TUCSON SUPPLEMENTAL RETIREMENT SYSTEM
BOARD OF TRUSTEES
Notice of Regular Meeting / Agenda

DATE: **Thursday, June 30, 2016**
TIME: **8:30 a.m.**
PLACE: **Finance Department Conference Room, 5th floor**
City Hall, 255 West Alameda
Tucson, Arizona 85701

A. **Consent Agenda**
1. Approval of May 26th, 2016 TSRS Board Meeting Minutes
2. Retirement ratifications for June 2016
3. May 2016 TSRS Budget Vs Actual Expenses

B. **Disability Applications ***
1. Stephen J. Arnoldi

C. **Investment Activity Report**
1. TSRS Portfolio Composition, Transactions and Performance Review as of May 31st, 2016

D. **Administrative Discussions**
1. Funding Policy Revision: Redline Version – Catherine E. Langford
2. Valeant Pharmaceuticals Litigation – Catherine E. Langford
3. Disability Audit Results

E. **Articles for Board Member Education / Discussion**
1. PIMCO – The Global Outlook: Stable But Not Secure

F. **Call to Audience**

G. **Future Agenda Items**
1. Education Plan for New Staff and Trustees
2. Duties and Selection of Advisory Board
3. Hiring an Intern to Free Staff for Education
4. TSRS Board Annual Evaluation of Staff and Consultants
5. Formal Evaluation of Active Managers – 1.5% over benchmark over a given period
6. RFQ for Actuarial Services
7. Action Plan for Black Swan Events
8. Would It Be Better to Index the Whole Fund

H. **Adjournment**

Please Note: Legal Action may be taken on any agenda item

***Pursuant to ARS 38-431.03(A)(3) and (4): the board may hold an executive session for the purposes of obtaining legal advice from an attorney or attorneys for the Board or to consider its position and instruct its attorney(s) in pending or contemplated litigation. The board may also hold an executive session pursuant to A.R.S. 38-431.03(A)(2) for purposes of discussion or consideration of records, information or testimony exempt by law from public inspection.

TUCSON SUPPLEMENTAL RETIREMENT SYSTEM
BOARD OF TRUSTEES
MEETING MINUTES

DATE:	**Thursday, May 26, 2016**
TIME:	**8:30 a.m.**
PLACE:	**Finance Department Conference Room, 5th floor** **City Hall, 255 West Alameda** **Tucson, Arizona 85701**

Members Present:	Robert Fleming, Chairman Rebecca Hill, HR Director (arrived 8:38 AM) Betsy Conroy, Deputy HR Director (departed 8:38 AM) Silvia Amparano, Director of Finance Michael Coffey, Elected Representative Jorge Hernández, Elected Representative John O'Hare, Elected Retiree Representative
Staff Present:	Dave Deibel, Deputy City Attorney Karen Tenace, Deputy Director of Finance Neil Galassi, Pension Administrator Silvia Navarro, Treasury Administrator Dmitriy Adamia, Administrative Assistant
Guests Present:	Gordon Weightman, Callan Associates Claire Beaubien, CTRA Representative Teri Smith, Aberdeen Asset Management Marie Mitchell, Aberdeen Asset Management
Absent/Excused:	Kevin Larson, City Manager Appointee

Chairman Fleming called the meeting to order at 8:32 AM

A. **Consent Agenda**

1. Approval of April 28th, 2016 TSRS Board Meeting Minutes
2. Retirement ratifications for May 2016
3. April 2016 TSRS Budget Vs Actual Expenses

Michael Coffey requested item A1 be considered separately.

Chairman Fleming asked for a vote on the approval of Consent Agenda items A2 and A3. Consent Agenda items A2 and A3 were approved by a vote of 5-0. (Chairman Fleming did not vote, Kevin Larson absent/excused).

Mr. Coffey stated on page 4 paragraph 2 stating bi-mobile should be bimodal, and rephrased the sentence to state "Michael Coffey asked about bimodal distribution of the expectations of growth rates". On page 4 paragraph 3 he corrected the spelling of the word monetary.

John O'Hare asked if staff still keeps CDs of the recordings.

Neil Galassi answered staff does keep audio files of the recordings on the City server.

Chairman Fleming asked for a vote on the approval of Consent Agenda item A1 with amendments. Consent Agenda item A1 with amendments was approved by a vote of 5-0. (Chairman Fleming did not vote, Kevin Larson absent/excused).

B. **Investment Activity Report**

1. Annual Investment Manager Review – Aberdeen Asset Management – Teri Smith, Sr. R.M. and Maree Mitchell, Sr. Equity Specialist

Teri Smith asked if there is any direction that the Board would like to give us on topics other than a review of the portfolio, and an update on the firm.

Chairman Fleming stated in terms of direction the Board is interested in knowing the status of the portfolio as it relates to the Trust.

Gordon Weightman requested Aberdeen provide a reminder to the Board of what the philosophy is and what Aberdeen is trying to do as a strategy.

Ms. Smith stated they wanted to start by thanking the Board for the additional investment allocation earlier this week. They appreciate that the Board stuck with Aberdeen through a period of relative under performance. They were happy to say so far this year that things that were working against Aberdeen, are now working for them this year, they are out performing by about 366 basis points versus the benchmark.

Marie Mitchell explained the team is based in Edinburgh, Scotland where they manage all of their international large and small cap portfolios. They use the research analysis provided by their 90 regional investment managers that are based around the world, who are out there meeting with management of potential companies, and doing a lot of due diligence before they will invest in a company. Last year they did over 2,000 company visits. They do not invest in a company before they have met the management at least once, but more often than not they will have met them at least three or four times over a potential one to two year period before they buy that company. Each of the regional teams are managing portfolios for their clients around the world that are invested in emerging markets covering the US, Asia, Japan, UK, and Europe. The global team based in Edinburgh will choose their 40 to 60 stocks and then they do additional analysis on those companies to whittle them down. They currently have 49 names in the portfolio and they believe that that is a good amount, every stock has to add value and they believe that they are investing in good quality stocks that will do well over the longer term.

Mr. Weightman asked how long does Aberdeen typically hold the stocks.

Ms. Mitchell stated the average turnover for this portfolio is always less than 35 percent, but last year there was a bit more activity because of volatility and the disappointing performance. They also cut a few stocks where they felt there were better opportunities elsewhere. Aberdeen's aim is to hold investments for at least five years over an economic cycle.

Overall performance

To 30 April 2016

Performance summary	One year to end Dec 2015	Year to date end Apr 2016	One year to end Apr 2016	Annualized three years to end Apr 2016	Annualized since inception (4/2/2012)
Fund (gross)	-13.63%	5.07%	-14.38%	-3.44%	0.69%
Fund (net)	-14.32%	4.79%	-15.07%	-4.21%	-0.11%
Benchmark	-5.25%	2.45%	-10.87%	0.42%	3.35%
Difference (gross)	-8.38%	2.62%	-3.51%	-3.86%	-2.66%

Account valuation as at end April 2016	
Tucson Supplemental Retirement System	$37,327,481

Ms. Mitchell referenced the above tables. She stated performance was hugely disappointing for the Board since their initial investment, and they had good performance before the Board invested with Aberdeen. They have had a tough few years recently, certainly since 2013 when the Federal Reserve announced they are going to taper quantitative easing, especially in emerging markets. Direct exposure is about 20% in emerging markets. Looking at emerging markets they under performed developed by nearly 15%. Aberdeen's indirect and direct exposure to emerging markets was a negative for their relative performance last year, as well as exposure to some of the cyclical sectors, which obviously had a tougher time on the back of lower commodity and energy prices. In addition, in the last few years, they have seen stocks in parts of Europe and in Japan, moving on the hope that quantitative easing will help. In Japan there has been strong performance the last few years, but they have not invested with some of the companies in Japan because of the way that they are managed, and have given preference to companies outside of Japan. That has been a negative for Aberdeen in past years. This year investors are focusing on quantitative easing and asking if it is really helping. In Japan it does not seem to be having the desired effect thus far. So, the under rating of Japan companies, which has hurt them the last couple of years, has actually been a positive for them this year as people have that with realized post quantitative easing, the only thing left to do is cut into savings. However, this is not having the desired effect. In Denmark, they have had negative interest rates since 2012 with intent that negative interest rates will entice people to not leave their money in the bank but rather spend it. Actually, it is having the opposite effect because people think that things are so bad, their government had to cut interest rates because there was nothing else to do. In actuality, people are not spending money as intended because they are worried that the economy is even worse than the experts are saying.

Mr. Weightman stated a lot of countries are actually issuing smaller denominated currency and people cannot find the 500 euro, people are not able to take the money out and hold on to it. There is more of an encouragement to keep their money in the bank.

Ms. Mitchell answered in the affirmative. Aberdeen's performance has improved because emerging markets have started to outperform developed markets. The overall portfolio is up 95% to the benchmark at the end of April, and Aberdeen's returns are up to 70% above the benchmark so far this year. This is a huge turn around after being off the benchmark by 50% last year. In addition they have seen commodity and energy prices stabilize. That has benefited some of the cyclical sectors.

Mr. Weightman stated looking at the energy sector for example, basically it was a broad sell off in stocks, it did not matter what your fundamentals were, if you were an energy and commodity oriented company, you sold off.

Mr. Weightman asked what did Aberdeen see in some of these energy companies and material companies that Aberdeen liked and caused Aberdeen to continue to own them.

Ms. Mitchell stated in regards to commodity prices, there are two ways of looking at this. First of all, they felt commodity prices had been overdone on the down side, and maybe a bit overdone on the up side now. So, from a valuation point of view versus their outlook they looked attractive. They have cut some energy and commodity related stocks, but they still own HP Bullion. HP Bullion is a materials commodity company and are one of the low cost producers. As commodity prices come down, the higher cost producers go out of business, but companies like HP Bullion remain strong. They have also seen changes in government policies for companies operating in global emerging markets over the last couple of years. As a result, Companies have begun to spend on infrastructure. The portfolio holds companies Aberdeen feels are some of the best in the class that will succeed over the coming decades. One of the reasons they underperformed over the last few years was over exposure to certain commodities with an indirect exposure to industrials. That is why over the last couple of years Aberdeen has worked to pick up some stocks they believe are of good quality, and will improve the overall quality of the portfolio. They reduced their overall exposure to industrials materials, energy, and increased their exposure to consumer staples, telecoms, IT, healthcare, and consumer discretionary.

Michael Coffey asked whether Great Brittan's exit from the Euro zone would have any effect on the Portfolio.

Ms. Mitchell stated Aberdeen does not believe the exit will have any effect on the portfolio. Most of their companies are global in nature, and Aberdeen believes the exit would not significantly affect them.

Mr. Weightman stated even if the citizens vote to exit the Euro zone, there is a huge negotiation process that will take years. The vote is not an end all be all.

Ms. Mitchell stated some of the things that had been negative for Aberdeen in the past were a positive this year. The biggest under performer last year was Bank of Bradesco which was down 51% vs. the benchmark, while this year the return is 70% above the benchmark return. They are conscious of such global rallies, and have been taking some money out of stocks that they think have gone too far on the up side. In regards to ongoing portfolio activity, Aberdeen is planning for top slicing, taking profits, or mitigating relative weaknesses, but the process and the team have not changed.

Chairman Fleming asked Ms. Mitchell to explain the portfolio characteristics and then the Board will ask questions.

Fund activity – one year to end April 2016*

Continued

	Stock Name	Date	Remarks
Exited	Schindler Holdings	Aug-15	Sold elevator and escalator manufacturer Schindler Holdings, on valuation and weakening end markets particularly China, which is the most important new installations market worldwide.
	South32	Sep-15	Sold out of the stock received from the BHP Billiton spin-off.
	Ericsson, Engie	Nov-15	Exited the positions to fund better opportunities elsewhere.
	Zurich Insurance	Jan-16	Exited the position. The European insurer faces a challenging operating environment with low yields and low interest rates. Our preference is towards AIA Group, which benefits from continued penetration of insurance products in Asia. Zurich Insurance has also struggled with management changes and poor results.
	Casino	Feb-16	Sold French retailer Casino, after it divested its Thai business, which we regarded as one of the attractive growth drivers of the company.
	Nordea Bank	Mar-16	Exited our position in Nordic bank, Nordea Bank. The company has done well since our initial investment and remains well capitalized, however compared to other investment opportunities we feel the business has limited future growth prospects and we are cautious over the exposure to the increasingly buoyant Nordic property market.
	Vale	Mar-16	Exited our remaining holding in Brazilian miner Vale on the back of a very strong rally in Brazilian assets year to date. This has been supported by the recent political news flow within Brazil and a sharp improvement in iron ore prices; however supply demand imbalances remain in this market.
	HSBC	Apr-16	Sold out given concerns over the continuing drag on returns from regulatory and compliance requirements to fund better opportunities.
	Schneider Electric	Apr-16	Sold the position to source the addition of Keyence, a more focused exposure to automation and sensors technology.

Aberdeen EAFE Plus Fund

Fund characteristics as at end April 2016

(%)	Aberdeen EAFE Plus Fund	MSCI AC World ex USA
P/E (x)	17.86	16.89
Dividend Yield	2.95	3.23
Dividend Growth (last 5 years)	11.68	10.01
Price/Book	2.02	1.50
Return on Assets (ROA)	7.06	5.18
Return on Equity (ROE)	18.20	14.44
Debt/Equity*	0.69	1.25

Ms. Mitchell referred to the above tables. She stated it is been a tough last few years, but they believe they have a quality portfolio that should hold up well in the future. Aberdeen likes companies with low debt and good cash flow, and overall they feel the portfolio is cash generative. They are focused on emerging markets where portfolio exposure is up to 30%. They also have direct and indirect exposure with a lot of companies within UK and Europe that are global in nature. Aberdeen sees positive signs in global emerging markets. Companies in these markets have reduced their current debt over the last few years, and they are much less reliant on US dollars than they have been in the past. Aberdeen has also seen some positive election results over the last few years, and lower energy prices in many countries. They are starting to see economies in emerging markets picking up, and there is still plenty of room to cut interest rates in emerging markets to spur on their economies. China is obviously the main driver toward emerging markets. They are moving from an export and investment led economy to a sustainable consumption and services led economy. Those jobs coming out of manufacturing are being replaced with service jobs. Therefore, Aberdeen feels services are going to be a growth area for China. Overall this year, in emerging markets, GDP is 4.6% versus the developed markets GDP of 2.2%, it is slowing but it is still growing.

Mr. Weightman stated it is interesting because many experts are worried about the slow down the Chinese are going to have in buying materials, commodities, and natural resources. Maybe from an investment standpoint that is not great, however they are going to be using less natural resources and commodities. As some of these resources that are very finite, and are not going to last forever this is a positive from an environmental perspective.

Ms. Mitchell stated emerging markets have been focusing on cost cutting and margin improvement over the last few years. Earnings were up about 10% last year in emerging markets, and they expect the same for this year. They are seeing really stretched valuations in domestic markets, especially in the US, Europe, and Japan, where the fundamentals do not represent those stretch valuations while the opposite is true in emerging markets. In valuations, emerging market equities are still trading at a 24% discount to their 10 year average price, compared to a 15% premium for US equities. They are definitely remaining cautious on some of these stocks that have rallied on these earnings in Japan, and Europe. Aberdeen cut Zurich Insurance, Nordea Bank, and HSBC Bank because of negative interest rates. What they have done is they bought a bank in Thailand and another bank in Japan representing a movement away from banks Aberdeen feels will struggle with negative interest rates.

John O'Hare asked by how many basis points is Aberdeen expecting to exceed the benchmark.

Ms. Mitchell answered Aberdeen's aim is to do 300 basis points above the benchmark over a 3 year rolling period. They have achieved that this year, but they clearly have not for the last couple of years, they have got quite a long way to go.

Mr. O'Hare stated Aberdeen needs strong performance in the future to make up for the last few years.

Ms. Mitchell answered in the affirmative. They are not going to say that they are going to get the last two years of underperformance back in the next year, but there was very strong performance to start to this year. Looking back to the years prior to TSRS's investment with Aberdeen, they had shown strong performance. Aberdeen feels they will return to stronger overall performance as time moves forward from the underperforming years.

Mr. Weightman stated to give Aberdeen credit, when there are times of underperformance there are always firms that will re-look at the way that they are doing things and tweak things, maybe even change the philosophy and process. It is the Boards understanding that Aberdeen has not done that, Aberdeen is not stretching for performance because of the recent losses.

Ms. Mitchell answered absolutely not, and that is something that they have been adamant about. Over the last 20 years, they have always stuck to their process. They believe it is the greater process longer term however, it is just certain environments than do not necessarily work as well. Aberdeen is hopeful they will get back to an environment where people are focusing on the fundamentals rather than the macro news.

Mr. Weightman stated the Boards former allocation to equities was 75% US, 25% non US, and the Board decided to go 60-40, 40% non US. When thinking about big broad level asset allocation policy, the Board is not interested in timing the market, because this plan is open in perpetuity and has a very long time horizon.

Mr. Weightman asked what is Aberdeen's perception of the timing of this change in allocation.

Ms. Mitchell stated if the Board is talking about the emerging versus developed markets, Aberdeen thinks that they will probably have at least another few quarters of volatility in emerging markets as economic conditions in China and Brazil settle, but they think people will focus less on that negative sentiment. In regards to money flowing in and out of emerging markets it is more sentiment driven as many large pension funds do not exist in these markets. They think on the institutional side, investors are definitely more focused on fundamentals, and other portfolios are looking similar to what the Board is doing within its portfolio. In the last three years, they have seen a lot of US companies doing share buyback programs as a form of financial engineering to look better.

Mr. Weightman asked if companies are issuing long-term debt to conduct the share buybacks.

Ms. Mitchell answered affirmative and typically that is not optimal. What should be happening is not companies buying shares back at all-time high prices, but rather companies should be reinvesting into their business so that in three to five years the company is stronger. Aberdeen thinks that is going to come back to bite companies in a few years when they realize that they did not do that. Investment managers at Aberdeen are not market timers. They will systematically increase the investment if they like company and the situation, and Aberdeen believes that is the right way to do it. By the end of the year Aberdeen is expecting to see people taking money out of developed markets, and focusing more on emerging markets where opportunities are better based on fundamentals.

Ms. Smith stated the Trust portfolio will look more like the world looks like. They think over the long term, it is okay to have a little bit of a bias towards the US, but now the Trust portfolio is going to look more like the opportunity set.

Mr. O'Hare asked how many clients has Aberdeen gained and lost in the last year.

Ms. Smith stated they will have to gather the specific numbers to provide an answer.

Mr. O'Hare asked how large is this product.

Ms. Smith answered this product is $4B.

Ms. Smith stated they have definitely seen more outflows than inflows, due to performance. One of the great things about having strong performance is Aberdeen gets a lot of interest from potential clients, the negative can be once Aberdeen under performs, some of the new clients may not be patient. New clients may hire Aberdeen based on great returns, but do not do as much work on how Aberdeen manages the money. Then as soon as they see a negative result, they leave Aberdeen. The flows have stabilized, but they definitely have lost clients in the global space, but they still have a healthy business in this area. They think it will take a few years before you see some new clients coming in because they want to see the positive performance as well.

Mr. Weightman stated peak assets in 2013 were $9.2B.

Ms. Smith stated some of that is outflows, and some of that is market action.

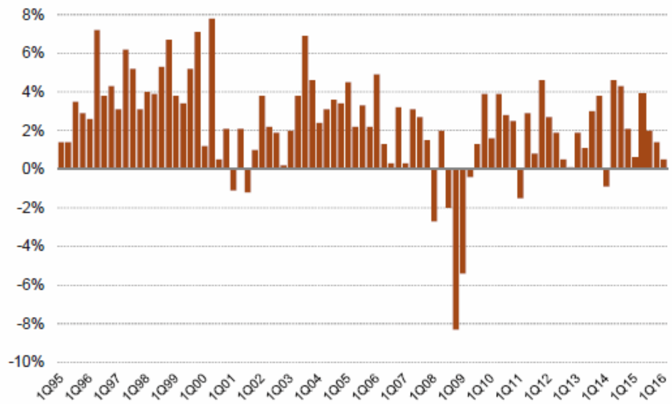
Ms. Mitchell stated certainly the pickup in performance, has helped us this year.

