MEETING

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PUBLIC EMPLOYEES' RETIREMENT SYSTEM

BOARD OF ADMINISTRATION

INVESTMENT COMMITTEE

OPEN SESSION

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SACRAMENTO, CALIFORNIA

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9:00 A.M.

JAMES F. PETERS, CSR
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A P P E A R A N C E S

COMMITTEE MEMBERS:

Mr. Henry Jones, Chairperson

Mr. Bill Slaton, Vice Chairperson

Mr. Michael Bilbrey

Mr. John Chiang, represented by Mr. Steve Juarez

Mr. Richard Costigan

Mr. Richard Gillihan, represented by Ms. Katie Hagen

Ms. Dana Hollinger

Mr. J.J. Jelincic

Mr. Ron Lind

Ms. Priya Mathur

Mr. Theresa Taylor

Ms. Betty Yee, represented by Ms. Lynn Paquin

STAFF:

Ms. Marcie Frost, Chief Executive Officer

Mr. Ted Eliopoulos, Chief Investment Officer

Mr. Doug Hoffner, Deputy Executive Officer

Mr. Matt Jacobs, General Counsel

Mr. Eric Baggesen, Managing Investment Director

Ms. Natalie Bickford, Committee Secretary

Mr. Dan Bienvenue, Managing Investment Director

Mr. Michael Krimm, Investment Director

Mr. Simiso Nzima, Investment Director

A P P E A R A N C E S   C O N T I N U E D

STAFF:

Mr. John Rothfield, Investment Director

Ms. Anne Simpson, Investment Director

Mr. Wylie Tollette, Chief Operating Investment Officer

Mr. Michael Younger, Staff Services Manager

ALSO PRESENT:

Mr. Andrew Junkin, Wilshire Consulting

Mr. Allan Emkin, Pension Consulting Alliance

Ms. Christy Fields, Pension Consulting Alliance

Mr. David Glickman, Pension Consulting Alliance

Mr. Steve Hartt, Meketa Investment Group

Mr. Danny Mitchell, StepStone

Mr. Jason Perez, Corona Police Officers Association

Mayor Darrell Steinberg, Sacramento Mayor

Mr. Tom Toth, Wilshire Consulting

I N D E X

P R O C E E D I N G S

CHAIRPERSON JONES: I'd like to call the Investment Committee meeting to order.

First order of business is roll call please.

COMMITTEE SECRETARY BICKFORD: Henry Jones?

CHAIRPERSON JONES: Here.

COMMITTEE SECRETARY BICKFORD: Bill Slaton?

VICE CHAIRPERSON SLATON: Here.

COMMITTEE SECRETARY BICKFORD: Michael Bilbrey?

COMMITTEE MEMBER BILBREY: Morning.

COMMITTEE SECRETARY BICKFORD: John Chiang represented by Steve Juarez?

ACTING COMMITTEE MEMBER JUAREZ: Here.

COMMITTEE SECRETARY BICKFORD: Richard Costigan?

COMMITTEE MEMBER COSTIGAN: Here.

COMMITTEE SECRETARY BICKFORD: Rob Feckner?

CHAIRPERSON JONES: Excused.

COMMITTEE SECRETARY BICKFORD: Richard Gillihan represented by Katie Hagen?

ACTING COMMITTEE MEMBER HAGEN: Here.

COMMITTEE SECRETARY BICKFORD: Dana Hollinger?

COMMITTEE MEMBER HOLLINGER: Here.

COMMITTEE SECRETARY BICKFORD: J.J. Jelincic?

COMMITTEE MEMBER JELINCIC: Here.

COMMITTEE SECRETARY BICKFORD: Ron Lind?

COMMITTEE MEMBER LIND: Here.

COMMITTEE SECRETARY BICKFORD: Priya Mathur?

COMMITTEE MEMBER MATHUR: Here.

COMMITTEE SECRETARY BICKFORD: Theresa Taylor?

COMMITTEE MEMBER TAYLOR: Here.

COMMITTEE SECRETARY BICKFORD: And Betty Yee represented by Lynn Paquin?

ACTING COMMITTEE MEMBER PAQUIN: Here.

CHAIRPERSON JONES: Okay. Thank you very much.

We're going to skip the CIO's briefing and return in a little bit. And so we're going to go right into the consent items -- the Action Consent Items?

So do we have a motion?

COMMITTEE MEMBER TAYLOR: Moved.

COMMITTEE MEMBER BILBREY: Second.

CHAIRPERSON JONES: Moved by Mrs. Taylor and seconded by Mr. Bilbrey.

All those in favor, aye.

(Ayes.)

CHAIRPERSON JONES: Opposed?

None.

The item passes.

Thank you.

We have Consent Items, Information. I have not received any requests to remove anything from the consent information items, so we will go on to Item 5, which is the CalPERS Trust Level Review.

Mr. Eliopoulos.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, we're off to a roaring start here this morning.

CHAIRPERSON JONES: Oh, just a minute. I think I see -- is -- Mr. Mayor is here?

No.

No. Okay. No, that's not. Okay.

Go ahead. I'm sorry.

(Thereupon an overhead presentation was Presented as follows.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: We're coordinating a number of really fun things. But, John, why don't you come on up.

This is the trust level review for the fiscal year that just concluded. And as the format that the Committee I think is very familiar with by now, we alternate presentations by your Investment staff and your independent fiduciary consultants. For the this August review the Investment staff goes first, and then the investment consultants will follow in that following as Agenda item 5b.

In addition to that, I think the format of the actual review is familiar to the Committee by now. You'll see a series of presentations by myself and Eric Baggesen and Wylie Tollette.

And we'll kick it off with a review of the macroeconomic environment. As you will remember, our chief economist at CalPERS, John Rothfield, presents. His role in the fund is as chief economist, among many other roles within our fixed income group.

So to start things off with the trust level review, the first section is the economic and market overview; and John will kick us off.

John.

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INVESTMENT DIRECTOR ROTHFIELD: Well, good morning, everyone. A pleasure to be here again.

And just wanted to -- I think the main message from the economic trend since last review that while we were here in February is that we continued to have fairly stable growth in the economy. We're now eight years into an economic expansion according to the way that business cycles are dated. And despite the fact that we've had a regime change in Washington and various things happening globally, the economy in the U.S. has -- continues to grow in about the low 2s. So whether you want to call that new normal growth or secular stagnation growth, it's not the kind of growth that we get in a typical expansion. It's normally a little bit more.

But particularly when you take out some volatile items in gross product, the level of economic active, and the economy's growing in low 2s per year.

Also, this year the labor market has grown, so the number of jobs created, and the economy has grown at 184,000 a month, which is almost identical to last year where we had 187,000 per month. So very stable growth in jobs created in the economy.

Leverage in the economy, which is very important, how much different actors in the economy are borrowing out of their income or otherwise. That's also been fairly stable in this expansion. So unlike the 2000s where they had a big growth in leverage, particularly in outstanding mortgages in the economy, leverage in the economy with some exceptions compositionally has actually been quite steady.

And also another thing that we typically worry about in an economic expansion is the trade deficit in the U.S. So in the last -- in the last economic expansion the U.S. trade deficit got out to about 6 percent of one year's gross product. Right now we're very steady at about 2 and a half percent, which is well within the normal boundaries of the kind of external deficit and borrowing that the U.S. can sustain. So in terms of that, there's not that much to report in -- you know, economy's neither accelerating or decelerating, neither is leverage in the economy.

Turning to a couple of positives on the chart you see before you from page 4, there definitely has been a surge in confidence in the economy. Both consumer confidence and business confidence has been up sharply. Whether that's -- that of course is a double-edged sword because if folks are spending out of their improvement in confidence, there's always a chance that at some point in the future this peak in confidence will come down and therefore we start to get less confidence growth.

Also the OAC, they pointed out recently that the correlation between spending activity and consumer sentiment has actually fallen to about zero. So confidence has been way up, but the spending associated with that hasn't changed very much. And that's also the case in their business sector as well.

There has been a slight improvement in the relative position of low income earners. As you get into the 9th year of an economic expansion, you're starting to draw on more labor with low levels of education, people who've been unemployed for longer, people with kind of a degraded skill set, things like that. So you are starting to drag them into the labor force. Some of them are even starting to formulate their own households, and so that's a good sign. Although overall, that compositional change is not particularly large. It's just a slight improvement.

I would also say that housing is still a positive for the economy. We have pretty strong sentiment in that sector. Starts and sales are also fairly high. And although valuations have gotten very high in certain markets like San Francisco, Los Angeles, et cetera, at a national level the ratio of house prices to either income or rents is actually in the middle of typical range, because it's not extended like it was, you know, '6 or '7, and how it's extended in some other countries right now, particularly Scandinavia and some of the dollar bloc countries.

And then a couple of other things I would like to mention on the positive side. The drag on the economy from mining, so drilling and extraction has gone from negative last year to a positive this year, as we've had some kind of stabilization of energy prices.

We also have a very benign inflation outlook in the U.S. for the next 12 months. So the Fed is not going to be in a hurry to address rising inflation by raising rates too quickly.

And finally, I think another key feature that's an improvement versus six months ago is that we've had an improvement in global economy. So some of the less populist outcomes from European elections have boosted economic growth and confidence there. They've started to address their financial intermediation problems more aggressively, which is starting to lead to more credit growth in the right areas of the economy without causing too much leverage.

Japan last night announced 4 percent quarterly growth, which was much higher than expected. So Japan is in a mini-cyclical improvement as well.

And importantly, the same can be said about China. Where their policies, despite the fact that they've made some significant reforms in terms of de-regulation and addressing some of their leverage issues, the Chinese economy's doing very well.

So you're starting to see that in the U.S. manufacturing sector and the export sector this improvement in China, Europe, and Japan is something that's contributing to a positive outlook.

The negatives I would like to highlight briefly. We are nine years into economic cycle. And typically an economic cycle doesn't go past ten years. This is past economic cycles. The cyclical performance of the economy is not as typical these days as it has been in the past, so it's not necessarily saying that we've only got two more years of economic expansion left. But things start to happen toward the end of an economic cycle. The profit share of income starts to come down a bit; the wide share starts to go up a bit, which starts to eat into valuations in the stock market.

Recently, the government announced that it had revised up spending growth and revised down income growth. What that means is the savings rating economy, the cushion that we have as household sector, has started to diminish a bit relative to what we previously thought.

So that means that if there is an exogenous shock to the economy, the household sector is less likely to be able to equilibrate that shock by increasing their -- increasing their savings.

And then you continue to have things like relatively weak corporate investment in a low growth world.

Consumer credit has increased from all those student loans and credit cards. That's a relatively small portion of the leverage in the economy. But it does mean that some of the folks in those sectors are getting a little bit overextended.

So the overall message I think would be that some of the big macro trends are very similar. There have been some significant positives since last time, a lot of that happening in the global economy rather than the U.S. economy. But there are some negatives associated with getting into some late cycle factors in the economy.

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INVESTMENT DIRECTOR ROTHFIELD: And then the one area that I would like to focus on is on page 10 -- 10 of the slides, which is we start to look at whether various factors in the economy are mid -- early, mid, or late cycle in the economy. And a lot of these are still relatively mid cycle, or at least getting through somewhere between mid and late cycle rather than very late cycle. I mentioned before the trade deficit leverage; housing affordability's about halfway along its continuum rather than being too expensive.

The one area that people worry about right now, which I think is justified, is that, how many workers are left to continue to fuel the economic expansion? If you age adjust the amount of employees to population in the economy, you only got one or two million people left even if you manage to drag more people into the labor force; you've only got another year or so of employment growth at this level to be able to drag into the labor force.

And there are some structural changes in the economy suggesting that perhaps males in the

25-to-34-year-old age group may not be able to come back into the labor force like there had been in prior cycles.

So, again, this is indicating that we're kind of mid to late cycle but in labor market we're getting toward late cycle, which can start to have impact on asset class returns.

And then, finally, on page 11, the overall message there is the most likely outcome continues to be this idea of challenging returns in the economy:

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INVESTMENT DIRECTOR ROTHFIELD: GDP growth remaining in the low 2s, some modest feeding of that growth by improvements in the labor force and household formation, continued fairly tame inflation so the Fed doesn't have to overreact, and gradual removal of stimulus abroad. So China, Europe, and Japan, as their economies improve, they're going to gradually remove some of their stimulus.

There are things you worry about on both sides. One of the biggest worries perhaps is that there's a policy mistake as the U.S., Europe, and Japan, and maybe even China start to reduce the stimulus that they're providing that cause this economic activity improvement; then you start to get the risk of a policy mistake. And less liquidity around there to fuel asset prices.

So again, the most likely outcome is challenging returns, but there are some late cycle risks that potentially we can worry about.

That's it.

CHAIRPERSON JONES: Okay. Seeing no questions, and so -- oh, do you have a question, Mr. Costigan? Just a minute here.

Mr. Costigan.

COMMITTEE MEMBER COSTIGAN: Thank you, Mr. Jones.

Just a few. I mean -- first of all, appreciate the report. The struggle I think we're all having, you look last week you have North Korea, you have what happened in Virginia in this week -- or over the weekend, you have the instability that's going in. And so you talk about this modest 2 percent growth. But I guess what I didn't hear a little bit is, you talked -- we'd have 2 percent growth going forward. But it seems that we're going to have significant volatility. And then you have interest rates continuing to remain low.

And then the concern I have, at least what I heard you say, is that rents and housing prices are in the middle, except you hear in California the median price of a home is north of $550,000 and wages have been flat. So what I've never -- have not been able to reconcile is, if wages are flat, housing prices are rising, who's moving into those houses, where -- how do we account for that? And if California is leading that trend in cost and wages, where -- how do you account for that in the report?

INVESTMENT DIRECTOR ROTHFIELD: Well, I don't have the chart in here, but there are various measures of housing affordability. One is just simply, you know, a person on a median income, the kind of mortgage they'd have to get at current mortgage rates, et cetera; and therefore if you do those sums relative to their income, how much of their income are they paying for their mortgage if they're buying a median house and they're on a medium income.

Another way is a measure that takes 200 different cities in the U.S. and says that the median price of a house, whether an existing or a new home, what percentage of people in that jurisdiction can afford that house?

Both those measures are showing that we got very expensive in 2007. We got very cheap in 2010. We've now retraced about half of that.

There are some outlying exceptions though. One is the San Francisco area, and then the surrounding areas like Fairfield. And then if you go down to Southern California, those measures are also very extended.

So this is a national measure that takes account of different affordability rates in different parts of the country.

And coming from the Bay Area, we have a different perspective on this because we are very close to wides in terms of unaffordability of housing. But if you go into the -- into the hinterland of the country and even on the East Coast, we haven't reached those extended levels yet.

COMMITTEE MEMBER COSTIGAN: Just a few follow-up questions.

So we have a very low -- we have a very high employment rate. And so we have a low unemployment rate. Wages are growing slowly. I mean, they tend to be flat to slow, right? I just want to make --

INVESTMENT DIRECTOR ROTHFIELD: Right.

COMMITTEE MEMBER COSTIGAN: The interest rates have been rising, and the Feds are waiting to see if they're going to raise them again in December. And then we have instability in the international world. I mean, I'm just trying -- I'm trying to get an idea, when Ted and -- when you all talk about -- we always talk about being long-term investors. So what we should look at right now is this is a short-term blip in a long-term cycle or is this, as someone said, sort of the new norm?

INVESTMENT DIRECTOR ROTHFIELD: I think this is probably the new norm. You know, normally when you have an unemployment rate this low, you typically have wage growth in the range of 3 to 4 percent in the economy. Right now we're only growing at about 2 and a half percent in the economy. And I think the -- there's a couple reasons for that difference, is we're getting toward the end -- we're getting toward the back third or whatever of a cycle -- quarter or a third of an economic cycle. And there are not that many skilled workers left. So a lot of the increment in employment has happened with high school leavers, people who've been unemployed for more than 27 weeks so they have less pricing power to come into the labor force. And so a lot of that's happening.

So, yes, it is true that income growth in the economy is actually slowed down quite a bit. And that again goes to this issue about maybe the -- a lot of the positives I mentioned in the economy are a little backward looking or current. Which is, we continue to get sequential improvement in these various things, but as we get too late cycle there are more things you start to worry about.

COMMITTEE MEMBER COSTIGAN: Excuse me. So just one last question, I mean, just -- and this is a crystal ball forecast. If nothing changed at the federal tax level -- because I know a lot of the market has built in that there was going to be some tax change going forward. I believe H.D. Palmer last week even commented that there was an impact to potential revenues. But I believe the Controller's office actually said we were at an impress -- document said we were up. But there are at least some folks delaying capital gains and delaying sales, anticipating lower rates. If nothing changes, and if the paralysis continues, do you believe we would still continue to see growth over the next three to four years? Or is the market priced in that if there is nothing that happens in the next year, we'll see a cycle correction? And that's just -- that's just a guess.

INVESTMENT DIRECTOR ROTHFIELD: Well, I think one of the reasons you have this deviation between strong confidence and soft actual spending is that people are hoping for changes in the tax structure and a tax cut, but they're not counting on it. They're not relying it.

So you'd start to be worried somewhat if -- if that was the case, that folks were pre-spending the tax cut that may or may not come in the next couple of years. But that's not really happening.

And then if you look at -- if you look at the stock market, it's been a general increase in the stock market. So initially, stocks that were based -- that would have benefited from corporate tax cuts outperformed -- that outperformance has come back, so the market's much more skeptical now about whether that's actually going to happen.

So I would say that, you know, if this legislative program of the GOP just drags on and we just get very tepid, net tax cuts because they have to be revenue neutral, et cetera, it's probably not going to have that much impact on the economy.

But I would say, some of these late cycle impacts we are talking about are relevant to the economy. You know, we -- we're getting to the point where again the new labor that's coming into the economy is less skilled, et cetera; therefore you're getting the low wage people starting to come in. That's actually helped them a bit. And they tend to be spenders and household formers.

But overall in the economy you just have this slow growth of nominal GDP, 3 to 4 percent, that would probably continue for sometime. And I would say, most people think that if they're thinking about a recession, that it probably would be -- we start thinking about a recession maybe in two years from now. But leading into that we'd probably get low growth. And of course, as always, these known/unknowns like North Korea, other geopolitical events, et cetera, internally and internationally, that we could worry about but it's very hard to put in an economic forecast.

COMMITTEE MEMBER COSTIGAN: Thank you.

Thank you, Mr. Jones

CHAIRPERSON JONES: You're welcome.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah, a couple of questions about your slides and then a more broad question.

On attachment 1, page 7, you talked about CapEx hasn't reflected intentions. Can you develop that a little bit and --

INVESTMENT DIRECTOR ROTHFIELD: Well, again, that's an issue --

COMMITTEE MEMBER JELINCIC: -- look at your crystal ball and tell me where we're going.

INVESTMENT DIRECTOR ROTHFIELD: -- where -- where -- it looks like a conditional improvement in CapEx intentions. So businesses think that they are going to get some kind of tax relief that is going to -- you know, depreciation, allowances, et cetera, that's going to allow them to invest more. Potentially this idea that some of the funds held abroad by U.S. corporates could come back onshore and be invested.

Actual investment hasn't moved at all yet. And businesses continue to constrain their investment because of things like low internal cash generation. They've already borrowed quite a lot. So their borrowing level is a -- a multiple GDP is already quite high. And they've essentially used that for buybacks, et cetera.

So this low investment rate in the economy is probably here for some time and is one of the factors that's helped to hold down productivity in the economy.

And a lot of things need to happen in order for, you know, policy change to finally deliver on higher investment. And even then, because we're late cycle, where's the demand going to be to make that investment profitable. So I'm fairly skeptical about whether this surge in investment or CapEx intention is actually going to happen.

COMMITTEE MEMBER JELINCIC: Okay. And then two slides further - steady leverage. One of things that I notice is in the various debt you've got, you know, business and government, but the base seems to be household net income -- or net worth. Can you explain why we're using household net worth when part of what we're looking at is government and business debt?

INVESTMENT DIRECTOR ROTHFIELD: Well, the leverage measures go to how much each player in the domestic economy -- domestic nonfinancial corporations, government, and household sector are borrowing.

Household net worth is a useful measure for economists because it's saying that the household sector, which owns houses and financial assets - stocks and bonds and mutual funds, et cetera - the valuation of them starts to rise relative to the amount of income being generated in the economy, and at some point you hit a speed bump because those valuations are high. You can only sustain a particular valuation of houses and financial assets as a multiple of income in the economy. And in the U.S. we're starting to get toward the highest we had the late nineties or the early 2000s and 2007. And that's why people were starting to say that some of these valuations are extended. In other countries though, like Canada, the UK, et cetera, those valuations are making new highs.

So it can be a speed bump or there can be things unlocked in the economy like productivity, the discovery of gas in the economy which is increasing our self-sufficiency, maybe some form de-regulation can start to improve those sustainable valuations. But I think that's why people look at household worth because it's a measure of houses plus financial assets as a multiple of income, and it tends to get a little wobbly when you get very high on those levels.

COMMITTEE MEMBER JELINCIC: So part of the assumption is that the net worth of Governments and businesses somehow get filtered back into household net worth?

INVESTMENT DIRECTOR ROTHFIELD: Yes, I would say that, particularly corporate sector because, you know, that's embedded in the stock prices -- that's embedded in stock prices, which is a key part of the measure of financial asset valuation.

And, you know, corporate debt to GDP is actually very high right now. Corporate net worth, if you measure a company either by the value of its stock or by some other measure of market valuation of its assets and liabilities, that's actually still fairly low. And part of that is just basically a lot of this borrowing is being used to do buybacks as opposed to investment.

COMMITTEE MEMBER JELINCIC: Okay. And then we have made policy decisions, I don't know, for the last 20 to 30 years, that basically have been designed to suppress unions and suppress wages. If we can -- any -- in your crystal ball, any chance of that changing? And if so, what impact would it have?

INVESTMENT DIRECTOR ROTHFIELD: Well, a lot of folks have been looking recently at the idea that when you look at national income in the economy, you come it from the income side rather than the output side. The profit share of gross product is very high. The labor share is very low, and it's been trending down for a long period of time.

Some studies have suggested that unionization is part of, the trend decline in unionization. There are other factors that are in there as well though, like internationalization, if you like. That's been another factor. Low productivity has been another factor.

So we keep -- we keep waiting in the cycle for the labor share of product to start coming up and start cannibalizing some of the profits that we have in the economy. That's not really happening. And even as we get into late cycle it's probably not going to happen either, because firms when they're faced with this idea of a shortage of labor actually aren't bidding up the price of labor; they're just making less and doing without it.

So, again, we are probably stuck with a lower labor share of GDP and a higher profit share. When they try and control for unionization, that's a relatively small factor. It's mainly globalization has been a factor there.

COMMITTEE MEMBER JELINCIC: Okay. And then on inflation, we're currently in this low inflation.

INVESTMENT DIRECTOR ROTHFIELD: And, I'm sorry, I should mention robotics and things like that as well.

COMMITTEE MEMBER JELINCIC: And on inflation, you know, the Fed's trying to push inflation up a little bit. Obviously very high inflation is a disaster. But I think people forget that low inflation sort of provides grease to eliminate some of the friction as we make social changes and policy changes and economic changes.

So what do you think's the likelihood of the Fed succeeding and pushing up inflation to provide some of that grease for adjustments?

INVESTMENT DIRECTOR ROTHFIELD: Well, some of the Fed members are worried about the fact that we're in a low inflation environment. Every country -- you know, it was basically decided back in mid nineties that we would go for a 2 percent inflation target. There wasn't particularly much science to that.

But it seems increasingly difficult to get inflation to reach and sustain at 2 percent. We have temporary increases in inflation that are based on things like food and gas prices going up, so you get rises in the inflation. But the average inflation rate does seem to be lower, then that coincides with lower wage growth meeting lower productivity growth. So the kind of unit labor costs are growing, and they need about one percent a year.

So the -- the Fed I think is -- more members of the Fed -- we had the Minneapolis president of the Fed last week talking about wage inflation being a ghost story, because people expect it to happen and it's just not happening.

I would say the Fed is probably going to find it fairly difficult to get inflation to sustain to 2 percent. Because you just have the structural shifts like permanently low wage growth, low wage share of output, and less pricing power happening.

And there's also demographical shifts. You know, the U.S. is getting older. Like Japan, where we went into disinflation. Part of that's cyclical but also partly structural. You know, all the people have services which tend to have, you know, less price variability, et cetera.

So the Fed is a little bit worried about its dual mandate. It's got the unemployment rate very row, but it's having some problems getting its inflation measures to sustain at over 2 percent.

The good thing about that I guess is it means that the Fed doesn't have to worry about -- worry as much as it has in the past about getting ahead of a late cycle inflation surge, which means that it can keep relatively benign in the tightening that it does over the next few years.

COMMITTEE MEMBER JELINCIC: And what policy --

CHAIRPERSON JONES: J.J., excuse me.

We have -- Mayor Steinberg is here and I understand his schedule's tight. So I'm going to pause the questioning here and return to you first when we return.

And he's part of our CIO's briefing, and so we're going to turn it back to Mr. Eliopoulos.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Thank you, Mr. Chair. Thanks to the Committee for your flexibility in coordinating some schedules here.

I can't tell you how thrilled I am actually to give this brief report on mentorship and internship. It is I think a key core value of this board, a key -- a key core value for myself in my own professional career. And we really want to highlight some very important programs that are being developed here in Sacramento, and I'll be introducing Mayor Steinberg officially here in a few minutes for sure to talk about a very important and meaningful internship program that he is beginning and leading for the city, and that CalPERS and the Investment Office is participating in. And that's why we're talking about it particularly today.

But before I get into that, I just want to make one other recognition before we get started. I think Chris Ailman is here today.

There he is, my counterpart, the CIO of CalSTRS; and talking about mentors, a key mentor to me.

So Chris is here today, as he was last year at this time if you remember, bringing with him eight interns from the CalSTRS Investment Office. They have eight students this year: Three undergrads, one community college transfer, two recent graduates, and two grad students.

These students all work for 14 weeks doing numerous projects against -- within the asset classes.

One of the interns I want to highlight is from a new program called Girls Who Invest. And Chris's internship efforts served as a real inspiration to me when he was here last year, and really leads into what I'm about to say now.

So thank you all for being here today. Chris, thank you for being here.

(Applause.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: And it's a terrific lead-in now to the purpose of my talk this morning, which is to highlight for the CalPERS Investment Office that we have hired five interns as part of a program that Mayor Steinberg has begun and led called One Thousand Strong Interns; and I'll be talking some more about that program and then turning it over to Mayor Steinberg to talk a little bit more detail about his leadership there.

And I'll also be asking our interns to stand up in a few minutes.

Before I did that, I just want to underscore what a personal privilege it is for me to be talking about this program here, because I believe so strongly in mentorship. It meant all the difference in my life and my career in the investment world. I think this Committee remembers our diversity conference from a few years back where I spoke.

And as a public high school junior, you know, a mentor reached out to me as part of the college application process really to show me a glimpse into the investment world. He was a stock broker in San Francisco. And really had no reason to take, you know, too much of his time or attention or responsibility. And I was a kid with hair down to my shoulders and head band and otherwise enjoying the early 80s, late 70s. Bjorn Borg inspired, John McEnroe inspired --

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- for sure.

But one of the things that always struck with me is he invited me to his office, his stock brokerage firm in San Francisco as a junior in high school. And that was the first time I'd ever been in an office building. And it was the first glimpse that I got of the investment world, all the quotron machines and otherwise, and all the hustle and bustle of the trading floor. And among other things, I -- you know, I asked him the simple question whether he thought that was a career that he thought I could ever aspire to. And it was really an innocent question, because I did not know what the answer was. And you think of the power of a mentor to look you in the eye and tell you, yes, of course, you have all the talent in the world and you're going to have all the opportunity in the world, and you should go where your talents will lead you. And it made an incredible difference in my life.

Which is why I think this program is so important, not just for the individuals here but for our community. And part of our ESG integration work, really part of the "S" of ESG is how good a community citizen are you; how strong are you in contributing to the fabric and the value of the communities that we do business with and, in this case, the community of Sacramento.

The interns in the Investment Office that I'll be introducing you to today all graduated from different Sacramento area high schools and all plan to attend college this fall.

The program, A Thousand Strong, that was launched by Sacramento Mayor Darrell Steinberg, has the goal of bringing together school districts, high schools, community-based organizations, state and local funding partners, students, and businesses to provide year-round paid internships for local youth, while fostering a highly trained and diversified workforce for Sacramento businesses.

In addition to coordinating the intern placement, the Thousand Strong program provides these students with 40 hours of workplace training in preparation for their internship.

Our interns are in the audience today, and I would like to take a moment to introduce them, if you could please stand up.

We have here today -- I'll introduce them, then have a round of applause after I announce them.

Abrina Lemar from Luther Burbank High School, Anna Prieto Razo from the West campus, Kendo Turner from Grant High School, Lennon Green from Rosemont High School, and Yeng Xiong from Hiram Johnson.

If you could just all welcome.

(Applause.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: All five of these interns intend to continue their internships in the Investment Office through the fall as they attend their local colleges.

In addition to their core workload, these students are participating in an educational series organized by our Investment staff, with the goal of increasing their understanding of finance and investments.

We have really greatly enjoyed getting to know these students. I have every confidence in them in their careers. And not only am I and we looking forward to working with them for this next year; I firmly believe looking 30 years from now, you know, that each one of these interns, you know, my hope, will have every opportunity to sit in these chairs and I hope, you know, in my 80s that I'll get the invitation from them to come back and attend one day and hear their presentations.

So with that, please be seated for sure.

And, Mayor Steinberg, thank you for being here today. It's a great honor to have you here, and appreciate you saying a few words about the Thousand Strong program.

MAYOR STEINBERG: I'm on. Okay.

Well, I want to begin by thanking you, Ted, and Marcie and the CalPERS team. Because as I explained to you, this audacious proposal and what it is we are trying to do in Sacramento, it will become clear that CalPERS, the Investment Office, has been one of the first major employers to step up big. And you always remember, those of us in politics, always remember who was with you first when it came to trying to achieve something significant.

So I am deeply appreciative of the fact that you have taken this on.

And so just a brief background. And I note that I walked in in the middle of this very important conversation about the future of the American and I guess the world's economy. And we spend a lot of time, including in Sacramento rightfully, on what it's going to take to create more high wage jobs? I mean, that's the game here, if we're going to provide opportunity for people.

And I certainly believe very strongly that in the capital city, the proud center of public service, that we must be more than a government town and more than just a capital city; that we are on the verge of creating something new, significant, and different in the way we diversify our economy here in Sacramento.

But I often say if all we do is grow a great cosmopolitan city, that will be I suppose very good, maybe great; but if we want to be the best, we must tie that job creation and that economic growth to our neighborhoods and specifically to young people.

And we often forget about the workforce development piece of our effort to create higher earnings and to build a modern economy.

And in many respects, as public institutions and private entities, we're siloed - right? - the school districts are different from the private businesses and the corporations. And so my goal here is to not create a program, but to put forward a philosophy that says that workforce development especially at a young age is every bit as important as anything else we do in the economic development sphere. And that's why we've launched A Thousand Strong, to try to create 1,000 year-round paid work experiences for high school students, either juniors going into their senior years or, as we see with the young people behind us, high school seniors going into their first year of college apprenticeship or the trades.

And I call it an audacious goal because nobody's tried to do this anywhere in the country to this scale before.

And so those of you who know know that I kind of dive in. We could have spent a year sort of preparing and getting ready for next summer. But, no, we wanted to place as many kids as possible. So as I sit here today, we have placed 130 young people in year-round paid work experience. And today we're gathering representatives of all the chambers of commerce in Sacramento, and they're going to be spending 10 days in my office helping recruit their employer lists, and we're going to get up to at least 400 this year.

And you got to be in this kind of work, as you are, as I am, for the long haul, and we're going to get to a thousand. And I hope that it's going to change the economic direction of our city and our region, because as we grow this economy, it ought to be our kids - our kids - especially those from the disadvantaged neighborhoods who are first in line, educated and trained for these jobs.

And so you are here at CalPERS, in my opinion, walking the walk here. And again I can't thank you enough for being a leader, the leader in helping us get started here.

And thank you to the young people, because you know, all they want is a chance. And we ought to stop spending so much darn money on remediating failure and spend more resources, more time, and more attention replicating what you have done here a thousand times over or more.

Thank you for having me. Appreciate it.

CHAIRPERSON JONES: Thank you.

(Applause.)

CHAIRPERSON JONES: Thank you, Mr. Mayor and Ted. I'm happy to welcome you, Mr. Mayor, and the One Thousand Strong interns here today. And as Chair of the CalPERS Investment Committee, I'm proud that the Investment Office has chosen to host the five One Thousand Strong interns.

I have heard wonderful things about the One Thousand Strong program and about the five young people interning in our Investment Office.

Thank you, Mr. Mayor, for joining us today and providing information on this important program.

I also want to thank CalPERS staff for working with the One Thousand Strong interns and making this program a reality.

Finally I want to thank Abrina, Lennon, Anna, Kendo, and Yang for being here today and working in our Investment Office. So thank you very much.

(Applause.)

CHAIRPERSON JONES: Just one minute.

Mr. --

(Laughter.)

CHAIRPERSON JONES: Okay. Go ahead.

