MEETING

STATE OF CALIFORNIA

PUBLIC EMPLOYEES' RETIREMENT SYSTEM

BOARD OF ADMINISTRATION

INVESTMENT COMMITTEE

OPEN SESSION

ROBERT F. CARLSON AUDITORIUM

LINCOLN PLAZA NORTH

400 P STREET

SACRAMENTO, CALIFORNIA

MONDAY, AUGUST 13, 2018

9:16 A.M.

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

COMMITTEE MEMBERS:

Mr. Henry Jones, Chairperson

Mr. Richard Costigan, Vice Chairperson

Ms. Margaret Brown

Mr. John Chiang, represented by Mr. Steve Juarez

Mr. Rob Feckner

Mr. Richard Gillihan, also represented by Mr. Danny Brown

Ms. Dana Hollinger

Ms. Priya Mathur

Mr. David Miller

Mr. Ramon Rubalcava

Mr. Bill Slaton

Mr. Theresa Taylor

Ms. Betty Yee, also represented by Ms. Lynn Paquin

STAFF:

Ms. Marcie Frost, Chief Executive Officer

Mr. Ted Eliopoulos, Chief Investment Officer

Mr. Matt Jacobs, General Counsel

Mr. Eric Baggesen, Managing Investment Director

Ms. Natalie Bickford, Committee Secretary

Ms. Elisabeth Bourqui, Chief Operating Investment Officer

Ms. Sarah Corr, Interim Managing Investment Director

Ms. Kit Crocker, Investment Director

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

STAFF:

Ms. Sabrina Hutchins, Chief, Enterprise Strategy & Performance Division

Ms. Kristin LaMantia, Assistant Chief, Enterprise Strategy & Performance Division

Mr. Paul Mouchakkaa, Managing Investment Director

Mr. John Rothfield, Investment Director

Mr. Kevin Winter, Managing Investment Director

ALSO PRESENT:

Ms. Lisa Bacon, Meketa Investment Group

Dr. Sarah Bernstein, Pension Consulting Alliance

Mr. Tristan Brown, California Federation of Teachers

Ms. Rose Dean, Wilshire Associates

Ms. Christy Fields, Pension Consulting Alliance

Mr. David Glickman, Pension Consulting Alliance

Mr. Steve Hartt, Meketa Investment Group

Ms. Cathy Jeppson, California Teachers Association

Mr. Andrew Junkin, Wilshire Associates

Ms. Jackie Lee, California Teachers Association

Mr. Steve McCourt, Meketa Investment Group

Ms. Hannah Schriner, Meketa Investment Group

Mr. Tom Toth, Wilshire Associates

I N D E X

I N D E X   C O N T I N U E D

P R O C E E D I N G S

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

The first order of business is roll call, please.

COMMITTEE SECRETARY BICKFORD: Henry Jones?

CHAIRPERSON JONES: Here.

COMMITTEE SECRETARY BICKFORD: Richard Costigan?

VICE CHAIRPERSON COSTIGAN: Here.

COMMITTEE SECRETARY BICKFORD: Margaret Brown?

COMMITTEE MEMBER BROWN: Good morning.

COMMITTEE SECRETARY BICKFORD: Good morning.

John Chiang represented by Steve Juarez?

ACTING COMMITTEE MEMBER JUAREZ: Here.

COMMITTEE SECRETARY BICKFORD: Rob Feckner?

COMMITTEE MEMBER FECKNER: Good morning.

COMMITTEE SECRETARY BICKFORD: Good morning.

Richard Gillihan?

COMMITTEE MEMBER GILLIHAN: Here.

COMMITTEE SECRETARY BICKFORD. Dana Hollinger?

COMMITTEE MEMBER HOLLINGER: Here.

COMMITTEE SECRETARY BICKFORD: Priya Mathur?

COMMITTEE MEMBER MATHUR: Good morning.

COMMITTEE SECRETARY BICKFORD: Good morning.

David Miller?

COMMITTEE MEMBER MILLER: Here.

COMMITTEE SECRETARY BICKFORD: Ramon Rubalcava?
COMMITTEE MEMBER RUBALCAVA: Here.
COMMITTEE SECRETARY BICKFORD: Bill Slaton?
CHAIRPERSON JONES: Excused.
COMMITTEE SECRETARY BICKFORD: Theresa Taylor?
COMMITTEE MEMBER TAYLOR: Here.
COMMITTEE SECRETARY BICKFORD: Betty Yee?
COMMITTEE MEMBER YEE: Here.
CHAIRPERSON JONES: Okay. Thank you.
The next item on the agenda is approval of the Investment Committee timed agenda. Are there any questions on the timed agenda from Committee members?
Seeing none.
I would entertain a motion.
COMMITTEE MEMBER MATHUR: Move approval.
CHAIRPERSON JONES: Moved by Ms. Mathur.
COMMITTEE MEMBER TAYLOR: Second.
CHAIRPERSON JONES: Second by Ms. Taylor.
All those in favor say aye?
(Ayes.)
CHAIRPERSON JONES: Opposed?
Hearing none. The item masses. Thank you.
The next item on the agenda is executive report, Chief Investment Officer.
Mr. Eliopoulos.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Good morning, Mr. Chair, members of the Investment Committee. Wonderful to be here for this August Investment Committee meeting, which traditionally is our -- really our heaviest item in terms of time and number of agenda items and substance really. So, as I mentioned to you, Mr. Chair, earlier, I don't plan on making very expansive comments this morning.

I just want to give the Committee a little bit of context of what really kicks off in this August Committee meeting through really the end of December. What kicks off today is the beginning of our program reviews for the Committee. And for each review -- and I'll just set the stage for you. Each review, you are presented a summary and information from your professional Investment staff. And then that's combined with a review by your fiduciary third-party consultants for each of the programs that are being reviewed.

So you can get two views, two lenses reviewing the same information, so that the Committee in its fiduciary obligation is able to really exercise your judgment by hearing from different fiduciaries of the system about the ongoing performance and risk within the programs.

In August, you see total fund programs. So the first review for the Committee today will be on the total fund. And you'll see us, your staff, making a series of presentations by your senior Investment staff, and then there's time for your independent consultants for the total fund, and then for the constituent programs. So you'll hear reports from Wilshire, and Meketa, and PCA.

And then going forward into the fall in September, we begin a series of in-depth looks at actually the constituent parts of the total fund. So in September, you'll see a report from your staff, and again from your independent consultants of the constituent parts of the public asset classes. So you'll see a report on our Global Equity Program in September in depth and then a report on our Global Fixed Income Program in depth in September.

We have a break in October. And then coming back in November, the Investment Committee meetings, you'll see a review of the private asset classes. So in November, you'll see your Investment staff as well as the consultant give you a report on private equity, and on the Real Assets Program and its constituent parts. And then finally in December wrapping up the year, we have an annual review of two important programs, our Emerging Manager and Transition Program as well as a review of our Responsible Contractor Program.

So that's the setting. We've orchestrated, you know, the second half of the fiscal year to give this really in-depth review of the performance of the programs, and have staged it in a way to go from total fund to constituent parts.

What's a bit new this August is we'll have a review not only of our trust level program -- this is the second year that we've had that review as a program looking at the total fund. In addition to that, this year for the first time we'll have a program review of our Opportunistic Program, which is our newest program. And going forward, you'll see this review in August every year going forward, if we keep the same schedule that we've had.

So I wanted to level set for the entire committee just to give you an idea of why we've -- why we're bringing the total fund reviews today and a coming attraction of its constituent parts and asset classes coming to the future.

So that's the setting for today. In addition, we have some other one-time agenda items that we think are important to bring to the Committee's attention, one on Iran/Sudan divestment and another on the timing of the RFPs for your independent consultants that we just mentioned. So we really do have an extensive program today.

Those are my remarks. I would suggest we move forward into the substance of the meeting.

I did want to mention -- I'm happy to take any questions and comments, of course. I did want to mention that I was going to do an introduction of some summer interns that are visiting us from CalSTRS that come every year. They're over on our trade floor right now. The review is going a little -- you know, a little longer than anticipated. So at some point when they make their way into the auditorium, I'll just have them stand up. It's a wonderful program that CalSTRS has and we like to share information.

And next month, I'll bring back some more information on our CalPERS internship program, as you recall, the 1000 Strong Program, and I'll give you information on how that program went this year, and our plans for the coming year for that.

So with that, Mr. Chair, that's my planned remarks.

CHAIRPERSON JONES: Okay. Thank you very much.

The next item on the agenda is the approval of the June 18, 2018 Investment Committee meeting minutes.

COMMITTEE MEMBER MATHUR: Move approval.

CHAIRPERSON JONES: Moved by Ms. Mathur.

COMMITTEE MEMBER TAYLOR: Second.

CHAIRPERSON JONES: Second by Ms. Taylor.

All those in favor say aye?

(Ayes.)

CHAIRPERSON JONES: Opposed?

The item passes. Thank you.

The next item is the information consent items. I've received no requests to pull anything off of the consent, so a motion is in order for that item.

VICE CHAIRPERSON COSTIGAN: I'll move it.

CHAIRPERSON JONES: Moved by Mr. Costigan?

COMMITTEE MEMBER HOLLINGER: Second.

CHAIRPERSON JONES: Second by Ms. Hollinger.

All those in favor say aye?

(Ayes.)

CHAIRPERSON JONES: Opposed?

The item is received.

Okay. The -- okay. Agenda Item, policy and delegation, 6a, Revision of Private Equity Program Policy, second reading.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Yes, Mr. Chair. I see Kit and Sarah coming up to the podium. And this is the second reading, and I'll turn it over too Kit.

INVESTMENT DIRECTOR CROCKER: Thank you. Good morning. Kit Crocker, CalPERS Investment Office staff.

Item 6a is a second reading of staff's proposed updates to the Private Equity Investment Policy.

As no further changes were requested at the first reading in June, attachments 1 and 2, which are clean and red-lined versions of the proposed updated policy, are unchanged from the first reading. An updated opinion letter from the Board's private equity consultant Meketa Investment Group is provided as attachments 3. As this is a second reading, staff is seeking action from the Committee at this time.

So with that, I'll pause to invite Meketa to make any comments. And I'm also Happy to entertain any questions from the Committee at this time.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So, Kit, I'll just clarify. So the red-lined changes that are before the Committee are the red lines marked --

INVESTMENT DIRECTOR CROCKER: The same as -- oh, sorry.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- versus the last -- the same as last month. The same as the last time we took --

INVESTMENT DIRECTOR CROCKER: They're identical to last month, yes.

CHAIRPERSON JONES: Thank you for that clarification. Okay.

Okay. Does Meketa have any comments you'd like to make?

MR. HARTT: (Shake head.)

CHAIRPERSON JONES: Seeing none.

Okay. This is an action item. So we need -- oh, Ms. Brown.

COMMITTEE MEMBER BROWN: Thank you.

You know, in looking -- in looking over the policy and all the attachments, I'm just wondering, there's a table here that talks about co-investments -- I'm sorry, I'm trying to find my little highlighted notes -- that talks about eliminating co-investments. Is that correct that we're changing that? Because I thought when we talked about -- we were trying to increase the number of co-investments.

INVESTMENT DIRECTOR CROCKER: Actually, what we've done is consolidate the two tables. So if you look on page -- I'm looking at page six of eight of the clean version.

COMMITTEE MEMBER BROWN: Can you give me the number in the Board -- on the Diligent, the iPad, do you know what that is?

INVESTMENT DIRECTOR CROCKER: Ted, do you have that?

COMMITTEE MEMBER BROWN: Okay. So give me the table -- the attachment.

INVESTMENT DIRECTOR CROCKER: So on the -- well, let's see on the red-lined, it is page six of eight. SO basically the page where you see it struck out look at the prior page, and you should see it added to the table, the new table on staff authority limits.

COMMITTEE MEMBER BROWN: Okay. And -- all right. So we're not eliminating co-investments.

INVESTMENT DIRECTOR CROCKER: We're not eliminating. No, it's an additional column under staff authority limits.

COMMITTEE MEMBER BROWN: Okay. That our staff can make.

And then are we also changing the quartile rankings we can invest in? Before, it was like in the first quartile, and now their top quartile performance, and now they can go to another tier, is that correct?

I should say tier, sorry.

INTERIM MANAGING INVESTMENT DIRECTOR CORR: Sarah Corr, Investment staff.

So previously, there were different delegation limits, if it was first quartile or second quartile. And now it's been consolidated. So first quartile and second quartile have the same delegation limits.

COMMITTEE MEMBER BROWN: And so those have increased or decreased?

INTERIM MANAGING INVESTMENT DIRECTOR CORR: They've increased for second quartile and decreased for first quartile.

COMMITTEE MEMBER BROWN: So that means staff has more flexibility, or less, or both?

INTERIM MANAGING INVESTMENT DIRECTOR CORR: Both.

COMMITTEE MEMBER BROWN: Okay. I'm glad I'm confused. It is a little confusing.

And then -- and then can staff invest in third and fourth quartile funds? Are there limits to those?

INTERIM MANAGING INVESTMENT DIRECTOR CORR: They would need a prudent person opinion to invest in anything below median.

COMMITTEE MEMBER BROWN: So that'sa -- that's a great point there. When you get a prudent person opinion, do you actually have to follow it? Because we may have had an instance in closed session where we didn't.

INTERIM MANAGING INVESTMENT DIRECTOR CORR: Staff does not have the authority to make a decision -- to make an invest if there is not a prudent person opinion, if it's below median. So it would have to come to the Committee.

COMMITTEE MEMBER BROWN: So it would come back to this Committee, where we would make a decision?

INTERIM MANAGING INVESTMENT DIRECTOR CORR: Correct.

COMMITTEE MEMBER BROWN: Okay. And do we currently have a policy that -- where staff is recommending one, and the prudent person opinion is recommending don't do it, do we have policy that says -- there's like a tie-breaker other than the Board, like possibly using the Board consultant to do that?

CHIEF INVESTMENT OFFICER ELIOPOULOS: No, we don't.

COMMITTEE MEMBER BROWN: Are we interested in doing that anybody?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, I think it's a question of our fiduciary obligation. The Board, as constituted by the Investment Committee, has that fiduciary obligation. They've delegated it to staff. And in the instance where there is a difference of opinion between a prudent person, an independent third party, and staff, the tie breaker is the Investment Committee who holds that -- who holds that fiduciary obligation.

The Committee can, and with the advice of counsel, could consider a different policy, but that hasn't been recommended.

COMMITTEE MEMBER BROWN: Yeah. Mr. Chair, I might suggest that we take this up at some point in the future when we have an instance like what occurred in closed session --

CHAIRPERSON JONES: Mrs. Brown, we should not refer to actions taken or comments in closed session.

COMMITTEE MEMBER BROWN: Okay. So I would like to suggest that -- thank you. I would like to suggest that maybe we take that up again looking at that policy -- when there is a difference of opinion, that we come up with a policy for our independent consultant or some format to where the Board isn't sort of blindly trying to decide to back one or the other.

CHAIRPERSON JONES: Okay.

COMMITTEE MEMBER BROWN: Thank you.

CHAIRPERSON JONES: Mr. Costigan.

VICE CHAIRPERSON COSTIGAN: Thank you, Mr. Jones. I just want to clarify. If there is, in fact -- while we have delegated to the Investment Office certain decisions, if, in fact, there is a difference of opinion between the Investment staff and our independent counsel, through the prudent person letter, the practice is to bring it to the Board?

CHIEF INVESTMENT OFFICER ELIOPOULOS: The policy is to bring it to the Board.

VICE CHAIRPERSON COSTIGAN: Okay. So I just -- Mr. Jones and Ms. Brown, I'm just trying to make sure. I believe we already have that policy in place. So the Board acts as the tie-breaker, so it's not the third-party consultant, is as long as everybody is aligned, there's no reason to bring it to the Board. If, in fact, there's a disagreement among the two parties, then it is brought to the Board for the Board to make its decision.

CHIEF INVESTMENT OFFICER ELIOPOULOS: That's correct.

VICE CHAIRPERSON COSTIGAN: Okay. So I just think we may ask Ms. Brown either further clarification or the fact that we already -- I think we already have the policy that she's seeking.

CHAIRPERSON JONES: Yes, that's true.

Okay. Ms. Brown. Wait just a minute. You need to put your --

COMMITTEE MEMBER BROWN: I did touch it.

CHAIRPERSON JONES: Okay. There you grow.

COMMITTEE MEMBER BROWN: Thank you.

And so my clarification would be I'd be seeking an -- maybe not an amendment to the policy, but I'd like to see maybe a change in the practice, where we do, in fact, ask our independent consultant for assistance. And I can't talk about what happened. And maybe we can talk about this in closed session, so I don't get myself into trouble. So I'll bring it up there.

Thank you.

CHAIRPERSON JONES: Thank you.

Ms. Taylor.

COMMITTEE MEMBER TAYLOR: And I will just agree with Mr. Costigan. I think we have a policy in place. The Board, its our fiduciary duty to rectify the situation. I think the policy is fine. I'm not sure why we would bring our consultants in on that after -- you know, as long as we have been informed of what the situation is, I don't see why we can't make the decision. So I agree that -- I'm not sure that we need to review the policy.

CHAIRPERSON JONES: Okay. Mr. Miller.

COMMITTEE MEMBER MILLER: Yeah. Again, I don't know exactly the policy. I'm sure -- but I would wonder whether when we're following a policy, you know, we can certainly ask staff questions, ask our consultants questions, if they're here. But I think it would potentially be something to see whether the actual -- the author or authors of the prudent person opinion would be available as a matter of policy to the Board to ask them questions, because I haven't seen whether that's the case. So that's something I would be interested in knowing.

CHAIRPERSON JONES: Yeah. And I would just like to state that even though we have a policy, any Board member could request a change to that policy at the appropriate time and at the appropriate place. So that for we move forward.

No further questions on that. Thank you very much.

And we do have a -- this is an action --

COMMITTEE MEMBER MATHUR: Move approval.

CHAIRPERSON JONES: Moved by Ms. Mathur.

COMMITTEE MEMBER HOLLINGER: Second.

CHAIRPERSON JONES: Second by Ms. Hollinger.

All those in favor say aye?

(Ayes.)

CHAIRPERSON JONES: Opposed?

Seeing none. The item approved -- is approved.

Thank you.

Okay. We now go to the next information agenda item, CalPERS Trust Level Review. Mr. Eliopoulos, I think I saw your guests come in behind you.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Okay. Great. Well, we're actually -- yes. Yes. Yes. Terrific. So before we tee up Item 7a, I already introduced in, you know, absentia the CalSTRS guests here. But we have the Scott Chan and Geraldine Jimenez, the deputy -- Scott is the new Deputy CIO of CalSTRS, and Geraldine, very familiar to CalPERS, is Investment

Director at CalSTRS. And they have with them eight student interns. And they just finished a tour of our -- of the trading program. They're standing up. We welcome you, and thank you, and wish you great luck on an incredible career in the investment world. Thank you for being here.

(Applause.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: So, Mr. Chair, we are on 7 -- Item 7a, which is the Board Investment Consultant Request for Proposal.

CHAIRPERSON JONES: Okay.

I think I missed the item. I'm sorry. Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So We'll have a different team up here momentarily. So 7a, this is when I mentioned in our open -- in my opening remarks. It's a new item brought before the Committee. And before I turn this item over to Elisabeth, I wanted to provide some background and perspective why we thought it was a good idea to bring this to the Investment Committee today for consideration.

The opportunity brought before today is for the Investment Committee to consider the investment consultant RFP process, the manner about which, and really the timeline about which that you go about hiring your Board investment consultant for either the total fund or for the various constituent parts of the total fund that you have separate consultants, namely private equity, real estate, infrastructure, and forestland.

And before we really launch the status quo approval process for the RFPs, we would have normally brought an item to you in either September or November, just really kicking off the very next RFP that was scheduled to be brought. And this item shows you that there are three lump -- all at the same time.

Before we just -- we just did that, we thought -- and this process has been used for many years in a row, perhaps even a decade. Before we did that, we thought it would be a good idea, especially since we'll be having a new CIO here beginning at -- the end of this year, beginning of next year -- shortly. How's that?

And I know there is a Board Governance review going on through the Board Governance Committee as well, that it would be a particularly good time to just take a break, since these are your consultants, to give you the time to consider the timeline and process by which you wanted to kick off this next round of RFPs to consider what the total fund and private asset class RFPs that you wanted to run to give you the flexibility to make any changes that you might want or not want.

So that -- that's the purpose of this. This relationship, as I underscored in my earlier remarks, between the Investment Committee and the Board consultants, and as the discussion we just had on policy as well, underscores the importance of the relationship between this Investment Committee, and the independent consultants that you hire really to be your eyes and ears, and checks and balances, and, you know, another informed opinion as you exercise your fiduciary duties.

So we thought it would be a good idea. We know we're adding to an already busy day. We could have just brought, you know, the items forward to replicate the status quo, but we thought it was an especially good time to take a break and consider whether or not we want to carve out some time for this Committee to have a discussion about the roles of the Investment Committee consultants, and how many you would like to have before we move forward with the regular timetable.

So that's the background, why this is before you this month. And I'll talk it -- turn it over to Elisabeth to talk a little bit about what we have in the agenda item.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

Sure. Thank you, Ted. Good morning, everyone. Elisabeth Bourqui Chief Operating Investment Officer.

So this Item 7a is an action item. We are requesting the Committee the approval to actually extend the term of Wilshire and Meketa Consulting contract -- contracts by one additional year for a total of six years, and at the same time, reduce the term of PCA Consultant contract by nine months.

The Board resolution 9204B4 grants the Board the authority to award a contract term of more than five years. This action aligns the expiration date for all of the three Board consultant contracts, and delays the release of a competitive solicitation process, an RFP process by an additional year.

We have two reasons to make this request. One -- as actually Ted just highlighted, one is policy related, and one is also more administratively related.

On the policy front, an additional year will provide the Board and the staff the opportunity to analyze the consultant role, structure, and more closely align it with the total fund approach that we have identified in our INVO 2020 Vision.

From an administrative perspective, the realignment effort may reduce the number of competitive solicitation RFP needed to rebid the Board consulting services from four to perhaps another number like one or two.

This reduction is in alignment with our strategic

Objective of reducing complexity. If approved today, staff will retain the fee schedule, currently in place addressing the reasonable cost provision of the delegation. Staff plans to bring a revised Board consultant rule structure to the Committee for consideration and approval by early 2020.

Happy to respond to any question from Committee members. I'll pause here. Thank you.

CHAIRPERSON JONES: Okay. Thank you.

Mr. Juarez.

ACTING COMMITTEE MEMBER JUAREZ: Yes. Thank you. And good morning.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Good morning.

ACTING COMMITTEE MEMBER JUAREZ: I wanted to clarify something, because it seemed as though extending three of the contracts and bringing back one of the contracts was based somewhat on a presumption about how many different RFPs we'd actually do. Am I right in making that assumption or is there other factors that would govern us extending for the one additional year and then bringing back the other one, one year?

CHIEF INVESTMENT OFFICER ELIOPOULOS: There's no presumption as to whether or not you end up with one or four. But by aligning all four together, it would preserve your options to consider them all at one time and make that decision.

The difficulty if the time periods are staggered, there's less opportunity to consider these options.

ACTING COMMITTEE MEMBER JUAREZ: Okay. I appreciate that. If we were to bring them back to 2020 though, bring them, that would give us that opportunity. And yet, because what -- as I reviewed the time needed -- and again, I think it's somewhat dependent on what this Board decides in terms of the number of RFPs.

But if we were to say just to do two, it seems to me that it would be reasonable to assume we could deliver the RFP in new contracts approved by the current date, which is June 30th, 2020. So I guess what I'm asking is would it be possible to consider at least leaving ourselves the option of deciding by June 2020 to actually award the RFPs, if, in fact, we're down to less than four?

CHIEF INVESTMENT OFFICER ELIOPOULOS: That's a good question. It really comes down to how much deliberation and forethought the Committee wants to consider the role of the consultant, and this question of how many consultants.

If we need to schedule time for the Committee to have that discussion, we then start to run into some timing constraints in terms of running multiple RFPs. If the Committee gave us direction today to say move forward with two RFPs, as your, you know, question, you know, underscores without extensive consideration or reconsideration of the substance of the roles, then we could meet the timeline and bring this to a conclusion by the end of June 30th of 2020.

But there's not a lot of slippage time in order to -- in order to bring that. So this was really an extra year was meant to give the Committee and us time to have this extra round of deliberation over this.

And you know, if I were to score -- you know, score myself and score the staff, you know, ideally perhaps we would have brought this a year ago in order to give you that, you know, flexibility one year past. But, you know, we're here today. The contracts expire June 30th of 2020, and we think it makes sense to give us a little -- get collectively some time to make sure we're not up against a deadline and the Committee is still deliberating over whether it should be one or two or three or four.

ACTING COMMITTEE MEMBER JUAREZ: But as it turns out, you're expecting us to have a decision sometime this fall. I assume -- did I read November was -- is the date by which we would know generally the direction prided to you relative to the number of RFPs we want to issue? Is that your thinking at this point?

CHIEF INVESTMENT OFFICER ELIOPOULOS: It's by the beginning of next year, right?

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Yes, by the beginning.

CHIEF INVESTMENT OFFICER ELIOPOULOS: The beginning of next year is when we would expect that.

ACTING COMMITTEE MEMBER JUAREZ: Oh, that decision. So I was thinking the fall. So we wouldn't necessarily tell you by -- and again, I'm looking at my fellow Board members as to how quickly we could make a determination. I mean, we've had at least a brief suggestion about this so far. I don't know how complex the discussion will be, but I guess just extending contracts to me is, if it's absolutely necessary, certainly I'm going to go along with the flow.