2. March 31, 2016 TSRS Quarterly Review of Investment Performance – Callan Associates, Inc.

U.S. Economy

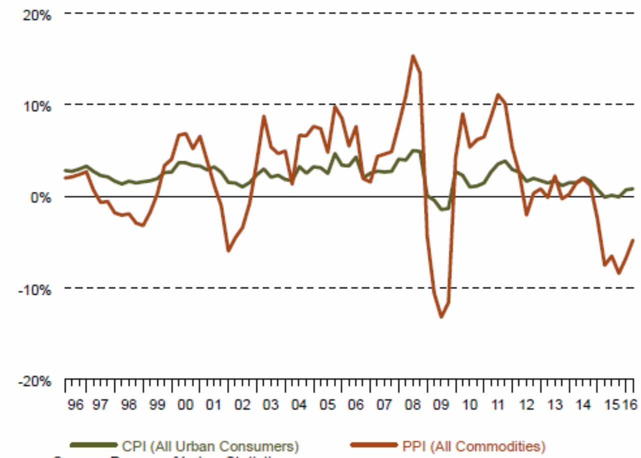
Periods Ending March 31, 2016

Quarterly Real GDP Growth (20 Years)*



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



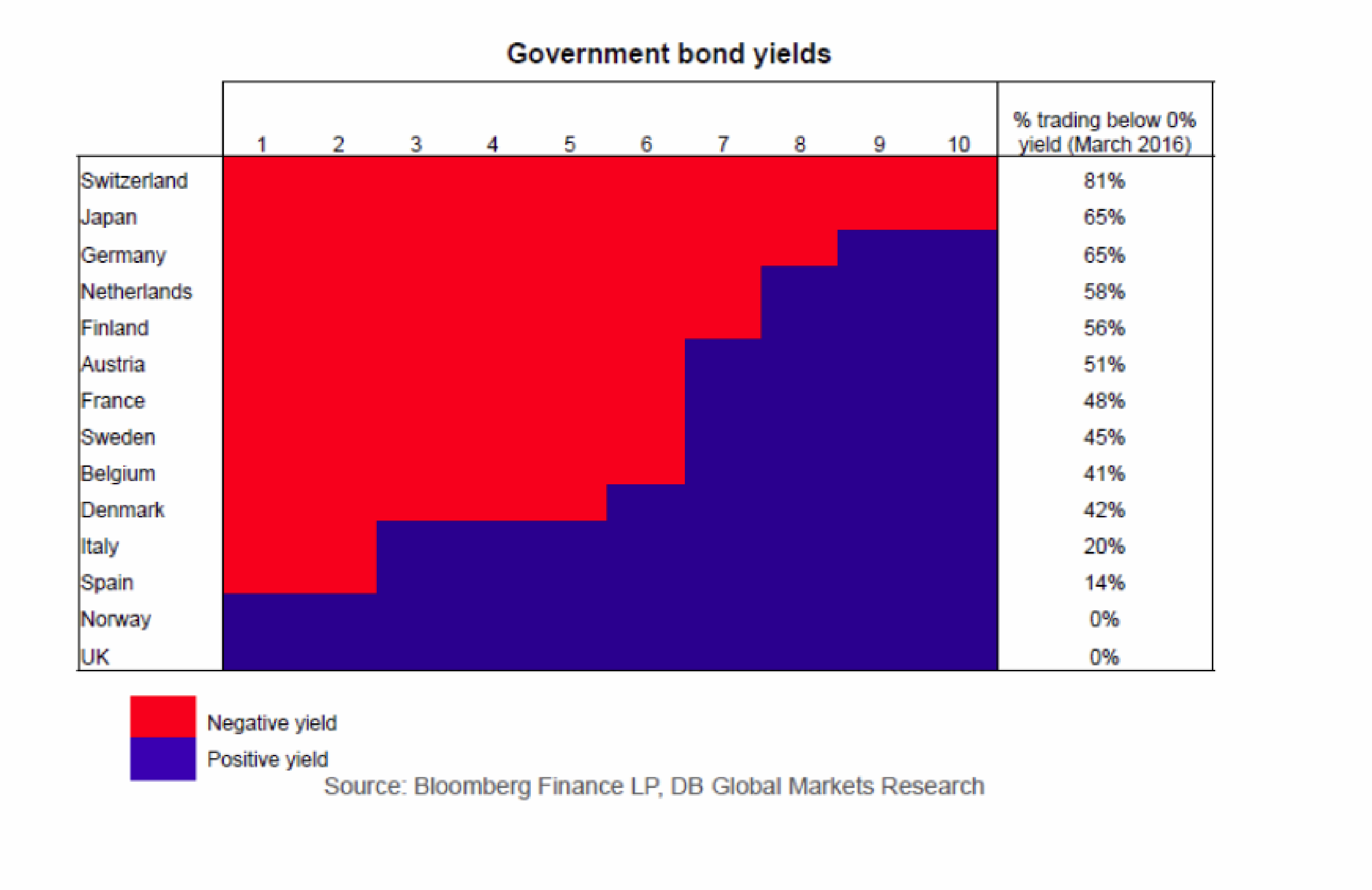
Source: Bureau of Labor Statistics

- Initial estimate of first quarter GDP came out at 0.5%, down from a fourth quarter reading of 1.4%.
- March headline inflation rose 0.9% over the trailing twelve months. Core CPI Increased 2.2%.
- March unemployment was 5.0% (up 0.1% from February) on a tick up in the labor force participation rate.
- The Fed maintained the fed funds target rate of 0.25% - 0.50 and reduced their year-end target rate from 1.4% to 0.9%.

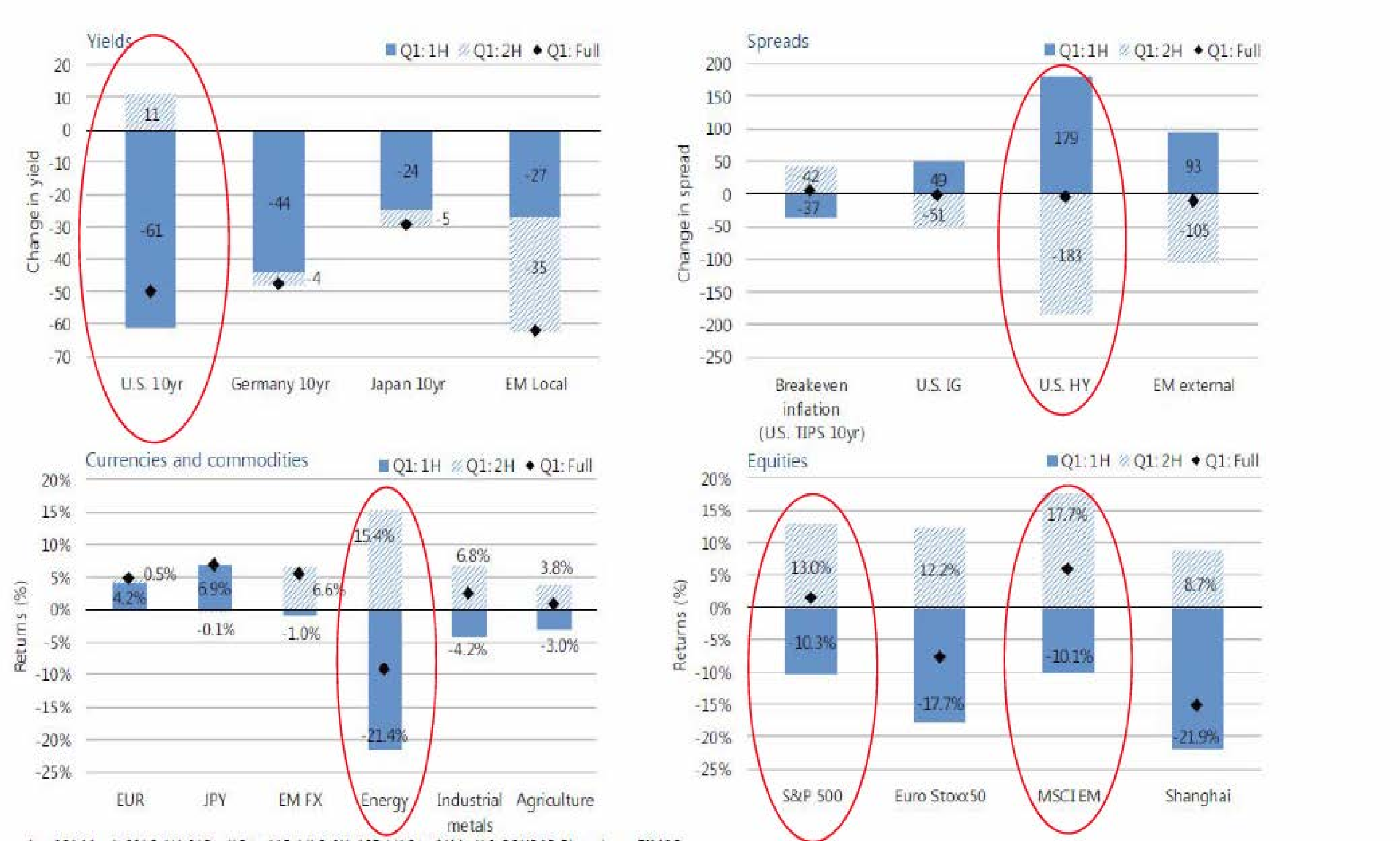
Gordon Weightman referenced the above table, and stated what we have is a tale of two halves in the first quarter. The first half was very much risk off, the second half was risk on, and so we saw equities rebound. We also saw energy and commodity prices rebound in the first quarter, and that is continued now through to where we are now.

John O'Hare asked Mr. Weightman to explain what risk on and risk off means.

Mr. Weightman answered the next few slides will illustrate what risk on and risk off means. When looking at the numbers, GDP is at .5%, consumer spending was up 1.9%, and consumer spending makes up about two thirds of GDP. That means there were some things that really substantially brought it down to .5%, like government spending at both the local and Federal level. We also saw some uptick in housing, inventory replenishing, and we are at the bottom of a cycle. Inflation is at .9%, and Core CPI excluding food and energy is at 2.2% which is a rate of change metric. This was predominately caused by energy prices going up, and the start of an uptick in inflation. We saw oil at $51.00 a barrel this morning, so it came up from a bottom in the middle of February of $26.00, doubling in that time period. Unemployment was at 5%, resulting from an uptick in the labor force participation rate as more people are getting back into the work force. Real wage increases are starting to come across through payrolls since corporations have a lot of cash on their balance sheets, and they are starting to give it to their most valued assets, their employees. The Federal Reserve maintained the funds rate at .25% to .5%. There are currently no indications from the Fed that they are going to be increasing rates given where rates are around the rest of the world.



Mr. Weightman stated the above graph shows the percentage of government bonds, and the various countries, and the percentage of their debts trading at negative interest rates. You can see that in Switzerland, 81% of their bonds are at negative interest rates and in Japan 65%. By having negative interest rates these countries are trying to encourage people to spend money rather than saving it. If investors think rates are going to go more negative or if investors were worried about disinflation, they may find these investments attractive. If one had a $50 coupon from a bond, and if you go into a disinflationary type environment, all of a sudden the purchasing power of that bond is $50 is greater. Those are some of the reasons why investors are actually putting money into these bonds and paying the government to keep their money safe. This is in stark contrast to the US, which is in the process of raising interest rates.



Mr. Weightman stated the above chart from PIMCO shows the amount of volatility in the first quarter. Looking at the US ten year, for example in the top left, the blue shaded bar is what happened in the first half of the first quarter, and the striped area is what happened in the second half. The first half of the quarter, saw yields fall as investors bought into treasuries, or a flight to quality corresponding to a risk off environment. This means investors had pulled money out of equities, high yield investments, and investments with a lot of credit risk and gone to a safe haven investment. Then in the second part of the quarter, investors started to sell some of those treasuries. As a result, we saw yields increase and overall the ten year treasury went from 2.25% to 1.75% during the quarter. In contrast to that looking at the top right of the chart, first half of the quarter saw high yield spreads widen. Investors were selling out of those risky assets, and buying treasuries. Then in the second part, they were buying back into high yield bonds, and the spreads tightened up. This is similar with energy which was down 21% in the first half of the quarter, and then up 15% towards the end. The S&P 500 was down 10.3% through the middle of February, and then it rebounded 13% in the second half of the quarter. Same thing with emerging markets, they were down 10.1% as investors sold the risky assets, and then up almost 18%. Emerging markets had a return of over 5%. There was a lot of volatility, it was a difficult environment because of all that movement for active managers to pick stocks.

Periodic Table of Investment Returns
for Periods Ended March 31, 2016

Best

Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
MSCI:EM Gross 5.8%	Barclays:Aggregate Index 2.0%	S&P:500 11.8%	S&P:500 11.6%	S&P:500 7.0%
Barclays:Aggregate Index 3.0%	S&P:500 1.8%	Russell:2000 Index 6.8%	Russell:2000 Index 7.2%	Russell:2000 Index 5.3%
S&P:500 1.3%	3 Month T-Bill 0.1%	Barclays:Aggregate Index 2.5%	Barclays:Aggregate Index 3.8%	Barclays:Aggregate Index 4.9%
BLMBRG:Commdty Idx **0.3%**	MSCI:EAFE (8.3%)	MSCI:EAFE 2.2%	MSCI:EAFE 2.3%	MSCI:EM Gross 3.3%
3 Month T-Bill 0.1%	Russell:2000 Index (9.8%)	3 Month T-Bill 0.1%	3 Month T-Bill 0.1%	MSCI:EAFE 1.8%
Russell:2000 Index (1.5%)	MSCI:EM Gross (11.7%)	MSCI:EM Gross (4.2%)	MSCI:EM Gross (3.8%)	3 Month T-Bill 1.1%
MSCI:EAFE (3.0%)	BLMBRG:Commdty Idx **(19.7%)**	BLMBRG:Commdty Idx **(16.9%)**	BLMBRG:Commdty Idx **(14.2%)**	BLMBRG:Commdty Idx **(7.1%)**

Worst

Mr. Weightman referenced the above table and stated emerging markets performed well last quarter. They had a difficult last year being down 11.7%, and looking at them over 5 years they are down 3.8%. Latin America was up 18%, Brazil was up 28% as there was a strong rebound in those markets. The Board made a policy decision to move the mandate for value non-us equity portfolio managers to ACWI EX-US which has about 20% exposure in emerging markets increasing TSRS's exposure there. The Barkley's aggregate went up to 3% with investment grade corporate bonds being the best performers within that segment. The S&P 500 was up 1.3%, small cap stocks were negative, down 1.5%, and EFA was down 3%. The dollar weakened for the first time in a long while which is good for US based investors investing internationally. In the US equity markets, dividend payers did very well, and utilities and telecom were up over 15% because of very low bond yields. In a risk off environment investors go to those dividend paying stocks, and they are getting income through those securities. Now when looking at those sectors, their valuations are extremely high. Therefore, they have fallen off during the quarter. The other trend is that for a long while now in non US and US markets, growth stocks that outperformed value have switched, and value actually out performed growth during the quarter. A lot of that has to do with energy, which is a big component of value indices.

Michael Coffey asked if the Board made a wise decision to move to a 60-40 allocation.

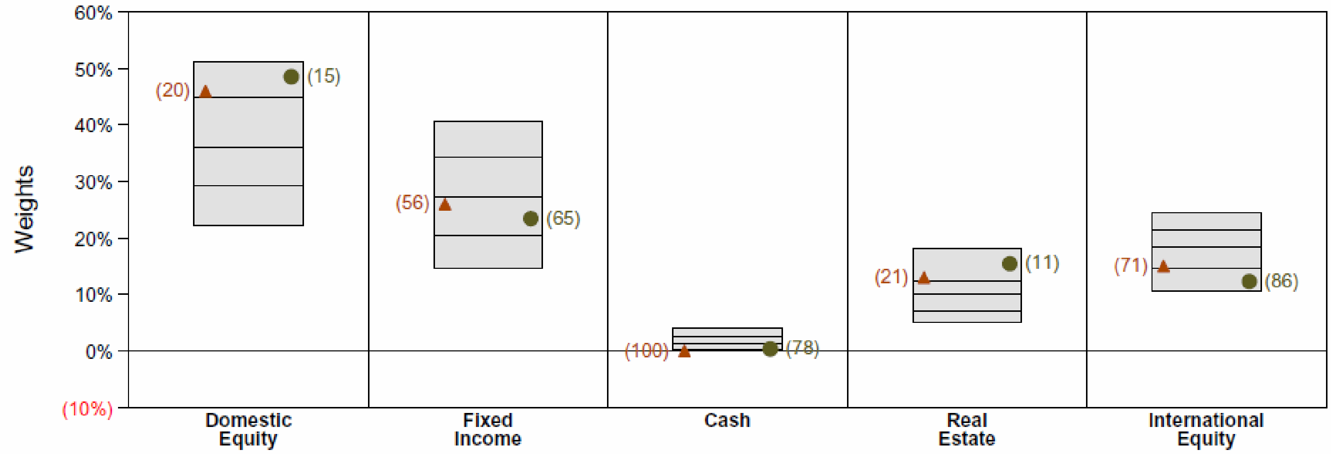
Mr. Weightman stated from a broad policy standpoint, it is consistent with the long term goals of the plan. Forty percent of revenue for S&P 500 companies now comes from abroad. The Board already has a global portfolio. If we track revenues, the bias would be more towards the rest of the world than towards the US. So, this move to go 60-40 is basically an acknowledgment that we believe in globalization. For example take a company like Nestle, based in Switzerland, who does a great amount of business in the emerging markets, yet has a big presence in the US. So one should not say well we are going to invest in Nestle just because we have X percentage in non US assets, and we have X percentage in US assets. Now one is basically saying we have a broader opportunity set, and there is more leeway. With the allocation to 60-40, the Board has embraced the total global equity picture. The Board still has a little bit of a bias towards US equities, if we look at the global market cap of the index, it is 50-50. The non US equity markets have lagged the US market for ten years. We just heard valuations in the non US equity market versus the US are cheaper. Therefore, the Board essentially sold stocks that had higher valuations, and bought stocks that had lower valuations, that is typically a good way to do it. However, there could also be a correction in the US. Equities as they have been rallying since 2008. If the Board looked at past cycles, a 7 year bull equity market is a long time.

> Aberdeen EAFE Plus – Callan's Global Manager Research group maintains a positive view on Aberdeen's Non-U.S. and Global equity strategies despite recent underperformance. Much of the recent slide has come from over exposures to Energy and Materials. We've questioned them on the "quality" of these exposures where they feel they're holding companies with the highest quality managements and reserves. Given the across-the-board selloffs in these sectors throughout 2015 their quality bias has not protected them. This trend reversed in the most recent quarter with Aberdeen outperforming the benchmark (+2.8% versus -0.4%). Assets under management in the strategy were $4.1 billion as of 3/31/16, which is down from the peak level of $9.2 billion in 2013.

Mr. Weightman stated the Board asked Callan to write up a memo on Aberdeen which is presented above. Callan still has conviction in Aberdeen and their underling process.

Mr. Weightman stated with Macquarie the Board has an infrastructure fund that has three holdings, with two being airports that make up the majority of the portfolio; one in Brussels, and one in Copenhagen. The airport in Brussels was bombed. Callan has had lengthy conversations with the Macquarie to determine how this may adversely affect the long term return stream and cash flow stream of the investment. They do not believe so with the reason being is it was not a widespread explosion. It was very centralized, and the actual damage is not going to take much to replace. The bigger concern is the flow of passengers in and out of the airport as they were operating at 60% capacity after the attacks. However, to their credit they have insurance that will pay for all the repairs. They are not expecting to have any long-term effects on performance, the only negative is that insurance premiums will go up.