VICE CHAIRPERSON SLATON: Darrell, thank you for being here today and for all of the efforts that you're championing, because you're trying to, you know, turn things around and take a different view than what we've done in the past. And this particular program, A Thousand Strong, you know, I think the goal is a thousand per year; I think it's ten thousand, not a thousand.

And we need to be doing this every year. And I assume that you've talked with SMUD. We have some interns in every summer. We need to up our game now that we see CalPERS doing this. And I think every state agency in Sacramento should be looking at this, because there's so many different career paths that are represented in state government.

MAYOR STEINBERG: No doubt.

VICE CHAIRPERSON SLATON: And those paths aren't necessarily end up in government. It's perspective. It's outlook. It's a chance to grow. And so I salute you in this program that you're doing and challenge every other agency to step up in Sacramento, so that every kid can -- every young person can have a chance to see what the potential is.

MAYOR STEINBERG: Secretary Batjer and I have met, and she is very enthusiastic about this. We didn't give her enough lead time to begin this summer. But next summer -- beginning next summer I'm confident that -- I hope that hundreds of the thousand or more are going to come from state government. But, again, you didn't wait. You showed the way. And appreciate it.

BOARD MEMBER SLATON: All right. Thank you.

CHAIRPERSON JONES: We have -- Mr. Mayor, hold on.

Mr. Costigan.

COMMITTEE MEMBER COSTIGAN: I just wanted to say thanks, Mayor Steinberg, for being here.

And I just want to point out, not only is this the only project you're working on. But I would certainly hope that if you're not doing anything on the 26th of August, that you attend actually another visionary project that Mr. Steinberg has been working on for over a decade. We're going to be opening the Unity exhibit at the California Museum.

And, Darrell, I just want to say, what I've seen you do there, if that is just half as good as you do with this project, you are going to be training the future leaders of California with this program.

So I just want to say thank you for all you do.

MAYOR STEINBERG: Thank you.

CHAIRPERSON JONES: Now you may leave, Mr. Mayor.

(Laughter.)

MAYOR STEINBERG: Thank you.

CHAIRPERSON JONES: Okay. We revert back to Mr. Jelincic at the floor.

COMMITTEE MEMBER JELINCIC: All right. This is my last question at least for you. I assure it's not my last question. And that assumes that don't surprise me with an answer that leads to more questions.

But what policy changes, both fiscal and monetary, do you think we need to make to, you know, get this wage increase going to get some -- the small amount of inflation you need just as a grease to eliminate -- or aid with transitions? So what sort of policy recommendations would you make and should we be working for?

INVESTMENT DIRECTOR ROTHFIELD: Well, I think as I mentioned before, things like globalization and robotics are some kind of secular or structural trends which are tending to keep the wage share maybe of gross product down. As, you know, the -- so those factors, which you don't want to put on protectionism, for example, you don't -- you don't want to add protectionism, you don't want to reverse technological change.

But there are things you can do to try and improve productivity in the economy. One of the reasons I say that wage growth is relatively low is just low productivity growth. So innovation, potentially some form of constructive de-regulation that raises productivity; and some of the benefits of that go to workers.

Education is obviously another thing. If you've got a large cohort of unskilled workers, increase the skill level and, you know, wages will rise commensurately.

So there are some policy changes that will do it without having to move too far away from globalization, which has been a net benefit to the economy. It's kept prices of products that low wage people earn down.

So it's more of that kind of thing.

COMMITTEE MEMBER JELINCIC: So what I heard is we need to make a much bigger commitment to education?

INVESTMENT DIRECTOR ROTHFIELD: Education's part of it, yep. Education, training.

COMMITTEE MEMBER JELINCIC: We're using education in a broader sense, not necessarily --

INVESTMENT DIRECTOR ROTHFIELD: Uh-huh.

COMMITTEE MEMBER JELINCIC: -- sending everybody to college, but training and skills development, thought process.

Okay. Thank you.

CHAIRPERSON JONES: Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes, thank you. I think J.J. asked almost all my questions. But I do want to thank you for the report.

One of the questions that I had was -- you had said something about males 25 to 30 not getting back into the economy. And I just wanted you to kind of go into that a little further. I was a little -- so part of it is that we have this low unemployment, but then you kind of referred to this segment of the population that is underemployed apparently.

And they're not going to be able to get back into the economy because?

INVESTMENT DIRECTOR ROTHFIELD: Yeah. Okay. So employment as a percentage of the population is coming down anyway as the population ages, simply because as you get into my age group, less of us are in a want -- needing --

COMMITTEE MEMBER TAYLOR: Our age group.

INVESTMENT DIRECTOR ROTHFIELD: -- needing or wanting work, right? So there is a structural decline in employment as part of the population. That's one of the things that's kind of holding down growth as well.

But there are various things going on within different age cohorts that are also happening, which is that even within a slice of the workforce, like 25 to 34 year olds, we're not getting back to where we were before the last recession. And one of the most interesting things about 25 to 34 is that for women age 25 to 34, the participation rate in the labor force has gone back to where it was; for males in that cohort it's stayed way low.

And there are a number of issues which the market is focusing on right now about why that has been the case. I think it's the next page.

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INVESTMENT DIRECTOR ROTHFIELD: Yeah, so you've got -- page 46 you've got the fact that the female participation rate in the labor force for that very important age group has rebounded to where it was before the recession started. But for the males it's way down. And a number of factors have been -- have been mentioned to explain this. One of them, quite frankly, is this idea of the opioid crisis in the U.S. and pain and disablement. And corporations now have better measure -- better processes to, you know, measure people who they don't -- who they think are -- might be underperformers because of addiction or things like that.

So that has been a factor that is actually being raised at --

COMMITTEE MEMBER TAYLOR: In that age cohort?

INVESTMENT DIRECTOR ROTHFIELD: In that age cohort. And you're talking about almost a million people -- a million males that -- if males had done what females have done, there'd be another million males employed in that age segment.

So some of the statistical work around that is still being developed. But if you look at people who are outside the workforce, maybe haven't looked for a job recently or haven't -- stopped looking for work, if people measure whether they're on some kind of medication or something, those numbers are actually higher.

COMMITTEE MEMBER TAYLOR: I did see that. I saw that part of the report. So what you're saying is that these -- these young people, these young men are not working because -- now, is this an assumption or is it based on this report or is it just a part of the problem?

INVESTMENT DIRECTOR ROTHFIELD: Well, a lot of it was looking at the data and saying why is the participation rate of men so low relative to the -- the significant improvement in woman? Are there issues specific to men in this age group. And then looking at some measures of pain and addiction and prison population, et cetera, and coming up with a conclusion.

Now, whether you -- I don't think you can explain the whole difference but you can explain part of it.

COMMITTEE MEMBER TAYLOR: So then -- because what my assumption was, part of my assumption, you'd said that wages had stopped growing, we're not seeing wage growth. I don't think we ever did in this recovery really to a degree. I think we did one year.

INVESTMENT DIRECTOR ROTHFIELD: I think, depending on how you measure wage growth, for individual people they're probably seeing average pay rises of 3 percent. But when you take the whole population, because now more of the way -- more of the employees are the lower end, lower skilled, compositionally it's holding down the aggregate wage growth of the economy to about 2 and a percent. That is higher than we were at the bottom, which was about 1 percent, so they have had some improvement. But not to the degree that we've seen in past cycles.

COMMITTEE MEMBER TAYLOR: Right. So is that -- is that a possibility that this young man cohort could also be not working because the wages are too low? They've decided not to reenter the workforce because the wages are too low? Has that been considered?

INVESTMENT DIRECTOR ROTHFIELD: There could be some circularity there, yeah, that wages are low and people aren't seeking work. The typical relationship between the employment rate and wages is just not happening to the degree that it had before. Part of it could be that. Part of it is also a skills mismatch. So you look at -- there's actually quite a number of vacant jobs out there. There's a very high number of vacant jobs, but they're not being filled and they're not being filled at high wages. So there could be some of that.

And there's also this cohort that's over 55 that's staying in the labor force trying to rebuild their balance sheet. And they're not making way for the younger cohorts to come into the labor force. So there is some hope that, you know, in the next few years you could get that structural change away from 55 and older into those younger cohorts coming back in.

COMMITTEE MEMBER TAYLOR: Yeah, there's a couple of -- you brought up something there. People who are over 55 can't retire because of loss of retirement during the recession. So we have a retirement crisis in this country as well. So there's a -- people are working well into their sixties, seventies, and eighties.

But also, I think I'm a little confused over that you've got one more -- that was my next question. You have one more year of dragging people into the workforce because we're in the late cycle. But we really don't have the educational background for these folks to pull people in.

And we were talk -- and you were talking about the policy changes. But we're not seeing any educational policy changes from this administration. So I don't see that changing in this country at this moment.

So what I wanted to -- and then you also tied that into age -right? - and aging population.

Japan had a 4 percent capital growth, which was pretty good. What was the difference there.

INVESTMENT DIRECTOR ROTHFIELD: Well, actually Japan recently has had a very good success rate at bringing women back into the workforce there, through things like child care programs, et cetera, which has allowed more women to take either part-time or full-time jobs back in the workforce. So they've actually had some success through I think there's been about a six point increase in the female labor force participation rate in Japan since Prime Minister Abe got in four years ago. That's been --

COMMITTEE MEMBER TAYLOR: Was there a wage increase?

INVESTMENT DIRECTOR ROTHFIELD: That's been one of the factors.

Wage increases haven't been that much, again because a lot of these folks are non-regular employees. They just want to -- they're mainly concerned about having a few hours. They're not particularly concerned about their wages. And there's no inflation in Japan anyway.

COMMITTEE MEMBER TAYLOR: Well, that's kind of where we are.

INVESTMENT DIRECTOR ROTHFIELD: And then there's still -- in Japan they're more worried -- if you've got a regular full-time job, you're more worried about job security than wages. So they haven't been able to reflate their economy and create inflation expectations even to the degree that we've downgraded to be in the U.S.

COMMITTEE MEMBER TAYLOR: Okay. All right. Thank you.

INVESTMENT DIRECTOR ROTHFIELD: Sure.

CHAIRPERSON JONES: Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you.

So your comments today and I think generally when you come and speak with us, Mr. Rothfield, it's generally sort of what is the current economic condition, which is a very useful context I think for us to consider. But I'm curious about sort of longer-term views an longer-term trends that might be, you know, occurring today and might continue that can have a long-term impact on the economy and ultimately on the performance of our own portfolio.

So let me ask you about something specific; and, that is -- I don't know if you've read any of Tina Fordham's work from Citigroup. But she's been doing a lot of work with the World Economic Forum. And she talks about vox populi risks, which is sort of shifting in volatile public opinion that supposes ongoing fast-moving risks to the business and investment environment.

And she specifically has been talking a lot about economic inequality, which I know has been a subject I've raised before and that we've all discussed before. But she's concerned, well, not only that this can cause political instability, but that it -- but that also aggregate economic growth because of this economic inequality, it's no longer a guarantee for political stability. And that likewise, or as a follow-on to that, economically these pose a risk to economic growth more broadly over the longer term. So in a short term maybe you don't see the effect as much; but in the long term, she posits that we could have some significant impact to economies and investment portfolios as well, business growth, corporate growth, et cetera.

Have you thought -- been thinking about these trends and these issues, and what are your thoughts how they incorporate into your analysis, and then thinking of the Investment Office?

INVESTMENT DIRECTOR ROTHFIELD: Yeah, I think -- I think the new normal, the secular stagnation, the raging of the population, globalization, et cetera, are all factors that are probably going to continue to suppress economic growth and inflation. But there is -- yes, there is also this element of the, as I mentioned before, the difference between a -- the labor share of national income has stayed relatively low. And that's actually contributed to what they call the Gini ratio, which is a dispersion of income between different income groups, because higher income groups not only have higher wage gains, but they also have -- they own most of the stocks and bonds and mutual funds in the economy, which have been improving in value and gaining income as well.

So that dispersion hasn't gotten any better; didn't get any better in the last couple of presidential regimes in the country, and is probably not going to get better now.

And that dispersion, yes, I agree, it -- people on -- if you have this continued dispersion, folks who tend to form households or tend to spend the higher percentage of their income have been constrained. And people at the higher end who have already formed a household or already have plenty of income, they're not going to increase their spending very much.

So I think that is a structural reason, that dispersion of income, for why we're producing less economic growth than we have in the past, I completely agree.

COMMITTEE MEMBER MATHUR: So then maybe this question's really for you, Mr. Eliopoulos.

What does that mean in terms of our engagement strategies, our public policy advocacy strategies, in terms of how we can potentially impact the long-term economic growth of the United States in particular, but maybe globally as well? What can -- what actions, activities can we undertake that might have an impact? You talked earlier about education as being a significant driver. Obviously don't have significant investments in education. But perhaps we could from an advocacy perspective, you know, make some kind of statement about the importance of education for long-term economic growth.

Anyway, just one idea, but -- corporate tax policy's another area, but maybe you have some thoughts.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Sure. Yeah. No, these are terrific questions for the Committee and us to have.

I think the main weight of change that can be made on income inequality is in the policy arena. We had a review of academic literature by Brad Barber -- Professor Barber two months ago, and there weren't a lot of definitive suggestions coming out of that research for direct either engagements or investment programs that could directly address issues regarding income inequality within the United States.

I think the main benefits can be had at the policy level. And there the main policy arena is to help.

Now, you mentioned education and training certainly are one. You know, there's tax policy. And, you know, really we have not as an institution engaged in advocacy around education policy, training, or tax policy in the past.

If we consider this a significant enough of a risk, that would probably be the arena that could have the most impact in terms of the overall levels of income inequality within the United States. But we haven't tackled that in the past. It's a -- it will be a question for CalPERS where that policy advocacy should reside, and how it should be formed and how it should be directed, whether that's within the Investment Office or perhaps at the enterprise level.

COMMITTEE MEMBER MATHUR: Okay. Well, I think this is -- I personally think, and I suspect some of my fellow Board members also agree, that this is an area we need to spend more time on. And I know its part of our ESG strategic plan to tackle this I think coming up at the end of this year. So I will look forward to having further conversations about it.

Thanks.

CHAIRPERSON JONES: Okay. Yeah, thank you.

Mr. Rothfield, my question goes to your comment about within two years we may be facing another recession. And so my question is, what data points we should be aware of, looking for, in the event that this does occur? Because, you know, we've got a lot of data; and I want to pare down to what data points we should be looking at and when should we become in a mode of action to deal with the -- and I know we've taken steps to mitigate our risks already in terms of our discount rate and a number of issues. But if another recession occurs soon, within two years, I mean it could be a major problem for our fund.

So I would like to get some feedback from you on that.

INVESTMENT DIRECTOR ROTHFIELD: Okay. And there's a little background on that. A lot of sell-side analysts, and we ourselves, take at look at, you know, a variety of factors that typically are -- how economic -- different economic variables behave early, mid, and late cycle in the economy, which gives you an indication about where those economic variables are now and, therefore, you know, how close we are to the end of a cycle.

And then there's also the age of the recovery. We're eight years into an expansion. The expansion in the nineties lasted 10 years. The last one only lasted six years. So we're two years beyond what we had last time.

So I would say there's a few things. One is labor market indicators. So the unemployment rate, and the -- particularly the labor force participation rate. So you can continue to -- right now the growth of the population in the working age population is relatively low. So the only way you can continue to get workers is if you get this participation rate and the labor force to come up so the unemployment rate doesn't fall too quickly to levels which are, so called, below frictional.

So the labor market is very important. And some people have been encouraged recently by the fact that the participation rate in the labor force by different cohorts has actually been edging up a little bit, which can prolong the expansion.

Another important thing is leverage. That's why we often have those numbers on the overall leverage in the economy how much borrowing's being done. So what happened in the last cycle is we had a huge growth in the mortgage book. We had big growth in corporate borrowing. And we got to the point where the weight of that borrowing meant that any kind of shock to the economy - and it turned out to be in the housing sector - happened, we would have a big reversal. So we watch numbers like leverage that the Federal Reserve produces every quarter on the economy.

And then there are, you know, short-term indicators. The Chicago Fed, for example, has a measure of about 120 economic indicators called a national activity index, which once it falls below a particular level indicates that we have a higher risk of recession.

So I would say labor market leverage and some of the kind of leading measures of short-term economic activity.

And, again, a lot of -- a lot of folks that -- the two years happens to be, okay, we're now 10 years into a cycle and we have a low unemployment rate. We haven't really had to build in leverage yet, but these factors are starting to suggest that the probability is starting to increase that at some point over that two-year horizon we'll have a recession.

And then the other point is about the nature of recession. Could it just be a very mild recession, because the rest of the world is growing faster right now, and therefore that provides some kind of cushion to any kind of downturn that we may have. And we haven't had kind of an excessive valuation in the housing market that people worry about. So at the moment, the handicapping is that if we do have another downturn, it would be a relatively mild one, not like the downturn that we saw in 2008.

CHAIRPERSON JONES: Okay. Thank you.

Mr. Slaton.

VICE CHAIRPERSON SLATON: John, just to build on the issue that we've been talking about about the labor force. The one area - and maybe you did address it, but I didn't hear it or read it - and that is this issue of immigration and what's happening on the federal level with this policy of essentially dialing back on immigration into this country, which seems to me to have a positive impact on the ability to bring additional people in for the workforce.

Can you address what you think that risk might portend? And does that have an impact either on the short term or long term as you would see it?

INVESTMENT DIRECTOR ROTHFIELD: That's a difficult question, because we have reached the point where domestically we have all the skilled workers are employed, all the people that have been unemployed for less than 27 weeks, which is kind of frictional unemployment. People, you know, change their jobs, lose their jobs, and they get another job.

We're already at the point in U.S. economy where we -- demonstrably where there's a lot of demand for skilled workers and workers in general. We don't have enough workers. So cutting off a supply of workers from abroad doesn't necessarily help in the short-term. And then, you know, one of the implications of the policy would be you're trying to take less educated -- Americans who've been undereducated and underskilled and give them those jobs; but there's like a two- or three-year lead time before they can kind of take -- take those jobs that, you know, imported skill workers might be able to take. So there's a timing problem there, right?

So I think the issue does lie in the fact that some of the structural changes we need to make in education and training have like a to two- to four-year lead time; and that's not going to help us in this current economic cycle that we're in. So probably cutting back on skilled immigration right now may be counterproductive because we don't have the domestic workers in place to be able to substitute.

VICE CHAIRPERSON SLATON: Okay. Thank you.

CHAIRPERSON JONES: Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah. I'd said it was my last question if you didn't pop something up on me.

This -- this industry tends to have an anchor bias: "That which is true today is always going to be true." This is I think the fifth but at least the fourth new normal during my career. And so my question is, why does this new normal have more stability than the previous new normals? And what are the risks, both positive and negative, to the persistence of this current regime?

INVESTMENT DIRECTOR ROTHFIELD: Well, I think -- I mean, the -- we've had -- we've made significant -- I think technology and demographics are different than they've been in past cycles. Demographics as to the population. Although this aging of the population is kind of going to peak out in the next decade. We're not forever going to be doing that because at some point the -- you know, the older people are going to, well, pass on or whatever. So this aging of the population is going to --

COMMITTEE MEMBER JELINCIC: They're going to actuarially term out.

(Laughter.)

INVESTMENT DIRECTOR ROTHFIELD: Right, actuarially term out at some point.

(Laughter.)

INVESTMENT DIRECTOR ROTHFIELD: And so, you know, this aging of the population is going to be constrained on growth probably for another decade. It's going to be at its maximum point at that aging of the population. But that is something that's been pervasive for last couple of decades, right. That's part of the reason why this -- the amount of employment you can get for a given population has come down for about two decades, and we may be a decade away from that becoming less impactfully on the economy.

There's also a globalization in technology, which is -- you know, there is a small number of very successful firms who are tending to dominate in terms of growth and activity. And the rest of -- you're not getting as much technology transfer as you did before.

So I think demographics and technology kind of define this new normal, as opposed to, you know, whatever -- whatever have been the constraints on growth in the past. And there's even a problem right now of course in measuring GDP because of new technology. The Government can't keep up with measurement of GDP.

So they're the main challenges. And, you know -- so if you -- if you're talking about a forward looking -- is there something out there that's going to change that equation, you know, maybe it's another age of technology like we saw between '95 and 2005. So the San Francisco Fed has talked a lot about, you know, a significant one-time change in technology that boosted productivity for a whole decade. And now we're just kind of replicating the improvement in technology into, you know, better versions of the same thing.

Technology I think is the key to the next leg of potential productivity -- structural productivity improvement that could raise potential growth and wage growth.

COMMITTEE MEMBER JELINCIC: Thank you.

CHAIRPERSON JONES: Okay. Well, thank you very much for your presentation and responding to all of the questions.

So we'll move on.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Thank you, Mr. Chair.

So moving onto the investment review. I'll started off, and then I'll be turning it over to Eric and then to Wylie.

Just looking at the fiscal year return, clearly a very strong double-digit one-year return of 11.2 percent for the fund.

There we go. Don't want to blank over the 11.2 percent return.

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: You know, this clearly reflects the growth or equity bias of the Total Fund, and this was rewarded this year.

Looking at longer time periods, you can see that this equity weighting within the portfolio causes a degree of volatility over time. So looking at the 3 -- or the 5- and 10- and 20-year time periods, you can see returns of 8.8 percent, 4.4 percent, and then 6.6 percent over the longer term.

The main driver of the returns this year in this fiscal year return are very strong. Global Equity market returns. Global equity, our portfolio returned just shy of 20 percent this year. 19.65 percent. Much stronger than we expected if we'd replayed the tape from last year and I think most market participants looking at the coming fiscal year of last year.

With that said, the 19.65 percent return is within one standard deviation of what we'd expect of our portfolio in any given time. So while it's a very strong number, it's not without -- it's not unprecedented or not outside of what we would realistically expect in any given year.

Looking at the returns on a relative basis over the 1-, 3-, and 5-year time periods for sure, we see a reasonable range of returns versus our benchmark. The 10-year return, certainly an underperformance of 123 basis points, reflects the hit we took during the financial crisis.

The volatility estimate or forecast for the Total Fund, I think it's important to note, is at historic lows, this 8.3 percent. Wylie will go into this in much more detail later in the presentation, probing the causes of this within our modeling, are in the most recent return information within the Total Fund and in the markets. But in addition to that he'll also look at how it also reflects the shift that we made to our interim allocation late last calendar year as well.

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CHIEF INVESTMENT OFFICER ELIOPOULOS: Looking at the total fund returns for the Total Fund as well as the affiliate funds, I think what's interesting in this chart is to look at the particular effect of asset allocation choices amongst the various funds and across time, and how that has played itself out in terms of actual returns in any given year or at different time periods. So if you just let your eye wander down the one-year column, you can see the Public Employees Retirement Fund, our Total Fund, with an 11.2 percent net return that I mentioned. And then as your eye wanders down the Judges Retirement Fund, the Retirement System II Fund, the Legislators' System Fund, the various CERBT strategies, you can see the effect of asset allocation, whether conservative or defensive, asset allocations are more aggressive asset allocations. How that plays out in a given market environment, certainly this year with the strong equity returns that I mentioned, the more aggressive asset allocations were rewarded. If you let your eye wander across the 3-, 5-, and then, more importantly, the 10-year time period, you see a balancing out of those returns and the relative impact of either Fixed Income or Global Equity over those time periods, and you get a much more balanced view over that time period.

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CHIEF INVESTMENT OFFICER ELIOPOULOS: Next, I think importantly, looking at our 10-year time period, this is a very familiar chart to the Committee. The gray top line is the steady march of the assumed actuarial rate of return of 7 1/2 at the end of this time period and before that 7 3/4; and the red, or middle line, and the blue line the return of our policy benchmark; and then the blue line is our actual return.

I think the key point here in this chart to underscore for this 10-year snapshot of returns is the impact of the financial crisis in this 10-year time period. We're now at the end, as John Rothfield mentioned, of an eight-year bull market. And at the end of this fiscal year, we have arrived a forecasted approximate 68 percent funded status for the over -- for the overall fund through to the end of this fiscal year.

Now, before I turn it over to -- I think Eric will be going next, I think it's good to review the risk positioning of the fund or the positioning of the fund while reflecting on the investment environment we are facing today. And I thought the discussion and questions between the Investment Committee members and John was fantastic and really a highlighting and underscoring the key -- really are key points and takeaways from a macroeconomic standpoint as well as from the investment risk standpoint.

So as you heard from John, you know, we're somewhere in a mid to late cycle looking at the macroeconomic environment. We continue to be in a fairly persistent low growth environment overall, although we're seeing some notable positive signs of growth in Europe and China and Japan.

I think, as we've covered in this Committee quite a bit over the course of the last year and in particular today as well, we'd still have a series of unique number of risks or uncertainties to ponder and think about:

Will this low growth environment persist? That's a terrific question. Not a great -- or no crystal ball to predict when that may or may not change and what might change it.

Will interest rates and inflation persist and stay low over time?

What will the impact of central bank policies be over the next time period? Will there be a mistake made and really the unwinding of the various quantitative easing policies by the various central banks across the globe?

We certainly have a wide array of geopolitical hot spots across the globe, each seemingly independent -- more independent of each other maybe than in historical time periods, each with their own set of intense risks to the globe and to the marketplace. I do think it's good to layer in some of the longer term risks that have been highlighted by the Committee today. What will be the effect of a more persistent income inequality within the U.S. versus global regions? Will that intensify some of the protectionist policies and other policies in the U.S. that could have a real effect, as John put in his downside case scenario.

Will that really the forces of inequality cause changes in either trade or tax or other policy that will risk the markets?

And then also on a longer term time period, the effect of climate change across the globe, what will those impacts mean over time?

So there's quite a series of very unique and consequential risks and uncertainties to think about at both near term, mid term, and long term.

Second, again as we've talked about quite a bit in this Committee, asset prices across our asset classes are at high, very elevated levels currently.

Next, we just adopted our capital market assumptions. Our forecast of go-forward returns are the lowest we've adopted in some time, if ever.

So you have low growth environment, some positive signs, unique number of risks, asset prices are at high levels across the board, going-forward forecasts of future returns are lower than we've seen for some time. And then, last, there are really large amounts of capital flowing into risk assets that we've talked about quite a bit. They're into the stock markets, into private equity, into real estate.

That makes up a challenging environment, for sure, in how to position the fund at any given time. In going forward, we'll have a very deep look at this in our ALM exercise and asset allocation side looking at both risk and return. But I think it's worth underscoring that given our rate of return requirement, 7 percent now over the long term, 6 percent-ish over the next 10 years - I think 6.2 is the number that we used in the most recent interim asset allocation review - we continue to have a portfolio with a very heavy bias towards growth and equity. Our Global Equity portfolio today is at about 48 percent of the overall fund - Eric will be covering that in a few minutes - at 8 percent to private equity. So we continue to have a heavy bet on growth and equity. I think given our return requirements, that will continue to be a cornerstone of our -- of our asset allocation.

We did quite a bit of very important work on portfolio priorities and our Risk Mitigation Policy over the course of last two years, and we've certainly identified as a system a need to be very concerned about drawdown risk and our funded status, and have put in place with the risk mitigation policy an attempt over time to reduce the volatility in our risk to downturns over time.

A key decision for investment strategy at any point in time, and certainly today as we look at how the last fiscal year played out and looking forward importantly to the future, is, you know, whether at any point in time to be aggressive or defensive in the positioning of the overall total fund.

I think we were aggressive coming out of the financial crisis. Our allocation to equities and growth were not only a target but over target and sometimes at the very highest points of our policy ranges during the course of the bull run that we've just talked about.

Last year, in a decision with respect to repositioning the fund on an interim basis, we became more defensive. We adopted an interim asset allocation that shifted five percent of the fund out of equities into more defensive assets.

Clearly that was not rewarded this year. The return of the global equity market rewarded risk taking this year and not a defensive -- or more defensive strategy. Now with 48 percent of the fund in global equity, we're rewarded quite substantially but less so than we otherwise would have been had we not made that decision.

So it's certainly fair to say that we were early.

But as a number of the questions in the Committee today, it's really impossible to predict how early. This could -- this bull market or this equity run can last for another year or two or three years.

Having said that, given our funded status of 68 percent, the elevated risk environment, the low return environment, and the valuations of asset classes currently, we still believe as an investment team that it's time to continue -- it is a time to continue to be more defensive than aggressive at this point in the cycle and given these conditions.

Of course, in our case, that means on the margins, as our portfolio is heavily weighted to equity risk.

So with that - that's sort of a review of the performance for the year - I would turn it over to Mr. Baggesen.

CHAIRPERSON JONES: Yes.

Mr. Jelincic, are your questions regarding the previous charts that Ted went over or is it further into the presentation?

COMMITTEE MEMBER JELINCIC: It's about the overall performance. And it may very well influence the presentations we're going to get, so I'd like to ask the question now.

CHAIRPERSON JONES: Okay. Go ahead.

COMMITTEE MEMBER JELINCIC: When I looked -- there's a little fund across the river. And from my time on staff, I know we watch them real close and they watch us real close.

The -- they obviously did better than us last year. So I'm kind of curious as to why they did it. I'm sure we've at least tried to figure it out. On public equity, you know, we were within a tenth of a point. But I would have expected, given our larger international exposure and given what the dollar's done, that we would have significantly outperformed. So you may want to comment on that or you may want to leave it to Eric.

On private equity, we did 13.9, they did 17.2. They're Obviously doing something different. And obviously the results are better. Fixed income, they did better. Real estate, they did better. And I'm kind of -- well, what did they do overall? Surprisingly they beat us on inflation assets. I'm not shoe that happened.

And -- but I will point out that we came very close to the benchmark. I mean, we missed -- we underperformed by about 15 basis points, all of which could probably be accounted for by costs. And most of those costs come from a particular point that I won't point to now because everybody knows exactly what I'm thinking.

So can you sort of contrast what we did and what they did, what they saw, we didn't see. And I also will acknowledge they have a different set of liabilities, although quite frankly they're not all that different.

So, anyhow, why'd they -- to use the -- why did they -- why'd they beat us?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Yeah, that's -- you're correct in saying we always take a look at our neighboring fund, both as friends and competitors.

We haven't done a full attribution analysis of all of the asset classes you mentioned at an asset class level. I think most of the return differential will come to both -- the weighting of global equity within their portfolio, so clearly they had a higher weighting to global equity than we did this fiscal year and that paid off.

I haven't done -- I don't though whether Eric or Wylie or Dan have looked at the composition in terms of international and domestic, but I the sheer weighting to the asset class is one of the main drivers. Again, I have not done the performance attribution to see the dispersion of return between their private equity portfolio and ours, but that's something that we are going to look at.

COMMITTEE MEMBER JELINCIC: And the Board's decision to reduce the asset allocation basically a year ago, the timing, I think the technical word is, sucked. But it's not -- I'm not saying it was the wrong decision. The timing could have been better. But in the long run, which is what we're in the game for, it may have been the right decision. So timing will tell.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Exactly.

CHAIRPERSON JONES: Okay. Ms. Hagen.

ACTING COMMITTEE MEMBER HAGEN: Thank you.

So, Ted, I heard in your comments a couple of times elevated risk environment and a more defensive rather than aggressive approach. And it made me think back to a discussion that we had had in May, June time period when we were discussing private asset class roles and benchmarks. And Wilshire at that time had supported benchmark changes but addi -- had recommended additional governance and portfolio guidelines be put in place, and at that time I supported that recommendation and had asked staff to bring those back to the Committee. And I understood it -- you know, you have a current workload and wouldn't get to it right away. But I just wanted to take this opportunity again to recommend that we maybe reprioritize that given the impending potential risks and develop those additional guidelines to mitigate against sort of alpha situations in the market.

CHIEF INVESTMENT OFFICER ELIOPOULOS: A good point always to underscore, so we very much appreciate it; and I know we're planning on bringing those back and perhaps during the review of the asset classes.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

That's right.

Wylie Tollette, CalPERS staff. Just a quick note on that, Ms. Hagen. That's right, we actually -- we did note your request and it's on our list.

ACTING COMMITTEE MEMBER HAGEN: Thank you.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Though I did want to also add one thing relative to Mr. Jelincic's question. So you're right, we do look at STRS carefully, and we --

COMMITTEE MEMBER JELINCIC: Basis points.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Yeah.

-- we very much respect their investment acumen and the longevity of their senior team as well.

So they beat us by 2.2 percent. 1.5 of that -- we're in the process of actually doing a more detailed attribution, as Ted mentioned, down to the asset class level.

But at the very high level, they beat us by 2.2. 1.5 percent - so 150 basis point of the 220 - is basically related to our lower weight in global equities. So we had a roughly 48 percent average weight and they had a roughly 56 percent average weight.

The next largest contributor to their outperformance was actually the inflation -- their inflation-sensitive asset class. That's significantly different than our inflation asset class. Our inflation asset class includes commodities, which had a very difficult year with the decline in the price of oil.

And their inflation asset class actually includes infrastructure, interestingly enough. So they're very differently composed. But that was the second largest driver of their outperformance, and that was about 30 basis points of that difference.

The remaining differences even at the asset class level were, you know, 10, 20 basis point here and there. And we are certainly happy to cover some of those when we get to the asset class level reviews, which we'll be doing over the next several months.

CHAIRPERSON JONES: Mr. Juarez.

