Board of Trustees

Quarterly Meeting

February 27-28, 2019

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Agenda

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

QUARTERLY MEETING OF THE BOARD OF TRUSTEES
February 27-28, 2019

Michael J. Burns Building – State Board Room (1st floor)
801 W. 10th St., Suite B, Juneau, AK 99801

Day 1 Webinar Access (click link to join webinar)
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Teleconference Option
If you are unable to join in-person or via webinar, please contact us at (907) 796-1515 to receive a teleconference number

AGENDA

WEDNESDAY, FEBRUARY 27, 2019

8:30 a.m. CALL TO ORDER

ROLL CALL (Action)

APPROVAL OF AGENDA (Action)

APPROVAL OF MINUTES (Action)
- December 11-12, 2018

SCHEDULED APPEARANCES AND PUBLIC PARTICIPATION

8:45 a.m. CHIEF EXECUTIVE OFFICER'S REPORTS (Information/Standard Reports)
- Pending Board Matters, Trustee Education Report, Disclosure Report, Travel, Due Diligence Log, Staff Education & Training, Internship Program, APFC Organization Update
- Communications Report
- Financials
- Cash Flow
- Monthly Performance Report
- Strategic and Tactical Moves
- Investment Management Fee Report
- FY19 Budget Update

9:00 a.m. LEGISLATIVE UPDATE (Information)
Paulyn Swanson, Communications Manager

9:20 a.m.	CHIEF INVESTMENT OFFICER'S REPORT (Information) Marcus Frampton, Chief Investment Officer
9:45 a.m.	RISK OVERVIEW (Information) Sebastian Vadakumcherry, Chief Risk & Compliance Officer
10:35 a.m.	*BREAK*
10:45 a.m.	PERFORMANCE REVIEW (Information) Steven Center, Callan LLC
12:00 p.m.	*BREAK / LUNCH*
	ASSET CLASS UPDATES (Information)
12:30 p.m.	PRIVATE EQUITY & SPECIAL OPPORTUNITIES Steve Moseley, Director of Investments, Alternatives Samantha LaPierre, Associate
1:00 p.m.	PRIVATE INCOME & ABSOLUTE RETURN Steve Moseley, Director of Investments, Alternatives Jared Brimberry, Senior Portfolio Manager Ross Alexander, Portfolio Manager
1:25 p.m.	PUBLIC EQUITIES Fawad Razzaque, Director of Public Equities
1:50 p.m.	FIXED INCOME Jim Parise, Director of Fixed Income
2:10 p.m.	REAL ESTATE Rose Duran, Director of Real Estate Tim Andreyka, Senior Portfolio Manager
2:30 p.m.	*BREAK*
2:45 p.m.	ASSET ALLOCATION STRATEGIES Valeria Martinez, Director of Asset Allocation
3:15 p.m.	RISK PARITY STRATEGIES PanAgora Asset Management Brian Belton, Director, Multi Asset Mike Anderson, Head of Global Sales
4:15 p.m.	FOREIGN CURRENCY HEDGE STRATEGIES Adrian Lee & Partners Adrian F Lee, President & Chief Investment Officer Philip Lawson, Head of Portfolio Management
5:15 p.m.	*RECESS FOR THE DAY*

THURSDAY, FEBRUARY 28, 2019

7:45 a.m. *BOARD OF TRUSTEES PHOTO SHOOT*

8:15 a.m. *MEETING RECONVENES*

8:20 a.m. LIQUIDITY OVERLAY STRATEGIES
NISA Investment Advisors:
Gregory Yess, Chief Operations Officer, Managing Director, Client Services
Ann-Marie Gehring, Senior Manager, Client Services
Richard Ratkowski, Director, investment Strategies
Kevin Schuman, Director, Client Services

9:45 a.m. NAMING OF MEETING CENTER (Action)
Angela Rodell, Chief Executive Officer

10:00 a.m. *BREAK*

10:15 a.m. STRATEGIC DIRECTION
Craig Richards, Chairman of the Board of Trustees

- Trustee Paper
- Investment Advisor Program
- Board Agenda Structure

11:15 a.m. OTHER MATTERS
Angela Rodell, Chief Executive Officer

11:30 a.m. INVESTMENT ADVISOR COMMENTS (Information)
Jerrold Mitchell

11:45 a.m. TRUSTEE COMMENTS / FUTURE AGENDA ITEMS

12:00 p.m. *ADJOURNMENT*

NOTE: TIMES MAY VARY AND THE CHAIR MAY REORDER AGENDA ITEMS (Please telephone Maggie Meiners at 907.796.1519 with agenda questions)

Approval of Minutes Memo

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Approval of Minutes   ACTION: __X__

DATE: February 27th, 2019   INFORMATION:

BACKGROUND:

Staff reviewed the following Board of Trustees meeting summary minutes, draft copies are attached for your approval.

- December 11-12, 2018   Quarterly Board of Trustees Meeting

RECOMMENDATION:

Approval of the summary minutes of the Board of Trustees meetings listed above.

December 11-12, 2018

ALASKA PERMANENT FUND CORPORATION

QUARTERLY MEETING OF THE BOARD OF TRUSTEES

December 11-12, 2018
8:30 a.m.

Location of Meeting:
Michael J. Burns Building
State Board Room, First Floor
801 West 10th Street
Juneau, Alaska 99801

SUMMARY MINUTES

Trustees Present:	Craig Richards, Chair Carl Brady, Vice Chair William G. Moran Marty Rutherford Bruce Tangeman Corri A. Feige	
Investment Advisor:	Jerrold Mitchell	
Staff Present:	Angela Rodell, CEO Valerie Mertz, CFO Paulyn Swanson Danielle Graham Valeria Martinez Tim Andreyka Ross Alexander Samantha LaPierre Youlian Ninkov Jim Parise Chris Cummins Matt Olmsted	Marcus Frampton, CIO Robin Mason, COO Chris Poag, General Counsel Sebastian Vadakumcherry Rose Duran Jarred Brimberry Stephen Moseley Fawad Razzaque Moctar Diouf Tom O'Day Masha Skuratovskaya
Other participants:	Gregory Allen, Callan Associates Steven Center, Callan Associates Cyril Moulle-Berteaux, Morgan Stanley Jeff Gardner, Bridgewater Doug Woodby, Public Comment Bob Schroeder, Public Comment Michael Tobin, Public Comment	

PROCEEDINGS

CALL TO ORDER

CHAIR RICHARDS asked for a roll call.
(CHAIR RICHARDS, TRUSTEE RUTHERFORD, TRUSTEE TANGEMAN, TRUSTEE FEIGE were present to form a quorum.)

APPROVAL OF AGENDA

CHAIR RICHARDS moved the executive session review of the executive director to 4:45, and reset the discussion of the Callan Fiscal Model to the regular meeting in February. He also added a discussion at the end of the day tomorrow before trustee comments, on the wisdom of doing a trustee paper. He asked for a motion to approve the agenda.

MOTION: A motion to approve the agenda was made by TRUSTEE RUTHERFORD and seconded by TRUSTEE TANGEMAN.

The MOTION WAS APPROVED with no objection.

SCHEDULED APPEARANCES AND PUBLIC PARTICIPATION

PUBLIC COMMENT

CHAIR RICHARDS recognized Doug Woodby.

MR. WOODBY stated that he is a retired fishery scientist with the Alaska Department of Fish & Game and is co-chair of 350 Juneau – Climate Action for Alaska. He explained that this is a local affiliate of 350.org, an international climate action organization. The number 350 refers to the concentration of carbon dioxide in the atmosphere that scientists say is an upper limit above which life as known is not sustainable. The atmospheric level of CO_2 is now over that limit, at about 409 parts per million and rising. He thanked the board for working to realize the highest investment returns for the benefit of all Alaskan residents. Concern was expressed about what appeared to be excessive concentration in fossil fuel investments and a petition with over 400 signatures of fund shareholders asking for appropriate action be taken by divesting the fund of fossil fuel holdings was submitted. A response was received from Mr. Moran and Ms. Rodell, and we appreciated the attention given to the concerns. The closing paragraph affirmed the board's commitment to maintain the fiduciary-based investment process, risk decisions, and the board's intention to not abruptly divest from fossil fuel companies. He stated that while that appears to be a prudent strategy, the protection requested is a full climate risk assessment as described in the letter previously submitted to the staff.

CHAIR RICHARDS thanked Mr. Woodby and recognized Bob Schroeder.

MR. SCHROEDER stated that he works as an applied anthropologist with ADF&G and U.S.D.A. Forest Service on subsistence fishing and on natural resource management issues. He continued that active divestment of fund investments of fossil fuel across all investment classes is urged. He talked about the acceleration of global warming which resulted in the worst commercial fishing season in Southeast Alaska, a hot dry spell of the Tongass National Forest that damaged salmon returns and threatened forest fires in a rainforest that has never burned. He continued on to the two measured climate assessments that were recently released. The first is the United Nations Intergovernmental Panel on Climate Change, which focuses on the disasters that will result if global action is not taken to limit planetary warming to 1.5 degrees centigrade. It concludes stating there are 12 years, on the outside, to remedy the situation by radically reducing fossil fuel. The second report is the U.S. Global Change Research Program which was mandated by Congress in the 1990 law and is the product of 17 Federal Government agencies. The assessment noted that time is running out to make the socioeconomic changes that are needed to avoid climate catastrophe. It shows how damaging unchecked global warming will be for the United States and even limited remediation will be very expensive and severely damage the U.S. economy. He hoped that there will be a proactive response from the board to climate change risks to the Permanent Fund to act with alacrity.

CHAIR RICHARDS thanked Mr. Schroeder and recognized Michael Tobin.

MR. TOBIN stated that he lived in Juneau, is a shareholder of the Alaska Permanent Fund, and is testifying as a board member of 350 Juneau – Climate Action for Alaska. He asked that the Permanent Fund board perform climate risk assessments on all fund holdings. He stressed that everyone is in this together, and as shareholders we all have a vested interest in the board doing the right thing. He continued that climate-related financial risk refers to a set of conditions caused by both the physical impacts of climate change and regulatory, technological, and legal responses to the global effort to transition to a low-carbon economy. He explained that this would likely impact assets, either depress or destroy the value of fossil fuel assets, and lead to declines in investment returns. He requested fiduciary responsibility in changing times and to incorporate periodic climate risk assessments across all asset classes, including corporate bonds, into the governance of the Alaska Permanent Fund, and to make the results public.

CHAIR RICHARDS thanked Mr. Tobin and asked for any other public comment. There being none, he closed public comment.

APPROVAL OF MINUTES (September 26-27, 2018; October 17, 2018)
MOTION: A motion to approve the minutes of September 26-27, 2018, and the minutes of October 17, 2018, was made by TRUSTEE RUTHERFORD and seconded by TRUSTEE FEIGE.

The MOTION WAS APPROVED with no objection.

CHIEF EXECUTIVE OFFICER'S REPORTS

CEO RODELL welcomed Trustees Tangeman and Feige to their first board meeting. She explained that this report comes out at the regular board meetings. In terms of pending board matters there is a list of activities that the board has expressed as a priority for the staff and the board to work on. These are routinely reviewed. She stated that a strategic plan is done every three to five years, and we are now in its fourth year. There has been an interest expressed on revisiting the strategic plan, which will be scheduled. In the past it was prepared by the staff and presented to the board. There will probably be interest in board members participating, which will make it a scheduled public meeting.

CHAIR RICHARDS asked if there was a reason for the asset allocation to be done in May.

CEO RODELL replied that it was moved to May to tie the performance measurement to the fiscal year, which resulted in a full performance year for any changes to the asset allocation. She pointed out trustee education and explained that the Board Charters and Governance wanted to assure that trustees have an opportunity to have continuing education in the realm of investments; and we are always looking for opportunities for the trustees. The most near term is the annual Callan Institute, a national conference. She encouraged trustees, to the extent they are available, to travel to San Francisco on January 29-30, to attend. It is an opportunity to also network with other trustees that have similar positions. The second organization is Pacific Pensions & Investments. They will be having their winter roundtable in Los Angeles February 27 to March 1st. She also added that the IFSWF's annual meeting will be hosted in Juneau from September 10-13, 2019. She moved on and stated that there is more public correspondence being received, which will be included in the book to ensure that the trustees are receiving it. She then explained the travel policy. She moved to the communication report and pointed out the number of communication projects on the table. Establishing a communications policy of the board's Charters and Governance calls for a comprehensive communications policy, and Paulyn Swanson is in the process of working on that. The social media presence on Facebook and LinkedIn is putting out regular communications with the public to assist in the education efforts about what is being done here at APFC. The newspaper insert has also been started. Also included in the communication plan are the Legislative priorities that were approved by the board of trustees, including the inflation-proofing, procurement streamlining, and working on improving internal communications.

CHAIR RICHARDS explained the governance structure to the new trustees and stated that it is set up that the only people that speak for the whole corporation are the chairman and the executive director. Trustees speaking about the corporation are speaking as individual trustees, unless it comes through those offices. He added that trustees are also welcome to speak with him or CEO Rodell at any time about the various points as all settle in.

CEO RODELL stated that the final thing in the communications plan, which was started in 2017 with Chad Brown, the HR manager, was to utilize a poll that is put out by Pensions & Investments. This gauged an assessment as to where the fund is internally from a management standpoint. She explained that it is an anonymous survey and completely protects the identity of the respondents. This is the second year it is being done at the corporate level, and she went through the results. She then continued on to the financial report as of the quarter end, September 30th, and stated that statutory net income for FY19 is on track, similar to FY17 and FY18. Also included are cash flows, which give an idea of the activity of the fund; the specific investments, and where the cash is coming from. The monthly performance report goes into the specificity of specific managers and how they and the investments are doing. The strategic and tactical moves gives a sense of all the investments that have been approved over the course of the quarter. She explained that a variety of commitments were funded: direct investments; hedge funds; and there were no strategic changes. She moved to the rolling quarterly investment management fee report. Included are the amounts received by appropriation to fund external public equity managers and fees funded by investments.

CHAIR RICHARDS moved to the CIO report.

CHIEF INVESTMENT OFFICER REPORT

MR. FRAMPTON stated that he included a quarterly CIO letter in the board materials where current positioning was reviewed, and some initiatives were focused on. He described the asset allocation basis and its positioning over the course of last year. He explained that, in the last year, the exposure for the total fund to public equities was reduced from 45 percent to 39 percent today. The target allocation is 38 percent. There is also more cash being carried; 1.3 billion of unencumbered cash that is in line with the benchmark. He continued that there is an asset class called asset allocation that includes: unencumbered cash, which is true cash and Treasury bills; cash that is overlaid with a 65/35 mix of equities and bonds; and risk parity. Unencumbered cash refers to cash that is not overlaid.

CHAIR RICHARDS asked about the process being used to decide what cash is going to have derivative exposure versus what is not.

MR. FRAMPTON explained that the anchors are benchmark weight. He talked about the chart that described the historical annual APFC realized volatility, returns, and asset allocation. It is an important topic of what type of loss can be expected in the environments.

CHAIR RICHARDS stated that it would be helpful, with the adoption of SB 26, the cash calls on the Permanent Fund have changed to not just dividends, but also to the 5.25 percent. He asked what the Permanent Fund is doing to address the change in liquidity needs, and if there is a strategy on that.

MR. FRAMPTON replied that the amounts funded to the State are manageable and behooves running closer to the benchmark rate of cash than when it was at 400 to $500 million. He noted that a large part of the performance the last few years has been private equity outperformance. That liquidity also has to be watched.

TRUSTEE RUTHERFORD asked if the expected call calendar with the Department of Revenue was finalized; and if there is any need to revisit that with the new administration to make sure that it is in sync with their expectations.

CEO RODELL replied that the letter with the agreed-upon amounts was sent to the trustees. Revenue reduced the initial draw in September for General Fund expenses. She stated that the dividend was fully funded, and then Revenue asked for an additional amount. That amount was reduced because there was more than expected production tax received because oil prices were high.

PERFORMANCE REVIEW

MR. ALLEN stated that he is the CEO and chief research officer at Callan. He explained that they are the investment consultant to the fund; working in that capacity for over 25 years. One of Callan's jobs is to help the board monitor and understand the performance of the fund. He introduced Steve Center, Senior Consultant out of the Seattle office, who is an expert at going through what has happened in the markets. He added that their perspective on the fund in addressing the board is a longer-term perspective, to understand the long-term trends in terms of return and risk.

MR. CENTER began with the capital markets overview, looking at the U.S. equity markets versus nonU.S. equity markets. The U.S. equity markets vastly outperformed nonU.S. equities in both developed and emerging markets. The Permanent Fund has invested outside the U.S. within an equity investment standpoint for a long term. It is good to have a diversified exposure outside the U.S. within the equity portfolio. He moved on to the total fund's asset allocation and stated that the Permanent Fund remains well-diversified across all major asset classes. Using standard institutional asset class definitions, the Permanent Fund, as of the end of September, was 43 percent equities; 23 percent fixed income; 12 percent in private equity; 6 percent in real estate; 7 percent in infrastructure; 5 percent in absolute return in hedge funds; and 5 percent in asset allocation. He continued that the fund performed quite well over the last year, ahead of both the benchmark and the CPI-plus-5 target by about 1.4 percent, and well ahead of the passive index. Longer-term performance is quite strong. The total fund has outpaced benchmarks over all time periods. He stated that the fund has been overweight to public equities, which has been a positive to performance. The laggards to performance for the quarter was the manager performance within the public equity space and performance within real estate; both measured against their benchmarks.

MR. FRAMPTON commented that, on the public asset classes, valuations are based on the stock prices that are publicly available. The privates are based on third-party appraisal evaluations. There is one large real estate property appraisal that took a very conservative assumption on re-leasing some vacant space. The real estate team expects that will reverse as that vacancy is filled. It is in a strong market. He talked about the lag to private equity that was instituted a year ago. There was an issue where appraisals and marks came in at varied timings; some of the marks were not getting in. The September performance is now off of changes in marks from March to June, which is the one-quarter lag.

MR. CENTER continued that public equity has lagged from an active management standpoint. A lot of this has come from the fund's overweight to exposure, nonU.S. equities, and the slight overweight to smaller-cap stocks versus larger-cap stocks within the U.S. Those have helped the performance. He continued that, for lack of a perfect peer group, the Permanent Fund is compared against two different peer groups, and Callan tries to highlight how the Permanent Fund is different in order to explain the return differences. He stated that performance for the Permanent Fund versus endowments and foundations has been strong over the last ten years; above median over all time periods. Over 20 years, the performance is below median due to the slightly conservative bend and higher allocation in fixed income seen over the long term. Most foundations and endowments are very active in alternatives, and have been for the last two decades. He continued to the risk/return chart and pointed out that the total fund has a below-median return. The risk is also below median. It has actually taken on less risk than most pension funds, and less risk than the target. He stated that the Sharpe Ratio for the Permanent Fund over all time periods has been above median, and top quartile for all but the last ten years. Overall, the plan looks good from a risk-adjusted-return standpoint. He continued with the domestic equity portfolio, which was approximately 54 percent focused on U.S. equity strategies and 46 percent in nonU.S. equities. The median allocation to U.S. equity in most U.S. public funds is about 60 percent. The equity portfolio has lagged its benchmark over the last quarter and last year. Most of the underperformance has been attributable to the active equity managers, exposure outside the U.S., and a small-cap bias within the U.S. Long-term performance for public equities has been good and compared well with the benchmark over the last three years, and slightly trailed over five to ten years. Overall performance has been fairly similar to the benchmark over all time periods. He pointed out that longer-term performance compared favorably versus both the benchmark and peers, above median and the benchmark over both seven and ten years. He stated that it is difficult to structure an active U.S. equity portfolio that is on a capitalization basis similar to the U.S. equity market. Many active managers tend to invest in smaller capitalization stocks because of the thinking that they will grow faster than larger capitalization stocks. He continued that, over the long term, that has been a structural overweight that contributed to performance. He detailed the U.S. equities structure and talked about the large-cap managers and the small-cap equity managers going into some of the other equity performance. He continued and touched on a few of the other fixed income building blocks, and then talked about alternatives. The Permanent Fund's total private equity portfolio is well-diversified. The geographic mix is extremely well-diversified and not overweight to any single geography. Industry mix is also well-diversified.

CHAIR RICHARDS called for a break.

(Break.)

REAL ASSETS, PRIVATE INCOME, & ABSOLUTE RETURN

MS. DURAN stated that she heads up the real estate investment team for the Permanent Fund. She introduced Tim Andreyka, senior portfolio manager for the real estate fund.

MR. ANDREYKA began with a brief market overview for some context. He stated that there is a bit of price risk. Cap rates have hit their lowest level in the 40 years that NCREIF has been reporting the cap rate. It is very hard to get access to good deals at this point. Part of that reason is occupancy rates are very high. He continued that rent growth is slowed, down 2.7 percent, which is considerably less than seen in recent years. This created the shift from appreciation to income. He added that the returns going forward will be based more on increasing the NOI as opposed to cap-rate compression. He stated that interest rates also put the pressure on the market; cap rates typically follow the interest rates, which is also a factor. He explained that a debt program with Heitman started this year. This was an opportunity to get into a better, less risky part of the capital stack while still generating good risk-adjusted returns. The first loan was closed this past quarter, which is not reflected in the numbers because of the lag. A loan was completed on a residential property in Hawaii. That will yield a rate of return of about 7.5 percent. These are floating-rate loans which will allow increases in the returns as interest rates increase.

MS. DURAN interjected that the real estate fund has always been managed as a real core portfolio; only income-producing properties are looked at. Going forward on the build-to-core program is with a preferred developer, and we are hiring an asset manager in-house to help with that.

MR. ANDREYKA explained that they are underallocated quite a bit due to three things: The REITs were transferred to fixed-income-plus; the interest in American Homes 4 Rent was sold; and the sale to Simpson Housing was closed. That took away most of the multifamily portfolio, which is why that 8 percent is so much below the NCREIF number. He noted that the retail percentage looks high as a result of selling these other assets, and the target investment is in line with where it should be.

MR. BRIMBERRY introduced himself and stated that he joined the Permanent Fund in March of 2016.

MR. ALEXANDER stated that he is the portfolio manager for infrastructure and has been with the Permanent Fund for three months. He began with the summary performance, which included real estate. He added that absolute return is not lagged, whereas, the private income and real estate numbers are lagged. The performance is as of June 30; absolute return is through September 30 performance. He explained that the absolute return portfolio has a long history, and was previously done by fund managers. That was changed in the 2016 restructuring of the portfolio. The reason for the transition was that fees were being paid to the fund-of-fund managers for a job that could be done in-house. There was a significant amount of beta experience in that portfolio that was, theoretically, an uncorrelated asset. It has been set out for very low drawdowns and through the cycle, consistent returns that are creative to the fund. He stated that the direct portfolio is diversified by strategies that can deliver the uncorrelated returns. He explained the infrastructure, which had a strong recent performance attributable to partial and full realization.

MR. BRIMBERRY highlighted the co-investment projects which contributed greatly to returns.

MR. ALEXANDER moved to the diversification for the current portfolio which continued to focus on power generation and transportation, with some smaller opportunities in midstream, telecom, and others. He stated that the geography has remained the same for the past several years, although the U.S. exposure has increased.

MR. BRIMBERRY briefly went over private credit, loans that are not publicly traded and are generally below what is seen in the high-yield market. He explained that the high-yield index was used as a benchmark, but we expect to deliver an additional return above that for the risks being taken. He stated that the income opportunities portfolio is the special opportunities or the other strategies for private income, including timber investments; investment in a fund that pursues lending to health-care companies; a company that buys life settlements or insurance claims and experiences in the runoff of those insurance claims. He continued that the biggest addition has been the Alaska Direct Alternative Credit initiative, which is a co-investment program for private credit where it is partnered with a public portfolio of high-yield securities managed by the fixed income team. He explained that the approach to that portfolio is to have a barbell investment of high-quality, high-yield bonds, something double-B quality versus the high-yield index which goes all the way down to single-B and some junk bonds and triple-Z ratings. It has a quality bias and a lower return than what is seen on the co-investment side.

PRIVATE EQUITIES & SPECIAL OPPORTUNITIES

MR. MOSELEY stated that he manages the private equities and special opportunities portfolios.

MS. LAPIERRE stated that she joined the private equity team in August; before that she worked on risk and asset allocation.

MR. MOSELEY stated that the combined portfolios today are about $8.2 billion; the lower number shown is because of the lag, and almost 13 percent of the overall Permanent Fund. He continued that the returns have been in the high 20s for the last year, and we do not think that is sustainable forever. He added that there are some structural advantages that will continue to allow outperforming the market.

CHAIR RICHARDS called a break.

(Break.)

CHAIR RICHARDS called the meeting back to order and recognized that Trustees Moran and Brady are now present.

MR. MOSELEY continued that the $8.2 billion private equity and special opportunities is intended to be one of the riskiest parts of the portfolio and among the most illiquid assets. On the portfolio basis it is well positioned for a less friendly private equity environment.

MS. LAPIERRE discussed performance in various ways and began with looking at vintage-year performance. The main takeaways is that the investments made in each of these years have outperformed their peers. She moved on and considered performance as it related to public and private market benchmarks. Generally expected is for the private markets to outperform the public markets; there is greater liquidity risk and higher returns are expected. She pointed out that the portfolio is beating the public market benchmark, as well as the private market industry benchmark. She continued and looked at how the public markets have been outperformed. The cumulative program returns are $5.9 billion since program inception; the rate of gains has accelerated over the past five years; and the $3.4 billion represents the amount of gains received by investing in private markets instead of investing the same amount in public markets.

MR. MOSELEY pointed out that they work every day on taking risk out of the overall portfolio, including monetizing a lot of assets. Aggressively selling those assets that are fully valued and continuing to redeploy that capital in exciting transactions will continue. He talked about the challenges and balancing the necessity to identify and back the best fund managers out there against the mathematical certainty that if too much is committed the program overall will be disadvantaged.

CHAIR RICHARDS called lunch break.

(Lunch break.)

CHAIR RICHARDS called the meeting back to order.

PUBLIC EQUITIES

MR. RAZZAQUE stated that he is the director of public equities and introduced his associates, Youlian Ninkov and Moctar Diouf, who also manage public equities. He continued that the public equity allocation is, for the most part, managed internally. There are two internal accounts: One is APF tactical debt account; second is a global equity account. He talked about the divergence in the third quarter, the payout between U.S. equities and nonU.S. equities. The U.S. equities and divergence was primarily driven by the fiscal stimulus injected into the U.S.

economy; the tax cuts, common spending, deregulations. The rest of the world did not have that kind of fiscal boost, and has been going through a cyclical slowdown. He stated that a strong dollar is good for Japan and Europe, but not for emerging markets. He continued that it had been a difficult time for active managers across the board because of the growth managers' underweighting-type stocks. He added that active managers from both sides, growth and value, had a very difficult third quarter. He moved to tariffs that are being announced from steel, aluminum, to China, and if negotiations fail, a 25 percent tariff on all Chinese goods. He shared a chart from Strategic Research Partners, a macro firm that showed that a combined economic effect of tariffs will be about $200 million. He added, that tariff is not the reason why equity markets would go down, because a fiscal boost is five times more. He moved to allocation which is driven by a strategic view, long-term valuations that are the most appealing for emerging markets. Risk also has to be managed, and the biggest risk is the U.S. dollar. He explained this in more detail, and then talked about global growth allocation coming from the managers. He continued that asset allocation was mixed; there were parts that helped like overweight to U.S. equities. On the whole, asset allocation was a wash. He then moved to the managers' assets returns. Across the board in domestic equities, active and quasi-passive managers underperformed; just 23 percent of the managers outperformed. He noted that the domestic external active manager was the primary driver of the shortfall. He added that there was no survivorship bias, and any manager that was terminated was also included in the percentage. He explained that last December the fund was over 6 percent overweight to public equities, and that was when the S&P was trading at 29 forward earnings. The sentiment was extremely bullish, and people were not seeing any sign of weakness. He felt that this was the time to reduce the fund's exposure to public equities by about $2.5 billion. The plan is if the market continues to be strong or gives an opportunity, it will lighten up a little more and keep the powder dry.

CHAIR RICHARDS recognized Jim Parise.

FIXED INCOME

MR. PARISE stated that he is the head of fixed income and started with a quick overview of what is managed and who was on the team. Managed is $14 billion, about 22 percent of the fund; $10 billion of that is internally managed. That means it is direct investing where bonds are bought and sold in order to build a portfolio. The valuation of the bonds are looked at, and a portfolio is built versus a benchmark. The benchmark is also looked at in determining how to weight it. He introduced Chris Cummins, who does the structured product; mortgaged-backed securities, asset-backed securities, CMBS. He also does the REITs and listed infrastructure. Masha Skuratovskaya does the global rates and TIPS portfolio, and also works on emerging markets. Matt Olmsted does all the credit analysis for both investment grade and high yield. He also is in charge of the high-yield portfolio, which is part of the fixed income plus. Tom O'Day is in charge of the cash portfolio of the fixed income portfolio. The Agg portfolio, which is the investable investment-grade bond universe, is managed by the entire team. He moved to the U.S. corporate bond portfolio which is beating in every period and is coming up on ten-year numbers which will show outperformance in ten years. The global rates portfolio is doing well and is within the range. This used to be outsourced and is now in-house. He continued that the TIPS portfolio and the fixed-income-plus cash are also beating the benchmark. He went over the details of the internally managed portfolios, except for the global rates portfolio, and we rarely take duration bets, which means that interest rate views versus the benchmark have no interest taken. That is the overriding deciding factor in performance. He explained that futures are used in this portfolio, which allows movement along the curve diagnostically. He added that all the portfolios have outperformed in every time period.

ASSET ALLOCATION STRATEGIES

MS. MARTINEZ stated that she is the director of asset allocation and manages 5 percent of the portfolio. She began with an overview of the total fund asset allocation. She explained that the three main things in this portfolio are liquidity or cash that is used for everything in terms of operations, funding of new investments, and also what is given to the General Fund of the state. The second category is multi-assets or portfolios that invest in cash liquidity and in equities and bonds as multiple asset classes. The last part of the portfolio is used for reducing risk of the fund, which is hedging currency risk. She continued that there are many things in this portfolio because there are multiple objectives. This part of the portfolio has to provide liquidity and has to keep up with the fund's return objective, which is CPI plus 5, or approximately a 60/40 mix of equities and bonds that will give that return objective. She added that there used to be a 5 percent allocation to cash at the total fund, which was moved to 2 percent. There is still an allocation to cash, but we are trying to be better at managing liquidity. She stated that by holding cash, tracking error was introduced. It also produced the cash drive because it is not invested in the market and potentially is losing returns. She explained the need to make sure assets are not sold because of liquidity needs and also makes sure to manage liquidities so assets do not have to be sold at the same time. She stated that a search was just completed, and the managers that were selected have been notified. She continued that Bridgewater will stay in the portfolio, and will change the volatility of the all-weather portfolio. They are all 12 percent volatility funds. The other managers are BlackRock and PanAgora. Each will start with an initial allocation of 200. She moved to a program that was implemented a year ago to be conscious of how much currency risk was being taken in the portfolio. She stated that there is currency risk coming from equities from the public markets. We wanted to reduce the risk of currency, and we hired a manager, Adrian Lee, to manage $2 billion. She goes through what was done in the last three months, which showed that not much was lost in terms of currency, as it could have been if this was not in place.

CHAIR RICHARDS called a ten-minute break.

(Break.)

RISK 101 OVERVIEW

CEO RODELL welcomed Sebastian Vadakumcherry to the Alaska Permanent Fund. He worked for large funds like the Kuwait Investment Authority.

TRUSTEE MORAN stated that it would be helpful for the trustees to understand that this represents a fundamental change.

CEO RODELL explained that individual portfolio managers will still be responsible for managing risk within their portfolios to the extent that there is market risk achievable. This will be formalizing some of the processes and brings in a fund perspective rather than an individual portfolio management perspective. We are pushing on the portfolio managers to make them better in terms of how this risk is embedded. Part of the role will be independent verification. This will make sure that the board is aware of the risks, and making sure that the risks are being measured properly.

MR. VADAKUMCHERRY stated that he worked with a government investment corporation in the past and moved to Juneau on October 22. He explained that his presentation is not going to be the format going forward, but will be his thoughts and discussions on how to play out risk management in the organization. It is a strategy for risk management rather than a risk management report. He continued that APFC has a very strong track record in the context of risk and has also transformed the organization. He highlighted that the complexity of the organization has considerably increased. He added that there is a need to be prepared for cyber technology crime, fraud, and climate change. The types, complexity and velocity of risks have significantly increased, due to both internal transformation and external factors. He explained the fundamental pillars for risk at corporations. Risk management and compliance effort is a collective responsibility of the organization. He defined a risk management framework, including investment risks, operational risks, and corporate risks. He stated the need for business continuity and disaster recovery and to make contingency plans, carving out the universe of risks and making sure that are all named and termed. He moved through value at risk and stated that it is a good measure of risk under normal circumstances.

CHAIR RICHARDS thanked Mr. Vadakumcherry and moved to the PMP update and Compensation Committee review.

PMP UPDATE & COMPENSATION COMMITTEE REVIEW

CEO RODELL stated that the incentive compensation structure began in 2016 when there was a lot of talk about where the actual base salary bands were in terms of compensation. The board instructed staff to hire McLaughlin to do a compensation study and determine its scope. She continued that the board then adopted new salary bands to reflect the market of where all positions were, not just investment staff, but also back office and middle office staff. Then there was identified a desire to look at incentive compensation structures for staff of APFC. In the past, budgetary approval was looked at. This year she recommended, and the board concurred, to put some money in the budget to create a policy to be able to start a dialogue with the Legislature. She added that an ad hoc committee was created to continue to work and finalize the incentive compensation policy. The board adopted a resolution in May that put the parameters around what an incentive compensation policy would look like so a number could be included in the budget request. This would strictly be limited to those individuals in the investment staff and the chief investment officer. She stated that the ad hoc committee mapped out for the trustees the issue or question being asked, where it is currently incorporated, where it will be in the proposed policy and that came before the board on October 17th. She continued that her goal was to keep this very simple and straightforward in terms of being able to explain to legislators and easily measure and calculate potential payouts.

CHAIR RICHARDS stated that former Trustee Fisher had been heading the Ad Hoc Committee and sent a memo that summarized his thoughts based on the work he had done in terms of how to do the incentive compensation.

CEO RODELL moved to the governance bylaws and stated that the most recent version of bylaws was adopted in 2010. The governance charters, board charters, and the executive director charter all came up for discussion. She added that the bylaws changes require 30 days' notice. One of the recommendations out of the ad hoc committee was to create a new Compensation Committee. In order to create a new standing committee, the board members, trustees, are required to have 30 days' notice of that change to absorb it before adopting any of those changes. This meeting constitutes the start of that clock. She recommended to the board that this can be taken up at the February board meeting. She stated that the purpose of the Compensation Committee would be to review the levels of incentive comp per position.

CHAIR RICHARDS stated that the board has voted to do incentive compensation by including it in the budget. The second piece is how that compensation will be structured. He suggested maintaining the Ad Hoc Committee and making one more run at trying to get consensus from the committee around that structure before the board meeting. The third piece is that the incentive compensation every year has to go through the Legislature and has to be appropriated. The board cannot commit to paying it if it is not appropriated under state law.

TRUSTEE MORAN stated that the Compensation Committee needs more thought and more structure put to it before it could provide the desired outcomes.

CHAIR RICHARDS replied that there is a 30-day notice on what is here and there is plenty of time to get another 30-day notice package to notice something else. He asked the Ad Hoc Committee to meet again and do the formulas before the governance changes to know what will be measured. He stated that the concept had been introduced, but had not been voted on.

TRUSTEE MORAN suggested that the board as a whole should go through a much more detailed thorough process than what the Ad Hoc Committee was prepared to do.

CHAIR RICHARDS moved to the Audit & Governance Committee Assignments.

AUDIT & GOVERNANCE COMMITTEE ASSIGNMENTS

CHAIR RICHARDS stated that next on the agenda is a line for assigning committee positions. There are two standing committees: the Governance Committee and the Audit Committee; and then there is a need to appoint some folks to the Ad Hoc Committee. In terms of the Governance Committee, the chair is the vice chair of the board, Vice Chair Brady; he also recommended Trustees Bruce Tangeman and Moran. He asked Trustee Rutherford to continue as chair of the Audit Committee, as well as Trustees Feige and Moran. He continued that he would like to participate on the Ad Hoc Committee and asked Trustees Moran, Tangeman, and Vice Chair Brady to serve. He called a ten-minute break.

(Break.)

CHAIR RICHARDS asked for a motion to go into Executive Session.

> **MOTION:** <u>In accordance with Alaska's Open Meetings Act, a motion was made to convene Executive Session for the purpose of discussing the annual performance evaluation of the Executive Director, by VICE CHAIR BRADY. Because this discussion could be harmful to the Executive Director's reputation and character, under applicable</u>

Alaska law this discussion should take place in Executive Session, unless the Executive Director requests a public discussion; seconded by TRUSTEE RUTHERFORD.

After a roll call vote, the MOTION was approved by the Trustees (RUTHERFORD, MORAN, RICHARDS, BRADY, TANGEMAN, and FEIGE).

(Executive Session from 4:36 p.m. until 5:25 p.m.)

CHAIR RICHARDS came out of Executive Session on the matter of the performance evaluation of the Executive Director. For the record, while in Executive Session, the trustees considered only the matters mentioned in the motion and took no action. Further, they also did not finish their deliberation as some of the trustees had to leave. The trustees will come back into the meeting at 8:00 a.m. and go back into Executive Session to finish this matter. He asked for a motion to adjourn.

MOTION: A motion to adjourn the meeting was made by TRUSTEE FEIGE; seconded by TRUSTEE TANGEMAN.

There MOTION WAS APPROVED with no objection.

(Alaska Permanent Fund Full Board meeting recessed at 5:26 p.m.)

DECEMBER 12, 2018

CHAIR RICHARDS called the meeting back to order, and called the trustees back into Executive Session.

(Executive Session continued from 7:59 a.m. until 9:05 a.m.)

CHAIR RICHARDS stated that the meeting was back in public session and to let the record reflect that matters discussed in Executive Session were only within the scope of the allowed Executive Session purpose, including only matters mentioned in the motion. No action was taken. Coming out of the Executive Session, the chair asked for a motion.

MOTION: A MOTION to provide an increase in the Executive Director's compensation of 3 percent was made by TRUSTEE RUTHERFORD; seconded by TRUSTEE TANGEMAN.

Following a roll call vote, THE MOTION WAS APPROVED by the Trustees (FEIGE, RICHARDS, TANGEMAN, BRADY, MORAN and RUTHERFORD).

MACRO OVERVIEW / 2019 OUTLOOK

MR. FRAMPTON stated that year-end is a natural point for investors to check in on the markets and think about the outlook for the next 12 months, and then the longer-term macro environment. He introduced the panel: Jeff Gardner, senior portfolio strategist at Bridgewater; and Cyril Moulle-Berteaux, from Morgan Stanley who manages a global tactical portfolio and takes active positions in markets around the world.

MR. MOULLE-BERTEAUX stated that he runs the multi-asset team for Morgan Stanley investment management. These are portfolios that invest in equities, fixed income currencies, and commodities globally. Decisions are made at asset class level, regional country level, as well as the sector and thematic level. They do not pick individual securities, so it is a macro top-down drive strategy, as well as a fundamental strategy. He continued that the difficulties that began in 2018 will continue in 2019 and will move into stagflation; the growth will be slow, but inflation will still be rising. This usually keeps policymakers under pressure to raise rates, which is not a great environment for risky assets. He added that 2020 will likely be a re-creation year if the cycle behaves in a classical manner. He continued that this growth slowdown will likely be led by the U.S. mostly due to the supercharged growth this year because of the tax cut; it will also be led by China. He explained that China has been contributing a third of the growth globally since the financial crisis, whereas the U.S. has only been contributing about a quarter of the growth. He continued that if the U.S. slows and if the rest of the world stabilizes, the exceptional performance seen from the U.S. economy and U.S. financial assets will likely end. That has been labeled the end of U.S. exceptionalism. He moved to the second major bullet point that "Free Money is over in the U.S. as the Fed gets tight." The time of negative interest rates and years of zero is over, which is a big part of the reason financial markets did not do as well as the real economy in 2018. He moved to the global growth slowdown led by the U.S. and explained that there has been a model underweight in global equities and overweight in TIPS and nominal bonds. The convergence between the U.S. and the rest of the world growth is a bigger theme because it has not begun. There has been ten years of performance in one direction, and he thinks the rest of the world will begin to outperform the U.S. right about now. He added that U.S. growth has been spectacular, but some of the key drivers are reversing, and by the end of next year growth will be close to 1.5 percent in the U.S.

MR. GARDNER stated that there is a lot of similarity in terms of how both he and Mr. Moulle-Berteaux think about where we are. He agreed that this has not been a typical recovery, and a typical downturn should probably be expected. He added that the recovery phase of the economy is typically a handful of years, and this one has been going on for the last decade, since the financial crisis. Also true is that the typical mechanisms for managing the economy have been very impaired. Central banks have been unable to use interest rates to manage the downside and try to stimulate economics and have had to resort to quantitative easing and printing of money in a material way to create this recovery. He explained that in 2008, there was too much debt causing a debt crisis. Lower interest rates did not cause people to go out and borrow more money because they already had too much debt. The financial system was gorged with debt and has gone through a big adjustment, which is why recovery took so long. He moved on and shared his view of the difference between quantitative easing and traditional open market operations. He talked about how interest rates work for three mechanisms: Lower interest rates make it cheaper to buy something on credit; second is people already have some degree of debt, and lower interest rates mean renegotiation; third is that it also impacts asset prices. He explained the effects of this, and suggested being in a more conservative stance.

TRUSTEE MORAN asked for any different scenarios that are being paid attention to in the background that might trigger something.

MR. GARDNER replied that the biggest question is about productivity, which has been very low during the course of this recovery. He added that it is not terribly unusual in a weak part for the economy that productivity is low. He continued that it feels like technology is creating a lot of productivity, but the question is whether that will translate into profits.

CHAIR RICHARDS explained that for a long time the Permanent Fund produced outcomes to the State. It resulted in a dividend, which was paid. The payment outflows from the fund were never the consequence of what the fund was trying to achieve. The fund was trying to do well to the level of risk it accepted. He stated that changed in the last year, and now, regardless of how the fund performs, a 5 percent payout will be made. He asked what that would mean in terms of the way the Permanent Fund thinks about the way it manages for cycles, thinks about its allocation, and the way it thinks about risk tolerance.

MR. GARDNER replied that some work has been done on this, and the basic way to think about it is that there is just a little bit less time. The more that is paid out, the less can be counted on for recovery. He explained that when money is lost and was paid out of the bottom, the market rebound on that money paid out will not come back.

TRUSTEE MORAN stated that the other thing that needs to be considered is the point at which the State is going to be most dependent on the strong solvent fund is going to be the point the market draws down 20 or 25 percent statutorily. This organization will not be able to pay anything because the earnings reserve will be gone.

CHAIR RICHARDS called a break.

(Break.)

OTHER MATTERS

CEO RODELL stated that she did not have any other matters. There is some work to be done with the Ad Hoc Committee and to get ready for February. She noted that the PBI conference in Los Angeles overlaps with the February board meeting and is not available this time around. She also noted that the calendar of meetings are put out two years in advance for planning purposes. The board had asked that some of the meetings get moved out of Juneau and moved around the state. Staff will work on fine-tuning those locations.

TRUSTEE MORAN asked if a venue could be found in Anchorage so some of the staff could interact remotely with the board.

INVESTMENT ADVISOR COMMENTS

MR. MITCHELL stated that in a meeting where there have been so many interesting presentations and discussions, it was hard to single out any individual presentation for comment; but he did note four that struck him as important and worthy of further explanation, because they are contrarian postures. He continued that some of these have already been covered by the Morgan Stanley and Bridgewater speakers and by questions from the board. On the presentation on equities he noted the relative attractiveness of emerging markets which was reiterated by the Morgan Stanley and Bridgewater presentations. He stated that this seems to be a decent time to move toward increasing exposure to emerging markets. He added that they may go lower, but it would be better long term. He moved to Ms. Martinez's presentation on asset allocation which reminded him that the role of cash in a portfolio is often overlooked. The speakers touched on this briefly, but cash is naturally defensive, and it is a totally uncorrelated asset in a portfolio that is basically an equity-oriented portfolio. Cash is totally uncorrelated and is often a defensive move, but it can also be offensive. If cash can be accumulated before a market decline, then there is an opportunity to buy at attractive prices. Mr. Moulle-Berteaux's introduction to the varieties of risk emphasized the downside problems of risk; but risk can also be positive. If there is no risk, there is no real chance for reward in investing. He added that the two days of meetings was terrific and thanked staff for the good job.

TRUSTEE COMMENTS

CHAIR RICHARDS thanked CEO Rodell for hosting on Monday. He explained that he came into the board meeting a day early and spent a day at the Permanent Fund. This exercise would be useful for everyone and recommended that the trustees may do the same. He apologized to the new trustees because he forgot to introduce them as new trustees. He continued that all are glad to have them and certainly believe the Governor made an excellent choice in qualifying both of them. He stated that, as a new chairman, it is appropriate to take a step back from the way the meetings are held, look at them and see if it is the most efficient use of our time. His opinion is that too much time is spent on performance review and not as much time on strategic thinking and initiative. He asked Trustee Rutherford to continue.

TRUSTEE RUTHERFORD stated that the conversation today reemphasized concern that the current POMV draw levels are going to be very difficult for the fund to provide and, at the same time, protect the long-term interests of the citizens of Alaska. She added that she does not have a suggestion, just a concern that there is no way to have those conservations.

CHAIR RICHARDS stated that he did not have a particular suggestion, and asked the other trustees.

TRUSTEE MORAN agreed that a little too much time is spent on the details and suggested, instead of having a full presentation from each of the departments each time, maybe sit down with one or two of them and get some feedback from staff on the thought processes in terms of risk on, risk off, longer terms around that.

VICE CHAIR BRADY stated that it is easy to get into the weeds, but he cannot be critical of the presentations. He has enjoyed all of them. Maybe some detail is too much, but the Chair's style management encourages people to get on with it and move with the clock.

CHAIR RICHARDS stated that there is time to think about it, and rapid change is not necessary. He continued that the trustees are not able to get together and communicate outside of this forum because of the Open Meetings Act. That means that time needs to be left to discuss and make decisions on information that is presented. He stated that there are great independent advisers who are knowledgeable, informed; but there is no consistency in the advice and no consistency in the presence. He continued that it may be useful to think about how to make that independent adviser role more empowered with more opportunity to provide what is effectively a professional's opinion on the board to people that are sometimes laymen in this area. He asked for thoughts on this.

TRUSTEE MORAN replied that was a great idea. There is a valuable resource, and if a little different level of expectation is communicated, it becomes fantastic.

VICE CHAIR BRADY stated that he had no comment.

TRUSTEE RUTHERFORD stated that during the public comments there was a reference to Global Asset Management 2017 Report on Climate Change and how the various asset management organizations could or should be dealing with climate change. She asked for a copy.

TRUSTEE FEIGE thanked the Executive Director, the CIO, all of the other presenters and her fellow trustees for helping to get onboard and for providing such thorough and substantive briefings on all of the asset classes and on the fund in general.

TRUSTEE TANGEMAN thanked all the presenters and stated that one of the highlights of being named Commissioner of Revenue is being able to sit in this chair. He is excited to learn more about the Permanent Fund.

TRUSTEE MORAN had no additional comments.

CHAIR RICHARDS asked for a motion to adjourn.

> **MOTION:** A motion to adjourn was made by TRUSTEE RUTHERFORD; seconded by TRUSTEE MORAN.
>
> The meeting was adjourned.

(Alaska Permanent Fund Corporation Full Board meeting adjourned at 11:17 a.m.)

Pending Board Matters

SUBJECT: Pending Board Matters

ACTION:

DATE: February 27, 2019

INFORMATION: __X__

BY	TASK	CAPTURED	TARGET	COMPLETED
Frampton / Moseley	Alaska Emerging Manager Program	9/18	2/19	
Vadakumcherry	Risk Appetite Assessment	10/18	5/19	
Rodell / Brown	Internship Program	5/18	5/19	
Frampton	Asset Allocation	9/18	5/19	
Rodell	Strategic Plan	9/18	5/19	
Rodell / Poag	Bylaws & Charters	11/18	9/19	
Rodell	Incentive Compensation Policy	5/18	TBD	

Trustee Education Report

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Trustee Education ACTION: ____________

DATE: February 27th, 2019 INFORMATION: _____X_____

BACKGROUND:

APFC Board of Trustees Charters and Governance Policies
The Board of Trustees of the APFC has established a Trustee Education Policy with the following objectives:

- To ensure that the members of the Board have access to the knowledge and information necessary for them to fulfill their fiduciary duties as trustees of the Alaska Permanent Fund; and
- To assist them in becoming well informed in all matters pertaining generally to the management of a large institutional fund, both public and private, and more specifically to the management and investments of the APFC.

In accordance with the Trustee Education Policy, the following is a list of conferences and seminars that Trustees may wish to attend.

TRUSTEE TRAINING OPPORTUNITY	TOPIC	LOCATION	DATES
KPMG / NACD	Quarterly Audit Committee Webcast Series	Webinar	March 21, 2019 June 20, 2019 September 12, 2019
Callan Institute	Regional Workshops	San Francisco, CA Denver, Colorado	June 5th, 2019 October 22nd, 2019
Pacific Pensions & Investments	Summer Roundtables	Chicago, IL	July 10-12, 2019
IFSWF Annual Meeting	TBD	Juneau, AK	September 10th-13th 2019

Disclosure Report

APFC ALASKA PERMANENT FUND CORPORATION

801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

Memo

To: Carl Brady
Governance Committee

Through: Angela Rodell
Executive Director

From: Chad Brown
HR Manager

Date: February 27th, 2019

Re: APFC Financial Disclosures

As required by AS 37.13.110(b) and Alaska Permanent Fund Corporation policy relating to personal investments conduct and reporting, trustees and staff must disclose certain financial interests. Below is a list of disclosures for transactions made by trustees and staff, covering a period of October 1 – December 31, 2018.

October 2018			
Name	**Position Title**	**Disclosure Type**	**Received**
Jared Brimberry	Senior PM – Private Income	Individual Transaction	11/12/2018
Marcus Frampton	CIO	Individual Transaction	11/11/2018
William Moran	Trustee	Individual Transaction	11/14/2018
Chris LaVallee	Accountant	Individual Transaction	12/11/2018
Mason Kullander	IT Specialist	Individual Transaction	11/06/2018
Tom O'Day	Fixed Income Analyst	Individual Transaction	11/5/2018
Matt Olmsted	Senior PM – Fixed Income	Individual Transaction	11/5/2018
Alex Smith	Accountant	Individual Transaction	11/05/2018

November 2018			
Name	**Position Title**	**Disclosure Type**	**Received**
Andrew Cloward	Trade Operations Analyst	Individual Transaction	12/12/2018
William Moran	Trustee	Individual Transaction	12/14/2018
Jared Brimberry	Senior PM – Private Income	Individual Transaction	12/07/2019
Chris LaVallee	Accountant	Individual Transaction	12/11/2018
Marcus Frampton	CIO	Individual Transaction	12/27/2018
Matt Olmsted	Senior PM – Fixed Income	Individual Transaction	12/12/2018
Jim Parise	Director of Investments	Individual Transaction	12/10/2018
Alex Smith	Accountant	Individual Transaction	12/12/2018

December 2018			
Name	**Position Title**	**Disclosure Type**	**Received**
Alex Smith	Accountant	Individual Transaction	1/14/2018
Jared Brimberry	Senior PM – Private Income	Individual Transaction	1/14/2019
Chris LaVallee	Accountant	Individual Transaction	01/17/2019
William Moran	Trustee	Individual Transaction	01/14/2019
Marcus Frampton	CIO	Individual Transaction	1/16/2019
Catherine Hatch	Administrative Specialist	Initial Disclosure	12/27/2018
Yup Kim	Senior PM – Private Equity	Individual Transaction	1/14/2019
Steve Moseley	Director of Investments	Individual Transactions (3)	1/25/2019
Matt Olmsted	Senior PM – Fixed Income	Individual Transaction	1/14/2019

All disclosures have been reviewed by the Executive Director or me, in our capacity as compliance officers. All disclosures were in compliance with policy requirements. Disclosures will be filed in the appropriate personnel file and copies will be placed behind the corporate minutes of the next meeting.

If you have any questions, please call 796-1541.

Travel

ALASKA PERMANENT FUND CORPORATION

Subject: Travel Report

Date: February 27th, 2018

Background: This report includes APFC Board/staff completed travel for the period December 1, 2018 through December 31st, 2018. The travel report is presented to the Board of Trustees for review at each board meeting as required by APFC Resolution 04-10.

Traveler	Purpose	Dates of Travel		Location
Alexander	LPAC Meetings	12/2/2018	12/7/2018	New York City
Andreyka	Macerich Quarterly Partnership & Manager Meetings	12/12/2018	12/21/2018	Washington, DC; Austin, TX
Brady	December Quarterly Meeting	12/10/2018	12/12/2018	Juneau
Brimberry	Aksia/Requin Private Credit Roundtable / Diligence meetings	12/2/2018	12/7/2018	New York
Duran	Macerich Quarterly Partnership & Manager Meetings	12/12/2018	12/15/2018	Washington, DC
Duran	Meeting with CS Capital	12/20/2018	12/22/2018	Los Angeles, CA
Mitchell	December Quarterly Meeting	12/10/2018	12/12/2018	Juneau
Moran	December Quarterly Meeting	12/10/2018	12/12/2018	Juneau
Richards	December Quarterly Meeting	12/10/2018	12/12/2018	Juneau
Rutherford	December Quarterly Meeting	12/10/2018	12/12/2018	Juneau
Seagren	Meet with BNYM, training in NYC	12/10/2018	12/16/2018	Boston, NYC

Forecasted FY19 Travel Budget

Please note the following can be found in its entirety in section 10: FY19 Budget Report

Budget-to-Actual Report: July 1 through December 31, 2018

Corporate Operations	Budget	Expenditures	Remaining Budget
Travel	1,203,200	239,873	963,327
Staff	946,077	192,876	753,201
Trustees	45,623	2,799	42,824
Moving/Non-Employee	211,500	44,198	167,302

CY18 International Travel

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: CY18 International Travel Summary ACTION:

DATE: February 27th, 2019 INFORMATION: __X__

Background:

This report includes APFC Board/staff completed travel for the period January 1, 2018 through December 31, 2018. The CY18 International Travel report is presented to the Board of Trustees to provide a greater understanding of APFC international travel.

CY18 International Travel

Traveler	Purpose	Dates of Travel		Location
Moseley	Due Diligence, Manager meetings, Alternative Investment Forum, Constellation	1/5/2018	1/16/18	New York, Tokyo, Boston
Rodell	2018 GSAM India Investor tour w/ Goldman Sachs	02/01/18	02/09/18	India
Kim	Due Diligence	02/16/18	03/08/18	San Francisco, Berlin, Boston, New York
Poag	Institutional Governance and Legal Symposium	04/30/18	05/07/18	London, England
Rodell	Global West Government Funds Roundtable, Adrian Lee, IFSWF	05/01/18	05/06/18	London, England
Moseley	Due Diligence	07/06/18	07/06/18	London, England
Ainsworth	Intern - return to school	08/19/18	-	Prince Rupert, Canada
Razzaque	Due Diligence to visit APFC managers	09/08/18	09/14/18	London, England
Moseley	Meetings with ILPA Board/Liquidity Partners	09/10/18	09/13/18	Toronto, Canada
Rodell	Marrakech - IFSWF / Board Meeting	09/16/18	09/27/18	Marrakesh, Morocco / Anchorage
Swanson	Marrakech - IFSWF	09/16/18	09/23/18	Marrakesh, Morocco
Parise	Discuss SWF Best Practices and Fixed-Income management	09/28/18	10/06/18	Tokyo/Singapore
Moseley	Capital Cons. Qtly Board Meeting, World Pension Summit	10/29/18	11/02/18	The Hague, Netherlands
Kim	Hong Kong AVCJ Conference, Beijing BO and VC Due Diligence meetings	11/09/18	11/25/18	Hong Kong/Beijing
LaPierre	Capital Constellation Board Meeting	11/10/18	11/14/18	Kuwait
Moseley	Capital Cons. Board Mtg, Inst. Investor Summit, Kelso LPAC Mtg	11/10/18	11/16/18	Kuwait

Trips indicated with Due Diligence in their purpose may be found in more detail on the Due Diligence Log (Section 3E) for FY19 Q2. Due Diligence trips taken in FY18 and FY19 Q1 may be found in earlier Due Diligence logs. Available upon request.

Due Diligence Log

APFC Investment Due Diligence: October 2018 - December 2018

Manager Due Diligence Log - Chief Investment Officer

The due diligence activities undertaken by APFC on-site and off-site are listed below. Conference calls were included if a product was substantially reviewed or previewed during the course of the call.

Date of Visit	APFC Staff	Broker, Manager, Consultant	Individuals Visiting/Visited	Topic	Location
3-Oct-18	MF	Cerberus	Greg and Steve Feinberg	Discussed Cerberus fund offerings	Chicago, IL
3-Oct-18	MF	Crestline	Caroline Cooley, Graham Officer	Update on Crestline Summit investment	Chicago, IL
9-Oct-18	JB, MF	Global Infrastucture Partners	Michael McGhee	Update call on TIL Infrastructure Co-Investment	Telephonic
10-Oct-18	MF, CP, JB	Sheppard Mullin	Thomas Devaney	Legal Call on in-process Investment	Telephonic
11-Oct-18	MF	Activate Capital	Raj Atluru	Update Call on in-process private investment	Telephonic
15-Oct-18	MF	Global Infrastucture	Matt Harris	Update Call on GIP fundraising process	Telephonic
16-Oct-18	MF, RA	Related	Andrew Right, Justin Metz, Chase Davidson, Seth Blau	Discussion on Potential Infra Direct Investment	Telephonic
16-Oct-18	MF, VM	Goldman Sachs	Robert Patch, Ty York, Linda Sambrook	Discussion on economic and market conditions	Telephonic
17-Oct-18	MF	Credit Suisse	Noelma Zavolas, Stephen Murphy	Credit Suisse Current Offerings	Telephonic
18-Oct-18	JB, MF	Pathway	Vince Dee	Discussion of Private Credit Pipeline	Telephonic
19-Oct-18	MF, FR	McKinley Capital	Rob Gillam, Joh Reynolds	McKinley Capital Update Call	Telephonic
22-Oct-18	MF	Silver Creek Capital	Bob Ratliffe	Timber Update	Telephonic
23-Oct-18	MF, VM	Adrian Lee Partners	Philip Lawson, Daire McNally	Currency Hedging Discussion	Telephonic
24-Oct-18	MF, JB, RA	Aurelius Capital	Allyson Harada	Quarterly Update Call	Telephonic
24-Oct-18	MF	Generate Capital	Scott Jacobs	Generate Capital Update Call	Telephonic
24-Oct-18	MF	Generate Capital and Pavilion	Andrew Hughes, Allen Waldrop, Daniel Fuller	Generate Capital Update Call	Telephonic
25-Oct-18	MF, SM, CP	Callan	Greg Allen, Steve Center	Discussion of in-state investment plan	Telephonic
26-Oct-18	MF	McKinley Capital	Rob Gillum	Update Call	Telephonic
29-Oct-18	MF	Macquarie	Rod Cornish	Discussion of Real Estate Market & Opportunities	Juneau, AK
29-Oct-18	MF, JB	Monroe Capital	Sean Duff, Zia Uddin	Private Credit Discussion	Juneau, AK
30-Oct-18	MF	Activate Capital	Raj Atluru	Fund Update	Telephonic
31-Oct-18	MF	Sands Capital	Andrew Giordano	Introduction Call on PE Strategy	Telephonic
1-Nov-18	MF, JB	Millenium	Rick Kohly	Update Call on Hedge Fund strategy	Telephonic
2-Nov-18	MF, JB, RA	Pathway Capital	Jason Jenkins, Jeff Buress	GIP Discussion	Telephonic
5-Nov-18	MF, VM	Adrian Lee	Philip Lawson, Daire McNally	EM cureency hedging discussion	Telephonic
5-Nov-18	JB, MF, VM	Aspect Capital	Emmett, Fitzgerald, Asif Noor	Discussion of Hedge Fund Strategy	Telephonic
6-Nov-18	MF	CBRE	Myles Sanger, Bernie McNamara, Tim Munn	Discussion of Global Real Estate	Telephonic
6-Nov-18	MF, RA	Evercore	Chris Brand	Discussion of Infrastructure Investment Opportunities	Juneau, AK
6-Nov-18	MF, JB, AR, RA, CP	King Street Capital	Harlon Sarokan	Discussion of Hedge Fund Strategy	Juneau, AK
14-Nov-18	MF	Generate Capital	Scott Jacobs	Quarterly Board Meeting	San Francisco
30-Nov-18	MF, JB	Crestline	Caroline Cooley, Graham Officer	Update Call on Hedge Fund strategy	Telephonic
3-Dec-18	MF, RA	Goldman Sachs	Tony Ritter	Discuss Infra Direct Investment Opportunity	Telephonic
10-Dec-18	MF, JB, RA	InstarAGF	Daniel Perruzza	Discuss Infra Direct Investment Opportunity	Telephonic
12-Dec-18	MF, SM	MSCI	Russell Read	Discussion of Partnering Opportunities	Telephonic
17-Dec-18	MF, JB	Dorsal Capital	Jeff Barnett	Update on Hedge Fund Strategy	Telephonic
17-Dec-18	MF	Activate Capital	Raj Atluru	Fund LPAC Call	Telephonic
19-Dec-18	MF, RA, AR	American Private Infrastructure	Frank Chin	Discuss Infra Direct Investment Opportunity	Telephonic
20-Dec-18	MF	Denali Advisors	Bob Sniggeroff	Discuss Public Equity Strategy	Juneau, AK
21-Dec-18	MF, JB	Field Street	Aaron Gillespie	Update Call on Hedge Fund strategy	Telephonic

Manager Due Diligence Log - Private Equity and Special Opportunities

The due diligence activities undertaken by APFC on-site and off-site are listed below. Conference calls were included if a product was substantially reviewed or previewed during the course of the call.

Date of Visit	APFC Staff	Broker, Manager, Consultant	Individuals Visiting/Visited	Topic	Location
1-Oct-18	SM, SL, YK	Altas	Damon Conway, Gareth Domingo	Co-Investment	Juneau
1-Oct-18	SM, SL, YK	Crestline	Ricky Simon, James Delaune	Co-Investment	Juneau
1-Oct-18	SM, SL, YK	ARCH	Ryan Dosh	Fund	Juneau
1-Oct-18	YK	Altas	Senior management	Co-investment opportunity	Call / Juneau
1-Oct-18	YK	Crestline	Senior management	Co-investment opportunity	Call / Juneau
1-Oct-18	YK	Lightspeed	Senior management	Co-investment opportunity	Call / Juneau
1-Oct-18	YK	CIEP II	Senior management	Fund opportunity	Call / Juneau
2-Oct-18	SM	Cranemere	Jeff Zients	Direct Investment	NYC
2-Oct-18	SM	Capital Constellation	Daniel Adamson	Direct Investment	NYC
2-Oct-18	YK, SM, SL	Crestline	Senior management	Co-investment opportunity	Call / Juneau
2-Oct-18	YK	Pathway	Senior management	Co-investment opportunity	Call / Juneau
2-Oct-18	YK	MSA	Senior management	Co-investment opportunity	Call / Juneau
2-Oct-18	YK	Salsano	Senior management	Co-investment opportunity	Call / Juneau
3-Oct-18	SM	L Catterton	Full Team	Advisory Board	NYC
3-Oct-18	SM	Advent International	Bob Weaver	Diligence	NYC
3-Oct-18	SM	Blackstone	Mike Sotirhos	Diligence	NYC
3-Oct-18	SM, SL, YK	H.I.G Capital	Asmat Doza	Co-Investment	Juneau
3-Oct-18	YK	Codiak	Senior management	Monitoring	Call / Juneau
3-Oct-18	YK	HIG	Senior management	Co-investment opportunity	Call / Juneau
4-Oct-18	SM	L Catterton	Senior management	AGM	NYC
4-Oct-18	SM	Altas	Senior management	Diligence	Call/ Juneau
4-Oct-18	SM, SL	Flagship	Senior management	Introduction	Call / Juneau
5-Oct-18	SM	Dyal Partners	Conley	Summit	Call / Juneau
5-Oct-18	YK	Silk Road Capital	Senior management	Co-investment opportunity	New York
5-Oct-18	YK	Weil	Senior management	Co-investment opportunity	New York
5-Oct-18	YK	Cranemere	Senior management	Fund opportunity	New York
8-Oct-18	SL	Fundamental Private Markets	Arnab Bhattasali	Diligence	Juneau
8-Oct-18	YK	Cranemere	Senior management	Fund opportunity	New York
8-Oct-18	YK	Crestline	Senior management	Co-investment opportunity	New York
8-Oct-18	YK	Insight	Senior management	Monitoring	New York
9-Oct-18	SL	Vestar	Ken O'Keefe	Diligence	Juneau

9-Oct-18	YK	Insight	Senior management	Monitoring	New York
9-Oct-18	YK	Pathway	Senior management	Co-investment opportunity	New York
9-Oct-18	YK	Providence	Senior management	Monitoring	New York
9-Oct-18	SM, SL	Crestline	Senior management	Diligence	Call / Juneau
9-Oct-18	YK	Crestline	Senior management	Co-investment opportunity	New York
10-Oct-18	SM	Flagship Pioneering	Ashley Baraby	Diligence	Juneau
10-Oct-18	SM	Aqueduct Capital	Tom Roupe	Diligence	Juneau
10-Oct-18	YK	Providence	Senior management	Monitoring	New York
10-Oct-18	YK	Willett	Senior management	Co-investment opportunity	New York
10-Oct-18	YK	Flagship	Senior management	Fund opportunity	New York
11-Oct-18	SM	Sana	Harr	Co-investment opportunity	Call / Juneau
11-Oct-18	SM	Silverlake	Carrier	Due diligence	Call / Juneau
11-Oct-18	SM	RBC	Rosso	Placements	Call / Juneau
11-Oct-18	SM, SL	Selenity	Robert Schotzinger	Diligence	Juneau
11-Oct-18	YK	Stepstone	Senior management	Fund opportunity	New York
11-Oct-18	YK	Grosvenor	Senior management	Fund opportunity	New York
11-Oct-18	YK	Cranemere	Senior management	Fund opportunity	New York
11-Oct-18	YK	Hamilton Lane	Senior management	Fund opportunity	New York
12-Oct-18	SM	Altitude	Maki	Portfolio considerations	Call / Juneau
12-Oct-18	YK	Hamilton Lane	Senior management	Fund opportunity	New York
15-Oct-18	SM	REL	Ryan	Advisory Board	Call / Juneau
15-Oct-18	SM	Capital Constellation	Adamson	Development	Call / Juneau
15-Oct-18	YK	Arch	Senior management	Monitoring	San Francisco
15-Oct-18	YK	Sana	Senior management	Direct opportunity	San Francisco
16-Oct-18	SM	Vista	Christine Pastore	Diligence	NYC
16-Oct-18	YK	Arch	Senior management	Monitoring	San Francisco
16-Oct-18	YK	Gossamer Bio	Senior management	Direct opportunity	San Francisco
16-Oct-18	YK	Innovation Endeavor	Senior management	Fund opportunity	San Francisco
16-Oct-18	YK	UBS	Senior management	Fund opportunity	San Francisco
17-Oct-18	SM	Clearlake Capital	Hannah Braun	Diligence	NYC
17-Oct-18	SM	Silverlake	David Shapiro	Diligence	NYC
17-Oct-18	SL	Apis Partners	Gustavo Eiben	Diligence	Juneau
17-Oct-18	YK	Menlo	Senior management	Fund opportunity	San Francisco
17-Oct-18	YK	Spectrum	Senior management	Monitoring	San Francisco
17-Oct-18	YK	NEA	Senior management	Monitoring	San Francisco
17-Oct-18	SM	Dragoneer	Stad	Diligence	NYC
18-Oct-18	SM	Catalyst	Senior	AGM, Advisory board	NYC
18-Oct-18	YK	Menlo	Senior management	Fund opportunity	San Francisco
18-Oct-18	YK	General Catalyst	Senior management	Fund opportunity	San Francisco
18-Oct-18	YK	Genstar	Senior management	Fund opportunity	San Francisco
18-Oct-18	YK	ICONiQ	Senior management	Fund opportunity	San Francisco
18-Oct-18	YK	Brooklands	Senior management	Fund opportunity	San Francisco
18-Oct-18	YK	DCM	Senior management	Fund opportunity	San Francisco
19-Oct-18	YK	Temasek	Senior management	Co-investment opportunity	San Francisco
19-Oct-18	YK	Lightspeed	Senior management	Fund opportunity	San Francisco
19-Oct-18	YK	SVB	Senior management	Fund opportunity	San Francisco
19-Oct-18	YK	Autotech	Senior management	Fund opportunity	San Francisco
19-Oct-18	YK	Canaan	Senior management	Fund opportunity	San Francisco
19-Oct-18	YK	DCM	Senior management	Fund opportunity	San Francisco
22-Oct-18	SM, SL, YK	Onex	Bobby Le Blanc	Co-Investment	Juneau
22-Oct-18	SM, SL, YK	Lee Equity	Whitney McBride	Co-Investment	Juneau
22-Oct-18	YK	Butterfly	Senior management	Fund opportunity	Call / Juneau
22-Oct-18	YK	Onex	Senior management	Fund opportunity	Call / Juneau
22-Oct-18	YK	Lee Equity	Senior management	Co-investment opportunity	Call / Juneau
22-Oct-18	YK	Boyu	Senior management	Fund opportunity	Call / Juneau
23-Oct-18	SM, SL	Cerberus	Greg Gordon	Diligence	Juneau
23-Oct-18	YK	Upfront	Senior management	Fund opportunity	Call / Juneau
23-Oct-18	SM	Meketa	Hartt	Diligence	Call / Juneau
23-Oct-18	SM	Goldman Sachs	Patch	Diligence	Call / Juneau
24-Oct-18	SM	Arch Ventures	Nelsen	Diligence	Call / Juneau
24-Oct-18	SM	Vista	Senior management	LPACs	Call / Juneau
24-Oct-18	YK	Emerald Lake	Senior management	Direct opportunity	Call / Juneau
24-Oct-18	YK	KKR	Senior management	Co-investment opportunity	Call / Juneau
25-Oct-18	SM, SL, YK	Emerald Lake Capital	Dan Lukas, Carling O'Brien	Co-Investment	Juneau
25-Oct-18	YK	ISP	Senior management	Fund opportunity	Call / Juneau
25-Oct-18	YK	Interritus	Senior management	Direct opportunity	Call / Juneau
25-Oct-18	YK	Autotech	Senior management	Fund opportunity	Call / Juneau
25-Oct-18	YK, SM, SL	NGP	Senior management	Fund opportunity	Call / Juneau
25-Oct-18	SM	StepStone	Brem	Fund opportunity	Call / Juneau
26-Oct-18	YK	General Catalyst	Senior management	Fund opportunity	Call / Juneau
29-Oct-18	YK	MSA	Senior management	Co-investment opportunity	Call / Juneau
29-Oct-18	YK	Kelso	Senior management	Co-investment opportunity	Call / Juneau
29-Oct-18	YK	Crestline	Senior management	Co-investment opportunity	Call / Juneau
30-Oct-18	YK	Link VC	Senior management	Fund opportunity	Call / Juneau
31-Oct-18	YK	Crestline	Senior management	Co-investment opportunity	Call / Juneau
31-Oct-18	SM	L Catterton	Evers	Co-investment opportunity	Call / Juneau
1-Nov-18	YK	Marlin	Senior management	Co-investment opportunity	Call / Juneau
1-Nov-18	SM	Capital Constellation	Adamson, Bishop	Fund opportunity	Hague
1-Nov-18	SM	Pathway Capital	Lew	Diligence	Call

5-Nov-18	SM	Whitehorse Liquidity	Ashley Triance-Haldane	Diligence	Juneau
5-Nov-18	SM	JMI	Senior management	LPACs	Call
5-Nov-18	YK	Indigo	Senior management	Monitoring	Call / Juneau
5-Nov-18	YK	Whitehorse	Senior management	Fund opportunity	Call / Juneau
5-Nov-18	YK	CIEP II	Senior management	Fund opportunity	Call / Juneau
6-Nov-18	SM	Redbird	Carpenter	Introduction	Call
6-Nov-18	SM	Arch Ventues	McDonnell	Fund Opportunity	Call
6-Nov-18	YK	Indigo	Senior management	Monitoring	Call / Juneau
6-Nov-18	YK	Nordic	Senior management	Fund opportunity	Call / Juneau
6-Nov-18	YK	Spark VC	Senior management	Fund opportunity	Call / Juneau
7-Nov-18	SM	Carlyle	Ryan Buntain	Diligence	Juneau
7-Nov-18	SL	One Equity Partners	David Lippin, Jamie Koven	Diligence	NYC
7-Nov-18	YK	Carlyle	Senior management	Fund opportunity	Call / Juneau
7-Nov-18	SM	McKinley	Rob Gillam	Strategy	Call/ Juneau
8-Nov-18	SM	Catalyst	Senior management	LPACs	Call/ Juneau
8-Nov-18	SM	Stone Point	Senior management	LPACs	Call/ Juneau
8-Nov-18	YK	Ziff CP	Senior management	Fund opportunity	Call / Juneau
8-Nov-18	YK	Upfront	Senior management	Direct opportunity	Call / Juneau
9-Nov-18	YK	Patria	Senior management	Co-investment opportunity	Call / Juneau
11-Nov-18	YK	Goldman Sachs	Senior management	Fund opportunity	Hong Kong
11-Nov-18	YK	Hillhouse	Senior management	Fund opportunity	Hong Kong
11-Nov-18	YK	Boyu	Senior management	Fund opportunity	Hong Kong
12-Nov-18	YK	KPS	Senior management	Fund opportunity	Hong Kong
12-Nov-18	YK	Fountainvest	Senior management	Fund opportunity	Hong Kong
12-Nov-18	YK	LGT	Senior management	Fund opportunity	Hong Kong
12-Nov-18	YK	Mvision	Senior management	Fund opportunity	Hong Kong
13-Nov-18	YK	Lightspeed	Senior management	Fund opportunity	Hong Kong
13-Nov-18	YK	CITICPE	Senior management	Fund opportunity	Hong Kong
13-Nov-18	YK	Everstone	Senior management	Fund opportunity	Hong Kong
14-Nov-18	YK	CITIC Capital	Senior management	Fund opportunity	Hong Kong
14-Nov-18	SM	Mariner	Blanco	Diligence	NYC
14-Nov-18	YK	Onex	Senior management	Monitoring	Call / Other
14-Nov-18	YK	IMM Private Equity	Senior management	Fund opportunity	Hong Kong
14-Nov-18	YK	BGH Capital	Senior management	Fund opportunity	Hong Kong
14-Nov-18	YK	Biotrack Capital	Senior management	Fund opportunity	Hong Kong
14-Nov-18	YK	Centurium Capital	Senior management	Fund opportunity	Hong Kong
14-Nov-18	YK	Ascendent Capital	Senior management	Fund opportunity	Hong Kong
15-Nov-18	SM	Artius	Sim	Fund opportunity	NYC
15-Nov-18	SM	Kelso	Senior management	LPACs	NYC
15-Nov-18	SM	Morgan Stanley	Wegman	Diligence	NYC
15-Nov-18	YK	Dymon Asia	Senior management	Fund opportunity	Hong Kong
15-Nov-18	YK	Boyu	Senior management	Fund opportunity	Hong Kong
15-Nov-18	YK	Fountainvest	Senior management	Fund opportunity	Hong Kong
15-Nov-18	YK	Eaton	Senior management	Fund opportunity	Hong Kong
15-Nov-18	YK	DE Shaw	Senior management	Fund opportunity	Hong Kong
16-Nov-18	SM	ONCAP	Senior managemenyt	Diligence	Call
19-Nov-18	YK	DCP	Senior management	Fund opportunity	Beijing
19-Nov-18	YK	Legend Capital	Senior management	Fund opportunity	Beijing
19-Nov-18	YK	Xiang He Capital	Senior management	Fund opportunity	Beijing
19-Nov-18	YK	Genesis Capital	Senior management	Fund opportunity	Beijing
19-Nov-18	YK	Sequoia China	Senior management	Fund opportunity	Beijing
20-Nov-18	SM	Altitude	Maki	Co-investment opportunity	Call
20-Nov-18	YK	Hopu	Senior management	Fund opportunity	Beijing
20-Nov-18	YK	Primavera	Senior management	Fund opportunity	Beijing
20-Nov-18	YK	DCM China	Senior management	Fund opportunity	Beijing
20-Nov-18	YK	Kuaishou	Senior management	Direct opportunity	Beijing
21-Nov-18	YK	Stepstone	Senior management	Fund opportunity	Beijing
21-Nov-18	YK	Primavera	Senior management	Fund opportunity	Beijing
21-Nov-18	YK	GS China Coop	Senior management	Co-investment opportunity	Beijing
22-Nov-18	YK	Blackfish	Senior management	Co-investment opportunity	Beijing
22-Nov-18	YK	Xiaomi	Senior management	Fund opportunity	Beijing
22-Nov-18	YK	Hopu	Senior management	Fund opportunity	Beijing
22-Nov-18	YK	Advantech Redview	Senior management	Fund opportunity	Beijing
22-Nov-18	YK	Goacheng	Senior management	Fund opportunity	Beijing
27-Nov-18	YK	Sands	Senior management	Fund opportunity	Singapore
27-Nov-18	YK	AXA	Senior management	Fund opportunity	Singapore
27-Nov-18	YK	Blackrock	Senior management	Fund opportunity	Singapore
28-Nov-18	SM	Goldman Sachs	Rob Patch	Diligence	NYC
28-Nov-18	SM	GTCR	Jeschke	Co-investment opportunity	Call / Juneau
28-Nov-18	SM	Vestar	O'Keefe	Diligence	Call / Juneau
28-Nov-18	YK	Invesco	Senior management	Fund opportunity	Singapore
28-Nov-18	YK	BGI	Senior management	Fund opportunity	Singapore
28-Nov-18	YK	HSBC	Senior management	Fund opportunity	Singapore
28-Nov-18	YK	Investec	Senior management	Fund opportunity	Singapore
28-Nov-18	YK	GCM Grosvenor	Senior management	Fund opportunity	Singapore
29-Nov-18	SM	Kayne Anderson	Kotecki	Diligence	NYC
29-Nov-18	SM	Hull Street	Senior management	Fund opportunity	NYC
29-Nov-18	YK, SM	Rapid Partners	Senior management	Direct opportunity	Call / Other
29-Nov-18	YK	Unigestion	Senior management	Fund opportunity	Singapore

29-Nov-18	YK	Natixis	Senior management	Fund opportunity	Singapore
29-Nov-18	YK	PGIM	Senior management	Fund opportunity	Singapore
30-Nov-18	SM	One Equity Partners	David Lippin, Jamie Koven	Diligence	NYC
30-Nov-18	SM	Hellman and Friedman	Adrien Mott, Susi Daniels	Diligence	NYC
30-Nov-18	SM	McKinley	Rob Gilam	Diligence	Call / Juneau
4-Dec-18	SM	Premia	Senior management	Board	Call
4-Dec-18	SM	Altas	Sheiner	Fund opportunity	Call
4-Dec-18	SM	UBS	Shere	Diligence	Call
4-Dec-18	YK	Pathway	Senior management	Co-investment opportunity	Call / Juneau
4-Dec-18	YK	Crestline	Senior management	Co-investment opportunity	Call / Juneau
5-Dec-18	SM	PIMCO	Kevin Gray	Diligence	Juneau
5-Dec-18	YK	Bpifrance	Senior management	Fund opportunity	Call / Other
5-Dec-18	YK	Ardian	Senior management	Fund opportunity	Call / Other
5-Dec-18	YK	Idinvest	Senior management	Fund opportunity	Call / Other
5-Dec-18	YK	Partech Partners	Senior management	Fund opportunity	Call / Other
5-Dec-18	YK	Sofinnova Partners	Senior management	Fund opportunity	Call / Other
5-Dec-18	SM	OrbiMed	Neild	Diligence	Call
5-Dec-18	SM	Kleiner Perkins	Knauf	Fund opportunity	Call
6-Dec-18	SM, SL	Varanah	Maie Gall	Diligence	Juneau
6-Dec-18	YK	BlackFin	Senior management	Fund opportunity	Call / Other
6-Dec-18	YK	Cathay Innovation	Senior management	Fund opportunity	Call / Other
6-Dec-18	YK	Iris Capital	Senior management	Fund opportunity	Call / Other
6-Dec-18	YK	Alven	Senior management	Fund opportunity	Call / Other
6-Dec-18	YK	Seventure Partners	Senior management	Fund opportunity	Call / Other
6-Dec-18	SM	Knightsbridge	Piette	Fund-of-funds opportunity	Call
6-Dec-18	SM	Indemnis	McDonald	Introduction	Call
7-Dec-18	SM	McKinley	Rob Gilam	Diligence	Call / Juneau
7-Dec-18	SM	Pathway Capital	Lew	Monitoring	Call / Juneau
10-Dec-18	SM	Denali Therapeutics	Senior management	Investor day	Call / Juneau
10-Dec-18	SM	Evercore	Addeo	Diligence	Call / Juneau
10-Dec-18	SM	NA	McGuire	Direct investment opportunity	Call / Juneau
10-Dec-18	SM	Kelso	Mannix, Nichol	Co-investment opportunity	Call / Juneau
11-Dec-18	YK, SM	Ridgemont LPAC	Senior management	Monitoring	Call / Other
13-Dec-18	YK	Vir Bio	Senior management	Monitoring	Call / Juneau
13-Dec-18	SM, MF	MSCI	Read	Direct investment opporunity	Call / Juneau
13-Dec-18	SM	PT Capital	Short	Diligence	Call / Juneau
14-Dec-18	SM	Innova Health	Berkowitz	Fund opportunity	Call / Juneau
14-Dec-18	SM	Denali Therapeutics	Krognes	Diligence	Call / Juneau
14-Dec-18	YK	Spark VC	Senior management	Fund opportunity	Call / Juneau
17-Dec-18	YK	Actera	Senior management	Fund opportunity	Call / Juneau
18-Dec-18	SM	Cranemere	Bhalla	Diligence	Call
18-Dec-18	SM	JL Properties	Senior management	Fund opportunity	Call
18-Dec-18	SM	McKinley	Rob Gilam	Diligence	Juneau
18-Dec-18	SL	KKR	Dan McLaughlin	Diligence	Juneau
18-Dec-18	YK	Mvision	Senior management	Fund opportunity	Call / Juneau
18-Dec-18	YK	Sana	Senior management	Direct opportunity	Call / Juneau
19-Dec-18	SM, SL	Further Global	Olivier Sarkozy	Diligence	Juneau
19-Dec-18	YK, SM, SL	Providence	Senior management	Co-investment opportunity	Call / Juneau
19-Dec-18	YK	Accel	Senior management	Fund opportunity	Call / Juneau
20-Dec-18	YK	Biopath	Senior management	Fund opportunity	Call / Juneau
20-Dec-18	YK	Summit	Senior management	Fund opportunity	Call / Juneau
20-Dec-18	YK	Macquarie	Senior management	Direct opportunity	Call / Juneau
20-Dec-18	SM	Denali Therapeutics	Krognes	Diligence	Call
20-Dec-18	YK	Blackrock	Senior management	Fund opportunity	Call / Juneau

Manager Due Diligence Log - Fixed Income Plus

The due diligence activities undertaken by APFC on-site and off-site are listed below. Conference calls were included if a product was substantially reviewed or previewed during the course of the call.

Date of Visit	APFC Staff	Broker, Manager, Consultant	Individuals Visiting/Visited	Topic	Location
2-Oct-18	CC	State Street	Sonya Park, and REIT Index team	Indexed REIT portfolio	Boston
3-Oct-18	CC	AEW	Candida Hoeberichts, Caroline Clapp, Russ Devlin, etc.	Active REIT portfolio	Boston
16-Oct-18	MS	TD	Priya Misra	Global Rates strategy	Call
17-Oct-18	TO, MS	Van Eck	Mark Hurrell	ETFs	Juneau
23-Oct-18	TO	Capital Group	Christine Wohn	Hedged Yield	Call
1-Nov-18	MO	OakTree	Anthony Shackleton, Nicola Mueller	European HY bond	Call
1-Nov-18	MO	OakTree	David Rosenberg	Quarterly High Yield review	Call
16-Nov-18	MS	KBN/JP Morgan	Thomas Møller, Angelica-Maria Strolz	Issure presentation	Juneau
20-Nov-18	MO	MarketAxess	Paul Toner	Demo	Call
27-Nov-18	MO, JP	BlackRock	Scott Williamson	seed financing USHY ETF	Call
30-Nov-18	MO	Bank of America GE discussion	Doug Karson	GE	Call
10-Dec-18	MO, JP	BlackRock	Scott Williamson	seed financing USHY ETF	Call

Manager Due Diligence Log - Asset Allocation Strategies

The due diligence activities undertaken by APFC on-site and off-site are listed below. Conference calls were included if a product was substantially reviewed or previewed during the course of the call.

Date of Visit	APFC Staff	Broker, Manager, Consultant	Individuals Visiting/Visited	Topic	Location
10/1/2018	VM	Shroders	Keir Livesey, Allan Ducket	Strategic Beta	Juneau
10/3/2018	VM	BlackRock	Staff	Risk Initiative Private Assets	Call
10/9/2018	VM	Albourne	Rola Elamin, Staff	Risk Parity Strategy Review	Call
10/10/2018	VM	PanAgora	Michael Anderson	Risk Parity Strategy Review	Call
10/16/2018	VM	Goldman Sachs	Davie Thomas, Ty York, Robert Patch	Market review	Call

10/18/2018	VM	Neuberger Berman	Paul Sauer, Hakan Kaya	Risk Parity Strategy Review	Juneau
10/23/2018	VM	Adrian Lee & Partners	Philip Lawson	Hedgiing GBP Currency, Real Estate Hedging	Call
10/25/2018	VM	Albourne	Rola Elamin, Tamara yiannakou, Lincoln Smith	Risk Parity Strategy Review	Call
10/30/2018	VM	BlackRock	Staff	US Pension Insights, Portfolio Solutions	San Francisco
10/31/2018	VM	NISA Investment Advisors	Grant Podolski , Ann Marie Gehring, Kevin Schuman, Paul Oehrlein	Account Activity and ISDA discussion	Call
10/31/2018-11/2/2018	VM	Callan, Blackrock, PanAgora, Bridgewater, Invesco	Greg Allen, Staff	Risk Parity Search	San Francisco
11/5/2018	VM	Adrian Lee & Partners	Philip Lawson, Adrian Lee	Emerging Market Currency Hedging	Call
11/5/2018	VM	Aspect Capital	Emmet Fitzgerald	Hedging	Juneau
11/8/2018	VM	Arrowstreet	Bryan Roda, Chris Poag	Active Currency Discussion	Call
11/13/2018	VM	NISA Investment Advisors	Grant Podolski , Ann Marie Gehring, Kevin Schuman, Paul Oehrlein	Quarterly review	Call
12/20/2018	VM	PanAgora	Michael Anderson	Risk Parity	Call
12/21/2018	VM	PanAgora	Brian Henze	Risk Parity Vehicle update	Call

Manager Due Diligence Log - Public Equities

The due diligence activities undertaken by APFC on-site and off-site are listed below. Conference calls were included if a product was substantially reviewed or previewed during the course of the call.

Date of Visit	APFC Staff	Broker, Manager, Consultant	Individuals Visiting/Visited	Topic	Location
10/15/2018	FR, MD	CDAM	Investment team	Quarterly review	conference call
10/16/2018	FR, MD	Arrowstreet	Investment team	Quarterly review	conference call
10/17/2018	YN	Vaneck	Mark Hurrell	Strategy Review	Juneau, AK
10/17/2018	FR, MD	Trustbridge	Investment team	Quarterly review	conference call
10/18/2018	FR, MD	Schroders	Investment team	Quarterly review	conference call
10/22/2018	FR, MD	McKinley Capital	Investment team	Quarterly review	conference call
10/23/2018	FR, MD	William Blair	Investment team	Quarterly review	conference call
10/24/2018	FR, MD	SKBA	Investment team	Quarterly review	conference call
10/24/2018	FR, MD	Wells Capital	Investment team	Quarterly review	conference call
10/25/2018	FR, MD	DFA	Investment team	Quarterly review	conference call
10/25/2018	FR, MD	AGI	Investment team	Quarterly review	conference call
10/29/2018	FR, MD	T.Rowe	Investment team	Quarterly review	conference call
10/29/2018	FR, MD	AQR	Investment team	Quarterly review	conference call
10/30/2018	FR, MD	Lyrical	Investment team	Quarterly review	conference call
10/30/2018	FR, MD	LSV	Investment team	Quarterly review	conference call
10/31/2018	FR, MD	DSM	Investment team	Quarterly review	conference call
10/31/2018	FR, MD	CastleArk	Investment team	Quarterly review	conference call
11/1/2018	FR, MD	Eagle	Investment team	Quarterly review	conference call
11/1/2018	FR, MD	JP Morgan EM	Investment team	Quarterly review	conference call
11/2/2018	FR, MD	Lazard	Investment team	Quarterly review	conference call
11/5-9/2018	FR	Acadian	Investment team	Strategy Review	Boston, MA
11/5-9/2018	FR	Arrowstreet	Investment team	Strategy Review	Boston, MA
11/5-9/2018	FR	LSV	Investment team	Strategy Review	Chicago, IL
11/5-9/2018	FR	CastleArk	Investment team	Strategy Review	Chicago, IL
11/5-9/2018	FR	RBC	Investment team	Strategy Review	Chicago, IL
11/12/2018	FR, MD	Acadian	Investment team	Quarterly review	conference call
11/12/2018	FR, MD	WCM	Investment team	Quarterly review	conference call
11/13/2018	FR, MD	JP Morgan International	Investment team	Quarterly review	conference call
11/13/2018	FR, MD	SSGA	Investment team	Quarterly review	conference call
11/14/2018	FR, MD	RBC	Investment team	Quarterly review	conference call
11/15/2018	YN	Wisdom Tree	Jeremy Schwartz, Jesper Koll, Joe Grogan	Strategy Review	conference call
11/15/2018	FR, MD	RBA	Investment team	Quarterly review	conference call
11/15/2018	FR, MD	Jennison	Investment team	Quarterly review	conference call
11/19/2018	FR, MD	Pzena	Investment team	Quarterly review	conference call
11/19/2018	FR, MD	Macquarie (ex Delaware)	Investment team	Quarterly review	conference call
11/20/2018	FR, MD	Johnston	Investment team	Quarterly review	conference call
11/26/2018	FR, MD	Mondrian	Investment team	Quarterly review	conference call
11/27/2018	FR, MD	Longview	Investment team	Quarterly review	conference call
11/28/2018	YN	FIS Group	Rob Morier	Strategy review	Juneau, AK
11/29/2018	FR, MD	Janus Henderson	Jamison Gagnier, Steve Weeple	Strategy review	Juneau, AK
12/3/2018	YN	KBI Global	Simon Padley, David Hogarty	Strategy review	Juneau, AK
12/5/2018	FR, YN	Premia Partners	Rebecca chua and Team	Strategy review	conference call
12/6/2018	YN, MD	SSGA	Sonya Park, Kristi Nyamathi	Year-end Update	Juneau, AK
12/18/2018	FR, MD	McKinley Capital	Rob Gillam	Portfolio Update	Juneau, AK
12/19/2018	FR, MD, YN	Denali Advisors	Kathryn Cicolett, Robert Snigaroff, John Cuthbertson	Strategy Review	Juneau, AK

APFC Investment Due Diligence: October 2018 - December 2018

Manager Due Diligence Log - Private Income and Absolute Return

The due diligence activities undertaken by APFC on-site and off-site are listed below. Conference calls were included if a product was substantially reviewed or previewed during the course of the call.

Date of Visit	APFC Staff	Broker, Manager, Consultant	Individuals Visiting/Visited	Topic	Location
3-Oct-18	MF, RA	Goldman Sachs	Various investment professionals	Fund Update	Conference Call
3-Oct-18	RA	InfraRed	Sandra Lowe	Fund Update	Conference Call
3-Oct-18	RA	Pavilion	Allen Waldrop, Daniel Fuller	Market Knowledge	Conference Call
4-Oct-18	RA	Junction Energy	Will Gaunt, Rob Johnson	Fund Opportunity	Conference Call
5-Oct-18	RA	LS Power	Emily Simonis, Dave Nanus	Fund Update	Conference Call
8-Oct-18	RA	Pathway Capital	Jason Jenkins, Jeff Buress	Fund Update	Conference Call
9-Oct-18	MF, JB, RA	GIP	Various investment professionals	Co-Investment Update	Conference Call
9-Oct-18	JB	Albar Capital	Michael Perry	Fund Opportunity	Conference Call
9-Oct-18	JB	H.I.G. Capital	Asmat Doza	Fund Opportunity	Conference Call
10-Oct-18	JB	Pathway Capital	Vince Dee	Fund Opportunity	Conference Call
10-Oct-18	JB, CP	SheppardMullin	Thomas Devaney, Daniel Losk, Gerald Kehoe, Richard Zarin, David Lincoln, Raj Atluru	Legal Discussion	Conference Call
10-Oct-18	RA	Pathway Capital, KKR	Romeish Bala, Jason Jenkins, Jeff Buress, Dan McLaughlin, Doug Brody	Co-Investment Opportunity	Conference Call
10-Oct-18	JB	Aksia	Rebecca Levy, Joshua Hemley, Drew Friedberg, Sylvia Owens	Fund Update	Conference Call
10-Oct-18	JB	Benefit Street Partners	Allison Davi, Julia Boylan	Fund Opportunity	Conference Call
10-Oct-18	JB, CP	SheppardMullin	Thomas Devaney	Fund Update	Conference Call
10-Oct-18	JB	H.I.G. Capital	Stuart Aronson, Pankaj Gupta	Direct Opportunity	Conference Call
11-Oct-18	RA	GIP	Various investment professionals	Fund Update	Conference Call
11-Oct-18	JB	Bridgewater Associates	Bob Prince	Market Knowledge	Conference Call
11-Oct-18	JB	SSG Asia	Edwin Wong	Fund Opportunity	Conference Call
11-Oct-18	JB	Crayhill Capital	Shamafa Khan	Fund Update	Conference Call
11-Oct-18	JB	Eso Capital	Tingting Peng	Fund Opportunity	Conference Call
12-Oct-18	JB	Alphadyne	Katie Carroll	Fund Opportunity	Conference Call
15-Oct-18	JB	Credit Suisse	Sprague Von Stroh	Fund Opportunity	Conference Call
16-Oct-18	RA	Atlantic Pacific Capital	Nicole Alicea	Fund Opportunity	Conference Call
16-Oct-18	MF, RA	Related	Justin Metz, Seth Blau, Andrew Right, Chase Davidson	Co-Investment Opportunity	Conference Call
17-Oct-18	JB	Audax Group	Various investment professionals	Fund Update	Conference Call
17-Oct-18	JB	Axonic Capital	Annee Kim	Fund Opportunity	Conference Call
17-Oct-18	JB	Audax Group	Various investment professionals	Fund Update	Conference Call
18-Oct-18	MF, JB	Pharo Management	David Crosby	Fund Update	Conference Call
18-Oct-18	JB	Serenitas	Cara Fleckenstein, David Weeks, Ajit Kumar, Don Steinbrugge	Fund Opportunity	Conference Call
18-Oct-18	MF, JB	Beach Point Capital	Scott Kleain, Zach Axelrod	Fund Opportunity	Juneau
18-Oct-18	JB, RA	Park Hill Group	Bob Kulperger	Market Knowledge	Juneau
18-Oct-18	MF, JB	Pathway Capital	Vince Dee, John Ruggieri	Fund Opportunity	Conference Call
19-Oct-18	JB	Lutetia	Cara Fleckenstein, Ghazi Bohsali, Jean Francois	Fund Opportunity	Conference Call
19-Oct-18	RA	Credit Suisse	Sprague Von Stroh	Fund Opportunity	Conference Call
22-Oct-18	MF, JB	Bridgewater Associates	Various investment professionals	Fund Update	Conference Call
22-Oct-18	JB	Permira Debt Managers	James Greenwood, Monica Chase	Fund Opportunity	Conference Call
22-Oct-18	JB	Albar Capital	Michael Perry	Fund Opportunity	Conference Call
23-Oct-18	JB	Falcon Bridge	Jessica Huang, Lindsey Douglas, Aga Linsky, Sunil Chowdry	Fund Opportunity	Conference Call
23-Oct-18	JB	Pathway Capital	John Ruggieri	Fund Opportunity	Conference Call
23-Oct-18	RA	Grain Management	David Grain, Sprague Von Stroh	Fund Opportunity	Conference Call
23-Oct-18	JB	Proventus	Daniel Sachs, Anders Thelin	Fund Opportunity	Conference Call
24-Oct-18	MF, JB, RA	Aurelius	Allyson Harada, Danielle Auld, Richard Petrilli	Fund Update	Conference Call
24-Oct-18	JB	Albourne	Travis Williamson, Lincoln Smith, Rola Elamin	Fund Opportunity	Conference Call
25-Oct-18	RA	Brooklands Capital	Dan Carroll, Yeatts Anderson, Rachel Ross, Inna Fong	Fund Opportunity	Conference Call
26-Oct-18	JB, RA	EIG Global Energy Partners	Bill Sonneborn, AJ Washington, Andrew Viehe	Fund Opportunity	Conference Call
26-Oct-18	RA	CIM Group	Various investment professionals	Fund Update	Conference Call
29-Oct-18	RA	Actis	Mike Till, Adiba Ighodaro	Fund Update	Conference Call
29-Oct-18	JB	Audax, Quirch	Kevin Bland, Bryan Nelson	Co-Investment Update	Conference Call
29-Oct-18	JB	Monroe Capital	Sean Duff, Zia Uddin, Taylor Eversden	Fund Update	Juneau
30-Oct-18	JB	Adamas Partners	Investment Team	Reference Call	Conference Call
30-Oct-18	JB	Aurelius	Mark Brodsky	Fund Update	Conference Call
30-Oct-18	JB	Silver Creek Capital	Bob Ratliffe, Tom Lindquist, Tim Oitzman	Fund Opportunity	Conference Call
31-Oct-18	JB	Pathway Capital	Stefan Goettl, Alaex Casbolt	Fund Opportunity	Conference Call
31-Oct-18	RA	Pathway Capital, KKR	Various investment professionals	Co-Investment Opportunity	Conference Call
31-Oct-18	JB	Makena Capital	Various investment professionals	Reference Call	Conference Call
31-Oct-18	JB	State of Wisconsin Investment Board	Various investment professionals	Reference Call	Conference Call
31-Oct-18	JB, CP	SheppardMullin	Thomas Devaney	Legal Discussion	Conference Call

1-Nov-18	RA	KKR	Various investment professionals	Fund Update	Conference Call
1-Nov-18	JB	Hayfin	Max Spicer, Amal Daghestani	Fund Opportunity	Conference Call
1-Nov-18	JB	Empyrean	Kate Baumann	Fund Update	Conference Call
1-Nov-18	MF, JB	Millenium	Rick Kohly	Fund Opportunity	Conference Call
1-Nov-18	JB	Varde	Eric Perry	Fund Update	
2-Nov-18	MF, JB, RA	Pathway Capital	Jason Jenkins, Jeff Buress, Jeanette Gaytan	Fund Opportunity	Conference Call
5-Nov-18	MF, VM, JB	Aspect Capital	Emmett Fitzgerald, Asif Noor	Fund Opportunity	Juneau
5-Nov-18	SM, JB	Whitehorse Liquidity	Ashely Triance-Haldane, Yann Robard, Sarah Cheng	Direct Opportunity	Juneau
6-Nov-18	MF, RA	Antin, Evercore	Sebastien Lecaudey, Chris Brand	Fund Opportunity	Juneau
6-Nov-18	RA	LS Power	Emily Simonis	Co-Investment Opportunity	Conference Call
6-Nov-18	JB	ISSP	Heli	Reference Call	Conference Call
8-Nov-18	JB	Elliott	Paul Singer, Jon Pollock	Fund Update	Conference Call
12-Nov-18	JB	Metacapital Management	Nathalie Schallock	Fund Opportunity	Conference Call
13-Nov-18	RA	Pathway Capital	Jim Chambliss	Co-Investment Opportunity	Conference Call
13-Nov-18	JB	Pathway Capital	Kevin Bland	Co-Investment Opportunity	Conference Call
14-Nov-18	JB	Crestline	Various investment professionals	Fund Update	Conference Call
14-Nov-18	RA	GIP	Kevin Feng, Jason Jenkins	Co-Investment Update	Conference Call
14-Nov-18	JB	Crestline	Various investment professionals	Fund Update	Conference Call
14-Nov-18	JB	TSSP	Various investment professionals	Fund Update	Conference Call
14-Nov-18	JB	Kartesia	Greg Wiener	Fund Opportunity	Juneau
15-Nov-18	JB	Silver Point	Eve Teich, Elizabeth Parker	Fund Opportunity	Conference Call
15-Nov-18	RA	Alturus	Nick Riva	Fund Opportunity	Conference Call
15-Nov-18	JB	Allegiant REC	Randy Reiff, Simon Breedon, Ben Milde	Fund Opportunity	Conference Call
15-Nov-18	JB	Silver Rock Financial	Carl Meyer, Vinay Kumar, Andrea Bollyky	Fund Opportunity	Conference Call
15-Nov-18	JB	Athyrium	Paul Sauer, Jeffrey Ferrell, Dolly Singh, Courtney Paul	Fund Update	Conference Call
15-Nov-18	JB	Torrey Cove	Kevin Hitchen	Fund Opportunity	Conference Call
19-Nov-18	RA	Pathway Capital	Jason Jenkins, James Dee, Jeff Buress	Fund Opportunity	Conference Call
19-Nov-18	MF, JB, RA	Generate Capital	Patti Szczepaniak, Raj Atluru, Ryan Bisch, Allen Waldrop, Todd Lapenna	Direct Update	Conference Call
20-Nov-18	MF, JB, RA	InstarAGF	Daniel Perruzza, Sonja Weiss, George So, Jack Bittan	Direct Opportunity	Conference Call
21-Nov-18	RA	Carlyle	Ryan Buntain, Pete Taylor, Ferris Hussein, Steven Simone	Fund Opportunity	Conference Call
26-Nov-18	JB	Pharo Management	David Crosby	Fund Update	Conference Call
26-Nov-18	RA	Pathway Capital, LS Power	John King, Darpan Kapadia, Emily Simonis, Jason Jenkins, Jeff Burress	Co-Investment Opportunity	Conference Call
26-Nov-18	MF, JB	Complus	Francois Hora	Fund Update	Juneau
26-Nov-18	JB	Millenium	Rick Kohly	Fund Opportunity	Conference Call
26-Nov-18	JB	Aurora	William Faulkner	Fund Opportunity	Conference Call
26-Nov-18	RA	Energy Capital Partners	Doug Kimmelman, Jess Larsen	Fund Opportunity	Conference Call
27-Nov-18	JB	CS Capital	R. Joseph Spicer, Michael McHargue	Direct Update	Conference Call
27-Nov-18	RA	Morgan Stanley Infrastructure	Various investment professionals	Fund Update	Conference Call
28-Nov-18	MF, JB, RA	Cascadia Capital	Various investment professionals	Direct Opportunity	
28-Nov-18	JB	Alphadyne	Katie Carroll	Legal Discussion	Conference Call
28-Nov-18	RA	Pathway Capital	Jason Jenkins, Jeff Burress	Co-Investment Opportunity	Conference Call
28-Nov-18	JB	Apollo Credit	Mike Fox, Danielle Thorsen	Fund Update	Conference Call
29-Nov-18	RA	NZ Super	Christopher Myers, Sam Inglis	Reference Call	Conference Call
29-Nov-18	JB	Pathway Capital	Kevin Bland, Bryan Nelson	Co-Investment Update	Conference Call
29-Nov-18	JB	LCM Partners	Paul Burdell	Fund Update	Conference Call
30-Nov-18	JB	Pathway Capital, Audax Group	Kevin, Bland, Bryan Nelson, Wayne Smith, Will Morris, Eric Duan, Steve Ruby, Shehzad Ajmal	Co-Investment Update	Conference Call
30-Nov-18	RA	Morgan Stanley Infrastructure	Andrew Dietz	Fund Update	Conference Call
30-Nov-18	JB	Crestline	Various investment professionals	Fund Update	Conference Call
30-Nov-18	MF, JB, RA	Generate Capital	Scott Jacobs, Matan Friedman, Allen Waldrop	Direct Update	Conference Call
3-Dec-18	JB	Millenium	Izzy Englander, Bobby Jain, and various other investment professionals	Fund Opportunity	New York City
3-Dec-18	RA	Carlyle	Various investment professionals	Fund Update	Conference Call
3-Dec-18	JB	Aksia	Various investment professionals	Market Knowledge	New York City
3-Dec-18	JB	EWR ConRac	Troy Ritter	Direct Opportunity	Conference Call
4-Dec-18	JB	Whitehorse Liquidity	Yann Robard	Fund Update	New York City
4-Dec-18	RA	GIP	Various investment professionals	Fund Update	Conference Call
4-Dec-18	JB	Preqin/Aksia	Various investment professionals	Market Knowledge	New York City
4-Dec-18	RA	GIP	Various investment professionals	Fund Update	New York City
4-Dec-18	RA	BRS Aladdin	Various investment professionals	Fund Update	Conference Call
4-Dec-18	RA	Morgan Stanley Infrastructure	Chris Koski, Ahmad Atwan, Andrew Medvedev, Alice Kim, Markus Hottenrott	Fund Update	New York City
4-Dec-18	JB	Cascadia Capital	Mike Kelley	Direct Opportunity	Conference Call
5-Dec-18	RA	LS Power	Various investment professionals	Fund Update	New York City
5-Dec-18	JB	Silver Point	Various investment professionals	Fund Opportunity	New York City

5-Dec-18	JB	MCCP	Ashok Nayyar, Michael Zimmerman, Jonathn Tunis, David Gelobter, Jason Hicks, and other various investment professionals	Fund Opportunity	New York City
5-Dec-18	RA	Pathway Capital, LS Power	John King, Jason Jenkins, Cody Hill	Co-Investment Opportunity	New York City
6-Dec-18	RA	LS Power	Various investment professionals	Fund Update	New York City
6-Dec-18	JB	Alphadyne	Philippe Khuong-Huu, Joseph Regan	Fund Opportunity	New York City
6-Dec-18	JB	Samlyn Capital	Rob Pohly, Steven Wagshal	Fund Opportunity	New York City
6-Dec-18	JB	Maltese Capital	Terry Maltese, Amanda Rice	Fund Update	New York City
6-Dec-18	JB	Empyrean	Andrew Reger, Kate Baumann	Fund Update	Conference Call
6-Dec-18	MF, JB, RA	Generate Capital	Scott Jacobs, Matan Friedman, Allen Waldrop, D. Fuller	Direct Update	Conference Call
10-Dec-18	JB	Goldman Sachs	Nicola Webster	Fund Opportunity	Conference Call
10-Dec-18	MF, JB, RA	InstarAGF	Daniel Perruzza, Sonja Weiss, George So, Jack Bittan	Co-Investment Opportunity	Conference Call
10-Dec-18	JB	SSG Asia	Toby Damek, Shirley Wong, Sabrina Chan	Fund Opportunity	Conference Call
12-Dec-18	JB	Silver Point	Eve Teich, Elizabeth Parker	Fund Opportunity	Conference Call
12-Dec-18	JB	Pathway Capital	Vince Dee, John Ruggieri	Fund Update	Conference Call
12-Dec-18	JB	Millenium	Rick Kohly	Fund Opportunity	Conference Call
13-Dec-18	JB	Atalaya AIF IV	Various investment professionals	Fund Update	Conference Call
13-Dec-18	RA	Encap Flatrock	Matt Crystal, Zach Kayem	Fund Update	Conference Call
13-Dec-18	JB	Cascadia Capital	Various investment professionals	Direct Opportunity	Conference Call
13-Dec-18	MF, JB, RA	GC, BAML	Various investment professionals	Direct Update	Conference Call
13-Dec-18	JB	Albourne	Andrew Bae, Lincoln Smith	Fund Update	Conference Call
14-Dec-18	RA	Pathway Capital	Jason Jenkins, Jeff Buress	Co-Investment Opportunity	Conference Call
14-Dec-18	RA	First Avenue	Andy Hayes	Fund Opportunity	Conference Call
17-Dec-18	JB	Maximus Capital	Greg Royce	Fund Opportunity	Conference Call
17-Dec-18	JB	Golub Capital	Ross Van der Linden	Fund Opportunity	Conference Call
17-Dec-18	JB	Dorsal Capital	Jeff Barnett	Fund Update	Conference Call
17-Dec-18	MF, YK, JB, RA	Albourne	Kelly McKale, Andrew Bae	Market Knowledge	Conference Call
17-Dec-18	RA	Generate Capital	Colby Payne, Scott Jacobs, Matan Friedman, Allen Waldrop, Daniel Fuller	Direct Update	Conference Call
18-Dec-18	JB	Maverick Capital	Andrew Fulton, Laura Sakevich, Claire Traugott	Fund Opportunity	Conference Call
18-Dec-18	JB	Siemens, Knik Tribe	Peter Chornyak, Kelly Laurel, Greg Koontz, Richard Porter	Direct Opportunity	Juneau
18-Dec-18	RA	Institutional Investor	Scott Kalb	Market Knowledge	Conference Call
18-Dec-18	JB	Credit Suisse	Sprague von Stroh	Market Knowledge	Conference Call
18-Dec-18	RA	North Haven India Infrastructure	Alice Kim, Raja Parthasarathy	Fund Update	Conference Call
19-Dec-18	JB	Goldman Sachs	Katherine Alberti, Nicola Webster	Fund Update	Conference Call
19-Dec-18	JB	400 Capital	Tim Lynch, Chris Hentemann	Fund Update	Conference Call
19-Dec-18	AR, MF, RA	American Public Infrastructure	Frank Chin	Co-Investment Opportunity	Conference Call
20-Dec-18	JB	Aksia	Rebecca Levy, Sylvia Owens, Tzveta Petrov	Market Knowledge	Conference Call
20-Dec-18	RA	GIP	Various investment professionals	Co-Investment Update	Conference Call
20-Dec-18	JB	Lansdowne	Julian Colville	Fund Update	Conference Call
20-Dec-18	RA	Project Atom	Andrew Claerhout	Fund Opportunity	Conference Call
20-Dec-18	JB	Albourne	Andrew Bae, Martina Steinberg, Lincoln Smith	Fund Opportunity	Conference Call
20-Dec-18	JB	Crestline	Various investment professionals	Fund Update	Conference Call
20-Dec-18	JB	MC Credit	Siddique Haq	Market Knowledge	Conference Call
20-Dec-18	RA	Torrey Cove	Tom Martin	Direct Opportunity	Conference Call
21-Dec-18	JB	Pathway, LBC	Brian Einfeldt, Kevin Bland, Wayne Smith, John Capparella, Jonathan Schor	Co-Investment Opportunity	Conference Call
21-Dec-18	MF, JB	Field Street	Aaron Gillespie	Fund Update	Conference Call
21-Dec-18	JB	Generate Capital	Various investment professionals	Direct Update	Conference Call
27-Dec-18	JB	Intrinsic Edge	Jonathan Yaffe, John Gallop	Fund Opportunity	Conference Call

Staff Education & Training

ALASKA PERMANENT FUND CORPORATION

	EMPLOYEE	DEPT	TRAINING TYPE*	VENDOR	COURSE TITLE	CLASS HOURS	CITY	ST
1	Danielle Graham	4	CS	National Seminars Training	Administratives Assistants Conference	6.0	Anchorage	AK
2	Janice L Hotch	Admin	Conference	State of Alaska	Procurement: Competitive Sealed Prop	1.0	Juneau	AK
3	Janice L Hotch	Admin	Conference	State of Alaska	Procurement: Protests, Ethics & Violations	1.0	Juneau	AK
4	John Seagren	Finance	OL	AICPA	AICPA Draft Accounting & Valuation Guides for Venture Capital & Private Equity Funds & Other Investment Funds	1.5	Juneau	AK
5	Mason Kullander	IT	OL	University of Alaska	Intro to Networking/Networking and Lan Administration	10+	Juneau	AK
6	Nellie Metcalfe	IT	Conference	Microsoft	Visual Studio Live	40	San Diego	CA
7	John Seagren	Finance	OTT	KPMG	Derivatives & Hedging Foundations for Accountants	16.5	New York	NY
8	John Seagren	Finance	OL	GFOA	Governmental GAAP Update	4.0	Juneau	AK
9	Masha Skuratovskaya	FI	CS	CFA Institute	CFA Fixed Income Conference	16.0	Boston	MA

CS	- Conferences & Seminars
LT	- Local Training
OTT	- Out of Town Training
OL	- Online

Internship Program

SUBJECT: Internship Program Update ACTION:

DATE: February 27th, 2019 INFORMATION: __X___

BACKGROUND:

APFC has a history of providing opportunities for students interested in a career in finance and accounting. This has included offering 2 -3 summer paid internships at our headquarters office in Juneau as well as working with external managers to provide internships of their own. The external internship program as created required a significant amount of time by the HR Manager as that individual had responsibility for working with managers to determine intern demand, recruiting and identifying candidates and following up and evaluating the success of the internship from both the manager's and intern's perspective. Since 2016 the focus has been on recruiting our internal summer interns and the 14 internal positions we have received and looking for ways to leverage resources with the University of Alaska.

At the May board meeting, the Board of Trustees requested that staff begin work on reestablishing the external manager internship program, recognizing our internal staffing and resource limitations for this program.

STATUS:

During the fall of 2018, we were able to reclass one of the administrative positions we received to HR Generalist, recruit and hire an individual to provide much needed support to the HR Manager. We were fortunate in that we were able to promote one of our own, unfortunate in that it created another vacancy within APFC that needed to be filled.