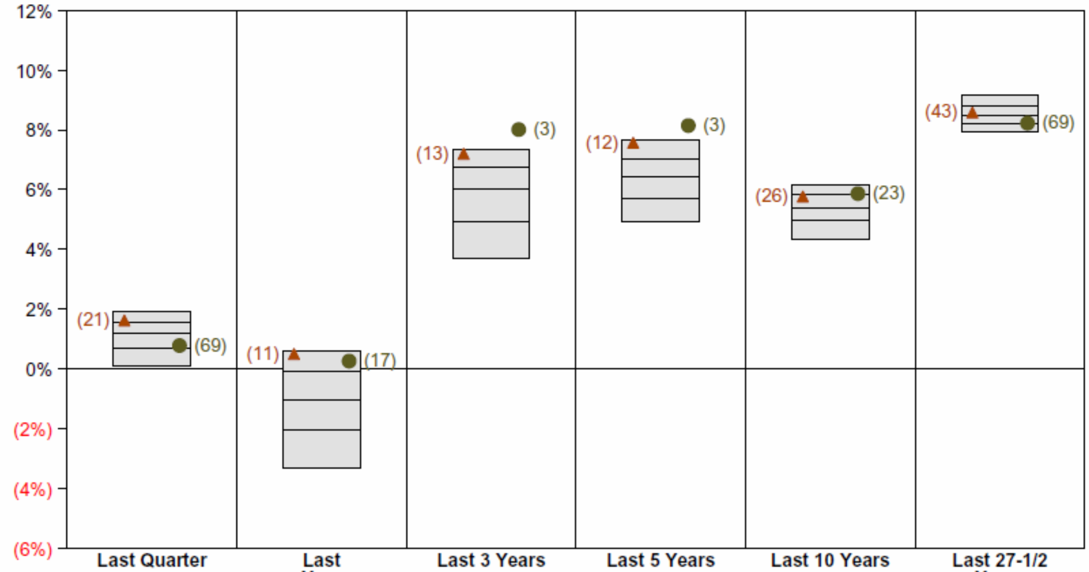
Asset Class Weights vs Public Fund Sponsor Database



	Domestic Equity	Fixed Income	Cash	Real Estate	International Equity
10th Percentile	51.06	40.54	4.14	18.07	24.35
25th Percentile	44.86	34.37	2.55	12.37	21.33
Median	36.04	27.17	1.25	10.05	18.50
75th Percentile	29.20	20.50	0.36	7.06	14.67
90th Percentile	22.22	14.61	0.10	5.06	10.71
Fund ●	48.54	23.42	0.33	15.42	12.29
Target ▲	46.00	26.00	0.00	13.00	15.00
% Group Invested	98.97%	96.92%	70.26%	61.03%	97.95%

Mr. Weightman referenced the above table and stated the Board has a home country bias in equities that has helped the portfolio over the last 7 years. Fixed income is pretty close to median, and portfolio fixed income exposure is at 26%. The portfolio real estate target is 13%, and that is in the 21st percentile. Private real estate has been one of the best places to be which has also helped the portfolio. Typically once expects returns to be about two thirds income, and one third appreciation. Given what is been happening in the real estate markets in a lot of the major cities around the US, that has been reversed. Capital preservation has been two thirds of the return, and income has been a third, so private real estate has done very well. International equity, at 15% of the portfolio, was in the 71st percentile which is relatively low but closer to peers.

Performance vs Public Fund Sponsor Database (Gross)



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 27-1/2 Years
10th Percentile	1.91	0.61	7.33	7.65	6.17	9.15
25th Percentile	1.54	(0.08)	6.76	7.01	5.82	8.82
Median	1.17	(1.03)	6.02	6.41	5.39	8.48
75th Percentile	0.67	(2.05)	4.92	5.69	4.96	8.20
90th Percentile	0.10	(3.35)	3.69	4.94	4.34	7.92
Total Fund ●	0.78	0.26	8.01	8.14	5.86	8.22
Total Fund Benchmark ▲	1.62	0.49	7.20	7.57	5.77	8.58

Mr. Weightman referenced the above table and stated an uptake in market value came from $5.4M in investment returns, and some outflows of less than $1M during the quarter. The actual return of the portfolio versus the benchmark and peers for the quarter was .78%. The portfolio underperformed the benchmark, and ranked in the 69th percentile. Over the last year the portfolio had a positive return. Looking at the distribution of returns, pension plans had negative returns in general. Therefore, the Board ranked very well versus peers, 17th percentile. Looking back 3, 5, 10 years, investments in US equity have helped the portfolio, with a 5 year return of 8.14% that is above expected rate of return of 7.25%, and in the 3rd percentile. The 10 year return is 5.9% which is below the expected rate of return of 7.25% primarily due to the events of 2008. The portfolio asset allocation policy and active managers gave the Board very good performance versus other public pension plans.

Mr. O'Hare asked if these are gross or net numbers.

Mr. Weightman answered they are all gross numbers.

Mr. O'Hare stated the Board should then take off 600 – 750 basis points in their analysis.

Mr. Weightman answered not that much. Looking at fiscal year 2015, the return gross fees for the total fund was 4.63%, Compare that to the net return over fiscal year 2015, and it is 4.17%. Therefore, the Board is looking at 46 basis points as the investment management fee. If the Board takes a long-term view, adopts a strategic asset allocation policy, and employs active managers in certain areas of the portfolio, the Board can have success. This has been evident as over the last 27 and a half years, the Board got to the 7.25% with a cushion. In the next 10 years Callan's median estimate would be closer to 6.5% for your portfolio with some volatility. Without any active management assumed, the probability of meeting the 7.25 % goes down to 40%. If we stretch that out over 30 years the return expectation would go up.

Returns for Periods Ended March 31, 2016

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Gross of Fees					
Domestic Equity	**(0.57%)**	**(0.56%)**	**11.87%**	**11.46%**	**6.63%**
Total Domestic Equity Target (1)	1.14%	(0.26%)	11.04%	10.95%	6.93%
Large Cap Equity	**(0.83%)**	**(0.36%)**	**12.06%**	**11.41%**	**6.24%**
S&P 500 Index	1.35%	1.78%	11.82%	11.58%	7.01%
Alliance S&P Index	1.32%	1.85%	11.82%	11.57%	7.07%
PIMCO StocksPLUS	0.91%	(0.25%)	11.76%	12.62%	8.83%
S&P 500 Index	1.35%	1.78%	11.82%	11.58%	7.01%
BlackRock Russell 1000 Value Index	1.65%	(1.36%)	9.51%	10.36%	5.88%
Russell 1000 Value Index	1.64%	(1.54%)	9.38%	10.25%	5.72%
T. Rowe Price Large Cap Growth	(6.34%)	(1.85%)	14.92%	12.68%	9.09%
Russell 1000 Growth Index	0.74%	2.52%	13.61%	12.38%	8.28%
Small/Mid Cap Equity U.S. Equity	**0.30%**	**(1.26%)**	**11.19%**	**11.47%**	**8.02%**
Russell 2500 Index	0.39%	(7.31%)	8.16%	8.58%	6.47%
Champlain Mid Cap	2.75%	1.21%	11.77%	11.42%	10.22%
Russell MidCap Index	2.24%	(4.04%)	10.45%	10.30%	7.45%
Pyramis Small Cap	(2.24%)	(3.86%)	10.47%	11.37%	8.61%
Russell 2000 Index	(1.52%)	(9.76%)	6.84%	7.20%	5.26%
International Equity	**(1.62%)**	**(11.02%)**	**0.53%**	**0.52%**	**1.89%**
MSCI ACWI x US (Net)	(0.38%)	(9.19%)	0.32%	0.31%	1.94%
Causeway International Value Equity	(4.59%)	(10.17%)	3.41%	3.57%	3.91%
MSCI EAFE Index	(3.01%)	(8.27%)	2.23%	2.29%	1.80%
Aberdeen EAFE Plus	2.83%	(12.17%)	(3.00%)	0.83%	3.72%
MSCI ACWI x US (Net)	(0.38%)	(9.19%)	0.32%	0.31%	1.94%
Fixed Income	**3.23%**	**0.79%**	**2.49%**	**4.65%**	**5.68%**
Barclays Aggregate Index	3.03%	1.96%	2.50%	3.78%	4.90%
BlackRock U.S. Debt Fund	3.07%	2.06%	2.62%	3.90%	5.03%
Barclays Aggregate Index	3.03%	1.96%	2.50%	3.78%	4.90%
PIMCO Fixed Income	3.34%	0.01%	2.41%	5.26%	6.24%
Custom Index (2)	3.94%	2.33%	3.04%	4.97%	5.98%

Mr. Weightman referenced the above table showing gross returns. He stated some of the managers that have underperformed. T Row Price is one of them, they utilize a large cap growth strategy. The stocks that normally help them, hurt them in the first quarter. Their long-term numbers over 3, 5, and 10 years are above the benchmark. They are more growth oriented than the benchmark. They have invested in a lot of healthcare, pharmaceuticals, and biotech companies that have historically helped their performance. However, the first quarter where those industries have struggled, T Rowe Price has underperformed. Subsequent to first quarter's reporting they have outperformed the benchmark. They are heading in the right direction again, but their performance pattern tends to currently be choppy when looking at their relative results. The lead portfolio manager over the T-Rowe Price fund Robert Sharps is being promoted and will no longer be managing the fund at the end of the calendar year. However, T-Rowe Price has a succession plan in place and the infrastructure to manage such personnel transitions. Within the mid cap equities, Champlain, for a while has been underperforming. When looking at their numbers versus the Russell 2000 Mid Cap Index which was down 4%, Champlain was up 1.2%. Pyramis small cap saw some under performance in the quarter but their long term results were great. Though the returns are negative this quarter, they are a lot less negative than the index.

Mr. O'Hare stated there still seems to be a reporting bias here, we are just asking our active managers to beat the benchmark and that is not good enough.

Chairman Fleming stated that is not what we are asking, that is just what the chart is showing.

Mr. O'Hare stated the Board should be asking active investment managers to beat the benchmark by 1.0% or 2%, but active managers are happy just to beat the benchmark and that is not good enough.

Mr. Weightman stated the difficulty is that the Board has two options, one is to invest in an index fund. An index fund that does not lend securities, by nature has no way to beat the benchmark. If the Board takes out their fees, the portfolio will always underperform the benchmark by the fees. There are some asset categories like large cap growth, US equity, where that tends to make sense, because it is very hard to beat the benchmark. T-Rowe Price has been an exception to that. The other option is active management. Every active manager will say they are going to beat the benchmark after fees plus something. Without that plus something it does not make sense to invest in active management. If the Board is paying them, and they are giving the Board benchmark performance, the Board might as well be in the index fund. When Board members say active managers should perform 2% or 3% over the benchmark, there are very few managers that can actually do that in reality in his experience over market cycles.

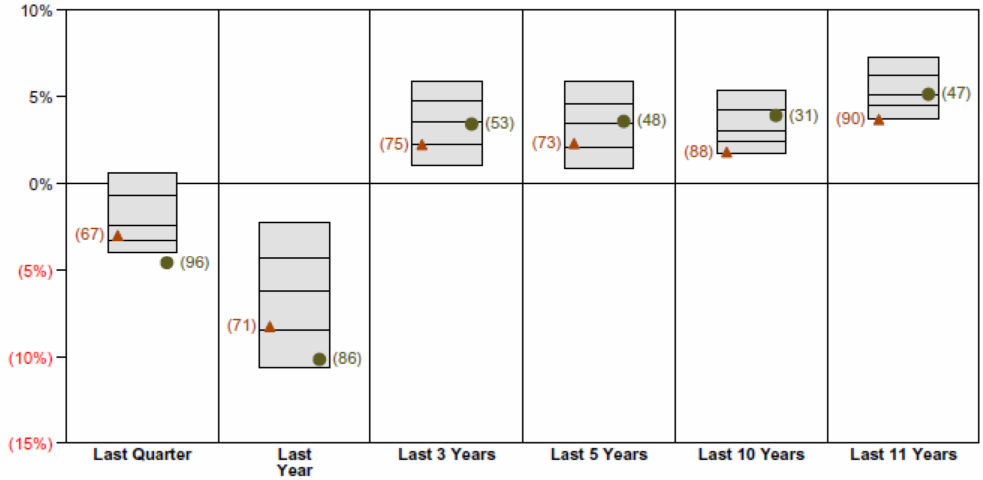
Mr. O'Hare asked if Mr. Weightman was making an argument for indexing the fund.

Mr. Weightman answered negative. He is making the argument that the premium the manager says they will earn the Board over the benchmark after fees is less than what they initially say. Just providing the Board with relevant information, so the Board members are able to make an informed decision.

Mr. O'Hare stated 1.5% over benchmark is a fair goal for active investment managers.

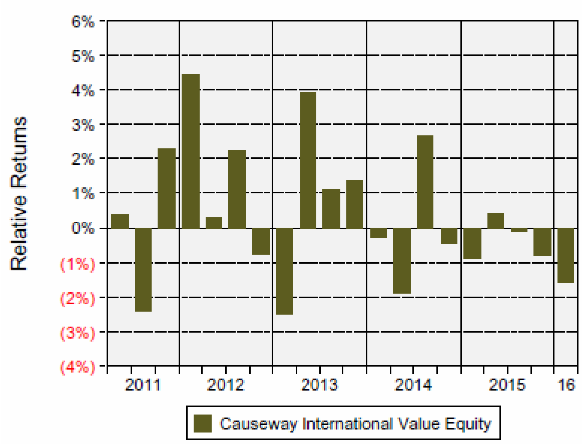
Mr. Weightman stated by looking at Causeway for example, their gross of fee returns for the last three years were up 2.7% when the index was up 2.2%. That is 50 basis points of outperformance after fees. Looking further out, over 5 years, it is 60 basis points.

Performance vs CAI Non-U.S. Equity Style (Gross)

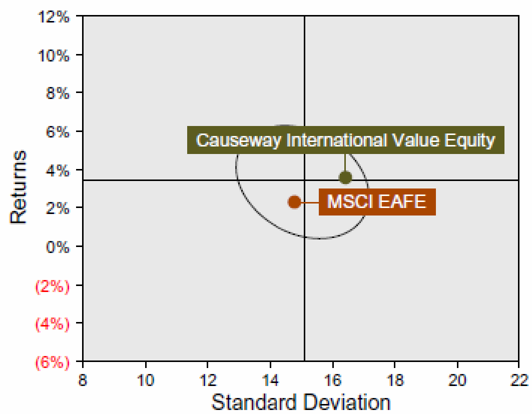


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 11 Years
10th Percentile	0.64	(2.27)	5.89	5.84	5.37	7.27
25th Percentile	(0.70)	(4.29)	4.75	4.54	4.20	6.20
Median	(2.46)	(6.23)	3.54	3.45	3.00	5.09
75th Percentile	(3.32)	(8.51)	2.23	2.10	2.45	4.46
90th Percentile	(3.97)	(10.63)	1.03	0.89	1.76	3.69
Causeway International Value Equity ●	(4.59)	(10.17)	3.41	3.57	3.91	5.12
MSCI EAFE ▲	(3.01)	(8.27)	2.23	2.29	1.80	3.67

Relative Return vs MSCI EAFE



CAI Non-U.S. Equity Style (Gross) Annualized Five Year Risk vs Return



Mr. Weightman referenced the above table regarding Causeway showing returns gross of fees. If the Board looks at the last 5 years, the Board has an above median manager that has outperformed after fees by 60 basis points.

Mr. Weightman asked does the Board think that employing Causeway as an active manager has earned the Board money. In Callan's opinion they have, but is it worth the hassle of monitoring and evaluating them to pay them that money. Callan believes the earnings are worth the hassle.

Mr. O'Hare stated that is something the Board members need to decide.

Mr. Coffey asked is there a better alternative. If the Board was to look at Causeway versus comparative firms and their performance over time the Board can be unhappy with Causeway's performance. However, if we cannot find a better performing active manager then the result would be the same.

Mr. O'Hare asked could a small public pension fund find superior talent.

Mr. Weightman stated ultimately the goal for the Board should be to try to find a manager that performs consistently, over a period of 3, 5, 7, and 10 years median or better versus peers. If the Board can find median or better that is a success. Then the Board needs to look at how the median manager has performed versus the benchmark. If the Board could find that median manager or better, and feel confident in selecting them, does their premium outweigh the benchmark performance. If the Board looks at the Russell 1000 growth index, the benchmark is in the top 20th percentile of the peer group. The Board would have to find the top quintile manager to beat that benchmark. Within the non US equity space, looking over 10 years, the benchmark is in 88th percentile. The Boards odds are pretty good of finding a manager that is going to outperform in the non US Equity Space. If active managers were consistently performing at 3% over the benchmark, their product would be closed, the Board would not be able to get in, and they would be so flooded with money it makes it harder to manage the portfolio. Callan has seen large portfolios tend to actually see their performance decline because they are managing so much money. The true test of active management is can the Board pick the median manager or better, and has the median manger consistently beat the benchmark.

Chairman Fleming stated the Board has to do that often enough so that the collective effect of our active managers beat the benchmark.

Mr. Weightman Stated one of the things the Board has done is balanced growth and value. If the Board looks at the 5 year rolling returns for growth and value they are mirror opposites of each other. What the Board is trying to do with Causeway and Aberdeen is in situations when value out performs, Causeway will beat the benchmark and Aberdeen should trail, and vice versa. What the Board is trying to do within the composite of international equity is capture that median outcome which has been better than the benchmark. For example looking at an investment manager like Aberdeen who has been doing this for a long time, has a process, the same people, and are sticking to the same philosophy, which has worked historically, just not recently, the Board must ask itself that although that is not ideal, do we have conviction in Aberdeen to better the benchmark.

Mr. O'Hare stated at the same time the Board cannot hold on to an underperforming active manager for a long time because they may not be able to make up for their underperformance.

Mr. Weightman stated if Aberdeen had changed their philosophy during a period of underperformance, Callan would have recommended to the Board that the Board terminate them and find a replacement.

Mr. O'Hare stated this shows how difficult and complex active management is. It takes a lot of time, experience, and education for decision makers to be effective.

Mr. Weightman agreed and stated investing often times is not common sense. Common sense would tell the Board we have a manager that is underperforming, let us find a different one. However, Callan cannot tell the Board how many times they have seen clients fire a manager because of performance at the bottom of their cycle, and then look for a manager at the top of their cycle, which then under performs for the next three to five years.

Mr. O'Hare stated that is a risk.

Mr. Weightman stated part of the decision to stay with Aberdeen is to keep the Board out of that situation.

Mr. O'Hare stated but there is a risk in doing that.

Mr. Weightman agreed there is a risk Aberdeen could continue to underperform.

Mr. O'Hare stated the Board is cognizant of public perception, and cares if we are losing money.

Mr. Weightman stated Aberdeen has not lost the Board money since the Board invested with them. Rather, the Board would have been better off in an index fund. The Board has been investing with Aberdeen for almost four years, and they are up 1.5% in that time Overall, we have spent a lot of time talking about active managers, and how they performed. When looking at how that actually affects the long-term results of the portfolio, it is about 10% of your actual performance, 90% is your asset allocation. The actual managers that the Board hires, account for about 10% of relative performance.

Chairman Fleming stated the Board spends more time on active management evaluation than on asset allocation.

Mr. O'Hare asked should we get into inflation and how that impacts returns.

Mr. Weightman stated the portfolios 7.25% includes an inflation expectation.

Mr. O'Hare asked if the inflation expectation was 3.5% or 4%.

Mr. Weightman stated per the actuary, they reduced it to 3%, that 7.25% is a nominal number.

