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NEW YORK CITY TEACHERS' RETIREMENT SYSTEM
INVESTMENT MEETING

Held on Thursday, December 5, 2019, at 55 Water Street, New York, New York

ATTENDEES:
DEBRA PENNY, Chairperson, Trustee
DAVID KAZANSKY, Trustee
THOMAS BROWN, Trustee
JOHN ADLER, Trustee, Mayor's Office
NATALIE GREEN-GILES, Trustee
SUSANNAH VICKERS, Trustee, Comptroller's Office
RUSS BUCKLEY, Trustee

REPORTED BY:
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ATTENDEES (Continued):
PATRICIA REILLY, Teachers' Retirement System
THAD McTIGUE, Teachers' Retirement System
SUSAN STANG, Teachers' Retirement System
RONALD SWINGLE, Teachers' Retirement System
ROBIN PELLISH, Rocaton
MICHAEL FULVIO, Rocaton
JOSEPH NANKOFF, Rocaton
VALERIE BUDZIK, Teachers' Retirement System
LIZ SANCHEZ, Teachers' Retirement System
SHERRY CHAN, Office of the Actuary
DAVID LEVINE, Groom Law Group
SUMANTE RAY, Mayor's Office
JOHN MERSEBURG, Comptroller's Office
MILES DRAYCOTT, Comptroller's OFfice
ALEX DONE, Comptroller's Office
MICHAEL HADDAD, Comptroller's Office
JOHN DORSA, Comptroller's Office
KOMIL ATAEV, Teachers' Retirement System
ISAAC GLOVINSKY, Teachers' Retirement System
PAUL RAUCCI, Teachers' Retirement System
STEVEN YUAN, Mayor's Office

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MS. REILLY: Good morning. Welcome to the Teachers' Retirement Board Investment Meeting for December 5, 2019.

I will start by taking the roll. John Adler?

MR. ADLER: Here.

MS. REILLY: Thomas Brown?

MR. BROWN: Here.

MS. REILLY: Natalie Green-Giles?

MS. GREEN-GILES: Here.

MS. REILLY: David Kazansky?

MR. KAZANSKY: Present.

MS. REILLY: Russ Buckley?

MR. BUCKLEY: Here.

MS. REILLY: Debra Penny?

MS. PENNY: Here.

MS. REILLY: Susannah Vickers?

MS. VICKERS: Here.

MS. REILLY: We have a quorum.

MS. PENNY: Okay, great. Thank you.

And we will start with Rocaton. Give us the update on the Passport Funds.

MR. FULVIO: Sure. Good morning, everyone. So we weren't planning to spend a

lot of time on the third quarter performance review given that we covered that at the last meeting, but happy to answer any questions on the performance of the Passport Fund through September.

Again, I wasn't -- you will recall at a very high level the Passport Funds, each of them had -- well, I should say the Diversified Equity Fund posted a modest positive return for the quarter, up about 30 basis points. The Balanced Fund was positive to the tune of about 60 basis points. Where we saw softness in the capital markets, the International Equity Fund had a negative 1.7 percent return. Inflation Protection returned 1.3 percent. And the Socially Responsive Equity Fund, which has since been renamed as you will recall, had posted 2.1 percent return for the quarter.

So happy to dive into that more, but I know we cited some of the more detailed numbers at the last meeting.

MS. PENNY: I guess we are good.

MR. FULVIO: Go ahead to October and here we saw really positive numbers across the

board for markets, which obviously helped with the absolute returns for the various funds.

The Diversified Equity Fund had a 1.7 -- I'm sorry, 2.3 percent return for the month of October. That brought the year-to-date return to about 20.5 percent. The 2.3 percent return was enough to outpace the Russell 3000 for the month. Though the hybrid benchmark returned about 2.4 percent, so lagging the hybrid by about 13 basis points. What really drove the results during the month of October was strong numbers from U.S. equity markets, up a little over 2 percent. We saw pretty strong results from non-U.S. equity markets with the MSCI EAFE Index up about 3.6 percent, emerging markets up over 4 percent. So that's really what drove some of the absolute numbers you see on the page. And all told, with respect to the relative results and also contributing to the overall absolute return for the fund, the Defensive Composite was up about 1-1/4 percent for October. But each of those underlying composites lagged during the month of October. The Balanced Funds had assets of

about 400 million at the end of October, had a 1 percent return for the year, year-to-date return 8.7 percent. The International Equity Fund was up about 3-1/2 percent compared to its composite or custom benchmark, about 3.7 percent. The Inflation Protection Fund was up half of a percent, bringing the year-to-date return there to 9.2 percent. And the Sustainable Equity Fund was up 42 basis points, lagged the Russell 1000 Growth Index which had a really strong month, up 2.8 percent. Year to date, the sustainable equity fund is up 16.6 percent.