ACTING COMMITTEE MEMBER JUAREZ: Yes, thank you, Chair.

I guess I'm -- I feel like we're getting drawn into a one-year comparison, which your general admonition to us as well as CalSTRS' general admonition to the Board members is not to get too drawn into this comparison, and yet we're going down this road.

And so I'm just wondering whether or not you bought into something that you tell us all too often not to do.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Well, that's exactly right, Mr. Juarez. I think you're highlighting sort of one of the fundamental flaws of all human nature, including my own, which is you can't help but watch and analyze.

We try to look at these as an opportunity to try to learn something, not necessarily use it as an opportunity to radically our strategy. But any time somebody beats you, you should look at why that is and try to understand how it might influence your strategy over the long term.

CHAIRPERSON JONES: Okay. Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you.

Mr. Eliopoulos, in your comments you mentioned, as Ms. Hagen reference, an elevated risk environment, which I can appreciate does not include -- is not limited to volatility. But you also indicated that volatility right now is really at 8.3 percent. So it's signi -- it's a full 50 percent less than what we had thought when we adopted our asset liability -- or asset allocation four --

four years ago.

So I guess my question is, what do you -- what do you mean by elevated risk environment when the volatility is so low? And -- because I think you said 25 percent is attributable to the interim asset allocation but 75 percent is actually attributable to market as it stands right now.

CHIEF INVESTMENT OFFICER ELIOPOULOS: That's a great -- and you'll be hearing much more about it in Wylie's presentation. But volatility -- forecast volatility really almost works as -- in the opposite of what you'd expect. When it's at its lowest point where it is now is probably the time to be the most concerned about the future because it reflects the experience of the last few years as weighted more heavily in the modeling of the vol numbers in our Barra system. So while the volatility levels are at all time lows, it's a point in time that you have to be concerned about what might come in the future.

And in terms of the risks or the risks that we've been talking about, you're at a time where asset prices are at all-time highs. So the question that investors are asking themselves are: With asset prices that high, with so much capital moving into risk assets, how long do you want to stay in that risk position? Are you going to be rewarded for taking those same risks with a lower return expectation? And how good are you going to be at the timing of moving yourself out of those risk positions should any of these other events, whether it's central bank policy mistake or not, geopolitical events or not, or any other number of risks that it's possible to forecast hit? It's usually very difficult to move out of your risk positions once it's obvious the volatility has returned.

COMMITTEE MEMBER MATHUR: Okay. Thank you.

CHAIRPERSON JONES: Okay. You may proceed.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Okay. Good morning. Eric Baggesen, Trust Level Portfolio Management team.

Before we leave page 15, I just want to make one comment on the chart that Ted covered, and it really relates to the gray line in this chart, which is the top line, which is reflective of the compounding of the returns. The other thing that you need to recognize is that as an organization we also tend to use a very similar discount rate as our expected rate of return. And what that means is that the liabilities are growing at the same rate. And that happens without volatility. So literally this is one of the challenges that we have and it's one of the challenges of using a high discount rate in the plan is that those liabilities continue to grow every single year at that compounded rate.

And any shortfall caused by market variance and things of that nature are basically what opens up this gap.

And you can just see how difficult it is, and you can see that over the time periods that Ted mentioned about the different returns we've had. So we're literally coming off a year with an 11.2 percent return; we have a five-year return of 8.8 percent for the total fund; and yet our 10-year return is 4.4 percent. So dramatically different outcomes that have happened. But that shows the challenge against this growing liability structure that is built into the benefit promise, the structure of contributions, the structure of the entire organization of the plan.

But this is a risk element where you're using a high discount rate and a high expected rate of return; any variance in that market outcome serves to create and open up a pretty significant risk chasm, if you will, between things that happen.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: One of the pages that Ted and Wylie asked me to cover was the sort of short-term versus long-term performance element. And you can literally see the solid horizontal bars basically represent the one-year performance; the hash-marked bars represent the longer term, in this case, 10-year performance. And you can just see exactly how variable that's been, both for the PERF - and again this is the 11.2 versus the 4.4 - but also across the different asset classes. So you can see the highest degree of variability that we've had is the Public Equity portfolio, which generated even within a single standard deviation, so it's within the expectations set, but you literally see a difference between a nearly 20 percent one-year return and a just over 4 percent 10-year return. So the tremendous variation that happens.

You also tend to see in this information though the what we believe is the positive attribute around the Private Equity portfolio. Even though it fell short on a one-year basis from the public equity return that happened, you can see that long-term return differential between that 4.3 percent versus a 9.3 percent return for private equity. So that's that excess return that we believe accrues to that part of the investment program.

But one of the most unusual things in this page as you actually look at the 10-year numbers, if you take a look at fixed income, which had a 10-year return of 6.5 percent, it's a very unusual 10-year period where you see the fixed income portfolio generating in this instance almost 200 basis points of annualized return on top of the

Public Equity portfolio. So it goes to show just how unusual this sort of 10-year environment has actually been.

The other thing that's here, as Wylie just mentioned, in relation to this is that, you know, our biggest negative for the year was the inflation asset class; and that is that exposure that is -- in relation to commodities, which is a very volatile part of the investment marketplace, and that obviously did not serve to help us in this period.

The other element on this page that also is reflective is the 10-year return to the real asset area. In general, we would not expect, for example, to see a 10-year return to fixed I had income of 6.5 percent and a 10-year return to real assets of, in this case, of almost minus one. And that is just reflective of the risks that had been accumulated in our Real Asset portfolio going into the financial crisis. And truthfully it's been -- it's very difficult to call it back the experience that we had, but that just serves to highlight how unusual that outcome has been.

CHIEF INVESTMENT OFFICER ELIOPOULOS: I might -- I can't help myself on real estate.

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: I might add, because it goes to Ms. Mathur's question, really the level of aggressiveness in the Real Estate portfolio going into the financial crisis -- obviously no one knew there would be a financial crisis coming -- but there were elevated asset prices at that time as well. And I think the choice for the Real Estate portfolio at that time was: Do you want to be more defensive or more aggressive?

The decision that was made at that time was to be ultra-aggressive, to invest in land, to do it in a levered basis, to invest in development, and to sell off our core assets.

In contrast to that, over the course of the last eight years now, we've built up a very substantial defensive portfolio within our Real Estate portfolio, where it now consists I believe just shy of 80 percent of the assets are commercial core portfolio.

So there are risk-reward trade-offs being made within the asset classes as well of whether or not -- how aggressive to be or how defensive to be and I would categorize going into this next 10-year period the Real Assets portfolio is positioned in a defensive position going into this next run.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: Thank you for those comments, Ted.

Just to echo Ted's comments, if you look at the chart on page 17 --

CHAIRPERSON JONES: Just a minute. Mr. -- on that same chart.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah. This chart would look very different if it were an 8-year chart, because '07 and '08 would fall off. And I -- I think it's important to see the '08 and '09 because it could happen but I think everybody agrees it was a bit of an anomaly. And so the next time you present this, you may want to consider doing a 10-year chart but also do an 8-year chart just so -- that's more normal.

CHAIRPERSON JONES: Okay.

COMMITTEE MEMBER JELINCIC: And, you know, that real estate reflects the disaster that we went through in '7 and '8.

Thank you.

CHAIRPERSON JONES: Okay. You're welcome.

I'm going to ask Committee members to hold their questions till you complete your presentation.

Mr. Baggesen.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Any other questions, Mr. Jones?

CHAIRPERSON JONES: No.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Okay. If we look at the chart on page 17, you know, just -- this starts to echo in the more recent years basically exactly what Ted and Wylie have been alluding to, in the fact that we've in essence tried to take some of the active risk out of the portfolio. Attached to that effort though is also an effort to try to understand what dimensions of active risk actually generate what we hope for, stable return contributions. So it's not just about taking active risk off the table, but it's also about trying to sort out which risks do you continue to want to take in contrast to risks that generate such a variable outcome that you really -- it's not clear that you should have any expectation of an excess return.

And a piece of this also links back to that concept around private equity.

All of our returns get generated -- and this feeds into the next chart on excess returns.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: All of the excess returns and the returns that happen in this portfolio have been subject to, I'm just going to call it, an amazing anomaly attached to the benchmarks that we've attached to private equity.

So obviously you can look at this chart and see the tremendous variability that happens in our portfolio relative to the expectations set that was set up around this.

And I guess rational people can certainly debate the reasonability of the expectations set. But we basically adopted a US-centric Public Equity portfolio plus 300 basis points that's being compounded. Even though basically our capital market assumptions that we adopted almost four years ago at this point, and we just recently adopted, all had compound returns, in our current period it's 150 basis points of excess returned. Prior to that the compound return was 158 basis points, and yet the benchmark calculation has compounded 300 basis points of excess return.

So there's just -- there's all sorts of arithmetic and geometric anomalies that are attached to this. But I think that this just highlights the fact that we set ourselves a hurdle, that's it's not completely -- in my mind anyway, it's not completely rational the degree of hurdle that we attached to that.

But you can see, other than that, we've had relatively stable and trimmed-in amounts of active risk and the outcome around active risk in the portfolio. And that's a piece of, as I say, the leadership really that Ted has brought to the office of trying to understand what risks are being rewarded. Where we can, we would like to enhance the taking of those risks, although we're then hemmed in to some extent by market capacity, which is always an issue for a portfolio the size of CalPERS.

I think now -- I was just going to ask Caitlyn if she could basically jump us forward into some of -- a couple of the slides in the appendix material.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: I think we had page 55, Caitlyn.

And some of these slides are also -- thank you very much.

Some of these slides are also reflective in some of the monthly risk reporting that gets embedded in some of consent items as well.

But this chart is actually very -- a really interesting one, and it gets to sort of the questions that were just being asked about volatility and return expectations. But in this chart we basically have -- the triangles represent the expectations of return that existed. And then the squares represent the actual returns.

And of course these are done with colors, so it's a little bit challenging for color blind individuals to sort of trace these things. But maybe the labels will help a little bit.

But I think what's really interesting about this chart though is that, if you look at what the expectations were - and these are from the 2013 ALM workshop, relative to the returns that have been generated and the volatilities that have been generated - is what you see is the returns have actually been -- and this was a five-year period, so that relates to that 8.8 percent CalPERS return -- so in essence the returns that were generated over that last five years are a little bit better than what our actual expectations were at the last ALM exercise.

What's dramatic though is that the volatilities realized are dramatically less than what the expectation set was. And this gets to the question, Ms. Mathur, that you were asking about volatility. And this is a -- this is demonstrative of the unusual environment -- and Ted didn't use the term but I'll use it. You know, I would say that the market is demonstrating almost a degree of complacency about the return expectations and the prospects that are in the marketplace. And that's what happens when these volatility levels drop to this kind of area.

Now, it may be that the economics in the world has somehow miraculously stabilized and it warrants those reduced volatility assumptions. Or it can simply mean that there's a like-mindedness that's layered in on top of the market place. And the risks of that is that suddenly the attitude shifts. Because if the attitude shifts and everyone is herded into one element of risk, then you basically can get an extremely poor outcome, which is to some extent what happened in the 2008 financial crisis. But it also happened in basically the early 2000s market sell-off where suddenly it didn't look like the Internet and tech stocks were going to take over the world, even though we seem to be repeating a bit of that in our current market environment.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: The other chart that I wanted to just touch on briefly is the current asset allocation.

So, as Ted pointed out, we brought it to this Investment Committee to shift the risk exposure downward last fall. The rationale behind doing that was, in retrospect, I guess, as Ted said, you could consider it was early. Although it's -- the return in the shift that was put in front of this Committee was not done necessarily from a pure return expectation standpoint. It was done to reduce the risk in the portfolio.

And to that degree basically that risk shift did happen. If you recall, we were attempting to knock back the investment risk. And I think our target at that point was about 35 basis points on the volatility. If we look at the current model, it would have that risk shift actually showing a 50-basis-point reduction in volatility, also because of the market conditions that have been very stable.

But the reasons for doing that were the combination of the funded ratio and the work that we did on portfolio priorities, where we really identified a significant unanticipated drawdown in the portfolio as being a real issue.

And one of the reasons that that's a real issue is of the asymmetry that happens between negative returns versus positive returns. Because when you're going -- if you've dropped, for example, 50 percent in your portfolio, just to take an extreme example, you need a return of 100 percent to get back to where you were. So this is asymmetry that can take place that can actually become somewhat debilitating around the structure of the funded ratio of the portfolio.

So all of that portfolio priority work identified that sort of defensive funded ratio as being a significant element at that point in time.

But it was that defensive -- the funded ratio relative to the valuation levels in the marketplace and some of the volatility and risk characteristics that were evident at that time which underlaid why we made that recommendation to the Board.

Obviously that has not paid off from a return perspective. But it has generated a risk reduction, which is still no panacea. That risk reduction is also important when you think about what's happening in contributions to the employers that are basically the underwriters of this market risk.

This is also one of the dimensions I think that is somewhat different between CalPERS and CalSTRS, is the structure of the way contributions come into the fund. So I think that there's a number of reasons why we end up with a different asset allocation, but I think there's plausible reasons that attach to that structural difference in the plan.

But one of the things that is interesting though is that the shift -- our concentration of risk, if we look at the Barra model currently, shows about 82 percent of our risk coming from the growth-related assets. Historically that number has been 88 to 90 percent of the risk coming from growth-related assets. So a piece of this whole risk shift was to change to some extent that concentration. And recall exactly that right now we basically have approximately 48 percent allocated into equities and another 8 percent in private equity, so about 56 percent attached to that versus an 82 percent risk allocation.

So we still have the preponderance of our risk deriving from those economically sensitive assets. So that hasn't completely changed. This whole risk shift was basically a marginal movement to try to reduce some of that concentration.

And I think that's the last chart I was going to plan to go through.

Caitlyn, I don't know if we can go back to page 19, I think, in the material. I was going to hand it over to Wylie at this point.

CHAIRPERSON JONES: Okay. Before we proceed with Wylie, we're going to take a 10-minute break and return at 10:10. Make it 11:10. Make it 13 minutes.

(Laughter.)

(Off record: 10:58 a.m.)

(Thereupon a recess was taken.)

(On record: 11:10 a.m.)

CHAIRPERSON JONES: I'd like to reconvene the Investment Committee meeting, please.

Okay. We'll reconvene with Wylie.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Thank you, Mr. Chair.

Before we get into the attribution, I just wanted to see and just confirm if there were any questions for Mr. Baggesen, because I wasn't sure if we had --

CHAIRPERSON JONES: No.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

-- sort of opened it up.

No. We're good to go. Great. Thank you.

Our Total Fund attribution model up on the slide is relatively new. I think we've brought it to the Committee three times; this will be the third time. So I wanted to introduce you to one of its architects, Michael Krimm, who's sitting to Eric's left, my investment director of investment risk and performance. He joined us in 2015. And he's actually one of the creators of this. And we've been using this since last year and it's been a really helpful tool to really help us understand the effectiveness of active risk taking in the plan.

Michael is importantly also the coordinator and referee of our stock-picking contest that the interns are participating in.

(Laughter.)

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: So he'll be the source of truth on their nascent investing prowess.

So with that, I'll turn it over to Michael.

INVESTMENT DIRECTOR KRIMM: Good morning.

The thing about the training game for the interns that we like to say is we're teaching them about long-term investing with a 3-month stock-picking exercise.

(Laughter.)

INVESTMENT DIRECTOR KRIMM: So this attribution that we're going to cover, Wylie already mentioned it's new for us to be presenting this. And the reason that I want to take a little time going through it in some detail is basically because it's new. I think it's a very useful way of understanding a portfolio. It's another tool in the toolkit of looking at performance. And -- but because it's new, I think it's worth making sure we kind of have some time to get our heads into the framework a little bit.

We're definitely open feedback on the framework and the way we're doing this. And, you know, it's something that we want to kind of do for the long term.

I'm going to ask you look at the right-most column of the table as I go through this; and that is the 5-year contribution to plan excess. And so we're looking at the, starting at the top number there, 23 basis points. That's our annualized excess return for the plan for the periods. And the purpose of the attribution is to explain where did that come from from the various activities in the -- you know, in the -- various investment activities tea in the plan.

There are, you'll notice, five groups of -- shaded groups below the 23, and those are the primary drivers of the attribution. And those collectively add up to the 23. So fundamentally attribution is really just an accounting exercise.

And kind of going through the drivers one by one:

We have public programs. They contributed 34 basis points for this period.

And then we have the private programs, which offset that somewhat with a minus 25 basis points. And you will note particularly the private equity contribution of minus 21 basis points. And again just worth reminding, this is all about excess performance. This is performance of the total plan of each of the individual programs relative to their policy benchmark. So this is not the total performance, because we know for the total performance the Private Equity Program particularly over longer periods has been our best performer. Relative to its policy benchmark it underperformed, and that contributed to this minus 21.

So those two categories that I just covered are really the -- I like to call them the easy parts of the attribution. This is essentially -- if you want to do the math in your head, you can look at the excess return of any of our programs and roughly multiply it by its weight in the plan to get at they contributions.

The next categories you really need the attribution calculation to get at. And they deal with the weighting of the asset classes, the relative weighting of the asset classes in the portfolio.

The first category here, allocation management, deals with the relative weighting of the public assets in our actual portfolio relative to the weighting of the public assets in the benchmark.

Now, recall the benchmark is basically just the reflection of our interim policy allocation each month. So quite literally the benchmark assumes you start each month with a precise weighting in each -- aligned with our policy allocation in each asset class. Of course the real portfolio is different than that. It defers. It fluctuates -- the allocation weights fluctuate due to market performance. They also fluctuate due to cash flows. And that's what's really reflected in this allocation management driver. Specifically it captures the impact of our rebalancing activities of our liquidity management and of course of deliberate decisions to over- or underweight asset classes relative to the benchmark.

So all that to say it only actually generated six basis points for this period.

The last category here, public proxy performance, is -- really deals more with the private assets. And this reflects the impact in a benchmarking sense of what happens when you are not at your policy target for a private asset class. And specifically over the 5-year period, we've been pretty consistently underweight in our allocation to private equity, roughly 1 percent. Now in the past year it's actually shifted to being more closer to the target. But what happens is the benchmark during this period is assuming you're earning the full return of that private equity benchmark throughout the period. In contrast, we -- since we don't have the full weight private equity, we are allocating additional weight to something like public equity. And for this period public equity underperformed the private equity benchmark, so that created a drag in the portfolio. And this is unfortunately an unavoidable consequence of how we -- how we have -- of the need to benchmark a private asset.

The point I should make on that is of course that you don't make a top-down allocation decision to private equity in the sense of saying, you know, this month I want to be overweight private equity. The weight you hold in private equity falls out of your allocation target, but it's a target. And then you're making individual allocation decisions to individual commitments to managers, and of course those have a lagged effect, so you can't ever perfectly achieve it. And of course we know we're also constrained by the market opportunity set in this period.

So a lot to say. But those are the drivers of our -- realty the drivers of our excess returns that I would expect to continue to see us talking about going forward.

The last row here, "other/residual," by and large it's just what it is. It's a -- there's a lot of kind of under-the-hood compounding issues that you have to deal within attribution, and those fall into here.

We also have over this five-year period the kind of ending effects of the way the currency hedge benchmark was implemented in the plan from 2009 through 2013. That currency hedge was essentially implemented as a 5 percent allocation, which slightly -- resulted in a slight de-weighting of the other programs in the benchmark. And this was a -- so could also describe it as a cash drag. And this was a time of rising market performance, so that caused the benchmark to essentially underperform a little bit.

So those are the big drivers. That's really what

I wanted to go through.

And happy to have questions.

CHAIRPERSON JONES: Okay. We have a couple.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: One of the anomalies we have is that the benchmarks for the asset allocation for each of the asset classes doesn't roll up to the benchmark for the total portfolio.

And do you have any sense of how much of that residual is just result of that?

INVESTMENT DIRECTOR KRIMM: I'm not quite sure what --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Mr. Jelincic -- I think he might be referring to the fact that we -- for example, in the growth allocation, we combine the private equity benchmark and the public equity benchmark to arrive at sort of a growth benchmark in that percentage. Is that what you're referring to, the roll up?

COMMITTEE MEMBER JELINCIC: Yeah. And unless we've changed it, you know, if you took all of the benchmarks for each of the allocations, added them -- they didn't really roll up because they didn't -- because we've carved out different niches and stuff over time.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

They actually -- they do roll up.

INVESTMENT DIRECTOR KRIMM: They roll up precisely.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

They do roll up precisely mathematically. But I think you are highlighting the fact that in any of these exercises, compounding when you're looking at month-to-month returns where the benchmark rebalances back to its -- essentially the benchmark rebalances back to its policy weight every month. And as Michael highlighted a moment ago, the actual portfolio doesn't do that. It can't. And that is reflected -- some of the math and the compounding effect of that is in fact reflected in the residuals.

COMMITTEE MEMBER JELINCIC: Thank you.

CHAIRPERSON JONES: Okay. Mr. Lind.

COMMITTEE MEMBER LIND: Thank you.

My question was around the allocation management and, you know, pretty small numbers here. The question is, if we were to look long term at that - and you've talked about everything that's encompassed in allocation management - would the numbers be higher? I guess maybe the crude way to put it, is the payoff worth the effort?

INVESTMENT DIRECTOR KRIMM: I don't have a direct answer to that question in terms of the longer -- the payoff obviously. I think -- and we haven't done this exercise a longer term. It's kind of a forensic -- it's actually quite a bit of research goes into it.

The one thing I will say, you can -- what we're not showing here is kind of year to year what this number was. And it can be bigger actually. There was a little bit more, if you will, tracking of volatility than just the 6 basis points. In any given year it can go to 10, even 15 basis points.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I might take a quick stab at that and also encourage my colleague, Eric Baggesen, to chime in.

Other entities have attempted sort of more tactically oriented asset allocation exercises. My observation - and I again encourage my colleagues to chime in - is that that is a very challenging task to do well over the long term. Some people get it right over a short period of time. But to consistently pick asset classes and weight them dramatically and move the assets around in a tactical fashion, it's expensive to do that, number 1, because you're generating transaction costs, and then, number 2, you have to get both the buy and the sell right. So tactical asset allocation, it's just a very challenging exercise.

If that was your question, I would urge the

Committee to just be very cautious about really endeavoring to do that in any dramatic way.

MANAGING INVESTMENT DIRECTOR BAGGESEN: I think let me just follow on to Mr. Lind's question. Eric Baggesen, Trust Level Portfolio Management.

I mean, that is one of the central questions that we're asking. And that's actually -- this traces back, you know, the attempt to be able to more tactically manage the ranges around the portfolio that actually traces to one of our investment beliefs. We're in essence stating that we're going to try to take some active risk and try to dynamically weight the portfolio. We do not know whether we're going to be successful in that effort.

So that has to happen in a prescribed narrow fashion while we really try to understand whether we actually have any skill in that area, Mr. Lind. And this will be an activity that ultimately -- and this is one of the reasons that we've asked Michael and Wylie to really help build out this attribution model, is to understand whether we have any skill at that.

And if it proves that we have no skill at it, that's an activity that we'll stop doing ultimately, because that is a way to add value, is to not engage in activities so that it actually may destroy value.

So it'll be a question that will be, you know, put in front of this organization in various ways. And we'll touch upon this a little bit when we get to the Trust Level Portfolio Management Program Review, which I think is our next agenda item after the consultants are done.

CHAIRPERSON JONES: Okay. Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you.

I would just suggest that it might be -- it might be that the answer is to stop doing something that we haven't exhibited a good track record of being able to execute effectively. But it might also be to acquire those skills is another alternative. So I guess I would -- I don't know that that's the right answer in this case, but I'm just suggesting that's the other way to look at it too.

CHAIRPERSON JONES: Okay. Thank you.

That concludes the questions.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Great. Thank you.

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: So we've just spent a few minutes focused on recent returns and sort of dissecting them. Thank you, Michael.

And you may recall our June meeting was actually focused quite a bit on the returns we expect over the next

10 years. That was part of the cap market assumption exercise. And with all the recent discussion of returns, I know it's tempting to believe that you can actually start to select the rate of return you'd like to earn. But as we all know, you really can't do that. You can only select the risks that we take. And the returns are the results of those risks. And so for the next few minutes we're going to talk a little bit about risk.

With the upcoming amount ALM workshop we thought it would be particularly appropriate to spend some time on this. We'll be selecting a risk position for the fund.

And we thought it would worthwhile to spend a few minutes talking about volatility, because that's a very central element in the ALM discussion.

As a long-term investor, CalPERS absolutely does need to consider long-term risks take climate change, the sustainability of economic growth, for example. These longer-term considerations add new uncertainty around future expected returns.

In our upcoming ALM exercise, we use volatility as a way to capture and summarize all the uncertainty around future expected returns, both short, medium, and long term. It's really the only way to mathematically balance risk and return. There are many nonmathematical risks out there, but volatility is the way that we balance the return and risk in order to arrive at what we believe to be an efficient portfolio.

As you may note on slide 20, a volatility has been unusually low, estimated at about 8 percent as of June 30th. This is partially due to our decision last fall to reduce overall risk in the fund - about a quarter of that reduction is due to that - as well as reflecting relatively calm equity markets of the recent past. And I'll be digging into that a little bit in the next few slides

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: So rate of return. The rates of return we just talked about, it's a very intuitive concept. I know everyone sort of gets that right away. It's what you're paid for taking risk.

Volatility on the other hand in not as intuitive. And one way of sort of helping people to wrap their heads around it, and it's certainly one that I find helpful, is to use a picture, an illustration. And this bell graph, which we included in prior trust level reviews, we actually took it out for a few cycles because we weren't sure it was terribly helpful. But it really is I think a helpful way to illustrate what volatility really is.

This is a probability distribution of one-year returns. So basically, what you can see here is that, on average, roughly two years out of three our one-year returns are going to be one standard deviation from the mean. And that's represented by sort of the dark blue - or if you're color blind, just dark gray - belly of this chart.

Volatility is this two-thirds-of-the-time measurement.

So over the long term we can expect that roughly two years out of three, given our current portfolio level of risk, one-year returns will be between about negative 2 percent and plus 15 percent roughly. And then one year out of three, returns will be either higher or lower than that.

And if you think about volatility in terms of those parameters, it's actually much more intuitive I think.

This slide then attempts to translate that volatility into the dollar gains and losses that you -- that the fund would experience, and then into an estimated funded ratio, again as a way of sort of internalizing and understanding volatility as a measure of risk.

And I'll thank Governor Brown here for a moment for his recent cash infusion, because this actually helped to make the bottom funded ratio on this slide 61 percent.

Without that extra 6 billion included in the cash projections, that lower funded ratio number would be in the 50s.

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: The next slide describes a very important element of recent volatility. As you've heard several times now, it's been really quite unusually low. And that's reflected in the 8.3 estimate from our Barra model. As Ted mentioned, we call that ex-ante volatility. It's basically expected volatility based on the model and our current portfolio.

And really what we might be seeing is that -- that we view that something like a contrarian indicator. In other words, when expected vol is showing very low levels, that's probably a good time to be very cautious about adding risk. When current vol is high, it reflects recently high volatility. That may be a time -- a better time to add aggressiveness into your portfolio. Not always, but I think ex-ante vol is -- it's cautious, sort of the -- the risk is that you can look at -- it looks like a good time to take risk because it looks like predicted risk is low. That's actually the exact opposite of kind of the way we think. If predictive is low, it's a possibility that it's going to shift up high and do that in a dramatically fast way.

They say that sort of markets like to rise like a feather on the wind, and they fall like a stone. And that can be reflected very quickly. The volatility numbers can change very quickly.

If we were to use a longer-term estimate of volatility of a 11.6, our two-thirds-of-the-time returns would vary between negative 5 and positive 18. So in other words, if we took Wilshire's 11.6 forecast volatility estimate here and plugged them into this chart --

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

-- what you'd see is that those vol -- those one-year expected returns would be -- that 1.7 number would go to roughly negative 5 percent and the 14.8 percent positive would bump up to about 18 percent.

So you can see the key point here is that small changes in volatility -- expected volatility can have dramatic changes in the expected returns you'll actually experience and in the resulting funded ratios that that would generate.

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: And I'll just spend a minute on this slide.

This slide sort of helps to show just how unusually low volatility actually is. And you can see that our fund's volatility is very largely and similarly driven by equity markets. This is the S&P 500 trailing vol, and it's about 8.2, strangely similar to our current 8.3 predicted vol.

And you can also see in the little table how returns usually work out in the subsequent 12 months when volatility is at these levels. So you can see, like I mentioned, low vol -- low expected or ex-ante volatility tends to result in poor forward-looking returns; higher current ex-ante volatility can -- tends to result in better longer-term returns.

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: This slide highlights a really very important element to keep in mind when you're using volatility as a tool. And we're going to have to use volatility as one of the key drivers of our upcoming ALM.

Allan Emkin actually mentioned this at our Board offsite last month. Our fund's actual returns are not perfectly bell shaped. You can see the bell shape superimposed right over this. These are our actual one-year returns, the probability distribution -- or the actual distribution of them. This is going back to 1989.

And what you can see -- a couple of interesting things you'll see in this distribution is that the bulk of returns are skewed to the right. That's a good thing. That means we've actually experienced and enjoyed some positive skew, so they've been better than we originally -- than simple statistics would predict.

The other thing that I would highlight - and this is not necessarily a good thing - is that our fund has had a fat left tail. You may have heard that described. But you'll see that over to the left-hand side of this, when we do experience bad returns, they tend to be much worse than it would be predicted by the simple normal distribution or the bell chart.

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CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Finally, on slide 25 we've provided some illustrations of two of those more recent left-tail events. And we'll be providing -- as part of the ALM, we'll actually be providing -- at the Chairman's suggestion and request, we'll be providing scenario analysis sort of stress tests with the candidate portfolios that you see. So you can see how different recent sort of left-tail events or market downturns would impact the different candidate portfolios that we'll be considering.

This is showing those same scenarios deployed on the current portfolio. So you can see the middle columns here are our scenario analysis if we took the current portfolio and then had to experience the financial crisis again what we would experience.

You'll also see what the current portfolio -- how it would be impacted by the tech crash that we experienced in the early 2000s.

Now, we've also included the column on the right, which is what we actually experienced. And if you're like me, the first thing that you'll notice is you'll see that, I -- the question you might be asking is, "I thought we took risk out of the portfolio. Why is the simulated return worse than what we actually experienced back in 2008 and 2009?" Well, that's because of the risk model. The risk model reflects an estimate of the market value adjustment in the private assets immediately. Whereas our actual returns, the actual -- the 32.6 that you see reflected up there, that reflects the fact that our private assets don't adjust when the public assets do.

So the public assets mark down immediately. The private assets, we have a lag effect. You remember that we revalue those with the three-month lag. So not only is there an accounting lag in the actual returns, but there's also just a valuation lag where the private assets, for example, real estate, takes a little bit longer to reflect the impact of a financial crisis in its valuations than, say, the stock market does. So that tends to mute the impact of a financial crisis or a downturn in the stock market on the actual returns.

In our financial modeling exercise, none of that accounting lag, none of that smoothing is reflected. It adjusts the asset values immediately.

And as I said, we'll be reflecting and providing similar types of analysis with the candidate portfolios in just a few months when you're endeavoring to choose an efficient portfolio during the ALM.

So with that, I'll pause and see if there's any questions on --

CHAIRPERSON JONES: Yes, we have a few.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah. A couple of questions.

On slide 20, you know, you point out that there's a 24 percent probability of negative returns. Somebody has to be the optimist and point out that there's 76 percent of positive returns, you know. So we can't look only at the downside.

On the next, Table 21, the 6.5 percent, when I go and I apply the expected returns and the capital market assumption to the asset allocation, I find -- unless my HP calculator has a problem in it, I find 5.478 as the expected return rather than 6.5. And if you look at Attachment 4 -- if you look at Item 4c, Attachment A, 4 of 4, we use 5.8. And so that kind of moves the whole thing to the left, and I was wondering if you can explain why.

And I will point out that when we get around to making an asset allocation decision, it's important that we start with accurate data.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Absolutely. Actually, yes, we can explain that, because we -- we had an internal debate on which number to put there.

And what you're reflecting are the accurate expected 10-year cap market returns. They're somewhere in the neighborhood of 5.8, 5.9.

What this slide reflects is actually -- and they reflect what's called a geometric average. And the geometric average for a return includes what we might call the volatility penalty. So when you have a return over time, and there's volatility in that return, you're confronted with some of the math that Mr. Baggesen highlighted earlier, which is negatives -- like a negative 50 percent return requires a 100 percent return to get back to normal. So that's the volatility penalty. Returns don't move in a straight line.

The number that's reflected on this slide represents the arithmetic return. And if you use the arithmetic sort of non-volatility penalty return in your number, you'd get something like a 6.5. And that's appropriate if you're looking at only one year, because in one year you're not having to geometrically penalize that return due to the volatility.

When we get to the ALM exercise, you'll see both the arithmetic average as well as the geometric average reflected in each of your candidate portfolios that you can choose from.

COMMITTEE MEMBER JELINCIC: Okay. But when I get -- to get to my 5.5, I mean basically it was -- I took exactly your instructions. I took the expected return per those capital market assumptions and multiplied it against the current interim asset allocation, and that's where I the got 5.5.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

That's because those expected returns include the geo -- they're the geometric -- they're the compounded expected return. This reflects the one-year almost like sort of a blank snapshot. And, again, we had an internal debate as to whether to reflect the arithmetic or the geometric average. And so I'm happy to share the different math with you, Mr. Jelincic, or with the

Committee if you're interested in really getting nerdy.