Returns for Periods Ended March 31, 2016

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Gross of Fees					
Real Estate	**2.02%**	**13.32%**	**13.82%**	**13.82%**	**5.92%**
NFI-ODCE Value Weight Gr	2.18%	13.67%	13.63%	13.26%	6.36%
JP Morgan Strategic Property Fund	1.88%	12.93%	13.51%	13.64%	7.08%
NFI-ODCE Value Weight Gr	2.18%	13.67%	13.63%	13.26%	6.36%
JP Morgan Income and Growth Fund	2.37%	14.36%	15.40%	17.60%	4.44%
NFI-ODCE Value Weight Gr	2.18%	13.67%	13.63%	13.26%	6.36%
Infrastructure	**5.43%**	**14.82%**	**8.02%**	**6.55%**	**-**
CPI + 4%	1.58%	4.50%	4.42%	5.09%	5.75%
Macquarie European Infrastructure	4.90%	11.35%	3.78%	5.04%	-
SteelRiver Infrastructure	5.89%	17.49%	12.66%	8.19%	-
CPI + 4%	1.58%	4.50%	4.42%	5.09%	5.75%
Cash Composite	**0.05%**	**0.06%**	**0.02%**	**0.03%**	**1.28%**
Total Fund	**0.78%**	**0.26%**	**8.01%**	**8.14%**	**5.86%**
Total Fund Benchmark*	1.62%	0.49%	7.20%	7.57%	5.77%

Mr. Weightman referenced the above table showing real estate returns. The Board has two portfolios, both with JP Morgan. One is a core fund, meaning it is invested in developed properties. They use about 25% debt to buy them, the rest is their investor's money. They are very well diversified across the country, and by property type. It is the largest core private real estate fund in the world, and the returns over 5 years have been great. Looking at the composite, a 13.8% return is not typical, and the Board should not expect to get that from real estate going forward. What Callan expects is the return to eventually be somewhere between stocks and bonds with similar levels of volatility.

1. Portfolio Transition Update – Callan Associates, Inc.

Gordon Weightman stated three months ago the portfolio transition to the new Board approved target allocations was postponed because there was staff turnover. The Board did a search for a transition manager to oversee the portfolio transition. Three firms were pre-approved by the Board to be the transition managers. TSRS staff requested a pre-trade analysis from the three pre-approved firms: Macquarie, Penserra, and Black Rock. Black Rock had the best pre-trade analysis, it was the lowest cost, and they also expected to be able to cross trade the most securities, and essentially what that leads to is lower trading costs for the fund. The final proposed transition cost was $155,000. As of May 26, 2016 the portfolio is fully transitioned, and resulted in a $1.3M profit for the Trust due to the timing of the event.

2. TSRS Portfolio Composition, Transactions and Performance Review for 04/30/2016
3. Approval of New Portfolio Composition, Transaction, and Performance Monthly Reports

Neil Galassi stated the Board has been provided with the traditional reports and the Callan reports with the staff generated executive summary. He asked if the Board had any questions about the reports for the month of April.

Chairman Fleming stated the Board did not have any questions.

Mr. Galassi asked the Board which report format does the Board prefer for future meetings.

Chairman Fleming clarified for the Board, if the new report format is approved the Board will receive the Callan reports and the staff generated executive summary for future meetings.

Michael Coffey asked staff to provide the pros and cons of both reports for the Board to consider.

Gordon Weightman stated with permission from the Board, he is able to provide them with the pros and cons of both reports.

Mr. Coffey answered in the affirmative.

Mr. Weightman stated Callan is receiving information from the book of record, the Trust custodian BNY Melon. Callan gets the market values at the beginning and end of the month. Callan receives cash flow information on a daily basis. For example, if there is $10B with an investment manager, and there is a rebalancing activity causing a loss of $1M, the $1M is taken into account when calculating performance during the period. Callan will make sure the $1M does not affect performance reporting. Callan is going to do a compounded return from the beginning of the period to the date of that cash flow, and then from the date of that cash flow to the end of the period, and then Callan is going to compound them.

Mr. Coffey clarified the comparability will remain valid.

Mr. Weightman answered in the affirmative. Callan is only looking at the investment manager's skill, not the cash flows that they do not have any control over. Staff does not have access to those daily flows, or the tools to calculate and handle the daily flows. Staff has been historically putting together a dollar weighted rate of return, which is saying if a manager lost a $1M due to rebalancing, that showed as a penalty in their performance even though they had nothing to do with it.

Mr. Coffey stated the Callan report is a superior product for the purposes of analyzing performance.

Mr. Weightman stated the Callan report is more of an industry standard.

Chairman Fleming stated the Callan report is more understandable and takes less time for staff to produce.

Mr. Galassi answered in the affirmative.

The Board directed staff to provide the Callan Report with a staff prepared Executive Summary as the materials for the TSRS Portfolio Composition, Transactions and Performance Review agenda item for future meetings moving forward.

C. **Administrative Discussions**

1. Priority of Future Agenda Items

Neil Galassi asked how the Board wanted to prioritize the future agenda items.

John O'Hare suggested staff provide more information about the future agenda items prior to the meetings.

Michael Coffey suggested staff include a summary for each of the future agenda items.

Chairman Fleming stated he will consider all of the suggestions and he will work with staff to compile a schedule for future Agenda Items.

2. IAPC Pension Sub-committee Formation

Neil Galassi notified the Board that the Independent Audit and Performance Commission (IAPC) Pension Sub-committee has been re-formed. Specific details about the sub-committee are still being discussed.

James Hannley, who was present in the audience, introduced himself as the vice chairman of the IAPC Pension Sub-Committee.

John O'Hare stated Mr. Hannley is also a member of the local CFA.

Michael Coffey asked if there are any of the Trust members on the IAPC Pension Sub-Committee board.

Dave Deibel stated Mayor and Council select the members of the IAPC Pension Sub-Committee.

Silvia Amparano stated the duties of the IAPC have not yet been defined. The staff will work to provide the IAPC with support and information needed.

Chairman Fleming stated during the formation of the IAPC, if a Trust member was asked to participate they would be allowed to.

Mr. O'Hare asked if staff could provide the agendas and minutes from the IAPC.

Mr. Deibel stated he does not believe the IAPC will be writing minutes for their meetings.

Mr. Galassi stated staff will provide the Board with updates from the IAPC as they move forward.

D. **Articles for Board Member Education / Discussion**

1. Callan Paper – Review of Past Capital Market Projections

E. **Call to Audience** – None heard.

F. **Future Agenda Items**

1. Disability Audit Results
2. Education Plan for New Staff and Trustees
3. Duties and Selection of Advisory Board
4. Hiring an Intern to Free Staff for Education
5. TSRS Board Annual Evaluation of Staff and Consultants
6. Formal Evaluation of Active Managers – 1.5% over benchmark over a given period
7. RFQ for Actuarial Services
8. Action Plan for Black Swan Events
9. Would It Be Better to Index the Whole Fund

G. **Adjournment** – 10:10 AM

Approved:

Robert Fleming Chairman of the Board	Date	Neil S. Galassi Pension Administrator	Date

Service & Disability Retirements, End of Service Entrants for TSRS Board of Trustees Ratification

05/10/16 - 06/09/16 - June 2016

Name of Applicant	Department	Type	Effective Date	Date of Birth	Age	Credited Service	Present Value	Member's Accumulated Contributions	AFC	Option	Pension
Khalid Tanbal	Water Utility	Normal Retirement	5/20/2016	1/14/1958	58.35	21.7272	300,190.42	85,422.31	4,541.39	J&S 100	1,918.41
Frank Valencia Jr.	General Services	Normal Retirement	6/3/2016	6/1/1954	62.01	16.9347	120,730.00	34,823.34	2,497.77	Single Life	951.73
Christopher N. Leighton	Transportation	Normal Retirement	6/1/2016	4/19/1961	55.12	26.2249	562,358.88	164,172.58	6,776.54	J&S 100	3,798.76
Gary Goodwell	General Services	Normal Retirement	6/9/2016	2/14/1954	62.32	12.6537	145,241.84	37,833.77	4,021.53	J&S 100	1,013.39
Lance E. Nelson	Parks and Recreation	Normal Retirement	6/10/2016	5/21/1954	62.05	28.3966	323,819.43	101,194.83	3,995.33	Single Life	2,552.71
Victoria T. Rucker	Police	Normal Retirement	6/2/2016	9/9/1951	64.73	26.1206	280,756.50	95,704.33	3,797.79	Single Life	2,232.01
Anita L. Lange	Housing and Community Dev	Normal Retirement	6/10/2016	7/21/1955	60.89	30.5407	377,897.25	125,344.98	4,091.61	Single Life	2,811.61
Timothy O. Beach	Information Technology	Normal Retirement	6/4/2016	5/18/1950	66.04	18.7473	290,466.91	94,801.41	5,872.53	J&S 100	2,155.75
Marcia L. Chapman	Parks and Recreation	Normal Retirement	6/4/2016	1/30/1955	61.34	27.8227	382,835.33	107,393.27	4,550.00	Single Life	2,848.35
									40,144.49		20,282.72
				Averages	34.55	23.24	309,366.28	94,076.76	4,460.50		2,253.64

Comparison of Monthly Pension Payments - Beginning of FY 2016 to Current Monthly Pension Payments

	Plan Year beginning 07/01/2015 (*from GRS annual valuation)	Monthly	Annual	May 2016 Pension Payroll		Annualized	Annual change since July 1, 2015	% change
Service Pensions	2,305	5,007,097.17	60,085,166	2,427	5,308,029	63,696,352.68	3,611,187	6.01%
Disability Pensions	160	174,259	2,091,109	151	169,144	2,029,732.32	(61,377)	-2.94%
Survivor Pensions	344	298,979	3,587,750	342	336,084	4,033,013.52	445,264	12.41%
	2,809	5,480,335	65,764,025	2,920	5,813,258	69,759,099	3,995,074	6.07%
				9	**$ 35,325**			
				(net) change from previous month				

S:\treasdiv\tsrs\retirement\facts&figures\F&F 15-16.xls	prior month	2,911	$	5,777,933.08

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City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Parameter Page

Parameters and Prompts

Fiscal Year	2016
Accounting Period	11
Fund	072
Department	900
Unit	*
Object Code	*

Report Description

The Expenses vs. Actual Report shows expenditures and encumbrances for the selected accounting period and for the selected fiscal year compared against the current expense budget and the unobligated budget balance. The report is sectioned by Department, Fund and Unit and summarized by Object.

Report ID : FIN-COT-BA-0001
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City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9001 - Normal Retiree Benefit

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
105 - PAYROLL PENSION	0.00	5,305,790.76	5,305,790.76	0.00	56,638,166.78	56,638,166.78	63,300,000	6,661,833.22	10.52 %
Total for 100 - PAYROLL CHGS	**0.00**	**5,305,790.76**	**5,305,790.76**	**0.00**	**56,638,166.78**	**56,638,166.78**	**63,300,000**	**6,661,833.22**	**10.52 %**
Total for Unit 9001 - Normal Retiree Benefit	**0.00**	**5,305,790.76**	**5,305,790.76**	**0.00**	**56,638,166.78**	**56,638,166.78**	**63,300,000**	**6,661,833.22**	**10.52 %**

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City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9003 - Normal Retiree Beneficiary Benefit

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
105 - PAYROLL PENSION	0.00	305,665.94	305,665.94	0.00	3,244,798.96	3,244,798.96	3,100,000	(144,798.96)	-4.67 %
Total for 100 - PAYROLL CHGS	**0.00**	**305,665.94**	**305,665.94**	**0.00**	**3,244,798.96**	**3,244,798.96**	**3,100,000**	**(144,798.96)**	**-4.67 %**
Total for Unit 9003 - Normal Retiree Beneficiary Benefi	**0.00**	**305,665.94**	**305,665.94**	**0.00**	**3,244,798.96**	**3,244,798.96**	**3,100,000**	**(144,798.96)**	**-4.67 %**

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9020 - Disability Retiree Benefit

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
105 - PAYROLL PENSION	0.00	169,141.36	169,141.36	0.00	1,865,078.73	1,865,078.73	1,975,000	109,921.27	5.57 %
Total for 100 - PAYROLL CHGS	**0.00**	**169,141.36**	**169,141.36**	**0.00**	**1,865,078.73**	**1,865,078.73**	**1,975,000**	**109,921.27**	**5.57 %**
Total for Unit 9020 - Disability Retiree Benefit	**0.00**	**169,141.36**	**169,141.36**	**0.00**	**1,865,078.73**	**1,865,078.73**	**1,975,000**	**109,921.27**	**5.57 %**

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9021 - Pension Fund Administration

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
101 - SALARIES & WAGES FOR PERMANENT EMPLOYEES	0.00	17,620.80	17,620.80	0.00	193,392.80	193,392.80	211,940	18,547.20	8.75 %
102 - EXTRA TIME	0.00	0.00	0.00	0.00	93.28	93.28	0	(93.28)	0.00%
103 - OVERTIME WAGES	0.00	0.00	0.00	0.00	195.02	195.02	0	(195.02)	0.00%
105 - PAYROLL PENSION	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00%
108 - DOWNTOWN ALLOWANCE & DISCOUNTED TRANSIT PASSES	0.00	92.32	92.32	0.00	936.40	936.40	1,160	223.60	19.28 %
113 - TSRS PENSION CONTRIBUTION	0.00	4,845.72	4,845.72	0.00	53,493.21	53,493.21	58,280	4,786.79	8.21 %
114 - FICA (SOCIAL SECURITY)	0.00	1,349.33	1,349.33	0.00	17,412.33	17,412.33	15,410	(2,002.33)	-12.99 %
115 - WORKERS COMPENSATION INSURANCE	0.00	332.06	332.06	0.00	2,822.72	2,822.72	5,930	3,107.28	52.40 %
116 - GROUP PLAN INSURANCE	0.00	1,417.02	1,417.02	0.00	21,021.72	21,021.72	30,920	9,898.28	32.01 %
117 - STATE UNEMPLOYMENT	0.00	23.12	23.12	0.00	214.89	214.89	300	85.11	28.37 %
171 - SICK LEAVE PAID AT RETIREMENT	0.00	0.00	0.00	0.00	17,099.87	17,099.87	0	(17,099.87)	0.00%
185 - RETIREMENT INCENTIVE	0.00	0.00	0.00	0.00	19,011.20	19,011.20	0	(19,011.20)	0.00%
196 - INTERDEPARTMENTAL LABOR	0.00	9,016.66	9,016.66	0.00	195,183.26	195,183.26	220,800	25,616.74	11.60 %
Total for 100 - PAYROLL CHGS	**0.00**	**34,697.03**	**34,697.03**	**0.00**	**520,876.70**	**520,876.70**	**544,740**	**23,863.30**	**4.38 %**
202 - TRAVEL	0.00	0.00	0.00	0.00	2,614.68	2,614.68	4,000	1,385.32	34.63 %
204 - TRAINING	0.00	0.00	0.00	0.00	440.00	440.00	14,000	13,560.00	96.86 %
205 - PARKING & SHUTTLE SERVICE	0.00	0.00	0.00	0.00	127.00	127.00	200	73.00	36.50 %
212 - CONSULTANTS AND SURVEYS	0.00	0.00	0.00	0.00	41,930.00	41,930.00	65,000	23,070.00	35.49 %

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9021 - Pension Fund Administration

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
213 - LEGAL	0.00	0.00	0.00	0.00	19,942.00	19,942.00	50,000	30,058.00	60.12 %
215 - AUDITING AND BANK SERVICES	0.00	0.00	0.00	0.00	23,845.00	23,845.00	25,000	1,155.00	4.62 %
219 - MISCELLANEOUS PROFESSIONAL SERVICES	0.00	1,099,174.74	1,099,174.74	0.00	2,671,408.75	2,671,408.75	4,034,500	1,363,091.25	33.79 %
221 - INSUR-PUBLIC LIABILITY	0.00	239.58	239.58	0.00	20,802.57	20,802.57	29,160	8,357.43	28.66 %
228 - HAZARDOUS WASTE INSURANCE	0.00	42.77	42.77	0.00	397.30	397.30	560	162.70	29.05 %
232 - R&M MACHINERY & EQUIPMENT	0.00	0.00	0.00	0.00	0.00	0.00	1,200	1,200.00	100.00 %
245 - TELEPHONE	0.00	0.00	0.00	0.00	1,680.00	1,680.00	1,200	(480.00)	-40.00 %
252 - RENTS EQUIPMENT	0.00	0.00	0.00	0.00	719.23	719.23	0	(719.23)	0.00%
260 - COMPUTER SOFTWARE MAINTENANCE AGREEMENTS	0.00	0.00	0.00	0.00	0.00	0.00	41,000	41,000.00	100.00 %
263 - PUBLIC RELATIONS	0.00	0.00	0.00	0.00	2,043.09	2,043.09	2,560	516.91	20.19 %
266 - ADVERTISING	0.00	0.00	0.00	0.00	411.50	411.50	0	(411.50)	0.00%
284 - MEMBERSHIPS AND SUBSCRIPTIONS	0.00	0.00	0.00	0.00	810.00	810.00	1,500	690.00	46.00 %
286 - MISC OUTSIDE SERVICES	0.00	0.00	0.00	0.00	61.92	61.92	0	(61.92)	0.00%
Total for 200 - PROF CHARGES	**0.00**	**1,099,457.09**	**1,099,457.09**	**0.00**	**2,787,233.04**	**2,787,233.04**	**4,269,880**	**1,482,646.96**	**34.72 %**
311 - OFFICE SUPPLIES	0.00	27.75	27.75	0.00	1,845.03	1,845.03	7,500	5,654.97	75.40 %
312 - PRINTING,PHOTOGRAPHY,REPRODUCTION	0.00	2,581.20	2,581.20	0.00	8,378.54	8,378.54	7,500	(878.54)	-11.71 %
314 - POSTAGE	0.00	2,707.68	2,707.68	0.00	9,429.62	9,429.62	10,000	570.38	5.70 %
341 - BOOK, PERIODICALS AND RECORDS	0.00	0.00	0.00	0.00	0.00	0.00	250	250.00	100.00 %

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM

Fund 072 - TUCSON SUPP RETIREMENT SYSTEM

Unit 9021 - Pension Fund Administration

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
345 - FURNISHINGS, EQUIPMENT AND TOOLS < $5,000	0.00	0.00	0.00	0.00	0.00	0.00	1,000	1,000.00	100.00 %
346 - COMPUTER EQUIPMENT < $5,000	0.00	0.00	0.00	0.00	0.00	0.00	1,000	1,000.00	100.00 %
392 - GENERAL SERVICES WORK ORDER SUPPLIES	0.00	180.00	180.00	0.00	478.80	478.80	0	(478.80)	0.00%
Total for 300 - SUPPLIES	**0.00**	**5,496.63**	**5,496.63**	**0.00**	**20,131.99**	**20,131.99**	**27,250**	**7,118.01**	**26.12 %**
Total for Unit 9021 - Pension Fund Administration	**0.00**	**1,139,650.75**	**1,139,650.75**	**0.00**	**3,328,241.73**	**3,328,241.73**	**4,841,870**	**1,513,628.27**	**31.26 %**

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9022 - Disability Retiree Beneficiary Benefit

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
105 - PAYROLL PENSION	0.00	30,418.52	30,418.52	0.00	335,909.08	335,909.08	350,000	14,090.92	4.03 %
Total for 100 - PAYROLL CHGS	**0.00**	**30,418.52**	**30,418.52**	**0.00**	**335,909.08**	**335,909.08**	**350,000**	**14,090.92**	**4.03 %**
Total for Unit 9022 - Disability Retiree Beneficiary Ben	**0.00**	**30,418.52**	**30,418.52**	**0.00**	**335,909.08**	**335,909.08**	**350,000**	**14,090.92**	**4.03 %**

