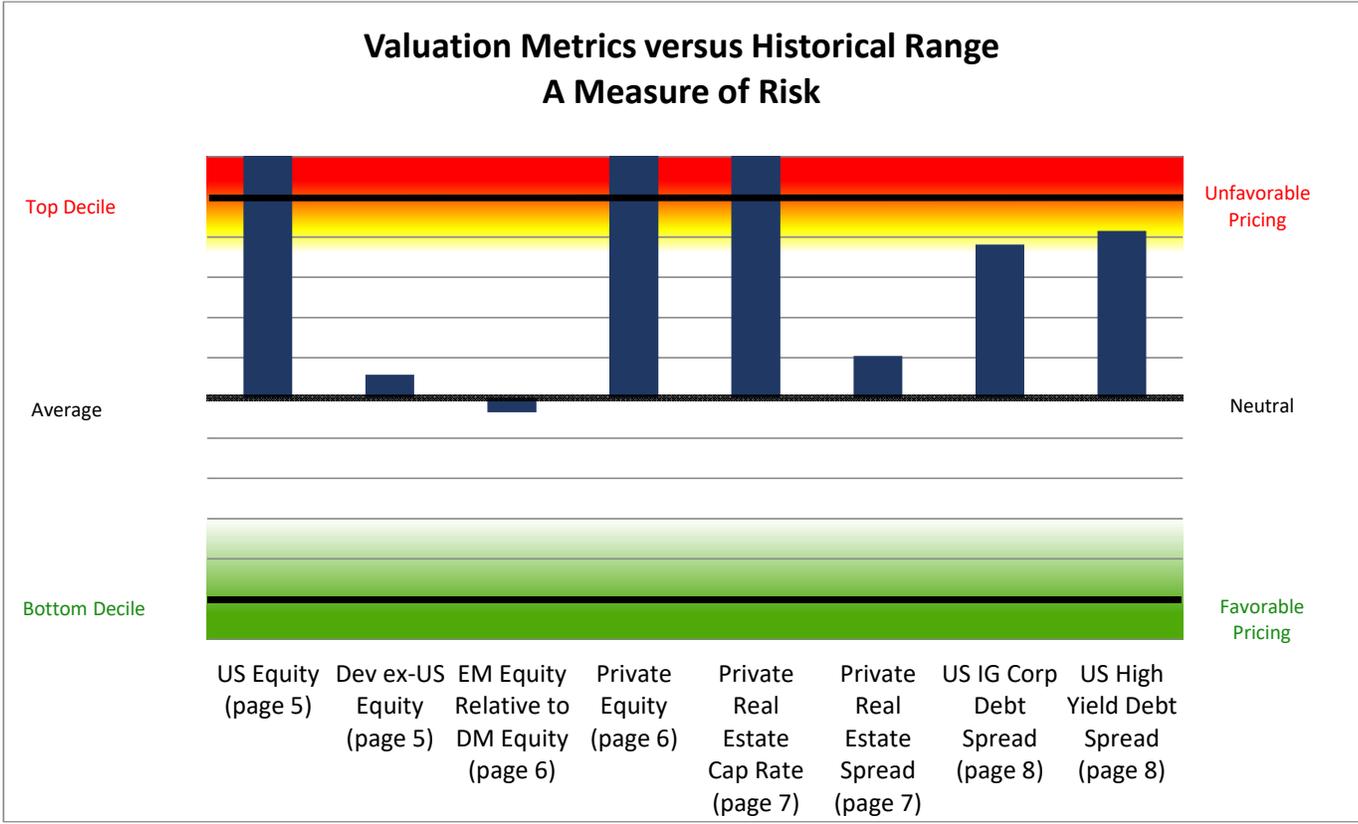
March 2018
(as of 2/28/18)

Takeaways

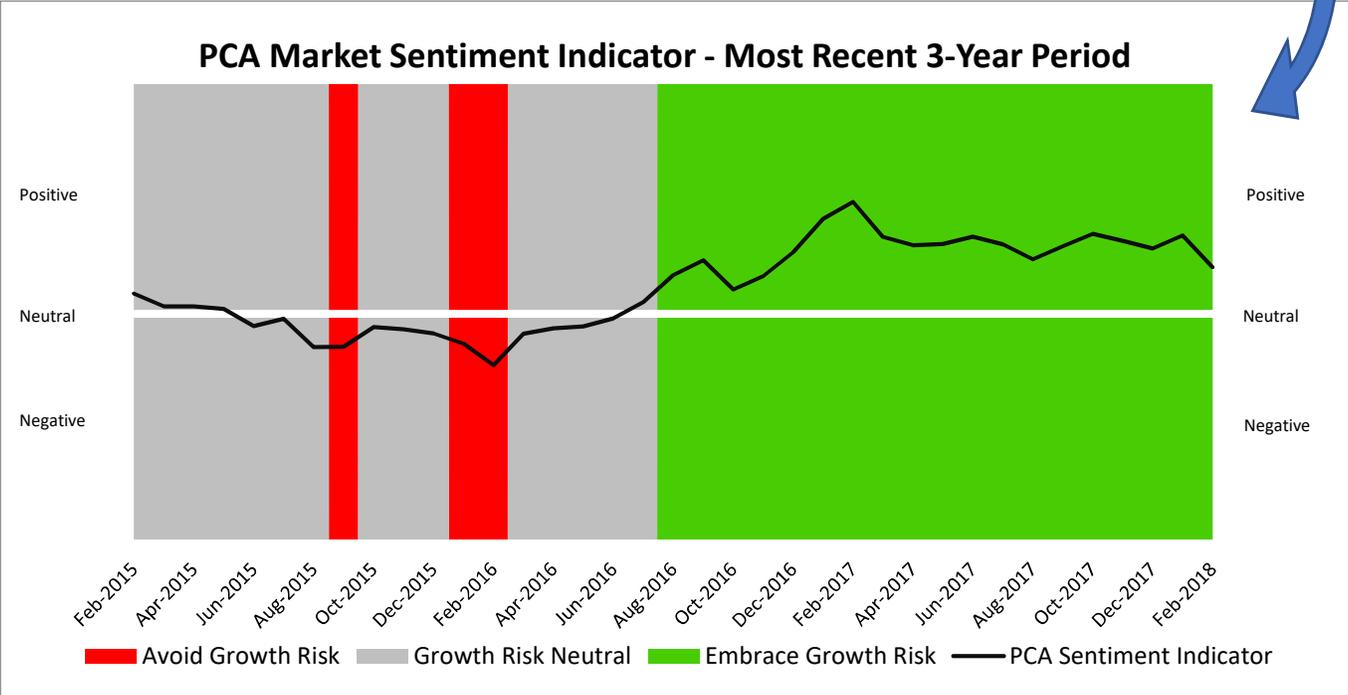
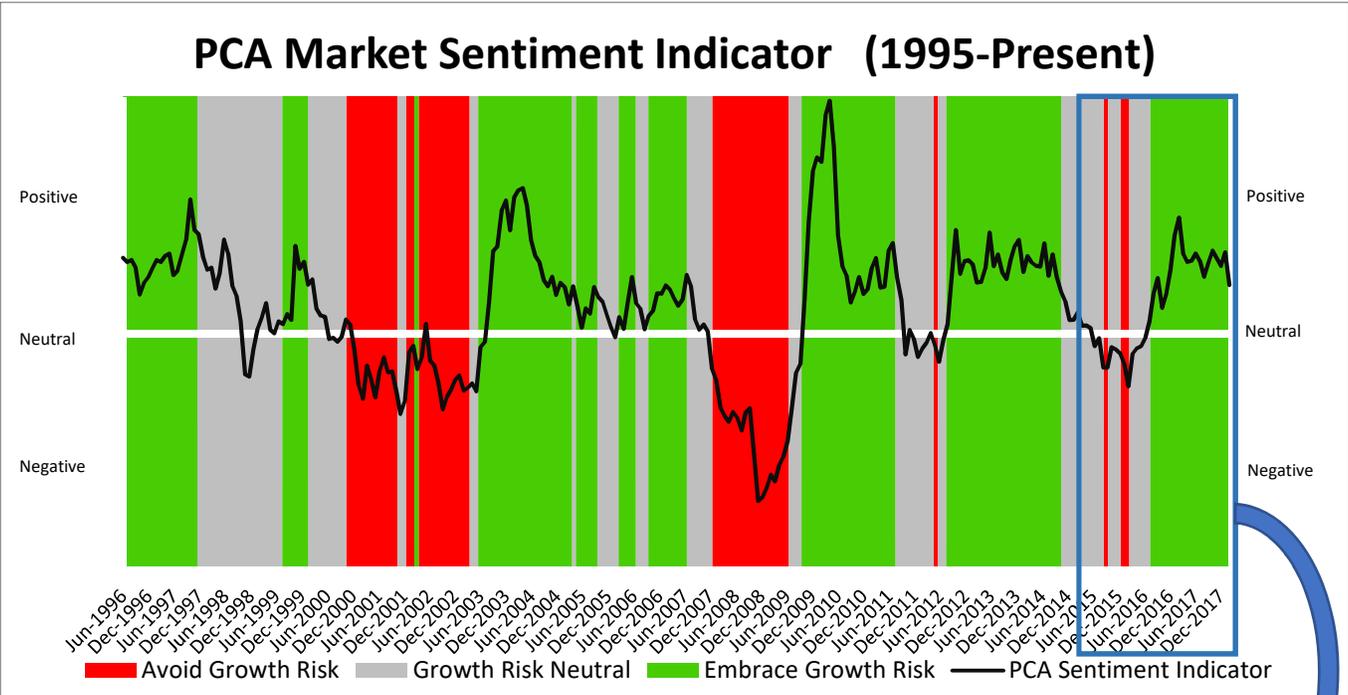
- February was extremely volatile on an intramonth basis, and the final month results were the worst since early-2016 for most risk assets. Relative to long-term capital market assumptions, however, February was a relatively normal month. PCA expects this environment (i.e., higher volatility than recent past) to persist over the near-term.
- Whereas implied equity volatility (VIX) hit 50 during the month and certain equity indices dropped by 4-5% on single days, February ultimately saw most assets experience modest negative returns, and volatility (VIX) returned to its long-term average level by month-end.
- Certain equity market segments (e.g., value, REITs, MLPs, etc.) have produced considerably worse results over recent history when compared to their counterparts and/or broad equity indices.
- U.S. Treasury interest rates continued to tick up in February. Moreover, the yield curve experienced a modest steepening as inflation concerns continued to get reflected in asset prices.
- Due to recent price increases, Non-U.S. Developed and Emerging Market equity valuations are no longer as cheap relative to their own histories (currently in-line with long-term averages), but they remain modestly cheap relative to U.S. levels.
- Inflation indicators generally remained well behaved. Recent macroeconomic data (e.g., GDP, CPI, wages, etc.) suggest that modest inflation may finally return in the intermediate-term. PCA expects the notion of inflation to remain a topic of interest/concern throughout 2018.
- PCA's sentiment indicator (page 4) remains positive. The sentiment indicator remains solidly **green**.