COMMITTEE MEMBER JELINCIC: Yeah, I would like to get nerdy, because I like to understand what's going on.

CHAIRPERSON JONES: Unless other members ask, just show it to Jelincic.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Okay.

CHAIRPERSON JONES: Unless other members have --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Be happy to do that.

COMMITTEE MEMBER JELINCIC: And just so I understood. On 22, the -- you know, given that they were both labeled as Barra, I was a little confused. But if I understood your explanation, the 10.6 was the expected volatility over the next 10 years back when we did the asset allocation decision, and the 8.3 is the actual volatility over the last year.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: 8.3 is actually what we might call ex-ante volatility as of June 30 of 2017. So ex-ante volatility as predicted by Barra basically takes the current portfolio weightings, and then Barra's estimate of volatility for each of those asset classes to develop a prediction of expected vol for the next year. Keeping in mind that Barra uses the past volatility and it significantly weights the last year of market history in its prediction for the next year.

So that's the 8.3

The 10.6 is I think the vol that was used in the last -- the last ALM exercise.

INVESTMENT DIRECTOR KRIMM: Technically the 8.6 -- or the 10.6 is just literally a different model applied to the current portfolio. And that is a different model that serves as an input to the ALM process. It wasn't necessarily the precise number.

The idea here is that - not helpful and somewhat confusingly - there are different risk models. And even Barra offers multiple models. And the thing that differentiates these models is how they calibrate, because these things aren't magic. They essentially use history to try to make a forecast of the future. And one of the big drivers is how big -- how long is the history that you look at.

If you look at what happened over markets over the last year, which is the kind of weighted emphasis of the current model of this 8.3 model that we use in most of our reporting, you get the effect that Wylie highlighted on the next page. You capture a very benign, calm period. And that informs what that model is putting out.

But there are other models. For example, the type of model that would influence a longer-term, 10-year, say, allocation decision, which is a longer history.

And so the reason these numbers are different is because we're actually looking at progressively longer market histories to calibrate the model. And if you look at a longer history, you capture more, all the different things that market did. So you happen to, you know, given that we're currently in a low period, you capture more of a longer-term average of what happened.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Thank you, Michael. He's refreshed my memory on the slide.

Interestingly, so the 1-year model that Michael's highlighting here on the left is actually known by Barra as the long-term model, even though it's -- one year is the half-life of the model.

I think the next one, the 8-year model, is called the extra long model.

And so we're trying to sort of present different volatility choices. And again, in the actual ALM exercise, and in the cap market assumptions that you decided on in June, you -- we used essentially the Wilshire numbers. We ended up very close to the Wilshire numbers overall.

COMMITTEE MEMBER JELINCIC: Well, fortunately the industry has a long-term view of one year.

And then my last question is on 25. You explained in the subprime and credit crisis why our actual performance exceeded the simulation. But I noticed in the one below, it actually underperformed the simulation and so the explanation you offered for the first one obviously doesn't cover the second one.

What was so unique about the January '00 to March, or do we know?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: It had to do again with the timing of the market impact and the timing of the fiscal year return.

You'll see that the tech crash recession is actually a -- sort of a fairly lengthy period. Whereas the historical PERF performance during that time is calculated -- basically it's -- again, it ends up being the difference between a simulated return in the risk system and the actual returns that we calculate.

COMMITTEE MEMBER JELINCIC: Okay. But earlier you say -- you explained how this smoothing made it less. And, you know, is this a case where the smoothing made it worse or...

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Eric's going to take a crack at that.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Eric Baggesen, Trust Level Portfolio Management.

I think you have to be careful about trying to divine any comparability in these numbers, because truthfully what you would have to do is to -- you need to recognize, there's two things that are changing. One is the risk calculations are changing; and also the portfolio composition is changing.

So if you really want to compare time periods, what you would have to do is take our current portfolio composition, you'd run it through the risk model. You would then have to take the portfolio composition that existed at that time and run it through the existing -- or the current risk model again.

So I just -- I'd be a little bit cautious about inferring much of anything in the importance of these numbers other than the fact that we will be basically stress testing the characteristics of the portfolio. And I think that's the main element that's important in this, is that we'll be taking whatever portfolio -- candidate portfolios we put in front of you as an investment committee and a board; we'll be basically showing what the risk model has to say about how those portfolios would have performed in that sort of stressed environment.

But right here we're a little bit conflating two different dimensions of risk model shift versus portfolio shift, and I just would encourage you to be a little bit cautious about interpreting anything from these data.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Maybe -- that's right. Thank you, Eric.

And I think a way to summarize that impact of the tech shift is that we had a higher overall global equity weighting in the plan at that time, and that's reflected in the larger negative return that we experienced during that actual period. We have a slightly lower public equity weighting in the plan now. And those simulated impacts, those are based on the current portfolio.

So if we experience -- and the tech crash affected primary the stock market. And so that's why the risk model is reflecting that and that's why this slide is reflecting that.

COMMITTEE MEMBER JELINCIC: Okay. So in both cases we reflected not the portfolio we had during the period that we created the simulation; we're using today's portfolio.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Today's portfolio. All those middle columns are today's portfolio run through the risk model, that scenario analysis that basically try to reflect the impact of those historical financial events.

COMMITTEE MEMBER JELINCIC: So the only thing we can really get from it is that the actual performance is probably not going to be the same as the simulated performance and it may be higher or lower?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

True.

COMMITTEE MEMBER JELINCIC: Thank you.

CHAIRPERSON JONES: Mr. Bilbrey.

COMMITTEE MEMBER BILBREY: Thank you, Mr. Chair.

Let me make sure I've got this right.

All right. So, first, I am also interested in the arithmetic/geometric information.

CHAIRPERSON JONES: Mr. Bilbrey, let me just ask other members. Because if there's a preponderance of members would like that, then they should bring it to the Committee.

Anyone else is interested in hearing Eric's and Wylie's explanation to J.J.?

No?

Okay. So the two of you. Okay.

COMMITTEE MEMBER JELINCIC: I'm going to actually suggest they email it to everybody. And everybody knows how to get to the link.

CHAIRPERSON JONES: Okay. That'll work.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Yeah, we're happy to do that. As I said, you will encounter this same question when you come back to the ALM, because you'll see both the returns calculated using an arithmetic averaging, which is really not appropriate for a portfolio that compounds. And you'll also see the compounded return when you have to consider this and build your efficient portfolio.

CHAIRPERSON JONES: Okay.

Okay. Mr. Bilbrey.

COMMITTEE MEMBER BILBREY: Okay. So my question is -- well, there's a couple questions here. So there are models outside of Barra; is that correct?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Many, that's right.

COMMITTEE MEMBER BILBREY: Okay. So what made you to decide to use this model for our portfolio?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

That's a great question. And I would say that we are consistently examining alternatives within the Investment Office.

At present, our assessment and during the last RFP process that we undertook, Barra has the most comprehensive coverage across the types of assets that CalPERS owns, the private and public assets. I'd say in many models are good at the public -- the public assets where there's, you know, a wealth of data, wealth of historical price data that's available. And many of them are not as robust as on the private asset class side where some assumptions and some modeling and some proxying exercises need to be completed.

But we're constantly on the look out for alternatives.

Barra is well and commonly used in the -- amongst asset managers and pension funds. So we're certainly not an outlier. But we're constantly looking for improvements and alternatives to the risk model.

COMMITTEE MEMBER BILBREY: That makes sense. I -- but having said that, you mentioned about using Wilshire's numbers in a previous and this time you came back with Barra. Why are we not using something more? I mean somewhere along the way you've jumped from here to here. Obviously it's a little confusing at times. And then the next time around, which was coming back, are we going to jump to something different?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

It's a great question.

COMMITTEE MEMBER BILBREY: Once we try to get one down, I want to, you know --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think what you're highlighting, Mr. Bilbrey, is the fact that all of this is something like trying to divine who's got the best crystal ball, because you're really trying to predict the future in terms of what risks are going to be. And in fact, what you're -- what this Committee decided in June is -- you were presented with our process for comparing all the various volatility estimates out there, because there are many. You've highlighted several, Barra -- the Barra model, Wilshire. There are many other prognosticators who attempt to predict future volatility. In our asset liability management process we examined many of those and had a very collaborative exercise, arrived at estimates with your consultant's involved in the conversation that we felt were reasonable. I don't -- I'm entirely confident all of the actual results we will experience will be different than what we concluded. Just as we've seen in Eric's earlier slide, the volatility estimates that we arrived at during the last ALM cycle, what we've actually experienced has been very different than any of those predictions. And those predictions were developed, you know, by your Investment Office and your very -- your team of very professional consultants.

So I think the short answer is is that we try to incorporate as much of the -- of as many of these different views as we can, and then we try to use a collaborative process to arrive at a consensus view of what we think volatility is going to be. But we are entirely sure that the actual results will be different.

But it's a reasonable process to employ because it's really the only process you can employ to arrive at a portfolio that you believe will be efficient, which is the goal of developing these volatility estimates.

MANAGING INVESTMENT DIRECTOR BAGGESEN: I'm sorry. I need to interject just a moment on to Wylie's comments.

What we see, Mr. Bilbrey, when we look at volatilities is that irrespective of the vendor that provides the model, when we look at consistent time periods, we see very consistent similar information. So in other words, the dimension of variability in trying to understand volatility is in changing the time horizon that you're measuring it over in contrast to changing the vendor of the model.

Because all the vendors are basically assessing exactly the same price information that is moved through the marketplace. So when you assess the same data, you really don't come out with very different calculations, basically because you're literally measuring the same things. Now, where you get difference is a judgment as to whether or not you should be using a long-term versus a short-term model; or how you basically proxy the private assets, which is one of the things that Wylie alluded to.

One of the reasons we use the Barra model is because we actually believe that Barra has done potentially some of the most robust work in trying to use publicly available price information to proxy the valuations attached to private assets, which is a very, very imperfect dimension on this. But I just want to be cautious about implying that there would be a different outcome to these volatility assessments whether the use a model from Barra or you use a model from Axioma or from Northfield or any of the other providers, because literally to the extent that you would get different information, it's because of either those private asset proxies or because they basically are looking across a different time horizon. If you're looking at the same time horizon, you're going to get basically the same information out of it.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think that's right. Thank you, Eric.

And that's actually what we saw during our asset liability management cap market assumption exercise, Mr. Bilbrey, internally within the office, is we saw that the estimates came in -- they were slightly different, 10, 20 basis points; but not enough to really dramatically influence it. What you see on the slide is that, just as Eric mentioned, the length of time, the degree, the number of market events that you incorporate into cycle has a much bigger impact, and the half-life of those in the way it's incorporated into the calculation has a much bigger impact than the provider.

COMMITTEE MEMBER BILBREY: I appreciate the answer. I know our stakeholders, not all -- I mean, our members, understand all of this. And so when they hear us using different models, you know, it gets confusing and also leaves some question of what are we trying to do up here. So thank you.

CHAIRPERSON JONES: Okay. Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes, thank you.

So I think I wanted to highlight just a couple of things that you guys were talking about.

You stated that when volat -- when we have higher volatility, we tend to have better returns. Am I correct in that, historically?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

What I was mentioning --

COMMITTEE MEMBER TAYLOR: That's what I wrote down.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

-- Ms. Taylor, is that what you see is that when you're looking specifically at this information, which is the trailing one-year volatility for the S&P 500 --

COMMITTEE MEMBER TAYLOR: Right.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:
-- what you can see is that periods where the trailing one-year volatility has been similar to what it is right now, very low, you can see that the subsequent one-year return is a lot lower than it is -- than it would be following periods where volatility is high.

COMMITTEE MEMBER TAYLOR: So is that a normal pattern you see?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: It looks that way.

COMMITTEE MEMBER TAYLOR: Okay. So --

CHIEF INVESTMENT OFFICER ELIOPOULOS: The more common kind of way --

COMMITTEE MEMBER TAYLOR: Sure.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- you hear is buy -- you know, buy low, sell high. It's that same thing.

COMMITTEE MEMBER TAYLOR: Right, which makes sense. So then when we were changing our asset allocation last year with the high volatility, I think my concern is that that wasn't presented to us at that time that we had -- you know, higher volatility means better returns. And I know we're looking at the long term. I understand that.

So I just -- I just want to comment though, I was a little concerned that didn't seem to be presented to us.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I'd ask Eric to comment. But actually even last year, when we made the decision, we had already entered this period of relatively low volatility. So --

COMMITTEE MEMBER TAYLOR: Okay. So you're saying the capital market assumptions at the time, it was kind of a low volatility period? Because I remember seeing the figures as pretty high.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Well, it's higher than it is currently, because we've had and extraordinarily low year -- one year. The last year has been extraordinarily low volatility. But even during the decision you made last year, we'd already sort of entered this period with high valuations and relatively stable stock markets than -- now, it's tempting when you're hearing the news or looking at a 100, 200 point jump in the Dow or something like that to think that volatility's high. But when you measure it across the whole portfolio in this way, even last year we were still in a period with relatively low vol.

COMMITTEE MEMBER TAYLOR: Okay. I remember you talking to us about how -- that it was relatively high and it was risky that it was being high -- it being that high at the time.

MANAGING INVESTMENT DIRECTOR BAGGESEN: What I think is important is, when we talked about taking some risk and shifting the risk last year, we weren't pointing towards any systematic volatility changes that had happened. Because the volatility had been drifting lower for several years. This is not basically a new phenomena. I think what we were talking about is the potential for political volatility. And that came out of events like Brexit. Certainly was anticipated before the election of the president. So what we were seeing is the potential for event volatility to come into the marketplaces and cause, in essence, just a disruption in the valuation. But it was really much more predicated on the actual valuation levels of the marketplace. And I would suggest -- I think that, for example, the PCA information I believe is distributed to you as Board members, their market expectations. And they put that out on a monthly basis. And literally the PCA information, just as an indicator of market valuation levels, has shown relatively extended valuations for several years. So it's not -- and it's been drifting -- those valuation levels have drifting higher.

But if you look at the chart, I think, that -- is the real question. If you look, for example, at that high peak, the highest peak in this, that's 2008 when the market is selling off. So market volatility tends to basically be related to disruption in the marketplace. So you get the highest volatility measures when you're having disruption, and that disruption is typically a sell-off in the marketplace.

When the market is rallying and all risks are being compensated, volatility tends to diminish. And that's the reason for the expectational difference that attach to the data that's shown in the matrix of information in the middle of this page. So when you have high volatility levels, that would imply those high volatility levels are from markets that have sold off, thereby reducing the valuation level and setting the stage for higher subsequent returns; in contrast to low volatility, which is when the market is very basically benign, assets are being richly valued. The expectational return from a highly valued asset going forward is less than the expectational return from an asset that's just been sold off to a lower valuation.

And that's all that underlies the inference in that --

COMMITTEE MEMBER TAYLOR: Right. So you basically just reiterated what I said, which is --

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yes.

COMMITTEE MEMBER TAYLOR: -- we had -- and if you look at the graph, you can see in 2016, it looks like, or 2000 -- yeah, 2016, we had an upswing in volatility. So we did -- so I guess my point is is that you -- you made it very clear that it was imperative for us to change our asset allocation mix. But at the same time, you're telling us now, because of lower volatility, that we may have a risk of poorer returns, which you told us before with higher volatility was the issue. And I'm just going to go on from here.

I just would like to know -- and Wylie you said it perfectly earlier, which was, you know, it's kind of like looking at a crystal ball. But I'd love to know if -- because we're using different models. Has anybody looked at our historical data from previous trust reviews to see how close we got in terms of making these predictions?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

That certainly -- actually Eric just covered a slide a few moments ago that reflects the volatility choices that were the predictions that were used during the last ALM. I'd be happy to flip back to that.

COMMITTEE MEMBER TAYLOR: I'm thinking even further back, not just the last one but even further back.

Oh, that -- okay.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: If you look at this, you can see that this reflects the historical volatility over roughly a 28-year period. As you can see, our historical volatility has actually been a little bit lower than we were expecting.

COMMITTEE MEMBER TAYLOR: Right. I'm not looking -- I'm not asking for that. I'm actually asking for your trust level review. So you are looking at making predictions here for our -- going forward. And I'm wondering if you've looked in the past to see how close you got before?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

It's fair to say that volatility -- at least in the trust level reviews that I've been involved in over the last three years here, volatility's been lower than predicted relatively consistently.

COMMITTEE MEMBER TAYLOR: Okay.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Our actual volatility's been lower than --

COMMITTEE MEMBER TAYLOR: Predicted?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

-- within the Barra model -- yeah, all of the models had predicted.

And then the models slowly reflect that. So the models reflect that actual market experience over time. And that's why you see the current predicted vol, it now incorporates those several years of very low market volatility.

COMMITTEE MEMBER TAYLOR: Okay. Great.

And so -- and we're -- and I just want to reiterate. So we're looking at low market volatility, correct? Which could mean an issue in terms of our returns and having low returns in the future?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

It's difficult to say. Again, this crystal ball, it's difficult to say exactly. We could continue to see another year of good returns or several years of good returns. That would mean that valuations, which are current -- which you've heard several times are already fairly high, would have to get higher, right?

COMMITTEE MEMBER TAYLOR: Right.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: And so from a strict probability standpoint, that's unlikely but it's certainly possible.

COMMITTEE MEMBER TAYLOR: Okay. Great. Thank you.

CHAIRPERSON JONES: Ms. Hollinger.

COMMITTEE MEMBER HOLLINGER: Thank you.

What I'm really concerned with and -- is volatility in terms of funded status. So -- because you -- obviously you can't absorb certain levels at different funded status. So do we have something, or maybe I missed it, that shows a correlation between volatility and funded status? Because I think that the funded status being high or low could either act as a shock absorber or a -- I don't know the --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think -- well, we've attempted to start to touch on some of that, Ms. Hollinger, on this slide that's in front of you, as well as on the earlier slide, the bell curve slide that shows the potential -- there it is -- the potential funded status under sort of what we might describe as typical volatility or --

COMMITTEE MEMBER HOLLINGER: Because in 2008 we had a 100 -- based on our actuarial assumptions then and whatever was our projected rate of return, we were at 100 percent. So when I look here, it's hard for me to fathom that if we went down the same based on a 68 percent funded status, that the -- you know, we'd be in free fall.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think --

COMMITTEE MEMBER HOLLINGER: So I don't under -- I'm just trying to figure out how the math works.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think what you're highlighting is the fact that during both of the events that are presented on this slide

CalPERS was entering the -- both of these events with a funded status over a hundred percent.

COMMITTEE MEMBER HOLLINGER: Correct.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: In the current environment we're entering, you know -- we're entering the current asset liability management exercise with around a 68 percent funded status.

COMMITTEE MEMBER HOLLINGER: Correct.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

That's significantly different. And it's certainly something I think we're going to have to think about.

COMMITTEE MEMBER HOLLINGER: So, you know, I -- I don't necessarily know how to compute the math. But if you had a 32 percent drop at 68 percent, I don't see how it can equate --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Yeah, I think it's reflected on that earlier slide actually. If we experience the financial crisis --

COMMITTEE MEMBER HOLLINGER: Got it.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

-- again and we had our current asset allocation from where we stand today, we would end up at about a 41 percent funded ratio. You see that reflected --

COMMITTEE MEMBER HOLLINGER: Oh, I see. That's the funded -- okay. Got it.

Okay. Thank you. I appreciate that.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: And as I mentioned, we'll be presenting similar types of information with the different candidate portfolios that you'll be reviewing in November how each of them might have behaved during the financial crisis. Once again, I'll highlight that all of that is simulation --

COMMITTEE MEMBER HOLLINGER: Right.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

-- using an estimator essentially. The Barra model's just an estimator based on past events. But it's useful information I think just to understand the overall level of --

COMMITTEE MEMBER HOLLINGER: No, I agree. I appreciate that. Thank you.

CHAIRPERSON JONES: Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah. To follow up a little bit on Dana's point.

We exist to pay benefits. And so that means we need to be funded. And one of the things I think we need to start looking at in how we evaluate ourselves is how we do relative to our expected return. Because this year we did -- what was it, 13? So we made up some of the deficit. If we hit the expected return, then basically we have not changed anything. If we underperform it, then we are increasing the unfunded liability. So at some point I think we need to figure out how to make the expected return part of our evaluation process both for the Committee and for the staff. I mean, if we're not -- if we are falling further behind, that's not a good thing. And if we are gaining on our funded status, even if it's by accident, that's a good thing.

But I think we really do need to pay more attention to how we do relative to the expected return.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Thank you for that, Mr. Jelincic. I think we would agree. And, in fact, the five-year expected -- how we're doing versus the expected return is in fact one of our strategic measures that the Board considers. And I think -- I believe it's next month, but you're -- in the -- you're going to be presented with some new measures that have been driven out of our enterprise strategic planning process that look at how we're doing versus our expected funded ratio given the fact that we amortize our unfunded liability every year, and so we're supposed to be moving our way back to a hundred percent funded status over a long period of time. And we'll be presenting to the Committee options on how to evaluate our success or failure at that as an overall institution.

So you'll see that if you were expected to recover, you know, three percentage points in a given year and you only recovered two, you'll be presented information or an option to consider to include that in some of your -- in some of the measures that the Board considers and receives.

COMMITTEE MEMBER JELINCIC: Thank you.

CHAIRPERSON JONES: Mr. Slaton.

VICE CHAIRPERSON SLATON: Well, thank you, Mr. Chair.

I want to come back on the estimated funding ratio. And one of the things that has troubled me about this ever since I've been on this Board -- and we saw a comparison discussion with CalSTRS earlier this morning. Although they essentially have the State of California behind them, as opposed to our situation where we have 2,000 -- is it 2,000? -- 3,000, pardon me -- 3,000 --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: More than 3,000.

VICE CHAIRPERSON SLATON: -- 3,000 plans with local government having funded status that is quite different, depending on which employer you're talking about.

So, you know, the problem is when we talk about averages, it doesn't tell the whole story. And so to me, the asymmetric risk that we have again skews to the left-hand side of the funded status curve to those number of employers who are more at risk than those who are less at risk because we don't have 3,000 PERFs, we have one.

So I think that -- and maybe part of this is a more robust analysis of where those funded status -- plural of -- statuses sit by quartile or by size or by something where we can see that left-hand side of the tail. Because we have to keep that in mind, because what we're trying to do is to meet the obligations that we have without driving employers into bankruptcy.

So I don't know if you have any comment about that, but that's where I'm really concerned with.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think my comment might be that might be something that we can undertake a discussion on at our Asset Liability Steering Committee the, group that oversees the development of the workshop that we'll be participating in in November. So we can discuss the idea of bringing forward sort of some high level information on where funded status is. I believe that is part of the plan anyway. It just is probably a question of how down into the details do you want to -- do we want to go.

VICE CHAIRPERSON SLATON: Right.

Thank you.

CHAIRPERSON JONES: Okay. That finished those questions.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Thank you, Mr. Chairman.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Okay. And that concludes our presentation.

CHAIRPERSON JONES: Okay. Then we will move to the Consultants' Trust Level Review: Wilshire, Pension Consulting Alliance, and StepStone, and Meketa.

Okay. Just one minute.

Mr. Jelincic had a question of -- from the last presentation.

COMMITTEE MEMBER JELINCIC: Yeah, I didn't realize you were going to stop there and not cut through some of the other ones.

But on slide 26, Investment Risk Responsibilities, one of the things that I notice is not there is the CEO. And since we've put the CEO in charge of everything, including the Investment Office, they belong some place on that chart. And that was the observation I wanted to make.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: That's a very fair comment. Thank you.

CHAIRPERSON JONES: Okay. Now we could proceed to the consultants' reports.

MR. JUNKIN: Great. Andrew Junkin with Wilshire Consulting.

(Thereupon an overhead presentation was Presented as follows.)

MR. JUNKIN: I think that was a pretty thorough discussion, so I'm going to try to not beat a dead horse and try to bring some new information to you today.

So starting on page four of the Wilshire materials, 243 of the iPad. Every year we complete a study of all of the State retirement plans in the country. And these are the results from 2016. So it takes awhile to gather all of the information, so this is a year dated in terms of the funding information that's here.

Starting on page 4 in the upper right, you can see the market value funded ratio really continues to sort of decline. I think that we're seeing, you know, lower returns back in '15 and '16 fiscal years relative to actuarial rates, and that's driving that obviously. On the actuarial side that's also happening, which is the bottom chart there. So in both cases the average or median funded ratios continue to decline.

--o0o--

MR. JUNKIN: A little closer look at that on page 5. The chart in the upper right here shows that 97 percent of the 103 plans that had reported 2016 funded ratios were underfunded. So a little quick math there, I'm going to say that that's three that are overfunded.

And then in the chart below, majority of those plans are less than 70 percent funded.

--o0o--

MR. JUNKIN: I think some of the more interesting things that come out of our funding studies are really what's going on with the asset allocation. And so on the next page, you can see we've taken sort of asset allocation snapshots about five years apart 2006, 2011, 2016, and really the Equity subtotal is largely unchanged. It declined a little bit. Fixed Income has come down some. "Other," which is kind of hedge funds and a few things, has really ramped up from 3 to about 10. But if you look within Equity what's going on there, there's something that I think is quite expected; and, that is, a decline the U.S. equity weight and a pretty significant increase in private equity as State plans have really pulled the private equity beta lever to try to drive returns higher to meet their actuarial returns.

But that's a pretty radical remaking of any single portfolio over a 10-year window. Doing it to 103 on average is really remarkable.

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MR. JUNKIN: And then ending this part of the presentation, looking at the asset allocations that each of those State plans have and then applying our assumed returns - no one else's, just ours - how many of those plans would meet the median discount rate, which at this point was 7 1/2 percent, using our 10-year assumptions the answer is 0. And in fact the median expected return would be about 6.4 percent instead of the actuarial return of 7.5 As you all know, we have longer-term assumptions that sort of get more at the equilibrium returns that we expect from asset classes. And in that case it's about half of the plans -- not quite half of the plans that are expected to make that 7 1/2 percent return.

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MR. JUNKIN: So I'm going to use that to segue into our forecasts for CalPERS. For the next 10- and 30-year risk-and-return forecasts, the risk is the same, but the expected 10-year return - we'll just look at the target allocation here - is 6.1 - this is using our June 30 assumptions - for the 10-year window and 7.4 percent over the next 30 years, with -- there's that number again -- about 12 percent risk that we talked about earlier, 11.4.

--o0o--

MR. JUNKIN: I'm going to skip ahead a bit. I feel like performance has been discussed, so --

attribution has been discussed. There was one page I wanted to get to, which is page 19. Which I think there was a pretty robust discussion on market volatility.

This is another look at -- market volatility has declined. We're looking here at a five-year window. And so you can see, equity market volatility is quite low.

This part of the presentation up until last week also included a comment about how low the VIX was, but the VIX shot up quite a bit last week.

I think to the comments that were made earlier really about is low volatility bad for returns or good for returns, it's not so much the level, it's the direction. And so when you get to a very low level of volatility, there's almost only one way to go and that is higher. And when volatility is higher, uncertainty is higher, that's factored into equity prices, prices tend to come down. I think the -- when volatility is near its average, which is kind of 15 percent or so and rising, rapidly rising, there has never been a period of positive stock market performance.

So that's the issue, is when there's a spike in volatility from -- not off of a low base, as we saw last week, because last week was kind of -- we had lots of event risk that kind of fed into it, but the markets were kind of unmoved relatively speaking. But when you get to sort of an average level of volatility and then you see a spike, that's when the market tends to underperform.

--o0o--

MR. JUNKIN: Let me skip ahead to page 22. We talked about U.S. versus non-U.S. We've talked about this for quite a long time. This is a chart that shows the average correlation to the U.S. equity market of several large non-U.S. equity markets. And what you're seeing here is that certainly during post-2008 - this is on a 3-year rolling ex-post window - the correlations to the U.S. markets -- the correlations around the globe were very high, 0.8 or higher. It didn't fully go to 1, but it was pretty close.

We've started to see some decline there. There is beginning to be some positive effect to diversification. All markets aren't moving up and down synchronously, which is really -- then there's little benefit to being globally diversified. Obviously that has been the case periodically. It is not something that we expect, and so global diversification continues to make sense from our point of view.

I'm going to skip ahead. And I don't want to cover too much about the private asset classes, but wanted to make a couple of comments since you've got Meketa and PCA here.

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MR. JUNKIN: Page 31, Private Equity - Pricing. At the end of the second quarter you can see we're now at again record levels, 10.7 times, 10.5 times, depending on where are you in the globe. This obviously has implications about future returns. You can't pay high prices expecting super high prices in the future and expect that to come true all of the time. And so our forecasts on private equity, which I didn't cover, are still pretty sanguine.

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MR. JUNKIN: The other factor that we talk about pretty regularly is what does the dry powder look like in private equity. I've been giving this slide in presentations to you all for long enough that I'm going to have to change the unit of measurement pretty soon. It's gone from 500 billion to nearly $1 trillion in private equity dry powder. So that's committed, yet to be deployed, capital. In some ways that's good. In some ways it's bad. As a current private equity owner, an investor with money that's committed, because of something like this you're unlikely to see the wheels come off of the private equity market. If we go from 10 1/2 times on pricing to 9 times, you can expect a lot of this to really come in. It's not like someone's going to turn off the tap and suddenly prices are going to be 6 times again.

So, you know, that's the good news and the bad news. There's going to be some support, but you're not -- it's unlikely that you or any other investors are really going to see a bargain entry point into private equity.

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MR. JUNKIN: And then last, I was going to stop -- no, I'm sorry, I wasn't going to stop. I'm almost done. Two more slides.

Page 41. I think as we continue to talk about -- and this was one of the things that John Rothfield talked about, a central bank policy. The federal reserve has announced plans to begin the shrinking of their balance sheet. And that's good. It gives us some clarity. You know, pre-global financial crisis we were looking at a central bank -- a federal reserve balance sheet of about $800 billion. Even with their announced plans, if you run that all the way out through 2020, it's still $2 1/2 trillion. We're probably not ever going to go back to that $800 billion balance sheet, by the way, it just doesn't seem like, unless something significantly changes in the economy. I could see us stopping at $2 1/2 trillion. It's amazing.

The very first time I was before this Board I gave a performance presentation and spoke about hundreds of millions of dollars and realized I'd made the incorrect unit of measurement point then. Now, it's we're talking about trillions on other things. So...

So last point was going to be on real estate

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MR. JUNKIN: Last point was going to be on real estate with Christy to my right. I'm a little anxious about making this point, but it's a good news point.

The red lines on each of these charts really is the vacancy rate, the availability rate for different property sectors. So at a glance you can quickly see the fundamentals of real estate across all the major property types really have been pretty good.

So I will stop there. I didn't spend a lot of time on performance because I felt like that had been covered quite nicely. Just wanted to add some points of view on other State plans and our view on the economy.

Happy to answer any questions there or hand it off to whoever's next.

CHAIRPERSON JONES: Okay. We have one.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah. On slide 11, 250 on the iPad, the drivers of the expected excess returns. If we were spot on the asset allocation, it would be zero, if I understand this chart correctly?

MR. JUNKIN: Upper left or upper right?

Upper left.

If you were spot on, both would be zeros all the way across.

COMMITTEE MEMBER JELINCIC: Okay. I just wanted to make sure I understood what I was looking at.

MR. JUNKIN: That's correct.

COMMITTEE MEMBER JELINCIC: Thank you.

CHAIRPERSON JONES: Okay. No further questions.

We move now to PCA.

MS. FIELDS: Good afternoon. Christy Fields, PCA.

As you know, the role of real estate in CalPERS is one of income -- providing income and also diversification to the equities and the growth characteristics that pervade in the larger part of their total portfolio. The Real Estate portfolio is fulfilling its role. And as we mentioned when we were here in December during the annual program review we had kind of talked about the likelihood of core real estate returns moderating in the future. Indeed that's been the case, with most of the diminution in returns coming from the appreciation component of return, with the income returns remaining quite steady.

And you can see the benchmark returns are moderating significantly. You have an 11.1 percent return in the benchmark over five years, and the shorter one year is down to 7.5 percent. So that's pervasive throughout the market -- the U.S. market.

Recent results for your portfolio are good. The trailing quarter and one year are strong, and three- and five-year returns are close to the benchmark, with a small amount of underperformance attributable to the elements within the CalPERS portfolio that differ from the benchmark, primarily land and the emerging markets exposure, which we discuss I think usually pretty regularly.

Other highlights at this point. The Real Assets unit has made their strategic capital allocations for the '17-'18 year, and the largest part of those are to core acquisitions. And those allocations in combination with continuing distributions from legacy investments and, most notably, recently the last distribution from the Project Knight sale of secondary interests will continue to further align the Real Estate portfolio with the long-term strategic objectives for the class.

I think this has been said before, but just to finish, the investment environment is fiercely competitive. The real estate corollary to Andrew's private equity dry powder number is roughly $250 billion as reported by Preqin in closed-end funds, and that doesn't really even track the kind of capital that you deploy on other large institutional investors employed through separate accounts and more direct investment vehicles.