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM

Fund 072 - TUCSON SUPP RETIREMENT SYSTEM

Unit 9023 - ACTIVE MEMBER REFUNDS-CONTRBS

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
105 - PAYROLL PENSION	0.00	0.00	0.00	0.00	0.00	0.00	0	(0.00)	0.00%
186 - TSRS REFUNDS	0.00	98,451.60	98,451.60	0.00	2,210,815.38	2,210,815.38	2,400,000	189,184.62	7.88 %
Total for 100 - PAYROLL CHGS	**0.00**	**98,451.60**	**98,451.60**	**0.00**	**2,210,815.38**	**2,210,815.38**	**2,400,000**	**189,184.62**	**7.88 %**
Total for Unit 9023 - ACTIVE MEMBER REFUNDS-CON	**0.00**	**98,451.60**	**98,451.60**	**0.00**	**2,210,815.38**	**2,210,815.38**	**2,400,000**	**189,184.62**	**7.88 %**

City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9025 - INTEREST ON REFUNDS

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
186 - TSRS REFUNDS	0.00	2,069.65	2,069.65	0.00	28,504.18	28,504.18	50,000	21,495.82	42.99 %
Total for 100 - PAYROLL CHGS	**0.00**	**2,069.65**	**2,069.65**	**0.00**	**28,504.18**	**28,504.18**	**50,000**	**21,495.82**	**42.99 %**
Total for Unit 9025 - INTEREST ON REFUNDS	**0.00**	**2,069.65**	**2,069.65**	**0.00**	**28,504.18**	**28,504.18**	**50,000**	**21,495.82**	**42.99 %**

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City of Tucson
Budget vs Actual Expenses
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For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9026 - DWE SYSTEM BENEFIT PAYMENT

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
186 - TSRS REFUNDS	0.00	0.00	0.00	0.00	61,918.40	61,918.40	200,000	138,081.60	69.04 %
Total for 100 - PAYROLL CHGS	**0.00**	**0.00**	**0.00**	**0.00**	**61,918.40**	**61,918.40**	**200,000**	**138,081.60**	**69.04 %**
Total for Unit 9026 - DWE SYSTEM BENEFIT PAYMEN`	**0.00**	**0.00**	**0.00**	**0.00**	**61,918.40**	**61,918.40**	**200,000**	**138,081.60**	**69.04 %**

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City of Tucson
Budget vs Actual Expenses
Through: May, 2016
For Fiscal Year 2016

Department 900 - TUCSON SUPPL RETIREMENT SYSTEM
Fund 072 - TUCSON SUPP RETIREMENT SYSTEM
Unit 9027 - CREDITABLE SERVICE TRANS(ASRS)

Object	Current Period Encumbrance	Current Period Expenditure	Current Total Obligations	YTD Encumbrance	YTD Expenditure	YTD Total Obligations	Current Budgeted Amount	Unobligated Budget Balance	Percent
186 - TSRS REFUNDS	0.00	0.00	0.00	0.00	(8,811.37)	(8,811.37)	0	8,811.37	0.00%
Total for 100 - PAYROLL CHGS	**0.00**	**0.00**	**0.00**	**0.00**	**(8,811.37)**	**(8,811.37)**	**0**	**8,811.37**	**0.00%**
Total for Unit 9027 - CREDITABLE SERVICE TRANS(A	**0.00**	**0.00**	**0.00**	**0.00**	**(8,811.37)**	**(8,811.37)**	**0**	**8,811.37**	**0.00%**
Total for Fund 072 - TUCSON SUPP RETIREMENT SYS	**0.00**	**7,051,188.58**	**7,051,188.58**	**0.00**	**67,704,621.87**	**67,704,621.87**	**76,216,870**	**8,512,248.13**	**11.17 %**
Total for Department 900 - TUCSON SUPPL RETIREME	**0.00**	**7,051,188.58**	**7,051,188.58**	**0.00**	**67,704,621.87**	**67,704,621.87**	**76,216,870**	**8,512,248.13**	**11.17 %**
Grand Totals	**0.00**	**7,051,188.58**	**7,051,188.58**	**0.00**	**67,704,621.87**	**67,704,621.87**	**76,216,870**	**8,512,248.13**	**11.17 %**

TSRS Portfolio Performance Review

DATE: June 24, 2016

TO: The Board of Trustees
Tucson Supplemental Retirement System

FROM: Neil S. Galassi, CPA
Pension Administrator

SUBJECT: **May 2016 Summary Performance Report**

SUMMARY:

This report presents the Tucson Supplemental Retirement System's investment portfolio as of May 31, 2016. Attached to this summary is the Callan prepared Investment Measurement Service Monthly Review Report which serves as the basis for this summary.

As of April 30, 2016 and May 31, 2016, the Total Fund balance was $721.3 million and $722.7 million, respectively. This represents a $1.4 million increase from the prior month. There were withdrawals totaling $5.5 million from the Total Fund to support pension payments during the recent month, and $27.5 million has been withdrawn during fiscal year 2016.

For the month of May, the Total Fund performance was a positive .98% which was slightly better than the custom benchmark return of positive 0.32% by 66 basis points. Total Fund performance was impacted by increases amounting to approximately 1.73% in all three of the equity markets and increases in the value of fixed income holdings of 43 basis points; the S&P 500 Index rose 1.41% during the month.

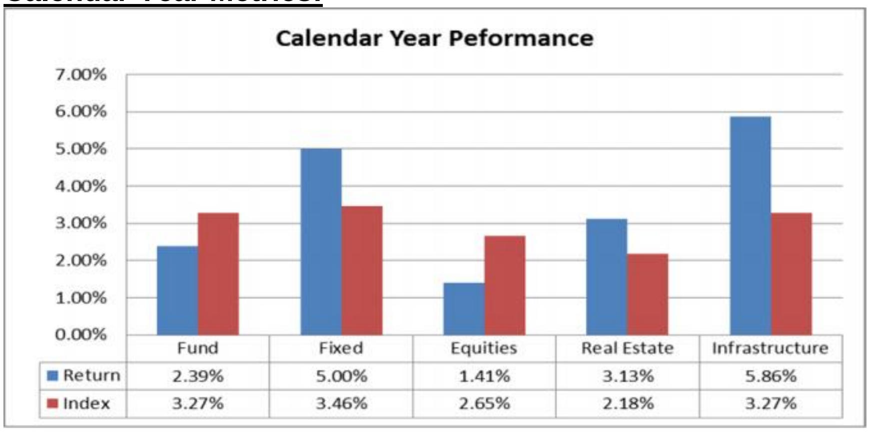
For the last twelve months the Total Fund performance was a positive .43% which was ahead of the custom benchmark return of .21% by 22 basis points. The Total Fund performance was impacted by negative but improving returns in the International Equity Markets of negative 12.18%, which were slightly better than the previous month's 12 year return of negative 13.42%. Domestic equity market returns outperformed the benchmark by 13 basis points for the same 12 month period with Small/Mid Cap Domestic Equity outperforming the benchmark by 4.80%. The Fund continues to experience 12 month positive returns on Fixed Income of 2.56% and returns on the Real Estate and Infrastructure of 11.54% and 11.88% respectively.

In regards to equity funds over the past 12 month period, the Small/Mid Cap Equity funds for Champlain Mid Cap and Pyramis Small Cap performed well above their benchmark by 5.26% and 3.45% respectively while the Large Cap Equity fund managers were relatively consistent with their benchmark except for T-Rowe Price which underperformed relative to the benchmark by 3.18%. The international equity funds of Causeway and Aberdeen trailed their benchmark by 1.27% and 2.98% respectively. For fixed income funds, the PIMCO Fixed Income Fund underperformed the benchmark by 1.33%, while the BlackRock U.S. Debt Fund was consistent with the benchmark. For Real Estate fund managers, the JPM Strategic Property Fund trailed the benchmark by 1.48% while the JPM income and growth fund outperformed the benchmark by 94 basis points. The Macquarie European Infrastructure Fund was 3.75% above the benchmark, and the Steel River Infrastructure fund also outperformed the benchmark by 9.98%.

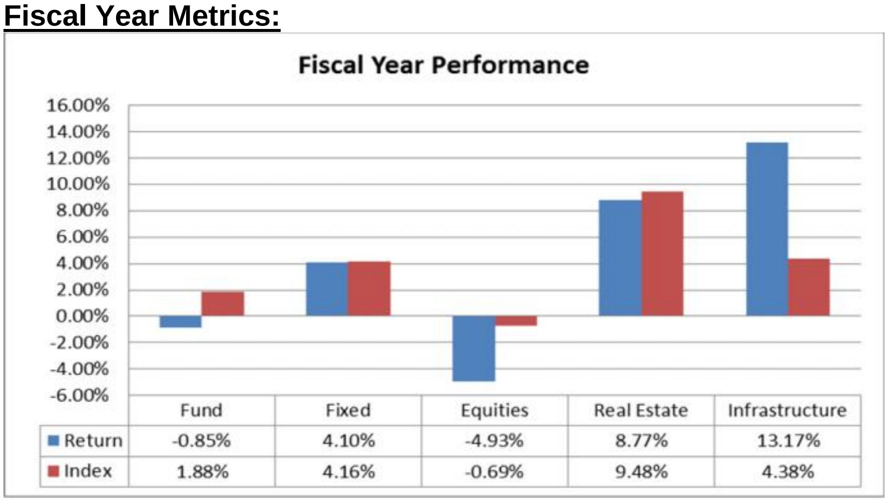
The Total Fund total as of today, June 24, 2016 was $727.1 million. This represents a increase of $4.4 million (.61%), over the balance as of April 30, 2016. The increase was primarily a result of increases all in asset balances across the portfolio with the largest being infrastructure at a 1.15% increase, and an increase in fixed income balances of 1.15%.

Summary graphs are as follows:

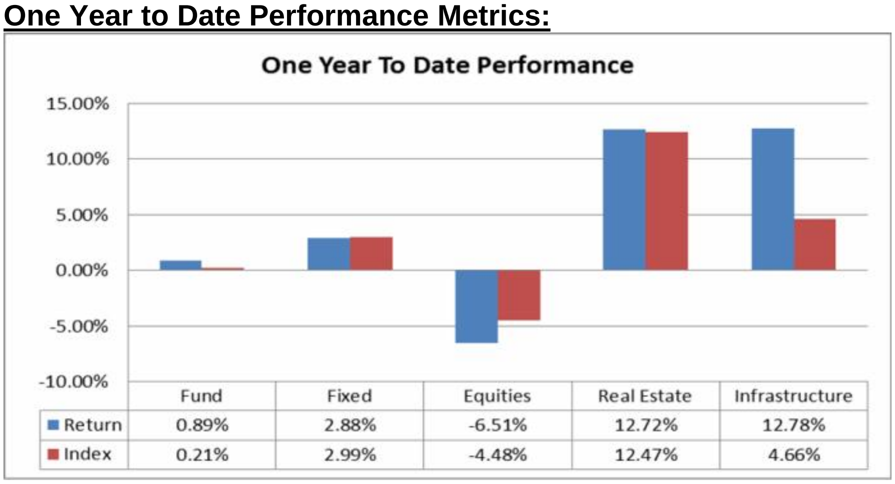
<u>Calendar Year Metrics:</u>



<u>Fiscal Year Metrics:</u>



<u>One Year to Date Performance Metrics:</u>



Callan

May 31, 2016

Tucson Supplemental Retirement System

Investment Measurement Service
Monthly Review

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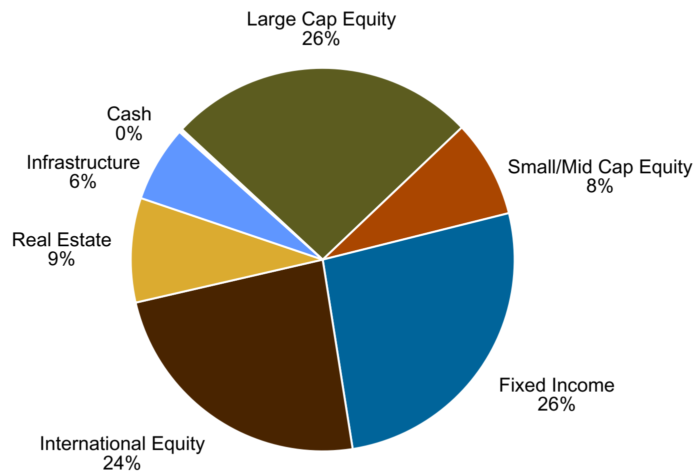
May 31, 2016

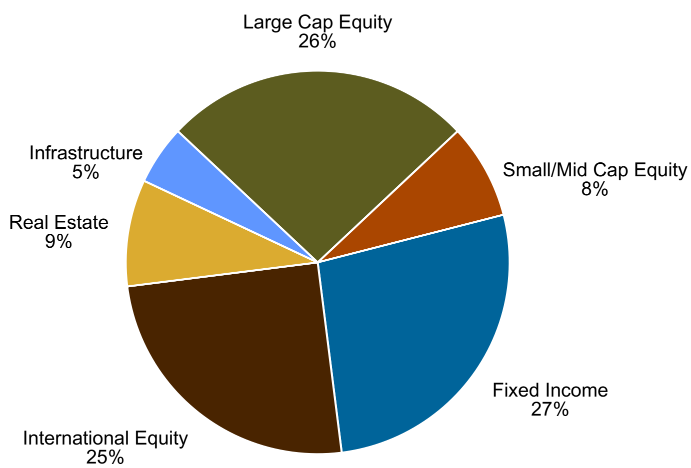
Actual vs Target Asset Allocation

The first chart below shows the Fund's asset allocation as of May 31, 2016. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

Actual Asset Allocation



Target Asset Allocation



Asset Class	$000s Actual	Percent Actual	Percent Target	Percent Difference	$000s Difference
Large Cap Equity	188,103	26.0%	26.0%	0.0%	205
Small/Mid Cap Equity	59,306	8.2%	8.0%	0.2%	1,491
Fixed Income	190,828	26.4%	27.0%	(0.6%)	(4,298)
International Equity	172,470	23.9%	25.0%	(1.1%)	(8,202)
Real Estate	63,910	8.8%	9.0%	(0.2%)	(1,132)
Infrastructure	45,951	6.4%	5.0%	1.4%	9,816
Cash	2,119	0.3%	0.0%	0.3%	2,119
Total	722,687	100.0%	100.0%		

*Current Month Target Performance is calculated using monthly rebalancing.

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of May 31, 2016, with the distribution as of April 30, 2016. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	May 31, 2016				April 30, 2016	
	Market Value	Percent	Net New Inv.	Inv. Return	Market Value	Percent
Domestic Equity	**$247,409,873**	**34.23%**	**$(108,322,988)**	**$5,537,505**	**$350,195,356**	**48.55%**
Large Cap Equity	**$188,103,433**	**26.03%**	**$(83,317,200)**	**$4,409,278**	**$267,011,355**	**37.02%**
Transition Account (1)	8,801	0.00%	(900,115)	908,916	-	-
Alliance S&P Index	56,893,260	7.87%	(27,433,636)	895,292	83,431,605	11.57%
PIMCO StocksPLUS	29,085,770	4.02%	(9,656,861)	607,271	38,135,360	5.29%
BlackRock Russell 1000 Value	50,668,774	7.01%	(24,105,503)	831,401	73,942,876	10.25%
T. Rowe Price Large Cap Growth	51,446,827	7.12%	(21,221,084)	1,166,398	71,501,514	9.91%
Small/Mid Cap Equity	**$59,306,440**	**8.21%**	**$(25,005,788)**	**$1,128,227**	**$83,184,001**	**11.53%**
Champlain Mid Cap	29,489,493	4.08%	(14,679,652)	371,461	43,797,684	6.07%
Pyramis Small Cap	29,816,947	4.13%	(10,326,136)	756,766	39,386,317	5.46%
International Equity	**$172,469,771**	**23.87%**	**$82,179,239**	**$407,776**	**$89,882,756**	**12.46%**
Causeway International Value Eq	70,994,216	9.82%	18,288,282	150,659	52,555,276	7.29%
Aberdeen EAFE Plus	68,363,133	9.46%	31,150,206	(114,553)	37,327,481	5.17%
American Century Non-US SC (1)	33,112,421	4.58%	32,740,751	371,669	-	-
Fixed Income	**$190,827,937**	**26.41%**	**$21,150,701**	**$768,363**	**$168,908,873**	**23.42%**
BlackRock U.S. Debt Fund	70,753,108	9.79%	6,687,929	56,853	64,008,326	8.87%
PIMCO Fixed Income	120,074,829	16.62%	14,462,772	711,510	104,900,548	14.54%
Real Estate	**$63,909,811**	**8.84%**	**$0**	**$415,821**	**$63,493,990**	**8.80%**
JPM Strategic Property Fund	46,231,496	6.40%	0	415,821	45,815,675	6.35%
JPM Income and Growth Fund	17,678,315	2.45%	0	0	17,678,315	2.45%
Infrastructure	**$45,950,606**	**6.36%**	**$(558,766)**	**$(46,517)**	**$46,555,889**	**6.45%**
Macquarie European	21,229,008	2.94%	(558,766)	(46,517)	21,834,291	3.03%
SteelRiver Infrastructure	24,721,598	3.42%	0	0	24,721,598	3.43%
Total Cash	**$2,118,861**	**0.29%**	**$(151,468)**	**$367**	**$2,269,961**	**0.31%**
Cash	2,118,861	0.29%	(151,468)	367	2,269,961	0.31%
Total Fund	**$722,686,858**	**100.0%**	**$(5,703,282)**	**$7,083,314**	**$721,306,826**	**100.0%**

(1) The Domestic Equity transition account was implemented for the May 2016 plan rebalancing. As part of the rebalancing, the American Century Non-US Small Cap strategy was funded on May 27, 2016.

Investment Manager Returns

The table below details the rates of return for the fund's investment managers over various time periods ended May 31, 2016. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended May 31, 2016

	Last Month	Quarter to Date	Last 12 Months	Last 36 Months	Last 60 Months
Gross of Fees					
Domestic Equity	**1.89%**	**3.35%**	**0.47%**	**11.63%**	**11.84%**
Total Domestic Equity Target (1)	1.88%	2.59%	0.02%	10.30%	10.96%
Large Cap Equity	**1.83%**	**2.82%**	**0.24%**	**11.43%**	**11.75%**
S&P 500 Index	1.80%	2.19%	1.72%	11.06%	11.67%
Alliance S&P Index	1.79%	2.16%	1.76%	11.04%	11.65%
S&P 500 Index	1.80%	2.19%	1.72%	11.06%	11.67%
PIMCO StocksPLUS	1.88%	2.67%	0.25%	11.19%	12.70%
S&P 500 Index	1.80%	2.19%	1.72%	11.06%	11.67%
BlackRock Russell 1000 Value	1.36%	3.46%	(0.10%)	9.28%	10.76%
Russell 1000 Value Index	1.55%	3.69%	(0.06%)	9.23%	10.70%
T. Rowe Price Large Cap Growth	2.33%	3.02%	(1.08%)	13.98%	13.18%
Russell 1000 Growth Index	1.94%	1.01%	1.61%	12.50%	12.11%
Small/Mid Cap Equity	**2.30%**	**5.29%**	**1.38%**	**12.35%**	**12.03%**
Russell 2500 Index	2.11%	3.61%	(4.30%)	8.23%	9.00%
Champlain Mid Cap	1.68%	5.71%	4.16%	13.23%	11.99%
Russell MidCap Index	1.64%	2.71%	(1.97%)	10.18%	10.33%
Pyramis Small Cap	2.92%	4.77%	(1.64%)	11.30%	11.90%
Russell 2000 Index	2.25%	3.86%	(5.97%)	6.93%	7.86%
International Equity	**(0.10%)**	**2.77%**	**(11.54%)**	**0.17%**	**0.50%**
MSCI ACWI x US (Net)	(1.69%)	0.90%	(11.39%)	0.19%	0.12%
Causeway International Value Eq	0.27%	3.65%	(10.36%)	2.72%	3.33%
MSCI EAFE Index	(0.91%)	1.96%	(9.68%)	2.00%	2.12%
Aberdeen EAFE Plus	(1.20%)	0.96%	(13.67%)	(3.25%)	-
MSCI ACWI x US (Net)	(1.69%)	0.90%	(11.39%)	0.19%	0.12%
Fixed Income	**0.43%**	**1.88%**	**2.88%**	**3.28%**	**4.51%**
Barclays Aggregate Index	0.03%	0.41%	2.99%	2.91%	3.33%
BlackRock U.S. Debt Fund	0.07%	0.47%	3.14%	3.05%	3.47%
Barclays Aggregate Index	0.03%	0.41%	2.99%	2.91%	3.33%
PIMCO Fixed Income	0.66%	2.75%	2.72%	3.42%	5.31%
Custom Index (2)	(0.02%)	1.44%	3.55%	3.68%	4.79%

(1) The Total Domestic Equity target is currently composed of 72% S&P 500 and 28% Russell 2500 index.