Since January, the HR team has continued to work towards getting our investment positions and summer internships filled. As background, in 2018 we received 839 applications and interviewed 204 potential candidates. This includes screening interviews that may not have gone any further. HR onboarded 14 employees along with 9 employee departures and 2 summer interns.

Our 2019 summer internship program has had 59 applicants for 2 positions. All applications have been reviewed and the top ranked candidates have been screened by HR. Final hiring decisions will be made and offers are scheduled to be out by February 28, 2019.

The team is also working on creating new parameters for an external manager internship program. This program will be designed to more effectively and efficiently leverage our relationships along with our resources to ensure it provides maximum benefits to the Fund.

We continue to work with the University to set up a field studies class which will allow the University to provide a unique experience to its business students and all the Fund to benefit from the talented student pool.

Finally, we are pleased to welcome Kimberly McGinnis who oversees the Student Investment Fund at the University of Fairbanks and Finance students from UAF as well as the University of Alaska Anchorage. We are looking forward to deepening our connection to the student population of Alaska providing learning, internship and employment opportunities.

APFC PCN Summary

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: APFC PCN Summary

ACTION:

DATE: February 27th, 2019

INFORMATION: __X__

Fiscal Year	Permanent Full-Time	Permanent Part-Time	Interns	Details
FY15	38	0	2	
FY16	42	0	2	-Investment Officer (2) -Investment Associate (1) -Accountant (1)
FY17	48	0	2	-Investment Officer (2) -Investment Associate (3) -IT Specialist (1)
FY18	47	2	2	-Admin Specialist (1 PFT) -Admin Specialist (2 PPT)
FY19	57	2	2	-Investment Officer (2) -Investment Associate (2) -Accountant (2) -IT Dev Ops (1) -Compliance Officer (1) -Business Analyst (1) -Admin Assistant (1)

Communications Report

SUBJECT: Communications ACTION:

DATE: February 27th, 2019 INFORMATION: __X__

APFC's Communications are focused on providing reliable and objective information to our Alaskan stakeholders and global audience on matters pertaining to the Alaska Permanent Fund and the Corporation.

Following are recent presentations, discussions, and media engagements about APFC and the Fund that the Board Chair and the CEO have participated in:

January 2019

- Interview – CEO Rodell: Max de Haldevang, Quartz Special Report on SWFs
- Presentation – Chair Richards and CEO Rodell: Senate Finance Committee on APFC and the Fund
- Presentation – CEO Rodell: House Information Session on APFC and the Fund
- APFC Walk Thru – CEO Rodell: Senator David Wilson and Staff
- APFC Walk Thru – CEO Rodell: Representative Jennifer Johnston
- APFC Walk Thru – CEO Rodell: Representative Bart LeBon and Staff
- Interview - CEO Rodell: Capital Views with Mike Bradner on Inflation Proofing
- Presentation – CEO Rodell: Alaska Chamber Breakfast on APFC and the Fund

February 2019

- Panel – CEO Rodell: SWFI Conference on Emerging Managers
- Presentation – Chair Richards: Commonwealth North on Fund Performance

Communications Projects

- **Newspaper Insert**
  - Circulated statewide the week of January 13, 2019. This publication provides information on Resolution 18-04 endorsing a sustainable framework for Fund transfers, an update on APFC's management of the Fund, and general education about how the Fund works. Financial statements are incorporated in the layout and fulfill the statutory requirement of AS 37.13.170 - Reports and Publications: "The annual income statement and balance sheet of the fund shall be published in at least one newspaper in each judicial district."
- **Planning for the 11th Annual Meeting of IFSWF – September 10-13, 2019 in Juneau**
  - The International Forum of Sovereign Wealth Funds (IFSWF) is a global network of sovereign wealth funds (SWF) created to enhance collaboration amongst organizations, promote a deeper understanding of SWF activity, and raise industry standards for best practices and governance. U.S. Treasury in conjunction with APFC is a founding member of IFSWF.
  - APFC is the member host for this meeting, and our team is working to coordinate all aspects of this event. The aim is to deliver a professional, informative meeting of our global sovereign wealth fund peers.
- **Communications Policy**
  - A draft is in process to provide a comprehensive update to APFC's communication components.

Financials

APFC ALASKA PERMANENT FUND CORPORATION

Financial Report
December 31, 2018

Fiscal Year 2019 Net Assets

Balances through December 31, 2018 *(in millions)*

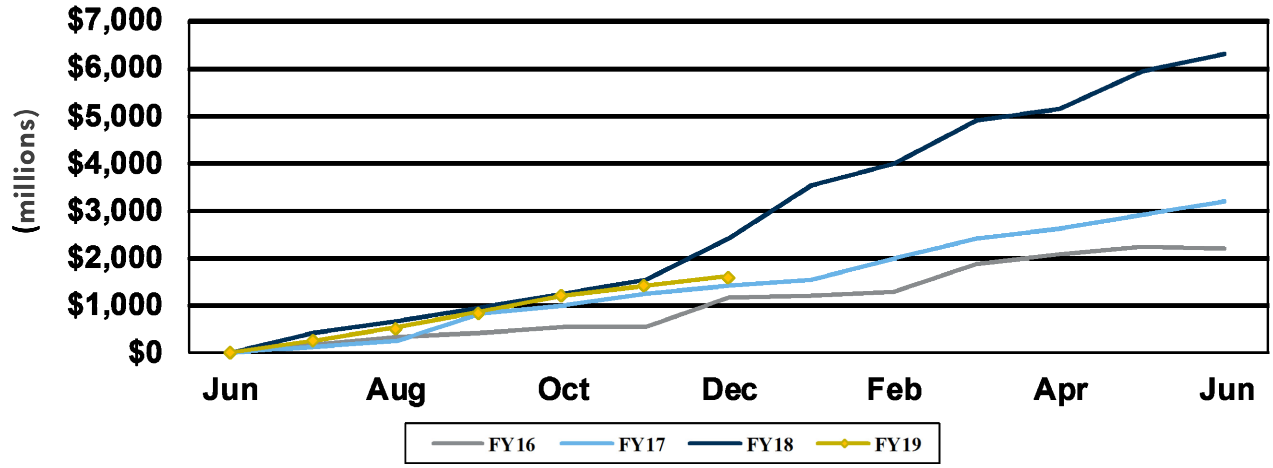
Total assets	$61,844.7
Less liabilities	($1,475.0)
Net assets	$60,369.7
Fund Balances:	
Non-spendable	
Permanent Fund corpus—contributions and appropriations	$40,373.6
Not in spendable form—unrealized appreciation on invested assets	$3,362.1
Total non-spendable fund balance	$43,735.7
Committed	
General Fund Commitment	$ -
Current FY inflation proofing	$985.1
Current FY AK Capital Income Fund	$10.9
Committed fund balance	$996.0
Assigned for future appropriations	
Realized earnings	$14,359.3
Unrealized appreciation on invested assets	$1,278.7
Total assigned fund balance	$15,638.0
Total fund balances	$60,369.7

Fiscal Year 2019 Income

For the six months ending December 31, 2018 *(in millions)*

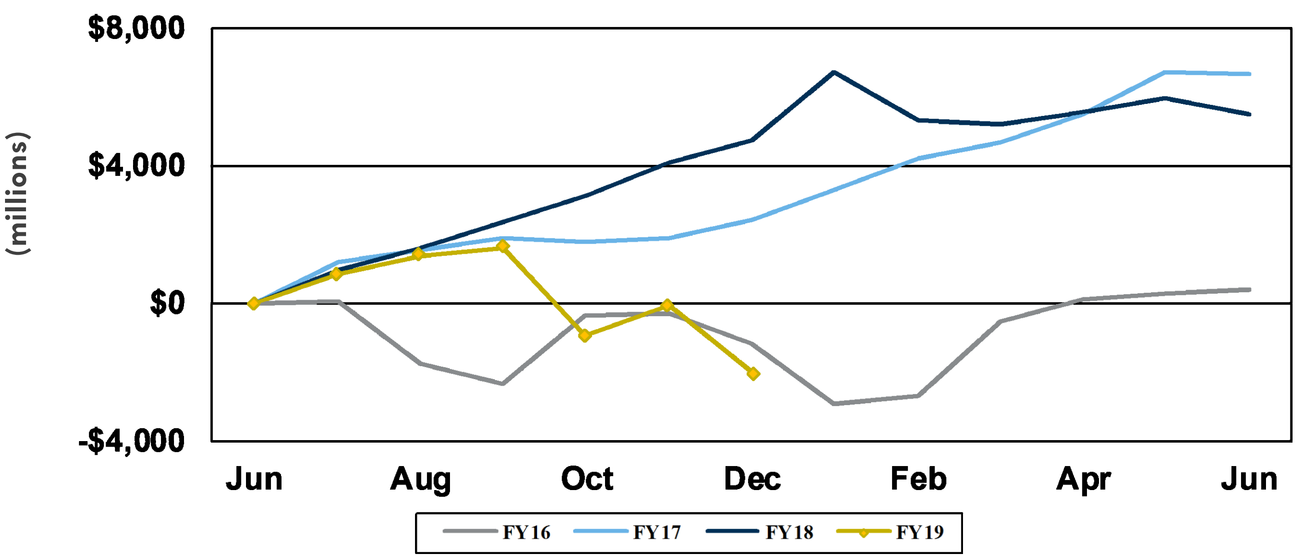
Statutory (Realized) Net Income	
Interest, dividends, real estate, and other income	$700.5
Realized gains on the sale of invested assets	$975.7
Less operating expenses/legislative appropriations	($60.0)
Alaska Capital Income Fund committed realized earnings	($10.8)
Statutory net income	$1,605.4
GAAP (Accounting) Net Income	
Statutory net income	$1,605.4
Unrealized gains on invested assets	($3,624.4)
Alaska Capital Income Fund committed realized earnings	$10.8
Accounting net income	($2,008.2)

Statutory Net Income, Fiscal Years 2016 - 2019



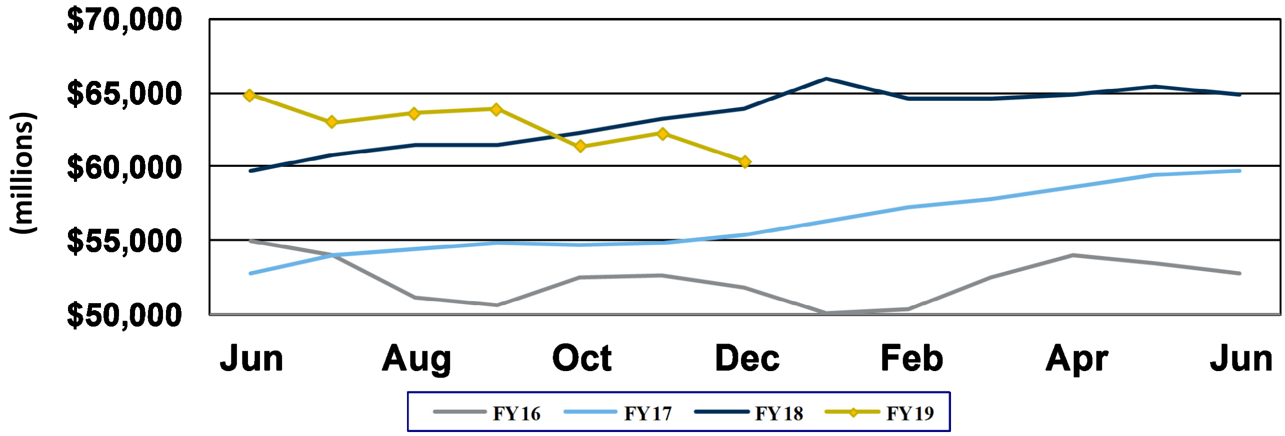
- Comprised of receipts from interest on fixed income, real estate rentals, stock dividends, and all realized gains and losses on the sales of invested assets, less AK Capital Income Fund committed amounts and operating expenses.
- FY16 statutory net income was $2,198.2 million.
- FY17 statutory net income was $3,214.2 million.
- FY18 statutory net income was $6,324.4 million.
- FY19 statutory net income through December 31st was $1,605.4 million.

GAAP Accounting Net Income (Loss), Fiscal Years 2016 - 2019



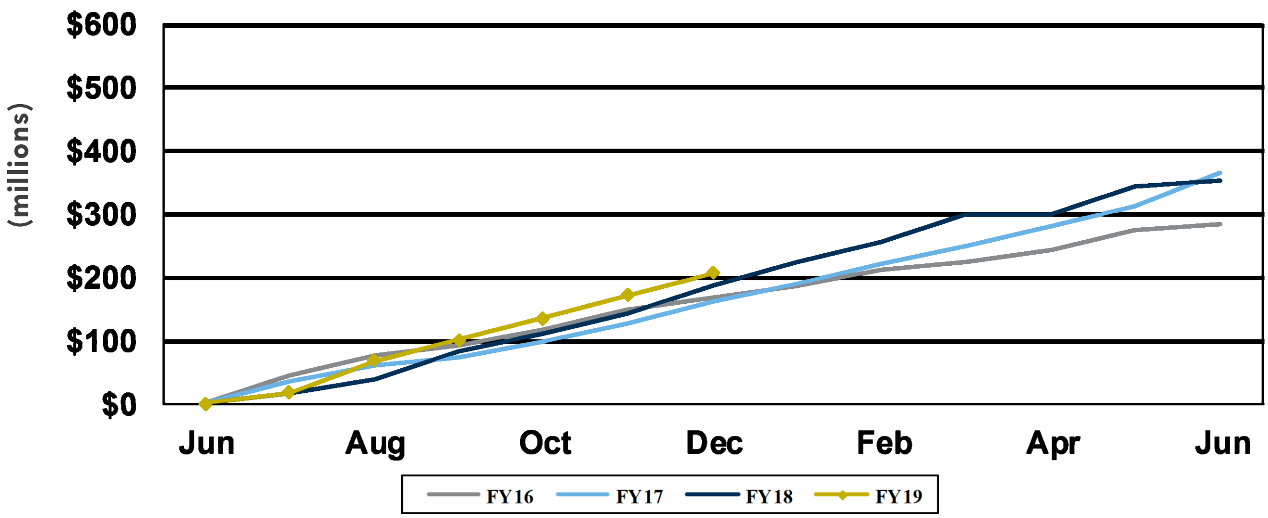
- Accounting net income is the same as statutory net income, except it includes unrealized gains and losses.
- Accounting net income for FY16 was $398.5 million.
- Accounting net income for FY17 was $6,675.6 million.
- Accounting net income for FY18 was $5,525.5 million.
- Accounting net loss for FY19 through December 31st was $2,008.2 million.

Market Value of Fund Net Assets, Fiscal Years 2016 - 2019



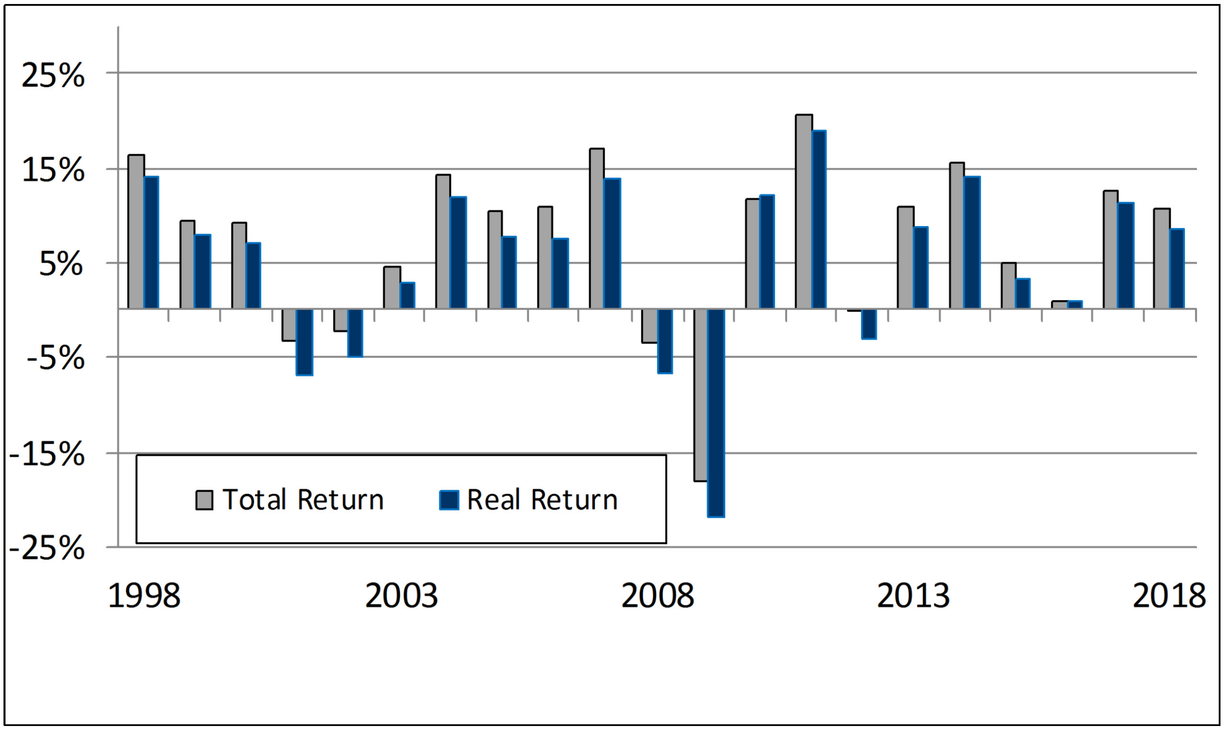
- FY16 net assets as of June 2016 were $52.8 billion, basically unchanged from the FY15 ending balance.
- FY17 net assets as of June 2017 were $59.8 billion, an increase of $7.0 billion over the FY16 ending balance.
- FY18 net assets as of June 2018 were $64.9 billion, an increase of $5.1 billion over the FY17 ending balance.
- FY19 net assets as of December 31, 2018 were $60.4 billion, a decrease of $4.5 billion from the FY18 ending balance.

Dedicated Mineral Revenues, Fiscal Years 2016 - 2019



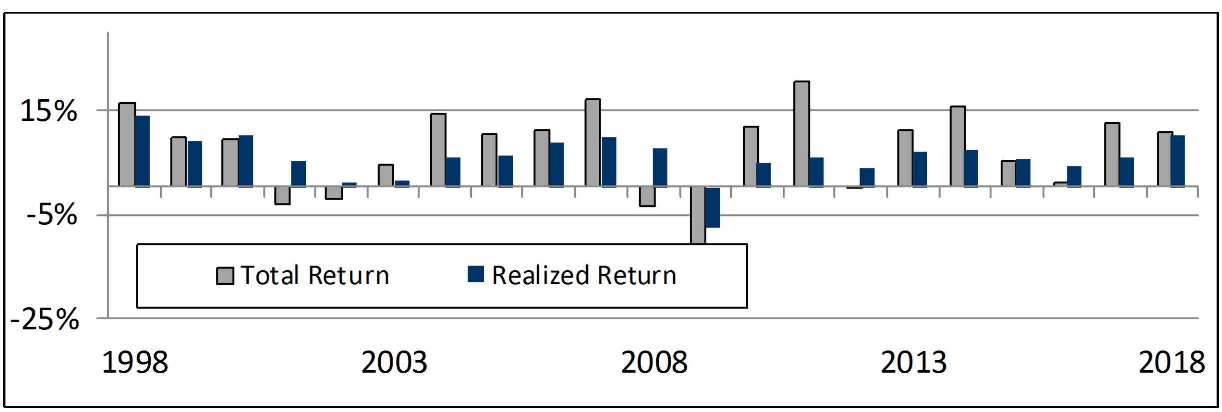
- FY16 mineral revenue was $284.5 million.
- FY17 mineral revenue was $364.9 million.
- FY18 mineral revenue was $353.1 million.
- FY19 mineral revenue as of December 31, 2018 was $206.2 million.

<u>Alaska Permanent Fund Historical Returns, Fiscal Year 1998-2018</u>
Total return minus inflation equals real return



Total return annualized over 34 years is 8.95%
Real return annualized over 34 years is 6.735%

<u>Alaska Permanent Fund Historical Returns, Fiscal Year 1998-2018</u>
Total return minus unrealized gains/losses equals realized return



Total return annualized over 34 years is 8.95%
Realized return annualized over 34 years is 10.04%

Balance Sheets

Unaudited (millions of dollars)		December 31, 2018	June 30, 2018
Assets			
Cash and temporary investments	$	**3,971.9**	4,906.1
Receivables, prepaid expenses and other assets		**400.3**	664.1
Investments:			
Marketable debt securities		**12,370.3**	11,546.6
Preferred and common stock		**22,562.8**	26,248.8
Real estate		**5,451.7**	5,460.9
Absolute return		**3,815.3**	5,288.1
Private credit		**1,665.2**	1,311.4
Private equity		**8,146.9**	7,198.3
Infrastructure		**3,460.3**	3,035.3
Total investments		**57,472.5**	60,089.4
TOTAL ASSETS	$	**61,844.7**	65,659.6
Liabilities			
Accounts payable	$	**414.5**	721.8
Income distributable to the State of Alaska		**1,060.5**	43.4
TOTAL LIABILITIES		**1,475.0**	765.2
Fund Balances			
Nonspendable:			
Permanent Fund corpus - contributions and appropriations		**40,373.6**	40,167.4
Not in spendable form - unrealized appreciation on invested assets		**3,362.1**	5,862.6
Total nonspendable		**43,735.7**	46,030.0
Committed:			
General Fund Commitment		**0.0**	2,722.7
Current FY inflation proofing		**985.1**	0.0
Current FY AK Capital Income Fund		**10.9**	0.0
Total committed		**996.0**	2,722.7
Assigned for future appropriations:			
Realized earnings		**14,359.3**	13,739.0
Unrealized appreciation on invested assets		**1,278.7**	2,402.7
Total assigned		**15,638.0**	16,141.7
TOTAL FUND BALANCES		**60,369.7**	64,894.3
TOTAL LIABILITIES AND FUND BALANCES	$	**61,844.7**	65,659.6

Statements of Revenues, Expenditures and Changes in Fund Balances

Unaudited (millions of dollars)		Month ended December 31, 2018	Six months ended December 31, 2018	Fiscal year-end audited June 30, 2018
Revenues				
Interest	$	52.4	267.7	459.4
Dividends		56.2	269.3	640.6
Real estate and other income		13.5	163.5	480.5
Total interest, dividends, real estate and other income		122.1	700.5	1,580.5
Net increase (decrease) in the fair value of investments:				
Marketable debt securities		95.5	(150.3)	(424.6)
Preferred and common stock		(1,931.8)	(3,067.1)	2,362.8
Real estate		(82.8)	(131.5)	65.6
Absolute return		(31.2)	(91.8)	221.7
Private credit		8.7	26.5	62.5
Private equity		(0.8)	750.8	1,599.8
Infrastructure		11.6	163.6	337.4
Derivative Instruments		(115.6)	(26.3)	(19.5)
Currency		(27.0)	(122.6)	(114.7)
Total net increase (decrease) in investments		(2,073.4)	(2,648.7)	4,091.0
TOTAL REVENUES		(1,951.3)	(1,948.2)	5,671.5
Expenditures				
Operating expenditures		(8.5)	(57.4)	(138.8)
Other legislative appropriations		0.0	(2.6)	(7.2)
TOTAL EXPENDITURES		(8.5)	(60.0)	(146.0)
Excess (deficiency) of revenue over expenditures	$	(1,959.8)	(2,008.2)	5,525.5
Other Financing Sources (Uses)				
Transfers in		34.7	206.2	353.1
General Fund commitment		(250.0)	(1,060.5)	0.0
Transfers out		250.0	(1,662.1)	(769.3)
NET CHANGE IN FUND BALANCES		(1,925.1)	(4,524.6)	5,109.3
Fund Balances				
Beginning of period		62,294.8	64,894.3	59,785.1
End of period	$	60,369.7	60,369.7	64,894.3

Statutory Income Calculation

Excess (deficiency) of revenues over (under) expenditures		(1,959.8)	(2,008.2)	5,525.5
Adjustments to bring net income to statutory net income:				
Unrealized (gains) losses		2,146.1	3,624.4	842.3
Alaska Capital Income Fund realized income		(1.2)	(10.8)	(43.4)
STATUTORY NET INCOME	$	185.1	1,605.4	6,324.4

ALASKA PERMANENT FUND
FUND FINANCIAL HISTORY & PROJECTIONS
as of December 31, 2018

APFC ALASKA PERMANENT FUND CORPORATION

Projections extend ten years, and are based on best available information ($ in millions)

	Nonspendable Fund Balance - Principal							Assigned Fund Balance - Earnings Reserve								TOTAL FUND
	FY	FY-Begin Contrib. Balance	Dedicated [1] State Revenues	Inflation Proofing	FY-End Balance Contributions	Unrealized Gain (Loss) FY-End Balance	FY-End Non-spendable Balance	Acct. Net Income [2]	Distributions Div/POMV Transfer [9]	Distributions Inflation Proofing	ACIF	FY-End Balance Realized	Unrealized Gain (Loss) FY-End Balance	FY-End Assigned Balance	FY	FY-End Balance
	09	29,149	651	1,144	30,945	(1,449)	29,496	(6,394)	875	1,144	0 [5]	441	(21)	420	09	29,917
	10	30,944	679	0 [6]	31,624	421	32,045	3,517	858	0 [6]	0 [5]	1,194	16	1,210	10	33,255
	11	31,624	887	533	33,044	4,788	37,832	6,812	801	533	13 [5]	2,016	292	2,308	11	40,140
	12	33,044	915	1,073	35,033	3,220	38,253	(100)	605	1,073	17	1,905	175	2,081	12	40,333
	13	35,033	840	743	36,615	4,184	40,800	4,314	604	743	30	3,487	567	4,054	13	44,853
	14	36,615	779	546	37,941	7,062	45,002	6,848	1,235	546	32	5,237	975	6,211	14	51,214
	15	37,941	600	624	39,165	6,473	45,638	2,384	1,373	624	24	6,147	1,016	7,162	15	52,800
	16	39,165	284	0	39,449	4,750	44,199	398	696 [7]	0 [8]	18	7,649	921	8,570	16	52,769
	17	39,449	365	0	39,814	7,155	46,969	6,676	0	0 [8]	25	10,863	1,952	12,816	17	59,785
	18	39,814	353	0	40,167	5,863	46,030	5,526	726	0 [8]	43	16,461	2,403	18,864	18	64,894
Lo	19	40,167	368	989	41,524	1,258	42,782	(3,522)	2,723	989	21	15,736	477	16,213	19	58,995
Mid	19	40,167	368	989	41,524	5,698	47,222	3,614	2,723	989	27	16,622	2,281	18,903	19	66,125
Hi	19	40,167	368	989	41,524	8,593	50,117	8,743	2,723	989	33	17,508	3,623	21,132	19	71,249
	20	41,524	397	943	42,864	5,813	48,677	4,066	2,933	943	27	16,687	2,263	18,951	20	67,627
	21	42,864	388	973	44,225	5,939	50,165	4,154	3,090	973	27	16,652	2,236	18,888	21	69,053
	22	44,225	379	1,004	45,608	6,062	51,669	4,241	3,091	1,004	27	16,670	2,216	18,886	22	70,555
	23	45,608	387	1,035	47,029	6,197	53,226	4,329	3,254	1,035	27	16,580	2,185	18,764	23	71,990
	24	47,029	405	1,067	48,502	6,339	54,841	4,414	3,361	1,067	27	16,433	2,148	18,580	24	73,421
	25	48,502	440	1,101	50,043	6,486	56,530	4,501	3,432	1,101	27	16,265	2,108	18,373	25	74,903
	26	50,043	492	1,137	51,672	6,639	58,311	4,592	3,505	1,137	27	16,077	2,066	18,143	26	76,454
	27	51,672	536	1,175	53,383	6,797	60,180	4,686	3,578	1,175	27	15,871	2,021	17,892	27	78,071
	28	53,383	585	1,214	55,182	6,959	62,141	4,785	3,652	1,214	27	15,647	1,973	17,620	28	79,761
	Cumulative Totals Proj. for FY19-FY28		4,377	10,638				43,382	32,619	10,638	272					

Assumptions:		Total Return	- Inflation	= Total Real Return		Statutory Return
Lo	FY19	-5.25%	2.44%	-7.69%	Lo	5.00%
Mid	FY19 [3]	5.95%	2.44%	3.51%	Mid	6.40%
Hi	FY19	14.00%	2.44%	11.56%	Hi	7.80%
	FY20-FY28 [4]	6.55%	2.25%	4.30%		6.40%

Notes related to financial history and projections:

[1] Dedicated State Revenues in current and future fiscal years are based on the Fall 2018 Department of Revenue forecast.

[2] Accounting net income is based on United States Generally Accepted Accounting Principles (GAAP).

[3] Current year returns and inflation are based on 2018 Callan capital market assumptions. Actual results will vary.

[4] Future returns are based on 2018 Callan capital market assumptions and median expected returns (the mid case). Actual results will vary.

[5] During FY 2009, the ACIF realized losses of $33.3 million, which are excluded from statutory net income, and are included in the ending unreserved balance as a deficit account. During FY 2010 and FY 2011, the ACIF had realized income of $20.8 and $25.3 million, which is excluded from statutory net income, and served to reduce the FY 2009 deficit.

[6] The statutory inflation calculation for FY 2010 was -.36%; therefore, there was no inflation proofing transfer during FY 2010.

[7] The dividend transfer reported for FY16 was paid out in dividends during FY17.

[8] There was no appropriation for inflation proofing in FY16, FY17 and FY18.

[9] Per AS 37.13.140, beginning in FY19, transfers are based on a percent of market value (POMV) calculation and are to the General Fund. In previous years, transfers were based on an earnings calculation and were to the Dividend Fund.

FY19 POMV Distribution (actual)		
Ending Fund Value (ex Am Hess)		
FY17	$	59,360.6
FY16		52,344.9
FY15		52,375.9
FY14		50,789.4
FY13		44,428.9
Average Value	$	51,860.0
Statutory Distribution	$	2,722.6

FY19 Statutory Dividend Transfer (actual)		
Statutory Net Income		
FY18	$	6,324.4
FY17		3,214.2
FY16		2,198.0
FY15		2,907.0
FY14		3,530.9
Avail for Dist (21%)	$	3,816.6
Statutory Trnsfr Amt	$	1,908.3

FY20 POMV Distribution (actual)		
Ending Fund Value (ex Am Hess)		
FY18	$	64,469.7
FY17		59,360.6
FY16		52,344.9
FY15		52,375.9
FY14		50,789.4
Average Value	$	55,868.1
Statutory Distribution	$	2,933.1

FY20 Statutory Dividend Transfer (projected)		
Statutory Net Income		
FY19	$	3,873.5
FY18		6,324.4
FY17		3,214.2
FY16		2,198.0
FY15		2,907.0
Avail for Dist (21%)	$	3,888.6
Statutory Trnsfr Amt	$	1,944.3

Income Year-to-Date as of December 31, 2018

FY19 Statutory Net Income		
Interest, dividends, real estate & other incom	$	700.5
Realized gains (losses) on the sale of assets		975.7
Less operating expenses		(60.0)
Less AK Capital Inc. Fund realized earnings		(10.8)
	$	1,605.4

FY19 Accounting (GAAP) Net Income		
Statutory net income (loss)	$	1,605.4
Unrealized gains (losses) on invested assets		(3,624.4)
AK Capital Income Fund realized earnings		10.8
	$	(2,008.2)

Cash Flow

APFC ALASKA PERMANENT FUND CORPORATION

Board of Trustees - APFC Transfers - October 1 through December 31, 2018

Type of Transfer	October	November	December	Total
Public Equities	(167,274,035)	(318,313,731)	(601,423,187)	(1,087,010,953)
Fixed Income Plus	18,385,971	(877,555)	(882,468)	16,625,948
Private Equity & Special Opportunities	45,054,029	52,228,028	48,287,725	145,569,781
Real Estate	(7,350,182)	(12,771,571)	5,642,538	(14,479,215)
Infrastructure & Private income	(119,686,572)	293,843,482	133,459,865	307,616,775
Absolute Return	305,991,945	74,503,836	(17,694,817)	362,800,964
Legacy ECIO	(726,238,335)	(526,392,607)	(41,700,000)	(1,294,330,942)
Asset Allocation	680,960,064	461,939,218	510,114,197	1,653,013,479
Net Transfers	**29,842,884**	**24,159,099**	**35,803,853**	**89,805,836**

ALASKA PERMANENT FUND CORPORATION

Board of Trustees - APFC Transfers - October 2018

Description	Asset Allocation	Public Equities	Fixed Income Plus	Pvt. Equity & Spec. Opps.	Real Estate	Infr. & Pvt. income	Absolute Return	Legacy ECIO	Net
State of Alaska & Administrative									
Mineral revenue	44,283,704								44,283,704
AIM STIF interest	831,862								831,862
Commission Recapture proceeds	9,078								9,078
Securities Lending income	95,469								95,469
Class Action proceeds	3,510								3,510
FY19 Appropriation to Dept. of Law	(2,619,100)								(2,619,100)
Corporate Expenses	(12,761,641)								(12,761,641)
Public Equities									
APF Tactical Tilts redemption	166,000,000	(166,000,000)							-
Public Equity Sec Lending income	1,274,035	(1,274,035)							-
Fixed Income Plus									
APF Fixed Income - Agg. funding	(30,000,000)		30,000,000						-
American Homes 4 Rent	45,747		(45,747)						-
APF Fixed Income Plus Cash	10,953,582		(10,953,582)						-
Fixed Income Sec Lending income	614,700		(614,700)						-
Private Equity & Special Opportunities									
Private Equity distributions	36,772,689			(36,772,689)					-
Private Equity capital calls	(78,360,714)			78,360,714					-
Growth Opportunities distributions	20,689,183			(20,689,183)					-
Growth Opportunities capital calls	(24,155,187)			24,155,187					-
Real Estate									
Real Estate distributions	7,585,267				(7,585,267)				-
Real Estate capital calls	(235,085)				235,085				-
Infrastructure & Private income									
Infrastructure distributions	17,058,404					(17,058,404)			-
Infrastructure capital calls	(12,609,432)					12,609,432			-
Private Credit distributions	129,809,169					(129,809,169)			-
Private Credit capital calls	(13,136,209)					13,136,209			-
Private income capital calls	(1,435,360)					1,435,360			-
Absolute Return									
Absolute Return distributions	28,752,634						(28,752,634)		-
Absolute Return capital calls	(334,744,579)						334,744,579		-
Legacy ECIO									
Bridgewater distributions	429,442,980							(429,442,980)	-
AQR distributions	124,795,355							(124,795,355)	-
Goldman Sachs distributions	172,000,000							(172,000,000)	-
Net Transfers - October	**680,960,064**	**(167,274,035)**	**18,385,971**	**45,054,029**	**(7,350,182)**	**(119,686,572)**	**305,991,945**	**(726,238,335)**	**29,842,884**

APFC ALASKA PERMANENT FUND CORPORATION

Board of Trustees - APFC Transfers - November 2018

Description	Asset Allocation	Public Equities	Fixed Income Plus	Pvt. Equity & Spec. Opps.	Real Estate	Infr. & Pvt. income	Absolute Return	Legacy ECIO	Net
State of Alaska & Administrative									
Mineral revenue	35,518,664								35,518,664
AIM STIF interest	820,668								820,668
Commission Recapture proceeds	32,431								32,431
Securities Lending income	165,686								165,686
Class Action income	1,002,723								1,002,723
Corporate expenses	(13,381,077)								(13,381,077)
Public Equities									
Mellon MSCI World ex-USA redemption	75,000,000	(75,000,000)							-
DFA Large Cap redemption	50,000,000	(50,000,000)							-
DFA Small Cap Value redemption	50,000,000	(50,000,000)							-
DFA Small Company redemption	50,000,000	(50,000,000)							-
APF Tactical Tilts redemption	72,088,957	(72,088,957)							-
APF SPDR Yield redemption	9,404,735	(9,404,735)							-
APF SPDR Momentum redemption	4,561,273	(4,561,273)							-
APF SPDR Low Vol redemption	5,854,078	(5,854,078)							-
Public Equity Sec Lending income	1,404,688	(1,404,688)							-
Fixed Income Plus									
APF Fixed Income - Agg. redemption	368		(368)						-
APF High Yield funding	(33,000,000)		33,000,000						-
APF Fixed Income Plus Cash	33,000,000		(33,000,000)						-
Fixed Income Sec Lending income	877,186		(877,186)						-
Private Equity & Special Opportunities									
Private Equity distributions	50,276,096			(50,276,096)					-
Private Equity capital calls	(33,568,071)			33,568,071					-
Growth Opportunities distributions	17,407,986			(17,407,986)					-
Growth Opportunities capital calls	(86,344,038)			86,344,038					-
Real Estate									
Real Estate distributions	27,208,910				(27,208,910)				-
Real Estate capital calls	(14,437,338)				14,437,338				-
Infrastructure & Private income									
Infrastructure distributions	15,001,184					(15,001,184)			-
Infrastructure capital calls	(45,055,068)					45,055,068			-
Private Credit distributions	9,838,576					(9,838,576)			-
Private Credit capital calls	(226,298,180)					226,298,180			-
Private income distributions	1,680,000					(1,680,000)			-
Private income capital calls	(49,009,994)					49,009,994			
Absolute Return									
Absolute Return distributions	3,497,944						(3,497,944)		-
Absolute Return capital calls	(78,001,780)						78,001,780		-
Legacy ECIO									
AQR distributions	327,538,012							(327,538,012)	-
Goldman Sachs distributions	198,854,595							(198,854,595)	-
Net Transfers - November	461,939,218	(318,313,731)	(877,555)	52,228,028	(12,771,571)	293,843,482	74,503,836	(526,392,607)	24,159,099

ALASKA PERMANENT FUND CORPORATION

Board of Trustees - APFC Transfers - December 2018

Description	Asset Allocation	Public Equities	Fixed Income Plus	Pvt. Equity & Spec. Opps.	Real Estate	Infr. & Pvt. income	Absolute Return	Legacy ECIO	Net
State of Alaska & Administrative									
Mineral revenue	22,125,297								22,125,297
AIM STIF interest	1,726,835								1,726,835
Securities Lending income	150,016								150,016
Class Action proceeds	137								137
Mental Health Trust increase	16,883,000								16,883,000
Corporate expenses	(5,081,431)								(5,081,431)
Public Equities									
MCM redemption	150,000,000	(150,000,000)							-
AGI - Large Cap redemption	125,000,000	(125,000,000)							-
CastleArk - Large Cap redemption	125,000,000	(125,000,000)							-
Mellon S&P 400 redemption	75,000,000	(75,000,000)							-
RBC Asset Mgmt redemption	50,000,000	(50,000,000)							-
Eagle Asset Mgmt redemption	75,000,000	(75,000,000)							-
Public Equity Sec Lending income	1,423,187	(1,423,187)							-
Fixed Income Plus									
APF Fixed Income - Agg. funding	(10,800,000)		10,800,000						-
APF High Yield funding	(10,000,000)		10,000,000						-
APF Fixed Income Plus Cash	20,800,000		(20,800,000)						-
Fixed Income Sec Lending income	882,468		(882,468)						-
Private Equity & Special Opportunities									
Private Equity distributions	50,111,804			(50,111,804)					-
Private Equity capital calls	(113,156,634)			113,156,634					-
Growth Opportunities distributions	65,653,530			(65,653,530)					-
Growth Opportunities capital calls	(50,896,425)			50,896,425					-
Real Estate									
Real Estate distributions	7,550,212				(7,550,212)				-
Real Estate capital calls	(13,192,750)				13,192,750				-
Infrastructure & Private income									
Infrastructure distributions	14,068,735					(14,068,735)			-
Infrastructure capital calls	(76,399,091)					76,399,091			-
Private Credit distributions	3,564,531					(3,564,531)			-
Private Credit capital calls	(57,991,624)					57,991,624			-
Private income distributions	1,080,685					(1,080,685)			-
Private income capital calls	(17,783,101)					17,783,101			
Absolute Return									
Absolute Return distributions	20,278,566						(20,278,566)		-
Absolute Return capital calls	(2,583,750)						2,583,750		-
Legacy ECIO									
AQR distributions	41,700,000							(41,700,000)	-
Net Transfers - December	510,114,197	(601,423,187)	(882,468)	48,287,725	5,642,538	133,459,865	(17,694,817)	(41,700,000)	35,803,853

Monthly Performance Report

ALASKA PERMANENT FUND CORPORATION

Board of Trustees - Monthly Performance Report - December 31, 2018

All returns are annualized (for periods greater than one year), gross of fees (before fees) unless otherwise noted, and provided by Callan Associates, Inc.

			(A)	(B)	(C)	(D)	(E)	(F)	(G)
		Market Values as of 12/31/2018*	Returns as of 12/31/2018						
			1 Month	3 Months	FYTD	CYTD	1 Year	3 Years	5 Years
1	**TOTAL FUND ●**	**61,910,095,831**	**-2.81%**	**-5.20%**	**-3.19%**	**-1.10%**	**-1.10%**	**7.58%**	**6.27%**
2	**TOTAL FUND w/o FX Overlay ●**		**-2.80%**	**-5.19%**	**-3.18%**	**-1.07%**	**-1.07%**	**7.59%**	**6.28%**
3	Passive Index Benchmark[1] ●		-4.47%	-8.43%	-6.54%	-6.75%	**-6.75%**	5.02%	3.38%
4	Performance Benchmark[2] ●		-2.70%	-4.97%	-2.44%	-1.54%	-1.54%	**6.90%**	5.26%
5	Total Fund Return Objective[3]		0.10%	0.77%	2.18%	6.91%	6.91%	7.03%	**6.52%**
6	**PUBLIC EQUITY**	**23,190,493,965**	**-7.67%**	**-13.65%**	**-10.90%**	**-11.07%**	**-11.07%**	**6.70%**	**3.82%**
7	**PUBLIC EQUITY w/o FX Overlay**	**23,183,667,673**	**-7.64%**	**-13.62%**	**-10.88%**	**-11.02%**	**-11.02%**	**6.72%**	**3.83%**
8	MSCI ACWI IMI		-7.24%	-13.28%	-9.92%	-10.08%	-10.08%	6.49%	4.17%
9	**INTERNATIONAL EQUITY**	**6,639,781,704**	**-4.31%**	**-11.20%**	**-11.76%**	**-15.42%**	**-15.42%**	**5.85%**	**1.25%**
10	MSCI ACWI IMI EX-US		-4.65%	-11.88%	-11.53%	-14.76%	-14.76%	4.39%	0.85%
11	**GLOBAL EQUITY**	**9,440,029,433**	**-7.85%**	**-13.57%**	**-9.98%**	**-9.41%**	**-9.41%**	**6.23%**	**4.35%**
12	MSCI ACWI IMI		-7.24%	-13.28%	-9.92%	-10.08%	-10.08%	6.49%	4.17%
13	**DOMESTIC EQUITY**	**7,103,468,137**	**-10.18%**	**-15.82%**	**-11.25%**	**-8.78%**	**-8.78%**	**7.78%**	**6.78%**
14	RUSSELL 3000 INDEX		-9.31%	-14.30%	-8.20%	-5.24%	-5.24%	8.97%	7.91%
15	**FIXED INCOME PLUS**	**14,692,207,531**	**0.00%**	**-0.79%**	**-0.15%**	**-1.77%**	**-1.77%**		
16	PUBLIC INCOME BENCHMARK[4]		0.10%	-0.67%	-0.32%	-1.76%	-1.76%		
17	**US FIXED INCOME AGGREGATE**	**4,052,237,882**	**1.67%**	**1.28%**	**1.49%**	**-0.35%**	**-0.35%**	**2.33%**	**2.61%**
18	BB AGGREGATE		1.84%	1.64%	1.65%	0.01%	0.01%	2.06%	2.52%
19	**US INVESTMENT GRADE CORPORATE**	**3,838,986,578**	**1.29%**	**-0.62%**	**0.57%**	**-2.99%**	**-2.99%**	**3.68%**	**3.79%**
20	BB CORPORATE		1.47%	-0.18%	0.79%	-2.51%	-2.51%	3.26%	3.28%
21	**NON US FIXED INCOME**	**1,509,963,576**	**1.15%**	**2.14%**	**2.00%**	**3.37%**	**3.37%**	**3.29%**	**4.02%**
22	BB GLOBAL TREASURY EX-US		1.34%	2.27%	1.91%	3.55%	3.55%	3.52%	4.25%
23	**GLOBAL HIGH YIELD**	**1,534,756,736**	**-2.35%**	**-4.77%**	**-2.39%**	**-2.15%**	**-2.15%**	**6.31%**	**3.30%**
24	BB US HIGH YIELD 2% ISSUER CAP		-2.14%	-4.54%	-2.24%	-2.08%	-2.08%	7.23%	3.84%
25	**EMERGING MARKET DEBT**	**973,371,035**	**1.27%**	**1.00%**	**0.67%**	**-5.20%**	**-5.20%**	**5.54%**	**2.01%**
26	EMD BENCHMARK[5]		1.33%	0.43%	0.67%	-5.15%	-5.15%	5.61%	1.95%
27	**TIPS**	**252,057,911**	**0.45%**	**-0.26%**	**-0.82%**	**-0.85%**	**-0.85%**	**2.07%**	**1.49%**
28	BB US TIPS		0.55%	-0.42%	-1.24%	-1.26%	-1.26%	2.11%	1.69%
29	**REITS**	**1,383,765,689**	**-5.80%**	**-5.42%**	**-5.11%**	**-4.29%**	**-4.29%**	**6.50%**	**6.21%**
30	S&P GLOBAL REIT		-5.93%	-5.79%	-5.85%	-5.93%	-5.93%	2.24%	5.28%
31	**LISTED INFRASTRUCTURE**	**692,359,113**	**-3.47%**	**-4.62%**	**-4.59%**	**-5.63%**	**-5.63%**	**7.51%**	**7.91%**
32	S&P GLOBAL LISTED INFRASTRUCTURE		-3.19%	-5.34%	-7.05%	-10.37%	-10.37%	5.95%	3.21%
33	**FIXED INCOME PLUS CASH**	**454,674,124**	**0.21%**	**0.53%**	**0.96%**	**1.79%**	**1.79%**		
34	90 DAY T-BILLS		0.18%	0.56%	1.06%	1.87%	1.87%		
35	**PRIVATE EQUITY & SPECIAL OPPORTUNITIES ●**	**8,197,315,367**	**N/A**	**6.71%**	**11.86%**	**30.80%**	**30.80%**	**20.43%**	**24.01%**
36	**PRIVATE EQUITY ●**	**4,950,470,977**	**N/A**	**6.33%**	**13.12%**	**28.52%**	**28.52%**	**21.05%**	**20.95%**
37	PRIVATE EQUITY CUSTOM BENCHMARK[6] ●		N/A	3.37%	8.08%	16.77%	16.77%	14.43%	10.10%
38	**SPECIAL OPPORTUNITIES ●**	**3,246,844,390**	**N/A**	**7.28%**	**9.78%**	**33.89%**	**33.89%**	**20.40%**	
39	CAMBRIDGE PRIVATE EQUITY ●		N/A	3.37%	8.08%	16.77%	16.77%	14.10%	
40	**REAL ESTATE ●**	**3,973,707,465**	**N/A**	**0.24%**	**-2.05%**	**1.69%**	**1.69%**	**6.09%**	**8.50%**
41	NCREIF TOTAL INDEX ●		N/A	1.67%	3.51%	7.16%	7.16%	7.75%	9.57%
42	**RE SEPARATE ACCTS & DIRECT**	**3,927,597,424**	**N/A**	**0.13%**	**-2.28%**	**1.25%**	**1.25%**	**5.70%**	**8.21%**
43	**RE FUNDS & CO-INVEST**	**46,110,041**							
44	**INFRA. & PRIVATE INCOME ●**	**5,171,908,661**	**N/A**	**3.81%**	**6.83%**	**13.87%**	**13.87%**	**14.22%**	**12.52%**
45	INFRA. & INCOME OPPORTUNITIES[7] ●		N/A	2.53%	6.19%	4.78%	4.78%	9.61%	7.52%
46	**INFRASTRUCTURE ●**	**2,719,798,569**	**N/A**	**5.56%**	**9.75%**	**20.41%**	**20.41%**	**20.00%**	**17.58%**
47	**PRIVATE CREDIT ●**	**1,453,167,885**	**N/A**	**2.29%**	**4.67%**	**7.81%**	**7.81%**	**7.46%**	**7.13%**
48	**PRIVATE INCOME ●**	**998,942,207**	**N/A**	**1.20%**	**1.85%**	**-2.62%**	**-2.62%**	**8.52%**	
49	**ABSOLUTE RETURN**	**3,436,581,532**	**0.01%**	**-0.86%**	**-0.20%**	**1.54%**	**1.54%**	**3.75%**	**2.79%**
50	ABSOLUTE RETURN BENCHMARK[8]		-2.37%	-5.76%	-5.26%	-4.49%	-4.49%	2.98%	4.15%
51	**ASSET ALLOCATION**	**3,258,410,558**	**-1.70%**	**-4.91%**	**-4.44%**	**-5.63%**	**-5.63%**	**1.35%**	**1.35%**
52	ASSET ALLOCATION BENCHMARK[9]		-1.55%	-2.77%	-1.03%	-0.14%	-0.14%	5.80%	4.61%
53	**APF FI LIQUIDITY**	**-**							
54	**APF ASSET ALLOCATION CASH**	**1,693,831,042**	**0.18%**	**0.53%**	**1.00%**	**1.71%**	**1.71%**	**0.94%**	**0.57%**
55	90 DAY T-BILLS		0.18%	0.56%	1.06%	1.87%	1.87%	1.02%	0.63%
56	**ASSET ALLOCATION OVERLAY**	**1,115,640,950**	**-4.20%**	**-7.99%**	**-5.86%**				
57	Asset Allocation Overlay Benchmark[10]		-4.06%	-8.18%	-5.87%				
58	**LEGACY ECIOS**	**448,938,566**	**-1.59%**	**-8.26%**	**-9.29%**	**-10.73%**	**-10.73%**	**1.44%**	**2.58%**
59	Performance Benchmark ●		-2.70%	-4.97%	-2.44%	-1.54%	-1.54%	6.90%	5.26%

[1] Passive Benchmark is a blended benchmark (60% MSCI All-Country World Index IMI; 20% BB Global Aggregate Index; 10% FTSE EPRA/NAREIT Rental Index; 10% US TIPs) from 9/30/2016 to date. Prior periods are described in Investment Policy.

[2] Performance Benchmark is a blended benchmark (39% MSCI ACWI IMI; 11% NCREIF Total Index (1Q Lagged); 12% Cambridge Private Equity (1Q Lagged); 6% BB US Corporate; 6% BB Aggregate; 5% HFRI Total HFOF Universe; 2% BB US High Yield 2% Issuer Cap; 3% BB US High Yield 2% Issuer Cap (1Q Lagged); 3% 90 Day T-Bills; 4% FTSE Developed Core Infrastructure TRI (1Q Lagged); 2% S&P Global REIT; 2% BB Global Treasury ex-US; 1% S&P Global Listed Infrastructure; 0.5% JPM EMBI Global Div; 0.5% JPM GBI-EM Global Div TRI; 1% BC US TIPS) from 6/30/2017 to date. Prior periods are described in Investment Policy.

[3] Total Fund Return Objective is the Consumer Price Index (All Urban Consumers, U.S. City Average, All Items, Unadjusted Index) plus 5%.

[4] Public Income Benchmark is a blended benchmark (25% BB Aggregate; 25% BB US Corporate; 10% S&P Global REIT; 10% BB US High Yield 2% Issuer Cap; 10% BB Global Treasury ex-US; 5% S&P Global Listed Infrastructure; 5% BB US TIPS; 5% 90 Day T-Bills; 2.5% JPM EMBI Global Div; 2.5% JPM GBI-EM Global Div TRI) from 9/30/2016 to

[5] EMD Benchmark is 50% JPM EMBI Global Diversified and 50% JPM GBI-EM Global Diversified.

[6] Private Equity Custom Benchmark is 60% Russell 3000 (1Q Lagged) and 40% MSCI EAFE (1Q Lagged) through 9/30/2016 then Cambridge Private Equity (1Q Lagged)

[7] Infra. & Income Opportunities Benchmark is a blended benchmark (60% FTSE Developed Core Infrastructure TRI (1Q Lagged); 40% BB US High Yield 2% Issuer Cap (1Q Lagged)) from 9/30/2016 to date.

[8] Absolute Return Benchmark is LIBOR + 4% through 6/30/2013, LIBOR + 6% from 7/1/2013 through 6/30/2015, LIBOR + 5% from 7/1/2015 through 9/30/2016, and HFRI Total HFOF Universe thereafter.

[9] Asset Allocation Benchmark is 100% Performance Benchmark from inception to 9/30/2016, 33.33% 90 Day T-Bills and 66.67% Performance Benchmark from 10/1/2016 through 6/30/2018, and 40% 90 Day T-Bills and 60% Performance Benchmark thereafter.

[10] Asset Allocation Overlay Benchmark is 65% MSCI ACWI IMI Net Unhedged and 35% BB US Agg

* Reported market values represent total fund holdings, which consists of 99.16% APF and 0.84% AMH, and are consistent with the timing of the APF and AMH Financial

● For investments within Private Equity and Growth Opportunities, Real Estate, and Infrastructure, Private Credit, and Income Opportunities asset classes, returns are lagged one (1) quarter. Composites that incorporate these investments as well as associated benchmarks are also lagged one (1) quarter.

		Market Values as of 12/31/2018*	(A) 1 Month	(B) 3 Months	(C) FYTD	(D) CYTD	(E) 1 Year	(F) 3 Years	(G) 5 Years	
			Returns as of 12/31/2018							
60	**PUBLIC EQUITY**	23,190,493,965	-7.67%	-13.65%	-10.90%	-11.07%	-11.07%	6.70%	3.82%	
61	**PUBLIC EQUITY w/o FX Overlay**	23,183,667,673	-7.64%	-13.62%	-10.88%	-11.02%	-11.02%	6.72%	3.83%	
62	MSCI ACWI IMI		-7.24%	-13.28%	-9.92%	-10.08%	-10.08%	6.49%	4.17%	
63	**INTERNATIONAL EQUITY**	6,639,781,704	-4.31%	-11.20%	-11.76%	-15.42%	-15.42%	5.85%	1.25%	
64	MSCI ACWI IMI EX-US		-4.65%	-11.88%	-11.53%	-14.76%	-14.76%	4.39%	0.85%	
65	**Macquarie Emerging Markets**	174,050,541	-4.00%	-7.36%	-7.18%	-11.50%	-11.50%	12.52%	2.64%	
66	**JP Morgan Emerging Markets**	364,171,896	-2.60%	-4.94%	-6.10%	-10.93%	-10.93%	12.90%	4.54%	
67	**Mondrian Investment Partners**	496,176,552	-1.27%	-5.13%	-4.55%	-13.36%	-13.36%	6.64%	0.53%	
68	**SSGA MSCI Emerging Markets**	104,527,057	-2.65%	-7.37%	-8.27%	-14.32%	-14.32%	8.98%	1.67%	
69	**William Blair Emerging Markets**	348,432,402	-2.62%	-6.60%	-10.99%	-16.71%	-16.71%	7.38%	2.63%	
70	**MEASA Fund**	79,408,429	1.12%	-3.29%	-10.86%					Net
71	MSCI Emerging Markets Index		-2.66%	-7.47%	-8.49%	-14.58%	-14.58%	9.25%	1.65%	
72	**DFA Emerging Markets Value**	442,656,910	-1.84%	-7.30%	-5.08%	-10.98%	-10.98%	11.71%		
73	MSCI Emerging Markets Value Index		-2.26%	-6.75%	-3.54%	-10.74%	-10.74%	9.52%		
74	**DFA Emerging Markets Small Cap**	131,986,848	-1.56%	-6.31%	-10.77%	-18.71%	-18.71%	6.37%		
75	MSCI Emerging Markets Small Cap Index		-1.61%	-7.18%	-11.08%	-18.59%	-18.59%	3.68%		
76	**Trustbridge Emerging Markets**	206,841,261	-7.37%	-12.90%	-24.30%	-20.91%	-20.91%	11.03%		
77	MSCI All China Net Total Return Index		-4.95%	-11.20%	-17.66%	-26.65%	-26.65%	-4.95%		
78	**Wells Capital**	138,857,757	-4.32%	-10.99%	-16.88%	-18.40%	-18.40%			
79	MSCI All China Net Total Return Index		-4.95%	-11.20%	-17.66%	-26.65%	-26.65%			
80	**Mellon MSCI World ex-USA**	424,749,035	-5.09%	-12.64%	-11.42%	-13.67%	-13.67%	3.48%	0.66%	
81	**DFA International Large Cap**	432,939,993	-5.23%	-13.62%	-12.48%	-15.17%	-15.17%	3.99%	0.63%	
82	Int'l Passive/Quasi-Passive Custom[1]		-5.17%	-12.78%	-11.64%	-14.09%	-14.09%	3.11%	0.34%	
83	**DFA International Small Cap Value**	294,921,128	-6.63%	-17.48%	-18.25%	-22.70%	-22.70%	2.74%	1.63%	
84	MSCI World ex-USA Small Cap Value Index		-6.02%	-14.80%	-15.05%	-18.38%	-18.38%	4.05%	1.39%	
85	**DFA International Small Company**	307,518,624	-6.24%	-15.97%	-17.06%	-18.85%	-18.85%	4.19%	2.48%	
86	**SSGA International Developed Small Cap**	350,806,158	-6.35%	-16.00%	-16.69%	-17.72%	-17.72%	4.13%	2.56%	
87	MSCI World ex-USA Small Cap Index		-6.41%	-16.16%	-16.88%	-18.07%	-18.07%	3.85%	2.25%	
88	**Acadian Asset Mgmt**	478,733,738	-5.19%	-10.19%	-7.47%	-9.73%	-9.73%	7.92%	4.47%	
89	MSCI Custom Benchmark[2]		-5.25%	-12.05%	-11.03%	-15.06%	-15.06%	3.15%	0.36%	
90	**LSV International Large Cap**	493,314,038	-4.91%	-13.01%	-10.93%	-15.67%	-15.67%	5.21%		
91	**Schroders International Large Cap**	534,241,406	-4.70%	-12.48%	-11.18%	-14.63%	-14.63%	5.37%		
92	MSCI All Country World ex-USA Value Index		-4.48%	-10.71%	-9.17%	-13.97%	-13.97%	4.75%		
93	**Johnston International Large Cap**	343,460,667	-3.99%	-11.46%	-14.19%	-13.05%	-13.05%	7.52%		
94	**JP Morgan International Large Cap**	491,664,952	-5.17%	-13.86%	-14.81%	-16.12%	-16.12%	3.73%		
95	MSCI World ex-USA Growth Index		-5.09%	-13.48%	-12.22%	-13.14%	-13.14%	2.84%		
96	**GLOBAL EQUITY**	9,440,029,433	-7.85%	-13.57%	-9.98%	-9.41%	-9.41%	6.23%	4.35%	
97	MSCI ACWI IMI		-7.24%	-13.28%	-9.92%	-10.08%	-10.08%	6.49%	4.17%	
98	**AQR Global Equity**	1,344,042,575	-8.78%	-15.84%	-12.79%	-13.71%	-13.71%	5.37%	4.59%	
99	**SSGA MSCI World**	165,807,961	-7.56%	-13.31%	-8.92%	-8.39%	-8.39%	6.76%		
100	**CDAM Global Equity**	257,192,713	-8.22%	-16.91%	-12.52%	-16.65%				
101	MSCI World Index		-7.60%	-13.42%	-9.10%	-8.71%	-8.71%	6.30%	4.56%	
102	**SSGA Russell Fundamental Developed Lrg Co**	1,460,404,130	-7.62%	-13.42%	-9.72%	-10.39%	-10.39%	6.65%	3.98%	
103	Russell Fundamental Dvlpd Lrg Co Index		-7.62%	-13.38%	-9.64%	-10.26%	-10.26%	6.88%	4.13%	
104	**Lazard Asset Management**[4]	1,083,116,265	-7.11%	-12.49%	-9.02%	-9.58%	-9.58%	5.39%	4.06%	
105	**McKinley Capital Management**	364,362,912	-7.78%	-16.67%	-13.35%	-12.34%	-12.34%	4.17%	4.65%	
106	**RBA Global Equity**	273,501,062	-8.07%	-13.64%	-10.19%	-9.69%				
107	**WCM Global Equity**	392,048,476	-6.97%	-11.36%	-5.58%	-1.43%				
108	MSCI All-Country World Index		-7.04%	-12.75%	-9.02%	-9.42%	-9.42%	6.60%	4.26%	
109	**APF Tactical Tilts**	2,346,019,369	-8.24%	-13.59%	-11.49%	-11.40%	-11.40%	5.38%		
110	**SSGA MSCI ACWI IMI**	150,764,062	-7.14%	-13.14%	-9.69%	-9.72%	-9.72%			
111	**APF Global Equities**	93,160,879	-6.73%	-12.14%	-8.70%	-9.07%	-9.07%			
112	**Arrowstreet Global Equity**	745,956,899	-6.47%	-12.89%	-6.86%	-6.35%				
113	**Longview Global Equity**	763,650,759	-8.48%	-10.03%	-3.70%					
114	MSCI All-Country World IMI		-7.24%	-13.28%	-9.92%	-10.08%	-10.08%	6.49%		
115	**DOMESTIC EQUITY**	7,103,468,137	-10.18%	-15.82%	-11.25%	-8.78%	-8.78%	7.78%	6.78%	
116	RUSSELL 3000 INDEX		-9.31%	-14.30%	-8.20%	-5.24%	-5.24%	8.97%	7.91%	
117	**Mellon S&P 500**	901,809,036	-9.02%	-13.52%	-6.90%	-4.43%	-4.43%	9.08%	8.45%	
118	S&P 500 Index		-9.03%	-13.52%	-6.85%	-4.38%	-4.38%	9.26%	8.49%	
119	**Mellon FTSE RAFI US Large Cap**	632,014,183	-9.88%	-13.84%	-8.63%	-8.30%	-8.30%	7.88%	6.65%	
120	FTSE RAFI US 1000 Index		-9.90%	-13.83%	-8.59%	-8.26%	-8.26%	7.89%	6.70%	
121	**AGI - Large Cap**	685,994,750	-10.01%	-18.32%	-11.87%	-6.80%	-6.80%	8.27%	8.68%	
122	**SSGA Large Cap**	214,370,398	-8.85%	-14.80%	-7.59%	-1.95%	-1.95%	9.52%	9.45%	
123	**DSM - Large Cap**	644,583,364	-8.12%	-12.97%	-9.96%	-3.80%	-3.80%	9.81%	9.79%	
124	**CastleArk - Large Cap**	175,677,970	-8.71%	-19.06%	-13.20%	-3.47%	-3.47%	11.50%	8.87%	
125	**APF SPDR Yield**	351,109,729	-10.10%	-13.92%	-11.04%	-8.70%	-8.70%			
126	**APF SPDR Momentum**	354,866,983	-10.35%	-17.18%	-13.31%	-12.37%	-12.37%			
127	**APF SPDR Low Vol**	380,704,504	-8.85%	-11.53%	-6.82%	-5.29%	-5.29%			
128	Russell 1000 Growth Index		-8.60%	-15.89%	-8.17%	-1.51%	-1.51%	11.15%	10.40%	
129	Russell 1000 Index		-9.11%	-13.82%	-7.42%	-4.78%	-4.78%	9.09%	8.21%	
130	**Lyrical - Large Cap**	594,884,721	-11.84%	-17.22%	-14.89%	-21.05%	-21.05%	2.96%	3.42%	
131	**SKBA - Large Cap**	324,481,464	-9.34%	-14.58%	-10.72%	-10.27%	-10.27%	8.56%	6.15%	
132	**LSV - Large Cap Value**	826,636,734	-10.97%	-14.32%	-10.26%	-12.11%	-12.11%			
133	Russell 1000 Value Index		-9.60%	-11.72%	-6.69%	-8.27%	-8.27%	6.95%	5.95%	
134	**Mellon S&P 400**	81,674,321	-11.89%	-17.80%	-14.61%	-11.65%	-11.65%	7.44%	5.91%	
135	S&P 400 Index		-11.32%	-17.28%	-14.08%	-11.08%	-11.08%	7.66%	6.03%	
136	**Jennison Associates LLC**	243,715,809	-11.75%	-20.78%	-19.30%	-11.42%	-11.42%	5.77%	4.85%	
137	Russell 2000 Index		-11.88%	-20.20%	-17.35%	-11.01%	-11.01%	7.36%	4.41%	
138	**RBC Asset Mgmt**	104,567,849	-13.84%	-20.53%	-14.40%	-4.07%	-4.07%	7.43%	4.95%	
139	**Eagle Asset Mgmt**	108,759,885	-12.75%	-21.27%	-12.59%	-2.10%	-2.10%	10.53%	7.90%	
140	Russell 2000 Growth Index		-11.68%	-21.65%	-17.33%	-9.31%	-9.31%	7.24%	5.13%	
141	Russell 2000 Index		-11.88%	-20.20%	-17.35%	-11.01%	-11.01%	7.36%	4.41%	
142	**T Rowe Price**	160,006,395	-11.92%	-19.05%	-15.25%	-11.81%	-11.81%	9.80%	4.79%	
143	**Pzena Investment Mgmt**	161,476,344	-13.04%	-19.56%	-20.81%	-12.56%	-12.56%	6.31%	5.87%	
144	Russell 2000 Value Index		-12.09%	-18.67%	-17.36%	-12.86%	-12.86%	7.37%	3.61%	
145	Russell 2000 Index		-11.88%	-20.20%	-17.35%	-11.01%	-11.01%	7.36%	4.41%	
146	**AGI Structured Alpha**	156,133,700	-9.87%	-15.96%	-8.65%	-6.17%	-6.17%			
147	S&P 500 Index		-9.03%	-13.52%	-6.85%	-4.38%	-4.38%			

[1] Int'l Passive/Quasi-Passive Custom Benchmark is MSCI EAFE through 5/26/10 then MSCI World ex US thereafter.

[2] MSCI Custom Blend benchmark is MSCI EAFE TRI through 2/28/11, MSCI World ex-USA TRI through 4/30/2016, then MSCI World ex-USA Value TRI thereafter.

[3] MSCI World ex-USA/MSCI EAFE benchmark is MSCI EAFE TRI through 2/28/11 then MSCI World ex-USA TRI thereafter.

[4] Lazard global equity accounts' annual fees do not include fees paid on imbedded mutual fund positions.

* Reported market values represent total fund holdings, which consists of 99.16% APF and 0.84% AMH, and are consistent with the timing of the APF and AMH Financial Statements.

			(A)	(B)	(C)	(D)	(E)	(F)	(G)	
		Market Values as of 12/31/2018*	Returns as of 12/31/2018							
			1 Month	3 Months	FYTD	CYTD	1 Year	3 Years	5 Years	
148	**FIXED INCOME PLUS**	**14,692,207,531**	**0.00%**	**-0.79%**	**-0.15%**	**-1.77%**	**-1.77%**			
149	PUBLIC INCOME BENCHMARK[1]		0.10%	-0.67%	-0.32%	-1.76%	-1.76%			
150	**US FIXED INCOME AGGREGATE**	**4,052,237,882**	**1.67%**	**1.28%**	**1.49%**	**-0.35%**	**-0.35%**	**2.33%**	**2.61%**	
151	BB AGGREGATE		1.84%	1.64%	1.65%	0.01%	0.01%	2.06%	2.52%	
152	**APF Fixed Income - Aggregate**	**4,052,237,882**	**1.67%**	**1.28%**	**1.49%**	**-0.35%**	**-0.35%**	**2.33%**	**2.61%**	
153	**US INVESTMENT GRADE CORPORATE**	**3,838,986,578**	**1.29%**	**-0.62%**	**0.57%**	**-2.99%**	**-2.99%**	**3.68%**	**3.79%**	
154	BB CORPORATE		1.47%	-0.18%	0.79%	-2.51%	-2.51%	3.26%	3.28%	
155	**APF Corporate Bonds**	**3,838,986,578**	**1.29%**	**-0.62%**	**0.57%**	**-2.99%**	**-2.99%**	**3.68%**	**3.79%**	
156	**NON US FIXED INCOME**	**1,509,963,576**	**1.15%**	**2.14%**	**2.00%**	**3.37%**	**3.37%**	**3.29%**	**4.02%**	
157	BB GLOBAL TREASURY EX-US		1.34%	2.27%	1.91%	3.55%	3.55%	3.52%	4.25%	
158	**Rogge Global Partners**	**358,114,462**	**1.16%**	**1.93%**	**1.73%**	**3.16%**	**3.16%**	**3.42%**	**4.06%**	
159	**APF Global Government Bonds**	**1,151,849,114**	**1.15%**	**2.20%**	**2.10%**	**3.55%**	**3.55%**	**3.29%**	**4.08%**	
160	**GLOBAL HIGH YIELD**	**1,534,756,736**	**-2.35%**	**-4.77%**	**-2.39%**	**-2.15%**	**-2.15%**	**6.31%**	**3.30%**	
161	BB US HIGH YIELD 2% ISSUER CAP		-2.14%	-4.54%	-2.24%	-2.08%	-2.08%	7.23%	3.84%	
162	**Oaktree High Yield**	**567,723,485**	**-2.19%**	**-4.73%**	**-2.49%**	**-2.80%**	**-2.80%**	**5.46%**	**2.76%**	
163	**APF High Yield**	**572,841,021**	**-1.96%**	**-3.89%**	**-1.40%**	**-1.68%**	**-1.68%**			
164	BB US High Yield 2% Issuer Cap Index		-2.14%	-4.54%	-2.24%	-2.08%	-2.08%	7.23%	3.84%	
165	HY Fixed Income Custom Blend[1]		-2.14%	-4.54%	-2.24%	-2.08%	-2.08%	6.83%	4.05%	
166	**Capital Guardian High Yield**	**394,192,230**	**-3.14%**	**-5.81%**	**-3.36%**	**-1.85%**	**-1.85%**	**8.26%**	**4.54%**	
167	Cap Guard Custom Blend[2]		-2.14%	-4.54%	-2.24%	-2.08%	-2.08%	6.75%	4.01%	
168	**EMERGING MARKET DEBT**	**973,371,035**	**1.27%**	**1.00%**	**0.67%**	**-5.20%**	**-5.20%**	**5.54%**	**2.01%**	
169	EMD BENCHMARK[3]		1.33%	0.43%	0.67%	-5.15%	-5.15%	5.61%	1.95%	
170	**Capital Guardian HY EM Gov't**	**630,723,561**	**1.14%**	**1.08%**	**0.47%**	**-5.11%**	**-5.11%**	**5.60%**	**2.04%**	
171	HY Emerging Markets Benchmark[4]		1.33%	0.43%	0.67%	-5.15%	-5.15%	5.65%	1.80%	
172	**APF Emerging Market Debt**	**342,647,474**	**1.50%**	**0.85%**	**1.06%**	**-6.35%**	**-6.35%**			
173	BB EMD Hard Currency AGG		1.32%	-0.49%	0.91%	-3.02%	-3.02%			
174	**TIPS**	**252,057,911**	**0.45%**	**-0.26%**	**-0.82%**	**-0.85%**	**-0.85%**	**2.07%**	**1.49%**	
175	BB US TIPS		0.55%	-0.42%	-1.24%	-1.26%	-1.26%	2.11%	1.69%	
176	**APF TIPS**	**125,271,222**	**0.53%**	**-0.46%**	**-1.20%**	**-1.20%**	**-1.20%**	**2.25%**	**1.73%**	
177	BB U.S. TIPS		0.55%	-0.42%	-1.24%	-1.26%	-1.26%	2.11%	1.69%	
178	**Alaska Permanent Capital Mgmt**	**126,786,689**	**0.38%**	**-0.07%**	**-0.45%**	**-0.18%**	**-0.18%**	**1.89%**	**1.24%**	
179	BB U.S. TIPS 1-10 Year Index		0.41%	-0.05%	-0.47%	-0.25%	-0.25%	1.87%	1.20%	
180	**REITS**	**1,383,765,689**	**-5.80%**	**-5.42%**	**-5.11%**	**-4.29%**	**-4.29%**	**6.50%**	**6.21%**	
181	S&P GLOBAL REIT		-5.93%	-5.79%	-5.85%	-5.93%	-5.93%	2.24%	5.28%	
182	**AEW Global RE Securities**	**510,485,789**	**-5.93%**	**-5.24%**	**-4.72%**	**-3.36%**	**-3.36%**	**3.90%**	**7.31%**	
183	**American Homes 4 Rent**	**16,616,500**	**-4.46%**	**-9.09%**	**-10.05%**	**-8.20%**	**-8.20%**	**5.17%**	**4.14%**	**Net**
184	MSCI US REIT Index		-8.18%	-6.71%	-5.70%	-4.57%	-4.57%	2.88%	7.80%	
185	REIT Benchmark[5]		-5.91%	-5.72%	-5.60%	-4.71%	-4.71%	3.30%	6.54%	
186	**SSGA REITS**	**856,663,400**	**-5.74%**	**-5.45%**	**-5.27%**	**-4.84%**	**-4.84%**			
187	S&P GLOBAL REIT		-5.93%	-5.79%	-5.85%	-5.93%	-5.93%			
188	**LISTED INFRASTRUCTURE**	**692,359,113**	**-3.47%**	**-4.62%**	**-4.59%**	**-5.63%**	**-5.63%**	**7.51%**	**7.91%**	
189	S&P GLOBAL LISTED INFRASTRUCTURE		-3.19%	-5.34%	-7.05%	-10.37%	-10.37%	5.95%	3.21%	
190	**Lazard Listed Infrastructure**	**187,125,678**	**-2.87%**	**-3.26%**	**-3.25%**	**-2.44%**	**-2.44%**	**10.11%**	**12.28%**	
191	FTSE Core Developed Infrastructure (Hedged)		-5.23%	-3.34%	-0.59%	1.84%	1.84%	9.54%	9.05%	
192	**Cohen & Steers Listed Infrastructure**	**140,775,752**	**-5.24%**	**-5.12%**	**-1.30%**	**-0.35%**	**-0.35%**	**9.89%**		
193	FTSE Core Developed Infrastructure Custom		-4.95%	-3.68%	-0.67%	-0.96%	-0.96%	9.35%		
194	**SSGA Listed Infrastructure**	**364,446,816**	**-3.07%**	**-5.12%**	**-6.53%**	**-9.41%**	**-9.41%**			
195	S&P Global Listed Infrastructure		-3.19%	-5.34%	-7.05%	-10.37%	-10.37%			
196	**FIXED INCOME PLUS CASH**	**454,674,124**	**0.21%**	**0.53%**	**0.96%**	**1.79%**	**1.79%**			
197	90 DAY T-BILLS		0.18%	0.56%	1.06%	1.87%	1.87%			
198	**APF Fixed Income Plus Cash**	**454,674,124**	**0.21%**	**0.53%**	**0.96%**	**1.79%**	**1.79%**			
199	**ABSOLUTE RETURN**	**3,436,581,532**	**0.01%**	**-0.86%**	**-0.20%**	**1.54%**	**1.54%**	**3.75%**	**2.79%**	**Net**
200	ABSOLUTE RETURN BENCHMARK		-2.37%	-5.76%	-5.26%	-4.49%	-4.49%	2.98%	4.15%	
201	**ASSET ALLOCATION**	**3,258,410,558**	**-1.70%**	**-4.91%**	**-4.44%**	**-5.63%**	**-5.63%**	**1.35%**	**1.35%**	
202	ASSET ALLOCATION BENCHMARK[6]		-1.55%	-2.77%	-1.03%	-0.14%	-0.14%	5.80%	4.61%	
	APF FI LIQUIDITY	**-**								
203	**APF ASSET ALLOCATION CASH**	**1,693,831,042**	**0.18%**	**0.53%**	**1.00%**	**1.71%**	**1.71%**	**0.94%**	**0.57%**	
204	90 DAY T-BILLS		0.18%	0.56%	1.06%	1.87%	1.87%	1.02%	0.63%	
205	**ASSET ALLOCATION OVERLAY**	**1,115,640,950**	**-4.20%**	**-7.99%**	**-5.86%**					
206	Asset Allocation Overlay Benchmark[7]		-4.06%	-8.18%	-5.87%					
207	**LEGACY ECIOS**	**448,938,566**	**-1.59%**	**-8.26%**	**-9.29%**	**-10.73%**	**-10.73%**	**1.44%**	**2.58%**	
208	Performance Benchmark ●		-2.70%	-4.97%	-2.44%	-1.54%	-1.54%	6.90%	5.26%	
209	**Bridgewater**	**405,495,498**	**-1.64%**	**-4.19%**	**-4.76%**	**-2.92%**	**-2.92%**	**4.18%**	**4.31%**	
210	CPI + 5%		0.10%	0.77%	2.18%	6.91%	6.91%	7.03%	6.52%	

[1] HY Fixed Income Custom Blend is BB Global High Yield Corporate Index through 7/31/2016 then BB US High Yield 2% Issuer Cap Index thereafter.
[2] Cap Guard Custom Blend is BB US HY 2% Issuer Cap through 12/31/2006, then BB Global HY Corporate Hedged through 3/31/2017, and BB US HY 2% Issuer Cap thereafter.
[3] Private Equity Custom Benchmark is 60% Russell 3000 (1Q Lagged) and 40% MSCI EAFE (1Q Lagged) through 9/30/2016 then Cambridge Private Equity (1Q Lagged) thereaft
[4] HY Emerging Markets Benchmark is 50% JP Morgan Emerging Markets Bond Index Global and 50% JP Morgan Government Bond Index-Emerging Markets Global Diversified.
[5] REIT Benchmark is UBS Global Real Estate Investors Index through 12/31/2014 then FTSE EPRA/NAREIT Developed Rental Index thereafter.
[6] Absolute Return Benchmark is LIBOR + 4% through 6/30/2013, LIBOR + 6% from 7/1/2013 through 6/30/2015, LIBOR + 5% from 7/1/2015 through 9/30/2016, and HFRI Total HFOF Universe thereafter.
[7] Asset Allocation Overlay Benchmark is 65% MSCI ACWI IMI Net Unhedged and 35% BB US Agg

* Reported market values represent total fund holdings, which consists of 99.16% APF and 0.84% AMH, and are consistent with the timing of the APF and AMH Financial Statements.

● For investments within Private Equity and Growth Opportunities, Real Estate, and Infrastructure, Private Credit, and Income Opportunities asset classes, returns are lagged one (1) quarter. Composites that incorporate these investments as well as associated benchmarks are also lagged one (1) quarter.

#		Market Values as of 12/31/2018*	(A)	(B)	(C)	(D)	(E)	(F)	(G)	
				Returns as of 12/31/2018						
				3 Months	FYTD	CYTD	1 Year	3 Years	5 Years	
211	**PRIVATE EQUITY & SPECIAL OPPORTUNITIES ●**	8,197,315,367		6.58%	11.64%	30.18%	30.18%	19.74%	23.22%	
212	CAMBRIDGE PRIVATE EQUITY ●			3.37%	8.08%	16.77%	16.77%	14.10%	13.77%	
213	**PRIVATE EQUITY ●**	4,950,470,977		6.12%	12.77%	27.52%	27.52%	19.99%	19.84%	
214	PRIVATE EQUITY CUSTOM BENCHMARK ●			3.37%	8.08%	16.77%	16.77%	14.43%	10.10%	
215	Pathway Capital Mgmt - Direct PE	1,293,612,039		10.07%	19.51%	41.40%	41.40%	26.83%	22.38%	Various
216	HarbourVest Legacy	1,070,712,586		4.46%	11.01%	27.87%	27.87%	21.00%	21.77%	Net
217	Pathway Capital Mgmt - PE	2,289,247,883		6.21%	12.04%	25.15%	25.15%	17.49%	17.84%	Net
218	BlackRock Co-investment Funds	217,060,852		9.37%	21.94%	32.00%	32.00%	13.67%		Net
219	Rapid Partners LP	47,053,364		-31.51%	-39.15%	-44.60%	-44.60%	-5.01%		Net
220	Kelso Hammer LP	32,784,252		-3.30%	4.61%	10.77%	10.77%			
221	**SPECIAL OPPORTUNITIES ●**	3,246,844,390		7.28%	9.78%	33.89%	33.89%	20.26%		Net
222	CAMBRIDGE PRIVATE EQUITY ●			3.37%	8.08%	16.77%	16.77%	14.10%		
223	**REAL ESTATE ●**	3,973,707,465		0.11%	-2.29%	1.24%	1.24%	5.70%	8.21%	
224	NCREIF TOTAL INDEX ●			1.67%	3.51%	7.16%	7.16%	7.75%	9.57%	
225	**RE SEPARATE ACCTS & DIRECT**	3,927,597,424		0.13%	-2.28%	1.25%	1.25%	5.70%	8.21%	Net
226	L&B Realty Advisors	2,086,207,204		-0.12%	1.01%	2.81%	2.81%	6.90%	10.15%	Net
227	Sentinel Real Estate	908,743,479		-1.45%	-12.08%	-8.63%	-8.63%	0.36%	4.52%	Net
228	LaSalle Investment Mgmt-United Kingdom	227,778,087		-1.26%	-7.35%	0.29%	0.29%	-15.38%		Net
229	Lincoln Industrial	99,196,816		4.61%	8.15%	18.73%	18.73%	15.20%		Net
230	CB Richard Ellis - Europe	149,708,594		2.09%	-1.33%	7.82%	7.82%	19.44%		Net
231	CS Capital	455,963,244		3.67%	5.72%	12.69%	12.69%			Net
232	**RE FUNDS & CO-INVEST**	46,110,041								Net
233	HIG EUROPE RE II	20,430,418								Net
234	HEITMAN CAPITAL	20,000,000								Net
235	HARBERT EUROP RE V	5,679,623								Net
236	**INFRA. & PRIVATE INCOME ●**	5,171,908,661		3.80%	6.82%	13.86%	13.86%	14.21%	12.51%	
237	INFRA. & INCOME OPPORTUNITIES ●			2.53%	6.19%	4.78%	4.78%	9.61%	7.52%	
238	**INFRASTRUCTURE ●**	2,719,798,569		5.56%	9.75%	20.41%	20.41%	20.00%	17.58%	Net
239	FTSE DEVELOPED CORE INFRA. TRI ●			2.61%	8.03%	5.85%	5.85%	10.49%	8.76%	
240	GIP	199,104,885		7.03%	8.98%	13.98%	13.98%	34.92%	36.13%	Net
241	GIP II	406,904,240		4.45%	8.98%	16.27%	16.27%	17.68%	19.95%	Net
242	Gateway IFR	271,768,594		-2.38%	-6.59%	0.20%	0.20%	8.44%	-0.27%	Net
243	G Sachs	268,477,416		3.81%	8.70%	36.79%	36.79%	23.89%	21.90%	Net
244	EQT II	41,663,330		0.44%	3.90%	10.68%	10.68%	22.89%	14.08%	Net
245	GIP II Co-Invest 2	104,487,775		13.95%	15.32%	27.29%	27.29%	29.14%	22.93%	Net
246	ACTIS Energy 3	43,263,157		-3.66%	-8.54%	-6.12%	-6.12%	23.04%		Net
247	LS Power III	178,524,018		15.36%	28.69%	36.64%	36.64%	22.57%		Net
248	North Haven	240,516,050		2.39%	5.90%	10.66%	10.66%	14.26%		Net
249	GIP III	380,393,496		8.11%	17.11%	18.31%	18.31%			Net
250	GIP III Canary	125,975,407		9.99%	30.57%	42.59%	42.59%			Net
251	CIM Fund II	78,477,334		6.59%	9.50%	10.35%	10.35%			Net
252	IFR ACTIS Energy 4	33,281,602		4.55%	8.72%	9.05%	9.05%			Net
253	IFR Meridiam III	311,788		N/A	N/A					Net
254	IFR GIP III Zenith	100,978,018		-0.02%	-0.06%					Net
255	IFR ENCAP FM IV	6,024,594		-5.77%	-14.50%					Net
256	IFR INFRARED V	24,042,955		-2.99%	-3.28%					Net
257	IFR NHIP II Bison	53,112,742		4.50%						Net
258	IFR GIP III Stetson	60,385,818								Net
259	North Haven India	1,072,200								Net
260	IFR EFM Moda	37,649,207								Net
261	IFR LS Power IV	218,501								Net
262	IFR KKR Infrastructure III	13,165,441								Net
263	IFR KKR Starlight II	50,000,000								Net
264	FTSE Core Developed Infrastructure TRI			2.61%	8.03%	5.85%	5.85%	10.49%	8.76%	
265	**PRIVATE CREDIT ●**	1,453,167,885		2.29%	4.67%	7.81%	7.81%	7.46%	7.13%	Net
266	BB US HIGH YIELD 2% ISSUER CAP ●			2.40%	3.46%	3.05%	3.05%	8.15%	5.55%	
267	**PRIVATE INCOME ●**	998,942,207		1.19%	1.83%	-2.71%	-2.71%	8.33%		Net
268	American Homes 4 Rent II	154,223,117		-6.17%	-3.89%	-9.16%	-9.16%	5.99%		Net
269	Twin Creeks Timber	96,427,823		0.16%	0.14%	0.10%	0.10%			Net
270	Athyrium III	11,068,947		0.68%	1.90%	3.60%				Net
271	Generate Capital	93,050,824		9.64%	10.92%	10.31%				Net
272	Broadriver III	4,629,114		-14.16%	26.41%					Net
273	Generate Capital II	25,065,862		9.58%						Net
274	APF ADAC	595,026,520		2.24%						Net
275	Activate Capital	19,450,000								Net

* Reported market values represent total fund holdings, which consists of 99.16% APF and 0.84% AMH, and are consistent with the timing of the APF and AMH Financial Statements.

● For investments within Private Equity and Growth Opportunities, Real Estate, and Infrastructure, Private Credit, and Income Opportunities asset classes, returns are lagged one (1) quarter. Composites that incorporate these investments as well as associated benchmarks are also lagged one (1) quarter.

Strategic and Tactical Moves

APFC ALASKA PERMANENT FUND CORPORATION
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907.796.1500 | apfc.org

Board Report on Tactical and Strategic Manager Actions
10/1/2018 through 12/31/2018

<u>Private Equity and Special Opportunities</u>

Tactical Changes Implemented:

Fund Commitments closed in Fiscal Q2:

$50 million to Arch X/Arch X Overage
$25 million to Lightspeed China Partners IV/Select I
$20 million to Harvest VIII
$65 million to Boyu IV
<u>$50 million</u> to Altitude III Side Fund*
$210 million

Direct Investments and co-investments closed in Fiscal Q2:

$23 million in CCS/CMGC
$25 million in Netskope
$100 million in Cranemere HoldCo (funding over time)
$50 million in HUB International
<u>$15 million</u> in Rubrik Series E (follow on investment for APFC)
$213 million

Distributions in Fiscal Q2:

$46.1 million from Riverstone Energy
$19.9 million from Vestar VI
$17.6 million from CL AK Advisory (Juno Therapeutics)
<u>$316.2 million</u> from other miscellaneous
$399.8 million

Strategic Changes Implemented:

None

Private Income

Tactical Changes Implemented:

Fund Commitments closed in Q2:

$500.0 million to Global Infrastructure Partners IV
$200.0 million funded commitment to King Street Capital
$175.0 million to EQT Infrastructure IV
$100.0 million to TSSP Capital Solutions
$75.0 million to Oaktree Power Opportunities Fund V
$75.0 million to Crestline Specialty Lending Fund II
$75.0 million to Permira Credit Solutions IV
$75.0 million to Energy Spectrum Partners VIII
$50.0 million to Atalaya Special Opportunities Fund VII
$25.0 million to Activate Capital Partners
$1350.0 million

Direct Investments/Co-Investments closed in Q2:

$20.0 million ADAC Co-Investment with Audax Group
$15.0 million ADAC Co-Investment with LBC Credit Partners
$10.0 million ADAC Co-Investment with Audax Group
$45.0 million

Strategic Changes Implemented:

None

Absolute Return

Tactical Changes Implemented:

$334.0 million transfer of Systematic Macro manager from Asset Allocation into Absolute Return Portfolio
$100.0 million to Technology Sector Long/Short Equity Manager
$25.0 million incremental to Market Neutral Equity Manger
$25.0 million incremental to Financial Sector Market Neutral Equity Manager
$50.0 million incremental to Hedged Event Driven Manager
$534.0 million

Strategic Changes Implemented:

None

Public Equity

Tactical Changes Implemented:

In line with the Strategy to reduce the Fund's overweight to Public Equities and bring it in line with the Policy weight of 38%, we redeemed $1.05 billion ($825mm from external managers and $225mm from the In-house tactical account) during the December quarter. The details are as follows:

Nov 15 – 23: Redeemed

$50 million DFA INTL LC
$50 million DFA INTL SC
$50 million DFA INTL SCV
$150 million

Nov 6 – 9: Redeemed

$75 million MCM World Ex US

Dec 17-18: Redeemed

$150 million Mckinley Global
$125 million AGI US LCG
$125 million CastleArk US LCG
$75 million Eagle US SCG
$50 million RBC US SCG
$75 million MCM S&P 400
$600 million

Oct – Nov:

$225 million Tactical Tilt Account

We should note that the Fund has been reducing the overweight to Public Equities since December 2017 with over $2.0 billion redeemed by Jan, 2018.

Strategic Changes Implemented:

None

Asset Allocation

Tactical Changes Implemented:

- Given the increased volatility in the market going forward, the Fund has been increasing its holdings to unencumbered cash, cash equivalents, and converting assets to a more liquid form of securities such as futures to more efficiently manage liquidity. This quarter the Fund liquidity activity saw $2.8 billion in inflows and around $1.6 billion outlflows to fund new investments, transfer to General Fund, and meet other obligations.

Strategic Changes Implemented:

- The Fund strategy over a few years has been to keep most of its excess cash invested in the market. Given the Fund's increased future funding needs the Fund has been increasing its holdings to unencumbered cash towards its normal target of around 2% of the Fund. Proceeds have come from opportunistic rebalancing from Equities and Fixed Income as markets have allowed Staff to capitalize gains.
- Staff received approximately $850 mm from the redemption of the ECIO program.

Investment Management Fee Report

APFC ALASKA PERMANENT FUND CORPORATION

Quarterly Investment Management Fees

	Quarter Ended				YTD		Quarter Ended								YTD	
	12/31/2018		9/30/2018		FY2019		6/30/2018		3/31/2018		12/31/2017		9/30/2017		FY2018	
Transition Management [a]	-		-		-		1,467,000		-		562,000		-		2,029,000	
Non-Domestic Equity & FI Managers	431,500		449,000		880,500		423,000		670,000		735,000		597,000		2,425,000	
Real Estate Advisors	8,078,000		7,465,000		15,543,000											
Real Estate Funds	1,077,000		1,051,000		2,128,000											
Real Estate [b][d]	9,155,000		8,516,000		17,671,000		9,938,000		7,761,000		8,311,000		6,281,000		32,291,000	
Abs. Return, Mezz. & Distressed Debt [c]	4,425,000		3,350,000		7,775,000		5,154,000		4,452,000		4,840,000		4,418,000		18,864,000	
Infrastructure	5,820,000		5,460,000		11,280,000		5,544,000		7,682,000		5,851,000		4,779,000		23,856,000	
Public Equity	-		650,000		650,000		76,000		-		793,000		493,000		1,362,000	
Private Equity Management Fees	21,977,000		21,898,000		43,875,000											
Private Equity Carried Interest Paid	21,598,000		22,457,000		44,055,000											
Private Equity [d]	43,575,000		44,355,000		87,930,000		39,621,000		51,890,000		51,674,000		54,081,000		197,266,000	
		BPS		**BPS**		**BPS**		**BPS**		**BPS**		**BPS**		**BPS**		**BPS**
Fees Funded by Investments	**63,406,500**	**10**	**62,780,000**	**10**	**126,186,500**	**21**	**62,223,000**	**10**	**72,455,000**	**11**	**72,766,000**	**11**	**70,649,000**	**11**	**278,093,043**	**43**
Fees Funded by Appropriation	**21,085,000**	**3**	**25,243,000**	**4**	**46,328,000**	**8**	**27,788,000**	**4**	**39,831,000**	**6**	**25,202,000**	**4**	**26,127,000**	**4**	**118,948,018**	**18**
APFC Corporate Expenses	**6,034,000**	**1**	**5,423,000**	**1**	**11,457,000**	**2**	**6,662,000**	**1**	**7,627,000**	**1**	**4,909,000**	**1**	**4,391,000**	**1**	**23,589,004**	**4**
TOTAL Investment Management Fees	**90,525,500**		**93,446,000**		**183,971,500**		**96,673,000**		**119,913,000**		**102,877,000**		**101,167,000**		**420,630,065**	
Assets Under Management	**60,879,996,000**		**64,440,887,000**		**60,879,996,000**		**65,404,093,000**		**65,118,515,000**		**64,527,103,000**		**62,043,958,000**		**65,404,093,000**	
Total Fees (Basis Points)	**15**		**15**		**30**		**15**		**18**		**16**		**16**		**64**	

Notes:

[a] Commissions and futures overlay fees only (if applicable, including commissions paid to third party brokers); excludes taxes and other implementation costs.

[b] Includes accrued but unpaid real estate advisor incentive fees.

[c] Fund-of-Fund structures include only fund manager fees, not underlying partnership fees.

[d] Beginning with the quarter ended 6/30/17, estimates of management fees for private equity and real estate investments accessed through external managers are included.

FY19 Budget Report

ALASKA PERMANENT FUND CORPORATION

Budget-to-Actual Report: July 1 through December 31, 2018

Corporate Operations	Budget	Expenditures	Remaining Budget
Personal Services	$ 11,861,201	$ 4,045,129	$ 7,816,072
Staff	11,833,661	4,038,459	7,795,202
Board: Honoraria	27,540	6,670	20,870
Travel	1,203,200	239,873	963,327
Staff	946,077	192,876	753,201
Trustees	45,623	2,799	42,824
Moving/Non-Employee	211,500	44,198	167,302
Contractual Services	4,174,899	1,923,564	2,251,335
Audit, Legal, Consulting	435,683	141,295	294,388
Public Communications	146,500	91,847	54,653
Board Support and Meetings	56,350	34,510	21,840
Information Technology	1,696,564	403,368	1,293,196
HR and Recruitment	62,824	43,001	19,823
Training/Education	186,620	28,209	158,411
Office Support	925,358	680,845	244,513
Capital Project: Renovation	665,000	500,490	164,510
Commodities	435,300	99,308	335,992
Equipment	400,000	167,673	232,327
Corporate Operations Total	**$ 18,074,600**	**$ 6,475,547**	**$ 11,599,053**

Investment Management	Budget	Expenditures	Remaining Budget
Investment Systems	$ 5,300,415	$ 4,351,555	$ 948,860
Investment Due Diligence	7,178,200	2,256,633	4,921,567
Custody Fees	1,500,000	705,462	794,538
Investment Manager Fees	136,520,085	46,327,838	90,192,247
Public Equities	82,493,617	25,982,217	56,511,400
Fixed Income	13,116,245	5,256,460	7,859,785
Alternative Assets	40,910,223	15,089,161	25,821,062
Investment Management Total	**$ 150,498,700**	**$ 53,641,488**	**$ 96,857,212**
Legislative Appropriation	**$ 8,758,400**	**$ 2,619,100**	**$ 6,139,300**
Capital Project: Renovation	**$ 4,050,000**	**$ 1,001,265**	**$ 3,048,735**
Total Appropriation	**$ 181,381,700**	**$ 63,737,400**	**$ 117,644,300**

Budget to Actual Report FY19

Budget to Actual Report FY 2019

Including All FY 2019 Activity Through 12/31/2018

For All Profit Centers Combined

		Budget	Actuals	Encumbrances	Actual plus Encumbrances	Budget Remaining
Operating Budget						
Personal Services						
Staff						
50000	Salaries	8,067,694.00	2,829,423.47	0.00	2,829,423.47	5,238,270.53
50010	Benefits	3,729,990.00	1,199,611.17	0.00	1,199,611.17	2,530,378.83
Staff Subtotal		11,797,684.00	4,029,034.64	0.00	4,029,034.64	7,768,649.36
Interns						
50500	Salary - Intern	32,277.00	8,616.64	0.00	8,616.64	23,660.36
50510	Benefits - Intern	3,700.00	807.38	0.00	807.38	2,892.62
Interns Subtotal		35,977.00	9,424.02	0.00	9,424.02	26,552.98
Board						
50600	Salary - Board	25,000.00	6,200.00	0.00	6,200.00	18,800.00
50610	Benefits - Board	2,540.00	469.96	0.00	469.96	2,070.04
Board Subtotal		27,540.00	6,669.96	0.00	6,669.96	20,870.04
Personal Services Total		**11,861,201.00**	**4,045,128.62**	**0.00**	**4,045,128.62**	**7,816,072.38**
Travel						
Staff						
51000	Staff: Alaska Travel	46,610.00	31,317.34	0.00	31,317.34	15,292.66
51010	Staff: US/Canada Travel	716,767.00	104,327.29	0.00	104,327.29	612,439.71
51020	Staff: International Travel	182,700.00	57,231.32	0.00	57,231.32	125,468.68
Staff Subtotal		946,077.00	192,875.95	0.00	192,875.95	753,201.05
Board						
51210	Board: Alaska Travel	21,683.00	2,002.49	0.00	2,002.49	19,680.51
51220	Board: US/Canada Travel	23,940.00	796.27	0.00	796.27	23,143.73
Board Subtotal		45,623.00	2,798.76	0.00	2,798.76	42,824.24
Moving/Non Employee						
51300	Moving - Trans/Per Diem	60,000.00	4,625.26	0.00	4,625.26	55,374.74
51320	Shipment of Personal Property	106,500.00	9,442.90	0.00	9,442.90	97,057.10
51400	Trans/Per Diem Non Employees	45,000.00	29,693.34	436.68	30,130.02	14,869.98
Moving/Non Employee Subtotal		211,500.00	43,761.50	436.68	44,198.18	167,301.82
Travel Total		**1,203,200.00**	**239,436.21**	**436.68**	**239,872.89**	**963,327.11**
Contractual Services						
Expenses						
52723	Commissioner's Office	56,926.00	0.00	57,200.00	57,200.00	-274.00
52724	Inter-agency Safety (Parking)	130.00	0.00	100.00	100.00	30.00
52726	Admin Services	30,288.00	0.00	33,000.00	33,000.00	-2,712.00
Expenses Subtotal		87,344.00	0.00	90,300.00	90,300.00	-2,956.00
Staff						
52721	Inter-agency Human Resources	32,824.00	0.00	32,950.00	32,950.00	-126.00
Staff Subtotal		32,824.00	0.00	32,950.00	32,950.00	-126.00

Garbage In = Garbage Out. You MUST run the " Contract / PO Data Mis-Match" report and the "Contract Date Audit" and fix any errors PRIOR to running this "Budget to Actual Report." Complete instructions on how to fix errors are included on each audit report.

Budget to Actual Report FY 2019

Including All FY 2019 Activity Through 12/31/2018

For All Profit Centers Combined

		Budget	Actuals	Encumbrances	Actual plus Encumbrances	Budget Remaining
Professional Services						
52100	Annual Audit	152,000.00	0.00	0.00	0.00	152,000.00
52110	Auditor Consulting	10,000.00	0.00	0.00	0.00	10,000.00
52490	Consulting Other	832,270.00	630,884.66	0.00	630,884.66	201,385.34
52510	Legal Fees Corp Matters	75,000.00	0.00	0.00	0.00	75,000.00
52520	DOL Legal	30,000.00	8,417.23	1,582.77	10,000.00	20,000.00
Professional Services Subtotal		1,099,270.00	639,301.89	1,582.77	640,884.66	458,385.34
Public Educ./Info. Progra						
52600	Communications Program	102,000.00	12,786.79	73,375.00	86,161.79	15,838.21
Public Educ./Info. Program Subtotal		102,000.00	12,786.79	73,375.00	86,161.79	15,838.21
IT Services						
52700	IT Consulting Services	342,283.00	41,572.00	196,143.30	237,715.30	104,567.70
52704	MIS System Services	500,000.00	403.45	220.43	623.88	499,376.12
53810	Netwk/Server Software Lic/Mnt.	779,281.00	145,908.27	19,120.72	165,028.99	614,252.01
IT Services Subtotal		1,621,564.00	187,883.72	215,484.45	403,368.17	1,218,195.83
Communications						
53100	Phone/Fax Lines/Toll/Cell	100,000.00	10,971.98	11,828.02	22,800.00	77,200.00
53110	State EPR Charge	50,000.00	0.00	0.00	0.00	50,000.00
53120	Tele/Videoconferencing	50,000.00	2,225.12	2,774.76	4,999.88	45,000.12
53140	Mobile Devices	20,000.00	10,740.47	13,599.63	24,340.10	-4,340.10
Communications Subtotal		220,000.00	23,937.57	28,202.41	52,139.98	167,860.02
Investment Systems						
Investment Systems Subtotal		0.00	0.00	0.00	0.00	0.00
Postage/Transportation						
53300	Inter-agency Mail	4,000.00	0.00	4,000.00	4,000.00	0.00
53320	Delivery Services	2,300.00	536.71	629.17	1,165.88	1,134.12
53325	Postage	250.00	50.00	0.00	50.00	200.00
Postage/Transportation Subtotal		6,550.00	586.71	4,629.17	5,215.88	1,334.12
Advertising/Printing/Bind						
53440	Recruitment Notices	30,000.00	10,050.76	0.00	10,050.76	19,949.24
53500	Communications Advert/Print	44,500.00	5,685.00	0.00	5,685.00	38,815.00
Advertising/Printing/Binding Subtotal		74,500.00	15,735.76	0.00	15,735.76	58,764.24
Repairs/Maintenance						
53600	Office Furniture/Other Repair	5,000.00	792.66	0.00	792.66	4,207.34
53610	Copier/FAX Maintenance	13,500.00	1,858.04	2,491.96	4,350.00	9,150.00
53650	IT Equipment Repair	75,000.00	5,151.03	0.00	5,151.03	69,848.97
Repairs/Maintenance Subtotal		93,500.00	7,801.73	2,491.96	10,293.69	83,206.31
Leases						
53700	Office Rent/Lease	523,300.00	252,523.14	252,523.14	505,046.28	18,253.72
53710	Records Retention Storage	3,000.00	1,728.96	698.10	2,427.06	572.94
53720	Copier Lease	10,000.00	2,571.96	3,011.60	5,583.56	4,416.44
53790	Other Rent/Leases	2,000.00	450.00	450.00	900.00	1,100.00
Leases Subtotal		538,300.00	257,274.06	256,682.84	513,956.90	24,343.10
Training/Education						
53900	Training & Conferences	186,620.00	21,717.49	6,491.49	28,208.98	158,411.02

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Budget to Actual Report FY 2019

Including All FY 2019 Activity Through 12/31/2018

For All Profit Centers Combined

		Budget	Actuals	Encumbrances	Actual plus Encumbrances	Budget Remaining
Training/Education Subtotal		186,620.00	21,717.49	6,491.49	28,208.98	158,411.02
Meeting Expenses						
53920	Meeting Room/Equipment Rental	4,000.00	1,674.00	0.00	1,674.00	2,326.00
53930	Catering/Food/Coffee Fund	18,350.00	10,941.47	0.00	10,941.47	7,408.53
53940	Meeting Transcription	33,000.00	18,138.25	0.00	18,138.25	14,861.75
53990	Other Meeting Expenses	1,000.00	3,756.11	0.00	3,756.11	-2,756.11
Meeting Expenses Subtotal		56,350.00	34,509.83	0.00	34,509.83	21,840.17
Other						
52722	Inter-agency Insurance	4,964.00	0.00	3,000.00	3,000.00	1,964.00
53995	Other Misc Expenses	49,700.00	5,028.78	910.00	5,938.78	43,761.22
Other Subtotal		54,664.00	5,028.78	3,910.00	8,938.78	45,725.22
State Support Services						
52720	Inter-agency Financial	1,413.00	0.00	900.00	900.00	513.00
State Support Services Subtotal		1,413.00	0.00	900.00	900.00	513.00
Contractual Services Total		**4,174,899.00**	**1,206,564.33**	**717,000.09**	**1,923,564.42**	**2,251,334.58**
Commodities						
Commodities						
53400	Subscriptions	32,300.00	9,613.20	4,199.42	13,812.62	18,487.38
55100	Office Supplies	17,000.00	2,999.39	117.06	3,116.45	13,883.55
55400	IT Supplies (FKA commodities)	75,000.00	2,747.42	1,599.80	4,347.22	70,652.78
55450	Workstation Equipment	310,000.00	71,578.10	6,453.96	78,032.06	231,967.94
55600	Office Furniture/Equipment	1,000.00	0.00	0.00	0.00	1,000.00
Commodities Subtotal		435,300.00	86,938.11	12,370.24	99,308.35	335,991.65
Commodities Total		**435,300.00**	**86,938.11**	**12,370.24**	**99,308.35**	**335,991.65**
Equipment						
Equipment						
55475	Network/Server Equip. > $5 K	400,000.00	167,673.36	0.00	167,673.36	232,326.64
Equipment Subtotal		400,000.00	167,673.36	0.00	167,673.36	232,326.64
Equipment Total		**400,000.00**	**167,673.36**	**0.00**	**167,673.36**	**232,326.64**
Operating Budget Total		**18,074,600.00**	**5,745,740.63**	**729,807.01**	**6,475,547.64**	**11,599,052.36**
Invmt Mgt Fees Budget						
Contractual Services						
Professional Services						
Professional Services Subtotal		0.00	0.00	0.00	0.00	0.00
Investment Systems						
52480	Consulting & Modeling	1,500,000.00	630.00	7,620.00	8,250.00	1,491,750.00
53280	Shared Services/Analytics/Data	3,775,415.00	1,798,709.33	2,523,595.92	4,322,305.25	-546,890.25
53281	Invest/Fin Network Access Fees	25,000.00	10,200.00	10,800.00	21,000.00	4,000.00

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Budget to Actual Report FY 2019

Including All FY 2019 Activity Through 12/31/2018

For All Profit Centers Combined

		Budget	Actuals	Encumbrances	Actual plus Encumbrances	Budget Remaining
Investment Systems Subtotal		5,300,415.00	1,809,539.33	2,542,015.92	4,351,555.25	948,859.75
Investment Due Diligence						
52405	Fiduciary Advice	3,000,000.00	577,985.36	514,502.05	1,092,487.41	1,907,512.59
52415	Subject Matter Experts	1,680,000.00	127,500.00	392,500.00	520,000.00	1,160,000.00
52435	Performance Measurement	506,800.00	249,699.99	0.00	249,699.99	257,100.01
52440	Research & Memberships	255,000.00	8,327.40	510.00	8,837.40	246,162.60
52455	Manager Searches	236,400.00	0.00	39,400.00	39,400.00	197,000.00
52502	Legal Fees-Investment Specific	1,500,000.00	346,208.27	0.00	346,208.27	1,153,791.73
Investment Due Diligence Subtotal		7,178,200.00	1,309,721.02	946,912.05	2,256,633.07	4,921,566.93
Custody						
52200	Custody Fees	1,500,000.00	705,461.69	0.00	705,461.69	794,538.31
Custody Subtotal		1,500,000.00	705,461.69	0.00	705,461.69	794,538.31
Investment Manager Fees						
52300	Public Equities Manager Fees	82,493,617.00	25,982,217.36	0.00	25,982,217.36	56,511,399.64
52310	Fixed Income Manager Fees	13,116,245.00	5,256,459.52	0.00	5,256,459.52	7,859,785.48
52330	Alternative Markets Mgr Fees	40,910,223.00	15,089,160.68	0.00	15,089,160.68	25,821,062.32
Investment Manager Fees Subtotal		136,520,085.00	46,327,837.56	0.00	46,327,837.56	90,192,247.44
Contractual Services Total		**150,498,700.00**	**50,152,559.60**	**3,488,927.97**	**53,641,487.57**	**96,857,212.43**
Invmt Mgt Fees Budget Total		**150,498,700.00**	**50,152,559.60**	**3,488,927.97**	**53,641,487.57**	**96,857,212.43**
Total Before Legislative Appropriations		**168,573,300.00**	**55,898,300.23**	**4,218,734.98**	**60,117,035.21**	**108,456,264.79**
Legislative Appropriation						
Legislative Appropriation						
Legislative Appropriation						
59100	Law Legislative Appropriation	2,619,100.00	2,619,100.00	0.00	2,619,100.00	0.00
59200	DNR Legislative Appropriation	6,044,800.00	0.00	0.00	0.00	6,044,800.00
59300	DOR Legislative Appropriation	94,500.00	0.00	0.00	0.00	94,500.00
Legislative Appropriations Subtotal		8,758,400.00	2,619,100.00	0.00	2,619,100.00	6,139,300.00
Legislative Appropriations Total		**8,758,400.00**	**2,619,100.00**	**0.00**	**2,619,100.00**	**6,139,300.00**
Legislative Appropriations Total		**8,758,400.00**	**2,619,100.00**	**0.00**	**2,619,100.00**	**6,139,300.00**
Grand Total		**177,331,700.00**	**58,517,400.23**	**4,218,734.98**	**62,736,135.21**	**114,595,564.79**

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Legislative Update Memo

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Legislative Update ACTION:

DATE: February 27th, 2019 INFORMATION: __X__

The first session of the 31st Alaska State Legislature commenced on Tuesday, January 15th, 2019. As this memo is being composed, the House has yet to form an organization – thus House bill introductions, with the exception of pre-files, and House Committee assignments are still pending.

APFC Legislative Initiatives

Inflation Proofing the Principal of the Fund - ***AS 37.13.145 (c)***

- During presentations to the Senate Finance Committee and the House Information Session we affirmed the importance of inflation proofing the Principal to maintain its purchasing power for future generations. Additionally, Resolutions 18-04, 18-01 and 17-01 were distributed to Legislators. The presentation to the House led to a follow up meeting with a House member wanting to champion this issue.

- The Capitol Views Interview of Angela Rodell by Mike Bradner also focused on inflation proofing. This interview will air on 360 North.

- Throughout the upcoming budget process, consistent with Board's direction, we will seek to ensure that FY20 inflation proofing is appropriated, as well as advocate for a supplemental appropriation to cover the FY16-FY18 inflation-proofing transfers that did not take place.

- It is also our plan to encourage interested Legislators to introduce a more permanent, long-term solution to ensure inflation proofing is a required annual event. As discussed in prior meetings the simplest method to achieve this goal is to modify the current method of calculating annual net income of the Fund so that the effects of inflation are offset with current year gains just like current year gains offset current year losses. Sample language is as follows:

  AS 37.13.140 is proposed to be amended to read:
  "Net income of the fund shall be computed annually as of the last day of the fiscal year in accordance with generally accepted accounting principles, excluding<u>: (1)</u> any unrealized gains and losses<u>; and (2) an amount to be transferred annually to the principal of the fund to offset the impacts of inflation</u>."

Procurement Streamlining

- During presentations to the Senate Finance Committee and the House Information Session we included as an APFC priority the concept of broadening the APFC procurement exemption to include investment related professional services so that our direct investments can timely procure the services needed to complete the due diligence associated with such direct investments. The presentation to the House generated questions on this topic and it is our impression there is some positive interest amongst some members in considering such legislation.

- Consistent with Board's direction, we will work with interested Legislators to introduce a bill to pursue an exemption from the State Procurement Code for APFC contracts where the work to be performed is related to the investment and monitoring of assets managed by APFC. Sample language is as follows:

  AS 36.30.850(b) is proposed to be amended by adding a new subsection to read: "(49) a contract of the Alaska Permanent Fund Corporation to provide investment related services for assets managed by the Alaska Permanent Fund Corporation."

Below is a summary of legislation and appropriation bills that pertain to the Fund and the Corporation. We will continue to track and report back to the Board as the legislative session progresses.

Appropriation Bill – FY20 Operating Budget

Governor Dunleavy has indicated that his administration will be introducing an amended budget on February 13, 2019. An update on the amended budget will be presented to the Board of Trustees as it pertains to APFC and the Fund during the Board meeting.

SB 20 / HB xx – Rules by Request of the Governor Status: SFIN / _____

The following is a summary of the operating budget bill that was introduced on December 15, known as the placeholder budget.

Alaska Permanent Fund Corporation

APFC Operations $176,781,600 I Fund Source: 1105 Alaska Permanent Fund Corp Receipts

- As introduced on December 15, 2018, the FY20 Operating Budget includes the Board of Trustees authorized request for APFC in the numbers section as a single appropriation.
  - Ensures that APFC has the resources necessary to continue to effectively manage the Corporation and the assets under its stewardship.
  - This request includes: 4 new positions (2 investment staff, 1 attorney, 1 support staff), an incentive compensation program for investment staff, retention and merit adjustments for all staff, and an increment for the investment management allocation which reflects growing assets under management.
- In January, the administration requested that APFC submit scenarios in the budget system that remove the incentive compensation and position increments. The Governor's amended budget is due out on February 13, 2019.

Royalty Deposits

- Appropriates an estimated $394,600,000 per AS 37.13.010 (a)(1) and (a)(2), the constitutionally required 25% of royalty proceeds and the statutorily mandated deposits of 50% from leases issued after 1979.

Inflation Proofing

- An appropriation estimated to be $943,000,000 from the ERA to inflation proof the Principal for FY20.
- An appropriation of $1,404,564,942 from the ERA to inflation proof the Principal of the Fund for the fiscal years that remain unappropriated FY16-FY18.
- Inflation proofing amounts are separate from the POMV draw distribution.

Alaska Capital Income Fund (AS 37.13.145 (d))

- The transfer from the ERA to the Alaska Capital Income Fund is calculated by applying the realized rate of return of the Fund to the balance of principal related to the case settlements of State v. Amerada Hess, et al. For FY20, this amount is estimated to be $27 million and included as an appropriation in the budget.

Draw from the Earnings Reserve Account

- An appropriation of $2,933,084,121 from the ERA to the General Fund to support government services and provide for a statutory dividend.
  - This draw amount is equal to 5.25% of the average market value of the Fund, for the first five of the preceding six fiscal years (FY14-FY18).
  - Directs a portion of the draw to the dividend fund per AS 37.13.145(b) for the fiscal year ending June 30, 2020. Based on APFC's calculations, this statutory dividend amount is estimated to be $1.94 billion.