At the same time, in real estate the overall volume of transactions has slowed. And there's several reasons behind this, but this combines with the amount of dry powder in the market to create a very difficult environment. So consistent with what's happened before, likely to continue in the near future.

MR. GLICKMAN: David Glickman, PCA.

The staff has shown very good discipline in managing the managers. You are not chasing deals that would be very, very expensive and which offer perhaps more risk than is appropriate for the kinds of returns that are available. There's a capital which can be deployed. And one of the things that we've observed and are glad to see is that within the real estate group there's more cohesion, there's more coordination, and there's more of a focus on adding investments which would be strategic and which would make an impact on the overall returns, and there's more and more winnowing of the portfolio to dispose of assets that aren't strategic and which can be distractions.

The resources that you have available to manage and grow your Real Estate portfolio are finite, and so this emphasis on things that are strategic is additive to the process.

At the same time, the real estate group has focused more on managing risk and by adding processes that are collaborative and that look at the entire cycle of owning real estate assets and managing those assets. We believe that when the next downturn comes, your real estate results will be much less severe than what they have been in other periods. And the reason is, you have more control than you used to, you have better governance than you used to, you are paying lower fees than you used to, and all of these things will be bulwarks during a period of real estate value declines.

With that in mind, Christy and I would be glad to take any questions that the members of the Committee have.

CHAIRPERSON JONES: Thank you.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Yeah. From reading about the recent bankruptcies of a number of retail chains and Amazon's venture into -- a movement into more sort of brick-and-mortar grocery stores, I'm just curious about what you see as the prospect for shopping malls and other kinds of retail and how those -- those developments might impact that sector.

MR. GLICKMAN: So if we look at retail on a wider footprint, there are now some very seismic shifts beginning to show in retail. That's not uncommon. The retail business goes through cycles over time. And it's important to drill down a little bit.

In general, Internet sales continue to increase every year at the expense of brick-and-mortar sales. Having said that, many of the retailers and many of the shopping center owners are shifting and pivoting in order to take advantage of capturing those sales through physical stores as well as on-line presence.

The shopping mall subset of retail is divided into class A, class B, and class C. All of the investments that CalPERS have made have been in the class A malls. Those are the ones with the best locations, the best tenant mixes; and, in fact, some of these bankruptcies to which you refer have turned out to be opportunities for those owners and operators because they can recapture a space that wasn't performing and lease it to the tenants who want to be where the action is.

In the class B and the class C malls, we've seen the biggest changes in valuation and often negative valuations. It's the class C malls that you'll see publicity about being, quote, repurposed or a change from retail use to some other use. You don't own any of those. And there's only a very tertiary effect on the valuation of the properties that you do own that comes from those class C malls.

Class B malls are sort of in between. Some of them may go positive. Many will go negative. Depends on ownership and the capitalization and the ability to change the way that the retail goods are presented.

The other place in retail where you have footings and investments, which is also being -- attempted to be influenced by the Internet, is in the grocery-store-anchored shopping centers, which is a significant portion of your retail holdings. And there we continue to see attempts to change the way consumers get their groceries, and very few of them have been successful on a large scale so far.

So for the time being those valuations, those rents, those occupancies are also holding up very, very well. Whereas people in the middle, big-box-anchored strip centers, of which you own almost none, are the places where there's the most change in valuation and probably the biggest sense of fear among owners and tenants.

COMMITTEE MEMBER MATHUR: Okay. Thank you. That's really helpful.

And then I also have a question about the housing market. And, you know, several years ago private equity funds starting getting into the for-rental -- the for-rent housing market. And curious of how that has manifested and how that has impacted the real estate -- the housing markets more generally but also our portfolio specifically.

MS. FIELDS: You know, the institutional ownership of single-family homes is still quite a small piece of the overall housing market, in the U.S. especially, and we kind of continue to watch that. The early move was when housing prices were recovering, and the institutional owners were buying those and then realizing yields on those as the market prices recovered. And it's become much more an operating business now, and there's still challenges within that business model around maintenance and leasing and all those types of things. But I would say the impact on the overall single-family housing market has been -- is still really almost negligible, quite small. And we're still seeing a lot of recovery in housing prices.

Does that answer your question?

COMMITTEE MEMBER MATHUR: That does. Thank you.

CHAIRPERSON JONES: Okay. Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: A number of

questions.

In your report the very first line is that: "Real estate space markets' cycle continues towards equilibrium." But when I read it, it's not clear to me what you meant by that.

MR. GLICKMAN: By that we mean, and Andrew's chart that showed the declining vacancy rates in each of the four primary property type sectors show, that the demand for space is approaching the supply of space. And so vacancy rates are falling. And occupancy rates are rising, to the point where on the margin, it makes sense selectively to see new construction. We haven't seen the kind of new construction bulges that we saw in earlier parts of the cycle, for a number of reasons, including reasonably strong underwriting by construction lenders. And so we are seeing as a result of that tightening in the space markets increases in rental markets.

Now, there's some exceptions. The class C mall is not seeing a lot of rental rate increases. But CBD office buildings are seeing increases in rent, warehouse space in particular is seeing increases in rent in properties that are located near transportation centers, apartments -- monthly rents have modulated some but they continue to increase month after month, year after year.

And so that's what we see in the primary space markets, and that leads us to the conclusion that the supply-demand is moving more towards equilibrium.

COMMITTEE MEMBER JELINCIC: Then when I look at your point five about increased value, what I'm getting out of that is that we're not going to see the kind of appreciation that we have seen in the past.

MR. GLICKMAN: We agree, and we said that last December we continue to believe that to be the case. If you try to differentiate between the fundamentals of space occupancy and vacancy and rental rate as one of the major determinants of what's going to happen to value, and you look at a second determinant, which is the amount of capital that's available, like private equity, as Christy said, there's so much money available to purchase completed and substantially leased properties, that we don't see too much of a diminution in prices coming in the next 12 to 24 months, because if there were to be some movement down in prices, there's plenty of dry powder to soak that up.

So we do see continued demand for finished goods on a part of institutional investors, CalPERS being typical in that regard, and so we would expect that prices will continue to be firm. They may not increase at the same rate that they increased between 2010 and 2015.

COMMITTEE MEMBER JELINCIC: And how about income?

What I'm hearing is income's going up even if the price of the appreciation is not as great. Am I hearing that correctly?

MR. GLICKMAN: You are. And, remember, there's sort of a tautology involved to what your income returns are going to be because every year you reappraise your property values and the amount of income is figured as a percentage of that new value, and it's going to be pretty close to first-year cap rates year in, year out. That's just the way it's calculated. So you're going to have a fairly consistent, call it, 4 1/2 half to 5 percent, maybe 5 1/2 before CapEx, as an income return on the value as determined by the appraisals. And then from that you subtract the annual management fee. So it's going to deliver somewhere in the high 3s to low 4s of a contribution with which the fund can pay benefits.

COMMITTEE MEMBER JELINCIC: Okay. So the cash coming in will continue to increase because -- which is in some ways more important than appreciation because our members tend to want cash, not appreciation.

MR. GLICKMAN: In the short term for your checking account, yeah, that's correct.

COMMITTEE MEMBER JELINCIC: And then on top of page 3 you talk about the uncertainty in grocery- and convenience-based shopping centers. As you know, we have a manager who's very, very big on that. How is that portfolio doing?

MR. GLICKMAN: The grocery store portfolio's performing well. The occupancies are in the mid nineties throughout. The manager's very active in recapturing tenant spaces of people who aren't performing well enough to pay percentage rents. And because the locations are in major cities, major metropolitan areas where they focus on the trade area in a 3-mile circle around the grocery store, and those are in all cases above average income levels, this continues to be a good performer for you.

COMMITTEE MEMBER JELINCIC: Okay. So they're actually doing better than that segment as a whole?

MR. GLICKMAN: Yes, they are performing better than the average grocery store nationally across all metro markets.

COMMITTEE MEMBER JELINCIC: And the bottom of that page you talk about how we underperformed the benchmark -- and that's largely a result of, you know, the big crisis we had in real estate. But wasn't that crisis also reflected in the benchmark?

MR. GLICKMAN: No, because your benchmark doesn't include the same level of leverage that your portfolio has historically had and continues to have. The benchmark --

COMMITTEE MEMBER JELINCIC: Then it wasn't even worse then.

MR. GLICKMAN: The benchmark also diverges from your portfolio because it doesn't include the kind and number of non-stabilized development assets that you traditionally have had and are no longer seeking to any great degree. And the third place the benchmark diverged from your portfolio is the benchmark didn't have assets outside the United States. And that's where there has not been the same level of recovery that there has been in North American assets.

COMMITTEE MEMBER JELINCIC: And then on page 4 down at the bottom, you tell me that, you know, per staff's analysis. Do you agree with that analysis or did you do your own or --

MS. FIELDS: This is data that comes out of the AREIS information system. So a lot of this is not really subject to a whole lot of interpretation. It's really looking at some of the individual separate accounts and how they performed relative to the rest of the portfolio and the benchmark. And we just take a look at what those strategies were and what strategies happened to have a particularly good run for that period of time. But there's not a whole lot of subjectively around it.

COMMITTEE MEMBER JELINCIC: Okay. And I will tell you, most of the other questions I had here you answered in your presentation. So thank you.

MS. FIELDS: Thank you.

CHAIRPERSON JONES: Ms. Hagen.

ACTING COMMITTEE MEMBER HAGEN: Thank you. And actually I had a comment for Wilshire. I wasn't quick enough on my button earlier.

I wanted to thank you, you and staff, as appropriate. I'm not sure the role there. But this was the first time that I had seen an attribution analysis in the review at least in the last couple of years since I've been on this Committee. And I really found that to be quite helpful in reviewing the trust level. And so I just wanted to thank you for that. I think that's a really important tool for our Board members and for staff, and I hope to continue to see that as we move forward.

I noticed it was a quarterly report. And so, you know, to our discussion on, you know, long-term performance being more important than the short term, I would hope that we would see more of that long term as we go.

MR. JUNKIN: We have three versions of it, because one wouldn't be good enough.

One is the most recent quarter, one is calendar year to date, and then one is fiscal year to date, which in this case is a full year. We can look at adding longer-term time periods.

ACTING COMMITTEE MEMBER HAGEN: That would be great. Thank you.

CHAIRPERSON JONES: Okay. That concludes the questions for PCA.

We will now go to StepStone.

MR. MITCHELL: Hi. Danny Mitchell from StepStone.

I wanted to cover three key topics today, but I can cover anything the Committee would like to.

One is the investment performance of the infrastructure program.

The second is the current investment environment including how some of your peers are accessing the market in a pretty difficult investment environment, to be honest.

And also the status of the fund-raising environment. Well, I think the status of the fund-raising environment probably less relevant in infrastructure than perhaps some of the other asset classes, because in the current environment fund manager, I'm really able to access core infrastructure, which is the hallmark of your program. And I can get to why, as I go through our comments.

With respect to the performance of the program, it's outperformed for the year to date, and also in the 3- and 5-year periods substantially above the benchmark, which historically has been CPI plus 400 basis points. In the fiscal year ended June 30th, it was 9.92 percent, of which about a third was attributable to net income and the rest to net appreciation.

Despite the difficult investment environment, staff did manage to make some substantial investments, growing that from 2.6 billion to 3.8 billion, primarily through some core infrastructure investments in the U.S. and Australia.

But I did, during my time on the Investment Committee, noticed significant restraint. So there was certainly periods of time when the Investment staff stepped away from deals which would otherwise -- which were otherwise pretty expensive in the marketplace, and did trade even higher than they were willing to pay. So I did notice significant restraint.

In terms of the investment environment, as I said, it's extraordinarily competitive. In core infrastructure, it's probably in the 6 to 8 percent range, quite close to the policy benchmark, at the middle -- at the midpoint. It's driven by a number of factors, but it's primarily by the amount of capital that's being allocated to the space primarily by institutional investors such as yourself, but also sovereign wealth funds and insurance companies.

At the -- to achieve higher returns than that, investors are really taking like more risk around the business plans that they're willing to underwrite. So, for example, they might be taking direct or indirect commodity risk in the infrastructure assets that they're investing in, or they may be investing in platforms, and therefore, they're taking private-equity type risk in terms of building out a platform and essentially build to core in terms of their strategy.

With respect to peers of yours, I would suggest there's a number of interesting ways that people have accessed the market. Notable transactions include PGGM and John Hancock acquiring a U.S. utility from Macquarie, so essentially an infrastructure managing transferring assets to institutional capital by de-risking that platform.

Other examples include private equity selling to infrastructure. So a notable transaction during the period was AIMCo and AES acquiring a stake in sPower, which was firmly held by Fir Tree. And that was essentially a solid PV development company.

Although it had some assets, it was definitely a platform investment, with actually AIMCo taking some comfort in the fact that they're investing alongside a strategic in AES.

Other trends I think which are interesting are strategic investors taking money out -- off the table and investing alongside institutional capital. So John Hancock invested alongside Exelon in their renewable energy platform several months ago, which I think is an interesting example of strategics becoming increasingly comfortable that they can partner with institutional capital given similar investment mandates, and in terms of the requirement to be long-term investors. So I thought that was an interesting trend.

I think finally I would highlight that people are expanding the definition of infrastructure. So despite the fact that CalPERS' program is primarily focused on core, institutional capital and fund managers have, for example, been sending me investors in data centers during the period. And that's clearly an expansion of where infrastructure at least used to be. Perhaps it's more real estate than infrastructure historically. But both institutional capital in the form of PSP and TIAA-CREF and also fund managers in the former have invested in data center platforms.

In terms of the fund raising environment, it's still quite robust. $20 billion was raised in the first six months of this year. That's down from last year, but then two large flagship funds closed in terms of Brookfield and GIP. It's increasingly competitive for LPs to get allocations, so funds are being raised very quickly and also being oversubscribed. But those funds, given the nature of the environment, are more focused on value-add and opportunistic, perhaps not as focused on where CalPERS wants to be in the marketplace.

That was my comments. Any questions?

CHAIRPERSON JONES: Yes. Okay. Thank you for your report.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah, on toll roads, other than the management fees, the people who make -- who tend to make the most money at it are the second and third owners. There's some of that in real estate as well.

So my question is, what have we been doing in terms of looking at take-out of some of those structures?

And the other reality is we've got funds that are now reaching the end of their lives, and it's actually an issue the U.N. raised a few years ago, of they're trying to get out and there's no real permanent capital there.

So what are we doing in terms of looking at basically being the take-out for some of this stuff once it's well established?

MR. MITCHELL: I think it's -- my sense of close-end fund exits, if it's for a controlling position, is it's very difficult for the existing owners to not take that to market, because they have a fiduciary obligation to sell to the highest bidder effectively.

So I think it's useful for CalPERS staff and other investors to have relationships with close-end fund managers who do -- are at the end of their investment period. But I suspect that whatever comes to market is going to come through an intermediary, so you're probably not going to have a quite step up.

Where you might be able to generate some investment opportunities and get some value and potentially be in a position where it's not as competitive is where fund managers or other institutional capital own minority interests. Relatively small stakes, but that by themselves are not attractive to a broad group of investors. And in that circumstance, I can see limited auctions or club deals under that. But I don't think -- I don't think you'll see a lot of close-end investments that aren't going to come to market.

So Macquarie when they sold Duquesne went to a limited universe, but still went to a significant universe, and I'm sure spoke to CalPERS staff at the time.

In terms of toll roads, I think a number of --

you're right, I think particularly traffic risk toll roads, you will have quite often overestimated. There's an overestimation bias during the initial investment often, particularly if the road's in a ramp-up phase. So, you're right, the second or third investor typically makes more money. And that's the case with Northwest Parkway, which recently traded in Pocahontas, which recently traded -- at least with respect to Northwest Parkway, the original investor essentially lost most of their money.

There's other assets that are in bankruptcy. So there is a chance to take some of those -- make some of those investments as they come out of bankruptcy proceedings.

COMMITTEE MEMBER JELINCIC: Thank you.

CHAIRPERSON JONES: Okay. That concludes the questions for StepStone.

We will now move to Meketa.

(Thereupon an overhead presentation was Presented as follows.)

MR. HARTT: Good afternoon. Steve Hartt from Meketa Investment Group. I'm very happy to provide our inaugural private equity report for you all, and happy to take questions any time through the presentation. I promises not to go through every slide. I will take only a few of them along the way here.

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MR. HARTT: So starting with the overview here -- oh, I'll make one other pre-comment here as well, is that just the nature of the asset class, there's not a lot of changes that happen in the portfolio or the performance from one 6-month period to another. But I will try to highlight some of the differences and the changes that have taken place during this period.

But just as an overview here, CalPERS does have an 8 percent target allocation. Right now -- that's the allocation interim target right now, with the overall target at 12 percent.

Right now just about 300 investments, just about $26 billion of value at this point. And about $15 billion is unfunded capital. So giving a total exposure to the private equity class of about $40 billion.

And these next facts are not much different from one period to the next, but the buyouts is the largest exposure in your portfolio. In particular, the large and the mega buyouts are a very significant portion of that.

The United States is 63 percent of your portfolio. That's not changing significantly from one period to the next.

And fund investments are the largest portion of your portfolio, about 70 percent currently.

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MR. HARTT: In terms of performance, the portfolio continues to underperform the benchmark across all of the asset -- the time periods. That being said, there was a $1.9 billion value increase in the portfolio from January 1st to the end of June.

The program itself had a net positive cash flow, meaning that there was more cash received into the program than was paid out in terms of new contributions. And that totaled 1.6 billion dollars 1.5 billion dollars during the last 6 months. Over the prior year, that's been -- $3.8 billion of total net cash has been received.

The staff completed $1.6 billion of new commitments in the last 6 months, and over the last 12 months was $2.9 billion.

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MR. HARTT: Just a couple of quick comments about the marketplace. We've talked about a number of comments here. First I'd say that the -- in general the buyout markets have stabilized. The amount of transactions and amount of capital being deployed each year has stabilized over the last several years. The transaction values continue to increase. There's been a continued tilt towards larger transactions over time.

Also would note that in both the buyout and the venture market, that the rate of exits has slowed somewhat, and particular in the venture market has slowed quite a bit.

That being said, the venture activity has continued to be relatively high.

And fund raising, as we talked about here, remains quite robust, as limited partners continue to receive capital back and there's enthusiasm about the asset class, leading towards additional commitments for funds; and in particular the large and mega funds have been quite successful most recently.

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MR. HARTT: There we go.

So just looking at the portfolio overview. The allocations among the different strategies within private markets is basically on target. The diversification is within what has been planned within the target allocation ranges.

I would note that the amount of capital allocated towards venture is quite small, and continuing to shrink over time. There has not been much in the way of commitments to venture capital most recently.

I would say that the target percent of assets of the private equity represents in the total portfolio 8 percent is on target at this point. That being said, there are smaller amounts of commitments being made each year than what would support that level. So at sort of the rates that are going on today, we would expect that the allocation is going to start to shrink unless there is additional capital deployed to private equity.

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MR. HARTT: This is a list of your largest manager relationships. This gets presented every time. This list doesn't change very much. But one point I just wanted to point out here is that the concentration in the top five managers continues to increase over time. Previously it was at 33 percent and now it's at 34 percent. And I would expect that this probably is likely to continue given the way the staff is allocating capital.

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MR. HARTT: This is a chart showing the contributions and distributions over the last several years, the last 12 years. And it can show that -- with the green lines down, that's the amount of capital being contributed into private equity funds; and the maroon lines on top showing the amount of distributions that CalPERS is receiving back, and that the line there is showing the net number.

And over -- since 2011, CalPERs has received over $28 billion of net cash from their private equity investments.

This has slowed down, as you can see, a little bit in the last year or so. There's various explanations for that. One of the things is that essentially the private equity snake has nearly completed digesting the antelope that represents 2006 and 2007 deals that were done. And that set of portfolio is being worked out, and so it's just leading towards less distributions. So that would be an anticipation over the next couple years that that's -- the rate of distributions is likely to increase just from that particular factor.

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MR. HARTT: This is the chart showing the value change over the last six months. There was an increase of about a half a billion dollars in the net value of the plan. And that has been impacted by the amount of contributions was made, $2.3 billion; you had net cash back of 3.7; and the value changed during the time period of $1.9 billion.

Just to illustrate, the last six months, the prior before that, the contributions were a little bit higher at $3 billion, but the distributions was much higher at $6.7 billion. And there was a positive value increase the six months prior at 1.7

So it's just showing that the contribution distribution is becoming more in line with each other.

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MR. HARTT: In terms of the strategy performance here, I think that we'd all had discussed that at the end of the day the one-year numbers are not particularly meaningful in this asset class. But just to point out a few things, that the portfolio itself, the performance on all the time periods except for the 10 year has improved since the last six months. So the portfolio has shown some improvement especially against the benchmarks, the margins differential between the benchmark and the portfolio performance has shrunk somewhat across the time periods.

The one year -- just to mention on the one-year time frame, the private equity portfolio doesn't -- in the rising equity market doesn't receive as much benefit as the public portfolio in the rising market. That being said, the performance over one year on private equity was quite strong. If you recall, that this figure six months ago was at 6.6 percent and six months before that it was 1.7 percent. So it's been quite a strong improvement in the one-year number for private equity. That being said, it still has not caught up to what the public markets have done.

One further comment here, I guess two. It's easy to see there that the venture portfolio has been a relative drag just looking at the numbers. It's a small part -- relatively small part of the portfolio so it doesn't have as much impact but it has been a drag. And one other sort of data point we didn't put on this chart here, but that's a peer analysis. How did other private equity investors do during these time periods?

And the CalPERS portfolio is more or less right on the median returns of -- from the peer private equity investor perspective.

--o0o--

MR. HARTT: Last comment here. The staff, as I mentioned, made commitments in the last six months. These are the three managers that they had committed to, totaling about 1.6 billion. And as I mentioned before, for the total fiscal year 2017 -- '16-'17, it was $2.9 billion.

Happy to take any questions.

CHAIRPERSON JONES: Okay. Thank you for your report. We have a few questions.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Yes, thank you. So you were pointing out -- sorry, now I don't recall exactly which slide it was, but the -- oh, sorry, slide 27 -- that we've -- that our portfolio has underperformed our benchmark in every time period, which is obviously distressing. Now, we've -- the benchmark has always been somewhat problematic. What is the appropriate benchmark has always been an outstanding question. But could you discuss a little bit sort of to what do you attribute that? Do you think there are opportunities to improve the performance of the portfolio?

You know, one of the things we've also done over the last couple of years is to concentrate this portfolio. In your assessment, has that been an effective, successful strategy, or should we reconsider that? And -- so maybe I'll start there. I have a number of questions but I'll start there.

MR. HARTT: So we are continuing to get up to speed on kind of the portfolio composition and the strategy that the staff has executed over time. So I don't have full answers, but make a couple of observations.

Certainly the efforts that the staff makes towards reducing fees is always going to be beneficial. And so that has continued to be a strong effort on the staff side of things.

The other -- just commenting about, does the strategy that's being executed, is it being effective? Well, the peer index -- because the CalPERS portfolio has more or less met what the peer index has done, it's not far off, right? But you have to say it's not far off. Could there be things to do things differently or better? Potentially so. So have to kind of see a little bit more, get some more details on that to have some further comments on that.

COMMITTEE MEMBER MATHUR: Okay. The other thing that I find somewhat concerning, and you mentioned it, is that our -- that we're sort of -- our pace is slowing. And I'd actually like to see it increasing. And I know that the opportunities -- maybe there are fewer opportunities. But maybe you could speak a little bit more to that and whether you think there's the potential -- have we hit our capacity or is there a potential for us to increase the money going out the door? Particularly given that I think, as I understand it now, we are actually in a cash flow positive situation, not just in private equity but sort of generally with our fund, and so the need -- so reinvesting the distributions would be helpful.

MR. HARTT: Right. So this is a situation, a circumstance that's affecting lots of investors today, because of the desire to have a certain allocation exposure to private equity, private markets, and that there's been more capital coming back. And so it's kind of like running up the escalators that are coming down, right? It's very hard to do.

There's obviously a discussion at the off-site about business models. I would say that there are -- there are challenges to being just a fund investor and deploying much more than 4- or $5 billion a year. It's just hard to do.

That being said, can there be other things in terms of separate accounts and more co-investments and things of that nature? Potentially.

That's things that I'm sure -- I know that staff has looked at, various separate accounts. I've talked to them about that. I've not seen something come through in the last several months since we've come on board. But there can be some other things to be done. But I know that they're working hard, they're being very selective, looking through the list of investments and the -- they're not doing just everyone that comes through. They're scrutinizing very carefully. And there's some that just don't pass muster, and that's a challenge.

I'd say there's also an additional factor. CalPERS being one of the largest investors, there can be some times when even a manager that's raising more money and if they're very attractive, they may want to get additional investors and there can be times when CalPERS doesn't get all the allocation it's looking for.

So it's just some of the artifacts of being a fund investor can be now the challenge is to get the capital out the door.

COMMITTEE MEMBER MATHUR: So would that then argue against concentration if we're not able to get the kinds of allocations that we might want from the selective few managers we might have part with?

MR. HARTT: I think that the staff is considering those aspects. I think that they want to be open to opportunities and that if there are good managers that don't happen to be on the list, then they consider those and there can be exceptions to it.

That being said, the managers that are the ones that are focused on are high quality managers. They've been researched, they've been thought through. Those managers are high quality ones and it makes sense to have a lot of capital to those.

That being said, there may be additional ones and ones to consider further.

COMMITTEE MEMBER MATHUR: Well, I recognize that you're still fairly new on this gig. And so I would appreciate as you continue to sort of assess and dig deeper, that if you could share with us your observations around the current strategy. And I'm sure you will do that.

MR. HARTT: Sure.

COMMITTEE MEMBER MATHUR: Thank you.

CHAIRPERSON JONES: Your comment about the off-site, about Mr. Eliopoulos and staff presented different business models on private equity, and Ted has indicated he's going to bring back a plan to look at these various options. Have you been involved in any changing business models in private equity space since you've been with Meketa? Or before Meketa?

MR. HARTT: So the different investors that we work with at Meketa have some variety of models. I'm just thinking about from a policy perspective in terms of that. This is a ship that takes a lot of time to make a turn, to make a policy change sort of, voila, the type that we're discussing in the off-site.

So we've not done it as extensively as what you're describing here. There have been -- I would say that more of the activities we've been involved in have involved looking at different types of opportunities to add co-investments with, to add secondaries or to do additional investments, to do separate accounts. So it's more incremental and additional as opposed to really having as a substantial as being considered for the business model here at CalPERS.

CHAIRPERSON JONES: Okay. Thank you.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: I have a question that goes to 7, but I'm going to hold off for the time being because we're already on 27.

On 28 you talk about how it's mostly attributable to appreciation of investment of fund management company.

MR. HARTT: Right.

COMMITTEE MEMBER JELINCIC: Who's the fund management company that's driving the returns?

MR. HARTT: So CalPERS has investments in some private market managers that are publicly listed. And there is one particular manager that has had a substantial stock price increase, and that is still held within the CalPERS portfolio.

COMMITTEE MEMBER JELINCIC: And who is that? I mean if it's a publicly traded company, it's --

MR. HARTT: Apollo.

COMMITTEE MEMBER JELINCIC: Apollo. Okay.

On 29, one of the things that I notice is there seems to be a real difference between funds and our custom investment accounts. And why -- do we know what's driving that difference?

MR. HARTT: I'd have to defer to staff to get some more details of what's that. And I'm happy to spend some time to come back to you with the specific attribution of the differences.

COMMITTEE MEMBER JELINCIC: Okay. Because it seems to me that our custom accounts should be outperforming our funds, but clearly they're not.

And then -- on -- you know, on 30, I notice that emerging markets, you know, tends to be highly desirable. But on the other hand there are certain risks to it. Have we figured out what that looks like if we kind of risk adjusted those?

MR. HARTT: So when you say risk adjusted --

COMMITTEE MEMBER JELINCIC: I would -- well, I'm assuming --

MR. HARTT: Form an exchange? Leverage?

COMMITTEE MEMBER JELINCIC: All of those things. I mean, I assume that we're taking more risks in our emerging market funds than we're taking in our U.S. funds. Maybe a bad assumption.

MR. HARTT: I'm sure that there is different kinds of risks. So I've not been through the portfolio to see, but I would estimate that there is less leverage in the emerging market portfolio overall than in the U.S. So there's -- from that perspective, there's probably more tilt towards growth. There might be younger companies that are there. So I believe it's a mix. I'm not sure there's the one particular answer one way or another whether there's more or less risk. There's probably different dimensions of the risk in the two portfolios.

COMMITTEE MEMBER JELINCIC: And then on slide 7, it's not particularly -- they've got a line there that is the exits. And I notice sometimes it's a dash and sometimes it's a solid line, and I know that that doesn't happen accidentally. Is there some significance to --

MR. HARTT: There's no significance to that. That's just an artifact of the formatting of the line.

COMMITTEE MEMBER JELINCIC: Okay. Thank you.

CHAIRPERSON JONES: Just to be sure that -- a follow-up on Mr. Jelincic's question on 29, look at trial list to follow-up on information.

MR. HARTT: Sure.

CHAIRPERSON JONES: Okay.

Ms. Hollinger.

COMMITTEE MEMBER HOLLINGER: Yes. Thank you.

This is a bit of a follow-up to Ms. Mathur.

So I -- what I'm also concerned with, when you delve deeper in the program -- and I'm not sure you have the answer yet because I recognize as well that you're new -- is what would it take? Do we have the staff? Because right now we have an interim program manager to increase our allocation. I want to -- if you could also speak to whether we're appropriately staffed to our process for underwriting deals compared to our competitors. And also what would interest me as well is to do co-investments. One of the things we've looked at is co-investment deals as a way to reduce our fees going forward. I don't know that we have now the staff to be able to underwrite those deals in the appropriate time period, because -- to speak to that process. And also what it would take in your estimation for us to be able to do that and to increase our allocation.

Because I hear two different things. I sometimes hear that, you know, just that there's so much money on the sidelines that you can't deploy it fast enough with deals being harvested. But I also want to make sure that we're getting the calls --

MR. HARTT: Right, right.

COMMITTEE MEMBER HOLLINGER: -- when there are opportunities.

And similar to Ms. Mathur, I have a concern, if we're looking to deploy additional capital into this asset class, whether our strategy of concentrating into fewer managers makes sense.

MR. HARTT: Right. Well, just on that one point there, by having a concentrated set of managers, there is a risk, there is the situation where you're beholden -- to deploy capital, you're beholden to their fundraising schedule.

COMMITTEE MEMBER HOLLINGER: Correct.

MR. HARTT: So if they're not in the market, then it's difficult to deploy capital. Yes, you can maybe look at co-investments or look at separate accounts and try to negotiate that. But just generically, if a manager is not fundraising, then there's less need for CalPERS' or other investor's capital. So there are some issues around that, how that goes.

COMMITTEE MEMBER HOLLINGER: And also we may get known that if you're not one of those people, we're not getting the calls --

MR. HARTT: Um-hmm.

COMMITTEE MEMBER HOLLINGER: -- you know, if you're not in that group.

MR. HARTT: So --

COMMITTEE MEMBER HOLLINGER: I don't know.

MR. HARTT: Right. So additionally, as I'm digging, learning on the --

COMMITTEE MEMBER HOLLINGER: I want to make sure we get the call.

(Laughter.)

MR. HARTT: Right, right, right.

So as I'm -- I'm learning about the program as well, that the way that investment opportunities come into CalPERS is through a portal process. So every investment has to come in through that process. And I've not looked at -- had a chance to look at it directly, but my understanding is that, you know, a manager has to fill out some particular set of information to make that happen. I know that staff does reach out to managers that they have some interest in and asks them to make, you know, make a preliminary proposal through the portal.

I don't know - I've not spoken to managers - as to how burdensome that is or what the issues are, whether it take a long time or not. I don't have that. But that's just --

COMMITTEE MEMBER HOLLINGER: Or whether people who aren't previously doing business with us feel that -- that it's really not open to -- it's not, you know a real opportunity for them.

MR. HARTT: I don't have the --

COMMITTEE MEMBER HOLLINGER: Right, I know.

MR. HARTT: Perhaps that's a survey question or things to go out and talk to people about.

COMMITTEE MEMBER HOLLINGER: Right.

MR. HARTT: Just on the comments of staff. CalPERS has one of the largest private equity staffs of managers of your size. There's a lot of experience in the staff. There's a lot of capabilities here. So I think in terms of number and the experience, there's a lot of people here.

That being said, there are open spots at some --

COMMITTEE MEMBER HOLLINGER: Right.

MR. HARTT: -- pretty senior spots; and looking to fill those in is going to be helpful to be able to work through investment opportunities in the right pace.

On the question of co-investments, there's different strategies that some investors take with that. Some investors just say -- raise their hand, I'm going to do every single co-investment opportunity that's presented to them; and just thinking, the idea, well, this is an opportunity to port more money with the manager that I like at lower costs.

Other investors will look at each investment opportunity very carefully, do their own research and do analysis and make investment decisions based on that.

That being said, the co-investment market is continuing to evolve in that there are more and more investors sort of of the CalPERS staff that are involving themselves in transactions before they are fully completed, and that they are -- they're kind of at the process of creation, and sometimes it works and sometimes it doesn't. But it's --

COMMITTEE MEMBER HOLLINGER: Right.