(2) The custom index is currently composed of 25% Barclays Mortgage, 25% Barclays Credit, 25% Barclays High Yield, and 25% JP Morgan EMBI Global. Prior to 2/1/2012, the custom index was composed of 70% Barclays Mortgage, 15% Barclays Credit, and 15% Barclays High Yield.

Investment Manager Returns

The table below details the rates of return for the fund's investment managers over various time periods ended May 31, 2016. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended May 31, 2016

	Last Month	Quarter to Date	Last 12 Months	Last 36 Months	Last 60 Months
Gross of Fees					
Real Estate	**0.65%**	**1.02%**	**12.72%**	**13.34%**	**13.35%**
NFI-ODCE Value Weight Gr*	0.72%	1.45%	12.47%	13.23%	12.91%
JPM Strategic Property Fund	0.91%	1.41%	12.08%	13.36%	13.33%
JPM Income and Growth Fund	0.00%	0.01%	14.36%	13.93%	15.89%
NFI-ODCE Value Weight Gr*	0.72%	1.45%	12.47%	13.23%	12.91%
Infrastructure	**(0.10%)**	**0.13%**	**12.78%**	**7.79%**	**6.12%**
CPI + 4%	0.74%	1.59%	4.66%	4.73%	5.01%
Macquarie European Infrastructure Fund	(0.22%)	0.28%	9.38%	3.56%	4.47%
SteelRiver Infrastructure North Amer.**	0.00%	0.00%	15.43%	12.43%	7.97%
CPI + 4%	0.74%	1.59%	4.66%	4.73%	5.01%
Total Fund	**1.00%**	**2.44%**	**0.89%**	**7.96%**	**8.20%**
Total Fund Target	0.32%	1.21%	0.21%	6.88%	7.37%

* Current Month Target = 27.0% Barclays Aggregate Index, 26.0% S&P 500 Index, 25.0% MSCI ACWI ex US, 9.0% NFI-ODCE Value Weight Gr, 8.0% Russell 2500 Index and 5.0% CPI-W+4.0%.

*The NFI-ODCE Value Weight benchmark current quarter return is preliminary.

**SteelRiver Infrastructure's performance reflects prior month's market value adjusted for flows.

Investment Manager Returns

The table below details the rates of return for the fund's investment managers over various time periods ended May 31, 2016. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended May 31, 2016

	Last Month	Quarter to Date	Last 12 Months	Last 36 Months	Last 60 Months
Net of Fees					
Domestic Equity	**1.85%**	**3.25%**	**0.15%**	**11.31%**	**11.47%**
Total Domestic Equity Target (1)	1.88%	2.59%	0.02%	10.30%	10.96%
Large Cap Equity	**1.83%**	**2.78%**	**0.08%**	**11.27%**	**11.55%**
S&P 500 Index	1.80%	2.19%	1.72%	11.06%	11.67%
Alliance S&P Index	1.79%	2.15%	1.72%	11.00%	11.60%
S&P 500 Index	1.80%	2.19%	1.72%	11.06%	11.67%
PIMCO StocksPLUS	1.88%	2.67%	0.25%	11.19%	12.52%
S&P 500 Index	1.80%	2.19%	1.72%	11.06%	11.67%
BlackRock Russell 1000 Value	1.36%	3.46%	(0.13%)	9.25%	10.74%
Russell 1000 Value Index	1.55%	3.69%	(0.06%)	9.23%	10.70%
T. Rowe Price Large Cap Growth	2.33%	2.90%	(1.57%)	13.47%	12.64%
Russell 1000 Growth Index	1.94%	1.01%	1.61%	12.50%	12.11%
Small/Mid Cap Equity	**2.13%**	**5.01%**	**0.50%**	**11.48%**	**11.13%**
Russell 2500 Index	2.11%	3.61%	(4.30%)	8.23%	9.00%
Champlain Mid Cap	1.68%	5.51%	3.29%	12.28%	11.04%
Russell MidCap Index	1.64%	2.71%	(1.97%)	10.18%	10.33%
Pyramis Small Cap	2.55%	4.39%	(2.52%)	10.50%	11.07%
Russell 2000 Index	2.25%	3.86%	(5.97%)	6.93%	7.86%
International Equity	**(0.10%)**	**2.68%**	**(12.18%)**	**(0.55%)**	**(0.23%)**
MSCI ACWI x US (Net)	(1.69%)	0.90%	(11.39%)	0.19%	0.12%
Causeway International Value Eq	0.27%	3.48%	(10.95%)	2.06%	2.64%
MSCI EAFE Index	(0.91%)	1.96%	(9.68%)	2.00%	2.12%
Aberdeen EAFE Plus	(1.20%)	0.96%	(14.37%)	(4.03%)	-
MSCI ACWI x US (Net)	(1.69%)	0.90%	(11.39%)	0.19%	0.12%
Fixed Income	**0.43%**	**1.80%**	**2.56%**	**2.95%**	**4.19%**
Barclays Aggregate Index	0.03%	0.41%	2.99%	2.91%	3.33%
BlackRock U.S. Debt Fund	0.07%	0.47%	3.12%	3.01%	3.45%
Barclays Aggregate Index	0.03%	0.41%	2.99%	2.91%	3.33%
PIMCO Fixed Income	0.66%	2.63%	2.22%	2.92%	4.82%
Custom Index (2)	(0.02%)	1.44%	3.55%	3.68%	4.79%

(1) The Total Domestic Equity target is currently composed of 72% S&P 500 and 28% Russell 2500 index.

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Returns for Periods Ended May 31, 2016

	Last Month	Quarter to Date	Last 12 Months	Last 36 Months	Last 60 Months
Net of Fees					
Real Estate	**0.65%**	**0.84%**	**11.54%**	**12.13%**	**12.11%**
NFI-ODCE Value Weight Gr*	0.72%	1.45%	12.47%	13.23%	12.91%
JPM Strategic Property Fund	0.91%	1.16%	10.99%	12.26%	12.21%
JPM Income and Growth Fund	0.00%	0.01%	12.94%	12.40%	14.30%
NFI-ODCE Value Weight Gr*	0.72%	1.45%	12.47%	13.23%	12.91%
Infrastructure	**(0.10%)**	**0.13%**	**11.88%**	**6.95%**	**4.82%**
CPI + 4%	0.74%	1.59%	4.66%	4.73%	5.01%
Macquarie European Infrastructure Fund	(0.22%)	0.28%	8.41%	3.05%	3.41%
SteelRiver Infrastructure North Amer.**	0.00%	0.00%	14.64%	11.15%	6.38%
CPI + 4%	0.74%	1.59%	4.66%	4.73%	5.01%
Total Fund	**0.98%**	**2.35%**	**0.43%**	**7.49%**	**7.67%**
Total Fund Target	0.32%	1.21%	0.21%	6.88%	7.37%

* Current Month Target = 27.0% Barclays Aggregate Index, 26.0% S&P 500 Index, 25.0% MSCI ACWI ex US, 9.0% NFI-ODCE Value Weight Gr, 8.0% Russell 2500 Index and 5.0% CPI-W+4.0%.

*The NFI-ODCE Value Weight benchmark current quarter return is preliminary.

**SteelRiver Infrastructure's performance reflects prior month's market value adjusted for flows.

Tucson Supplemental Retirement System
Board of Trustees
Funding Policy

Effective as of July 1, 2015
As Reviewed and Documented by TSRS Board on June 30, 2016

Background: The TSRS Funding Policy is designed to provide assurance that the Tucson Supplemental Retirement System ("TSRS") will remain viable and sustainable, and that the cost of the benefits provided by TSRS will be funded in an equitable manner. The TSRS funding policy is based on the following primary principles:

1. As of December 2014, the Board intends to encourage the City to extinguish the TSRS unfunded liability over a 12 – 15 year time period by recommending the following:
    a. That the City contribution to TSRS be based on the Actuarially Determined Contribution ("ADC") instead of the Annual Required Contribution ("ARC"), and
    b. That the City contribution to TSRS be a minimum of 27.5% of payroll, subject to changing market conditions.
2. The ADC will be calculated in a manner designed to fully fund (and not over-fund) the long-term costs for the benefits while balancing the goals of stable contribution rates and the allocation of members' costs over their working lifetime.
3. The TSRS Board wishes to demonstrate accountability and transparency by communicating all of the information necessary for assessing the City's progress toward meeting its pension funding objectives.

Purpose: The Funding Policy will govern the determination of the ADC, which shall take into account the following three core elements:

1. ***Annual Required Contribution or ARC*** - The annual amount necessary to fund the sum of the employer normal cost, the employee segment normal cost amounts, and the annual amortization requirements for the System's unfunded accrued liability.
2. ***Administrative Expenses*** - The reasonable and appropriate costs incurred in connection with the administration of the System on an annual basis.
3. ***Rounding Policy*** **-** The adjustment to the actuarially determined contribution rates, designed to minimize volatility in contribution rates from year to year.

Authority: The Board has been granted the power and authority necessary to effectuate the administration, management and operation of TSRS. TCC §22-44(a). The Board is required to certify to the City Manager the ARC, the Member Contribution rate(s) and the Employer Contribution. TCC §22-35(b). The City is required to appropriate and pay over to TSRS 100% of the Employer Contribution, as that term is defined in Section 22-30(t) of the Tucson City Code ("TCC").

The ADC is a recommendation of the Board to the City. TSRS will obtain the Actuarially Determined Contribution ("ADC") annually from the System Actuary, determined in accordance with this Funding

Policy. The ADC will serve as the basis for the recommended contribution rate to the City, subject to the additional policy considerations and funding concerns explained below.

Policy:

1. **Annual Required Contribution**

The ARC is determined on a fiscal year basis by the System's actuary in accordance with sound actuarial principles. The ARC is the sum of the employer normal cost, the employee segment normal cost and the annual amortization of the System's unfunded liability, calculated with the following actuarial assumptions:

a. Actuarial Cost Method

The actuarial cost method is the individual entry age normal cost method, level percent of pay. This method conforms to the actuarial standards of practice and allocates normal costs over a period beginning no earlier than the date of employment and does not exceed the last assumed retirement age. This cost method fully funds the long-term costs of the promised benefits of the employees' period of active service.

b. Asset Valuation Method

To minimize the volatility effect of contribution rates affected by investment gains or losses during the year, the Board has adopted a smoothing process that involves spreading the difference between actual and expected market returns over a five year period to determine the actuarial value of assets.

c. Amortization Policy

The Board has adopted a 20 year open, level percent of pay amortization policy. A single unfunded amount is determined with each actuarial valuation, and that amount is then amortized over a 20 year period, assuming that the contribution amounts will remain level as a percent of the total payroll (so the dollar amount of the contribution is assumed to grow each year). The Board's amortization policy was most recently revised effective July 1, 2013.

2. **Administrative Expenses**

The annual administrative expenses incurred by the System, based on the administrative operating budget approved by the Board in advance of the fiscal year and determined as of the end of the fiscal year, shall be included in the calculation of the ADC in accordance with sound actuarial principles. Administrative expenses paid by the System and included in the calculation of the ADC shall be reasonable and appropriate, and shall include staff salaries and related overhead expenses, actuarial, legal and other professional consulting fees, accounting charges, compliance expenses, and other fees and expenses necessary for the efficient administration of the System. Investment fees and expenses shall not be included in the calculation of the ADC.

3. **Contribution Rounding Policy**

a. Purpose

This Contribution Rounding Policy is intended to (1)minimize volatility in the Member Contribution rates and the related impact on the net take home pay of employees, (2) eliminate minor adjustments in contribution rates, and (3) recognize the inherent timing gap between actuarial valuation data and the effective date of new contribution rates.

b. Rounding Policy

The Board shall determine Member and City Contribution rates in accordance with all applicable provisions of the TCC and, effective July 1, 2014, the terms of this Contribution Policy as set forth below. The Member and City Contribution rates determined in accordance with this Contribution Policy shall be incorporated into the ADC.

I. <u>Member Contribution Rates</u>: Member Contributions for Legacy Members, Tier I Members and Tier II Members shall be determined by the System actuary pursuant to TCC Section 22-34: members hired prior to July 1, 2006 (the “Legacy Members”), members hired between July 1, 2006 and June 30, 2011 (“Tier I Members”) and members hired on or after July 1, 2011 (“Tier II Members”). The Legacy Members contribute 5% of pay. The Tier I Members and Tier II Members are referred to collectively as the variable contribution tier Members, and they make Member Contributions equal to a percentage of the normal cost for their particular Tier. The percentage applicable to the variable contribution tier Members currently is set at 50%, but can be changed by the City in accordance with Section 22-34(b) of the TCC. In no event shall the variable contribution tier members contribute less than 5% of pay as set forth in TCC §22-34(a) and (b).

The actuarially determined Member Contribution rate for each group shall be referred to as the “Calculated Rate” for the applicable group. The Board will then review the Calculated Rate for each member group and set the “Charged Rate” for the upcoming fiscal year. The Charged Rate will equal the Calculated Rate, rounded up to the nearest 0.25. The Charged Rate for a member group shall never be less than the Calculated Rate for that member group (for that same fiscal year).

Examples:

Year 1:	Actuarially Calculated Tier I Member Contribution Rate:	6.67% of pay
	Charged Rate for Tier I Member Contribution:	6.75% of pay
Year 2:	Actuarially Calculated Tier I Member Contribution Rate:	6.48% of pay
	Charged Rate for Tier I Member Contribution:	6.50% of pay

II. City Contribution Rates: Pursuant to TCC Section 22-30(t), the City is required to fund the Employer Contribution for a particular fiscal year, which equals the difference between the ARC and the Member Contribution rate(s). For purposes of determining the ADC that will be recommended by the Board to the City, the System actuary will be asked to prepare the following calculations:

Because there are three different Member Contribution rates, the System actuary shall calculate a City Contribution rate for each member group and a blended City Contribution rate for the entire member population. In no event shall the blended City Contribution rate for the entire member population be less than the City Contribution rate for any member group. The City Contribution rates calculated by the System actuary are referred to as the “Calculated Rates.”

The Board will then review the Calculated Rates and set the “Charged Rate” for the City Contribution for the upcoming fiscal year. The Charged Rate will equal the blended Calculated City Contribution rate, rounded up to the nearest 0.50. The Charged Rate shall be rounded up to the nearest 0.50 instead of the nearest 0.25 because the Charged Rate is a blended rate. The Charged Rate shall never be less than the Calculated Rate for any member group for that same fiscal year.

Example:

Actuarial Calculated City Contribution Rates
for three member groups:

Legacy Members:	27.22% of pay
Tier I Members:	25.55% of pay
Tier II Members:	27.08% of pay

Actuarially Calculated Blended City Contribution Rate 26.95%

Charged Rate for City Contribution: (Charged Rate is not set at 27.0% because that would be less than the Calculated Rate for two of the member groups)	27.50% of pay

III. Funded Status of TSRS: It is the goal of the Board to increase the funded status of TSRS. The Board anticipates that Calculated Rates for both Member Contributions and Employer Contributions may decrease from time to time, based on various actuarial factors. The Board will not recommend a decrease in the ADC until such point as TSRS is fully funded because the unfunded accrued liability has been extinguished, and the ADC represents the payment of the normal cost of benefits only. Moreover, the Board shall recommend a decrease in the Charged Rates for Member Contributions only to the extent that the Charged Rates for Tier I Member Contributions and Tier II Member Contributions decrease simultaneously, in the same percentage of pay.

Attachment: TSRS Actuarial Assumptions Addendum to TSRS Code Sec. 22-30(d)

Tucson Supplemental Retirement System
Board of Trustees
Funding Policy

Tucson Supplemental Retirement System ("TSRS")

Addendum to TSRS Code Sec. 22-30(d)

TSRS Actuarial Assumptions

To determine the value of actuarially equivalent member benefits under TSRS, the following actuarial assumptions shall be applied, effective as of July 1, 2015:

Interest Rate:	**7.25%**
Mortality Table:	**Mortality Table: RP-2000 Combined Mortality Table for males and females projected with Scale BB to 2020**

The foregoing actuarial assumptions are adopted in accordance Tucson Code Chapter 22, Section 22-30(d) and are incorporated into this Addendum as required pursuant to Section 401(a)(25) of the Internal Revenue Code of 1986, as amended.

This Addendum hereby is executed by an authorized representative of the Tucson Supplemental Retirement System Board of Trustees, pursuant to action taken at a duly called meeting of the Board held on the 30th day of June, 2016, at which a quorum was present.

By:_____________________________
Name:___________________________
TSRS Board of Trustees

Tucson Supplemental Retirement System
Board of Trustees
Funding Policy

Effective as of July 1, 2015
As Reviewed and Documented by TSRS Board on June 30, 2016~~September 24, 2015~~

Background: The TSRS Funding Policy is designed to provide assurance that the Tucson Supplemental Retirement System ("TSRS") will remain viable and sustainable, and that the cost of the benefits provided by TSRS will be funded in an equitable manner. The TSRS funding policy is based on the following primary principles:

~~1. TSRS will obtain the actuarially determined contribution (ADC) annuallyTSRS Board will certify the ADC to the City annually.~~
~~2. The City is required to appropriate and pay over to TSRS the ADC under the Tucson City Code ("TCC").~~
1. As of December 2014, t~~T~~he Board intends to encourage the City to extinguish the TSRS unfunded liability over a 12 – 15 year time period by recommending the following:
   a. T~~t~~hat the City contribution to TSRS be based on the Actuarially Determined Contribution ("ADC") instead of the Annual Required Contribution ("ARC"), and
   ~~a.~~b. That the City contribution to TSRS be ~~remain fixed at~~ a minimum of 27.5% of payroll, subject to changing market conditions.
~~3.~~2. The ADC will be calculated in a manner designed to fully fund (and not over-fund) the long-term costs for the benefits while balancing the goals of stable contribution rates and the allocation of members' costs over their working lifetime.
~~4.~~3. The TSRS B~~b~~oard wishes to demonstrate accountability and transparency by communicating all of the information necessary for assessing the City's progress toward meeting its pension funding objectives.

~~Effective July 1, 2013 the contribution requirement for members hired after July 1, 2006 was changed from 40% of the Actuarial Required Contribution (or "ARC," as defined below) to a range of 50% to 100% of the normal cost of their given tier. In no event shall the variable contribution tier members contribute less than 5% of pay as set forth in TCC §22-34(a) and (b). Members hired prior to 7/1/2006 contribute 5% of pay.~~

Purpose: The Funding Policy will govern the determination of the ADC, which shall take into account the following ~~cover~~ three core elements~~ of a funding policy~~:

1. ***Annual Required Contribution or ARC*** - The annual amount necessary to fund the sum of the employer normal cost, the employee segment normal cost amounts, and the annual amortization requirements for the System's unfunded accrued liability.
2. ***Administrative Expenses***~~-~~ - The reasonable and appropriate costs incurred in connection with the administration of the System on an annual basis.

3. ***Rounding Policy*** ~~-~~ - The adjustment to the actuarially determined contribution rates, designed to minimize volatility in contribution rates from year to year.

Authority: The Board has been granted the power and authority necessary to effectuate the administration, management and operation of TSRS. TCC §22-44(a). ~~The actuarially determined contribution (ADC) to TSRS is set by the Board each fiscal year. TCC §22-30(mm). In connection with the determination of the ADC, T~~the Board is required to certify to the City Manager the ARC~~DC~~, the Member Contribution rate(s) and the Employer~~City~~ Contribution. TCC §22-35(b). The City is required to appropriate and pay over to TSRS 100% of the Employer Contribution, as that term is defined in Section 22-30(t) of the Tucson City Code ("TCC").