Special Appropriation Bill

Currently there is one special appropriation bill that would seek to appropriate funds from the realized ERA to the Principal.

HB 31- Representative Kreiss-Tomkins Status: Prefile Release

- An Act making a special appropriation of $5.5 billion from the ERA to the Principal of the Alaska Permanent Fund.

Supplemental Permanent Fund Dividend Appropriation Bills

Currently there are two legislative proposals that would seek to fund the portion of the 2016, 2017, and 2018 permanent fund dividends that were not appropriated at the statutory dividend calculation threshold per AS 37.13.145(b). These bills would be funded with an appropriation from the Earnings Reserve Account.

SB 13/SB 17 – Senator Wielechowski Status: SSTA

- An Act directing the payment of supplemental dividends for eligible individuals, those who received a 2016, 2017, 2018 dividend and are also eligible for a 2019 dividend.
- An Act appropriating $2.39 billion from the ERA to the dividend fund to pay supplemental permanent fund dividend to eligible individuals.

SB 23 & 24/HB xx – Rules by Request of the Governor Status: SSTA /

- An Act directing the payment of dividends to eligible individuals over the next three years.
- An Act appropriating from the ERA to the dividend fund the amount necessary for the payment of unpaid permanent fund dividends, and authorizing dividend payments through 2023 per the statutory dividend transfer language in AS 37.13.145(b).
  - $1,061 for those who received a 2016 dividend and are eligible in 2019. Estimated to be $565 million in FY20.
  - $1,289 for those who received a 2017 dividend and are eligible in 2020. Estimated to be $683 million in FY21.
  - $1,328 for those who received a 2018 dividend and are eligible in 2021. Estimated to be $705 million in FY22.
  - FY 20 Permanent Fund Dividend. Estimated to be $1.9 billion.
  - FY 21 Permanent Fund Dividend. Estimated to be $2.1 billion.
  - FY 22 Permanent Fund Dividend. Estimated to be $2.2 billion.
  - FY 23 Permanent Fund Dividend. Estimated to be $2.3 billion.

Constitutional Amendments Pertaining to the Fund

Currently there are three proposed resolutions, with varied distributions to dividends and government, that would place an amendment to The Constitution of the State of Alaska before the voters at the next general election to establish distribution formulas for draws from the Alaska Permanent Fund. The Governor has also introduced an amendment to constitutionally protect the dividend program, requiring voter approval for any changes to the program in the future; and an amendment to the appropriation limit that directs excess revenues to the Permanent Fund.

HJR 3 – Representative Tuck Status: Prefile Release

- Constitutional amendment establishing the ERA in the Constitution and providing for a 4% POMV draw, not to exceed net income of the Fund for the fiscal year just ended.
- Of income available for distribution, provides that 50% shall be used for a program of dividend payments and the remaining 50% shall be deposited to the general fund.
- Transfers for dividend payments and to the general fund are to be made without legislative appropriation.

SJR 1 – Senator Wielechowski Status: SSTA

- Constitutional amendment establishing the ERA in the Constitution and providing that the income available for distribution is 21% of the net income of the Fund for last 5 fiscal years, including the year just ended, not to exceed net income for the fiscal year just ended plus the ERA balance.
- Of income available for distribution, provides that 50% shall be used for a program of dividend payments and the remaining 50% may be deposited to the general fund.

- Stipulates that the legislature shall provide for an inflation proofing transfer from the ERA to the Principal.
- Stipulates the constitutional dividend program calculation.

SJR 2 – Senator Begich **Status: SSTA**

- Constitutional amendment establishing that Permanent Fund investments are to be made according to the prudent investor rule and providing for a 5% POMV draw, not to exceed net income of the Fund for the fiscal year just ended.
- Of income available for distribution, provides that 40% shall be used for a program of dividend payments, 40% shall be deposited to the general fund, and up to 20% may be transferred to the Principal for inflation proofing.
- Transfers for dividend payments and to the general fund are to be made without legislative appropriation.

SJR 5/ HJR xx – Rules by Request of the Governor **Status: SSTA /**

- Constitutional amendment establishing that a portion of the income from the Permanent Fund shall be transferred solely for a program of dividend payments.
- Stipulates the constitutional dividend program calculation.
- Provides that any changes to the dividend program must be voted on by Alaskans.
- Transfers for the dividend program are not subject to appropriation.

SJR 6 / HJR xx – Rules by Request of the Governor **Status: SSTA /**

- Constitutional amendment establishing a constitutional appropriation limit for a fiscal year that would not exceed the average of the appropriations for the last three fiscal years plus a provision for inflation and population growth, or two percent, whichever is less.
- The proposed amendment implements a constitutional savings plan that would transfer the unexpended, unobligated and unappropriated balance in the general fund at the end of a fiscal year first, to the Alaska Permanent Fund and second, to a savings reserve fund. The savings reserve fund may be allowed to grow until the balance is equal to the appropriation limit for the next fiscal year. After that, all surplus revenue would be deposited in the Alaska Permanent Fund.

Legislation Pertaining to APFC

SB 5 - Senator Stevens **Status: SCRA**

- An Act relating to the management of certain municipal assets by the Alaska Permanent Fund Corporation.
- Provides that APFC will manage municipal assets if directed so by the municipality and the asset value is at least $50,000,000. Provides reporting and structural guidelines.
- A similar bill, SB 161, was introduced in 1997. Kodiak is interested in this legislation.

Chief Investment Officer’s Report

CIO Report for the February 27-28, 2019 APFC Board Meeting

Good morning, Mr. Chairman and members of the Permanent Fund Board.

At our last meeting, in early December, we had the awkward dynamic of presenting results through September 30, which omitted the difficult market environment in October through November and in December, what was ultimately the worst monthly decline for US equities since the Great Depression. At today's Board meeting, Staff and Callan will similarly (or conversely) be presenting performance through December with knowledge that January was the best start to a year for US equities in over thirty years with close to a 10% return CYTD at the time of this letter.

In periods of less extreme volatility to the upside and downside, this lagged performance reporting effect is less of an issue. However, in order to mitigate this issue today and in the future, as well as to help the Board get as much as possible out of our quarterly presentations, I've asked the Investment Team to make some important changes to their presentations at this meeting and going forward. The Team will endeavor to include less of a primary focus on past performance. Instead, in each asset class presentation, you will see: a discussion of the areas they invest in, the tactics used to gain exposure to the asset class, and a discussion of expected return environment. For each asset class, we have a Callan capital markets return expectation from 2018 that is incorporated into our Investment Policy & Procedures document and, in some cases, the asset class Director will discuss their perspective on APFC's ability to outperform this expected return. We have a terrific history of outperforming our benchmarks at APFC and this discussion should help the Trustees understand how we go about achieving this. In each asset class presentation, the Team will also talk about their strategic outlook and how we plan on navigating the going-forward market environment. Finally, recent performance will be presented for each asset class with the remaining time.

This is the first time in a while that we have adjusted the format for asset class presentations by the Investment Team so any feedback from Trustees is most welcome. And, it goes without saying, but we welcome any questions you may have during the presentations.

A significant portion of the agenda this Board meeting is devoted to our "Asset Allocation" Portfolio. This portfolio has been the source of more than a few questions in the past and Staff at times could have communicated its composition and objectives more clearly to the Board. Our goal today is to provide a comprehensive review of the constituent strategies and to answer any questions that arise. In advance of that, I will provide a little history. While most institutional investors have a stand-alone cash portfolio, as APFC did prior to Investment Policy & Procedures amendments in the past two years, the APFC today holds its primary cash balances within a portfolio that includes other elements. The source of this change was a desire by Staff and the Board to maintain higher cash balances and more readily accessible liquidity, but without all of the attendant cash drag. Accordingly, in 2017 the Investment Policy & Procedures was amended to allow for a "Cash Overlay Program" managed by an external manager who would enter into futures contracts (at a 65/35 stock/bond split) overlaying a portion of the Fund's cash. Later, in May 2018, a new version of the Investment Policy & Procedures added a Risk Parity strategy within Asset Allocation with similar objectives to the Cash Overlay Program in terms of returns, but with different asset allocation weightings under a risk parity methodology (which will be described to the Board in more detail).

Today, the Fund's Asset Allocation portfolio represents a 5% target allocation of the fund (or roughly $3.3 billion). 40% of the Asset Allocation portfolio is earmarked for Cash, which is benchmarked to three-month treasury bills. 60% of the Asset Allocation portfolio is earmarked for Risk Assets (Cash Overlay Program and Risk Parity), which is benchmarked to the same Performance Benchmark as the overall fund. The purpose of having Risk Assets in our primary liquidity portfolio is to enable the Fund to carry higher balances in the liquidity portfolio without incurring the same cash drag (in up markets) as would be the case if the entire portfolio was in cash. Over cycles, this increases the Fund's likelihood of achieving its long-term return objective of CPI + 500 bps.

Presenting to the Board today and tomorrow will be professionals who can explain all elements of our Asset Allocation portfolio. Our internal Fixed Income team who manages a majority of the unencumbered Cash will present to you today. Also presenting today will be Panagora who will be one of our Risk Parity managers (upon completion of the negotiation and execution of relevant investment contracts). NISA, who is APFC's external manager for the Cash Overlay Program, will present to the Board tomorrow.

The final portion of the Asset Allocation program worth mentioning is our foreign currency management program where an external manager, on an active basis, enters into hedges on up to $2 billion of our $10+ billion of foreign currency exposures derived from our international public equity holdings. While the performance impact of this activity appears in the Total Fund and Public Equity returns (shown on official performance reports with and without these hedges), the margin cash underlying the positions sits in Asset Allocation. Adrian Lee & Partners, our external manager for the foreign currency management program will be presenting to the Board today on results to-date for the program, market outlook, and details on the instruments and tactics they use to implement their program.

Finally, I've included in the appendix some initiatives that I and the rest of the Investment Team are focused on grouped by Current, Medium-term, and Long-term. I will elaborate on each of these in person and answer any questions related to them. We have a full agenda for the next two days I thank you in advance for your attention, your questions, and your comments.

Appendix – CIO & Investment Team Initiatives & Priorities

Near Term / Current

- In-state private markets investment mandate ($200 mm)
- Recruiting open positions on Investment Team
- Assessing potential significant private markets secondary transaction
- Various asset class-specific strategies, ongoing execution (e.g., build-to-core real estate, purchasing new issue bonds at attractive prices, accessing high quality private markets partnerships and investments)
- Actively rebalancing portfolio as markets move

Medium Term / May Board Meeting

- Updating and reviewing private markets pacing plan
- Maintaining adequate cash / liquidity going into year-end and Fall 2019
- Investment Policy & Procedures – elected to not pursue amending document at this May's meeting

Longer Term / FY 2020

- Work together in Investments Department and with rest of APFC on 5 year Strategic Plan
- Investment Policy & Procedures
    - Review asset class return expectations as it relates to CPI + 500 bps return objective
    - Review asset allocation targets and nomenclature
    - Review benchmarks

Risk Overview

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Risk Overview ACTION: ____

DATE: February 27, 2019 INFORMATION: ___X_

BACKGROUND:

The Investment Risk Report provides an overview of historical and forward-looking measures of risk for the Total Fund and its underlying asset classes.

STATUS:

At this meeting, Staff will present some of the key measures of the Risk of the fund. APFC's key risk measures include Value at Risk (VaR) on a standalone and relative-to-benchmark basis, tracking error, statistics that measure realized volatility and Sharpe Ratios, asset class and factor contributions to risk and risk scenarios. It also covers Geographic, Currency, and Liquidity risks for the Total Fund.

Presentation: Risk Overview

APFC ALASKA PERMANENT FUND CORPORATION

Risk Overview

February 27, 2019

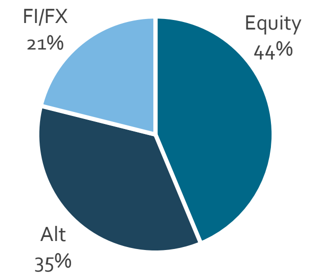
Key Risk Metrics

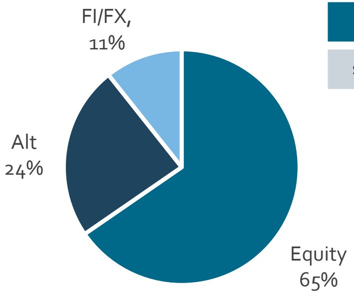
As of December 31, 2018

Asset allocation & VaR: breakdowns

Asset Mix | VaR Mix

Dec 2017

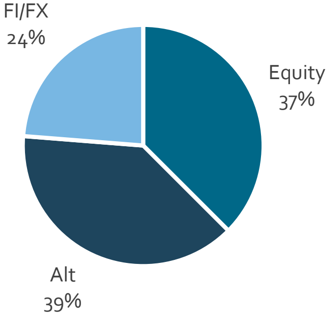


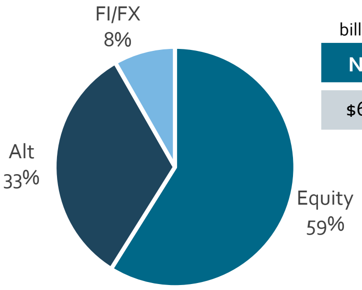


billions

NAV	VaR	VaR %
$64.5	$7.4	11.5%

Dec 2018





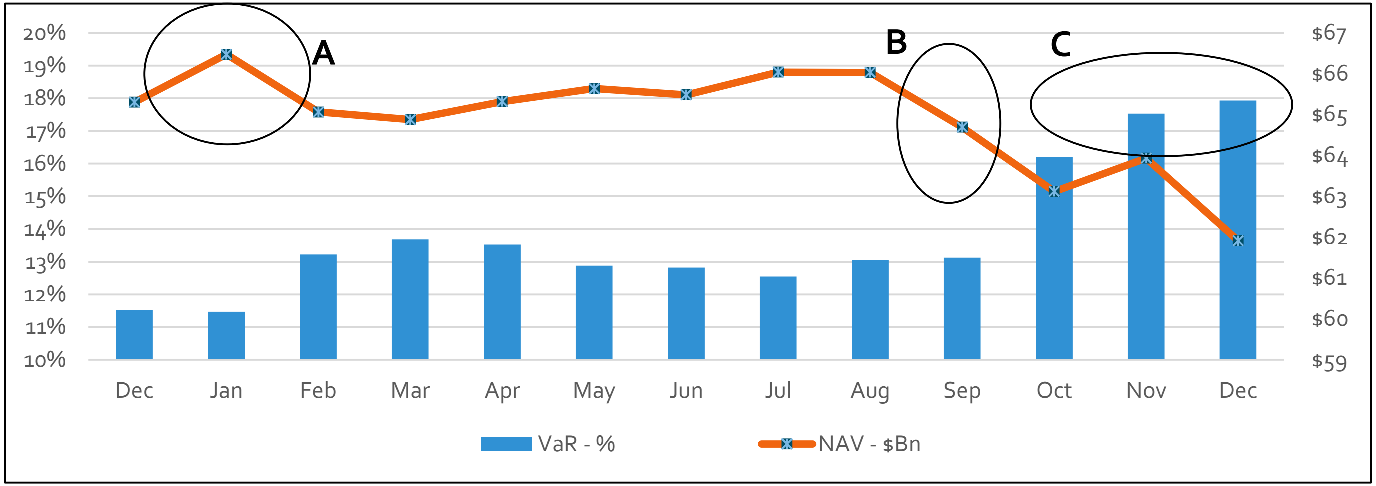
billions

NAV	VaR	VaR %
$61.9	$11.1	17.9%

During 2018:

- Fund NAV declined by $2.6bn or 4%, made up of ~$1.7 bn in transfers to GF and a $0.9bn decline in market value
- Despite lower NAV (exposure), VaR increased both in % and $ terms
- Most of the increase in VaR resulted from higher volatility and correlation of 'market factors'
- The VaR mix changed as well, with the reduction in the equity risk pie offset by increased Alternative's risk contribution

Value at Risk (VaR): profile during 2018



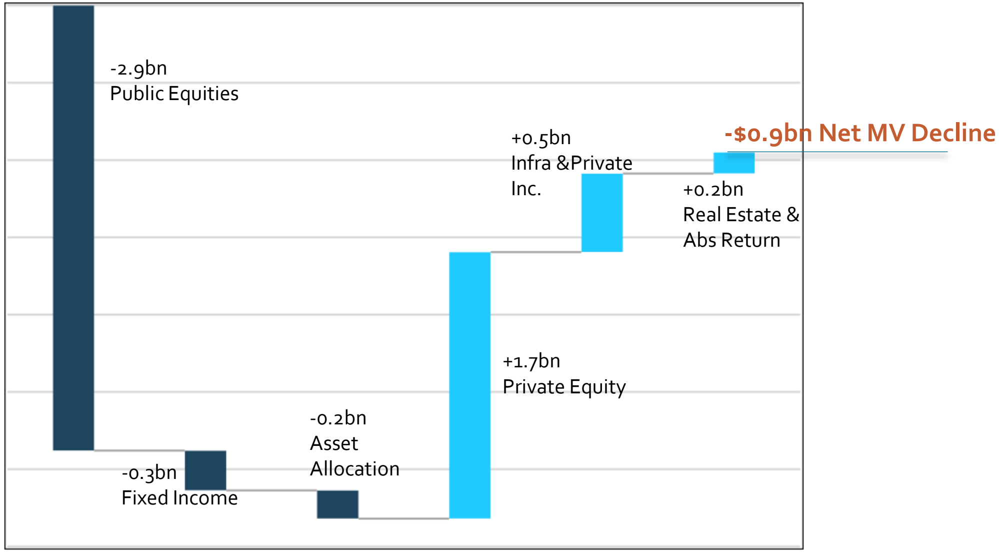
A. NAV movement in Q1 almost entirely reflects volatility in public equities

B. Part of the decline in NAV during Q3 resulted from the ~$1.7 bn transfer to General Fund

C. The spike in VaR during Q4 was mostly driven by increased market turbulence

Diversification: mitigates market turbulence

Contribution to Fund Market Value movement



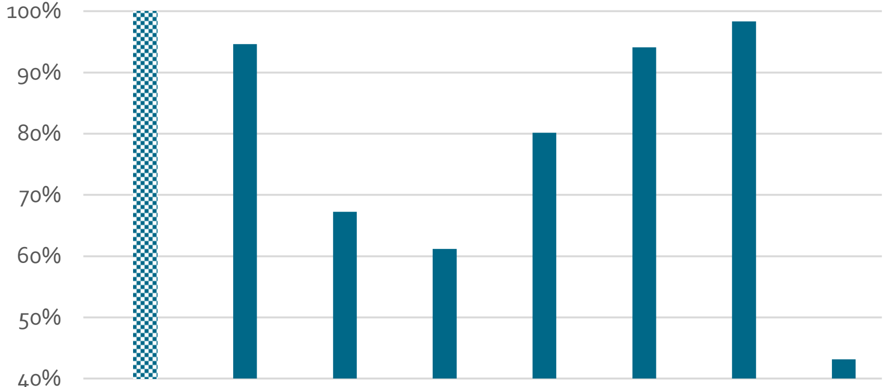
- The decline in public market valuations were, to a large extent, offset by positive contributions from the private market assets and real estate

- VaR captures the benefit of diversification by incorporating correlation coefficient(s) in the computation

- As at the end of 2018, total fund VaR figures incorporated a diversification benefit of approximately 3.5% or ~$2.1 bn *(it is worth noting that such diversification benefit was ~4.5% at the start of 2018)*

Diversification: benefit reflected in VaR contribution

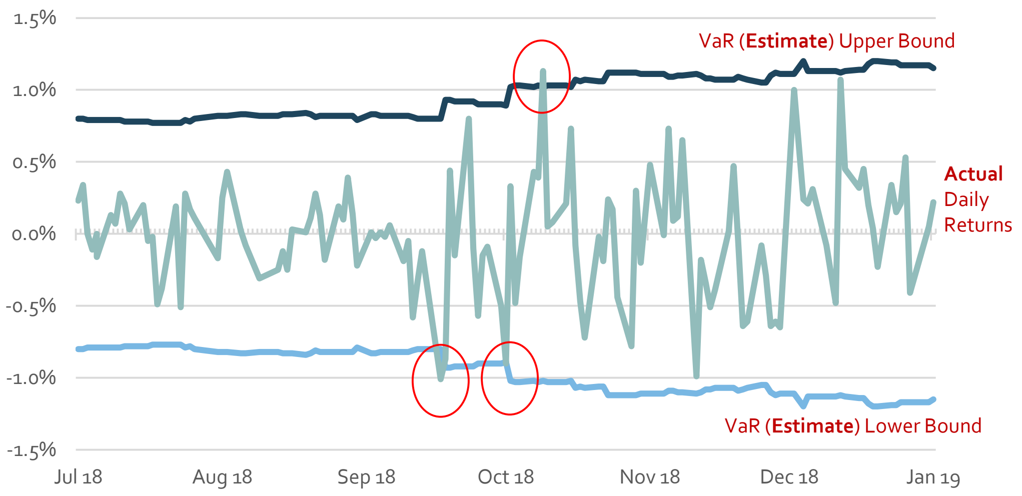
Ratio of "Contribution VaR" to "Stand-alone VaR"



	Total Fund	Asset Alloc.	Absolute Return	FI Plus	Infra & Pvt Crdt.	Pvt Equity	Public Equity	Real Estate
Asset Allocation $bn	**$61.9**	$3.3	$3.5	$14.7	$5.1	$8.2	$23.2	$4.0
Standalone VaR as % of respective portfolio NAV	**17.9%**	5.9%	5.3%	5.7%	14.6%	42.9%	26.9%	13.1%

- In terms of standalone VaR, private equity has the highest proportionate 'risk', followed by public equity.
- Given that the model assumes close correlation between private and public equity exposures, the benefit from diversification is less.
- On the other hand, the fixed income and real estate exposures increase diversification benefit (portfolio weights also have an impact on 'contribution VaR')

VaR Model Validation: back testing



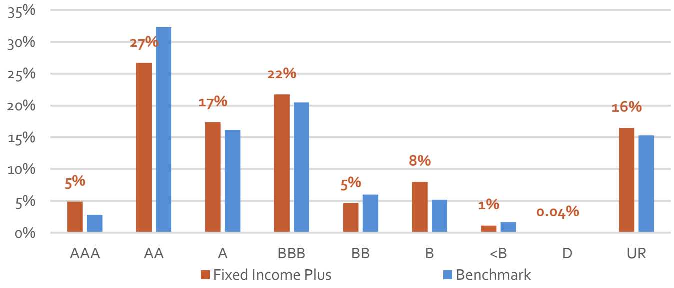
#Observations (days)	Confidence Level	# Target Max Out of Bound	# Actual Out of Bound
127	97.5%	3.2	3

- One element of model validation is to back test – i.e. compare actual returns to VaR expectations.
- VaR was computed at the total fund level, based on 97.5% confidence level, 1 day time horizon and default underlying data. This was compared to daily returns independently computed by BNYM.
- Overall, during the 127 days of back testing, actual returns exceeded VaR (estimates) on 3 days. This is in line with the confidence level expectations.

Note: there are several assumptions, which are being reviewed, including underlying datasets, return computations and alignment between BNYM and BRS data

Credit VaR: a measure of portfolio credit risk

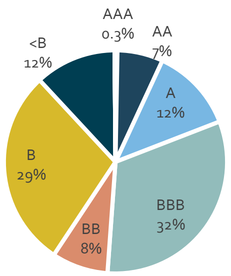
Rating breakdown: FI Portfolio Vs Benchmark



Credit VaR (CVaR): FI portfolio

For FI portfolio of $14.8 bn	CVaR $ mm	ESF $mm	CVaR %	ESF %
97.5% CL, 1 yr	$120	$149	0.8%	1.0%
99.9% CL, 1yr	$218	$276	1.5%	1.9%

Credit VaR (CVaR): by Ratings

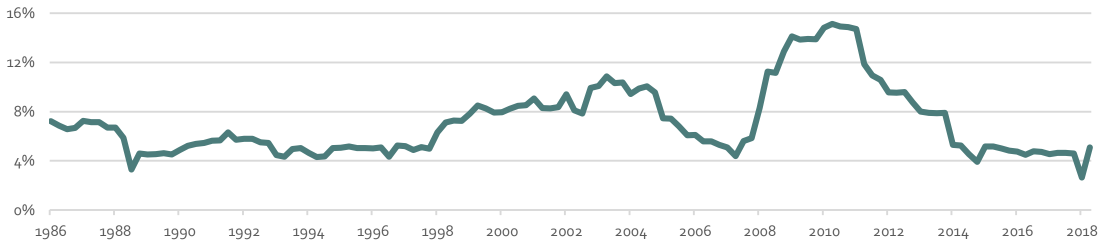


- The Fixed Income (FI) portfolio is the principal source of credit risk within the asset portfolios
- Overall, the credit rating breakdown of FI is close to that of the benchmark
- Credit VaR (CVaR) provides another measure of credit risk by quantifying loss potential based on probabilities of transition and default
- It also effectively captures correlations enhancing aggregate estimates

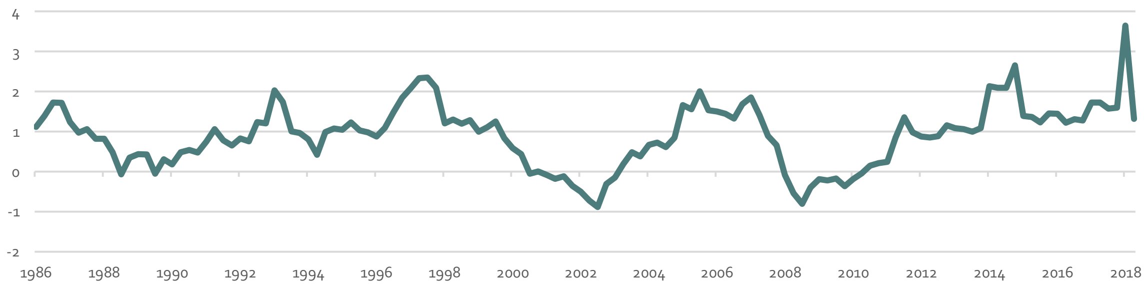
Note: these are preliminary numbers and are subject to change based on review and testing of data, concept and model

Total Fund: Realized Volatility & Sharpe Ratio

Realized Fund Volatility



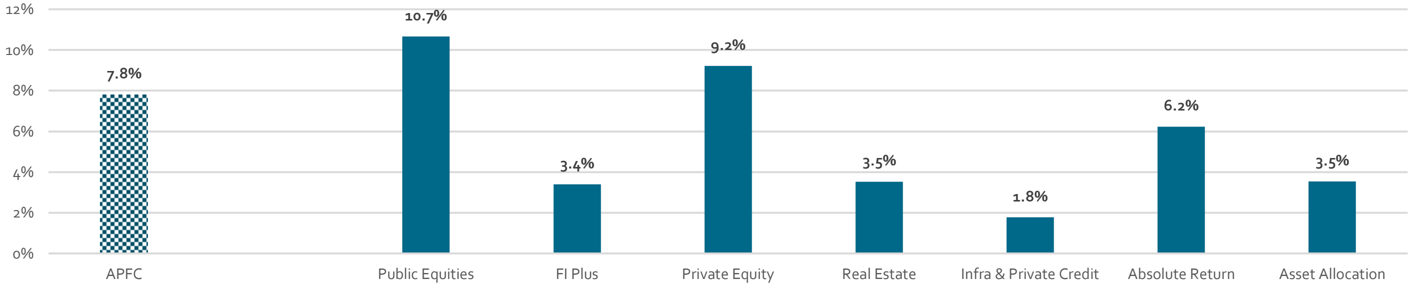
Realized Fund Sharpe Ratio



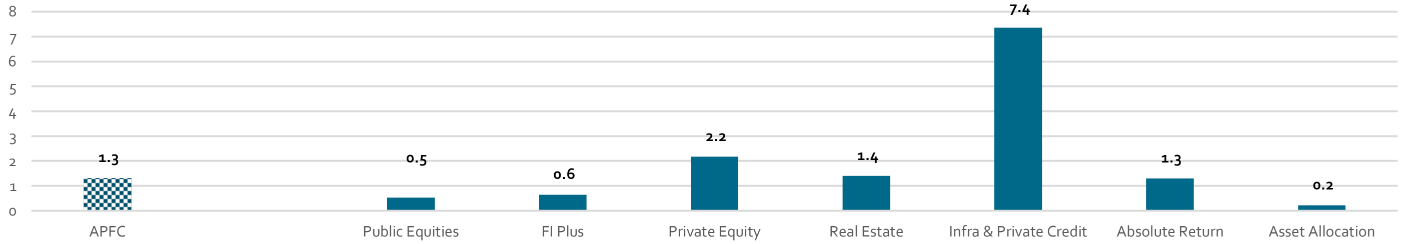
Volatility (standard deviation) and Sharpe ratio have been computed based on rolling 3 year quarterly returns for the Total Fund

Fund & Constituents: Volatility and Sharpe Ratio as of Dec 31, 2018

Volatility

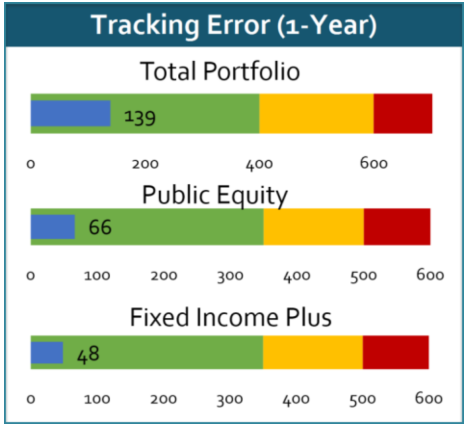


Sharpe Ratio

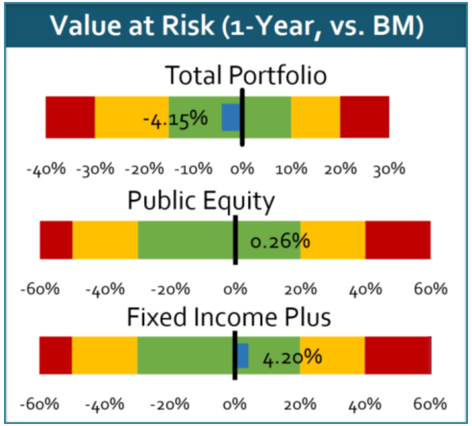


Volatility (standard deviation) and Sharpe ratio have been computed based on historical 3 year quarterly returns, as of December 31, 2018

Tracking Error and VaR: (Vs) Limits



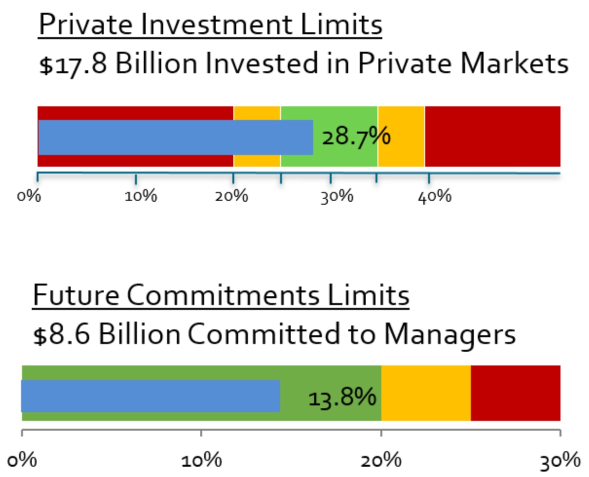
- Tracking error is an indicator of performance relative to benchmark
- It represents the deviation of portfolio returns from benchmark returns
- It is directionally agnostic and does not indicate over or underperformance



- VaR is an estimate of value decline, based on a 97.5% confidence level and 1 year holding period
- The above chart reflects the Relative VaR of the portfolio versus respective benchmark

Liquidity Limits: modification to guidelines

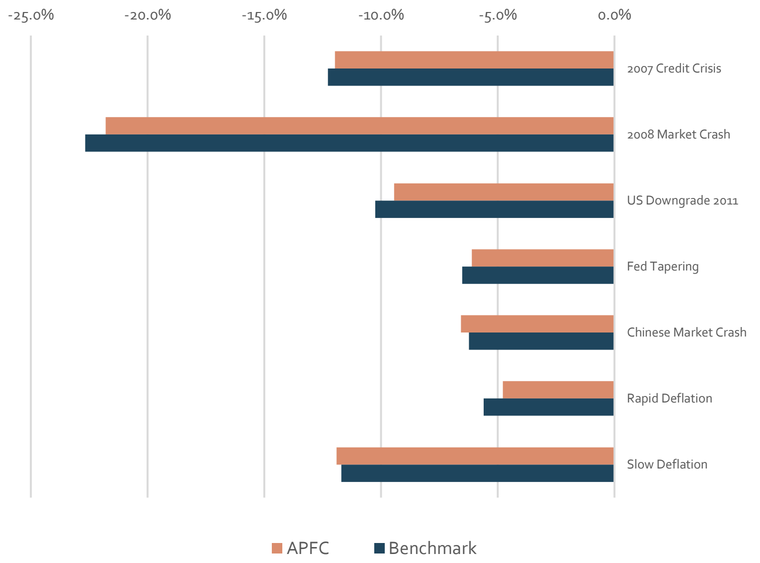
Liquidity Limits as % of Fund NAV



- Private Investments include Private Equity, Infrastructure & Private Income, and Real Estate portfolios
- With the objective of aligning investment policy asset allocation limits with investment guidelines, the limits (color) ranges for Private Investments have been modified in the investment guidelines (i.e. 'Target' asset Allocation: 30%, Green zone: 25% to 35%, Yellow Zone:20% to 25% & 35% to 40%, Red Zone: <20% and >40%). The limit ranges would move in tandem with the change in 'Target' allocation for FY 2020 and FY 2021.

Tail Risk: Current portfolio during extreme events

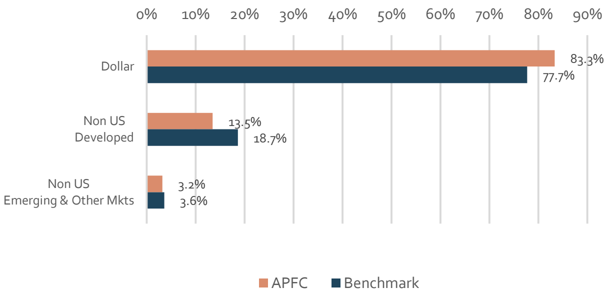
Scenario	Definition
2007 Credit Crisis	Credit & liquidity crisis stemming from a severe slowdown in the housing market causing significant widening of credit spreads and increased implied volatility.
2008 Market Crash	S&P 500 down 20% (2000 bps).
US Downgrade 2011	The period starts with 50% chance US downgrade indication from S&P standards and ends with Operational Twist announcement from the Fed (stock market losses and bond market gains).
Fed Tapering Talk 2013	Equity & bond markets sold off. EM suffered badly due to hot money flight back to U.S.
Chinese Market Crash	Chinese stock market crash beginning with the popping of the stock market bubble on June 12, 2015.
Rapid Deflation	Oil down 60% (6000 bps); ST Inflation down 350 bps; Mortgage spreads tighten 25 bps.
Slow Deflation	LT deflation down 200 bps; LT Treasury Rates down 100 bps; Mortgage spreads tighten 25 bps.



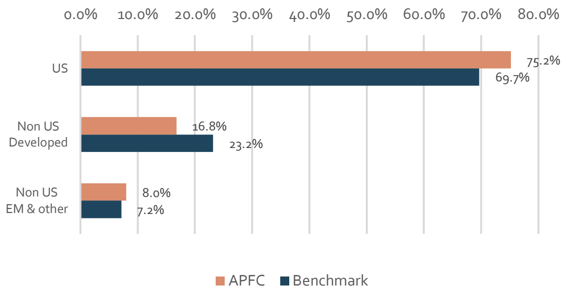
In most "risk scenarios" the fund's value decline is less than benchmark decline primarily due to scaling down of risk assets during 2018. Other holding specific factors also contribute to the deviations.

Currency & Geography: breakdowns

Currency breakdown



Country breakdown



Currency Name	Exposure ($, millions)
Euro	2,384
British Pound	1,566
Japanese Yen	1,449
Hong Kong Dollar	1,046
Canadian Dollar	693
Sub-Total	**7,139 (11.5% of NAV)**
Total Non-US DM Exposure	**8,358 (13.5% of NAV)**

Country Name	Exposure ($, millions)
China	1,003
India	446
South Korea	396
Taiwan	285
Brazil	272
Mexico	186
Total	**2.588 (4.2% of NAV)**
Total EM & Other Exposure	**4,966 (8% of NAV)**

Risk Dashboard Overview

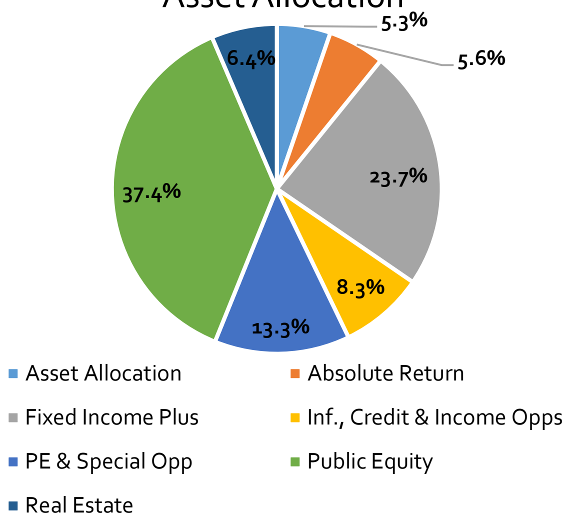
As of December 31, 2018

APFC
ALASKA PERMANENT FUND CORPORATION

Daily Dashboard: 12/31/2018

NAV (m): $61,920,700,876

Asset Allocation



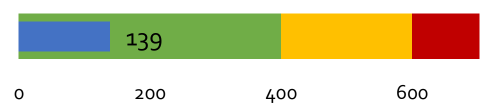
Performance Summary*

Asset Class	YTD, %	FYTD, %	1 Year, %
Total Fund	-1.68	-3.10	-1.68
Public Equity	-10.92	-10.79	-10.92
Fixed Income Plus	-1.74	-0.13	-1.74
PE & Special Opps	24.87	10.82	24.87
Real Estate	1.9	1.04	1.9
Inf., Credit & Income Opps	11.25	4.83	11.25
Absolute Return	2.54	0.08	2.54
Asset Allocation	-4.91	-3.52	-4.91

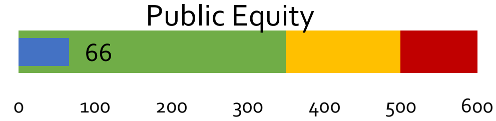
*source = BNY Mellon

Tracking Error (1-Year)

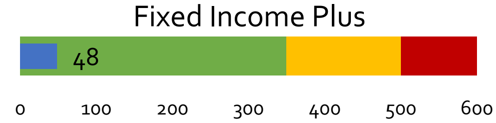
Total Portfolio



Public Equity

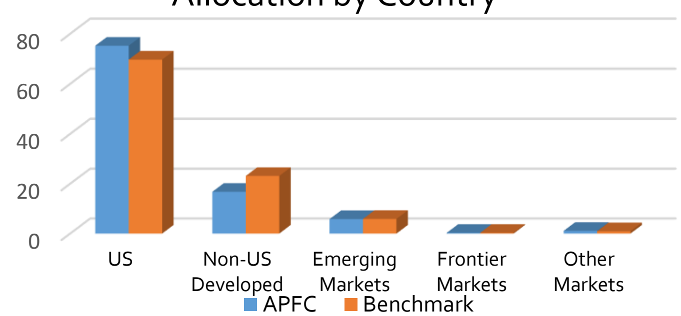


Fixed Income Plus



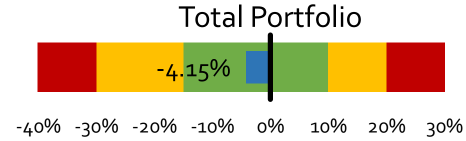
Income: 43.0%
Growth: 57.0%

Allocation by Country

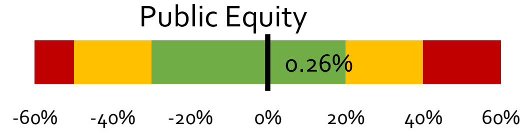


Value at Risk (1-Year, vs. BM)

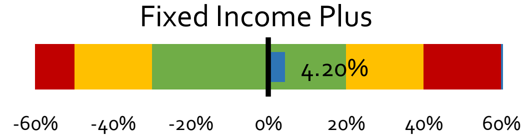
Total Portfolio



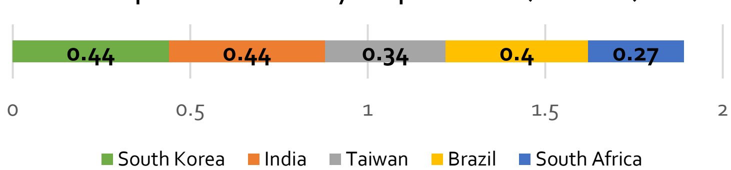
Public Equity



Fixed Income Plus



Top EM Currency Exposures (%NAV)



Economic Indicator**	November	December2
10-Year Treasury Yield	2.99%	2.68%
30-Year Treasury Yield	3.29%	3.01%
Credit Index OAS	129	143
S&P 500	2760.17	2506.85
Crude Oil	$50.93	$45.41
U.S. Dollar/Euro	1.13	1.15
VIX	$18.07	$25.42

** source = Bloomberg

Asset Allocation					
12/31/2018	Net Asset Value	Current Weight	Target	Over/Under	Compliance
Public Equity w/o FX Overlay	**23,185,324,269**	**37.4%**	**38.0%**	**-0.6%**	
Domestic Equity	**7,103,409,557**	**11.5%**			
Mellon Capital Mgmt S&P 500	901,809,143	1.5%			
AGI (RCM) - Large Cap	685,994,200	1.1%			
Mellon FTSE RAFI US Large	632,014,448	1.0%			
SSGA Domestic	214,370,398	0.3%			
Mellon S&P 400 (prev 1000)	81,614,178	0.1%			
Eagle Asset Management	108,759,659	0.2%			
T. Rowe Price - Value Small Cap	160,007,123	0.3%			
Jennison Associates LLC	243,715,438	0.4%			
RBC Asset Mgmt Inc	104,567,723	0.2%			
Pzena Investment Management, LLC	161,475,455	0.3%			
Lyrical - Value LC	594,884,721	1.0%			
SKBA - Value LC	324,481,464	0.5%			
LSV US LC	826,639,118	1.3%			
DSM - Growth LC	644,583,673	1.0%			
APF SPDR Yield	351,109,696	0.6%			
APF SPDR Momentum	354,866,968	0.6%			
APF SPDR Low Vol	380,704,483	0.6%			
CastleArk - Growth LC	175,677,970	0.3%			
AGI Structured Alpha	156,133,700	0.3%			
International Equity	**6,641,508,097**	**10.7%**			
Mellon Capital Mgmt - MSCI World ex-US	424,829,327	0.7%			
DFA International Large Cap	432,939,963	0.7%			
SSGA International	314,517	0.0%			
Acadian Asset Mgmt Non-US - EAFE	478,814,251	0.8%			
DFA International Small Company	307,749,606	0.5%			
SSGA World Small Cap Index	351,258,775	0.6%			
DFA International Small Cap Value	295,076,360	0.5%			
Mondrian Investment Partners - EM	496,176,517	0.8%			
SSGA Emerging Markets Index - EM	104,527,845	0.2%			
Lee Munder - EM	7,794	0.0%			
William Blair - EM	347,939,378	0.6%			
Macquarie - EM (ex. Delaware)	174,050,541	0.3%			
JP Morgan - EM	364,173,189	0.6%			
DFA Value - EM	442,538,820	0.7%			
DFA Small Cap - EM	132,275,903	0.2%			
Trustbridge - EM	206,935,341	0.3%			
Schroders International EQ	534,652,168	0.9%			
JP Morgan International EQ	491,664,952	0.8%			
Johnston International EQ	343,459,143	0.6%			
LSV International EQ	493,314,038	0.8%			
Wells Capital	138,951,622	0.2%			
MEASA	79,858,048	0.1%			
Global Equity	**9,440,016,829**	**15.2%**			
Lazard Global Equity	1,083,116,265	1.7%			
State Street Russell Fundamental LC	1,460,421,799	2.4%			
AQR Capital Mgmt Global	1,344,038,995	2.2%			
McKinley Global	364,362,912	0.6%			
APF Tactical Tilts	2,346,002,434	3.8%			
APF Global	93,160,506	0.2%			
SSGA MSCI ACWI IMI	150,760,113	0.2%			
SSGA MSCI World	165,808,744	0.3%			
CDAM	257,231,075	0.4%			
Arrow Street	745,930,418	1.2%			
Longview Global	763,645,883	1.2%			
WCM	392,036,639	0.6%			
RBA	273,501,062	0.4%			
Fixed Income Plus	**14,694,299,984**	**23.7%**	**22.0%**	**1.7%**	
FI Plus Cash	**454,709,987**	**0.7%**			
APF Fixed Income Plus Cash	454,675,101	0.7%			
US Fixed Income Agg	**4,052,433,800**	**6.5%**			
APF US Fixed Income Aggregate	4,051,425,673	6.5%			
APF TBA Collateral	1,008,127	0.0%			
US Investment Grade Corporate	**3,838,983,365**	**6.2%**			
APF Corporate Bonds	3,838,983,365	6.2%			
Non US Fixed Income	**1,509,930,912**	**2.4%**			
Rogge Global Partners	358,114,462	0.6%			
APF Global Fixed Income Combined	1,151,816,449	1.9%			
Global High Yield	**1,535,226,968**	**2.5%**			
Oaktree High Yield Fixed Income	568,153,917	0.9%			
Cap Guardian High Yield Fixed Income	394,232,175	0.6%			
APF High Yield	572,840,876	0.9%			
Emerging Market Debt	**972,464,806**	**1.6%**			
Cap Guardian High Yield Emerging Mrkt Debt	629,818,020	1.0%			
APF EM Debt	342,646,787	0.6%			
US TIPS	**252,057,888**	**0.4%**			
APF TIPS	125,271,209	0.2%			
AK Permanent Capital Mgmt TIPS	126,786,680	0.2%			
Global REITs	**1,386,136,837**	**2.2%**			
AEW Global RE securities	511,408,394	0.8%			
American Home 4 Rent	16,616,500	0.0%			
SSGA Reits	858,111,943	1.4%			
Listed Infrastructure	**692,355,421**	**1.1%**			
Lazard Listed Infrastructure	187,122,000	0.3%			
Cohen & Steers Listed Infrastructure	140,775,752	0.2%			
SSGA Listed Infrastructure	364,446,802	0.6%			

Asset Allocation 12/31/2018	Net Asset Value	Current Weight	Target	Over/Under	Compliance
Private Equity & Special Opportunities	**8,223,447,844**	**13.3%**	**12.0%**	**1.3%**	
Private Equity	**4,935,438,781**	**8.0%**			
Pathway Capital Management	2,286,809,667	3.7%			
HarbourVest Legacy	1,068,668,429	1.7%			
Staff Direct Private Equity	1,283,062,217	2.1%			
BlackRock Co-Invest	217,060,852	0.4%			
Rapid Partners	47,053,364	0.1%			
Kelso Hammer LP	32,784,252	0.1%			
Special Opportunities	**3,288,009,063**	**5.3%**			
Real Estate	**3,983,904,053**	**6.4%**	**11.0%**	**-4.6%**	
RE Sepate Accts & Direct	**3,937,950,774**	**6.4%**			
RE L&B Realty Advisors	2,086,207,204	3.4%			
RE Sentinel	919,096,829	1.5%			
RE Lincoln	99,196,816	0.2%			
RE CS Capital	455,963,244	0.7%			
RE LaSalle International	227,778,087	0.4%			
RE CB Richard Ellis International	149,708,594	0.2%			
RE Funds & Co-Invest	**45,953,279**	**0.1%**			
RE HIG Europe II	20,273,656	0.0%			
RE Heitman	20,000,000	0.0%			
RE Harbert Europe V	5,679,623	0.0%			
Infrastructure, Private Credit and Income Opportunities	**5,121,875,703**	**8.3%**	**7.0%**	**1.3%**	
Private Infrastructure	**2,682,296,349**	**4.3%**			
Global Infrastructure Partners	199,104,885	0.3%			
Global Infrastructure Partners II	406,904,240	0.7%			
Global Infrastructure Partners III	380,393,496	0.6%			
Gateway Infrastructure Investments	273,133,388	0.4%			
Goldman Sachs Infrastructure Partners	268,268,140	0.4%			
EQT Infrastructure II	41,663,330	0.1%			
GIP II Co-Invest 2	91,373,007	0.1%			
GIP III Canary Co-Invest	111,962,391	0.2%			
Actis Energy 3	43,263,157	0.1%			
Actis Energy 4	33,281,602	0.1%			
LS Power III	178,524,018	0.3%			
Morgan Stanley North Haven Infrastructure II	240,516,050	0.4%			
IFR Meridiam III	311,788	0.0%			
CIM Infrastructure II	78,477,334	0.1%			
IFR GIP III Zenith	100,978,018	0.2%			
IFR Encap FM IV	6,024,594	0.0%			
IFR Infrared V	24,042,955	0.0%			
IFR NHIP II Bison	53,112,742	0.1%			
IFR GIP III Stetson	48,163,633	0.1%			
IFR LS Power IV	218,501	0.0%			
IFR KKR Infrastructure III	13,857,672	0.0%			
IFR EFM Moda	37,649,207	0.1%			
IFR KKR Starlight II	50,000,000	0.1%			
IFR North Haven India	1,072,200	0.0%			
Private Credit	**1,448,993,299**	**2.3%**			
Private Income	**990,586,054**	**1.6%**			
AH4R II	154,223,117	0.2%			
Athyrium III	11,068,947	0.0%			
Activate Capital	19,450,000	0.0%			
Generate Capital	84,840,918	0.1%			
Twins Creek Timber	96,282,303	0.2%			
Generate Capital II	25,065,862	0.0%			
Broadriver Inc. III	4,629,114	0.0%			
APF ADAC	595,025,794	1.0%			
Absolute Return	**3,450,450,234**	**5.6%**	**5.0%**	**0.6%**	
Absolute Return	**3,450,450,234**	**5.6%**			
Asset Allocation	**3,261,398,789**	**5.3%**	**5.0%**	**0.3%**	
Cash and Liquidity	***1,693,771,161***	**2.7%**			
APF Asset Allocation Cash	1,693,771,161	2.7%			
Asset Allocation Overlay	***1,115,600,504***	**1.8%**			
NISA Overlay	1,115,600,504	1.8%			
Legacy ECIOs	***455,730,080***	**0.7%**			
Bridgewater	412,288,456	0.7%			
AQR	36,187,116	0.1%			
Goldman Sachs	7,254,507	0.0%			
FX Overlay	***(3,702,956)***	**0.0%**			
Adrian Lee FX Overlay	(3,702,956)	0.0%			
Total Fund	**61,920,700,876**	61,920,700,876			

Callan LLC Performance Review Memo

APFC ALASKA PERMANENT FUND CORPORATION

801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Callan Associates, Inc.
APFC Performance Review

ACTION: ___________

DATE: February 27, 2019

INFORMATION: ___X_____

BACKGROUND / STATUS:

Callan Associates, Inc. is currently under contract to perform APFC's core general consulting services of 1) investment policies and procedures review; 2) annual preparation of an asset allocation plan; 3) performance reporting and analysis; 4) risk analysis; 5) statistical modeling, manager searches, selection, and oversight; and 6) other special consulting services as needed.

STATUS:

At every quarterly board meeting or as requested, Callan Associates, Inc. provides an extensive review of the fund's performance as well as updates on market conditions. President, Gregory Allen, and Senior Vice President, Steven Center, will be the presenters at this meeting.

Presentation: Callan LLC Performance Review

Callan

February 27, 2019

APFC

Alaska Permanent Fund Corporation

4th Quarter 2018
Performance Review

Greg Allen
CEO and Chief Research Officer

Steven Center, CFA
Senior Vice President

Alina Vartanyan, CFA
Assistant Vice President

Agenda

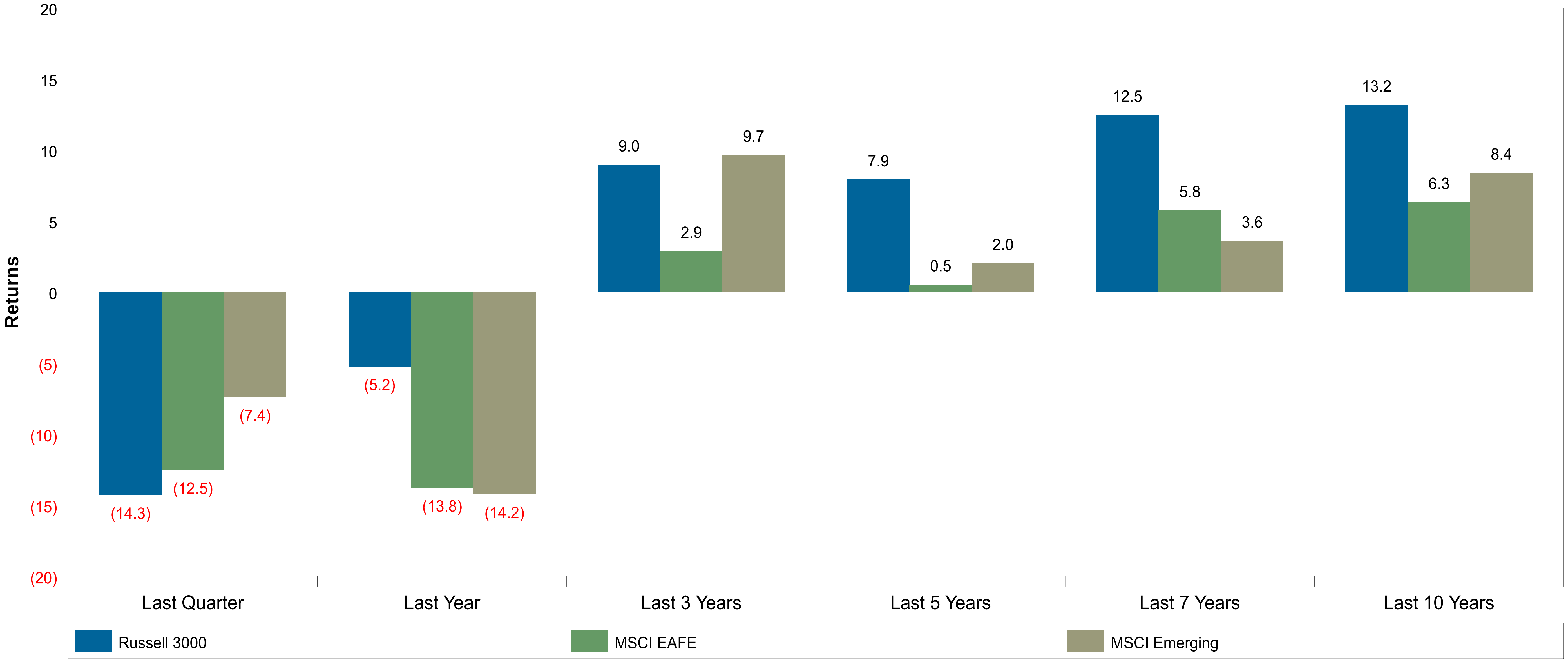
- Capital Markets Overview
- Total Fund Asset Allocation and Performance
- Asset Class Structure and Performance

Broad Capital Market Performance

Periods Ended December 31, 2018

Public Equity Capital Market Performance

Periods Ended December 31, 2018



Callan Periodic Table of Investment Returns

Returns for Key Indices

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
MSCI Emerging Markets 78.51%	MSCI ACWI ex USA SC 25.20%	Bloomberg Barclays Aggregate 7.84%	MSCI ACWI ex USA SC 18.52%	Russell 1000 33.11%	S&P 500 13.69%	MSCI ACWI ex USA SC 2.60%	Bloomberg Barclays Corp High Yield 17.13%	MSCI Emerging Markets 37.28%	Bloomberg Barclays Aggregate 0.01%
MSCI ACWI ex USA SC 62.91%	MSCI Emerging Markets 18.88%	Bloomberg Barclays Corp High Yield 4.98%	MSCI Emerging Markets 18.23%	S&P 500 32.39%	Russell 1000 13.24%	S&P 500 1.38%	Russell 1000 12.05%	MSCI ACWI ex USA SC 31.65%	Bloomberg Barclays Corp High Yield -2.08%
Bloomberg Barclays Corp High Yield 58.21%	Russell 1000 16.10%	Bloomberg Barclays Global Agg ex US 4.36%	Russell 1000 16.42%	MSCI World ex USA 21.02%	Bloomberg Barclays Aggregate 5.97%	Russell 1000 0.92%	S&P 500 11.96%	MSCI World ex USA 24.21%	Bloomberg Barclays Global Agg ex US -2.15%
MSCI World ex USA 33.67%	Bloomberg Barclays Corp High Yield 15.12%	S&P 500 2.11%	MSCI World ex USA 16.41%	MSCI ACWI ex USA SC 19.73%	Bloomberg Barclays Corp High Yield 2.45%	Bloomberg Barclays Aggregate 0.55%	MSCI Emerging Markets 11.19%	S&P 500 21.83%	S&P 500 -4.38%
Russell 1000 28.43%	S&P 500 15.06%	Russell 1000 1.50%	S&P 500 16.00%	Bloomberg Barclays Corp High Yield 7.44%	MSCI Emerging Markets -2.19%	MSCI World ex USA -3.04%	MSCI ACWI ex USA SC 3.91%	Russell 1000 21.69%	Russell 1000 -4.78%
S&P 500 26.47%	MSCI World ex USA 8.95%	MSCI World ex USA -12.21%	Bloomberg Barclays Corp High Yield 15.81%	Bloomberg Barclays Aggregate -2.02%	Bloomberg Barclays Global Agg ex US -3.09%	Bloomberg Barclays Corp High Yield -4.47%	MSCI World ex USA 2.75%	Bloomberg Barclays Global Agg ex US 10.51%	MSCI World ex USA -14.09%
Bloomberg Barclays Global Agg ex US 7.53%	Bloomberg Barclays Aggregate 6.54%	MSCI Emerging Markets -18.42%	Bloomberg Barclays Aggregate 4.21%	MSCI Emerging Markets -2.60%	MSCI ACWI ex USA SC -4.03%	Bloomberg Barclays Global Agg ex US -6.02%	Bloomberg Barclays Aggregate 2.65%	Bloomberg Barclays Corp High Yield 7.50%	MSCI Emerging Markets -14.58%
Bloomberg Barclays Aggregate 5.93%	Bloomberg Barclays Global Agg ex US 4.95%	MSCI ACWI ex USA SC -18.50%	Bloomberg Barclays Global Agg ex US 4.09%	Bloomberg Barclays Global Agg ex US -3.08%	MSCI World ex USA -4.32%	MSCI Emerging Markets -14.92%	Bloomberg Barclays Global Agg ex US 1.49%	Bloomberg Barclays Aggregate 3.54%	MSCI ACWI ex USA SC -18.20%

Source: Bloomberg Barclays, FTSE Russell, MSCI, Standard & Poor's

Market Environment

Volatility Spikes in First and Fourth Quarters of 2018

Three sharp declines during 2018
– Full corrections (10% decline) in February and December
– Near-correction (8% drop) in March

U.S. equity market suffered 5% loss for the year
– Developed markets fell 14%
– Emerging dropped over 18%.

The Fed raised rates four times in 2018, and signaled two more hikes in 2019

Wage pressures are building as the unemployment rate stays below 4%

However, CPI fell back below 2% year-over-year in December
– Higher rates threatened earlier in the year
– Falling oil prices alters the outlook for inflation

Returns for Periods ended December 31, 2018

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	-14.30	-5.24	7.91	13.18	9.04
S&P 500	-13.52	-4.38	8.49	13.12	9.07
Russell 2000	-20.20	-11.01	4.41	11.97	8.28
Non-U.S. Equity					
MSCI World ex USA	-12.78	-14.09	0.34	6.24	4.76
MSCI Emerging Markets	-7.46	-14.57	1.65	8.02	--
MSCI ACWI ex USA Small Cap	-14.43	-18.20	1.96	10.02	--
Fixed Income					
Bloomberg Barclays Aggregate	1.64	0.01	2.52	3.48	5.09
3-Month T-Bill	0.56	1.87	0.63	0.37	2.55
Bloomberg Barclays Long Gov/Credit	0.78	-4.68	5.37	5.88	6.82
Bloomberg Barclays Global Agg ex-US	0.91	-2.15	-0.01	1.73	4.39
Real Estate					
NCREIF Property	1.37	6.72	9.33	7.49	9.34
FTSE NAREIT Equity	-6.32	-4.62	7.90	12.12	9.76
Alternatives					
CS Hedge Fund	-4.30	-3.19	1.66	5.10	7.27
Cambridge Private Equity*	3.37	16.77	13.77	11.62	15.46
Bloomberg Commodity	-9.41	-11.25	-8.80	-3.78	2.03
Gold Spot Price	7.11	-2.14	1.28	3.78	4.85
Inflation - CPI-U	-0.48	1.91	1.51	1.80	2.20

*Cambridge PE data are available through September 30, 2018.

Source: Callan LLC

U.S. Economy Overview

Gross Domestic Product (GDP) and Inflation (CPI, PPI)

Global interest rate policies have yet to converge

– The Fed hiked rates four times in 2019, two more increases expected in 2019

U.S. economy strong, labor market very tight, reaching the limits of full employment.

The U.S. and euro zone economies diverging again

– Eurozone unemployment has dropped, but economic growth stalled (GDP below 1.5%)

– Geopolitical turmoil across the zone, from Italy to Brexit

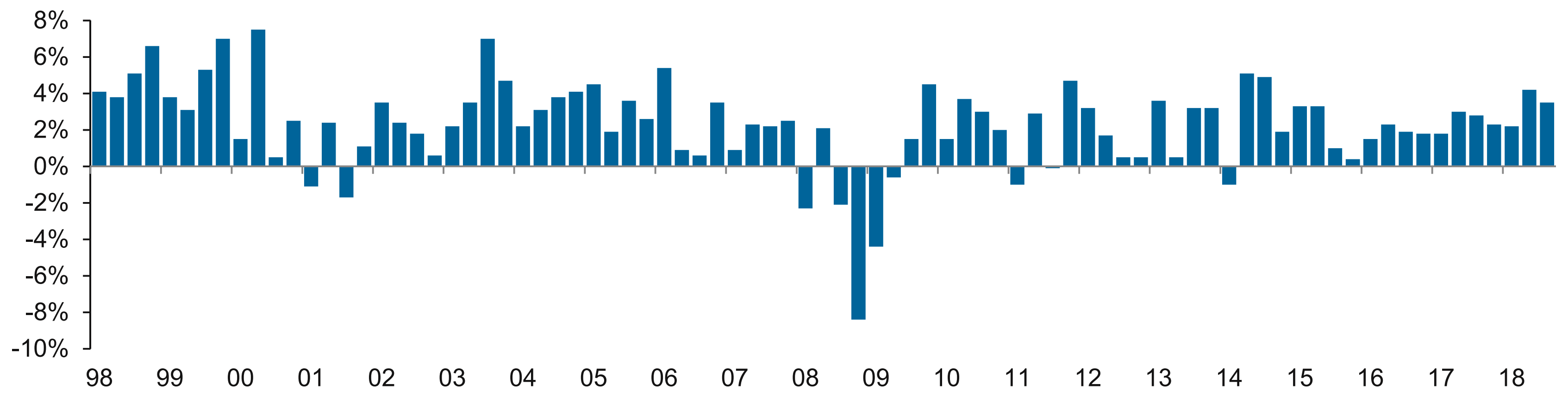
China suffering serious slowdown in growth: industrial output, retail sales, implied GDP

Slumping oil prices may radically alter inflation outlook

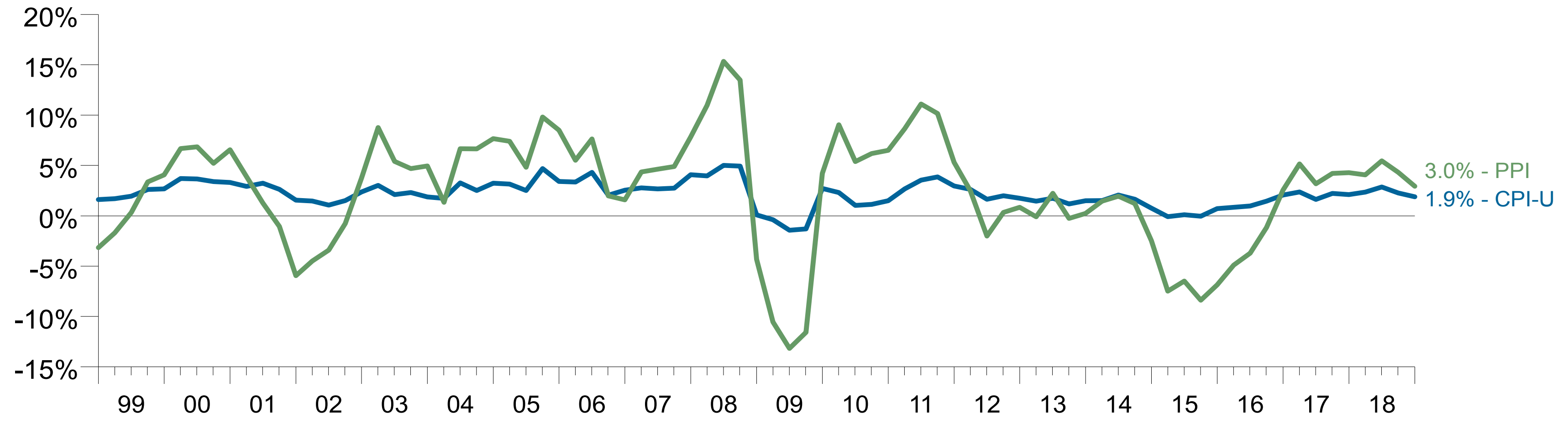
– Wage pressures building in U.S. had yet to translate into headline inflation

– Crude oil prices crested at $78 in September, only to collapse in the fourth quarter

Quarterly Real GDP Growth*



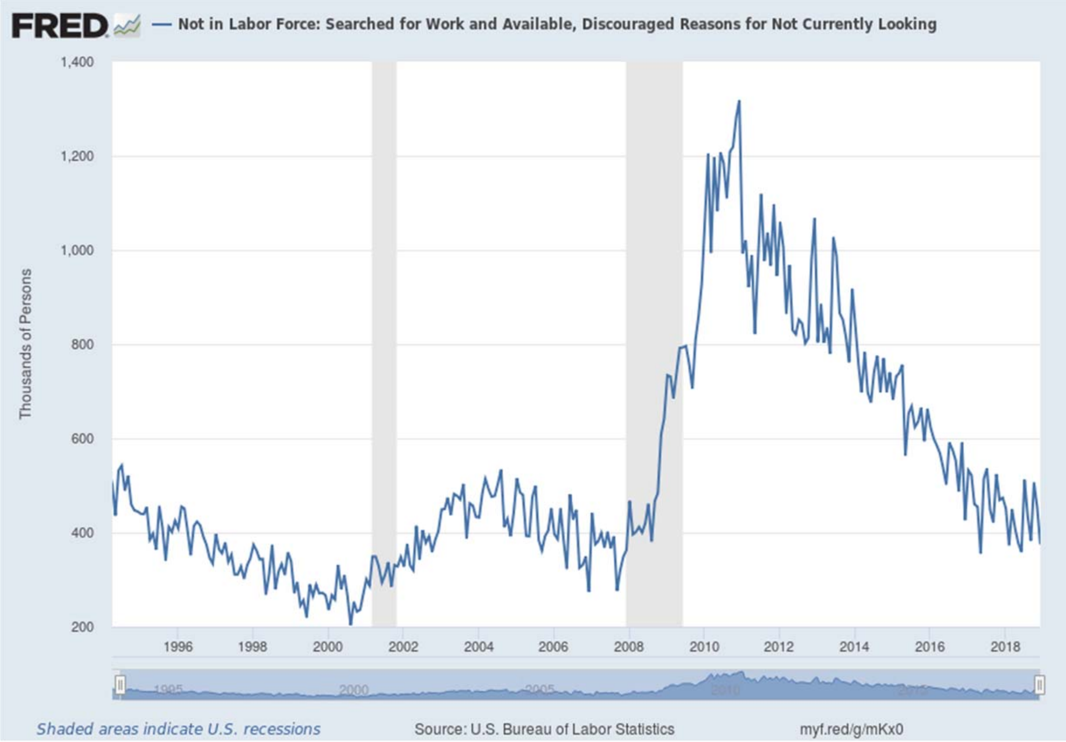
Inflation Year-Over-Year



*Fourth quarter 2018 data not available at time of publication.
Sources: Bureau of Labor Statistics, Bloomberg, Callan LLC

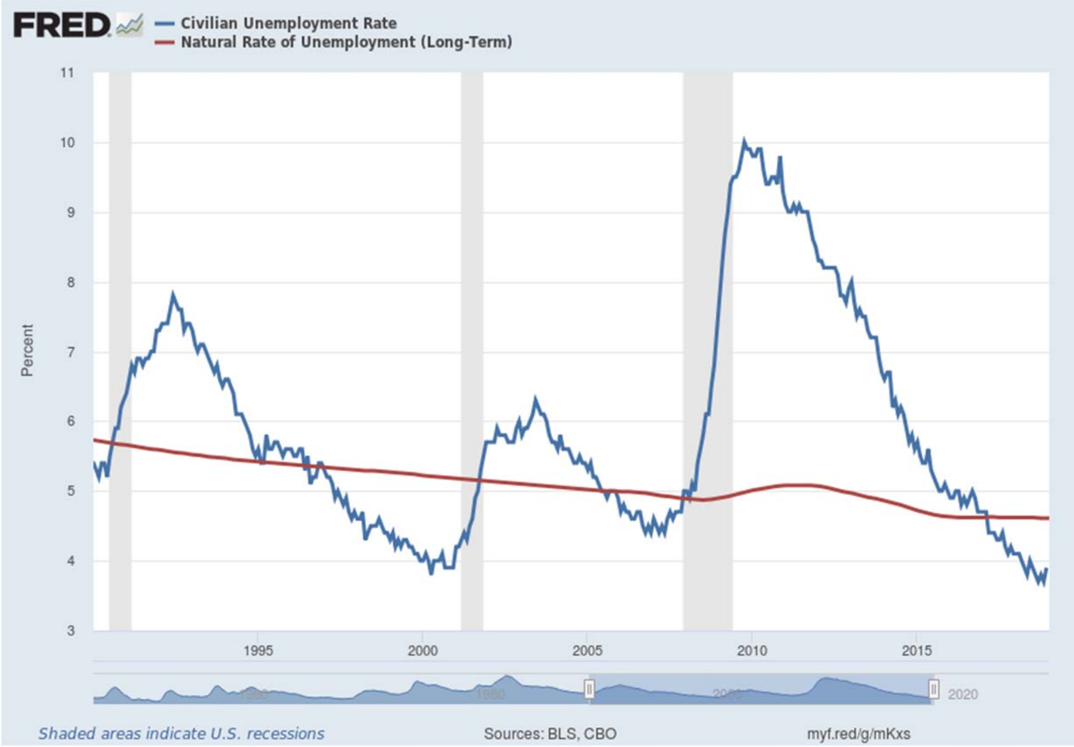
When Will Inflation Catch Fire? The Job Market Squeeze on Policy

10 years of persistent monetary and fiscal stimulus has caught up to global growth



Discouraged worker effect has been pervasive since the Global Financial Crisis

– Gradual, persistent growth has finally coaxed workers back from the sidelines, erasing the slack in the job market.



The U.S. unemployment rate has reached a generational low

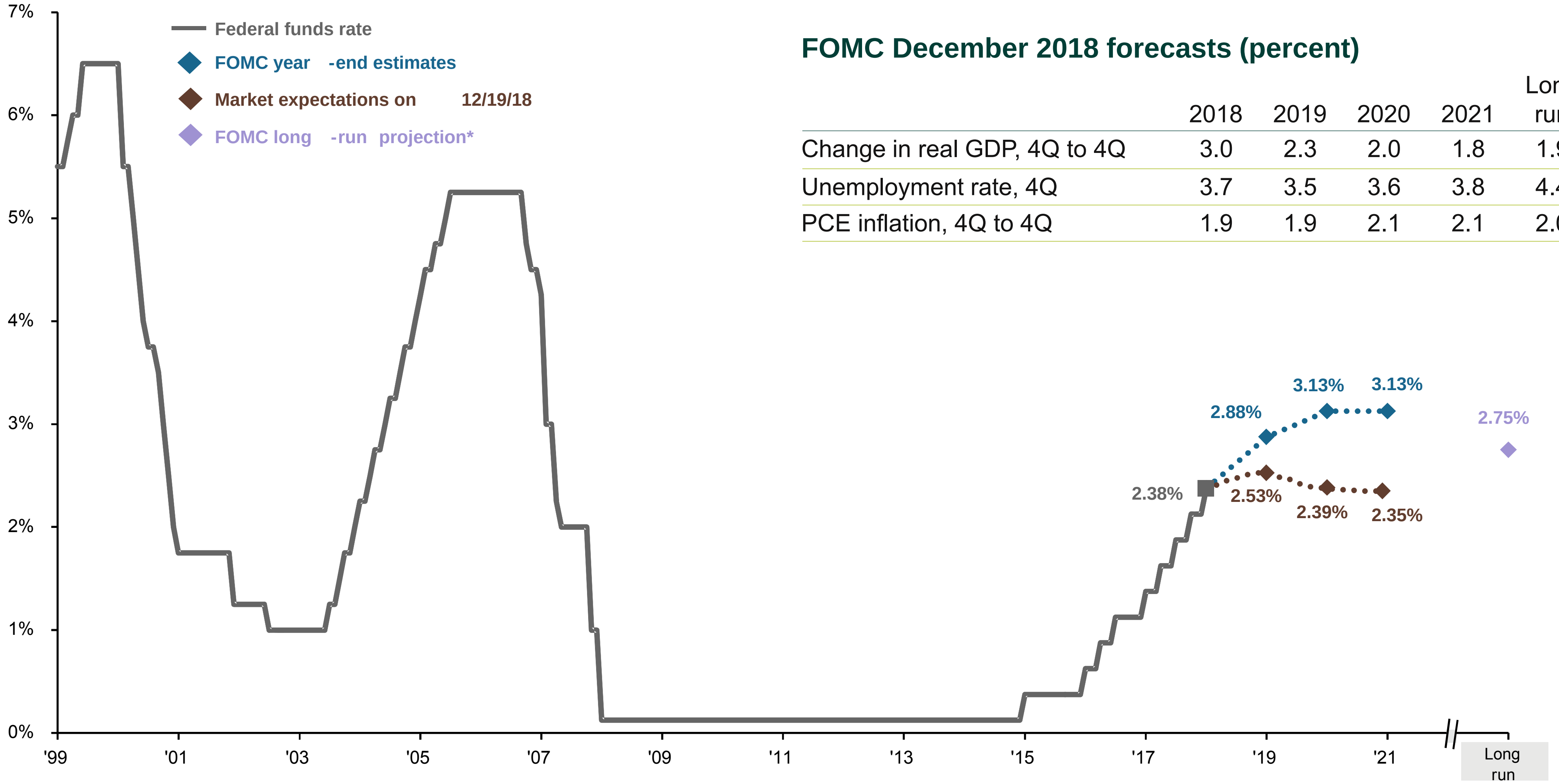
– Fell to 3.7% in September

– Well below the long-term natural rate of unemployment

Source: Federal Reserve, U.S. Department of Labor

Unprecedented Policy Response Is Finally Over

Fed moved toward normalization with four rate hikes in 2018; two more still projected for 2019



FOMC December 2018 forecasts (percent)

	2018	2019	2020	2021	Long run
Change in real GDP, 4Q to 4Q	3.0	2.3	2.0	1.8	1.9
Unemployment rate, 4Q	3.7	3.5	3.6	3.8	4.4
PCE inflation, 4Q to 4Q	1.9	1.9	2.1	2.1	2.0

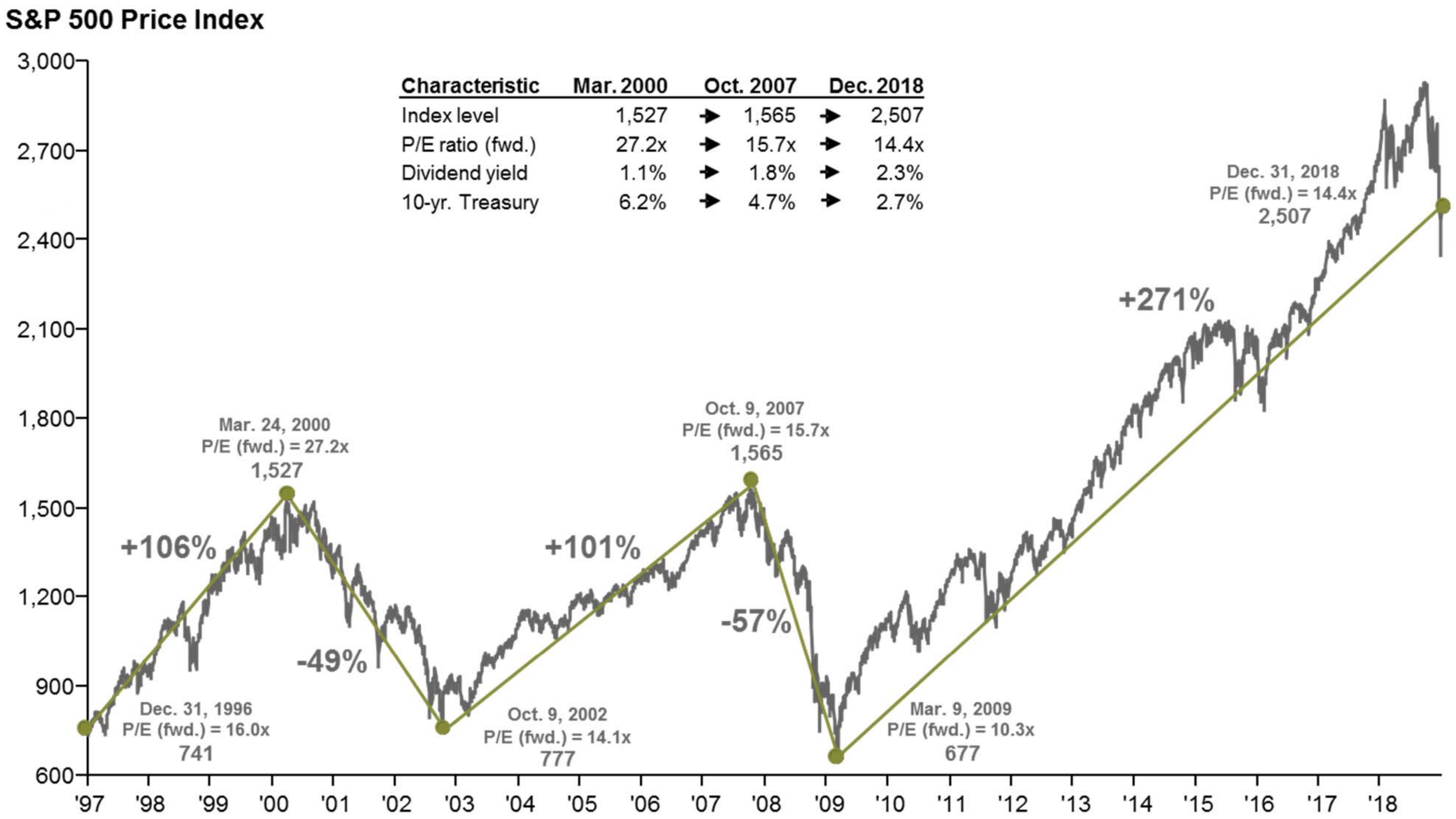
Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.
Market expectations are the federal funds rates priced into the fed futures market as of the date of the December 2018 FOMC meeting and are through November 2021. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy.
Guide to the Markets – U.S. Data are as of December 31, 2018.

Q4 Decline Erases Third Quarter Run-Up in US Stock Market, Ends 2018 With a Loss

Fourth quarter collapse brought S&P 500 down by 4.2% for the year
- Strong 3rd quarter put S&P up over 10% by September; obliterating TWO corrections in February and March

Forward valuation dropped to 14.4, below its 25-year average
- nowhere near the peak set in 2000

Dividend yield on stocks has been comparable to that of a 10-year Treasury for an extended period, and the gap is just widening now
- vastly different relationship between stock and bond yields in 2000 and 2007



Source: Compustat, FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management.
Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by Compustat. Forward price to earnings ratio is a bottom -up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns.
Guide to the Markets – U.S. Data are as of December 31, 2018.

Source: J.P. Morgan Asset Management.

U.S. Equity Performance

Fourth Quarter 2018

U.S. Equity Fell Drastically in 4Q18

- Decline driven by broad-based de-risking
- Trade tension, rising rates, concern over slowing growth, low oil prices, and government shutdown remain concerns
- Defensive "safe haven" sectors fared best; Cyclical sectors fared worst on end-of-cycle fears

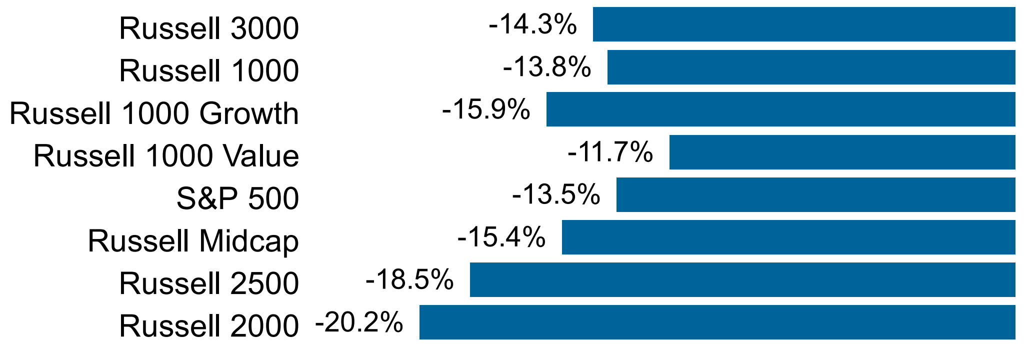
Growth Trailed Value for the Quarter

- Growth fell further than Value within both large and small cap due to larger weightings in poor performing Tech, Discretionary and Industrial sectors

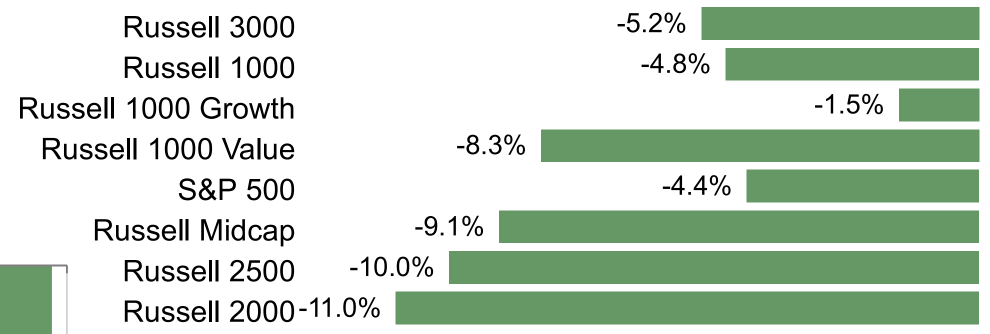
Small Caps Hardest Hit

- Margin pressure, excess leverage, slowing growth and earnings expectations worried investors
- Russell 2000 fell over 22% from August peak

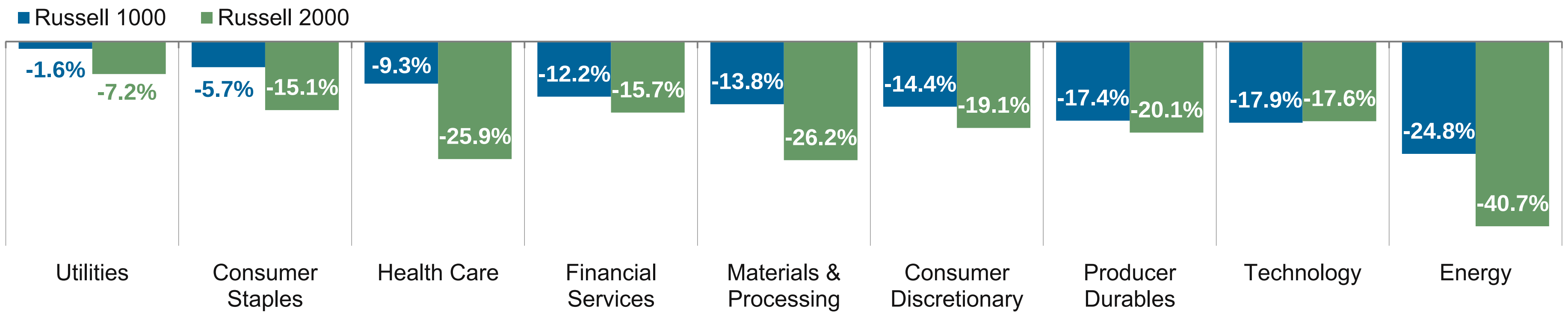
U.S. Equity: Quarterly Returns



U.S. Equity: Annual Returns



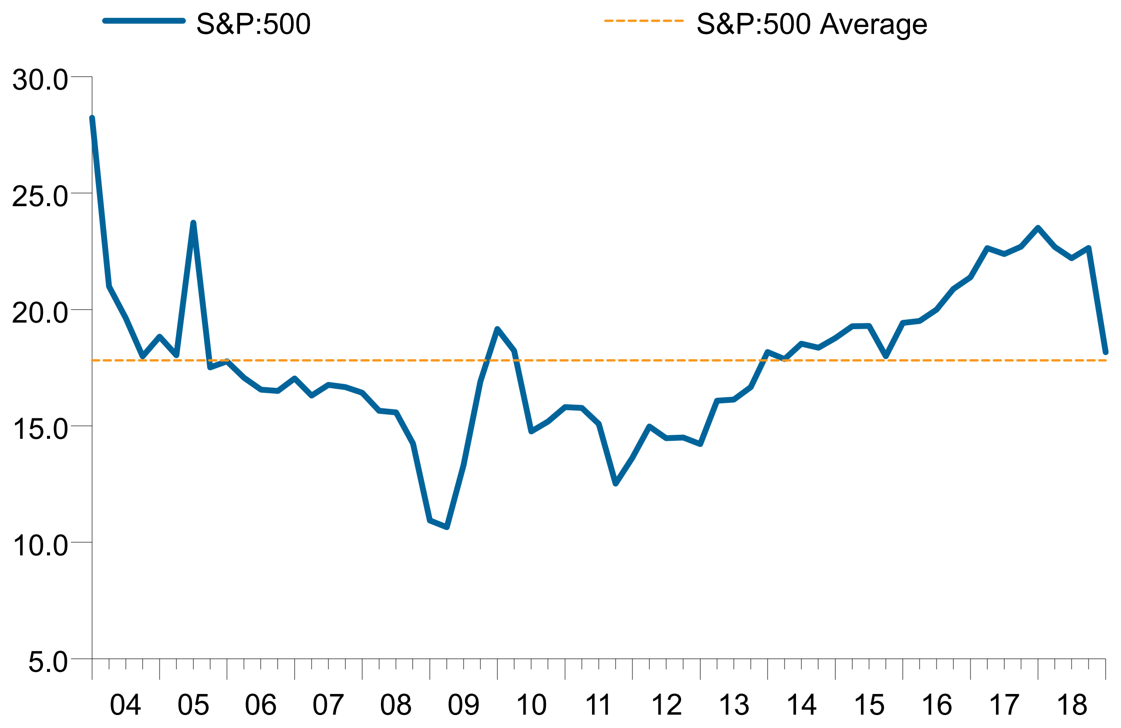
Quarter ended December 31, 2018



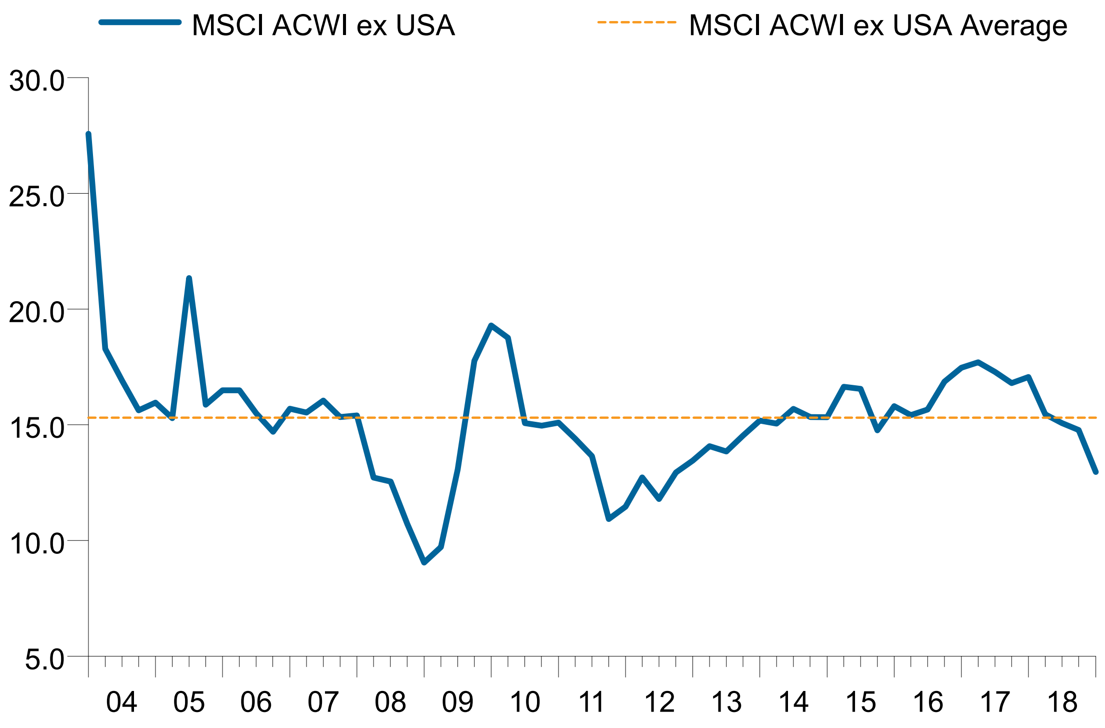
Sources: FTSE Russell, Standard & Poor's

U.S. Equity Valuations: Back to the Long-Term Average

Price/Earnings Ratio (exc neg)
for 15 Years ended December 31, 2018



Price/Earnings Ratio (exc neg)
for 15 Years ended December 31, 2018



U.S. equity valuations dropped during 2018 and have returned to their 15-year average

– Valuations recuperated steadily after the Global Financial Crisis, but current valuations are well below the tech-bubble era
– U.S. equity valuations are higher relative to non-U.S. equity; ACWI ex USA valuations are below their 15-year average

Sources: MSCI, Standard & Poor's, Callan

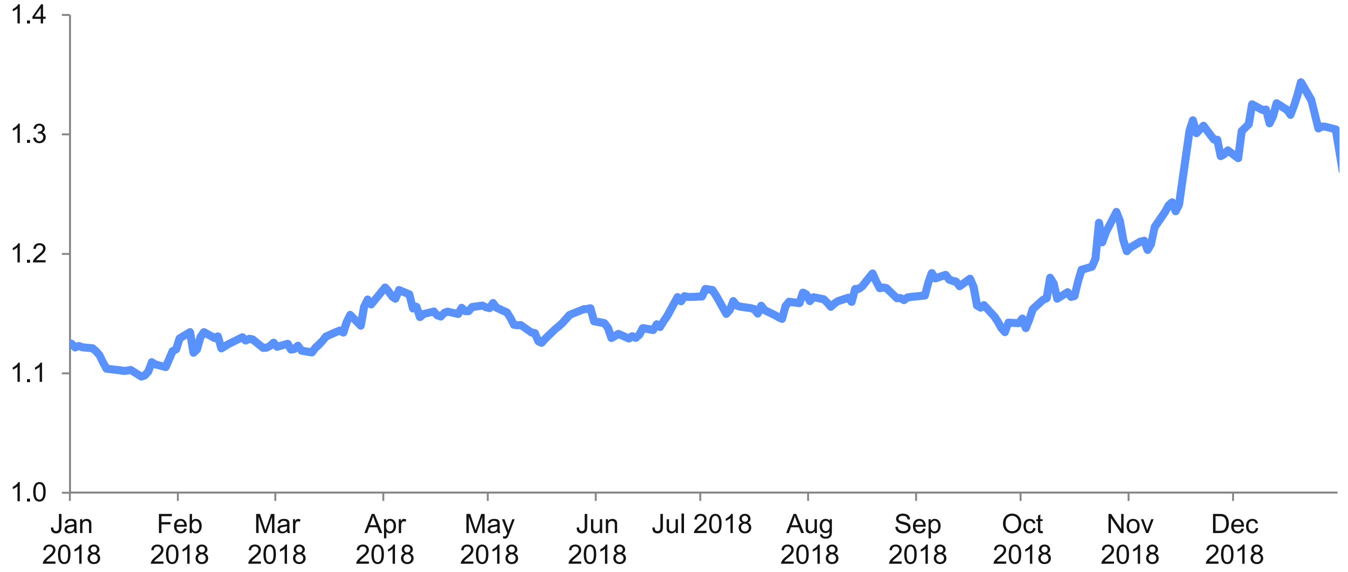
Equity Markets See Return of Volatility

– After a year of very little volatility in 2017, VIX index ended 2018 above 20 on 59 separate occasions, illustrating extreme volatility
– Much of the volatility occurred in the second half of the year
– As defensive sectors outperformed in 4Q, valuations rose relative to the broader market

The VIX Index

	#Number of Days VIX Traded Over				
	20	25	30	35	40
2018	59	16	5	2	0
2017	0	0	0	0	0
2016	42	12	0	0	0
2015	42	14	4	2	1

S&P Low Volatility / S&P 500 12-month Forward P/E Ratio



Source: Bloomberg as of 12/31/2018

Non-U.S. Equity Performance

Fourth Quarter 2018

Markets Driven Down by Global Trade Dispute and Brexit impasse

– Dollar rallied against euro on fears of euro zone contraction; Yen gained against dollar as investors sought safe haven
– Defensive sectors fared better than cyclicals across all markets given risk-off environment
– Global growth concerns and falling oil prices challenged economically sensitive sectors
– Value outpaced growth (and quality outpaced volatility factors) across all markets as visible earners and stable businesses prevailed

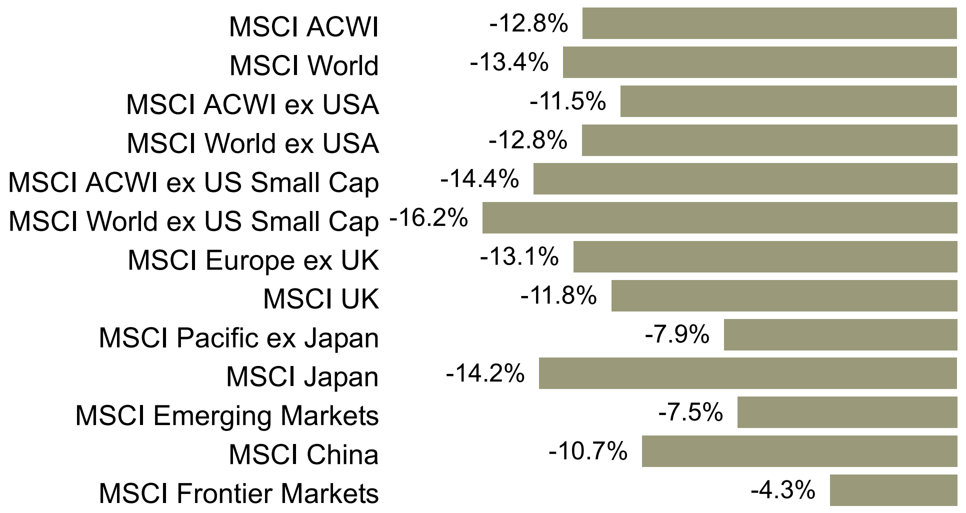
Emerging Markets Faltered

– China down double digits on rising dollar, trade tension and slowing economy
– Brazil up double digits on shifting growth and pension reform sentiment with presidential election
– Asian Tech companies down on soft demand, heightened regulation and consumption slowdown

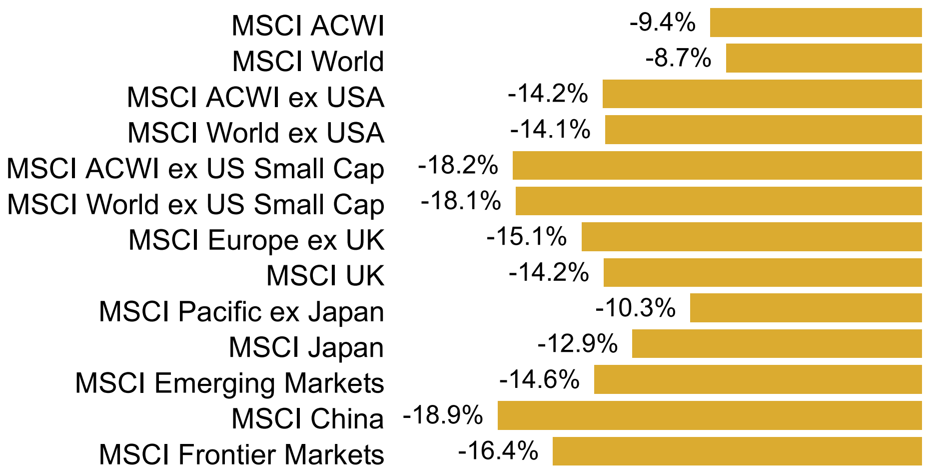
Non-U.S. Small Cap Trailed Large Cap

– Non-U.S. small cap also negatively impacted by U.S.-China trade tension and global growth fears

Global Equity: Quarterly Returns

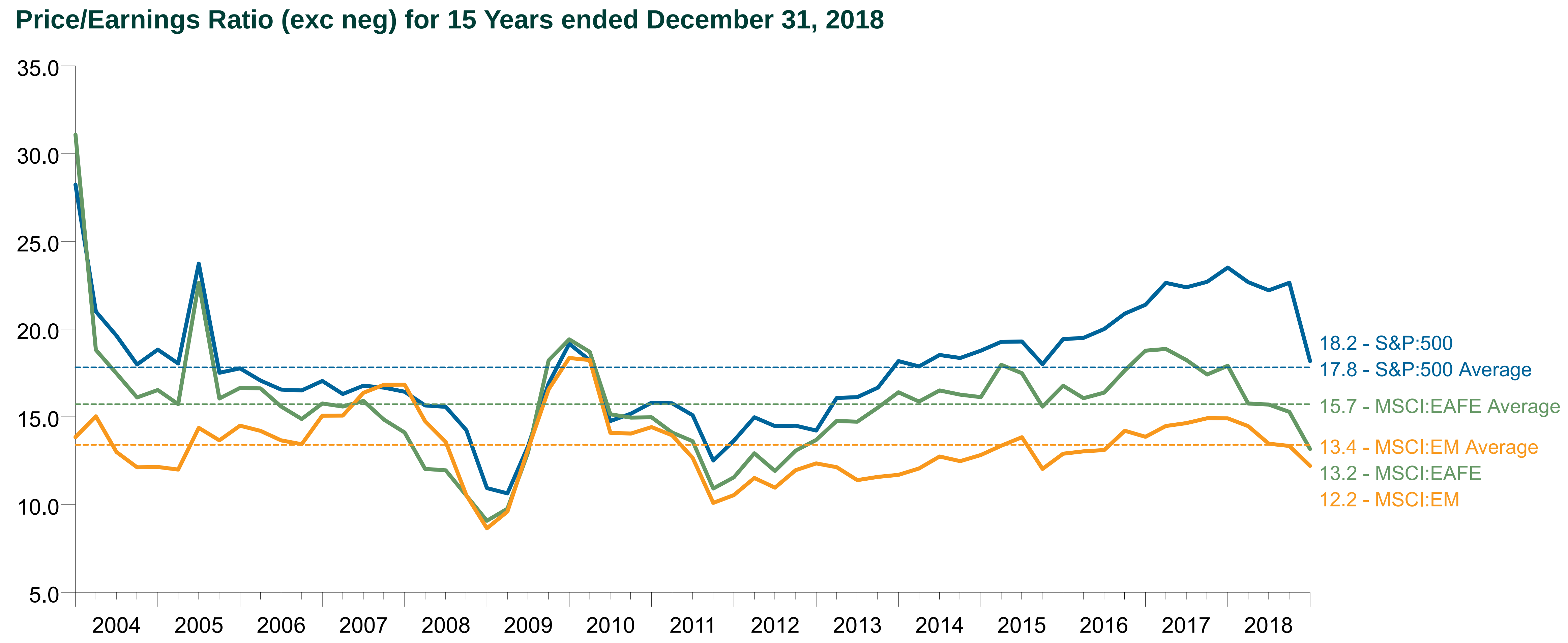


Global Equity: Annual Returns



Source: MSCI

Global Equity Valuations—Historical Data



U.S. equity valuations plummeted in Q4 and have returned to their historical average

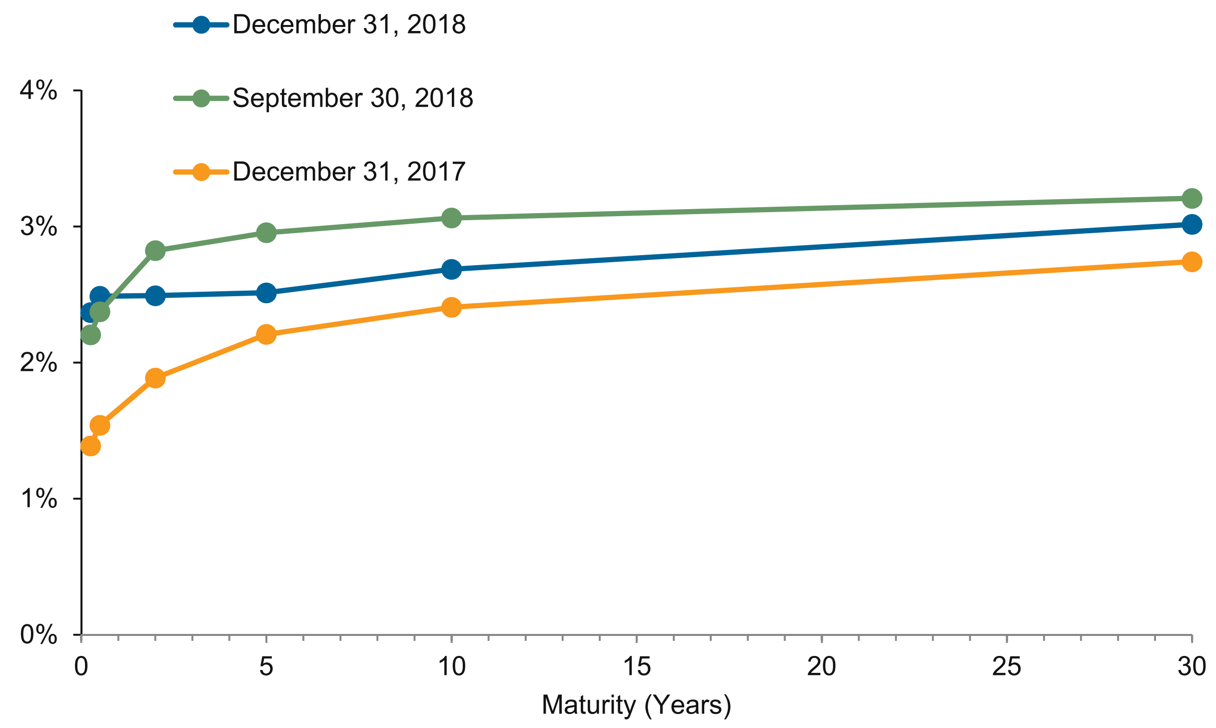
– U.S. remains higher than non-U.S. developed and emerging market equity valuations relative to the 15-year average for each index.
– Despite reasonable relative valuations, both political and economic risks remain in international markets

Forward valuations dropped during 2018 and the 14.4 December reading is below the 25-year average

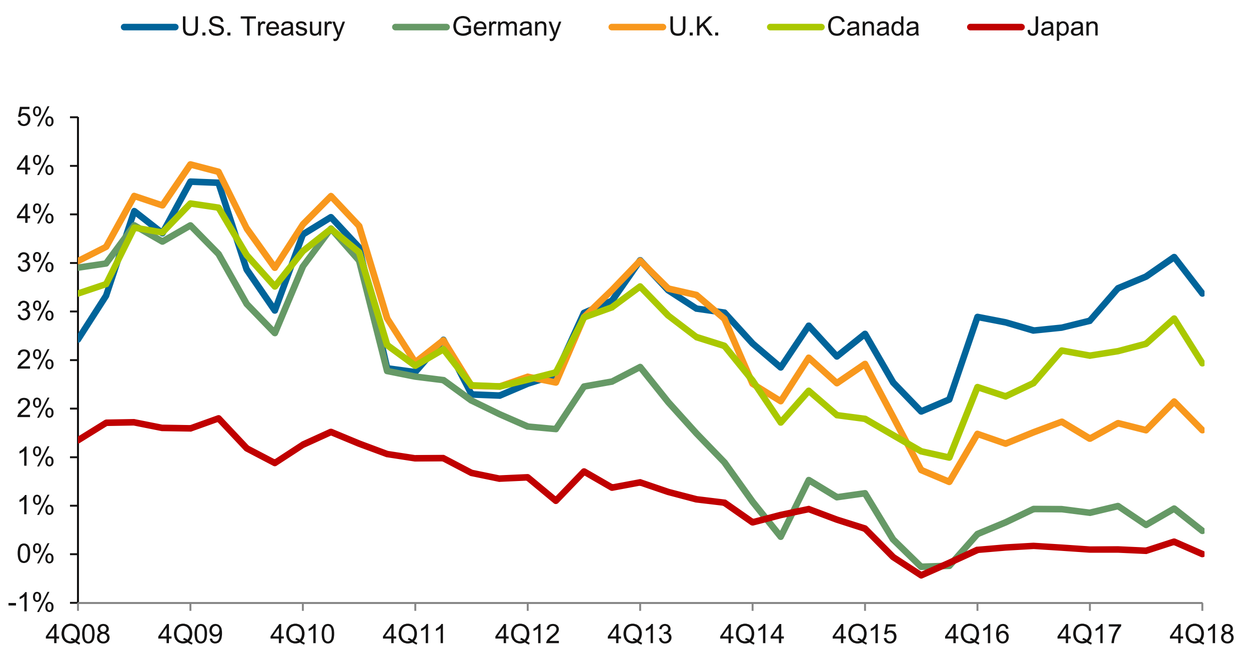
Sources: MSCI, Standard & Poor's, Callan

Yield Curve Flattens While Global Rates Diverge

U.S. Treasury Yield Curves



10-Year Global Government Bond Yields



Treasury yield curve has flattened as rates moved up on the short end

- Yields have barely moved on the long end
- Inverted yield curve has presaged most recessions in past 70 years.