But I just -- I worry about putting off the decision one more additional year, when we probably know what we want to do. I think we will by -- sooner than early next year. So I just put that out to the Board.

I mean, if -- if for the time being we can always revisit it, we want to extend it for one more year to 2021, that's fine. But I would just hold open the possibility that we may want to come back to the staff in saying let's try to wrap this up by June 30th, 2020.

That's -- that's --

CHAIRPERSON JONES: Okay. It's a valid point. And, you know, we would have to agendize the discussion, and then how long does it take to promulgate the whole process for an RFP once that's done?

CHIEF INVESTMENT OFFICER ELIOPOULOS: It really depends on how many RFPs --

CHAIRPERSON JONES: Oh, okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- that we have to process, because we have to sequence them. You know, as you know, there's quite a choreography around the RFP process, including Investment Committee member participation in, you know, parts of the process. So if we're going to run four, we need to stagger them. If they're fewer, then it can go much faster.

So we didn't want to presume to get ahead of the Committee in terms of how many consultants you might want to have, whether you have a -- you know, have a firm been or not. Really just to give the timeline for the Committee's benefit, if you want -- the section in the staff report that mentions this fall for the -- for Mr. Juarez -- that's if we go with the status quo, then we'd be back this fall this November with the beginning for the three consultant RFPs.

And that gives you an idea of we need to start that RFP process, then in order to be complete by June 30th of 2020. If -- so if the Committee knew -- liked the status quo, and wanted to move forward, that's what we would do. We'd be back here in November and we'd start that process.

CHAIRPERSON JONES: So if we were -- if the Committee were to decide that we calendar this for a discussion of this item early next year, and then the -- whether to extend or not would be based on the outcome of that discussion, is that right?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Yes, that's correct.

CHAIRPERSON JONES: Okay. And to Mr. Juarez's point, then I think that may be the appropriate way to deal with this is to let's have that discussion to see what we want to do, and then that will dictate how long -- whether or not to extend or stay the course. Okay. Okay. Ms. -- That's one option.

Ms. Yee.

COMMITTEE MEMBER YEE: Thank you, Mr. Chairman. Just a practical question about the PCA contract. Do we have the ability to terminate it in nine months?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Yes, the Committee -- yes, we do.

COMMITTEE MEMBER YEE: Okay. Mr. Chairman, I actually would like to request that we agendize a discussion about the scope of services going forward. I think one of the things that may not be apparent to the public is that the value that the consultants bring to us. And I happen to like having multiple consultants, because I think multiple perspectives just helps better inform us.

But there's a lot of value in terms of the individual interaction that I as a Board member or a member of this Committee have with the consultants as well. And sometimes that's not apparent in terms of some of the work that we do individually with the consultants or how we utilize their services for expertise.

I would like to see a discussion from the perspective of -- it's always been kind of a rub about who's actually directing the work and the expectations of the consultants. And I think the consultants, at times, feel like they're kind of stuck in the middle. They work very closely with the staff. And yet, in terms of their relationship with us, maybe a little less clear.

And so I would really welcome a conversation about that. And maybe that's all embedded in what we can articulate relative to the scope of services going forward and the structure of the RFP.

CHAIRPERSON JONES: Okay. And I -- unless the Committee has a different viewpoint, I will direct staff to agendize this next year, so that we could have that discussion to help us --

COMMITTEE MEMBER YEE: Thank you.

CHAIRPERSON JONES: -- form our opinion on where we want to go with this.

Okay. Ms. Brown.

COMMITTEE MEMBER BROWN: Thank you, Mr. Chair. I'd just like to say that I agree with Ms. Yee's comments. I do value the individual consultants that we work for, and I really wouldn't want to give up the benefits of the individual asset class expertise.

You know what's not in here is what this consulting help does to increase our returns, and what would happen if we instead don't have that individual asset class expertise, what does happen with our returns? And I know you can't predict that, but it's a -- it's a big -- it's a big concern if we lose that expertise.

So I'd be happy to have that conversation in the very near future about how we move forward.

Thank you.

CHAIRPERSON JONES: Okay. Mr. Rubalcava.

COMMITTEE MEMBER RUBALCAVA: Thank you, Mr. Jones.

I just had a clarifying question. I think you sort of clarified it a bit. In the memo that talks about if we stay with the status quo, you would have to return in November to the Committee, but to initiate four separate RFPs. But then right now you said three. And that was my question, because they -- because there's a two-year difference between two branches of -- so I just want to clarify that.

CHIEF INVESTMENT OFFICER ELIOPOULOS: There are three that expire on -- in June of 2020 --

COMMITTEE MEMBER RUBALCAVA: Right.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- and then PCA is the fourth -- is two years later as you say. So really it's the pressing time matter are the first three, where the expiration is on June 30th, 2020.

So the challenge with the Chair's direction, just to underscore expectations, is if we agendize the full discussion regarding the Board's role, which we're recommending would be healthy to have that discussion, and the committee ultimately decides that it would like to move forward with these three RFPs, and then subsequently fourth two years later, that there will be some timing issues to get all three completed by June 30th of 2020, and an extension may be needed.

But we could take that up in the new year. But I just want to set expectations that -- that we might need an extension if that discussion on role, you know, precludes us from processing three separate RFPs and meeting that June 30th, 2020 deadline.

CHAIRPERSON JONES: Right. Yeah, I'm glad you clarified that, because depending on what we decide will dictate the timeline.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Yes, right.

CHAIRPERSON JONES: Okay. Okay. Mr. Costigan.

VICE CHAIRPERSON COSTIGAN: Thank you, Mr. Jones. And I'd like to say to the Investment Office appreciate you all bringing this forward. I know RFPs are complicated. I think the direction, at least I've heard, is for us to put the item over, have a discussion about the consultant's roles of discussion, clarifying -- because one of the things I wanted to make sure, and I just don't see it in the materials, we still retain the 30 days to terminate any contract, that's correct?

CHIEF INVESTMENT OFFICER ELIOPOULOS: That's correct.

VICE CHAIRPERSON COSTIGAN: Okay. Because I just want to -- and then the other issue to just think about working with Ms. Malm, and I think Mr. Gillihan may raise that issue is to me an 18-month RFP seems like an extremely long time and we have to figure out what the problem is.

When I respond to RFPs, it's typically 45 days, and I see lots of RFPs from local governments. So I'm not sure why an RFP for us is so complex, that it's August of 2018, and we're talking about something three years from now. So again, I'm looking to our new -- to you, Elisabeth, as you're going to be running this process, is what is wrong with the process that requires 18 months to do an RFP? And I don't need an answer now, but at some point when we come back to this item, particularly when we only have four, what the concern is. And if that's staffing or process, we need to address it as a core issue.

Thank you, Mr. Jones.

CHAIRPERSON JONES: Okay. Mr. Gillihan.

COMMITTEE MEMBER GILLIHAN: Thank you, Mr. Chair. First of all, I'd like to say I completely agree with where Mr. Juarez was headed. And should he make a motion along those lines, I'd be happy to support it.

In my experience, and I've dealt with a lot of RFPs in my career, is these things tend to expand to consume all the available oxygen. And so if we set deadlines that are so far out, it's going to take that long. But I believe with direction from this Board, that we could have a decision in time for the current -- the three that are going to expire in almost two years from now, without the need to decide to extend them today. And again, this board can always make a decision later to extend those contracts, or to terminate other ones early if we have a strategy that changes going forward.

CHAIRPERSON JONES: Yeah, and I think that's consistent with what I've heard from all members.

Okay. Mr. Miller.

COMMITTEE MEMBER MILLER: I guess kind of in the same camp as Richard. I'm wondering if rather than agendizing that more extensive conversation for next year, if we could get it on our calendar in late fall/winter to give us that extra time, but also to not unnecessarily delay having that conversation of making those decisions.

CHIEF INVESTMENT OFFICER ELIOPOULOS: We've looked at the calendar as -- and the calendar is really packed through December, but we'll look again to see if there's a spot that we can interject it, as I -- as the Committee was discussing and I was thinking one probably really good opportunity for that role discussion would be the January off-site would be a good time for that perhaps.

But we'll also look at the November and December agenda. And if we can carve an item, we'll look to further this from a timing standpoint. But there are some constraints.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: And

I think just to add on that, we wanted to give you extra timing, not only from a administrative perspective, but really for you to have the possibility to have a discussion after the review -- the Governance Board review, right, where you can really think what are the different roles and importance of each of the different consultant, and have sort of a complete discussion about it, given the governance kind of survey that you're doing.

CHAIRPERSON JONES: Okay. Thank you. So we will not take an action on this item, and we will ask that you add a follow-up item to see when the earliest this can be returned for that discussion, but no later than say off-site in January.

Okay. Thank you.

Okay. Now, we well move to the 8th item, 8a, CalPERS Trust Level Review.

(Thereupon an overhead presentation was presented as follows.)

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

The format for this is very familiar to the Committee. I have some familiar faces joining us now. This is the review of this past fiscal year. And what we start off with is a summary and review by CalPERS Chief Economist, John Rothfield, on the macroeconomic environment that prevailed, and that -- what we see going forward. So we'll start with that and questions and answers for Mr. Rothfield.

And then following that, I'll turn it back over to me, Elisabeth, and Eric to go through the presentation on performance, attribution, and risk, as well as a newer face. Although, you saw Rob Patterson last year will be bat clean-up, will be the last presenter to talk about our GIPS compliance this year for our return performance.

So with that, I will turn it over to Mr. Rothfield.

INVESTMENT DIRECTOR ROTHFIELD: Thank you, Ted. And again, it's great to have the opportunity to talk to you about the macro backdrop for -- that informs asset class performance and hear your questions and concerns. I appreciate the opportunity.

So compared to when we were here earlier in the year in February, the economy -- the U.S. economy has outperformed probably expectations over that period of time. And for the whole fiscal year, the U.S. economy grew by 2.8 percent compared to the average of the first eight years of the economic expansion of 2.2 percent. So there's been a six-tenths increase in growth in the latest year, which is unusual this far into a business cycle.

But it's fairly easy to achieve higher growth when you have a $1.5 trillion fiscal expansion, which the government put in place, so a trillion dollar corporate tax cut, and a half a trillion dollar for the household sector. So most sell-side analysts have believed that the addition to the economy this year and next from the fiscal loosening that happened in the U.S. is about six-tenths growth in one year and that's exactly what we've had.

So really the debate is about the future, whether this is a -- an economy that's going through a supply-side improvement or whether we're just creating demand that's going to ultimately close down the expansion fairly quickly.

So a lot of the discussion around the moment is about the longevity of the U.S. business cycle. So we've now been growing in the U.S. for nine years. The U.S. records, since they started dating business cycles, has been 10 years. So the question is whether we can go on like some other countries and have a longer expansion than 10 years. Because I would say the median estimate in the market right now is the economic expansion here in the U.S. goes about another three years.

We have had examples like the UK and Canada, where from 1992 to 2008, there was a 17-year economic expansions. That was roughly the same as the Japanese expansion from the mid-seventies to the early nineties.

And my own home country Australia has not had a recession since 1992.

So, you know, people are starting to think about whether we can actually go past the 10 year, which has typically provided a stop for U.S. economic expansion, which is important for the performance of risk assets versus safe assets going forward for the next few years.

So going specifically to page two, and I don't -- this guy is not working.

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INVESTMENT DIRECTOR ROTHFIELD: Ah. Okay. Facing it that way. Yeah. Thank you.

So we typically do -- I know the Board in the past has liked this table on what's trending. And you can see in the economy that more has been trending positive than negative over the last six to 12 months. As I mentioned, economic growth has improved by six-tenths of one percent in the latest year.

In the latest data for gross product, we had a lot of historical revisions, which seemed to show that the savings rate by the household sector in the economy was much higher than we thought. And that's very important, because it means that if the household sector is saving, it's providing a flow of revenue into mutual funds, bonds, stocks, and pension funds more than we had -- in a way that we had previously thought was starting to dissipate. As people started to feel confident and were spending more, we're now starting to revise back to a situation where we are actually getting a lot of household savings. So that was actually a positive that was announced only a couple of weeks ago, and encouraged people to think that the expansion could last for longer.

Another interesting trend in the U.S. economy has been small business plans to expand hire. Small businesses are very significant employers in -- employers in the economy. And their problem is finding qualified workers to actually pay to fund their expansion plans. They're having to start to increase wages to do that, and in some cases may not find the worker and have to ditch those plans.

Corporate earnings and sales has been strong. Again, that's not that difficult when you've got a $1.5 trillion fiscal loosening that happened in the economy. Mining and manufacturing have also been going particularly well. Mining, a function of the improvement in global energy prices. You've seen mining states like Texas, North Dakota, et cetera improve in relative terms, in terms of their hiring and their gross State product.

Housing trends have also been very encouraging. We've had a pick up in household formation -- annual household formation. And more of that has happened in owner occupied as opposed to rental. So owner occupied fell sharply after the recession. Owner occupied has now started to improve. And even more encouragingly, more ownership based household formation is coming from young people, and from folks who are in the lower half of the total income cohort. So that's another encouraging sign in the economy.

The Fed also believes that U.S. financial system stability remains quite strong. Surveys of loan officers is showing that their hasn't been a significant drop off in demand for loans or tightening standards. Whether right or wrong, that means that we're not late cycle in that perspective as well.

And the global business cycle has actually had a good couple of years. Now, if you go across to the negative side, it gets to this issue about whether labor force participation and productivity, which are the two ways you can extend a business cycle when you've got a very low unemployment rate, we've yet to see the data that shows that we're going to get that cycle prolongation by an improvement in those two factors of the economy.

The other couple of problems that could arise in the future is that because we've had a pretty good economic performance, some of the central banks around the world are starting to withdraw liquidity. The Fed started to do that as recently as last October. The European Central Bank has decided it won't be buying anymore debt after January 1 next year. And even the Bank of Japan has loosened up a little bit its -- sorry, tighten up a little bit its loose monetary policy as well.

So some folks believe that some of the asset price reflation we've had is due to all this liquidity that's been added by the main three central banks. And that's becoming less of a supportive of financial assets as the global economy improves. And that that source of liquidity goes away.

Another couple of factors which are clearly evident, are emergent trade wars. I think it's under appreciated how much the improvement in global trade in the last couple of years has contributed to the performance of the U.S. economy, not only foreign economies. And if we have a trade war that takes down growth of global trade, that could be problematic for risk assets. And then, of course, the disruptive geopolitics.

So we've cleared a lot of those hurdles, but in the fourth quarter of this year, we have some issues around both whether the UK is going to indulge in a hard or soft Brexit, and, for example, in Italy, whether the government -- the new Five Star Movement and League government is going to try an engage in policies which increase their borrowing and puts them at odds with what's happening in the rest of the Euro area.

The other problem, of course, in the geopolitical space is emerging markets, where emerging markets have actually had a poor year, despite good economic performance. Everyone from Turkey to Brazil to China are starting to slow down a bit, and they haven't been able to get out of the early business cycle phase.

So again, I would say most of the factors that we're seeing, both past and even leading into the future are positive, but we have some negatives that we do have to worry about as usual, in terms of whether we worry about risk assets at all.

So I just wanted to address a couple of those constraints on the U.S. expansion, how long it can go, pages four, five, and six of the material going through very quickly.

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INVESTMENT DIRECTOR ROTHFIELD: We have something called the non-employment rate in the economy, which is not only people who are looking for work, but people who haven't looked for work in 12 months, and a reasonable reckoning of people who are still out there and don't even know that they could potentially look for work in the future.

That so-called non-employment index in the economy has gotten very low. So the question is, you know, maybe if we continue to get strong growth, you can pull more people than we think out of non-employment into the labor force and into jobs. But it may be difficult, and they may be very low productivity experiences in the economy.

On page five, is this issue of labor --

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INVESTMENT DIRECTOR ROTHFIELD: -- force participation, which is that -- that's the one, yeah. Page five is that the labor force participation rate is being held down in the economy, because we have an aging population. So as people tend to get over 55, their participation in the labor force halves from 80 percent to 40 percent.

So just compositionally getting low participation in the labor force. And then the other problem is that even within some cohorts, particularly in prime age, you're getting low participation continuing. The clearest example of that is in the age 25 to 34 where female participation in the labor force has picked up to where it was before the recession.

Male participation of 25 to 35 year old -- 34 year olds remains very low, across whites other cohorts in -- kind of racial cohorts in the labor force.

So that's a big question about whether that group can ever improve its labor force participation. Quite frankly, as of yet, we haven't really seen that improvement. It's still going sideways, despite improvement in the economy and efforts to address various things.

And, you know, one element of that is there is, you know, this concept of there maybe a semi-generation that was educated during the great recession in 2008/2009. They got their degrees, but their skills got degraded, because it took a long time to find jobs. And therefore, that generation may never retain or regain the labor force participation that they had before. So that's still a very open debate in the economy about whether we can -- whether we get that going.

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INVESTMENT DIRECTOR ROTHFIELD: Then on page six, you can circumvent -- you can circumvent a low labor force growth by looking at so-called productivity, which is what output benefit you get from adding incremental labor to the labor force.

Now that, in this expansion, has only grown at 1.1 percent. There's some talk that that low productivity rate is biased downward, because we've had -- the government does a poor job of measuring technology, such as what we're getting from cell phones, et cetera on economic growth, but it is clearly lower and hasn't improved yet.

Now, there's a leading indicator of productivity, which is on the right-hand side. And unfortunately, that line that looks up now should look down, because it's been revised. And it's essentially saying that companies have done a very good job of increasing actual and prospective employment, but the output side isn't increasing commensurately. So that's actually low productivity.

One of the examples there is manufacturing. We've had a significant improvement in manufacturing employment in the last year or so, but manufacturing output, or investment in manufacturing equipment and plant has actually been coming down. So that's low productivity.

So the jury is still out on this median estimate that the expansion has about three years to run. If it did have three years to run, that would probably be good for risk assets. The Fed would be moving gradually to a higher rate. The Fed thinks it's halfway through what it's going to do, and that would probably be fairly constructive for markets.

But at this point of a business cycle, you never know what's going to turn it over, particularly when you've got these global issues.

I just wanted to go to two more charts.

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INVESTMENT DIRECTOR ROTHFIELD: One on pages nine, which is that we and others don't only look at the U.S. business cycle, we look at the business cycles of other jurisdictions, so China, Japan, and Europe as well. You can see there that a lot of the U.S. indicators that we look at are still in mid-cycle as opposed to late cycle. So we're -- there's some debate about whether we're late-mid or mid-early late cycle in the U.S. economy.

In China, when we look at that economy, that economy has softened. It hasn't been in a recession since the eighties, but it has softened. And now, they're going through an easing process. They're cutting interest rates, they're easing up on credit constraints, and they are loosening their budget policy to allow more spending.

Whether they're successful in being able to engage in another rebound in the Chinese economy depends on whether they can stop capital outflow from China.

Europe is also in mid-cycle, which is constructive for assets as well. Japan is probably late cycle. They've managed to improve their economic performance by increasing dramatically the hiring of women, elderly people, and temporary immigrant workers. But they're reaching the end of the line on their ability to be able to do that, and continue to get above potential growth.

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INVESTMENT DIRECTOR ROTHFIELD: So page 11 goes to the issue of leverage and valuation. Leverage in this expansion has been going sideways. And again, it gets to this issue about the fact that the household sector has been very responsible. It's not like the 2000s where we all took out leverage, took equity out of our homes, et cetera, and engaged in a spending spree. That hasn't happened in this cycle. We're actually putting savings into the system at the moment, which is good, and the government deficit has been getting smaller to kind of match the increase in corporate leverage. And their valuations are high, but in every country valuations have gone up.

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INVESTMENT DIRECTOR ROTHFIELD: And then finally on conclusion on page 14, what I wanted to get across from macro was that on balance, if you look at central and upside, you're getting about two-thirds of the outcomes over the next six to 12 months when you look forward with this.

And then there is always this elephant in the room, which is some of the downside risk, trade wars, nationalist policies, which is a negative-sum game, the Fed or central banks tighten too quickly, and that takes away the punch bowl from the economic expansion we're having. So that's the end of my presentation.

CHAIRPERSON JONES: Okay. Thank you. We have a few questions, but I want to thank you for the presentation. Always look forward to your insights from an economic point of view, and --

INVESTMENT DIRECTOR ROTHFIELD: Appreciate that. Thank you.

CHAIRPERSON JONES: Yes, very much.

Okay. Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you, Mr. Chair, and thank you, Mr. Rothfield. As always, an instructive summary, your assessment of the economy.

I do have a few questions. The first is that on Friday, as you know, the Labor Department reported that inflation has outstripped wage growth, and that wages are actually in real terms going down slightly, but on the way down. Have you considered what the implications of that might be, if that becomes a long-term trend?

INVESTMENT DIRECTOR ROTHFIELD: Yes. There's something called real personal disposable income, which is income after taxes, and after being dissipated by inflation. And that number is not really turned negative -- that negative yet, but we do have three percent consumer price inflation, and wage growth of -- nominally, wage growth of 2.7 percent.

Although, I will say part of that wage -- lower wage number is due to compositional effects. So if you take one worker compared to a year ago, their wages are rising by 3.2 percent, a little bit more than inflation.

When you look at inflation right now of three percent, many people think this is the top of the cycle. The main reason we've had higher inflation in the latest year has been higher energy prices compared to a year ago, which is feeding through into gasoline prices. And the impact of that is starting to turn down.

So if you look at Wall Street and our own estimates for inflation, by the end of the year, you could well be down to about two, two and a quarter percent inflation by the end of the year. So a lot of this is due to gasoline and oil drive about 75 to 80 percent of headline inflation. And we're seeing kind of a peak now in that impact.

So I would say as a forecast from what we're seeing from the street is we probably get a fairly strong growth continuing in personal disposable income after the tax cuts. And we're going to start to see a bit of a dissipation in inflation from the gasoline sector going forward.

COMMITTEE MEMBER MATHUR: Okay. Thank you. One other thing that you talked a bit about is tightness in the labor market. And to -- but -- to what degree is immigration policy currently impacting that? Because you mentioned that with respect to Japan, that they're using immigration as a way to source workers.

INVESTMENT DIRECTOR ROTHFIELD: Yeah.

COMMITTEE MEMBER MATHUR: And that's obviously been something that in the U.S. has been quite a prevalent dynamic as well, but -- so could you talk about project -- you know, what the prospective is?

INVESTMENT DIRECTOR ROTHFIELD: Yeah. So that comes down to the issue of how the relevant population of, you know, 16 to 16 plus age group, because now anyone is working. It doesn't matter how old you are. So let's say 16 plus population. And then the growth of the labor force, which is people in that cohort, which either have or are looking for a job.

We haven't seen anything yet in the population growth numbers that reflects intentions to slow down immigration into the economy. Maybe that will happen in the future as some of the immigration policies take hold of the administration, then you might start to see a slow down in population growth, which makes it even more difficult to get the labor force that you need to fund a long expansion.

And I know there's a lot of proposals out there. The business sector is advocating for a, you know, skills based, but also a broader immigration policy that allows the expansion to continue. One of the areas that we're seeing is in construction. Hose prices have kept rising, in part because there's a demand for household formation.

But housing construction in the last six to 12 months has actually declined, because you haven't been able to -- in part, because you haven't been able to find the workers, given the competing objectives, and then the slow down in the growth of maybe that immigrant workforce.

COMMITTEE MEMBER MATHUR: And then finally, my last question is you talked about the improvement in manufacturing employment, but that productivity overall is down. And is that, do you think, just a lag that there's -- as they're training new workers, that it takes awhile for the productivity to manifest or is there something else at work?

INVESTMENT DIRECTOR ROTHFIELD: I would say. And then also manufacturing had a lot of unused capacity anyway, so you have to get to -- you have to increase your raise of capacity utilization before you start making new investments in plant and equipment. That's one thing happening.

And then probably if you're starting to increase your production lines, you take any worker that's available and then maybe there's some training that could occur over two to three years that would allow that to improve. But again, I think this Wednesday we get the productivity numbers for the second quarter. There's one side expecting, hey, this is going to be a great number, and another side saying not so fast. We're just adding workers but not growth and output yet. So it's become almost an ideological, rather than an analytical issue about what's going to happen.

CHAIRPERSON JONES: Fair enough. Thank you very much.

INVESTMENT DIRECTOR ROTHFIELD: Sure.

CHAIRPERSON JONES: Okay. Ms. Yee.

COMMITTEE MEMBER YEE: Thank you, Mr. Chairman.

I wanted to go back to the trending slide on page two. There was one element that actually really intrigued me, and that had to do with the shift from renting to home owning, which seems not to be the case here in California.

So curious where that's happening?

INVESTMENT DIRECTOR ROTHFIELD: Yeah, and in the attachment -- in the attachment material on page -- on page 24, I have some of that information on household formation trends. So definitely there's no such thing as a national housing market. It's all regional.

COMMITTEE MEMBER YEE: Right.

INVESTMENT DIRECTOR ROTHFIELD: And what you definitely find, there's one measure of housing affordability, which breaks down into, you know, a couple of a hundred cities in the U.S. And you can see that clearly in the Bay Area and also Southern California, you've reached extremes in terms of affordability, et cetera. Whereas, nationally, we're in about the middle range of affordability.

And therefore, you know, you can definitely see the national level from that -- from that slide on page 24, that top right that the number of owner households has been increasing, and the number of rental households, which made up all of the growth for the major part of the expansion has started to come down a bit.