The ADC is a recommendation of the Board to the City. TSRS will obtain the Actuarially Determined Contribution ("ADC") annually from the System Actuary, determined in accordance with this Funding Policy. The ADC will serve as the basis for the recommended contribution rate to the City, subject to the additional policy considerations and funding concerns explained below.

Policy:

1. **Annual Required Contribution**

The ~~Annual Required Contribution or~~ ARC is determined on a fiscal year basis by the System's actuary in accordance with sound actuarial principles. The ARC is the sum of the employer normal cost, the employee segment normal cost and the annual amortization of the System's unfunded liability, calculated with the following actuarial assumptions:

a. Actuarial Cost Method

The actuarial cost method is the individual entry age normal cost method, level percent of pay. This method conforms to the actuarial standards of practice and allocates normal costs over a period beginning no earlier~~y~~ than the date of employment and does not exceed the last assumed retirement age. This cost method fully funds the long-term costs of the promised benefits of the employees' period of active service.

b. Asset Valuation Method

To minimize the volatility effect of contribution rates affected by investment gains or losses during the year, the Board has adopted a smoothing process that involves spreading the difference between actual and expected market returns over a five year period to determine the actuarial value of assets.

c. Amortization Policy

Tucson Supplemental Retirement System
Board of Trustees
Funding Policy

The Board has adopted a 20 year open, level percent of pay amortization policy. A single unfunded amount is determined with each actuarial valuation, and that amount is then amortized over a 20 year period, assuming that the contribution amounts will remain level as a percent of the total payroll (so the dollar amount of the contribution is assumed to grow each year). The Board's amortization policy was most recently revised effective July 1, 2013.

2. **Administrative Expenses**

The annual administrative expenses incurred by the System, based on the administrative operating budget approved by the Board in advance of the fiscal year and determined as of the end of the fiscal year, shall be included in the calculation of the A~~ctuarially~~ D~~etermined~~ C~~ontribution~~ in accordance with sound actuarial principles. Administrative expenses paid by the System and included in the calculation of the ADC shall be reasonable and appropriate, and shall include staff salaries and related overhead expenses, actuarial, legal and other professional consulting fees, accounting charges, compliance expenses, and other fees and expenses necessary for the efficient administration of the System. Investment fees and expenses shall not be included in the calculation of the ADC.

3. **Contribution Rounding Policy**

a. Purpose

This Contribution Rounding Policy is intended to (1)minimize volatility in the Member Contribution rates and the related impact on the net take home pay of employees, (2) eliminate minor adjustments in contribution rates, and (3) recognize the inherent timing gap between actuarial valuation data and the effective date of new contribution rates.

b. Rounding Policy

The Board shall determine ~~and certify~~ Member and City Contribution rates in accordance with all applicable provisions of the TCC and, effective July 1, 2014, the terms of this Contribution Policy as set forth below. The Member and City Contribution rates determined in accordance with this Contribution Policy shall be incorporated into the ADC.~~:~~

I. Member Contribution Rates: Member Contributions for Legacy Members, Tier I Members and Tier II Members shall be determined by the System~~TSRS~~ actuary pursuant to TCC Section 22-34: members hired prior to July 1, 2006 (the "Legacy Members"), members hired between July 1, 2006 and June 30, 2011 ("Tier I Members") and members hired on or after July 1, 2011 ("Tier II Members"). The Legacy Members contribute 5% of pay. The Tier I Members and Tier II Members are referred to collectively as the variable contribution tier Members, and they make Member C~~Effective July 1, 2013 the contribution requirement for members~~

ontributions equal to a percentage of the normal cost for their particular Tier. The percentage applicable to the variable contribution tier Members currently is set at 50%, but can be changed by the City in accordance with Section 22-34(b) of the TCC. ~~hired after July 1, 2006 was changed from 40% of the Actuarial Required Contribution (or "ARC," as defined below) to a range of 50% to 100% of the normal cost of their given tier.~~ In no event shall the variable contribution tier members contribute less than 5% of pay as set forth in TCC §22-34(a) and (b). ~~Members hired prior to 7/1/2006 contribute 5% of pay.~~

The actuarially determined Member Contribution rate for each group shall be referred to as the "Calculated Rate" for the applicable group.

The Board will then review the Calculated Rate for each member group and set the "Charged Rate" for the upcoming fiscal year. The Charged Rate will equal the Calculated Rate, rounded up to the nearest 0.25. The Charged Rate for a member group shall never be less than the Calculated Rate for that member group (for that same fiscal year).

Examples:

Year 1:	Actuarially Calculated Tier I Member Contribution Rate:	6.67% of pay
	Charged Rate for Tier I Member Contribution:	6.75% of pay
Year 2:	Actuarially Calculated Tier I Member Contribution Rate:	6.48% of pay
	Charged Rate for Tier I Member Contribution:	6.50% of pay

II. City Contribution Rates: Pursuant to TCC Section 22-30(t), the City is required to fund the Employer Contribution ~~The City Contribution rate~~ for a particular fiscal year, which ~~—~~equals the difference between the ARC~~ctuarially Determined Contribution~~ and the Member Contribution rate(s). ~~TCC §22-30(t).~~ For purposes of determining the ADC that will be recommended by the Board to the City, the System actuary will be asked to prepare the following calculations:

~~-~~Because there are three different Member Contribution rates, the System ~~TSRS~~ actuary shall calculate a City Contribution rate for each member group and a blended City Contribution rate for the entire member population. In no event shall the blended City Contribution rate for the entire member population be less than the City Contribution rate for any member group. The City Contribution rates calculated by the System ~~TSRS~~ actuary are referred to as the “Calculated Rates.”

The Board will then review the Calculated Rates and set the “Charged Rate” for the City Contribution for the upcoming fiscal year. The Charged Rate will equal the blended Calculated City Contribution rate, rounded up to the nearest 0.50. The Charged Rate shall be rounded up to the nearest 0.50 instead of the nearest 0.25 because the Charged Rate is a blended rate. The Charged Rate shall never be less than the Calculated Rate for any member group for that same fiscal year.

Example:

Actuarial Calculated City Contribution Rates
for three member groups:

Legacy Members:	27.22% of pay
Tier I Members:	25.55% of pay
Tier II Members:	27.08% of pay

Actuarially Calculated Blended City Contribution Rate 26.95%

Charged Rate for City Contribution: (Charged Rate is not set at 27.0% because that would be less than the Calculated Rate for two of the member groups)	27.50% of pay

III. Funded Status of TSRS: It is the goal of the Board to increase the funded status of TSRS. The Board anticipates that Calculated Rates for both Member Contributions and Employer ~~City~~ Contributions may decrease from time to time, based on various actuarial factors. The Board will not recommend a decrease in the ADC~~Charged Rate for Member and/or City Contributions~~ until such point as TSRS is fully funded because the unfunded accrued liability has been extinguished, and the ADC~~Calculated Rates for Member and City Contributions~~ represents the payment of the normal cost of benefits only. Moreover, the Board shall recommend a decrease in the Charged Rates for Member Contributions only to the extent that the Charged Rates for Tier I Member Contributions and Tier II Member Contributions decrease simultaneously, in the same percentage of pay.

Attachment: TSRS Actuarial Assumptions Addendum to TSRS Code Sec. 22-30(d)

Tucson Supplemental Retirement System
Board of Trustees
Funding Policy

Tucson Supplemental Retirement System ("TSRS")

Addendum to TSRS Code Sec. 22-30(d)

TSRS Actuarial Assumptions

To determine the value of actuarially equivalent member benefits under TSRS, the following actuarial assumptions shall be applied, effective as of July 1, 2015~~4~~:

Interest Rate:	**7.25%**
Mortality Table:	**Mortality Table: RP-2000 Combined Mortality Table for males and females projected with Scale BB to 2020**

The foregoing actuarial assumptions are adopted in accordance Tucson Code Chapter 22, Section 22-30(d) and are incorporated into this Addendum as required pursuant to Section 401(a)(25) of the Internal Revenue Code of 1986, as amended.

This Addendum hereby is executed by an authorized representative of the Tucson Supplemental Retirement System Board of Trustees, pursuant to action taken at a duly called meeting of the Board held on the 30~~18~~th day of June, 2016~~December, 2014~~, at which a quorum was present.

By:______________________________
Name:____________________________
TSRS Board of Trustees

DISABILTY AUDIT RESULTS 2016 SUMMARY

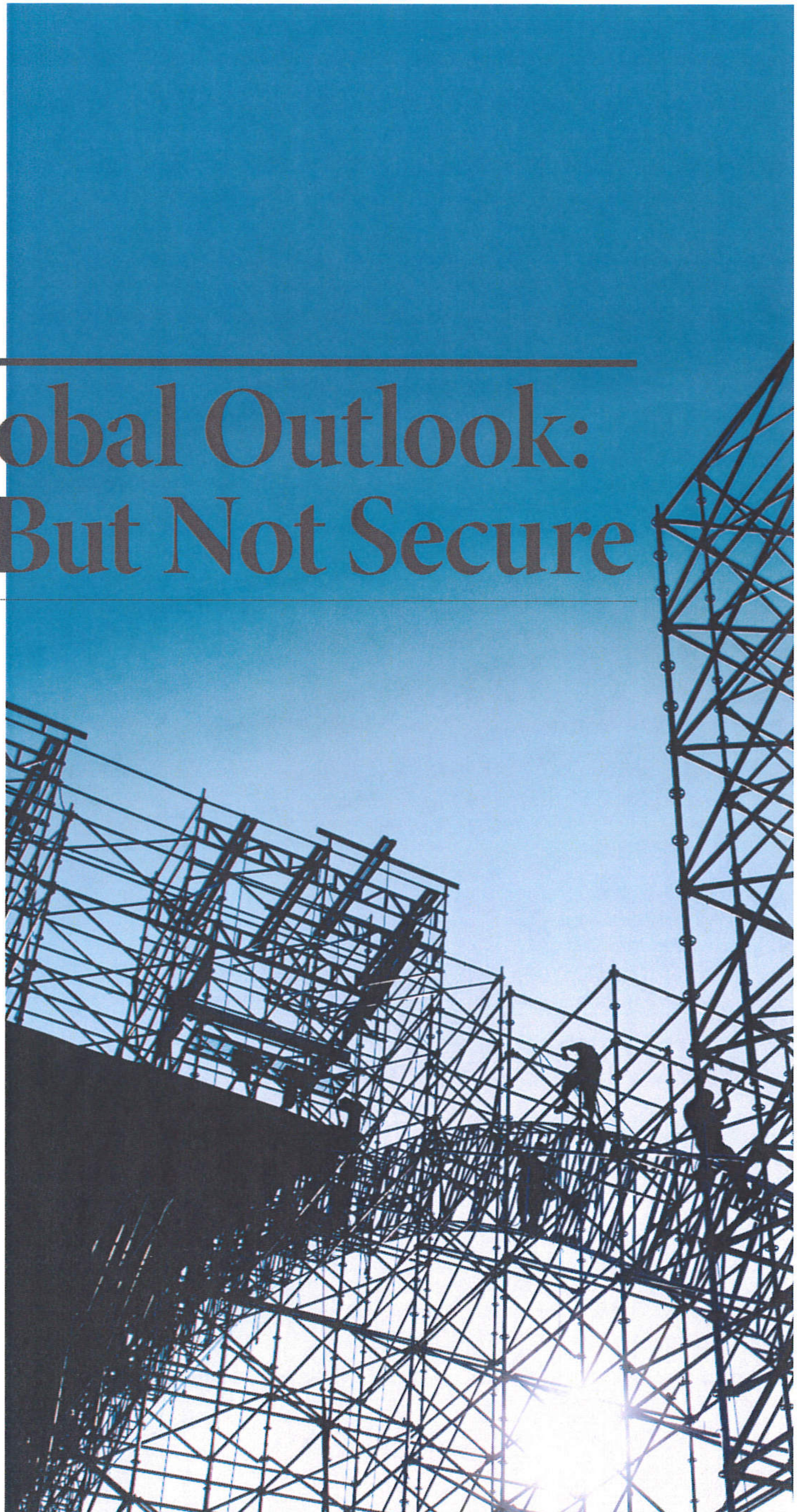
Consistent with Tucson City Code Section 22-39(f), TSRS must complete a disability audit review of those members that have not reached the normal retirement age or 80 service credits. There are 151 retirees or beneficiary survivors receiving a disability type benefit, of the 151, there were 44 audits sent out in May of 2016 with a certified, return receipt requested. Responses had been received from 40 of the retirees audited. After attempts to locate the most recent information within the means of TSRS staff we were unable to locate 4 individuals. After consultation with legal counsel Individuals who have failed to respond and/or have failed to ensure TSRS records contain their most recent information can be deemed to not be in compliance with TCC 22-39(f). We recommended discontinuing the benefits to the four non-compliant individuals as an attempt to garner their attention. This action is provided for in the Tucson Code. The audit responses required completion of a simple affidavit indicating whether the retiree had earned any income. The audited individuals were not new or recent retirees. If the Board approves the recommendation the action would affect with the July pension check of the non-compliant individuals. This action has been taken in the past for isolated cases and the reason for the audits was if the individual receiving disability benefits has another source of income, adjustments may be required on their pension checks. This action has been successful in the past.

PIMCO

SECULAR OUTLOOK

June 2016

The Global Outlook: Stable But Not Secure



Good investment opportunities remain, but investors must be compensated for growing and heightened uncertainty and risks of policy exhaustion.

A company of **Allianz**

AUTHORS

Andrew Balls
Chief Investment Officer
Global Fixed Income

Richard Clarida
Global Strategic Advisor

Daniel J. Ivascyn
Group Chief Investment Officer

How stable is the global economy, and what are the risks to that stability?

Critical questions like these drove vigorous debate when PIMCO's investment professionals gathered in May for our 35th annual Secular Forum. As always, our focus was to identify the key secular forces that will drive the global economy, monetary and fiscal policy, and financial markets over the next three to five years. To help us develop and refine our views, we heard from a stellar lineup of invited speakers, were briefed by our newest class of MBAs, and engaged with members of our Global Advisory Board, who actively participated in the forum discussions. The goal of the Secular Forum is to provide the concept, the construct and the compass to help us navigate global markets over the next three to five years. Crucial to this objective are the baseline, left tail and right tail scenarios we consider for the global economy and economic policy over that timeframe.

To set the stage for this year's forum discussion, we briefly reviewed the baseline scenario that emerged from last year's forum.

In May 2015, our baseline secular outlook saw central banks constrained by lofty leverage and sluggish growth to set policy rates at levels well below those that prevailed before the crisis, a continuation of our New Neutral thesis from 2014. For the eurozone and Japan, we expected equilibrium real policy rates would remain *negative* over most, if not all, of our secular horizon. For the U.S., we foresaw a gradual liftoff trajectory for the federal funds rate also fully consistent with The New Neutral, a liftoff trajectory that a year ago – and today – is (more than) priced in to financial markets (see Figure 1). We also saw a potential conflict between the Fed's desire to allow its balance sheet to shrink over time and its dual mandate objectives of supporting growth and pushing up inflation toward its 2% target, and observed that the Fed balance sheet was not on autopilot. Our baseline secular scenario last year saw a world of economies converging to modest trend growth trajectories, with output gaps narrowing – in some cases only very gradually – and with inflation rising toward target. We also identified key tail risks to the baseline scenario that, if realized, would produce a far different trajectory for the global economy. For example, we noted that, were the world economy to tip into a global recession, few countries outside the U.S. and China would have ample room to maneuver to deploy aggressive countercyclical policy. We also specifically cautioned that there "remains a tail risk of political polarization in the eurozone and/or a British exit from the European Union. In China, the planned reforms are ambitious, but success is not assured, and capital account liberalization in particular will be challenging to accomplish in the timeframe announced."

THIS YEAR'S QUESTIONS

As we gathered in Newport Beach for the 2016 Secular Forum, we knew that our New Neutral thesis was now more than fully priced in to financial markets. In fact, Fed officials themselves have discussed U.S. monetary policy in terms of a time varying "neutral" policy rate, which is currently and is expected for several years to remain (well) below its pre-crisis old neutral level. So an important goal of this forum was to develop a new secular framework appropriate for a world in which The New Neutral is expected to prevail and is fully reflected in asset prices. We also realized that we confronted many of the same questions that we did the year before: How robust is the global expansion in developed and emerging economies? What are the limits of unconventional monetary policy, and do the costs of such policies exceed the benefits? Are China's prospects for growth, exchange rate policy and capital account liberalization on track? We confronted new questions as well, about the prospects and risks for political polarization and fragmentation in Europe and the U.S., and the downside to negative interest rate policy in Japan and elsewhere.

> "The neutral nominal federal funds rate – defined as the value of the federal funds rate that would be neither expansionary nor contractionary if the economy were operating near potential – is currently low by historical standards and is likely to rise only gradually over time."
>
> – Federal Reserve Chair Janet Yellen, 16 December 2015

Figure 1: Market has more than repriced to The New Neutral

December 2018 eurodollar interest rate future contract implied policy rate

Source: Bloomberg data as of 10 May 2016

But while many of the questions might remain the same, a lot – to say the least – has happened since our last forum in May 2015, and we needed to decide based on what we learned from our invited speakers, our Global Advisory Board members and our first-year class of MBAs whether and to what extent we needed to reassess our baseline scenario as well as recalibrate the likelihood and rethink the particular consequences of different tail scenarios. We organized our agenda into four broad topics, also the four essential questions to frame our discussion:

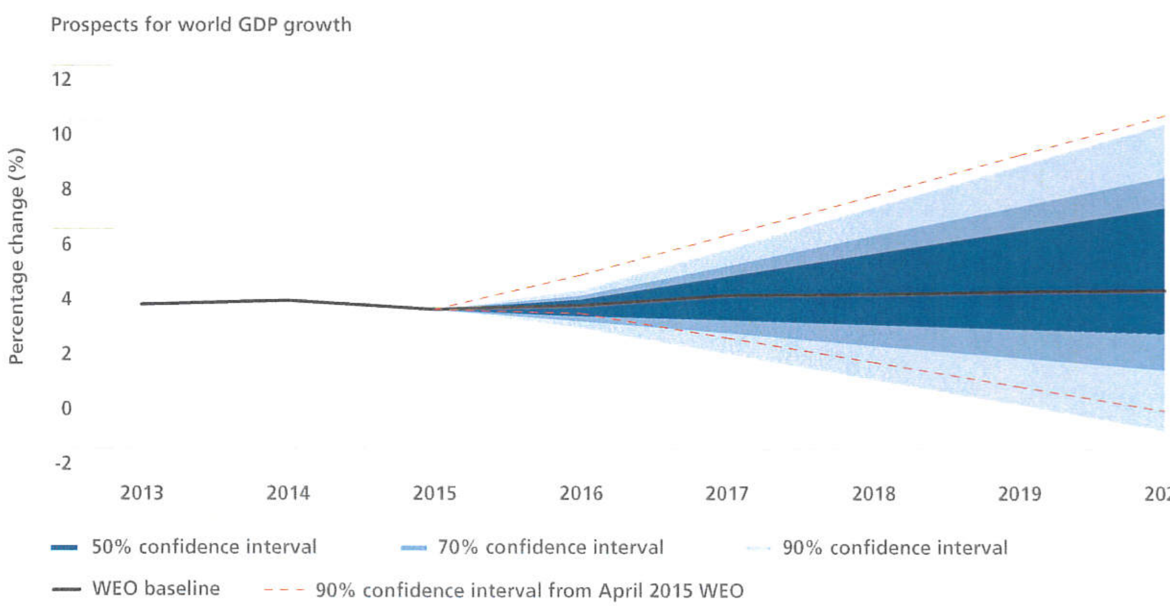
- The global economic outlook: Is last year's left tail this year's baseline? (See Figure 2 for IMF's view on this.)
- China: Is the journey as important as the destination?
- Monetary policy: Diminishing returns or dead end?
- Political populism and polarization: Flash in the pan or secular reality?