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

Risk Overview



Market Sentiment



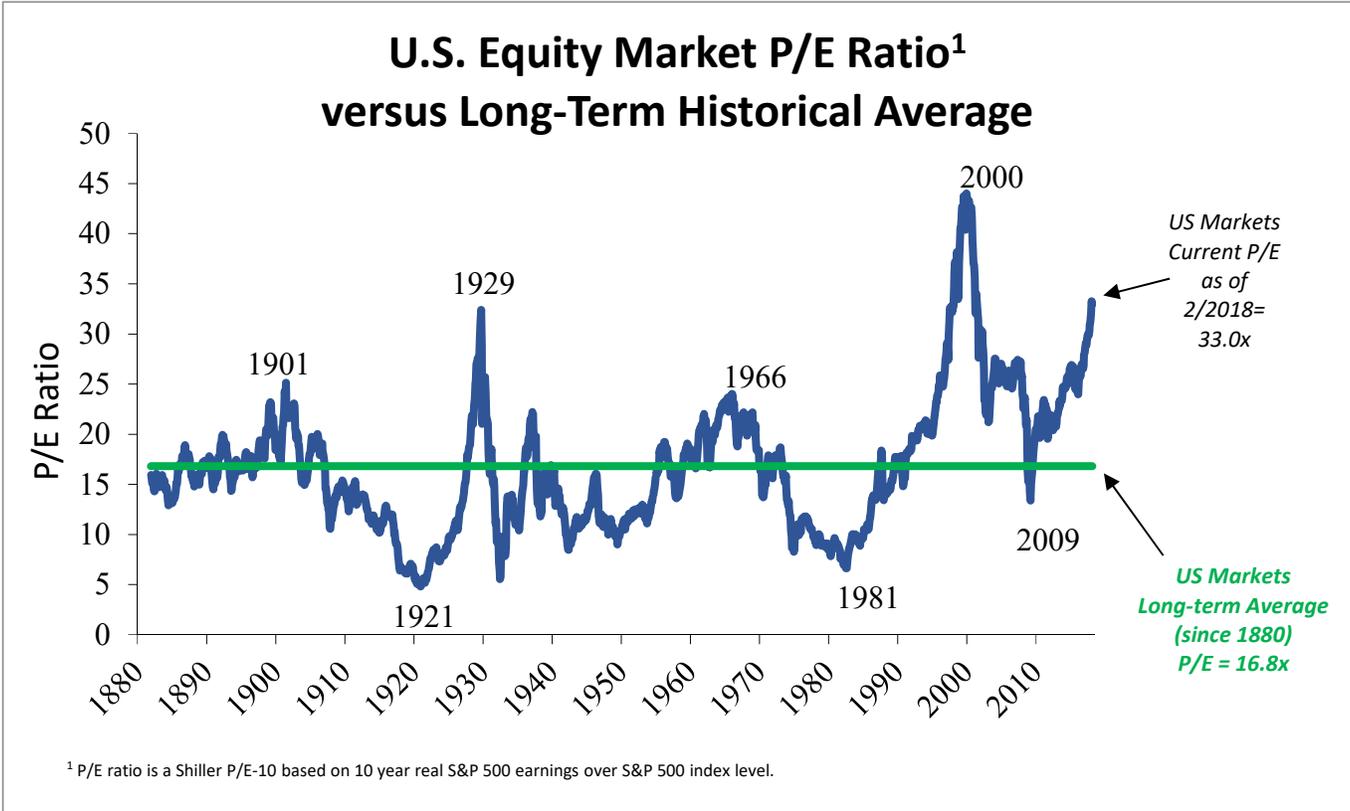
Information Behind Current Sentiment Reading