MR. HARTT: -- that's a move that some larger investors are making and that has implications for staffing, it has implications for authority to be able to spend money on investments that may not happen. There's lots of activities that are -- that have to be considered with that.

There's other ways of doing co-investments as well. You can sort of semi-outsource. If you can work with a manager that can help you identify and help you actually, you know, review the investments, you'll still have discretion on it, and then be able to make the decisions on it. So there's a way to not have to do everything internally.

So these are options and --

COMMITTEE MEMBER HOLLINGER: No. But once you finish your evaluation, I would like your insight on what you think is realistic given our staff, given -- you know, given certain constraints, et cetera.

MR. HARTT: Right, right. Sure.

And I have just one further comment I'd say, is that co-investments -- the -- by their nature, they don't end when you just write the check. You need to monitor them afterwards. Sometimes they require some additional capital. Sometimes you might be involved in the Board and have to get rid of the CEO and hire somebody else. So it's --

COMMITTEE MEMBER HOLLINGER: Well, then if we'd have to use somebody externally to underwrite -- you know.

MR. HARTT: It's part of the -- it's not just saying, okay, go do co-investments --

COMMITTEE MEMBER HOLLINGER: No, I get -- I understand that.

MR. HARTT: -- so let's do it the right way to go about doing that.

COMMITTEE MEMBER HOLLINGER: Thank you.

CHAIRPERSON JONES: I think we -- you know, there's a lot of theories and information sharing. But I think if -- perhaps we need to -- when we get into investment strategies, we need to have this discussion in closed session to get down to some -- answer some of the granular questions behind these theories. So we need to schedule it some time in the future.

MR. HARTT: Sure.

Okay. Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: This is not a question. It's an observation.

On page 32 of 45.

We have got the vintage years in the returns?

MR. HARTT: Yes.

COMMITTEE MEMBER JELINCIC: Going forward I would suggest that it would be helpful to add a column for IRR and Multiples. Because, you know, either one of those alone can be somewhat misleading. So I would -- and that's just a presentation issue I would suggest.

MR. HARTT: Understood.

COMMITTEE MEMBER JELINCIC: And this is towards staff. Back on 5a, Attachment 4, you gave us the private equity funds. And I would suggest that attaching vintage years and multiples would be -- would be helpful in terms of making sense out of that.

Thank you.

CHAIRPERSON JONES: Okay. Seeing no further questions.

We will break for lunch. And we will reconvene at 2:20.

(Off record: 1:20 p.m.)

(Thereupon a lunch break was taken.)

A F T E R N O O N S E S S I O N

(On record: 2:20 p.m.)

CHAIRPERSON JONES: I'd like to reconvene the Investment Committee meeting. And we will begin at Item 6, Program Reviews, Trust Level Portfolio Management Annual Program Review.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Okay. Good afternoon. Eric Baggesen, Managing Investment Director for trust level portfolio management.

(Thereupon an overhead presentation was presented as follows.)

MANAGING INVESTMENT DIRECTOR BAGGESEN:

Basically, this is the first time that this team within the Investment Office have put together any kind of a program review around our activities associated with asset allocation. And this also builds on some of the information that Wylie didn't really get to spend too much time speaking about in our prior agenda item, which is really kind of restructuring and risk functions within the Investment Office.

And basically what we've done with the trust level portfolio management team is to recognize that the activities that we engage in are actually part of the risk taking within the program. In contrast to just being sort of a passive activity, there's a number of dimensions that we're involved with that actually equate to that risk-taking element.

That's separation of the risk function from this team is a recognition of --

--o0o--

MANAGING INVESTMENT DIRECTOR BAGGESEN: Let me just move to the first slide. But that's a recognition of the fact that risk and its assessment and attribution really needs to be calculated by an area that is independent from any of that risking taking and the decision-making process associated with it.

So at this point, we don't really have -- there's not a tremendous amount of sort of like raw statistical or mathematical information in this. What we have is a repeat of some of the attribution information that Michael Krimm went through this morning.

Going forward, though, this team is responsible for a couple of bodies of work. And what we'll be having happen in the future is Wilshire Associates, as the general pension consultant, will, in essence, be assessing the things that this team engages in and actually doing some -- you know, rendering an opinion to you as a Board as to how well the team is executing on these activities.

The primary elements of -- or activities that we're involved in are, one, is working on the ALM process, which I think everyone is familiar with. And that's historically been the area that the trust level portfolio management team have been most engaged with the Investment Committee about.

Another dimension of what we're involved with though is this effort to more dynamically manage the asset allocation, and use the ranges around the target exposures with a bit more deliberation, in contrast to just simply letting those ranges drift.

A third level of effort is to assimilate the aspirational desires from the MAC Partner Program. I'm not sure how many of you as Board members remember Joe Dear when he created the MAC Partner Program, but a lot of it was around the idea of attempting to understand whether or not there were other alternative approaches to trying to invest this money into different structures that would basically hope to achieve the required rate of return with a different risk profile.

So basically, we're trying to assimilate that program, and in particular the knowledge transfer elements that were attached to the program, so that that really has a home at this point in time.

And then the last area I think that's a critical area for this team is to really act as a, I'll use the term, "integrator". We're very much attempting to pierce through the silos that exist within the Investment Office and to bring skill and knowledge from wherever it exists within the Investment Office to bear on some of these big questions and the big topics that really can affect the outcome to this fund.

So we view ourselves very much as a cross-functional -- oh I don't know, just, as I say, basically project manager, if you will, trying to bring different parts of all the different teams together and achieve basically a better outcome for the fund.

But that is actually quite a challenging task, given that the Investment Office probably has three or four, and maybe more, different cultures within it within its subteam. So that's a big piece of this sort of trying to move past the kind of siloed behavior that we've had in the past within the Investment Office.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: Just briefly, this is some of the kinds of information that you'll be seeing in the future. You'll be seeing obviously more graphical, more mathematical information as we really move forward. But everything that we're building within this team, we're basically doing side by side with Wylie and Michael Krimm and the performance assessment and attribution people, because we basically are committed to really understanding whether or not we actually have any skill.

And this is particularly relevant to the question of trying to more dynamically manage the asset allocation. We really do not know if we have skill in that effort. So that is a -- you know, we need to make sure that we have an attribution model that will help the organization and ourselves understand ultimately whether we have any skill in that area.

You can just basically see some of the, you know, similar kinds of attribution elements that Michael spoke to earlier. So I won't go back through this slide again.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: The team does have a significant number of accomplishments I think that were generated over the last year or so. Certainly, I think the work that we've done around benchmarks and roles and portfolio priorities, and all these different topics to try to help us focus on the things that are important to the organization are meaningful.

We do have initiatives that are coming up, so a big piece of the work that this team also has to do is to oversee the process by which we manage liquidity and leverage in the fund. And if you recall at the off-site in July, we were just speaking about the topic of leverage. And that's another element that fits into the management of the portfolio particularly around the sort of dynamic aspect around the targets that ultimately get established in our ALM process.

And I think with that, I'm going to stop and just turn this over to Tom Toth from Wilshire Associates. And we just asked Tom to do a -- just a -- you know, a first pass at thinking about this program as a program in contrast to just the function that happens within the Investment Office.

Tom.

MR. TOTH: Good afternoon. Tom Toth with Wilshire Consulting. In your Board materials, you'll find Wilshire's opinion letter going over the TLPM program. And going forward, as Eric mentioned, we'll be providing a very similar analysis that we do for the other internal program, such as global equity and global fixed income.

So as the letter states, Wilshire views the build-out of the trust level portfolio management team very constructively. The program has a goal of improving and formalizing the decision-making process at the total fund level with an objective of producing investment returns that help CalPERS meet their commitments while, at the same time, being very cognizant of all of the risks that are embedded in the portfolio.

Eric laid out some of the key areas of responsibility for the trust level portfolio management team, including coordinating the regular asset liability management process, looking at implementing some dynamic elements of asset allocation, things like liquidity management and rebalancing, high level portfolio strategy and research, which should feed across various elements of the total fund portfolio, as well as strategic planning and making sure that the direction the team is moving in is aligned with the long-term strategic goals of the plan.

It's important to remember that the roles and processes for the trust level portfolio management team are likely to evolve over time. As Eric stated, this is an evolution of the team. We think that establishing these more formal and centralized responsibilities should aid in improving decision making at the total fund level.

I'll end my prepared comments here with just a few points on governance and the team. I think a key point to keep in mind is that the investment delegations that are laid out in staff's presentation are always going to be governed by the total fund investment policy, which is regularly reviewed, revised by the Investment Committee. And this helps ensure that the overall portfolio's risk profile remains consistent with that, that is adopted in the formal asset liability management process.

Wilshire feels the trust level portfolio management team is adequately sized and well resourced for the tasks that they have been assigned, and will utilize all of the extensive expertise across the Investment Office to help move towards those goals. And we think it's this coordination and collaboration that is likely to be a key point as we look at the success of the trust level portfolio management team.

So with that, I'll stop, and I'll see if there are any questions.

CHAIRPERSON JONES: Yes, we do.

Thank you for the report.

And Mrs. Mathur.

COMMITTEE MEMBER MATHUR: Thank you. I want to make sure I understand one piece of this, and that is the dynamic asset allocation and the MAC strategy transfer.

I thought I heard you say, Mr. Baggesen, in your sort of comments that the purpose of this team was to be outside of sort of the risk-taking decisions -- oversee sort of the -- at the high level and be outside of the risk taking decision making. But I think this is actually money management, investment management. And so that is risk taking. And so I just -- I'm just trying to understand how you reconcile that.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Sure. No, we very much see this team --

COMMITTEE MEMBER MATHUR: Yeah.

MANAGING INVESTMENT DIRECTOR BAGGESEN: -- as being central to the risk taking. So what I was saying though is that the risk functions that used to exist underneath this team, those functions have been shifted over to Wylie and Michael Krimm from an --

COMMITTEE MEMBER MATHUR: I see.

MANAGING INVESTMENT DIRECTOR BAGGESEN: -- so they would be independent basically of those risk element decisions. So I think what's different --

COMMITTEE MEMBER MATHUR: Okay.

MANAGING INVESTMENT DIRECTOR BAGGESEN: -- is that, you know, we're recognizing the fact that some of the work that we do actually constitutes some of the risk-taking decisions.

COMMITTEE MEMBER MATHUR: Okay. So I think I misheard, and I didn't quite get it all from the presentation. So what you're saying is that this is no longer asset allocation and risk --

MANAGING INVESTMENT DIRECTOR BAGGESEN: Risk management.

COMMITTEE MEMBER MATHUR: -- management. The risk management piece has moved over to the back office, or the -- or to Wylie Tollette's line of reports.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: The independent office of the COIO.

COMMITTEE MEMBER MATHUR: Thank you.

(Laughter.)

COMMITTEE MEMBER MATHUR: COIO. Thank you.

(Laughter.)

COMMITTEE MEMBER MATHUR: The independent office of the COIO

(Laughter.)

COMMITTEE MEMBER MATHUR: So now you will be taking on risk. And how will you avoid -- I mean, I can imagine that there could be conflict between sort of the high level view and the individual asset class, how do you -- how will you manage that kind of like who's responsible for what and --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Carefully.

(Laughter.)

COMMITTEE MEMBER MATHUR: -- you know -- yeah.

MANAGING INVESTMENT DIRECTOR BAGGESEN: That's an interesting question. I don't think that we see that there's a conflict in that space --

COMMITTEE MEMBER MATHUR: Okay.

MANAGING INVESTMENT DIRECTOR BAGGESEN:

-- because, in essence, the aspects that underlie the elements that are brought to you as a Board, let's say, in the strategic asset allocation work, those same elements are the kinds of information bites that feed into whether or not you want to do something dynamic around that.

Now, we don't know whether we can add value with that dynamic element or not. But even if you can't, you still have to manage liquidity for the fund. You still have to manage what -- you know, however we structure leverage for the fund, even though that's not very extensive at this point.

There's a number of dimensions around this that actually still require some decision making. And that decision making basically again, we want to bring that -- make sure that those decisions are made from the perspective of the total fund, in contrast to being made from the perspective of any particular asset class within it. And I think that's the nuance of what we're really trying to bring is intent around the management, for example, of the ranges that we have.

Now, again, we don't know whether ultimately we'll be able to whatever time the market effectively to be able to add value with that activity, but some decisions will still need to be made.

COMMITTEE MEMBER MATHUR: And what size -- I don't -- maybe I missed it, but I don't see what's -- how -- how many assets do you anticipate this team managing.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Well, right now, if you think about the ranges that we have, let's say global equity, for example, the range is targeted I think at 45 percent currently right, but it's plus or minus seven percent around that.

So the question is, is what is the utilization of that seven percent? So this -- it gets into a number of different dimensions as to, for example, rebalance policy and contrast with tactical positioning policy, in contrast to who knows what.

What we're doing now is we're basically building a capability to manage the overall asset allocation in a small way - when I say small, it's a couple hundred million dollars - to basically just test out the structures around that and test out the process. So we're not doing anything that basically, you know, is going to have a meaningful impact to the fund at this stage of the game, but I think that that's one of the efforts to figure out whether this can be done or not.

COMMITTEE MEMBER MATHUR: Okay. All right. Thank you.

CHAIRPERSON JONES: Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes. Thank you.

Thank you for report, Mr. Baggesen. I'm -- I think I'm a little confused over I think the bottom here, "Major initiatives". It says, "Develop governance policy and operating model for total fund liquidity and leverage management". And I'm trying to -- I thought we were supposed to have that developed by now. So maybe I'm looking at it differently than you are.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yeah. Well, I mean, moon we already have some policies, Ms. Taylor, around, you know, liquidity management and leverage management. There's some reporting that happens in that. We believe though that that work needs to -- in particular, the leverage management, we believe that ultimately that needs to be done from a centralized location.

Right now, the structure of our policies have a lot of leverage language that's devolved down through specific programs in contrast to just happening at the total fund level. So that's a piece of what, I think, we intimated to you in July needs to be rebuilt. So basically this team has got to be the coordinators of the development of that with the involvement of the other parts of the Investment Office, and ultimately bring to this -- to this body a recommendation as to how that governance structure could conceivably work.

Ultimately, you control the definition of the policy and how that governance works. But it's, I think, up to us to bring you a recommendation as to what changes might be -- needed to be made in that. So that's a piece of the work that we have in front of us is to -- with respect to that.

COMMITTEE MEMBER TAYLOR: So you're still developing the policy, is what you're saying --

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yes, absolutely.

COMMITTEE MEMBER TAYLOR: -- at the fund level?

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yes.

COMMITTEE MEMBER TAYLOR: Okay. So that's where I'm a little confused, because I thought that that -- at this point, because we're a year in, we would have had that developed by now.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yes. I think what we said in July was that we believe that we would have a functional governance policy by the beginning of the next fiscal year, whether that's ultimately optimal is, I think, a question mark. But we think that we'll be able to make more rational the clean-up of the policies that we currently have where leverage language is all devolved down into different parts of the programs.

COMMITTEE MEMBER TAYLOR: So do you have a policy ready to go to show us?

MANAGING INVESTMENT DIRECTOR BAGGESEN: I'm sorry?

COMMITTEE MEMBER TAYLOR: Do you have governance policy ready to show us at -- from the trust level or not?

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yes, that governance policy will ultimately have to happen from the total fund perspective, because again right now --

COMMITTEE MEMBER TAYLOR: I'm asking if you have it?

MANAGING INVESTMENT DIRECTOR BAGGESEN: Do we have it? No.

COMMITTEE MEMBER TAYLOR: You're saying develop it. I'm -- and you said you should have it. In July last year, you said you'd have it by beginning of this fiscal year. Well, it's past this fiscal year.

MANAGING INVESTMENT DIRECTOR BAGGESEN: No. No. Just this past July, last month, I said we would have that -- we would have a workable version of that policy by the beginning of the next fiscal year.

COMMITTEE MEMBER TAYLOR: So in '18?

MANAGING INVESTMENT DIRECTOR BAGGESEN: Right.

COMMITTEE MEMBER TAYLOR: Okay. That I did not understand. So we should have something workable by 2018 is what you're saying?

MANAGING INVESTMENT DIRECTOR BAGGESEN: (Nods head.)

COMMITTEE MEMBER TAYLOR: So we've got five years and you're saying we're going to be two years in before we have a working governance policy? Because we --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Wylie Tollette, CalPERS staff.

Ms. Taylor, if I might, this relates to the governance of the asset allocation activities specific to Eric's program.

COMMITTEE MEMBER TAYLOR: Okay.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I'm wondering if maybe you might be thinking of the Global Governance Policy?

COMMITTEE MEMBER TAYLOR: I think I might be. I apologize. I apologize.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: And that, in fact, is the next agenda item actually is the global governance.

COMMITTEE MEMBER TAYLOR: Okay. I apologize. I did not realize that.

Thank you

CHAIRPERSON JONES: Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: When I look at the agenda item itself and Investment Beliefs, number 2, long-time investment horizon is a responsibility and an advantage. And I have argued, and will continue to argue, for at least a few more months, that we really don't take advantage of that. We have become so focused on volatility and what happens to the employer's contribution in the next calendar year, that we really have sacrificed some really advantages that we could have if we took a longer-term horizon.

So anyhow, that -- you've heard that before. You will hear it at least through the end of the year.

On slide 2, it's oversight function led by the Investment Risk and Performance, who's Investment Risk and Performance?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Good question, Mr. Jelincic. You met Michael Krimm earlier today. He leads the Investment Risk and Performance team. And they roll up through my office. The basic idea is that you want your score keepers and your referees to be separate from the players on the field. And so part of what Eric is talking about is essentially the separation of the risk measurement, running the risk model, running the performance and the performance attribution models, separating those out of the asset classes.

And now that increasingly trust level portfolio management is involved in actual risk taking decisions, as Eric mentioned, in other words not just helping to coordinate the activities of the every four-year ALM cycle, but managing the ranges in between those four-year ALM cycles, we, as an office, felt it would be appropriate to pull out the risk measurement activities, the risk attribution activities and the performance attribution activities, and cull them out into a group that isn't necessarily involved in sort of the playing on the field. We're more the score keepers and the referees.

COMMITTEE MEMBER JELINCIC: I appreciate that. In fact, I would suggest going a step further and taking compliance and put it over in ECOM, and really get it away from the asset classes.

On 3, there's that large black bar. What did you wipe out or what -- what's the bar?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I think that's just a separation bar.

MANAGING INVESTMENT DIRECTOR BAGGESEN: No, I was just checking with Bill McGrew basically --

CHAIRPERSON JONES: Your mic.

MANAGING INVESTMENT DIRECTOR BAGGESEN: I'm sorry. Excuse me. There's really nothing that's been wiped out. I just wanted to confirm that with Bill basically. It's just a separation bar on the graphic.

COMMITTEE MEMBER JELINCIC: Okay. Because it looks like you stole this chart from some place else and said this column isn't relevant, so we are not going to talk about it.

So, yeah, on -- in the appendix on 11 is where we -- you don't have to go there, but that's actually where we're focusing on, and what we're not focusing on really is long-term returns.

It goes back to my introductory comment that we need to take advantage of our ability to take a long-term. Thank you.

CHAIRPERSON JONES: Okay. Seeing no further questions on this item.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Thank you very much.

CHAIRPERSON JONES: Okay. Thank you.

We will move to Item 6b, Corporate Governance Update.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Great. Thanks, Mr. Chair. I will provide some introduction while we get our team on the field here. I think we've Anne and Dan and Simiso. I'll give you time.

This is an update report on corporate governance.

(Thereupon an overhead presentation was Presented as follows.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: This is a update report on corporation governance. And in particular, the update will focus on proxy voting activity during the second quarter of 2017, progress on shareowner campaigns, and ongoing corporate engagement initiatives.

Before I turn it over to Simiso, I think with respect to the strategic plan for global governance and sustainability, I think we're one year into the plan and we're largely, I think as you'll see in this report, on track and very aggressively pursuing the priorities of the plan. And you'll see more of that in terms of our activities on climate change, on diversity, and on majority voting.

In terms of the global proxy voting, here we're also about one year -- we were here last year talking about the integration of these corporate act -- governance activities into the working of the Investment Office as a whole, and particularly our global equity plan.

And there I would just underscore in terms of the proxy voting activity, which Simiso will discuss shortly, we've made some governance changes in terms of who we operate. And particularly, we've talked to you about the global governance and sustainability working groups that we've established within the office.

Simiso leads the proxy voting working group, which is in its first year of existence, and it has membership from various parts, not only of the Investment Office. We have staff people from our global equity, our global fixed income, and our private equity team, as well as our sustainability team, Anne's group. But in addition to that, we have a representative from our Legal Office and from our Public Affairs Office.

So this is the first year that we've tried this new governance structure. It's meant to review the proxy voting. And this working group, of course, reports up to the overall governance and sustainability subcommittee that Dan and Anne co-chair.

We'll go over the results for this quarter and for the year. And I think it's -- it will be interesting as time develops to really gauge how effective the integration of these activities into the overall office is. I know one question that we often get from Committee members is does anything change when you're trying to integrate ESG and other things into the office? Are there results that are different than before? Those are questions that we'll be looking at over time for sure.

I think in this particular period, Q2 period, I think one of the things that we do see -- and again, I'm probably going on farther than -- longer than I was ex -- anticipating, so I'll get it to Simiso real quickly here.

But we'll see in the area of actual proxy voting, at least for this quarter, we have a lesser percentage of votes in favor of both management and shareowner proposals. So I think we'll want to keep our eyes on that, and see why that is, and what the attribution is over time, whether that's a product of this working group really coming to bear on proxy voting decisions, where we haven't had the eyes and ears of the rest of the investment office, and whether or not it's, you know, meeting our objectives or not.

So with that, Simiso, I want to turn it over to you. I'll give you the clicker as well, if you need that. And we'll turn to the quarterly update.

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INVESTMENT DIRECTOR NZIMA: Thank you, Ted.

Good afternoon, members of the Investment Committee. Simiso Nzima, Investment Director, Global Equities.

I'll jump straight into the presentation starting with slide 3. Basically, with this slide, what we're showing the statistics around company meetings, total resolutions, management proposals, and shareowner proposals.

I won't go deep into the actual Q2 statistics, but just to expand on what Ted said in terms of the support levels for shareowner proposals and management proposals. Staff applies the governance and sustainability principles uniformly across all proposals, regardless whether they're coming from management or shareowners.

What you see here is realty the artifact of applying those uniformly. However, what also tends to happen is with management proposals, really you're dealing with commonly presented item, that is items that are generally voted on at every annual general meeting, such as board elections, share -- audits ratification. Whereas with shareowner proposals, really a lot of these are emerging issues. You're dealing with situations where some of them are too prescriptive or the language is not as clear.

If you actually break this down in terms of the regional aspects of it, in the U.S., we actually supported about 81 percent of shareowner proposals. Whereas, in the international market, it was much lower. And that can be attributed to again in the U.S. when you look at the regulatory framework in terms filing shareowner proposals, you have to go through the SEC in terms of the companies can get no-action letters.

Whereas, if you look at international markets, we don't have the same framework. So we have one example whereby in Sweden, you know, one retail shareholder filed about 350 proposals, you know, in one season. So about 15 proposals per company. So you don't have that.

So internationally, we tend to have lower support levels, because of the difference in terms of the language.

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INVESTMENT DIRECTOR NZIMA: Moving on to slide 4, here really, we're looking at the shareowner campaigns. Proxy access campaign, we continue to work with New York City Funds in terms of trying to advance the adoption of proxy access by companies. On majority vote for director election, I'll talk about the long term here, where if you look over the last 10 -- over the last 7 years, when we actually started working with majority vote for director elections.

We've had 325 of the 350 companies that we've engaged actually adopting majority vote for director elections. And the difference there, if you look at the 25 -- the 16 companies are companies from this year's list where we're actually continuing to engage them. And about eight or nine companies fell off either through mergers and acquisitions or bankruptcies.

On climate risk reporting, in terms of the campaign, we reached a significant milestone in the U.S. when a shareowner proposal that we filed -- co-filed with some of our partners at Occidental received -- was the first one to receive majority support in the U.S. Subsequently to that, we have one at Exxon as well as PPL that actually received majority support.

And one thing to point out there, at both Occidental and Exxon we saw the large asset managers supporting these climate risk reporting proposals. At Exxon and Occidental, we saw BackRock, Vanguard, State Street actually voting for -- the average support levels in the 15 climate risk reporting proposals that were -- actually went to vote was 45 percent this year compared to 34 percent in 2016.

Our hope is that with the -- the support we saw coming from asset managers that this is -- this is the beginning and not the end that they actually will start to support more and more of these proposals and staff will continue to have outreach in terms of talking to the asset managers and in terms of the themes. And they will vote how they vote. But at least in terms of the building stronger relationship with them, staff will work on that.

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INVESTMENT DIRECTOR NZIMA: Moving on to slide 5, here, really what we're showing are the U.S. market trends for the 3 major areas in terms of the shareowner campaigns that we're running. The message here is that there's a lot of work that still needs to be done, especially when you look at mid caps and small cap companies on both majority vote and proxy access.

And there's still a lot of work to be done on climate risk reporting proposal. So that's the main message that I would like the Committee to take from this slide.

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INVESTMENT DIRECTOR NZIMA: On slide 6, we talk about the corporate engagements update, so the global climate 100. We are working on finalizing a memorandum of understanding. I think we have a date of August 17th, where we hope everyone will come to an agreement in terms of the engagement framework. And then -- and we'll be introducing the global climate 100 at PRI in September. And then we have a public launch at COP23 in November.

But basically here what we're looking at really is our engagements. We're trying to emphasize in terms of the framework that was developed by the Task Force on Climate-related Financial Disclosures, the TCFD, and really to think about the four main areas which is the Board -- which is board governance, the strategy, risk management, and metrics, and targets.

Our view and our strategy really is that we're going to engage companies to see how they're going to implement climate risk reporting based on the TCFD framework, and depending on how the engagements proceed, we'll use the tools that are available to shareowners in terms of what to do going forward.

On diversity and inclusion, we've been involved in a concerted effort in terms of trying to get companies to increase gender diversity on their Boards. And early July we sent about 504 letters to companies in the Russell 3000 that do not have gender diversity on their board. It's still early days. It's just been a month. The response rate so far is about 11 percent out of the letters that we sent out. And we've had calls with about eight companies, and we have about -- six of the companies have actually either added a director -- a female director or they indicated they would add, you know, gender diversity to their board.

Granted, I mean, some of much these were already in the works before our letter got to them, but still we count that -- you know, we count those on the list of immediate successes. Hopefully, when we come back to the Board in March next year, we have a much better reporting schedule on that.

On the enhanced focused list, as the Board may recall, really the last two years or three years of the enhanced focus list has been focused on Japan, where we've been engaging eight companies per year. But this year what we then decided to do, we transitioned the Japan engagement from just being focused on, you know, eight companies per year to a market-wide engagement, which is the Japan Board Independence Initiative.

And our view here is that this gives us greater market impact, and we're able to leverage our partnerships in terms of trying to get the Japanese companies to increase the level of board independence.

As you may know, 70 percent of companies in Japan have less than one-third board independence. And this is something which we are trying to push on to get the companies to increase the level of independence on their boards.

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INVESTMENT DIRECTOR NZIMA: I'll skip slide 7 and move on to slide 8. Here, we show the evolution of the CalPERS focus list going back to 1987 when the first corporate engagement began at CalPERS. And in 1989, when we're the first public focus list, which was the name and shame for it, that went on until 2011, and thanks to Anne who came and introduced the confidential engagement of focus list companies. Again, this is -- we've seen that when we engage privately and confidential, it's much more constructive, and companies tend to work better with us than actually doing a public name and shame format.

And then, 2015 is when we started working on the Japan engagement with eight companies per year. And in 2017, really what we're trying to do is really to transition the focus list really to move the thematic approach, which is in line with the ESG strategic plan, which the Board approved in August last year.

And by thematic approach, again I'm talking about the global climate 100 board diversity initiative, proxy access, majority vote, and so forth. And what this does really is that we move away from the narrow focus of the focus list where we're engaging between eight and 20 companies per year to actually broadening the focus where we actually now will be engaging about 1,200 to 1,500 companies per year across multiple themes.

And the advantage of this really is as we engage these companies, for example, when we're engaging a Global Climb 100 company, we may also be engaging the same company on majority vote, on proxy access, or it really helps us in terms of looking at these things in a thematic approach.

And furthermore, even when we engage with asset managers where we're trying to build strong partnerships, in terms of having discussions with them really it's much easier to talk candidly about themes, as opposed to, you know, a single specific company, because there could be compliance issues as far as, you know, what you can discuss about single companies.

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INVESTMENT DIRECTOR NZIMA: I think that concludes my presentation. And at this point, I will take any questions.

CHAIRPERSON JONES: Okay. Mr. Bilbrey.

Thank you for the presentation.

COMMITTEE MEMBER BILBREY: Thank you, Mr. Chair. So, Ted, you started off by talking about us putting forward proposals and the lack of proposals that were passed. I'm looking at the first slide where it talks -- where we kind broke them up under proxy, climate, et cetera. It seems in the past that we've had more success in getting proposals passed than I'm seeing what's going on in this chart.

Now, I know you say you're going to study and look at it a little further, but there's no -- nothing that you've seen so far as to why this is happening.

CHIEF INVESTMENT OFFICER ELIOPOULOS: I think just to clarify it a bit. In terms of shareowner proposals that we're supporting or we're a part of, those numbers have actually been going up as a slide later in the deck that Simiso went through. So on the shareowner campaigns that we're involved with, we're getting more and more successful over time. And all of the work that the team has done in building coalitions, and gathering support around, particularly these three strategic themes, has been successful.

Now, going back to page three, what I was noting is in terms of shareowner proposals that anyone might bring to a company or management proposals, what I noted just in this Q2 2017 vote cast is the percentage of our own votes in favor of either management proposals or shareowner proposals that anyone might bring - and Simiso talked about someone in Sweden brought shareowner proposals or otherwise - that the percentage of our support has come down somewhat on the management side and more so on the shareowner proposal side.

And I would like to know more about why that is. Is it the application of the working group's kind of consideration of the principles and what's presented. Or what I'm hearing Simiso say, it might be just in terms of the shear greater number of international shareowner proposals that were in this batch of proposals.

So we have more work to do. And it's something that I think going forward we'd like to bring perhaps some trend information to the Committee, so you can kind of see how these votes are going over time. And as we get more experience in this, we might -- I keep on saying might. I think we should bring -- we will bring more trend information unless the Committee tells us not to, and then more attribution as we look through and see what has changed or hasn't change, so we can help answer the question that has been asked, you know, many times, does any of this integration work change anything?

And at least this beginning stage, I don't know whether it's the integration work or whether it's just the number of international votes that we're casting, but I would like to bring more attribution to the Committee, so we can answer that more particularly.

COMMITTEE MEMBER BILBREY: So on Slide 4, let me just give a more specific under climate risk, one of the 13 proposals passed that we ran, is that correct? Am I reading that correctly on the bottom?

INVESTMENT DIRECTOR NZIMA: No. So one of the proposals that we ran the proxy solicitation that know that we filed. So they were filed by others. What we did was that we ran proxy solicitations at companies where we did not file.

But if you look at the level of support across the 15 climate risk proposals that were filed -- or that went to vote in 2017 that level was 45 percent, which was up from 34 percent in 2016.

COMMITTEE MEMBER BILBREY: Okay. Because I'm reading here CalPERS also ran proxy solicitations at 13 U.S. companies seeking implementation of climate risk reporting. One of the 13 proposals passed. So did we --

INVESTMENT DIRECTOR NZIMA: That is accurate, one of the 13 were --

COMMITTEE MEMBER BILBREY: Okay. So then what was the issue of only getting one out of 13 passed? What was our impediment there?

INVESTMENT DIRECTOR NZIMA: I think when we look at climate risk reporting proposals, really this is -- this is a new area in terms of, you know, the market actually getting traction to this. And a lot of investors I think are waiting for the TCFD framework, in terms of what they -- you know, how they're going to vote related to these climate risk reporting proposal.

So it really -- what is encouraging to us is looking at the trend, because when you look at the trend, in terms of the average support across all these proposals is really high, you know, much higher than it has been in the past.

MANAGING INVESTMENT DIRECTOR BIENVENUE: Yeah, just really quickly. Dan Bienvenue, Global Equity. Anne correct me if I'm wrong, but I don't think any of the climate risk proposals passed last year. We got one passed this year that we -- I'm sorry, that we filed. Last year, we did not pass at ExxonMobil. This year, we got ExxonMobil passed. We got Occidental Petroleum passed. We do see progress, and to Simiso's point, 45 percent up from 34.

So certainly not where we want to be. And pursuant to KPIs, we want to see ourselves, you know, get these passed. You know, to Simiso's point, we do think that by really working some of the asset managers now, as well as other asset owners, we think we're going to get traction. But there's a lot of work to do. This is -- you know, we said in the ESG strategic plan, this is a heavy lift, and it's a heavily lift.

COMMITTEE MEMBER BILBREY: No, I understand that. I just wanted the get some of idea what was the impediments going on, so we -- as we move forward, we have a better idea of what we're looking at.

And then looking --

INVESTMENT DIRECTOR SIMPSON: Could I -- sorry, Mr. Bilbrey --

COMMITTEE MEMBER BILBREY: Yes, anne.