U.S. yields have diverged as monetary policies have fallen out of sync

- Tightening in Euro zone hold

Source: Callan

U.S. Fixed Income Performance

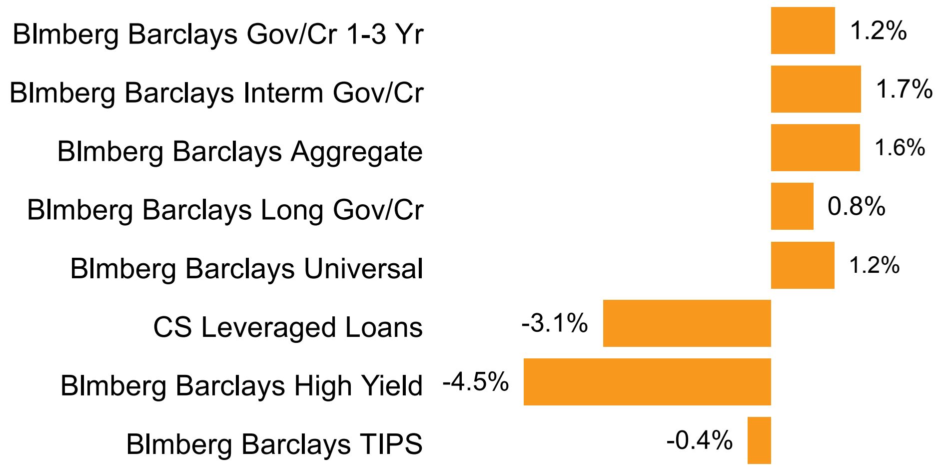
Fourth Quarter 2018

Investors Rotated into Safe Haven Securities
- U.S. Treasuries returned 2.57% as the 10-year Treasury yield closed the quarter at 2.69%
- Yield curve continued to flatten with long-term rates declining faster than short-term rates
- IG corporates sank amid elevated leverage concerns
- Investment grade spreads widened to levels (+153 bps) not seen since July 2016
- Greater than 50% of new issuance came from BBB-rated issuers in 2018

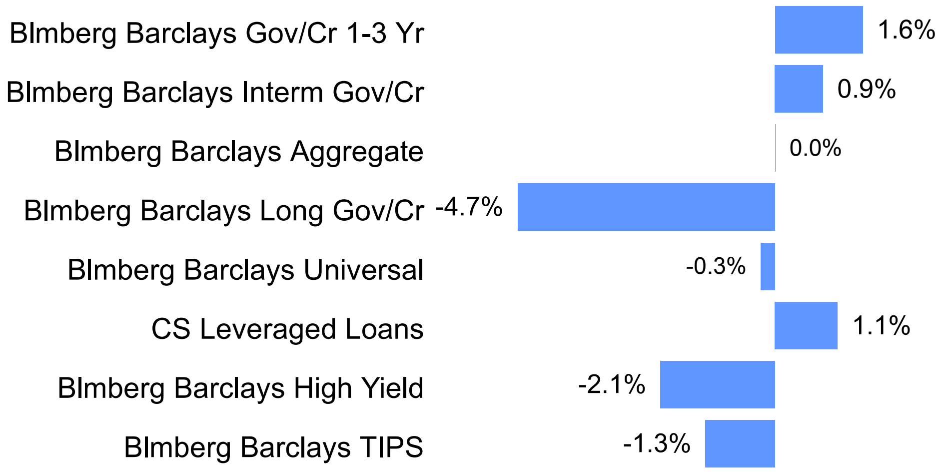
High Yield Spreads Widened as Yield-to-Worst Approached 8%
- High Yield funds saw $20bn in outflows as sector dealt with flight to quality
- Energy sector led selloff amid volatile oil prices

Leveraged Loans Experienced $17 bn in Outflows
- Changing interest rate projections sparked additional volatility
- CLO formation decreased in December, pulling back from technical demand in 4Q

U.S. Fixed Income: Quarterly Returns



U.S. Fixed Income: Annual Returns



Sources: Bloomberg Barclays, Credit Suisse

Global Fixed Income Performance

Fourth Quarter 2018

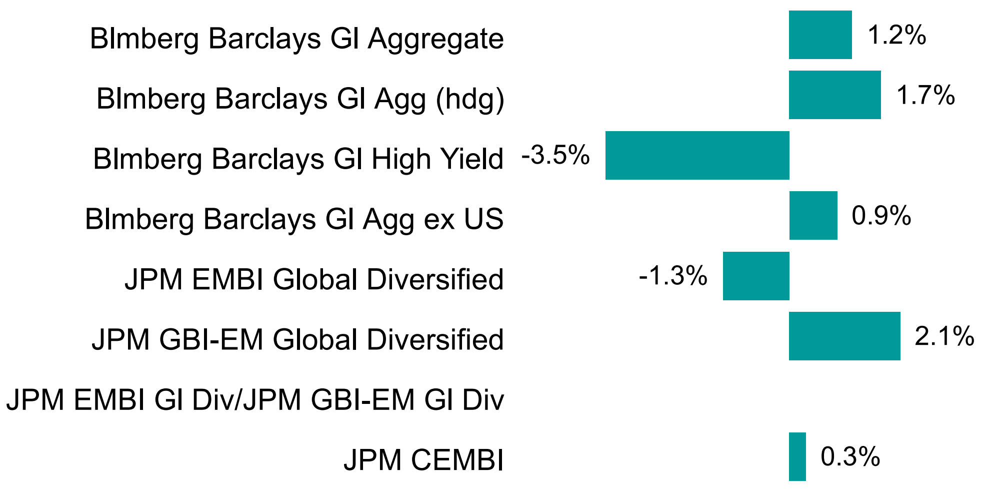
Sovereign Bond Yields Declined

– U.S. dollar strength was headwind for unhedged non-U.S. developed assets

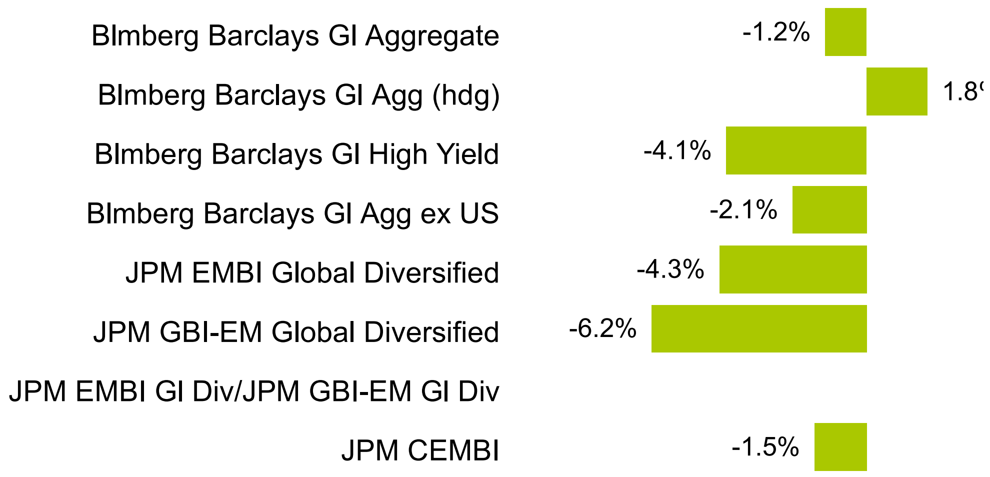
Local EM Debt Outpaced Hard Currency ($US) EM Debt

– Higher yielding EM currencies (Turkey, Argentina, Brazil) appreciated against the dollar
– Performance was mixed across EMBI's 60+ countries

Global Fixed Income: Quarterly Returns



Global Fixed Income: Annual Returns



Sources: Bloomberg Barclays, J.PMorgan

Unsynchronized Growth and Policy Paths

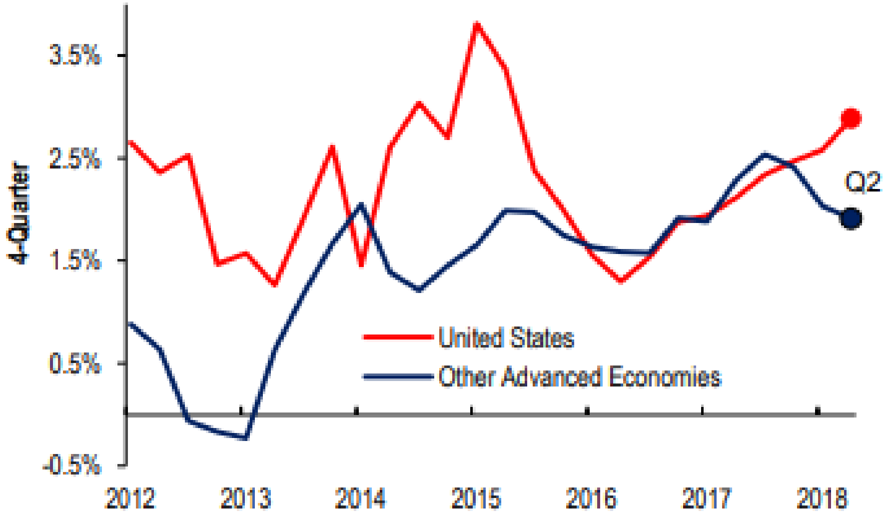
U.S. Takes Lead on Rate Normalization

- Rates in Europe and Japan remain low, but asset purchases slowing and hikes may follow
- U.S. farther ahead in its tightening cycle, which may lead to decoupling in interest rate regimes

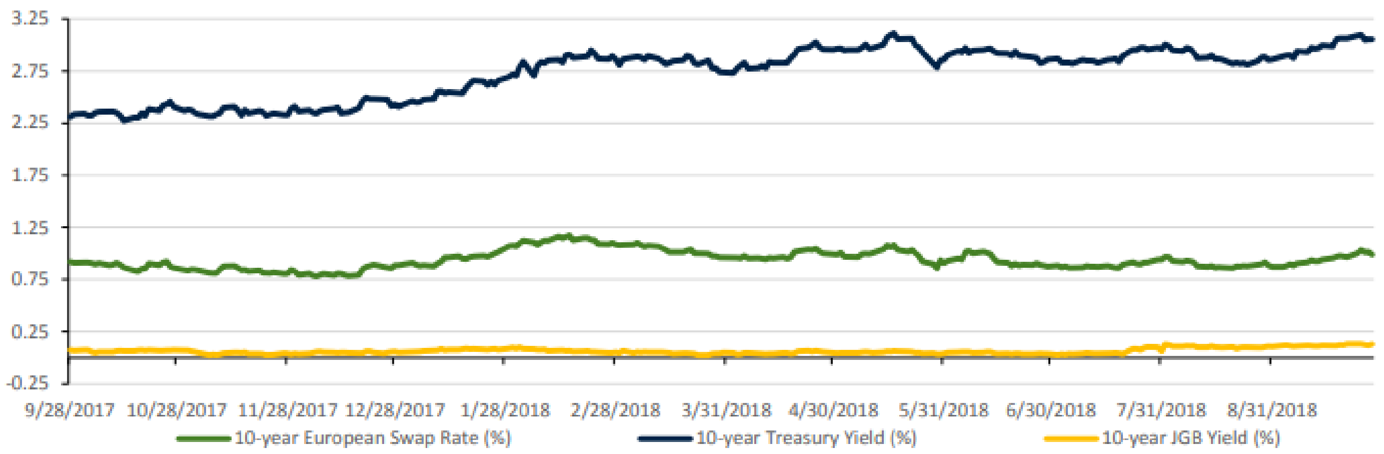
China Growth Slowed; Efforts Underway to Reduce Credit & Leverage in System

- Trade war effects will start to take hold

Real GDP Growth



U.S. Rates moving off lows while Japanese and European rates remain anchored



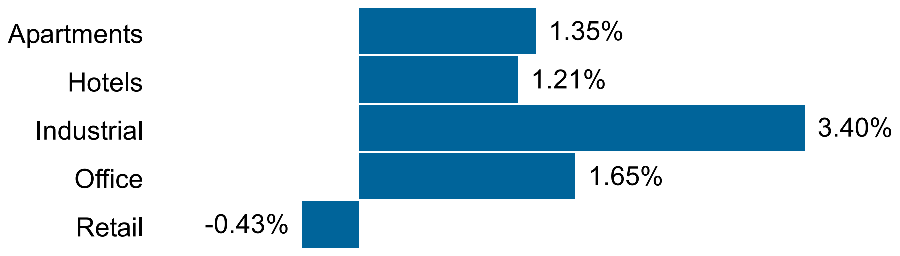
Sources: Bloomberg as of September 2018, Haver Analytics as of October 2018

Real Estate Market

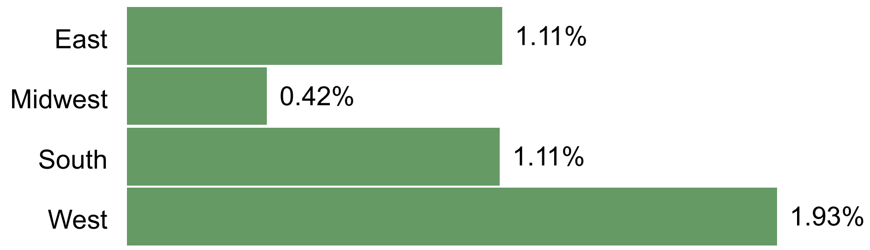
Fourth Quarter 2018

U.S. Private Real Assets	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Real Estate ODCE Style	1.45	7.41	7.41	7.76	9.69	6.00	7.09
NFI-ODCE (value weight net)	1.52	7.36	7.36	7.27	9.41	6.01	7.23
NCREIF Property	1.37	6.72	6.72	7.21	9.33	7.49	8.86
NCREIF Farmland	2.85	6.74	6.74	6.67	8.57	11.16	14.44
NCREIF Timberland	0.97	3.44	3.44	3.22	4.98	3.83	7.23
Public Real Estate							
Global Real Estate Style	-5.86	-4.74	-4.74	3.66	6.08	11.10	8.28
EPRA/NAREIT Developed	-5.69	-5.63	-5.63	2.72	4.34	9.65	--
Global ex-U.S. Real Estate Style	-5.53	-5.10	-5.10	4.50	4.99	10.49	7.95
EPRA/NAREIT Developed ex US	-4.87	-5.79	-5.79	5.09	3.00	9.24	7.22
U.S. REIT Style	-6.32	-4.32	-4.32	3.09	8.35	13.04	9.12
NAREIT Equity REITs	-6.32	-4.62	-4.62	2.89	7.90	12.12	8.25

Sector Quarterly Returns by Property Type



Sector Quarterly Returns by Region



REITs Traded Off, Outperformed Global Equities

– Global REITs lost 5.5% in 4Q18 compared to -13.3% for global equities (MSCI ACWI IMI)
– Both domestic and international REITs are trading at discounts to NAV
– Large cap stocks, especially those with lower debt levels, outperformed

U.S. Real Estate Returns Continue to Moderate, But Fundamentals Remain Healthy

Non-U.S. Markets Seeing Increased Capital Flows

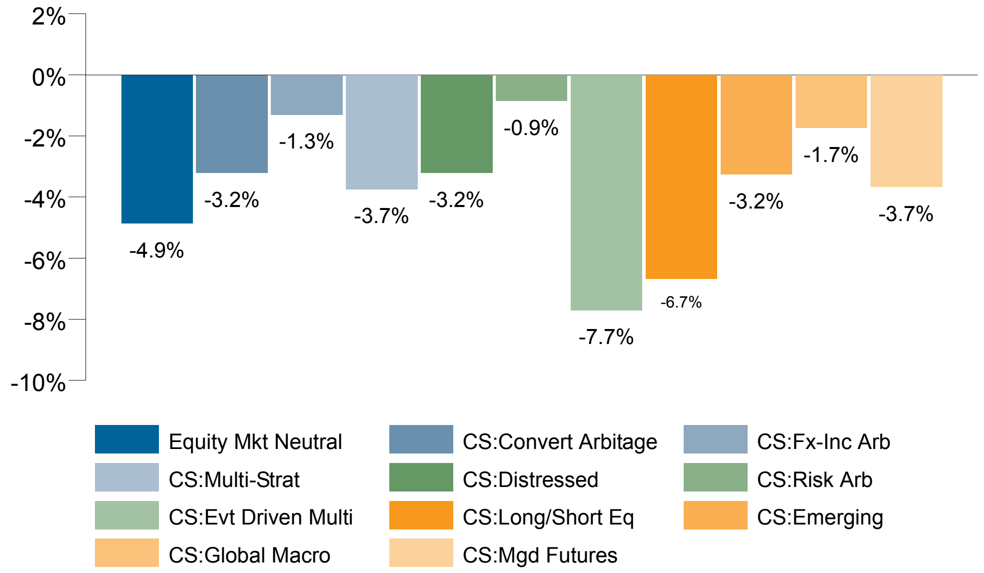
Sources: Callan, FTSE Russell, NAREIT, NCREIF

Hedge Fund Performance

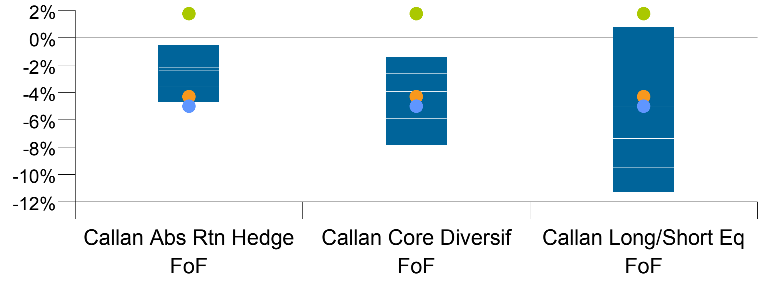
Hot Stuffing Meets Cold Turkey

- As the global capital markets reacted to the sharp risk-off sentiment driven by the mounting trade war and slumping China growth, volatile prices and tightening liquidity inside these markets became a heated mess for hedge funds.
- With U.S. small caps and commodities leading markets down, most hedge funds long on risk lost ground, as the Credit Suisse Hedge Fund Index melted down 4.3%. For the year, the index finished with a 3.2% loss.
- Heavily exposed to equity beta, Long/Short Equity (-6.7%) and Event-Driven Multi (-7.7%) lost the most among CS hedge fund strategies.
- After suffering more-than-expected damage in the prior quarter, Emerging Markets (-3.2%) fare better with alpha.
- Relative value trades, particularly those further away from liquid stocks, like Fixed-Income Arb (-1.3%), were less impacted.
- Also, more process-driven or hard-catalyst strategies, like Risk Arb and even Distressed (-3.2%), held ground better.
- Reflecting live hedge fund portfolios, the HFRI FoF Composite Index (-4.8%) fell marginally more than its unmanaged CS HFI proxy. For the year, it lost 3.9%.
- Hedge fund portfolios with a long bias to U.S. equities and related risks suffered the most, while those with illiquid credits, conservative event-driven, or discretionary macro strategies performed relatively well.

CS Hedge Fund Strategy Returns (quarter ended December 31, 2018)



Callan Hedge FOFs Style Group Returns (quarter ended December 31, 2018)

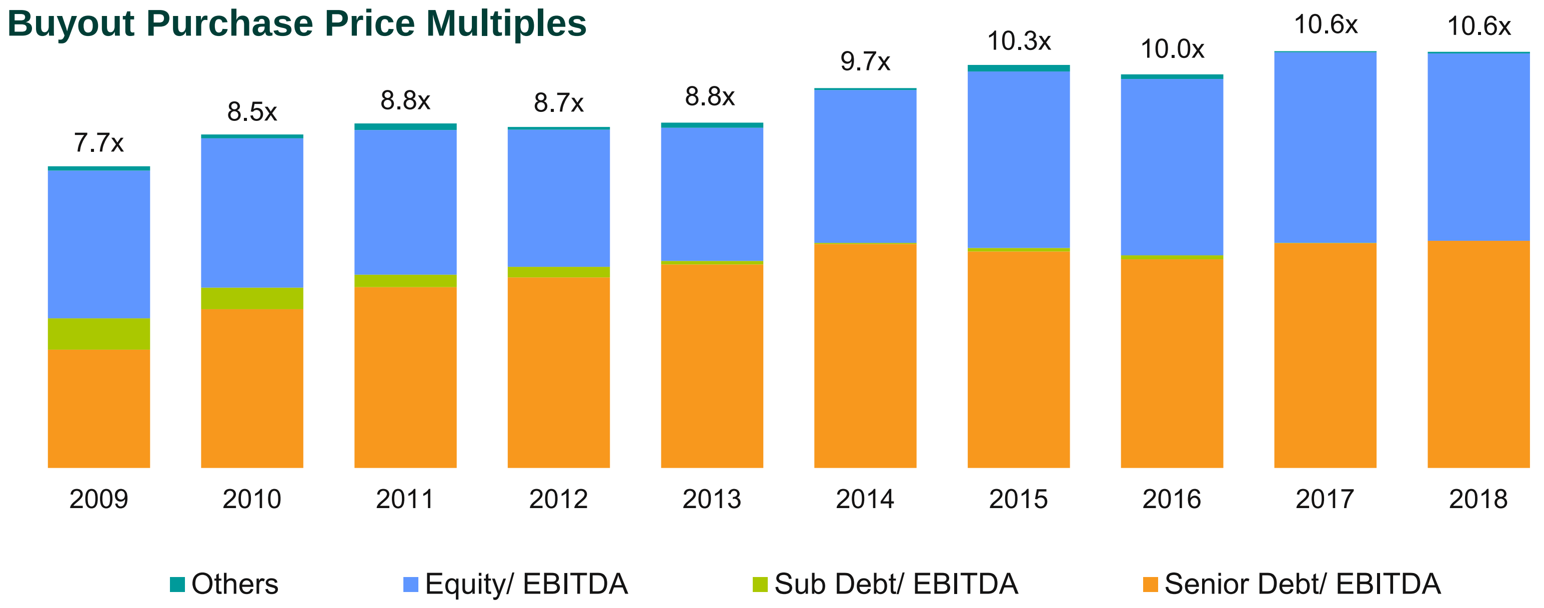


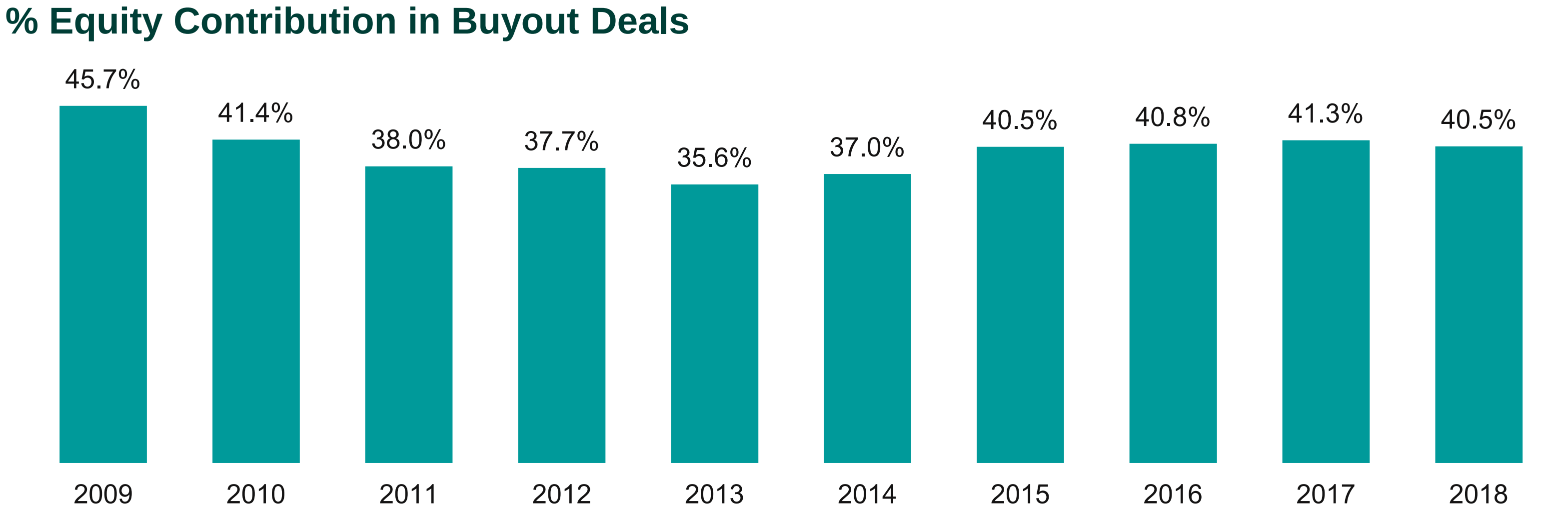
	Callan Abs Rtn Hedge FoF	Callan Core Diversif FoF	Callan Long/Short Eq FoF
25th Percentile	-2.2	-2.6	-5.0
Median	-2.4	-3.9	-7.4
75th Percentile	-3.5	-5.9	-9.5
CS Hedge Fund Index	-4.3	-4.3	-4.3
HFRI Fund of Funds	-5.0	-5.0	-5.0
T-Bills + 5%	1.8	1.8	1.8

Sources: Callan, Credit Suisse

Private Equity Company Valuations and Leverage

- Valuations for the year have plateaued at highly elevated levels
- Dip in 4Q18 valuations and leverage may signal tart of downward trend, attributable to:
  - Rising interest rates
  - Managers looking to de-risk in preparation for a market disruption



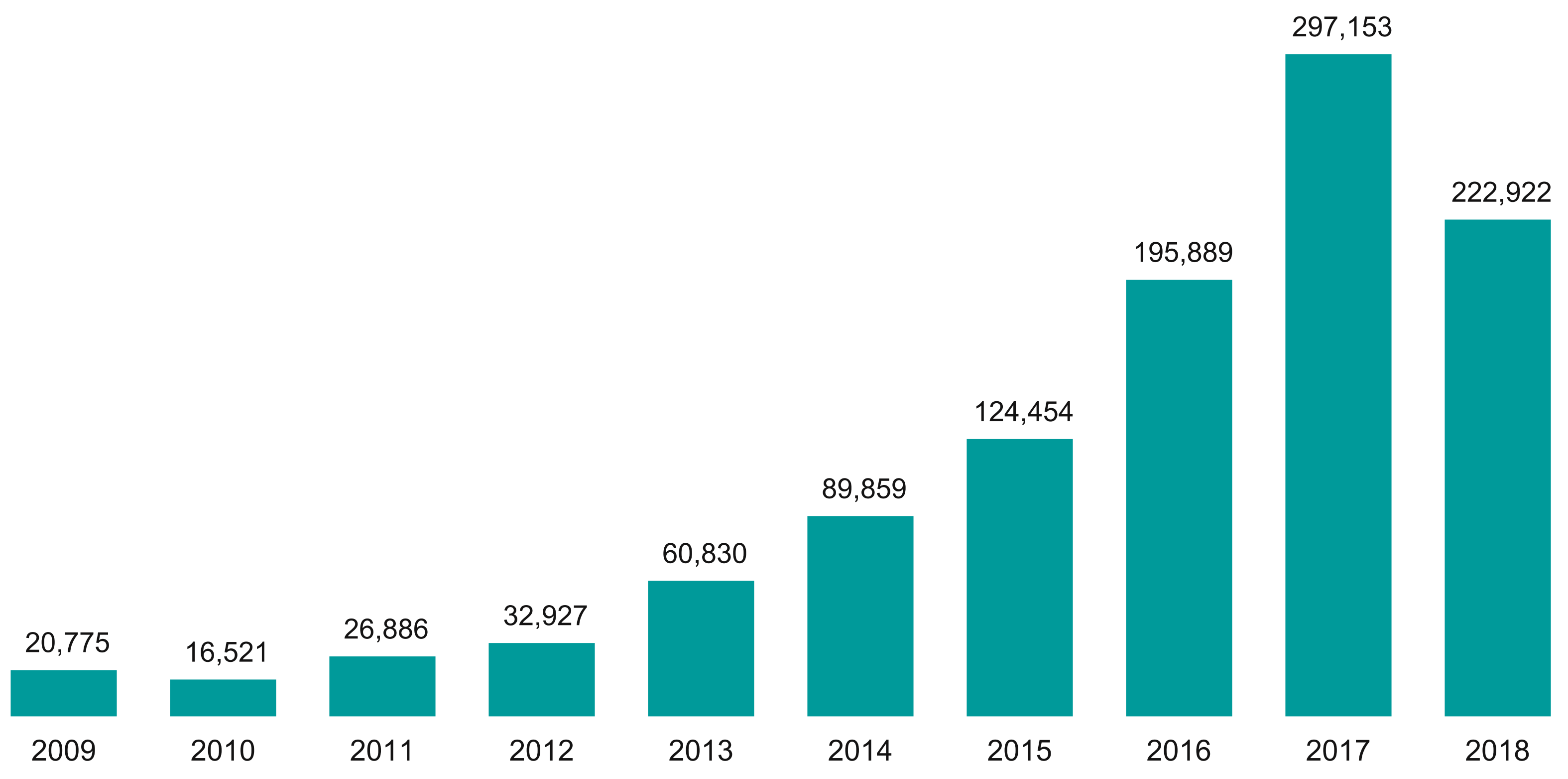


Source: S&P LCD

Private Equity Dry Powder Falls

- Dry powder dropped significantly in 2018 and has neared 2016 levels, indicating normalization of dry powder levels after 2017's highpoint.
- Longer-term, dry powder significantly higher than where it was 10 years ago. Private equity managers raising larger and larger funds, leading to increased amounts of capital available to deploy.

Dry Powder ($millions)

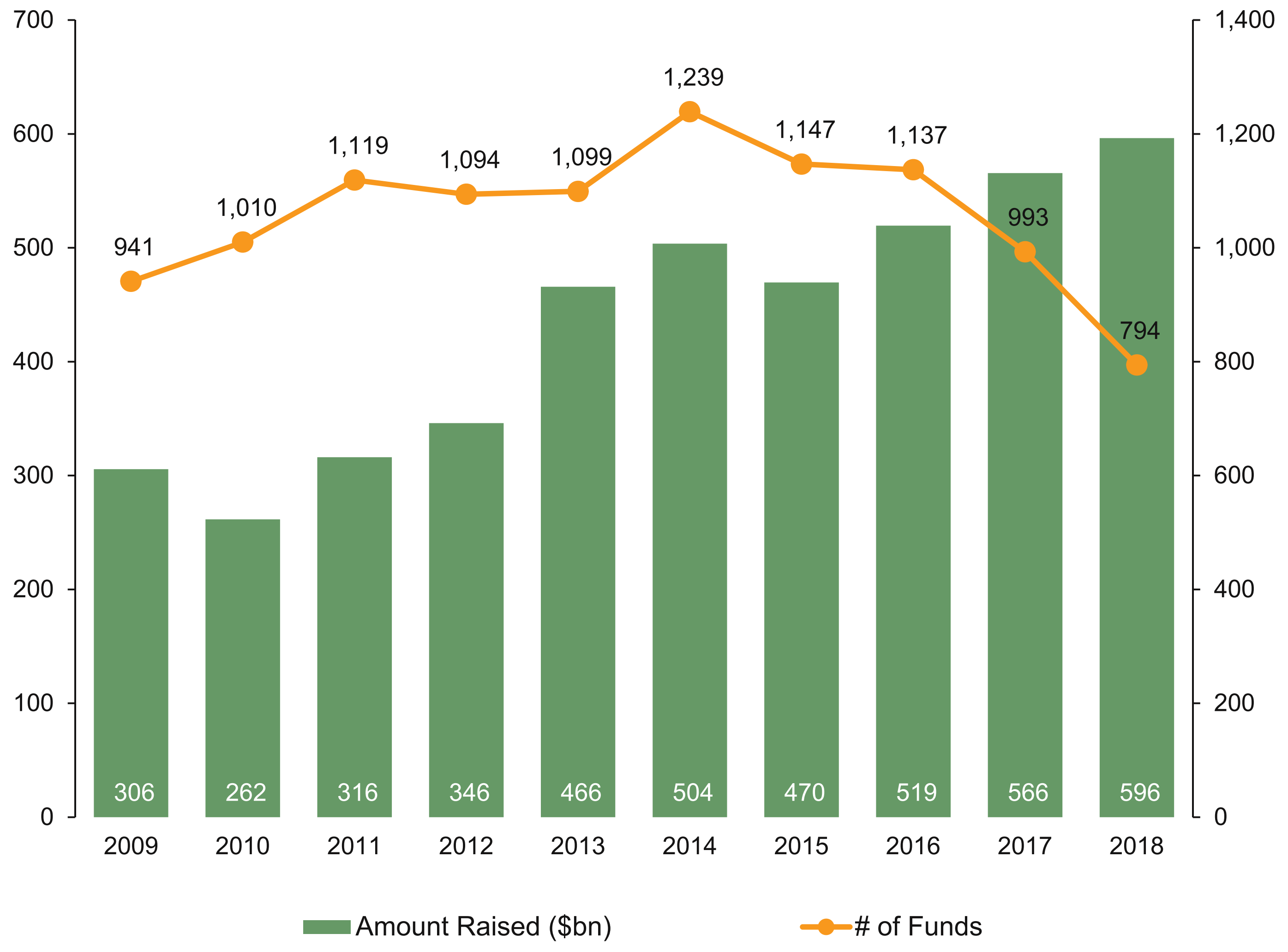


Source: Pitchbook

Private Equity Fundraising – The Surge Continues

- A fourth quarter spike resulted in record fundraising for 2018. Fund sizes also peaked as the overall number of fund dipped. Consequently, fundraising was concentrated in fewer, but larger, funds.

Funds Holding Final Closes by Year



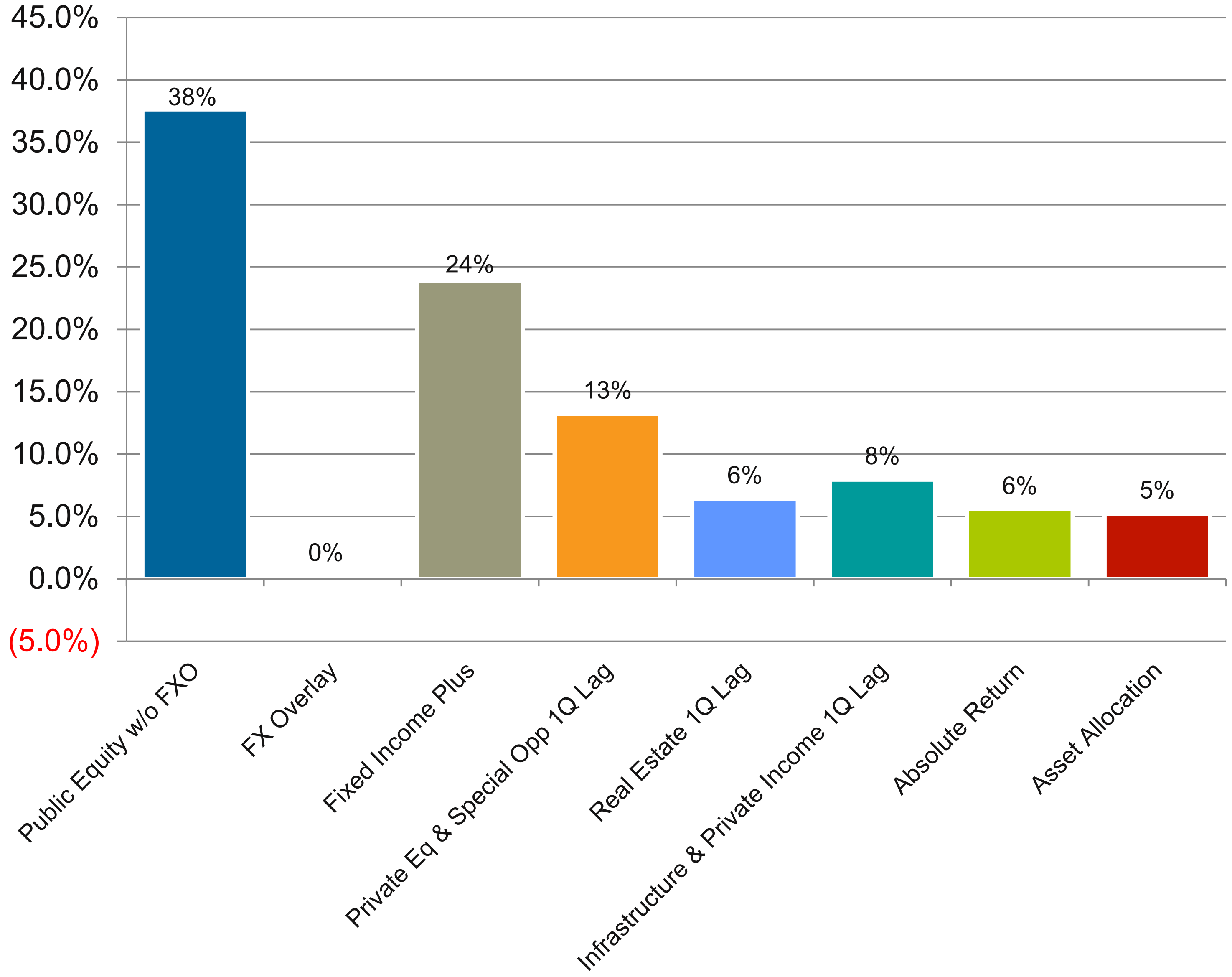
Source: Pitchbook

Total Fund
Asset Allocation and Performance

Total Fund Asset Allocation

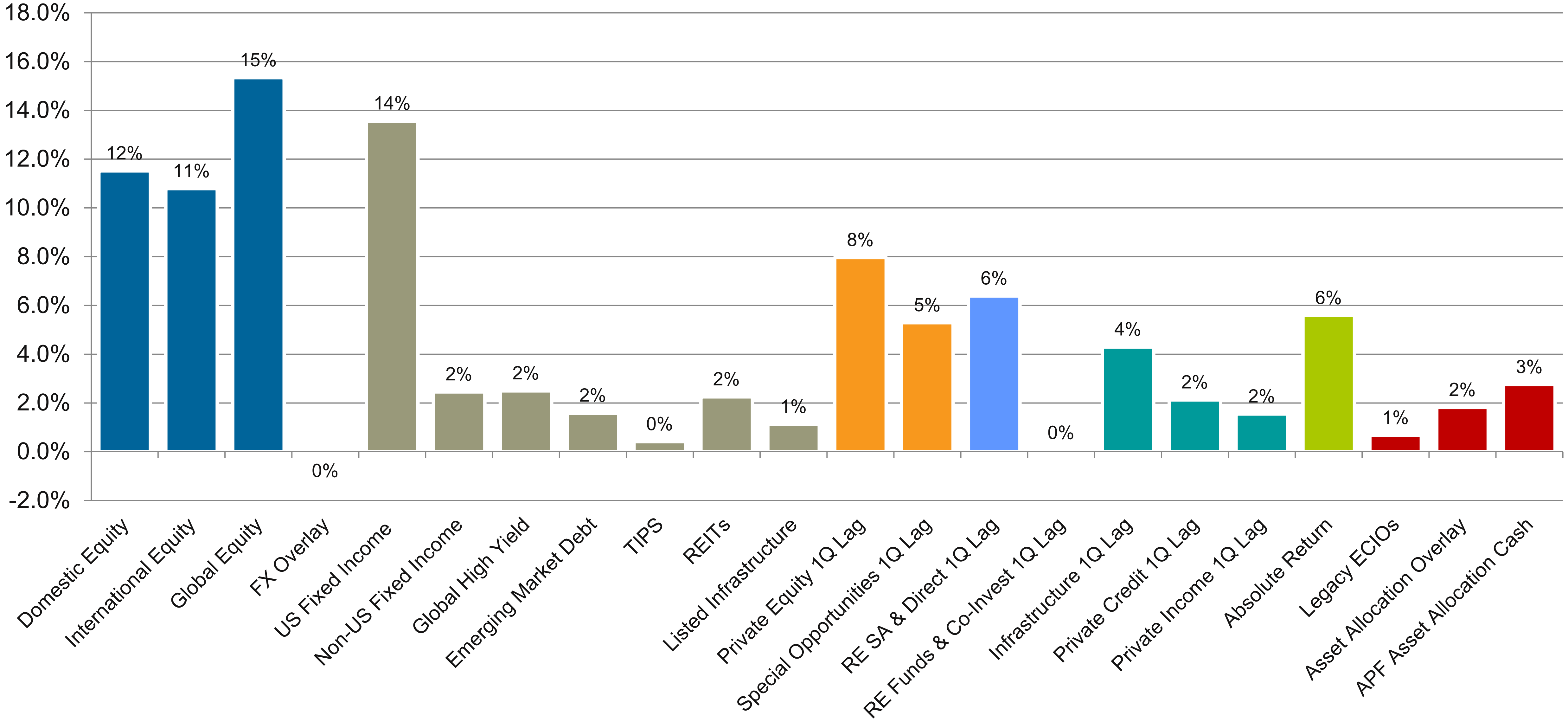
As of December 31, 2018

- APFC portfolio is well diversified across all major asset classes employed by institutional investors.
- Using institutional standard asset class definitions, the portfolio is currently allocated 38% to public equity, 24% to fixed income, and 38% to alternative investments.
- Compared to allocations in the 3rd quarter, this reflects a 5% decrease in public equity, an 1% increase in fixed income, and a corresponding 4% increase in alternative investments.
- Alternatives include private equity, special opportunities, real estate, private infrastructure, private credit, private income, absolute return, and asset allocation.
- Private Equity & Special Opportunities, Real Estate, and Infrastructure & Private Income are reported on a one-quarter lag.



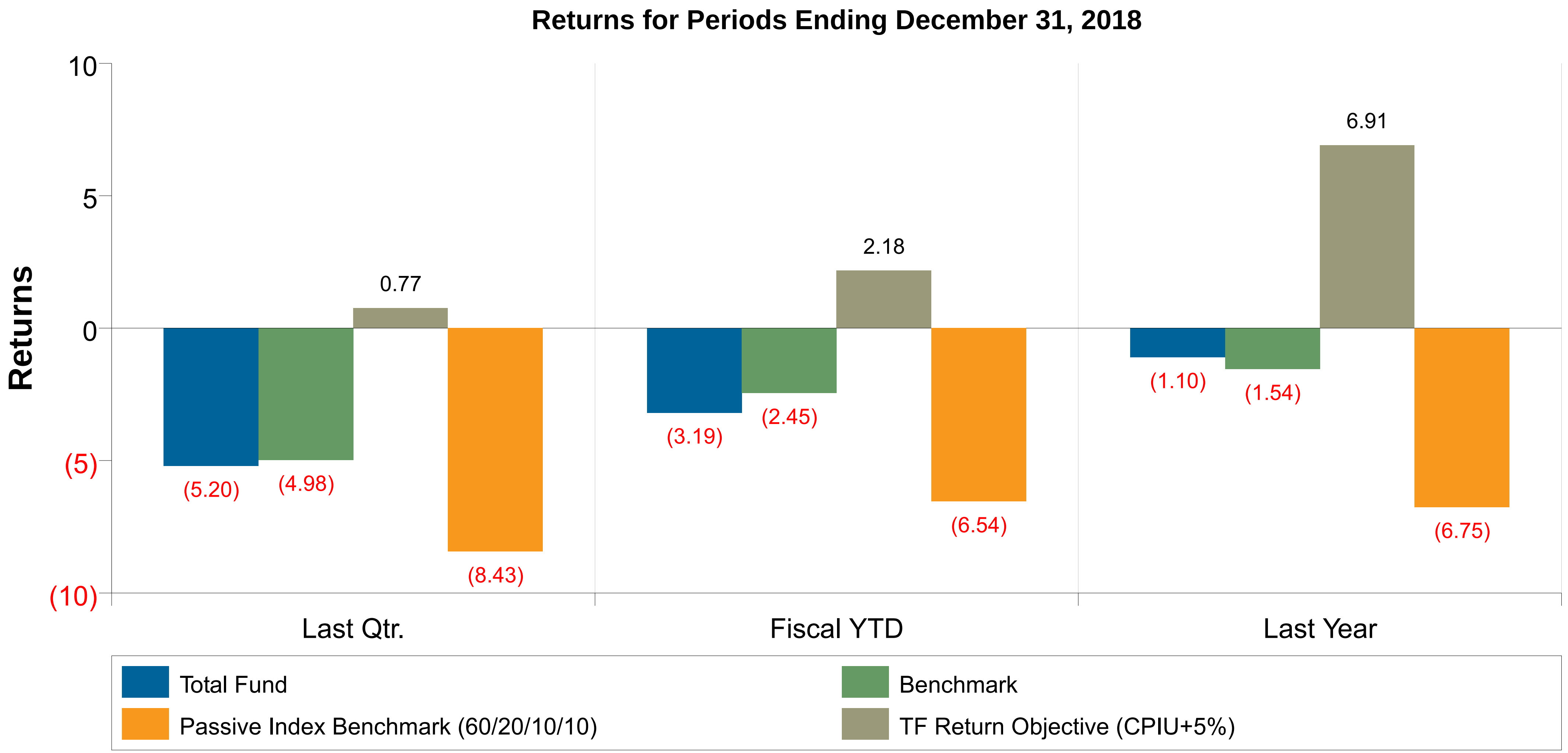
Total Fund Asset Allocation

As of December 31, 2018



APFC Total Fund Cumulative Returns

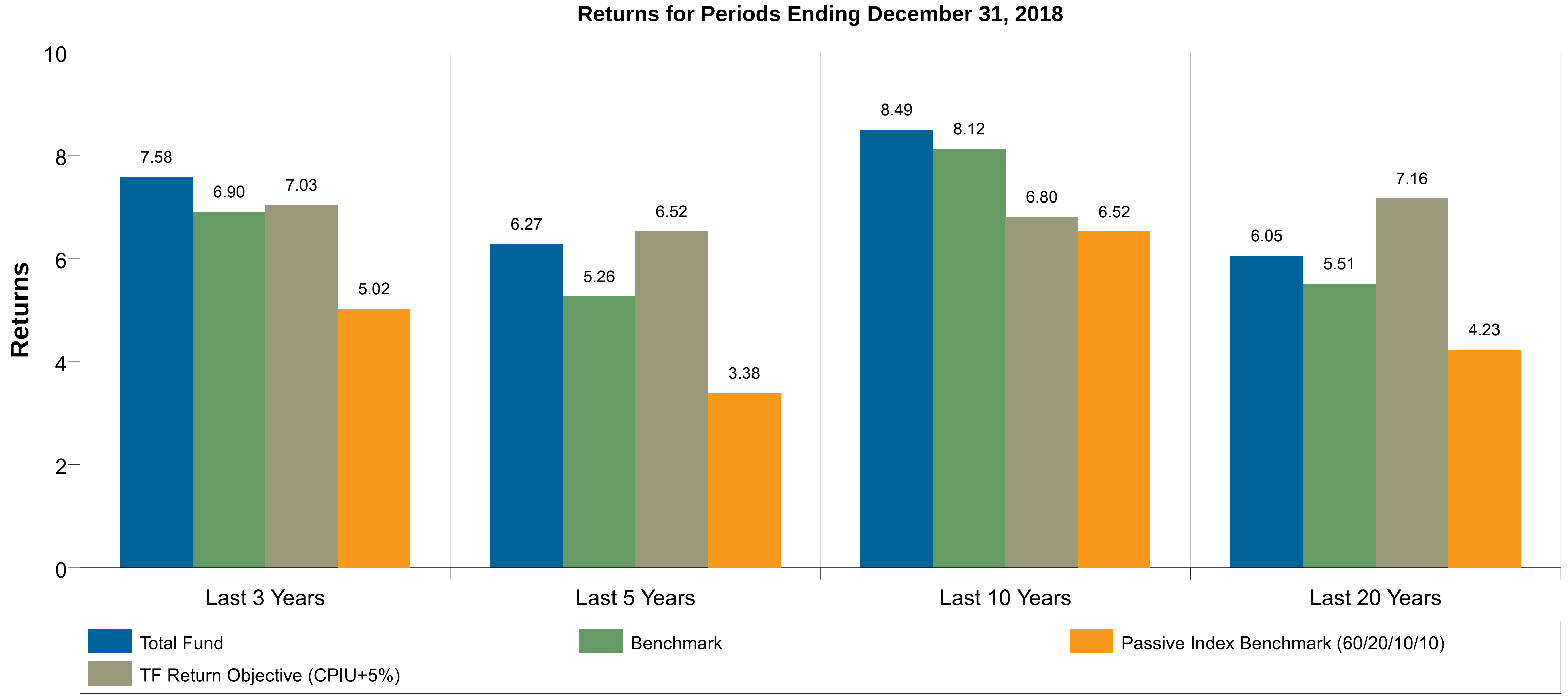
Total Fund versus Total Fund Targets



- Benchmark (FY18-FY19) = 38% MSCI ACWI IMI, 1.1% 90 Day T-Bills, 1.1% BB US TIPS, 5.5% BB Agg, 5.5% BB Corp IG, 2.2% BB Global Treasury ex-US Hedged, 0.55% JPM EMBI Global Diversified, 0.55% JPM GBI-EM Global Diversified TR, 2.2% BB US High Yield 2% Issuer Cap, 2.2% S&P Global REIT, 1.1% S&P Global Listed Infrastructure, 12% Cambridge PE (lagged), 11% NCREIF Total Index (lagged), 4.2% FTSE Developed Core Infrastructure (lagged), 2.8% BB US High Yield 2% Issuer Cap (lagged), 5% HFRI Total HFOF Universe (weighted), 2% 90 Day T-Bills, and 3% Performance Benchmark (rounded to nearest tenth).

APFC Total Fund Cumulative Returns

Total Fund versus Total Fund Targets



- Benchmark (FY18-FY19) = 38% MSCI ACWI IMI, 1.1% 90 Day T-Bills, 1.1% BB US TIPS, 5.5% BB Agg, 5.5% BB Corp IG, 2.2% BB Global Treasury ex-US Hedged, 0.55% JPM EMBI Global Diversified, 0.55% JPM GBI-EM Global Diversified TR, 2.2% BB US High Yield 2% Issuer Cap, 2.2% S&P Global REIT, 1.1% S&P Global Listed Infrastructure, 12% Cambridge PE (lagged), 11% NCREIF Total Index (lagged), 4.2% FTSE Developed Core Infrastructure (lagged), 2.8% BB US High Yield 2% Issuer Cap (lagged), 5% HFRI Total HFOF Universe (weighted), 2% 90 Day T-Bills, and 3% Performance Benchmark (rounded to nearest tenth).

APFC Total Fund Attribution

For One Quarter Ended December 31, 2018

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Public Equity + FXO	41%	38%	(13.65%)	(13.28%)	(0.15%)	(0.31%)	(0.46%)
Fixed Income Plus	23%	22%	(0.79%)	(0.67%)	(0.03%)	0.04%	0.01%
Real Estate	6%	11%	0.24%	1.67%	(0.08%)	(0.33%)	(0.41%)
Infrastructure & Private	7%	7%	3.81%	2.53%	0.09%	0.00%	0.09%
Absolute Return	5%	5%	(0.86%)	(5.87%)	0.26%	(0.00%)	0.26%
Private Eq & Special Opp	12%	12%	6.71%	3.37%	0.38%	0.01%	0.39%
Asset Allocation	5%	5%	(4.91%)	(2.77%)	(0.10%)	(0.00%)	(0.11%)
Total			**(5.20%)** =	**(4.98%)** +	**0.37%** +	**(0.59%)**	**(0.22%)**

- In the fourth quarter, the Total Fund underperformed the Performance Benchmark by 0.2%.
- Deviating from target allocations, specifically overweighting Public Equity and Fixed Income Plus, hurt relative results during the quarter, offsetting beneficial manager performance within Absolute Return and Private Equity & Special Opportunities.
- In aggregate, active management added 37 basis points to relative performance, while deviations from the Policy Target detracted 59 basis points.

APFC Total Fund Attribution

For Fiscal YTD Ended December 31, 2018

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return		Target Return		Manager Effect		Asset Allocation	Total Relative Return
Public Equity + FXO	41%	38%	(10.90%)		(9.92%)		(0.43%)		(0.28%)	(0.71%)
Fixed Income Plus	22%	22%	(0.15%)		(0.32%)		0.03%		0.04%	0.07%
Real Estate	6%	11%	(2.05%)		3.51%		(0.33%)		(0.30%)	(0.63%)
Infrastructure & Private	7%	7%	6.83%		6.19%		0.05%		0.00%	0.05%
Absolute Return	5%	5%	(0.20%)		(5.38%)		0.28%		0.01%	0.29%
Private Eq & Special Opp	12%	12%	11.86%		8.08%		0.42%		(0.00%)	0.42%
Asset Allocation	6%	5%	(4.44%)		(1.03%)		(0.20%)		(0.03%)	(0.23%)
Total			**(3.19%)**	**=**	**(2.45%)**	**+**	**(0.18%)**	**+**	**(0.57%)**	**(0.74%)**

- For the fiscal year to date, the Total Fund underperformed the Performance Benchmark by 0.7%.
- Manager performance within Public Equity, Real Estate, and Asset Allocation coupled with an overweight to Public Equity and an underweight to Real Estate, hurt relative results.
- In aggregate, both active management and deviations from the Policy Target weighted down relative performance, detracting 18 and 57 basis points, respectively.

APFC Total Fund Attribution

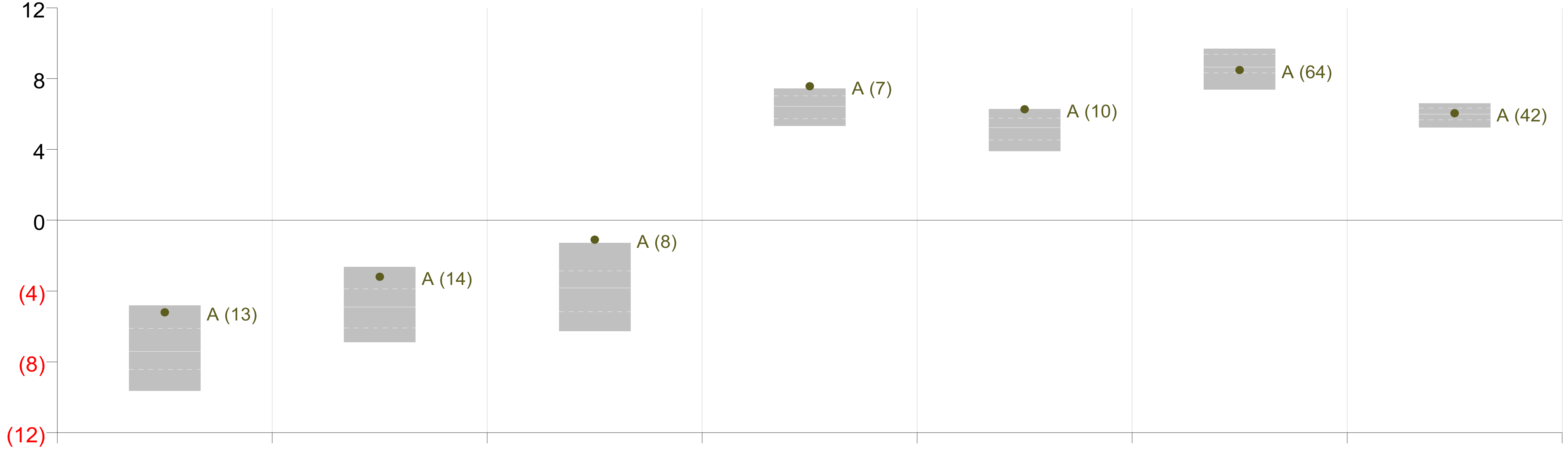
For One Year Ended December 31, 2018

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Public Equity + FXO	42%	38%	(11.07%)	(10.08%)	(0.43%)	(0.26%)	(0.69%)
Fixed Income Plus	22%	22%	(1.77%)	(1.76%)	(0.00%)	0.06%	0.06%
Real Estate	7%	11%	1.69%	7.16%	(0.31%)	(0.38%)	(0.69%)
Infrastructure & Private	6%	6%	13.87%	4.78%	0.47%	(0.00%)	0.47%
Absolute Return	4%	5%	1.54%	(4.61%)	0.31%	0.01%	0.33%
Private Eq & Special Opp	12%	12%	30.80%	16.77%	1.36%	0.03%	1.39%
Asset Allocation	8%	6%	(5.63%)	(0.14%)	(0.38%)	(0.02%)	(0.40%)
Total			**(1.10%) =**	**(1.54%) +**	**1.01% +**	**(0.57%)**	**0.45%**

- For the trailing year, the Total Fund outperformed the Performance Benchmark by 0.5%.
- Manager performance within Absolute Return, Private Equity & Special Opportunities, and Infrastructure & Private Income was beneficial, and offset manager performance within Real Estate, Asset Allocation and Public Equity, which detracted.
- In aggregate, active management added 101 basis points to the relative performance, while deviations from the Policy Target deducted 57 basis points (primarily due to an overweight to Public Equity and an underweight to Real Estate).

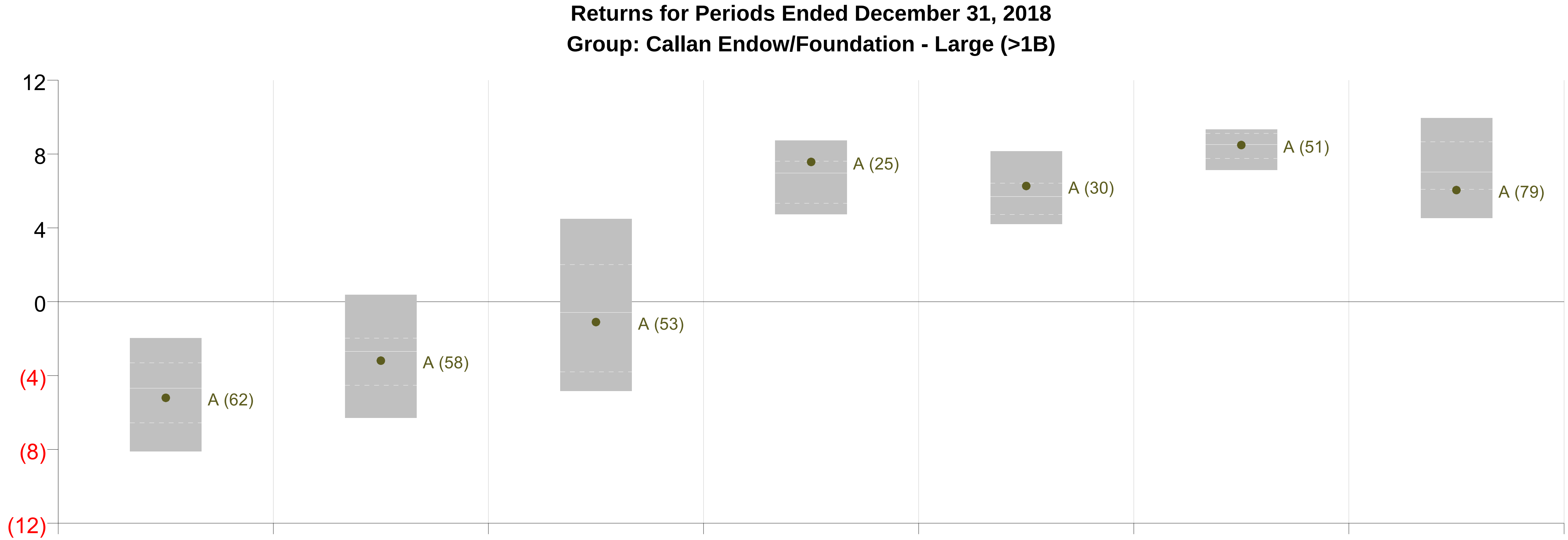
APFC Total Fund Relative to Callan's Large Public Fund Database

Returns for Periods Ended December 31, 2018
Group: Callan Public Fund Sponsor - Large (>1B)



	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
10th Percentile	(4.80)	(2.63)	(1.28)	7.44	6.28	9.69	6.60
25th Percentile	(6.11)	(3.88)	(2.86)	7.03	5.77	9.38	6.33
Median	(7.42)	(4.90)	(3.82)	6.44	5.24	8.66	6.00
75th Percentile	(8.43)	(6.08)	(5.17)	5.74	4.54	8.33	5.68
90th Percentile	(9.64)	(6.89)	(6.27)	5.32	3.91	7.38	5.25
Member Count	88	88	88	88	87	83	68
Total Fund ● A	(5.20)	(3.19)	(1.10)	7.58	6.27	8.49	6.05

APFC Total Fund Relative to Callan's Large Endowment / Foundation Database

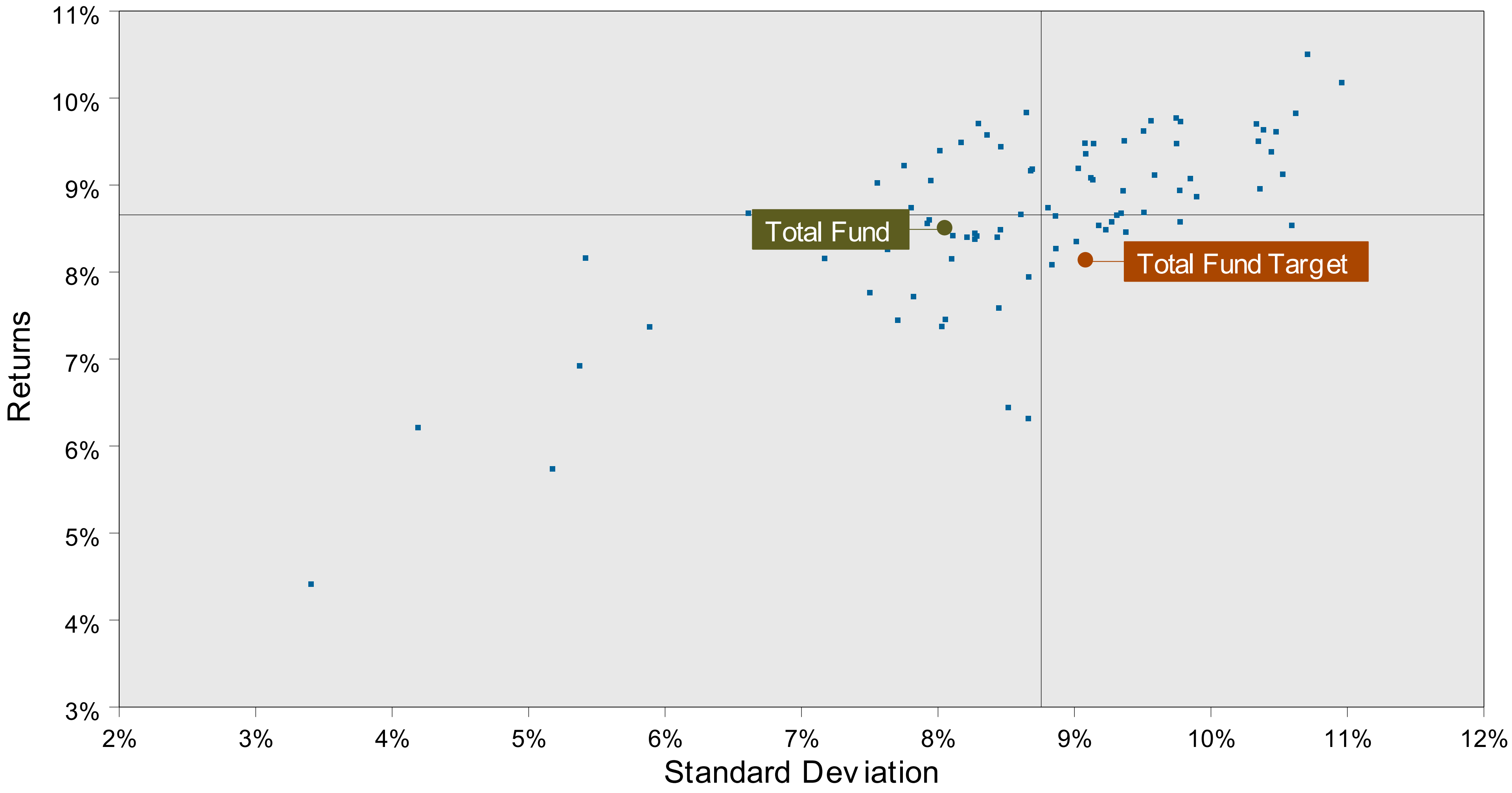


	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
10th Percentile	(1.97)	0.39	4.49	8.73	8.16	9.34	9.96
25th Percentile	(3.31)	(1.97)	2.02	7.61	6.42	9.12	8.67
Median	(4.69)	(2.69)	(0.58)	6.97	5.71	8.51	7.03
75th Percentile	(6.56)	(4.52)	(3.79)	5.33	4.73	7.76	6.09
90th Percentile	(8.09)	(6.28)	(4.84)	4.74	4.22	7.14	4.54
Member Count	38	37	37	37	37	36	22
Total Fund ● A	(5.20)	(3.19)	(1.10)	7.58	6.27	8.49	6.05

APFC Total Fund Return versus Standard Deviation

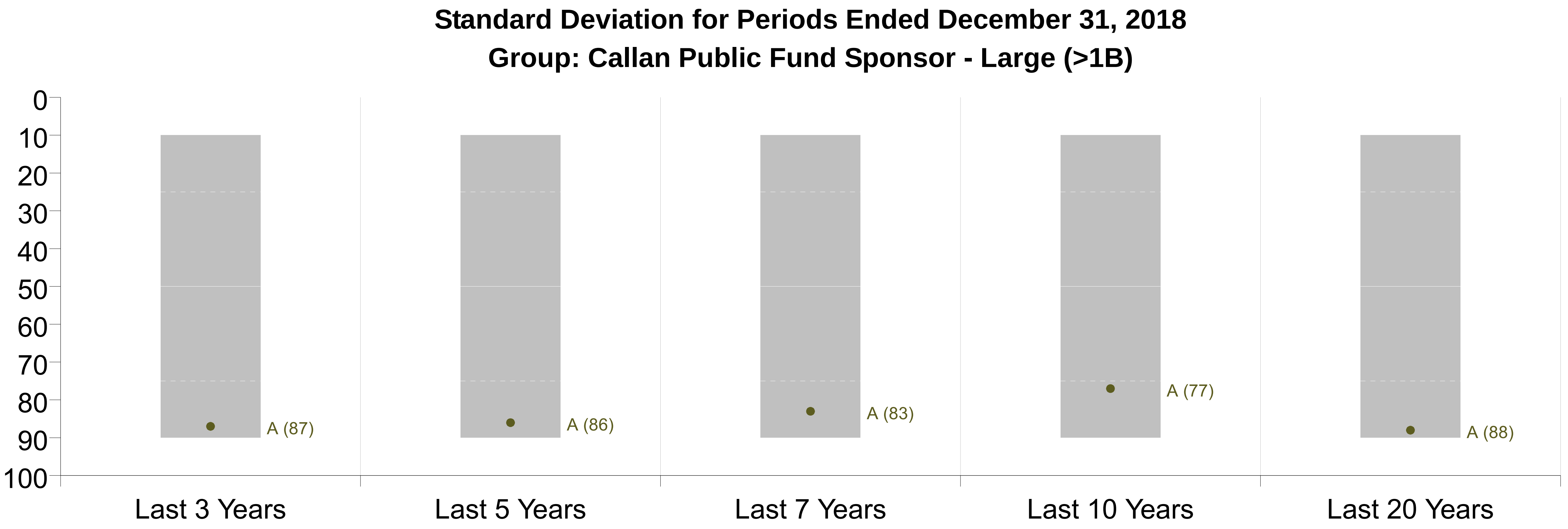
Relative to Callan's Large Public Fund Database

Ten Year Annualized Risk vs Return



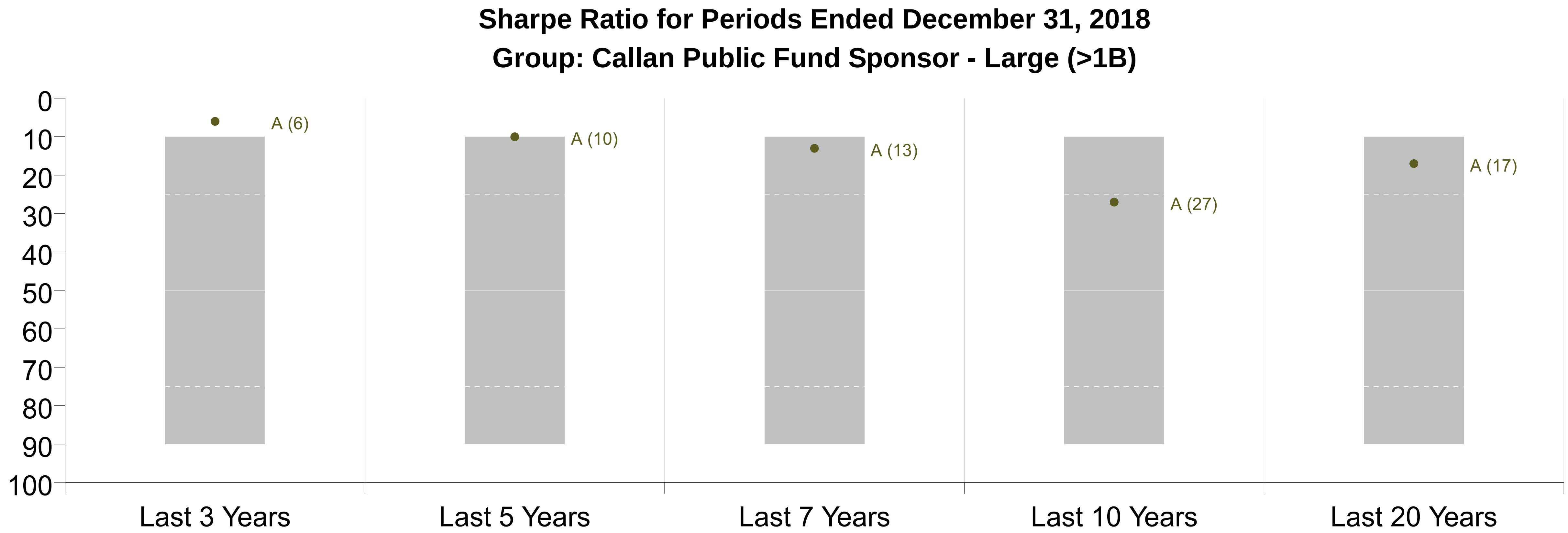
Squares represent membership of the Callan Public Fund Sponsor - Large (>1B)

APFC Total Fund Standard Deviation Relative to Callan's Large Public Fund Database



	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 20 Years
10th Percentile	7.79	7.14	7.60	10.44	10.99
25th Percentile	7.11	6.58	6.89	9.58	10.69
Median	6.35	5.99	6.28	8.76	10.19
75th Percentile	5.71	5.54	5.82	8.09	9.41
90th Percentile	4.92	4.67	4.92	7.37	8.83
Member Count	88	87	83	83	68
Total Fund ● A	5.19	5.18	5.44	8.06	8.89

APFC Total Fund Sharpe Ratio Relative to Callan's Large Public Fund Database



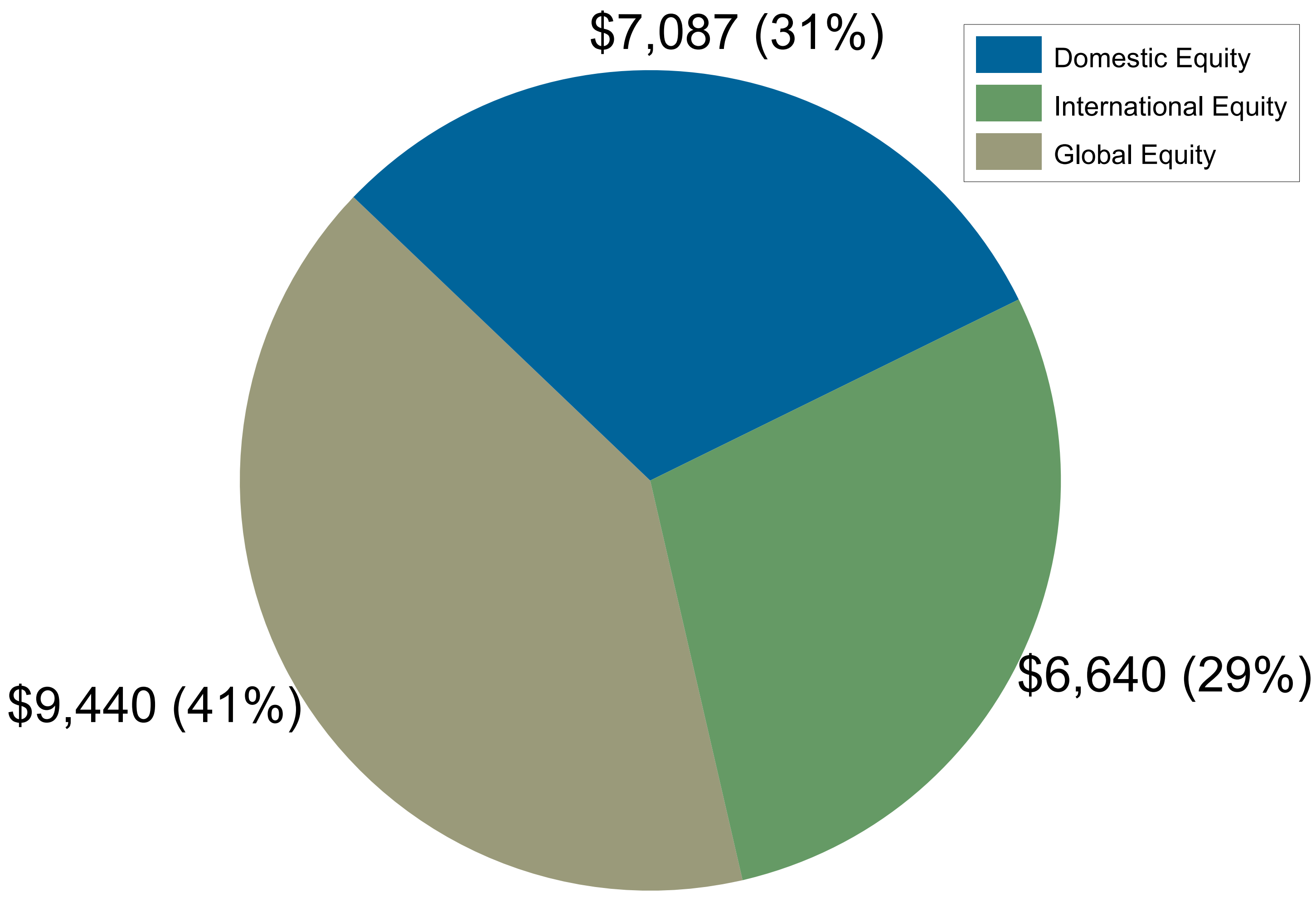
	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 20 Years
10th Percentile	1.17	1.09	1.46	1.12	0.52
25th Percentile	0.98	0.90	1.28	1.02	0.45
Median	0.83	0.75	1.15	0.95	0.40
75th Percentile	0.71	0.64	1.00	0.88	0.38
90th Percentile	0.63	0.54	0.91	0.85	0.35
Member Count	88	87	83	83	68
Total Fund ● A	1.26	1.09	1.39	1.01	0.47

Asset Classes
Structure and Performance

APFC Public Equity w/o FX Overlay Structure

As of December 31, 2018

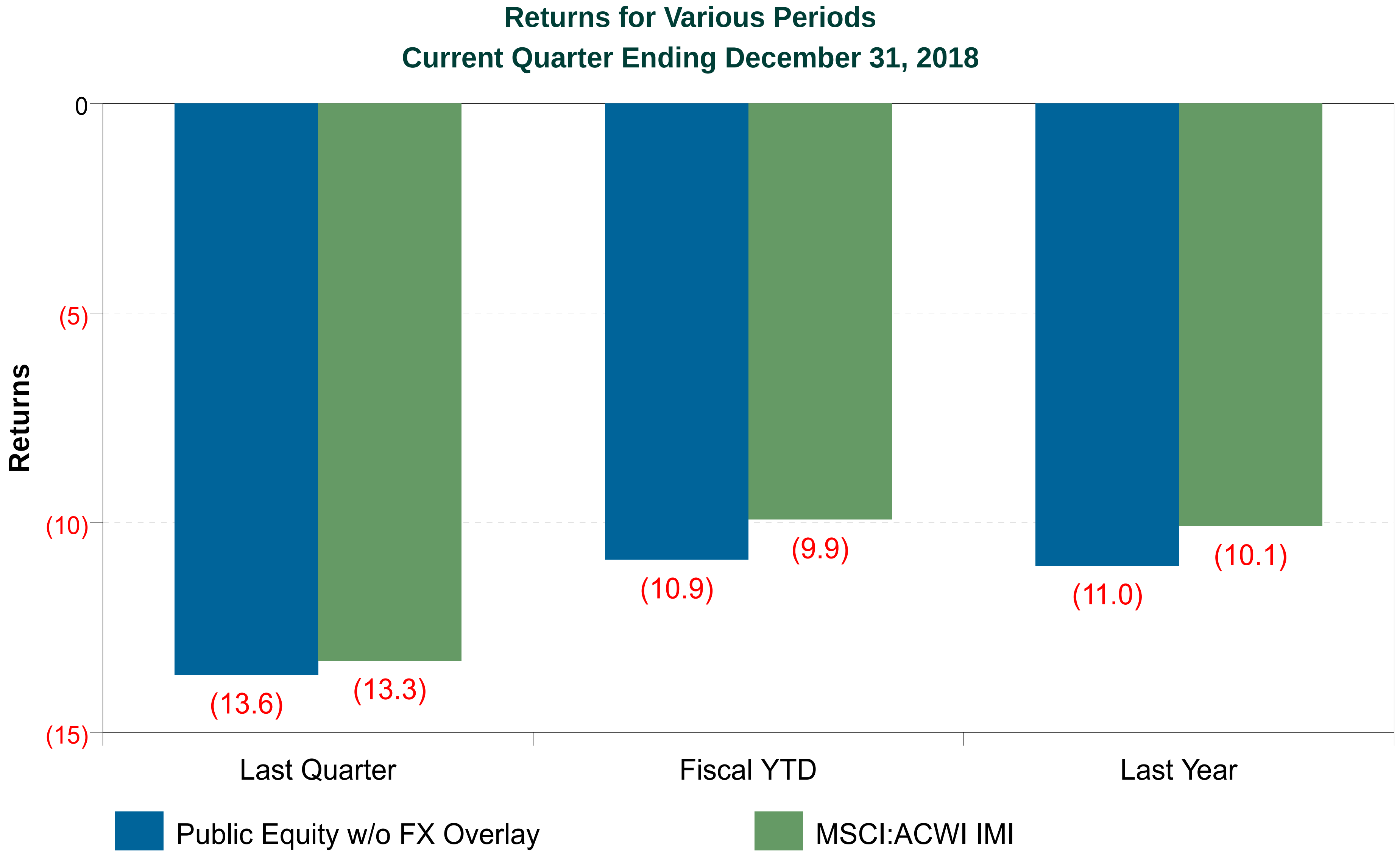
- APFC Public Equity w/o FX Overlay portfolio has a weighting of roughly 55% in US equity, and 45% in non-US equity.
- The MSCI ACWI IMI benchmark has a weighting of roughly 54% in US equity, and 46% in non-US equity.
- The median allocation to US equity across public equity portfolios in Callan's Large Public Fund Sponsor database is roughly 60%.



APFC Public Equity w/o FX Overlay vs. MSCI ACWI-IMI

Periods Ended December 31, 2018

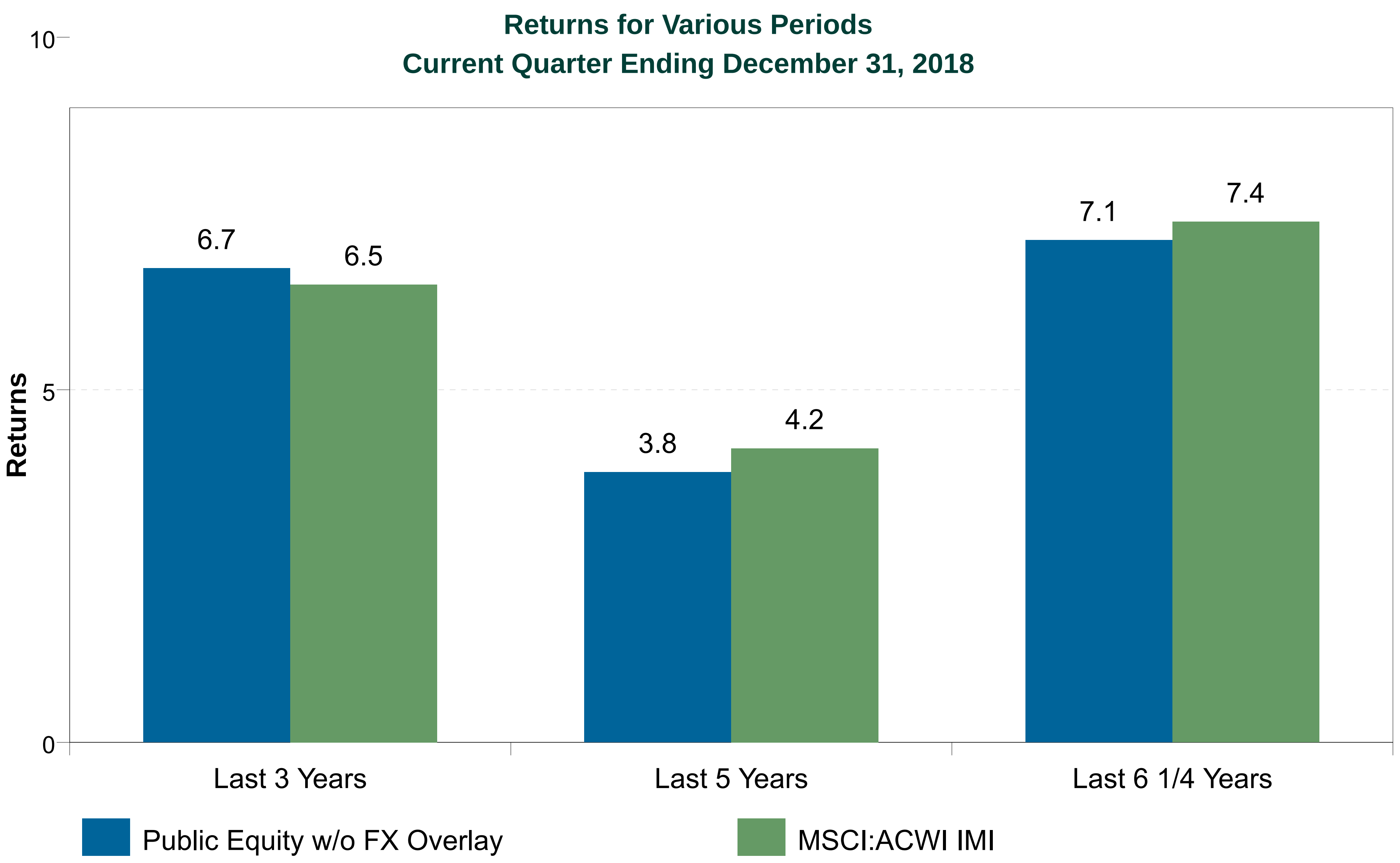
- APFC Public Equity w/o FX Overlay portfolio trails the MSCI ACWI IMI index for all time periods measured on the chart.
- The composite's fourth quarter result was driven by broad relative underperformance from most equity managers.



APFC Public Equities Performance vs. MSCI ACWI-IMI

Periods Ended December 31, 2018

- APFC Public Equity w/o FX Overlay portfolio should be expected to track the index over time, which it does, in both the intermediate- and long-term periods shown on the chart.
- Overall, the portfolio is well diversified across regions, countries, and underlying strategies.

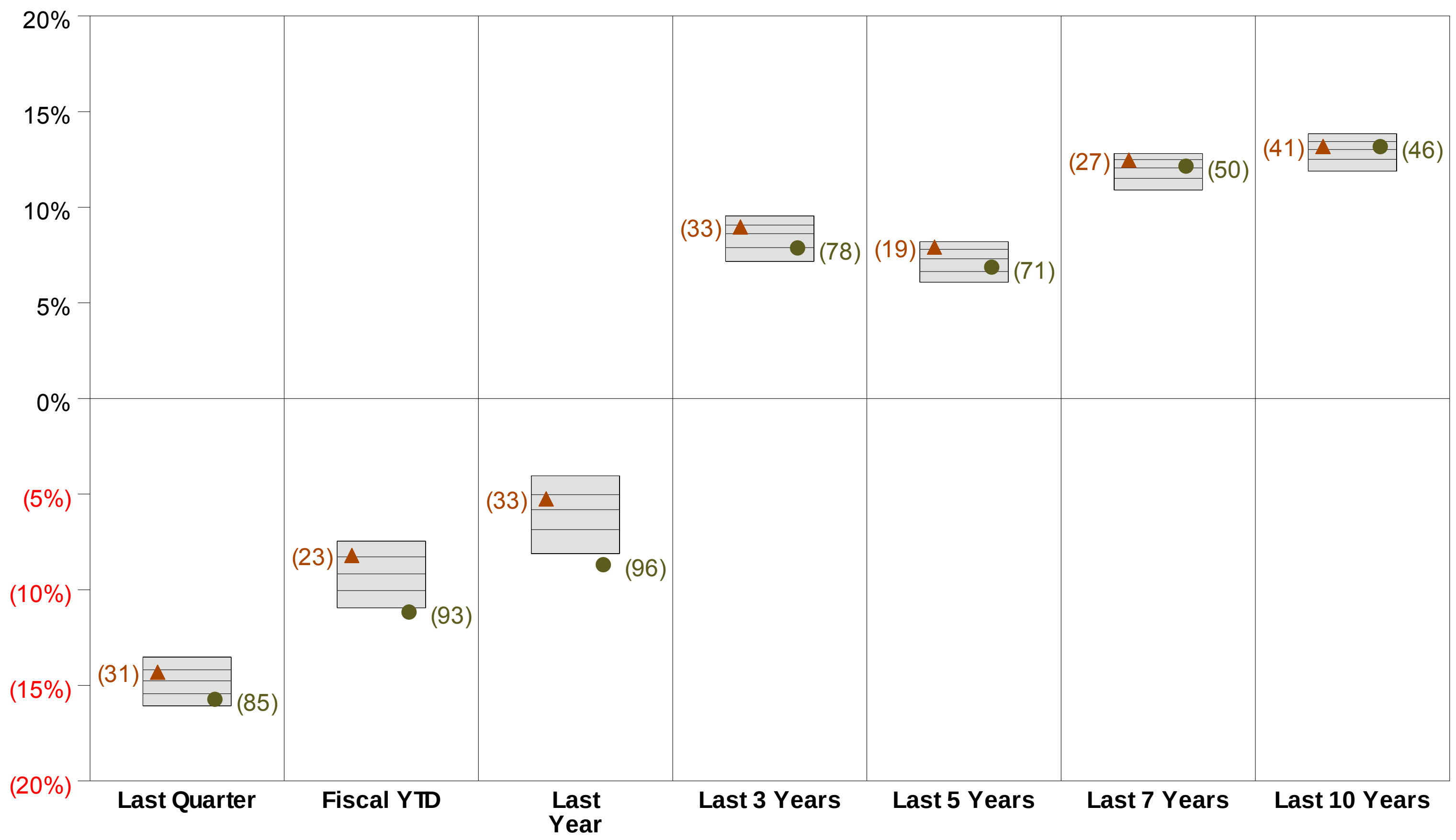


APFC US Equity Performance vs. Fund Sponsor US Equity

Periods Ended December 31, 2018

- Universe is comprised of total domestic equity portfolios of large institutional investors in Callan's Fund Sponsor Database.
- APFC US Equity portfolio declined 15.8% in the 4th quarter of 2018.
- Longer-term performance tracks the benchmark.
- When compared to US Equity portfolios of other large institutional investors, APFC's US Equity composite ranks below median in the short- and intermediate-term, and ranks median over longer time periods shown.

Performance vs Fund Spnsor - Domestic Equity (Gross)



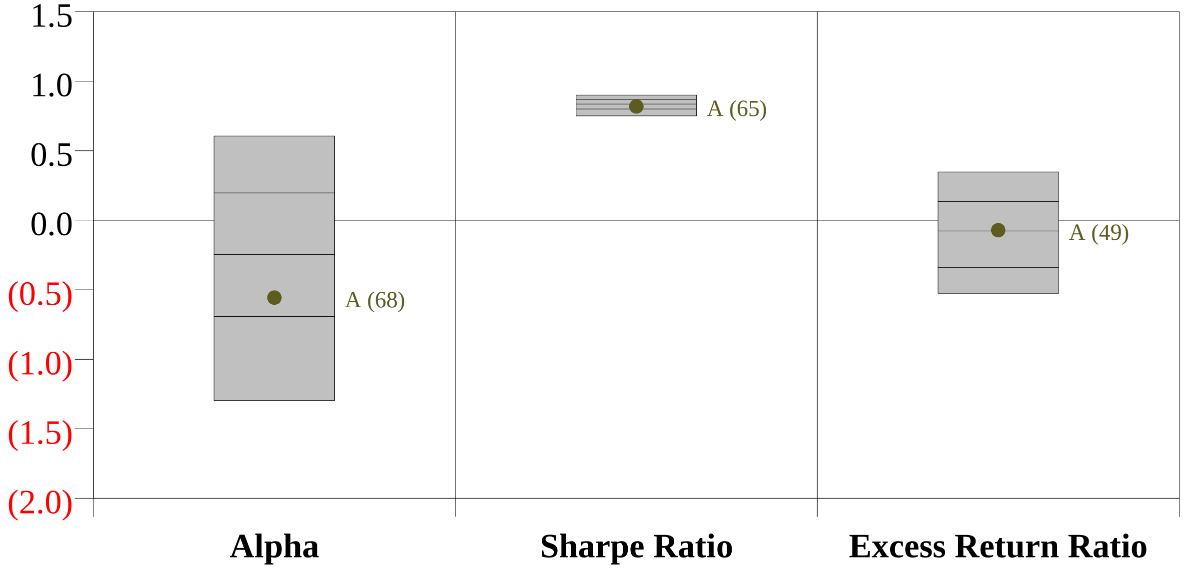
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(13.52)	(7.46)	(4.04)	9.55	8.20	12.80	13.84
25th Percentile	(14.18)	(8.28)	(5.03)	9.07	7.80	12.49	13.43
Median	(14.76)	(9.17)	(5.81)	8.61	7.30	12.06	13.02
75th Percentile	(15.43)	(10.04)	(6.86)	7.89	6.64	11.51	12.51
90th Percentile	(16.07)	(10.95)	(8.11)	7.17	6.08	10.91	11.89
Domestic Equity ●	(15.82)	(11.25)	(8.78)	7.78	6.78	12.06	13.09
Russell 3000 Index ▲	(14.30)	(8.20)	(5.24)	8.97	7.91	12.46	13.18

APFC US Equity Portfolio Risk Adjusted Return Rankings

Ten Years Ended December 31, 2018

- Universe comprised of total domestic equity portfolios of large institutional investors in Callan's Fund Sponsor Domestic Equity Database.
- For the trailing ten-year period, APFC portfolio ranks median for Excess Return Ratio and in the third quartile for the remaining risk adjusted return measures.
  - Alpha measures contribution to performance – portfolio's return above index adjusted for risk.
  - Sharpe Ratio represents return gained per unit of risk taken (return/risk).
  - Excess Return Ratio measures alpha (return above benchmark) divided by tracking error (risk versus benchmark).

Risk Adjusted Return Measures vs Russell 3000 Index
Rankings Against Fund Sponsor Domestic Equity Database



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.61	0.90	0.35
25th Percentile	0.20	0.87	0.14
Median	(0.25)	0.84	(0.08)
75th Percentile	(0.69)	0.80	(0.34)
90th Percentile	(1.30)	0.75	(0.52)
Domestic Equity ● A	(0.56)	0.82	(0.07)

Capitalization and Style Allocation: US Equity

As of December 31, 2018

- Highlighted cells indicate largest biases relative to the Russell 3000 index.
- The overweight to value cushioned the decline during the quarter, as growth stocks suffered more than value stocks on the back of poor performing Tech, Discretionary and Industrial sectors.
- During the most recent quarter, smaller companies were hit the hardest. As a result, the size cap positioning had a negative impact across the board (overweighting small and mid caps and underweighting large caps).
- Small and mid cap overweighs relative to the index are common in actively managed US equity portfolios.

Style Exposure Matrix
Holdings as of December 31, 2018

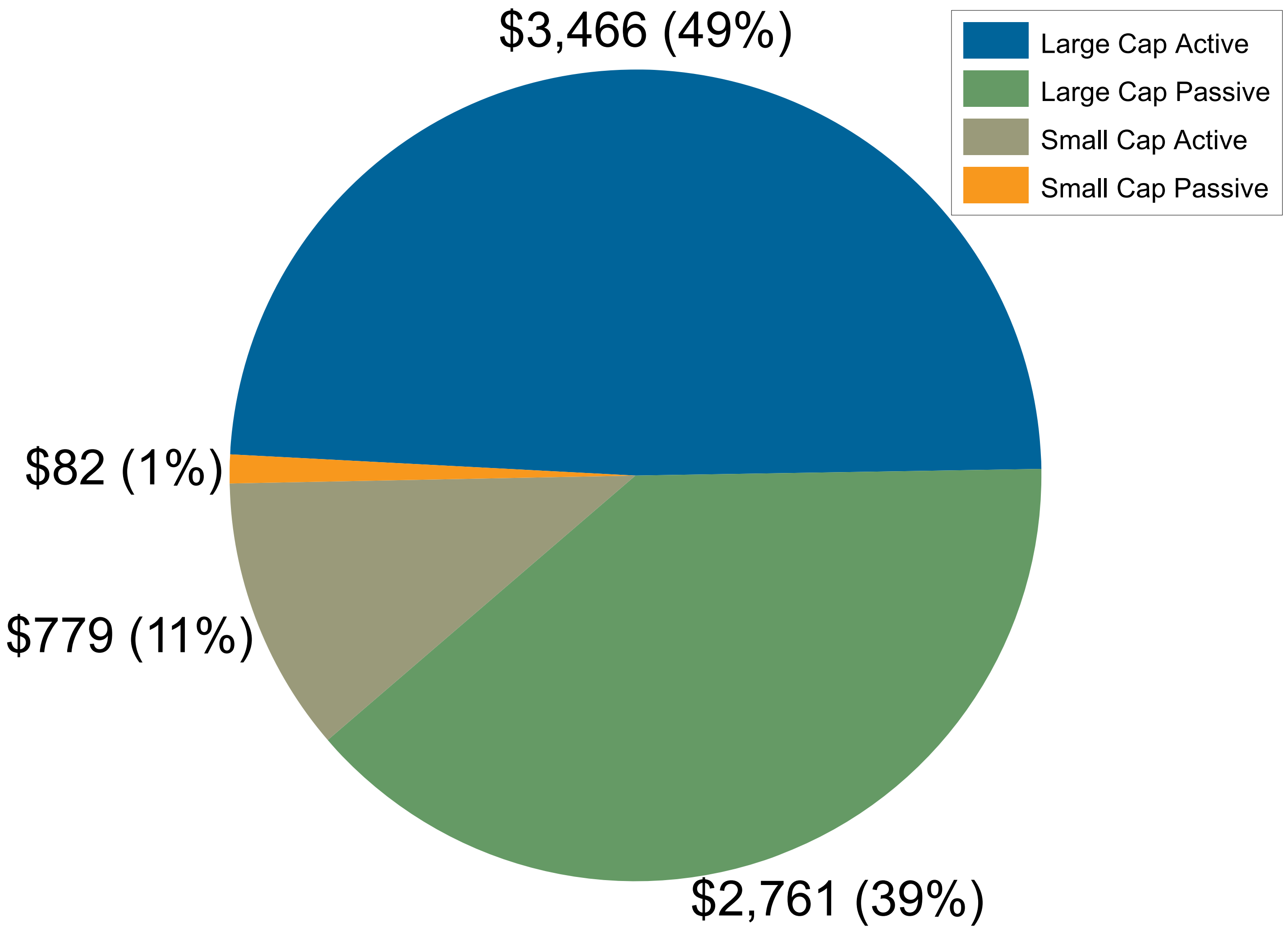
	Value	Core	Growth	Total
Large	20.3% (103) 23.2% (100)	16.2% (108) 23.9% (102)	24.7% (103) 29.2% (95)	61.2% (314) 76.3% (297)
Mid	10.6% (178) 4.9% (172)	8.4% (206) 5.6% (210)	7.5% (210) 5.9% (213)	26.6% (594) 16.3% (595)
Small	3.5% (184) 1.9% (329)	5.0% (232) 2.5% (480)	3.0% (144) 2.2% (382)	11.5% (560) 6.6% (1191)
Micro	0.3% (29) 0.3% (291)	0.3% (39) 0.3% (400)	0.1% (14) 0.2% (201)	0.7% (82) 0.8% (892)
Total	34.8% (494) 30.2% (892)	29.8% (585) 32.3% (1192)	35.3% (471) 37.4% (891)	100.0% (1550) 100.0% (2975)

APFC Portfolio   Russell 3000 Index

APFC US Equity Structure

As of December 31, 2018

- US equity portfolio is roughly 60% actively managed and 40% passive (or quasi-passive).
- Structure has a slight overweight to small cap with 12% of portfolio allocated to dedicated small cap strategies.
- Roughly 56% of the large cap allocation is actively managed while 92% of the small cap allocation is actively managed.

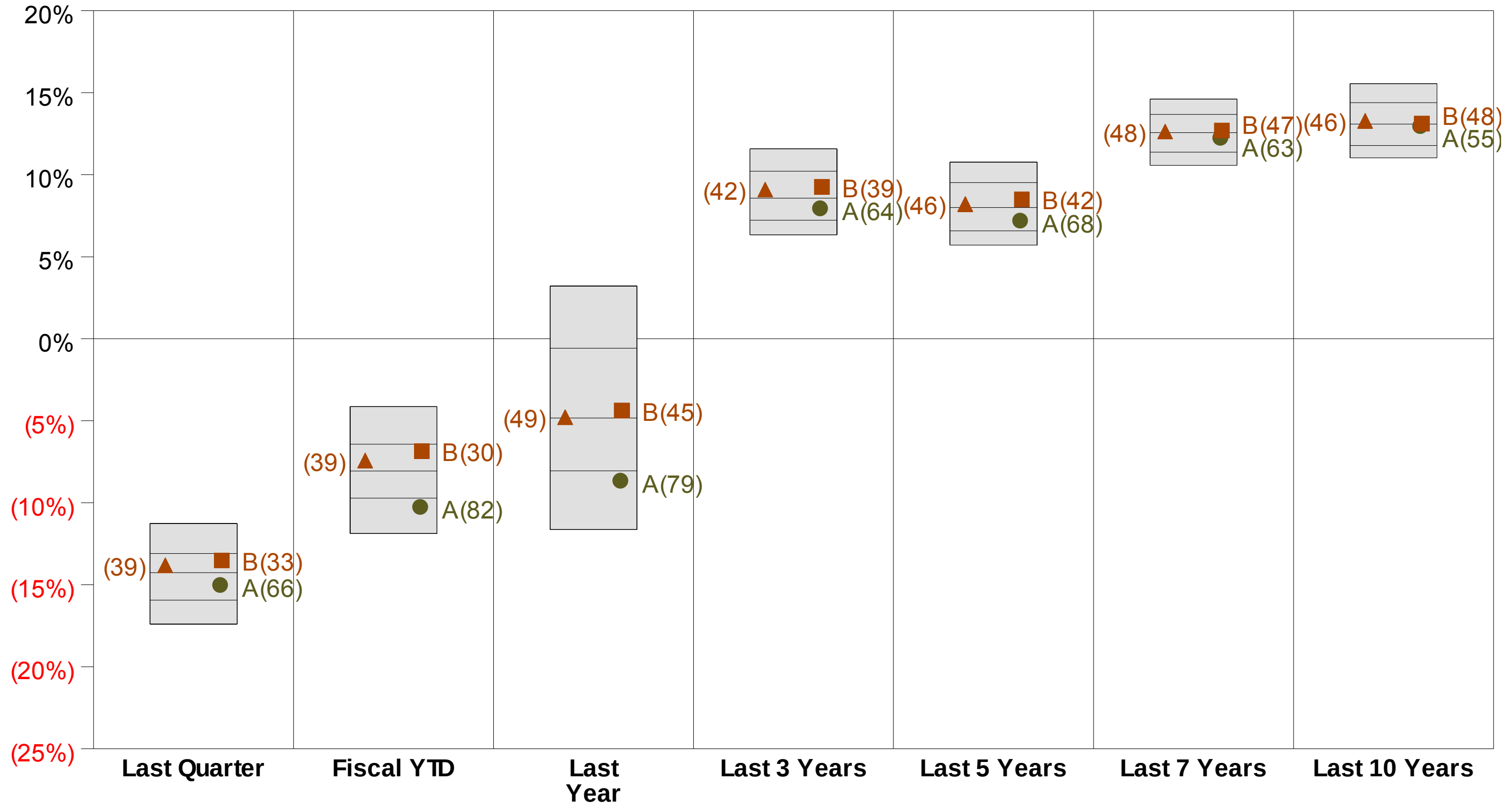


APFC Large Cap Equity Relative to Large Cap Universe

Periods Ended December 31, 2018

- APFC's Large Cap portfolio trails its index and ranks below median within the large cap universe for all time periods displayed on the chart.
- Large cap composite has a small/mid cap size bias relative to the index, which hurt performance during the quarter.
- Portfolio's value tilt relative to the benchmark mitigated the fall.

Performance vs Callan Large Capitalization (Gross)



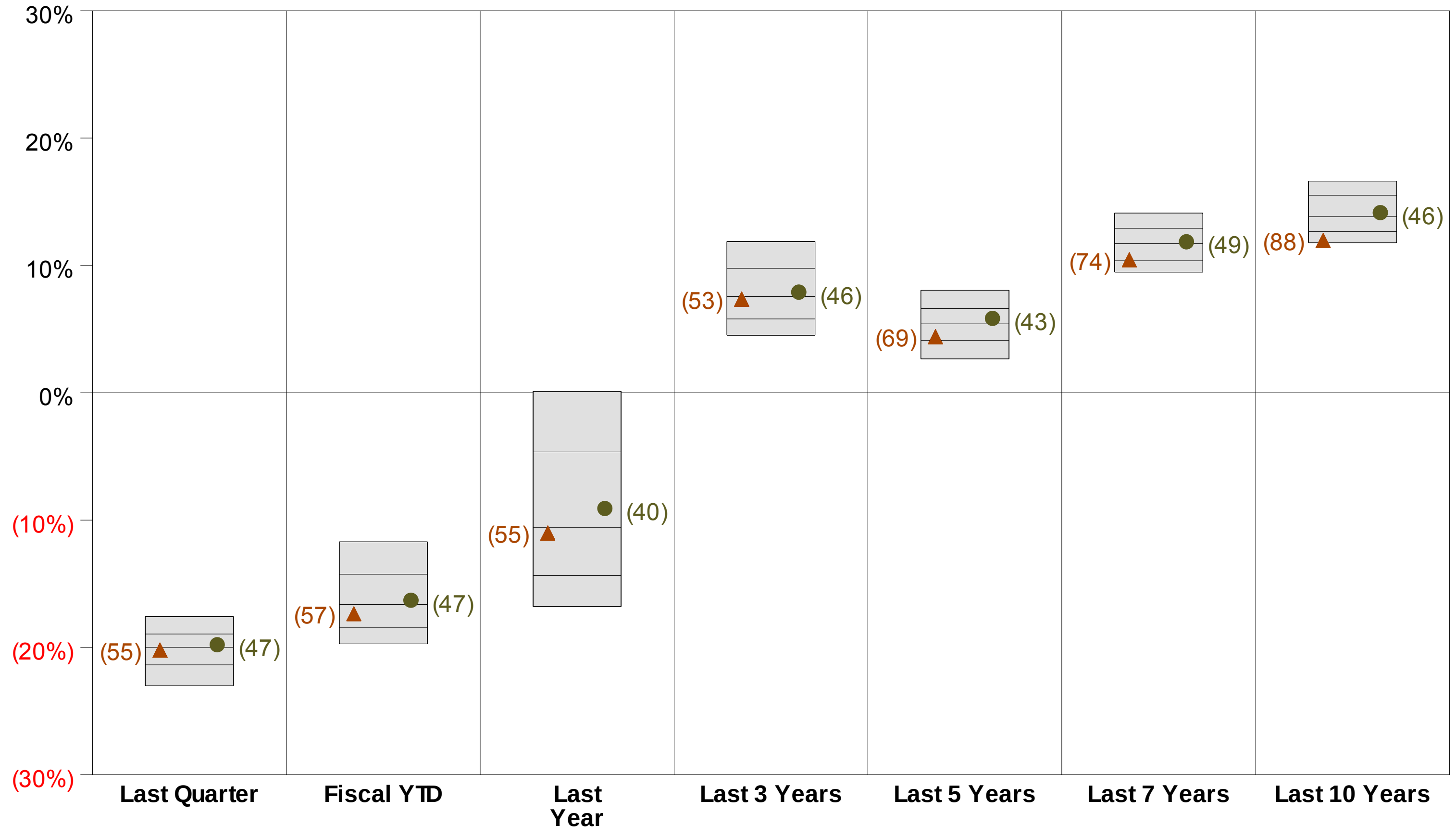
		Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile		(11.27)	(4.13)	3.22	11.58	10.77	14.62	15.55
25th Percentile		(13.10)	(6.42)	(0.58)	10.21	9.51	13.67	14.39
Median		(14.26)	(8.07)	(4.84)	8.56	8.01	12.57	13.09
75th Percentile		(15.94)	(9.73)	(8.06)	7.22	6.58	11.37	11.78
90th Percentile		(17.40)	(11.88)	(11.63)	6.34	5.71	10.58	11.02
Large Cap Equity	● A	(15.12)	(10.36)	(8.77)	7.86	7.10	12.15	12.86
Standard & Poor's 500	■ B	(13.52)	(6.85)	(4.38)	9.26	8.49	12.70	13.12
Russell 1000 Index	▲	(13.82)	(7.42)	(4.78)	9.09	8.21	12.63	13.28

APFC Small Cap Equity Relative to Small Cap Universe

Periods Ended December 31, 2018

- APFC small cap portfolio leads the index and the small cap universe median over all time periods shown in the chart.
- APFC small cap equity portfolio has a higher market capitalization bias and a growth tilt when compared to the Russell 2000 Index. The overweight to mid caps in lieu of small caps was helpful, while the growth style hurt.

Performance vs Callan Small Capitalization (Gross)

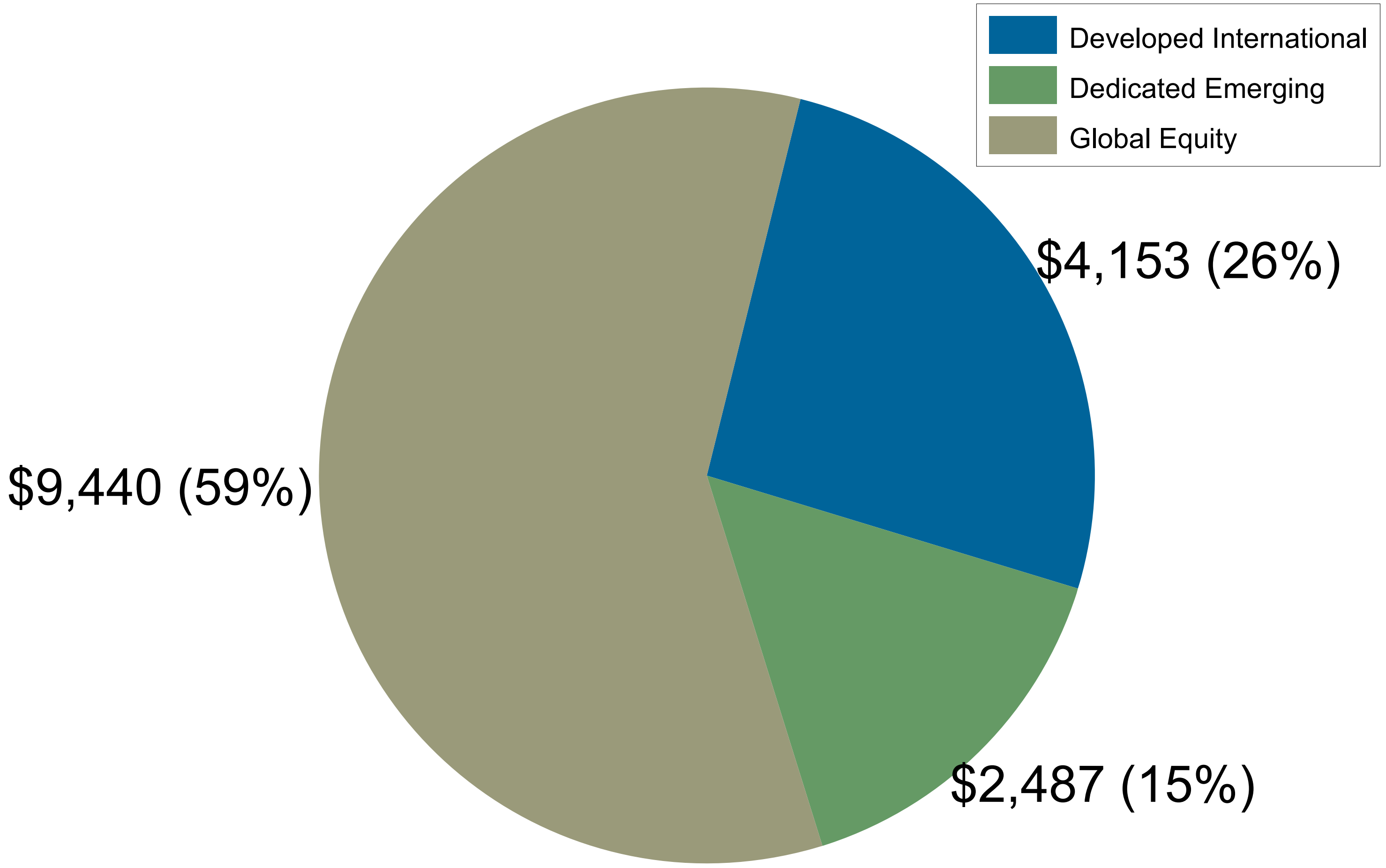


	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(17.57)	(11.70)	0.11	11.88	8.05	14.12	16.62
25th Percentile	(18.94)	(14.26)	(4.65)	9.77	6.61	12.92	15.50
Median	(20.00)	(16.63)	(10.58)	7.56	5.42	11.71	13.84
75th Percentile	(21.37)	(18.45)	(14.35)	5.80	4.12	10.37	12.65
90th Percentile	(23.01)	(19.72)	(16.78)	4.52	2.67	9.48	11.80
Small Cap Equity ●	(19.92)	(16.43)	(9.21)	7.77	5.70	11.73	14.01
Russell 2000 Index ▲	(20.20)	(17.35)	(11.01)	7.36	4.41	10.44	11.97

APFC Non-US Equity Structure

As of December 31, 2018

- Portfolio is divided between global, non-US, and emerging markets mandates.
- Both global and non-US equity managers invest in emerging markets.
- Global managers invest in US markets as part of their mandate.

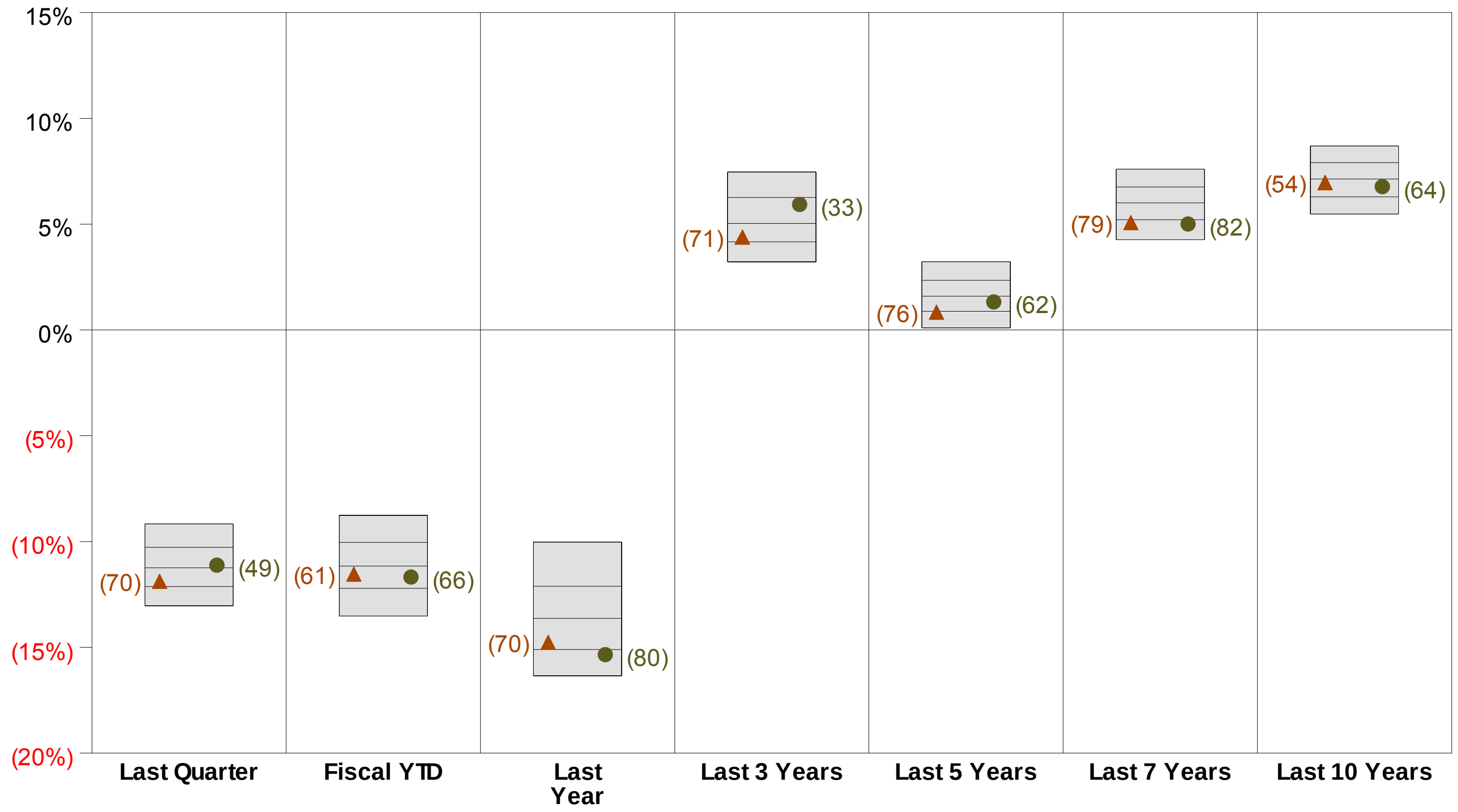


APFC International Equity Relative to Fund Sponsor Universe

Periods Ended December 31, 2018

- During the quarter, Non-US markets ended in the red, impacted by global trade dispute, Brexit standstill, and faltering Emerging Markets.
- In the 4th quarter, APFC international equity portfolio suffered in absolute sense, but gained in relative sense.
- Longer-term returns are about in-line with the index.
- Relative to other fund sponsor international equity portfolios, performance sits below median over most periods shown on the chart.

Performance vs Fund Spnsor - International Equity (Gross)



	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(9.17)	(8.76)	(10.03)	7.46	3.23	7.60	8.69
25th Percentile	(10.27)	(10.04)	(12.11)	6.26	2.34	6.76	7.90
Median	(11.25)	(11.16)	(13.63)	5.03	1.59	6.00	7.13
75th Percentile	(12.13)	(12.20)	(15.10)	4.16	0.87	5.21	6.29
90th Percentile	(13.04)	(13.51)	(16.35)	3.22	0.10	4.26	5.48
International Equity ●	(11.20)	(11.76)	(15.42)	5.85	1.25	4.93	6.69
MSCI ACWI ex US IMI ▲	(11.88)	(11.53)	(14.76)	4.39	0.85	5.07	6.97

APFC Int'l Developed Equity Relative to Non-US Equity Universe

Periods December 31, 2018

- APFC International Developed Equity portfolio is ahead of its index for the trailing 5- and 7-year time periods, and behind the index for all other remaining time periods.
- The portfolio roughly tracks the peer group median in the short- and intermediate-run, but sits below median in the longer-run.

Performance vs Callan Non-US Equity (Gross)

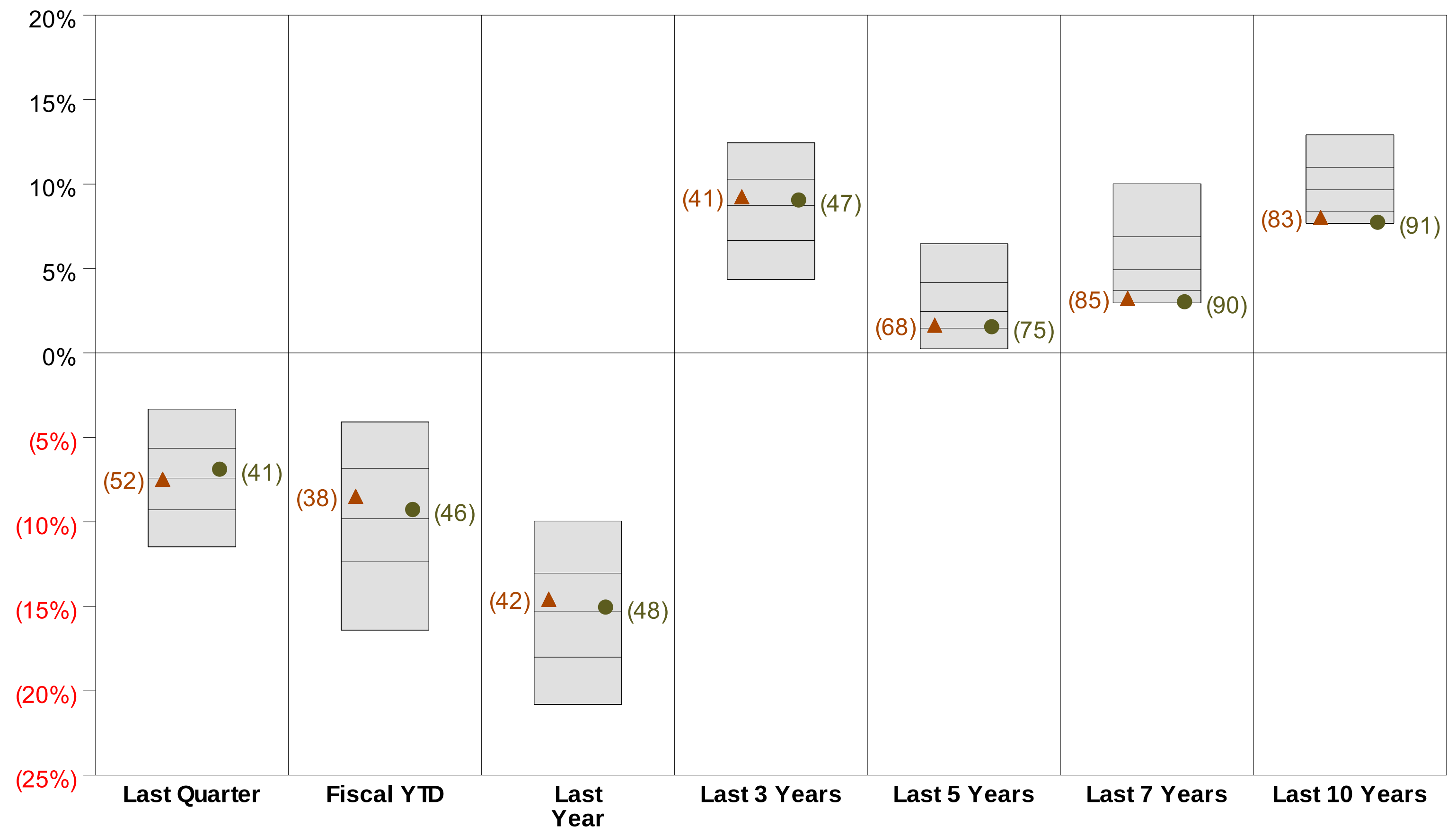
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(10.74)	(9.25)	(10.17)	6.69	3.53	8.39	9.92
25th Percentile	(12.05)	(10.96)	(12.96)	4.72	2.32	7.58	8.91
Median	(13.51)	(12.73)	(15.13)	3.24	1.43	6.71	7.79
75th Percentile	(14.69)	(14.01)	(16.89)	2.06	0.47	5.81	6.65
90th Percentile	(16.07)	(16.20)	(18.45)	1.08	(0.52)	5.03	5.96
International Developed ●	(13.48)	(13.12)	(15.64)	4.22	1.15	6.09	6.15
MSCI ACWI ex US ▲	(11.46)	(10.84)	(14.20)	4.48	0.68	4.85	6.57

APFC Emerging Markets Equity Relative to EM Universe

Periods December 31, 2018

- With the exception of the most recent quarter, APFC Emerging Markets Equity portfolio is behind the MSCI EM Index over all other time periods measured.
- The portfolio tracks the median actively managed portfolio for time periods of 3 years and less, but lands in the bottom quartile for time periods of 5 years and greater.