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

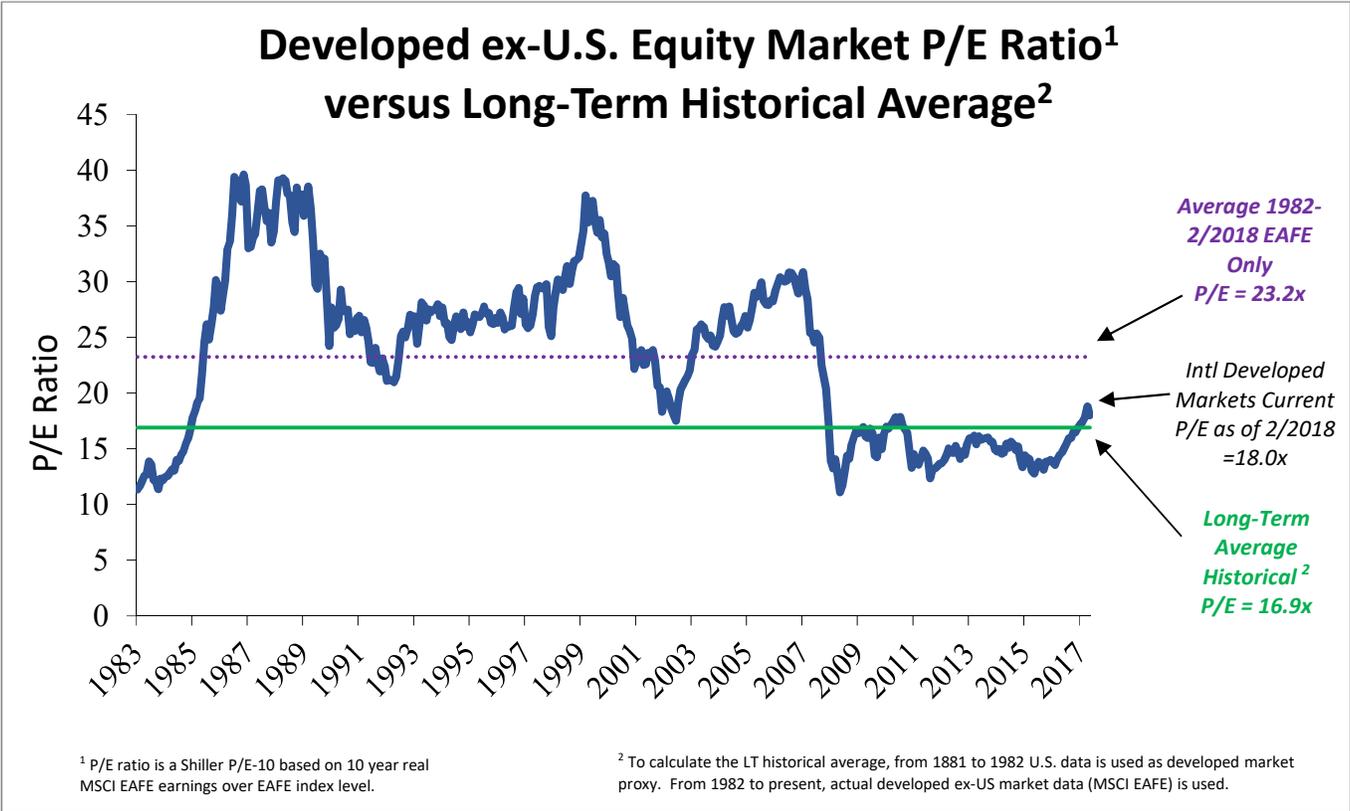
Positive	
Positive	
Agree	

Growth Risk Visibility (Current Overall Sentiment)	Positive	
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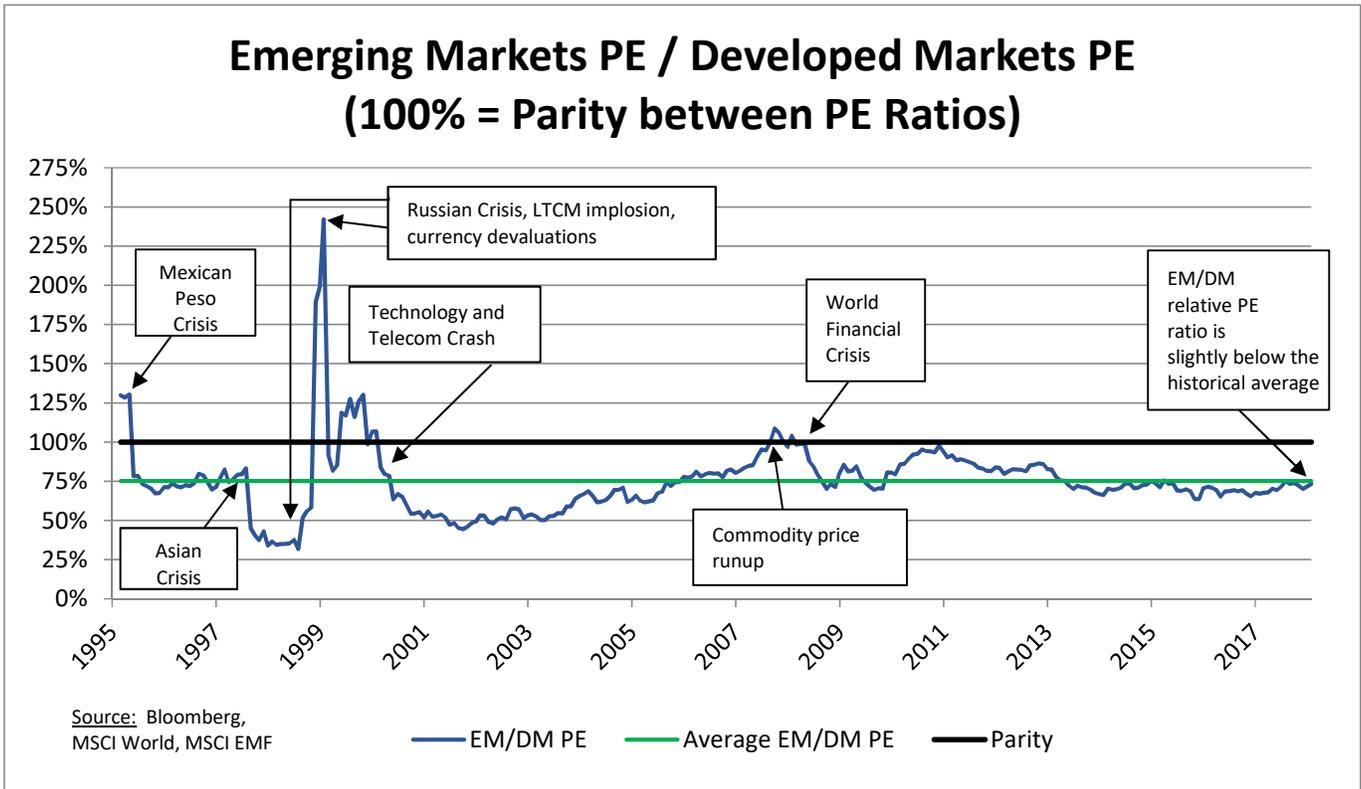
Developed Public Equity Markets



(Please note the difference in time scales)

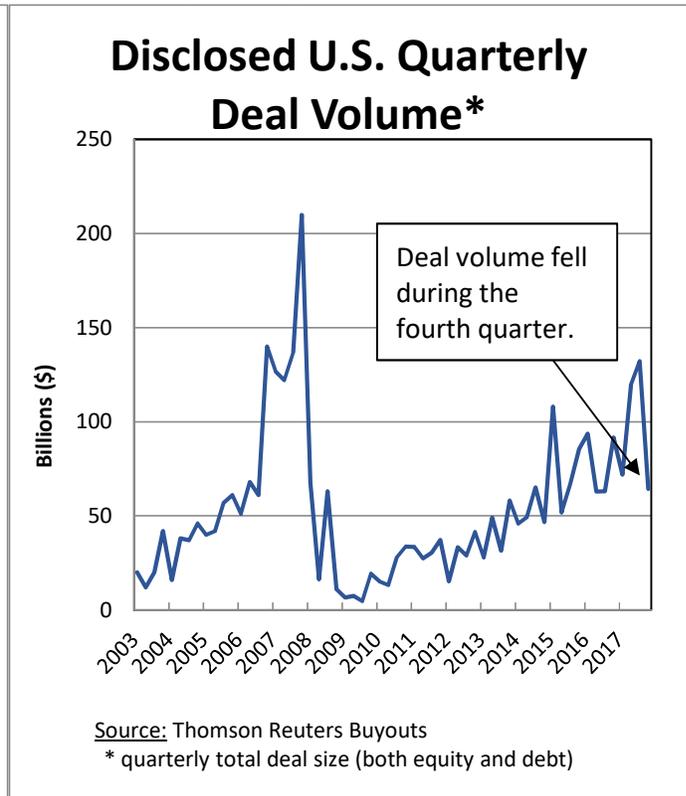
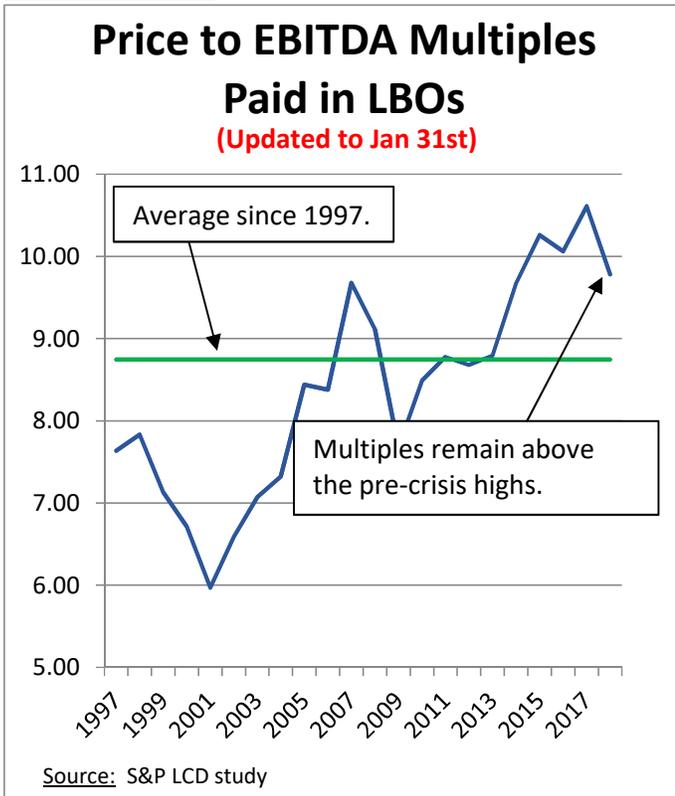


Emerging Market Public Equity Markets



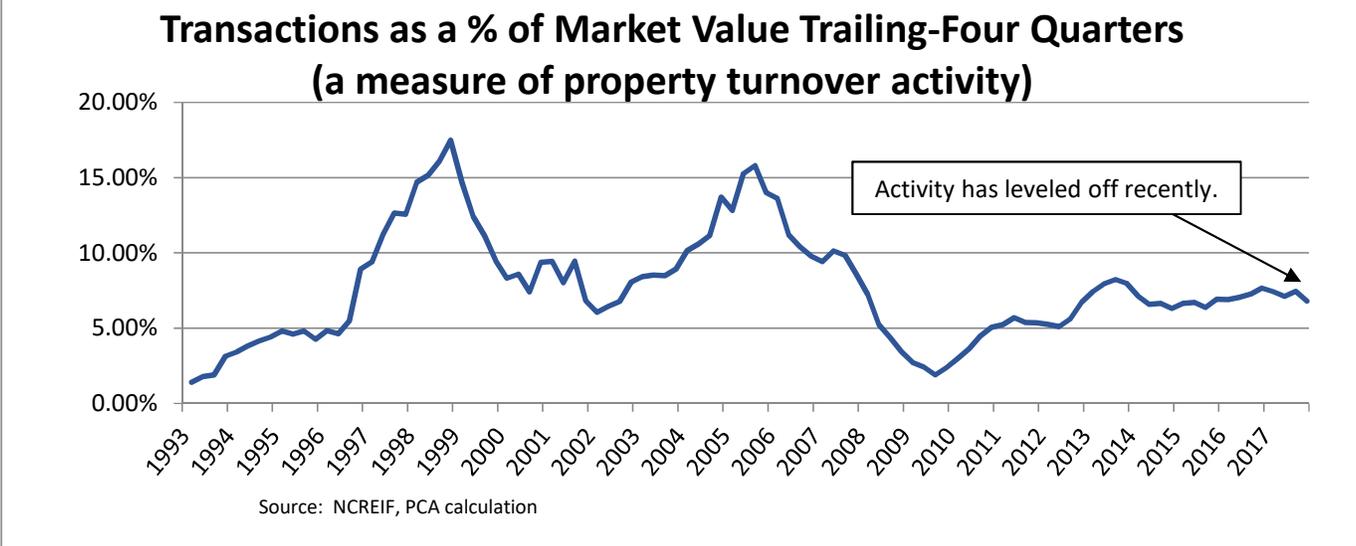
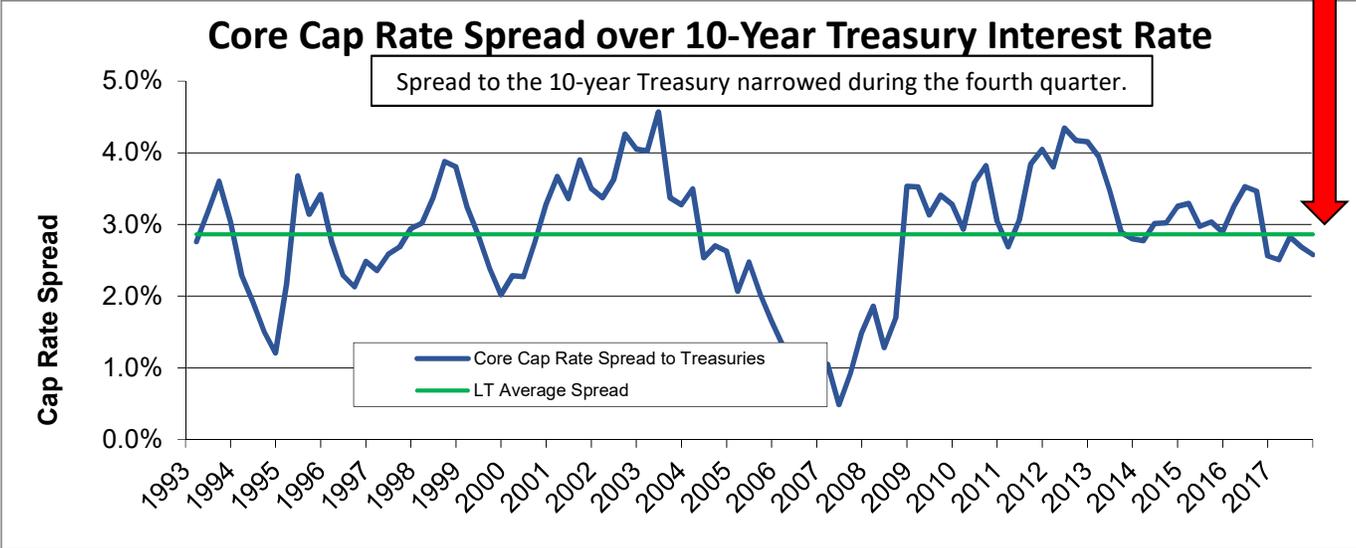
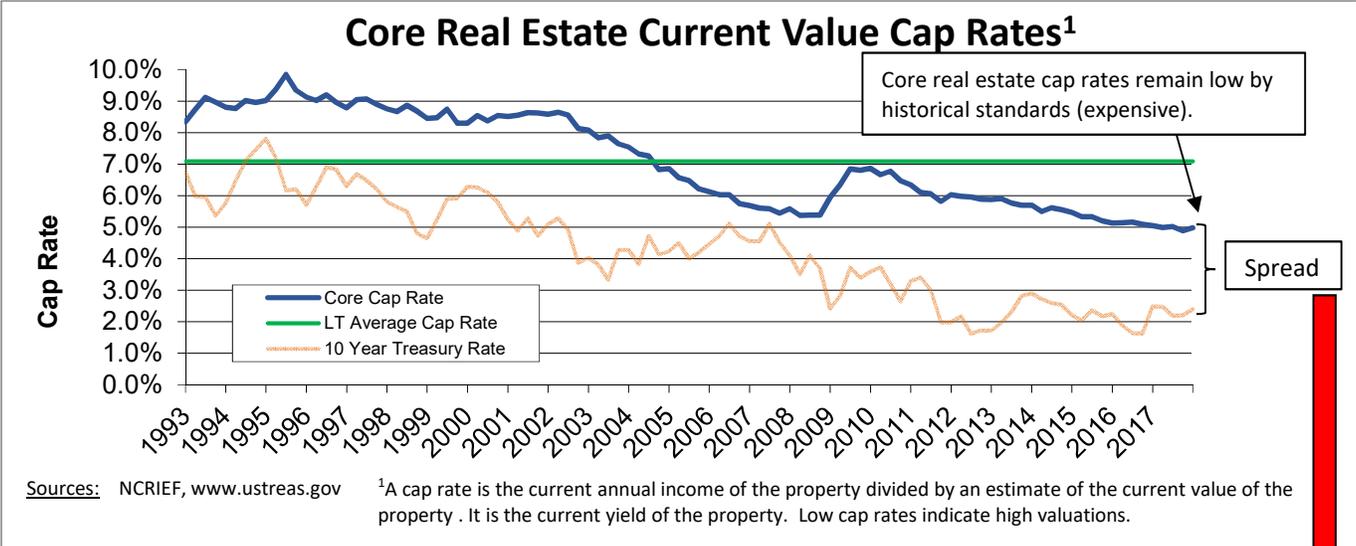
US Private Equity