And then again on the bottom left, you can see that below median income has had an increase in participation -- in ownership. And then by age cohort, it's been under 35. So, you know, whether this is good data or not, clearly at the national level, there has been some improvement. And maybe nine or plus years into an economic cycle, the rich tend to do well earlier. And then ultimately you get -- I'm not -- I don't want to call it trickle-down, but I think that ultimately at some point in the cycle, even those who have been left behind start to get a relative improvement. It's still a very small relative improvement, but it's encouraging nonetheless.

COMMITTEE MEMBER YEE: Okay. Kind of from your perspective and those economists generally, so as the Fed begins to wind down its quantitative easing program, what are the signs that you're going to be looking for that signal a potential market downturn? And is Japanese economy instructive in that way?

INVESTMENT DIRECTOR ROTHFIELD: That's a very interesting question, because the Fed -- both the Fed and European Central Bank have very well intentioned what they tend -- what they intend to do in terms of balance sheet runoff, particularly the Fed.

The only question about the Fed is when they stop doing it. They're probably going to have to end up with a big -- much bigger balance sheet than they had before this recession, because of changes in some relationships within the banking sector.

So there is a question about when they actually stop drawing down the balance sheet, but they've telegraphed it for a long time. So interestingly forward-looking asset markets should already be adjusting to that new reality of lower balance sheet. But ultimately, you know, it's almost like the boiling frog at some point, everyone knows that this drawdown is going on. But then you start to actually see less demand for bonds and for stocks coming from that liquidity drawdown, and then there's a tipping point in markets.

And that's -- that was very much the case in the 2000s. 2007, the Fed was still tightening -- I think May of 2007 was its last rate hike. Still things were going fine. The recession actually started only seven months after that.

So that gets to this issue about, yes, maybe we are going to be getting a longer expansion. But you never really know when -- what that tipping point is going to be. And maybe it's just an accumulation of factors, exacerbated by the withdrawal of liquidity.

One of the more encouraging things is that balance sheet drawdown is conditional. The Fed can always go back to tightening at some point or even cutting interest rates. So there's a conditionality about the drawdown that encourages some people to think that we can go on for longer.

COMMITTEE MEMBER YEE: Um-hmm. Okay. Great.

A couple of other questions. The -- you mentioned Brexit still waiting to see whether it will be a hard or soft Brexit. With respect to the federal tax cuts, are there economic forecasts in the making with respect to what we can expect the impact to be on the federal tax cuts that have --

INVESTMENT DIRECTOR ROTHFIELD: The household -- tax cuts to the household or the --

COMMITTEE MEMBER YEE: Both.

INVESTMENT DIRECTOR ROTHFIELD: -- corporate sector?

COMMITTEE MEMBER YEE: Both, household and corporate, yeah.

INVESTMENT DIRECTOR ROTHFIELD: Yeah. Yes, the -- the median opinion is that it would add about six-tenths of one percent to growth both this year and next year. And then we would have a bit of a cliff in 2020 as the stimulus impact of the tax cuts dropped off.

And as I mentioned, you know, we -- in the latest year, we had 2.8 percent growth. And that's kind of six-tenths higher than the pre-average for the expansion. So we're kind of getting that six-tenths run rate on growth improvement at the moment.

And one of the things that's helped that strategy has been that normally you would get so-called crowding out, so that when government came in bond yields would go up and that would crowd out the private sector. But in this case, bond yields haven't gone up in a noticeable way, partly because again this global QE that's going on.

And also, you know, pension funds, particularly corporate pension funds and others, have been buying bonds, partly due to some tax issues. And so you haven't had this so-called crowding out --

COMMITTEE MEMBER YEE: Um-hmm.

INVESTMENT DIRECTOR ROTHFIELD: -- that typically happens. So they've been able to get a free lunch in the early stage of this fiscal expansion.

COMMITTEE MEMBER YEE: Good. Good.

And then last question, and obviously trade and tariffs and all that have impacts. And the response from China has, relatively speaking, been pretty measured. If the Chinese government should become more aggressive, any thoughts about what we ought to be worried about with respect to the fund.

INVESTMENT DIRECTOR ROTHFIELD: Probably more worried about a China level, because they are going through an economic slow down. So the question is whether they have the levers, for example, with fiscal policy to reopen their infrastructure projects again.

One interesting thing about China that came out of last week's data is China doesn't have a external surplus anymore. It's got a surplus with the U.S., but basically its current account is back to zero, which is unusual.

So you may actually just see a reconfiguration of trade imbalances between one area and another, rather than a significant net hit to China.

And again, they can -- what they're doing right now is they're cutting their interest rates, and they are boosting their fiscal. And they have the wherewithal to do that, because they're a very high savings country. So I tend to have a more sanguine view about how this could end. I don't think it's going to have much of an effect on the U.S.

And the question is can China re-engineer its expansion and recalibrate it in the -- in the case of a trade war. And history says it can do it, but there was an incident in '14-'15 that caused China to turnover, and them the suffer capital outflow, which reduced their degrees of freedom. And that's one thing that we have to worry about.

COMMITTEE MEMBER YEE: Great. Thank you, Mr. Rothfield.

CHAIRPERSON JONES: Okay. Thank you.

Mr. Juarez.

ACTING COMMITTEE MEMBER JUAREZ: Yes. Thank you for the presentation. It was incredibly understandable, which I appreciate coming from an economist.

(Laughter.)

INVESTMENT DIRECTOR ROTHFIELD: Oh, sorry about that.

(Laughter.)

ACTING COMMITTEE MEMBER JUAREZ: The -- a couple of your charts had these gray bars. And at first, until I got to page 11, I didn't realize -- or I sort of assumed they were recession periods on the gray bars.

INVESTMENT DIRECTOR ROTHFIELD: That's correct, yes.

ACTING COMMITTEE MEMBER JUAREZ: And if you go back to page four, I think it's just worth noting that what appear to be during times of full employment, at least as we would normally categorize it, it was almost the onset of the next recession, almost to a T every time.

And it's sort of where we're at today. And it's no magic -- you know, it doesn't take a wizard to say people are predicting some sort of downturn. But clearly, it's at a time when you see these numbers of employment that we start to feel the recession.

And I guess all I -- my question would be for you to just tell us a little -- pontificate on why that is? Why is it that we can't have a prolonged period of low unemployment, and steer clear of these bars?

INVESTMENT DIRECTOR ROTHFIELD: Yeah. That is a good question. I mean a lot of those last recessions have been due to financial cycles and not economic cycles. So the Fed has got to dual mandate of inflation and employment -- implied dual, so they look at both, really looking at two percent inflation.

But you can -- so that -- that's the mandate. But often, the recession tips over when you've got a financial excess, whether the savings and loans in the late eighties, early nineties, the tech bubble in 2000, and then the subprime and another leverage crisis that you had in the 2000s. So it really wasn't due to the low unemployment rate.

So it is possible. And so it was really the financial cycle turned over the economy, which started to get firms to fire people, and then the unemployment rate turned around. So it wasn't the low unemployment rate, per se, that ended. And you can have -- like I mentioned with the country of Australia, you can have a period where the unemployment rate goes around in kind of a sine wave. It doesn't sideways trend at a fairly low level without triggering a recession.

The other thing in the economy right now is that the wage share of GDP is incredibly low historically, and the profit share very high.

So you can have a point where scarce labor causes a rise in wages, but it doesn't collapse the economy, because you have plenty to go in the wage side before you start to hit profits. And then, of course, the more wages you're paying, your top line is improving anyway. So it is possible.

There's a lot of debate at the Fed around what so-called NAIRU, which is the accelerating inflation rate of unemployment. It could actually be lower than we think. And then this issue about whether you can get labor force growth that stops the unemployment rate falling.

But, yes, I think you're right is that it's not the low unemployment rate per se that's causing the recession. It's other factors at the moment.

ACTING COMMITTEE MEMBER JUAREZ: So purely coincidental in those three cycles.

INVESTMENT DIRECTOR ROTHFIELD: Yeah, I wouldn't call it coincidental. I would say that as the economic expansion continues, you're getting very strong hiring. So always at the end of a cycle, you have a very low unemployment rate. It's very rare that a recession starts at a -- from a high unemployment rate. Whether one causes the other is more questionable.

ACTING COMMITTEE MEMBER JUAREZ: Thank you.

CHAIRPERSON JONES: Okay. Mr. Costigan.

VICE CHAIRPERSON COSTIGAN: Thank you, Mr. Jones.

I always find your report fascinating. So I look forward to it. I think the data is just amazing.

So I want to quote Joe Dear a little bit. You know Joe always used to talk about the market's animal spirits. And the one thing that I don't see tracking in these charts is sort of the fear that's in the market right now. A few months ago, I had a good discussion with David Crane sort of just to understand everything seemed inverse, bonds were up, markets up, right? Everything is working in reverse economics. And we all wait on what's going to be said each morning. You open up your Twitter feed and what is it today?

(Laughter.)

VICE CHAIRPERSON COSTIGAN: You know, last week it was Turkey. And so you look at the data -- and I mean, I just note that we have rising interest rates, which are -- you know, folks got used to cheap money. I mean, the problem is I'm looking for a new car, and if it's not at zero percent, I'm not buying it, I mean, which I know is going to begin having an impact long term on the auto market, because you got used to cheap money.

And we're seeing rising housing prices I think as Controller Yee talked about, particularly in the Bay Area. And then we have wage stagnation. And your right, while it quite hasn't tipped, we've seen a little bit of growth, every quarter percent increase in interest rates begins squeezing people out in a housing market that stays flat.

But when you have a housing market moving at seven or eight percent and rates moving at a quarter percent and wages not moving. Sort of back to Mr. Juarez's points when you start looking at the charts, you see all this information. And it's hard to look at that the fundamentals are strong.

And then you get Governor Brown -- and I want to give him a lot of credit, on August 6th said two years from now, we're going to be in a recession. We have to start planning, as though we're going to be into one.

And so we have these great numbers, Ted and his staff, for June. So things look good. But then you start looking at core inflation. We're right back to where we are in 2008. You look at housing, I mean, it is just sky rocketing. And then I think as you said, the Feds, it's two or three more. And as Controller Yee said, quantitative easing is coming to an end. Although, you can play with -- a little bit with the books.

But what I'm concerned about, or at least would like your opinion is, as we roll into the mid-terms, right, there's -- Dems going to win, Reps going to win. I'm not asking you which side is going to win. But I almost fear from the standpoint that as we move towards November, people are going to begin making economic moves.

Back to the animal spirits, it becomes a herd mentality is I start selling, and then it goes, and it goes, and it goes. And with all of this, do you see -- I mean, because one thing I'm thinking about long term is is when you look at the discount rate and the returns on the system, right? So you talk about the core fundamentals, but we're talking about something two, three, four years from now for our members that will be here 50, 60, or 70 years.

It would almost seem at this point to take a conservative stance in the world, because we're sort of at the trailing end of all the data. I mean, I know that's a long question, but I just kind of want your thoughts on that.

INVESTMENT DIRECTOR ROTHFIELD: No, I definitely take your -- take your point there. The -- there are some numbers that show that the consumers -- I mean, consumer sentiment is very high, but it is fairly fragile. So if the stock market falls, the question in the conference

Board survey, do we expect the stock market to be higher or lower in the next 12 months falls along with the stock market.

So people don't -- people take a very short-term view based on recent performance. So you could easily get from a virtuous to a vicious cycle in terms of consumer sentiment as it pertains to the stock market, and they get people acting in a way that is self-fulfilling.

The other area that's fairly volatile is consumer plans to buy a home. So consumer plans to buy a home have been very elevated. They've come off fairly sharply recently as well, maybe his affordability has dropped off a little bit as interest rates go up. So there is some fragility in the sentiment that helps to drive in a self-reinforcing virtuous cycle in the economy.

So it does really come down to this question about we are nine years into a cycle. The median estimate is we have another three years to go. If that's true, then risk assets should perform fairly well.

But then there's the conundrum of in that late part of a cycle, you never really know the catalyst or the timing of when it turns over. But one of the things I'm really encouraged about is just this leverage story. So the revision to the numbers that show, and who knows it could be revised away again, is that consumers, although they've been -- they've been positive, they have adopted a cautious stance, both the 55 and older cohort, and the prime age cohorts have saved a lot of the improvement in income and sentiment that they've -- they're seeing. They're not spending it in the way that they did in the 2000s.

And that's rather encouraging, because it gives them a caution should things start to falter for one reason or another.

So -- and, you know, quite frankly, we poll some external managers who -- in our dynamic asset allocation process, who have actually been taking a little bit of risk off the table. They've been very risk on, becoming still net his on, but taking off some risk, and they're seeing also that we are creeping into late mid, or early late cycle in the economy, in which case you do start to think more cautiously, even though, as I say, if we're right in thinking the expansion goes another three years, it would be premature to do that right now.

VICE CHAIRPERSON COSTIGAN: No, go ahead. I just have a couple more questions.

INVESTMENT DIRECTOR ROTHFIELD: That's about it. As I say, what economists look for is some kind of stretch in the economy apart from just valuation. Is there leverage being taken?

There is a group like autos and student loans where you are starting to see some extremes in terms of those two areas, which are starting to impede economics in that area. But not to the degree it could become a contagion event into the rest of the economy. And then, of course, as you mentioned, house prices in this state, in certain parts of this state have become an extreme event.

The question is whether it becomes a more generalized contagion. And then I come down slightly on the balance that I err more towards the performance of risk assets while accepting those risk.

VICE CHAIRPERSON COSTIGAN: Well -- and I appreciate that. And that's the difficulty with all this. I mean, I was just -- you know, you read so much now. In U.S. News and World Report, at the end of July posted a story relating to an obscure maritime rule related to moving to sulfurs -- or reducing the amount of sulfur in ships. And it's actually -- it talks about the potential for a spike in diesel fuel that will result in a recession in three years, if they -- so you see this tumbling, and they're so -- while I love your report, it is so comprehensive, and it is -- it's just trying to reinforce for folks that it is a best guess situation at this time.

Because I don't know, Ted, if I sent you the article. I know I sent it around. But just this interesting piece that you don't get -- the maritime industry doesn't get -- it's a rule waiver. It has to move to low sulfur fuels. Diesel is going to spike. As a result of diesel going to $200 a barrel, it goes back to core inflation.

And yet, these were all things as you're anticipating in the market. So, Mr. Jones, I almost wish we could have this report every month, because it is fantastic.

(Laughter.)

VICE CHAIRPERSON COSTIGAN: But you guys do a fantastic job and thank you so much.

INVESTMENT DIRECTOR ROTHFIELD: Appreciate that. Thank you.

CHAIRPERSON JONES: Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes. Thank you, Mr. Rothchild[SIC]. I also love your report, because it's -- it is just so comprehensive. And I had a couple of questions -- I've got to find the page first. Hold on. There we go.

So I think you were looking at page 24 a little bit ago, and you were talking about the housing formation.

INVESTMENT DIRECTOR ROTHFIELD: Right.

COMMITTEE MEMBER TAYLOR: You know, so owner household formations, and that it has slightly improved from where it was. And I just -- I think I was struck by the right-hand corner -- top corner of that particular graph, because -- so I see where owner households were real high, and you didn't show the drop off. So I assume that was a straight drop off to where it is in 2008?

INVESTMENT DIRECTOR ROTHFIELD: Yeah, I just got back to zero for the start of an expansion yeah.

COMMITTEE MEMBER TAYLOR: Okay. So then we're looking at -- and that's when rental households went up. And now we're seeing just a slight tick up, I guess, just over zero in 2018.

INVESTMENT DIRECTOR ROTHFIELD: Net increase, yeah.

COMMITTEE MEMBER TAYLOR: Net increase. Okay. And that's -- and it's slower for the younger folks, right? That's where we're looking.

INVESTMENT DIRECTOR ROTHFIELD: No, it's actually been happening more recently for the younger folks. So that's the bottom right chart there. So the home ownership rate for people under 35 has gone up almost 2.5 percent --

COMMITTEE MEMBER TAYLOR: For this year?

INVESTMENT DIRECTOR ROTHFIELD: -- percentage points of the cohort in the last two years.

COMMITTEE MEMBER TAYLOR: In the last two years.

INVESTMENT DIRECTOR ROTHFIELD: Yeah.

COMMITTEE MEMBER TAYLOR: Okay. Because I think I remember hearing that that was the -- that was the hardest cohort to get into home ownership for long term.

INVESTMENT DIRECTOR ROTHFIELD: There was a lag and now it's catching up.

Again, you know, there's a long way for these things to go. You still have that cohort still reluctant to form owner households or unable through the lending system.

COMMITTEE MEMBER TAYLOR: Right.

INVESTMENT DIRECTOR ROTHFIELD: They have student loans and auto loans, et cetera, so -- but it's an encouraging move in the direction that they would want to see.

COMMITTEE MEMBER TAYLOR: Okay. Great. And so that's -- it was just one of those -- that particular graph really struck me as how much the recession impacted us. I just I really had never considered that before.

INVESTMENT DIRECTOR ROTHFIELD: Yeah, and a lot of that is just people moving back from owning to renting. So it's the same households moving from one group to another.

COMMITTEE MEMBER TAYLOR: Right.

INVESTMENT DIRECTOR ROTHFIELD: The ones that lost their homes.

COMMITTEE MEMBER TAYLOR: I'm one of those participants.

(Laughter.)

INVESTMENT DIRECTOR ROTHFIELD: Okay.

COMMITTEE MEMBER TAYLOR: So then my other question was -- and I've got to find -- we were on -- talking about the 24 to 30 -- 25 to 34 year old males --

INVESTMENT DIRECTOR ROTHFIELD: Um-hmm.

COMMITTEE MEMBER TAYLOR: -- and not -- and non-participation in the economy. And I was a little concerned. I guess your answer to why was kind of we don't know, is that correct?

INVESTMENT DIRECTOR ROTHFIELD: No, it -- there's some evidence around the use of opioids, about prison rates, about motivation, and also about the fact that a lot of folks who are in that cohort were educated during the great recession, '08, '09, and '10. And they've come out of college in the early part of their workforce life, there weren't skilled jobs around that matched their education. And that's -- some people are calling that a lost mini-generation, in terms of their participation in the labor force will never improve to where it was.

So a number of factors have been used to describe it with -- potentially using imperfect data, so some speculation.

COMMITTEE MEMBER TAYLOR: Okay. And I was just wondering, so I guess I thought -- because I know that female employment in that age range is up.

INVESTMENT DIRECTOR ROTHFIELD: Um-hmm.

COMMITTEE MEMBER TAYLOR: Is that because -- I'm sorry, is that because of a possibility that we're paying females less, and the males don't want to take that job for the -- is there -- is there any data into that?

INVESTMENT DIRECTOR ROTHFIELD: That could well be. That's a question I could take -- take off line and try and get you an answer on. Yeah, the female participation has gone back a very healthy way for that age group. And whether it's a decision made within the family, or, as you say, the new jobs that are being created are of a particular type that favor that. That's an interesting question I'll get back to you on.

COMMITTEE MEMBER TAYLOR: That would be great. I appreciate it, because I have a 30-year old daughter and 27-year old son. And I believe they both fit into that. So it's an interesting -- it's an interesting thought.

INVESTMENT DIRECTOR ROTHFIELD: Okay. Uh-huh.

COMMITTEE MEMBER TAYLOR: And then on your graph -- your very first graph on page -- not your graph.

I'm sorry, your trending on page two. You had U.S. consumer sharp upward revision to measured savings flow, so -- which gives us more ammunition to spend going forward.

And then on a negative, low savings cushion increases risk when financial markets or expectations turn inverse. So -- and that was under low personal savings ratio. So I'm a little confused, because you had both.

INVESTMENT DIRECTOR ROTHFIELD: Well, you've actually caught a -- caught a really good thing, which is that I had to put this to the printer before that revised data came out. So you actually picked up on an element of this --

COMMITTEE MEMBER TAYLOR: A mistake.

INVESTMENT DIRECTOR ROTHFIELD: Yeah, so you can take out that thing low personal savings ratio. That's the one that's improved.

COMMITTEE MEMBER TAYLOR: Okay.

INVESTMENT DIRECTOR ROTHFIELD: And again, the presentation had gone to the printer, so that's a really good catch.

COMMITTEE MEMBER TAYLOR: Oh, okay. Well, gosh, I didn't know I was that good.

(Laughter.)

COMMITTEE MEMBER MATHUR: I did.

(Laughter.)

COMMITTEE MEMBER TAYLOR: So also on page two -- hold on. And, of course, it just went away. I love that when that happens.

There we go.

And it's so tiny. There we go.

Small business plans -- so expanding and hiring despite difficulties in following -- finding qualified workers. My concern is kind of along the line of this Ms. Mathur's concern is how much does our immigration policies currently impact that, because we have -- you were talking about when you said not much, you said legal immigration. But we have -- we have illegal immigrants that have been here for 20, 25 years, and are now being deported, and are so scared they're not even going to work.

So is that impacting this?

INVESTMENT DIRECTOR ROTHFIELD: I think it does. One of the things is they ask a question, what is your most difficult problem? And it used to be high regulation. So one of the things that happened is that people -- that small businesses are now finding regulation to be a bit less of a problem. But in relative terms, yes, they are finding it more difficult to find workers -- suitably qualified workers for their jobs.

And that always happens as an economic cycle goes on. But in this cycle, that balance of respondent opinion that workers are difficult to find is significantly higher than it is in a typical late expansion. So you can -- you could make the inference perhaps that it's exacerbating the problem, because not only do you have a cyclical thing going on, but you also have a structural thing going on where you can't find the workers. So I would say, in a qualified way, that I think that's right.

COMMITTEE MEMBER TAYLOR: Okay. Well, I appreciate that. I appreciate your honesty in that.

I also wanted to know if -- is there a way we can -- I don't know. As we consider this, is there a way we can kind of measure that, actually measure that? I mean, in California, a lot of our business rely on legal and illegal immigration. So as -- does that result what you're talk -- what you're agreeing with me with, does that actually end up resulting in causing some sort of economic issues say in this state in particular, or states that rely on those workers in particular?

I know that in agribusiness that's going to be an issue. So how does that impact our fund? Because I know that we have stocks in that. So, I mean --

INVESTMENT DIRECTOR ROTHFIELD: Yeah, as I mentioned before, the last three or four economic cycles have been financial cycles, excess -- financial excesses turning to a downturn. It hasn't been a low unemployment rate that actually causes it exacerbated by maybe some policies around immigration. But you -- you also have another concept called stall speed economy, which toward the end of an expansion -- if the economy gets to a low speed of growth, because of factors like that, then it makes it more vulnerable to a financial shock.

So that's probably where it would feed in there --

COMMITTEE MEMBER TAYLOR: Okay.

INVESTMENT DIRECTOR ROTHFIELD: -- which is that in a fast economy, you can have a pull back in the stock market or whatever and it becomes less pervasive than if you've got the economy like a plane coming in gets below stall speed, and you start to increase the vulnerability to that. So I don't that we're at that stage yet, because at the big level you're not seeing it in the population growth numbers from that 16 plus. But it could become a problem as, you know, move further forward.

COMMITTEE MEMBER TAYLOR: Right, but that population growth is actually legal immigration. So we don't actually count the illegals, do we?

INVESTMENT DIRECTOR ROTHFIELD: Yeah, I'm not quite sure how they do that. The civilian non-military population that they come up with. I'll take a look at that as well, and see whether that tries to make an estimate for, you know, non-legal workers.

COMMITTEE MEMBER TAYLOR: Okay. Great. I really appreciate these reports.

INVESTMENT DIRECTOR ROTHFIELD: Thanks for the feedback.

COMMITTEE MEMBER TAYLOR: And Like Mr. Costigan, I don't know, maybe monthly would be great.

Probably too time consuming, but I do appreciate these reports.

INVESTMENT DIRECTOR ROTHFIELD: Cheers.

CHAIRPERSON JONES: Thank you very much. And All good questions. And I just have one, I guess, macro question. Well, one thing, I hearing more and more economists agree on the three-year time period. I think -- I get nervous when all the economists agree on -- you know, on potential downturn.

(Laughter.)

CHAIRPERSON JONES: And so looking at three years out, the balance sheets of corporations have been very healthy. But now, it's -- the trend is they're buying back equities in their company. So they're using their balance sheet reserves. You have the federal government interest rates are still relatively low. The -- and so that toolbox item is no longer available, if something happens.

You mentioned that the -- and the federal government is deficit spending, and they have debt that's unheard of. So I'm just trying to think -- and you also mentioned that you would take the equity risk side and -- going forward. I thought that's what I heard you say.

And so my question is, is where is the shock absorbers, because you also mentioned that the individual families are saving more, but that doesn't save an economy I don't believe. So how do we evaluate this potential downturn getting ready to withstand, if you will, another downturn?

INVESTMENT DIRECTOR ROTHFIELD: Yeah. And my view is that if the expansion does go another three years, it's probably risk asset friendly, but with that caveat that as you get to this stage of the cycle, you never know the catalysts that are going to turn it over. But I think most people have chosen three years, because the Fed says it has another three years of hiking to do or two plus years of hiking.

So the Fed's own dots are saying that they're done in 2020. 2020 is when the fiscal stimulus goes away. As you say, you've -- then have got a higher -- you've got tighter monetary policy, and fiscal policy starting to ease off again -- tighten up again.