INVESTMENT DIRECTOR SIMPSON: -- I just wanted to add a point.

COMMITTEE MEMBER BILBREY: Please do.

INVESTMENT DIRECTOR SIMPSON: I think when we've -- given the trends in previous periods, we've given the international picture. So what you might be remembering is that last year we co-filed three proposals internationally, Rio Tinto, Glencore -- help me. One missing. No, not BHP. No, we already had them.

Rio Tinto, Glencore -- three of the international money companies. I'm sorry.

I also want to say that we already had BHP Billiton had agreed voluntarily to do the reporting. And --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Anglo American.

INVESTMENT DIRECTOR SIMPSON: Anglo American. Thank you, sir. Wylie wins today's prize for exceptional memory retrieval.

Yeah. So we had -- and those were supported by the management of the companies, which I think was a very big achievement to actually get the management to say we're on the same side. We agree we need climate risk reporting. That was a big part of the engagement.

And the year before, we ran proxy solicitations at BP and Shell. So before we really put a big push into the U.S., we had five international companies where we'd gotten 90 percent plus votes in favor. So I think with that as the high water mark, then we came to the U.S. and we're dealing with a very different situation.

Unfortunately, we didn't have a single company where the management said, we agree let's do it together. So then we have a much bigger hill to climb. Even with the investment management community, because to support the shareowner proposal means voting against management advice. And I think that's why you see that we were starting from lower levels of voting support in the United States.

So just to clarify, this year, we ran campaigns at three companies and won the vote. One company we withdrew, which was Chevron, because we felt they'd made a best-in-class effort. It was sort of 80/20. In our opinion, we got 80 percent of what we'd asked for, but there's more to do, but we gave, you know, the benefit of the doubt to Chevron.

And I also want to say in addition to BHP Billiton, which have already agreed to do this, NRG, a major utility company, has also just published its first SASB compliant, and also TCFD compliant report. So something you won't see through the voting numbers is where we're actually making progress with companies that say we get it.

We don't want to have a fight at the ballot box. Let's work together and get the report coming through. So I think that really for me is very welcome, because it's showing in the United States that having management working together with the owners, you can actually make a lot more progress. It shouldn't -- it shouldn't really be something to be having a fight about, because this is really for the long-term benefit of the company, but it explains why we're -- we've got a bigger hill to climb in the U.S. Hopefully, that will change.

COMMITTEE MEMBER BILBREY: Thank you. That clarifies. One last question. On the appendix, under diversity-related proposals, and I want to make sure I'm reading this correctly. So we voted for 13 pay equity -- gender pay equity proposals. It talks about a high water mark of 18 percent, but this year in 2017 it appears we've gone down to 13 percent. Is that amongst all shareholders as a percentage of support for that type of a proposal has gone down?

Sorry, it's on page 12 of 13.

INVESTMENT DIRECTOR NZIMA: I'm not sure I understood the question.

COMMITTEE MEMBER BILBREY: So if I read this correctly, we've voted for 13 gender pay equity shareowner proposals, correct?

INVESTMENT DIRECTOR NZIMA: Correct.

COMMITTEE MEMBER BILBREY: And this talks about a high water mark of 18 percent. And the average level of support in 2017 was 13 percent. Does that mean all shareholders, from different companies, the support for that has now gone done? It's going backwards or am I reading that incorrectly?

INVESTMENT DIRECTOR NZIMA: No. So the high water mark really is the one company that was the highest --

COMMITTEE MEMBER BILBREY: Just the one.

INVESTMENT DIRECTOR NZIMA: -- that we got, and then the average is for all the other gender pay equity proposals.

INVESTMENT DIRECTOR SIMPSON: Apart from the ones that passed, because that's obviously a --

COMMITTEE MEMBER BILBREY: So just The Travelers Companies is what we're talking about, the high water mark.

INVESTMENT DIRECTOR NZIMA: I'm sorry?

COMMITTEE MEMBER BILBREY: I said so it's The Travelers Companies is the one that we're talking about. I just want to make sure there there's not all of a sudden sentiment that people are no longer in support of gender pay equity because that's a concern.

INVESTMENT DIRECTOR NZIMA: That is correct. That's correct.

COMMITTEE MEMBER BILBREY: Okay. Thank you.

CHAIRPERSON JONES: Okay. Thank you.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Looking at four of 13, I find this confusing. Looking at proxy access, the second bullet is New York City Funds basically filed 20 proposals. CalPERS ran the proxy solicitations. So we ran the solicitation for their proposal, is that what I'm reading?

INVESTMENT DIRECTOR NZIMA: That is correct. So we -- we've worked with New York City funds in terms of running these solicitations for the proposals, yes.

COMMITTEE MEMBER JELINCIC: Okay. So their proposal, we absorbed the cost of running the solicitation. Okay.

Climate risk reporting, 15 proposals went to a vote. CalPERS co-sponsored three proposals, two of which went to a vote, correct?

INVESTMENT DIRECTOR NZIMA: Yes.

COMMITTEE MEMBER JELINCIC: And then it says CalPERS also ran proxy solicitations at 13 companies. Is that in addition to the 15 climate risk or --

INVESTMENT DIRECTOR NZIMA: No., this is -- so we co-filed at three, and then we withdrew at Chevron, so that left us with two. And then we ran proxy solicitations at 13 other companies. So the two and the 13 that gives us the 15 total.

COMMITTEE MEMBER JELINCIC: Okay. So the 15 were filed altogether that went to a vote. Two of them were our proposal, because we co-filed.

INVESTMENT DIRECTOR NZIMA: That is correct.

COMMITTEE MEMBER JELINCIC: So there were -- and so presumably we ran a proxy contest for the two that we had co-filed. But then it says CalPERS also ran 13.

INVESTMENT DIRECTOR NZIMA: So the 13 were filed by others So those are not the ones within -- were not involved in filing those proposals, but we made a decision because those were companies that we were looking at as part of the global climate 100, and we decided to run proposals and put the solicitations at those companies.

COMMITTEE MEMBER JELINCIC: So we ran the proxy solicitation for all 15 of the climate risk reporting proposals.

INVESTMENT DIRECTOR NZIMA: That is correct.

COMMITTEE MEMBER JELINCIC: Okay. On page six, you talk about develop a memorandum of understanding document. What's in that memorandum of understanding document?

INVESTMENT DIRECTOR NZIMA: I'll let Anne jump onto that. Basically, this is where we're talking about the engagement framework with our coalition partners, but I'll let Anne jump onto that and explain more in terms of what is really contained in there.

INVESTMENT DIRECTOR SIMPSON: Yes. Thank you, Simiso. I'm glad to.

The Board will recall some 18 months ago that we carried out a carbon footprint in global equity, and came to the surprising conclusion that at that point 80 companies are responsible for about 50 percent of the emissions. And that was what we knew going into the Paris agreement.

What became clear in talking with other asset owners and other organizations is that because our portfolios are quite similar, we've probably got the same concentration of carbon risk, if you like, from an emissions point of view. And what we could do is team up and see whether we could work collaboratively. And in breakfast meeting which the Controller co-chaired with Scott Stringer New York City at the UN, we scoped out this idea.

There was very broad support and interest, not just from big investors, who attended, but also the main networks like Ceres, the European, Asian, and Australian networks plus the PRI.

So what we said was we would spend dome time together working out whether we could identify what the engagement strategy would look like, so that we could globally, as an alliance, ask for the same things of these companies, and really bring our collective influence to bear.

But also, we then had to have some governing document to work out the division of labor, and who's going to do what? So, for example, one idea, which is working through very nicely, is the idea that we will follow the local lead in a market. So if we're working in Japan, or Australia, or France, or the U.S., the local members of this alliance will be the ones who take the lead on the engagement, because they've got the knowledge and understanding of the regulatory frame work, probably speak the language, and have got a track record with the companies. So working out the division of labor was one part of it.

The second thing we wanted to agree was to misuse the term "terms of engagement". Would it be confidential? Would some -- would everybody be obliged to share information as it went along? How would we control the flow of information into the public domain or back to the companies? So we've -- we've worked all that out to ensure confidentiality.

And then the final thing was how would we govern this grand initiative? So we've decided that there should be a steering committee, which each of the regional networks will have their staff member on. Plus, each region will nominate an asset owner or an asset manager. And CalPERS has volunteered to be the investor for the U.S., which the others have agreed.

And also, we're working out how we can really connect very deeply with PRI, which covers many of the markets which these regional networks don't. For example, there's a handful of companies, one in Russia, India, Brazil, so that we can sort of mobilize the PRI network. So that's actually been a lot of very delicate negotiation.

And as Simiso said, we've got, what we hope will be, a final planning call at the end of this week. And if we can sort of dust it all off, and have it ready for PRI, that's the plan, because that will mean we can have a call to action for other investors to join us. Because our idea here is that we've got the Paris agreement, which is the global policy framework, now we need an initiative which brings the financial markets.

But organizing that is quite -- has to be done with some delicacy, and care, and courtesy, which is -- which is what we've been discussing with all these different groups. But I think we're nearly there. And I would like, you know, on the record say how much we've appreciated all the input and ideas from Ceres, and PRI, and IGGCC, and AIGCC, and AAIGCC.

(Laughter.)

INVESTMENT DIRECTOR SIMPSON: Seriously, these are the acronyms, the alphabet soup of wonderful responsible ownership.

But I think if these groups -- it's never been tried before. There's never been an effort to really organize investors around a common engagement strategy. We've practiced by having a shared statement, which is very powerful, in the run up to the Paris agreement.

But to say, right, we'll all roll up our sleeves and see with our common shareholdings whether we can move those companies in -- in a good long-term direction, that's -- that's quite a piece of work. But anyway, I think we've made good progress.

MANAGING INVESTMENT DIRECTOR BIENVENUE: And I just -- I would like to just add just a couple of quick things. Just two quick themes that both Simiso and Anne highlighted. One thing I will also say is that I don't think Anne can overstate the amount of time, and energy, and finesse that went into building this work. And I can say that, because I -- it wasn't my finesse. It was Anne's and Simiso's. So I can give them all the appropriate credit.

I will tell you that there was a lot of work there. So getting everybody to a place of confidential was one thing. And as Anne said, that's really critical to us, because that allows us to really work with management. But then the other thing is this collaboration and team work. And, Mr. Jelincic, this goes to your previous question on New York City filed a proposal, and then we ran the share -- the solicitation campaign. We actually think that's a critical component of what we do. What we care about is the outcome.

If we get some of these over the line, we just want to work as good team members, but different people take the lead on different topics. We're much more interested in seeing the outcome and playing to our strengths than we are about sort of, you know, only doing the campaign where we file.

We want to make sure that we just -- we get these across and we get the disclosure we need.

COMMITTEE MEMBER JELINCIC: Okay. So let me summarize what I heard, which may or may not be what you said. The memorandum of understanding is basically a agreement on what our goals are and who's going to do the work, and it was developed by that alphabet list that you gave us?

INVESTMENT DIRECTOR SIMPSON: (Nods head.)

COMMITTEE MEMBER JELINCIC: So I now under -- I now understand my question -- the answer to my question.

On eight, the history, you know, one of the things that -- you know, I've been around a long time, so I become part of the institutional memory. You know, when we did the name and shame, I mean, we always adopted that in closed session. We talked with the companies. If the companies were willing to cooperate, they weren't -- they didn't become part of the name. And then we went and filed proxy -- so I'm not sure that it is a lot different than what we're doing now.

But one of the things that always struck me as interesting, as part of the movement away from name and shame, was the Wilshire study that showed that the ones that we didn't identify did better than the ones we did identify, and has never been shown to my satisfaction at least is that the reason they did better was not that we kept it secret, but that they were willing to work with us.

So the people who were willing to work with us did better than the people not willing to work with us.

And I'm not sure that, you know, to come to the conclusion that they did better because we didn't expose it is coming to the right conclusion.

INVESTMENT DIRECTOR NZIMA: I'm not sure whether there's a question there, but I'm going to --

(Laughter.)

COMMITTEE MEMBER JELINCIC: You may be right.

Do you agree with the reason that they cooperate -- they did better was because they cooperated?

(Laughter.)

INVESTMENT DIRECTOR NZIMA: I think part of the explanation probably why the -- those were willing to work with us did better is ensures that they have a culture of inclusiveness and listening to shareowners and stuff like that. I think that's part of the -- at least, that's the way I rated that if a company is willing to work with us, it means it's a company which has management that really values shareowners, and their input, and the long-term value creation.

COMMITTEE MEMBER JELINCIC: Okay. And I remember in that era, we actually had -- one of the companies we picked was St. Jude. And they -- so they met with us, they agreed with us, they were willing to cooperate with us. And so we said, okay, we'll take you off the list. And the CEO went apoplectic, because he said that if he --

if we weren't on their list, he couldn't his board to do those things. So there is some advantage to that.

And the one other observation I want to make is when we finish this, I'd like to go back 6a for a brief point.

CHAIRPERSON JONES: Okay. We -- I -- we may want to do that between open and closed, but I'll talk to you about that.

COMMITTEE MEMBER JELINCIC: Okay. Just -- just so we -- I get to it before we close.

CHAIRPERSON JONES: Yeah. Okay.

My question goes to slide 6, diversity and inclusion engagement. Several years the then Controller Chiang challenged CalPERS and CalSTRS to create vehicles to include diversity on corporate boards. We did a lot of research and found that women and people of color on boards tended -- those companies tended to outperform those that did not have people of color and women.

We ask corporate America why don't you have more women and people of color? They said they couldn't find them. We then, under your leadership Anne, created a database, the 3D, that now there's a portfolio of over 400 people that meet that criteria of women and people of color.

My concern is in this statement -- and I support gender diversity. Don't get me wrong, but where are the people of color? It's absent from this initiative. And it was part of our fundamental effort from the beginning is that we were going to corporate boards to talk about women and people of color, and it's absent from this report.

INVESTMENT DIRECTOR NZIMA: Thank you for your question. So as we engage companies, the criteria that we use to identify which companies to engage really was gender diversity, so we had to have a starting criteria. But as we talk to companies, we -- we explain that really for us diversity is not just gender diversity. It is, you know, race, ethnicity, and the whole alphabet soup in terms of diversity.

So we encourage companies really not just to look at gender diversity. And as we -- at least some of the research that we've seen is that diversity begets diversity. So as you start adding people of diverse background, diverse ethnicities, and stuff like that, you tend to progress more on that -- in that direction. So hopefully, as these companies increase gender diversity on their boards, they also increase other forms of diversity on the boards.

CHAIRPERSON JONES: Yeah, but my point is is that if you don't press them to do it, they won't do it, because they haven't done it in the past. Here, you have a specific strategy for gender diversity, and I'm suggesting that what happened to the people of color strategy?

INVESTMENT DIRECTOR NZIMA: Point taken.

CHAIRPERSON JONES: Okay. Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: I think that will be an area of focus for us, and we'll come back to the Committee at the next report on ideas.

CHAIRPERSON JONES: Okay. Thanks.

Now my thing is gone. This mouse is not working. It's stuck.

VICE CHAIRPERSON SLATON: Batteries. Batteries.

CHAIRPERSON JONES: Well, anyway, it's going to be -- can you turn Ms. Taylor's mic on. She's next.

Thank you.

COMMITTEE MEMBER TAYLOR: Thank you. That's okay, Henry.

I was going to reiterate what Henry said. I thought that -- I thought it was a little lacking when I didn't see -- I saw everything about gender diversity. I saw nothing on race diversity in our diversity and inclusion. And I also didn't see that we are promoting our 3D. So I want to make sure that we are promoting our 3D that we work so hard to put together.

And then as to Mr. Jelincic, the name and shame. I work for an agency that names and shames and it works, but I will say that our Enhanced Focus List Program, I only see us working on -- let me make sure I'm not missing it here -- a strategy around Japan. Was there a reason for that focus? Did I miss out on that in a meeting? Did -- I don't know if Anne wants to answer that, or Ted, or Wylie?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Why don't we -- it probably -- I'll take a few of the ones that you just raised. So on the Japan focus list, yes, that was a strategy that came to the Board. It had a number of iterations. And I believe -- I'm not sure whether it was voted on by the Board, but direction to pursue this thematic focus list approach to Japan.

COMMITTEE MEMBER TAYLOR: For climate in Japan.

CHIEF INVESTMENT OFFICER ELIOPOULOS: To Japan.

COMMITTEE MEMBER TAYLOR: Because I think I saw climb too. Did I see climate too?

CHIEF INVESTMENT OFFICER ELIOPOULOS: That's earlier. That's not part of the focus list. But going forward --

COMMITTEE MEMBER TAYLOR: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- we're going to apply these thematic themes.

(Laughter.)

COMMITTEE MEMBER TAYLOR: Okay. Now how is that working?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Very well.

COMMITTEE MEMBER TAYLOR: Since you were focusing and you're doing a narrow focus, how is that working? Are you being more successful that way?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, certainly as large a market as Japan is, it's worked very well, because we've been able to collaborate with our institutional peers in Japan. We've been able to schedule engagements with Japanese companies in Japan. So for something as specific as that, but also, you know, it's our second largest market, it's been a really -- the experiment isn't quite finished, but it's going very well and has not only garnered efficiencies for us, but also impact in the marketplace.

The fact that we're focusing on this has been noticed, and I think we've gotten really good marks for how we've approached it.

COMMITTEE MEMBER TAYLOR: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So that's the focus list one. I thought maybe we'd let Anne cover the 3D --

COMMITTEE MEMBER TAYLOR: Sure.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- because I don't want that to get lost in the shuffle --

COMMITTEE MEMBER TAYLOR: Absolutely.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- because we've actually had some -- some successes of late. So maybe you can talk a little bit about that, and the fact that our Diversity and Inclusion Committee is also overseeing that transition.

INVESTMENT DIRECTOR SIMPSON: Yeah. Thank you very much, Ted, and thank you for the question.

Mr. Jones is absolutely right, we've spent some years working on this. And the question was always diversity makes complete sense. If only we could find diverse candidates. And that was really the whole inspiration by behind 3D. And 3D was not set up as a pool of women candidates. It was set up as a pool of diverse talent. And so although it is over two-thirds female candidates, we've made very strong efforts to form partnerships with organizations that are advocates for diversity, along race, ethnicity, but also gender identity and sexual orientation, to reflect the approach to diversity which this Board has approved in its principles.

What we found is that the problem wasn't really supply. Maybe no surprise. But we took that challenge up. We found that we had 3D in a database with a data provider, and it just wasn't being used.

And I think we came then to understand half the problem at least is demand. And that was really part of the thinking around our proxy access campaign, because we found that the tenure for board directors is getting longer, and longer, and longer. So opportunities for people of color, for women, for people bringing any dimension of diversity, they're not getting the opportunity to come forwards.

We really, when we were talking with our sister fund in New York City, saw that if we could run this proxy access campaign together, each playing to strength, them filing the proposals which they do at scale, CalPERS running the proxy solicitations, which we're really good at, bringing that together for a major push on proxy access would open up this opportunity for boards to start bringing forward diverse candidates.

And that also allowed us to bring this concept of climate competence forwards, because we could see a lot of boards simply didn't have the skills and experience. They didn't have the diversity. They didn't have the skills and experience, so we want to start pushing on that too.

So this has given a new lease of life we think to 3D. So we looked for a new home, where it could be more accessible to companies, where there could be some marketing and promotion, and we took in a consultant to help, and actually, examined, I think, Ted, it was 36 different possible homes for 3D, because we felt it was almost a little orphan product. We'd got it buried in a place that wasn't getting enough attention.

I'm glad to say we transferred it to Equilar, which has opened up a suite of services for boards around the theme of board diversity. It's the largest pool of talent on that suite. And Equilar has reported to us that they have over 50 large public companies actually now using that pool of talent. And we know that we only transferred, six months ago I think it must be, but they've already been able to announce 10 appointments, two of them publicly announced as 3D candidates.

So we feel that we're just at the beginning of a new phase. And through the Diversity and Inclusion Committee as Ted mentioned, we're just looking at how we can nurture 3D in this new role, and really find some synergy between those companies where we've won proxy access, where we're writing with CalSTRS, or we're writing ourselves to prod nominating committees, because no longer is there an excuse that you can't find people. It's there, presented, ready to use, and we're actually seeing our first success.

So I think when we started this, I, for one, fully committed to the long term, but I just didn't think it was going to take this long. And what's been disappointing is that we've seen backsliding in the U.S. market. There's such a small -- such a low level of representation from people of color that a handful of people retire and suddenly the numbers collapse.

And actually, I think this last quarter, the progress on gender just on women was 0.3 percent improvement. So I know we're grateful for every small gain, but, you know, this is really not the pace of -- pace of change that we need for all the -- for all the reasons that Mr. Jones said.

You know, the ability to draw on the full range of talent and really improve the quality of boards, because we've said a high quality board is independent, it's competent, and it's diverse.

So this, I think, is still an important area of work. We can't -- we can't sit back and just think, oh, well, it's obvious now. It's just going to roll ahead. Just back to the theme that Dan and Simiso mentioned, I do think it's very encouraging that we've seen some major fund managers like SSGA start picking up diversity and following through in their voting on nominating committee shares. So I hope this is going to be really the start of some major traction.

CHAIRPERSON JONES: Yeah. And I know it's heavy lifting. And I just don't want us to lose sight is that when we then break off and approach a different strategy, let's not forget people of color. That's all I'm saying.

Okay. Mr. Lind.

COMMITTEE MEMBER TAYLOR: I was still -- I'm sorry. I still had questions.

CHAIRPERSON JONES: Oh, I'm sorry.

(Laughter.)

CHAIRPERSON JONES: Just a minute Theresa.

COMMITTEE MEMBER MATHUR: You just turned her off.

CHAIRPERSON JONES: Okay. Hit your button again.

COMMITTEE MEMBER TAYLOR: There you go.

CHAIRPERSON JONES: Okay. Just a minute. There you go. Sorry about that.

COMMITTEE MEMBER TAYLOR: That's okay. That's okay. She was answering my question, which ended up to you, so I get it.

And then I had one other question. With the issue we're having with the SEC rolling back rules on executive compensation, I didn't see anywhere in our report here that we did any proxy voting on executive compensation. And since the government isn't going to hold companies accountable, I think the investors need to start holding companies accountable. And again, I did not see that anywhere in our report here.

Maybe you didn't report it, but I think it's a very important -- it's a very important tool to hold down our -- the wealth inequality that we're experiencing in the United States that cause that short-term and long-term risk that we talked about earlier today. So I was wondering if we could, Ted, Wylie, Anne, if any of you want to address that for me, please.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Sure. I'll turn it over to Simiso just to -- for any further, but I think we have -- we did not break out separately the --

COMMITTEE MEMBER TAYLOR: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- proxy voting on executive compensation. We focused on the key priorities under the strategic plan. Not to say that executive compensation proxy voting isn't important, it's part -- one of our core activities. I think in times past we have tried to give some flavor for --

COMMITTEE MEMBER TAYLOR: Yeah, you have.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- kind of notable, because it's hard to do --

COMMITTEE MEMBER TAYLOR: I actually looked the books up, and yeah, you have, so --

CHIEF INVESTMENT OFFICER ELIOPOULOS: So I think in the future ones, in the -- you know, in our appendix, we will include either notable votes in the executive compensation arena, and we'll probably do -- probably be a good thing for the team to come through and say, okay, let's look at some of our, you know, core priorities as well, and make sure that we cover that, at least in, you know, identifying to the Committee the big ones.

COMMITTEE MEMBER TAYLOR: I think it's good that we do that, but given the strategy the government is going towards right now, we need to work with our investors -- our managers and make that a reality, I think, because we're not right now. It looks like. I'm sorry. I assume we are, but --

CHIEF INVESTMENT OFFICER ELIOPOULOS: I can assure you we're voting our proxies and voting on every executive comp proposal, but we'll bring back better reporting --

COMMITTEE MEMBER TAYLOR: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- to the Committee to kind of identify as we have in the past along some themes how we voted.

COMMITTEE MEMBER TAYLOR: Okay. I'd appreciate it. Thank you.

CHAIRPERSON JONES: Okay. Let me go back.

Mr. Lind.

COMMITTEE MEMBER LIND: Thank you. My question was a little bit similar to Theresa's. The report that you gave sort of focused on the priority areas, and rightly so. And we're clearly doing some really good work around those priorities, but we used to -- you know, our activity, whether it was engagement or proxy voting, you know, sometimes that activity happens over issues or with companies that are not part of the priority focus. We used to hear more about those, executive compensation, alignment with shareholder interests, supply chain, human capital management, whatever.

And sometimes our engagement efforts come about because we just determine that it's important. Maybe it's not one of the priorities, but it's important to do the particular company. Sometimes it has to do with requests from stakeholder groups. My question is -- well, first of all, my request is maybe we could, to the point you just raised, Ted, hear more about those things in the next report.

But my question is how is a determination made as to what companies to engage over what issues, aside from what these -- our priority list is? I mean, what is the process? And maybe walk us through what an engagement might look like from sort of beginning to end, whoever wants to do that.

INVESTMENT DIRECTOR NZIMA: Thank you for the question. We have an engagement framework where we start by looking at the -- whether the issues that's being raised either by stakeholders is covered under our governance and sustainability principles and of our policies, Investment Beliefs, and so forth. We also look at the materiality in terms of what's the -- what's the -- what's our holding in that company, but also in terms of the potential material impact of the issue, in terms of reputational risk and so forth.

So we look at that in terms of that determination. We then look at the resources, whether we actually have the resources to be able to pursue that particular issue, given other strategic issues that we are involved in.

We consider whether it's better for someone else to actually do the -- you know, run with the -- with the issue as opposed to us. And that might mean that we help with proxy solicitation, for example, as opposed to being involved ourselves in the underlying issues.

So there is a framework that we use. And part of this also goes back to the governance aspect, which Ted has talked about, the Governance and Sustainability Subcommittee, and the various working groups under that. Because all the issues that come from stakeholders they'll go through some of the subcommittees. So the Proxy Voting Subcommittee for Stakeholders raises an issue. The Proxy Voting Working Group will vet the issue and come to a decision.

Again, the composition of that working group is both, you know, Investment Office, as well as the enterprise, because we want everyone to own the decisions. Not a decision that we just want to be, you know, either myself or Anne or Dan, it's a decision that we want the entire CalPERS enterprise to own. So that's something which goes through that governance framework.

If the Proxy Voting Working Group feels like there's more that needs to be done, it gets elevated to the Governance and Sustainability Subcommittee. So there is that aspect of it.

And on the question of the actual engagement, I think our first step -- our preferred approach really is to engage on our own. And sometimes if situations where, you know, partners are already engaging, it is particular company, and sometimes make a determination that it's best for us to run a parallel engagement, as opposed to joining the partner depending again at what stage of the engagement the partner is.

So there are a lot of factors that go into that. And also, depending on factors like whether the engagement by the partner is private and confidential. If we feel that if we're going to do something with partners, and that would be -- end up being in a public domain, we may decide to run a parallel engagement, which is private and confidential, which is the strategy which, you know, this team has brand for a long time.

COMMITTEE MEMBER LIND: So my question as to what an engagement looks like, so let's say based on some determination we've made that we need to engage a company on a particular issue. I mean, does it start with a phone call, with a letter? I mean who, talks to who? How does that happen? Is it an ongoing relationship? Are there meetings involved? I mean, just kind of give me just a real big picture overview.

INVESTMENT DIRECTOR NZIMA: Sure. So the first -- the first point of call really is a phone call asking for a meeting. We don't think that, you know, we should start by writing a letter before we talk to the company, so we -- you know, we reach out to the company, asked to talk to, you know, a director, or, you know, a particular leadership person in one of the committees. Sometimes we get that, sometimes we don't. So if we don't get that, maybe we end up talking to the general counsel.

And so that is the starting point. So we raise those issues with the directors with the company. And then we follow up that with a letter to -- just to emphasize and restate the issues that we discussed during the phone call or during a meeting and so forth.

And then we have an ongoing monitoring in terms of whether the company is actually carrying out the things that they promised to do. And one of the things that we really feel strongly about is giving companies time to effect some of the changes.

So if we are engaging with a company, we believe we should engage in good faith. And that means that, for example, when you're talking about appointing, you know, candidates who are diverse to the board, we understand that's not going to happen in one week, so we give the company time, but we also monitor the company, and we could have a follow up whether it's every three or six months or something like that, but it's something which actually we do on an ongoing basis, and we make ourselves available to the company that any time they have something that they want to run through by us, they can pick up the phone and reach out to us.

COMMITTEE MEMBER LIND: Great. And I've brought this up before - this me to you, Ted - around, you know -- Simiso, you talked about the framework for making decisions about engagement, or proxy voting, or whatever. And I'm not sure we have, as a Board, sort of heard a real in-depth discussion around what that framework looks like. I'm not asking for it now.

But also some of us at least are interested on going - and I've raised this many times before - in the ongoing process about determining our proxy voting and engagement, and some -- maybe you kind of ahead of time what we're thinking and what we might do or might not do, and some sort of way we could -- it's time consuming, I understand. But, you know, even if it's annually kind of her a more in-depth thought process around what direction we're going. And maybe some of the requests that we've had that we -- for engagement that we haven't yet, or don't intend to fulfill. Just a little bit more robust sort of reporting on all of that I think would be appreciated.

INVESTMENT DIRECTOR SIMPSON: Yes, it's Anne. Maybe I could add to that.

I mean, the starting point as Simiso described it essentially is Investment Belief number 3, where we look for principles, beliefs, materiality, our ability to make a difference, who can we partner with, and how can we judge success.

And that, at a high level, I think has served us well. I think the trick with emerging issues that you're monitoring, and you can see things bubbling under, the point is at what -- when do you elevate this into making that call to the company, because you can't in fairness just pick up the phone and say hello, I'd like to have a little chat to you about this major development in pesticides, or regulatory initiative, or whatever it might be. You actually have to go into that conversation prepared.

And that means not just to listen and learn, but to be able to have an inquiring mind and a conversation, which means understanding the issue, the industry, the history, looking ahead and thinking about, as the other Investment Beliefs say, the multi-faceted nature of risk for CalPERS. So that is really an intelligence gathering option -- you know, function, which I actually think has been very important in helping us to keep ahead of things.

In terms of the process, the bit I would just add to the story as explained at the beginning of Simiso's answer is the working groups that have been established or replaced to shake issues out, but the decision-making process for how things are taken up, by whom and when, runs now through the Governance and Sustainability Subcommittee.

And the current arrangement that we have is that ICOR does a checklist review of a topic that's brought to us in order that the Committee can have an organized discussion about the issue in relation to the Beliefs, the Principles, and so forth. And we've been running that process for the last few months. It's new, so we're still assessing how we can make improvements to it, because obviously the benefit of involving lots more people is you do have that shared ownership and integration. And really the whole strategic plan is driven by that goal for integration, but it also means you got more complexity, more process, more people involved, so you need more time.

So I think we're just mindful at the moment that we're working through these new processes to see how we can really strike -- find our own efficient frontier, if you like, between these two balancing -- these two balancing factors. But it's always a matter of judgment. I would just emphasize that process is our friend, but ultimately we have to be willing to make judgment to reflect the values of the organization.

CHAIRPERSON JONES: Okay. Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you.

I have a few comments. One is, Ted, I -- Mr. Eliopoulos, I wanted to -- you know -- you said a couple of things that you would do to improve the reporting next time. And I think -- and one was around providing better trend analysis year on year, which I think would be really helpful. So I just want to endorse that.

And the second was on providing more information on other notable engagements or votes, which I think would also be outside of the key priority areas, which I think would also be helpful.

I actually think on the second piece, if we -- if it's possible to have a summary that sort of buckets by category the -- you know, the various proposals that get voted on, that might be really helpful, in addition to maybe note -- you know, if there are some notable ones highlighting those two, I think -- so that's just a suggestion, but I would appreciate that.

One of the things that I imagine happens, but you can correct me if I'm wrong, is that from time to time, there is a proposal that highlights an emerging issue that we haven't yet considered, and that is not yet in our governance principles. How do you handle those situations and consider whether they ought to be incorporated into the Governance Principles? What is the process around that?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, a couple pieces to it. First, the emerging issues or any issue that comes up in this area goes through the governance process that they just discussed. In terms of whether or not it raises an issue that should be brought to the principles itself and policy, we review the principles and policies once a year.

Right now, we have a parking lot list of about six to eight emerging issues that came out of our collective review of the principles. So I think -- that happens in March. Yeah so, that happens in March, so it's a good suggestion to think through whether there's anything that's come up during the course of the principle -- the engagements or proxy voting that we would want to bring to it. And I would think that's what you would do anyway, right, Anne?

INVESTMENT DIRECTOR SIMPSON: Yeah. No. Thank you. Thank you very much. It's an excellent question. I think what we've found, or certainly I've found, in the years gone by is that the principles are comprehensive and they're very high level. So when a specific issue comes up, for example, we've had votes to cast on the use of antibiotics in, you know, in farm animals, and the impact on, you know, human health that resistance brings, we've managed to look at that, or pesticides and carcinogens is another example, or indigenous rights and tribal sovereignty.

What we've found so far is that we have a high level statement, be it human rights, or responsibility to customers, or to employees, and we can see how this is a specific example of that general principle. But I think if -- as a topic comes forwards, sometimes what's useful is when the Board is able to clarify that when we say "human rights", it includes this, or we talk about responsible corporate behavior, this is an example.