Quarterly Data, Updated to December 31st

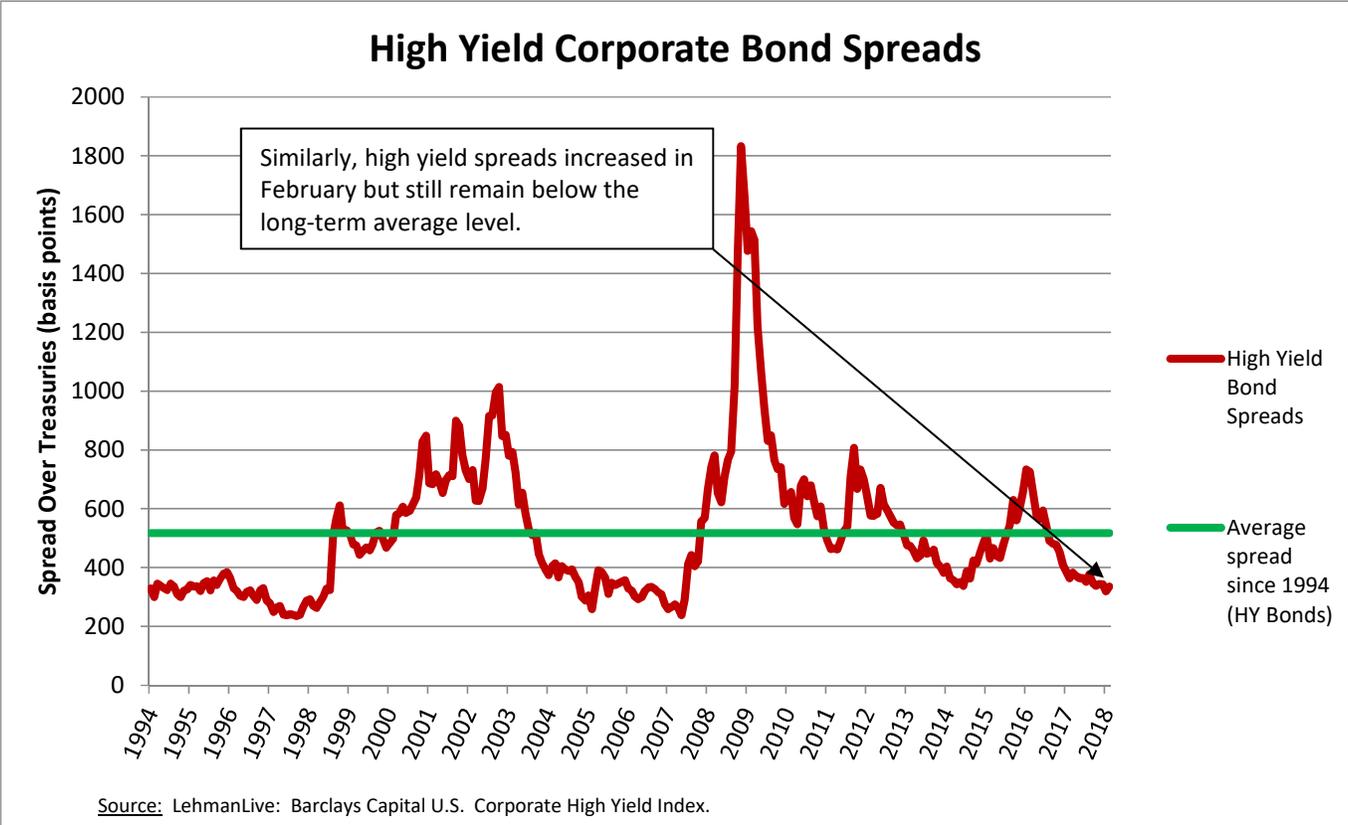
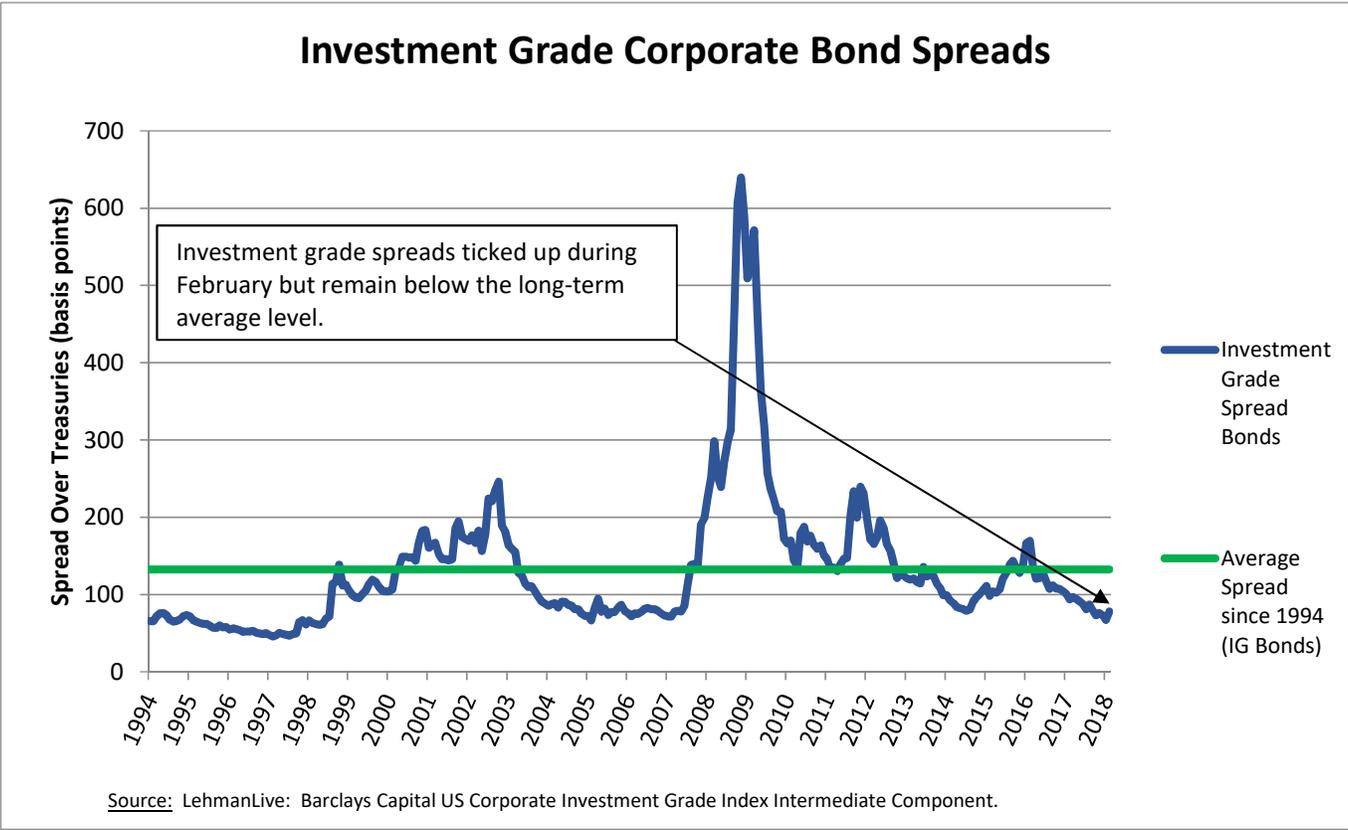