So that seemed to be a fairly natural time, but it's a very -- it's much more of an art than a science in terms of probability of recession. So I agree with you that it is a bit of a worry when everyone is on that -- everyone essentially took the expansion from 2019 to 2020 recently because of the early gains that have been made from the fiscal expansion. But it's a very imprecise estimate of how long that expansion could last.

And I take your point about the growth of debt. Ultimately, there's no such thing as a free lunch, so you have to look at some of the bigger leverage things like what's the U.S. trade deficit. The trade deficit in the last blowup of the economy got to six percent of one year's GDP. Now, it's still only two percent. That's a key indicator.

The household savings pool is another one. Now, that could change at some point. But you are getting this generation or this -- people still have a strong memory of 2008. And they're not going on a spending spree like they did that helped to close down the last expansion. So again, overall, I'm slightly optimistic that we can keep going for a while.

CHAIRPERSON JONES: Okay. Thank you. Thank you for the report. Okay.

Okay. That concludes that item, we now go to 8b, Trust Level Review, consultant's report, right?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Actually, Mr. Chair, we have a little more on the staff side, but --

CHAIRPERSON JONES: Okay. They're going to complete their report.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- very cognizant of time. I think -- I think we're -- we've learned that we need to afford more time for Mr. Rothfield and the Committee for sure.

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: This is of real interest, if we're going to have this two -- you know, two times a year, so...

(Thereupon an overhead presentation was presented as follows.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: Eric, Elisabeth and I will speed up this portion.

CHAIRPERSON JONES: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: And I'll just say no offense, Rob, to you, we won't have the, you know, small presentation on GIPS compliance. But if there are questions from the Committee on GIPS compliance, we can have that at the end as well.

CHAIRPERSON JONES: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So with that, we'll kick off the performance review for this past fiscal year.

--o0o--

CHIEF INVESTMENT OFFICER ELIOPOULOS: There we go.

So here the -- let me just layout. We'll have a three-part presentation. I'm going to talk a little bit about the absolute return, and put it in the context of what we might expect in any given year, and what we've seen over the course of the past five to ten years. We're going to talk a little bit about the relative return, how we performed versus our benchmark. There will be a little more detail from Elisabeth on the actual attribution that we've done on those returns.

And then we have five or six or so slides that Eric is going to cover really getting to this downturn question and what would the impact be to our portfolio. So that's -- that's the -- that's the -- what you'll hear from us.

Starting out with the return for the fiscal year was 8.6 percent for the year. And that return really reflects, you know, the equity dominance of our asset allocation. As you know, almost half of our fund is made up of global equities. And the performance for the fiscal year of global equities was 11.5 percent. So that is a dominant driver of our overall return.

In addition to that, the other equity driver of our portfolio is private equity, which represents a little less than eight percent of the total fund. And it earned in excess even of what we achieved in the public equity markets. It earned 16.1 percent.

So this equity dominant portfolio of ours had -- you know, came through for this past fiscal year in driving the returns. In addition to that, our inflation asset class made up of a strong component of commodities, about 25 percent of that asset class, earned a 9.3 percent return, and real estate, representing about nine percent of the total fund, earned 6.8 percent.

The last thing to mention, even though a small component of the overall fund, infrastructure, which represents 1.2 percent of the overall fund, it had an unusually strong performance year of 20.6 percent return.

So really the lineup of either equity dominant, or in the case real estate in infrastructure, asset classes with a component of equity-like return in appreciation to them all had very strong years that combined to contribute to this overall 8.6. -- 8.6 percent return.

Now, the flip side of that is the diversification of the overall portfolio. And in this past fiscal year, we did see that fixed income, which represents 22 percent of the fund. We'll see some longer time periods in a charter or two, but it returned just a little bit over zero, so 0.4 percent. So the combination of the equity-like asset classes and fixed income provided an overall return of 8.6 percent.

As we've talked before, this return for the year increased our funding ratio from 68 percent to 71 percent. So that's also good news. And before I turn to the relative returns, I think it's always -- you always hear some caution. And actually, it's the -- it's the continuation of the questions from the Committee around, well, what's coming -- what could be coming around the corner? And, of course, we don't not -- we don't know. Both macroeconomics and the markets are a domain of randomness. And we don't have a crystal ball for the future.

But what we do know is that this is the nineth year of positive returns for the portfolio. This 8.6 percent return -- I pulled our annual one-year fiscal year returns for the past five years to put this 8.6 percent into some context. Last year, the total fund earned 11.2 percent. The year before just over zero, 0.6 percent. The year before that, 2.4 percent. And the year before that, 18.4 percent.

All of -- all of those returns are within what we would expect. The 8.6 that we received this year, the zero that we received a couple years ago, the 18 that we received five years ago, all of those one-year returns we would expect in any given year, at least to the, you know, two-thirds or 66 percent expectation of what you'd expect in any given year.

So the main -- the main point of the absolute return is 8.6 is a good year from a perspective of, you know, making progress on our actuarial gains, and a good year to be rewarded for taking risk as our portfolio is positioned to do over time.

Turning now to the --

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CHIEF INVESTMENT OFFICER ELIOPOULOS: -- relative return perspective. I'm going to make a couple points on this slide. One with respect to relative, and the other with respect to the affiliate funds, which also had positive years from an absolute return basis.

The total fund for the fiscal year underperformed our policy benchmark by six basis points. And, you know, we don't try to look at one any given year, either on the return side or the relative return side. But looking at over the longer time period, the three- and five-year period, we've -- I'm not going to address the 10-year period. We've talked about the effects of the fiscal crisis extensively here.

But looking out over the one-, three-, and five-year time period, the relative performance reflects really two things, one a fairly moderate amount of risk taking, you know, using our active risk budget. That the Committee has outlined of about 150 basis points of active risk.

So having returns that come in at or near within a six or 20 basis point range of the benchmark reflects both a moderate amount of at least observed risk taking from the active risk budget. And it also, you know, reflects, you know, a fairly narrow range of results in terms of the total fund.

It does though reflect a need to review the level of active risk taking, you know, throughout the portfolio. The Investment Office has been working some time to build up the total fund governance and data architecture and performance attribution architecture. And really center stage for the next two years will be really decomposing the level of active risk taken by the various asset classes and really measuring and -- well, really coming to some conclusions about whether or not we're being rewarded for the active risk that we're taking, and to perhaps make some shifts within the portfolio to pursue programs and efforts that we are being rewarded for active risk taking and perhaps avoid some of the areas that we're not.

But the overall message is that this is a acceptable level of risk, acceptable level of result from a relative standpoint, but disappointing, if I had to give my own assessment of it in terms of being below the benchmark, even if marginally.

Now, the only other piece to mention is there is some changes we've made to our actual benchmarks, particularly with private equity. Much of this underperformance has to do with the underperformance of the private equity portfolio as compared to its previous benchmarks. And it's been a long journey on private equity. The newly constituted benchmark will go into effect -- or has gone into effect as of July 1st. And we're hopeful that that will be a -- you know, a better comparator set for private equity going forward. It certainly has played the role that we've hoped it would play within the portfolio, not just this year, as I mentioned with its 16 percent plus return. But over the one-, three-, five-, 10-, and 20-year periods, it has provided that incremental return above our stock portfolio, and is an important contributor on an absolute basis to our return.

So that's something for the Committee to take --

keep an eye on going forward.

I think in the interest --

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CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, in the interests of time, I'll probably conclude with this chart.

Woops. The one before it. There we go. Great. So here is the chart. That gray line -- that straight gray line is the actuarial rate cumulative returns and you can -- for the past 10 years. And you can see that number marches in -- you know, in a straight line with a bit of a kink when we adjust the actuarial return rate. And really the point of this chart is you can see the starting point 10 years ago, fiscal year '09, and that negative 20 percent plus return, and the hole that that return placed the fund to catch up to the rate of return of the actuarial rate. And we've never caught up from that -- from that hole. And this is something that, you know, our 10-year return, for instance, is 5.6 percent. And that's what this -- that's what those charts are telling us. And it shows that, you know, these really extreme downturns, you know, take a toll. And it takes, you know, quite some time to dig yourself out of it over time. And that will be another real focus of the Investment staff and the Investment Committee going forward.

So with that, I won't go over some of the other more particular one- and five-year excess returns. I will turn it over to Elisabeth to talk about the performance attribution, which we'll go over some of that same information. You just won't hear it twice.

CHAIRPERSON JONES: Okay. Thanks.

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CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

Thank you very much, Ted.

Elisabeth Bourqui, CalPERS Chief Operating Investment Officer. So we'll go to slide -- in the interests of time on page nine --

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CHIEF INVESTMENT OFFICER ELIOPOULOS: There we go.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

Yeah, very good -- and look at the excess return attribution. As Ted mentioned, the total excess return is -- of minus six basis points for this fiscal year-end is acceptable but disappointing. And we aim to kind of look closely into that.

Let's look a bit at the number. We split this excess return into four components. One is the public market. One the private market. Then the allocation for the public asset class, and the allocation linked to the private nature of the private asset classes.

So let's dig more into these four components.

On the public side, first, the fiscal year-end excess loss came almost entirely from the fourth quarters. The rest of the quarters were good. This fourth quarter has accounted for about minus 43 basis points. This underperformance on the equity side -- on the global equity side is explained by a combination of two things. One is explained by being overweight in defensive tilted type of value strategies. That means in the U.S. that these resulted in being underweighted some of the mega cap tech stocks such as the FANGs, the Facebooks, Amazon, Apple, Netflix, and Google.

The second reason of the underperformance was the country positioning within the emerging market during a very volatile fourth quarter, especially in that sector. So here, I want to remark still that as Ted just mentioned before is that our global equity portfolios are actually factor-based portfolios, and are constructed such that we do not concentrate or over-concentrate the portfolio on large concentrated stocks on the benchmarks, and therefore had this kind of result.

We are closely monitoring actually this exposure, particularly to some of these mega-cap stocks to stay within the risk targets. That's for the equity side.

Then on the income side, we have very positive results with the one-year and five-year note. These excess returns actually resulting from four strategies on mortgages, on credits, on sovereigns, and on treasures. So it's good news there. And the inflation, the one year and the three year are positive. Excess return driven by the performance of inflation-linked bonds, as well as managing the allocation between the inflation-linked bonds and the commodities.

Let's turn now on the private side. Private equity to -- as Ted mentioned, is the highest absolute return of all programs. There is a question of benchmark that has changed, and that is reflected into these numbers.

It underperformed the benchmark -- the private equity benchmark by 251 basis points this year, and 222 for the five-year period.

It needs to be noted, however, that still our private equity returns positively outperformed the global equity benchmark by 419 basis point this year, and by 179 basis point for five years. So we are still very happy with this.

On the real assets side, the one-year excess return of 118 basis point is driven mainly by infrastructure. On the five-year side, the slight negative minus 23 basis points is driven by an outperformance on the core real estate of 60 basis points, and more negatively on the real estate value-added and opportunistic that underperformed both by minus 38 and minus 78 basis points over that period, as well as the real estate forestlands by minus 44.

So the point here that we are closely monitoring and is consistent over the trend over the past several years is to continue the real estate investment to focus on core type of investment.

Now, all of these were really on the more selection side. Let's move on a bit more on the allocation side.

We break the impact of the allocation into two buckets, one is the allocation -- what we call the allocation management, and the other one the public proxy performance. So as a definition of the allocation management here is the impact of the over and underweight applied in the public market particularly. And why do we do these distinctions is because these overweight or underweight are immediately applicable in the market. And whereas, for the private market it's more complicated and more timely to implement.

So over the one-year period, we had an overweight to equity over the first three quarters that contributed positively by 14 basis points, and an underweight to inflation that detracted from 11 basis points.

Altogether, with some other areas contributing positively reached out to a nine basis point positive, due to the allocation management there.

On the more, what is called, the public proxy performance on the sort of impact associated of being over or underweighted in public markets due to the illiquid nature of the private markets. We have an underweight to private equity that was the primary detractor of minus five basis point that were invested in public equity. And as we've just seen, the global equity benchmark actually underperformed the private equity benchmark. We had the opposite effect in real assets with the benchmark that kind of balanced the effects.

So was this, I will just conclude to say again that the excess return of minus six basis points is, we think, acceptable, but disappointing, and we are addressing from the total fund perspective, and from also the asset class perspective, the active risk taking we want to take in the future.

With this, I pause, and I will hand over to Eric for the risk part.

CHAIRPERSON JONES: We have a couple of questions on -- Elisabeth.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:
Sure.

CHAIRPERSON JONES: Before I -- before I identify Committee members, I want to make a comment or question. Just a clarification, on the private equity, even though you have the relative basis points of 251, private equity still was our highest asset returning category.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Yes.

CHAIRPERSON JONES: And what was that number?

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: It was plus 16 percent from --

CHIEF INVESTMENT OFFICER ELIOPOULOS: Plus 16.1.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Plus 16 percent, 16.1 percent.

CHAIRPERSON JONES: And then the benchmark that's been modified, is it reflected here, or it will be reflected next year?

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Yes. So actually our private equity benchmark outperformed the global equity benchmark. I have these numbers in front of me by 670 basis points this year, and by 402 basis points for five years.

CHAIRPERSON JONES: Okay. Thank you.
Okay. Ms. Brown.

COMMITTEE MEMBER BROWN: Thank you.

My question is about fixed income, where I think we -- I think we missed big, but I just want to know if that's true. It says the income was 0.4 percent. What was the -- what was the benchmark for that?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Actually, so it's the reverse. The fixed income outperformed its benchmark. So just on the headline -- the headline conclusion --

COMMITTEE MEMBER BROWN: Sure.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- is fixed income on a relative basis had a -- had not only a good one-year, but they've had a very good relative performance --

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Yes.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- for the one, five, 10, and 20 period. The benchmark return was less than zero? Or what --

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:
Exactly.

COMMITTEE MEMBER BROWN: Can I -- can we go to page -- attachment 2, page five of 24. And so I'm just trying to understand all of these. This is my first time seeing all these charts and graphs, so it's very complicated as we're comparing different things to different things. So in this one income shows at 0.4. I don't know what the benchmark was, because it shows over 10 years, the returns were 5.7, so it looks like maybe income should be much higher.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Actually, if we could go to the end of the attachment, the pages, all the way to the end.

Yes. And this --

COMMITTEE MEMBER BROWN: Could that be a little smaller?

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: I know. If you go -- this is a page from attachment four, page four.

COMMITTEE MEMBER BROWN: Okay.

CHIEF INVESTMENT OFFICER ELIOPOULOS: It's page four of attachment four. If you call that up, you might -- yeah, even my own eyes now, I'm a little -- I was way too optimistic on including this in case this question came up.

But, if you -- if you look at the income line -- the fixed income line, there's our return, of 0.35 percent, and it beat the benchmark by 38 -- by 38 basis points.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: Yes.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So that implies a negative return of about just under zero.

I thought this had the actual return -- the benchmark returns on them, but they don't.

COMMITTEE MEMBER BROWN: That little cheat sheet might be helpful in the future.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Helpful for you, yeah.

COMMITTEE MEMBER BROWN: Thank you.

CHAIRPERSON JONES: Okay. Thank you.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Yes. And just to follow up on that, page eight actually shows the excess return for the one-year and the five-year. So it's -- you can see there that fixed income outperformed by 38 basis points over the one --

CHIEF INVESTMENT OFFICER ELIOPOULOS: What's missing, and it's a good -- it's a good thing for the future is just laying out the actual numbers for the benchmark and the actual return.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: And we'll do that.

CHIEF INVESTMENT OFFICER BOURQUI: You'll see that quite a explicitly next month when the fixed income performance review come. But it's a good -- it's a good point that -- it will be a good additional charge just to make sure we have it handy.

COMMITTEE MEMBER BROWN: Thank you.

COMMITTEE MEMBER MATHUR: So I wanted to say first that I'm very glad that we're going to be doing a review of active risk taking across the asset classes. And are you going to look at that -- how granular is that going to go? Is that going to -- I mean, because there's U.S. versus, you know, international performance, and there might be places where you want to take risk internationally, but maybe in the U.S. it doesn't really pay to take risk, or -- you know, I'm not saying that that is the outcome, but, you know, how granular is that review growing to go?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Yeah. I'll start, and then I'll invite either Elisabeth or Eric to add in.

Fairly granularly. We've been able to build up over the course of the last, you know, five years really both our -- the data and information side, as well as our governance architecture, which allows us to isolate more specifically the investment decisions that are made in a given year. It's actually quite complex and complicated to do that.

But we think we're at a point now that with all the work that we've done from a governance side and a data side, that we can review within each asset class the whole array of decisions, the allocation decisions that are made, as well as the subfactor decisions that are made.

And that's precisely the point that we've built ourselves to now.

COMMITTEE MEMBER MATHUR: Yes.

CHIEF INVESTMENT OFFICER ELIOPOULOS: And the next phase is coming now over the course of the next two years to really apply that and make some decisions about some of the active decision making that has taken place.

And with that, I don't know, Elisabeth or Eric, do you want to add anything to that?

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

Yeah. Maybe, I can just very quickly. I mean, we try to kind of review that exactly from our total fund perspective. So to be able to kind of go through the whole spectrum of active risks --

COMMITTEE MEMBER MATHUR: Yes.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

-- taken within the asset classes, and taken at the total fund level, be able to balance them, and to kind of of look at the risk and the return adjusted performance of that.

And in order to do that, I mean, the staff has done sort of a huge job already in order to kind of be able to have a sort of inventory and understanding where these active risks are, and how -- and what are the strategies -- the strategies behind it.

And the other great step that has been taken on was to construct that strategy to be able to be quite agile about those, about our own understanding and overview. And the next step is then to construct and continue to construct to kind of be able to me -- to do, I would say, what I call agile decision making on that side, and be able to kind of compare the different levels of active risks.

This goes, of course, together with different notions of risks that are being taken at the total fund. And one notion of the risk is, of course, the sort of return and the sort of asset type of risk. I think the other part to the equation is to understand a bit what this -- how this looks like from a funding ratio perspective as well, and to see what type of active risk; are contributing positively or negatively to the funding ratio as well. So it's on two sides.

Thank you.

CHAIRPERSON JONES: Before Eric's presentation, we're going to take --

COMMITTEE MEMBER MATHUR: I have -- I have a few more questions. I'm sorry.

CHAIRPERSON JONES: On this one?

COMMITTEE MEMBER MATHUR: On this one, yeah.

CHAIRPERSON JONES: Okay. Go ahead.

COMMITTEE MEMBER MATHUR: Thank you, Mr. Chair.

So with respect to -- I just have three more -- three more things.

With respect to private equity, I think it's not -- it's to be expected that private equity, given its benchmark as being benchmarked against the public equity -- against public equities, it's expected that it would underperform in a rising public equity environment, is it not, as -- public equities are performing well, then we expect private equity --

CHIEF INVESTMENT OFFICER ELIOPOULOS: Generally, yes, and in the reverse during downturns.

COMMITTEE MEMBER MATHUR: And in the reverse during downturns. I just wanted to make that point that it's -- we've had a strong public equity market in the -- yeah.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

Yeah. And maybe just to add on that, because I think you raise a very, very important point is that in all our previous private equity presentations, we have always assumed that private equity would kind of outperform the private -- the global equity market by about 100 or 150 basis point, whereas actually when you can see from the attribution, this year we outperformed by 419, and over five years by 179.

So I would say that we are above, I mean, our -- we had -- what I want to say is that we had pretty defensive assumptions at that point on that --

COMMITTEE MEMBER MATHUR: Yes.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

-- on the private equity versus global equity relationship.

COMMITTEE MEMBER MATHUR: Thank you. The other thing I wanted to note, you mentioned that -- or how our factor-based approach to public equities impacted the portfolio this year. And I just wanted to sort of, you know, say that this is -- this is a particular approach that we have to look at over the long term, that one year's -- we don't want to overlearn the one year lessons. And while these mega-tech companies might have outperformed in this short period of time, or even in just in the last quarter, we don't want to, you know, retrench from our factor-based approach, which we think is going to serve us well over longer periods of time.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI:

Yeah. Thank you very much for making this comment. I think it's totally true. It's -- we can be also very proud from this factor-based approach. It permits us to, I would say, navigate through the market, and the specific concentration of the market that we might want to avoid as well, right?

COMMITTEE MEMBER MATHUR: Yes.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: So the fact to kind of -- the fact that we use this factor-based allocation to diversify our portfolio against sort of market concentrating is actually very useful, and especially in downturns. So this year, it's a bit disappointing, but it's still very acceptable, I think, in the range of the risk that is being taken there.

COMMITTEE MEMBER MATHUR: Thank you.

And then my last point is with respect to infrastructure. We've again seen infrastructure perform very strongly. I know it's a very small portion of our portfolio. I'm wondering where -- how we can play a stronger role in developing the infrastructure market. I know it's a nut we've been trying to crack for quite awhile, and increasing the supply-side of projects that are acceptable to us, given our risk parameters, and our policy around infrastructure. But how -- how can we really devote the resources we need in order to ensure that we can allocate more significantly to this asset class?

CHIEF INVESTMENT OFFICER ELIOPOULOS: Well, on the public policy side, we were hoping for and expecting more out of the federal government this -- from a policy perspective over the course of this last year and a half. And that certainly would be an area, Mr. Rothfield mentioned it as well, that would be helpful going forward. The actual investment team has actually done a good measured job of building up the program. And we have to shy $5 billion worth of assets right now.

So I think we're doing what we can to access, you know, those projects that are available to the marketplace.

The public policy side is one that we would need to think about how we'd want to try and enter that equation, and something for the Investment Office, and for the CEO as well to determine, you know, how we spend our resources from a, you know, policy perspective.

COMMITTEE MEMBER MATHUR: Yeah, I do think -- I do think -- I appreciate there's probably a lot of things that go into that consideration, but I do think it's something we might want to consider being even more strong in that regard in terms of helping to construct a federal program or a statewide program that could actually deliver investable projects that meet our goals and also help advance the state and the country as a whole.

Thank you.

CHAIRPERSON JONES: Okay. We're going to take a 10 minute break till 11:32. And then we'll return with Mr. Baggesen. And I just also want to note that Mr. Bill Slaton has arrived.

Okay.

(Off record: 11:22 a.m.)

(Thereupon a recess was taken.)

(On record: 11:32 a.m.)

CHAIRPERSON JONES: I'd like to reconvene the Investment Committee Meeting.

Boy, this gavel gets attention, doesn't it?

Okay. Mr. Baggesen, you're up.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Okay. Good morning. Eric Baggesen, CalPERS staff.

To follow on from the information that Ted and Elisabeth have provided to you, we just wanted to touch briefly upon -- excuse me --

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MANAGING INVESTMENT DIRECTOR BAGGESEN: -- a couple of the slides that were attached to the risk segment of this report. The first slide I'd call your attention to is slide 11 of the attachment, and it's attachment 2 of Agenda Item 8a.

What you have here are two pie charts. The pie chart on the left of the chart represents the actual asset location proportions. So these are the weights of the portfolio, where that capital is invested. The pie chart on the right reflects the risk contributions of those allocations.

And what you'll see in this is that we have a little bit over 55 percent of the portfolio capital allocated to what we call the growth-related investments, which are public equities and private equity. What you also see though is that the risk contribution represents almost 85 percent from those two segments of the portfolio. So the risk contribution is almost 30 percent higher than the actual weight contribution.

You see the effect of that in the line chart on the bottom of the page, where basically the outcome to this plan, it's investment results, traces very, very closely to the results that are generated by these growth-related assets.

So from this perspective, this -- we just want to reemphasize the fact that this portfolio, despite having thousands of individual positions, and all different types of asset classes, is still very much a growth-oriented equity-centric portfolio. So the outcome to the public equity markets and the growth-related investments, in large measure, continue to determine the outcome to this plan.

And I would remind the Board that one of the actions that you have taken in the past, the whole Risk Mitigation Policy, is really structured to try to eventually move towards the lower rate of return expectation that allows us to further diversify this portfolio and attempt to reduce that concentration of risk emanating from that growth-related concentration.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: When you look at that growth-related element, this is a tool-up chart that we've shown you before, which just tries to illustrate the variability in outcome. And this is cast in terms of the net asset value of the fund. So this is just the aggregate market value. But you literally see that the volatility in this portfolio, based on the capital market assumptions -- and I'll remind you that we had a seven percent return expectation, and an 11.4 percent volatility expectation.

When you extrapolate that through just statistically, you see that there's a quite wide range of potential outcomes relating to the valuation of the fund.

So there can be many different paths that this fund can experience basically in getting from the present into the future.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: The effect of that, if we experience -- and it's typically the drawdown that really becomes the issue. And we, in general, don't worry too much about the market crashing up, other than the fact that if you get a crash up, basically you have very high rates of return, that tends to reduce your expectation going forward. But it's really the downside risk that becomes quite problematic, because that creates an unfunded liability that then has to then be amortized through the policies of the actuaries. And that has then effects on the contribution levels to the employers and, you know, it raises up this whole issue of affordability.

What you see in this is that if we were to replay with our current asset allocation the events of the early 2000s, the tech crash or the events of the financial crisis in the '08-'09 time period, that we would be seeing drawdowns in the portfolio of, you know, 80 to 100 billion dollars plus, given the current structure of the asset allocation.

So this portfolio is still exposed to that kind of risk. And this extrapolates what would happen to the funded ratio should that happen in a one-year time period.

So it could be fairly significant to say the least basically, if that -- if those kinds of events were to replay themselves. And this is not a forecast that they will replay themselves, but we need to be sensitive to that fact that this is still a portfolio that is exposed to that kind of possibility.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: Just a bit of context around equity drawdowns, the drawdowns are not isolated instances, even though the great financial crisis of the '08-'09 experience represented the most severe drawdown actually since the Great Depression, the 1929 and into early thirties time period. So that was the most severe equity drawdown that had happened.