So I think what we should be really gathering in is look again at those votes where perhaps we didn't have that specific guideline, or we felt we hadn't got guidance, and that's something -- you know, I sit with Simiso over this year's proxy voting -- and just come back to the Committee and look where we may need to be more explicit. But at a high level, I think the principles work really well.

COMMITTEE MEMBER MATHUR: Terrific. Well, I'm glad to hear that, and I do think -- I would appreciate that if things are bubbling up that that -- that they be considered as part of the -- you know, during the principles review. Antibiotics overuse was actually going to be one of the examples I was going to raise, so I'm glad you raised it, because I do think that is one we ought to consider being explicit about.

Sorry, just two more questions -- just two more comments, last question.

I understand this process with the ICOR checklist on emerging issues or requests that come through. It sounds to me like that perhaps the checklist is a useful tool, but I just -- I would just be concerned that we not just -- it's not -- to me, a lot of these issues are not exactly just a checklist. There shouldn't be a gating mechanism, I guess, is my concern, so that that -- these do require sort of judgment. And so I just would raise that.

It sounds like you're already evaluating and assessing how effective it is, and how the tool ought to be used. But I thought I'd weigh in on that.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Wylie Tollette, CalPERS staff.

Yeah, a quick comment, Ms. Mathur. As the leader of ICOR, the process was put in place basically because many of the engagement requests we encounter, some involve the U.S., some involve other countries that have different regulatory and legal structures. So the first question we have to look at is, okay, what is the legal structure underwhich this request is being framed?

And ICOR is used to looking at sort of the regulatory framework that might be in place regarding investing activity. So that's -- it's not necessarily a -- they're not necessarily excluding something, but they're more providing that background to the Global Governance and Sustainability Committee, so they know the legal framework in which this particular request is being framed.

The second element of the ICOR review really looks at our internal documents, the Investment Beliefs, the investment policy statements, what are called the IPPGs, they're the procedural level documents that the staff uses to actually manage the portfolio, and then, of course, the Investment Beliefs. And so they're looking at it as to where this particular request has nexus or connection within documents, because ICOR essentially owns those documents for the office in their role as the guardians of the policy.

So then they provide that information to the Governance and Sustainability Committee. It really ends up accelerating the community who has the ultimate responsibility to judge and weigh these things as investors. It allows that committee to basically accelerate their -- from the point where they receive the request to the point where they can get to a decision, because these were all questions that would consistently come up every time we'd get one of these. So those --

COMMITTEE MEMBER MATHUR: Well, that sounds like a very appropriate process. So I just want to make sure I understand. So this process does not --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: It's not a gating mechanism.

COMMITTEE MEMBER MATHUR: It's not a gating mechanism. Not being used to keep things from moving forward that the Committee that other -- might otherwise think ought to move forward.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: The only time it would be a gating mechanism if we get a engagement request that somehow looks like it might break a law or regulation, then it would be a gating request. But in the cases we've experienced so far, it's really more of sort of a pre-analysis process that helps the Committee understand the framework in which it's being made, and where it as nexus within our own documentation.

COMMITTEE MEMBER MATHUR: Okay.

MANAGING INVESTMENT DIRECTOR BIENVENUE: Yeah, and let me -- if I can -- can I just add to that --

COMMITTEE MEMBER MATHUR: Yeah.

MANAGING INVESTMENT DIRECTOR BIENVENUE: -- just because this process is fairly new? To Anne's point, this is a fairly new process, and we're working our way through it. It is definitely not -- it is definitely not a gating mechanism.

Basically we have, what we call, you know, our SME, our Subject Matter Expert. That kind of tends to be where the request comes in, whether it's to sign onto a letter, an engagement topic, something like that, then

ICOR has this look really that's about just sort of uncovering information and distilling it to the key points.

This process was actually borne out of Lou Zahorak who is our GSS representative from GFI just saying, my goodness, we are getting so many of these, you know, I can't keep up. And I don't feel like -- I feel like we're not adding anything to this process.

So ICOR's really is to come to some of the details on what the salient points are, so that people like myself, who maybe don't read quite as fast as Kit and her ICOR team, can really get to what the key points are.

But then it always will come where the SME has their chance to sea what they want to say and support, or however they come down on the topic. ICOR says what the key points are, and then ultimately critically judgment of the GSS to decide, okay, this is the point -- you know, this is the way that we're going to go with it.

Now, again, to Anne's point, we're hitting our stride in this. All of this integration is taking time, and we're working our way through things. And, you know, rightly so and appropriately so there's quite a bit of diversity on the Governance and Sustainability Subcommittee, there's quite a bit of diversity just when Anne and Simiso and I get together on a topic, which means these things move more slowly, but it also I think really means that the conversation is robust, and we come to, what I think, are generally better decisions, just -- which is, you know, why we argue for diversity on our corporate boards, we kind of hold ourselves to the same standard.

COMMITTEE MEMBER MATHUR: So my last comment/question is really around this sort of question of how do we assess the transition and ensure that we are learning from -- I mean, of course, we would not expect everything to be perfect right out of the gate day one. I'm sure you're all learning as you go how to make this the most effective approach and structure and process -- set of processes as possible.

But at some point, it would be helpful, I think, for the Committee -- Investment Committee to get a sense of where you feel like you are and where you feel like things might not have gone as smoothly, and you think there's room for improvement, ideas you have.

I guess I would like to get a better -- one of the things that I said last year was I would really like to understand how the transition is going. And I feel like I'm getting sort of little bits and pieces, and there's -- but I -- I could use a more comprehensive view I think.

So I know that -- I know there's a lot coming up over the next few months, but I -- anyway, that's my -- that's my thought.

CHIEF INVESTMENT OFFICER ELIOPOULOS: I think -- I don't have a ready answer for you, but we'll think through how we can bring that back. For sure, the milestones and the targets for priorities under our strategic planning, if we're not hitting those, that's going to be a real red light that something is not going.

And then in terms of these core activities, and these activities that we talked about today, we'll think through a way of doing that. We're still wrestling with it ourselves. It might be in the program review, as soon as -- well, not likely in September. We're still a month away from that. Maybe in March when we do the principles review, we'll think -- we'll think through when is the right time where we have a good amount of time that we can actually talk through it, which probably means March rather than September.

But let's -- it's a point well taken, and one that we -- we're really interested in knowing too, right?

COMMITTEE MEMBER MATHUR: Of course.

CHIEF INVESTMENT OFFICER ELIOPOULOS: We're right in the midst of it trying to assess --

COMMITTEE MEMBER MATHUR: Sure.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- do we think it's going well? Do we not think it's going well? But at the first part of it, I would give on the overall that we do think the integration effort is worth it. It is time-consuming, and it is going to bring up questions over judgment calls, and how those are made, and how effective they were. So the best anecdote to that is having full and complete communication, so that we can assess it.

COMMITTEE MEMBER MATHUR: Yeah. Fair enough. Thank you.

CHAIRPERSON JONES: Okay. Mr. Costigan.

MANAGING INVESTMENT DIRECTOR BIENVENUE: And I would -- you know, I -- just, I'm sorry, real quickly I would say I'm not objective, but I do think it's going well, because I just do think that we're having some good conversations on these topics, and I, for one, am learning a lot. I think it's really good. We do plan on coming in September with sort of the business model of corporate governance within global equity.

However, to Ted's point we -- you know, we haven't thought through all of these topics. And, of course, with the timeline around mailing deadlines, that, you know, won't all be included in the next one, but these are -- this is exactly the dialogue that we want to have.

We act did a survey of the Governance and Sustainability Subcommittee maybe six months ago to see what we're doing well and what we could do better, and that's led us in evolutions.

You know, we're very -- very open and aware that we are never going to perfect this body of activity, just due to the complexity of the topics, the complexity of the context within which we work. But, you know, as I say, I think we're making strides. I'm not objective, but I think we're making strides and I'm happy with the strides we're making.

CHAIRPERSON JONES: Okay. I'm going to invoke what I learned at the off-site, this is going to be the last round of questioning on this subject. And so if -- this is the list and this it.

Mr. -- Ms. Hagen.

COMMITTEE MEMBER COSTIGAN: You skipped over me.

CHAIRPERSON JONES: Oh. You're on. You're on. I'm sorry.

COMMITTEE MEMBER COSTIGAN: I haven't asked a question. Okay. All right.

Thanks, Henry.

So I have a few questions. First of all, I appreciate you all doing this report. And I've been raising this for a couple years back on Henry's comments on diversity and collusion.

Two or three years ago, I asked for a cross-reference document to take the top 100 public holdings of companies we have to cross reference to see who's on boards. I mean, we've talked about minority representation, women representation, right? We're not even talking to the root cause. So I just did a little research while we're sit -- while I was sitting here.

On the Chev -- on the Apple board, you have one board member who's on four different boards. Now, we have an informal policy vote against people that serve on more than three boards, right? You want to diversify, you open up one of the 25,000 slots.

We recently invested more money with a private equity -- or with a private equity company who's publicly traded. They have 13 board members, only one of which is the female, who happens to be the chair of a nominating committee of another board she sits on that has 19 board members, of which only five are women. And she sits on another board that has 13, of which only three are women.

So I'm not sure she's doing a very good -- she's very well credentialed, and I like the fact -- I'm not going to say who, but you all will be able to figure out who it is. She was the CEO of a big public relations company. Her job actually looks like she is a professional board member.

And so we can talk all we want. One is I'd still like to get the report I asked for that cross-references who sits on what boards. And so you've identified 87 companies. Okay. Let's start with the top 20. I sat here and managed to do Apple, Dow, Merck, JP Morgan, Disney, and Facebook, and cross referenced.

And so I'm curious as to what is our policy, Mr. Chair? If we're going to diversify the 25,000 seats, how do we start with actually getting people out of these Board seats. I mean, it's not -- if it's not a supply issue, then it's the fact that the person who is the -- and oh, by the way, the large private equity company has put one of its asset managers on the Coca-Cola Board.

So what I'm looking for is where are these relationship maps, because it's the same people?

INVESTMENT DIRECTOR NZIMA: We have a voting practice in terms of voting against overboarded directors. If you add CEO, if you sit on more than one other board, we'll vote against you at the other companies.

COMMITTEE MEMBER COSTIGAN: So where would I find those reports of who we voted against? Because I'd like to know, for example -- and I'm not -- and I'm not going to call anybody out. But there's a COO of a large social media company that serves on two boards. Have we voted against her?

INVESTMENT DIRECTOR NZIMA: What we can do is to -- maybe the statistics may not be -- the analytics may not be as readily available, but on the website, you know, in terms of the -- our vote decisions.

COMMITTEE MEMBER COSTIGAN: I understand the analytics, and I'm not trying to be difficult. I see Wylie is about to respond. I've asked for this for a number -- of couple of years, what I thought would be a fairly simple project - and maybe we can get an intern to work on - which is take the top 50 companies we invest in and what boards do they sit on?

I mean, the one individual -- and I guess I'll go ahead and call her out. One female serves on Blackstone, 13 board members. Publicly-traded company that runs money for us. Okay. If we're going to sit here as a Board and talk about how important this is, okay, what are we actually doing to change behavior?

CHAIRPERSON JONES: Okay. Can I suggest that Mr. Eliopoulos take that concern, because it is a question that you raised --

COMMITTEE MEMBER COSTIGAN: Okay.

CHAIRPERSON JONES: -- sometime ago and just take that back and give it some thought --

COMMITTEE MEMBER COSTIGAN: Because I have a few more questions.

CHAIRPERSON JONES: -- and come back later, okay?

COMMITTEE MEMBER COSTIGAN: We're going to come back later? We're not going to --

CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, we can --

CHAIRPERSON JONES: On that one. No, you go ahead.

COMMITTEE MEMBER COSTIGAN: Go ahead, Mr. Eliopoulos.

CHIEF INVESTMENT OFFICER ELIOPOULOS: I was going to say that if the Chair directs, we can --

CHAIRPERSON JONES: Yes, that's what I -- that's what I just did.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- we can easily put that 100-company report together.

CHAIRPERSON JONES: Just give an answer on the question right now.

CHIEF INVESTMENT OFFICER ELIOPOULOS: I don't know where the request came over the past two years, so sorry that we didn't follow up on that, so --

COMMITTEE MEMBER COSTIGAN: I mean, I've also -- so I'll be clear, because I've raised it before, because I've also raised it before, because I've also raised it in the context of private equity, is that when we look at the boards of directors of private -- of companies held in the private equity space that we have talked for the number of years that I've been on this Board about diversifying boards of directors.

When I look at all the work that you all are doing, now it leads -- really leads to the questions is what do you need to do this? Do you need a strong board behind you? Because I just -- I sit here -- and I will say, with all due respect, Mr. Jones, a little bit, I understand on one hand the arguments you all make about diversifying, ethnic diversity, gender diversity, right?

I'll even start with the white guy on the board who's on multiple boards. I mean, you have 25,000 -- am I correct, are there 25,000 publicly available board seats? If I -- is that a stat? How many?

INVESTMENT DIRECTOR SIMPSON: Many more.

COMMITTEE MEMBER COSTIGAN: Okay. So there are more than twenty-five --

INVESTMENT DIRECTOR SIMPSON: More than 100,000.

COMMITTEE MEMBER COSTIGAN: -- 100,000 seats that are available. Is that right?

Could you turn on your mic, because I can't hear. Is it -- there are over 100,000 seats available on public boards?

INVESTMENT DIRECTOR SIMPSON: Correct, in the

United -- yeah, if you look at our portfolio of 11,000 companies --

COMMITTEE MEMBER COSTIGAN: Okay.

INVESTMENT DIRECTOR SIMPSON: You can typically find between 5 and 12 seats. It tends to vary by market. But I would say 100,000 positions would be pulled out of the air as a number. I'd be glad for us to follow up with the exact, but it's of that order.

COMMITTEE MEMBER COSTIGAN: And do we have anyway -- do we have anyway to identify who serves on what boards right now?

INVESTMENT DIRECTOR SIMPSON: Yes, in most of those markets. And just to -- as Simiso says, we track this already in order that we vote against directors who sit on what we think should be just one other position, if they're an executive. And if they're a non-executive of a board, no more than two other positions. So we do have data services that track this, and we vote on the basis of that. And all of those votes are posted on the CalPERS website.

But as Ted said, what we can -- and apologies for not providing it before, or not understanding that it was on our to-do list. It's on our to-do list now should the Chair direct. We can pull that data in the form of some trends in some markets, and the biggest holdings, whatever would be useful.

COMMITTEE MEMBER COSTIGAN: So I just want to make sure I'm clear. I will find somewhere on our website -- and I'm not picking on anybody. I'm just -- this is public information. Mr. James Bell, who serves on Apple, JP Morgan, Dow, and CDW. We will have voted a proxy somewhere. Because he serves on more than one board, we'll have voted against him at some point?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: (Nods head.)

COMMITTEE MEMBER COSTIGAN: Okay. Mr. -- I'd like to see that vote at some point, please.

CHAIRPERSON JONES: Yeah, I think --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: I'm looking at it. Mr. Costigan, I'm actually looking at it on our website right now. It's the -- we publish a list all of our votes on the website. If you go to our website and just type in proxy in the search field. It will direct you to it immediately. As Simiso mentioned, we have a policy regarding overboarded directors.

The other thing I might just quickly highlight here too is the services that we use. Glass Lewis and ISS do keep track of board member directorship and sort of how many they serve on. And we utilize that in our -- in the actual voting process.

COMMITTEE MEMBER COSTIGAN: And I just want to make sure that I have -- my information is correct, because I've heard it too. We contract out proxy services, proxy voting?

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: No, we do our own proxy decision making.

COMMITTEE MEMBER COSTIGAN: Okay.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: -- but we use the services of Glass Lewis and ISS to help us with that process. They help us --

COMMITTEE MEMBER COSTIGAN: But they don't cast the vote for us. Our staff does.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: No, we do the vote, yeah.

COMMITTEE MEMBER COSTIGAN: Okay. Thank you, Mr. Jones

CHAIRPERSON JONES: Okay. Staff will provide the information, Mr. Costigan, okay?

Ms. Hagen.

ACTING COMMITTEE MEMBER HAGEN: Thank you.

CHAIRPERSON JONES: Oops. Hit it again.

There you go.

ACTING COMMITTEE MEMBER HAGEN: Thank you. I just have quick follow-up actually to what Mr. Jones commented on. There -- there's actually -- there was an article done by -- it was an academic article, I think it Wharton business school, back in May that questioned whether or not gender diversity actually does improve, you know, an organization's performance. I know there's literature that goes both ways.

But one of the things that I took away from that article was the argument could be easily made that it's gender equality, rather than diversity is the reason that you would want to go down that pathway with your board. And to your point, I think, you know, racial equality is also equally important. I'd like to also mention that in my monitoring of legislation on a regular basis, I've noticed that there's an uptick in LGBT legislation encouraging companies to monitor whether -- you know, the sexual orientation of their board members.

And while it's already very difficult to gather racial data, I can imagine how difficult that would be to gather that particular data set as well. I just mention it as something that I recently observed here in the stated. I haven't looked at federal legislation in that area.

But to Mr. Jones' point, I think it would be better to use a broader term like diversity, rather than gender diversity, because there's a whole lot of focus on that right now.

So that's it. Thank you.

CHAIRPERSON JONES: Thank you.

INVESTMENT DIRECTOR SIMPSON: Yeah, thank you. I'd just like to agree with you that one of the problems we've got is the disclosure is so poor. Gender diversity it seems easier to track. And then you're getting a skew away from other factors, because we're not insisting on the full disclosure.

And you'll recall last year that we successfully filed a petition with the SEC calling on gender, racial and ethnic diversity to be made a disclosure requirement at SEC rules in a matrix form that also included skills and experience and so forth. I think that is now just sitting -- sitting on a shelf at the SEC.

But we have recently filed a new petition on human capital management, which specifically talks about these many dimensions of diversity plus other issues that we've touched on today, like education, and training, and health and safety, factors that are vitally important to the management of human capital. And that petition was filed with the SEC a couple of weeks ago.

So there's also some draft legislation in Congress which we've been engaged with, which was initiated by Representative Maloney. That has now, through very fruitful discussions with staff on her side, been expanded to include disclosure around race and ethnicity.

So where we've got this opportunity, it's important that we take it, because, you know, gender is only one dimension. And I think this -- you know, the Investment Committee had some powerful testimony when we were building out the ESG strategic plan looking at race, ethnicity, gender, but also the tremendous benefit of having a company which is inclusive on gender identity and sexual orientation.

And that isn't something within -- I say to intrude -- to have intrusive disclosure requirements, but you'll recall that Credit Suisse found that where companies had created an environment where their senior executives and board members felt comfortable in self-identifying, that was associated with high performance.

So I think, you know, we pick up these strands in different places, but I think there's a powerful case for it being an investment issue, but it's certainly the broader definition of diversity that CalPERS has seems to me to be absolutely the right one.

CHAIRPERSON JONES: Thank you.

Okay. Thank you. Ms. Paquin.

ACTING COMMITTEE MEMBER PAQUIN: Thank you, Mr.

Chair.

Thank you so much for this discussion. I think it's been very interesting. And I just wanted to add to the points made by Priya and Ron about the make-up of the process. And kudos to you all. I know it's very difficult kind of build this process from the ground up. But when you come back I think you mentioned in March, I'm very interested also to hear what kind of lessons learned, and how you've adjusted the -- your working groups and your process from there.

And Also, I'd be curious to hear about -- a little bit more about the ICOR pre-review, and whether that has unnecessarily screened out any potential requests for partnership opportunities or engagement opportunities. And specifically also, once ICOR identifies a potential problem, does the working group then have the opportunity to kind of go back in and say, well, if we get the partners to change it a little bit, we'd be able to sign on or it would be worth signing on at that point?

Thank you.

CHAIRPERSON JONES: Okay. Thank you.

MANAGING INVESTMENT DIRECTOR BIENVENUE: I was going to suggest a short answer is that -- is that ICOR does not screen it out. It still comes to that team, and that team -- some team proxy working group GSS both, and that's where the decision is made.

And when you talk about lessons learned, I mean even just the working groups and this whole ICOR process, candidly those were lessons learned. Those didn't exist at the outset. So we are definitely figuring things out as we go, but we'll make sure that we stay in touch on the progress.

ACTING COMMITTEE MEMBER PAQUIN: Great. Thanks.

CHAIRPERSON JONES: Okay. Thank you. Let's take a 10 minute break.

(Off record: 4:13 p.m.)

(Thereupon a recess was taken.)

(On record: 4:24 p.m.)

CHAIRPERSON JONES: If we could reconvene the Investment Committee meeting, please.

Okay. This is -- the next item on the agenda is review of survey results of the Board Investment consultants. And I would like to begin by sharing the background of the evaluation process in prior years.

Several years ago, consultants sent their own evaluation surveys directly to the Board. As recent as last year, feedback was collected manually from randomly selected Board members and reviewed with each consultant separately in closed session.

This year, several enhancements have -- were implemented. The survey is administered by CalPERS. Feedback is submitted through an on-line survey. All Board members have the opportunity to offer feedback, and results are going to be shared in open session.

Additionally, we have asked the ESPD to administer the survey as a neutral third party.

So with that, I'll call on Mr. Doug Hoffner

DEPUTY EXECUTIVE OFFICER HOFFNER: Thank you Mr. Chair. Doug Hoffner, team member with CalPERS.

I'm here really in a support fashion today. So Michael Younger sitting to my right, you may remember him from the July off-site. He'll present and facilitate the enterprise performance framework we had at that session. As the Chair had indicated, we provided a third-party survey that we conducted through the Enterprise Strategy Performance Division to compare the results of the Board's feedback related to the consultants and a series of questions that Michael will get into.

But my role today really is in a support fashion. Michael is also going through our leadership development and succession planning process. So with that, I will turn it over to Michael Younger for the presentation.

CHAIRPERSON JONES: Thank you.

(Thereupon an overhead presentation was Presented as follows.)

STAFF SERVICES MANAGER YOUNGER: Thank you, Doug. Good morning. Michael Younger, CalPERS team leader.

I'm here this afternoon at the Investment Committee to introduce the process of administering the annual evaluation survey of your Board investment consultants. The survey includes responses from 11 of the 13 Board members. Meketa Investment Group is not included in the evaluation for this fiscal year given their limited tenure in the 2016-17 fiscal year.

I would like to take a moment to highlight the survey calculation example specifically of how we would suggest to interpret the data.

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STAFF SERVICES MANAGER YOUNGER: And I would ask that you turn to slide 7, and the example being used Wilshire Associates. I just want to provide you with the Board member equivalent. If we look at this slide, for example with this question accurately analyzes issues and provides timely objective information. You can interpret the 55 percent very satisfied to equate to six board members; 36 percent satisfied, which would equate to four Board members.

And in summary, 91 percent of board members who took the survey are very satisfied or satisfied when considering this specific question.

So that just kind of gives you some context as you kind of read through the very expansive deck there to really interpret that data. As was stated earlier, ESPD helped administer the survey this year. It enhanced the independence of the process as that neutral third-party. We've enhanced the survey format and the process this year to include all Board members via the on-line survey.

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STAFF SERVICES MANAGER YOUNGER: The questions asked this fiscal year are very similar to prior years. In addition, the results are included in your materials in the form of charts, as was just reviewed here, as well as described in the various answers selected by the Board members.

So, in conclusion, I will turn it back to see if there are any questions for the Board members.

CHAIRPERSON JONES: Okay. Well, thank you, Michael and ESPD for helping to complete these surveys. The Board Investment consultants perform an important independent oversight function on our investment -- investing activities. Feedback is equally important to help ensure our consultants are meeting CalPERS's needs.

I would invite all my Committee members to discuss any specific topics from the material if you have any, because you have had the material for some time. And we also have our consultants in case Committee members have questions for them.

Mr. Jelincic.

COMMITTEE MEMBER JELINCIC: Yeah. I have a couple of emails that bother me. And I don't want to call out the particular consultant, but it is -- it is an issue. One of our consultants sent us an email that says, "At the advice of Matt Jacobs, CalPERS General Counsel, we will no longer circulate a prep sheet in advance of the meeting. However, we're available for private conversations".

We have another consultant who sent us an email that includes, among other things, "At the request of certain Committee members, I will be sending a follow-up email on Wednesday. That email will provide a few questions that we think could be appropriate for discussion with staff at the IC or other times. We are providing these questions to highlight issues that we have already discussed with staff, but feel may be -- feel may need more discussion in front of the IC to highlight the unresolved issues, or to highlight disagreements between staff and the consultant".

And then we get a follow-up to that that says, "I sent an email promising to set of questions. Based on feedback from Matt Jacobs, I feel these questions are best discussed one-on-one, and provide more context and robust dialogue surrounding the event".

And it goes to an issue that I have raised a couple of times, that I know the consultant and the staff have really vigorous conversations and dialogue, and give and take. And I think that's appropriate, and we want them to do that. But what does not come to the Board is any of that dialogue. So we don't necessarily know what the options were, what was considered. And quite frankly, the entire time I've been on the Board, I can only think of once where the consultant and the staff actually specifically disagreed. But we need to know that context and rationale that if we're to make informed decisions.

And, you know, they work for us. Their job is to help us make informed decisions. And I don't know that we are getting -- across all the consultants, I don't know that we're getting the kind of discussion that we ought to have.

And one of the questions was about fees. And I can't remember having seen a proposal from any of the consultants that says this is an area where you can reduce fees and this is how you can do it.

CHAIRPERSON JONES: Well, first of all, the question about the infor -- the emails, the process - we talked about this earlier - that does not prevent the consultants from meeting with individual Committee members one-on-one. That is still okay.

What we're avoiding is a serial process where all Board members was getting the same information. So we said today that Committee members continue to meet one-on-one with our consultants. To your broader question, I think it goes to expectations, I guess, in terms of investment strategies that our consultants are providing to us.

So I think we perhaps need to schedule some kind of strategic investment dialogue with our consultants in closed session, so that we can kind of come together to talk about what our expectations on these strategic investment decisions are. And I'll work with staff to make that happen.

COMMITTEE MEMBER JELINCIC: Okay. And, you know, the idea that everybody on the Board will get the same information to doesn't particularly strike me as bad thing.

CHAIRPERSON JONES: Yeah, I don't think it was getting the same information, but it was -- well, I'm going to leave it there.

Okay. Anyway, any further questions on the report?

Seeing none.

We go to the next item. Thank you, Michael and Doug, and thank you, consultants, for waiting around. And we go now to the summary of committee direction.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Great. With some trepidation, I'll try and -- I'll try and list out here.

(Laughter.)

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: We normally have a chance to sort of reconcile our lists as a way to validate that we caught everything. We didn't quite have an opportunity to reconcile them, so we may have to sort of ham and egg a bit here.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Exactly. So number one, to bring back a summary of the geometric versus arithmetic returns on the ALM process to make sure that's fully disclosed in the ALM process so that's one that was directed, which we will bring back.

Number two, in the private equity area, I think this was directed to Meketa, but it could equally be directed to staff as well, a attribution of the returns for the customized -- individual customized accounts versus our funds and fund of fund returns.

Now, that's -- those are the clear ones. These now -- we'll come to some others that will give -- maybe give me a little bit of help. But on the third one from

Ms. Hagen, I don't think this was actually directed, but I volunteered that we're already going to bring this back, and it has do private asset class guidelines, risk guidelines, and ranges. So I'm just acknowledging that we're already going to be bringing those back. So I don't know that it was directed, but it will be happening.

CHAIRPERSON JONES: Yes, and a matter of fact, Ms. Hagen looked at the follow-up board action matrix, and she didn't see it on there, so that was the basis for her questions. So she wrote it out on here, so I'll give it to you.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Great.

Then with respect to corporate governance, I volunteered to on the next -- on our next reporting on proxy voting really to add in a section on core themes, and then a note -- beef up the notable highlights to really categorize by themes, things such as executive compensation, human capital management, supply chain. So I'll take that as directed. We'll be doing that. As well as some trend -- trend information on voting.

And then the last -- the last on corporate governance really lots of feedback, and, I think, implicit direction to look at lessons learned, how is the corporate engagement process, the issues that are coming up emerging, bring that back to the Committee to talk about and communicate how the new processes are working or not. And we've tentatively ID'd March as the best time to do that.

And then last one you just added, which is to work with the Chair to schedule some time with the investment consultants in closed session to kind of review investment strategy.

CHAIRPERSON JONES: Okay. Now, what about Mr. Costigan's --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Yeah, there was one more. Mr. Costigan's.

(Laughter.)

CHAIRPERSON JONES: Sorry.

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: I'm serving on too many boards.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Yeah, Mr. Costigan, you'll be happy to know that I did actually catch that one. So to provide a link to the Investment Committee of our proxy voting activities.

COMMITTEE MEMBER COSTIGAN: Just a point on that.

CHAIRPERSON JONES: Go ahead, Mr. Costigan.

COMMITTEE MEMBER COSTIGAN: It was I'd like to start with the top 50 companies that we invest in and cross-reference their board of directors, and build from there. So it's just a link. I've looked at that, but I'd like it to go further, but at least the top 50 to see who serves on what boards.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: Mr. Chair.

CHAIRPERSON JONES: That's fine.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:

Okay.

CHAIRPERSON JONES: And --

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE: And then the only one that I didn't hear highlighted in Ted's review was to -- and, Mr. Chair, it was yours, I think it was to look at the definition of diversity used in the -- in our board diversity engagement activity.

CHAIRPERSON JONES: Yeah. Not look at the definition, to include it racial -- people of color in our efforts to have diversity on corporate boards, because -- yeah. Not limited to gender is the broader definition.

Okay. Then I think, Mr. Jelincic, you had...

COMMITTEE MEMBER JELINCIC: Yeah. I thought I heard Ted say you were going to do what I heard was an agenda item on the arithmetic versus the geometric. And what I thought we had discussed was an email-type thing, because there were two of us who wanted it and everybody else could hit the delete.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:
Yeah, I believe what Ted was referring to is the fact that in the ALM process in the workshop, which is an agenda item, you will see both the arithmetic as well as the geometric return assumptions. They are explicit in that process.

In addition to that, which is already planned, we are happy to provide the arithmetic back-up for the material that was presented today, but we'll do that via but email.

COMMITTEE MEMBER JELINCIC: Yeah, but it was six five instead of five eight.

CHIEF OPERATING INVESTMENT OFFICER TOLLETTE:
Exactly.

COMMITTEE MEMBER JELINCIC: Okay, but that's an email. Okay. Thank you.

CHAIRPERSON JONES: I think you got it. Okay.

Okay. We will -- we have one request to speak from the public Mr. Perez. If you could come down to the dais here. And the mic is on, and you will have three minutes to speak. And there's a clock right here that will go on as soon as you start talking to let you know your time as you go through your comments.

Okay.

MR. PEREZ: Good afternoon. So I came up here.

CHAIRPERSON JONES: Introduce yourself.

MR. PEREZ: My name is Jason Perez. And I'm the President of the Corona Police Officers Association in Southern California.

God bless you.

While I'm representing 162 members of the police officer's association, I'm speaking on behalf of all four of our labor groups. So I came up with a pre-conceived notion on how I thought the meetings were going to run and what I thought I would hear. And I got -- and this was very enlightening.

Good job on the return last year, but there are some definite concerns that my members have, as well as most city workers and PERS members. In reading your -- the California Constitution, Article 16, Section 17(b), it's pretty powerful. I've got to read it direct, cause I can't memorize it.

"The members of the Retirement Board of Public Pension or Retirement System shall discharge their duties with respect to the system, solely in interest of and for the exclusive purposes of providing benefits to participants and their beneficiaries, minimizing employee contributions thereto, and defraying reasonable expenses of administering the system. A retirement board's duty is to its participants and their beneficiaries shall take precedence over any other duty".

That's a pretty powerful statement. And it goes, in my opinion, absolutely contrary to the last three hours of what you all were discussing, which, in fact, are -- it's a noble effort. You're absolutely right, all -- the whole board, all the Investment Committee, all your staff that does all their diligent work, they're right. We need equality on boards. We need representation from everyone on all kinds of boards, but not with -- not in this forum.

If you all want to invest with your own funds in that kind of thing, perfect. Personally, I believe in the sanctity of life, so I make sure that none of my funds that I invest in personally go to any that supports Planned Parenthood.

Please, please, please, I beg you, just make us money. Don't -- don't try to change the world, right? Just make us money. I want to retire in 10 years, Lord willing, and live a long and happy life.

Thank you.

CHAIRPERSON JONES: Thank you for your comments.

Okay. That is the end of the open session. We will allow for everyone to leave the auditorium that is not part of closed session, and go right into closed session.

(Thereupon California Public Employees'

Retirement System, Investment Committee meeting open session adjourned at 4:41 p.m.)

C E R T I F I C A T E OF R E P O R T E R

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, do hereby certify:

That I am a disinterested person herein; that the foregoing California Public Employees' Retirement System, Board of Administration, Investment Committee open session meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed, under my direction, by computer-assisted transcription;

I further certify that I am not of counsel or attorney for any of the parties to said meeting nor in any way interested in the outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 21st day of August, 2017.

JAMES F. PETERS, CSR
Certified Shorthand Reporter
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