Private Real Estate

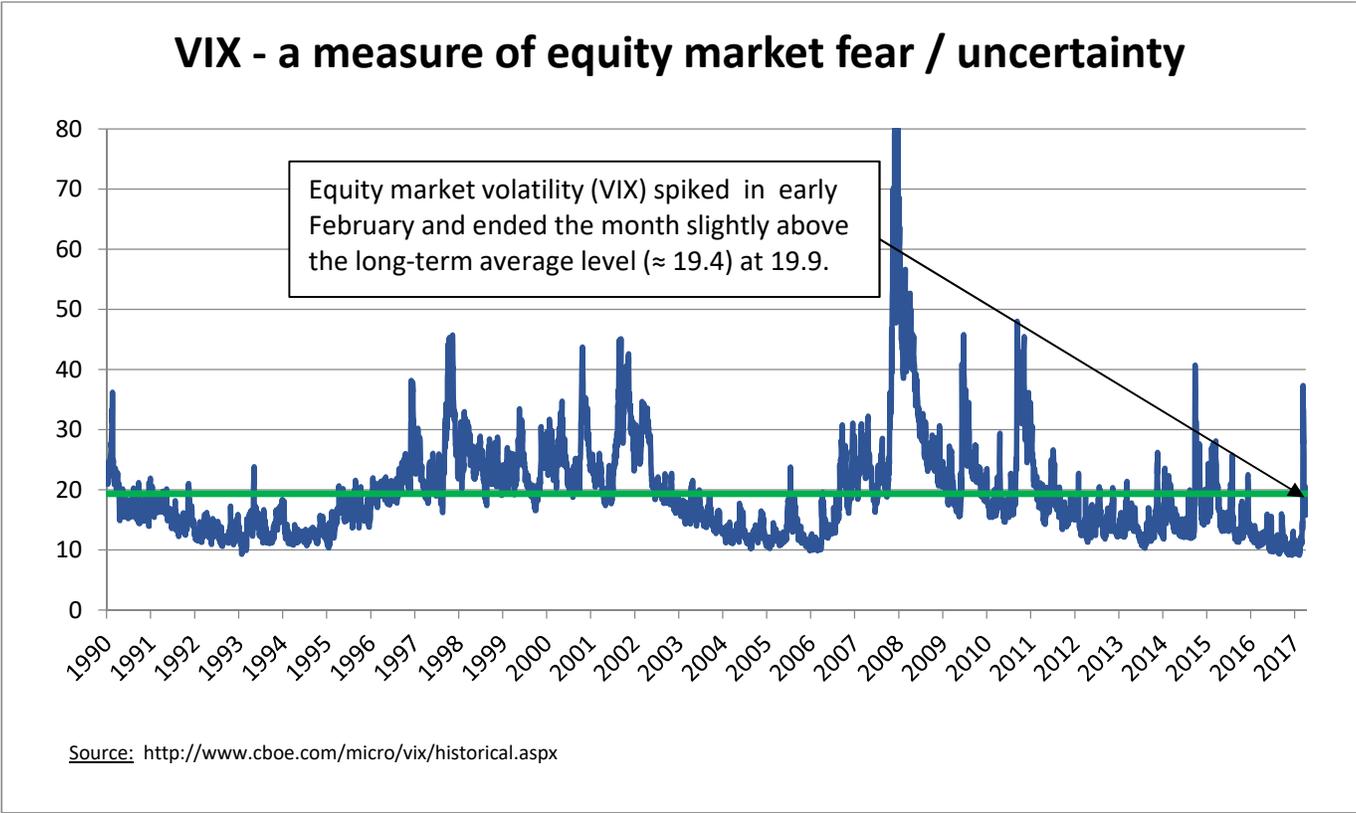
Quarterly Data, Updated to December 31st.