But if you go back through the fifties and sixties, you'll actually see protracted periods where you had quite a bit of volatility in the marketplace. So this ultimately is, you know, for us from the perspective of managing the risk of this portfolio, in large measure, the management of the risk is to basically make sure we administer the fund in a way that allows us, since we have this growth-related risk bet in the portfolio, to try to maintain that bet through almost any environment.

And that's one of the things that affected this fund in the '08-'09 crisis is we were not able to contain or continue exactly the same risk profile of the fund that we had had before.

I think I'll stop with that, other than maybe just make a very brief comment that we are changing some of the structure of the performance reporting, not to reduce any of the information that's provided to you, but to try to increase the consistency of how the Public Employees' Retirement Fund, and the affiliate funds are presented. And consistent with the question that was coming up about the benchmarks, I think it was Ms. Brown's questions, you actually see the returns of the asset classes in the benchmarks, it's shown in some of the consent reporting under tab 5C, attachment one, page one has both the asset class and benchmark performance set out side by side. So that information is available to you.

And I think with that, I would just stop now and see if you have any questions before we go on to the consultants.

CHAIRPERSON JONES: Yeah. Yes, we do. I had a question on the chart that you showed on attachment 2, page 13 of 24, iPad page 156. Yes. And thank you for this scenario, what-if scenario, if you will, to see what the impact would have been. I know we had talked about presenting something like this for some time. So this is very instructive.

But my question is looking at the actual gain and loss, looking at the '07, '09, 119 billion, and just remembering when the financial crisis occurred, we lost $100 billion. So is it because the base is larger now that this is a larger number?

MANAGING INVESTMENT DIRECTOR BAGGESEN: Well, you know, that's a good question, Mr. Jones. I'm not sure -- I certainly -- the base --

CHAIRPERSON JONES: I mean, I know it's not apples to apples. I understand that.

MANAGING INVESTMENT DIRECTOR BAGGESEN: The base is absolutely larger. So if you extrapolate that same degree of drawdown against a larger base, it will absolutely add up to a more -- a larger number.

CHAIRPERSON JONES: Okay.

MANAGING INVESTMENT DIRECTOR BAGGESEN: You know, there's lots of things that would go into exactly what's the experience that would happen. And we're -- we're -- and we'll get into this during our program review with you, because we're basically also trying to identify ways to reduce these sort of eventualities, how successful those efforts will be, you know, have yet to be seen.

CHAIRPERSON JONES: Right. Yeah, and the only reason I asked the question, because I know our whole effort was to mitigate the risk of another crisis would occur in terms of our asset allocation and our public market assumptions. So that answers the question.

Thank you.

Ms. Hollinger.

COMMITTEE MEMBER HOLLINGER: Yeah. Thank you. Really appreciate this. A couple of questions.

So coming from insurance, I look at it's all about hedging our downside risk. So similar to what Mr. Jones said, as part of that, if we increase our allocation to private markets, would that be a buffer to hedging our downside?

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yeah. I mean, certainly when we look at all the risk reporting that we have and the structure of reporting in the plan, we definitely see dampened volatility attached to the private asset exposures.

There's absolutely a healthy debate that goes on though as to whether or not that truly represents economic reality --

COMMITTEE MEMBER HOLLINGER: Right.

MANAGING INVESTMENT DIRECTOR BAGGESEN: -- or is just an accounting phenomena. And honestly, it's difficult to sort those out. That's where I say though that basically for us, the risk management effort in this is to try to ensure that we would never have to force a transaction in any of those private assets basically, if we were in a severe drawdown environment. So we'd like to not test the economic rationality of those things happening.

But we definitely experience a benefit just from an accounting perspective attached to the private assets.

COMMITTEE MEMBER HOLLINGER: Right. And my other question is this. This is also assuming that we're not in an inflationary period. Because another concern I have is in a downside is with the COLA rider. And if all of a sudden we were to experience an inflationary period, that would make us spiral even further.

So one of the things I look at is whether in going forward we need to have a policy that at least if we go below a certain funding level, that there is some kind of freeze, so we don't spiral even further.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Yeah. You know, what you're bringing up is certainly beyond my pay grade basically if we're trying to, you know, hypothesize how you resolve that.

But one of the topics areas that we'll be bringing back more information to you in the hopefully not-too-distant future is actually around the whole topic of inflation.

COMMITTEE MEMBER HOLLINGER: Right.

MANAGING INVESTMENT DIRECTOR BAGGESEN: Currency is yet another topic that we owe you to return on. And the work that we've done though so far around inflation is that the picture on inflation is actually a little bit more mixed or a little bit more nuanced compared to how you just laid the context of it out.

And the nuance is that because of the structure of how contributions are made to the fund as a percentage of payroll, if you have an inflationary bump, if you will, that is also tended to be correlated with bumps in compensation. So it typically has resulted in higher levels of contributions coming into the fund.

So the timing of when those contributions versus when the COLAs take effect actually creates -- it's quite a nuanced picture. And that will be information that ultimately the actuaries can help bring back too. But it's not an automatically black and white thing that inflation, you know, immediately debilitates the fund or really makes it more stressful.

COMMITTEE MEMBER HOLLINGER: Right.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: And I think just to add on that, if I may, as Eric said we are going to come back with a sort of a real true inflation review on that.

COMMITTEE MEMBER HOLLINGER: Oh, good.

CHIEF OPERATING INVESTMENT OFFICER BOURQUI: But what we're also working on, on sort of a parallel basis, is be able to put all those numbers, which is the active risks together with the funding ratio. And we hope to be able to come up with -- I don't know if the policy is the right word, but to come up with a way to be able to kind of measure the level of active risks and how the funding ratio will kind of evolve over time, and be able to implement, if needed, in a very severe downturn some measures that would, on the active risk side, that would protect the downside of the funding ratio.

COMMITTEE MEMBER HOLLINGER: Good. That's very good to hear. Thank you. I really appreciate all this.

CHAIRPERSON JONES: Okay. That concludes the question. So before I move forward, if that's the end of this particular item? I don't want to jump again.

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: That's the end. We've completed our end. You know, you've got it.

CHAIRPERSON JONES: Okay. Now, we will move to the trust level review consultant's report Wilshire, PCA, and Meketa.

CHIEF INVESTMENT OFFICER ELIOPOULOS: In the interests of time, so you'll have each of the consultants up, we'll just move to the back row --

CHAIRPERSON JONES: Okay. Fine. Thank you.

CHIEF INVESTMENT OFFICER ELIOPOULOS: -- and allow them just...

(Thereupon an overhead presentation was presented as follows.)

MR. JUNKIN: Good morning. Andrew Junkin with Wilshire. I had to check my watch to make sure it was still morning.

(Laughter.)

COMMITTEE MEMBER MATHUR: Barely.

MR. JUNKIN: And I was fully prepared for 45 minutes of economic discussion that completely disagreed with Mr. Rothfield. But once I heard how much you liked his presentation, I decided not to do that.

(Laughter.)

MR. JUNKIN: Actually, I -- bold. Thank you.

We're really largely on the same page. I would say that we're constructive, but concerned for a lot of the same reasons. And really it kind of comes down to the economy looks very strong right now, but we have some concerns about wages and employment that he touched on, that I'm not really going to drag us all back through.

Inflation, we do have some concerns about, coupled with tighter central banks. So those are kind of the high level concerns.

I'm in control of the clicker. Let's see if I can manage this.

So starting on page two, we'd like to update you on where our forecasted returns are. We run this exercise every quarter. There really are not significant changes quarter to quarter. These are 10-year forward-looking assumed returns. There haven't really been any significant changes from the beginning of the year. But that in itself is noteworthy. It means that things are pretty steady state right now.

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MR. JUNKIN: I'm going to jump ahead pretty far and hit a few things that sort of jumped out to us. This page happens to be related to the non-U.S. equity market, but I'm really going to be focused in the lower right corner on the -- really the notable spread in returns from different countries in the emerging markets. You can see Brazil down 26 percent during the second quarter. This chart is going to also be pretty interesting after the third quarter, particularly with the way things have started in Turkey just in the last week or so. So emerging markets, there's really been a lot of disparity there.

I skipped over a few pages I was going to cover.

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MR. JUNKIN: I'll run back quickly just to sort of make the points I going to make pretty quickly. So the economic review. Again, I don't want to cover everything that Jonathan covered quite well. But three key points on this page for us. Consumer sentiment well above the 10-year average. The 10-year average does include the global financial crisis, but we're back to pretty much the highs that we saw before the global financial crisis. Manufacturing, the survey there at 60. Well above kind of the mid-point of 50, which is neither expansion nor contraction. So the economy looks good on both the consumer and the manufacturing side.

And then the monthly job growth loss chart in the lower right needs to be renamed. We've gone five plus years without a single month of job losses, which is pretty astonishing at this point.

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MR. JUNKIN: Employment conditions. As was noted earlier, we've seen a huge increase in profits. What we have not seen is an increase really in wage growth. Those have been decoupled.

That continues. There's been a little bit of upward pressure. But to the point that was made earlier, on real basis, probably not so much.

We actually -- it was interesting when I was going through his materials to see we both picked on sort of a time period within the labor force to pick on here.

The Labor force participation sort of broadly has held steady. But within the 25- to 54-year old area, it's ticked back up. People are getting pulled back in. I can tell you anecdotally, Wilshire as a business, we're experiencing wage pressures. There's -- and I think I mentioned this at the Performance and Comp meeting a few months ago, we're seeing huge increases given as employees shift firms, sometimes on the order of 40 percent.

So that's not -- that's not to say financial services represents the broad economy, but as one part of it.

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MR. JUNKIN: Okay. Back to where I was headed, page 26. And I know that Meketa will probably touch on this and the next slide that I hit. Buy-out pricing multiples are still near the top end of the range at about 10 times. That 2018 number is kind of a first half number. So that could change pretty significantly depending on the deals that get done between now and the end of the year.

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MR. JUNKIN: I think more striking to me is the amount of dry powder. Now, this graph includes private equity, debt, real estate, infrastructure, and unlisted national resources. But you can see $1.7 trillion of dry powder. That's committed, but not yet invested. You know, in addition to having a good economy, we do have very high asset prices pretty much across the board. It's hard to argue, and I think I've probably been making this point for four years and the markets continue to go up during this time period, that there's a cheap spot in the market, right? Asset prices are high, are continuing to go up, or have continued to go up, but things like this much dry powder probably will continue to provide some support in the private markets.

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MR. JUNKIN: Back to one of the other points that I referenced, central banks. You can see here this is the graph of what the Fed balance sheet has looked like and the forecast for the runoff of the balance sheet. We've moved from an environment where the ECB was really kind of hitting the gas, and Japan was kind of neutral, to the ECB going to neutral and Japan starting to tighten a little bit.

If we get to a place, and we probably will, where all of the large major central banks are sort of in a tightening posture, even if not radically tightening at the same time, that could have a pretty significant impact on, I think somebody called it the animal spirits earlier. I think that was Richard. That's a radical change compared to what we've seen post-2008. We have not had that happen since then.

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MR. JUNKIN: Page 38, non-U.S. fixed income just pointing out here the bottom three rows, the dollar versus Euro, the Yen, the Pound. If you compare the two emerging market lines there, one down 8.2, the other down 1.4 for the quarter, the difference is currency hedging. Currencies just got hammered during the quarter. That is continuing certainly in the emerging markets so far this quarter.

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MR. JUNKIN: Just a few more pages here. Sorry. I should -- here we go. Real estate. Vacancy rate is the red line here. You can see it's really been a strong market on the fundamental side. I think this speaks to the strong returns in the core property market that Elisabeth referenced. It's just -- it's amazing the apartment sector in particular.

There was a comment about housing and renting versus owning. You know, I travel a decent amount. It seems like every time I land in Denver, somebody started a new apartment complex and it gets filled about three months later. It's mind-boggling.

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MR. JUNKIN: And then last, I want to spend a moment on timber, which we don't normally do, but I think it probably is merited here.

So timber prices are presented here on page 54. And you can see southeastern timber in the upper left. Really pretty flat. In some cases down, depending on the type of timber. And this goes back three years.

Compare that to the Pacific Northwest, just as an example, because it's got a clear pattern of increasing over time. The reason I bring up Southeast versus Pacific Northwest obviously is that Crown Pine, which has been an investment of yours that has struggled, has had significant exposure to southeast.

So the performance for the forestland portfolio here is on page 56. But I just wanted to make a few comments about this. And as we've been discussing for some time, this portfolio struggled. We know that, largely due to that one asset with lots of concentration in the southeast timber market.

It was hit pretty hard. Timber prices in the Southeast were hit pretty hard in the global financial crisis, because that tends to be the market that's used for home construction. You don't use Pacific Northwest hardwoods for home construction.

But even as the housing market has recovered, those prices did not. So one of the reasons for the challenging performance, other than just with the poor timing on the purchase, which you can't know in advance that the market is going to collapse, included -- sorry, other reasons, included debt service and a challenging governance structure.

So the performance that's reported here is before the sale actually is reflected in the performance. The next quarter -- next two quarters will reflect the additional markdown that came. But really that markdown was coming regardless of the sale.

There'd been a valuation. The valuation was going to push the market value down. The sale actually occurred at a price that was higher than that last valuation.

So I think one of the questions I would want to know if I were in your seat why now? Why sell it now?

There was a very large principal payment coming up. Staff did a lot of very hard work that we -- they shared with us. We worked our way through it as well to really reflect on what's the future return of that large principal payment, and is CalPERS better served by investing that other places like core real estate. Pretty much even under the optimistic scenario for timber, you were better off having core real estate.

So I think that added some speed to the process. But in no way was this a panicked move. I think your staff spent a lot of time really thinking through the options, and finding the best possible solution at this time.

I do want to make one other point, and it's not timber specifically, but relates to another issue that the organization has right now, and that is change in leadership. So really, the timber portfolio was the beginning of the implementation of a vision that a CIO, three CIOs ago, had. And obviously, the market changed, and that vision wasn't fully implemented, because subsequent CIOs didn't -- had other issues to deal with. The global financial crisis being one of them.

But as the strategic vision for CalPERS changed, and as the focus in real assets changed from kind of a balanced approach between income, and capital appreciation to more focused on high quality assets in core real estate, focus on income, less focus on things like timber, this really -- it did not become a fit, and then had to be managed kind of as part of the land of misfit toys.

So I -- as a result, you know, I think again staff worked very hard to find the right outcome for CalPERS. It's obviously challenging to lose money on a significant asset. But changes in leadership can have significant impacts on a portfolio.

And when it's in illiquid parts of the portfolio, I think it's worth noting, if there's a visionary or radical shift in how CalPERS might approach something, is this really going to be implementable over the long term, because there are significant costs if it is not. And one of the issues was CalPERS ultimately just couldn't buy enough timber to build a very large portfolio.

So I had to end on a bad note --

(Laughter.)

MR. JUNKIN: -- but at the same time, I know other people up here would like to speak.

Happy to take any questions.

CHAIRPERSON JONES: Yeah. We have a couple.

Andrew, what year did we acquire that asset?

MR. JUNKIN: I'm going to say 2007. And Paul is going to yell over my shoulder if that's wrong.

CHAIRPERSON JONES: He's shaking. Okay. So it's over 10 years.

MR. JUNKIN: Yeah.

CHAIRPERSON JONES: Okay.

MR. JUNKIN: And, you know, it's -- you've also had changes in the real assets team since then. Paul, I think, has been with you for three years now, so --

CHAIRPERSON JONES: Yes, right.

Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes. Thank you, Mr. Junkin, for the -- when I read your report initially, it was -- there was a lot of stuff in here. I wanted to ask you, because you mentioned it, so we have a government right now that's implementing tariffs that most tariffs don't seem to be impacting the stock market, but you did mention Turkey. So I just read yesterday or the day before how much it is actually impacting the EU, which will impact us. How do you see that moving forward with our fund and sustainability of our fund.

MR. JUNKIN: I have to essentially take everything that I ever learned and throw it away, when it comes to tariffs. I mean, I think that we've all -- now, there's two sides to this, right? Just if there is a bad actor in the global economy that is dumping product, and that is -- that has been the case with steel, for example, where China was producing massive amounts. It wasn't the same quality. They'd agreed to sort of production limits. They far exceeded them, and then sold it through other countries, and then into the U.S., which really hurt U.S. producers.

Those kind of actions I think if there are treaties and trade agreements in place, those should be, you know, adhered to. But just out and out --

CHAIRPERSON JONES: Andrew, go towards the mic a little bit.

MR. JUNKIN: Sorry. Out and out tariffs, I think, is -- we're into sort of a new realm that people haven't contemplated in probably 30 years.

COMMITTEE MEMBER TAYLOR: And the Turkey one is being used as sanctions basically, which are impacting not necessarily tariffs. China's tariffs, I feel like the stock market, China -- the European Union we got rid of. We negotiated, but China's tariffs don't seem to be -- I mean, we haven't really felt the long-term impact --

MR. JUNKIN: Right.

COMMITTEE MEMBER TAYLOR: -- for the businesses that it impacts. But the sanctions on Turkey, which end up kind of relating to this whole thing, and then impacting the EU indirectly or directly, and then us. So that's where I'm concerned.

MR. JUNKIN: Yeah, I think to -- I think your original question was how does this affect us? And at a micro level, it's hard for me to say, well, Turkey is going to be really a horrible or a really great performer. We actually were joking about that on the drive over here. You know, with -- the last time we saw sovereign bonds at 20 percent, it was Italy. And by the way, those bonds are now back below U.S. yields or pretty close to U.S. yields.

So that one actually worked out all right. Turkey may be a very different example.

I think what ultimately happens is consumers play -- pay higher prices. And in a world where real wage growth is not fantastic or not present, that begins to cause some headaches. And one of the slides that Jonathan didn't touch on that I thought was really interesting was I think washing machine prices. And it only struck me, because I just bought one like three months ago. And I thought, well, at least I got that done before the tariff caused the price to go up. I didn't even know I was saving money at the time.

But, you know, there are some things that we've all come to incorporate into our daily lives like washing machines that if you've got to buy another one, you don't get to wait for the tariff to go away. Maybe you can wait until January for a sale or something. But ultimately, tariffs are going to put stress on consumers, and consumers are two-thirds of the U.S. economy.

So anything that creates a drag there, it's offset by the tax reduction. The math boggles the mind, certainly mind. But I think that's the biggest challenge for CalPERS is slowing consumer activity.

COMMITTEE MEMBER TAYLOR: Slowing consumer activity. And then on that note, John, had talked about the slow wage growth, and then in particular sectors, et cetera. But I wondered what you're thinking is in terms of a long-term impact of that, in terms of a drawdown or whatever? How -- this really slow wage growth and almost wiping out any wage growth we had through inflation, how does that impact our long-term sustainability?

Because it seems like -- and I didn't add this. It does seem like we -- the tax breaks that everybody got didn't really translate.

MR. JUNKIN: Right.

COMMITTEE MEMBER TAYLOR: And maybe we won't see that until after, you know, tax returns or --

MR. JUNKIN: Yeah, I think you're -- I think you're squarely back into the issue of income inequality, right? The richest five percent, they haven't had a problem with real wage growth.

COMMITTEE MEMBER TAYLOR: Right.

MR. JUNKIN: The -- you know, the median down, that's been a challenge. And some of it has been general increases in productivity have kept wages down. They've kept costs down as well.

I would argue, and it's impossible to make this point and be, you know, reasonable. But, you know, without the level of productivity gains that we've seen in the information revolution, as some people have called this age, inflation would have been higher, wage growth would have been higher. I don't know that we'd necessarily be better off. But I just bought my son a laptop for school, and it was like 400 bucks, right? And that was -- it wasn't the top of the line, because he's 16 and he'll break it, but --

(Laughter.)

MR. JUNKIN: -- it was -- it was better than the one that I have at home that I bought three years ago that 800 bucks.

COMMITTEE MEMBER TAYLOR: Right.

MR. JUNKIN: So, you know, those kind of things I think they do affect the ability for wages to grow, but it's offset by productivity gains. Again, hard for me to reconcile those two.

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

CHAIRPERSON JONES: Okay. Ms. Paquin.

ACTING COMMITTEE MEMBER PAQUIN: Thank you, Mr. Chair. Thank you for the presentation. You know, I think it was interesting hearing the staff presentation earlier this morning too, and, of course, during all the work we do with the ALM process about trying to de-risk the fund as much as possible.

So I was curious from your point of view is there anything else that you think staff should be looking at, that they're not currently working through and considering?

MR. JUNKIN: That is a much tougher question in this room than it is for almost any other client we deal with, because of the size of the assets. Some of the things that other clients would have the ability to consider quite frankly are a challenge because of capacity.

So I think certainly leading into the ALM process, we had a lot of these conversations with staff. And everything we think that could be implemented at size was either considered or is in process. So I think at this point, you know, barring something like, you know, a small allocation to 30-year STRIPS in case there's a crisis. But I just don't -- I'm not sure that's a -- the kind of strategy that you want to pursue.

ACTING COMMITTEE MEMBER PAQUIN: Okay. Thank you.

CHAIRPERSON JONES: Okay. No further questions.

Next. PC -- PCA.

(Laughter.)

MR. GLICKMAN: Thank you, Mr. Jones.

David Glickman with Sarah Bernstein and Christy Fields from PCA. We are your Board real estate consultant. And we're going to talk about the markets briefly. We're going to talk about your portfolio briefly. And Sarah is going to talk about ESG.

There are five things I'd like to point out about markets currently. John, Elisabeth, Eric, Andrew have done a good job in setting the stage of what's going on in the global economies and the domestic economies.

The real estate performance that you earned in the last year and over the last several years is an output. The inputs are capital markets and supply and demands of space for real estate.

And as those change, those are the things that are going to determine, in fact, your real estate performance. A second part of performances to understand about real estate versus the publicly-traded assets is a good portion of the reported performance is an opinion. Okay. They are based on appraisals.

Part of it is based on cash return, but a significant portion of the overall return less than in the old days, but still notable is based on a third-party outside evaluation. Those can be perfect or something less than perfect. Over time it sorts out, but in any one shorter term period, I think it's important to remember that those are appraisals and not realized sales.

The second thing I want to reiterate and emphasize, as Andrew just did, is that nothing is cheap. And I've been a broken record about that for quite a few years. And it hasn't really changed much. There is still way more capital chasing high quality performing real estate assets than there are assets to be sold.

And while we have seen, and this is the third point, somewhat of a moderation in prices, as they increase, they continue to increase year over year. They are not increasing at as drastically improved amounts as they did in the third, and fourth, and fifth year of the recovery from the GFC.

For example, the forecast for the next 10 years from industry pundits says that they should -- we should generate about five percent unlevered, global, high-quality, cash-on-cash returns. The look backwards for six years, that number has been closer to double that amount.

So there's some narrowing, there's some slowing down of the appreciation. Unfortunately, for the kind of real estate that you seek to acquire and increase your position, that's the real estate that's still in the highest demand. And there are lots of different buyers, including retirement systems, but also including sovereign funds, also including high net worth individuals and partnerships who can buy those assets on different terms than you can afford to buy those assets, and so it makes prospecting difficult.

Now, you have available to you patients, and you have scale. And from time to time, you will find opportunities that are worth pursuing, but you have been disciplined over the last year, you've been disciplined over the last three and five years, and we think that's to your favor, even though you aren't quite at the level of investment as a percentage of your fund that you would have targeted.

The fourth thing I want to point out is that the different property types have had different results over the last year and over the last three and five years. The industrial properties sector overall has had very, very good returns in the last 12 years -- last 12 months. The office sector has had the second best overall returns. Trailing those two have been apartments, for which there have been pockets of oversupply. And to Mrs. Yee's and Mr. Costigan's earlier comment about housing, the balance between rental and ownership is still moving back and forth. One of the reasons is home mortgages are easier to get last year than they were three years ago or five years ago. De-regulation and the change in underwriting standards have allowed households to qualify for mortgages that in 2015 and '16 they couldn't get. So in '17 and '18 they -- more of them could, and that's tipped it a little bit more towards buying a house, rather than renting.

The last of the traditional real estate types in the markets that came in for performance was retail. And we have talked at other meetings, and we will talk in more depth in November about the changes and the disruption in retailing, and how that affects the value of the retail assets that you hold. They did not perform as well during the last 12 months as they had in previous periods.

So with that, I'll turn it to Christy who will talk about the CalPERS real estate portfolio.

MS. FIELDS: Good afternoon. Just double checking. Christy Fields, PCA.

Just a couple highlights from the letter that we submitted. The real estate portfolio now has a market value of 31.8 billion. That's an increase of approximately 1.3 billion, or 4.1 percent, over the trailing year, which brings real estate to right about nine percent of the total portfolio against a long-term target of 10.

The performances highlighted in the table on page -- at the top of page three, although strong on an absolute basis, particularly if we look at kind of the five-year number, which is appropriate to focus on for these private investments, the performance of the portfolio is trailing the benchmark over all periods, roughly 60 basis points trailing over the five-year period.

David has Highlighted some of the market dynamics that are contributing to that, and we've seen moderating of returns across all portfolios, institutional investment portfolios.

I would say that the deep diversification of your portfolio is serving its purpose. You've got certain sectors that are kind of starting to moderate more dramatically, like multi-family, while others like industrial and your data center portfolios are continuing to perform strongly. So that's working well.