Performance vs Emerging Markets Equity DB (Gross)



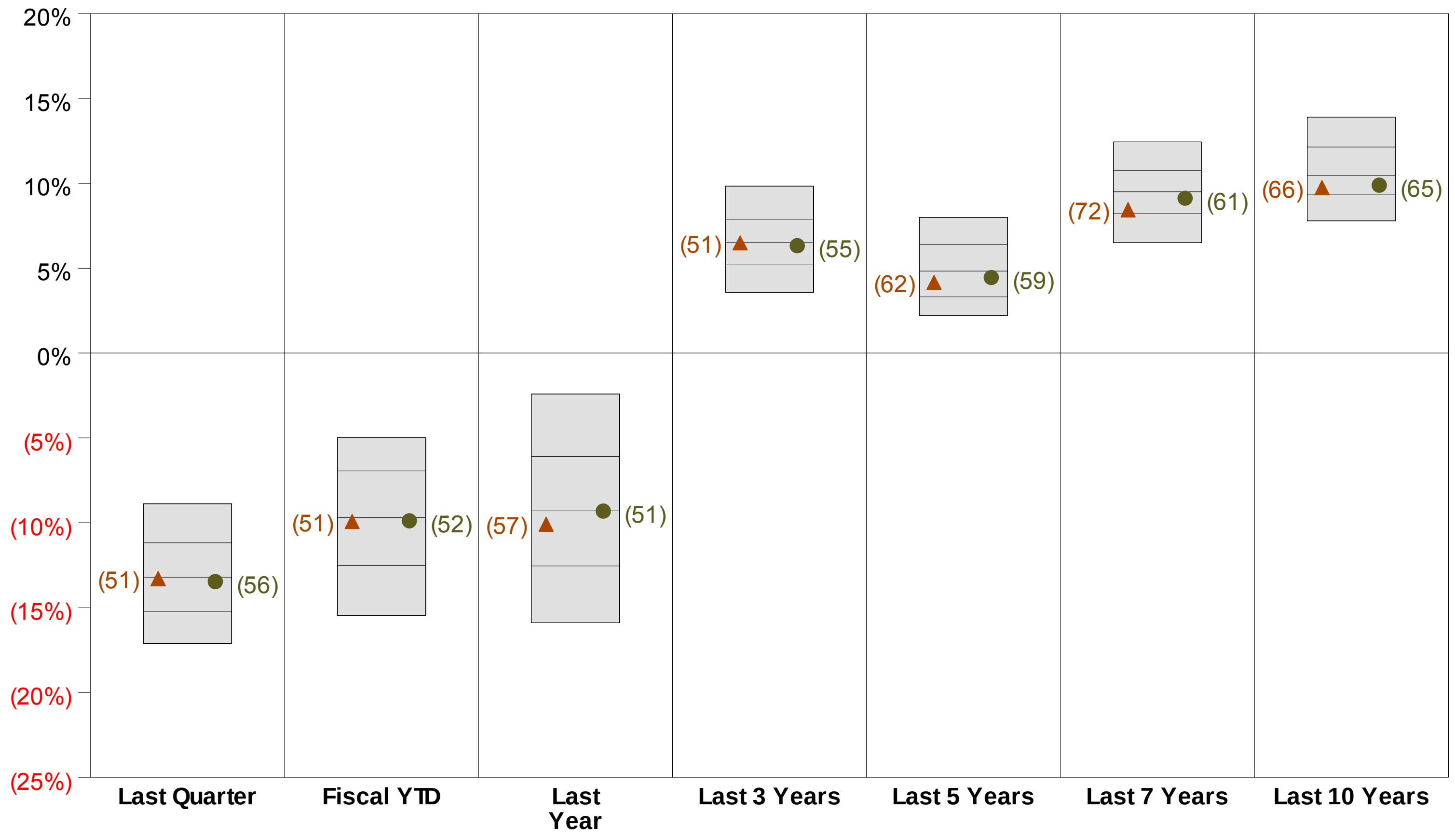
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(3.32)	(4.09)	(9.96)	12.45	6.47	10.01	12.91
25th Percentile	(5.64)	(6.83)	(13.05)	10.29	4.16	6.89	10.98
Median	(7.41)	(9.81)	(15.29)	8.73	2.45	4.94	9.67
75th Percentile	(9.28)	(12.37)	(18.02)	6.65	1.46	3.70	8.40
90th Percentile	(11.48)	(16.41)	(20.81)	4.34	0.24	2.96	7.67
Emerging Markets ●	(6.98)	(9.37)	(15.15)	8.96	1.45	2.93	7.65
MSCI EM ▲	(7.47)	(8.49)	(14.58)	9.25	1.65	3.23	8.02

APFC Global Equity Relative to Global Universe

Periods Ended December 31, 2018

- APFC Global Equity portfolio roughly tracks its benchmark and ranks near the median when compared to other global equity managers over all time periods.

Performance vs Global Equity Database (Gross)

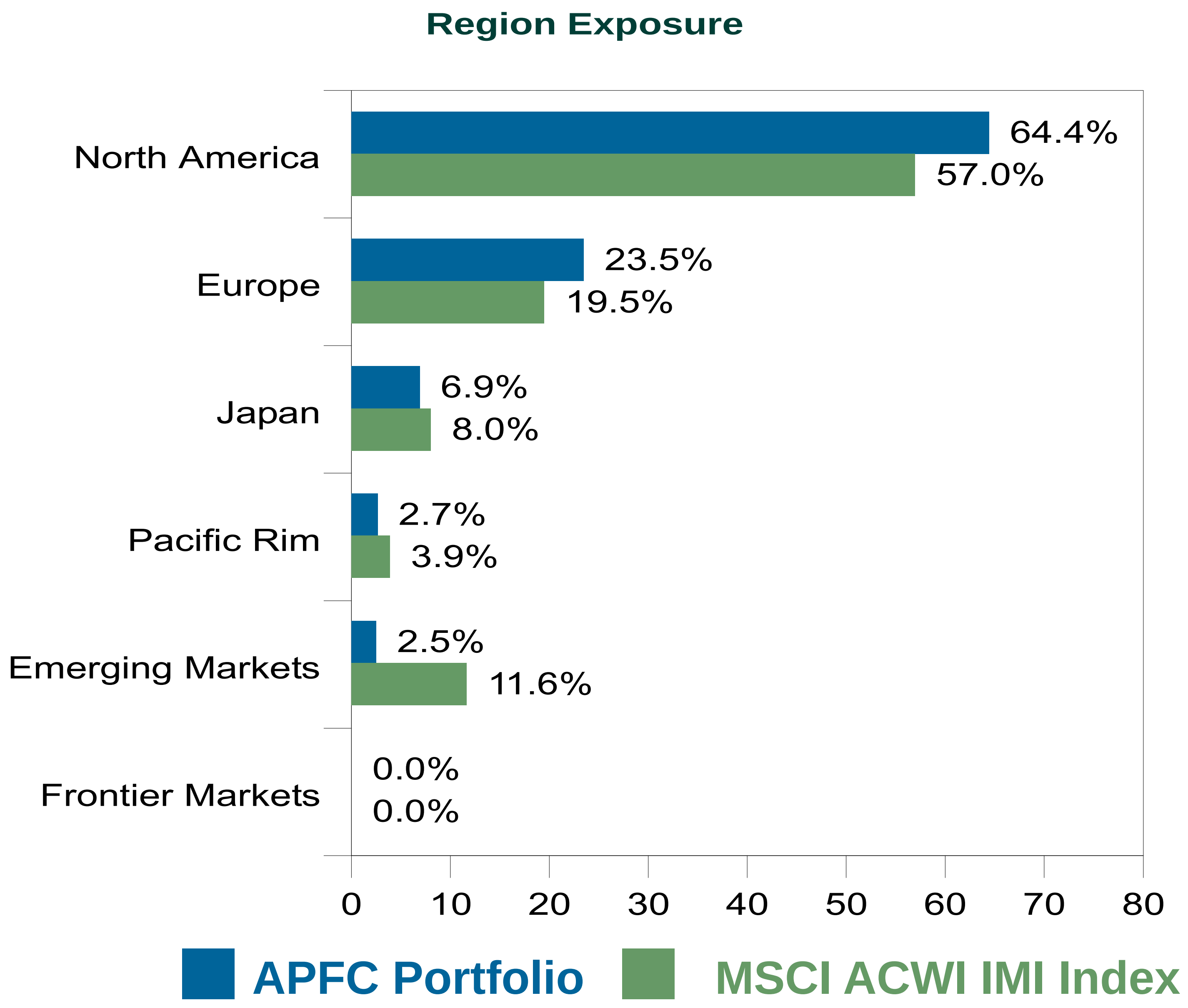


	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(8.88)	(4.98)	(2.42)	9.84	7.99	12.43	13.90
25th Percentile	(11.18)	(6.94)	(6.09)	7.88	6.39	10.77	12.13
Median	(13.21)	(9.70)	(9.30)	6.51	4.83	9.50	10.46
75th Percentile	(15.21)	(12.51)	(12.55)	5.19	3.31	8.22	9.36
90th Percentile	(17.11)	(15.46)	(15.89)	3.58	2.22	6.50	7.78
Global Equity ●	(13.57)	(9.98)	(9.41)	6.23	4.35	9.02	9.79
MSCI ACWI IMI ▲	(13.28)	(9.92)	(10.08)	6.49	4.17	8.44	9.74

APFC Global Equity Portfolio Region Exposure

As of December 31, 2018

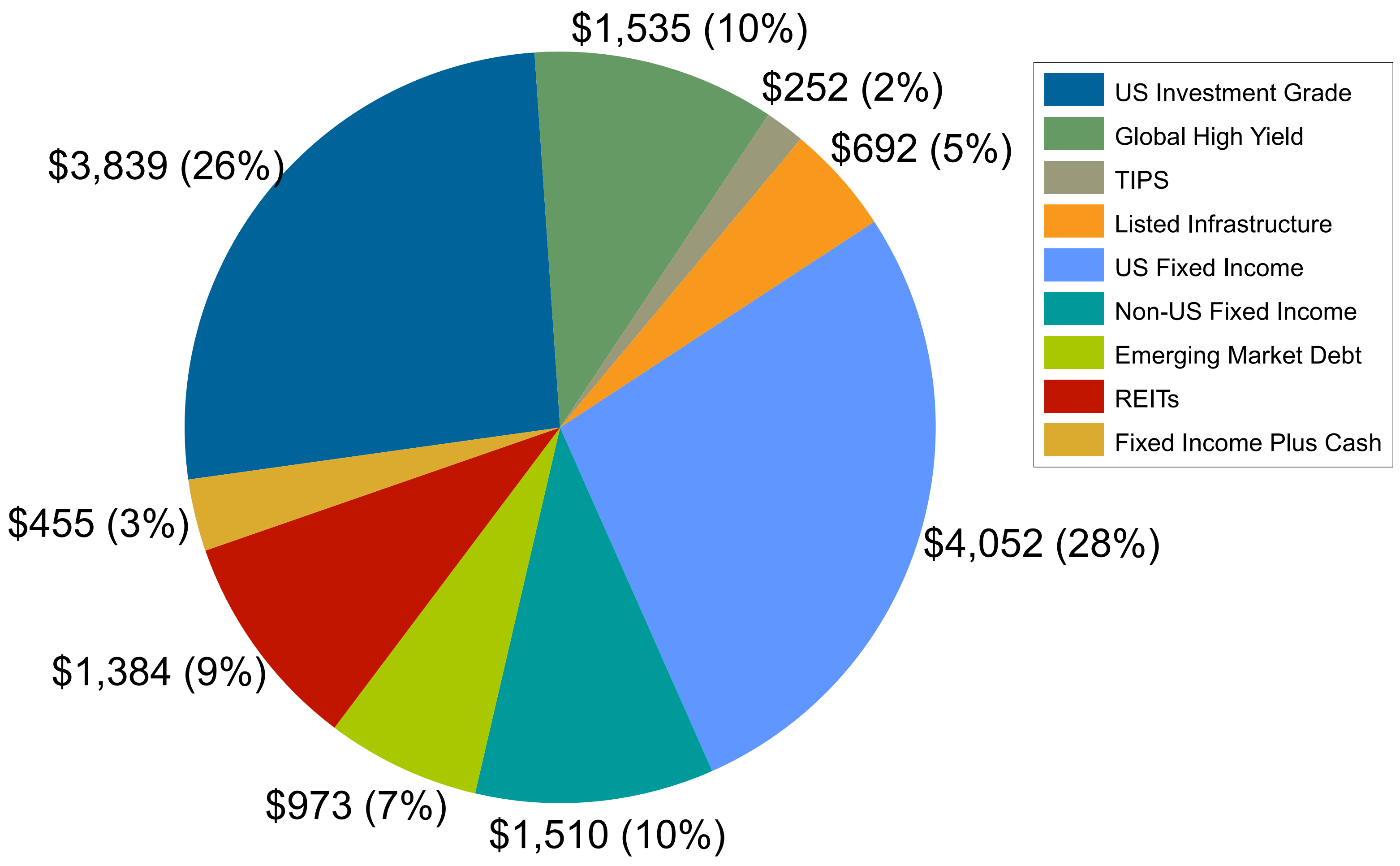
- The APFC global equity portfolio has an underweight to Emerging Markets, Japan, and the Pacific Rim relative to its benchmark.
- The portfolio has corresponding relative overweighs to North America and Europe.
- This positioning and broad based regional losses drove quarterly results.



APFC Fixed Income Plus Structure

As of December 31, 2018

- 65% of the fixed income plus portfolio is managed internally, including allocations within Fixed Income Plus Cash, US Fixed Income Aggregate, US Investment Grade Corporate, Non-US Fixed Income, and TIPS.
- External mandates are focused in specialty areas including Non-US Fixed Income, Global High Yield, Emerging Market Debt, REITs, and Listed Infrastructure.

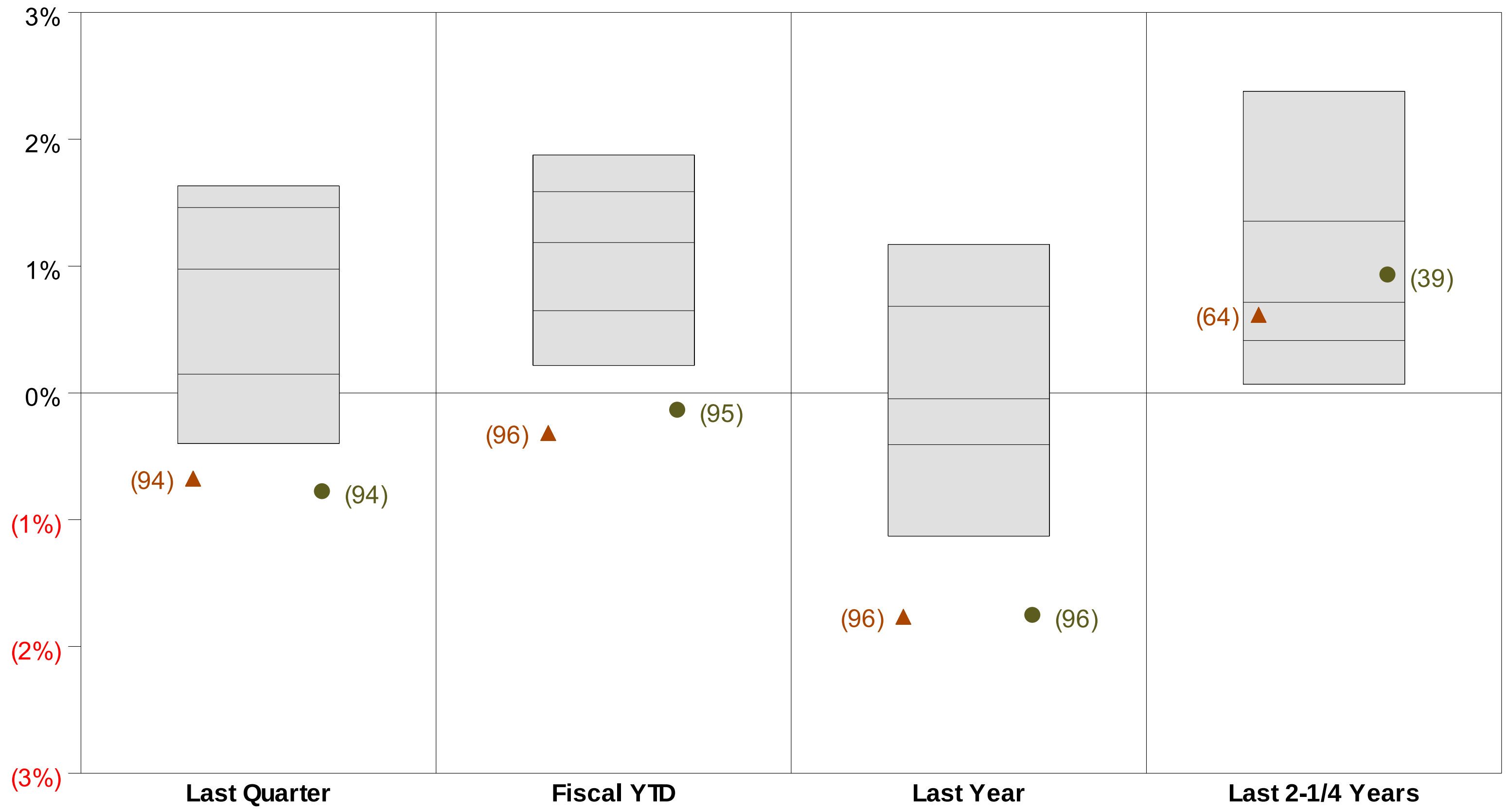


Fixed Income Plus Relative to Public Fixed Income Funds

Periods Ended December 31, 2018

- APFC Fixed Income Plus portfolio roughly tracks its benchmark but lands in the bottom decile when compared to its peers for three of the four time periods shown.
- Since Inception, 2 ¼ years ago, the portfolio maintains a solid lead over both the index and the median manager.
- Negative absolute performance from REITS, Global High Yield, and Listed Infrastructure offset positive absolute performance from Non-US Fixed Income and US Fixed Income Aggregate.

Performance vs Public Fund - Domestic Fixed (Gross)



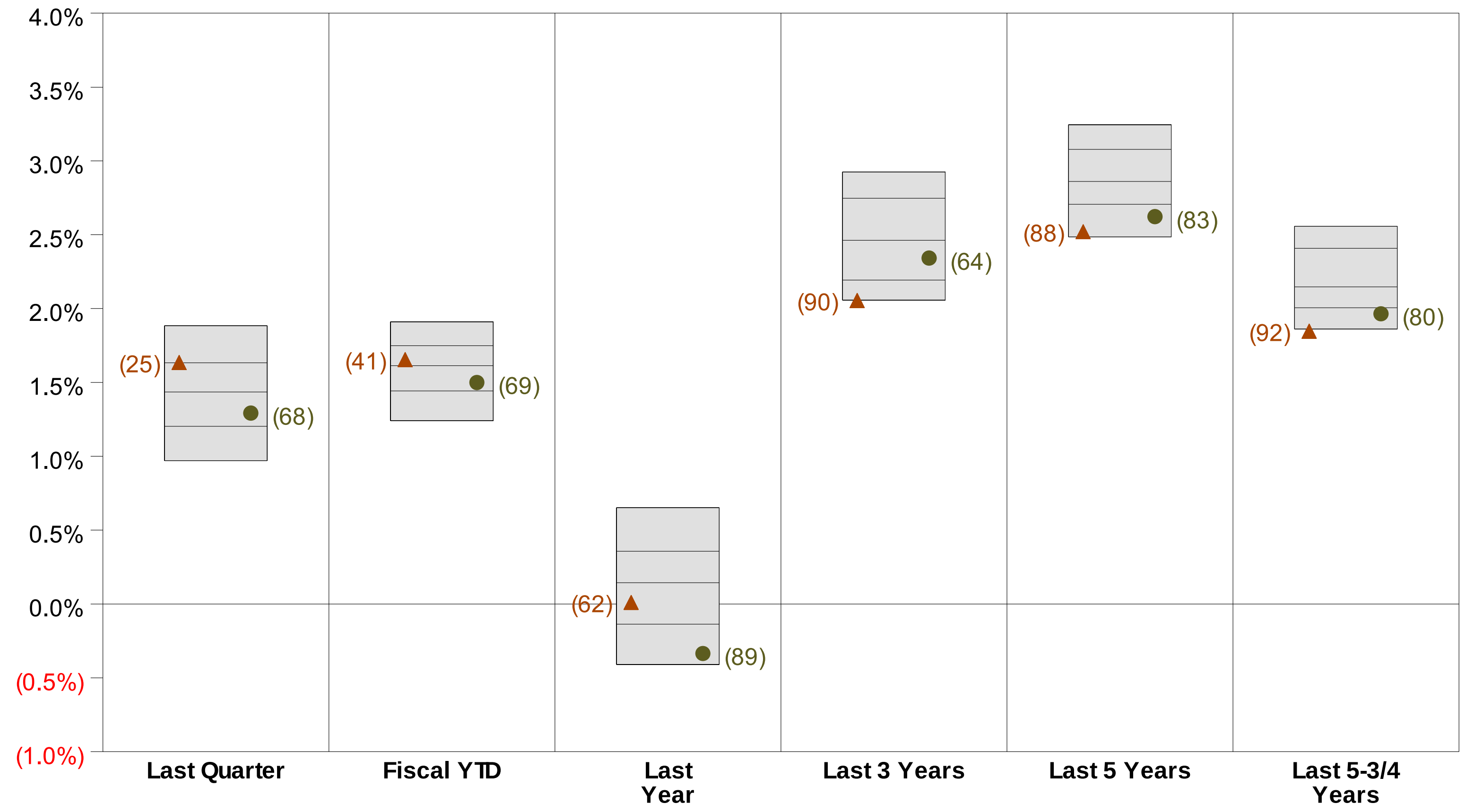
	Last Quarter	Fiscal YTD	Last Year	Last 2-1/4 Years
10th Percentile	1.63	1.88	1.17	2.38
25th Percentile	1.46	1.59	0.68	1.35
Median	0.98	1.19	(0.05)	0.71
75th Percentile	0.15	0.65	(0.41)	0.41
90th Percentile	(0.40)	0.22	(1.13)	0.07
Fixed Income Plus ●	(0.79)	(0.15)	(1.77)	0.92
Fixed Income Plus Benchmark ▲	(0.67)	(0.32)	(1.76)	0.62

US Fixed Income Aggregate Relative to Core Bond Funds

Periods Ended December 31, 2018

- APFC US Fixed Income Aggregate portfolio trails the Bloomberg Aggregate Index for all time periods of one year and less and is in the lead for all time periods of three years and longer.
- US Fixed Income composite lags the median core bond manager over all time periods shown on the chart.
- Longer-run underperformance relative to peers is primarily driven by APFC's lower allocation to credit, during periods of solid performance from said sector.

Performance vs Callan Core Bond Fixed Income (Gross)



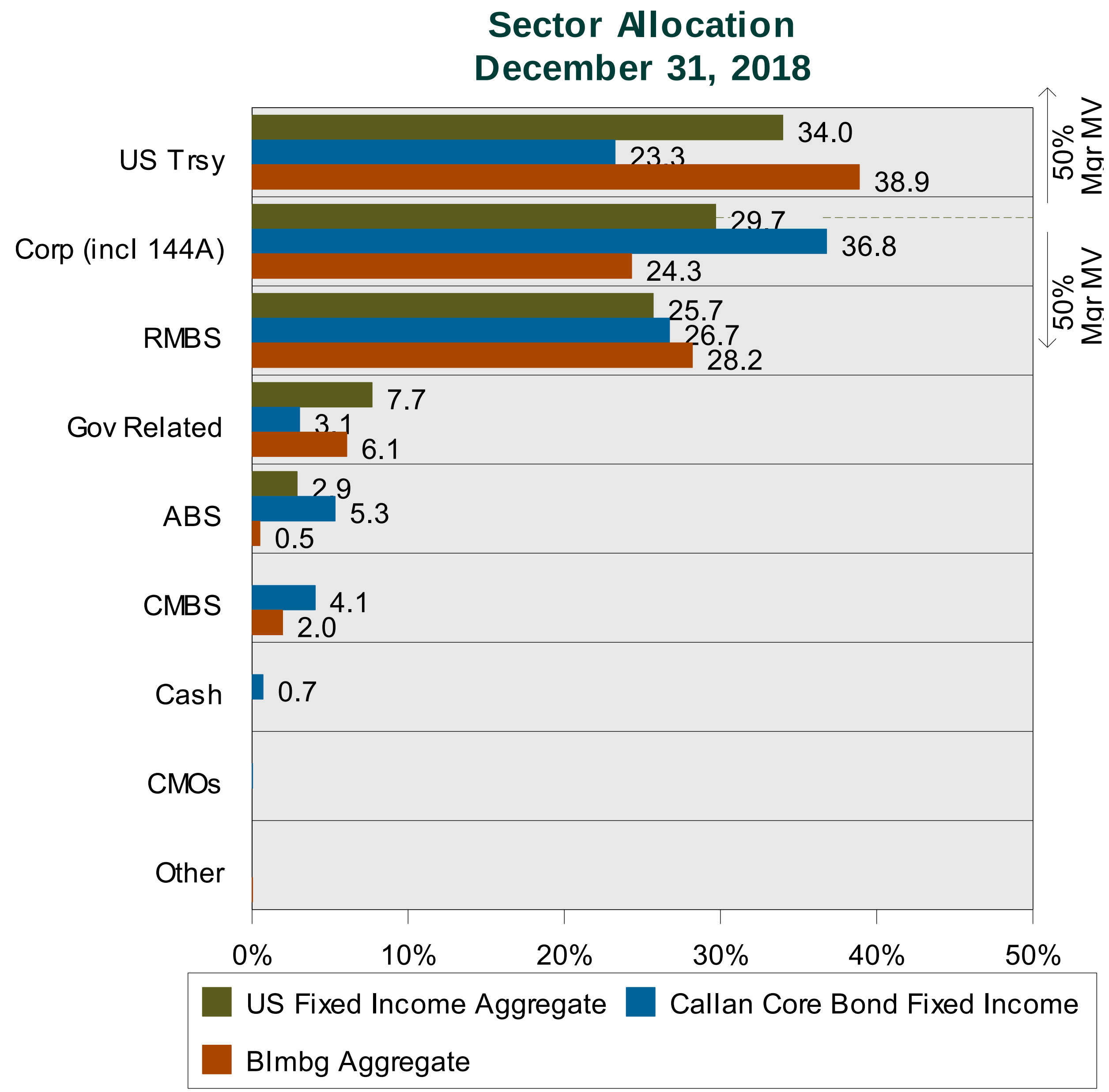
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	1.88	1.91	0.65	2.93	3.24	2.56
25th Percentile	1.63	1.75	0.36	2.75	3.08	2.41
Median	1.44	1.61	0.14	2.46	2.86	2.15
75th Percentile	1.20	1.44	(0.14)	2.19	2.71	2.01
90th Percentile	0.97	1.24	(0.41)	2.06	2.48	1.86
US Fixed Income Aggregate ●	1.28	1.49	(0.35)	2.33	2.61	1.95
Blmbg Aggregate ▲	1.64	1.65	0.01	2.06	2.52	1.85

US Fixed Income Sector Allocation

As of December 31, 2018

- The primary driver of performance for the US Fixed Income portfolio relative to peers has been its lower than average allocation to corporate bonds and higher than average allocation to U.S. Treasuries and Government-related debt.

- Additionally, the US Fixed Income portfolio has a higher quality bias, and thus a lower yield, than its Core Fixed Income peers.



US Investment Grade Corp Relative to Investment Grade Funds

Periods Ended December 31, 2018

- APFC US Investment Grade Corporate composite trails its benchmark for time periods of one year and less, but has a comfortable lead for all other time periods shown.
- The Investment Grade Corporate composite sits below median in the short-term and Since Inception, but above peer median over the intermediate-term periods.

Performance vs Callan Investment Grade Credit Fixed Inc (Gross)

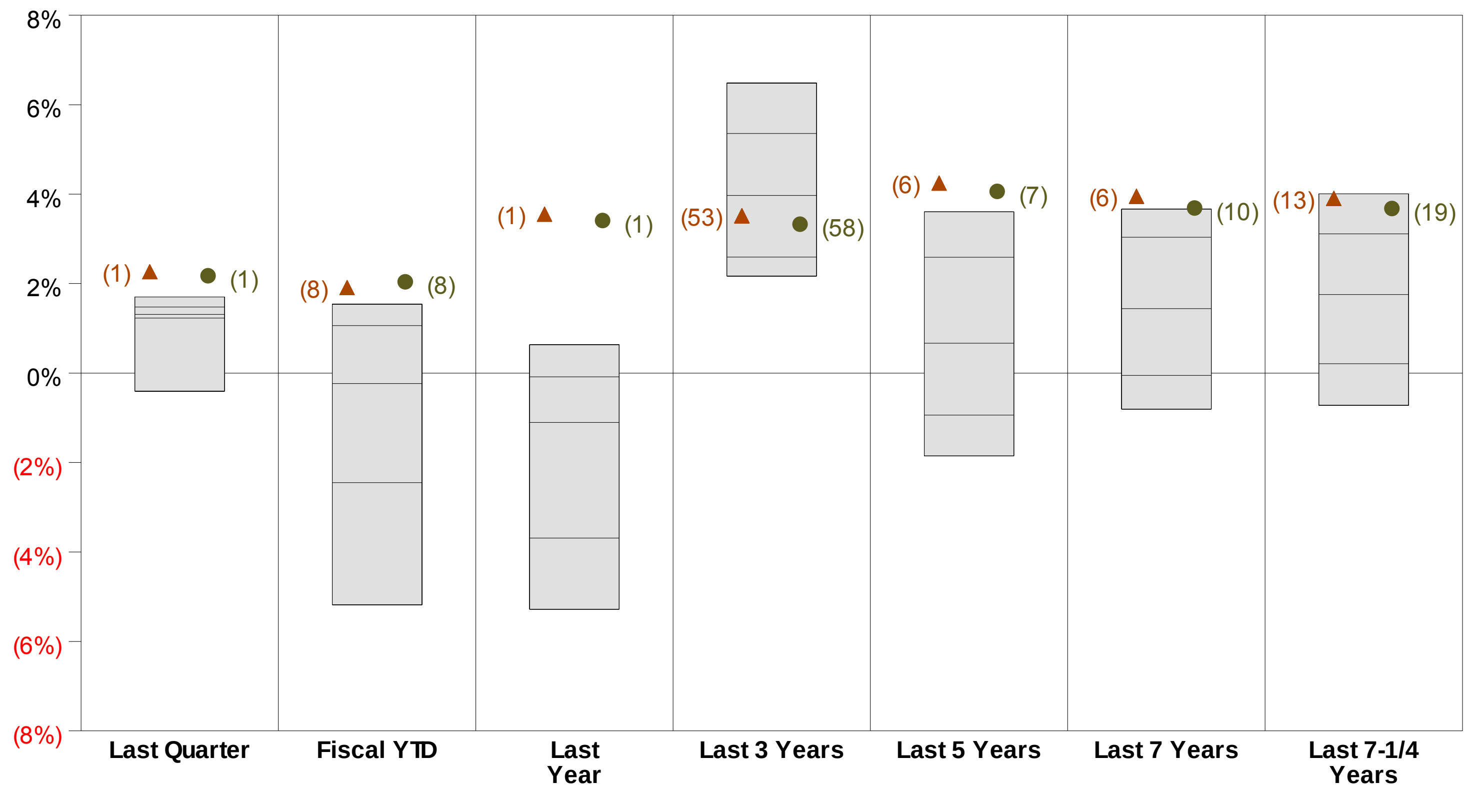
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 9-1/4 Years
10th Percentile	0.11	1.03	(1.66)	4.38	4.26	5.10	6.23
25th Percentile	(0.16)	0.94	(2.18)	3.96	3.77	4.37	5.61
Median	(0.40)	0.71	(2.33)	3.67	3.66	4.04	5.19
75th Percentile	(0.57)	0.43	(2.67)	3.32	3.49	3.85	4.99
90th Percentile	(1.08)	0.16	(3.15)	3.14	3.28	3.72	4.90
US Investment Grade Corporate ●	(0.62)	0.57	(2.99)	3.68	3.79	4.05	5.08
Blmbg Corporate ▲	(0.18)	0.79	(2.51)	3.26	3.28	3.48	4.61

Non-U.S. Fixed Income Relative to International Fixed Income Funds

Periods Ended December 31, 2018

- APFC Non-U.S. Fixed Income underperforms its benchmark over all time periods measured, with the exception of Fiscal YTD.
- When compared to peers, the portfolio exceeds the median manager for the majority of time periods shown; falling behind the median manager only for the last 3-year period.
- This composite includes allocations to Rogge Asset and an In House Global Gov't Bonds mandate.

Performance vs Public Fund - International Fixed (Gross)



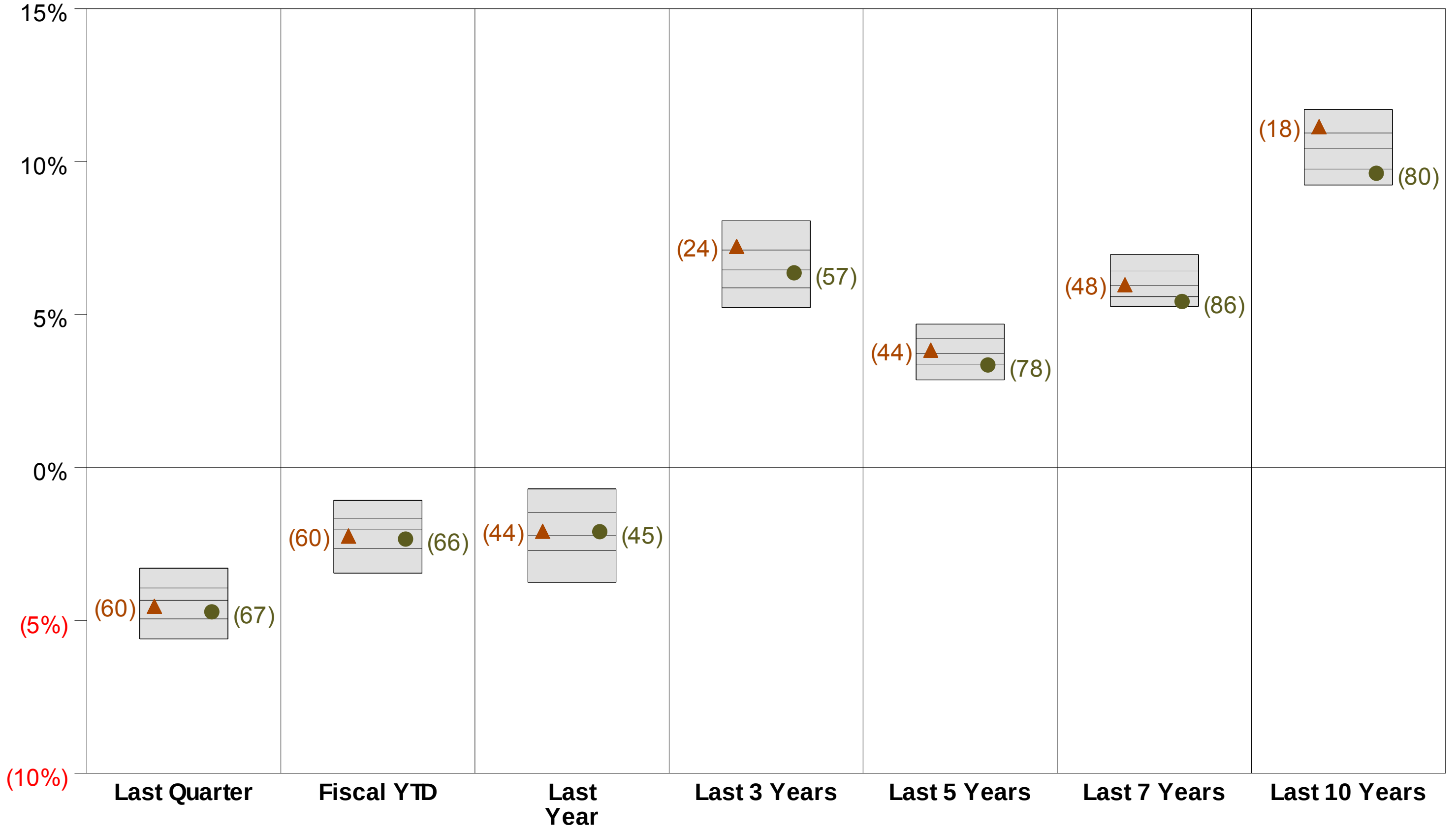
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 7-1/4 Years
10th Percentile	1.70	1.54	0.64	6.49	3.61	3.67	4.01
25th Percentile	1.48	1.06	(0.09)	5.36	2.59	3.04	3.11
Median	1.31	(0.24)	(1.10)	3.97	0.67	1.44	1.75
75th Percentile	1.23	(2.45)	(3.69)	2.59	(0.94)	(0.05)	0.21
90th Percentile	(0.41)	(5.18)	(5.28)	2.17	(1.85)	(0.81)	(0.72)
Non US Fixed Income ●	2.14	2.00	3.37	3.29	4.02	3.65	3.64
BC Global Treasury ex-US ▲	2.27	1.91	3.55	3.52	4.25	3.95	3.91

Global High Yield Relative to High Yield Funds

Periods Ended December 31, 2018

- APFC Global High Yield falls behind its target over all time periods depicted on the chart.
- When compared to peers, the portfolio exceeded the median manager over the last 1-year, kept up over the last 3-years, and fell behind over all other time periods measured.
- This composite includes allocations to Oaktree, Capital Guardian, and an iShares ETF.

Performance vs Callan High Yield Fixed Income (Gross)



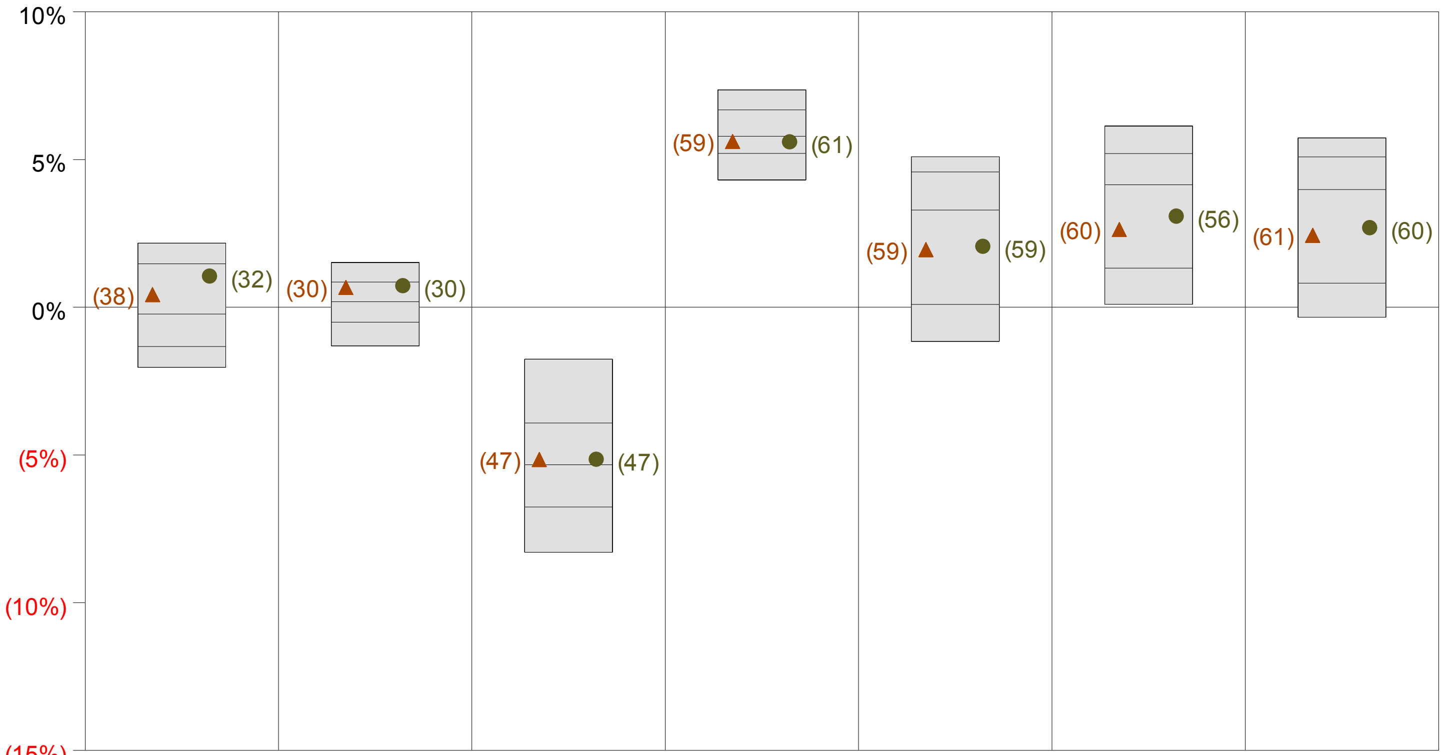
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(3.29)	(1.07)	(0.70)	8.07	4.69	6.96	11.71
25th Percentile	(3.94)	(1.66)	(1.48)	7.11	4.21	6.43	10.94
Median	(4.34)	(2.04)	(2.23)	6.46	3.73	5.94	10.42
75th Percentile	(4.95)	(2.65)	(2.72)	5.87	3.38	5.58	9.76
90th Percentile	(5.60)	(3.45)	(3.75)	5.23	2.87	5.27	9.24
Global High Yield ●	(4.77)	(2.39)	(2.15)	6.31	3.30	5.37	9.57
Blmbg HY 2% Iss Cap ▲	(4.54)	(2.24)	(2.08)	7.23	3.84	5.98	11.14

Emerging Market Debt Relative to EMD Funds

Periods Ended December 31, 2018

- In the 4th quarter, emerging market debt was a relatively bright spot in spite of risk-off environment.
- APFC Emerging Market Debt portfolio leads its target for the recent quarter and in the long-run, and is-line in the short- and intermediate-term.
- Relative to peers, the composite is above median in Callan's EMD database in the short-run and consistently hovers around 60th percentile in the intermediate- and long-run.

Performance vs Emerging Debt Database (Gross)



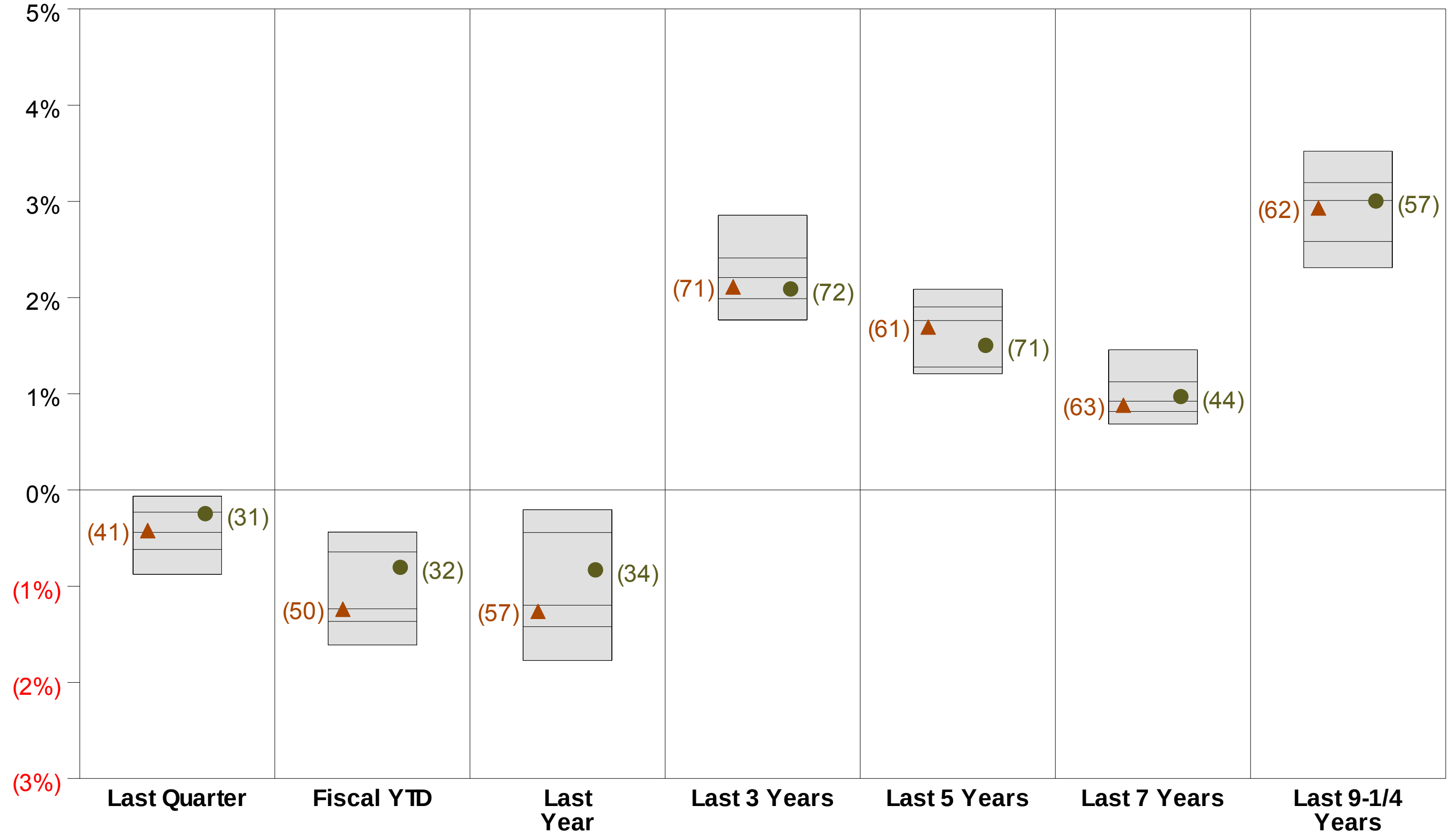
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 8-1/4 Years
10th Percentile	2.17	1.52	(1.75)	7.36	5.10	6.13	5.74
25th Percentile	1.47	0.86	(3.92)	6.69	4.58	5.21	5.09
Median	(0.23)	0.19	(5.33)	5.79	3.29	4.14	3.98
75th Percentile	(1.33)	(0.50)	(6.76)	5.21	0.10	1.32	0.82
90th Percentile	(2.03)	(1.31)	(8.29)	4.31	(1.16)	0.10	(0.33)
Emerging Market Debt ●	1.00	0.67	(5.20)	5.54	2.01	3.03	2.65
EMD Benchmark ▲	0.43	0.67	(5.15)	5.61	1.95	2.63	2.44

TIPS Relative to Callan’s Inflation Linked Bonds database

Periods Ended December 31, 2018

- APFC TIPS portfolio closely tracks the Bloomberg US TIPS Index over all time periods shown.
- TIPS composite ranks in the top half of Callan’s Inflation Linked Bonds peer universe for periods of one-year and less, but is in the bottom half for the remaining time periods presented on the chart.
- TIPS allocation includes APCM and an In House TIPS portfolio.

Performance vs Callan Inflation Linked Bonds (Gross)



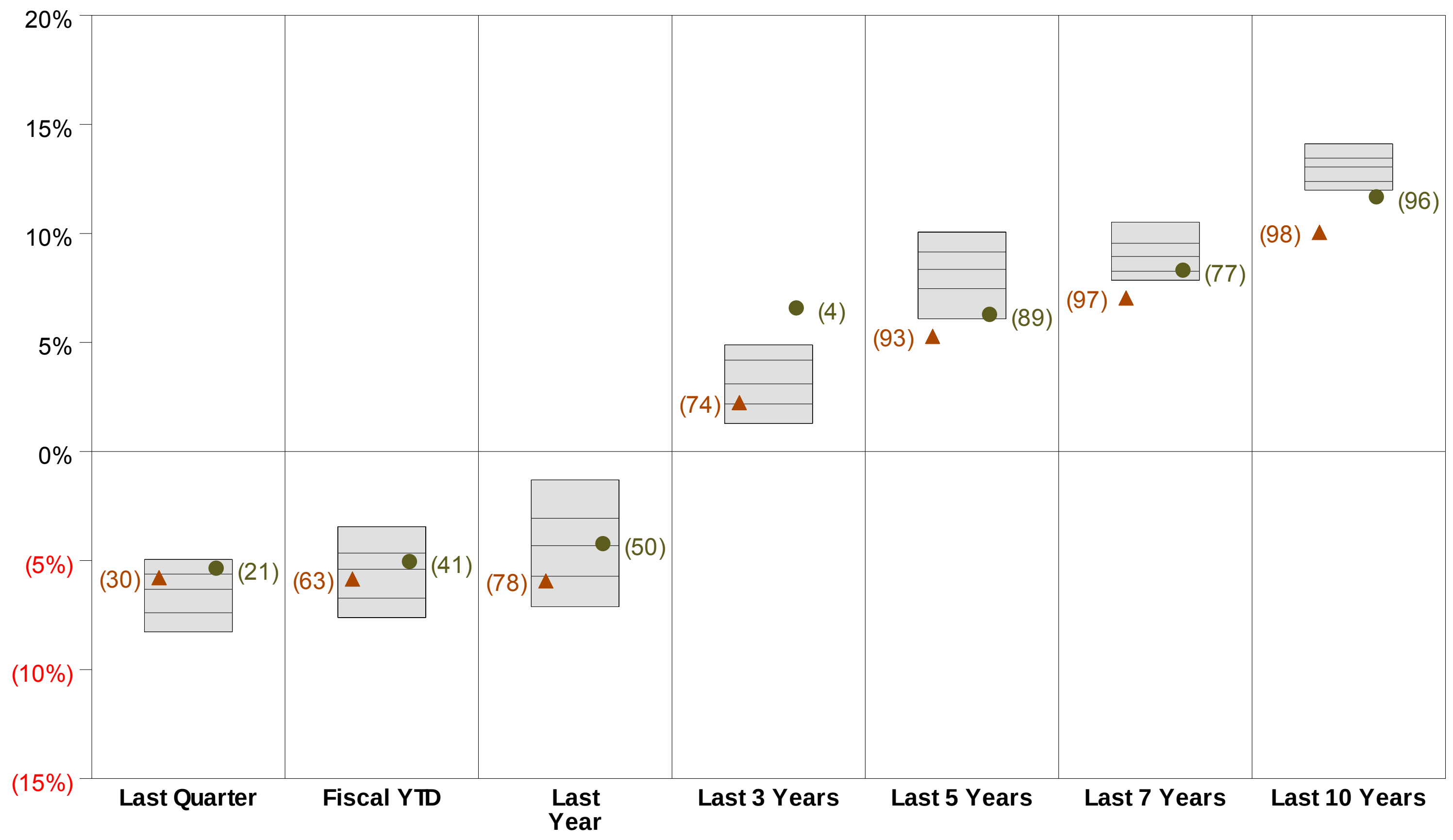
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 9-1/4 Years
10th Percentile	(0.06)	(0.44)	(0.20)	2.86	2.09	1.46	3.52
25th Percentile	(0.23)	(0.64)	(0.44)	2.41	1.90	1.12	3.19
Median	(0.44)	(1.24)	(1.20)	2.21	1.76	0.92	3.01
75th Percentile	(0.62)	(1.37)	(1.42)	1.99	1.28	0.82	2.58
90th Percentile	(0.88)	(1.61)	(1.77)	1.77	1.21	0.69	2.31
TIPS ●	(0.26)	(0.82)	(0.85)	2.07	1.49	0.95	2.99
Blmbg US TIPS ▲	(0.42)	(1.24)	(1.26)	2.11	1.69	0.88	2.93

REITs Performance Relative to Callan’s REITs database

Periods Ended December 31, 2018

- APFC REITs portfolio is in the red in the short-term, but nonetheless mitigates the decline of the benchmark. Additionally, the portfolio has done notably well versus its benchmark for time periods of 3-years and greater.
- REITs composite ranks above the median REIT manager for periods of 3-years and less, but is in the bottom quartile for periods of 5-years and greater.
- REITs allocation includes AEW Global, SSGA, and American Homes 4 Rent.

Performance vs Callan Real Estate REIT (Gross)



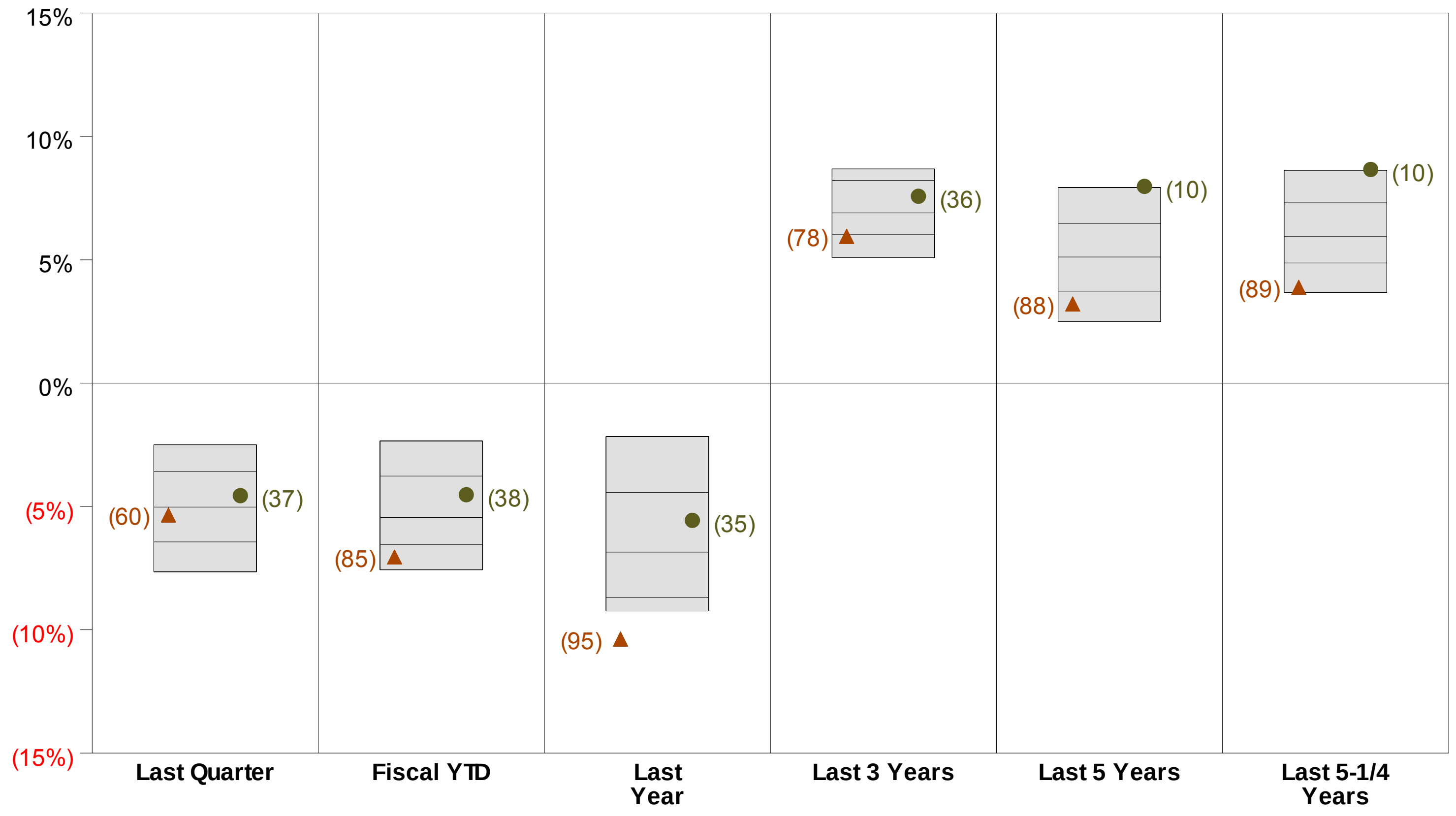
	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(4.95)	(3.45)	(1.31)	4.89	10.06	10.52	14.11
25th Percentile	(5.62)	(4.66)	(3.06)	4.20	9.14	9.55	13.45
Median	(6.32)	(5.40)	(4.32)	3.09	8.35	8.94	13.04
75th Percentile	(7.39)	(6.73)	(5.72)	2.18	7.47	8.26	12.38
90th Percentile	(8.27)	(7.62)	(7.12)	1.28	6.09	7.85	11.99
REITs ●	(5.42)	(5.11)	(4.29)	6.50	6.21	8.25	11.60
S&P Global REIT ▲	(5.79)	(5.85)	(5.93)	2.24	5.28	7.04	10.05

Listed Infrastructure Relative to Listed Infrastructure Funds

Periods Ended December 31, 2018

- APFC listed infrastructure portfolio's performance was down during the quarter. However, this result protected against the fall of its index and landed the fund above median in Callan's Publicly Listed Infrastructure peer group.
- Since Inception, the portfolio has more than doubled the return of its benchmark, whilst placing in the top decile in its peer universe.
- Listed Infrastructure composite includes Lazard, Cohen & Steers, and SSGA.

Performance vs Callan Publicly Listed Infrastructure (Gross)

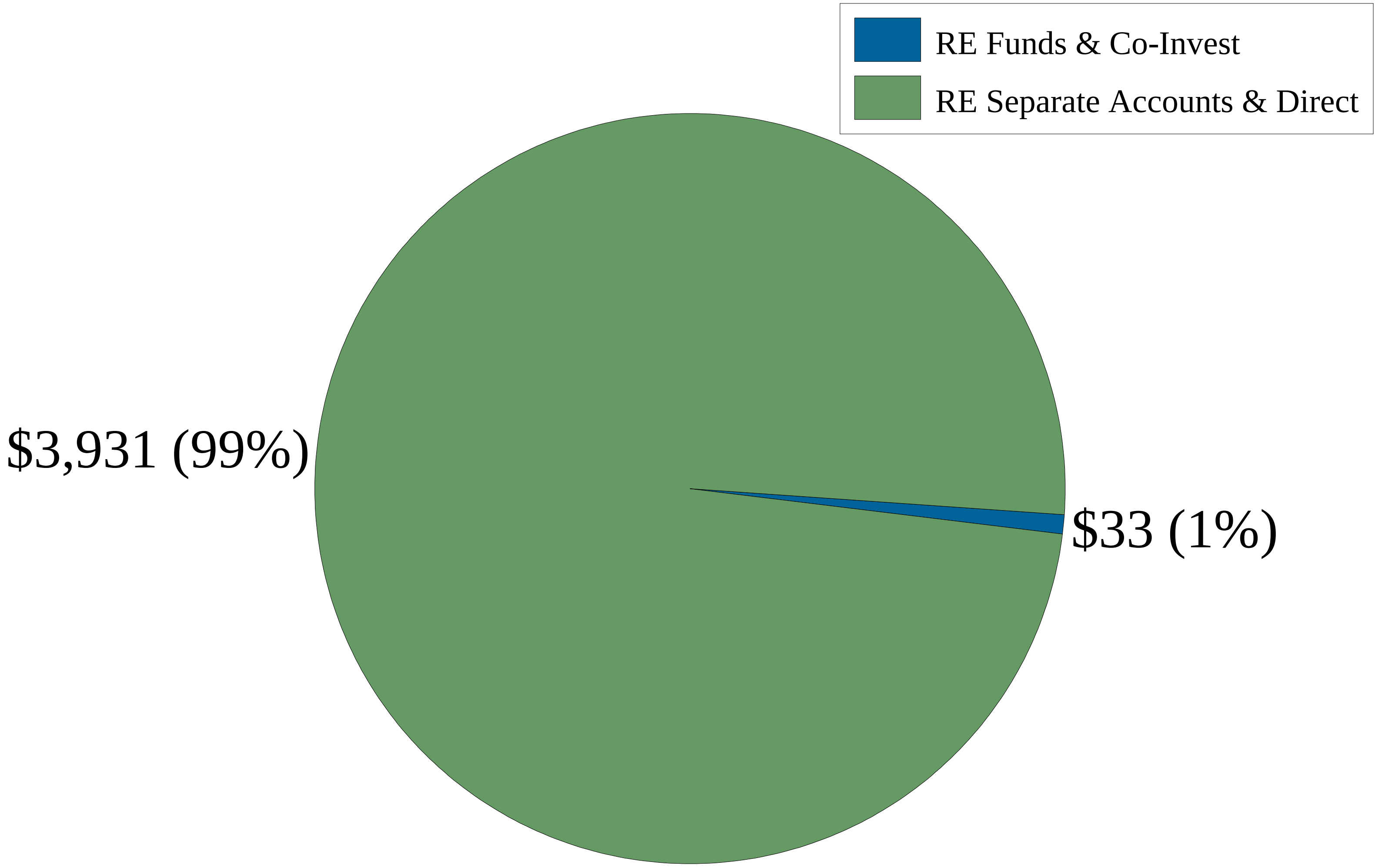


	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 5-1/4 Years
10th Percentile	(2.49)	(2.35)	(2.17)	8.68	7.92	8.62
25th Percentile	(3.59)	(3.77)	(4.43)	8.21	6.48	7.31
Median	(5.03)	(5.45)	(6.85)	6.90	5.11	5.94
75th Percentile	(6.44)	(6.54)	(8.69)	6.04	3.72	4.87
90th Percentile	(7.65)	(7.56)	(9.23)	5.09	2.50	3.68
Listed Infrastructure ●	(4.62)	(4.59)	(5.63)	7.51	7.91	8.59
S&P Global Infrastructure ▲	(5.34)	(7.05)	(10.37)	5.95	3.21	3.88

APFC Real Estate Structure *(1Q LAG)*

As of December 31, 2018

- 99% of the structure is invested in Separate Accounts and Direct Real Estate portfolios.
  - Within RE Separate Accounts & Direct, 97% is made up of Direct Real Estate.
    - 10% of the Direct allocation is invested internationally (CBRE Europe and LaSalle UK).
  - Real Estate Operating Companies make up the remaining 3% (Lincoln).
- 1% of the structure is invested in Real Estate Funds and Co-Investment portfolios (HIG Europe, Harbert Europe, Heitman Capital, Brookfield Strategic).

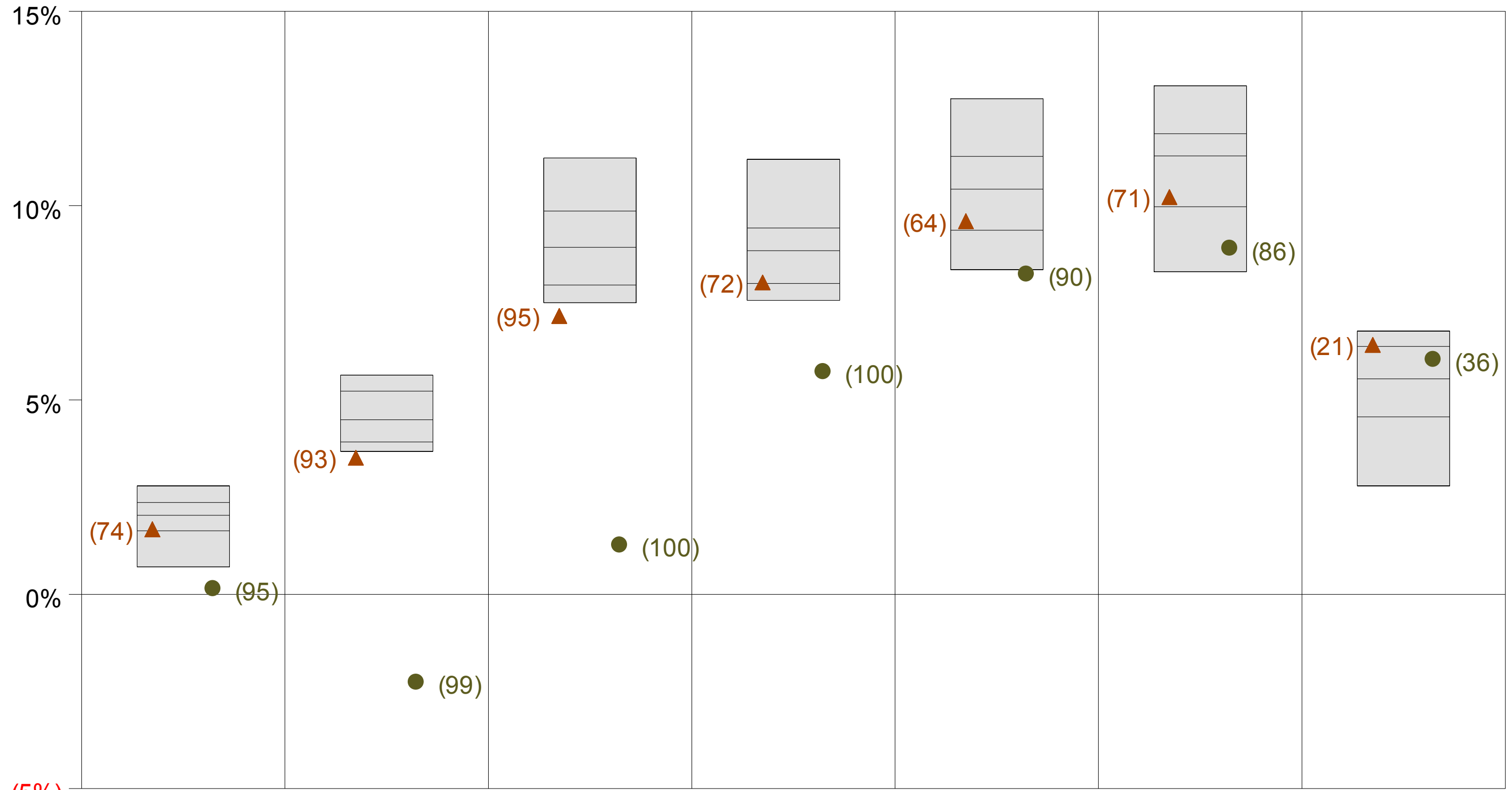


Real Estate Relative to Callan's Total Real Estate Database *(1Q LAG)*

Periods Ended December 31, 2018

- APFC Real Estate portfolio performance is shown net of fees for all investments.
- When compared to its target, the composite underperforms over all time periods displayed on the chart.
- Relative to the peer group, the portfolio ranks favorably in the very long run, but falls below median otherwise.

Performance vs Public Fund - Real Estate (Gross)

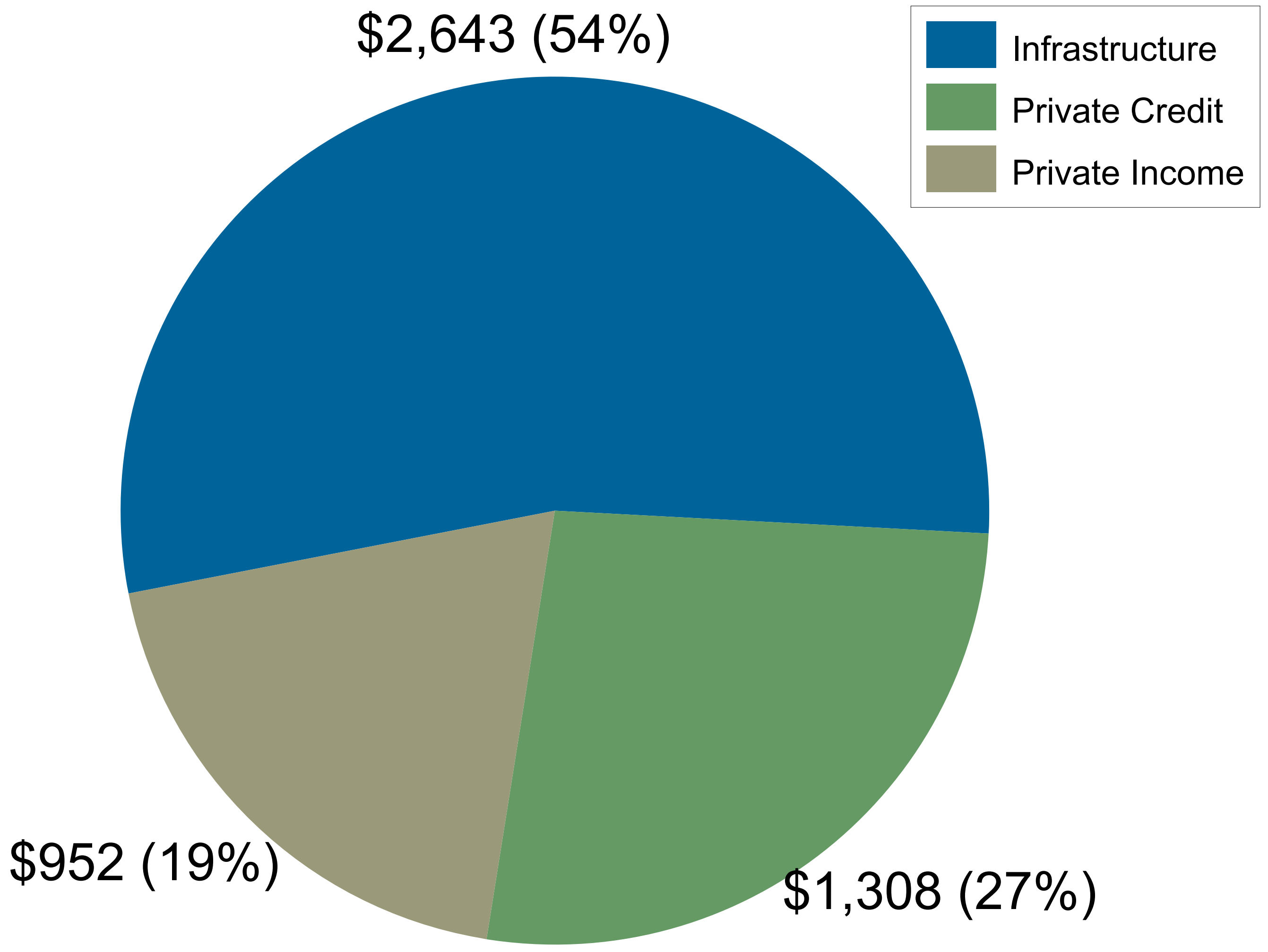


	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	2.79	5.64	11.22	11.19	12.75	13.09	6.77
25th Percentile	2.36	5.23	9.86	9.42	11.26	11.85	6.38
Median	2.03	4.49	8.93	8.84	10.42	11.28	5.54
75th Percentile	1.63	3.92	7.95	8.00	9.37	9.97	4.56
90th Percentile	0.71	3.67	7.50	7.56	8.35	8.30	2.79
APFC Real Estate (NOF) ●	0.11	(2.29)	1.24	5.70	8.21	8.87	6.01
APFC Target ▲	1.67	3.51	7.16	8.03	9.60	10.22	6.42

APFC Infrastructure and Private Income Structure *(1Q LAG)*

As of December 31, 2018

- 54% of the structure is invested in infrastructure funds, which includes a diversified portfolio of infrastructure, timber, energy, and power assets.
- 27% of the structure is invested in private credit mandates including mezzanine debt, opportunistic credit, and direct lending strategies.
- 19% of the structure is invested in private income including structured credit, alternative credit, AH4R2, and timber.



Infrastructure and Private Income Performance *(1Q LAG)*

As of December 31, 2018

	Last Quarter	FYTD	Last Year	Last 3 Years	Last 5 Years
Infrastructure and Private Income	3.81	6.83	13.87	14.22	12.52
60% FTSE Dev Core Infr / 40% BC US Corp HY 2%	2.53	6.19	4.78	9.61	7.52

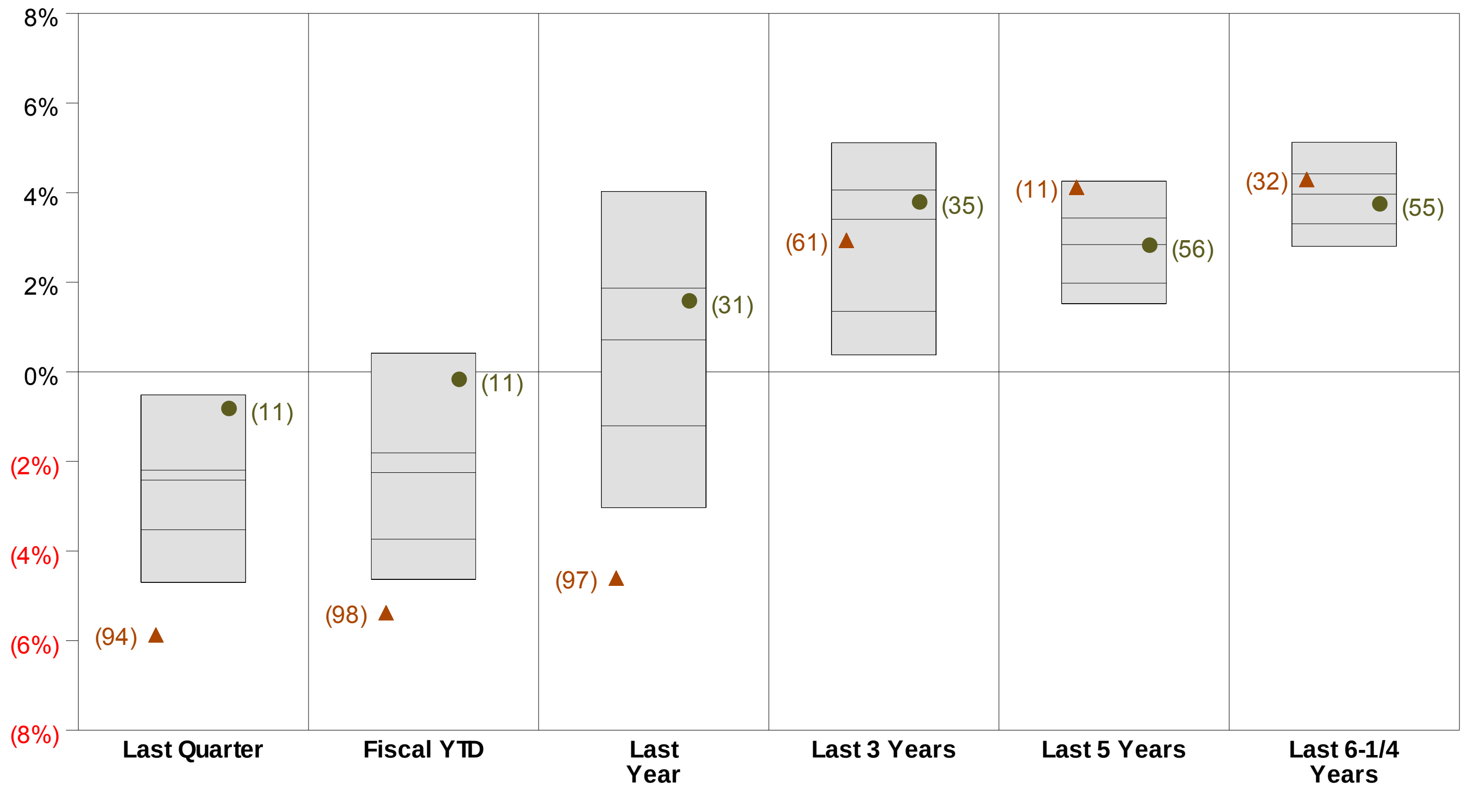
- APFC's Infrastructure and Private Income composite leads its custom benchmark (60% FTSE Developed Core Infrastructure and 40% BC US Corp HY 2%) over all time periods shown.
- Infrastructure, which was up a notable 5.6% in the quarter, lifted asset class performance.

Absolute Return Portfolio Relative to HFOF Universe

Periods Ended December 31, 2018

- The portfolio outperforms its custom benchmark for periods of 3-years and shorter, but sits behind for the last 5-years and Since Inception.
- Accordingly, Absolute Return composite ranks in the top half relative to peers in the short-term, and around median for the last 5-years and Since Inception.

Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)

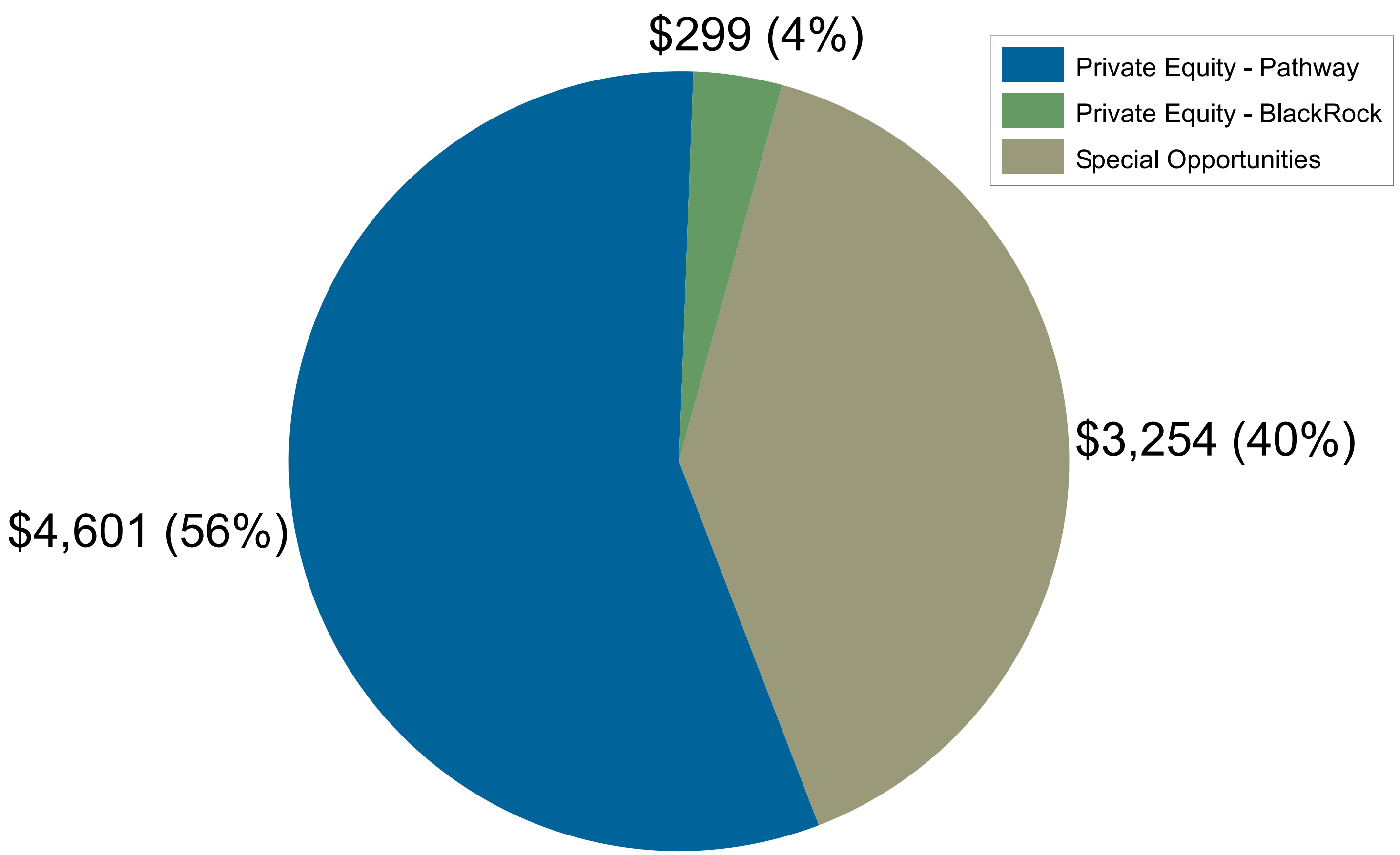


	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years	Last 6-1/4 Years
10th Percentile	(0.51)	0.42	4.03	5.11	4.26	5.12
25th Percentile	(2.20)	(1.81)	1.87	4.06	3.43	4.42
Median	(2.42)	(2.25)	0.71	3.41	2.84	3.97
75th Percentile	(3.52)	(3.74)	(1.21)	1.35	1.98	3.30
90th Percentile	(4.70)	(4.63)	(3.03)	0.38	1.52	2.80
Absolute Return (net) ●	(0.86)	(0.20)	1.54	3.75	2.79	3.71
Absolute Return Benchmark ▲	(5.87)	(5.38)	(4.61)	2.94	4.12	4.29

APFC Private Equity and Special Opportunities Structure *(1Q LAG)*

As December 31, 2018

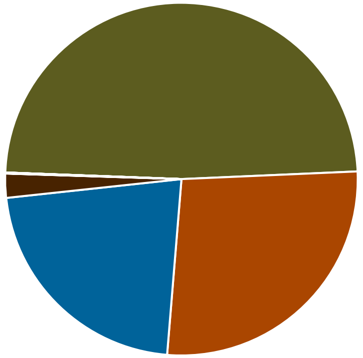
- 60% of the structure is invested in private equity.
- The legacy HarbourVest investments have been transferred to Pathway for oversight management.
- The Pathway portfolio also includes direct investments overseen by Pathway.
- 40% of the structure is invested in special opportunities.



Private Equity Portfolio Positioning

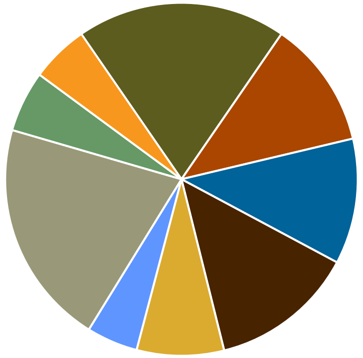
As of June 30, 2018

- APFC's Total Private Equity Portfolio is well-diversified by strategy, geography, and industry.
- All key sectors are included: venture capital, buyout, special situations and distressed debt. Buyouts remain the largest allocation.
- The largest non-U.S. sector exposure is Europe.
- The largest industry sector is Technology.



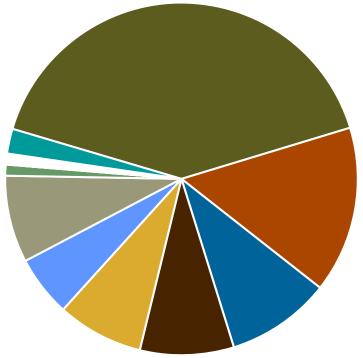
Strategy Mix by Net Asset Value

Buyout	48.73%
Venture/Growth Capital	27.02%
Special Situations	22.02%
Distressed/Restructuring	2.16%
Secondary Interest	0.09%
Mezzanine	0.03%



Geographic Mix by Net Asset Value

West/Pacific Northwest	19.01%
Mid-West	11.58%
Southwest/Rockies	13.38%
North Atlantic	11.65%
Southeast	7.88%
Mid-Atlantic	4.61%
Europe	19.96%
Asia/Pacific	6.08%
Other	5.88%



Industry Mix by Net Asset Value

Technology	42.88%
Consumer Discretionary	13.84%
Health Care	10.42%
Industrials	8.99%
Financial	7.17%
Communication Services	5.44%
Energy	7.49%
Materials	0.97%
Consumer Staples	0.48%
Utilities	0.26%
Other/Misc	2.14%

APFC Private Equity and Special Opportunities Performance *(1Q LAG)*

As of December 31, 2018

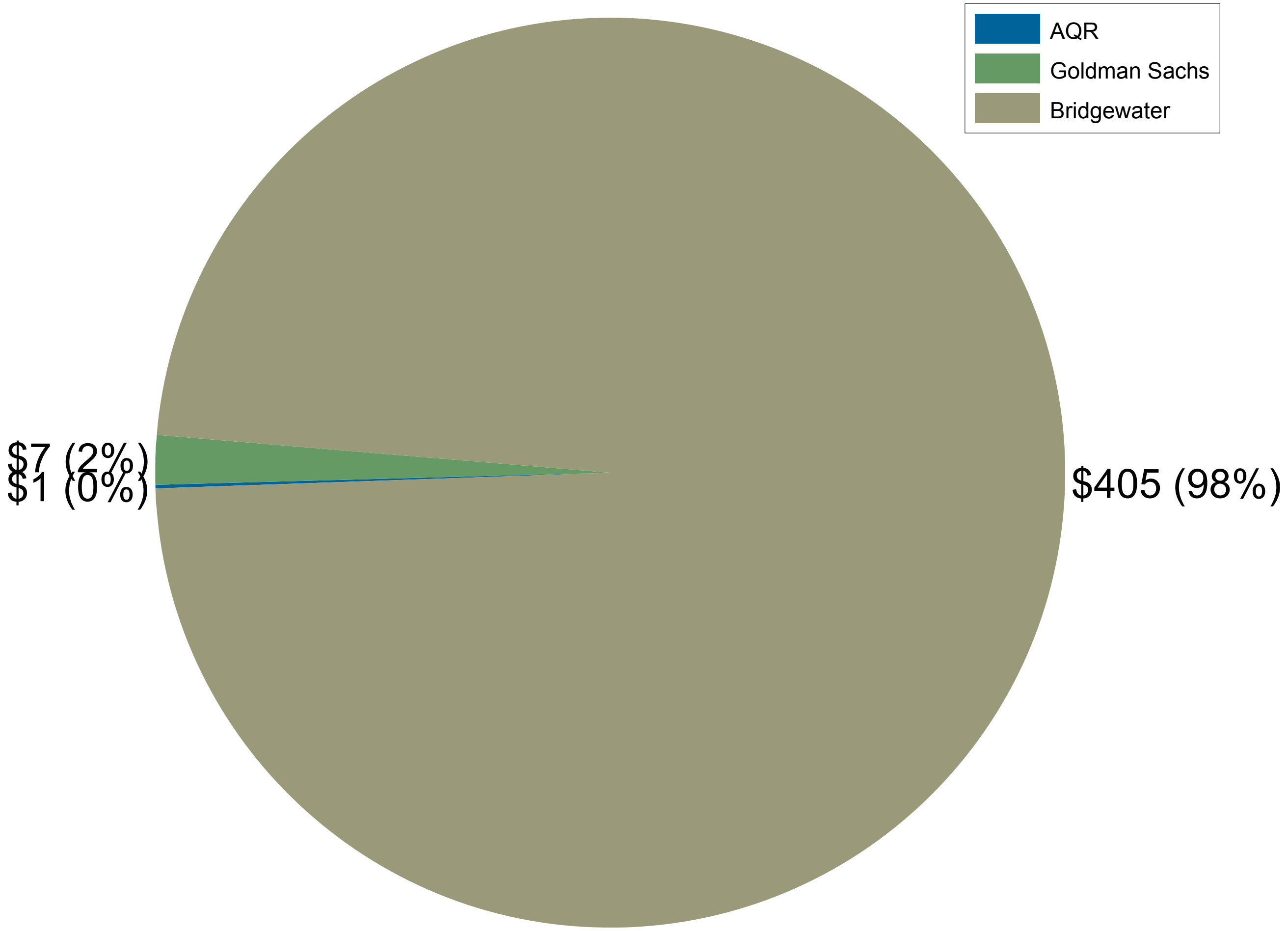
	Last Quarter	FYTD	Last Year	Last 3 Years	Last 5 Years
Private Equity and Special Opportunities	6.71	11.86	30.80	20.43	24.01
Cambridge Private Equity	3.37	8.08	16.77	14.10	13.77

- APFC's Private Equity and Special Opportunities composite is ahead of the Cambridge Private Equity Index for all time periods measured.
- Both Private Equity (+6.3%) and Special Opportunities (+7.3%) portfolios performed well during the quarter.

APFC Legacy ECIOs Structure

As of December 31, 2018

- Roughly $413 million distributed across three mandates.
  - AQR and Goldman Sachs began liquidating during the quarter.
- Multi asset class portfolios, limited use of illiquid assets.
- Leverage is used to amplify the impact of asset classes and/or strategies.
- Generally has maintained higher fixed income exposure than APFC total fund.



APFC Legacy ECIOs Performance

Periods Ended December 31, 2018

	Last Quarter	FYTD	Last Year	Last 3 Years	Last 5 Years	Last 8 3/4 Years
Bridgewater	(4.19)	(4.76)	(2.92)	4.18	4.31	8.15
Legacy ECIOs	**(8.26)**	**(9.29)**	**(10.73)**	**1.44**	**2.58**	**4.74**
TF Ret Objective (CPIU+5%)	0.77	2.18	6.91	7.03	6.52	6.66
Benchmark	(4.98)	(2.45)	(1.54)	6.90	5.26	6.78
Passive Index (60/20/10/10)	(8.43)	(6.54)	(6.75)	5.02	3.38	5.43
Total Fund	**(5.20)**	**(3.19)**	**(1.10)**	**7.58**	**6.27**	**7.45**

- The Legacy ECIOs portfolio trails three of the four targets for the quarter, and all four targets (Total Fund, CPIU+5% Objective, Benchmark, Passive Index) over remaining time periods, including since inception.
- AQR and Goldman portfolios liquidated during the quarter.
- Long-term underperformance relative to the total fund is explained by a number of factors, but primarily can be attributed to a low exposure to US Equity, an overweight to emerging markets, and levered exposure to fixed income. Additionally, the Legacy ECIOs composite includes terminated managers PIMCO and GMO.

Closing Remarks

- Total Fund ended the fourth quarter of 2018 with $61.5 billion in assets, declining 5.2% for the quarter. For the year ending December 31, the Fund is down 1.1%. This trailing year performance puts the Total Fund in the top quartile relative to other large public funds, and in the third quartile versus other large endowments/foundations.
- For the quarter, Total Fund trails the CPIU+5% return target, tracks the Performance Benchmark, and bests the Passive Index Benchmark. For the last 1- and 5-year periods, Total Fund leads two of the three targets, falling behind the CPIU+5%. However, for the trailing 3-years, Total Fund is ahead of all three targets.
- Over longer periods (last 10- and 20-years), the total Fund only trails CPIU+5% return objective and only for the trailing 20-year period.
- Strong recent performance has helped the Fund perform well relative to most large public funds and endowments. Longer-term performance has not fared as well versus peers, largely due to a comparatively high allocation to non-US equity, emerging markets, and fixed income – this effect, however, has consistently been improving.
- The Public Equity portfolio trailed its index during the quarter. Within Domestic Equities, the small/mid capitalization size bias detracted offsetting benefits from the value tilt. International Equities absolute performance was impacted by geopolitical worries. Intermediate- and longer-term performance of the Public Equity portfolio closely tracks the index.
- The Fixed Income Plus portfolio ended the quarter just shy of its respective benchmark. Absolute performance from REITS, Global High Yield, and Listed Infrastructure weighted on composite.
- The alternatives portfolios' performance was mixed. Private Equity & Special Opportunities (+6.7%) added the most value to overall performance, followed by Infrastructure & Private Income (+3.8%), and Real Estate (+0.2%). Although Absolute Return (-0.9%) ended in the red, on relative basis, the portfolio led its index by 5%. Asset Allocation (-4.9%) performed the worst.
- Prudent asset allocation with appropriate levels of diversification and a long-term perspective remain Callan's recommended course.

Callan

Callan Update

Published Research Highlights from 4Q18

2018 Nuclear Decommissioning Funding Study

Greg Allen's Reflections on 30 Years at Callan

Puttin' on the Risk: How Investors Can Use Open Protocol

Considering Currency Hedging: 10 Charts to Think About

Popular Blog Posts

How DTS Helps Us Evaluate Bonds
Kevin Machiz

A Look at the New Communication Services Sector
Irina Sushch

ESG Hitting Its Stride in U.S.
Anna West

Additional Reading

Private Equity Trends quarterly newsletter

Active vs. Passive quarterly charts

Capital Market Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Callan Institute Events

Upcoming Conferences, Workshops, and Webinars

2019 June Regional Workshops

–Atlanta, June 4, 2019

–San Francisco, June 5, 2019

"Callan College"—Ongoing fiduciary education Introduction to Investments sessions

–San Francisco, April 16–17, 2019

–San Francisco, July 16–17, 2019

–Chicago, October 22–23, 2019

Webinars: On-Demand now available at https://www.callan.com/ondemandwebinar/

Our library of pre-recorded webinars on specific investment-related topics, such as:

–ESG Adoption and Implementation Trends

–Infrastructure: Real Perspectives on an Evolving Asset Class

–Investigating Private Equity Implementation

"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."
— Greg Allen, CEO, Chief Research Officer

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Asset Class Updates: Private Equity & Special Opportunities Memo

APFC ALASKA PERMANENT FUND CORPORATION

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SUBJECT:	APFC Private Equity & Special Opportunities Asset Class Update	ACTION:	____________
DATE:	February 27th, 2019	INFORMATION:	X

BACKGROUND:

The Private Equity and Special Opportunities presentation provides portfolio updates and investment performance analysis.

STATUS:

At this meeting staff will present some of the key elements of the Private Equity and Special Opportunities portfolios including, as context, overall market performance and outlook. Staff will compare performance of the portfolios' components, including performance of staff investments versus gatekeeper investments and fund investments versus co-investments. All Policy guidelines are identified in the Investment Policy Manual and Strategic Plan.

Presentation: Private Equity & Special Opportunities

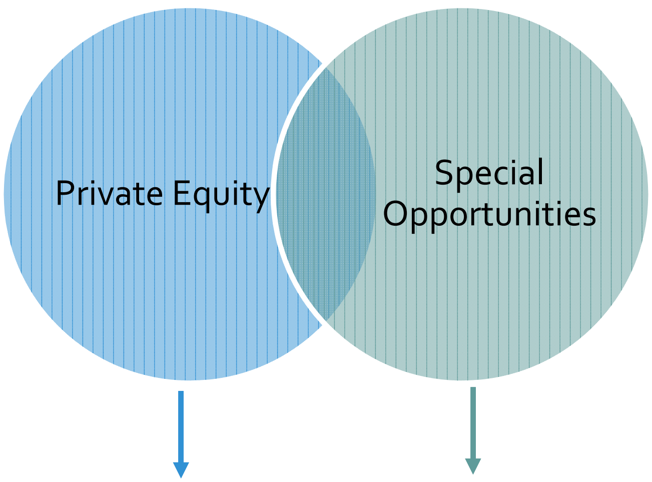
APFC

ALASKA PERMANENT FUND CORPORATION

Private Equity and Special Opportunities

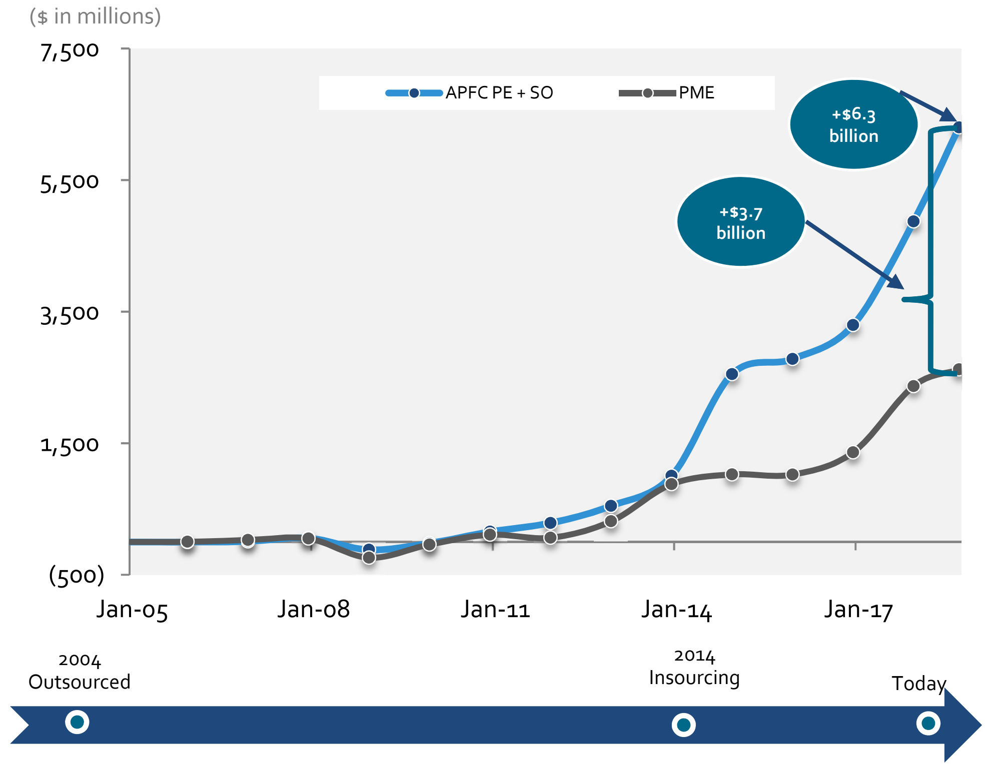
February 27, 2019

PESO Mandate and Tactics



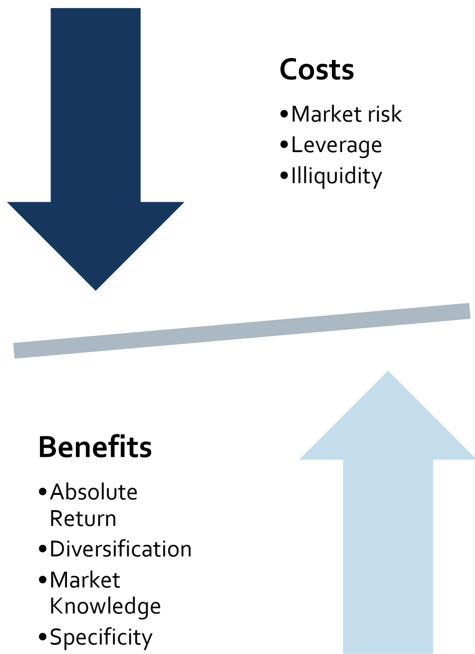
Tactics:

- Private Equity:
  - Fund Commitments
  - Co-Investments
- Special Opportunities:
  - Fund Commitments
  - Co-Investments
  - Structured Fund Commitments
  - Direct Investments



Sources: Pathway Capital Management and Burgiss as of 30-Sep-2018.
Notes: All returns net of management fees and carry.
PME = Public market equivalent benchmark assumes combined portfolio cash flows are invested in, or distributed from, a public index fund (60% Russell 3000/40% MSCI EAFE).

Portfolio Role + Expected Returns



Expected returns over market cycle	Projected Annualized	
	r	*s*
Callan	8.5	22%
Horizon CMA Survey	9.0	22%
Torrey Cove Survey	7.7	24%
APFC	12.0	22%

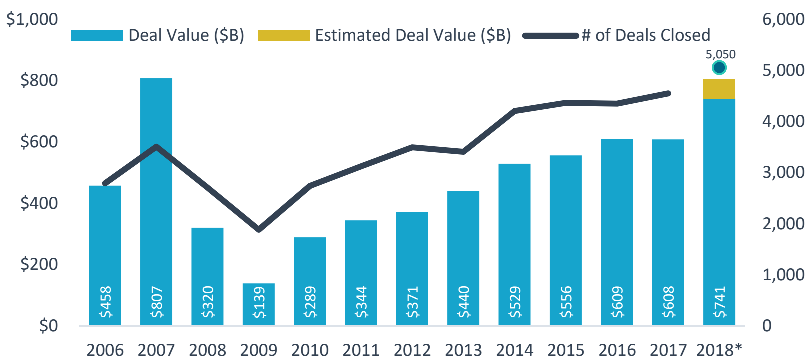
Potential Obstacles:
- Market Beta
- Execution Risk
- Team Turnover

Benchmarks:	
Private:	Cambridge
Public:	60/40

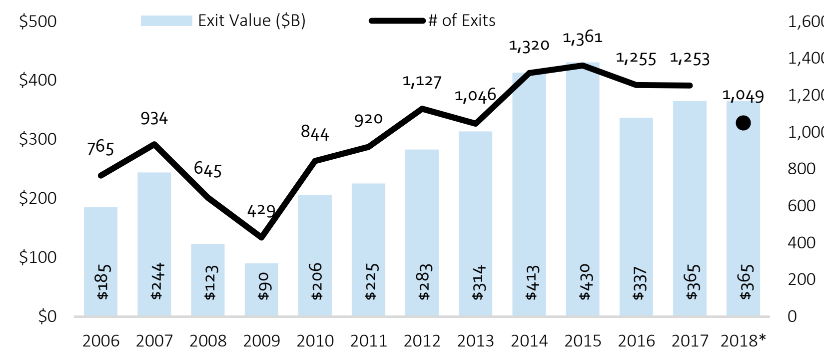
Market Update + Outlook

Purchase price multiples and fundraising velocity require caution

U.S. M&A activity continues to be robust…



…although exit activity has decelerated in 2018.



Source: Pitchbook as of Q4 2018.

Industry Trends

- **Longer Holds**
- **Asset class convergence**
- **Internationalization**
- **Evolving LPs**
- **Massive inflows**

CY19 Priorities

Maintain agility	Manage HR and geographic constraints	Reinforce defensive posture	Internationalize for diversification and growth
• Enhance portfolio monitoring and data analytics • Harvest gains, de-risk portfolio, maintain steady pacing • Seek counter-cyclical, uncorrelated strategies and assets • Deploy with conviction when markets turn	• Sourcing and diligence more critical than ever • Leverage consultants, advisors, and other 3rd parties • Build team, skills, and morale	• Consolidate preferred GP relationships • Favor contractual returns, asset coverage	• Position APFC for long-term growth opportunities

In-State Manager Update

September 27, 2018
- APFC BOT passed Resolution 19-03

January 8, 2019
- Issued RFI

January 31, 2019
- Response Due Date

February 1, 2019-February 29, 2019
- Review and discussion of proposals

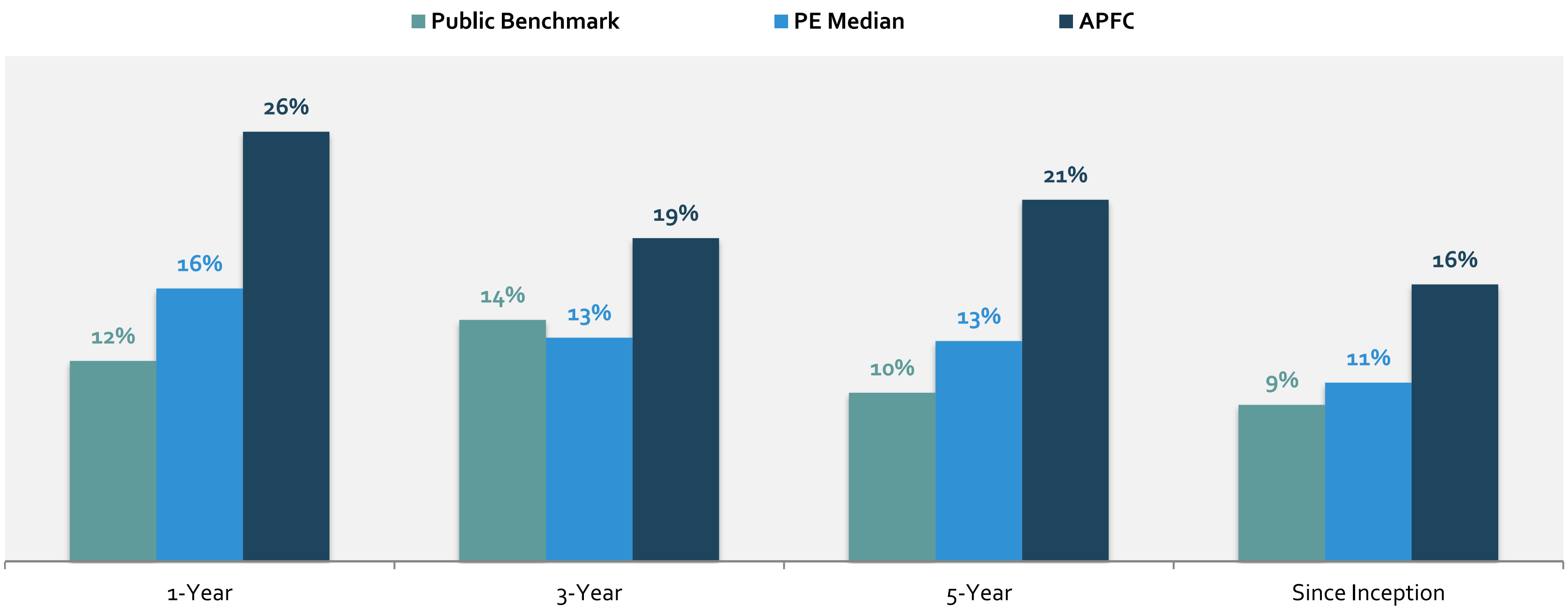
TBD
- Award mandate(s); program launch

Expected selection criteria include:

- Alignment
- Proposed strategy and available resources
- Team background + capabilities
- Historical performance

Portfolio Performance

PE and SpecOpps portfolios continue to outperform both public market and industry benchmarks



Source: IRR calculations and underlying cash flows as reported by Pathway Capital Management and Burgiss as of 30-Sep-2018.
Note: All returns net of management fees and carry. Returns may differ slightly from Callan due to timing and methodology.

Portfolio Performance

Callan Portfolio Summary						
	NAV		Historical Returns (Callan)			
($mm, 30-Sep-18) **Portfolio**	**Market Value**	**% of APF**	**1 Year**	**3 Years Annualized**	**5 Years Annualized**	**Since Inception**
Staff PE	**$1,115**	1.8%	41.4%	26.8%	22.4%	19.9%
All PE	**$4,900**	8.0%	27.5%	20.0%	19.8%	13.8%
SpecOpps	**$3,245**	5.3%	33.9%	20.3%	na	30.8%
Co-investments*	**$1,584**	2.6%	47.4%	22.2%	na	63.4%
All PESO	**$8,154**	**13.3%**	**30.2%**	**19.7%**	**23.2%**	**16.5%**
Cambridge Benchmark			*16.8%*	*14.1%*	*13.8%*	

Source: Official Callan numbers (top), and *Pathway Capital Management and Burgiss as of 30-Sep-2018 (bottom)
Note: All returns net of management fees and carry. Pathway's returns may differ slightly from Callan's time-weighted returns due to reporting lag and methodology.

Asset Class Updates: Private Income & Absolute Return

APFC ALASKA PERMANENT FUND CORPORATION

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SUBJECT:	APFC Private Income and Absolute Return Asset Class Update	ACTION:	____________
DATE:	February 27th, 2019	INFORMATION:	X

BACKGROUND:

The Private Income and Absolute Return presentation provides a portfolio update and investment performance analysis. Specific portfolios covered will include Infrastructure, Private Credit, Income Opportunities, and Absolute Return.

STATUS:

At this meeting Staff will present some of the key elements of the Private Income and Absolute Return portfolios including, as context, overall market performance and outlook. Staff will also compare performance of, and provide updates on, portfolio components.

Presentation: Private Income, & Absolute Return

APFC ALASKA PERMANENT FUND CORPORATION

Private Income and Absolute Return

February 27, 2019

Summary Performance

Time Weighted Returns and Exposures as a % of Total Fund (per Callan)

($ in millions)	NAV	Allocation: Current	Allocation: Target	QTD	FYTD	1 Year	3 Year	5 Year
Absolute Return Portfolio	**$3,437**	**5.6%**	**5.0%**	**(0.9%)**	**(0.2%)**	**1.5%**	**3.8%**	**2.8%**
HFRI FOF Index				***(5.8%)***	***(5.3%)***	***(4.5%)***	***3.0%***	***4.2%***
Private Infrastructure	$2,643	4.3%		5.6%	9.8%	20.4%	20.0%	17.6%
FTSE Infrastructure Index				*2.6%*	*8.0%*	*5.9%*	*10.5%*	*8.8%*
Private Credit	$1,308	2.1%		2.3%	4.7%	7.8%	7.5%	7.1%
Bloomberg US High Yield Index				*2.4%*	*3.5%*	*3.1%*	*8.2%*	*5.6%*
Income Opportunities	$952	1.5%		1.2%	1.9%	(2.6%)	8.5%	N/A
Blended Benchmark [1]				*2.5%*	*6.2%*	*4.8%*	*9.6%*	*N/A*
Private Income Portfolio	**$4,903**	**8.0%**	**7.0%**	**3.8%**	**6.9%**	**13.9%**	**14.2%**	**12.5%**
Blended Benchmark [1]				***2.5%***	***6.2%***	***4.8%***	***9.6%***	***7.5%***

Source: Callan official performance reports. Private Income NAVs and performance as of September 30, 2018. Absolute Return NAV and performance as of December 31, 2018.

[1] Blended Benchmark is 60% FTSE Infrastructure Index and 40% Bloomberg US High Yield Index

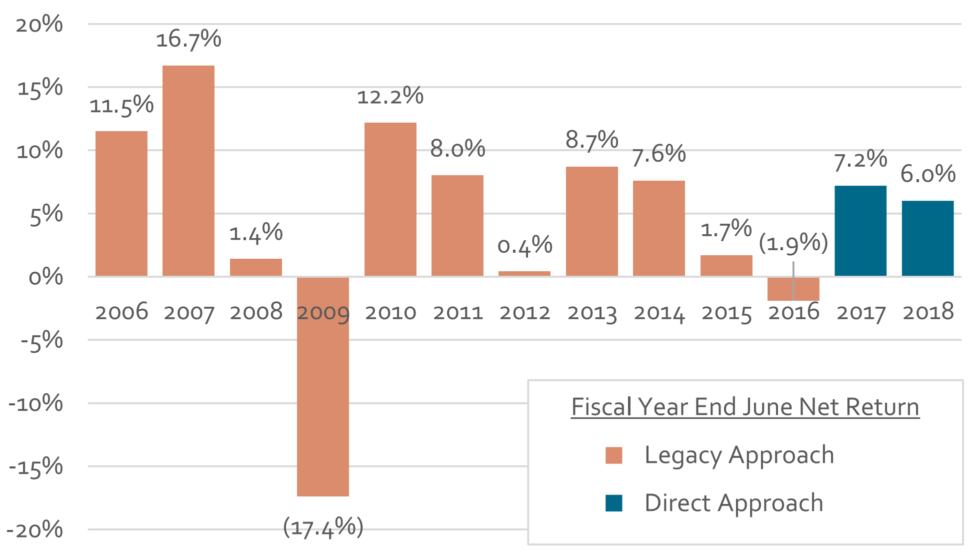

Absolute Return

Absolute Return

Target allocation and diversification reached within three years of rebuild

- In May 2016, APFC redeemed from three fund-of-funds managers after determining an in-house approach could reduce fees and refocus the program on delivering the long-term objectives:
  - Provide consistent and accretive returns to the Fund
  - Create a portfolio with returns uncorrelated with traditional, market-driven asset classes
- Since the first investment in August 2016, APFC has built a $3 billion portfolio of 17 managers, $400 million remains between two of the fund-of-funds
- If this portfolio can deliver on the objectives, it will provide the Fund defensive investments with accretive returns, and with significantly better liquidity than other alternative investments
- Returns are measured against two benchmarks
  - Absolute: CPI + 5.00%
  - Relative: HFRI Total HFOF Universe

Performance of Absolute Return Portfolio Over Time



Note: All returns per Callan year-end monthly performance report.