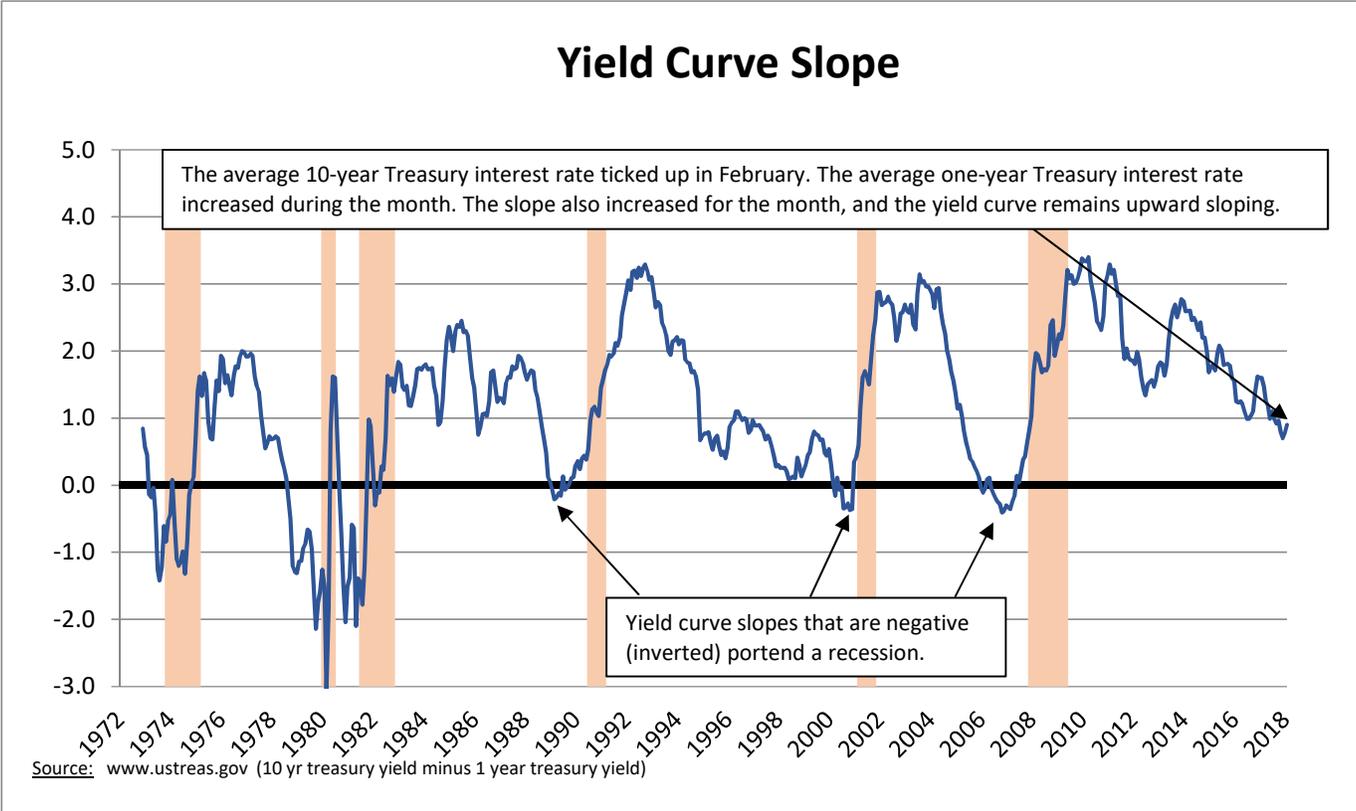
Credit Market US Fixed Income



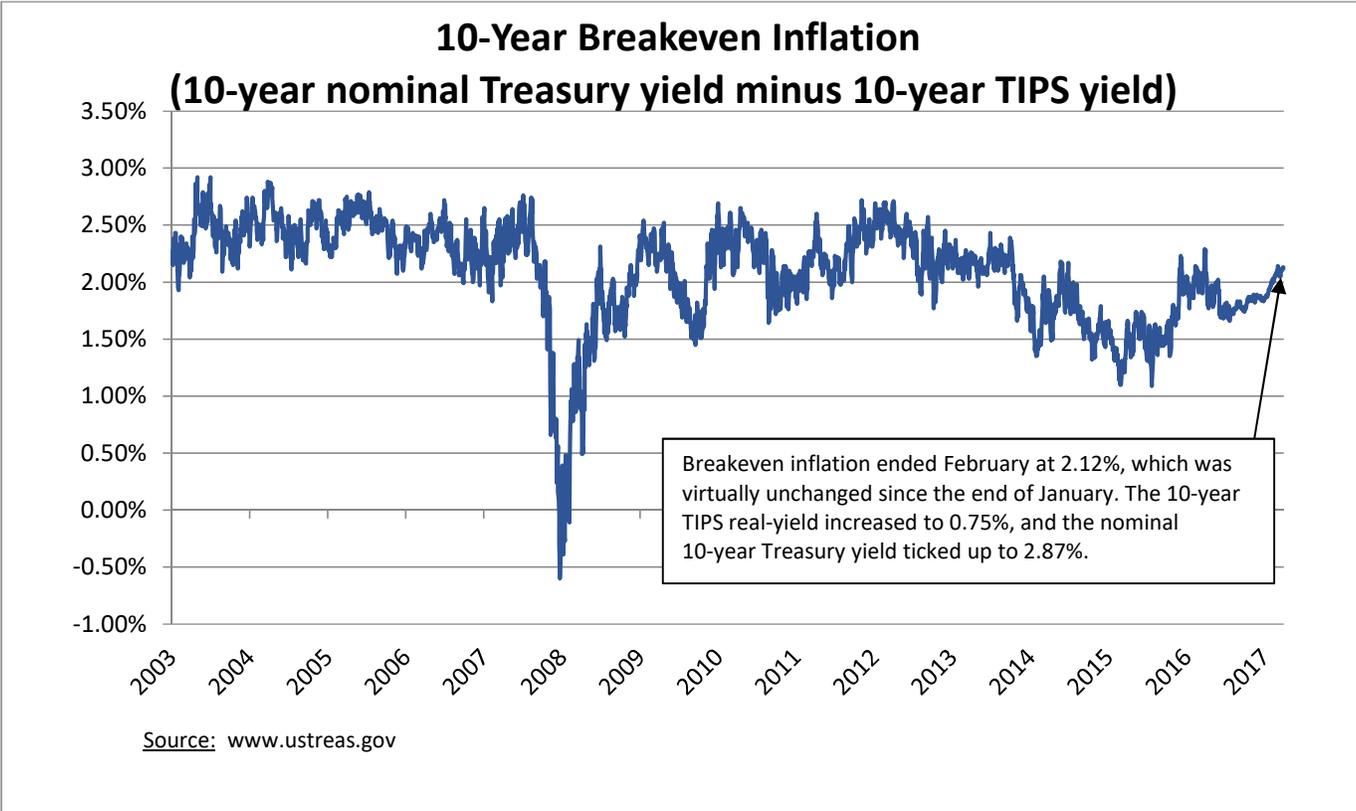
Other Market Metrics



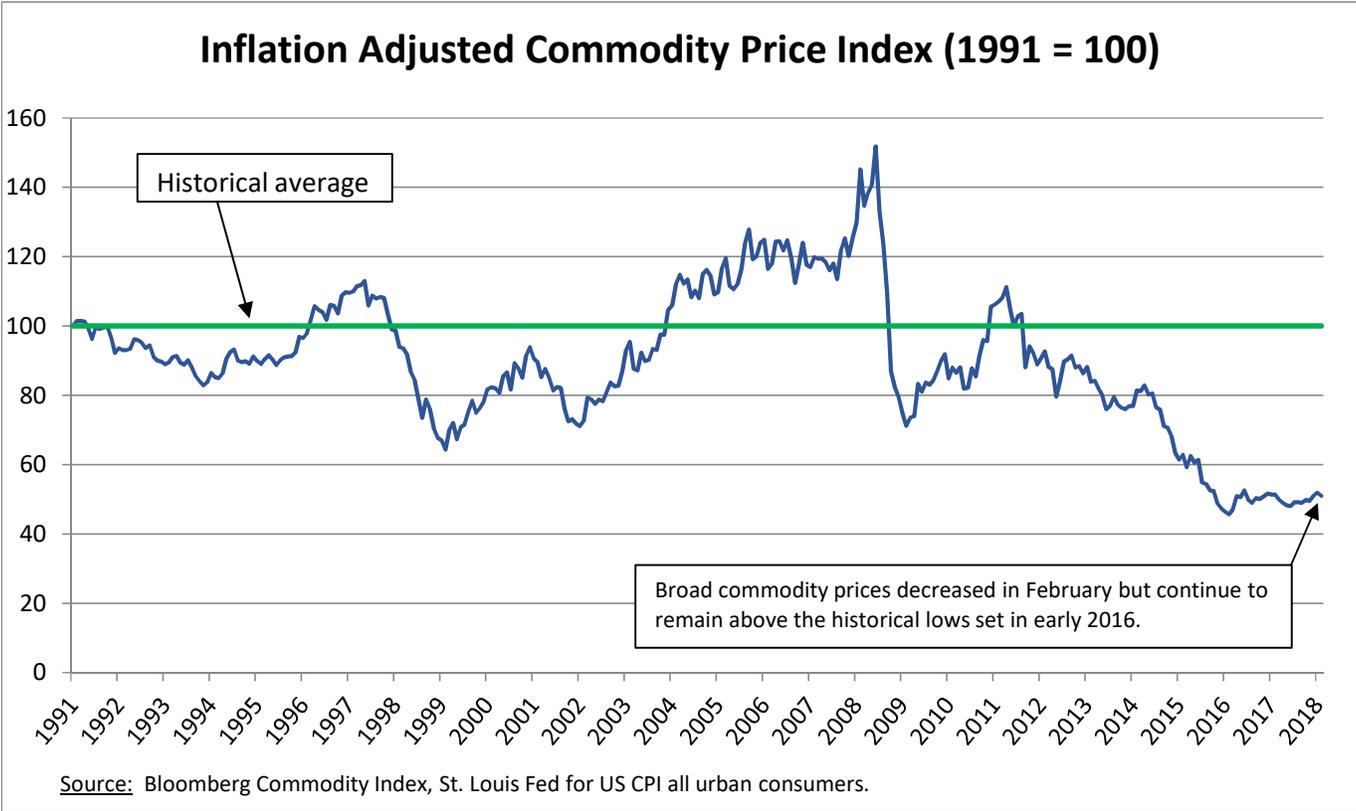
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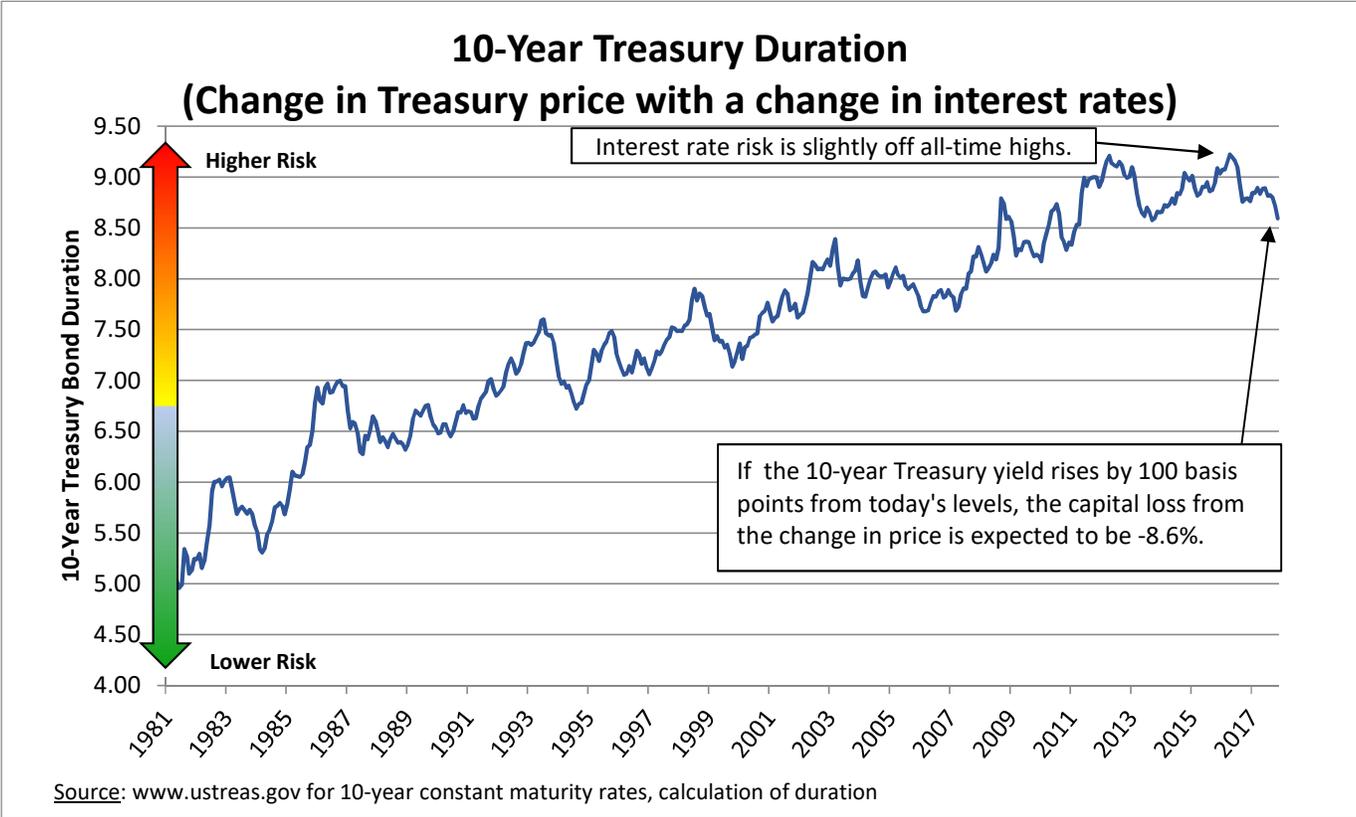
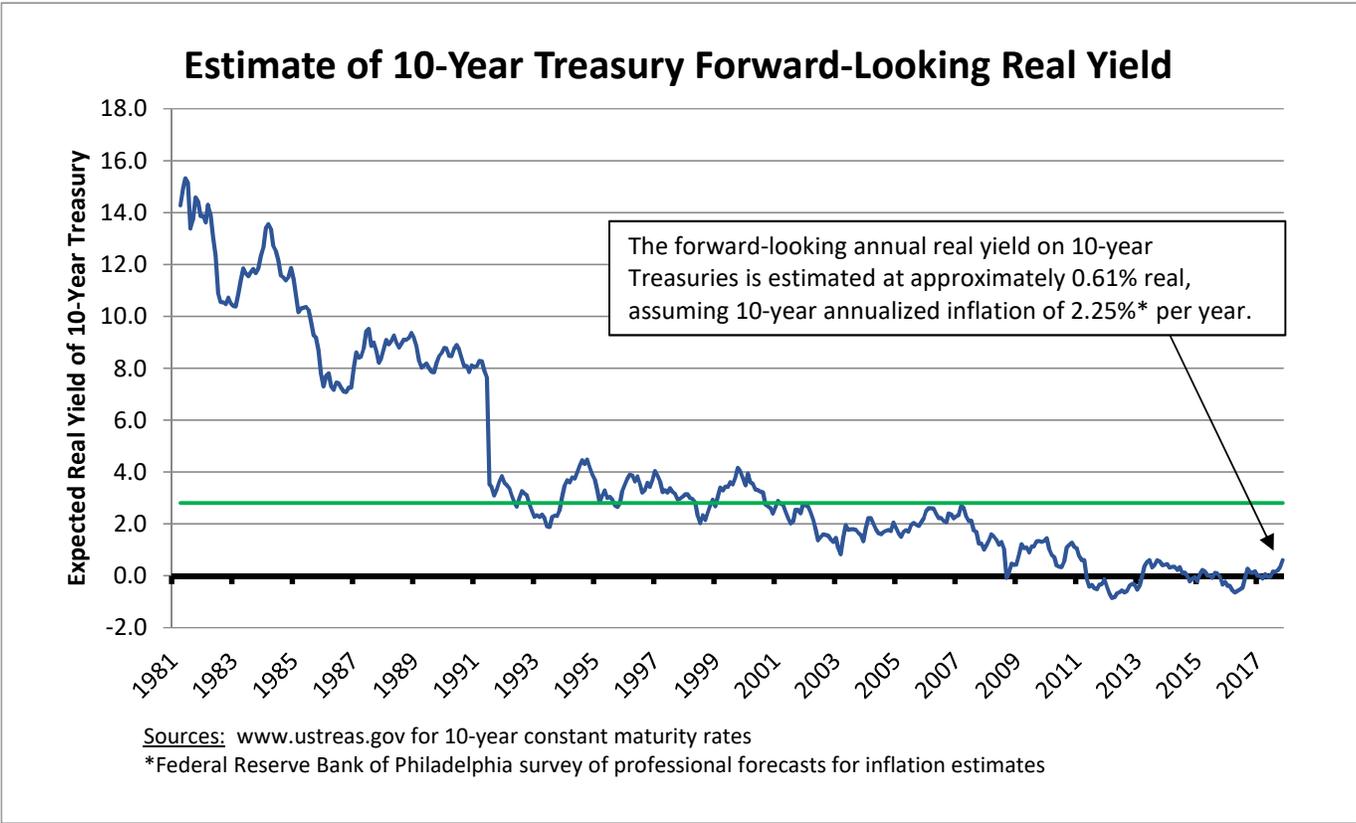
Measures of Inflation Expectations