I think the other thing to note, and Elisabeth Touched on it, was the importance of the core portfolio. And that's becoming increasingly a larger portion. It's now 78 percent of the portfolio as opposed to less than 50 percent several years ago. And that transition of the portfolio continues as a means of de-risking the portfolio and continuing to improve the durability of the income streams that you derive from that portfolio.

Staff continues to deploy capital in a measured way, and with a not insignificant portion of the new dollars for the coming fiscal year tagged for investment and reinvestment in your existing portfolio. With such a large portfolio, you have just a little bit of a unique thing for you that you've got a fairly rich opportunity set within the assets that you already own to reinvest in those, to extend tenants, to attract new tenants, and to continue to improve the income streams there.

I think I'll leave it at that and let Sarah comment on the ESG portion here.

DR. BERNSTEIN: Thank you, Christy. Two big overview points from an ESG point of view for your real estate portfolio. Made a few notes here. First of all, looking across our client base, CalPERS continues to be a leader in ESG. What I want to highlight here from your real estate point of view is that the actions you're taking, the programs you're putting in place really seem to be accretive. In other words, they're not just looking ex post facto at which ES and/or G factors are negative, but really seem to be -- to be able to help position your portfolio, and highlight, too, here, which is your energy optimization program.

And the Responsible Contractor Policy and Program, which have been in place for quite awhile has matured to the degree that it seems to be able to really help on critical issues in real estate particularly at this time, which are human capital issues.

The second point overall is the physical risks within the environmental area. They used to be seen as something that were not going to be important, really important and really material to investment portfolios to the second half of this century. I think a lot of folks think that that has been moved up.

And your real assets portfolio is in an excellent position to start looking at those physical risks and material risks. I guess what I want to say here is it seems to be important, and your staff is moving to broaden that kind of look at physical risks of climate risk that are in the portfolio, not just energy transition, but climate physical risk throughout the rest of your portfolio. There are starting to be new databases out there that can, for example, look at the individual facilities of a global company. So not just where they're headquartered, but where their distribution, their manufacturing centers are -- all of their facilities, and look at them in the context of different climate change. Still modeling, but at least you're getting a sense of sea rise, extreme heat, flooding, et cetera that hopefully can serve you well in the next few years.

Thank you.

MR. GLICKMAN: We'd be glad to take any questions, Mr. Jones.

CHAIRPERSON JONES: Okay. Thank you.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you.

Are you aware of Prop 10 the rent control initiative that would repeal Costa-Hawkins in the state of California? The reason why I'm asking the question is I want to -- I think it's -- given that we do own apartments that -- you know, rental housing, I think it's worth us looking at what the implications of that might be, and what the risk to the portfolio might be of that passing versus -- you know, or whether it would be accretive. I don't know, but I guess -- I'm just curious if you have any thoughts on that?

MR. GLICKMAN: It's a little complicated.

COMMITTEE MEMBER MATHUR: Yeah.

MR. GLICKMAN: It is dependent on the specific submarket in which your investments are located, what the rest of the housing stock is in that submarket and alternatives for affordable housing. It's something that we would be glad to come back with a more detailed response. We don't have -- I don't have an answer for you as it relates to the apartment complexes that you own today.

COMMITTEE MEMBER MATHUR: Okay. Thank you.

CHAIRPERSON JONES: Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes. Thank you, Mr.

Chair. Thanks you guys. This was a good report.

David, I had a question for you on -- I think you brought up that this last two years I think you said or lasts year, I'm sorry, has been for purchasing homes has been -- there's been some de-regulation. It's -- or purchasing properties, I should say.

So my question that goes with that, and in our portfolio, is that impacting -- are we -- you said we can't -- we don't seem -- everything is too high for us to continue to purchase right now. We're sort of sitting and being patient. So does opening those avenues and those regulations help us in any way?

MR. GLICKMAN: I'm going to answer from a slightly different angle.

COMMITTEE MEMBER TAYLOR: Okay.

MR. GLICKMAN: But it speaks to de-regulation, and therefore the ability to borrow.

The two things we keep an eye on really closely in trying to figure out when the party is going to stop, and the music is going to be over are oversupply of new product and increased amounts of leverage that are available.

And to the extent both for single-family homes and for multi-family apartments for rent, and condos and townhouses for purchase, to the extent that the banks have an easier time making loans, and the developers and the builders have an easier time borrowing larger and larger amounts on favorable terms, that's going to cause excess supply. And that's the point at which your apartment investments are going to be impacted, because the appraisers are going to say rents aren't going to go up very much until that oversupply of either new houses and/or new apartments has been worked through the system.

You have to remember in context that we've gone many years without there being much supply at all. And while Andrew's point about seeing a new subdivision or new apartment complex being built every time he lands in Denver is probably factually correct, Denver went about nine years without anybody putting a shovel in the ground.

And so the three or four thousand new apartments in Denver that should have been built on average every year, every year, none of them got built. So if they dump 15,000, it looks terrible, but the market will absorb them over a period of time.

So to try to directly answer your question about what happens to your portfolio is keep and eye on supply, keep an eye on the terms that borrowers can obtain in starting new spec deals. And to the extent that both of those rise, you're going to see the rate of increase in the value of your housing investments -- apartment investments begin to level off, and in some cases for some short periods of time may even decline in value.

COMMITTEE MEMBER TAYLOR: Okay. And you kind of read my mind because that's kind of where I was going with that question.

And then in addition, we're seeing -- and it was in the Sacramento Bee on Sunday -- basically, there is a decline in for I think this year, July of this year, of prices of homes in this region. Now, I know that's not in every region. But do we see that with the -- so we have the weakening of the de-reg -- or regulations that can lead to a -- and I don't want to say a 2008 issue, but you've got these de-regulations, people more easily able to get homes, yet at the same time you have interest going up. So I think that defrays that a little bit. But are we seeing a swing towards the prices starting to come down?

MR. GLICKMAN: I don't think so.

COMMITTEE MEMBER TAYLOR: Okay.

MR. GLICKMAN: I think what you're seeing, and this is typical in a housing pricing cycle, is the duration is going out, the number of days on the market that a house is listed, the number of months it takes to refill a vacated apartment in an apartment community, that's lengthening out. But we don't see prices coming down.

The new developments, the new apartment developments are offering some free rent in those submarkets where they've had an excess of supply in a spurt. And the reason they can do that, Mrs. Taylor, is because they call that free rent an additional cost of construction. And they write that off as part of their capital base, as opposed to changing the rent on the sticker, which is how the appraisers look at what the ultimate value of the property turns out to be.

So we're not there yet, but as trying to help you with our best guesses to look around corners, we would say keep an eye on the supply of new construction, and keep an eye on the levels of leverage that are allowed, because that's not like 2008, not 2009, but those are where the cracks begin to show up.

COMMITTEE MEMBER TAYLOR: Okay. Great. Thank you.

CHAIRPERSON JONES: Mr. Miller.

COMMITTEE MEMBER MILLER: Hi. And this may be a little further afield. But I'm curious just how specific is the segmentation when you can look at areas of say new construction or opportunities. And the example that I really want to kind of bring to mind is in California, at least, when it comes to like assisted living or board and care, it seems like about 60 to 80 percent of the existing capacity, which is nowhere near what the market wants or needs, is single-family dwellings that weren't built for the purpose that have been kind of modified or converted. And that almost every jurisdiction seems to be doing whatever they can to encourage, make it easier to put in these kind of facilities and operations. Is there any kind of good information about opportunities for kind of new construction or building to spec for those kinds of investments, for assisted living, board and care, versus just a regular standard residential dwelling, whether it be a single unit or multi, you know, quads, fourplex up to small apartment-sized buildings?

Because there seems to be a tremendous demand. And certainly our membership with the demographics, there's a need out there without even getting into the kind of long-term care style facilities, but just the smaller, you know, typically four to 12 or 14 unit kind of operations?

MR. GLICKMAN: So senior care sort of divides broadly into government assisted and private pay. And the economics of building senior housing for government pay rates are terrible. That's a big drag on the creation of new ones. And that's why existing stock, as you described like a single-family home, is being converted for that purpose, because it doesn't make sense to do new construction. You'll never get the costs properly returned.

For private pay, there has been a reasonable increase in the number of new developments. And so some of the large health care REITs that specialize in this business have had earnings that have not grown as fast, because there's been some absorption that's necessary. But in those cases, you have the ability to charge the market what would be necessary to justify the cost of construction.

It's a lot harder to do in California, where the cost of land, and the entitlement process, and the -- not withstanding the public will to try to create more of these facilities, the different jurisdictions have different requirements that have to be met before you can begin construction. And the combination of those high hurdles, and the cost of land, and the cost per square foot of construction, and the availability of labor all combine to make it a very, very uphill effort especially looking at it from the point of view of am I going to get a decent return on my investment?

COMMITTEE MEMBER MILLER: Thank you.

CHAIRPERSON JONES: Mr. Slaton.

COMMITTEE MEMBER SLATON: Thank you, Mr. Chair.

David, I want you to expand on the energy optimization program, because there's information here, but I don't understand quite what this -- well, or one of you can -- on the scale.

So 17 projects, $6.2 million, with a present value of 19 million. So what's the potential? What's the market? Who makes these decisions? What's the decision process that's used to decide to do a project or not do a project?

MR. GLICKMAN: I'll start, and then I'll ask Sarah to please join in. And I see Mr. Mouchakkaa is here who actually knows the answer to your question.

(Laughter.)

MR. GLICKMAN: Every year as part of the annual investment process for each one of your separate account managers, one of the charges they are tasked with is coming up in their annual plan with a request for capital in part to do tenet improvements and to pay leasing commissions, but also specifically how can we make this a better return on investment.

And when Christy described one of the areas of your portfolio where you're going to make a good incremental return on investment as being investing in your own properties, energy is one of those places.

So the managers who actually operate the properties onsite will come back and say, here's what we think we can do, here's what it costs in our community to add solar. Here's what it costs in our community to recycle water and so and so on. And then as part of the capital budget to be approved prospectively in fiscal year, the real estate staff will consider each of these investments as does that make sense, is that a good risk-adjusted return, and then they are given -- the managers are given the green light and the capital to implement those programs.

DR. BERNSTEIN: This is Sarah.

Yeah, and Paul is going to have to fill you in on the details of where you're at with making proposals into systematic application across your portfolio and the potential for that. So these are all estimates, but Paul, if you want to go ahead.

MANAGING INVESTMENT DIRECTOR MOUCHAKKAA: Thank you, Sarah. Paul Mouchakkaa, Investment staff.

I think David summed it up perfectly. The only thing I would add is we tried it last year in the '17-'18 fiscal year as a pilot project. And now we're rolling it out over a broader part of our portfolio. And really it is that balancing act of trying to reinvest in our portfolio in an accretive way and make a difference.

One of the big things that came out in the research was when you're in the process of improving one of your existing assets, that is the opportunity to attack this potential opportunity to improve the value and the operations of the property.

COMMITTEE MEMBER SLATON: So -- but the scale of them. So you have 17 projects. Out of a universe of potential, are there a whole long list that get rejected? What's the return portfolio? What does it have to reach? What's the threshold?

MANAGING INVESTMENT DIRECTOR MOUCHAKKAA: So we've engaged a consulting firm to help us, first, sort of create an inventory, or a library is probably a better word, of all the different types of projects that we can undertake in a portfolio as large and diversified as ours.

We really just started that, I want to say, about eight or 10 months ago, and we're in the throes of, you know, going through all the library that we're soon to be provided and try to roll that out. We're working really side by side with our partners too in addition to the consultant to try and see how big this can get.

So the real short answer to your question is we don't know at this point in time, but we're trying to set it up in a way that it can either go in the side of a -- more of a project orientation like we have today, where it's one discrete project after another, or it could be a policy that sort of governs one of the components of managing this, you know, real estate portfolio.

COMMITTEE MEMBER SLATON: So it just seems to me that, given where the technology is, the ability -- this is a fairly low risk area to work in to get additional returns. So to me, it's kind of a no-brainer. We've been talking about risk-adjusted returns. This is one that's far toward the end of fairly low risk, because these are fairly predictable projects, or at least many of them can be very predictable in terms what the return is.

So I think it's great. Encourage it. Seventeen projects sounds like a small amount, but we're in the second year. So hopefully, we can see a much higher number of projects and investment going forward.

MANAGING INVESTMENT DIRECTOR MOUCHAKKAA: Thank you.

COMMITTEE MEMBER SLATON: Thank you.

CHAIRPERSON JONES: Ms. Paquin.

ACTING COMMITTEE MEMBER PAQUIN: Thank you, Mr. Chair.

Thanks for the report. I really appreciate it. I was interested in what you were talking about with regards to the climate change impacts on the real estate portfolio, and the fact that there's now more tools that are out there to help evaluate and monitor those risks.

So I was hoping that we could hear a little bit more about that when staff is ready, hopefully sometime in the fall in the annual review.

Thank you.

CHAIRPERSON JONES: Okay. Yeah. David, you made reference to investments by high-wealth individuals and various other funds in the real estate area that CalPERS cannot do, because of who we are. But could you expand on that, and describe some of those terms that you were referring to?

MR. GLICKMAN: Yeah, in brief. When you look at high net worth investors, sometimes that's flight capital. So an investor who wanted to move money out of a politically unstable plan, and buy a trophy building in the United States isn't really worried about getting a market rate of return on that investment the first year or two or three. They're more worried about moving the capital and having it not be subject to forfeiture in their home country.

So if they want to buy an office bidding in Hong Kong, because they're a Chinese national, but they want it out of China, and they get a one percent return on investment for the first few years, they can pay a much higher price than you who needs somewhere in the four to five percent first year current return. So that would be one example.

Another example would be a sovereign wealth fund that didn't have a liability side to their balance sheet the same way that a retirement system has. So whereas you have fixed obligations over time that need to be serviced by the income from the real estate and the other assets, a sovereign wealth fund might not ever have that obligation to pay. And therefore, their idea of pricing for the long term is going to be different than yours.

CHAIRPERSON JONES: Thank you very much.

Okay. Meketa.

MR. HARTT: Yes. Good afternoon. Steve Hartt from Meketa Investment Group. We're a private equity board consultant. I'm joined by Hanna Schriner also in our San Diego office.

(Thereupon an overhead presentation was presented as follows.)

MR. HARTT: And we plan to go through our report today. We'll make it quick. We just -- the sections. Just a quick introduction talking about the private equity industry, a review of the portfolio, some performance, and the activity in the portfolio.

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MR. HARTT: So in terms of an overview. Currently have about just over $27 billion of exposure NAV in the portfolio. A total exposure of just over 41 billion that includes the unfunded capital commitments and is about 7.7 percent just below the target allocation of 8 percent.

The portfolio itself diversified by strategy with the buyouts being the largest segment. As you may have noted in the policy review discussed earlier, there was an uptick in the range for buyouts to be from 60 to 65 percent is the target there. So where the program is now is in line with that.

The exposure by strategy funds continues to be an increasing share of the overall exposure. Now, it's 72 percent, a customized investment account, fund of funds, co-investments are shrinking somewhat.

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MR. HARTT: In terms of performance, the value of the portfolio overall, including a net return of capital increased by $1.6 billion in the six months from January 1st to June 30th.

And while the program has underperformed its policy benchmark, as was discussed earlier, it's been a very strong returns, 6.1 percent for the year. But over longer terms, it's been quite strong as well. And we do note that the program when you look at it against a pro forma of the new benchmark, which is the FTSE All-World, it is meeting or exceeding those benchmarks on the three, five, and 10-year basis.

Just as a note, the program had a net positive cash flow, meaning there was more distributions than contributions over the six months of just over a billion dollars. And we would note that since 2011, over just about six years, CalPERS has received over $31 billion -- of nearly $31 billion dollars of net cash from the portfolio.

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MR. HARTT: So Hannah is going to pick up on the industry.

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MS. SCHRINER: Okay. Thank you, Steve. Hannah Schriner with Meketa Investment Group.

This first slide here, I'm only going to go through a few of the market slides that we've included in this deck. And this first one goes over the U.S. buyout activity through the first quarter. And what you can really see on this page, if you focus on the right-hand side of that chart is in 2017, the deal value in terms of dollars has remained relatively stable throughout the year, compared to 2016 and 2015 as well.

And the blue line that you see above that with the number of deals closed also continues to remain stable throughout the past year. And if we look at 2018, this just represents the first quarter remember, there was a decrease. And we don't think that that's telling of the rest of the year activity. We just think that it's, you know, a -- you know, an output of the first quarter lumpiness of the market activity.

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MS. SCHRINER: If we turn to the next page, something that, you know, we wanted to kind of point out is that costs do remain high. As you see in the far right-hand side, multiples remained at 10.5X for the year of 2017. And so while this remains at peak levels, you know, leverage also continues to be high. And one thing to consider here is that a lot of this leverage to consider -- or includes that flowing rate debt. And as interest rates rise, you know, one thing that we're going to see is that, you know, the leverage is going to get more expensive. And so that could have an impact on the leverage within these funds.

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MS. SCHRINER: If we look to the next page, looking at the exit activity within the U.S. buyouts, what you'll see here again, you know, continuing the same trend of the investment activity that we pointed out on the first slide, is that in 2017, relatively stable at 213 billion versus, you know, 2016 it was at 215. And the number of exits again stable at about 1,179 versus the 1,249 for 2016.

You know, again, exit activity did slow in first quarter. But again, you know, it's just one quarter for the year and we don't think that's telling of the rest of the year.

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MS. SCHRINER: And we can flip over to page 12, yes. So just touching on the venture capital, you know, market, we think this slide is very important, because you see that each of these lines, which represents a different round size within venture capital through the end of the second quarter, and you see that each of these lines are trending up, starting -- you know at the purple line represents the angel/seed, the middle blue line represents early venture, and then the top line represents the later venture. And you see over the past five years, you know, each of these have more than doubled. One thing to note though is that, you know, these funds are staying in market -- or they're staying -- their age is increasing. So, you know, relative to exiting earlier with the smaller levels. So that is one thing to consider.

If we turn to the next.

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MS. SCHRINER: Take a look at fund-raising. One thing to point out here is you see at 2017, the purple bars represent the capital raised by dollar value. And then the blue line again number of funds closed through the first quarter. And what you'll see is the purple bars are trending up where the blue line is trending down. And so what we're seeing in the market is a trend that has continued is that GPs are increasing their funds sizes, while the LPs are increasing their allocations but to fewer funds.

So it is a trend that we do, you know, see continuing. And, you know, when we look at, you know, first-time managers in the market, you know, they do account for 10 percent of the vehicles in 2017. So we are seeing an uptick of those managers coming to market.

And 16, the final slide that I'll go over for the market update --

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MS. SCHRINER: -- these -- these lines -- the top line represents the average fund size for the U.S. buyout market, and the bottom line represents the median fund size. And what's really notable to focus on here is 2017. The average fund size was over a billion, which it hasn't been since 2007.

And, you know, for the first quarter, there was a decrease in the average fund size. However, 59 percent of the capital that was raised during the first quarter went to the 10 largest funds, which again, you know, goes back to the previous trend with the GPs raising their fund sizes, but then also LPs increasing their allocations.

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MS. SCHRINER: And with that, I'll turn it over to Steve to go over the portfolio.

MR. HARTT: Okay. So just quickly on the portfolio here. As I mentioned, the buyouts remains the strongest -- the largest portion of the portfolio and is within the ranges, noted as we discussed before, that the target range for -- the target for buyouts has been increased to 65, and for credits has been decreased to 10. So the portfolio is essentially in line with expected -- expected allocations.

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MR. HARTT: The slide here showing that the net asset value by region in the United States remains a dominant portion of the exposure at the fund level.

But also a note on the next page here --

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MR. HARTT: -- that at an asset level looking through the portfolio, it's a little less on the U.S., a little more on Europe. And that comes from the fact that there are some U.S. funds that make investments in companies that are located in Europe and other regions.

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MR. HARTT: I think we had shown here that the vintage years, the commitments that had been made in the 2006 to 2008 time frame sort of outweigh what we see in the following years. But in terms of the amount of uncalled capital, the -- those years 2006, 2008 are a much smaller proportion. We look at the -- what's unfunded in; the more recent years as where the balance of the capital is going to be coming from not the older funds anymore.

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MR. HARTT: So it mentioned that net asset value by the structure, that funds remains the strongest and the largest part of the portfolio, and that the customized investment account is a smaller portion of that, and has shrunk somewhat over time.

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MR. HARTT: The largest manager relationships, this table doesn't change very much, especially the top three there. There can be an occasional change in the fourth or fifth, but it doesn't change very often. And we do know that staff did make commitments to Blackstone Tactical Opportunities and the Carlyle Fund during the last six months.

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MR. HARTT: I wanted to highlight this is a page that I commented on earlier showing -- this is showing the distributions and contributions that were made on an annual basis. And you can see beginning in 2011 that that has remained quite strong, that the amount of cash coming back to the plan has far exceeded the amount that has been drawn by the underlying funds. But you can see that beginning in 2013 that trend has begun to change. And in 2018, it's almost back to a flat. And that's basically showing the impact of the new commitments that have been made over the last couple of years.

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MS. SCHRINER: So this slide here decomposes the change in program value from January 1 through June 30, 2018. And the far left you see the beginning net asset value of 26.7 billion. And as Steve had already mentioned, you know, contributions and then distributions are outpacing those contributions. However, there was that strong positive change in value, which did attribute to a total value increase of 400 million for the first half of 2018.

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MS. SCHRINER: Next just looking at program performance, you know, a few of these data points were already covered. But, you know, if you look at the top line, you see that the CalPERS PE program over the one-, three-, five- and 10-year periods has produced strong, you know, absolute performance, versus the policy benchmark it is lagging, and versus the Cambridge Associates, which is the industry standard benchmark up here, is also trailing behind that as well.

The third line here shows that the FTSE All-World's index plus 150 which is that global public market index, plus a premium. And you will see over the one period is slightly trailing, but over the three-, five-, and 10-year period it is outperforming.

And one thing to note too is that over all periods measured on this page, the program is exceeding the projected return at 8.3 percent. So that is -- that is something very positive for the program.

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MS. SCHRINER: On the next page, breaking down kind of what's been contributing to the overall performances for the program, looking at strategy level, buyouts. Steve had mentioned attributed to are about 64 percent of the total program. So really driving that overall performance had a very strong performance over all period at the one year at 19.8 percent.

Growth and expansion, two rows down, is also very strong performance for the one-year at 16.9 percent, while venture is posing a small drag.

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MS. SCHRINER: The next page breaking it out by different structure, you see funds four lines down does contribute the most to overall performance. The one-, three-, five-, and 10-year very much in line with the overall program value.

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MS. SCHRINER: And then lastly looking at the performance by geography at the top line there, the U.S. which represents about 70 percent of the total program, again driving much of the performance, the one-year slightly behind the program, three-, five -- the three-year as well, but over five and 10 years just slightly either in line or outperforming.

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MS. SCHRINER: And then I'll turn it over to Steve to just talk briefly about the program activity.

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MR. HARTT: So just quickly here that this is a look at the investments that were made by the staff over the last six months. Eight managers were selected, 10 overall commitments, and essentially on pace with the plan that was expected for the whole year of about $6 billion is what's expected for the full -- the full fiscal year, and at 2.7 just showing that it's about on track.

Happy to take any questions.

CHAIRPERSON JONES: Okay. Thank you for the presentation.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you.

My first question is on page 30. Excuse me. I'm sorry I'm just going to that page, which is page 398 of the iPad. I just wanted to note that while you have distributions in red, which makes it look like a negative thing, it's actually a very positive thing. This is cash being returned to us as the investor. So I -- obviously, to get to the NAV, you have to net it out. But I think it makes it look like we lost $3.2 --

MR. HARTT: Right, right.

COMMITTEE MEMBER MATHUR: -- billion. And that's not what happened. It got returned to us and we're reinvesting that in other things, either --

MR. HARTT: That's correct.

COMMITTEE MEMBER MATHUR: -- in private equity or somewhere else in the portfolio.

MR. HARTT: Right.

COMMITTEE MEMBER MATHUR: So I just wanted to make that note.

On page nine, you talk about private -- and 10, you talk about private equity exit activity. And I'd note that 26 percent of private equity exits are going to another buyout fund basically. That's what the secondary buyouts --

MR. HARTT: That's correct, yeah.

COMMITTEE MEMBER MATHUR: -- means?

Do we have a way -- I know this is market-wide that you're showing here. But do we have a way of looking at our own portfolio and seeing how much -- how much are we selling to ourselves through -- I mean, I'm sure -- I imagine we know the answer to this question, but how much are we actually selling from one fund that we might be in to another fund that we're also in.

MR. HARTT: Yeah. So I don't have that data in front of me here, but I would just note that on this particular page here on page 10, that that 26 percent is -- represents just the first quarter of 2018. And you may recall in other reports we've given that this -- this share of secondary buyouts has been increasing.

COMMITTEE MEMBER MATHUR: Yeah.

MR. HARTT: And it is nearly up to 50 percent. It was at 40 and has been creeping up to nearly 50 percent. So it's becoming a larger part of the overall portfolio, the market activity. I would say that a reason that it appears in the first quarter why the market has shrunk is I think there's been less secondary buyouts, just, you know, bid-ask spread between different managers has not been able to be met, so they haven't done deals.

I would think that the PEARS system possibly has some information points to be able to see what would be the data on, you know, manager-to-manager transfers among the -- among the portfolio. That being said, my guess is that it would be -- if I had to make an assumption, my guess is it's going to be less than market, because a lot of these secondary buyouts are from small managers to medium, and medium to mega.