MS. PELLISH: This is linked, right?

MR. FULVIO: That's right. The performance you see for the fund, for the Sustainable Equity Fund and its benchmark, is linked to the prior results of the strategy. I actually should note though, however, the benchmark here in this case is not linked to the S&P 500, which I think going forward definitely should be to reflect the prior history of the underlying strategy there. So we will make that change for the November

report.

Are there any questions on the October results?

So we will turn ahead then to some

preliminary numbers through November. The Russell 3000 Index was a really strong month, up 3.8 percent. International Equities across developed and emerging -- in aggregate were up about 1 percent. The Defensive Strategies Composite had a really strong month as well, 3.2 percent, so we expect a return for the Diversified Equity Fund just north of 3 percent. And you can see other underlying strategies and benchmark, I should say benchmarked proxies, for the other funds. The Balanced Fund, like we would expect, a positive return of about 70 basis points. The EAFE Index up on its own about over 1 percent. And emerging markets very modestly negative for the month, but what you can still see across the board is really strong calendar year-to-date returns. And if you look at the second column on this table, pretty strong fiscal year-to-date returns across the board

as well.

And if there is no questions, that concluded the performance update.

MS. PENNY: Okay, great. So the emerging markets policy review, do you want to go over that with us?

MS. PELLISH: Sure.

So you may recall that at the last investment meeting, we had a discussion about this emerging market company review policy. There was some language that was suggested at that meeting that we added to the policy. So immediately after the last investment meeting I added that language, which we see in the red text towards the bottom of the page, and circulated it to the board. I did not receive any comments, so we welcome any comments at this point.

MS. PENNY: Okay. Yes, John.

MR. ADLER: Yes. So I am okay with that addition, but I don't think I -- and I think I expressed this last time: I want us to develop the criteria, agree on the criteria as part of adopting this policy. It doesn't have to be

in the policy, but I am not prepared to vote for the policy until we know what the criteria are. And we discussed this really a lot, I think, in the course of this process. And we have a proposal for criteria as a jumping-off point, but it's up to the board whether that's a discussion you want to have today.

MR. KAZANSKY: So if I can jump in, my understanding -- and anybody who was at the last investment meeting correct me if I am wrong, but my understanding was that at that meeting that we did agree that criteria was going to be created. But that it wasn't going to be created at this time and it wasn't going to be -- and the adoption of this policy was not going to be contingent on the criteria being developed first. So I am -- excuse me. I am fine with this policy as a jumping-off point for getting this work started and working on the criteria as we get the data from Sustainalytics and MSCI. But it certainly was my understanding that if there was a mention of the criteria in the policy, that that was going to be sufficient for

everybody involved to put this in the books and then move forward.

MS. GREEN-GILES: May I -- I just want -- I am going to echo, that was my understanding as well. And I thought the conversation led us to that we couldn't possibly anticipate what all that criteria would look like to put in a policy, so keeping the policy nimble enough to allow us to apply it without knowing the universe of elements that -- because it changes as we know from even recent professional development opportunities here, there is no way we can know what to put in as every single possible -- so we don't want this to be too limiting.

MR. ADLER: I am agreeing with that. I am agreeing that -- I am just concerned about us not arriving at criteria in a timely way, because timeliness has been my issue with this throughout. Originally I thought we were going to agree on a policy last summer, then we said it was going to be fall. Now we are in December and this is not an implementable policy until we have criteria.