(Please note the difference in time scales)



Measures of U.S. Treasury Interest Rate Risk



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:

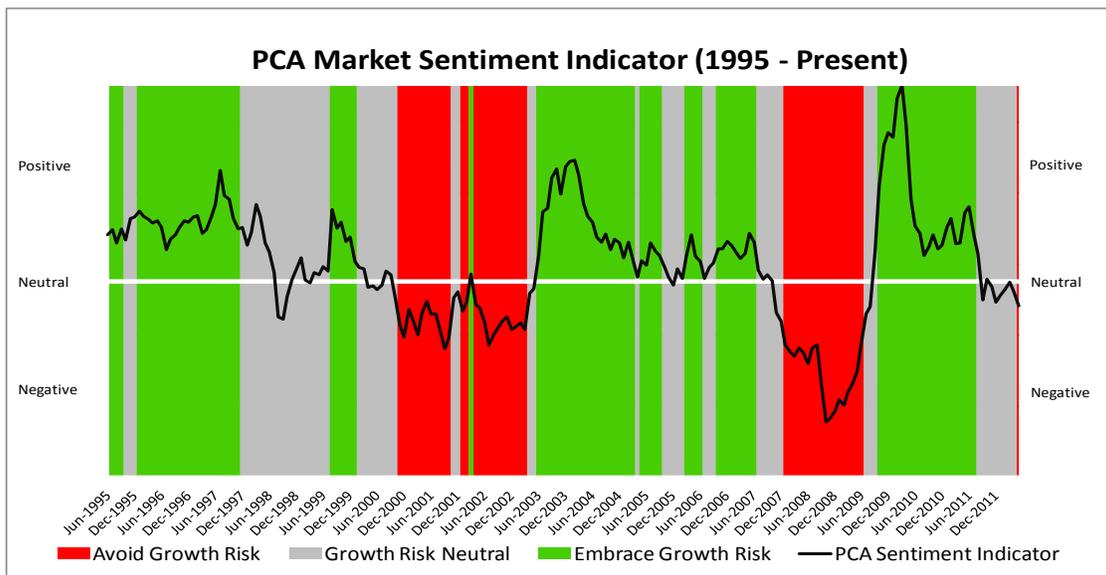
What is the PCA Market Sentiment Indicator (PMSI)?

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>

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.

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

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Robert J. Muszar
Member

Steven Wilkinson
Member

Martin J. Melia
Member

John C. Speakman
Member

Christine Daniel
Member

REGULAR MEETING of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

Wednesday, March 28, 2018 – 1:30 pm
One Frank H. Ogawa Plaza, Hearing Room 3
Oakland, California 94612

- - - ORDER OF BUSINESS - - -

A. CLOSED SESSION

B. Report of PFRS Board Action from Closed Session (if any).

C. Subject: February 28, 2018 PFRS Board Meeting Minutes
From: Staff of the PFRS Board

Recommendation: APPROVE February 28, 2018 PFRS Board meeting minutes.

D. AUDIT AND OPERATIONS COMMITTEE AGENDA – MARCH 28, 2018

D1. Subject: PFRS Actuary Valuation as of July 1, 2017
From: Cheiron, Inc., PFRS Plan Actuary

Recommendation: APPROVE the PFRS Actuary Valuation as of July 1, 2017.

D2. Subject: Administrative Expenses Report
From: Staff of the PFRS Board

Recommendation: ACCEPT an informational report regarding PFRS Administrative Expenses from July 1, 2017 through January 31, 2018.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
MARCH 28, 2018

ORDER OF BUSINESS, continued

- D3. **Subject:** Revision of the PFRS Education & Travel Policy
From: Staff of the PFRS Board
-
- Recommendation:** **APPROVE** the revision of the PFRS Education & Travel Policy.
- D4. **Subject:** Review of and Revisions to PFRS Rules and Regulations
From: Staff of the PFRS Board
-
- Recommendation:** **DISCUSSION**, review of, and revisions to the PFRS Rules and Regulations.
- D5. **Subject:** Discussion regarding PFRS July 1, 2026 Actuary Funding Deadline
From: Staff of the PFRS Board
-
- Recommendation:** **DISCUSSION** regarding PFRS July 1, 2026 Actuary Funding Deadline.
- D6. **Subject:** Resolution No. 7009 - Travel authorization for PFRS Board Member Jaime Godfrey to travel to and attend the 2018 IMN Global Indexing and ETF Conference ("IMN Conference") from June 26, 2018 to June 28, 2018 in Dana Point, CA with an estimated budget of One Thousand Nine Hundred Eighty-two Dollars (\$1,982.00)
From: Staff of the PFRS Board
-
- Recommendation:** **APPROVE** Resolution No. 7009 - Travel authorization for PFRS Board Member Jaime Godfrey to travel to and attend the 2018 IMN Global Indexing and ETF Conference ("IMN Conference") from June 26, 2018 to June 28, 2018 in Dana Point, CA with an estimated budget of One Thousand Nine Hundred Eighty-two Dollars (\$1,982.00).
- E. **INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – MARCH 28, 2018**
- E1. **Subject:** (1) Review of Alternative Risk Premia/Trend section of Crisis-Risk Offset Strategy, (2) Interview and Selection of New Alternative Risk Premia/Trend Manager
From: PCA and Staff of the PFRS Board
-
- Recommendation:** **ACCEPT** the Review of Alternative Risk Premia/Trend section of Crisis-Risk Offset Strategy, **ACCEPT** the presentations by firms AQR, Lombard Odier, and Parametric Portfolio Managers, and **APPROVE** the a new Alternative Risk Premia/Trend Investment Strategy Manager.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
MARCH 28, 2018

ORDER OF BUSINESS, continued

- E2. **Subject:** Resolution No. 7007 – Authorization for Service Agreement with Northern Trust Investments (large-cap core domestic equity asset class manager) using a comingled fund
From: Staff of the PFRS Board and PCA
-
- Recommendation:** **APPROVE** Resolution No. 7007 – Authorization for Service Agreement with Northern Trust Investments (large-cap core domestic equity asset class manager) using a comingled fund.
- E3. **Subject:** \$14.2 million 2nd Quarter 2018 Member Benefits Drawdown
From: Staff of the PFRS Board & Pension Consulting Alliance
-
- Recommendation:** **APPROVE** PCA recommendation of \$14.2 million drawdown to be used to pay for April 2018 through June 2018 member retirement benefits.
- E4. **Subject:** Investment Market Overview
From: Pension Consulting Alliance (PCA)
-
- Recommendation:** **ACCEPT** an informational report on the global investment markets through January 31, 2018.
- F. NEW BUSINESS – No Report.
- G. OPEN FORUM
- H. FUTURE SCHEDULING

A BOARD MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was held on February 28, 2018 in Hearing Room 3, One Frank Ogawa Plaza, Oakland, California.

Board Members Present:

- Jaime T. Godfrey, Vice President
- John C. Speakman, Member
- Robert J. Muszar, Member
- Christine Daniel, Member
- Martin J. Melia, Member

Board Members Absent:

- Walter L. Johnson, President
- R. Steven Wilkinson, Member

Additional Attendees:

- Katano Kasaine, Plan Administrator
- Pelayo Llamas, Jr., PFRS Legal Counsel
- David Low & Teir Jenkins, Staff Member
- David Sancewich & Sean Copus, Pension Consulting Alliance (PCA)

The meeting was called to order at 12:12 pm.

President Johnson was absent from today’s meeting; Vice President Jaime Godfrey acted as President Pro Tem for today’s Board meeting.