And the strong share of the portfolio is in the large and mega, so there's going to be -- there's less trading of those investments. Those tend to go strategic, as opposed to another -- another buyout manager, but we can see if we have some more data on that.

COMMITTEE MEMBER MATHUR: Okay. I mean, I think the important point to me to make, as we're considering this direct model that we have shared publicly we're considering, is that that is one driver of -- if -- or interest, my interest, in the direct model is to avoid that sort of periodic requirement to exit. We might want to own a company for a long time, but we also want to avoid sort of the leakage that happens when you sell from one fund to another within your own internal portfolio. So I just wanted to make that -- that point. Thank you.

MR. HARTT: Great.

CHAIRPERSON JONES: Mr. Juarez.

ACTING COMMITTEE MEMBER JUAREZ: Yes. Thank you.

Just quickly the question as it related to -- or two of your charts, and you don't have to go back to them, but maybe you -- if you know, just generally off the top of your head, how we compare relative to other major institutional investors on two fronts. One is the distribution amongst the various strategies. We seem to be heavily ladened in buyout. And maybe that's a good thing, but that's what I would you would be able to tell me. And then our concentration in the U.S. versus being more spread globally.

MR. HARTT: So I'll take the question from the perspective of other large U.S. public plans. And I would say that just as a blanket statement that it's -- the CalPERS portfolio is pretty close to what other U.S. public plans are. They're going to be relatively more concentrated in buyouts, especially in larger buyouts. And they're going to be more concentrated on the U.S. with Europe being second.

So I don't -- without like comparing statistics, my sense is that the CalPERS portfolio is generally in line with a number of the other large plans.

ACTING COMMITTEE MEMBER JUAREZ: Okay. All right. Thank you.

MR. McCOURT: Steve McCourt at Meketa. Just to add to that as well. It's also -- all these funds are roughly in line with the universe of private equity opportunities, which is largely U.S. dominated, and largely buyout dominated as well.

ACTING COMMITTEE MEMBER JUAREZ: Yeah. And if I might, just -- it would be interesting to see as we -- as we -- if we, in fact, move to the more direct investing model, whether or not we hold to those same distributions going forward as a direct investor, and whether or not, in fact, we don't get -- and again it may be -- as Steve said, it may be just where the opportunities are, but --

MR. HARTT: Right. So I would say there's two parts of that. As you know, there are two of the pillars that are being discussed, one is a -- the longer term strategies, which is going to be -- tend more towards the buyout side of things --

ACTING COMMITTEE MEMBER JUAREZ: Right.

MR. HARTT: -- and the technology, which -- or innovation, which would be more towards newer or growth.

So that -- to the extent that kind of develops, that's going to have some roll-on impact in the portfolio.

The second I would say, in terms of geography, with private equity now being sort of pulled together with the global equity. One of the ideas of that move is to free up the private equity staff to just choose the best managers they can find without having to think about overlays of either geography or industry. That the global equity portfolio can make some adjustments in the overall equity exposure to compensate for that, to make any tactical bets, things like that.

So those are -- that's in early days for that. So I would think on the -- on the geography exposure question that -- a more complete answer is going to be looking at the overall equity portfolio.

ACTING COMMITTEE MEMBER JUAREZ: Thank you.

CHAIRPERSON JONES: Okay. Ms. Taylor.

COMMITTEE MEMBER TAYLOR: Yes. Thank you, Mr. Chair.

I just had a quick question on pricing. So you talked about we have a lot of dry powder. We talked a about -- a little bit about the cost of private equity right now.

So Tesla -- and it just came up on a flash on my screen, and I lost it, and I can't find the story right now. But Tesla is looking at getting out of the stock market and going private.

MR. HARTT: At least Elon is talking about it.

COMMITTEE MEMBER TAYLOR: Well, Elon is talking about it. I don't know. It looked -- the headline I saw looked more definitive, like there was some decision making going on, but again, I can't find the story now, so...

So I wondered what role does PE have in the number of public companies that are going private, and does that impact that cost and dry powder that we're talking about here?

MR. HARTT: So I think the dry powder question, one -- a couple of quick comments on that. One is it's very large. I would also -- and I don't have the statistic in front of me, but, you know, a way to look at it is how many years of deployment is that dry powder? Because the market has gotten larger, so comparing necessarily dry powder to what it was 10 year ago or 20 years ago is not -- not as valid a way to look at it as maybe some other measures to think about it. So that's one.

The other is that it vastly underestimates the amount of money available to invest in private equity, because all the programs that have co-investments or other ones that, you know, CPPIB that does direct investments. Those are not included in that dry powder calculation. So the amount that you see is actually understated. You know, what's reported is understated and what's really available.

COMMITTEE MEMBER TAYLOR: Oh, wow.

MR. HARTT: So that is a consideration.

So in terms of the -- how private equity would be involved in taking private, so that's been an activity that's taken place with -- with private equity for a long time. That being said, at stock market valuations where they are today, it's not a strong feature that takes place. There is not a lot of take privates.

I'd have to look at some statistics, but it may be relatively balanced right now. The IPO market has been pretty strong, and there have been quite a few private equity back companies both in venture and in buyouts that have gone public in the last couple of years.

So I don't know if it's a straight kind of wash, but I think from a valuation perspective, you know, kind of a bootstrap, how you can think about taking a company private, and then build it up in private equity, it's not a super attractive time right now. What has been happening more is as companies are more focused on the particular businesses that they want to be focused on, there have been, what are called, carve-out deals, where private equity would come and purchase a portion of a particular -- a public company, let's say, and work with that. So I can see if I can get some statistics to more --

COMMITTEE MEMBER TAYLOR: Yeah, because I'm just wondering if we're going to get involved ourselves in this -- in this space, I want to know if we're looking at good prices or is this driving the prices up or --

MR. HARTT: Um-hmm, right.

COMMITTEE MEMBER TAYLOR: -- you know, so -- yeah, if you -- that would be good.

MR. HARTT: Okay.

COMMITTEE MEMBER TAYLOR: Thanks.

CHAIRPERSON JONES: Okay. Let me see we -- I think we have one more report, but I think I'm going to pause for a lunch break, and then return to Meketa on infrastructure, right? And -- okay. So why don't we do that, and we'll return at 1:45.

(Off record: 1:00 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: 1:45 p.m.)

CHAIRPERSON JONES: I'd like to reconvene the Investment Committee meeting. And we have one more presentation from Meketa. So you're on.

MR. McCOURT: Great. Steve McCourt with Meketa Investment Group here with Lisa Bacon from Meketa Investment Group who does the bulk of the work for us on this assignment. And in the interests of time, I'm just going to hand it over to Lisa to review our six-month evaluation.

MS. BACON: Thank you, Steve. Lisa Bacon Meketa Investment Group.

So starting with performance, as I got to report last time and the time before, the Infrastructure Program continues to outperform its benchmark. The absolute returns are impressive, and the overperformance relative to the benchmark also is. On the first page of our letter to you, we've got a table showing what the performance is, even though this is the -- a six-month reporting period, and sometimes we cover the year, I really would direct your attention more to the three-, five-, and 10-year. Infrastructure obviously is a longer tenured asset class.

And so while the earlier performances are important and the -- your eye is probably particularly drawn to the 20 percent for the one year, which is nice and healthy, the other years are really more representative of what the asset class is built to do in your portfolio.

In terms of a couple performance highlights across the portfolio, we looked at some of the diversification parameters. And so with respect to risk and return, core really has been the strongest. It's a story that you've heard within -- within the Real Estate Program as well. It's a good time for that particularly asset -- for that asset class. Within that, the international portion of core also has been particularly important.

With respect to the segments, international is one of your segments as well. It's delivered very strong returns, and is really consistently been at the top across longer periods of time. Commercial and power, the segments have been essentially add or a little bit above their gets, whereas the specialized category, which includes the value-add, and the opportunistic risk-return profiles have lagged somewhat.

With respect to income and appreciation, the portfolio tilted towards core is really built to capture more of the total return from apprec -- from income. And the yield over the past six months has been six percent, which is where you're shooting for. This is up from prior periods, and reflects I think the maturation of some of the assets in the portfolio.

With respect to key program parameters, your NAV as of March was at 4.2 billion, which is an increase of 250 million or six percent compared to the September numbers of the prior period. And this NAV represents 1.2 percent of the total fund, which is a little bit above the interim target of one percent.

With respect to the policy ranges that are laid out, the risk categories, core, value-add, opportunistic, all of those are in compliance with those ranges. With respect to the regional distribution diversification targets and limits, those are all within range. Your leverage and your external manager metrics are within the policy ranges, and we've reported here on segments, which are not measured for policy purposes at the infrastructure program level, but at the Real Asset Program level.

Still, we want to keep track of the diversification there. And as you can see with commercial essential, international, and specialized, those are diversified within the portfolio.

Moving on to a little bit on market commentary. As you've heard in some of the other sectors, the deal volume continues to be high. The dry powder continues to be high. And so it really is an active market, which is good for valuations and is part of the reason why you're seeing that 20 percent for the short-term period. But it also makes deploying capital at the kind of scale and with the kind of quality that you're looking for a little bit difficult.

With respect to where the deals are being reported, Europe is dominating the data that we have. Some of that has to do with there's a lot of activity in Europe, and some of it I think has to do with who reports and where the data are available, but North America certainly is a very significant source of deal flow racking up 28 billion in the first half of 2018.

With respect to sectors, we're seeing a lot of diversity there as well covering energy, renewables, transportation, power, and midstream are all very meaningful portions of the deal flow over the reporting period.

Social, waste, and water were much smaller segments reflecting less availability, more fragmentation, a smaller kind of deal set, but I think one that's increasing in the future.

With respect to the risk-return profile of the deals flow that we looked at, about two-thirds to three-forters -- to three-quarters are in core, which is exactly what you all are shooting for. And so there's again a lot of activity, but there is an awful lot of people, institutional capital, as well as sovereign wealth funds, and players of all sizes and scales really going for that kind of -- that kind flow. We've also reported on North America. You all are a global investor. But North America is an important part of a source of deals for you all.

We've got a table here in our letter to you and I would draw your attention down to the last row in terms of the percent of total dollars that we're showing in each of a couple sectors, midstream, renewable power, and transport. All of those, as I mentioned a little bit earlier, are as far as globally in North America, these are meaningful segments. If you look at the -- also just the second to the last line, the average deal ranging from 260 in renewables up to 900 in power, I think reflects the kind of assets those are, and the kinds of deals that are accomplished.

Just a particular note on renewables, those tend to be smaller projects. It's a lot easier to do smaller scale in that space, than it is the others. And so that's one of the reasons why that number is different. If you look at the total numbers of deals, you can see that there's over 6,000. And so it's not -- it's not really a reflection on a lack of activity, just the projects are a lot smaller.

We look at California for you all, and there's certainly a significant amount of activity here. There were 37 deals reported in the database that we were looking at. A significant number of them, more than half were in the renewable space, either solar or wind with a couple deals in midstream, power, two airports, and some waste. We've provided a little bit of information on some of the deals that we made note of. These are just offered for informative -- to be informative on the market, and not indicative of what CalPERS necessarily did or didn't go after.

With respect to fundraising and dry powder, as I mentioned at the outset, and as you heard earlier for the real estate asset class, there are record levels of dry powder in the infrastructure space globally. And it looks like 2018 is on track to hit a new high in terms of new funds closing on capital.

One thing of note, which will contribute to the data in a fourth coming period is that the two largest funds that closed two years ago are already coming back to market with numbers greater than they were before. And so we're probably looking in a year or two at another 20 to 40 or even more adding on, not even counting all of the other players in the space.

So the assets that you all are trying to acquire in the infrastructure space are very competitive. And to get quality core at the scale that you all are looking for, CalPERS has tremendous visibility on the deal flow. We get a chance to see what you all are seeing. And so I think you should be confident that your staff is really able to see so much of what's out there, especially what would be important for them in the kind of -- the kind of assets and the kind of attributes that they're looking for.

CalPERS certainly has some competitive advantages in this space, the size, the reputation, and the ability and history of partnering both with other investors with managers, with strategics. And so even though it's been a little bit of a grind to make that 1.2 percent inch up, it does -- it does seem that you all are doing everything that you can within the confines of having CalPERS be disciplined and careful about the kinds of investments that you're making, and the kinds of partners that you're engaging with.

So I will end my remarks there.

MR. McCOURT: Okay. And I'll just have to add one more remark, because I think it is remarkable when you started this asset class 10 years ago, expectations were that the asset class would return seven to eight percent at that time. So a 14 percent annual return over the last 10 years is truly beyond what anyone's expectations would have been at the time. Part of that is fantastic execution by your staff over that time.

But there have been two significant tailwinds just to bear in mind. One, you've had declining and persistently low long-term interest rates, which have partly driven investors towards this asset class. And you've had just a continuation of significant amounts of capital from global pension plans and sovereign wreath funds that are looking for very long-term contracted income that you find in infrastructure. And that's really pushed up the prices. So just to reiterate Lisa's points, the historical returns are great. But what they do do is the suppress forward-looking returns in the asset class. So that will be a continuing challenge for staff as they deploy capital in the future.

And that concludes our report.

CHAIRPERSON JONES: Okay. Thank you.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you. Just a sort of -- along the same lines of the question I asked earlier of the CalPERS team, what would it take for us to really help create the supply out there? I mean, can we have an influence on the supply out there by -- through advocacy or other mechanisms. And what do you think it would take for us to be able to increase that supply in such a fashion that it would -- we could increase our allocation?

MR. McCOURT: The supply-side is always challenging, because I think a lot of it, as Ted and others highlighted, does relate to public policy. So I think -- I think if there's a desire to increase supply, it has to kind of start with that and focus on that. And perhaps with the hope that the federal government leads the way in allowing pension plans to invest in more and more infrastructure over time.

COMMITTEE MEMBER MATHUR: Okay. Thanks.

CHAIRPERSON JONES: Thank you.

Okay. So no further questions on this item. And I want to thank all of the consultants for your presentation and the updated information you've provided to the Committee.

So now we will move on to the next item on the agenda, 8c.

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

8c -- well, Elisabeth and Kit are on their way up. This is an information item. And what we're informing the Committee, recommending, is that we delay for two years the review of the divestment status of Iran/Sudan, given the sort of recent developments with respect to Iran politically at our federal level, and around the globe. That's the short of it.

Kit has a presentation about the agenda, but we could stop there, if there -- if the Committee thinks that's the right direction to go in or Kit is prepared to describe it in more detail.

CHAIRPERSON JONES: I see no questions, so it must be the right direction.

(Laughter.)

CHIEF INVESTMENT OFFICER ELIOPOULOS: Thank you.

CHAIRPERSON JONES: Thank you.

Okay. Let's now move to Item 9a, Trust Level Portfolio Management Annual Program Review.

CHIEF INVESTMENT OFFICER ELIOPOULOS: And for this one, Eric Baggesen will start us off. And I think he didn't expect that item to go quite so quickly.

(Laughter.)

(Thereupon an overhead presentation was presented as follows.)

MANAGING INVESTMENT DIRECTOR BAGGESEN: Okay. Good afternoon. Eric Baggesen, CalPERS staff.

As Ted said, we have our annual program review. Let me just do a bit of an introduction on this, I think, and then we'll touch on just a couple of points. And then what I'd really actually encourage the Board to do is spend a few minutes of time with the Wilshire review of the TLPM team. This is the first time that Wilshire has actually reviewed the team, so I think that potentially the most interesting information in this is their review of the team.

But basically, I think one of the things that you need to understand about TLPM is that this team most of its activities are very closely aligned with the structure of the Investment Beliefs and also the portfolio priorities.

Most particular, Investment Belief number 6, that asset allocation is the primary determinant of the outcome to the fund. There's a sub-bullet under number six also though that relates to the aspirational statement that the organization will attempt to add value with dynamic asset allocation.

So a core element of one of the pillars of what this team works on is actually trying to build out a framework by which we will try to understand if that's just a wishful thinking or if that's something that can actually be realized.

The team TLPM is also very closely associated with the Opportunistic Program. And you're going to be hearing from Kevin Winter around the Opportunistic Program a little bit later this afternoon. But that linkage is really because opportunistic does not have a strategic role in the asset allocation.

By definition, opportunistic trades are not things that are there on a secular basis or a systematic basis, but rather a sort of episodic, and therefore the opportunities may appear and then disappear. So that kind of activity or that sort of opportunity really does not relate well to having a strategic allocation to opportunistic.

But that basically means though that when Kevin and his team are able to identify an opportunity in the marketplace, we need to have a mechanism or a process by which we would identify capital that could be deployed into that opportunity. And that's where TLPM comes in.

So we've been working to build out a framework to do that assessment and really try to identify where we could source capital into the opportunis -- opportunities that Kevin and his team are able to identify.

I think another thing that is important to understand around TLPM also is that a central activity of this team is basically to foster collaboration. Most importantly or at least primarily that collaboration really needs to exist across the Investment Office. So this is a team that really thinks about everything that we do from the perspective of the total fund in contrast to a perspective of let's say public equities, or real estate, or fixed income.

So basically one of our charges is to try to identify skill and knowledge that exists within the other parts of the organization and bring that together.

But that collaboration also extends beyond the Investment Office. We do a tremendous amount of work with the actuarial staff under Scott Terando. We do a lot of work with the Finance staff. We'll have a new Chief Financial Officer coming into the organization in the not too distant future. So all of that work and coordination basically is a central element to the things that the people on this team basically bring forward on behalf of the organization. And that was most recently evidenced in the work around the strategic asset allocation related to the PERF and also the Affiliate Funds.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: Let's see, I think I'm just going to touch on one or two slides.

Slide number 3 in the materials is a restatement of the attribution slide that Elisabeth presented for the total fund in the total fund review.

The areas that TLPM is associated with on this, you can see that sort of light gray box in the middle of the top section. There's four line items. You have the external MAC Program, completion overlay, volatility harvesting, risk mitigation. These are all places where TLPM is actually in the business of deploying some capital into the marketplace. That capital right now is pretty limited. It's about one percent of the fund, maybe a little bit less than that at this stage of the game.

But these are places where we're, in essence, really trying to explore alternatives in an effort to understand whether we can do things from the area of risk mitigation or around the actual management of the asset allocation, including dynamic asset allocation.

So if you recall for you the Board members that were here when Joe Dear was our Chief Investment Officer, Joe started the MAC Program with the effort to, one, understand whether any external organizations could better manage our strategic asset allocation than we had had actually been doing, and also two, to understand whether or not there was any techniques or knowledge that those managers could impart into the staff that would expand our capabilities.

With Joe's passing, that program became a little bit of an orphan. And when Ted became the Chief Investment Officer, we said we would absorb that into, what was at that time, asset allocation and risk management in an effort to try to keep that agenda going forward, and really to focus on that sub-bullet under Investment Belief number six around dynamic Elisabeth allocation. Because at some point in time, as an organization, we either need to find a way to successfully do and scale-up that effort around dynamic asset allocation, or if we determine that we actually can't do that, we need to remove that as an Investment Belief. Because having a belief that invites active management, if ultimately it's proven that we can't do that, and may really systematically make money at it, then we're better of off to, in essence, remove that temptation to invite that kind of activity into the plan. So that's a big piece of what we're doing in this.

When you get into volatility harvesting, that's an area that we inherited, in essence, from global equity. That's a project where we are attempting to -- when we say harvest volatility, it's actually just basically selling volatility. And that happens through the utilization of options, and that began in global equity and has migrated into TLPM. And we think that it could be a component part of the risk mitigation effort. And the risk mitigation effort is an effort where we are actually not automatically trying to earn year in and year out a systematic return from the market.

In its contrast, that's actually an exercise where we basically are paying the equivalent of an insurance premium, and are hopeful that if we have certain conditions met in the marketplace, that will be an episodic moment when we would actually earn money on that effort.

But that is an effort that will, in essence, actually cost on a pretty systematic basis with very infrequent, very episodic potential to payoff. So it's very different than exposing that plan on a systematic basis to risk premia that we think carry with them sort of a systematic return.

When you look at this chart, the places that TLPM touch are that big gray box. And you can see that the net effect for the one year period of that big gray box basically was a cost of three basis points to the fund, partly due to the performance of the MAC Program, and partly due to the costs that attach to the risk mitigation effort.

On a five-year basis, that big gray box added up to a single basis point. And even though basis points don't sound like a lot of money, a basis point to this fund represents about $35 million, so it's serious money even with very tiny percentages.

The other places where TLPM touches this chart are on the other plan level, which tends to be things such as transition accounts, usually attached to asset allocation shifts. So the numbers roll through that. And you can see that that was a negative one basis point for the one-year period, and a positive three basis points for five years.

The other place where we touch are the allocation management line. That's very much directly that whole dynamic asset allocation effort. And we've got a huge, I shouldn't say huge, but we have a significant effort made up of a cross-functional team within INVO working on this whole issue of dynamic asset allocation. That happens to have been positive for both of these time periods.

And then another area that we touch is the performance of the public proxies. And that is related to both the misweights attached to the private assets, which do not have the ability to absorb or to pay back capital on demand, so it's hard to manage the exposure to those private assets classes.

When you're underinvested in something in like private, by default you are overinvested in something else. The money is deployed some place else within the portfolio. So this relates to that sort of implied proxy allocation that accounts for any under or overweight to the private asset classes.

But it also links back to the overlay program that we're attempting to build, which seeks to create a version of the total fund asset allocation, which can be executed just within publicly-traded markets, which then allows us to then control those allocations.

So there's a large effort going on to try to understand how effectively we are or are not able to proxy the performance of the private assets through publicly traded instruments. And that's where that whole sort of overlay activity falls into the program.

When you add up all of these pluses and minuses, you know, small numbers of basis points, TLPM had a positive four basis point effect for the one-year period, and exactly a zero effect over the five-year period.

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MANAGING INVESTMENT DIRECTOR BAGGESEN: I think the last page that I would speak to in the review and there's a whole bunch of other slides attached to the appendix that we'd be happy to answer questions about, but not necessarily try to present information about it, but it's mainly just about the accomplishments and the upcoming activities.

So in the '17-'18 fiscal year, we went through the strategic asset allocation for the PERF. We've also gotten through all the affiliate funds. That took a huge amount of work and coordination by the team. We've also done a lot of work in relation to the MAC Program. And at some stage of the game, we'll probably bring back a review of specific just about MAC. I think that's a topic that -- you know, the media has picked up on this agenda item and is certainly writing some articles about these efforts.

But one of the things that we've done with the MAC Program is to -- one is to add some additional managers to the roster. So we were basically allowed to have a total of six managers under Ted's manager constraints basically. We're using four of those manager slots to really work on the multi-asset class activity, and two of those slots to work on the risk mitigation activity.

So that whole program has been fleshed out over the last year. And we've also been working to restructure those, some of the mandates around MAC to basically bring that program much closer to the asset classes, the risk constraints, the ranges that are applied in the structure of our strategic asset allocation.

We believe that the greatest potential to try to create some knowledge transfer from external entities is to have them working on something that is very close to what we were actually able to work on.

When Joe Dear originally built this program, he made it unconstrained, so the managers could use any kind of definition of market segments or asset classes. They were also able to use things like leverage beyond the capacity that we have with our current policy limits and things of that nature.

So we're, in essence, restructuring some of that to -- not in every instance, but in some instances rein in some of those degrees of freedom and make it more reflective of the things that we can actually do.

And then we've got the '18-'19 initiatives. One of our initiatives, as Ted mentioned, is to actually really sort through this whole issue of active risk, and really try to create more attribution so we can understand whether we're adding value in that area or not; to continue the work on the dynamic asset allocation efforts that are there; and to really continue to explore the topics in particular that were brought up earlier today around currency, inflation. We owe you a return with information on those topic areas. And I think we're going to try to bring that to fruition over this fiscal year, so we can actually have an understanding about what is the most rational approach for the organization to take in those areas.

So I think with that, I would stop blathering at you. Happy to answer any questions, and move this on to Wilshire's part of the assessment.

CHAIRPERSON JONES: Okay. Yeah. I -- before I call on the Committee Members, I just want to applaud you and the staff for the accomplishments that are listed here, that talks about our asset liability management -- excuse me -- and strengthening the long-term sustainability of the fund, because a number of steps have been taken, including the ones listed here. But there's some others that you've accomplished, such as the amortization rate changes. All those steps that you've taken to have the long-term sustainability of the fund. So I just want to applaud the staff for the actions that you've taken. So thank you.

Ms. Mathur.

COMMITTEE MEMBER MATHUR: Thank you. Well, I think this program is really essential as we try to really look at things holistically across the total fund to be making the right trade-offs within the portfolio, and the right decisions around both risk and return. So I think really important work here.

I do have a couple of questions. The risk -- on page three that chart, the risk mitigation that you have listed here is not the same as our Risk Mitigation Policy.

It's not to -- it's not to effectuate the risk mitigation policy. It's a different type of risk mitigation. Could you delve a little deeper into what that means. You gave us, you know, a quick answer. But if you could delve a little bit deeper.

MANAGING INVESTMENT DIRECTOR BAGGESEN: No, you're absolutely correct. It does not -- it has nothing to do with the Risk Mitigation Policy that you as a Board have adopted.

This is actually trying to understand dimensions by which we end up with some kind of an impairment of our asset values. So like a big downfall in the public equity markets is indicative of that.

So we're looking at those dimensions that have that potential to create that impairment and asking ourselves is there a way to effectively hedge against that activity.

So that's really what it's targeted on. The will be more money -- information coming out over the coming year basically about this to you as Board members, and there's more that we can actually say in closed session about it --

COMMITTEE MEMBER MATHUR: Sure.