MS. VICKERS: Well, I would just add, you know, I sort of agree with what David and Natalie has said and I have articulated this, John, to you before: I think it's -- it would be irresponsible for us to develop and approve prescriptive detailed criteria at this point without having a vendor under contract which we don't have currently and without knowing -- you know, having a greater understanding of the information that we are going to get and the format that we are going to get it.

So the -- you know, the jumping-off point policy that you circulated or that I saw has very specific thresholds and triggers for action that I am really uncomfortable with at this point. And I think the best thing to do is to, you know, wait until we get feedback from the vendors who can help us develop criteria. And I really like that you are pushing us to do this in a timely way and I think that's very helpful. And as soon as we, you know, start engaging with the vendor, then we can work to develop criteria. And I

think that it says that in this policy, that criteria will be developed. But I just don't think it makes any sense whatsoever to try to do it -- to put the cart before the horse and try to do it before we have that engagement taken care of.

MS. PENNY: I think this is all of our feelings: We certainly don't want to kick the can down the road and never do this, but this opens the door so that we can start those discussions and then we can find out what is actually needed in the policy.

MR. ADLER: I don't actually understand how this policy right now differs from what we have in place. We have an interim policy in place that essentially maintains the excluded companies that we -- that were on that list that we got from Sustainalytics and MSCI, right?

MR. KAZANSKY: Right, in China and Russia.

MR. ADLER: As well as Pakistan. So that's what in place. How does adopting this policy change that; can anybody explain that

to me?

MS. VICKERS: I don't think that it's going to be to make substantive changes right away on the list of excluded companies, but what it does is it codifies a much more detailed and official policy that we have and it explicitly states that threshold criteria will be developed as the next step. So right now we have done a lot of work. I mean, you know that, you know, procurement and hiring is not easy when you are a city agency, so we are doing everything that we can. I think that the urgency should be on getting the contract finalized with the vendor. That's what we really need to do to get this going and to have something different in place than we have now. What we don't need to do, I think in my opinion, is to spend a lot of time arguing about criteria that it's premature to be looking at.

MR. ADLER: Question: So there are I think fifteen or so companies right now that are excluded from our portfolio because they are China, Russia, and they appeared on this

list of companies that the two vendors found to be either in violation of the UN Global Compact or had material public controversies. If we adopted this policy today, what happens to that list of fifteen companies?

MS. PELLISH: Valerie, do you --

MS. BUDZIK: I actually don't -- I don't know. I think we would maintain the current.

MR. ADLER: It says "This policy replaces the interim emerging market review policy," so I don't understand that.

MS. VICKERS: I'm sorry to keep interrupting and harping on this, but in order to take any action we need to review information provided by third-party vendors. So I think the interim policy, the interim situation, will stay in effect until we have a report from the third-party vendor and then we start using this policy.

MR. ADLER: But interim policy is based on the interim report we got from the third-party vendor.

MS. VICKERS: I would not say -- I think that was practice, you know.

MS. BUDZIK: It was kind of a practical decision. We didn't want to permit the managers to buy these securities AND three months later we were going to tell them to sell the securities. And I would actually say you can do it either way; you can maintain those companies as excluded or you could -- unless they are subject to a separate divestment, it's a -- some of them were -- you could lift those exclusions. I don't even recall -- because I think some of them fell down on the list. I don't know that they were like your red companies.

MS. VICKERS: But -- I don't know if I am looking at this from a totally different perspective as everybody else but, you know, we have not engaged the vendor. We do not have a report or information officially provided by that vendor. We have a sales pitch from vendors. We have kind of an initial draft information from that vendor and another vendor. We have not gone through the process that we have all agreed we need to go through to responsibly review these companies,

so that has not happened yet. So I don't see how we can develop criteria for something that hasn't happened yet. And I say again that we are trying to officially hire the third-party vendor and figure out the vendor that -- the MSCI system that we have, how that can be utilized. This board has not acted on those two things. So I think it's important to have this policy and to develop the criteria, but we can't -- we can't have criteria holding this up now.

MR. ADLER: I hear that. But what is stopping us from hiring the vendor?

MS. VICKERS: Nothing is stopping us. It's a lengthy -- as you know, John.

MR. ADLER: But this is a small procurement. This is not a full RFP based on the price.

MS. VICKERS: So what are you saying?