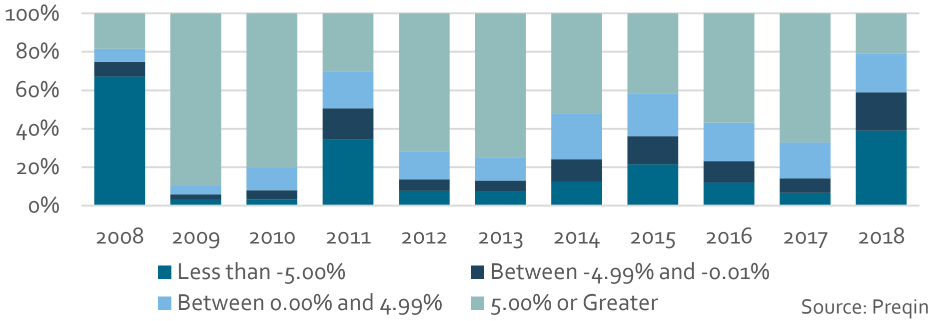
Absolute Return

Divergence between outlook and objectives

Through-the- Cycle Expectations

10-Year Projections	*r*	*σ*
Callan	5.05%	9.15%
CPI	2.25%	1.50%
APFC Objective	7.25%	<12.00%

Return Dispersion of Active Funds



Source: Preqin

Risks to Meeting Objectives

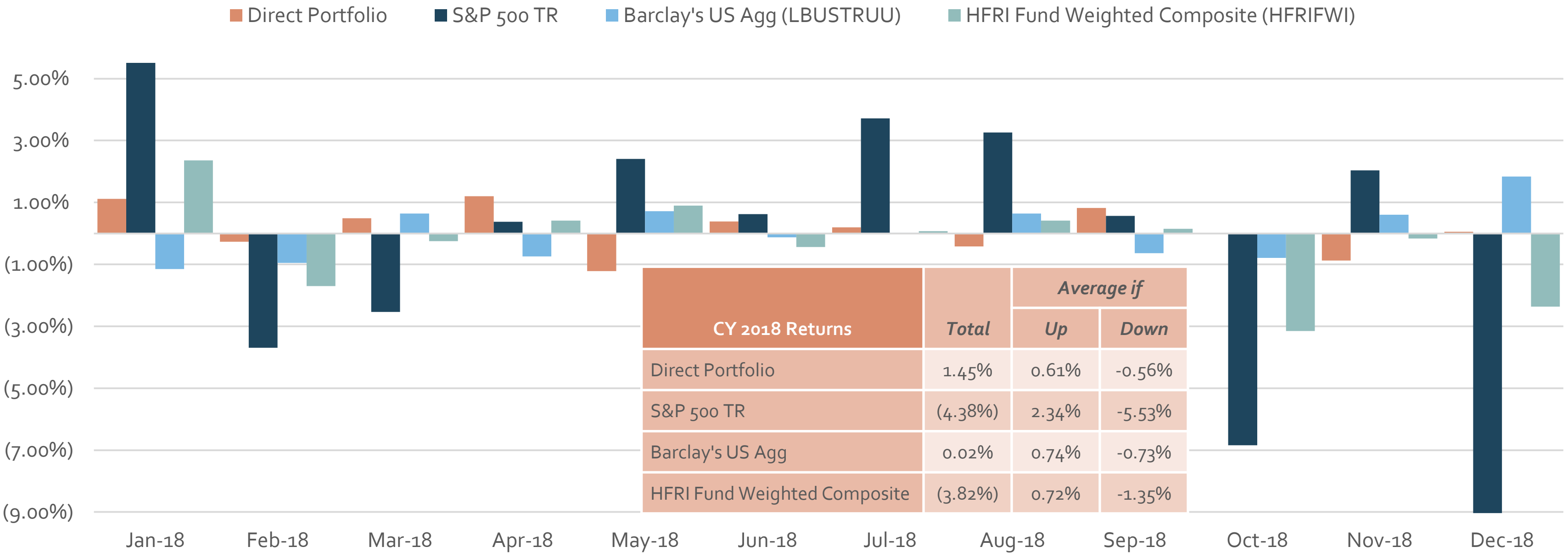
- Lower ex-post volatility limiting returns
- Overpaying for non-accretive strategies
- Leverage used by mangers can lead to significant losses if not properly managed

Current Strategic Initiatives

- Improve tracking and monitoring process
- Reconstitute pipeline of high conviction managers
- Periodically re-underwrite existing investments
- Monitor and trim lower conviction investments

Absolute Return

Stability in an otherwise unpredictable year



CY 2018 Returns	*Total*	*Average if Up*	*Average if Down*
Direct Portfolio	1.45%	0.61%	-0.56%
S&P 500 TR	(4.38%)	2.34%	-5.53%
Barclay's US Agg	0.02%	0.74%	-0.73%
HFRI Fund Weighted Composite	(3.82%)	0.72%	-1.35%

Absolute Return

Performance and portfolio composition

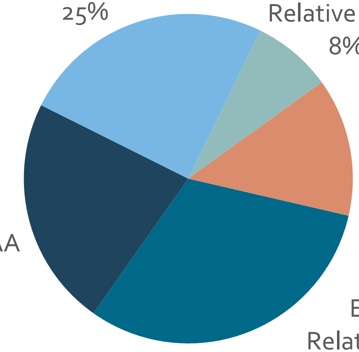
Portfolio Performance

($ in millions)	NAV Dec-18	Return 2Q19	Return CY19	Return SI
Fund-of-Funds	**$404**	**-1.0%**	**2.3%**	**7.5%**
Crestline	$337	-1.1%	1.9%	9.7%
Mariner	$67	-0.6%	3.5%	5.2%
Direct Portfolio	**$3,047**	**-0.8%**	**1.5%**	**3.9%**
Absolute Return	**$3,452**	**-0.9%**	**1.6%**	**5.7%**

Source: APFC manager statements and investment staff calculations.
Note: December NAV and performance figures may utilize preliminary estimates where finalized numbers not yet available; performance figures calculated as NAV-weighted geometric mean over applicable timeframe

Direct Portfolio Overview

Strategy Mix



Portfolio Statistics

Ann. Return	3.98%
Volatility	2.90%
Sharpe	0.94
Corr to S&P	-0.07
Corr to Agg	0.10
Corr to HFRI	0.13

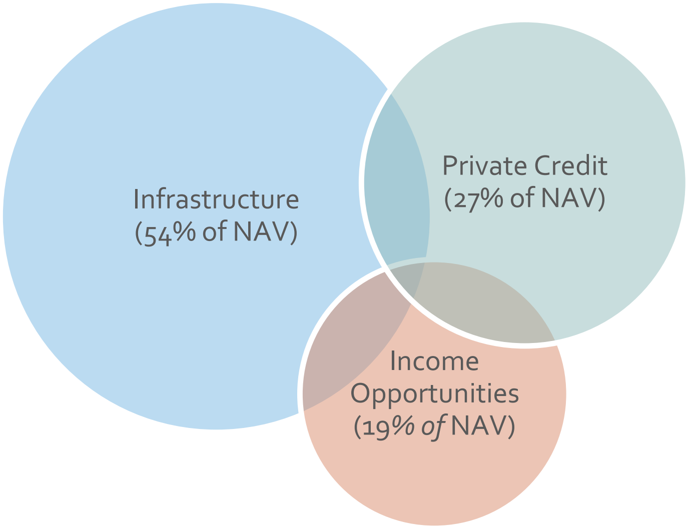
Note: Since inception date of July 1, 2016, to match beginning of FY17 and beginning of in-house strategy


Private Income

Overview of Private Income

Current income, capital appreciation, and downside protection

- In the quarter ending December 31, 2016, APFC began reporting on Private Income as a composite
  - Objective: Generate a return between the expected return for public equity and fixed income that is comprised of an attractive level of current income and capital appreciation
  - Returns are measured against the following benchmarks
    - Absolute: CPI + 5.00%
    - Relative: 60% FTSE Developed Core Infrastructure and 40% Bloomberg US High Yield (with a 2% Issuer Cap)
- Private Income's role is to trade the liquidity of public markets for incremental return and the higher return potential of private equity for a lower risk profile
- New investments are now 100% discretionary and include a mixture of fund investments, co-investments, and direct investments



Private Infrastructure

Mandate

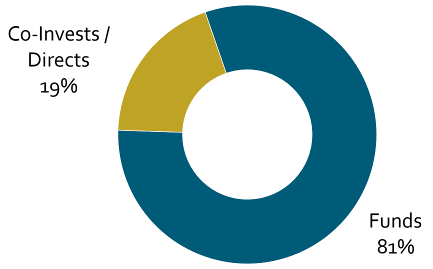
To invest in long-lived assets and companies that exhibit contractual or inflation protection characteristics, while safeguarding principal

Return Objectives

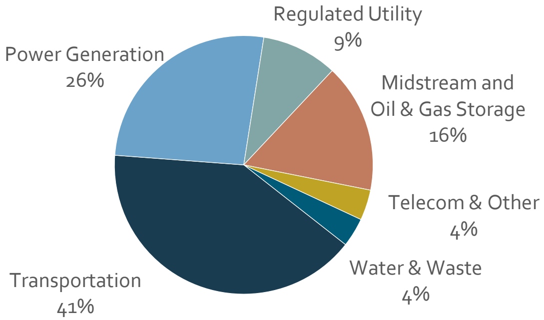
Returns are measured against two benchmarks

- Absolute: CPI + 5.00%
- Relative: FTSE Infra Index

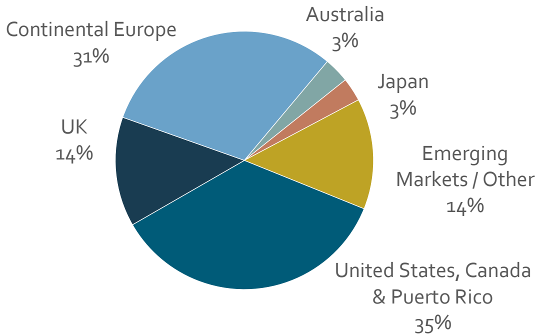
Structure Mix



Sector Mix



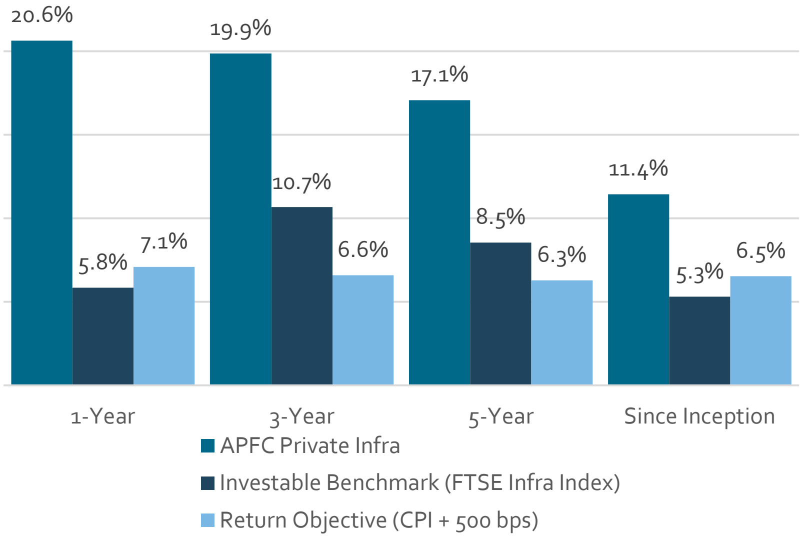
Geographic Mix



Private Infrastructure

Overview of Performance and Benchmark Comparison

Horizon IRR's @ September 30 Marks



Since Inception Portfolio Performance

($ in millions)	Capital Committed	Capital Called	Capital Dist.	Current Value	Net IRR	MOIC
Fund Investments	$3,775	$2,595	$1,784	$2,135	11.1%	1.51x
Co-Investments	$450	$389	$13	$507	22.0%	1.34x
Listed Infrastructure	$300	$300	$397	$0	10.6%	1.32x
Total - 9/30/18	**$4,525**	**$3,284**	**$2,194**	**$2,642**	**11.4%**	**1.47x**
12-Months Ago	*$3,684*	*$2,564*	*$1,647*	*$1,933*	*9.9%*	*1.40x*

Note: Returns are as of September 30, 2018 NAVs as calculated by APFC Staff and Pathway Capital. APFC portfolio returns are calculated on a money-weighted (IRR) basis as opposed to Callan's returns which are reported on a time weighted basis.

Private Infrastructure

Outlook

Through-the- Cycle Expectations

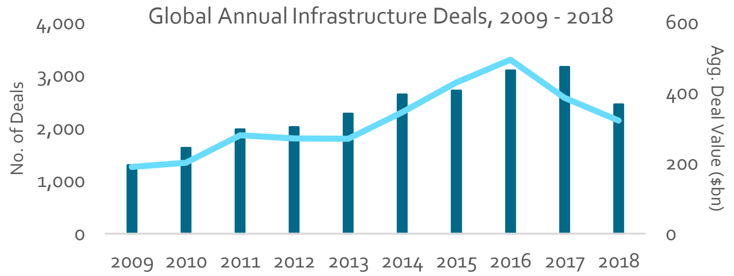
10-Year Projections	*r*	*σ*	*yield*
Callan	5.75%	13.00%	5.00%
CPI	2.25%	1.50%	n/a
APFC Objective	7.25%	n/a	n/a

Risks to Meeting Objectives

- Current high valuations may be subject to downward pressure from market conditions
- Excess dry powder from investors create is creating increased competition when acquiring assets
- Operationally intensive assets are subject to risk of mismanagement

Current Market Outlook

- Record fundraising combined with decreased deal flow has led to heightened asset valuations
- Maturation of certain segments of market has decreased return potential of those segments
- However, underlying fundamentals of the asset class remain strong



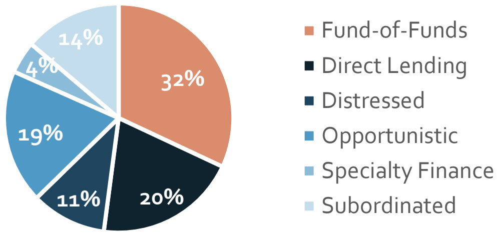
Source: Preqin

Private Credit

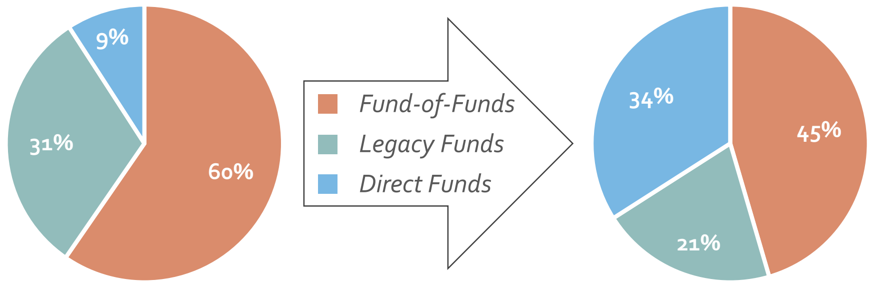
Significant shift in attribution over the last twelve months

- In December 2015, APFC ceased new investments in private credit fund-of-funds and embarked on building a portfolio of in-house fund commitments
- If this portfolio can deliver on its objectives, it will provide current income in excess of US high yield bonds, while safeguarding principal and providing some potential for capital appreciation
- Returns are measured against two benchmarks
  - Absolute: CPI + 5.00%
  - Relative: Bloomberg US High Yield (2% cap)

Exposure at Sep-18 (NAV + Unfunded Commitments)



Shift in NAV Composition from 12 Months Ago -> Today

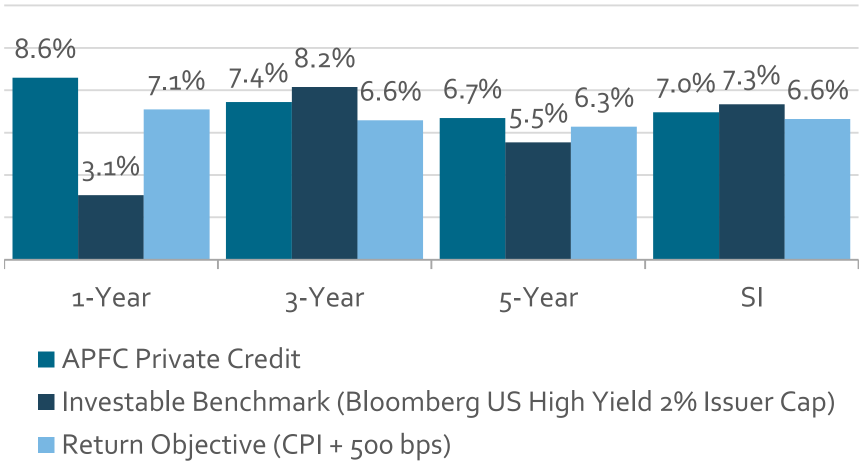


- Fund-of-funds and legacy fund commitments are late in life-cycle and returning significant capital on a monthly basis
- 20 in-house commitments ("Direct Funds") totaling $1.6 billion since refocusing the portfolio in December 2015
- While still very early in their life-cycle, in-house commitments are contributing a since inception net IRR of ~11%

Private Credit

Performance and benchmark comparison

Horizon IRR's @ September 30 Marks



Since Inception Performance

($ in millions)	Capital Called	Capital Dist.	Current Value	Net IRR	MOIC
Legacy Fund-of-Funds	$1,145	$935	$595	5.8%	1.3x
Direct Lending	$130	$33	$109	10.3%	1.1x
Distressed	$450	$345	$218	9.0%	1.3x
Opportunistic	$258	$53	$242	12.1%	1.1x
Specialty Finance	$57	$24	$38	10.2%	1.1x
Subordinated	$491	$527	$107	9.7%	1.3x
Total Private Credit	**$2,530**	**$1,917**	**$1,308**	**7.0%**	**1.3x**
12 months ago	*$2,077*	*$1,530*	*$1,146*	*6.8%*	*1.3x*

Note: Returns are as of September 30, 2018 NAVs as calculated by APFC Staff and Pathway Capital. APFC returns are calculated on a money-weighted (IRR) basis as opposed to Callan's returns which are reported on a time weighted basis.

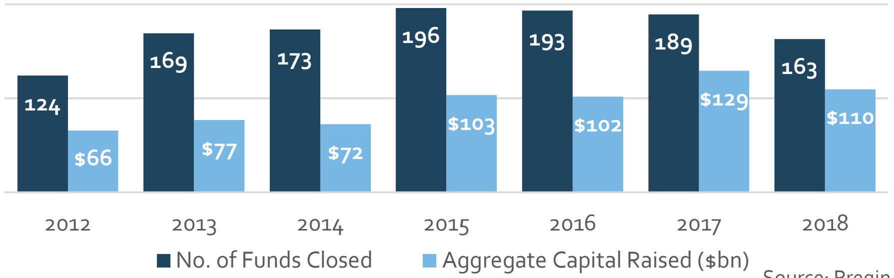
Private Credit

Protecting principal to deliver return and yield objectives

Through-the- Cycle Expectations

10-Year Projections	*r*	σ	*yield*
Callan	5.75%	16.50%	6.25%
CPI	2.25%	1.50%	n/a
APFC Objective	7.25%	n/a	n/a

Global Private Credit Fundraising



Source: Preqin

Risks to Meeting Objectives

- Defaults and losses on underlying loans
- Increased competition leading to a compression in spread to public markets
- Inability to refinance/exit loans due to a widespread flight of capital

Current Strategic Initiatives

- Review portfolio from a bottoms-up basis
- Maintain defensive positioning, while reviewing exposure gaps in the portfolio
- Evaluate existing managers raising their next fund
- Develop co-investment deal flow

Income Opportunities

Concentrated portfolio with defensive positioning

- With the formation of Private Income, the Income Opportunities portfolio was seeded with a joint venture to purchase and lease high-end single family homes
- This portfolio recognizes that the dynamic nature of global markets will create attractive, income generating, opportunities outside of the traditional Infrastructure and Private Credit definitions
- Returns are to be accretive to the Private Income portfolio and are therefor measured against the same benchmarks

Through-the- Cycle Expectations

10-Year Projections	*r*	*σ*	*yield*
Callan	5.75%	14.50%	5.50%
CPI	2.25%	1.50%	n/a
APFC Objective	7.25%	n/a	n/a

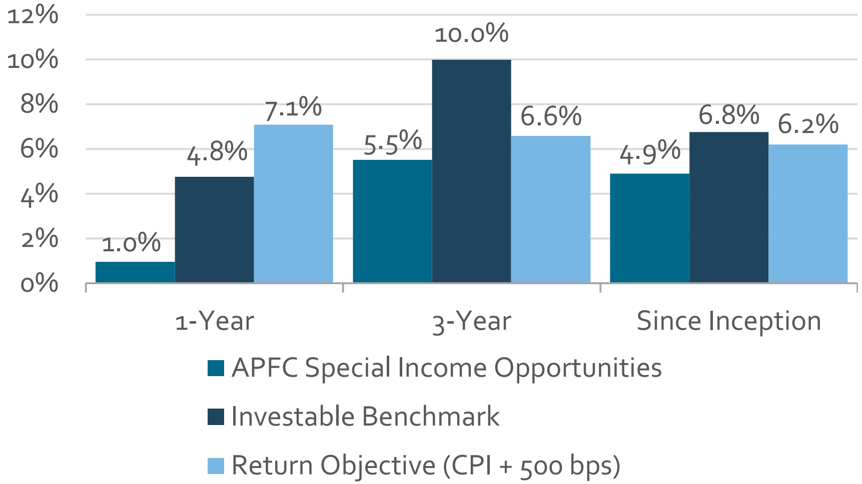
Risks to Meeting Objectives

- Low return potential on unlevered, defensive assets
- Lack of ADAC diversification during build
- Concentrated, existing commitments will drive performance

Income Opportunities

Performance and benchmark comparison

Horizon IRR's @ September 30 Marks



Note: Investable Benchmark is 60% FTSE Developed Core Infrastructure and 40% Bloomberg U.S. High Yield 2% Issuer Cap. Returns are as of September 30, 2018 NAVs as calculated by APFC Staff and Pathway Capital. APFC returns are calculated on a money-weighted (IRR) basis as opposed to Callan's returns which are reported on a time weighted basis.

Since Inception Performance

($ in millions)	Vintage Year	Capital Called	Capital Dist.	Current Value	Net IRR	MOIC
American Homes for Rent II	2013	$162	$34	$156	5.2%	1.2x
Athyrium Opportunities Fund III	2016	$11	$2	$10	1.2%	1.0x
Twin Creeks Timber	2016	$92	$3	$89	0.3%	1.0x
Generate Capital	2017	$100	$0	$110	12.8%	1.1x
BroadRiver III	2017	$4	$0	$5	8.2%	1.0x
ADAC High Yield	2018	$535	$0	$546	4.8%	1.0x
ADAC Co-Invest	2018	$36	$0	$37	9.8%	1.0x
Total Income Opportunities		**$941**	**$39**	**$953**	**4.9%**	**1.1x**
12 months ago		*$259*	*$34*	*$270*	*8.1%*	*1.2x*

Asset Class Updates: Public Equities Memo

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: APFC Public Equities Asset Class Update

ACTION: ____________

DATE: February 27th, 2019

INFORMATION: X

BACKGROUND:

The Public Equities presentation provides information on the APFC Public Equities Portfolio.

STATUS:

At this meeting, staff will present key elements of performance, positioning, initiatives, and expectations of APFC Public Equities Portfolio. This includes overview of the markets, manager selection, asset allocation, and internal management of equities.

Presentation: Public Equities

APFC ALASKA PERMANENT FUND CORPORATION

Public Equities

February 27, 2019

Public Equities - December 31, 2018

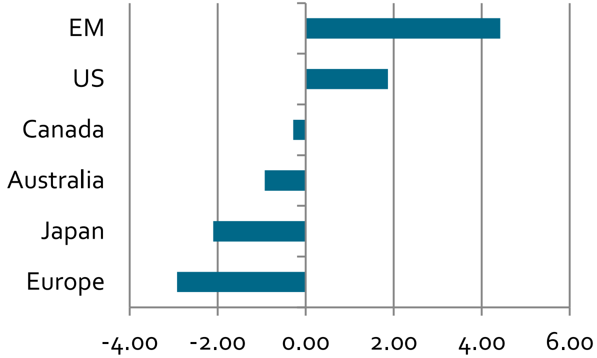
APFC Assets:	$61.5 billion
APFC Public Equities:	$23.1 billion
Current Weight:	37.6%
Policy Weight:	38%
Investment Universe:	Global
Benchmark:	MSCI ACWI IMI

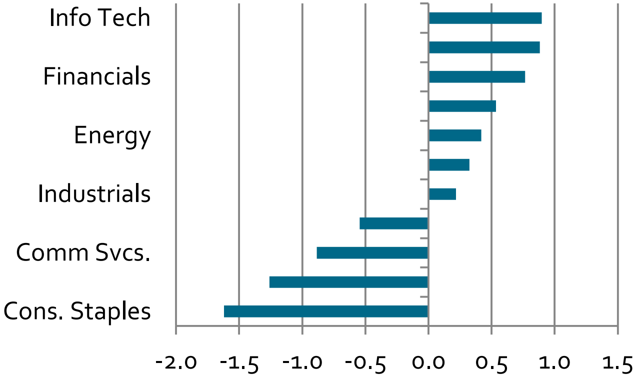
Management

▪ External Managers:	90%
▪ Internal:	10%

Investment Strategies:	Active, Passive, Quasi Passive

Positioning





Relative to MSCI ACWI IMI

Regions: Overweight Emerging Markets
Overweight United States
Underweight World ex US

Sectors: Overweight Cyclicals
Underweight Defensives

Style: Modest tilt in favor of Value

Risks to Current Pro Cyclical Positioning

- FED
- Trade
- Corporate Earnings
- US Dollar
- Yield Curve

Performance

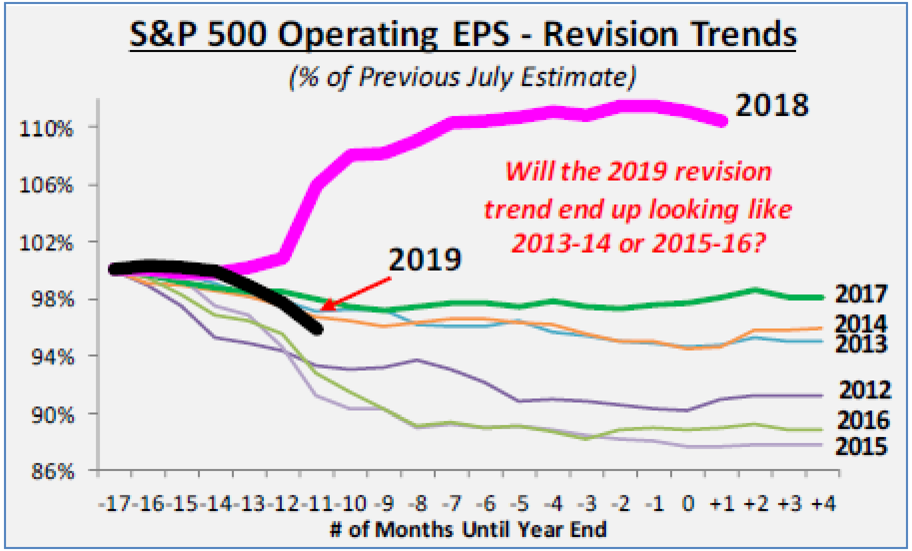
What Drove Equity Market Returns in FY 19 Q2?

- **Market's Emotional Response**
  - FED Policy too tight
  - Global Trade Uncertainty
  - Slowdown in Corporate Earnings Growth

- **FY 19 Q2 Relative Performance**
  - Emerging Markets held up better than Developed Markets
  - US Equities lagged the most
  - Value did better than Growth
  - Large Caps outperformed Small caps
  - Active underperformed Passive

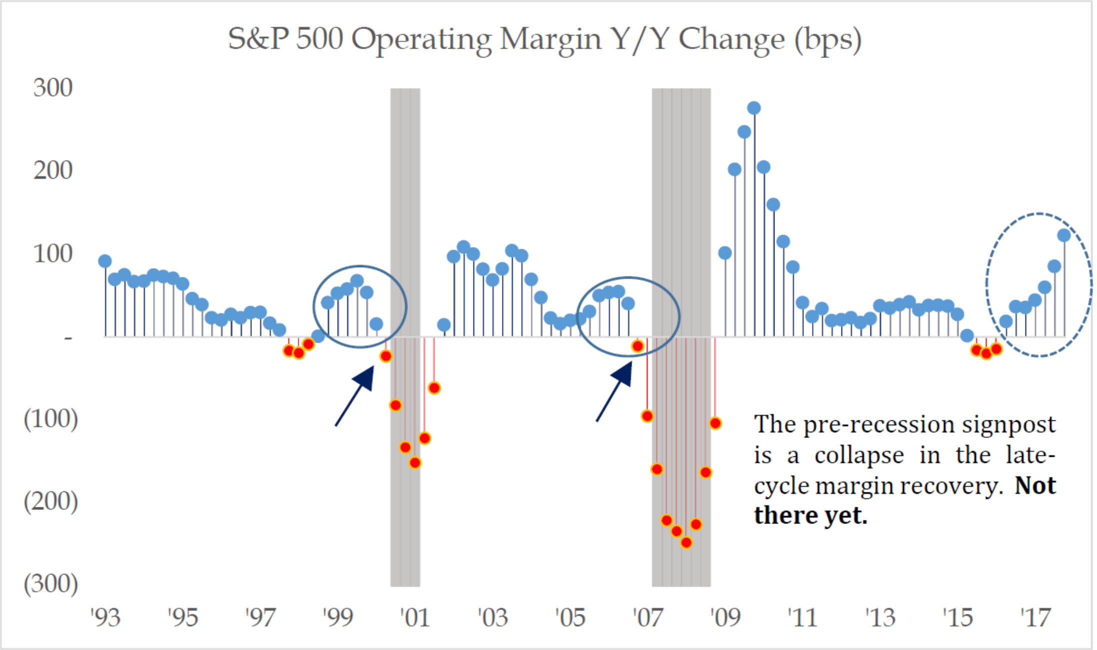
Public Equity Markets (FY 19 Q2)	(%)
MSCI ACWI IMI	**-13.28**
Russell 3000	-14.30
MSCI World ex US	-12.78
MSCI Emerging Markets	-7.47

Earnings Revision Trends



S&P 500 Operating EPS	Bottom Up Consensus	
	EPS	YoY
FY 2016A	$118	0.5%
FY 2017A	$132	11.8%
FY 2018E	$161	22.2%
1Q19E	$39	2.3%
2Q19E	$42	2.9%
3Q19E	$44	3.4%
4Q19E	$45	11.2%
FY 2019E	$171	5.8%
FY 2020E	$190	11.2%

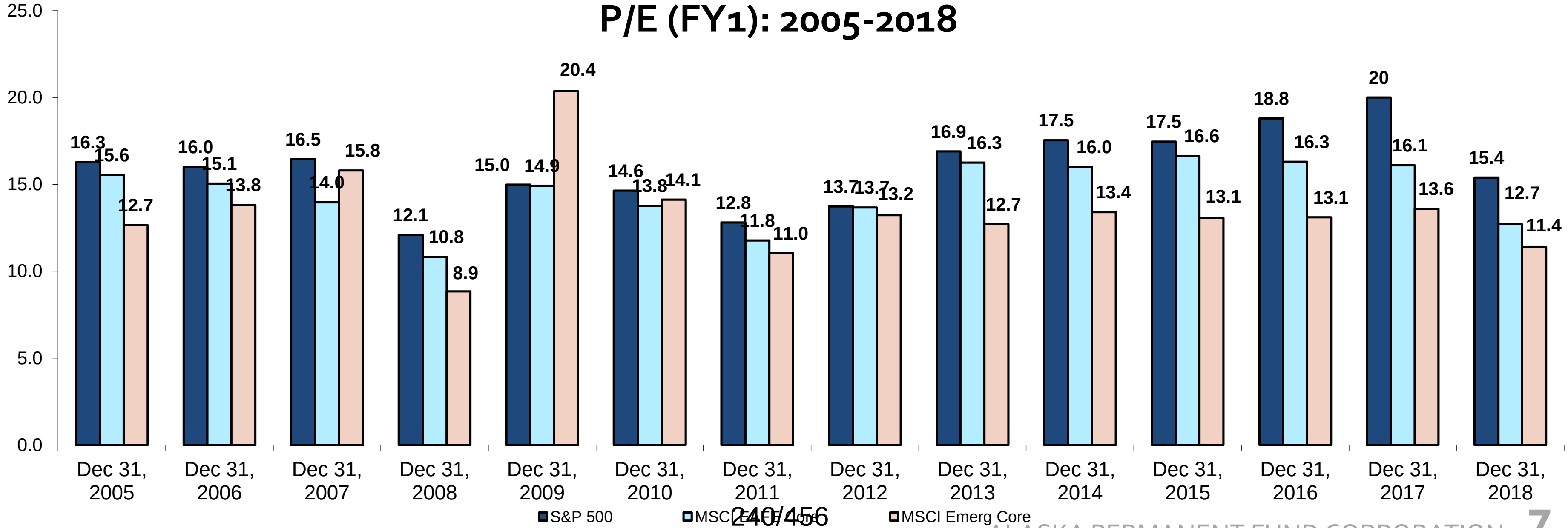
Profit Margins Strong – Have Margins Peaked?



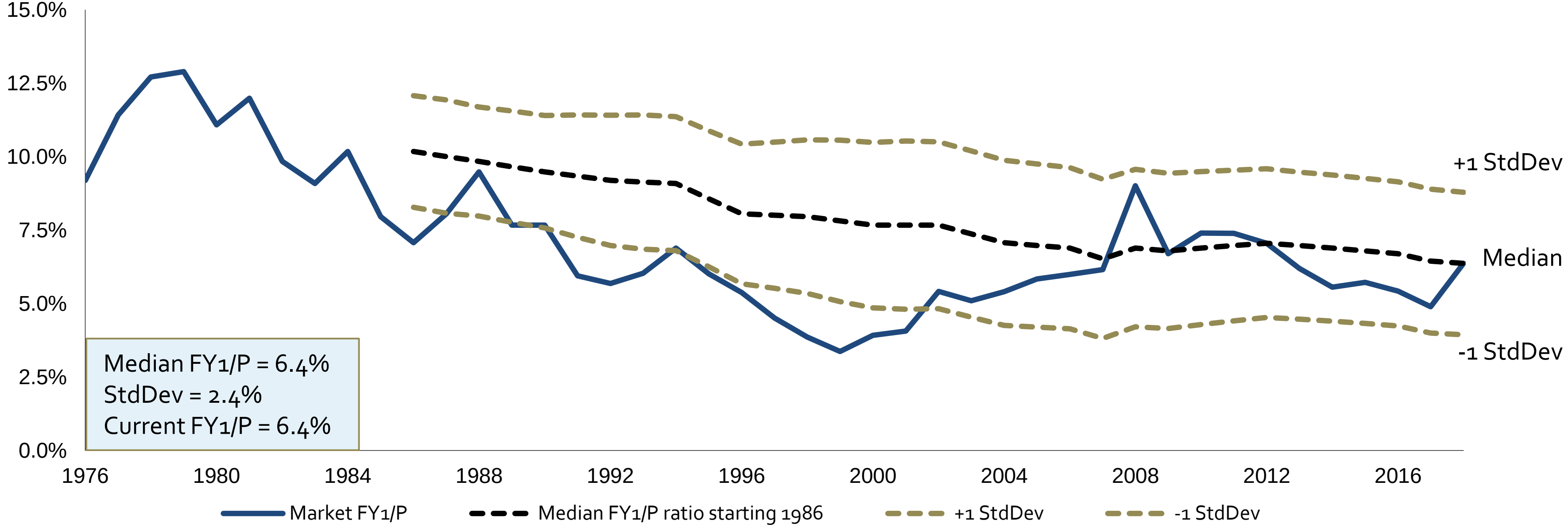
As of December 31, 2018
Source: Strategas Research Partners

Valuation

S&P 500 vs. EAFE Core vs. Emerging Core P/E (FY1): 2005-2018

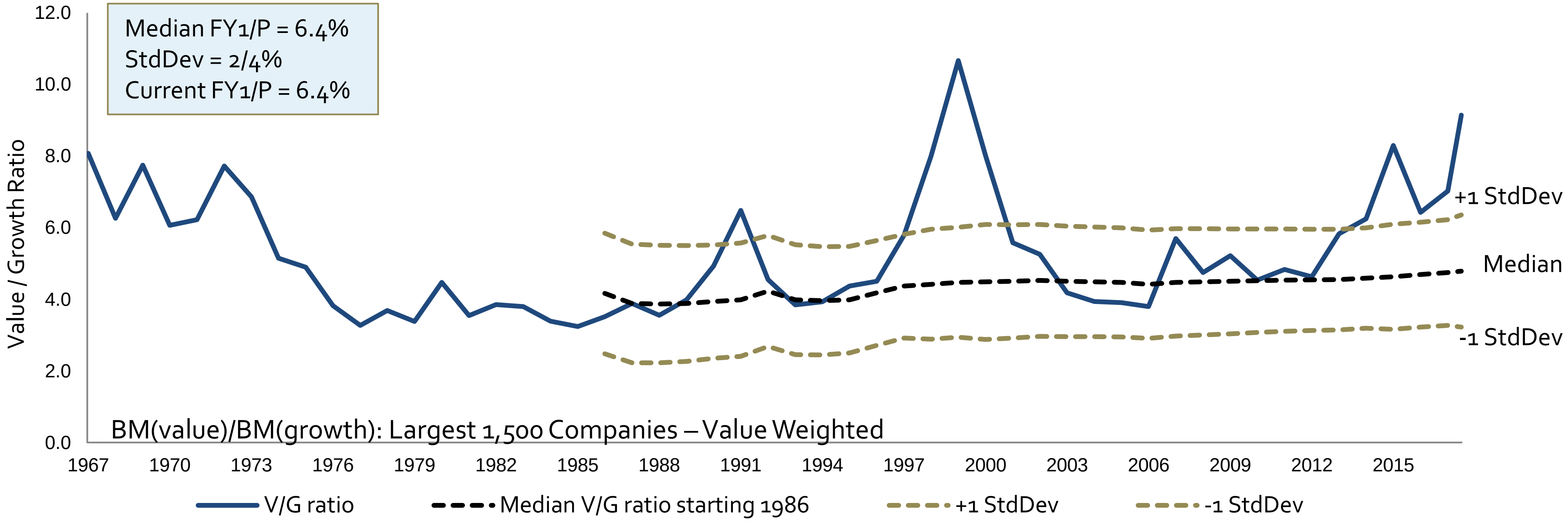


U.S. Market Valuations – U.S. Aggregate FY1 E/P



- The historical median forward earnings yield in the U.S. is 6.4% (15.7 P/E)
- The forward yield as of December 31, 2018 was 6.4% (15.7 P/E)
- On a forward earnings yield basis, the market looks fairly valued

Value vs. Growth Relative Valuation in the U.S. – B/M Ratios



- Historically, value has been about 4.79 times cheaper than growth in the U.S
- As of December 31, 2018, value was 8.78 times cheaper than growth; the highest since 1999
- The V/G ratio has increased as 2017/2018 has been difficult for B/M based value strategies

Relative Performance (FY19 Q2)

APFC Allocation	FY19 Q1 (%)
Public Equities	-13.62
MSCI ACW IMI	-13.28
Excess Returns (bps)	-34.00
Breakdown of Excess Returns (Approx.)	
Fund Manager (bps)	-44.00
Asset Allocation External (bps)	+13.00
Regional (OW EM & US)	
Style, Size, and Sector Tilts	
Asset Allocation Internal (BPS)	
In-house Tactical Tilts (BPS)	-3.00

What Drove Relative Returns?

- **Fund Managers -44 bps**
  - Success Rate: **45%**
  - Skew: Outperformers gained by **45** bps while Underperformers lost by **88** bps, US LC Active Managers lagged
- **Asset Allocation +13 bps**
  - Key Contributors: Overweight Emerging Markets
  - Key Detractors:
    - Overweight Value
    - Overweight Cyclical sectors
- **Internal Equity: -3 bps**

Performance As of December 31, 2018

What Drove Relative Returns in FY 19 Q2?

- Fund Managers and Asset Allocation

Domestic Equities -46 bps

- 29% of the Fund Managers Outperformed
- Active Value strategies detracted 34 bps - Underweight to defensive sectors hurt relative performance
- Value tilt (FTSE RAFI + SPDRs) was also a drag

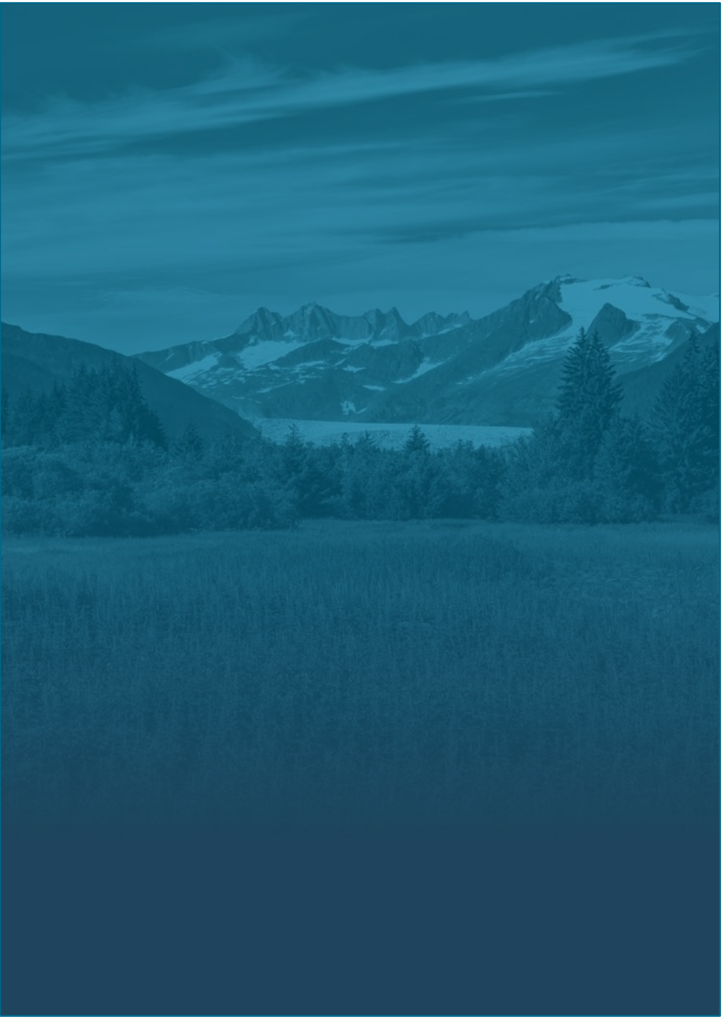
International Equities +19 bps

- 59% of the Fund Managers outperformed
- Over Weight to Emerging Markets (relative to World ex US) was beneficial to relative performance

Global Equities - 12 bps

- 50% of the Fund Managers Outperformed
- AQR was a significant drag by -14 bps
- Underweight to Emerging Markets (relative to the ACWI index) hurt relative performance

APFC Public Equity	Allocation (%)	Cont. to Ex Ret. (bps)
Domestic Equities	31	-46
International Equities	29	+19
Global Equities	40	-12



Key Initiatives

- Internal Management
  - Top Down
  - Risk Management
  - Cost
  - What is the optimal allocation to Internal Management?

- Performance-based Fee Structures
  - Fair
  - Mitigates Agency Risk
  - Active Passive debate less relevant
  - What is the optimal mix (if any) between paying all Fund Managers a fixed asset-based fee vs. paying all Fund Managers a performance-based fee?


Appendices

Appendix A
Performance – Negative Skew in Fund Manager Excess Returns (FY19 Q2)

Fund Managers	Assets	Attribution
Longview Global Equity	3.30%	0.09%
DSM - Large Cap	2.78%	0.08%
Mondrian Investment Partners	2.14%	0.05%
JP Morgan Emerging Markets	1.57%	0.04%
APF SPDR Low Vol	1.64%	0.04%
Hardman Johnston INTL LC	1.48%	0.03%
WCM Global Equity	1.69%	0.02%
MEASA	0.34%	0.01%
William Blair Emerging Markets	1.50%	0.01%
Arrowstreet Global Equity	3.22%	0.01%
Lazard Asset Management	4.68%	0.01%
Acadian Asset Mgmt	2.07%	0.01%
SSGA Large Cap	0.93%	0.01%
RBC Asset Mgmt	0.45%	0.01%
DFA Emerging Markets Small Cap	0.57%	0.00%
APF Global Equities	0.40%	0.00%
DFA International Small Cap	1.33%	0.00%
Eagle Asset Mgmt	0.47%	0.00%
Wells Capital	0.60%	0.00%
Macquarie EM	0.75%	0.00%
SSGA Russell Fdm Dv Large Cap	6.30%	0.00%
Mellon FTSE RAFI US Large Cap	2.73%	0.00%
APF SPDR Yield	1.52%	0.00%

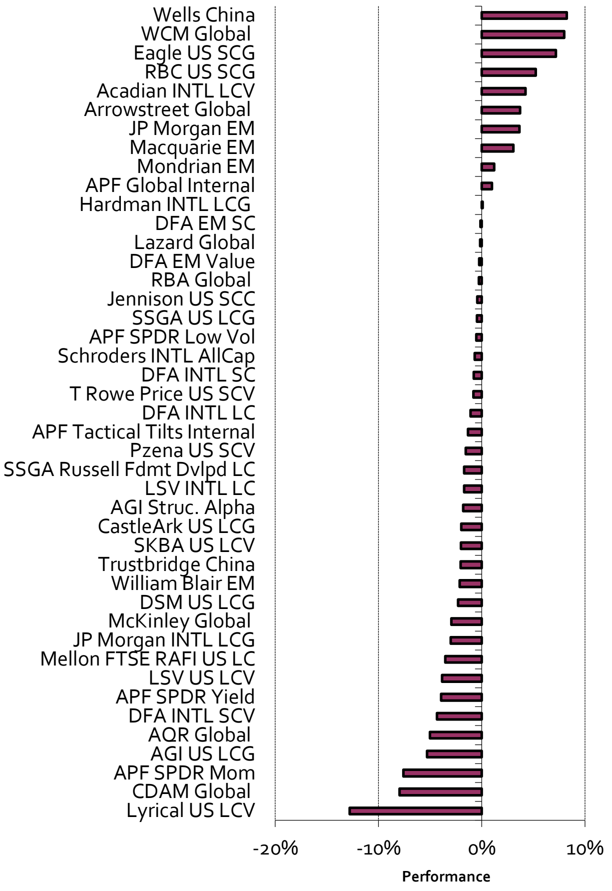
Fund Managers	Assets	Attribution
T Rowe Price	0.69%	0.00%
Jennison Associates LLC	1.05%	-0.01%
Pzena Investment Mgmt	0.70%	-0.01%
JP Morgan INTL LC	2.12%	-0.01%
RBA Global Equity	1.18%	-0.01%
DFA Emerging Markets Value	1.91%	-0.01%
AGI Structured Alpha	0.61%	-0.01%
DFA International Large Cap	1.87%	-0.02%
Trustbridge Emerging Markets	0.89%	-0.02%
CastleArk - Large Cap	0.76%	-0.02%
APF Tactical Tilts	10.13%	-0.03%
DFA International SCV	1.27%	-0.03%
CDAM Global Equity	1.11%	-0.04%
SKBA	1.40%	-0.04%
Schroders INTL All Cap	2.31%	-0.04%
LSV International Large Cap	2.13%	-0.05%
APF SPDR Momentum	1.53%	-0.05%
McKinley Capital Management	1.57%	-0.06%
AGI - Large Cap	2.96%	-0.07%
LSV US LCV	3.57%	-0.09%
AQR Global Equity	5.80%	-0.14%
Lyrical	2.57%	-0.14%
Total		**-0.47%**

Appendix B
Performance – External Fund Managers (1 Year)

Fund Managers	Excess Returns (%)
Wells China	8.25%
WCM Global	7.99%
Eagle US SCG	7.21%
RBC US SCG	5.24%
Acadian INTL LCV	4.24%
Arrowstreet Global	3.73%
JP Morgan EM	3.65%
Macquarie EM	3.08%
Mondrian EM	1.22%
APF Global Internal	1.01%
Hardman INTL LCG	0.09%
DFA EM SC	-0.12%
Lazard Global	-0.16%
DFA EM Value	-0.24%
RBA Global	-0.27%
Jennison US SCC	-0.41%
SSGA US LCG	-0.44%
APF SPDR Low Vol	-0.51%
Schroders INTL AllCap	-0.66%
DFA INTL SC	-0.78%
T Rowe Price US SCV	-0.80%
DFA INTL LC	-1.08%
APF Tactical Tilts Internal	-1.32%

Fund Managers Cont.	Excess Returns (%)
Pzena US SCV	-1.55%
SSGA Russell Fdmt Dv LC	-1.68%
LSV INTL LC	-1.70%
AGI Struc. Alpha	-1.79%
CastleArk US LCG	-1.96%
SKBA US LCV	-2.00%
Trustbridge China	-2.03%
William Blair EM	-2.13%
DSM US LCG	-2.29%
McKinley Global	-2.92%
JP Morgan INTL LCG	-2.98%
Mellon FTSE RAFI US LC	-3.52%
LSV US LCV	-3.84%
APF SPDR Yield	-3.92%
DFA INTL SCV	-4.32%
AQR Global	-5.00%
AGI US LCG	-5.29%
APF SPDR Mom	-7.59%
CDAM Global	-7.94%
Lyrical US LCV	-12.78%

Active Managers Excess Returns 1 Year ended 12/31/18



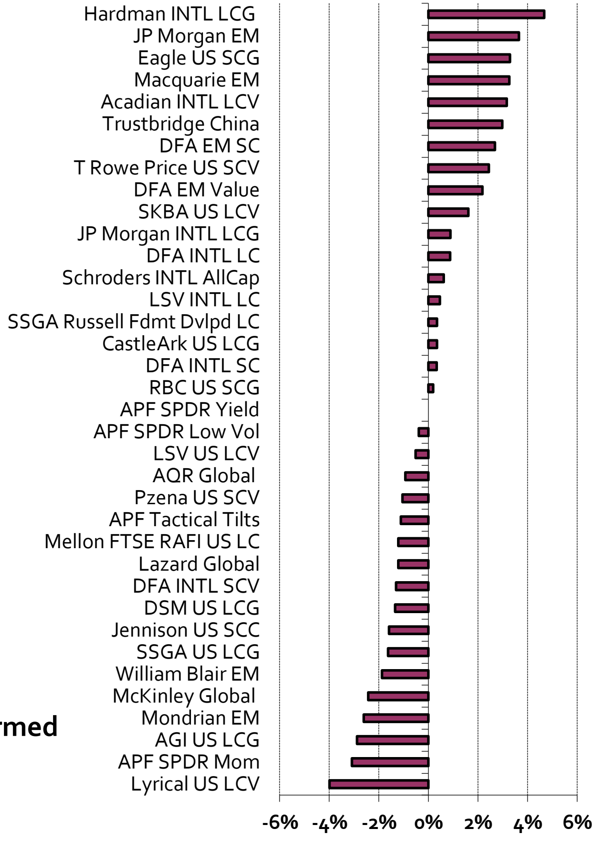
Appendix C
Performance – External Fund Managers (3 Years)

Fund Managers	Excess Returns (%)
Hardman INTL LCG	4.68%
JP Morgan EM	3.65%
Eagle US SCG	3.29%
Macquarie EM	3.27%
Acadian INTL LCV	3.17%
Trustbridge China	2.99%
DFA EM SC	2.69%
T Rowe Price US SCV	2.44%
DFA EM Value	2.19%
SKBA US LCV	1.61%
JP Morgan INTL LCG	0.89%
DFA INTL LC	0.88%
Schroders INTL AllCap	0.62%
LSV INTL LC	0.46%
CastleArk US LCG	0.35%
SSGA Russell Fdmt Dvlpd LC	0.35%
DFA INTL SC	0.34%
RBC US SCG	0.19%
APF SPDR Yield	0.00%
APF SPDR Low Vol	-0.39%
LSV US LCV	-0.51%
AQR Global	-0.93%

Fund Managers Cont.	Excess Returns (%)
Pzena US SCV	-1.05%
APF Tactical Tilts	-1.11%
Lazard Global	-1.21%
Mellon FTSE RAFI US LC	-1.21%
DFA INTL SCV	-1.31%
DSM US LCG	-1.34%
Jennison US SCC	-1.59%
SSGA US LCG	-1.63%
William Blair EM	-1.87%
McKinley Global	-2.43%
Mondrian EM	-2.61%
AGI US LCG	-2.88%
APF SPDR Mom	-3.08%
Lyrical US LCV	-3.99%
Lee Munder	xxx
Herndon	xxx
SSGA INTL	xxx

APFC External Fund Managers: 46% Outperformed

Active Managers Excess Returns 3 Year ended 12/31/18



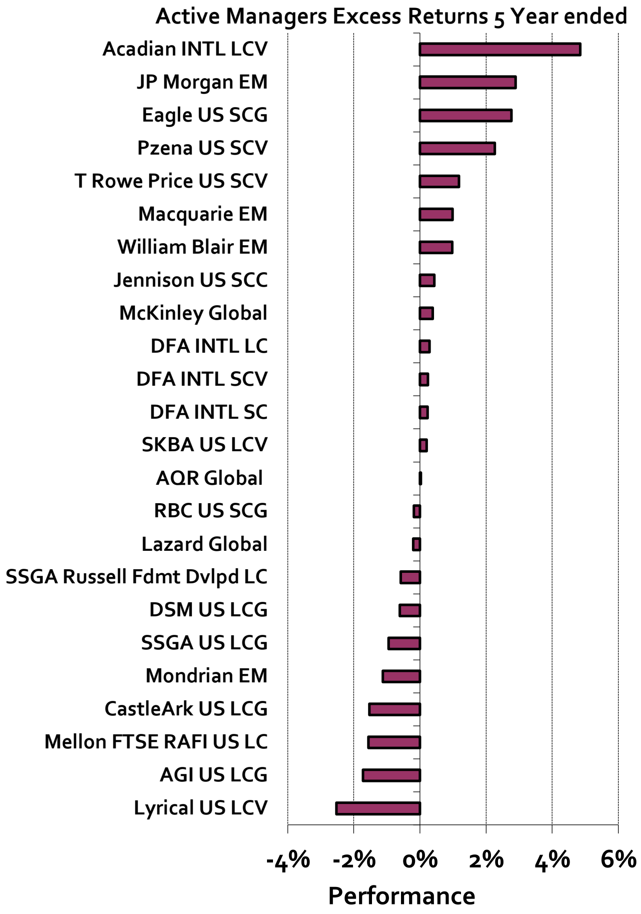
Appendix D
Fund Manager Selection Excess Returns (5 Years)

Fund Managers	Excess Returns (%)
Acadian INTL LCV	4.85%
JP Morgan EM	2.89%
Eagle US SCG	2.77%
Pzena US SCV	2.26%
T Rowe Price US SCV	1.18%
Macquarie EM	0.99%
William Blair EM	0.98%
Jennison US SCC	0.44%
McKinley Global	0.39%
DFA INTL LC	0.29%
DFA INTL SCV	0.24%
DFA INTL SC	0.23%
SKBA US LCV	0.20%
AQR Global	0.03%
RBC US SCG	-0.18%
Lazard Global	-0.20%
SSGA Russell Fdmt Dvlpd LC	-0.58%
DSM US LCG	-0.61%
SSGA US LCG	-0.95%
Mondrian EM	-1.12%
CastleArk US LCG	-1.53%
Mellon FTSE RAFI US LC	-1.56%

Fund Managers Cont.	Excess Returns (%)
AGI US LCG	-1.72%
McKinley Global	-2.43%
Mondrian EM	-2.61%
AGI US LCG	-2.88%
APF SPDR Mom	-3.08%
Lyrical US LCV	-3.99%
Lee Munder	xxx
Herndon	xxx

APFC Fund Managers: 52% Outperformed

- Capital Group were terminated in 2015
- Herndon and SSGA INTL were terminated in 2017
- **No Survivorship Bias**



Appendix E
Performance – Public Equities

Public Equities	1 Year (%)	3 Years (%)	5 Years (%)
Public Equities	**-11.0**	**6.72**	**3.83**
MSCI ACWI IMI	**-10.1**	**6.49**	**4.17**
Domestic Equities	-8.78	7.78	6.78
Russell 3000	-5.24	8.97	7.91
International Equities	-15.42	5.85	1.25
MSCI ACWI ex-US	-14.76	4.39	0.85
Global Equities	-9.41	6.23	4.35
MSCI ACWI	-10.08	6.49	4.17

Appendix E
In-House Tactical Tilt – Attribution as of 12/31/2018

Internal Equities $2,346 million	FY 19 Q2 (%)
APFC Tactical Tilt	-13.59
MSCI ACWI IMI	-13.28
Excess Returns (Net of Fee)	-31 bps

Allocation	%	+/-
US	81.0	+
World Ex US	2.2	-
EM	16.2	+

Key Attribution
Beneficial
Junior Gold Miners (GDXJ)
Emerging Markets (VWO)
MSCI China (MCHI)
Detracted
SPDR S&P Oil & Gas Exp. & Prod.

Appendix E
APF Global Equity – Performance as of 12/31/2018

Internal Equities $93.6 million	FY 19 Q2 (%)	1 Yr
APF Global Equity	-12.14	-9.07
MSCI ACWI IMI	-13.28	-10.08
Excess Returns (Net of Fee)	+114 bps	+101 bps

Appendix F
Public Equities – Key Factors to Watch

Yield Spread between US 10 Yr and US 2 Yr (1977 – 2018) - at the lowest point over the last decade, 17 bps from the point of inversion – in December, 2018

Appendix G
Public Equities – Key Factors to Watch

US DOLLAR (5 Yr period)

Asset Class Updates: Fixed Income Memo

APFC ALASKA PERMANENT FUND CORPORATION
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907.796.1500 | apfc.org

SUBJECT:	APFC Fixed Income Asset Class Update	ACTION:	____________
DATE:	February 27th, 2019	INFORMATION:	X

BACKGROUND:

The Fixed Income presentation provides information on the Fixed Income + Portfolio.

STATUS:

At this meeting staff will present some of the key elements of the Fixed Income Portfolio including performance and positioning. We will also cover the publicly traded mandates that are part of the Fixed Income + strategy.

Presentation: Fixed Income

APFC
ALASKA PERMANENT FUND CORPORATION

Fixed Income

February 27, 2019

What is Fixed Income?

Bonds

- Consistent Income Stream
- Capital Preservation
- Diversification
- Total Return vs. Benchmark

	Portfolio	Market Value	Percent	Fees
Internal	U.S. Aggregate	4,052,000	28%	-
	U.S. Corporate	3,839,000	26%	-
	Global Rates	1,152,000	8%	-
	TIPS	125,000	1%	-
	Cash	455,000	3%	-
	American Homes 4 Rent	17,000	0%	-
	Total	**9,640,000**	**66%**	**-**
Passive	High Yield Corporate ETFs	573,000	4%	0.42%
	EM Debt ETFs	343,000	2%	0.35%
	State Street REITs	858,000	6%	0.08%
	State Street Instrastructure	364,000	2%	0.08%
	Total	**2,138,000**	**15%**	**0.21%***
External	Allianz Global Rates	358,000	2%	0.15%
	Cap Guardian High Yield	394,000	3%	0.23%
	Oaktree Hight Yield	568,000	4%	0.45%
	Cap Guardian EM Debt	630,000	4%	0.38%
	AK Perm TIPS	127,000	1%	0.09%
	AEW REITs	511,000	3%	0.36%
	Lazard Listed Intrastructure	187,000	1%	0.55%
	C & S Listed Infrastructure	141,000	1%	0.45%
	Total	**2,916,000**	**20%**	**0.34%***

*Average

Fixed Income Return Expectation

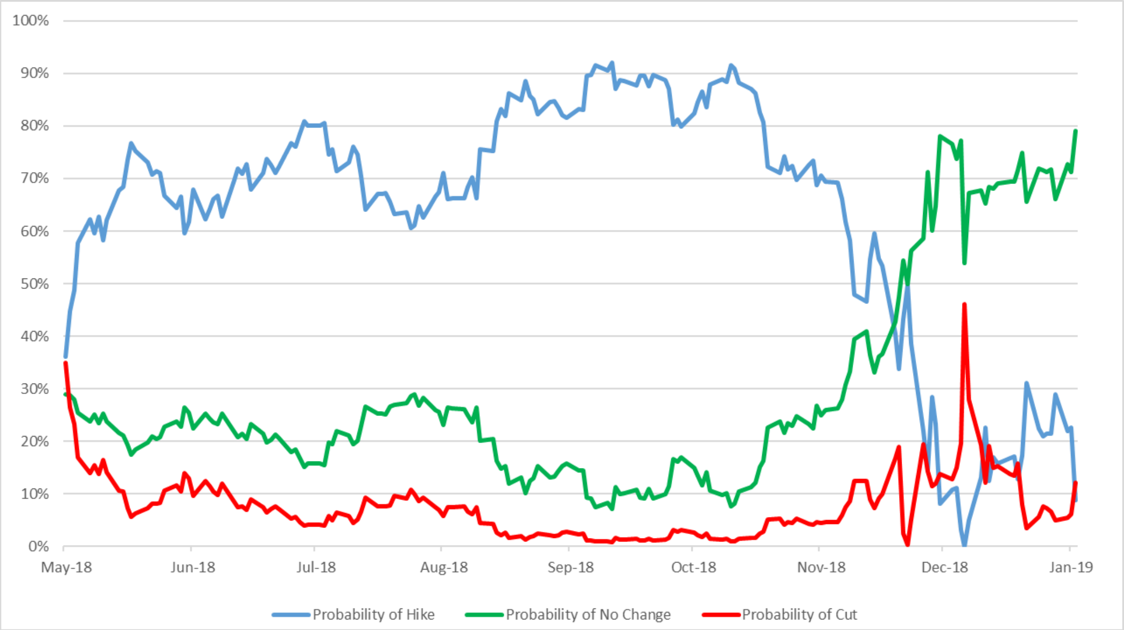
Callan 10 year return expectation: 4.05%*

- Ultimately will be driven by the interest rate environment
- Over the last 3 and 5 years, Fixed Income has outperformed its benchmarks

* Equates to CPI +1.75%

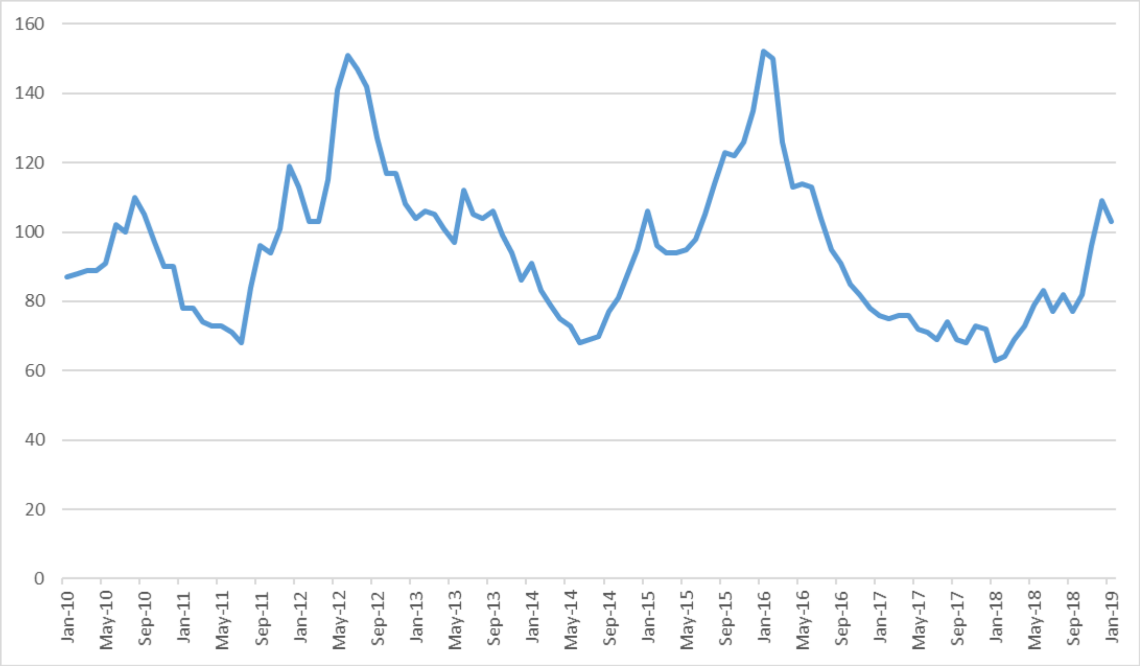
Federal Funds Rate Projection 2019

- Interest rates very hard to predict
- Duration largest factor for bond returns
- Total Return vs. Benchmark



AA to BBB Corporate Spreads

- Reversion to the mean
- Active Management vs. Benchmark



Fixed Income Plus Performance

Internal Portfolios

Fixed Income Plus ($14,692mm)

- Overweight US Agg, Corporates, High Yield and Emerging Markets
- Underweight TIPS and Cash

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Strategy	-0.79%	-1.77%	n/a	n/a
Index	-0.67%	-1.76%	n/a	n/a

U.S. Aggregate Portfolio ($4,052mm)

- Neutral duration and long spread product vs Treasuries
- Overweight to corporates were the greatest contributors to underperformance this quarter

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Portfolio	1.28%	-0.35%	2.33%	2.61%
Index	1.64%	0.01%	2.06%	2.52%

U.S. Corporate Bond Portfolio ($3,839mm)

- Security selection largest contributor to quarterly underperformance
- Overweight 10+ year Credit

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Portfolio	-0.62%	-2.99%	3.68%	3.79%
Index	-0.18%	-2.51%	3.26%	3.28%

Fixed Income Plus Performance

Internal Portfolios

Global Rates ($1,152mm)

- Underweight to Italy and security selection were contributors
- Overall duration short and loss of carry due to underweight in Eurozone and Japan were detractors

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Portfolio	2.20%	3.55%	3.29%	4.08%
Index	2.27%	3.55%	3.52%	4.25%

TIPS ($125mm)

- Neutral duration with focus on pure, mean-reverting relative value plays

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Portfolio	-0.46%	-1.20%	2.25%	1.73%
Index	-0.42%	-1.26%	2.11%	1.69%

Fixed Income Plus Cash ($455 mm)

- Source of liquidity
- Seek to at least match T-Bills

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Portfolio	0.53%	1.79%	n/a	n/a
Index	0.56%	1.87%	n/a	n/a

Internal U.S. Aggregate Portfolio

Performance

	Latest Quarter	YTD	One Year	Three Year	Five Year
Portfolio	1.28%	-0.35%	-0.35%	2.33%	2.61%
Index	1.64%	0.01%	0.01%	2.06%	2.52%

Quarterly Attribution

	Duration/ Curve	Asset Allocation	Security Selection	Other
Portfolio	-0.09%	-0.18%	-0.09%	0.0%

Predicted Tracking Error

Total Tracking Error	Curve	Sector Spread	Inflation	Other
38 bps	11%	86%	3%	0%

Index Comparison

	Portfolio	Index
Duration	5.6	5.7
Yield	3.4	3.3
Spread	60	52
Rating	Aa2	Aa2

Composition

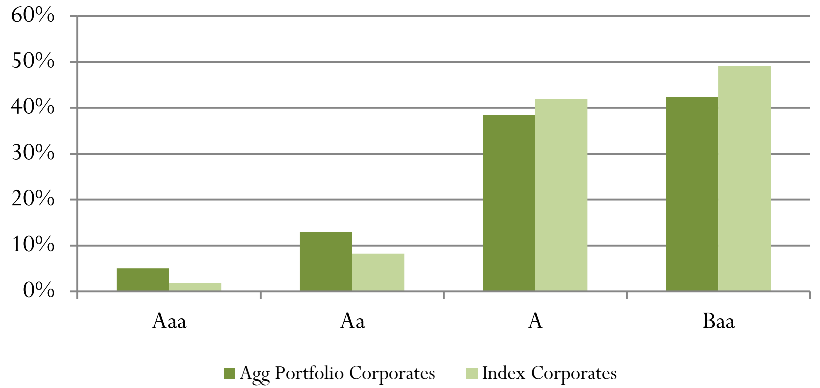
- $4.052 Billion
- Investment Grade Bonds
- Barclays' US Aggregate Index
- Duration based on interest rate forecast
- Internal Fixed Income Team's Best Ideas
- Primary PM: Jim Parise, Chris Cummins, Masha Skuratovskaya

Performance as of 12/31/2018

Internal U.S. Aggregate Portfolio

Sector	MV ($mil)	% of Portfolio	% of Index
Total Portfolio	$4,052	100%	100%
Treasury	$1,206	29.77%	38.89%
Government-Related	$311	7.68%	6.07%
Corporate	$1,203	29.69%	24.31%
MBS	$1,052	25.95%	28.20%
ABS	$117	2.89%	0.52%
CMBS	$141	3.47%	1.96%
Cash	$22	0.54%	0.0%

Portfolio Credit Quality vs. Index



	Portfolio	Index	Over/Under Weight
Duration	5.6	5.7	-0.1

Internal Corporate Bonds

Performance

	Latest Quarter	YTD	One Year	Three Year	Five Year
Portfolio	-0.62%	-2.99%	-2.99%	3.68%	3.79%
Index	-0.18%	-2.51%	-2.51%	3.26%	3.28%

Quarterly Attribution

	Duration/ Curve	Asset Allocation	Security Selection	Other
Portfolio	-0.01%	0.02%	-0.46%	0.02%

Predicted Tracking Error

Total Tracking Error	Curve	Sector Spread	Idiosyncratic	Other
61	3%	87%	10%	0.0%

Index Comparison

	Portfolio	Index
Duration	7.0	7.1
Yield	4.2	4.2
Spread	151	150
Rating	A3	A3

Composition

- $3.839 Billion
- Investment Grade Corporate Bonds
- 300+ positions with 200+ issuers
- Barclays' U.S. Corporate Bond Index
- Futures used to control curve and duration exposure
- Primary PM: Jim Parise

Internal Tips Portfolio

Performance

	Latest Quarter	YTD	One Year	Three Year	Five Year
Portfolio	-0.46%	-1.20%	-1.20%	2.25%	1.73%
Index	-0.42%	-1.26%	-1.26%	2.11%	1.69%

Quarterly Attribution

	Duration/ Curve	Asset Allocation	Security Selection	Other
Portfolio	-0.04%	0.02%	0.02%	-0.04%

Predicted Tracking Error

Total Tracking Error	Curve	Sector Spread	Inflation	Other
14 bps	43%	0%	57%	0%

Index Comparison

	Portfolio	Index
Duration	7.2	7.2
Yield	2.6	2.6

Composition

- $125 Million
- US Treasury Inflation Protected Securities
- 14+ positions
- Barclays' U.S. TIPS Index
- Portfolio duration and curve position reflects views on rates and inflation valuation
- Primary PM: Masha Skuratovskaya

*The internal TIPS portfolio is managed to the BC U.S. TIPS index while the external TIPS portfolio is managed to the BC US TIPS 1-10 year index because the portfolios have a different duration target.

Internal Global Government Bonds

Performance

	Latest Quarter	YTD	One Year	Three Year	Five Year
Portfolio	2.20%	3.55%	3.55%	3.29%	4.08%
Index	2.27%	3.55%	3.55%	3.52%	4.25%

Quarterly Attribution

	FX Hedging	Country Allocation	Duration / Curve	Asset Allocation	Security Selection
Portfolio	-19	+10	-9	-1	+12

Predicted Tracking Error

Total Tracking Error	Curve	Sector Spread	Idiosyncratic	Other
50 bps	97%	0%	2%	1%

Index Comparison

	Portfolio	Index
Duration	7.6	8.6
Yield	3.24	3.34
Rating	A1	A1

Composition

- $1,152 Million
- Investment Grade Sovereign and Agency bonds
- 60+ positions with 25+ issuers
- Barclays' Global Treasury Ex-U.S. Index Hedged
- Cross country allocation is driven by expectation for relative performance.
- Primary PM: Masha Skuratovskaya

Performance as of 12/31/2018

Fixed Income + Allocation

	Fixed Income + Allocation (000's)				QTD Excess Return Contribution		
	Benchmark		Portfolio		Sector Allocation	Within Sector Allocation	Total Excess Return
US Aggregate	25.0%	3,698,000	27.6%	4,052,000	0.04%	-0.10%	-0.06%
US Corporates	25.0%	3,698,000	26.1%	3,839,000	0.01%	-0.11%	-0.11%
High Yield	10.0%	1,479,200	10.4%	1,535,000	-0.02%	-0.02%	-0.05%
REITs	10.0%	1,479,200	9.4%	1,384,000	0.02%	0.03%	0.05%
Non-US Rates	10.0%	1,479,200	10.3%	1,510,000	0.00%	-0.01%	-0.01%
TIPS	5.0%	739,600	1.7%	252,000	-0.01%	0.00%	-0.01%
Emerging Market	5.0%	739,600	6.6%	973,000	0.02%	0.03%	0.05%
Listed Infrastructure	5.0%	739,600	4.7%	692,000	0.01%	0.02%	0.03%
Total Cash	5.0%	739,600	3.1%	455,000	-0.03%	0.02%	-0.01%
Total	100.00%		100.00%		0.03%	-0.14%	-0.11%

Fixed Income Plus Performance

Fixed Income Plus ($14,692mm)

- Overweight US Agg, Corporates, High Yield and Emerging Markets
- Underweight TIPS and Cash

Barclays U.S. Aggregate Portfolio ($4,052mm)

- Neutral duration and long spread product vs Treasuries
- O/W corporate was the greatest contributor to underperformance

Corporate Bond Portfolio ($3,839mm)

- Security selection largest component of underperformance
- Overweight 10+ year Credit

Global Rates ($1,509mm)
Internal ($1,152mm)

- Underweight to Italy and security selection were contributors
- Overall duration short and loss of carry due to underweight in Eurozone and Japan were detractors

Allianz ($358mm)

- Gained from underweight to New Zealand and US$ off-benchmark EM positions
- Underweight to Italy, Spain and Japan greatest detractors.

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Aggregate	-0.79%	-1.77%	n/a	n/a
Index	-0.67%	-1.76%	n/a	n/a
Strategy	1.28%	-0.35%	2.33%	2.61%
Index	1.64%	0.01%	2.06%	2.52%
Strategy	-0.62%	-2.99%	3.68%	3.79%
Index	-0.18%	-2.51%	3.26%	3.28%
Strategy	2.14%	3.37%	3.29%	4.02%
Index	2.27%	3.55%	3.52%	4.25%
In House	2.20%	3.55%	3.29%	4.08%
Index	2.27%	3.55%	3.52%	4.25%
Allianz	1.93%	3.16%	3.42%	4.06%
Index	2.27%	3.55%	3.52%	4.25%

Fixed Income Plus Performance

Global High Yield ($1,535mm)

- Predominantly managed externally with ETFs used to fill allocation

High Yield ETF ($573mm)

- Outperformed 1YR & QTD due to cash overweight prior to market decline (this cash is currently fully invested)

Oaktree High Yield ($568mm)

- Underperformed despite defensive stance due to a bankruptcy in portfolio

Capital Guardian High Yield ($394mm)

- OW lower rated bonds (B and CCC) was accretive for the year but detracted for the 4Q performance

TIPS ($252mm)

Internal TIPS ($125mm)

- Neutral duration with focus on pure, mean-reverting relative value plays

Alaska Permanent Capital Mgmt. ($127mm)

- Slightly short duration, overweight 7s vs 5s and 10s on the curve

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Strategy	**-4.77%**	**-2.15%**	**6.31%**	**3.30%**
Index	**-4.54%**	**-2.08%**	**7.23%**	**3.84%**
ETF	-3.89%	-1.68%	n/a	n/a
Index	-4.54%	-2.08%	n/a	n/a
OakTree	-4.73%	-2.80%	5.46%	2.76%
Index	-4.54%	-2.08%	6.83%	4.05%
Cap Guard	-5.81%	-1.85%	8.26%	4.54%
Index	-4.54%	-2.08%	6.75%	4.01%
Strategy	**-0.26%**	**-0.85%**	**2.07%**	**1.49%**
Index	-0.42%	-1.26%	2.11%	1.69%
In House	-0.46%	-1.20%	2.25%	1.73%
Index	-0.42%	-1.26%	2.11%	1.69%
APCM	-0.07%	-0.18%	1.89%	1.24%
Index	-0.05%	-0.25%	1.87%	1.20%

Performance as of 12/31/2018

*The internal TIPS portfolio is managed to the BC U.S. TIPS index while the external TIPS portfolio is managed to the BC US TIPS 1-10 year index because the portfolios have a different duration target.

Fixed Income Plus Performance

Emerging Market Debt ($973mm)

ETF ($343mm)

- Overweight Cash with even allocation to Hard and Local Currency debt

Capital Group ($624mm)

- Long duration local Brazil exposure greatest contributor

REITS ($1,384mm)

- Small underweight to the overall REIT sector

AEW ($510mm)

- Individual stock selection in North America And Asia added to the outperformance.
- Stock selection in United States, Canada and Japan were strongest

American Homes 4 Rent ($17mm)

SSGA Global REITS ($857mm)

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Strategy	**1.00%**	**-5.20%**	**5.54%**	**2.01%**
Index	**0.43%**	**-5.15%**	**5.61%**	**1.95%**
ETF	0.85%	-6.35%	n/a	n/a
Index	0.43%	-5.15%	n/a	n/a
CapGuard	1.08%	-5.11%	5.60%	2.04%
Index	0.43%	-5.15%	5.65%	1.80%
Strategy	**-5.42%**	**-4.29%**	**6.50%**	**6.21%**
Index	**-5.79%**	**-5.93%**	**2.24%**	**5.28%**
AEW	-5.24%	-3.36%	3.90%	7.31%
Index	-5.79%	-5.99%	2.24%	5.28%
AH4R	-9.09%	-8.20%	5.17%	4.14%
Index	-5.79%	-5.99%	2.24%	5.28%
SSGA	-5.45%	-4.84%	n/a	n/a
Index	-5.79%	-5.99%	n/a	n/a

Performance as of 12/31/2018

Fixed Income Plus Performance

Listed Infrastructure ($692 mm)

- Small underweight to overall sector

Lazard ($187 mm)

- Positive returns from Italian, Spanish regulated utilities, and Australian toll road.
- Detracting returns were a North American Utility and a Railroad company

SSGA ($364 mm)

- Passive portfolio used to adjust weighting

Cohen & Steers ($141 mm)

- Positive contributors were rail, communications, and water utilities
- Detractors were underweight to electric utilities and toll road selection .

Fixed Income Plus Cash($454 mm)

- Source of liquidity
- Seek to at least match T-Bills

	QTD (%)	1Yr (%)	3Yr (%)	5Yr(%)
Strategy	**-4.62%**	**-5.63%**	**7.51%**	**7.91%**
Index	**-5.34%**	**-10.37%**	**5.95%**	**3.21%**
Lazard	-3.26%	-2.44%	10.11%	12.28%
Index	-3.34%	-1.84%	9.54%	9.05%
SSGA	-5.12%	-9.41%	n/a	n/a
Index	-5.34%	-10.37%	n/a	n/a
C&S	-5.12%	-0.35%	9.89%	n/a
Index	-3.68%	-0.96%	9.35%	n/a
Strategy	0.53%	1.79%	n/a	n/a
Index	0.56%	1.87%	n/a	n/a

Asset Class Updates: Real Estate Memo

APFC ALASKA PERMANENT FUND CORPORATION
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SUBJECT:	APFC Real Estate Asset Class Update	ACTION:	____________
DATE:	February 27th, 2019	INFORMATION:	X

BACKGROUND:

The Real Estate presentation provides portfolio updates and investment performance analysis.

STATUS:

At this meeting, staff will present key elements of the Real Estate portfolio. Staff will also compare performance of, and provide updates on, portfolio components.

Presentation: Real Estate

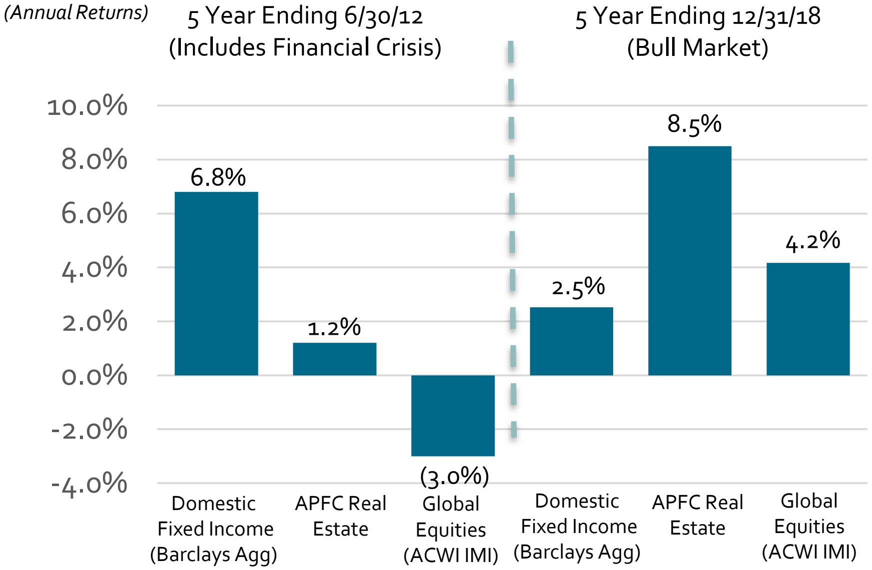
APFC ALASKA PERMANENT FUND CORPORATION

Real Estate

February 27, 2019

Objectives

- Provide diversification to broader portfolio (Total Fund)
- Provide returns between Equity and Fixed Income
- Meet long-term return objective of CPI+5%



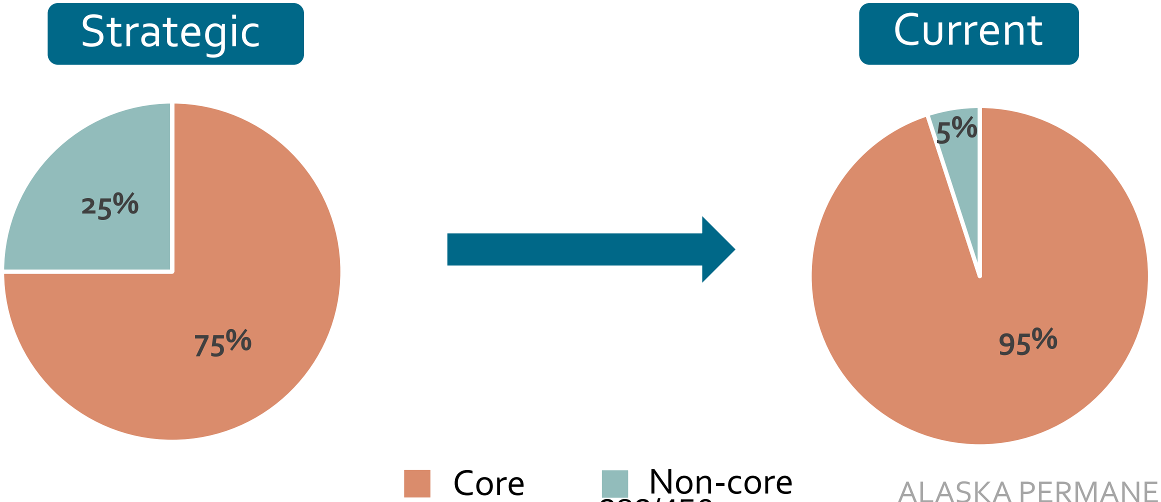
Benchmark

NCREIF – NPI

- Universe includes core real estate held by institutional investors throughout the US
- Current market value of $612 Billion
- 7,883 total properties
- Office, retail, industrial, multifamily, hotel
- Income-producing properties only
- All APFC real estate investments must meet this benchmark, including non-US investments.

Portfolio positioning

- Strategic target for portfolio seeks better balance between core and non-core investments; mix necessary to beat benchmark (NCREIF)



Portfolio composition

Tactical:

Portfolio weightings vs benchmark

Initiatives:

- "Build-to-Core"
- Niche Investments
- Debt

Property Type	APFC	NCREIF	Current Tactical Plan*
HOTEL	2%	1%	1%
INDUSTRIAL	7%	16%	10%
MULTI-FAMILY	8%	24%	34%
OFFICE	35%	36%	25%
RETAIL	48%	23%	30%
	100%	100%	100%

*2019 Tactical planning in progress

Core investments

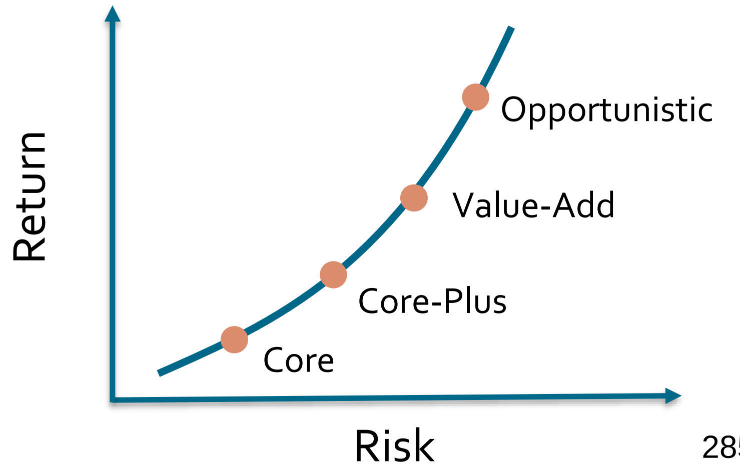
Income Return	+	Capital Appreciation	=	Total Return
4%	+	1.5%	=	5.5%

Characteristics Include:

- Dominant location
- Fully leased property
- Credit tenancy
- Long leases
- Diversified rent roll
- Durable income stream

Non-Core investments

Income Return	+	Capital Appreciation	=	Total Return
0-3%	+	5-15%	=	8-18%



Risks:

- Lease up
- Construction
- Financing
- Credit
- Counterparty

Non-Core investments

195 unit "age-targeted" multi-family project to be developed with Greystar at our CCN parcel. 21 stories over 7 levels of structured parking.

Current initiatives

Build to Core -

- Acquire quality product through development when acquisition cap rates are below return on cost
- Assets considered long-term holds; mitigating downside risk

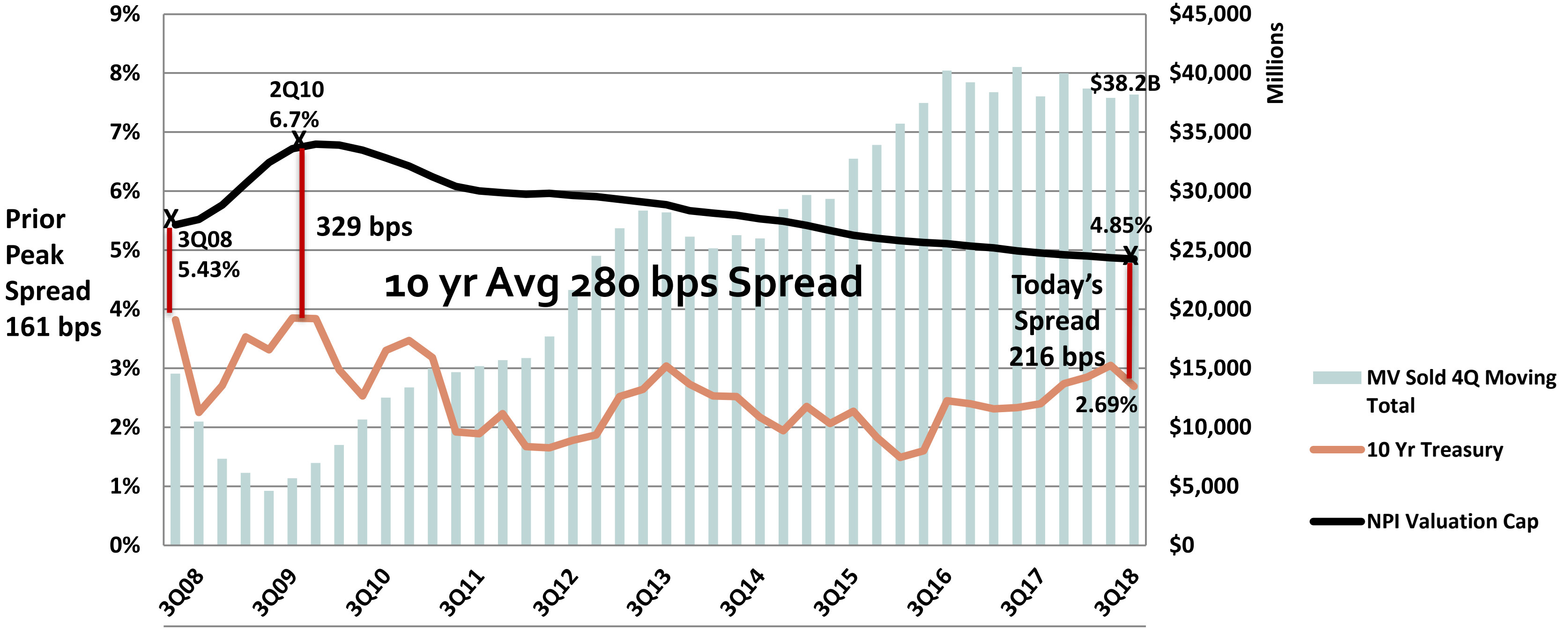
Niche Investments –

- Self storage, medical office, senior housing, student housing
- Ability to pick up non-traditional assets at favorable pricing in comparison to conventional core real estate

Debt –

- Defensive positioning play given late cycle investing

NCREIF – NPI Valuation Cap Rate



Source: NCREIF

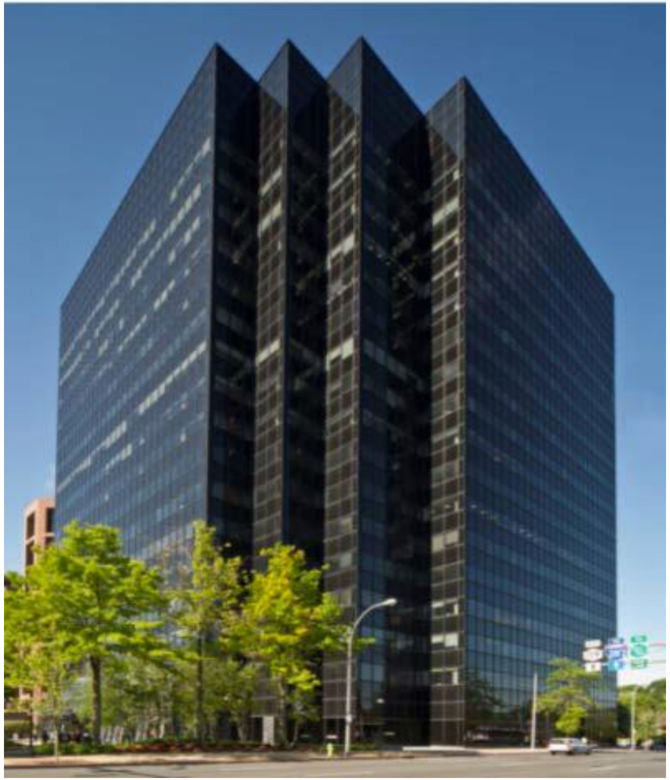
Portfolio Composition by Property Type

Property Type	Sept 2018 Market Value ($mm)	% of Portfolio	NCREIF % of Portfolio Sept 2018	LTV %	GROSS RETURNS			
					1 Year		3 Year	
					APFC	NCREIF	APFC	NCREIF
Hotel	$69	2%	1%	0.0%	9.4%	7.3%	12.6%	6.4%
Industrial	$290	7%	16%	24.5%	16.5%	14.2%	12.5%	13.2%
Multi-Family	$321	8%	24%	21.5%	4.1%	6.4%	7.5%	7.0%
Office	$1,386	35%	36%	27.8%	11.2% -2.2%	6.9%	6.5% 0.1%	6.7%
Retail	$1,865	47%	23%	35.2%	2.8%	3.9%	6.6%	7.0%
Total:	**$3,931**	**100%**	**100%**	**30.5%**	**5.8% 1.7%**	**7.2%**	**7.2% 5.0%**	**7.8%**

(Note: Real Estate values and returns are reported with a one quarter lag. 4Q18 actual values as of 9/30/18.)

* 299 Park impact

Gateway – White Plains, NY
Lobby renovation



Before
Removal of monkey bars and placement of new glass at entry, new conference room, and cafeteria update.

Budget
Lobby renovation budget:
$6,265,000
~50% of work completed to date

Gateway – White Plains, NY
Lobby renovation

Asset Class Updates: Asset Allocation Strategies Memo

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: APFC Asset Allocation Strategies
Portfolio Update

ACTION: ____________

DATE: February 27th, 2019 INFORMATION: ___X___

BACKGROUND:

The Asset Allocation Strategies presentation provides a portfolio update and investment performance analysis. Specific portfolio strategies covered will include Liquidity, Risk Parity, and Currency Management.

STATUS:

At this meeting Staff will present some of the key elements of the Asset Allocation Strategies portfolios including performance of, and provide updates on, portfolio components.

Memo: Asset Allocation Strategy Summary

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

Asset Allocation Strategy Summary

To: APFC Board of Trustees
From: Marcus Frampton (CIO), Valeria Martinez (Director of Asset Allocation Portfolio)
Date: February 27-28, 2019
Re: APFC Asset Allocation Portfolio – Strategy Summary

Summary

The purpose of this memo is to provide the APFC Board of Trustees (the "Board") with background information on the Fund's Asset Allocation Portfolio. The Asset Allocation Portfolio is the Fund's first source of liquidity for all cash needs including funding general operations, POMV transfers to the State, and funding private markets capital calls. In contrast to many institutional investors (and the APFC prior to 2018 Investment Policy & Procedures Amendments) who have an explicit Cash allocation, the APFC's current Investment Policy & Procedures contemplate a liquid portfolio with a mix of Cash and Risk Assets together (which we call the Asset Allocation Portfolio). The Fund's Asset Allocation Portfolio is a 5% target allocation of the Fund with a targeted mix of 40% Cash (benchmarked to three month treasury bills) and 60% Risk Assets (benchmarked to the Fund's overall performance benchmark). The purpose of this configuration is to (i) provide Staff with a tool to carry higher levels of readily liquid assets without attendant cash drag, (ii) to fund the necessary cash flow activities of the Fund without as frequent disturbance to APFC's Fixed Income Plus and Public Equities portfolios (the second and third source of liquidity behind Asset Allocation Portfolio), and (iii) to enable Staff to more rapidly and efficiently add or reduce risk exposures of the Fund (through changing futures overlay amounts) than may be achieved by rebalancing in and out of the other asset classes.

Finally, in addition to the 40% Target Allocation to Cash and 60% to Risk Assets, APFC has a Currency Management Program (started in 2017) which is designed to reduce a portion of the otherwise unhedged foreign currency exposure of the Fund's international public equities holdings. While the margin cash supporting these positions sits within Asset Allocation for exposure bucketing, the performance impact of this currency management activity only is reflected in Public Equities (where performance is shown with and without the impact of the hedging) and Total Fund performance (where performance similarly is shown with and without the hedging impact).

Background and History

The last amendments made to the APFC Investment Policy & Procedures, in September 2018, made significant changes to the allocation within the APFC Investment Portfolio formerly referred to as "Cash" and currently referred to as "Asset Allocation" [1]. The most significant changes derived from a desire by the Board and Staff to carry higher cash balances, in recognition of higher and more uncertain State funding requirements, but without the attendant cash drag from holding more cash and carrying higher liquidity.

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[1] The name "Asset Allocation" can be somewhat confusing at times. In future versions of the APFC Investment Policy & Procedures we may explore changing the name to something more descriptive like "Cash & Alternative Betas" or to create two separate allocations: "Cash" and, separately, "Alternative Betas" to house the Risk Asset portion of today's Asset Allocation Portfolio.

Specifically, Staff was empowered to work with a third party manager (NISA was selected) to develop a program of adding equity/fixed income future overlays to a portion of the Fund's cash holdings – we refer to this as the "Cash Overlay Program" in this memo. Additionally, complementing the Cash Overlay Program within the Asset Allocation portfolio was the creation of a Risk Parity strategy. Risk Parity funds tend to have monthly liquidity and represent strategies that seek to achieve broadly diversified beta (general market) exposures which are weighted to equalize the risk (as measured by volatility) contributions of the various asset classes as opposed to their dollar weighting. Together, over cycles, the Cash Overlay Program coupled with Risk Parity is expected to target performance in line with (or close to) overall performance of the Fund, but to do so in a way that provides more readily available liquidity than the overall Fund can with its private markets positions and larger overall allocations that can be less nimble in rebalancing.

Finally, as referenced above, the Currency Management Program (whose margin cash is held in Asset Allocation, but whose performance is attributed elsewhere) was established in 2017 in response to the Board's desire to explore strategies to hedge a portion of the Fund's foreign currency exposure.

At this Board meeting, Staff will review quarterly performance and strategic outlook for all the components of the Asset Allocation Portfolio. The Board will also hear presentations from NISA on the Cash Overlay Program, PanAgora on Risk Parity Strategies, and Adrian Lee & Partners on the Currency Management Program.

Portfolio Holdings Detail

At the risk of being repetitive to the description above, below is a summary of the components of APFC's Asset Allocation Portfolio.

- Cash – 40% target allocation of Asset Allocation Portfolio, benchmarked to 3 month T Bills
  - Majority is managed in-house by APFC Fixed Income Team
  - A portion is held through an external manager (Invesco), but emphasis is moving more to in-house management
  - Underlying investments for internal portfolio include: short term government securities, commercial paper (rated A-1/P-1), CD's, agency discount notes, and similar highly rated short term securities
- Risk Assets – 60% target allocation of Asset Allocation Portfolio, benchmarked to APFC Total Fund Performance Benchmark
  - A portion of this portfolio is Cash (currently invested with external manager Invesco) with a 65/35 mix of stocks and bond futures via an overlay program managed by NISA known as the Cash Overlay Program; **Note: please see Appendix A here for a detailed description of this program, additionally, NISA will be presenting to the Board on February 28, 2019.**
  - A portion of this portfolio is invested into Risk Parity Funds. Risk Parity is a strategy which targets a broadly diversified mix of global risk assets, weighted to achieve a targeted equal mix of risk from various asset classes. **Note: please see Appendix B here for a detailed description of Risk Parity, additionally, PanAgora (a Risk Parity manager) will be presenting to the Board on February 27, 2019.**
- Currency Management – in September 2017 APFC Staff commenced a Board-approved program to hedge up to $2 billion of the $10+ billion of unhedged foreign currency

exposure that primarily derives from APFC's international public equity holdings[2]. Staff selected Adrian Lee & Partners as an external manager to conduct this currency management activity. While the underlying margin cash supporting APFC's currency management with Adrian Lee & Partners sits within the Asset Allocation Portfolio, as noted previously, the P&L (for performance purposes) is reflected in Public Equities and Total Fund (where both lines are shown with and without the hedging). **Note: please see Appendix C here for detailed description of the Currency Management program, additionally, Adrian Lee & Partners will be presenting to the Board on February 27, 2019.**

[2] Note: Currency hedging activities related to APFC's Fixed Income portfolio are conducted internally by the fixed income desk. It is possible that at some point Staff may explore whether to run some of the hedging activities conducted by Adrian Lee & Partners with internal resources.

Appendix A: Program description - NISA Overlay Program

Overview

Overlay strategies use a variety of derivative instruments – such as swaps, swaptions, and futures – to gain, offset or substitute specific portfolio exposures beyond those provided by the underlying portfolio assets (in APFC's case, a 65% / 35% stock / bond mix substituted for a portion of the Fund's Cash holdings).

Custom overlay solutions can be designed to help investors achieve customized policy objectives. An investor can use these strategies to securitize (convert cash into securities) fund level liquidity, residual manager cash securitization, manage portfolio transitions, rebalancing, maintaining policy targets, currency exposure management, and interest rate management. In addition to the goal of maximizing the efficiency of an investment portfolio, overlay strategies also aim to keep costs low using liquid and transparent derivatives that can be a cheaper alternative to trading physical securities.

Derivative overlay strategies are directed at maximizing the targeted efficiency of investment portfolios. In the APFC's case, this means taking Cash and efficiently turning it into a portfolio with characteristics of a traditional stock / bond portfolio. Staff implements an overlay strategy with an external manager, NISA Investment Advisors, to replicate a 65%/35% Stocks/Bonds portfolio mix to maintain a market exposure for a portion of the Cash sitting at the Fund. APFC's Investment Policy & Procedures establishes a target of 60% of the Asset Allocation Portfolio to be in Risk Assets like this overlay program, with a target of 40% in unencumbered cash that should have no market risk involved with it.

APFC Staff provide NISA Investment Advisors, as the overlay program manager, with access to a cash account that establishes the limit of the notational cash available to them for their program. At times in the history of the program, this cash amount to be overlaid has been as high as several billion dollars, but today the figure totals around $800 million. This number may be reduced in the future with the funding of our new Risk Parity mandates. At our target allocation of 5% of the Fund in Asset Allocation, roughly $1.3 billion at any time is the target for unencumbered cash and roughly $2 billion is targeted for Risk Assets (including Risk Parity and NISA Overlay Program). Today (as of February 6, 2018) Staff is holding higher levels of unencumbered cash than targeted ($2.2 billion) for a variety of reasons. By having the NISA Overlay strategy, Staff has a method to quickly and efficiently get market exposure to cash that is otherwise idle.

Implementation Tactics

NISA will present to the APFC Board on Thursday, February 28th and will cover in detail the tools they use to implement the Overlay Program. At a high level, as mentioned above, the strategy is implemented using derivatives. NISA has a comprehensive derivatives risk management policy that they will review with the Board. Currently, the primary instrument used in implementation of the Overlay Program is exchange-traded futures. Exchange-traded futures have minimal counterparty risk because of their central clearing, high-quality collateral requirements and daily mark-to-market values. However, at times, NISA also will implement via over-the-counter swaps for some clients, which do entail higher counterparty risk. Today, however, NISA is not using OTC swaps in the APFC account.

Conclusion

The APFC Board of Trustees approved this overlay program in 2017 under the theory that the Fund at that point had higher and more uncertain cash funding requirements than in the past. Today, there is a little more certainty around POMV funding levels, but liquidity requirements are higher than in years past. Accordingly, Staff will continue to evaluate the best methods to achieve market beta exposure for the portion of the Asset Allocation portfolio that is intended to have market risk exposures (i.e., the portion other than the 40% targeted for unencumbered cash). Today, Staff uses the NISA Overlay Program and Risk Parity managers for this exposure, in the future we will continue to evaluate all options including ETF's, passively-managed separate accounts, etc.

Appendix B: Program Description - Risk Parity

Overview

The Permanent Fund portfolio, like many other institutional portfolios allocates **capital** to different asset classes. Institutional portfolio allocations to equities are typically 40% or higher. Because equities can have approximately three to four times the risk of bonds (as measured by volatility), this allocation leads to a portfolio that can have as high as 90% of its risk budget dedicated to equities for some institutional portfolios. This concentration in certain environments leads to lower risk-adjusted returns and potentially less consistent performance. Traditional portfolios' performance over time will largely be dictated by the equity markets. The bond market can have a miserable or an extraordinary year, commodity prices can soar or drop, but the effect on the portfolio will nonetheless be small for investors with equity-dominated risk budgets.

Risk Parity approaches are centered on a belief that diversification is the key to generating better risk adjusted returns, and avoiding risk concentration is the best way to achieve true diversification. Risk Parity diversification focuses on **risk** allocation. By making significant investment in non-equity asset classes, investors can achieve better diversification, and may achieve more consistent performance regardless of the economic environment.

Implementation Tactics

A key principle of the Risk Parity investment process is a belief that risk should be allocated to investment opportunities in relation to their expected Sharpe Ratios and that the Sharpe Ratios of equities and bonds, or sectors and countries within an equity or fixed income benchmark are similar over the long-term. As a result, risk should be equally allocated across these investments over time in order for a portfolio to be properly diversified. These Sharpe Ratios will be similar over long periods of time, but they vary over shorter periods in response to macroeconomic conditions and/or investor behavior. This variation may serve as an opportunity for managers to add value tactically.

The key to Risk Parity is to diversify across asset classes that behave differently across economic environments. In general equities do well in higher growth and low inflation environments, bonds do well in deflationary or recessionary environments, and commodities tend to perform best during inflationary environments. Having balanced exposure to these main asset classes can produce more consistent long-term results. While there can be material differences among Risk Parity strategies, such as the breadth of asset classes used and portfolio construction methodologies employed, the concept that binds them all is the more balanced approach to risk allocation.

In order to aim for balanced risk across asset classes, managers begin by determining an expected volatility for each asset class. This methodology ensures that a lot less capital is allocated to high volatility asset classes (equities). As a result, these risks will not dominate the portfolios since exposures to lower volatility assets are increased to balance risks. As volatility estimates change, the holdings of Risk Parity portfolios also shift accordingly to maintain the desired diversification.

In order for investors to seek higher returns, they must take on higher risk. The question is how to take that risk. The traditional approach is to concentrate in riskier assets, in particular equities. In contrast, the Risk Parity approach is to start with a diversified lower-risk portfolio and then use leverage to raise the expected return. The use of leverage introduces its own risks, of course, particularly when investments are illiquid. To mitigate this, Risk Parity portfolios tend to invest in liquid instruments such as financial futures contracts.

Leverage is a key component of successful Risk Parity portfolios and products, and the understanding and acceptance of leverage is critical in adopting and managing a risk parity approach. Using leverage, investors can use risk parity products to diversify away from equities without sacrificing expected return. Adding Risk Parity means trading off concentration risk that you cannot manage for leverage risk that you can. Leverage risk can be managed by:

- Controlling portfolio risk
- Holding liquid assets
- Maintain adequate cash
- Have a plan for reducing risk targets when market volatility increases

At a minimum, risk parity will be institutional managed diversified portfolios with different return drivers than the rest of the Fund. Importantly, APFC's risk parity investments will be entered into via limited partnership interests in commingled funds. Any leverage or derivative positions are non-recourse to the APFC.

Conclusion

The APFC's Board of Directors adopted the Risk Parity program in 2018. After a manager search conducted by the General Consultant, Callan Associates, Staff selected three managers to manage the Fund's Risk Parity program expected to start in the first quarter of 2019. Over the long term, the program should have an expected return similar to that of traditional institutional portfolios utilizing a more balanced risk allocation across asset classes. These portfolios will also be managed at similar risk levels, or a 12% volatility. Lastly, this program can be a source of liquidity for the Fund. As such, no illiquid or private investments are permitted and APFC will invest in comingled funds offering monthly liquidity. Staff expects the program to provide broader diversification and, in certain environments, more consistent performance relative to the rest of the portfolio.

Appendix C: Program Description - Currency Management

Overview

Currency is embedded in any investment that the Fund makes outside of the United States. The returns on this investment consist of the underlying asset return plus the currency return that the asset is denominated in. This currency return can be diversifying but also is additive, both in potential return and actual risk. Simply put, if the underlying asset is higher by 10% and the currency is lower by 2%, the net return is 8%. The volatility of returns in the portfolio is also generally higher for a foreign investor when compared to that of a local investor, and this risk is entirely due to the effect of currency.

A US dollar-based investor who is long a portfolio of international equities not denominated in US dollars is actually taking a bullish view on the local equity market and a bearish view on the US dollar. This positioning may work favorably during periods of a weakening US dollar. However, this would work against the investor during periods of a strengthening US dollar.

Currency risk arises from the change in the price of one currency relative to another. Currency fluctuations are, at times, more extreme than stock-market fluctuations and can be unpredictable. The US dollar for example, fell 40% against the euro from 2002-2007. Maintaining a portfolio that is 100% unhedged could increase overall risk so an investor may choose to hedge a portion of its currency exposure.

Implementation Tactics

The best way to understand hedging is to think of it as insurance. When you hedge, you are insuring yourself against a negative event. While hedging does not prevent a negative event from happening, it can reduce the impact of the event. Currency returns can significantly alter an asset's return stream, especially when large currency moves occur. Over long time periods, several studies have shown that the compounded annual returns on hedged portfolios have been similar to the returns on unhedged portfolios. The APFC Board in 2017 elected to hedge a portion of the Fund's currency exposure because over shorter periods of time, hedged portfolios have been significantly less volatile than unhedged portfolios and have avoided large currency losses.

When evaluating currency hedging, three options are available; do nothing at all, select a static currency hedge or implement an active currency hedge. Static hedging means a hedge ratio (the amount of your foreign currency exposure you want to hedge) is selected – hypothetically, 50% and held constant. Active management means the percentage of the currency exposure that is hedged will vary, potentially from no hedge (0%) to a full hedge (100%). This latter approach is currently applied at the Fund by an active manager, Adrian Lee & Partners. Hedging away all of a portfolio's currency exposure is not necessarily optimal, because currency exposure affects a portfolio's risk in two ways. It introduces diversification as well as volatility, and it is the net impact of these two that determines the hedging ratio. Staff and the Board elected to pursue an actively managed currency strategy given its potential to add value to the portfolio return while controlling the risks.

This active currency management has primarily a risk-focused approach, where the desired outcome is to control against a loss of asset values due to losses in currency component. This is usually done by hedging away currency risk when it is negative but hedging less when currencies appreciate. Nevertheless, a secondary focus is to generate excess returns from currency in both up and down markets while controlling benchmark deviation (tracking error).

The most common hedging instruments are futures, forwards and options. A description of these instruments is included below.

	Forwards*	Put Options	Range Forward
Description	A contract to buy or sell a specified amount of currency forward at a specific rate to a specific date	Purchase the right but not the obligation to sell currency at a pre-specified rate on a pre-determined date	A purchase of a put option and sale of a call option (with a higher strike) creating a collar
Advantages	No up-front cash outlay Highly liquid markets Can be used on individual currencies or a basket	Benefit from foreign currency appreciation	No up-front cash outlay Downside protection Get some up-side when foreign currencies appreciate
Disadvantages	If fully hedged, forfeit gain from foreign currency appreciation	Can be expensive depending on level of protection desired	Sell off of some upside to finance downside protection
Payoff Structure	Symmetric- responds to positive and negative moves in the currency	Asymmetric- responds differently to positive and negative moves in currency	Asymmetric

**Applies also to futures. Futures are less flexible in general than forwards. They come in standardized contract sizes and maturities and require margin deposits and daily mark to market while forward do not.*

<u>*Conclusion*</u>

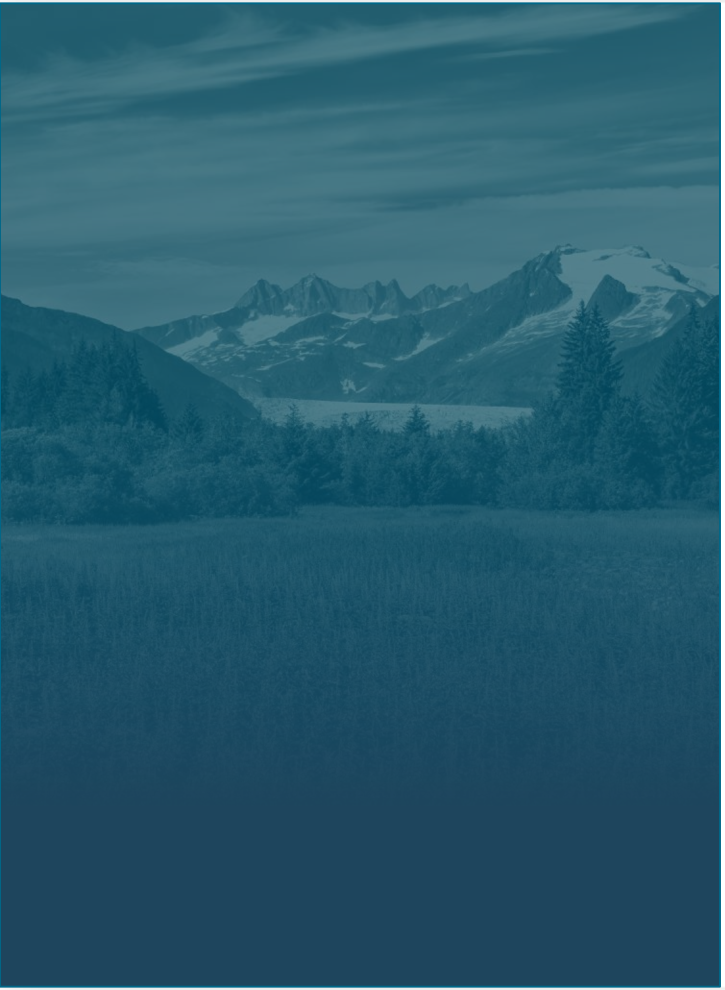
Adrian Lee & Partners, has a mandate to actively hedge up to two billion of notional currency exposure for the Fund after the Board approved the program in late 2017.

Presentation: Asset Allocation Strategies Review

APFC ALASKA PERMANENT FUND CORPORATION

Asset Allocation and Performance

February 27, 2019



Asset Allocation Portfolio

- Comprised of 3 Strategies:
  - Liquidity Strategies
    - Unencumbered Cash
    - Short term Fixed Income securities managed internally
    - Liquid equity and Bond futures portfolio managed by NISA (65% Equities/35% Bonds)
  - Risk Parity Strategies
  - Currency Management
- Objectives:
  - Long term CPI+3%
  - Short term Blended Benchmark of multiple asset classes
  - Provide Liquidity for the Fund
  - Manage currency risks

AA Strategies Overview

Liquidity

Liquidity decreased from $3.5 billion to $2.8 billion

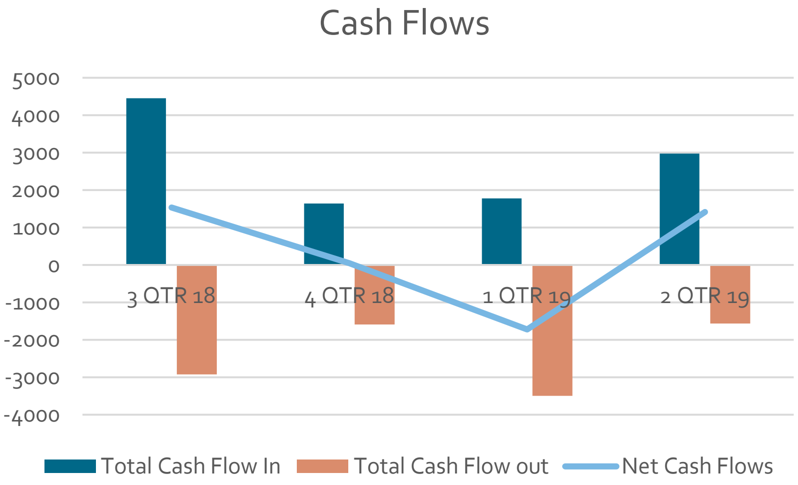
Multi-Asset

Legacy ECIO under redemption, search of risk parity strategies finalized

FX Overlay

$2 billion currency overlay program

Liquidity



Source: Callan, Staff calculations.

Liquidity					
($ in millions)	**12/31/2018 NAV**	**1 QTR Return**	**1 Year Return**	**3 Year Return**	**5 Year Return**
Asset Allocation Cash	1,694	0.53%	1.71%	0.94%	0.57%
90 Day T-Bills		*0.56%*	*1.87%*	*1.02%*	*0.63%*
NISA Overlay	1,116	-7.99%	-	-	-
Overlay Benchmark		*-8.18%*	-	-	-
Total - Liquidity	**2,810**				

NISA Overlay Program

Program Performance – Q4 2018

Combined Program

2018	Beginning Benchmark Notional	Program Performance: Change in MV ($MM)	Program Performance: Portfolio Return	Benchmark: Benchmark Return	Net: Over/Under Performance
Q1*	$998.8	-$52.7	-4.02%	-4.10%	0.08%
Q2	$2,133.5	-$3.6	-0.48%	0.05%	-0.53%
Q3	$2,119.4	$50.8	2.43%	2.09%	0.34%
October	$771.9	-$40.4	-5.01%	-5.47%	0.46%
November	$876.0	$8.3	1.23%	0.99%	0.25%
December	$1,299.3	-$52.6	-4.10%	-4.20%	0.10%
Q4	$771.9	-$84.7	-7.78%	-8.55%	0.77%
YTD	$998.8	-$90.2	-9.78%	-10.42%	0.65%

Source: Manager calculations.

NISA Overlay Program

Performance Attribution – Q4 2018

Fixed Income Overlay Program

	Benchmark Return	Portfolio Return	Over/Under Performance	Performance Attribution: Spread Mismatch	Performance Attribution: Other
Bps	170	183	14	15	-1
$mm	7.4	7.9	0.5	0.6	-0.1

Equity Overlay Program

	Benchmark Return	Portfolio Return	Over/Under Performance	Performance Attribution: Component Weighting	Performance Attribution: Instrument Mismatch	Performance Attribution: Timing Differences	Performance Attribution: Other
Bps	-737	-729	8	-1	20	-11	0
$mm	-61.2	-60.5	0.7	-0.1	1.7	-1.0	0.0

Source: Manager calculations.

Legacy ECIO- Bridgewater

Alaska Permanent Fund Corporation - AW Returns (Net of Fees)					
	Excess Return	+	Cash	=	Total
2010	17.5%		0.1%		17.6%
2011	18.0%		0.1%		18.1%
2012	14.5%		0.2%		14.7%
2013	−4.0%		0.1%		−3.9%
2014	7.4%		0.1%		7.5%
2015	−7.0%		0.0%		−6.9%
2016	9.7%		0.2%		9.9%
2017	11.0%		0.8%		11.8%
2018	−6.8%		1.8%		−5.0%
2018 Q4	−5.0%		0.6%		−4.4%
Cumulative Return	75.2%		3.4%		78.6%
Annual Return	6.3%		0.4%		6.7%

Source: Manager calculations, Albourne.