OUR SECULAR OUTLOOK

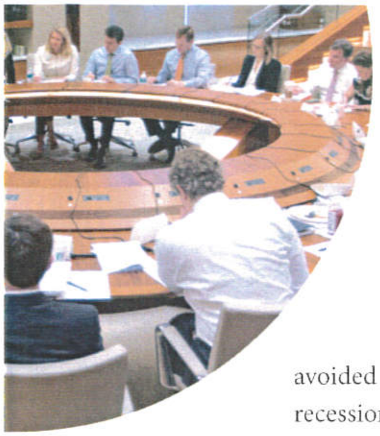
The focus of our internal discussion was on how to balance and reconcile the set of powerful forces that have been at work in the post-crisis global economy, to stress test and re-examine how likely they are to continue, and to assess what might happen if the baseline scenario for the global economy proves to be unsustainable. In these discussions, many of us found a useful framework in one of our guest speakers' notions that we face "radical uncertainty" about the future course of the economy, policy and markets, and the idea that "stability is not sustainability."

We agreed that we find ourselves today in a post-crisis global economy in which growth is just fast enough to avoid stall speed, but there is no evident or prospective source of productivity or organic demand that would support a baseline for more robust expansion. Deflation has been avoided and output gaps in many major economies are closing, but few if any major central banks today are even hitting their 2% inflation targets, let alone overshooting them. And so while the global economy has plodded along since 2009 and has thus far

Figure 2: IMF forecast for global growth has shifted down



Source: IMF World Economic Outlook, PIMCO as of April 2016



avoided tipping into another recession, the system has only averted collapse because of zero or even negative policy rates in many countries, the gusher of liquidity administered by major central banks via quantitative easing (QE), and the debt-financed investment boom in China and some other emerging market (EM) economies.

One plausible scenario, and indeed this remains the PIMCO baseline case, is that a version of this status quo simply continues and evolves gradually for the next three to five years. More specifically, our baseline view for the U.S. foresees GDP growth at or slightly above trend of 1.5% to 2% per year, inflation fluctuating around the 2% target, the Fed gradually lifting the federal funds rate to The New Neutral range of 2% to 3% nominal, and fiscal policy providing modest positive support to aggregate demand.

For the eurozone secular baseline, we foresee lackluster, trend-like growth of between 1% and 1.5% per year with inflation remaining somewhat below 2%. On policy, we see the European Central Bank continuing to do the heavy lifting and eventually even pursuing an extension of the QE program that will approach de facto if not de jure monetization of fiscal deficits. Our baseline sees modest positive support for European growth from fiscal policy over the next three to five years.

Finally, for China, our baseline is that of a managed slowdown, with growth between 5% and 6% and inflation around 2%. Under the baseline, leverage stabilizes in part through controlled defaults and with incremental state recapitalization of state-owned enterprises.

But the consensus in the room was that we should not take excessive comfort from this familiar refrain even if it does remain our baseline scenario. With the global recovery about to enter its eighth year, with central banks pushing even further into the realm of diminishing if not negative returns to unconventional policy, and with our secular window now open to the year 2020 and beyond, we considered another, more complex diagnosis: There is the distinct possibility that the left tail has gotten fatter, and that monetary policy exhaustion and an overhang of debt in some major economies pose material threats to the sustainability of the global recovery and financial stability. This is a left tail scenario and not our baseline view, but in contrast with our previous New Neutral thesis, we now believe that there is a material risk globally – if not necessarily for the U.S. – that the unconventional monetary policies in place today will be insufficient to maintain global growth, close output gaps and bring inflation to target. Furthermore, compared with the

2016 SECULAR FORUM GUEST SPEAKERS

Mervyn King
Governor of the Bank of England (2003–2013)
The End of Alchemy

David Dollar
Senior Fellow, Brookings Institution
The Outlook for China's Economy, Policy and Financial Markets

Doris Kearns Goodwin
Presidential Historian, Pulitzer Prize-winning Author
The 2016 U.S. Presidential Election

Olivier Blanchard
Former Chief Economist, International Monetary Fund
Fred Bergsten Senior Fellow, Peterson Institute for International Economics
The Outlook for Global Growth, Equilibrium Interest Rates, Aggregate Demand, Supply and Inflation

Charles Gave
Founding Partner and Chairman, Gavekal
Emerging Markets 2020 – What Lies Ahead

PIMCO GLOBAL ADVISORY BOARD

Ben Bernanke
Former Federal Reserve Chairman and Distinguished Fellow at the Brookings Institution

Gordon Brown
Former UK Prime Minister and former Chancellor of the Exchequer

Ng Kok Song
Former Chief Investment Officer of the Government of Singapore Investment Corporation (GIC)

Anne-Marie Slaughter
President and CEO of New America, Bert G. Kerstetter '66 University Professor Emerita of Politics and International Affairs at Princeton University, and former Director of Policy Planning for the U.S. State Department

Jean-Claude Trichet
Former President of the European Central Bank and present Chairman of the European group of the Trilateral Commission

pre-crisis experience, with trend growth slow and with debt levels high, there are no obvious "spare tires" available globally if and when monetary policy exhaustion threatens global stability. In other words, the global economy finds itself today in a state of disequilibrium that has remained stable thus far only via three policy props: zero or near-zero interest rate policy, QE, and levering up in China, some other EM economies and the European periphery. We concluded there are diminishing returns to all three of these policy props, while at the same time we believe the costs of unconventional policy are rising and the ability to maintain growth with ever-higher leverage in some countries is limited.

We also considered right tail scenarios for the global outlook, and focused our attention on possibilities for a rebound in global productivity – which would support higher investment, consumption and "animal spirits" – and possibilities for a shift in the global policy mix toward fiscal policy or even coordinated monetary-fiscal "helicopter money" programs. As for productivity, our guest speakers reminded us that inflection points in productivity growth are hard to predict, so while a rebound in productivity *might* happen in the next three to five years, and we could cite anecdotal evidence to support that belief, we did not see this right tail scenario as likely enough to affect the way we expect to invest.

Regarding helicopter money, we thought it very unlikely to happen in the U.S. over our secular horizon. By contrast, in Japan, there already appears to be a rather high degree of coordination between monetary and fiscal policy, and there are real prospects for even closer ties between the Ministry of Finance and the Bank of Japan in which the existing quantitative and qualitative monetary easing (QQE) program evolves into a Japanese government bond price-pegging program. The uncertainty surrounding the impact of helicopter money scenarios is especially radical.

Turning to more traditional fiscal policy options, the world's three major economies – the U.S., Germany and China – all have space to run more expansionary fiscal policies, and in a right tail scenario they do so and with a focus on infrastructure and the supply side.

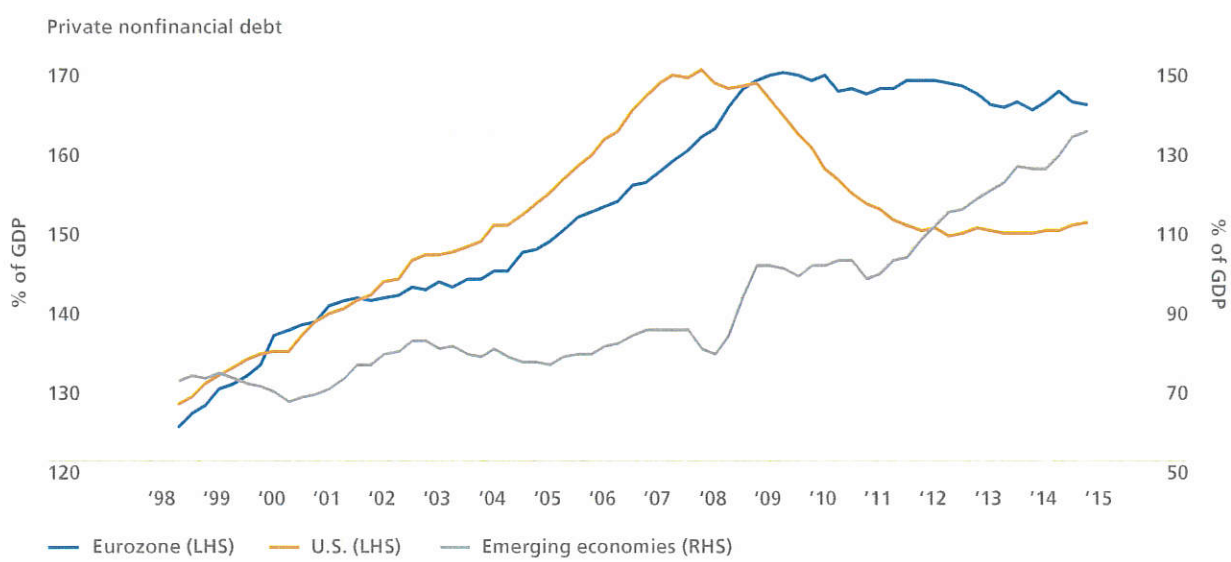
Finally, a potential positive for the global outlook in our baseline scenario is that the secular correction in commodity prices and the secular tailwind to the strong dollar appear to be largely complete.

In sum, our secular thesis is that with risks to global economic stability rising, investors should be compensated up front for the growing and heightened uncertainty and potential consequences of monetary policy exhaustion they face. Under a left tail scenario in which this stable disequilibrium unravels sometime and in some fashion during our secular horizon, no one has a crystal ball to determine what it would look like. The timing and precise dynamics of the eventual endgame following such a scenario are uncertain, the plausible paths are many and complex, path dependence would be the rule and not the exception, and much would depend on the timeliness and boldness of the policy – including fiscal policy – response. But while there are myriad uncertainties, there is no doubt that a global disruption of our baseline scenario would have serious repercussions for growth, inflation and financial markets. The risks are uncertain, but they are real, and active investors can aim to put a price on them.

Here we can learn another lesson from history: "A Stable Disequilibrium" was in fact the theme of our 2006 Secular Forum, and this was the way we had characterized the world in the years leading up to the global financial crisis. At that time, PIMCO was early and saw the world in a state of stable disequilibrium – supported by a surge of financial globalization and petrodollar recycling that fueled an unprecedented explosion in private sector borrowing, an era that today is referred to as "the great leveraging" that provided the financing for "the great moderation." Asset prices were distorted and traditional metrics for valuation were cast aside. Momentum made money, and contrarian investors, for a time, lagged behind. Nonetheless, as early as 2004 we had begun to prepare and position our portfolios for the eventual unwind, knowing full well that our crystal ball was opaque and that the stable disequilibrium, although doomed to collapse eventually, could persist for some time – as of course it did.

Although the situation today differs in many respects from the pre-crisis experience, there are some parallels. Global leverage is again exploding – via government budget deficits in the rich countries and private sector borrowing binges in some major EM countries (see Figure 3). Asset prices in some markets are distorted and traditional metrics of valuation are cast aside in a world of QE infinity, negative interest rate policies and subzero seven-year sovereign yields. Although global imbalances have declined and are shrinking, they have been more than replaced by ballooning central bank balance sheets as a source of liquidity and cheap finance for the chronically debt-addicted. This policy mix and the middling global growth and modest inflation it supports may remain our baseline scenario. But because we see the left tail risks as elevated, just as we did during the stable disequilibrium years before the crisis, we believe it makes sense coming out of this forum to prepare and position ourselves with this elevated macro risk in mind.

Figure 3: What deleveraging? Private sector leverage outside the U.S. remains high and rising



Source: Bank for International Settlements as of 30 September 2015

Investment implications

In a world in which stability is becoming increasingly unsustainable, how do we invest? These are some of the key secular themes that we expect to guide how we manage our clients' assets over the next three to five years.

Stay on dry land and preserve capital

In recent years we have described "riding a wave" of central bank interventions, as a range of unconventional policies have been rolled out across countries, driving asset price returns. This wave-riding has worked well in the past. Looking out over the secular horizon, however, diminishing returns to central bank interventions – and the potential for policy activism to do more harm than good, notably in the case of negative policy rates – advise against such an approach. Debt levels globally remain very high, and the more levered sectors are relying on (potentially less effective) central bank support. While our baseline secular outlook sees a fairly benign macroeconomic path and fairly range-bound markets, there are a range of downside risks (discussed in detail above), including China and the eurozone, monetary policy exhaustion, political gridlock and the rise of populism. These potential shocks to the global economy increase the prospects for permanent debt write-downs over the secular horizon. Overall, we expect to have more cautious positioning in our portfolios, and to make capital preservation the number-one priority. It will be critical to target high quality income-generating assets in our portfolios but not necessarily the highest-yielding assets – we will tend to look for structural seniority, and we want to see sufficiently strong fundamentals or hard asset coverage to help investments weather the uncertainties over the secular horizon. We cannot rely solely on central bank support. The secular timeframe is likely to remain a very difficult environment for investing, and we will seek to avoid investments where there is a real risk of permanent capital loss.

Guard against negative yields and guard against the asymmetric risk of rising yields

Markets now price in The New Neutral outlook for central banks and for market rates, which has been a central theme of our secular outlook for the past two years. Over the coming secular horizon, we will guard against negative yields in Japan and the eurozone, looking for more attractive global alternatives. Overall in our baseline outlook we expect government bond market yields to be fairly range-bound, but there is a clear asymmetric risk toward higher yields than those priced into forward curves.

Grind out alpha in a low return environment

The combination of fixed income markets that price in The New Neutral and fairly full equity valuations means we are operating in a low return environment. This reinforces the importance of active management, with alpha set to be a higher proportion of total return than during the secular bull market. We see this as an environment in which active managers can improve upon low passive returns. We believe critical decisions have evolved beyond the straightforward *how much* of a given asset class, sector or region to own in a portfolio, and instead see a need for greater discretion in selecting *what* to own. Also, we reaffirm the importance of PIMCO's long-term tradition of structural alpha positions, which seek to benefit from exploiting market inefficiencies and provide a diversified source of return from other top-down and bottom-up active positions.

Seek to benefit from periods of high volatility

The outlook for growth at the global level and across globally important countries and regions we see as subject to fairly normal, bell-shaped distributions. But this fairly normal outlook reflects a very unusual level of central bank and other policy interventions. Market valuations range from fair to stretched and remain highly influenced by central bank interventions. As the Federal Reserve looks to unwind stimulus and other countries, notably Japan, get further and further into extreme intervention territory, the margin for error is thin. The experience of the past years has shown that it does not take much in terms of policy actions and mistakes to prompt repricing in markets. While maintaining overall fairly cautious portfolio positioning, we will seek to benefit from periods of volatility in which assets have the potential to cheapen significantly. To be in a position to benefit, we will need careful portfolio construction and rigorous risk management of our positions.

Very selective on the eurozone

The eurozone secular outlook in particular is subject to a series of risks – economic, political and regulatory – and significant uncertainty over the reliability of property rights and the protection of the rule of law (recent examples of the latter include Portugal and Austria). In recent years we have favored eurozone markets with a secular bias to be overweight but, at current valuations and given the risks to the outlook, we expect to be cautious and very selective on eurozone holdings in our portfolios.

Look for opportunities in emerging markets

Two of the key challenges to emerging markets in the past few years have been the strength of the U.S. dollar and the weakness of commodity prices. Our secular outlook of broad stability for the U.S. dollar, in part owing to China's constraint on Fed policy tightening, along with commodity markets that have largely repriced to China's reduced and less commodity-intensive growth path suggests that two key negatives for emerging markets have been removed. While there are of course country-specific challenges in emerging markets, and liquidity conditions have deteriorated, we will look on a country-by-country and sector-by-sector basis for good investment opportunities in emerging markets.

Bottom-up over beta

In credit markets, where market beta valuations look fair but not cheap, we will seek to add value using our global team of credit portfolio managers and credit analysts, focusing on picking the winners and avoiding the losers in the capital structure and investing in industries and companies where we perceive pricing power and barriers to entry.

Scour the world and diversify

We will scour the world for investment opportunities across sectors, using our global team of 295 portfolio managers and analysts. We will look to take a wide range of diversified positions and to identify attractive liquidity and complexity premiums – and we will strive in portfolio construction and risk management to guard against excessive correlated risk in our portfolios.

Guard against the right tail

As well as seeking to protect against left tail risks, we need to seek to protect against right tail risks, given the possibility of better-than-expected macro outcomes – notably inflation, which, along with default risk, constitutes in our opinion the biggest risk to fixed income portfolios, particularly at very low levels of real and nominal yields. Given the extent of increasingly experimental monetary policies in place globally (with the potential for more to come), all with a core objective of boosting inflation rates, we find inflation protection is attractively priced. Different countries face a range of potential inflation outcomes, but we see U.S. Treasury Inflation-Protected Securities (TIPS) as offering both good value and valuable protection against the possibility of higher inflation in the U.S. Risk management will be crucial to investment outcomes over the secular horizon.

Rising Risks?

Central banks around the world have extended the global expansion, but with other factors weighing on the recovery, monetary policy effectiveness is waning.

INVESTMENT RISKS

Left tail risks are building, with consequential implications for portfolios.

In the absence of structural reforms, we are approaching the limits of central bank policy.

Increasingly experimental policy is creating greater uncertainty and stretching valuations.

Unsustainable debt levels mean that long-term risks of capital impairment or inflation are rising.

Political uncertainty is increasing.

Greater regulation and related reduced transactional liquidity are enhancing local market volatility.

... AND RESPONSES

Be patient.

Be tactical and flexible.

Provide liquidity when others need it.

Prepare for market turning points. This is one of the key advantages of active management.

Avoid or underweight assets that solely or primarily rely on central banks to support valuations.

Hedge against a tail scenario in which inflation overshoots central bank targets.
Although this is unlikely in the near term, the risk is significant over our secular horizon.

ABOUT OUR FORUMS

PIMCO's investment process is anchored by our Secular and Cyclical Economic Forums. Four times a year, our investment professionals from around the world gather in Newport Beach to discuss and debate the state of the global markets and economy and identify the trends that we believe will have important investment implications. We believe a disciplined focus on long-term fundamentals provides an important macroeconomic backdrop against which we can identify opportunities and risks and implement long-term investment strategies.

At the Secular Forum, held annually, we focus on the outlook for the next three to five years, allowing us to position portfolios to benefit from structural changes and trends in the global economy. Every Secular Forum, we invite distinguished guest speakers – Nobel laureate economists, policymakers, investors and historians – who bring valuable, multi-dimensional perspectives to our discussions. We also welcome the active participation of the PIMCO Global Advisory Board, a team of five world-renowned experts on economic and political issues.

At the Cyclical Forum, held three times a year, we focus on the outlook for the next six to 12 months, analyzing business cycle dynamics across major developed and emerging market economies with an eye toward identifying potential changes in monetary and fiscal policies, market risk premiums and relative valuations that drive portfolio positioning.

PIMCO

PIMCO employee data is as of 31 March 2016.

Past performance is not a guarantee or a reliable indicator of future results. All investments contain risk and may lose value. Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and the current low interest rate environment increases this risk. Current reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Inflation-linked bonds (ILBs)** issued by a government are fixed income securities whose principal value is periodically adjusted according to the rate of inflation; ILBs decline in value when real interest rates rise. **Treasury Inflation-Protected Securities (TIPS)** are ILBs issued by the U.S. government. Investing in **foreign-denominated and/or -domiciled securities** may involve heightened risk due to currency fluctuations, and economic and political risks, which may be enhanced in **emerging markets**. **Management risk** is the risk that the investment techniques and risk analyses applied by PIMCO will not produce the desired results, and that certain policies or developments may affect the investment techniques available to PIMCO in connection with managing the strategy. There is no guarantee that these investment strategies will work under all market conditions or are suitable for all investors and each investor should evaluate their ability to invest long-term, especially during periods of downturn in the market. Investors should consult their investment professional prior to making an investment decision.

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CMR2016-0525-189937