MANAGING INVESTMENT DIRECTOR BAGGESEN: -- if you want to have more discussion there.

COMMITTEE MEMBER MATHUR: Okay. Thank you. And then with respect to the public proxy performance, you know, we had talked at some length I think it was maybe a year ago at the offsite - it might have been a little longer - about the use of leverage at the, you know, total fund level. Is this -- is this partly where that would be effectuated if we were to implement that or, and are you --

MANAGING INVESTMENT DIRECTOR BAGGESEN: It could be. So, for example, one of the areas that we're trying to come up with some proxy assets, and this involves work between the TLPM team and the Opportunistic team headed by Kevin Winter is to find a mechanism to try to proxy, let's say, the return expectations for private equity.

Now we do not ever believe that we'll actually be able to proxy the outcome of private equity, but our return expectation is public markets returns plus 150 basis points. So that leverage could, for example, be a tool to attempt to try to do that. It could also be taking some incremental other type of a risk, such as a credit risk or something of that nature basically in order to try to generate that return. So all of that will dovetail together.

COMMITTEE MEMBER MATHUR: So it's not -- and is it just looking at the return or is it also looking at some of sort of the fundamental characteristics of that particular asset type or --

MANAGING INVESTMENT DIRECTOR BAGGESEN: What we're trying -- so the existing public proxies are simply just the -- where does the capital get deployed to if it's not in, let's say, private equity or real estate --

COMMITTEE MEMBER MATHUR: Right.

MANAGING INVESTMENT DIRECTOR BAGGESEN:

-- because we've tended to have it underweight to those two areas pretty systematically. So there is that implied proxy that is not necessarily a conscious decision of anybody, other than just leaving the money sitting in some part of the portfolio. Then there's the intentional work to try to define proxies that are more -- have more efficacy.

The basis of trying to define those proxies is actually the benchmark returns, and the capital market assumptions basically that are attached to these different parts of the portfolio. So when you think about things like private equity and real estate, you've got the appraisal process, you've got lags, you've got all kinds of things that affect the actual outcome. We're not trying to proxy those elements. We're just simply trying to proxy the attributes that went into the strategic asset allocation that have caused us to allocate money to that -- to those parts of the portfolio.

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

CHAIRPERSON JONES: Okay. I see no further questions. Thank you.

Next.

MR. TOTH: Great. Good afternoon. Tom Toth with Wilshire Associates to cover the opinion letter on our TLPM review. You'll recognize the framework from some of the other internal programs which we provide a similar review on. And the real purpose is to give you an idea on the due diligence that we would do for a -- we'll call it a typical investment management organization in looking at the important facets which we think have a strong ability to predict success in terms of adding value.

So you've seen it for global equity, you've seen it for global fixed income, and now we're doing it for TLPM. And you'll hear shortly also on the Opportunistic Strategies Group.

So rather than walk through the opinion letter - I'm certainly open for questions - I thought I'd just start with a couple of comments, first, on the strengths that we see in the program, opportunities for adding value to the total fund, and then some areas for monitoring potential areas for improvement as well.

So starting with strengths, and Eric touched on this. I think the strategic asset allocation processing and the coordination thereof is a real strength of the TLPM group. And having just gone through that, you've really seen that in real-time. It's very robust, and it utilizes input from consultants, outside experts from the Board, from staff across the organization to really triangulate on a portfolio that helps you meet your objectives. And at the end of the day, that's the single most determinant -- important determinant of the success of the CalPERS investment program.

Further, the TLPM team has significant experience and depth. Given their current mandate, we would expect some fluctuation in that as things are built out over time. But given where they currently stand, we feel like those resources are sufficient for their mandate.

In our discussion with them in one of the key due diligence processes is coming on site to sit with the team, and not just sitting with Eric, although that's very important, but also talking to the AIMs and the IOs, and getting a sense -- a very holistic sense for how the process is working. And in those discussions, we came away very comfortable that the expertise -- the appropriate level of expertise sits within the TLPM team. And that comes with a very strong understanding of portfolio construction. We talked a little bit about active risk exposures. It's very clear to us that the team is very cognizant of those, and is going to be very judicious at using those levers in terms of managing the TLPM process.

And then lastly on the strength -- strengths, the research collaboration really came through in our discussions and our review of materials, and trying to make sure that all of the various information sources are utilized, not just within TLPM, but are also broadly disseminated and widely available to staff as necessary to make good decisions. So we were -- we were very favorably impressed with that.

In terms of opportunities, Eric touched on this a little bit in his comments. We'd like to see continued improvement in cross-asset collaboration. I think CalPERS has made significant strides in that area. And the way that we're viewing TLPM is very much a focal point for those decisions. So continued improvement there represents a real opportunity to add value over and above the portfolio's strategic benchmark.

Those can include things like the Strategic Overlay Program, rebalancing decisions, whether to fully rebalance or partially or not to rebalance as the case may be, based on very well researched and well founded principles.

We are also very positive on the continued build out of the attribution capabilities. You've seen a little bit of the results there. But at the end of the day, it's very important to make sure things are appropriately measured, because then they get managed. And to understand whether the decisions that are being made on an active basis are really adding value relative to the policy benchmark.

And Eric also touch on this, but external relationships. We think there is significant opportunity there for both learning and for adding value to the plan. And the changes to align those external relationships with the policy priorities to do things like mitigate drawdowns and manage total fund volatility we'd look at very positively.

When you look at our scoring, and this dovetails in with the areas for improvement or continued monitoring, a couple of things jump out. And the first one being a below average score for the organization. And that really is driven by turnover at the senior investment level with continued stability. We imagine that our score there has the potential to increase. But that loss of intellectual capital is a real threat to the organization. And I think the Board is well aware and making strides to manage that.

But we think, at this point, there certainly is room for improvement there. And then you'll also notice in our scoring that the forecasting score comes in as average. You saw a little bit of the attribution there. A slight negative. Ideally for a strong forecasting score, we want to see sort of proof of the efficacy of the TLPM program. And given that it's still relatively early in the lifecycle of the program, we think there's room to improve there as well. And so we rated that as average currently.

Our expectation as that's built out, as the track record is developed and as the levers that they pull start to add value that that score will increase.

So, in summary, I think it's fair to say that we view the growth in the evolution of the TLPM program in a positive manner. We feel there's real opportunity to add value over and above the policy portfolio, given the team's level of expertise, and it aligns very well with the overall CalPERS objective to meet your return hurdle at a reasonable level of risk.

So with that, I'll stop and stand for questions from the Board.

CHAIRPERSON JONES: Okay. I see no questions on this item, so thank you for the report.

MR. TOTH: Thank you.

CHAIRPERSON JONES: And so you're up next also, Tom, I think.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Actually, I think we'll hear from staff first, and then the consultant. That's how we prepares. So you don't want to throw us off kilter here at the last minute.

(Laughter.)

(Thereupon an overhead presentation was presented as follows.)

CHAIRPERSON JONES: Just keep moving ahead.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So I think Kevin will be kicking you off.

MANAGING INVESTMENT DIRECTOR WINTER: Good afternoon. Kevin Winter, CaPERS staff.

CHAIRPERSON JONES: Your mic.

MANAGING INVESTMENT DIRECTOR WINTER: There we go Pushing the wrong button.

(Laughter.)

MANAGING INVESTMENT DIRECTOR WINTER: As this is the inaugural opportunistic presentation, I thought I'd give you guys sort of an outline of what the group looks like and what we do, and then open it up to questions after that.

So really opportunistic is three different business segments. The first is trading, the second is beta enhancement reinvestment, and the final is the actual opportunistic portion.

Looking at ESS, this group does most of the trading for the fund. They currently trade for TLPM, GE, GFI, and we do some one-off trades for the private asset classes. Recently, we did a trade -- a currency trade for our real estate group, so we're sort of collaborating with most of the groups within the fund. The only person we haven't -- or group we haven't worked with this year is private equity. But historically, the GE group also traded for them when they had IPOs or something like that.

So as Eric mentioned earlier, collaboration, ESS is probably the most collaborative group within the -- or one of the more collaborative groups within the organization.

ESS really --

CHAIRPERSON JONES: Excuse me, Kevin, can you get closer to the mic?

MANAGING INVESTMENT DIRECTOR WINTER: ESS basically came together as it is in its current form last October when the GFI trading team came over to ESS. Since that time, we've put together some SLAs with each of our customers. We review all the asset classes as customers, and we're providing that service to them. So the SLAs, or security level agreements, give a clear outline of what we're responsible for, what kind of workload there is. And if there are changes, we have a quarterly meeting say -- and we say, okay, we're noticing a huge increase in volume and we might need more resources here or something like that. So it's a very collaborative interaction with our customers.

Another point about ESS I wanted to clarify is almost all derivatives that within the fund are traded on the desk. Wylie Tollette who was our previous COIO was really, really adamant about having all derivatives in one place so we could really track that risk, because things get really out of whack really quickly with those types of securities.

An additional aspect of ESS is we're trying to rebuild redundancy within our trading group. So we have a number of people that were equity focused, a number of people that are fixed income focused. We're trying to get those to sort of go across, so we have more depth in our trading desk, so we're not dependent on one or two people to trade certain types of security. We've got more people there to do that.

And finally, an interesting part of this integration is recently we were able to do a trade in the fixed income area that uses methodologies that the equity side traded with, resulted in really, really good discussion. The PMs in the fixed Income group were very, very happy. And this is like one real big win for the ESS team.

The final thing that ESS also does -- works on is sec lending. They do all he sec lending for the total fund. Next, I'm going to move to beta enhancement. Beta enhancement currently is a value add for GE and GFI. We basically -- they'll gain the beta exposure via the futures market, which frees up some cash. We'll invest that cash in LIBOR-based securities. These securities are very low risk from the standpoint of capital loss. And in this strategy, we're -- really long-term focus, we're able to take ups and downs of market volatility, but over the long term, this one is going to payoff for us.

Over the next few years, we're going to add additional types of securities to this, and we continue to work on that. The final area that we have is opportunistic. As Eric mentioned earlier, there is no strategic allocation to opportunistic. Funds must be sourced from other areas within the fund. With -- and TLPM has to agree to where we source the funds from.

So for example, we wouldn't be able to go into a debt strategy with an equity funding or an equity strategy with debt funding. It has to be similar risk characteristics as with what is being sold in existing asset classes.

There's a small group attributed -- associated with this area, and that's by design. We want this strategy to be small in the amount of people, so we don't have our staff feeling like they have to do things, but then we can also utilize the rest of the fund to get more brain power into any opportunity we look at.

A good example of this is a recent looking at the middle market direct lending. That's basically a LIBOR based or a floating rate security similar to leverage loans, which is a public market equivalent. So we put together a team of myself and similar fixed income guys specifically in credit. We've been looking at these guy -- looking at a bunch of strategies and managers. And we're doing ASP right now, which a -- going to higher a couple managers.

We won't fund them initially. But when the time is right, we'll go ahead and make the allocation to that out of the -- at a leverage loan allocation.

Most likely the -- most of the time, there will not be a lot of money in this opportunistic area. But when there is, it will probably be large amounts, because obviously there will be a lot more opportunities in the market. And with that, I'll open it up to questions.

CHAIRPERSON JONES: Okay. Ms. Mathur.

COMMITTEE MEMBER MATHUR: A couple of questions. So you threw out a number of acronyms, so maybe we can just start by defining some of those.

MANAGING INVESTMENT DIRECTOR WINTER: Sure.

COMMITTEE MEMBER MATHUR: ESS is the execution strategies and services.

MANAGING INVESTMENT DIRECTOR WINTER: Yes, ESS. Yeah, execution services strategy.

COMMITTEE MEMBER MATHUR: Okay. And I think you said -- I think I heard you say that you're doing trading for all the asset classes including global equity --

MANAGING INVESTMENT DIRECTOR WINTER: Yes.

COMMITTEE MEMBER MATHUR: -- is that right?

MANAGING INVESTMENT DIRECTOR WINTER: Yes.

COMMITTEE MEMBER MATHUR: So does that mean global equity is not trading itself, anymore? They're --

MANAGING INVESTMENT DIRECTOR WINTER: It all goes through.

COMMITTEE MEMBER MATHUR: The trading desk is all moved through -- into your group.

MANAGING INVESTMENT DIRECTOR WINTER: Yes.

COMMITTEE MEMBER MATHUR: I see. Okay. So I wasn't aware that that was part of the restructuring that was happening. Okay. That's interesting.

Okay. Well, I think that's helpful. So you --

the other -- I think some of the other acronyms I heard -- and I'm just going to -- I'm just going to -- for the audience sake, I might just define them is GE was global equity.

MANAGING INVESTMENT DIRECTOR WINTER: Yes.

COMMITTEE MEMBER MATHUR: GFI is global fixed income?

MANAGING INVESTMENT DIRECTOR WINTER: Yes.

(Laughter.)

COMMITTEE MEMBER MATHUR: I can't think if I missed any other ones, but -- oh, ASP, if you could -- yeah --

MANAGING INVESTMENT DIRECTOR WINTER: Oh, the alternative solicitation process.

COMMITTEE MEMBER MATHUR: Okay. So that's -- that's basically looking -- searching for managers.

(Laughter.)

COMMITTEE MEMBER MATHUR: I know you're --

MANAGING INVESTMENT DIRECTOR WINTER: Well, even in our office, there's so many acronyms, I can't keep track of them also, so --

(Laughter.)

COMMITTEE MEMBER MATHUR: It's very hard to -- it's very easy to get lost in the acronyms. Okay. Well, thank you so much.

MANAGING INVESTMENT DIRECTOR WINTER: Sure.

CHAIRPERSON JONES: Okay. No further questions.

MANAGING INVESTMENT DIRECTOR WINTER: Thank you.

CHAIRPERSON JONES: Next.

MS. DEAN: Good afternoon. Rose Dean, Wilshire Associates. So we'll speak briefly to the program review for opportunistic strategies. And you have this review in your materials, so I won't go into detail. But given that this is an initial review, the program has not been in place or is completely structured yet or has been scaled out yet.

We have not scored the program as we normally would the other programs that are currently operating in its full scale. What we did do is touch on the strategy itself, the governance, some of the risk management processes in place. And we plan to bring back the review in full scale next year with the scoring.

We would just caution that obviously the strategy itself by definition is something that changes, given the opportunities in the market. So based on those opportunities, resource, dedication to those strategies as they come up would be an important part of our review, and our focus, in determining the success of the program.

The only other thing I would mention is that, as Ms. Mathur you pointed out, the ESS program has been transitioned into this program from the GE program. So as with any transition, we will focus on whether that transition is smoothly implemented, and also get feedback from the clients of this program, which is our GE and GFI, global equity and global fixed income programs, to assess the effectiveness.

CHAIRPERSON JONES: Okay. No further questions

CHIEF INVESTMENT OFFICER ELIOPOULOS: Thank you, Mr. Chair. I realize I goofed in the introduction. I was going to introduce for Kevin -- here, just hold on a second Tom and Jean -- who was here. That was part -- that was my job. I forgot to do that in haste. But with Kevin Winter and Tom McDonagh, Jean Hsu, we have three of our really veteran leader from our global fixed income unit, over decades of experience within global fixed income.

And I think we saw this morning the performance that emanated out of global fixed income. And they're in charge of putting this new group together, both from an execution standpoint, what you heard about is centralizing that is so important from a risk standpoint, but this Opportunistic Program is also going to be very important for us going forward. And the leadership is very comfortable to have such senior people from CalPERS for many, many years, if not decades is very comforting. So I forgot to say that. So thank for being here.

CHAIRPERSON JONES: Okay. Thank you. Okay. You bring your next group up, and I'll --

CHIEF INVESTMENT OFFICER ELIOPOULOS: This is -- this is the last item -- this is the last item in open sess -- or the last substantive item.

CHAIRPERSON JONES: Second to the last, yeah.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Exactly. The other item 10a.

CHAIRPERSON JONES: I see them coming up. Okay. Thank you.

CHIEF INVESTMENT OFFICER ELIOPOULOS: And I will turn this over to -- oh, Henry, yeah.

CHAIRPERSON JONES: Yeah. This next item on the agenda is a review of survey results on Board investment consultants. This is the second year Enterprise Strategy and Performance, ESPD --

(Laughter.)

CHAIRPERSON JONES: -- conducted the surveys as a natural -- neutral third party. All Investment Committee members had an opportunity to submit feedback through an online survey for our investment consultants, Wilshire Associates, Pension Consulting Alliance, Meketa Investment Group. Results will be shared today in open session.

The Board investment consultants perform an important independent oversight function on our investment active -- investing activities. Feedback is equally important to help ensure our consultants are meeting CalPERS' needs.

I would invite all Committee members to discuss any specific topics for the material, if you have any. We will also have consultants here in case Committee members have any questions.

So with that, I will turn it to Sabrina Hutchins, Chief of ESPD, to share the highlights and analysis of the results

(Thereupon an overhead presentation was presented as follows.)

ENTERPRISE STRATEGY & PERFORMANCE DIVISION CHIEF HUTCHINS: Very good. Thank you. Good afternoon, Mr. Chair and members of the Committee Sabrina Hutchins, CalPERS team member. I'd like to introduce you today to Kristin LaMantia. She's one of our senior leaders within the ESPD team. And she will actually be providing you with a high level overview of the results of the survey today.

ENTERPRISE STRATEGY & PERFORMANCE ASSISTANT DIVISION CHIEF LaMANTIA: Thank you, Sabrina. Good afternoon, Mr. Chair and Committee members. Kristin LaMantia, CalPERS team member.

I'm here today to go over the annual evaluation survey results of your Board investment consultants retained by the Investment Committee for fiscal year 2017-18.

As stated by Mr. Jones, and shown in the agenda item, the Enterprise Strategy and Performance Division, or ESPD, acts as a neutral third-party administrator of the Board investment consultant surveys.

The results of the surveys were not shared with any Board member, consultant, or public prior to the posting of this agenda item.

The questions asked this year are the same as in previous year, and changes include the addition of the private equity asset class category to the survey. And Meketa Investment Group will be represented for both the infrastructure consultant and the private equity consultant.

The number of responses from Committee members for each consultant group survey were varied. For Wilshire Associates, general pension investment, and Meketa Investment Group, private equity surveys, we had 10 responses.

Both of the Pension Consulting Alliance surveys related to real estate, and general investment, and Responsible Contractor Program had nine responses. And

Meketa Investment Group related to infrastructure had eight responses.

Since this is the second year that ESPD has acted as the third-party administrator of the surveys, we have displayed comparison results from 2017 to 2018.

Meketa Investment Group's results for infrastructure and private equity only show the 2018 results as this is the first year under evaluation in those asset classes.

I would like to take a moment to highlight a survey calculation example. May I ask you to turn to page 511 of your Board Books or slide number six of the PowerPoint deck, and it's Wilshire Associates question number one.

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ENTERPRISE STRATEGY & PERFORMANCE ASSISTANT DIVISION CHIEF LaMANTIA: As a reminder, there were 10 responses from participating Committee members for this survey. In 2017, there were 11 responses from participating Committee members.

I'd like to provide the Committee member equivalent to the percentages you see listed here. So for question number one, accurately analyzes issues and provides timely and objective information, the blue bar chart represents 2017. We had 55 percent or six Committee members that rated very satisfied; 36 percent, or four Committee members, rated satisfied; and nine percent, or one Committee member, rated neutral.

The gray bar chart represents 2018. Fifty percent, or five Committee members rated very satisfied; 30 percent, or three Committee members, rated satisfied; and, 20 percent, or two Committee members, rated neutral.

When considering this specific question this year, 80 percent of Board members who took the survey rated very satisfied or satisfied, and last year the percentage was 91.

The comprehensive results for all consultant groups surveys are included in your materials in the form of charts representing the various answers selected by the participating Committee members.

So with that, I'll pause and ask if there are any questions?

CHAIRPERSON JONES: There's no questions at this time.

ENTERPRISE STRATEGY & PERFORMANCE ASSISTANT DIVISION CHIEF LaMANTIA: Okay. Thank you.

CHAIRPERSON JONES: Okay. Thank you for the report.

Committee members, do you have any questions for the consultants?

Okay. Thank you very much.

All right. Back to you, Ted.

CHIEF INVESTMENT OFFICER ELIOPOULOS: So I think this is the agenda item for directed items -- Chair directed items.

CHAIRPERSON JONES: Yes.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Are you ready for me?

CHAIRPERSON JONES: Yes.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Okay. I have five. All right. First, to bring back an item on the role of consultants and the timing of the RFP process in the fall or winter, but no later than the offsite in January. That's one.

Number two, to bring back information with respect to the women employment gains in the economic data for the past two years with some attribution over some of the causes for that gain.

And secondly --

COMMITTEE MEMBER TAYLOR: Versus the male.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Versus the male, right.

Secondly, for the population figures, some more information on The calculation method for non-legal immigrants.

Number three -- and these ones were directed to the consultants, but I think we'll probably be playing a role in it. So number three, the impact -- the potential impact of Prop 10 on apartment portfolio.

Number four, in the fall, more information on -- in our real estate portfolio on tools to assess climate change risk.

And then lastly, five, with respect to private equity portfolio, some information on the exit -- on the exits in our portfolio between and among our existing portfolio managers.

CHAIRPERSON JONES: Okay. That I think picks them up.

Ms. Mathur

COMMITTEE MEMBER MATHUR: Yeah. Just with respect to that last one, it's not something urgent. But maybe if it can be incorporated at some point into the reporting.

CHIEF INVESTMENT OFFICER ELIOPOULOS: Our hope will be perhaps with private equity and the real estate ones to time it with their November agenda items.

COMMITTEE MEMBER MATHUR: Yeah, that's fine.

Thank you.

CHAIRPERSON JONES: Okay. You got them all. Thank you. Okay.

So that -- we have a -- go to public speakers, I think. Look at my agenda here. Public comment. We have a request to speak under the public comments section.

Ms. Jeppson -- Jeppson, Ms. Lee and Mr. Brown.

If the three of you could come down. Is it Mr. Brown.

You will have -- each will have three minutes to make your comments. And there's a timer here in front of me that will help gauge you in your comments. And introduce yourselves and your organization. And when you start speaking, the timer will start.

MS. JEPPSON: Good afternoon, and greetings from California Teachers Association.

My name is Cathy Jeppson. And I'm thanking you for the opportunity to address the Board. I believe that you all received a letter from Eric Heins the President of the California Teachers Association regarding private prisons investments child and family detention facilities.

The California Teachers Association is deeply troubled by the recent events unfolding at the national level regarding family separations, the detention of families, and most particularly the detention of children by Immigrations and Customs Enforcement.

CTA appreciates the responsive communication by CalPERS staff, and ask that you work as an institutional investor to ensure that both CoreCivic and GEO Group, whom are housing families in detection centers, are following the law.

More importantly, CTA asks you to review whether your investments in these companies are consistent with your Investment Beliefs.

Thank you. And now I will turn it over to Jackie Lee.

MS. LEE: Hello. My name is Jackie Lee, and I'm a CTA liaison to CalPERS. Thank you so much for taking our comments. CTA has shared a detailed list of questions that would verify these companies are following all applicable laws and would be happy to provide assistance to CalPERS to better understand the laws surrounding these topics.

This is what educators do best, we educate. We appreciate the opportunity to share our concerns about this important and sensitive issue, and look forward to an organizational response.

Thank you so much.

CHAIRPERSON JONES: Yeah. Thank you. Before you speak, Mr. Brown, I want to thank you for your comments, and we appreciate you taking the time today to share your views with the Investment Committee. I just want to acknowledge that I did receive the letter that you sent a few days ago. And staff has engaged with the companies regarding this.

MS. JEPPSON: Yes, they have.

CHAIRPERSON JONES: And I understand they have communicated with you --

MS. JEPPSON: Yes.

CHAIRPERSON JONES: -- with some of the steps that they're taking to deal with this important issue. So please continue to work with staff, and we all hope that we could make an impact in this very important -- on this very important issue.

Okay. Mr. Brown.

MR. BROWN: Thank you, Mr. Chair and members. My name is Tristan Brown with the California Federation of Teachers. Simply here to echo the comments you just heard from my colleagues with the California Teachers Association. We, too, have sent a letter from our President Joshua Pechthalt identifying the General Dynamics, CoreCivic and GEO Group issues. I want to just relay great thanks to the staff here at CalPERS for their engagement with us, as well as letting us know that there is engagement occurring right now with these corporations. We hope that any funds and profits from the hard work of our public educators is not going to the -- some of the things that we've been seeing along the border with these private prisons, and immigration groups.

We hope that these contracts can be severed and that there is some engagement that can happen to help these abuses to cease. And this is just something -- part of a larger context in private prisons and their engagement with public funds throughout the nation.

The AFT, American Federation of Teachers, has released a report that may have been sent out, and, if not, will be sent out, detailing some more of these connections throughout the country in hopes that we can help steer the ship into a new direction.

So again, we just would like to say thank you for your cooperation and looking forward to working in the future -- working together in the future.

CHAIRPERSON JONES: And I want to thank you too for your time today, and appreciate your comments. And as I mentioned before, continue to work with staff on this very important issue.

MR. BROWN: Thank you.

CHAIRPERSON JONES: Thank you.

Okay. I think that's it. This meeting is adjourned.

(Thereupon California Public Employees' Retirement System, Investment Committee meeting open session adjourned at 2:48 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 18th day of August, 2018.

James F Peters

JAMES F. PETERS, CSR
Certified Shorthand Reporter
License No. 10063