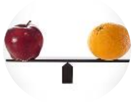
Risk Parity

- Board approved risk parity allocation at May 2018 Board meeting
- Traditional portfolios are heavily concentrated in equity risk
- Objective is to realize a higher long-term, risk adjusted return
- Diversify **risk** globally and across asset classes
- Construct a portfolio that is more robust in different environments
- Callan manager search finalized. Selected managers were Blackrock, Bridgewater, and PanAgora

Currency Management Program Performance (Adrian Lee & Partners)

Guidelines

- Actively manage foreign currency exposure of $2 billion
- Mitigate adverse impact of foreign currency weakening
- Add value over benchmark by 100 bps per annum over a 3-5 yr period
- Annual ex-post active risk expected to be 175-200 bps on average



- Benchmark is the currency component of return on the unhedged MSCI EAFE plus Canada index

- Hedging shall be between 0%-100% per currency.
- Cross hedging is allowed
- Authorized instruments are foreign exchange spot and forward contracts of currencies in the MSCI EAFE plus Canada

Currency Overlay Program Performance (Adrian Lee & Partners)

Period	Passive Return (%)	Overlay Return (%)	Managed Currency Return (%)	Excess Currency Return (%)
October 2018	-1.54	0.12	-1.42	0.12
November 2018	-0.03	-0.09	-0.12	-0.09
December 2018	0.76	-0.46	0.29	-0.47
Last 3 Months	-0.83	-0.44	-1.26	-0.43
Since Inception	-2.44	-0.74	-3.14	-0.71
Annualized SD	4.93	1.24	4.97	1.24

Source: Manager calculations.

Currency Management Program Performance (Adrian Lee & Partners)

Currency	Asset (%) (Dec 31, 2018)	Deviation (%)	Currency Return (%)	Excess Currency Return (%)
US Dollars	0.00	8.40	0.00	0.00
Japanese Yen	23.15	-2.55	3.50	-0.07
Euro	28.74	-1.91	0.96	-0.01
British Pound	15.60	-2.05	-0.18	0.01
Swiss Franc	7.98	-3.79	1.37	-0.06
Canadian Dollar	8.65	2.89	-2.69	-0.10
Australian Dollar	5.95	3.61	-3.59	-0.14
Swedish Krona	2.47	-2.42	2.65	-0.06
Norwegian Krone	0.67	2.99	-0.65	-0.04
New Zealand Dollar	0.20	-2.14	-2.38	0.03
Singapore Dollar	1.19	-1.23	0.66	-0.01
Israeli Shekel	0.50	-1.81	-0.21	0.00
Danish Krona	1.57	0.00	0.97	0.00
Hong Kong Dollar	3.32	0.00	-0.05	0.00

Source: Manager calculations.

Portfolio Summary

Quarter Ended December 31, 2018

Liquidity

- Since Inception last quarter, liquidity has remained at similar levels changing from $3.7 billion to $2.8 billion
- Recent notable programs include the liquidity overlay to securitize excess cash
- Of the current liquidity, approximately 2 billion is securitized with a mix of bond and equity derivatives
- Other liquidity includes treasury holdings and cash for operational activities
- The liquidity portfolio contributes to all funding of new programs, capital calls and operational expenses of the Fund

Multi-Asset

- At the May 2018 meeting, the Board terminated the ECIO program. The majority of redemptions have been received
- Board approved Risk Parity allocation. Callan conducted a search for 3 managers. The program is set to start during the first quarter of 2019
- The program should provide diversification and more consistent returns across market environments

FX Management

- Uses fundamental economic factors and research-driven valuation analysis
- $2 billion of currency exposure resulting from our international investments are actively managed
- During this quarter trade war concerns brought volatility up pushing investors temporarily to safe heaven currencies
- This quarter FX overlay detracted 43 basis points

Risk Parity Strategies Memo

APFC ALASKA PERMANENT FUND CORPORATION

801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Risk Parity Strategies
PanAgora Asset Management

ACTION: ____________

DATE: February 27th, 2019

INFORMATION: X

BACKGROUND:

Risk Parity is a strategy which targets a broadly diversified mix of global risk assets, weighted to achieve a targeted equal mix of risk from various asset classes. APFC's Board adopted a Risk Parity program in 2018, and is expected to start the first quarter of 2019. At this meeting, PanAgora Asset Management, a Risk Parity program manager for APFC, will present their strategies to the Board.

Biographies of Attendees:

Bryan Belton, CFA – Director, Multi Asset
Mr. Belton is a Director within the Multi Asset group. Mr. Belton is responsible for the daily management of the firm's Risk Parity Multi Asset, global fixed income, currency, and commodity portfolios. Mr. Belton is also a member of the firm's Operating and Directors Committees.
Prior to joining PanAgora, Mr. Belton was the Investment Portfolio Officer at the Federal Home Loan Bank of Boston. In that role, he was responsible for actively managing and hedging all of the Bank's long-term investment portfolios. Before joining Federal Home Loan Bank of Boston, Mr. Belton was a Senior Manager at Investors Bank & Trust Company.
Mr. Belton is a CFA charterholder.
Education:
Northeastern University, M.S.F.
Boston College, A.B.

Michael W Anderson – Head of Global Sales
Mr. Anderson is Director, Head of Global Sales. He is responsible for business development and client relationships for PanAgora Asset Management's investment strategies globally. He is a member of the firm's Directors and Operating Committees.
Prior to joining PanAgora, Mr. Anderson was Senior Business Development Officer for fixed income investments at Standish Asset Management. He has also held executive sales and sales management roles at New York Life Asset Management, Mercer Global Investments and Putnam Investments. His career experience includes working with corporate, public, endowments and sovereign wealth funds.
Education:
College of the Holy Cross, B.A.

Presentation: PanAgora Asset Management

Alaska Permanent Fund Corporation

PanAgora Risk Parity Multi Asset

February 27, 2019

1. PanAgora Overview
2. What is Risk Parity?
3. Why Adopt Risk Parity?
4. Why PanAgora Risk Parity Multi Asset?
5. Appendix I - How is Risk Parity Different?
6. Appendix II

Presented by:

Bryan Belton, CFA
Director, Multi Asset

Mike Anderson
Head of Global Sales

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International investing involves certain risks, such as currency fluctuations, economic instability, and political developments. Additional risks may be associated with emerging market securities, including illiquidity and volatility. Active currency management, like any other investment strategy, involves risk, including market risk and event risk, and the risk of loss of principal amount invested. Derivative instruments may at times be illiquid, subject to wide swings in prices, difficult to value accurately and subject to default by the issuer. Strategies that use leverage extensively to gain exposure to various markets may not be suitable for all investors. Any use of leverage exposes the strategy to risk of loss. In some cases the risk may be substantial.

BACKTESTED PERFORMANCE: The model and hypothetical performance included in the presentation does not represent the performance of actual client portfolios. The performance is shown for illustrative purposes only. Historical performance presented herein is purely theoretical and involves the application of PanAgora quantitative strategies to historical financial data to show what decisions would have been made if the strategy were employed. These backtested performance results are shown for illustrative purposes only and do not represent actual trading or the impact of material economic and market factors on PanAgora's decision-making process for an actual PanAgora client account. Backtested performance results were achieved by means of a retroactive application of a model designed with the benefit of hindsight.

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 INVESTMENT 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 INVESTMENT 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 INVESTMENT PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS.

The Dynamic Risk Allocation (DRA) Model performance presented is shown for illustrative purposes only. Cumulative Value Added DRA reflects the impact of DRA as evidenced by the outperformance of the Risk Parity Multi Asset strategy attributable to DRA according to PanAgora's strategic risk targets. Model performance does not reflect actual returns experienced by any investor. Please see disclosures at the back of this presentation. Source: PanAgora.

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PanAgora Overview

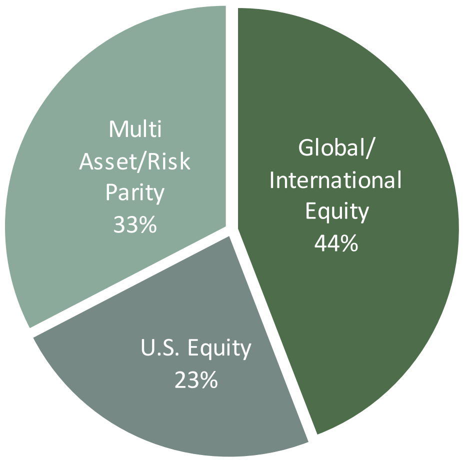
PanAgora Overview

PanAgora at a Glance

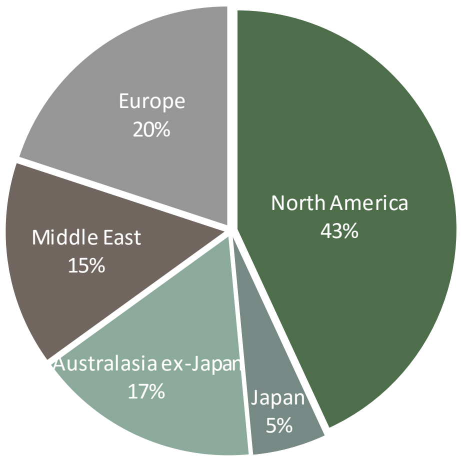
- An experienced manager of quantitative investment strategies since 1989
- Innovative research and intellectual capital
- Over 150 institutional clients worldwide
- Approximately $43 billion in assets under management

- Strategies offered:
  - Alternatives
  - Risk Premia
  - Active Equity
- Robust track records since inception*

Asset Breakdown



Geographic Breakdown



AUM and asset breakdown as of December 31, 2018

**Past performance is not a guarantee of future results. See Performance Disclosures in the Appendix.*

Source: PanAgora

PanAgora Overview

Why PanAgora? Our Clients' Interests Come First

- **Corporate Plans**
  - General Motors Investment Management Corporation
  - Boeing Corporation
  - PG&E Corporation
  - Southern California Edison Company
  - NAV CANADA
  - Marsh & McLennan Companies, Inc.
- **Public Plans**
  - Ohio Public Employees Retirement System
  - Iowa Public Employees Retirement System
  - NSW Treasury Corporation
  - Florida PrePaid College Board
  - Tennessee Consolidated Retirement System
  - San Mateo County Employees' Retirement Association
  - Government Superannuation Fund Authority
  - Boston Retirement Board
  - United Nations Food and Agriculture Organization
- **Endowments & Foundations**
  - Cornerstone Foundation of Northeastern Wisconsin
  - Statler Foundation
- **Sub-advisory**
  - Strategic Investment Group
  - SEI Investment Management Corporation
  - Investors Group
  - Northern Trust Global Advisors
- **Multi-Employer Plans**
  - IBEW Local 332
  - United Food and Commercial Workers

The list of clients presented above reflects both separate account investors and private fund investors and is based upon client type, domicile, account size, and diverse selection of investment management as of December 2018 and is provided for informational purposes only. It is not known whether the listed clients approve or disapprove of PanAgora or the advisory services provided.

PanAgora Overview

PANAGORA

Organizational structure

Eric H. Sorensen, Ph.D.
President and Chief Executive Officer

EQUITY	MULTI ASSET	BUSINESS DEVELOPMENT AND CLIENT SERVICE	ADMINISTRATION
George Mussalli, CFA *Chief Investment Officer & Head of Equity Research* **Jaime Lee, Ph.D.** *Director, Dynamic Equity* **Richard Tan, CFA** *Director, Stock Selector*	**Edward Qian, Ph.D.** *Chief Investment Officer & Head of Multi Asset Research* **Bryan Belton, CFA** *Director, Multi Asset*	**Robert Job, CFA** *Head of Global Strategic Partnerships & Relations* **Michael Anderson** *Head of Global Sales*	**Michael Turpin, CFA, CPA** *Chief Operating Officer*
Supported by 37 Employees	Supported by 23 Employees	Supported by 26 Employees	Supported by 66 Employees
Equity Group Strategies: Stock Selector Equity Dynamic Equity	**Multi Asset Group Strategies:** Risk Parity Factor Premia Defensive Equity Managed Futures	**Key Functions:** Relationship Management Business Development Client Service Marketing	**Key Functions:** Legal Compliance Operations Information Technology

Source: PanAgora.

Agenda

PanAgora

» **What is Risk Parity?**

» **Why Adopt Risk Parity?**

» **Why PanAgora Risk Parity Multi Asset?**

What is Risk Parity?

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Risk Parity Introduction

- **Multi Asset Investment Portfolio**
  - Long-only portfolio seeking to generate returns through persistent exposure to global equity, global fixed income and global inflation protected assets
- **Diversified**
  - Seeks balanced exposure for consistent performance across market environments
  - Global Equities (U.S., Int'l., EM) for upside participation in periods of strong growth
  - Global Fixed Income for downside protection in periods of weaker growth
  - Commodities and Global Inflation-Linked Bonds to preserve real rates of return in inflationary periods
- **Alternative Weighting Scheme**
  - Traditional approach diversifies how dollars are invested (e.g. 60% equities and 40% fixed income)
  - Risk Parity weights investments so different asset all contribute similarly to the portfolio's total return
  - Less risky assets receive more weight than riskier assets (e.g. 50% equities and 150% fixed income) allowing the ***return contribution*** to be similar between equities and fixed income

Why Adopt Risk Parity?

Plan Objectives

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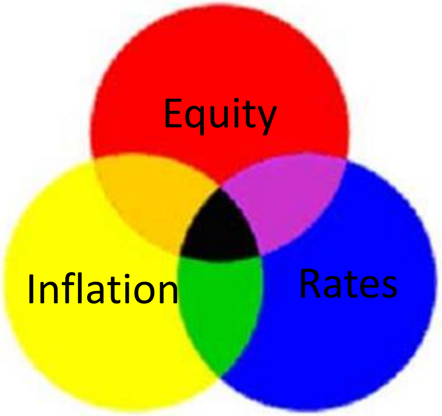
Dual investment objective

- **Grow plan assets through investment returns**
  - Investment returns target plan’s actuarial assumption
  - Invest in the “primary colors” of market premia
- **Promote a stable path to wealth creation**
  - Invest in assets that appreciate when others lose value
  - Weight the investments in your portfolio so they can all have a similar impact on the return of the portfolio

Plan Objectives

Sources of return

- Capture long-term risk premiums in equity risk, interest rate risk, and inflation risk
- Many hybrid asset classes (credit, private equity, real estate, etc.) are combinations of the three primary risk premiums



Premia	Condition that yields a payoff to investors for bearing market risk
Equity Risk Premia	Corporate earnings grow faster than valuations imply
Interest Rate Risk Premia	Real Interest rates rise more slowly than valuations imply
Inflation Risk Premia	Future inflation is higher than valuations imply

For illustrative purposes only. Source: PanAgora.

Plan Objectives

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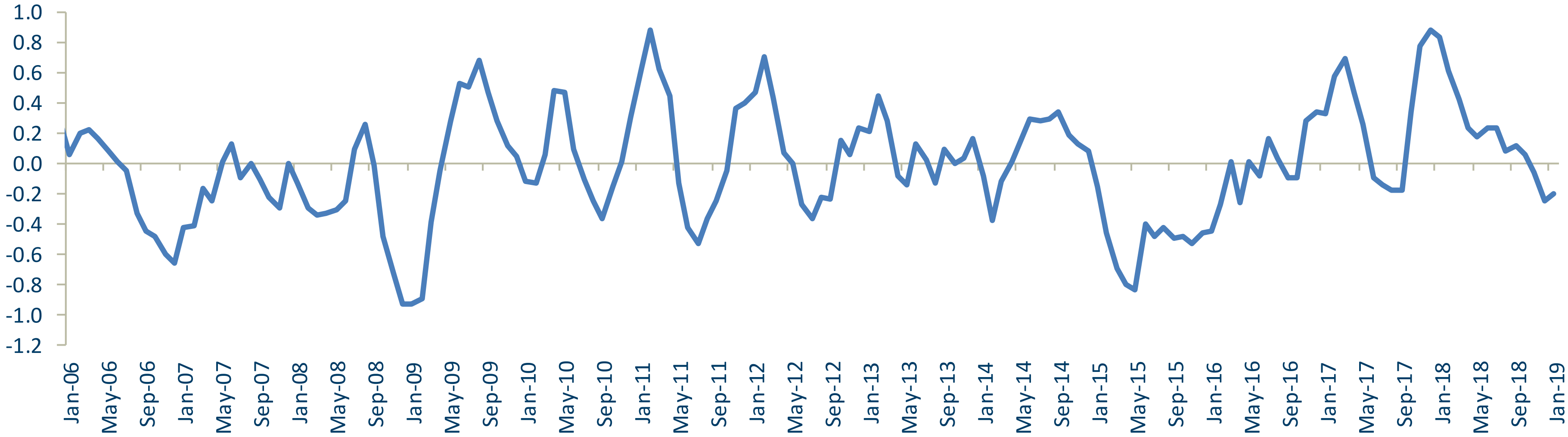
Promoting stability

» Every asset class will underperform in certain market environments

» Include assets that make money when others are losing money

Bloomberg U.S. Economic Surprise Index 2006-2019



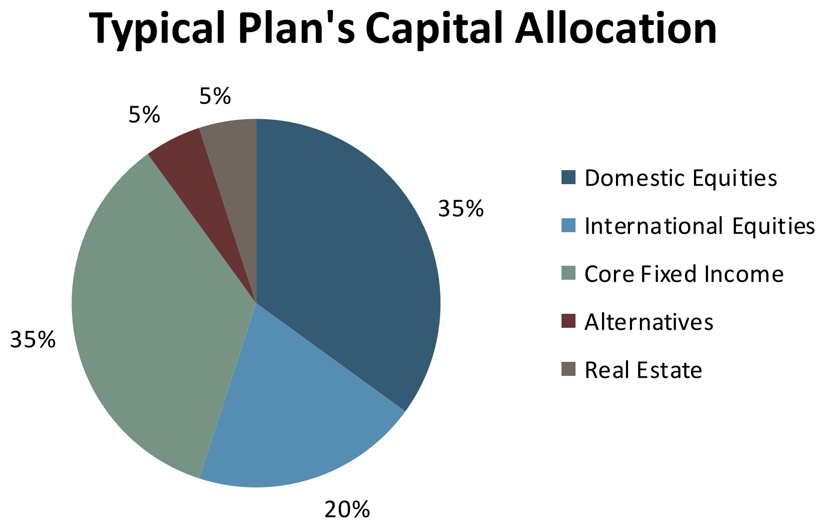
Asset Class	Market Environment when premia underperforms	Positive Surprise*	Negative Surprise*
MSCI USA Index	High P/E ratios and earnings disappoint	18.1%	-1.9%
BB Barclays US Long Treasury	Flat yield curve slope and rates rise aggressively	0.5%	11.4%

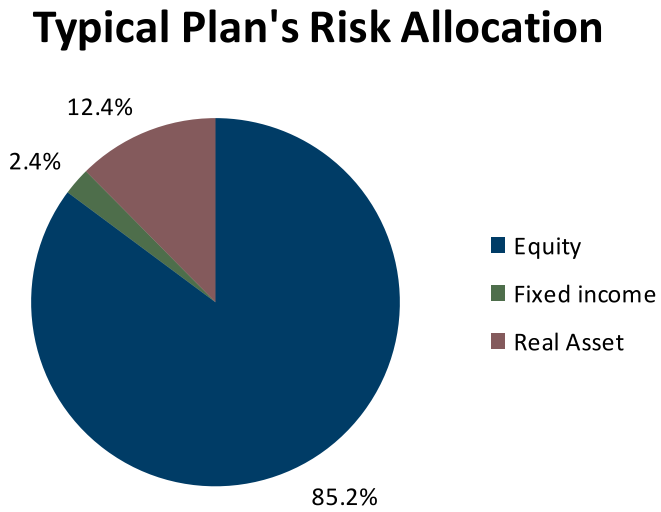
*Return when Economic Surprise is positive/negative January 2006 – January 2019. For illustrative purposes only. Source: PanAgora.

Weighting for Stability

The traditional approach to asset allocation – diversify capital

» Traditional approach may result in the plan closely tracking the outcome of the equity market





For illustrative purposes only. Source: PanAgora.

Weighting for Stability

PanAgora

Why are portfolios with diversified capital unbalanced?

» The magnitude of equity returns (both positive and negative) is greater than that of bond returns
  - Equity returns are typically 3-4 times larger than bond returns
  - Balancing dollars between equities and bonds means that equities matter more

» Do bartenders pour whiskey and beer in the same size glass?
  - Just like bartenders, investors should size equities and bonds differently

For illustrative purposes only. Source: PanAgora.

Weighting for Stability

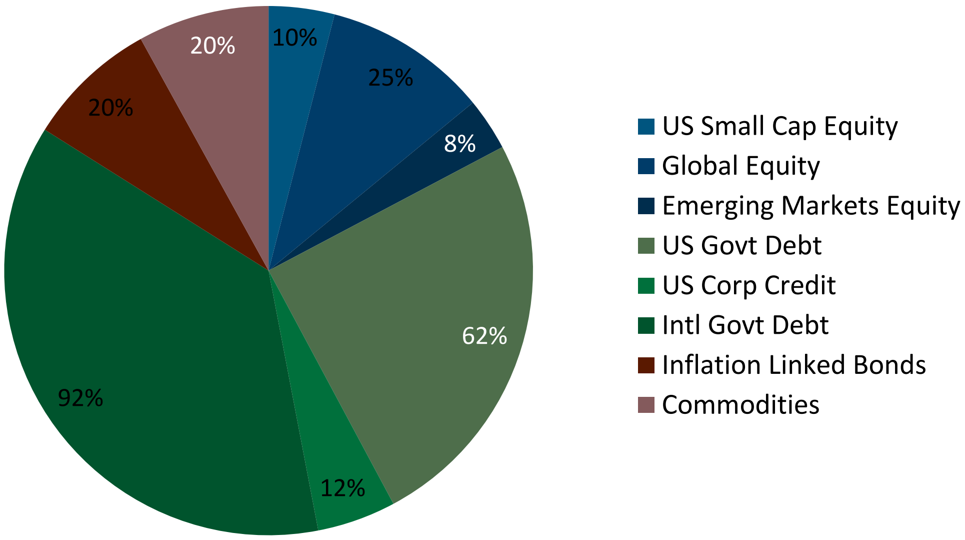
PanAgora

The Risk Parity approach to asset allocation – diversify risk

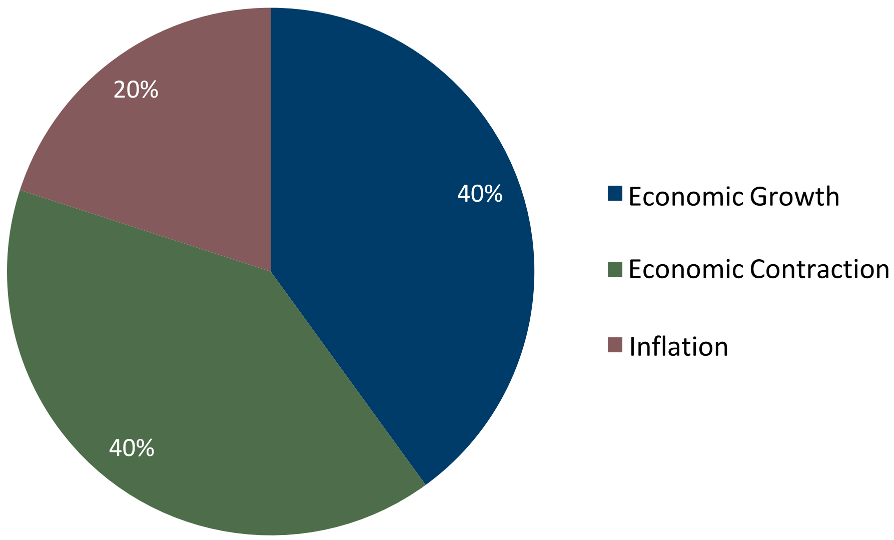
» Risk Parity approach weights assets so that all investments influence the portfolio similarly

» The goal is to participate on the upside in periods of market growth, to control portfolio drawdowns in periods of market dislocation, and preserve wealth during heightened inflation

Risk Parity Capital Allocation



Risk Parity Risk Allocation



For illustrative purposes only. Source: PanAgora.

Weighting for Stability

Global 60/40 Index Portfolio versus Risk Parity Multi Asset: Jan. 2006 – Jan. 2019

» Allocation to PanAgora's Risk Parity Multi Asset strategy can improve consistency across economic surprises

Since Inception (1/1/2006)	60/40 Index Portfolio	Risk Parity Multi Asset Composite
Annualized Return	5.6%	6.7%
Annualized Risk	8.1%	9.2%
Sharpe Ratio	0.54	0.60

Since Inception (1/1/2006)	60/40 Index Portfolio	Risk Parity Multi Asset Composite
Annualized Return Positive Economic Surprise Months (79 months)	10.6%	7.4%
Annualized Return Negative Economic Surprise Months (78 months)	**0.07%**	**6.0%**

60/40 Index Portfolio consists of 60% MSCI World Hedged Index/40% Bloomberg Barclays Global Aggregate USD Hedged Index.
Composite performance is shown gross of fees and does not include the deduction of management fees and other expenses that may be incurred in managing an investment account. A portfolio's return will be reduced by advisory and other fees. Data is historical. Past performance is not a guarantee of future results. As with any investment there is a potential for profit as well as the possibility of loss. Source: PanAgora. Periods are defined using Bloomberg index from prior page.

Summary

An allocation to Risk Parity can help your plan

» Risk Parity is designed to achieve a dual investment objective

- Invests in "primary colors" of market premia to achieve returns
- Employs alternative weighting scheme to generate a stable path to wealth creation across different environments

» Risk Parity will typically outperform a traditional allocation when a plan needs the most help

- Provides downside protection in periods with negative economic surprises
- Provides upside participation in periods with positive economic surprises, but will typically lag equity centric portfolios

Summary

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Why PanAgora Risk Parity Multi Asset?

- » A pioneer in the field of Risk Parity
  - Chief Investment Officer, Dr. Edward Qian, CFA is credited with defining the term “Risk Parity”
  - PanAgora has been managing Risk Parity portfolios for institutional clients since 2006
- » A more thoughtful approach to achieving balance across macroeconomic and inflationary shocks
  - How we choose asset classes
  - How we build exposures
  - How we shift exposures
- » Boutique nature and desire to form strategic partnerships gives clients unparalleled access to our investment teams

Why PanAgora Risk Parity Multi Asset?

Risk Parity Multi Asset

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Investment process focused on diversification of risk

» Strategic emphasis on minimizing risk concentration in multiple dimensions to generate better long-term risk-adjusted returns

» Tactical emphasis on capitalizing intermediate-term investment opportunities to generate additional value-added

Step 1: Select appropriate asset classes

↓

Step 2: Build asset class exposures

↓

Step 3: Strategically weight long-term exposure to asset classes

↓

Step 4: Tactically re-weight exposures

Portfolio construction is subject to change. No assurance can be given that the investment objective or expected return will be achieved or that an investor will receive a return of all or part of his or her initial investment. As with any investment there is a potential for profit as well as the possibility of loss. Source: PanAgora.

Risk Parity Multi Asset

PANAGORA

Step 1: Select appropriate asset classes

» Diversification can be achieved without introducing additional liquidity and tail risk

		Correlation to Capital Growth	Correlation to Capital Protection	Correlation to Inflation Protection	Liquidity Risk	Tail Risk	**Diversification Benefit**
PANAGORA DIVERSIFIED RISK ASSET CLASSES	Non-U.S. Equity	High	Low	Medium	Low	Medium	High
	U.S. Large Cap Equity	High	Low	Medium	Low	Medium	High
	U.S. Small Cap Equity	High	Low	Medium	Low	Medium	High
	Emerging Markets Equity	High	Low	Medium	Medium	Medium	High
	Term Structure	Low	High	Low	Low	Low	High
	Sovereign Fixed Income	Low	High	Low	Low	Low	High
	Investment Grade Credit	Low	High	Low	Low	Low	High
	Inflation-linked Global	Low	High	High	Low	Low	High
	Commodities	Medium	Low	High	Low	Medium	High
OTHER ASSET CLASSES	High Yield Fixed Income	High	Low	Low	High	High	Low
	Emerging Markets Debt	High	Low	Low	High	High	Low
	Private Equity	High	Low	Medium	High	High	Low
	Real Estate	High	Low	Medium	High	High	Low

Marginal diversification benefit, but high liquidity and tail risk

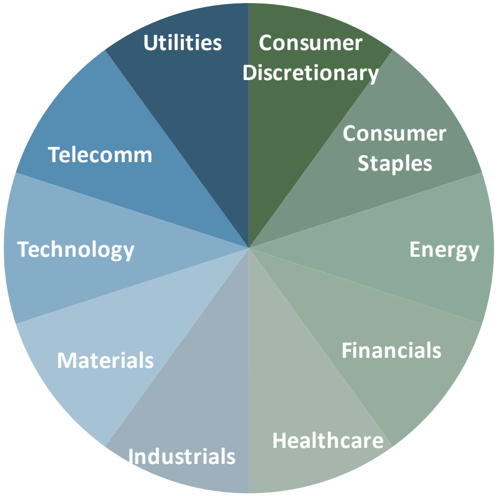
For Illustrative purposes only. Source: PanAgora.

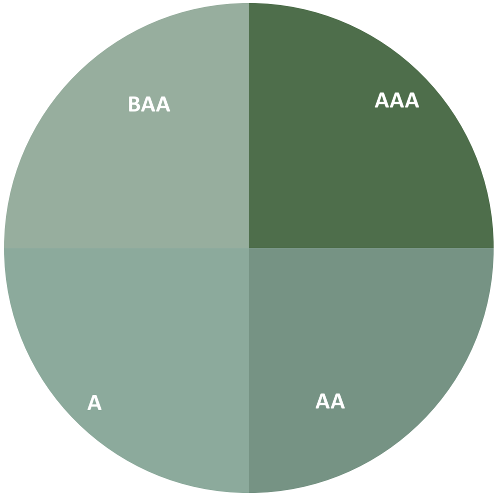
Step 2: Build asset class exposures

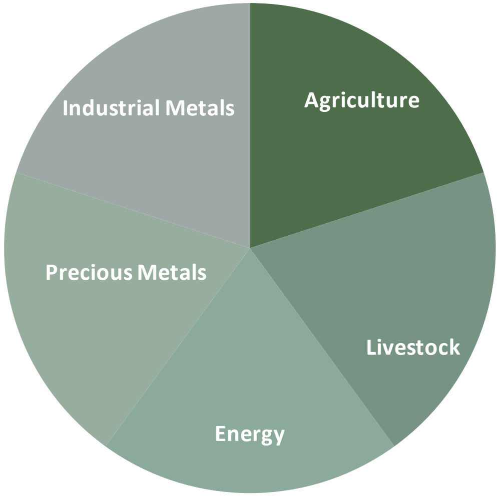
Diversified Risk Equity
- Sector concentration
- Country concentration
- Stock concentration

Diversified Risk Fixed Income
- Credit concentration
- Term structure concentration
- Sovereign concentration
- Real Interest rate concentration

Diversified Risk Commodities
- Sector concentration
- Security concentration





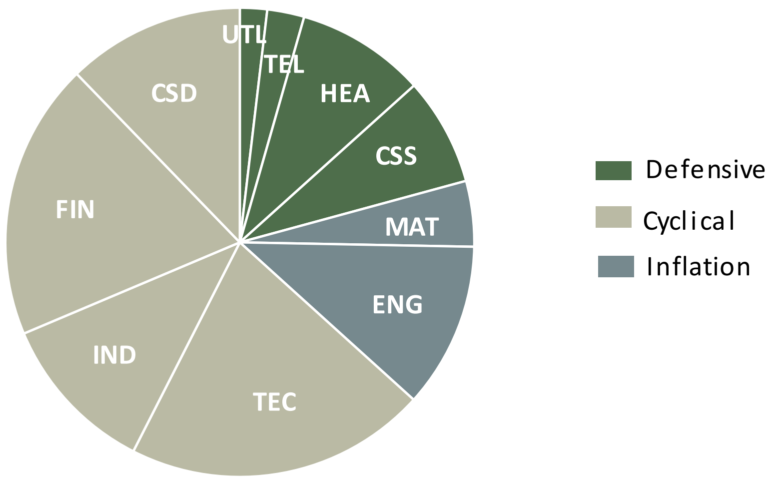


For illustrative purposes only. Source: PanAgora. PanAgora accounts may have exposure to some or all of the markets and asset classes discussed herein. Graphics are not representative of the strategy's exact exposure to each asset class.

Step 2: Build asset class exposures

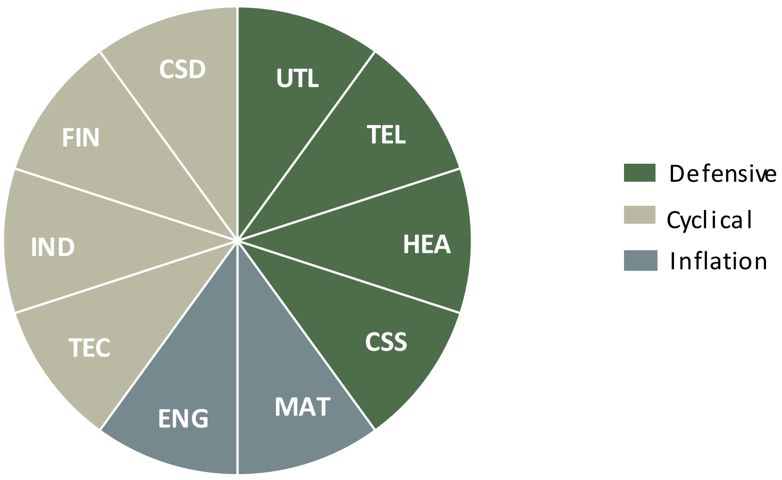
» We believe a deeper application of Risk Parity results in better portfolio building blocks

S&P 500 Index Sector Contribution to Risk



» Risk concentration in Cyclical sectors

PanAgora Diversified Risk U.S. Large Cap Sector Contribution to Risk

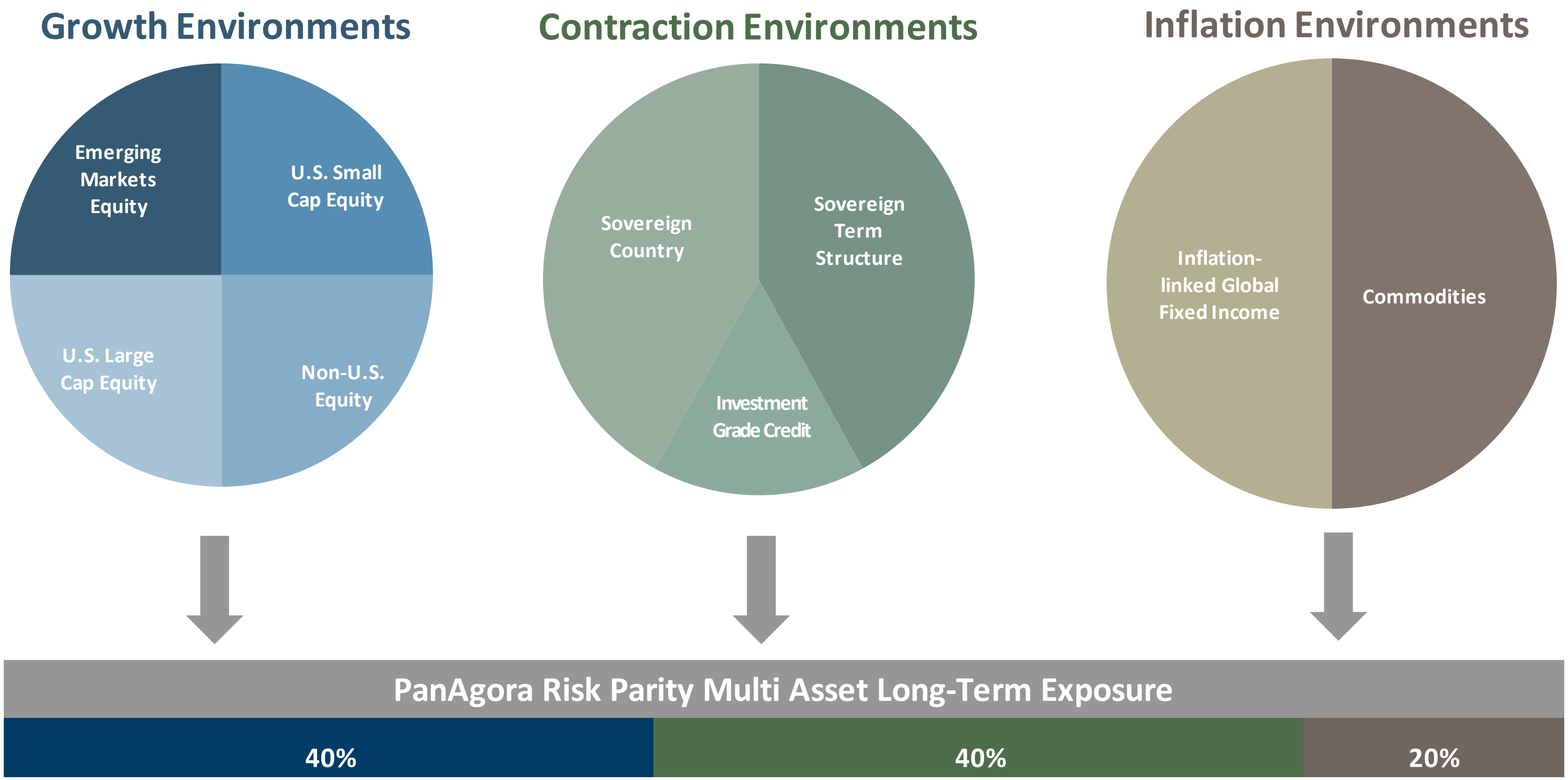


» Balanced from the bottom-up

For illustrative purposes only. Source: PanAgora. PanAgora accounts may have exposure to some or all of the markets and asset classes discussed herein. Graphics are not representative of the strategy's exact exposure to each asset class.

PanAgora

Step 3: Strategically weight long-term exposure to asset classes



Portfolio construction is subject to change. No assurance can be given that the investment objective or expected allocations will be achieved or that an investor will receive a return of all or part of his or her initial investment. As with any investment there is a potential for profit as well as the possibility of loss. PanAgora accounts may have exposure to some or all of the markets and asset classes discussed herein. Graphics are not representative of the strategy's exact exposure to each asset class Source: PanAgora.

Step 4: Tactically re-weight exposures

- DRA is applied across equities, fixed income, and commodities
- DRA is applied across sub-asset classes
- DRA is applied within certain asset classes

DRA across asset classes

DRA across sub-asset classes

Dynamic Risk Allocation

Equity	Fixed Income	Commodities
Non-U.S.	Non-U.S. Sovereign	5 Commodity Sectors
U.S. Large Cap	Term Structure	Agriculture
U.S. Small Cap	Credit	Livestock
Emerging Markets	Inflation Linked Bonds	Energy
		Precious Metals
		Industrial Metals

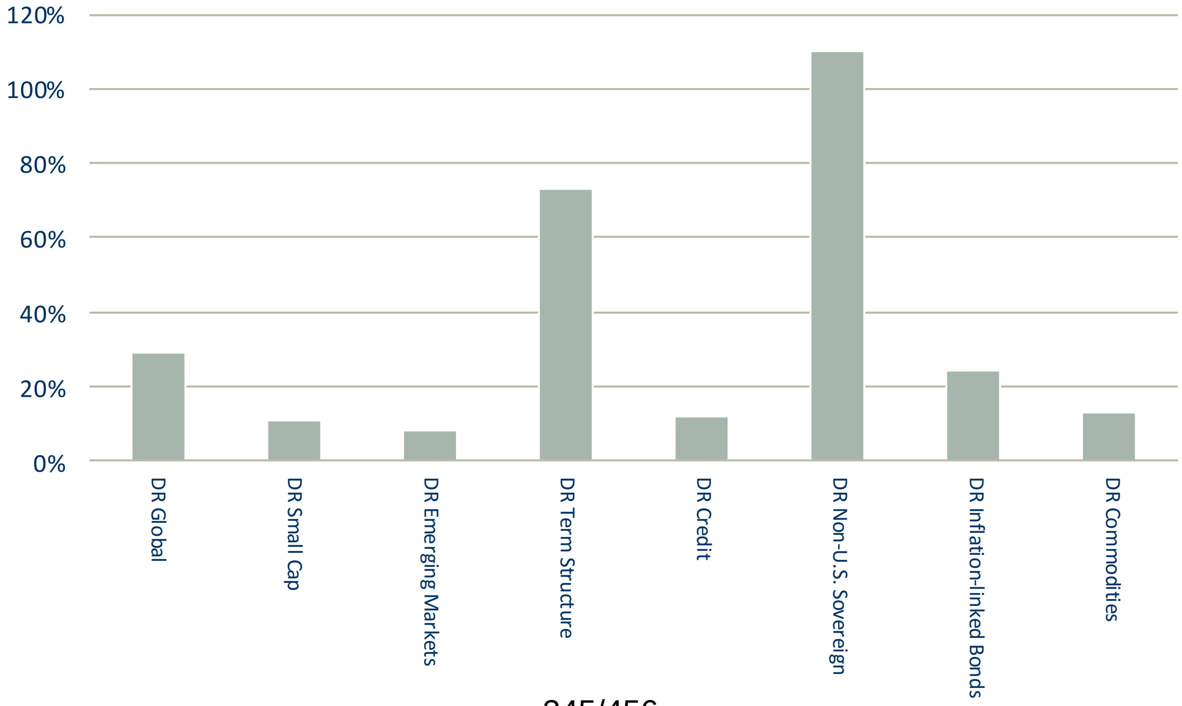
PanAgora accounts may have exposure to some or all of the markets and asset classes discussed herein. For illustrative purposes only. Source PanAgora.

Risk Parity Multi Asset

Portfolio weights and exposures

	DR Global	DR Small Cap	DR Emerging Markets	DR Term Structure	DR Credit	DR Non-U.S. Sovereign	DR Inflation-linked Bonds	DR Commodities
Target Risk Weights	22%	11%	11%	16%	4%	16%	9%	11%
Notional Market Exposures	29%	11%	8%	73%	12%	110%	24%	13%
Instruments	Physicals/Futures	Physicals/Futures	Physicals/Futures	Futures	Physicals	Futures	Physicals	Futures

Notional Market Exposures



The portfolio allocation presented is shown for illustrative purposes only. PanAgora accounts may have exposure to some or all of the markets and asset classes discussed herein.

Source: PanAgora. Please see the disclosures in the back of this presentation.

Appendix I - How is Risk Parity Different?

How is Risk Parity Different?

PanAgora

- Prudent use of instrument leverage
  - Why use it?
  - Why is it safe to use it?

- Fixed Income matters as much as equity
  - Why is it important?
  - Why now when interest rates are low?

How is Risk Parity Different?

Leverage can help achieve both the return and stability objectives

» 60% equities, 40% fixed income

- Achieves the expected return target by creating a portfolio with 10% risk
- Introduces instability to plan’s funding status as return outcome is determined by the equity markets

» 20% equities, 80% fixed income

- Fails to achieve the expected return target as portfolio risk is approximately 5%
- Promotes stability by allowing fixed income returns to contribute as much as equity returns

» Risk Parity Multi Asset

- Achieves the expected return target by levering a liquid, risk-balanced portfolio to achieve a 10% risk target
- Promotes stability by allowing fixed income returns to contribute as much as equity returns
- Reduces concentration and liquidity risks

How is Risk Parity Different?

PANAGORA

The modern economy is built on leverage

» Just like Risk Parity, most investments are levered

- Public and Private Equity, Real Estate, Infrastructure, Hedge Funds
- Securitization (or in the case of Risk Parity – commingled fund) allows it to be non-recourse leverage

» Risks of leverage can be controlled with good risk management

- Levering a diversified portfolio of liquid assets not sub-prime mortgages
- Active rebalancing to target constant and balanced market risk
- Maintaining high levels of unencumbered cash
- Utilizing instrument leverage through exchange-traded and centrally cleared futures, not borrowed leverage

How is Risk Parity Different?

PanAgora

The importance of making fixed income a meaningful part of the portfolio

- Diversification and capital preservation
- See the forest for the trees
- Understanding bond math – the market has "priced-in" rising rates
- It's tough to make predictions, particularly about the future
- Short end vs. long end of Treasury curve
    - Dynamic Risk Allocation both across and within asset classes
- Backtest and live data

How is Risk Parity Different?

PANAGORA

Fixed income for diversification and capital preservation

- Irrespective of the attractiveness, fixed income is an important strategic diversifier
- The diversification of treasuries is typically positively convex
- Many other asset classes can become less diversifying

	Stocks/Treasuries
Average Correlation 1973-2019	0.08
Correlation in 20% of months when stocks experienced their worst performance	-0.14
Difference	-0.22

	Return when Economic Surprise is positive 2006-2019*	Return when Economic Surprise is negative 2006-2019*
MSCI USA Index	18.1%	-1.9%
BB Barclays U.S. Long Treasury Index	0.5%	11.4%

**Return when Economic Surprise is positive/negative January 2006 – January 2019. For illustrative purposes only. Source: PanAgora.*

How is Risk Parity Different?

PanAgora

Yields may rise, but will they cover?

» The market has "priced in" rising rates

- The "buffer" built into the forward curve reflects expectations for rising rates and additional risk premium

» This is similar to picking the underdog in your office football pool

Year	Favorite	Underdog	Spread	Win	Cover
2013	Denver	Jacksonville	28	Yes	No
1976	**Pittsburgh**	**Tampa Bay**	**27**	**Yes**	**Yes**
2007	New England	Philadelphia	24	Yes	No
1993	San Fran	Cincinnati	24	Yes	No
1987	San Fran	Atlanta	23.5	Yes	No

For illustrative purposes only. Source: PanAgora

How is Risk Parity Different?

PanAgora

Systematic flexibility to adapt to changes in market cycles of interest rates

» Risk Parity Multi Asset performance during periods of rising rates (Gross of fees)

Period	Change in US 10 year Treasury yield (bps)	Annualized Returns		
		MSCI World Hedged Index	FTSE World Government Bond Hedged Index	PanAgora Risk Parity Multi Asset
January 2006 - June 2006	75	7.0%	-1.9%	-5.9%
December 2006 - June 2007	57	20.8%	-0.6%	1.0%
April 2008 - May 2008	65	56.1%	-12.8%	17.5%
January 2009 - December 2009	163	26.3%	1.0%	7.2%
September 2010 - March 2011	94	36.9%	-5.6%	19.2%
April 2013 - December 2013	134	23.7%	-0.8%	-1.0%
June 2016 - December 2016	96	15.0%	-0.8%	5.3%
September 2017 - July 2018	84	14.6%	0.7%	1.8%
Average:	**96**	**25.1%**	**-2.6%**	**5.6%**

For illustrative purposes only. The information on this page is supplemental to the GIPS-compliant presentation presented in the appendix. Past performance is not indicative of future results. Source: PanAgora.

Appendix II

Multi Asset team research bibliography

» **Research Notes**

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- PanAgora Investment Insight: Don't Judge a Portfolio by its Duration. Research Notes (2017). Bryan Belton, CFA, Edward Qian, Ph.D.
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** Additional Published Articles and White Papers are available at www.panagora.com*

Experienced Multi Asset investment team

Name	Title	Area of Focus	Industry Experience	Years With Firm
Edward Qian, Ph.D.	CIO and Head of Research, Multi Asset	Architect of Risk Parity framework, oversight of Multi Asset group, research and	22	20
Bryan Belton, CFA	Director, Multi Asset	Fixed income, currency and commodities research and implementation	20	13
David Liddell	Director, Multi Asset	Equity implementation	29	29
William G. Zink	Director, Multi Asset	Equity implementation	43	29
Kun Yang, Ph.D., CFA	Director, Multi Asset	Fixed income, commodities, currency and equity research and implementation	11	11
Nicholas Alonso, CFA	Director, Multi Asset	Equity research and implementation	11	8
Jonathan Beaulieu, CFA	Director, Multi Asset	Fixed income, currency and commodities research and implementation	22	7
Anthony Borthwick, CFA, CMT	Portfolio Manager, Multi Asset	Fixed income, currency and commodities research and implementation	30	26
Randall Yarlas	Portfolio Manager, Multi Asset	Equity implementation	25	18
Anne Ma, Ph.D.	Research Analyst, Multi Asset	Multi Asset research	4	4
Timothy Doyle	Portfolio Analyst, Multi Asset	Portfolio implementation	14	12
James Alberto	Analyst, Multi Asset	Investment software application developer	28	10
Justin Neal	Analyst, Multi Asset	Investment software application developer	20	6

Biographies

Bryan Belton, CFA
Director, Multi Asset

Mr. Belton is a Director within the Multi Asset group. Mr. Belton is responsible for the daily management of the firm's Risk Parity Multi Asset, global fixed income, currency, and commodity portfolios. Mr. Belton is also a member of the firm's Operating and Directors Committees.

Prior to joining PanAgora, Mr. Belton was the Investment Portfolio Officer at the Federal Home Loan Bank of Boston. In that role, he was responsible for actively managing and hedging all of the Bank's long-term investment portfolios. Before joining Federal Home Loan Bank of Boston, Mr. Belton was a Senior Manager at Investors Bank & Trust Company.

Mr. Belton is a CFA charterholder.

Education:
Northeastern University, M.S.F.
Boston College, A.B.

Michael W. Anderson
Head of Global Sales

Mr. Anderson is Director, Head of Global Sales. He is responsible for business development and client relationships for PanAgora Asset Management's investment strategies globally. He is a member of the firm's Directors and Operating Committees.

Prior to joining PanAgora, Mr. Anderson was Senior Business Development Officer for fixed income investments at Standish Asset Management. He has also held executive sales and sales management roles at New York Life Asset Management, Mercer Global Investments and Putnam Investments. His career experience includes working with corporate, public, endowments and sovereign wealth funds.

Education:
College of the Holy Cross, B.A.

MSCI Disclosure

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Appendix

Disclosure

The performance shown is for the stated time period only; due to market volatility, each account's performance may be different. The returns shown assume the reinvestment of dividends and other income. The information in this presentation may contain projections or other forward-looking statements regarding future events, targets or expectations, and is only current as of the date indicated. No assurance can be given that the investment objective or target return will be achieved or that an investor will receive a return of all or part of his or her initial investment.

The securities presented are intended to demonstrate the application of the investment strategy and do not constitute a representative list of all securities bought or sold during any time period. These recommendations should not be considered to be a pattern of success or a guarantee of positive performance. Not all of PanAgora's recommendations have been or will be profitable.

PanAgora is exempt from the requirement to hold an Australian financial services license under the Corporations Act 2001 in respect of the financial services. PanAgora is regulated by the SEC under U.S. laws, which differ from Australian laws.

Performance is shown gross of fees and does not include the deduction of management fees and other expenses that may be incurred in managing an investment account. A portfolio's return will be reduced by advisory and other fees. To the extent required by Form ADV, actual fees are described in Part 2A of PanAgora's Form ADV and will vary depending on, among other things, the applicable fee schedule and account size. For example, if $100,000 were invested and experienced a 10% annual return compounded monthly for 10 years, its ending value, without giving effect to the deduction of advisory fees, would be $270,704 with annualized compounded return of 10.47%. If an advisory fee of 0.95% of the average market value of the account were deducted monthly for the 10-year period, the annualized compounded return would be 9.43% and the ending dollar value would be $246, 355. Past performance is no guarantee of future results.

The information in this presentation may contain projections or other forward-looking statements regarding future events, targets or expectations and is current only as of the date indicated. As used herein, "targeted" returns or characteristics refer to ex-ante objectives in the portfolio management process; whereas "expected" returns or characteristics refer to expectations based on the application of mathematical principles to portfolio attributes and/or historical data, and does not represent a guarantee. There is no guarantee that targeted or expected returns or other characteristics will be realized or achieved, or that an investment strategy will be successful. Forward-looking statements are subject to numerous assumptions, risks and uncertainties which change over time. Predictions, opinions and other information contained in this presentation are subject to change continually and without notice of any kind and may no longer be true after the date indicated. PanAgora assumes no duty to and does not undertake to update forward-looking statements.

Foreign Currency Hedge Strategies Memo

SUBJECT: Foreign Currency Hedge Strategies
Adrian Lee & Partners

ACTION: ____________

DATE: February 27th, 2019

INFORMATION: X

BACKGROUND:

APFC's Currency Management Program was established in 2017 in response to the Board's desire to explore strategies to hedge a portion of the Fund's foreign currency exposure. At this meeting, Adrian Lee & Partners will present their Currency Management Program, managed for APFC, to the Board.

Biographies of Presenters:

Adrian F Lee, MBA, MA – President, Chief Investment Officer
Adrian is a founding partner of Adrian Lee & Partners. Before founding this firm in 1999, Adrian was Managing Director of JP Morgan Investment Management's Currency Overlay group in London. Prior to developing and managing currency overlay at JP Morgan, Adrian was responsible for developing JP Morgan's tactical currency models in the Capital Markets Research Group in New York. Prior to joining JP Morgan, Adrian worked for Winklevoss and Associates (Consulting Actuaries) in Philadelphia and at the University of Pennsylvania as a lecturer in Statistics. Adrian is the author of several publications on global asset allocation and currency hedging; he was awarded the International Quantitative Group prize for outstanding research in 1990 for his work on currency. He was responsible for much of JP Morgan's and the industry's original research and development work in the area of currency overlay management and is recognized globally as one of the founders of currency overlay.
Education:
MA in Mathematical Economics & Statistics from Trinity College, Dublin
MBA in Finance & Actuarial Science from the Wharton School

Philip Lawson – Head of Portfolio Management
Philip is a member of the discretionary alpha team, the senior management team and he is a partner in the Firm. Philip joined Adrian Lee & Partners in 2000 as Trader before moving into the portfolio team in 2005. Philip was promoted to head of portfolio management in 2011 and is responsible for overseeing all client portfolios and servicing. Philip has also worked at Barclay's Global Investors as a senior asset allocation portfolio manager working in the client solutions group between 2007-2010. Prior to joining the buy side Philip worked in New York and London for Republic National Bank of NY and Credit Suisse focusing on FX options and sales. He has also worked in Tokyo for RNB managing the hedge fund sales desk.
Education:
Philip studied law at Trinity College in Dublin.

Presentation: Adrian Lee & Partners

APFC

APFC Currency Management Program

27th February 2019

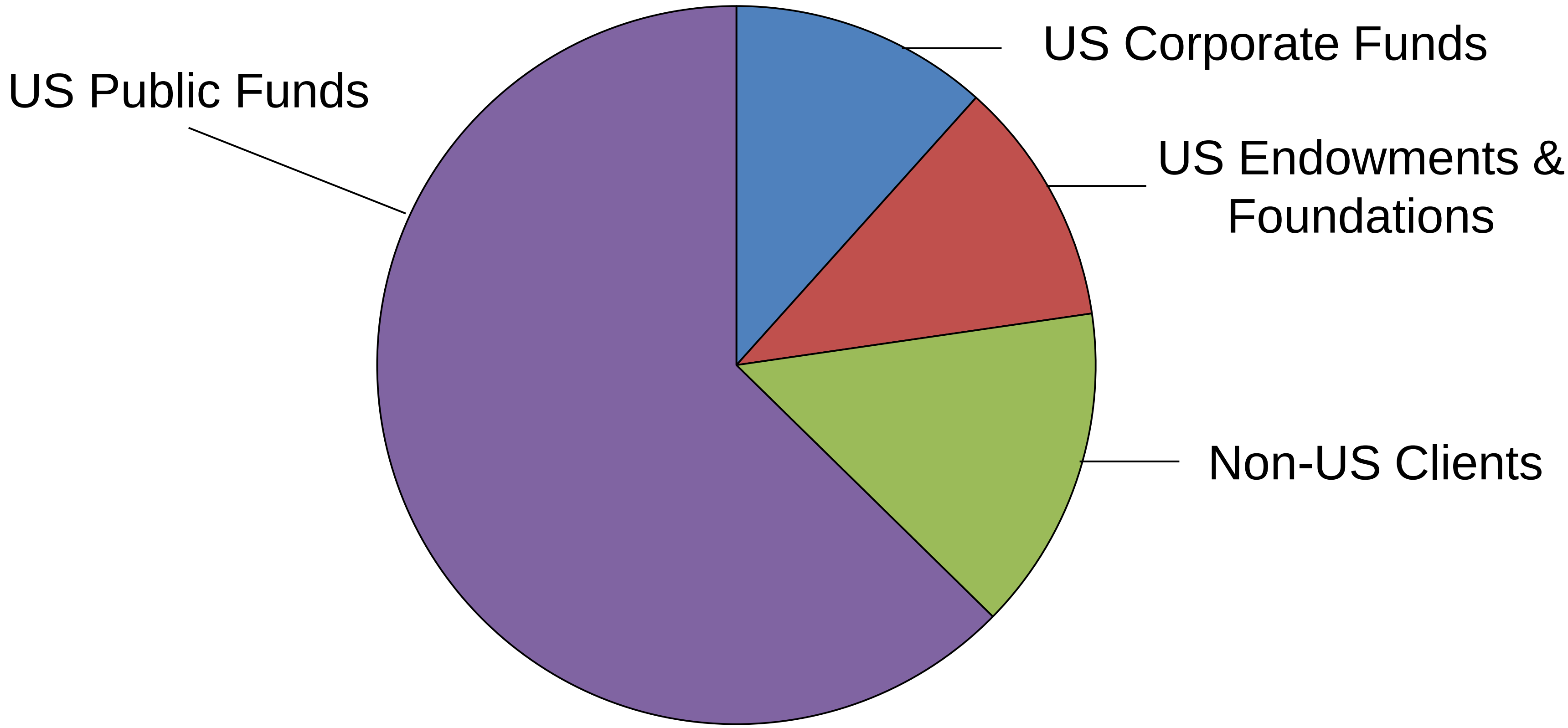
Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT

Contents

Adrian Lee & Partners –
Architects of Active Currency Management

- 100% employee-owned asset manager specializing in quantitative research-proven currency and international fixed income management:
  - Founding partners pioneered active currency management in 1989 at J. P. Morgan Investment
  - Adrian Lee & Partners was founded in 1999 to focus exclusively on active currency management
  - Team of 29 with an average of 15 years of experience in currency management
  - Majority of employees are equity owners
- Original architects of active currency management for institutional investors
- Continue to innovate our quantitative research proven process
- Manage approximately $14 billion at an average 2.5% active risk, with offices in London and Dublin for clients in the US, Europe and Australia
- All clients have separate accounts with a range of guidelines and risk management objectives. One process, one team
- Over 27 years of positive performance

AUM By Client Type



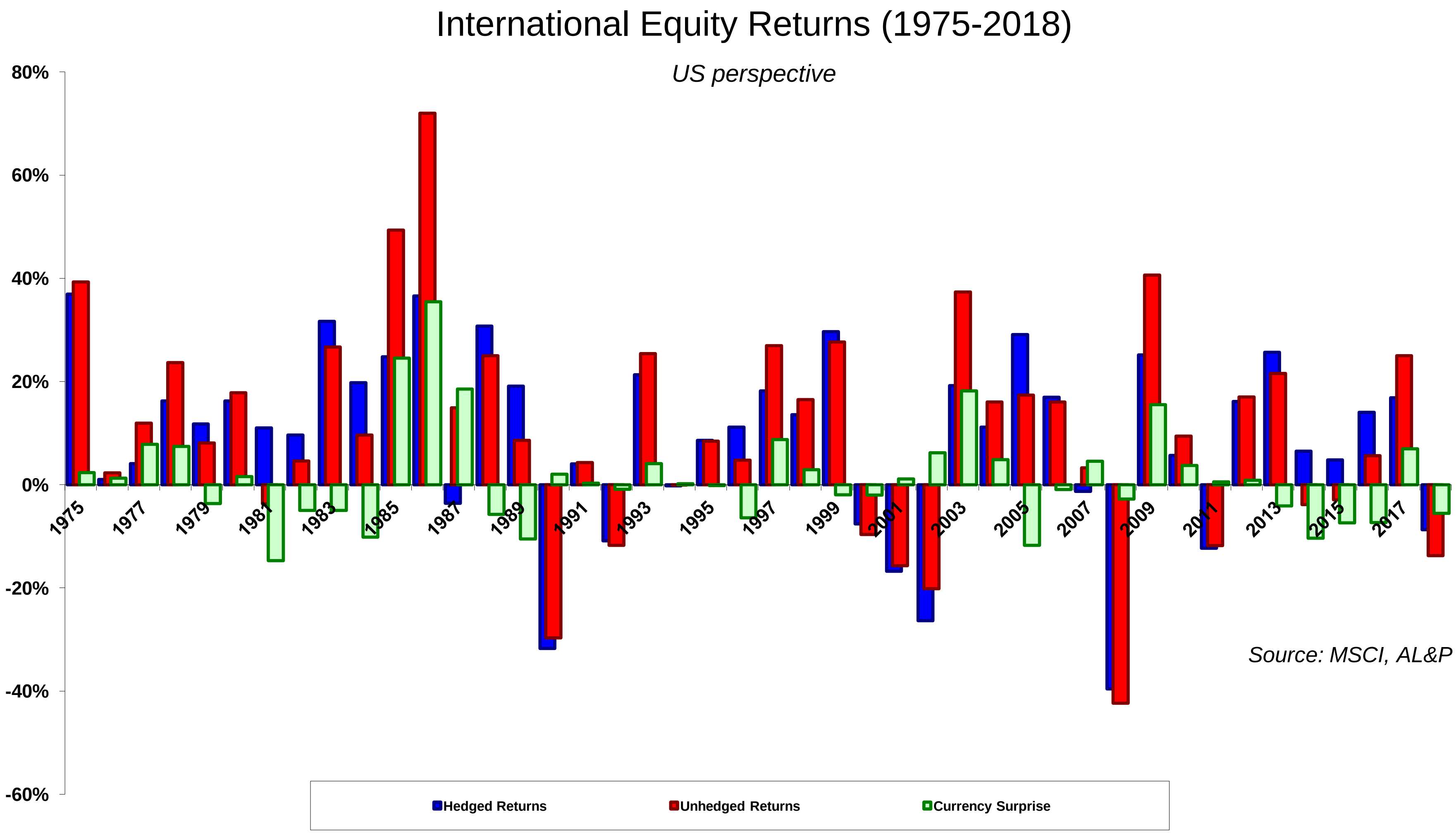
$14 billion Under Management

Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT

- Internationally diversified portfolios have an equal exposure to currency as to assets.
- Historically, currency risk is significant.
- Expected long-run return to passive currency is about half of the forward rate bias; this is the International Risk Premium.
- Currency return is not systematically related to asset return.
- Currency is driven by different economic fundamentals than those that drive assets.
- Currency markets are not efficient, and therefore can be managed actively to add long term return to international portfolios.
- Investors should separately manage these exposures to add return and manage risk.

International returns significantly impacted by currency

Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT



In the long run, currency has virtually no return, high risk, and low correlation with equity

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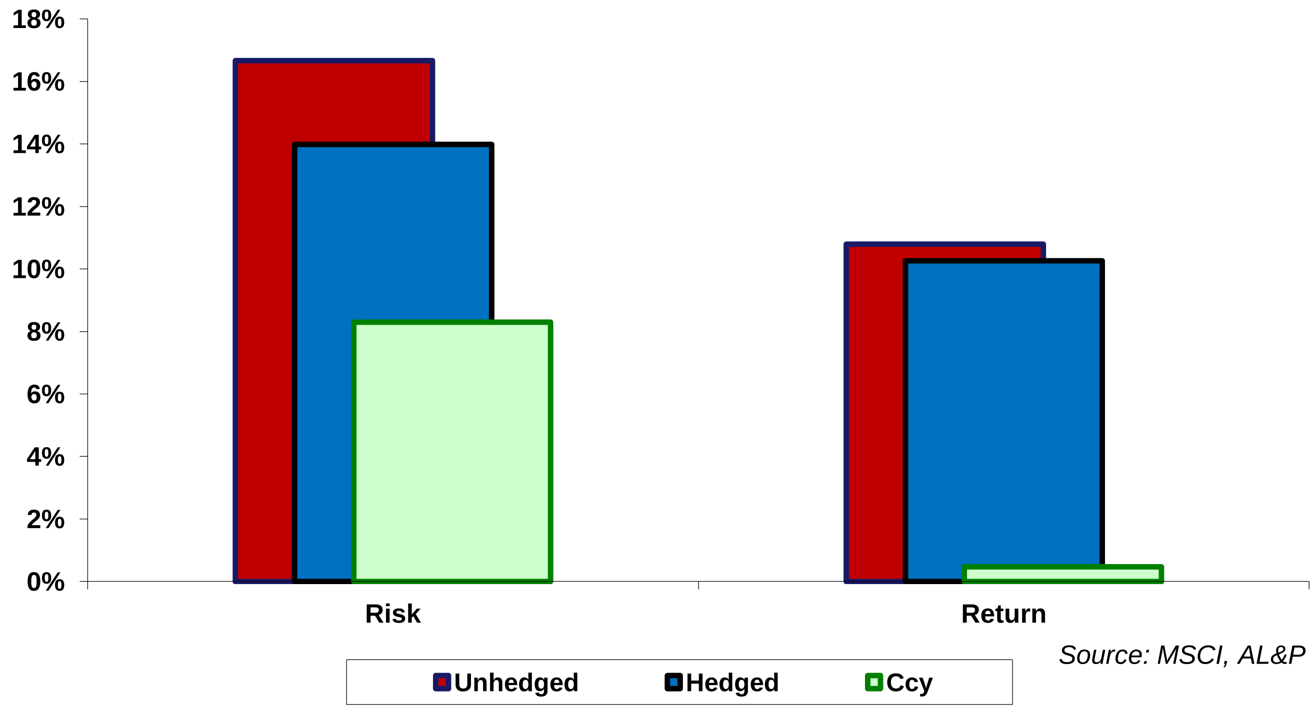
ACTIVE ASSET AND CURRENCY MANAGEMENT

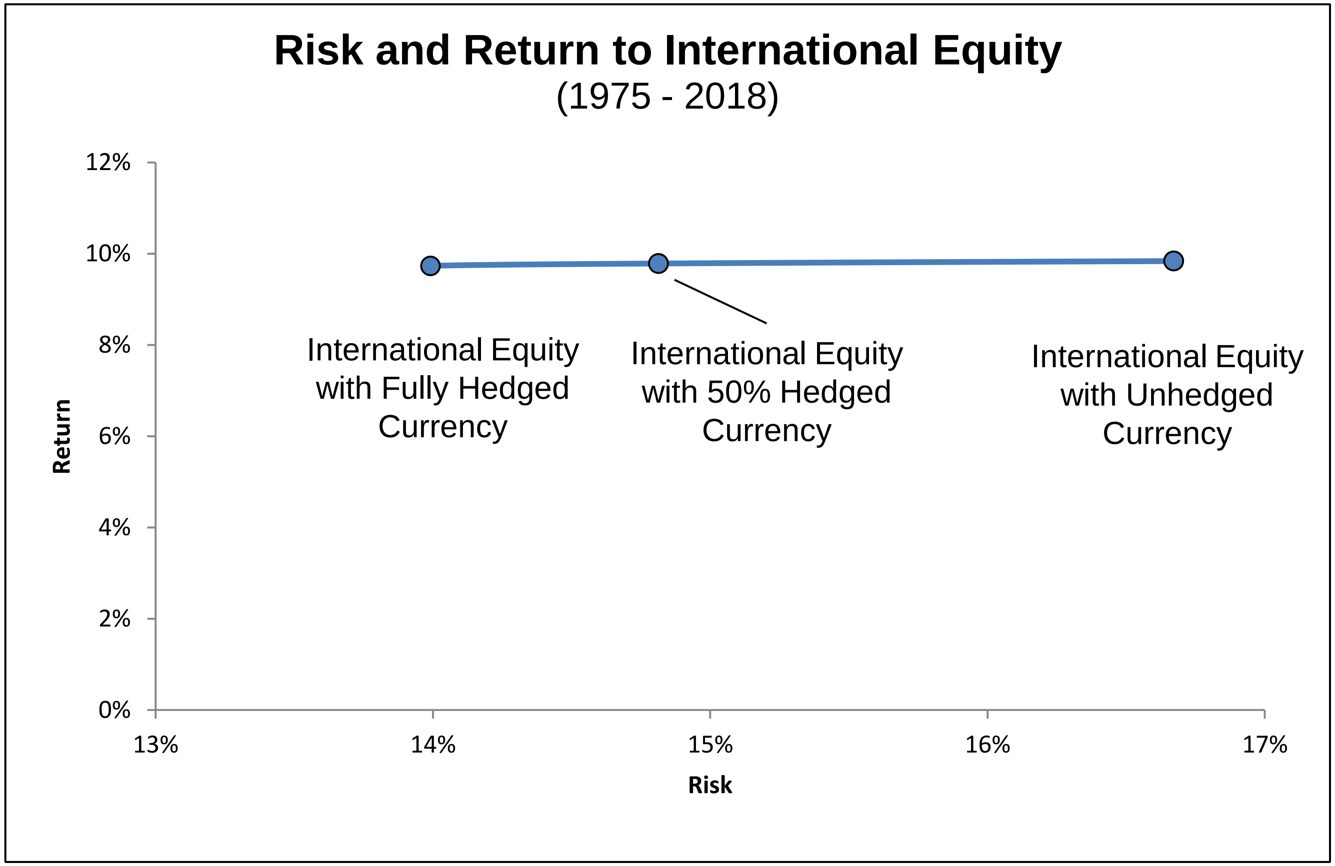
International Equity Risk and Return (1975-2018)



Source: MSCI, AL&P

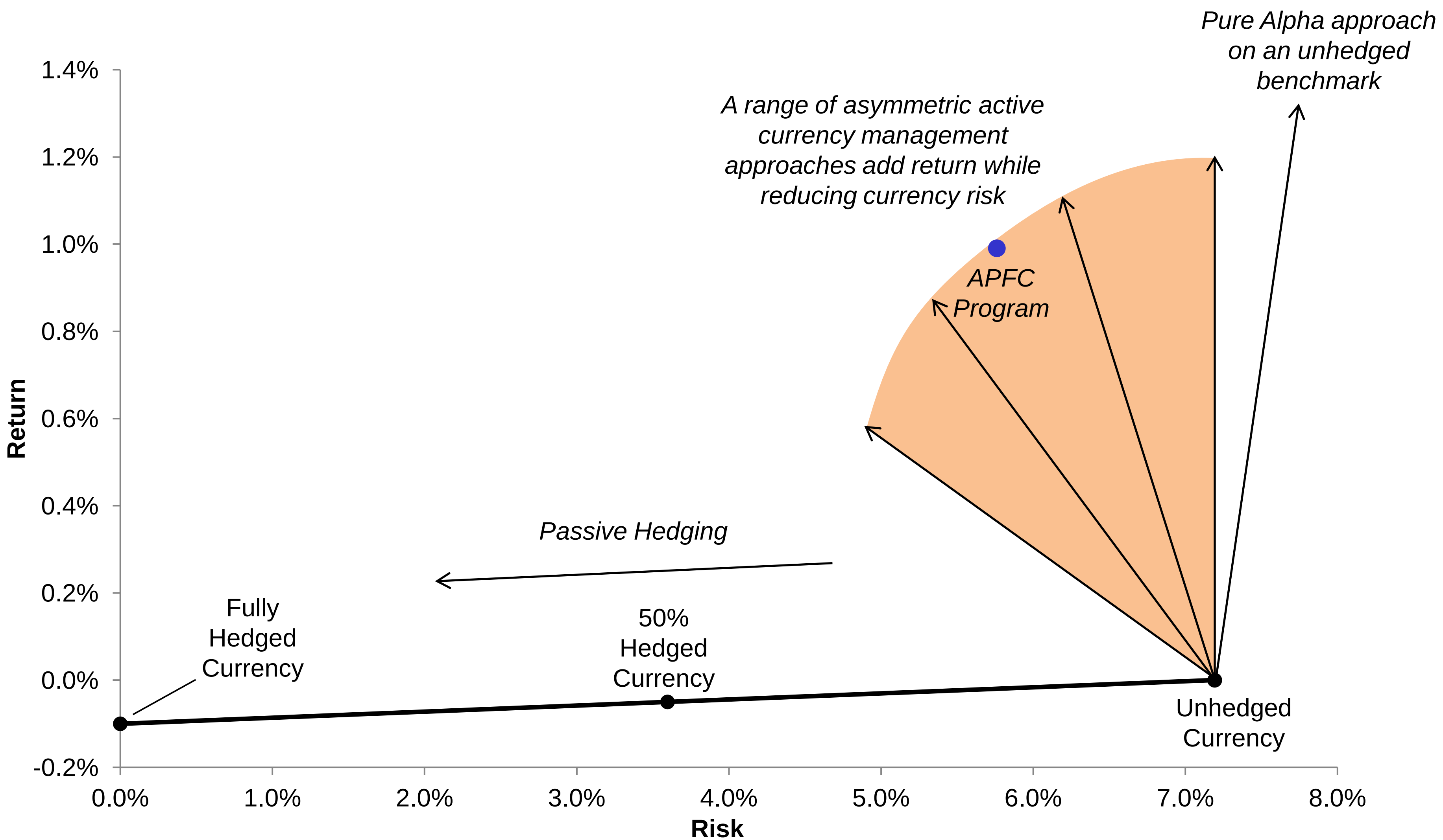
- Hedged equity and currency correlation: 0.05

Risk and Return of International Equity



Source: MSCI, AL&P

Effect of active and passive currency management



APFC Currency Portfolio – 31st Jan 2019

Currency	Assets (%)	Overlay (%)	Net (%)
US Dollars	0.00	0.07	0.07
Japanese Yen	22.35	-1.12	21.22
Euro	28.61	-2.08	26.52
British Pound	15.76	1.60	17.36
Swiss Franc	7.74	-4.44	3.30
Canadian Dollar	8.97	2.56	11.53
Australian Dollar	6.46	3.89	10.35
Swedish Krona	2.40	-2.35	0.05
Norwegian Krone	0.68	3.76	4.44
New Zealand Dollar	0.21	-0.61	-0.40
Singapore Dollar	1.25	1.23	2.48
Israeli Shekel	0.50	-2.45	-1.95
Danish Krone	1.58	0.00	1.58
Hong Kong Dollar	3.51	0.00	3.51
Total	100		
Annual Risk	7.53	0.84	7.67

How Currency Overlay Works

- Separate account set up, no funding necessary
- Trade forward exchange contracts with counterparty in name of client
- Cash flow at settlement (e.g. 6 months, tailored dates)
- Any strategic benchmark possible e.g. 0%, 50%,100% hedge
- Any level of active management can be combined with any benchmark – risk control gratis
- Guidelines can be tailored to allow symmetric or asymmetric alpha and beta patterns
- Weekly reporting of positions, performance and expected cash flow

Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT

Our investment philosophy relies on 3 premises:

- Fundamental economic factors determine currency equilibrium over time
- Research-driven valuation analysis identifies departures from this equilibrium
- Experienced investment management can exploit these deviations to add return over time

Quantitative research with disciplined methodology is the key to capturing this opportunity

Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT

- Process only uses proven repeatable factors
- We research and investigate strategies that make sense and have worked consistently over time and can be expected to work in the future
- We place these hurdles of fundamental logic, persistent evidence and rational expectation in front of each factor in a linear tactical framework

Our process is balanced and looks to the future as well as the past

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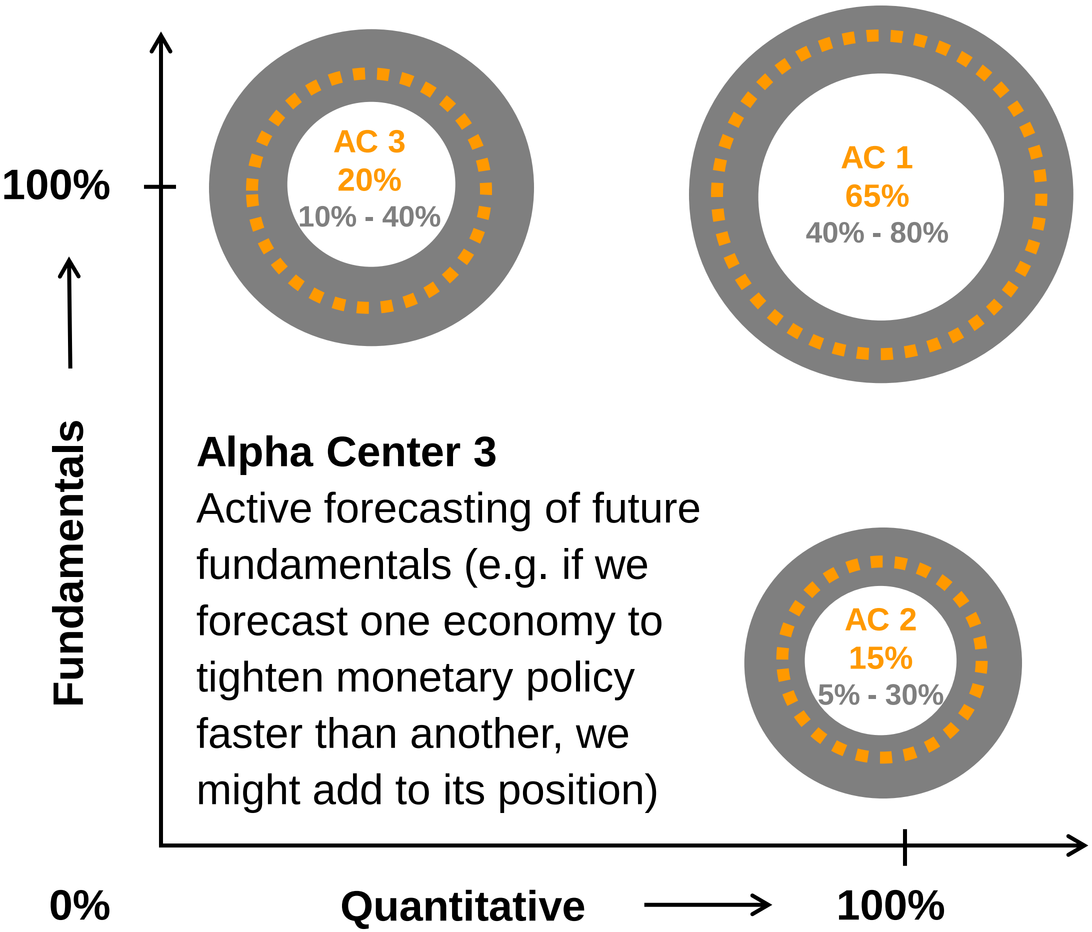
ACTIVE ASSET AND CURRENCY MANAGEMENT



Alpha Center 1
Observed differences in today's fundamentals (e.g. favor higher yielding currencies)

Alpha Center 3
Active forecasting of future fundamentals (e.g. if we forecast one economy to tighten monetary policy faster than another, we might add to its position)

Alpha Center 2
Observed recent trends in currency (e.g. favor a currency that has appreciated gradually over last 1 to 3 months)

Risk control is effected through

Ex Ante Risk Control:

- Diversification: in excess of 400 factors are utilized
- Individual and regional constraints are used
- Extensive testing and sensitivity analysis are conducted
- Positions reduced as implied vol increases

Ex Post Risk Mitigation:

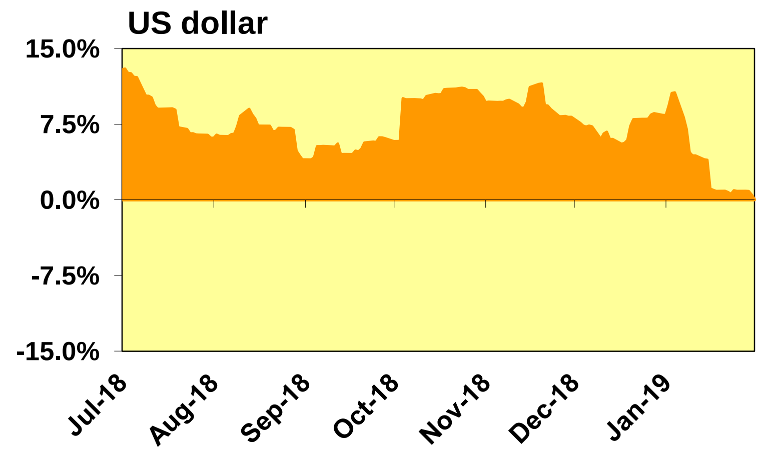
- Technical signal acts as stop loss
- Strategy members employ stop losses

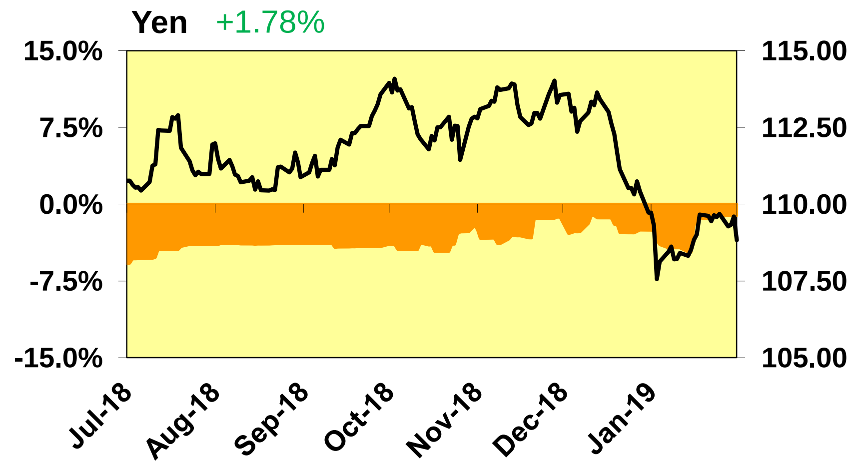
Summary of APFC Investment Guidelines

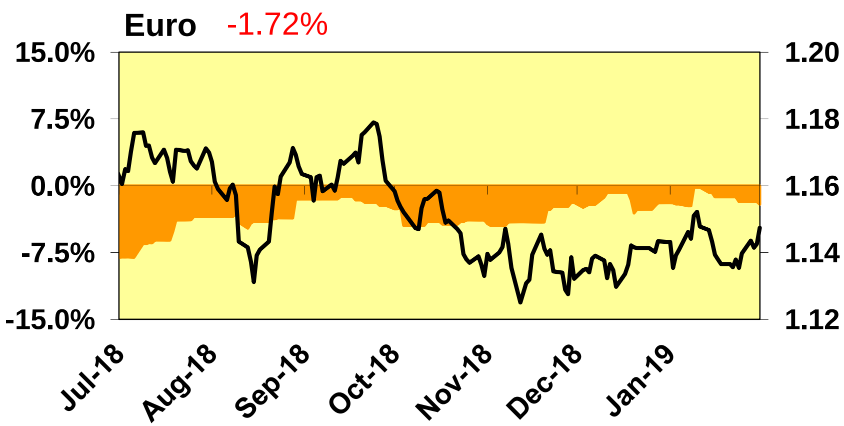
Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT

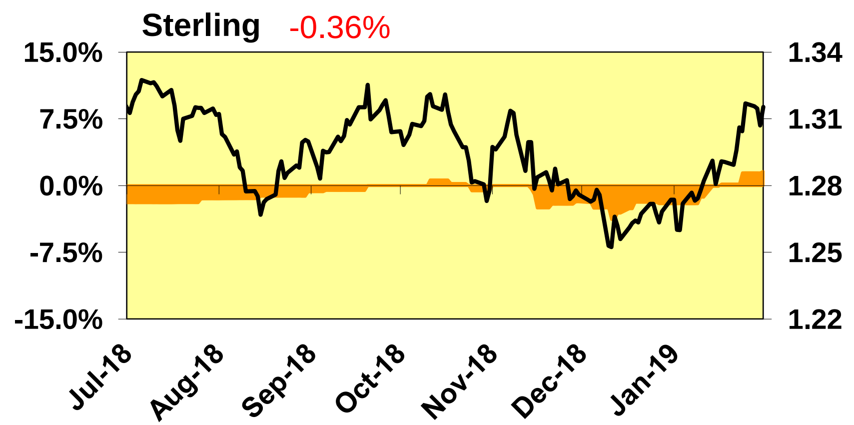
- The objective is to add value over the benchmark by 100 basis points per annum over a 3 to 5 year period. The annual ex post active risk relative to the benchmark is expected to average approximately 175 to 200 basis points
- The Benchmark return is the currency component of return on the unhedged MSCI EAFE plus Canada index
- Permitted instruments are foreign exchange spot and forward contracts of currencies in the MSCI EAFE plus Canada Index, as available
- As a general rule, net shorts are not permitted, however, limited net shorts of 2% are permitted in the following currencies: Israeli Shekel, Norwegian Krone, New Zealand Dollar, Singapore Dollar.
- Cross hedging is allowed.
- The sum of all long positions must not exceed 100%.

APFC - Active Currency Positions









Deviation (LHS)

Daily spot rate (RHS – market convention)

APFC - Active Currency Positions

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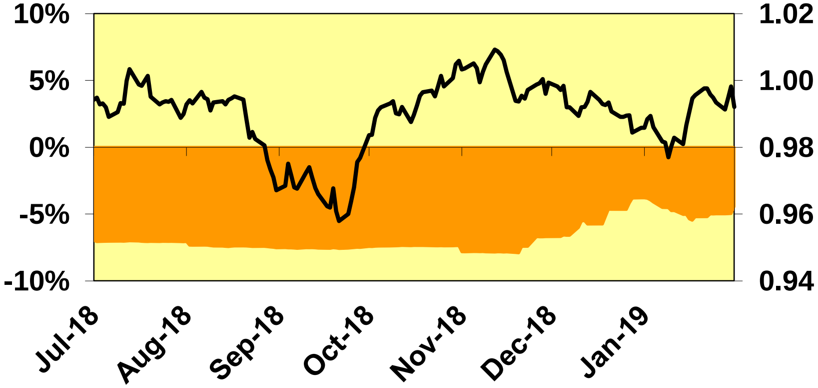
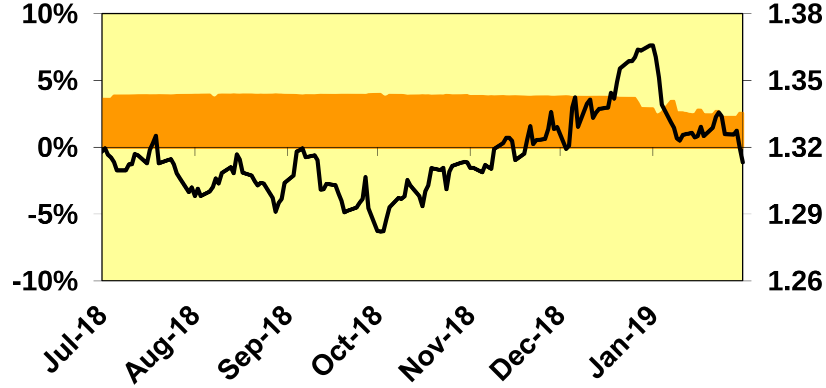
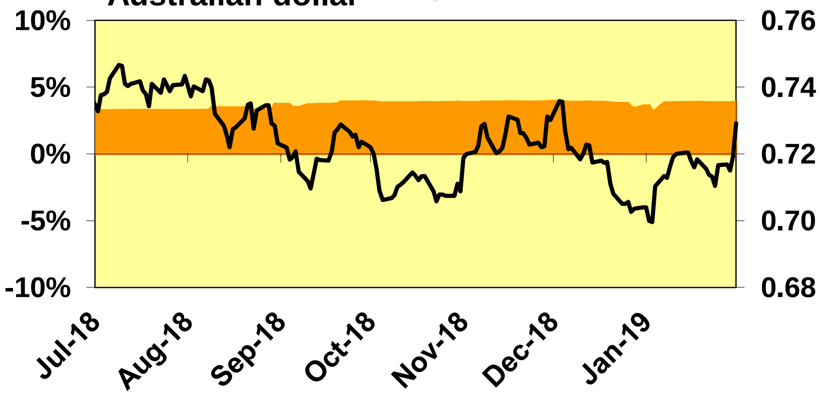
Swiss franc +0.09%



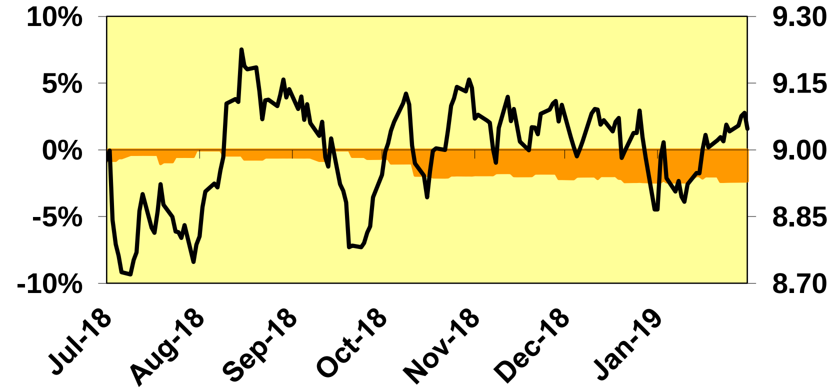
Canadian dollar +0.16%



Australian dollar -1.31%



Swedish krona -1.12%



Deviation (LHS)
Daily spot rate (RHS – market convention)

Performance of APFC Currency Program

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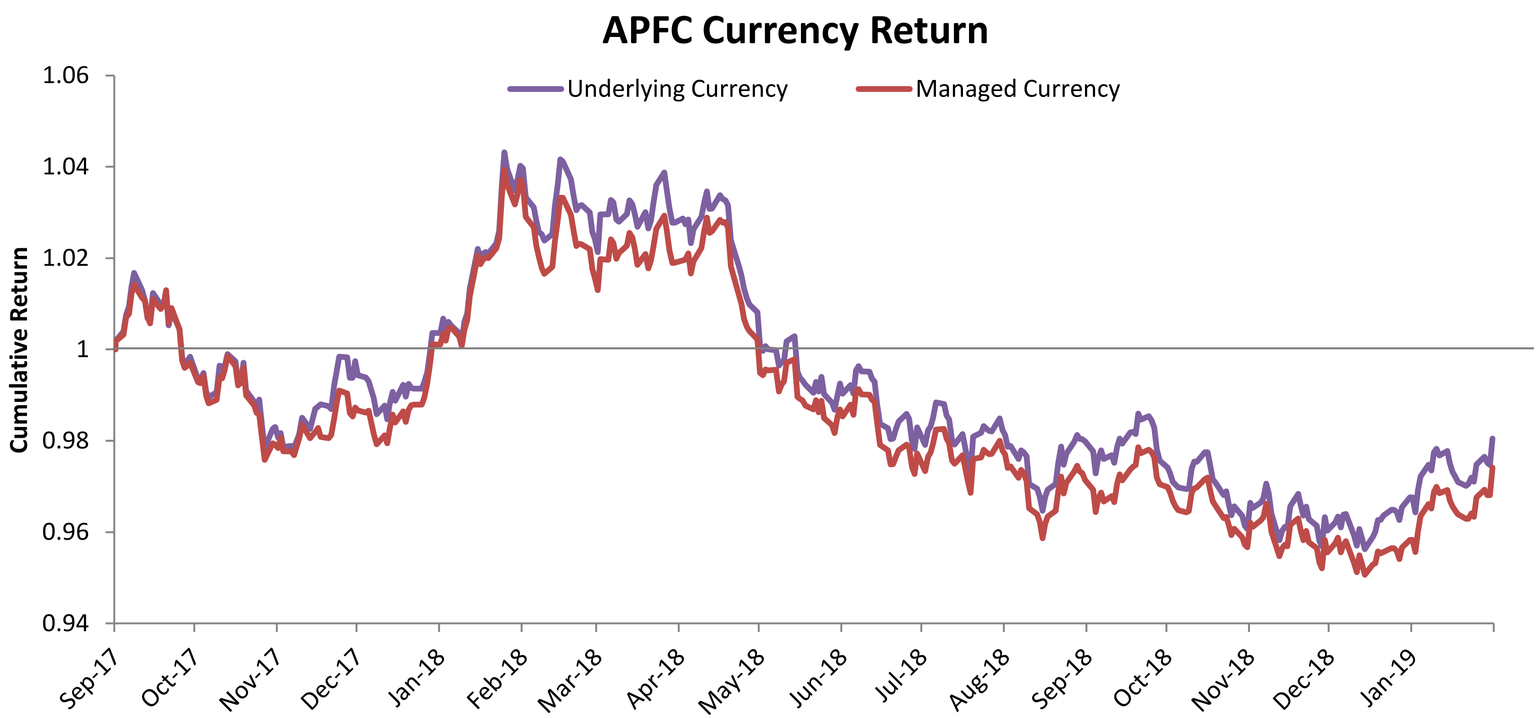

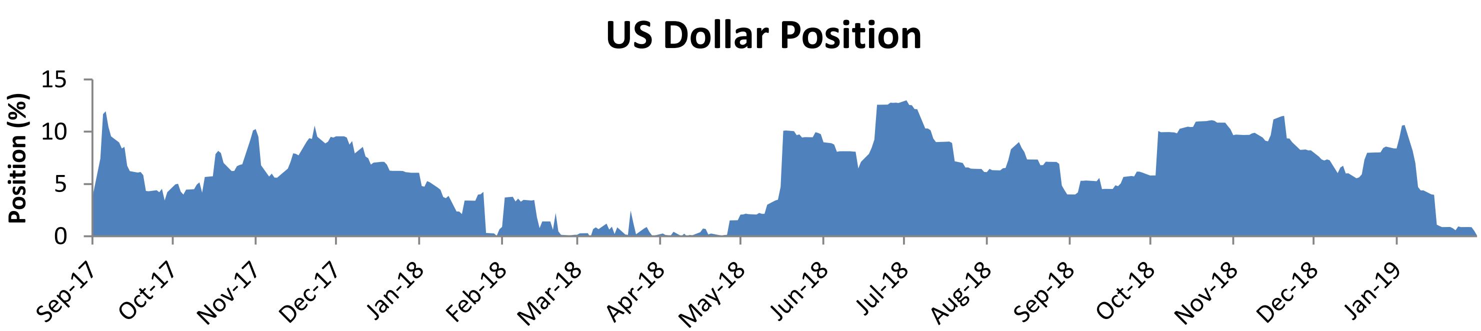

APFC - Performance Summary

APFC Performance Summary *from 01-Sep-2017 to 31-Jan-2019*

Period	Underlying Portfolio Currency Return (1)	B'mark Hedging Currency Return (2)	Passive Return (3) =(1)+(2)	Overlay Return (4)	Managed Currency Return (5) =(1)+(4)	Excess Currency Return (6) =(5)-(3)
September 2017	-0.16	0.00	-0.16	-0.14	-0.29	-0.14
October 2017	-1.55	0.00	-1.55	-0.26	-1.80	-0.25
November 2017	1.47	0.00	1.47	-0.63	0.83	-0.63
December 2017	0.62	0.00	0.62	0.77	1.40	0.78
January 2018	3.65	0.00	3.65	-0.05	3.60	-0.05
February 2018	-1.55	0.00	-1.55	-0.54	-2.08	-0.53
March 2018	0.35	0.00	0.35	-0.02	0.33	-0.02
April 2018	-1.91	0.00	-1.91	0.26	-1.65	0.26
May 2018	-1.55	0.00	-1.55	0.02	-1.53	0.02
June 2018	-0.96	0.00	-0.96	-0.02	-0.98	-0.02
July 2018	-0.07	0.00	-0.07	0.13	0.06	0.14
August 2018	-0.24	0.00	-0.24	-0.42	-0.66	-0.42
September 2018	-0.43	0.00	-0.43	0.34	-0.09	0.33
October 2018	-1.54	0.00	-1.54	0.12	-1.42	0.12
November 2018	-0.03	0.00	-0.03	-0.09	-0.12	-0.09
December 2018	0.76	0.00	0.76	-0.46	0.29	-0.47
January 2019	1.33	0.00	1.33	0.31	1.65	0.32
Compound returns						
Last 3 Months	2.07	0.00	2.07	-0.24	1.82	-0.25
Year (July 2018) to Date	-0.25	0.00	-0.25	-0.07	-0.32	-0.07
Calendar Year to Date	1.33	0.00	1.33	0.31	1.65	0.32
One Year	-5.74	0.00	-5.74	-0.37	-6.08	-0.34
Since Inception	-1.38	0.00	-1.38	-0.47	-1.83	-0.45
Annualized standard deviation of return	4.94		4.94	1.24	5.07	1.24

APFC - Performance by Currency (Fiscal YTD 2018)

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ACTIVE ASSET AND CURRENCY MANAGEMENT

APFC Performance Attribution *from 01-Jul-2018 to 31-Jan-2019*

	Asset 30-Jun	B'mrk	Dev	Asset 31-Jan	B'mrk	Dev	Spot Rate 30-Jun	One Month 30-Jun	Spot Rate 31-Jan	Currency Return	Underlying Portfolio Currency Return (1)	B'mark Hedging Currency Return (2)	Passive Return (3) =(1)+(2)	Overlay Return (4)	Managed Currency Return (5) =(1)+(4)	Excess Currency Return (6) =(5)-(3)	Code
USD	0.00	0.00	12.75	0.00	0.00	0.07	1.0000	1.0000	1.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	USD
JPY	22.40	22.40	-5.81	22.35	22.35	-1.12	110.76	110.57	108.83	1.78	0.44	0.00	0.44	0.06	0.51	0.06	JPY
EUR	29.77	29.77	-8.10	28.61	28.61	-2.08	1.1676	1.1698	1.1474	-1.72	-0.51	0.00	-0.51	0.07	-0.43	0.07	EUR
GBP	16.46	16.46	-1.95	15.76	15.76	1.60	1.3202	1.3219	1.3154	-0.36	-0.08	0.00	-0.08	0.03	-0.04	0.03	GBP
CHF	6.83	6.83	-6.78	7.74	7.74	-4.44	0.9930	0.9908	0.9921	0.09	0.02	0.00	0.02	0.12	0.14	0.12	CHF
CAD	8.65	8.65	3.63	8.97	8.97	2.56	1.3154	1.3149	1.3133	0.16	0.02	0.00	0.02	-0.04	-0.02	-0.04	CAD
AUD	6.09	6.09	3.28	6.46	6.46	3.89	0.7388	0.7389	0.7292	-1.31	-0.06	0.00	-0.06	-0.06	-0.12	-0.06	AUD
SEK	2.33	2.33	-0.79	2.40	2.40	-2.35	8.9460	8.9282	9.0472	-1.12	-0.03	0.00	-0.03	0.01	-0.02	0.01	SEK
NOK	0.64	0.64	4.12	0.68	0.68	3.76	8.1504	8.1417	8.4235	-3.24	-0.02	0.00	-0.02	-0.17	-0.19	-0.17	NOK
NZD	0.16	0.16	3.66	0.21	0.21	-0.61	0.6770	0.6771	0.6936	2.44	0.01	0.00	0.01	-0.15	-0.14	-0.15	NZD
SGD	1.21	1.21	-2.64	1.25	1.25	1.23	1.3635	1.3628	1.3446	1.40	0.02	0.00	0.02	0.02	0.04	0.02	SGD
ILS	0.45	0.45	-1.33	0.50	0.50	-2.45	3.6606	3.6536	3.6332	0.75	0.00	0.00	0.00	0.03	0.03	0.03	ILS
	1,980,830,555	100.00	0.04	2,026,573,767	100.00	0.08					-0.25	0.00	-0.25	-0.07	-0.32	-0.07	

APFC - Performance by Factor (Fiscal YTD 2018)

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ACTIVE ASSET AND CURRENCY MANAGEMENT

APFC Factor Attribution ***from 01-Jul-2018 to 31-Jan-2019***

	AC1										AC2	AC3	AC1+2+3	Code
	Real Cash	Cash Slope	Bond	Vol Prot	Trade	PPP	Comm	ToT	RA	AC1 Total	Technicals	FMD	Total	
JPY	0.00	0.00	0.00	-0.01	-0.02	0.01	0.00	0.00	0.06	0.02	-0.01	0.05	0.06	JPY
EUR	0.03	0.00	0.07	-0.01	-0.02	-0.10	0.06	0.00	0.03	0.06	-0.01	0.03	0.07	EUR
GBP	0.00	0.00	0.02	0.07	-0.05	0.00	0.00	0.00	0.00	0.03	0.01	-0.01	0.03	GBP
CHF	0.01	0.00	0.02	0.01	0.03	0.02	0.00	0.00	0.01	0.10	-0.02	0.04	0.12	CHF
CAD	0.00	0.00	-0.01	-0.01	0.00	0.00	-0.02	0.00	-0.02	-0.06	0.00	0.02	-0.04	CAD
AUD	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.02	-0.04	-0.01	-0.01	-0.06	AUD
SEK	0.02	0.00	0.08	0.00	0.04	-0.09	0.00	0.00	0.00	0.06	-0.01	-0.04	0.01	SEK
NOK	0.00	0.00	-0.02	-0.01	-0.04	-0.06	-0.05	0.00	-0.02	-0.21	0.00	0.04	-0.17	NOK
NZD	0.03	0.02	0.03	-0.03	-0.04	-0.07	-0.06	0.01	-0.01	-0.13	0.00	-0.02	-0.15	NZD
SGD	0.01	0.00	0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.02	SGD
ILS	0.02	0.01	0.00	0.02	0.04	-0.05	0.00	0.00	0.00	0.04	0.00	-0.01	0.03	ILS
	0.11	0.04	0.20	0.01	-0.11	-0.34	-0.07	0.00	0.03	-0.13	-0.02	0.08	-0.07	

APFC - Currency Mix

APFC on 31-Jan-2019

Currency	Asset (Base) 02-Jan-19	Asset (%) 02-Jan-19	Overlay (%)	Overlay G/L (%)	Net (%)	Bmk (%) 02-Jan-19	Client Target Dev (%)	Deviation (%)
US Dollars	0.00	0.00	0.07	0.31	0.07	0.00	0.22	0.07
Japanese Yen	452,844,353.55	22.35	-1.12	0.00	21.22	22.35	-1.23	-1.12
Euro	579,701,820.24	28.61	-2.08	0.00	26.52	28.61	-2.09	-2.08
British Pound	319,308,229.30	15.76	1.60	0.00	17.36	15.76	1.60	1.60
Swiss Franc	156,873,304.27	7.74	-4.44	0.00	3.30	7.74	-4.44	-4.44
Canadian Dollar	181,785,479.07	8.97	2.56	0.00	11.53	8.97	2.57	2.56
Australian Dollar	130,863,651.09	6.46	3.89	0.00	10.35	6.46	3.77	3.89
Swedish Krona	48,546,660.01	2.40	-2.35	0.00	0.05	2.40	-2.35	-2.35
Norwegian Krone	13,719,344.73	0.68	3.76	0.00	4.44	0.68	3.77	3.76
New Zealand Dollar	4,356,782.16	0.21	-0.61	0.00	-0.40	0.21	-0.61	-0.61
Singapore Dollar	25,302,622.97	1.25	1.23	0.00	2.48	1.25	1.23	1.23
Israeli Shekel	10,110,016.04	0.50	-2.45	0.00	-1.95	0.50	-2.45	-2.45
Danish Krone	32,021,223.58	1.58	0.00	0.00	1.58	1.58	0.00	0.00
Hong Kong Dollar	71,140,280.38	3.51	0.00	0.00	3.51	3.51	0.00	0.00
Total	2,026,573,767.41	100.00	0.08	0.31	100.08	100.00	0.00	0.08

Annual Risk		7.53	0.84		7.67	7.53		0.84
Quarter Risk		3.76	0.42		3.84	3.76		0.42
Month Risk		2.17	0.24		2.22	2.17		0.24

Potential Evolution of the Program: Adding Emerging Market Currencies

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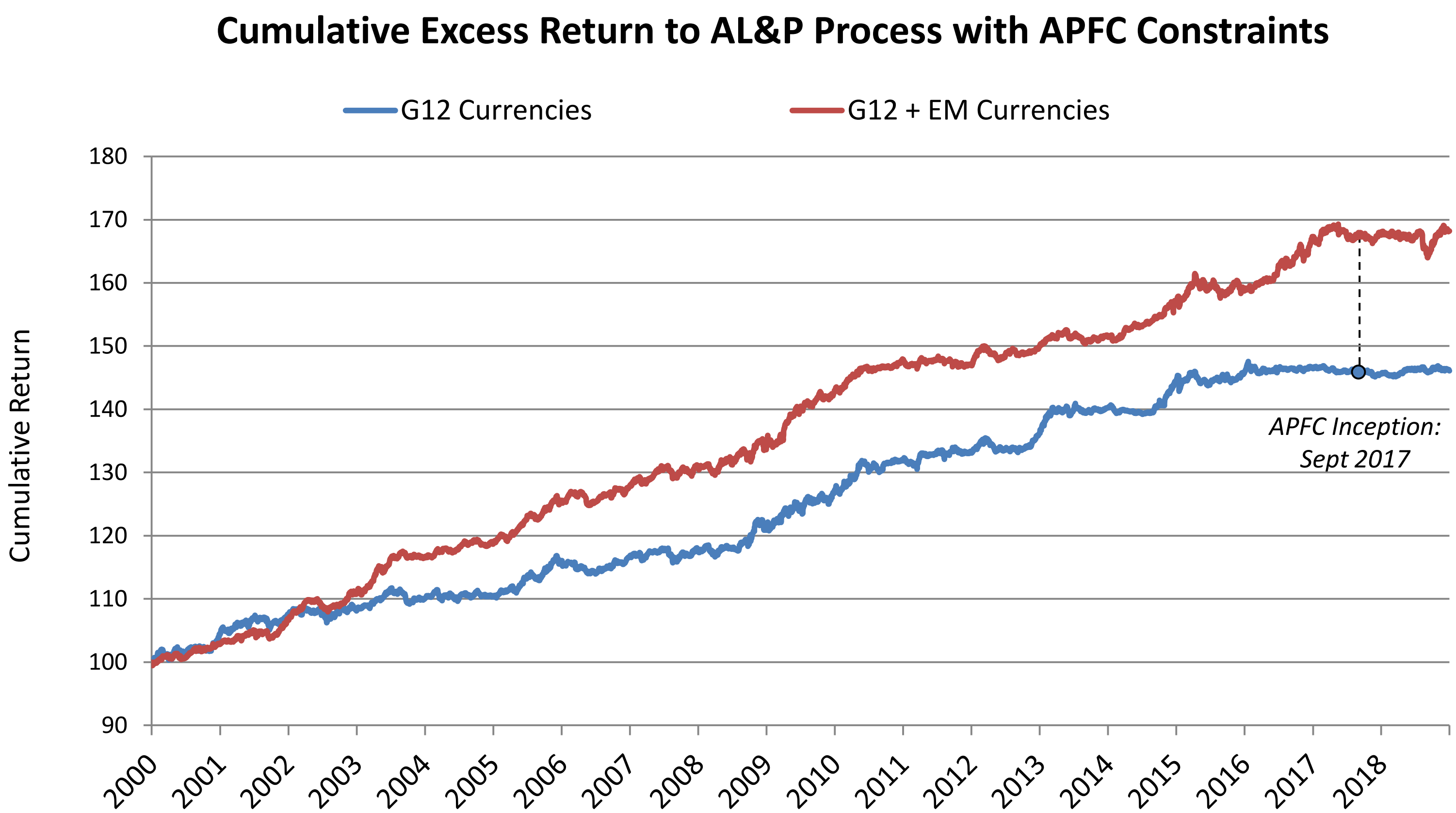
ACTIVE ASSET AND CURRENCY MANAGEMENT

- Adding emerging market currencies is a logical improvement which can be expected to enhance the performance of the program over time



Summary Statistics (2000 – 2018)

Ann. Ret (%)	Ann. Risk (%)
2.7	1.9
2.0	1.9

Global Economic Outlook

	GDP GROWTH FORECASTS			MONETARY POLICY FORECASTS		
	2018 F	**2019 F**	**2020 F**	**Current Rate**	**2019 F**	**2020 F**
US	3.00%	2.40%	1.80%	2.50%	3.00%	3.00%
EUROZONE	1.70%	1.70%	1.50%	-0.40%	-0.15%	0.50%
JAPAN	0.80%	1.10%	0.80%	-0.10%	0.00%	0.00%
UK	1.20%	1.80%	1.50%	0.75%	1.25%	1.75%
CANADA	2.20%	1.80%	1.80%	1.75%	2.25%	2.75%
AUSTRALIA	3.00%	3.00%	2.80%	1.50%	2.00%	2.50%
SWITZERLAND	2.80%	1.70%	1.70%	-0.75%	-0.50%	-0.25%
SWEDEN	2.40%	2.20%	2.00%	-0.25%	0.25%	0.75%
NORWAY	2.30%	2.30%	2.30%	0.75%	1.50%	2.00%
NEW ZEALAND	2.70%	2.70%	2.70%	1.75%	2.00%	2.50%
G10	**2.20%**	**1.96%**	**1.59%**			
POLAND	5.00%	3.70%	3.00%	1.50%	2.00%	2.50%
CZECH	3.40%	3.20%	2.70%	1.75%	2.50%	2.75%
HUNGARY	4.50%	3.20%	2.80%	0.90%	1.40%	1.75%
RUSSIA	1.70%	1.50%	1.70%	7.75%	8.00%	7.00%
SOUTH AFRICA	0.70%	1.30%	1.70%	6.75%	7.00%	7.00%
TURKEY	3.50%	0.60%	3.00%	24.00%	20.00%	15.00%
ISRAEL	3.60%	3.20%	3.40%	0.25%	0.75%	1.50%
EMEA	**2.70%**	**1.91%**	**2.14%**			
BRAZIL	1.30%	2.60%	2.60%	6.50%	7.50%	8.00%
MEXICO	2.10%	2.20%	2.00%	8.25%	7.50%	7.00%
CHILE	4.00%	3.60%	3.20%	3.00%	3.75%	4.00%
COLOMBIA	2.60%	3.50%	3.30%	4.25%	4.75%	5.25%
PERU	3.80%	3.90%	3.70%	2.75%	3.50%	4.00%
LATAM	**2.11%**	**2.75%**	**2.60%**			
CHINA	6.60%	6.30%	6.00%	4.35%	4.35%	4.35%
INDIA	6.70%	7.50%	7.50%	6.50%	6.00%	6.00%
TAIWAN	2.50%	2.20%	2.20%	1.38%	1.50%	1.75%
SOUTH KOREA	2.60%	2.60%	2.50%	1.75%	2.00%	2.00%
SINGAPORE	3.30%	2.40%	2.40%	-	-	-
MALAYSIA	4.80%	4.80%	4.80%	3.25%	3.50%	3.75%
PHILIPPINES	6.30%	6.70%	6.70%	4.75%	5.00%	5.00%
INDONESIA	5.20%	5.00%	5.00%	6.00%	6.50%	6.00%
THAILAND	4.20%	3.80%	3.80%	1.75%	2.00%	2.00%
ASIA	**5.85%**	**5.84%**	**5.70%**			
EM	**4.77%**	**4.80%**	**4.70%**			
WORLD	**3.17%**	**3.06%**	**2.90%**			

NB: F - GEO Forecast

FX FORECASTS (vs. USD)			
	Spot 29th Jan	6m Forecast	Currency Return
G10			
US DOLLAR	-	-	
EURO	1.14	1.16	1.4%
JAPANESE YEN	109.33	113.00	-3.2%
BRITISH POUND STERLING	1.31	1.30	-0.8%
CANADIAN DOLLAR	1.33	1.29	3.2%
AUSTRALIAN DOLLAR	0.71	0.75	5.5%
SWISS FRANC	0.99	1.01	-1.5%
SWEDISH KRONA	9.08	8.75	3.7%
NORWEGIAN KRONE	8.51	8.09	5.2%
NEW ZEALAND DOLLAR	0.68	0.69	1.0%
EMEA			
POLISH ZLOTY	3.76	3.70	1.8%
CZECH KORUNA	22.58	21.93	2.9%
HUNGARIAN FORINT	277.89	277.00	0.3%
RUSSIAN ROUBLE	66.07	62.60	5.5%
SOUTH AFRICAN RAND	13.62	14.30	-4.8%
TURKISH LIRA	5.31	5.65	-6.0%
ISRAELI SHEKEL	3.68	3.63	1.3%
LATAM			
BRAZILIAN REAL	3.73	3.49	6.9%
MEXICAN PESO	19.01	18.83	0.9%
CHILEAN PESO	668.63	644.00	3.8%
COLOMBIAN PESO	3,160.73	3,010.00	5.0%
PERUVIAN SOL	3.36	3.27	2.9%
ASIA			
CHINESE YUAN	6.73	6.82	-1.3%
INDIAN RUPEE	71.11	71.16	-0.1%
TAIWANESE DOLLAR	30.81	30.45	1.2%
KOREAN WON	1,116.50	1,112.00	0.4%
SINGAPORE DOLLAR	1.35	1.36	-0.7%
MALAYSIAN RINGGIT	4.11	4.06	1.3%
PHILIPPINE PESO	52.44	52.56	-0.2%
INDONESIAN RUPIAH	14,095.00	14,500.00	-2.8%
THAI BAHT	31.53	32.58	-3.2%

Appendix

Appendix: Approved Counterparties List

As at 31st December 2018	Long Term Rating*		Short Term Rating**	
	Moody's	S&P	Moody's	S&P
HSBC	Aa3 (stable)	AA- (stable)	P1	A1+
JPMorgan Chase Bank	Aa2 (stable)	A+ (stable)	P1	A1
National Australia Bank Ltd	Aa3 (stable)	AA- (negative)	P1	A1+
Royal Bank of Canada* **	A2 (stable)	AA- (stable)	P1	A1+
State Street Bank & Trust	Aa3 (stable)	AA- (stable)	P1	A1+
Toronto Dominion Bank	Aa3 (stable)	AA- (stable)	P1	A1+
Westpac Banking Corp.	Aa3 (stable)	AA- (negative)	P1	A1+
Australia and New Zealand Banking Group Ltd.	Aa3 (stable)	AA- (negative)	P1	A1+

*** AL&P minimum long-term rating of A1 (Moody’s) and A+ (S&P)**
**** AL&P minimum short-term rating of P1 (Moody’s) and A1 (S&P)**
***** On September 24th, Moody's downgraded RBC long-term credit rating below our internal credit rating threshold**

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Performance returns are shown exclusive of any fees payable to the Investment Manager.