A. **Approval of PFRS Board Meeting Minutes** – Member Muszar made a motion to approve the November 29, 2017 PFRS Board meeting minutes, second by Member Daniel. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

B. **Approval of PFRS Board Meeting Minutes** – PFRS retiree Ray Miller spoke about the issue he raised during Open Forum at the January 31, 2018 Board meeting (alleged failure of PFRS staff to return documents to him). Member Daniel said the January 31, 2018 Board meeting minutes should be amended for the Open Forum item, adding the phrase: “including the return of his documents” to Mr. Miller’s comments on the January 31, 2018 meeting minutes. Member Daniel made a motion to approve the January 31, 2018 PFRS Board meeting minutes as amended, second by Member Speakman. Motion Passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

C. **PFRS AUDIT COMMITTEE MEETING – FEBRUARY 28, 2018**

C1. **Experience Study for Actuary Valuation of the PFRS Fund through July 1, 2017 and Change of Assumptions** – Graham Schmidt and Tim Doyle from Cheiron, Inc. (PFRS Actuary) presented the results of the Actuary Experience Study of the PFRS Plan through July 1, 2017. Their presentation addressed recommendations regarding changes to the assumed rate of return, inflation rate, and mortality table selections affecting the PFRS plan through June 30, 2017.

Following Board and staff discussion, Member Muszar made a motion to approve the recommendation of Cheiron Inc., PFRS Plan Actuary, to change the assumptions to be used in its actuary valuation report as of July 1, 2017 as follows: (1) adopt the CALPERS 2017 mortality table, (2) adopt the Initial Earnings Rate of 6.00 percent, and (3) adopt an wage inflation rate of 3.25 percent for the PFRS actuary valuation report as of July 1, 2017, second by member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

- C2. **Administrative Expenses Report** – Investment Officer Teir Jenkins presented the administrative expenses report from July 1, 2017 through December 31, 2017. Member Muszar made a motion to accept the administrative expenses report, second by member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

- C3. **Revision to the PFRS Education and Travel Policy** – Member Speakman reported the Audit Committee and staff are working on current edits to the PFRS Education and Travel Policy and will continue through the next meeting. He said the Audit Committee tabled action on this matter until the next meeting.

- C4. **Review of PFRS Rules and Regulations** – Due to time constraints, the review of the PFRS Rules and Regulations was tabled to the next scheduled Audit Committee meeting.

- C5. **Resolution No. 7002 - Travel Authorization for PFRS Board Member Godfrey** – Member Speakman made a motion to approve Resolution No. 7002 – Travel Authorization for PFRS Board Member Jaime Godfrey to Travel and Attend the 2018 The Pension Bridge Conference (“Pension Bridge Conference”) from April 10, 2018 to April 11, 2018 in San Francisco, CA with an estimated budget of Seven Hundred Twenty-seven Dollars (\$727.00), second by Member Muszar. Motion passed.

[DANIEL – Y / GODFREY – ABSTAIN / JOHNSON – ABSENT / MELIA – Y
MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 4 / NOES: 0 / ABSTAIN: 1)

- C6. **Resolution No. 7003 - Travel Authorization for PFRS Board Member Wilkinson** – Member Speakman made a motion to approve Resolution No. 7003 – travel authorization for PFRS Board Member R. Steven Wilkinson to Travel 2018 CALAPRS General Assembly from March 3, 2018 through March 6, 2018 in Indian Wells, CA with an estimated budget of One Thousand Three Hundred Dollars (\$1,300.00), second by member Daniel. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

- C7. **Resolution No. 7004 - Travel Authorization for PFRS Plan Administrator Katano Kasaine** – Member Speakman made a motion to approve Resolution No.

7004 – Travel Authorization for PFRS Plan Administrator Katano Kasaine to Travel and Attend the 2018 The Pension Bridge Conference (“Pension Bridge Conference”) from April 10, 2018 to April 11, 2018 in San Francisco, CA with an estimated budget of Two Hundred Thirty-nine Dollars (\$239.00), second by Member Daniel. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D. PFRS INVESTMENT COMMITTEE MEETING – FEBRUARY 28, 2018

D1. **Investment Manager Performance Review – Northern Trust Asset Management** – Member Melia reported that Northern Trust Asset Management Presented a report on the company’s investment performance, management and administration related to the PFRS fund. Member Melia made a motion to accept the informational report, second by member Muszar. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D2. **Investment Manager Overview – Northern Trust Asset Management** – David Sancewich reported that PCA had no issues regarding the investment performance, management and administration by Northern Trust Asset Management related to the PFRS fund. Member Melia made a motion to approve the PCA review of Northern Trust Asset Management, second by member Muszar. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D3. **Investment Manager Report presented by new representative from NWQ** – Member Melia reported that Michael Mullane, relationship manager for NWQ, presented an overview of NWQ and his role as the new relationship manager for the PFRS Fund. Following some Board discussion, member Melia made a motion to accept the report, second by member Muszar. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D4. **Resolution No. 7008 - Placement of Investment Manager to Watch Status** – Investment Officer Teir Jenkins reported that the PFRS Board approved the placement of NWQ onto Watch Status by board motion at their January 2018 Board meeting. Mr. Jenkins said Resolution No. 7008 memorializes this action. Member Melia made a motion to approve Resolution No. 7008, second by member Daniel. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D5. **(1) Informational report from PCA & Staff regarding On-site visit of Hansberger Growth Investors and (2) Recommendation for Request for Information for an active International Equity Investment Manager** – David Sancewich from PCA presented his report of the on-site visit he conducted with

Chairman Godfrey of Hansberger Growth Investors' Toronto office. Following Board discussion, Member Melia made a motion to accept the information report from PCA, second by Member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

David Sancewich explained PCAs recommendation to conduct a Request for Information (RFI) seeking candidates to serve as PFRS' International Equity Investment Manager. Member Melia made a motion to authorize PCA to conduct the RFI, second by member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

- D6. **Investment Market Overview** – Mr. Sancewich reported on the global economic factors affecting the PFRS Fund. Member Muszar made a motion accept the Informational Report from PCA, second by Member Daniel. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

- D7. **Investment Fund Performance Report for the Quarter Ending December 31, 2017** – Mr. Sancewich presented the details of the Investment Fund Performance Report for the Quarter Ending December 31, 2017. Member Melia made a motion to approve the , second by member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

- D8. **Resolution No. 7007 - Renewal of Service Contract – Northern Trust Investments** – Mr. Jenkins reported the coming expiration of the service agreement between Northern Trust Asset Management and the PFRS board. He reported that Resolution No. 7007 would renew the service agreement for one year. The Board and PCA discussed the issues regarding a change in the fee schedule, and the possibility of switching to a comingled account. Staff and PCA were instructed to explore the issues related to fees with Northern Trust and report back to the Investment Committee next month. Member Melia reported that action on Resolution No. 7007 was tabled until the March 2018 meeting.

- D9. **Alternative Risk Premia/Trend Manager Search – Proposed Finalists to be interviewed at an upcoming PFRS Investment Committee Meeting** – Mr. Sancewich presented a report regarding the Crisis Risk Offset (CRO) strategic investment manager class interviews. He explained PCA's analysis of the firms who submitted their credentials to serve as PFRS' Alternative Risk Primia/Trend Manager, and PCA's recommended three finalists to be interviewed in March. Following some discussion, Member Melia made a motion to conduct interviews of AQR, Lombard Odier, and Parametric Portfolio Managers, for the Alternative Risk Premia/Trend manager, second by Member Muszar. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D10. **2018 Capital Market Returns memo** – Mr. Sancewich presented the 2018 Capital Market Returns memo to the Board. Following some discussion, Member Melia made a motion to accept the memo, second by Member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

D11. **PFRS Calendar Year 2018 Strategic Investment Plan** – Mr. Sancewich presented PCA's Strategic Investment Plan and Calendar of upcoming PFRS-related investment meeting items. Member Melia made a motion to approve the Plan and Calendar, second by Chairman Godfrey. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

E. **Resolution No. 7005 and 7006** - Member Muszar made a motion to approve Resolutions No. 7005 and 7006, second by member Speakman. Motion passed.

[DANIEL – Y / GODFREY – Y / JOHNSON – ABSENT / MELIA – Y / MUSZAR – Y / SPEAKMAN – Y / WILKINSON – ABSENT]
(AYES: 5 / NOES: 0 / ABSTAIN: 0)

E1. **Resolution No. 7005** – 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: Tamara J. Meyer And Jeffrey J. Meyer.

E2. **Resolution No. 7006** – Resolution Fixing the Monthly Allowance Kathleen Tryhorn, Spouse of Donald L. Herschal; of Linda D. Hendler, Spouse of Howard A. Hendler; and of Sylvia M. Horne, Spouse of James M. Horne, Retired Members of the Police and Fire Retirement System.

F. **NEW BUSINESS** – Member Muszar requested that the Board set an item for the March 2018 Board agenda to respond to the City of Oakland's January 2018 letter to the PFRS Board which requested that the Board postpone its consideration of police holidays calculations.

G. **OPEN FORUM** – PFRS Member Ned Ubben expressed his thanks to each PFRS Board for their work.

Plan Administrator Katano Kasaine told the PFRS Board that staff regularly receives information for Conferences and Board Member Training opportunities. She said staff will regularly inform the Board of these conferences and training classes as they become available.

H. **FUTURE SCHEDULING** – Staff reported the next Board meeting is scheduled for March 28, 2018. Tentative starting times: for Investment Committee to start at 9:00 am; Audit Committee to start at 11:30 am, and the Board meeting to start at 2:00 pm.

The meeting adjourned at 1:26 pm.

KATANO KASAINÉ, BOARD SECRETARY

DATE

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Oakland, California 94612

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Robert J. Muszar
Member

R. Steven Wilkinson
Member

Martin J. Melia
Member

John C. Speakman
Member

Christine Daniel
Member

**CLOSED SESSION of the BOARD OF ADMINISTRATION
of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")**

Wednesday, March 28, 2017 – during regular meeting starting at 1:30 pm
One Frank H. Ogawa Plaza, Hearing Room 3
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

- a. Retired Oakland Police Officers Association v. Oakland Police and Fire Retirement System, et al,
Alameda County Superior Court, Action No. RG 16838274

- b. Alaska Electrical Pension et al v Bank of America et al,
United States District Court for the Southern District of New York,
Action No. 14-cv-7126 (JMF)