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Liquidity Overlay Strategies Memo

SUBJECT:	Liquidity Overlay Strategies NISA Investment Advisors	ACTION:	___________
DATE:	February 28th, 2019	INFORMATION:	X

BACKGROUND:
NISA, a third party manager hired to develop a Liquidity Overlay Program for APFC, will present to the Board and cover in detail the tools they use to implement the Overlay Program.

Biographies of Attendees:

Gregory J. Yess, CPA – Managing Director, Client Services; Chief Operating Officer
Greg is managing director, chief operating officer, and chair of NISA's Management Committee. Greg is responsible for the day-to-day oversight of many of NISA's operating departments including Client Services, Operations, Technology, Risk Management, and Administration. He also works with various departments to develop new products and growth initiatives. Prior to joining NISA in 2000, Greg spent three years as the COO and CFO of Tulsa-based Saint Francis Health System. From 1991 to 1997, he co-founded and directed Weiss, Yess and Co. (currently CBIZ), a business and financial advisory firm. From 1982 to 1991, Greg worked for Arthur Andersen LLP as a senior manager providing business consulting and tax services.
Education:
BS in Accounting from Illinois Wesleyan University

Kevin D. Schuman, CFA – Director, Client Services
Kevin is a director in the Client Services Group. He is responsible for client interactions and assisting in the development and implementation of customized investment strategies. He also oversees NISA's liability analysis team which works with clients and their actuaries to estimate the liability's effective interest rate exposure, and NISA's Hedge Portfolio Management Team, which is charged with calculating hedge targets for completion mandates and other synthetic overlay programs. Kevin joined NISA's Operations Group in 1999 and transitioned to the Client Services Group in 2000.
Education:
BSBA in Finance from Saint Louis University
MS in Finance from Washington University in St. Louis

Richard R. Ratkowski, CFA – Director, Investment Strategies
Rick is a director in NISA's Investment Strategies Group. He is responsible for developing custom strategies designed to meet client objectives and developing and implementing proprietary financial modeling and engineering tools used throughout NISA. Rick is also responsible for the day-to-day oversight of NISA's Strategic Portfolio Management Group which is charged with maintaining hedge strategies including completion portfolios. In addition, he assists in the areas of product development and growth initiatives at NISA. Rick was recruited through NISA's internship program and joined NISA's Investment Strategies Group in 2005.
Education:
BS in Computer Science and Economics from Washington University in St. Louis
MS in Computer Science from Washington University in St. Louis

Ann-Marie Gehring, CFA – Senior Manager, Client Services
Ann-Marie is a member of the client services team responsible for client interactions and assisting in the development and implementation of customized investment strategies. She works with NISA's Hedge Portfolio Management Team which is charged with calculating hedge targets for completion mandates and other synthetic overlay programs. Anne-Marie joined NISA's Operations Group in 2009 and transitioned to the Client Services Group in 2010.
Education:
BSBA in International Business from the University of Missouri – Columbia
MBA from the University of Missouri - Columbia

Presentation: NISA Investment Advisors

NISA Update and Program Overview

Alaska Permanent Fund Corporation

February 28, 2019

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All data presented are as of December 31, 2018, unless otherwise noted.
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Some numbers have been rounded and may not sum to 100% or reported totals.
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Presenters

Gregory J. Yess, CPA – *Managing Director, Client Services; Chief Operating Officer*

- Greg is a managing director, chief operating officer and chair of NISA's Management Committee.
- Greg is responsible for the day-to-day oversight of many of NISA's operating departments including Client Services, Operations, Technology, Risk Management and Administration. He also works with various departments to develop new products and growth initiatives.
- Prior to joining NISA in 2000, Greg spent three years as the COO and CFO of Tulsa-based Saint Francis Health System. From 1991 to 1997, he co-founded and directed Weiss, Yess and Co. (currently CBIZ), a business and financial advisory firm. From 1982 to 1991, Greg worked for Arthur Andersen LLP as a senior manager providing business consulting and tax services.
- He holds a BS in Accounting from Illinois Wesleyan University.

Kevin D. Schuman, CFA – *Director, Client Services*

- Kevin is a director in the Client Services Group. He is responsible for client interactions and assisting in the development and implementation of customized investment strategies.
- He also oversees NISA's liability analysis team which works with clients and their actuaries to estimate the liability's effective interest rate exposure, and NISA's Hedge Portfolio Management Team, which is charged with calculating hedge targets for completion mandates and other synthetic overlay programs.
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- He holds a BSBA in Finance from Saint Louis University and an MS in Finance from Washington University in St. Louis.

Presenters

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- Rick was recruited through NISA's internship program and joined NISA's Investment Strategies Group in 2005.
- He holds a BS in Computer Science and Economics and an MS in Computer Science from Washington University in St. Louis.

Ann-Marie Gehring, CFA – *Senior Manager, Client Services*

- Ann-Marie is a member of the client services team responsible for client interactions and assisting in the development and implementation of customized investment strategies. She works with NISA's Hedge Portfolio Management Team which is charged with calculating hedge targets for completion mandates and other synthetic overlay programs.
- Ann-Marie joined NISA's Operations Group in 2009 and transitioned to the Client Services Group in 2010. She earned a BSBA in International Business and an MBA from the University of Missouri – Columbia.

Overview

208 Institutional Clients – $319 Billion Under Management[1]

Distinguishing Features

- Employee owned and long-tenured senior management
- Custom solutions
- Client-centric business model
- Innovative culture centered on fundamental financial principles

$319 Billion Under Management

$188 Billion in Physical Assets

- $179 billion in Fixed Income
  - Investment grade fixed income, ranging from short to long duration
- $9.1 billion in Equity
  - After-tax enhancement and custom factor exposure strategies

$131 Billion in Derivatives Notional Value

- Beta, interest rate management, and other customized solutions

[1] $7.2 Billion in Repurchase Agreement notional and underlying assets are reported in both physical assets and derivatives notional value under management.

208 Institutional Clients – $319 Billion Under Management

Tax-exempt ERISA Clients

- Clients include 29 of the 50 largest U.S. corporate retirement plans[1]
- $141 billion in physical assets for 176 clients
- Average relationship of $794 million[2]

3M Investment Management Corporation
ABC-NABET Retirement Trust Plan
Accenture LLP
The Aerospace Corporation
Ahold USA, Inc.
Air Products and Chemicals, Inc.
Alcoa USA Corp.
Alliant Techsystems, Inc. Defined Benefit Master Trust
Alliant Energy Corporate Services, Inc.
Ameren Services Company
American Airlines, Inc.
American Air Liquide Holdings, Inc.
American Cancer Society, Inc.
American Electric Power Co.
The American National Red Cross
A.O. Smith
Archer-Daniels-Midland Company
Arconic Inc.
Ascension Health
Automatic Data Processing, Inc.
AVANGRID
B&W Pension Trust
The Bank of New York Mellon
Baxter International Inc.
BJC Health System
BMW Pension Plan
Boehringer Ingelheim USA Corporation
The Boeing Company
Booz Allen Hamilton Inc.
BP Corporation North America Inc.
Bristol-Myers Squibb Company
Cargill, Incorporated
Carpenter Technology Corporation
Caterpillar Inc. Benefit Funds Committee
Catholic Health Initiatives
Celanese Americas LLC
CenturyLink Investment Management Company
Colgate-Palmolive Company, Inc.
Committee of the UAW Retiree Medical Benefits Trust

Consolidated Edison Retirement Plan*
Daimler Trucks North America, LLC
Dairy Farmers of America, Inc.
Duquesne Light Company Pension Trust
Edgewell Personal Care Company Benefits Governance Committee
Electric Energy, Inc.
Equifax Inc.
Exelon Corporation*
FCA US LLC Master Retirement Trust
FedEx Corporation
FirstEnergy Corporation
FMC Corporation
Ford Motor Company*
Framatome Inc.
Freeport-McMoRan Corporation
General Motors Investment Management Corporation
The Goodyear Tire & Rubber Company
Graphic Packaging International, Inc.
Greater Baltimore Medical Center, Inc.
Harley-Davidson Retirement Plan
Highmark Inc.
HP Inc.
Intermountain Health Care, Inc.
International Flavors & Fragrances Inc.
International Paper Company
Kellogg Company
Kennametal Inc. Master Trust
The Kraft Heinz Company
Macy's, Inc. Defined Benefit Plans Master Trust
Major League Baseball Group Pension Trust
Merck & Co., Inc.
Mercy Health
Mondelēz Global LLC
Monsanto Company
Motorists Mutual Insurance Company
MultiCare Health System

National Railroad Passenger Corporation Retirement Income Plan Trust
The Nemours Foundation*
Northern Trust Investments, Inc.
NV Energy, Inc.
Pacific Gas and Electric Co.
Peabody Investments Corp.
Pension Investment Committee of the Kroger Co.
PepsiCo, Inc. Master Trust
Pinnacle West Capital Corporation*
Pitney Bowes, Inc.
PNM Resources, Inc.
Premera Blue Cross
PVH Corp.
Remington Arms Company, Inc.
Retirement Plans Committee of Lehigh Hanson, Inc.*
Ricoh USA, Inc.
S&P Global
Saint-Gobain Corporation
sanofi-aventis
Schneider Electric
Siemens Corporation
Snap-on Incorporated
Target Corporation
Textron Inc.
Thomson Reuters Holdings Inc.
United Technologies Corporation
Unum Group
The UPS Group Trust
United Steelworkers (International Union) Staff Pension Plan*
U.S. Bancorp
US Foods Inc.
Vantage Consulting Group, Inc.
Wells Fargo & Company Master Pension Trust
Whirlpool Corporation and Subsidiary Employees' Retirement Trust
YUM! Brands, Inc.

** Denotes multiple engagements under different name.*

[1] Source: Based on data from *Pensions & Investments online*, as of December 31, 2017.
[2] Average relationship size reflects only physical assets under management.
This list is not intended to imply client recommendation of NISA or NISA's investment management services. The above list includes all tax-exempt ERISA clients that permit NISA to use their name on such lists and were not selected on the basis of performance. Many clients, as a matter of policy, do not permit their names to be listed. Many clients are included in both tax-exempt ERISA and other tax-exempt client counts. Many clients are included in both tax-exempt and taxable client counts.

208 Institutional Clients – $319 Billion Under Management

$31 billion in physical assets in other tax-exempt accounts for 33 clients

Public Pension, Endowment, Foundation, and Other Tax-exempt Clients

Average relationship of $933 million[1]

Alaska Permanent Fund Corporation	Ford Motor Company of Canada, Limited*	New York City Deferred Compensation Plan
The Alfred I. duPont Testamentary Trust*	Inter-American Development Bank	Pennsylvania State Employees' Retirement Fund
The American National Red Cross	Kentucky Retirement Systems	Risk Premium Investment Management Company LLC
BJC Health System	Lehigh Hanson Canadian Master Trust*	Snap-on Tools of Canada, Ltd.
Bristol-Myers Squibb Company	Medica Health Plans*	The Rotary Foundation
The Colorado Health Foundation	Missouri Education Pension Trust	Washington University in St. Louis
The Curators of the University of Missouri	Missouri State Employees' Retirement System	

$16 billion in physical assets in NDT/taxable accounts for 25 clients

NDT/Taxable Clients

Includes $13.3 billion in NDT assets for 13 clients

Allegheny Electric Cooperative, Inc.	Dominion Energy, Inc.	Medica Insurance Company*
Ameren Services Company	Duke Energy	Medical Professional Mutual Insurance Company
American Electric Power Co.	Electric Energy, Inc.	MidAmerican Energy Co.
Amerisure Mutual Insurance Company	Entergy Corporation	Pacific Gas and Electric Co.
Arizona Public Service Co.*	Exelon Generation Co., LLC*	Schlumberger Master Health Care Trust
Blue Cross Blue Shield of Massachusetts, Inc.	FirstEnergy Corporation	Southern California Edison Company
Blue Cross and Blue Shield of North Carolina	Independence Blue Cross	Susquehanna Nuclear, LLC
		Wellmark, Inc.

* Denotes multiple engagements under different name.

[1] Average relationship size reflects only physical assets under management.

These lists are not intended to imply client recommendation of NISA or NISA's investment management services. The top list includes all public pension, endowment, foundation, and other tax-exempt clients that permit NISA to use their name on such lists and were not selected on the basis of performance. The bottom list includes all NDT/taxable clients that permit NISA to use their name on such lists and were not selected on the basis of performance. Many clients, as a matter of policy, do not permit their names to be listed. Many clients are included in both tax-exempt ERISA and other tax-exempt client counts. Many clients are included in both tax-exempt and taxable client counts.

NISA

Focused Business Areas

NISA was the 4th largest manager of active domestic fixed income assets managed internally and the largest overlay manager in 2017, as ranked by *Pensions & Investments*[1].

Liability Driven Investing	Short and Core Duration	Defined Contribution	Equity (Tax-Focused/Factor Tilt)	Overlay
$143.3 billion	**$33.3 billion**	**$1.9 billion**	**$9.1 billion**	**$131b notional**

• Targets high information ratios with low tracking error
• Custom benchmarks to reflect liability objectives
• Integrated with overlay strategies, as appropriate
	• Targets high information ratios with low tracking error
	• $6.8 billion in TIPS
	• $7.6 billion in taxable fixed income
		• Custom target date fund research and design capabilities
		• Retirement income product development
		• Stable value fund management
			• Tax/Accounting-sensitive investments
			• Customizable factor tilts
			• Implement client Environment, Social, and Governance restrictions
				• Duration management
				• Asset allocation/beta services including:
				  • Rebalancing
				  • Cash Securitization
				  • Currency Management
				  • Beta Replication
				• Integrated with cash management, as appropriate

Consistent Themes

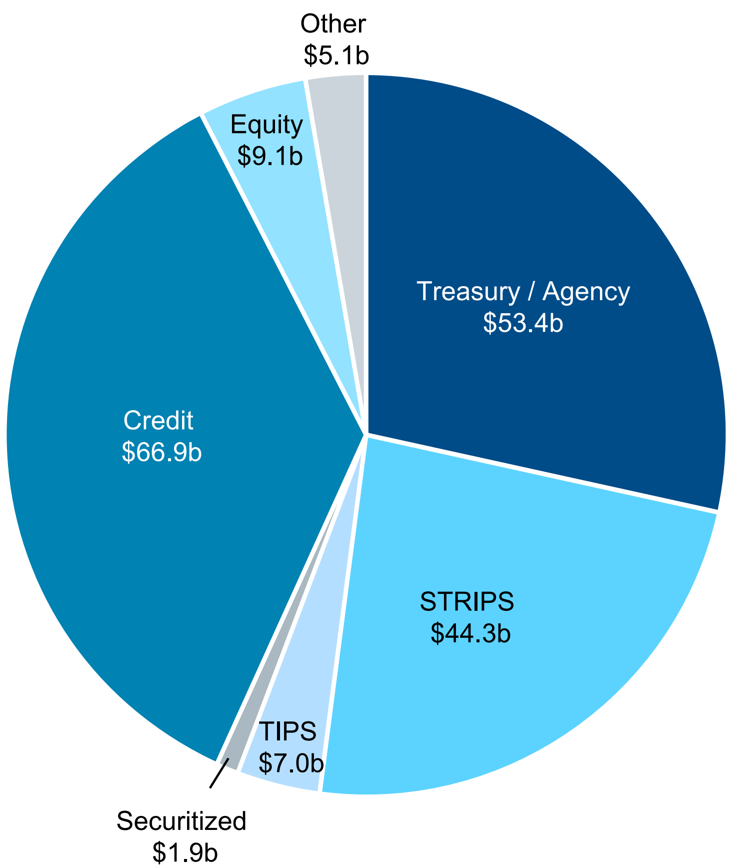
- Risk-controlled asset management
- Frequent client interaction
- Experienced, team-oriented professionals
- Customized, innovative strategies

[1] Source: *Pensions & Investments, Online*. Rankings were as of December 31, 2017. Other survey participants may have reported overlay strategies on a basis other than notional values and, as such, direct comparison and rankings may not be appropriate.

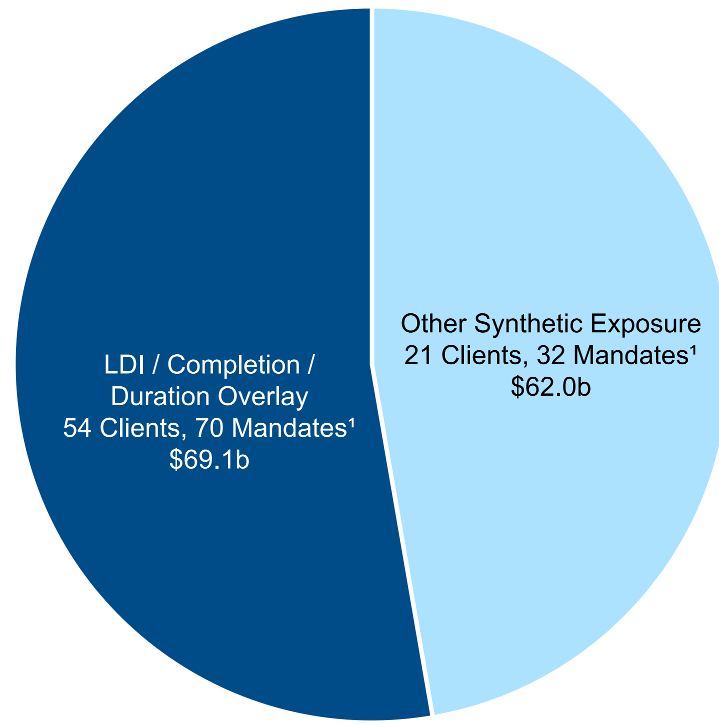
NISA

Composition of NISA's Engagements

Securities Engagements by Asset Type
$188 billion



Derivatives Strategies
$131 billion notional



Strategies Utilized Include:

- Liability Hedging
- Tactical Interest Rate Exposure
- De-risking/Downside Risk Reduction
- Alternative Risk Premia
- Cash Securitization
- Portable Alpha
- Risk Parity
- Commodity Exposure
- Repurchase Agreements

Note: The use of derivatives introduces additional requirements and risks to the portfolio.

[1] Ten clients have mandates in both types of derivatives strategies. The number of derivatives mandates only includes engagements for which derivatives are the primary instrument for obtaining exposure.

NISA

Derivative Overlay Engagements – Strategies

NISA's overlay engagements can be divided into four categories that encompass a wide spectrum of programs to support our clients.

NISA's Overlay Strategies

Asset Allocation

11 Programs
$10.0 billion

- Rebalancing
- Cash Securitization
- Tail-risk Hedging
- Transition Management
- Currency Management

Liability Management

72 Programs
$69.1 billion

- Duration Extension
- Duration Shortening
- Yield Curve Management
- Liability Completion

Asset Class / Beta Replication

28 Programs
$48.9 billion

- Equity Replication, including factor-based strategies
- Alternative Risk Premia
- Hedge Fund Replacement
- Portable Alpha
- Commodities

Tactical

5 Programs
$3.2 billion

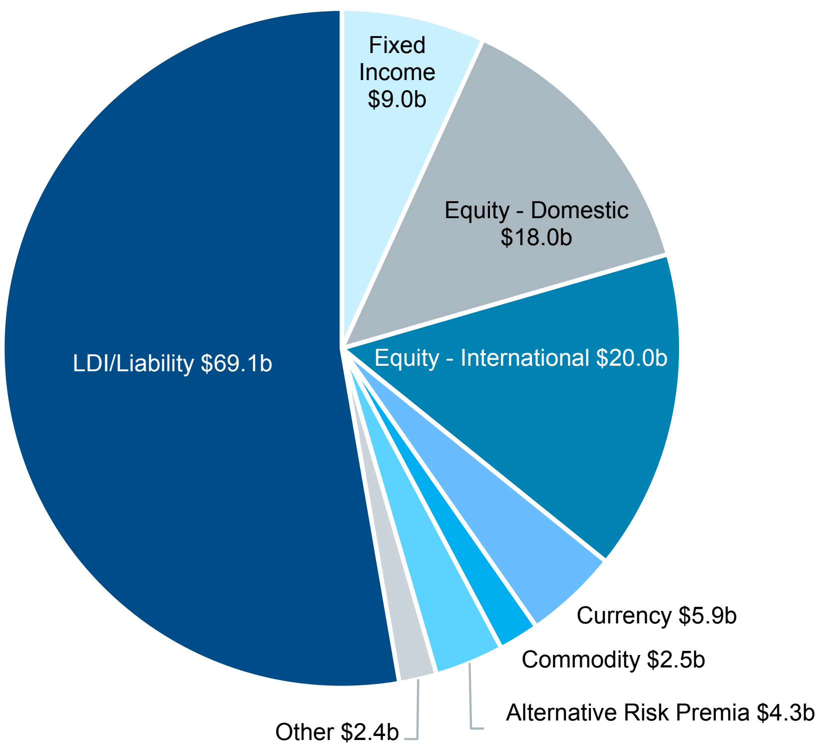
- Client Driven Tactical Trades
- Custom Options Strategy Implementation (e.g., volatility selling)

 The number of derivatives programs only includes engagements for which derivatives are the primary instrument for obtaining exposure.

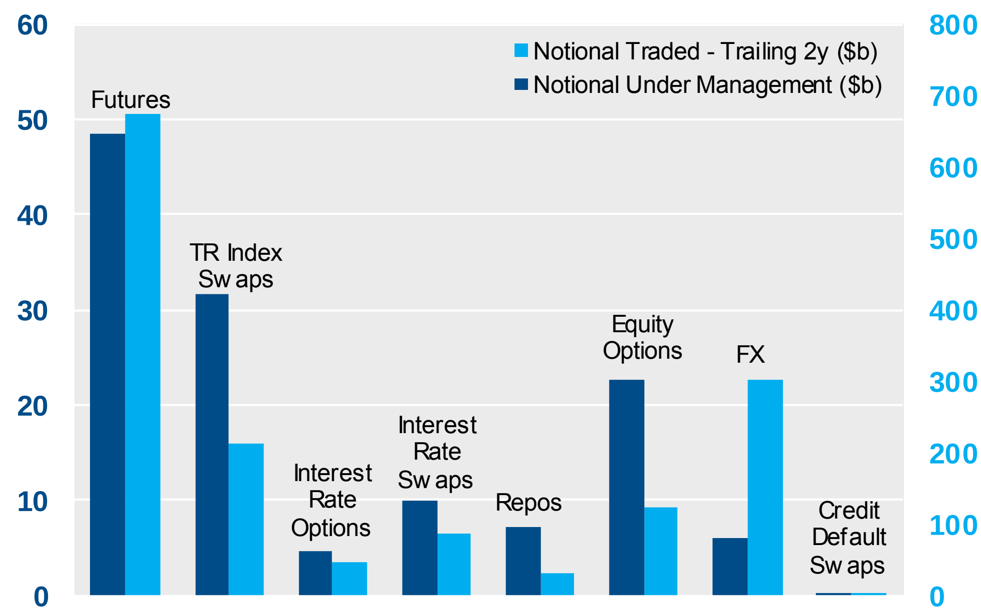
Derivative Overlay Engagements – Exposures and Instruments

- Broad and deep experience across markets, instruments and exposures
- Customizable multi-instrument portfolios based on each client's objectives
- Longstanding relationships with major derivatives dealers
- Operational systems designed for frequent and sizeable trades

EXPOSURES
65 Clients, 116 Programs,
$131b Notional



INSTRUMENTS
$131b Notional Under Management,
Over $1.4 Trillion Traded Over Previous 2 Years



 Market liquidity may vary from time to time for the instruments listed.

NISA

Senior Team

SENIOR LEADERSHIP		YEARS OF EXPERIENCE
Jess B. Yawitz, Ph.D. (E,I)	*Chairman and Chief Executive Officer; Chair, Investment and Executive Committees*	45+
David G. Eichhorn, CFA (E,I,M)	*President and Head of Investment Strategies; Vice Chair, Investment Committee*	20+
Kenneth L. Lester (I,M)	*Managing Director, Portfolio Management*	30+
Anthony R. Pope, CFA (I,M)	*Managing Director, Portfolio Management*	20+
Gregory J. Yess, CPA (M)	*Managing Director, Client Services and Chief Operating Officer; Chair, Management Committee*	30+

CLIENT SERVICES / INVESTMENT STRATEGIES

Mark N. Fortier, CFA *Director, Defined Contribution Solutions*	30+
Cheryl L. Hanson, CPA (M) *Director, Client Services*	25+
Gregory W. Johnson, CFA, CPA *Director, Client Services*	20+
C. Robert Krebs, CFA *Director, Defined Contribution Solutions*	35+
William P. Marshall *Director, Defined Contribution Product Strategy and Implementation*	20+
Richard R. Ratkowski, CFA *Director, Investment Strategies*	10+
Daniel A. Scholz, CFA (I) *Director, Investment Strategies*	20+
Kevin D. Schuman, CFA *Director, Client Services*	15+

PORTFOLIO MANAGEMENT

Biswajit Bhattacharya, CFA (I) *Director, Fixed Income*	15+
Matthew G. Byron, CFA *Director, Fixed Income*	10+
John S. Choe *Director, Derivatives*	15+
Gabriel E. Crump, CFA *Director, Credit Research*	15+
Patrick R. Foley *Director, Fixed Income & Derivatives*	10+
Carl R. Kuebler, CFA *Director, Derivatives*	20+
Joseph A. Murphy, CFA (I,M) *Director, Portfolio Management*	30+
Michael P. Vanous, CFA *Director, Equity Portfolio Management*	25+

ADDITIONAL SENIOR TEAM

Nicholas F. Cangiani, CAIA *Associate Chief Technology Officer, Technology Solutions*	15+
Michael R. DeNorscia *Director, Operations*	30+
Richard M. Dolson, CFA, CIPM *Chief Compliance Officer*	15+
Mark A. Folkins, CFA, CPA *Chief Administrative Officer*	30+
Matthew D. Kaplan, CFA, FRM *Chief Risk Officer*	20+
David J. Kon *Chief Data Officer, Enterprise Data*	15+
Daniel M. Rothweiler, CFA *Associate Chief Technology Officer, Technology Operations*	20+
Bella L. F. Sanevich, Esq. (M) *General Counsel*	20+
Scott Smith, CFA *Chief Data Architect*	10+

E - Executive Committee Member I - Investment Committee Member M - Management Committee Member

Employees' years of experience may include previous employment and/or roles other than those listed.

Organizational Teams

CLIENT SERVICES / INVESTMENT STRATEGIES

PRESIDENT
David Eichhorn, CFA

MANAGING DIRECTOR
Greg Yess, CPA

DIRECTORS
Mark Fortier, CFA
Cheryl Hanson, CPA
Greg Johnson, CFA, CPA
Robert Krebs, CFA
Bill P. Marshall
Rick Ratkowski, CFA
Dan Scholz, CFA
Kevin Schuman, CFA

SENIOR MANAGERS
Ann-Marie Gehring, CFA
Chris Goebel, CFA
James Hobbs, CFA
Elaine Kemper
Derek Lohse
Luke Obholz, CFA
Paul Oehrlein, CFA
Dan Riley, CFA
Kevin Shultz, CFA
Aaron Smith, CFA

MANAGERS
Ross Barthold
Alison Briggs
Stephen Douglass
Rusty Groth, CFA
Ryan Henrichs, CFA
Randy Lane
Sharbani Maitra
Aleks Panchenko
Steve Sash
Joe Sodemann, CFA
Dirk Thompson, CFA
Jodie Treeman, CFA
Alik Ulmasov, CFA

SENIOR ANALYSTS
Thomas Hargis
Cindy Hu, CFA
Bo Jin, Ph.D.
John Knowles-Bagwell
Grant Podolski, CFA
Amanda Simmons
Adekemi Sodamade
Justin Stock

ANALYSTS
Bryson Beaver
Spencer Daniels
Brock Gerstner
Cole Gorman
Dennis Grandt
James Griffard
Lucy Huo
Steve Layton
Courtney Lucas
Carolyn Lucchesi
Kiana Mason
Kylee Morris
Imran Mumtaz
Jordan Smith
Aaron Wang
Michael Williams, CFA

PORTFOLIO MANAGEMENT / TRADING / RESEARCH

MANAGING DIRECTORS
Ken Lester[1]
Anthony Pope, CFA[1]

DIRECTORS
Biswajit Bhattacharya, CFA[1]
Matt Byron, CFA[1]
John Choe[1]
Gabe Crump, CFA[2]
Pat Foley[1]
Carl Kuebler, CFA[1]
Joe Murphy, CFA
Michael Vanous, CFA[1]

SENIOR INVESTMENT OFFICERS
Pat Fuchs, CFA[1]
Jennifer McCarthy, CFA[1]
Jordan Rouff, CFA[1]
Vinod Sadasivam

INVESTMENT OFFICERS
Israel Acosta[2]
Patrick Duda, CFA[1]
Andy Harwerth, CFA[1]
Tim Hughes[1]
Shelby MacDoniels, CFA, CPA[2]
Bob Skowron
Mark Utlaut, CFA[2]
Ryan Wood, CFA, CPA[2]

SENIOR ANALYSTS
Arielle Bodine[1]
Matt Ferris, CFA[1]
Ben Fu, CFA[1]
Dillon Gusmano[1]
Mark Hasemeier[1]
Ryan Hofmeister[1]
Joda Holloway, CFA
Sean Lou, CFA[2]
Craig Robbins, CFA[2]
Eric Rohr, CFA[1]
Abe Skellenger, CFA[1]
Tyler Sparks, CFA[1]
Zac Stevens, CFA[1]
Josh Ulrich
Nick Wilson
Spencer Wise[2]
Nick Wiseman, CFA[2]

ANALYSTS
Peter Beste, CFA
Brock Hammers
Logan Hayward
Michael Hill, CFA
Karl Kawders
Shane Legatzke
Connor Leuty
Jordan Peasel[2]
Matthew Peltier
Jack Slezak
Nolan Sokol
Robert Stackhouse[2]
Wiktor Szrek

LEGAL

GENERAL COUNSEL
Bella Sanevich, Esq.

COUNSEL
Fredrik Appel, Esq.
Justin Roth, Esq.

COMPLIANCE

CHIEF COMPLIANCE OFFICER
Rick Dolson, CFA, CIPM

SENIOR COMPLIANCE OFFICER
Mark Reinsch

COMPLIANCE OFFICER
Joshua Silvey

SENIOR ANALYSTS
Brendan Normile
Mehdi Zaidi

ADDITIONAL SENIOR TEAM

CHIEF RISK OFFICER
Matt Kaplan, CFA, FRM

DIRECTOR, OPERATIONS
Michael DeNorscia

CHIEF ADMINISTRATIVE OFFICER
Mark Folkins, CFA, CPA

CHIEF DATA OFFICER, ENTERPRISE DATA
David Kon

CHIEF DATA ARCHITECT
Scott Smith, CFA

ASSOCIATE CHIEF TECHNOLOGY OFFICER, TECHNOLOGY SOLUTIONS
Nicholas Cangiani, CAIA

ASSOCIATE CHIEF TECHNOLOGY OFFICER, TECHNOLOGY OPERATIONS
Daniel Rothweiler, CFA

[1] Denotes individuals with trading authority.
[2] Denotes individuals on the Credit Research Team.
Includes senior team and portfolio management Investment Professionals for fixed income, equity and derivative strategies.

Cash Securitization Program Overview

Alaska Permanent Fund Program Objectives

- Synthetically overlay the desired overall plan benchmark of 65% ACWI IMI, 35% Bloomberg Barclays US Aggregate Index on large un-invested cash reserves.
- Monthly and intra-month exposure adjustments to maintain policy target allocations (equity and fixed income) utilizing synthetic exposure.
- Provides APFC with a mechanism for synthetically implementing tactical views.

Selected benefits of a Cash Securitization Program

- Reduce tracking error vs. plan policy allocation – allows assets to be fully exposed to markets while maintaining cash for liquidity needs
- Reduces cash drag and seeks to increase expected returns
- Lower expected plan transaction costs for a given level of expected policy tracking error
- Coordinate large movements between physical managers using synthetic positions
- May have greater flexibility to add or remove physical asset managers

 There are costs associated with a rebalancing and cash securitization program. The use of derivatives introduces additional requirements and risks to the portfolio.

Assessing the Impact of Cash Securitization

Return Drag Reduction:
Securitizing cash provides a potential return enhancement due to risk premiums associated with market exposures.

Realized Market Risk Premium Assumption	Potential Return Enhancement Per $100m of Cash Securitized ($mm)		
	1 Year	2 Years	3 Years
1.0%	$1.0	$2.0	$3.0
2.0%	$2.0	$4.0	$6.1
3.0%	$3.0	$6.1	$9.3
4.0%	$4.0	$8.2	$12.5
5.0%	$5.0	$10.3	$15.8
6.0%	$6.0	$12.4	$19.1
7.0%	$7.0	$14.5	$22.5
8.0%	$8.0	$16.6	$26.0

Tracking Error Reduction:
Securitizing cash reduces the tracking error versus plan objectives associated with holding cash instead of the desired asset class.

If Cash is Held Instead of…	Annualized Dollar-Risk vs. Desired Asset per $100 million*
Equity	$17.1 million
Fixed Income	$3.3 million
65% Equity/35% Fixed Income	$11.4 million

Note: Marginal contribution to tracking error at the plan level is likely smaller due to the presence of other non-perfectly correlated sources of tracking error (e.g. active management, allocation drift, etc.).

*Based on 5-year historical volatility estimates as of 12/31/2018. Equity assumed to be MSCI ACWI and Fixed Income assumed to be Bloomberg Barclays US Aggregate index. Investment strategies involve risk, including loss of principal.

NISA

Alaska Permanent Fund Cash Securitization Structure

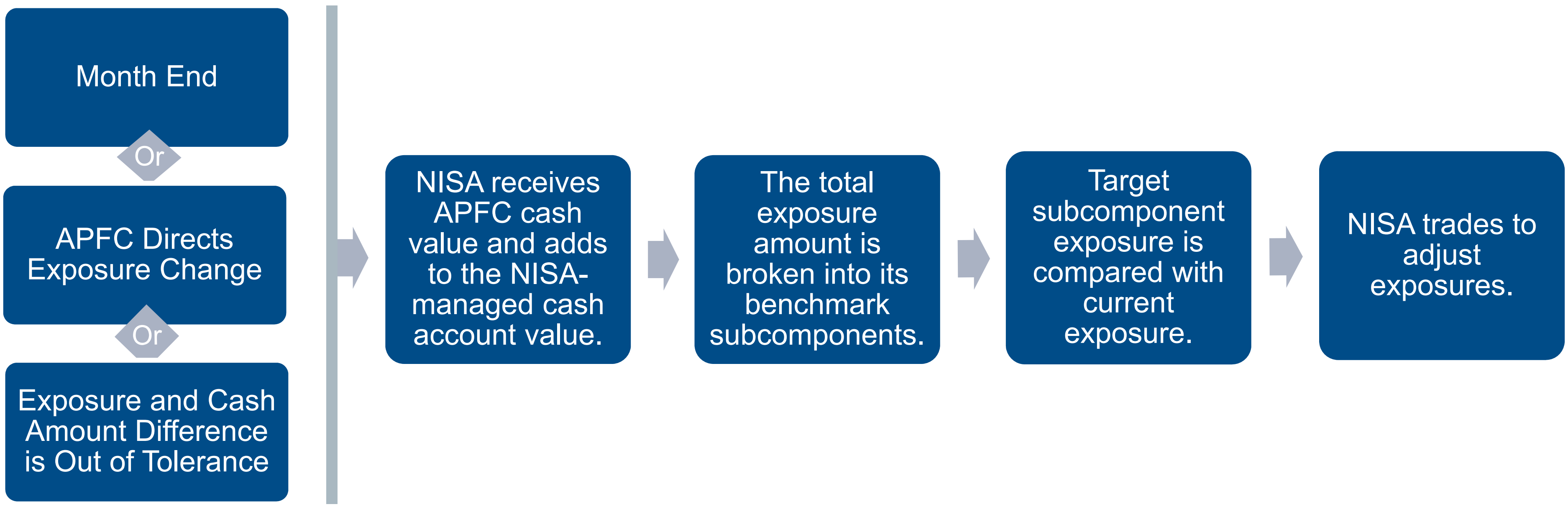
NISA / APFC Cash Securitization Structure

Unencumbered Cash		Unencumbered Cash		U.S. T-Bills
APFC Cash Portfolio + **NISA-Managed Cash Collateral Portfolio**	=	**Total Amount of Cash to Overlay**	=	**65% ACWI IMI Synthetic Exposure** / **35% Agg Synthetic Exposure**

Note: Unemcumbered Cash is not part of the NISA Overlay Program and is monitored separately by APFC staff.

Alaska Permanent Fund Cash Securitization Structure

NISA / APFC Cash Securitization Process



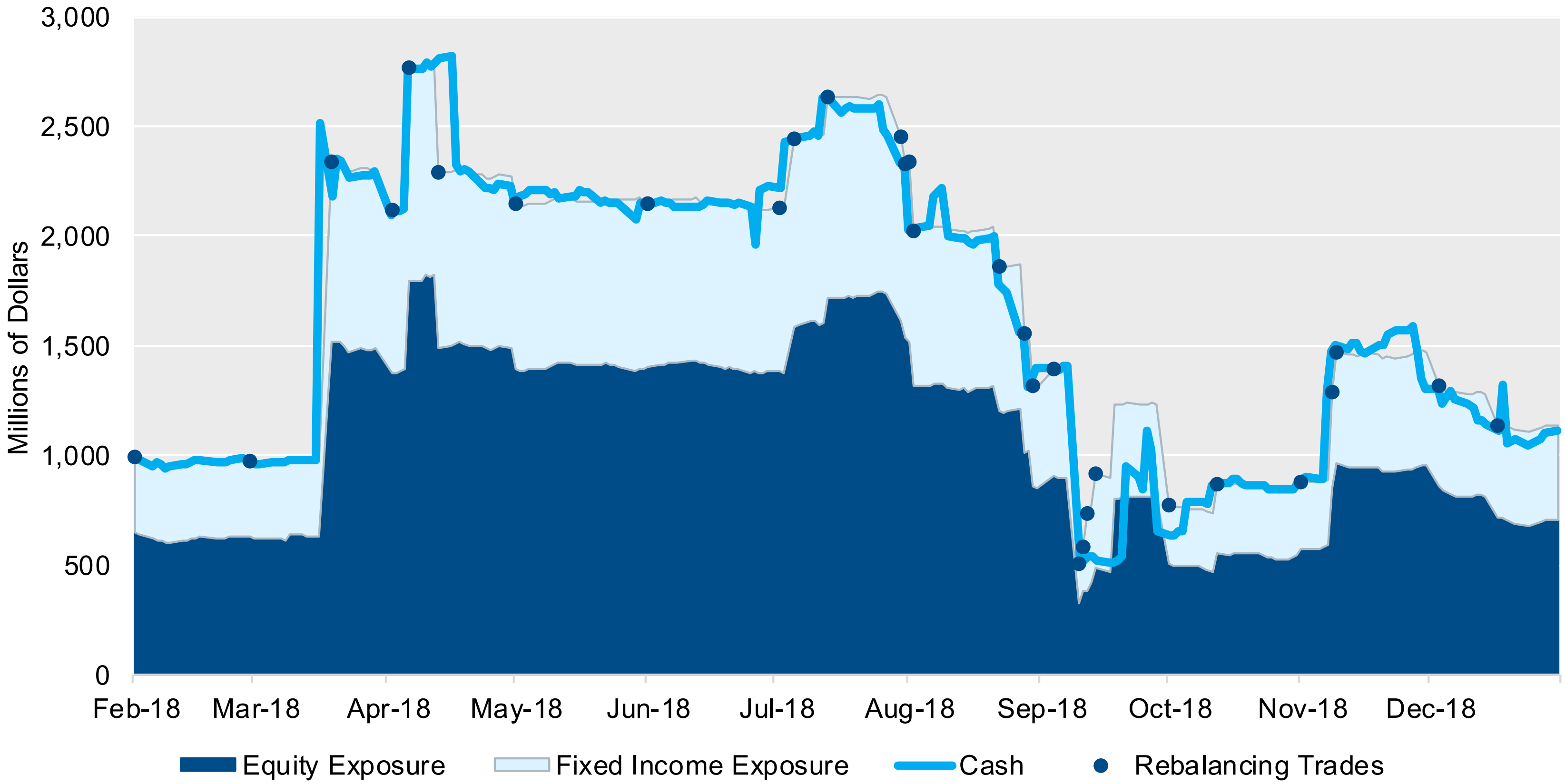
Cash Overlay Program Overview

- The chart below shows the equity and fixed income exposure in the Cash Overlay program since inception.
- Mismatches in total exposure and cash levels may be due to 1) drift due to market moves, 2) cash movements that were too small to trigger a trade, and 3) directed exposure changes in anticipation of cash level moves.

Program Statistics Since Inception

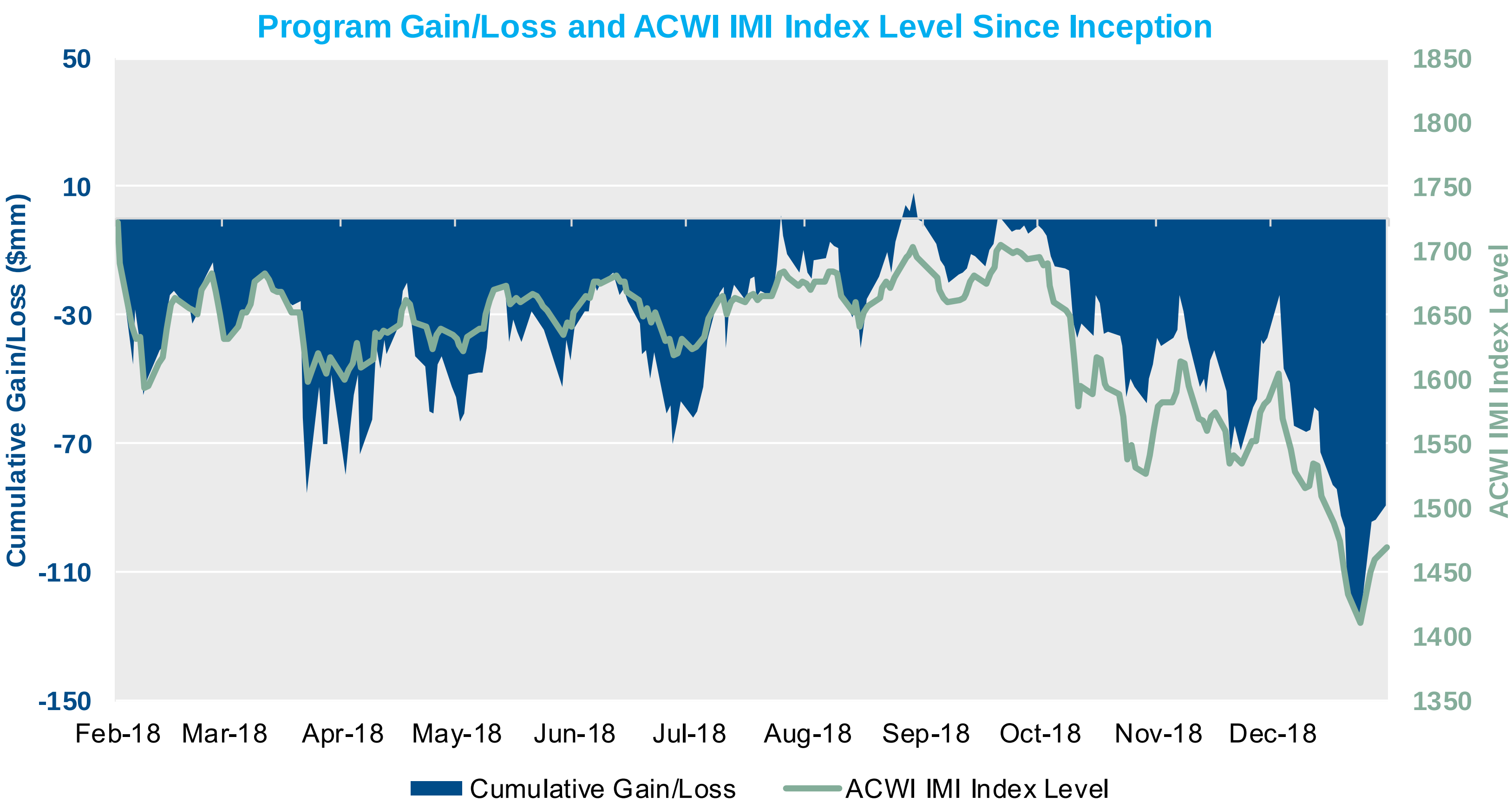
Number of Adjustments	Total Notional Exposure Traded ($B)	Average Notional ($B)
30	$8.9	$1.7

Cash Overlay Exposure History



Program Cumulative Gain/Loss

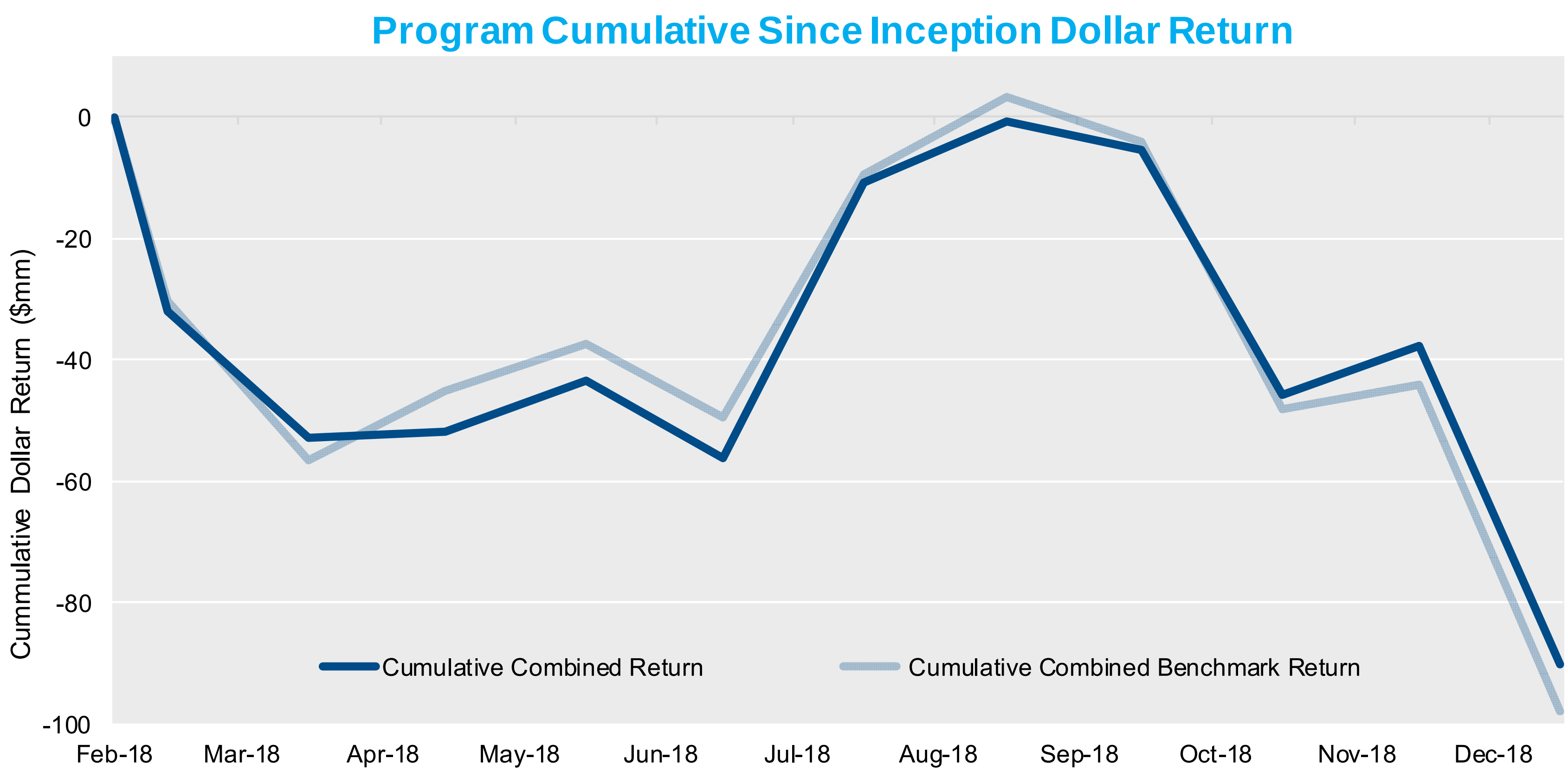
- The chart below shows the cumulative gain/loss of the program since inception through December 31, 2018.
- The return of the MSCI ACWI IMI Index is the primary driver of the gain/loss in the program.
- The program is benchmarked to 65% MSCI ACWI IMI and 35% Bloomberg Barclays US Aggregate Index.



 Source: Bloomberg, MSCI

Performance Since Inception

- The chart below illustrates the program and benchmark cumulative dollar returns since inception through 12/31/2018.
- Cumulative program dollar return is +$7mm against the benchmark since inception.



The combined benchmarked is 65% MSCI ACWI IMI and 35% Bloomberg Barclays US Aggregate Index. Program inception dated 2/2/2018.
Portfolio performance is reported gross of investment management fees unless otherwise noted. Portfolio performance is calculated using market values determined by NISA using a time-weighted methodology. Portfolio performance is calculated and presented for the purpose of evaluating NISA's investment management services. The actual realized portfolio return will differ. A summary of NISA's performance calculation policies is available upon request. Reported benchmark component returns, where applicable, are as published by the index provider(s).
Source: Bloomberg, MSCI

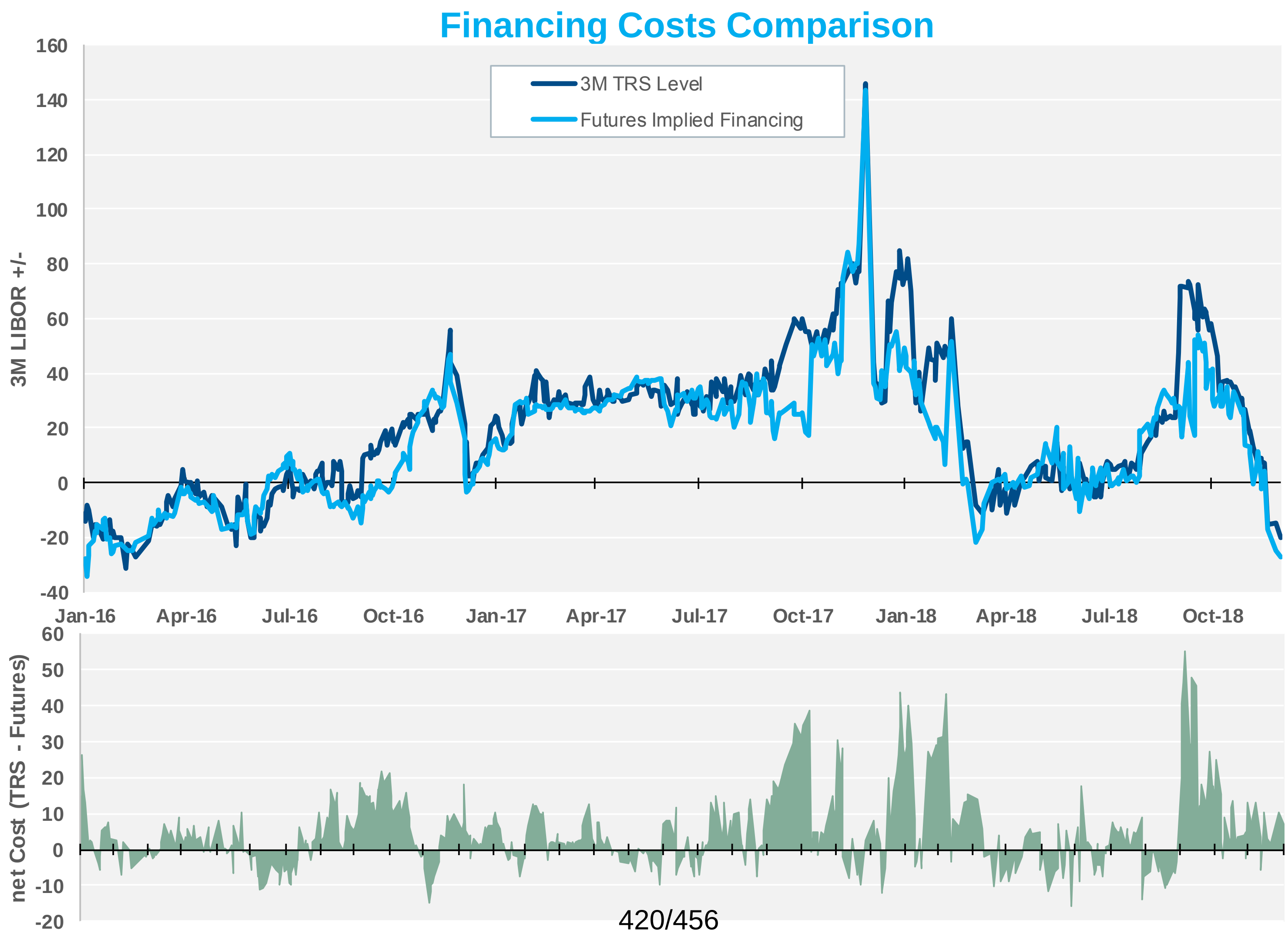
Implementation – Swaps vs. Futures & Efficient Execution

Key Tradeoff: Absent any qualitative constraints, instrument selection becomes a tracking error vs. transaction cost analysis.

	Total Return Swaps	Futures
Quoted Terms	• Pay LIBOR +/- a spread to receive Index Total Return, or vice-versa • Negotiable maturity (e.g., 6 month, 1-year, 2-year, etc.)	• Payout is based on change in futures price • Typically rolled quarterly, with some commodities rolling monthly • The financing rate (or implied repo rate) is implicit from the futures price
Cost Considerations	• Is LIBOR +/- the spread something that resembles a risk-free rate +/- reasonable compensation for managing the exposure? • Break fees	• For a 1-yr horizon, for a contract that rolls quarterly, there are 5 transactions (initial trade, 3 quarterly rolls, closing trade) • Commission costs and potential market impact costs for each transaction • Potential cash drag from margin/liquidity account
Expected Tracking Error	• Minimal, if available for desired market	• Limited breadth of futures markets may increase tracking error • Deviations from fair value • Equity Futures prices are based on expected dividends, not actual dividends
Other Considerations	• Counterparty risk • Quantifying cash flow needs • ISDA Documentation • Swap market liquidity (intra-day or otherwise)	• Daily cash management for variation margin • Initial margin requirements • Ongoing management costs/risks (e.g., need to roll positions, monitor cash, etc.) • Limited flexibility/customization

Futures vs Total Return Swaps Financing Costs

- The following graph compares the implied financing rate on S&P500 Futures contracts and S&P500 total return swaps ("TRS").
- NISA monitors relative financing levels and selects the most efficient instrument to gain exposure to a desired index, thereby reducing client transaction costs.
- The multi-instrument approach applies across asset classes and can result in larger financing cost deviations than shown below.



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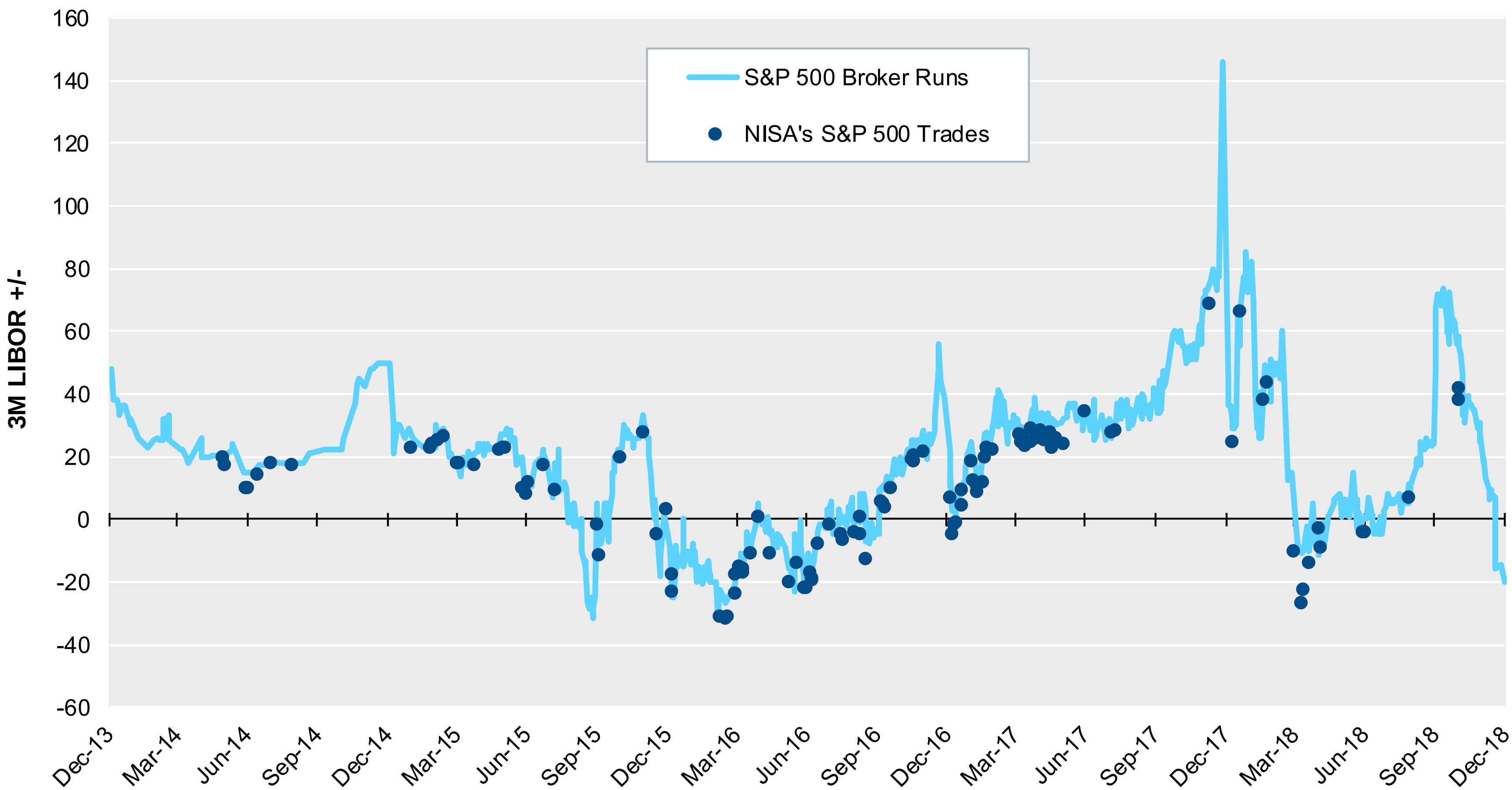
Past performance is not a guarantee of future performance.

NISA

Over-The-Counter Instrument Efficient Execution

- The following graph compares broker runs for 3-month long S&P 500 total return swaps with the level at which NISA executed similar total return swaps.
- NISA estimates over this time frame that the average trade was executed ~4 basis points below what the broker indicates for similar swaps.
- There are timing differences when comparing actual trades to broker runs.



Past performance is not a guarantee of future performance.
S&P 500 trades show actual trades executed by NISA between 2 and 4 months to expiry on the SPTR Index between 1/1/2014 and 12/31/2018. Spread level will be impacted by contractual terms and transaction history specific to each client. Average spread savings over the time period is based on the average of the most timely broker runs by multiple dealers around the time of execution of NISA's trade. Broker runs used to compare trade levels were received prior to trade execution, but may not have been the same day and may not be at a level at which the dealer would execute.

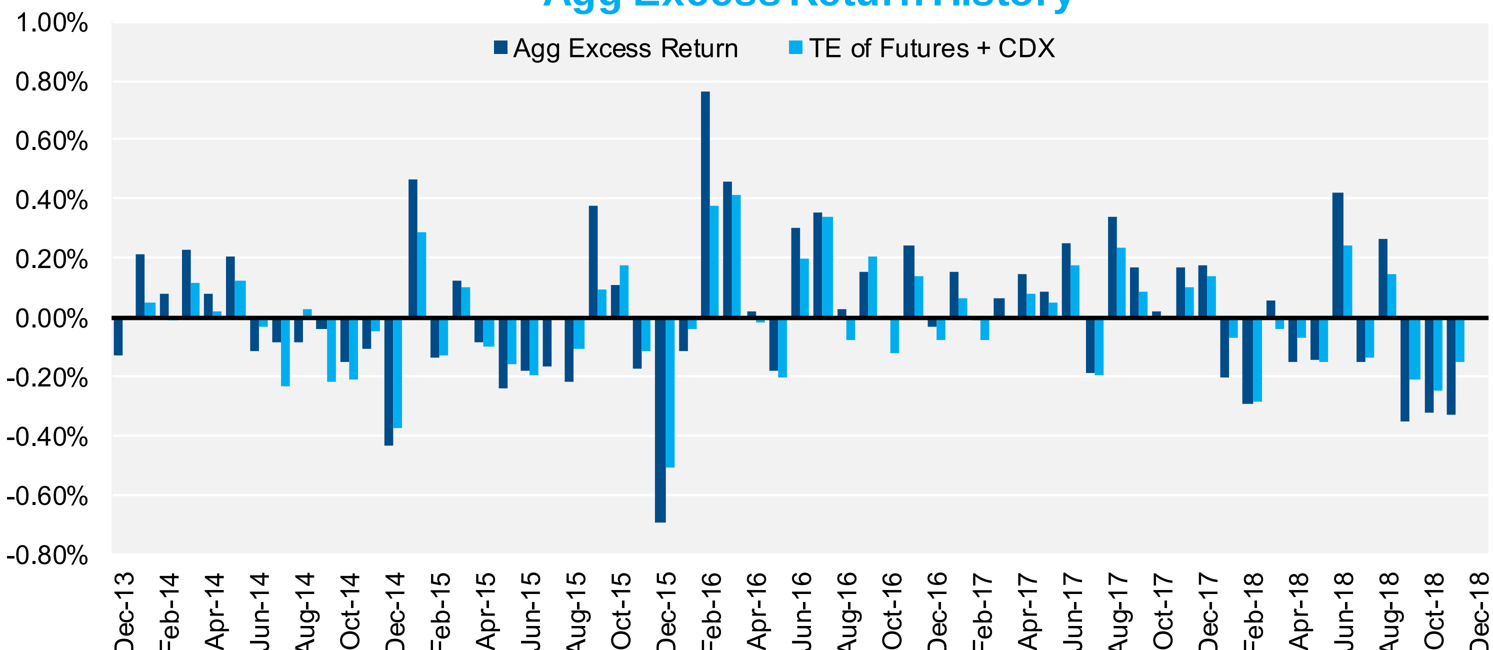
NISA

Tracking Error vs. Expected Return on US Aggregate Replication

- One key tradeoff in the decision between total return swaps on one hand and Treasury futures and credit default swaps on the other is balancing tracking error and expected return.
- While total return swaps have zero tracking error, their expected return is currently negative because of financing costs.
- The financing cost of Treasury futures is lower than total return swaps, though there are other associated costs and an expectation of tracking error relative to the benchmark.
- Adding credit default swaps (40% of the notional) reduces expected tracking error and increases expected total return.

Solution	Financing (vs. 1mL)	Roll, Transaction, Other Costs	Total Costs (vs. 1mL)	Expected Excess Return	Total Expected Return vs. Benchmark	Expected TE
Agg TRS	14	0	14	36	-14	0
Tsy Futures	3	16	19	0	-55	91
Tsy Futures + CDX	3	17	20	15	-41	64
Over the last five years, the Aggregate Index has outperformed UST futures and CDX due to tightening credit spreads						

Agg Excess Return History



 Sources: Bloomberg Barclays and NISA. Data as of 1/28/2019. Expected return assumes a 75% OAS realization.

NISA

Tracking Error vs. Expected Return on ACWI IMI Replication

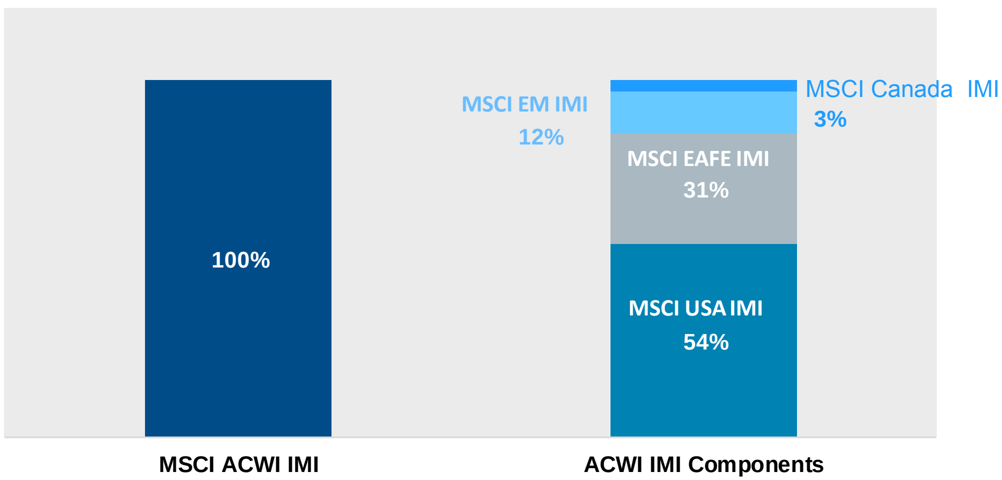
- Total return swaps on the MSCI ACWI ex US IMI or its components can be used to achieve the desired exposure.
- Implied Repo Rates are more comparable to the estimated gross total return swap levels presented herein.

Using Futures

Benchmark	Hedge Instruments	Commission Cost (bps)	Potential Annual Bid/Ask (bps)	Implied Repo Rates (bps)	Total Financing Cost (3ML+) (bps)	Estimated Tracking Error (bps)
MSCI ACWI IMI	EAFE, EM, SPX, TSX60 futures	1	2	14	17	25 - 75

Using Total Return Swaps

Benchmark	Hedge Solution	Net Swap Level (3m LIBOR) (bps)	Est. Taxable Dividend Impact (bps)	Est. Gross Index Swap Level (3m LIBOR) (bps)	Estimated Tracking Error (bps)
MSCI ACWI IMI	ACWI IMI TRS	-27	68	41	~0
MSCI ACWI IMI	MSCI EAFE, MSCI EM, MSCI USA, MSCI Canada	-43	68	25	25 - 50



Notes: Indicative pricing based on market estimates as of 1/28/19. Estimated taxable dividend impact based on the average one year historical return difference between the net and gross index. Assumes annual financing cost is equal to the current period's cost. Tracking error estimated against the MSCI ACWI IMI and is based on five years of historical data ending 1/28/19.
[1]The tracking error of EAFE and EM futures has been adjusted for the differences in pricing time between the futures market and the underlying indices.
Sources: Bloomberg Index Services Ltd., MSCI, and Bloomberg.

Program Design – Collateral

- The size and composition of the cash securitization pool has strategic and operational ramifications.
- The cash/collateral pool should satisfy and facilitate any margin or collateral requirements. To the extent backup sources of collateral or cash liquidity is available, a smaller primary collateral pool can be utilized.
- Depending on the correlation and position direction (long/short) of the synthetic positions, a reduction in collateral can occur.
- The example below illustrates the potential collateral needs per $1 billion of notional benchmarked to 65% ACWI IMI and 35% US Agg.

Collateral Requirement for 1 Standard Deviation Event ($mm)				Collateral Requirement		
	$650mm	$350mm	Total	Size of Total Overlay Portfolio		
Horizon	ACWI IMI Overlay	Agg Overlay	Overlay	$1.0 Billion	$2.0 Billion	$3.0 Billion
1 month	26	3	27	27	54	81
3 months	45	6	47	47	94	141
6 months	63	8	66	66	133	199
12 months	90	12	94	94	188	282

The NISA cash portfolio is $293mm, which implies a 3 standard deviation move over a given year before being depleted.

Notes: Data as of 12/31/2018. The probability of ACWI IMI decreases is estimated assuming an annual ACWI IMI Index volatility of 13.9% assuming a normal probability distribution. The probability of US Agg decreases is estimated assuming an annual US Agg Index volatility of 3% assuming a normal probability distribution. NISA will contact the client when the collateral reserve is not sufficient to cover a decrease in the ACWI Index of 5% or less.

NISA

Cash Securitization Focused Portfolio Management Process

DATA INPUTS

Assets
- Policy Allocations
- Cash Account Values
- Derivative Exposure Levels

Additional
- Tactical Allocations (if desired)
- Manager Cash Levels (if needed)
- Anticipated Cashflows

HEDGE PORTFOLIO MANAGEMENT PROCESS

Hedge Portfolio Management ("HPM") calculates benchmark notional amounts and any needed exposure adjustments

HPM process confirms trade accuracy (Independent calculations are completed by Client Services and Portfolio Management)

Senior members of Portfolio Management confirm trade and benchmark notional amounts

Portfolio Management groups execute trades

CLIENT COMMUNICATION AND REPORTING

Client Services reports overall exposures, levels of cash, positions information, and program performance

Investment Strategies and Client Services discuss trading strategy with client

Derivatives Operational Details

There are operational details unique to derivative engagements. Managing and monitoring these details are critical to the program's implementation.

Derivative Documents
- Relationships with counterparties, clearing members and clearinghouses
- Experience with ISDAs, futures and clearing documents

Efficient Execution
- Competitive bidding process promotes efficient execution
- Active involvement in the market

Daily Derivative Valuation
- All derivative positions are priced daily for internal use*

Clearing/Counterparty Risk Management
- Valuation and management of daily margin and/or collateral inflows and outflows

Overlay Portfolio and Strategy Monitoring
- Proprietary models to monitor the efficacy of the hedge strategy
- Coordination of the hedge with underlying portfolios

Performance Measurement
- Customized performance calculations*

*Data are based on trade date and calculated according to NISA's pricing policies. NISA maintains the data only for its portfolio management, guideline verification and performance calculation purposes. NISA does not provide pricing, recordkeeping, brokerage or any related services.

Clearing/Counterparty Risk Management

- Alaska Permanent Fund currently has the following stable available:
  - **FCMs**: Moran Stanley
  - **Counterparties**: Goldman Sachs, BNP Paribas, JP Morgan Chase
- Counterparty risk is a function of instrument volatility, payment frequency, notional value/size, and maturity/tenor, among others. Managing counterparty risk is a key element of an overlay strategy.

	Applicable to…		
Selected Elements	*Non-cleared OTC*	*Cleared OTC*	*Exchange Traded*
Utilizing multiple counterparties	X		
Consideration of loss “waterfall” and other business terms		X	X
Price all derivative positions for internal use*	X	X	X
Value collateral positions independently*	X	X	
Communicate collateral requirements to the counterparty	X		
Direct custodian to send/receive collateral/margin payments	X	X	X
Verify collateral movement and/or margin payments	X	X	X
Track credit rating of counterparty/FCM/DCM	X		
Monitor clearing capacity – FCM/DCM and CCP		X	X

Daily Activities

*Data are based on trade date and calculated according to NISA’s pricing policies. NISA maintains the data only for its portfolio management, guideline verification and performance calculation purposes. NISA does not provide pricing, recordkeeping, brokerage or any related services.

Overlay Portfolio and Strategy Monitoring

We have dedicated resources to provide thorough and comprehensive monitoring and oversight of implemented strategy.

Selected Elements	*Applicable to…*			
	Non-cleared OTC	*Cleared OTC*	*Exchange-traded*	
Price all derivative positions for internal use*	X	X	X	Daily Processes
Monitor index/benchmark levels	X	X	X	
Produce and distribute internal position and associated collateral valuation reports*	X	X	X	
Execute trades to raise/invest cash related to collateral requirements	X	X	X	
Identify the benchmark composition and notional amount	X	X	X	Monthly Processes
Identify portfolio reset, if any	X	X	X	
Execute trades in swaps or futures, if required	X	X	X	

*Data are based on trade date and calculated according to NISA's pricing policies. NISA maintains the data only for its portfolio management, guideline verification and performance calculation purposes. NISA does not provide pricing, recordkeeping, brokerage or any related services.

Program Performance – As of 12/31/2018

Fixed Income Overlay Program

		Portfolio Performance		Benchmark Performance				Net
2018	Beginning Benchmark Notional	Change in MV ($MM)	Portfolio Return	US Agg Index Return (X)	1-Month LIBOR (Y)	Cash (Z)	Benchmark Return (X) - (Y) + (Z)	Over/Under Performance
Q1*	$349.1	$3.5	0.16%	-0.04%	0.26%	0.05%	-0.26%	0.42%
Q2	$746.7	-$3.2	-0.33%	-0.16%	0.49%	0.08%	-0.57%	0.24%
Q3	$741.8	-$3.5	-0.72%	0.02%	0.52%	0.10%	-0.40%	-0.32%
October	$270.2	-$2.1	-0.74%	-0.79%	0.19%	0.09%	-0.90%	0.16%
November	$306.6	$3.9	0.68%	0.60%	0.19%	0.08%	0.46%	0.22%
December	$454.7	$7.9	1.83%	1.84%	0.20%	0.06%	1.70%	0.14%
Q4	$270.2	$9.8	1.77%	1.64%	0.58%	0.23%	1.24%	0.52%
YTD	$349.1	$6.6	0.87%	1.45%	1.87%	0.46%	0.01%	0.86%

*Program inception dated 2/2/2018. Therefore, Q1 2018 performance is calculated from 2/2/2018 to 3/31/2018.
Fixed Income Overlay Program Benchmark is the Bloomberg Barclays US Aggregate Index Net Financing. Portfolio performance is reported gross of investment management fees unless otherwise noted. Portfolio performance is calculated using market values determined by NISA using a time-weighted methodology. Portfolio performance is calculated and presented for the purpose of evaluating NISA's investment management services. The actual realized portfolio return will differ. A summary of NISA's performance calculation policies is available upon request. Reported benchmark component returns, where applicable, are as published by the index provider(s).

Program Performance – As of 12/31/2018

Equity Overlay Program

		Portfolio Performance		Benchmark Performance				Net
2018	Beginning Benchmark Notional	Change in MV ($MM)	Portfolio Return	ACWI IMI Index Return (X)	1-Month LIBOR (Y)	Cash (Z)	Benchmark Return (X) - (Y) + (Z)	Over/Under Performance
Q1*	$649.8	-$56.2	-6.23%	-5.93%	0.26%	0.05%	-6.14%	-0.09%
Q2	$1,386.8	-$0.4	-0.57%	0.80%	0.48%	0.07%	0.38%	-0.95%
Q3	$1,377.6	$54.3	4.14%	3.89%	0.52%	0.10%	3.44%	0.70%
October	$501.7	-$38.3	-7.31%	-7.82%	0.19%	0.09%	-7.93%	0.62%
November	$569.4	$4.4	1.53%	1.41%	0.19%	0.07%	1.27%	0.26%
December	$844.5	-$60.5	-7.29%	-7.24%	0.20%	0.06%	-7.37%	0.08%
Q4	$501.7	-$94.4	-12.75%	-13.28%	0.58%	0.22%	-13.64%	0.88%
YTD	$649.8	-$96.7	-15.29%	-14.58%	1.86%	0.43%	-15.83%	0.54%

*Program inception dated 2/2/2018. Therefore, Q1 2018 performance is calculated from 2/2/2018 to 3/31/2018.
Equity Overlay Program Benchmark is the ACWI-IMI Index Net Financing. Portfolio performance is reported gross of investment management fees unless otherwise noted. Portfolio performance is calculated using market values determined by NISA using a time-weighted methodology. Portfolio performance is calculated and presented for the purpose of evaluating NISA's investment management services. The actual realized portfolio return will differ. A summary of NISA's performance calculation policies is available upon request. Reported benchmark component returns, where applicable, are as published by the index provider(s).

Program Performance – As of 12/31/2018

Combined Program

		Program Performance		Benchmark	Net
2018	Beginning Benchmark Notional	Change in MV ($MM)	Portfolio Return	Benchmark Return	Over/Under Performance
Q1*	$998.8	-$52.7	-4.02%	-4.10%	0.08%
Q2	$2,133.5	-$3.6	-0.48%	0.05%	-0.53%
Q3	$2,119.4	$50.8	2.43%	2.09%	0.34%
October	$771.9	-$40.4	-5.01%	-5.47%	0.46%
November	$876.0	$8.3	1.23%	0.99%	0.25%
December	$1,299.3	-$52.6	-4.10%	-4.20%	0.10%
Q4	$771.9	-$84.7	-7.78%	-8.55%	0.77%
YTD	$998.8	-$90.2	-9.78%	-10.42%	0.65%

*Program inception dated 2/2/2018. Therefore, Q1 2018 performance is calculated from 2/2/2018 to 3/31/2018.
Fixed Income Overlay Program Benchmark is the Bloomberg Barclays US Aggregate Index Net Financing. Equity Overlay Program Benchmark is the ACWI-IMI Index Net Financing. Portfolio performance is reported gross of investment management fees unless otherwise noted. Portfolio performance is calculated using market values determined by NISA using a time-weighted methodology. Portfolio performance is calculated and presented for the purpose of evaluating NISA's investment management services. The actual realized portfolio return will differ. A summary of NISA's performance calculation policies is available upon request. Reported benchmark component returns, where applicable, are as published by the index provider(s).

NISA

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Naming of Meeting Center Memo

SUBJECT: APFC Meeting Center Names ACTION: ___X____

DATE: February 28th, 2019 INFORMATION:

BACKGROUND:

APFC recently undertook the renovation of its corporate headquarters and as a result of that process, the Hugh Malone Board room was repurposed. A new Meeting Center was built to accommodate APFC Board of Trustee meetings, large training sessions as well as being available for use by other groups. It is not part of the secured APFC offices and therefore provides greater flexibility of use by members of the public.

Staff voted on the names for internal large and small conference rooms, huddle spaces and common areas. The names chosen were those of glaciers located in southeast Alaska. Glaciers invoke a number of adjectives including solidity, sense of time, clarity or transparency, deliberate movement, that we believe relate to the Permanent Fund.

STATUS:

The renovation is substantially complete and the Meeting Center and its components are ready to be named. Staff and Trustees were invited to submit nominations for discussion by the Trustees. Nominations essentially fell into three different groups: (i) traditional Tlingit names, invoking the native Alaska lands upon which the building sits, southeast Alaska heritage and the place we call home; (ii) individuals who were instrumental in setting up the Fund and APFC; and (iii) others, which include finance terms to an extension of the glacier names we use in the main offices.

It is important to note that the suggestions received did not necessarily tie to a specific conference room or the board room but rather were provided as suggestions to be included in the discussion.

Tlingit Names (the translations below were submitted by those submitting the name; apologies to all for any potential mistakes or misinterpretations):

Haa Shuká - translated to mean “everything we have ever been, everything we are right now, and everything we are going to become”
Haa Shagóon – translated to mean “Our Origins and History; Our History; Where We Come From”

Ḵaa Sháade Háni – translated to mean "Leader" and reflect traditional value of "in every chair, a leader"
Ku oo – translated to mean "people" or "community"
Yanwaat – translated to mean "elder"
Woosh Kann`ax Has Wudi.aadi Ye – translated to mean "the meeting place"
Klukwan – translated to mean "eternal village"
Kluktu – translated to "where the landslides come down"
Klukshu – translated to "the place for fishing"

Individuals:
Hugh Malone
Dave Rose
Jay & Bella Hammond
Clem Tillion, Senate President, 1980
Terry Gardiner, Speaker of the House, 1980
Arliss Sturgulewski, Senator

Other Names:
Alaska: Denali, Brooks, Chilkat, Katmai, Noatak
Icefields/glaciers: Stikine, Thiel, Gilkay, Norris
Nature: The Pod, The Meadows, The Canopy, Orca, Fireweed, Spruce, Blue, Iris and Hemlock
Finance: CPI+5, POMV, Alpha

RECOMMENDATION:

Staff recommends the Board make a motion adopting three names – one for the overall Meeting Center, one for the Board Room and one for the Conference Room. Dedications, if desired, will be held at a future meeting.

Strategic Direction Memo

SUBJECT: Strategic Direction ACTION:

DATE: February 28th, 2019 INFORMATION: ____X____

BACKGROUND:

In 2005 the Alaska Retirement Management Board (ARMB) was created and assumed responsibility for managing the assets of PERS and TRS. In establishing their board governance charters an Investment Advisory Council (IAC) was also created. The idea behind this was to provide the Trustees with the perspective of peers working with other funds and share that knowledge. In 2010, the Alaska Permanent Fund Corporation Board of Trustees began a review and overhaul of its governance documents. At that time, they adopted the practice of the ARMB and established the Investment Advisory Group (IAG).

APFC's Board of Trustees has established a charter for the IAG and it was last reviewed and adopted in February 2017. This charter lays out the duties and expectations of the IAG. It may have one to three members. In contrast to the ARMB which has all three members attend every meeting, members of APFC's IAG rotate their attendance with only one member at each meeting. The current members of the IAG are: Jerrold Mitchell, George Zinn, and Tim Walsh. Contracts are for a 3-year period and are staggered to have one open for renewal or replacement each year. IAG members serve at the Board's pleasure. The FY20 annual budget for the IAG is $54,800 which includes monthly stipend and travel expenses.

STATUS:

The use of the IAG and the ARMB's IAC has evolved over the years. The boards have relied on their respective advisors for everything from weighing in on the appropriateness of risk factors, to the value of adding or removing assets, to providing a sense of continuity over the years as the qualifications and sophistication of board expertise shifted with new members. A new board member's fiduciary duty starts immediately, with no transition period, so the IAC and IAG provide independent assurance to those board members about decisions coming before them, allowing new board members to take formal action.

According to the National Association of State Retirement Officers, more than 60% of public plans utilize an investment advisory council in addition to having a general consultant. These groups are structured similar to Alaska's IAC and IAG. Advisors are chosen based on their expertise with institutional investing and may represent a specific strategy or asset class. Duties may be outlined in formal governance charters, contracts or both.

The duties of the IAG members for APFC are to provide comments to the Board of Trustees on the following items:

1. Long-term or strategic asset allocation
2. Risk management
3. Changes to the investment policy
4. Adding a new asset class
5. Any new or innovative investment products or strategies, particularly in alternatives or non-traditional assets
6. Significant changes to investment management structures such as changing the number of active managers in an asset class or moving from active to passive
7. Any other issue the Board would like to have comment and observation from the IAG member on.

Each board has its own traditions and norms as to how it fully utilizes its consultants and advisors. Some boards send issues and questions to members in advance to allow for preparation and insure that time is given to hear from those members on the specific topics in question. Other boards treat advisors as a non-voting board member who is expected to be as engaged as voting members. The ARMB preference has been to have all members of the group available, periodically they are asked to weigh in during debate of certain items and provide an overview or summary of observations and takeaways at the end of the meeting.

The APFC Board of Trustees is invited to discuss how they believe the IAG could provide the best benefit and recommend any, if needed, changes to the IAG Charter for the May Board meeting.

Investment Advisor Charter

ALASKA PERMANENT FUND CORPORATION

Charter of the Investment Advisory Group

INTRODUCTION

1. The Board of Trustees has established an Investment Advisory Group consisting of at least one but not more than three individuals who have considerable knowledge and experience in the management and investment of large endowment or trust funds.

2. This Charter sets out the duties and responsibilities of the Investment Advisory Group.

3. The Board will have full authority over the selection and appointment of the members of the Group who will serve at the pleasure of the Board.

DUTIES AND RESPONSIBILITIES

4. The Investment Advisory Group (Group) will, as requested, advise the Board on best practices in the management of large institutional funds.

5. The Group will also, as requested, provide comments to the Board on the following major policy issues:

   (a) The long-term or strategic asset allocation of the Fund;

   (b) The risk management framework of the Fund;

   (c) Any changes to the investment policy;

   (d) Any proposed investment in new asset classes;

   (e) Any proposed investment in new or innovative investment products or strategies, particularly those involving alternative or non-traditional asset classes;

   (f) Any significant changes to the investment management structure of the Fund, including the following:
      i) The relative proportion of assets in an asset class managed by external investment managers versus internal staff;
      ii) The relative proportion of assets in an asset class managed using active versus passive investment strategies;
      iii) The total number of active investment managers or portfolios in an asset class; and

(g) Any other issue at the discretion of the Investment Advisory Group or as requested by the Board.

REVIEW AND AMENDMENT OF THE CHARTER

6. The Governance Committee will review this Charter at least once every three (3) years and recommend any amendments to the Board for approval as necessary to ensure that the Charter remains relevant and appropriate.

7. The Board of Trustees adopted this Charter on February 23rd, 2017.

Investment Advisory Group

ALASKA PERMANENT FUND CORPORATION

THE BOARD OF TRUSTEES
INVESTMENT ADVISORY GROUP

The Alaska Permanent Fund Corporation (APFC) Investment Advisory Board was formed in February of 2001 with the purpose of providing APFC Trustees further insights into the increasingly complex and changing world of institutional investing. The three advisors impart special perspectives drawn from their professional knowledge in the areas of portfolio management, overall management of a large fund and experience with an endowment or trust fund. The advisors serve staggered three-year terms.

JERROLD MITCHELL | PARTNER, SALTONSTALL & COMPANY

Mr. Mitchell managed domestic and international equity portfolios for institutions and mutual funds for over twenty-five years at Wellington Management Company, where he was a partner. He also served as Chief Investment Officer of the Massachusetts state pension fund for four years and is currently a partner at Saltonstall & Company. He is a graduate of Yale University and Harvard Law School.

TIMOTHY WALSH | SENIOR EXECUTIVE

Mr. Walsh is a senior executive with demonstrated leadership in both the private and public sectors. He is a seasoned investment fiduciary with in depth experience in public pension plans, having served as both a Trustee and CIO. Mr. Walsh served as Chief Investment Officer for the State of New Jersey pension fund from 2010 through 2013. At New Jersey, he was the chief fiduciary for the $75 billion pension fund, one of the largest internally managed public pension funds in the United States. Prior to joining the State of New Jersey, he was the Chief Investment Officer managing the $8 billion Indiana State Teachers' Retirement Fund. Throughout his career, Mr. Walsh has served as fiduciary on several boards of both private and public companies. Most recently, he served two terms as a Board Member of the United States Securities and Exchange Commission Advisory Committee on Small and Emerging Companies. He holds a Bachelor of Science from Merrimack College and an MBA from the Kellogg School of Management at Northwestern University.

GEORGE ZINN | CORPORATE VICE PRESIDENT AND TREASURER, MICROSOFT

As Corporate Vice President and Treasurer, Mr. Zinn is responsible for overseeing Microsoft's corporate assets. He leads a group which manages the company's worldwide financial and corporate risk, investment portfolio, strategic portfolio, foreign exchange, corporate and structured project finance, dilution management, cash and liquidity, customer financing, and credit activities. Mr. Zinn is dedicated to minimizing financial risks for Microsoft while optimizing returns. Prior to joining Microsoft in 1996, he was a partner in a money-management firm specializing in foreign exchange and commodity trading. Mr. Zinn holds an A.B. in Economics and Environmental Studies, with a minor in Romance Languages, from Bowdoin College. He earned his MBA from the University of Washington while working at Microsoft. Mr. Zinn has also been recognized by Treasury & Risk Management Magazine as a Top 40 Finance Professional under 40.

Investment Advisor Contract

STANDARD AGREEMENT FORM FOR PROFESSIONAL SERVICES

1. Agency Contract Number	2. ASPS Number	3. Financial Coding	4. Agency Assigned Encumbrance Number
APFC-003-FY17		9300-52490	Y000073

5. Vendor Number	6. Project/Case Number	7. Alaska Business License Number

This contract is between the State of Alaska,

8. Department of	Division	
Revenue	Alaska Permanent Fund Corporation	hereafter the State, and

9. Contractor

Jerrold Mitchell

hereafter the Contractor

Mailing Address	Street or P.O. Box	City	State	ZIP+4

10.

ARTICLE 1. Appendices: Appendices referred to in this contract and attached to it are considered part of it.

ARTICLE 2. Performance of Service:

2.1 Appendix A (Terms of Agreement), Articles 1 through 10, governs the performance of services under this contract.
2.2 Appendix B[1] (Indemnity and Insurance)

ARTICLE 3. Period of Performance: The period of performance for this contract begins February 1, 2017, and Ends January 31, 2020.

ARTICLE 4. Considerations:

4.1 In full consideration of the contractor's performance under this contract, the State shall pay the contractor a sum not to exceed $75,000.00 in accordance with the provisions of the Terms of Agreement.
4.2 When billing the State, the contractor shall refer to the Authority Number or the Agency Contract Number and send the billing to:

11. Department of	Attention: Division of
Revenue	Alaska Permanent Fund Corporation
Mailing Address	**Attention:**
P.O. Box 115500, Juneau, Alaska 99811-5500	Angela Rodell, Chief Executive Officer

12. CONTRACTOR

Name of Firm: Jerrold Mitchell

Signature of Authorized Representative:

Date: 1/19/17

Typed or Printed Name of Authorized Representative: Jerrold Mitchell

Title:

14. **CERTIFICATION:** I certify that the facts herein and on supporting documents are correct, that this voucher constitutes a legal charge against funds and appropriations cited, that sufficient funds are encumbered to pay this obligation, or that there is a sufficient balance in the appropriation cited to cover this obligation. I am aware that to knowingly make or allow false entries or alterations on a public record, or knowingly destroy, mutilate, suppress, conceal, remove or otherwise impair the verity, legibility or availability of a public record constitutes tampering with public records punishable under AS 11.56.815-.820. Other disciplinary action may be taken up to and including dismissal.

13. CONTRACTING AGENCY

Department/Division: Alaska Permanent Fund Corporation

Date: 1/24/2017

Signature of Project Director: Angela M Rodell

Typed or Printed Name of Project Director: Angela Rodell

Title: Chief Executive Officer / Executive Director

Signature of Head of Contracting Agency or Designee: Angela M Rodell

Date: 1/24/2017

Typed or Printed Name: Angela Rodell

Title: Chief Executive Officer / Executive Director

NOTICE: This contract has no effect until signed by the head of contracting agency or designee.

02-093 (12/03/02)
BACK 02-093 (04/01/03)

SAF.DOC

APPENDIX A

GENERAL PROVISIONS

Article 1. Definitions.

1.1 In this contract and appendices, "Project Director" or "Agency Head" or "Procurement Officer" means the person who signs this contract on behalf of the Requesting Agency and includes a successor or authorized representative.

1.2 "State Contracting Agency" means the department for which this contract is to be performed and for which the Commissioner or Authorized Designee acted in a signing this contract.

Article 2. Inspection and Reports.

2.1 The department may inspect, in the manner and at reasonable times it considers appropriate, all the contractor's facilities and activities under this contract.

2.2 The contractor shall make progress and other reports in the manner and at the times the department reasonably requires.

Article 3. Disputes.

3.1 Any dispute concerning a question of fact arising under this contract which is not disposed of by mutual agreement shall be decided in accordance with AS 36.30.620-632.

Article 4. Equal Employment Opportunity.

4.1 The contractor may not discriminate against any employee or applicant for employment because of race, religion, color, national origin, or because of age, disability, sex, marital status, changes in marital status, pregnancy or parenthood when the reasonable demands of the position(s) do not require distinction on the basis of age, disability, sex, marital status, changes in marital status, pregnancy, or parenthood. The contractor shall take affirmative action to insure that the applicants are considered for employment and that employees are treated during employment without unlawful regard to their race, color, religion, national origin, ancestry, disability, age, sex, marital status, changes in marital status, changes in marital status, pregnancy or parenthood. This action must include, but need not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting out the provisions of this paragraph.

4.2 The contractor shall state, in all solicitations or advertisements for employees to work on State of Alaska contract jobs, that it is an equal opportunity employer and that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age, disability, sex, marital status, changes in marital status, pregnancy or parenthood.

4.3 The contractor shall send to each labor union or representative of workers with which the contractor has a collective bargaining agreement or other contract or understanding a notice advising the labor union or workers' compensation representative of the contractor's commitments under this article and post copies of the notice in conspicuous places available to all employees and applicants for employment.

4.4 The contractor shall include the provisions of this article in every contract, and shall require the inclusion of these provisions in every contract entered into by any of its subcontractors, so that those provisions will be binding upon each subcontractor. For the purpose of including those provisions in any contract or subcontract, as required by this contract, "contractor" and "subcontractor" may be changed to reflect appropriately the name or designation of the parties of the contract or subcontract.

4.5 The contractor shall cooperate fully with State efforts which seek to deal with the problem of unlawful discrimination, and with all other State efforts to guarantee fair employment practices under this contract, and promptly comply with all requests and directions from the State Commission for Human Rights or any of its officers or agents relating to prevention of discriminatory employment practices.

4.6 Full cooperation in paragraph 4.5 includes, but is not limited to, being a witness in any proceeding involving questions of unlawful discrimination if that is requested by any official or agency of the State of Alaska; permitting employees of the contractor to be witnesses or complainants in any proceeding involving questions of unlawful discrimination, if that is requested by any official or agency of the State of Alaska; participating in meetings; submitting periodic reports on the equal employment aspects of present and future employment; assisting inspection of the contractor's facilities; and promptly complying with all State directives considered essential by any office or agency of the State of Alaska to insure compliance with all federal and State laws, regulations, and policies pertaining to the prevention of discriminatory employment practices.

4.7 Failure to perform under this article constitutes a material breach of the contract.

Article 5. Termination.

The Project Director, by written notice, may terminate this contract, in whole or in part, when it is in the best interest of the State. The State is liable only for payment in accordance with the payment provisions of this contract for services rendered before the effective date of termination.

Article 6. No Assignment or Delegation.

The contractor may not assign or delegate this contract, or any part of it, or any right to any of the money to be paid under it, except with the written consent of the Project Director and the Agency Head.

Article 7. No Additional Work or Material.

No claim for additional services, not specifically provided in this contract, performed or furnished by the contractor, will be allowed, nor may the contractor do any work or furnish any material not covered by the contract unless the work or material is ordered in writing by the Project Director and approved by the Agency Head.

Article 8. Independent Contractor.

The contractor and any agents and employees of the contractor act in an independent capacity and are not officers or employees or agents of the State in the performance of this contract.

Article 9. Payment of Taxes.

As a condition of performance of this contract, the contractor shall pay all federal, State, and local taxes incurred by the contractor and shall require their payment by any Subcontractor or any other persons in the performance of this contract. Satisfactory performance of this paragraph is a condition precedent to payment by the State under this contract.

Article 10. Ownership of Documents.

All designs, drawings, specifications, notes, artwork, and other work developed in the performance of this agreement are produced for hire and remain the sole property of the State of Alaska and may be used by the State for any other purpose without additional compensation to the contractor. The contractor agrees not to assert any rights and not to establish any claim under the design patent or copyright laws. The contractor, for a period of three years after final payment under this contract, agrees to furnish and provide access to all retained materials at the request of the Project Director. Unless otherwise directed by the Project Director, the contractor may retain copies of all the materials.

Article 11. Governing Law.

This contract is governed by the laws of the State of Alaska. All actions concerning this contract shall be brought in the Superior Court of the State of Alaska.

Article 12. Conflicting Provisions.

Unless specifically amended and approved by the Department of Law the General Provisions of this contract supersede any provisions in other appendices.

Article 13. Officials Not to Benefit.

Contractor must comply with all applicable federal or State laws regulating ethical conduct of public officers and employees.

Article 14. Covenant Against Contingent Fees.

The contractor warrants that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee except employees or agencies maintained by the contractor for the purpose of securing business. For the breach or violation of this warranty, the State my terminate this contract without liability or in its discretion deduct from the contract price or consideration the full amount of the commission, percentage, brokerage or contingent fee.

Appendix A

Terms of Agreement between the
State of Alaska,
Alaska Permanent Fund Corporation and
Mr. Jerrold Mitchell, Investment Advisor
APFC-003-FY17

This agreement is entered into between the Alaska Permanent Fund Corporation ("APFC") and Mr. Jerrold Mitchell ("Appointee") regarding a position as an Investment Advisor pursuant to the terms and conditions set out herein.

1. Term. The term of this agreement runs from February 1, 2017 to January 31, 2020. The APFC in its sole discretion may reappoint the Appointee for an additional term.

2. Performance. Appointee will serve as an Investment Advisor appointed by the APFC to advise the Board on investment policies, strategy, and procedure and to perform such other services as requested by the Board. Responsibilities include, but are not limited to:

   (a) review the board meeting materials provided, and the investments made by the APFC;
   (b) make recommendations to the Board concerning the Board's investment policies, investment strategy, and investment procedures;
   (c) advise the Board on selection of performance consultants and on the form and content of annual and other reports;
   (d) make recommendations on the selection and retention of external investment managers and custodians; and
   (e) provide other advice and information as requested by the Board.

3. Attendance At Meetings. The Appointee shall make best efforts to attend at least one regularly scheduled meeting of the Board annually, and such other meetings as the Appointee may be requested to attend by the APFC. If circumstances prevent attending in person, attendance by teleconference may be acceptable if approved in advance by the APFC.

4. Fiduciary Relationship. The Appointee acknowledges that while performing the services under this agreement, the Appointee will be acting under a delegation of investment powers or fiduciary duties conferred on the Board under state law and is thus in a fiduciary relationship with the Board and the State of Alaska.

5. Fees Paid. In full consideration of the Appointee's performance, the APFC shall pay the Appointee a sum not to exceed $25,000 annually during the term of this contract consisting of:
   (a) $1,000/month as a retainer fee;
   (b) $1,000 per meeting day of participation at Board meetings;

(c) $1,000 travel time payment per meeting attended to compensate for time spent traveling to and from the meeting; and

(d) Travel expenses, including coach airfare, hotel, and per diem meal expense reimbursement at the approved State rate (expenses must be paid by the Appointee, subject to reimbursement).

Payments under this agreement are contingent upon legislative appropriations for funding each year. The APFC is liable only for payment in accordance with this section for services rendered before the effective date of any termination. The APFC assumes no liability for work done, even in good faith, prior to the effective date of this agreement, or during periods of suspension. This agreement is valid upon the signature of the APFC Executive Director.

6. Termination Or Suspension.

(a) Appointee serves at the pleasure of the APFC, and the term of this agreement may be terminated or suspended at any time by the APFC. The decision of the APFC respecting termination or suspension is final. The Appointee may terminate this agreement upon sixty days notice to the APFC.

(b) A suspension under this agreement is a period of time during which the Appointee shall not be required to perform services. Suspension occurs upon direction of the APFC for periods during which the Appointee's performance or issues of conflict or fitness are being evaluated or investigated by the APFC. A suspension does not operate to extend the term of this agreement set out in Section 1.

(c) In the event of a termination or suspension, the Appointee shall have no rights to compensation for services or costs arising after the date of the termination or during the period of suspension.

(d) In the event of a termination or suspension, the APFC may, in its sole discretion, allow or request the Appointee to present the Appointee's position respecting such action. Such presentation shall be in executive session of the Board of Trustees of the APFC ("Board") to the extent permitted by law.

(e) The Appointee shall notify the chair of the Board within twenty days of any of the following:

(1) any lawsuit filed by or against the Appointee;
(2) cancellation of a professional license or certificate held by the Appointee;
(3) any financial investigation to which the Appointee is a party;
(4) arrest of the Appointee on a felony or misdemeanor charge; or

(5) termination of the Appointee's employment at any firm or agency or a request that the Appointee resign from such employment.

7. Ownership of Work Product. Work performed by the Appointee for the APFC shall become the property of the APFC, provided, however, that such materials as the Appointee provides to the APFC which have been otherwise published or which have copyright or other trademark rights shall remain the property of the creator of such work or the owner of such rights.

8. Confidentiality. The Appointee shall maintain as confidential the work performed by the Appointee for the APFC to the extent required by law when necessary to preserve confidentiality, privacy, or trade secrets. The Appointee shall direct any request for access to the Appointee's APFC-related work or files to the APFC.

9. Disclosure. To avoid conflicts or the appearance of conflicts, no later than 30 days after the effective date of this agreement, the Appointee shall file with the APFC a disclosure statement identifying all clients advised by the Appointee, entities in which investments are held by the Appointee, other appointments of the Appointee as an investment advisor and such other matters as may be from time to time required by state law or the APFC. The Appointee shall update the disclosure statement annually during the term of this agreement, or state in writing that there are no material changes to disclose over the course of the year.

10. Notices. Notices by and between the parties to this agreement shall be as follows:

Alaska Permanent Fund Corporation
Angela Rodell, CEO/Executive Director
801 W 10th Street, Suite 302
PO BOX 115500 Juneau, AK 99811-5500
Telephone (907) 796-1500
Fax (907) 465-1573

Calendar of Upcoming Board Meetings Memo

APFC ALASKA PERMANENT FUND CORPORATION
801 W 10TH SUITE 302 | JUNEAU, AK 99801
907.796.1500 | apfc.org

SUBJECT: Board of Trustees Meetings ACTION: ________

DATE: February 28th, 2019 INFORMATION:_____X_____

BACKGROUND:

APFC's Board of Trustees holds quarterly meetings to review and evaluate the investment performance of the portfolio, the asset allocation and investment risk of the Fund, and the compliance program in relation to applicable laws, regulations, and governance policies. Special meetings of the Board of Trustees are scheduled as required.

The 2019 and 2020 Board of Trustees Meeting schedules have been previously approved. Attached are the calendars for your information, please mark your schedules.

2019 BOARD OF TRUSTEES MEETINGS ARE CURRENTLY SCHEDULED:

FEBRUARY 27-28, 2019 Wednesday & Thursday Location: Juneau	Regular Quarterly Meeting Advisor: Mitchell
MAY 22-23, 2019 Wednesday & Thursday Location: Fairbanks	Regular Quarterly Meeting/Audit Committee Advisor: Walsh *Memorial Day is Monday, May 27*
SEPTEMBER 5, 2019 Thursday Location: Juneau	Audit Committee/Budget Planning Session *Labor Day is Monday, September 2*
SEPTEMBER 25-26, 2019 Wednesday & Thursday Location: Anchorage	Annual Board Meeting Advisor: Zinn
DECEMBER 3-4, 2019 Tuesday & Wednesday Location: Juneau	Regular Quarterly Meeting Advisor: Mitchell

Board meeting calendars continued on next page

2020 BOARD OF TRUSTEES MEETINGS ARE PROPOSED TO BE SCHEDULED:

FEBRUARY 26-27, 2020 Tuesday & Wednesday Location: Juneau	Regular Quarterly Meeting Advisor: TBD
MAY 20-21, 2020 Wednesday & Thursday Location: TBD	Regular Quarterly Meeting/Audit Committee Advisor: TBD *Memorial Day is Monday, May 25*
SEPTEMBER 3, 2020 Thursday Location: Juneau	Audit Committee/Budget Planning Session *Labor Day is Monday, September 7*
SEPTEMBER 23-24, 2020 Wednesday & Thursday Location: Anchorage	Annual Board Meeting Advisor: TBD
DECEMBER 9-10, 2020 Wednesday & Thursday Location: Juneau	Regular Quarterly Meeting Advisor: TBD

RECOMMENDATION:

- Review of 2019 and 2020 Board of Trustees Meeting Schedule

2019 BOT Meetings

ALASKA PERMANENT FUND CORPORATION

2019 BOARD OF TRUSTEES MEETING SCHEDULE

DATE	LOCATION	TYPE OF MEETING	ADVISOR
February 27-28, 2019 (Wednesday/Thursday)	Juneau	Regular	Mitchell
May 22-23, 2019* (Wednesday/Thursday)	Fairbanks	Regular Audit Committee	Walsh
September 5, 2019* (Thursday)	Juneau	Audit Committee Budget Work Session	
September 25-26, 2019 (Wednesday/Thursday)	Anchorage	Annual Meeting	Zinn
December 3-4, 2019 (Tuesday/Wednesday)	Juneau	Regular	Mitchell

Committee Meetings and Special or additional APFC board meetings will be scheduled as needed.

*The Audit Committee Meeting in September must be scheduled in advance to coordinate with the release date for the Audited Statements and the Annual Report as required in statute.

2020 BOT Meetings

ALASKA PERMANENT FUND CORPORATION

2020 BOARD OF TRUSTEES MEETING SCHEDULE

DATE	LOCATION	TYPE OF MEETING	ADVISOR
February 26-27, 2020 (Tuesday/Wednesday)	Juneau	Regular	TBD
May 20-21, 2020* (Wednesday/Thursday)	Kenai	Regular Audit Committee	TBD
September 3, 2020* (Thursday)	Juneau	Audit Committee Budget Work Session	
September 23-24, 2020 (Wednesday/Thursday)	Anchorage	Annual Meeting	TBD
December 9-10, 2020 (Tuesday/Wednesday)	Juneau	Regular	TBD

Committee Meetings and Special or additional APFC board meetings will be scheduled as needed.

*The Audit Committee Meeting in September must be scheduled in advance to coordinate with the release date for the Audited Statements and the Annual Report as required in statute.

Separator Page

Mitchell Response

From:	Richards, Craig
To:	Meiners, Maggie
Subject:	Fw: APFC IA Program
Date:	Wednesday, February 13, 2019 3:21:39 PM

From: JERROLD MITCHELL
Sent: Wednesday, February 13, 2019 2:50 PM
To: Richards, Craig
Subject: Re: APFC IA Program

Craig,
You raise several good questions. I will be at the February 27 Board meeting and can answer in person, but would like to respond in written form as well. So here goes!

1. History. If my memory serves, the IAC program at APFC was started by Bob Storer when he came over from ARMB to APFC as ED. He basically took the ARMB (it may have been called ASPIB then) program and brought it to APFC. That program had three advisors who came to all meetings and interacted with each other as well as the staff and Board. At some point, the APFC Board (and maybe the staff as well) felt that (1) the cost of having three advisors at every meeting was too high, and (2)the advisors were talking too much and "dominating" the meetings. So APFC moved to the current system of rotating advisor visits and, while allowing advisors to speak up, limiting their "official" participation to the scheduled slot toward the end of the meeting.

2. The ARMB Model. As you know, I also serve on the ARMB IAC. Rob Johnson and Bob Mitchell at ARMB could give you a lot of information on how their program works, but to me the main differences are as follows: (1) The three ARMB advisors must represent three different disciplines or backgrounds--money management, public funds, academic. (2) They all come to every meeting. (3) Because of the different backgrounds, the Board/staff get three views on any particular topic. (4) The ARMB chair, as well as other Board members, frequently call on the IAC members during meetings for opinions on matters ranging from manager selection to economic outlook to the addition of new asset classes.
(5) From time to time, the ARMB CIO asks one of the IAC members to present on a specific topic; for example, I have presented on International Investing, the academic member has presented on active vs. passive investing, etc. (6) In addition to attending all Board meetings, the ARMB IAC members participate with Callan and the ARMB CIO on a conference call each year before the Board's asset allocation meeting to review Callan's work and advise on asset allocation. (7) Once each year the ARMB IAC meets with the ARMB CIO and Callan offsite for a day long review of every ARMB manager; the review includes recommendations from the advisors as to which managers are not doing well, either for performance or other (e.g., corporate changes, personnel defections, etc.) reasons. (8) The ARMB CIO on occasion will call IAC members to "air out" a particular topic before a Board meeting. (9) Because all three ARMB advisors come to all meetings, they are pretty much current on what is happening at the fund; at APFC, if an advisor comes only once or twice a year, even if he diligently reads minutes and reports, he is somewhat out of touch. (10) The ARMB advisors suggest topics for the annual Education Conference.

3. Advisors vs. Consultants vs. Staff. Perhaps the original reason for having an IAC was to have someone to look over the shoulder of Callan and the staff. That is, if the IAC members are truly "independent" (with no career at risk) they can serve as an objective check on how the consultant and staff are doing. But they have to be asked!

4. Cost. The ARMB program is more expensive than the APFC program. On the other hand, some public and private sector and major foundation/endowment fund advisory committees pay their advisors as much as 5 to 25 times more than either ARMB or APFC pay.

5. What Does the Board Want? In any organization, the decision to hire an outside advisor is a complex one. Does the organization want real, perhaps tough, advice? Does it want rubber stamping of decisions already made? Does it want cover in case of problems? Does it want the best advisors possible? Should cost be a primary determinant? Should the advisors be able to overrule the staff and consultants, or at least have an equal vote? If the Board is happy with the quality of staff and consultants (and their performance), are outside advisors necessary? Does the organization want to use the advisors as a sounding board and incorporate them as part of the team, or keep them at arm's length? I think the Board itself has to determine what they want from the advisors, how active they want the advisors to be and how much they want the advisors to be integrated into the APFC investment process. Investing is a funny business: there is really no "one right way" to do things. I have see
n institutional investors ranging from one with a single decision maker and no advisors to one with a process as complicated as the Tokyo subway system and a staff of hundreds. There is never a guaranty that one type of organization or combination of consultants and advisors will produce better or less good results. What is important, however, is that the Board and staff be comfortable with whatever role is assigned to the advisors and that the advisors understand what is required of them.

Best regards, Jerry

> On February 13, 2019 at 4:52 PM Richards, Craig wrote:

>
> Jerrold, George and Tim,
>

> I hope all is well. I had the privilege of chairing my first APFC board meeting in December. The Board of Trustees briefly discussed the Independent Advisor program. In particular I questioned whether the way it is structured and how you interact with the Trustees and staff is fully optimized.
>
>
> In particular, the program comes at some expense in terms of cost and time (the Board's time and your own). Yet having different advisors come to different meetings, as well as the structure where advisors ask a few questions and then give thoughts at the end, limits - at least from my perspective - the utility of your advice.
>
>
> So at this next Board meeting I've asked the Board, Staff, and now you all, to offer ideas to increase the value of the contribution of the program. How can the program be better in terms of organization, meeting flow, how and when the advisors interact with staff and Trustees, and how staff and Trustees interact with you?
>
>
> Anyway, a fairly open ended question. Feel free to send us any thoughts by email, or I'd be happy to talk with you on the phone. The next meeting is February 27, so any input you have would be appreciated before that. We can also make a telephone line available for you to call in if you'd like to share any thoughts with the full Board.
>

Sincerely,
>
>
> Craig Richards
>

Separator Page

Zinn Response

From: Rodell, Angela
To: Meiners, Maggie
Subject: APFC IA Program
Date: Thursday, February 21, 2019 1:27:05 PM

From: George Zinn
Date: February 21, 2019 at 1:20:10 PM AKST
To: Richards, Craig
Cc: Jerold Mitchell, Timothy Walsh, Angela Rodell

Subject: RE: APFC IA Program

Craig,

I am submitting my comments in writing as I will be in Japan next week and unable to dial in. You raise good questions and upon reflection I think that my perspective is informed by my experience both at the Fund and as a Board member to the Washington State Investment Board(WSIB), where I serve in a similar capacity.

My relationship with the AFPC began when the former Executive Director hired my former colleague Jeff Scott as CIO and I provided a reference in 2008. Therefore, I cannot provide as much historical context as Jerry and defer to him for that perspective.

During Jeff's tenure and Jay Willoughby's I was utilized rather differently than under the most recent CIO, Russell Read. Previously, I had been asked to aid and abet on a number of both organizational and investment fronts. In that window I helped Mr. Burns benchmark and recruit another former Microsoft colleague, Max Giolitti, who was responsible for architecting a very similar risk management structure ("the green zones") to what we used at Microsoft at the time. I also worked with Jay and Mike directly advising on your https://www.americanhomes4rent.com/ investment as well as Juno Therapeutics. In the latter instance, I performed on the ground due diligence from Seattle meeting directly with the VC involved. I also worked with the previously mentioned ED and CIOs on the proposal to manage duration with futures which is something that we do at Microsoft. I provide those as examples of contributions that occurred outside of the Board meetings. I mention these examples as what I believe was a good utilization of an advisor by staff and the Board, in addition to what you have asked directly about which is contributions during meetings.

In so far as the meeting construct, I would reference both how we utilize our Investment Advisory Council, Chaired by Mohammed El Erian at Microsoft, and the WSIB. In both situations, all advisors are invited/attend each meeting schedules permitting. It is a much more substantial commitment not just in time for the advisors, but also expense for the organizations given the increased expectations. Dialog throughout the meetings is encouraged with no time slot allocated at the end. In addition to the meeting commitments, there are a number of contributions that advisors are tasked with. Specifically, in the Microsoft case, the IAC provides a confidential, annual, performance review/evaluation to both the CEO/CFO as well as a quarterly summary to the Board given their attendance is optional. In the WSIB case, the Advisors are asked to serve on subcommittees where they have special expertise. For example, the newest member is well versed/experienced in Real Estate and was specifically recruited to help advise on those investing activities. I serve on the Audit Committee at the WSIB. In addition, the staff at both places work with the advisors on strategic asset allocation prior to the annual plans being presented to the Boards.

Hope that helps. Thanks for asking.

Best,
George

-----Original Message-----
From: Richards, Craig
Sent: Wednesday, February 13, 2019 1:53 PM
To: Mitchell, Jerrold ; Zinn, George; Walsh,Timothy

Cc: Rodell, Angela

Subject: APFC IA Program

Jerrold, George and Tim,

I hope all is well. I had the privilege of chairing my first APFC board meeting in December. The Board of Trustees briefly discussed the Independent Advisor program. In particular I questioned whether the way it is structured and how you interact with the Trustees and staff is fully optimized.

In particular, the program comes at some expense in terms of cost and time (the Board's time and your own). Yet having different advisors come to different meetings, as well as the structure where advisors ask a few questions and then give thoughts at the end, limits - at least from my perspective - the utility of your advice.

So at this next Board meeting I've asked the Board, Staff, and now you all, to offer ideas to increase the value of the contribution of the program. How can the program be better in terms of organization, meeting flow, how and when the advisors interact with staff and Trustees, and how staff and Trustees interact with you?

Anyway, a fairly open ended question. Feel free to send us any thoughts by email, or I'd be happy to talk with you on the phone. The next meeting is February 27, so any input you have would be appreciated before that. We can also make a telephone line available for you to call in if you'd like to share any thoughts with the full Board.

Sincerely,

Craig Richards