MR. ADLER: I am saying I make a motion to hire Sustainalytics, if that hasn't happened.

MS. VICKERS: No, that has happened. But what happens is the contract has not been

finalized. I am not a procurement person, I don't work in the comptroller's contracting unit, but I can find out what the status of that contract is. But, you know, for anybody sitting around this table to act like it's a surprise that the City of New York process is a lengthy bureaucratic and slow is not a very fair statement.

MR. ADLER: I get that, but here is the thing: It's not clear and, we can make it clear today, that this policy does not mean that we open the floodgates and allow investments in every company since we have not yet developed criteria. We -- I mean, just to

be clear, we took investment decisions based on the data that we received from those two vendors, right? We made investment decisions based on that.
MS. VICKERS: We created an interim policy.
MR. ADLER: So what I am saying is: I don't want to move from that interim policy until we put new criteria in place that stipulates -- look, the point of this process,

right, which we have been engaged in for a couple of years I think is to replace our country screens that have been in place for ten or more years with company screening, so that we do not invest in companies that we believe pose undue risks to the Teachers' Retirement System. I believe that we are currently investing in such companies and those companies appear on the list that we got from -- from MSCI and Sustainalytics.
And I am concerned that adopting this policy without either a set of criteria or a strict timeline for adopting the set of criteria puts the system at risk by investing in companies that I do not believe the members of this system would like to see this board invested in and that pose undue financial and reputational risk to that board. So I am saying on the record that I am worried that that is what's happening. And that this is taking much more time than we anticipated it would take and so I am worried about adopting a policy without putting those criteria in place underlying the policy. Obviously the

criteria will change over time, but right now there is no process in place for adopting this criteria and that's what worries me.
MS. VICKERS: So can I just respond to that. So I think that maybe you are conflating several different processes and trying to take care of everything today. So I would suggest -- you sort of gave two options in what you just said. I would suggest a third, that we adopt this policy as written today and in the motion of adoption we say that the interim policy remains in effect until we -- until the vendor is hired and criteria developed -- and the first annual report is delivered and criteria is developed. So that should protect us from opening the

floodgates to investments in dangerous companies.

MR. FULVIO: I know -- I don't think the intent was to invest in those fifteen companies concurrent with the passage or the acceptance, you know, of everyone approving this because I think we all felt that like there was a reasonable chance that whatever

criteria we came up with, regardless of how severe or not that criteria would be, that those -- there was a relatively high likelihood that those fifteen companies might be on that list. So I think we recognize for the same reasons we continue to not invest in them, we wouldn't all of a sudden start investing in them now just because we approved this and then choose to divest later. So I just think from a practical standpoint, I don't think anyone was considering allowing investment in those fifteen companies just because we approved this. I still think we recognize we need to finalize the criteria before we change what we are investing in.

MS. PENNY: Right. I don't think -- again, this was not intended to open the floodgates, because that's one thing we spoke about a while ago. It wasn't to open the floodgates, but just to start the discussion. And we had for so long that policy where we didn't invest in China, Russia, and Pakistan and then we would do well, okay, it's okay for this in this case and in this case and that's

how we started this. We were very uncomfortable for making those exceptions without having something in writing and without having some system where we can actually check and see why don't we invest in those -- in those companies.

Valerie, what do you feel about this? Is this something that's necessary for us to do the work?

MS. BUDZIK: I think it guides the work. I don't think it stops what John wants to ultimately arrive at. The policy itself talks about a review and maybe you could put a time frame there --

MR. ADLER: I would like to put a time frame.

MS. BUDZIK: -- and bring it back to the board. My understanding was you wanted to first have at least one report from the vendors and that would inform your development of criteria.

MR. ADLER: The reality is we did get a report from the vendor -- excuse me, can I finish?

MS. VICKERS: No, I am going to interrupt.

MR. ADLER: Madam Chair, can I finish? I guess not.

MS. VICKERS: I was going to say: If BAM came to you with unofficial draft information from some vendor that was trying to sell us something and we based an investment recommendation on that --

MR. ADLER: We did. Excuse me. The interim policy is based on that.

MS. VICKERS: It's an interim policy.

MR. ADLER: Exactly.

MS. VICKERS: I just can't believe that you are suggesting that we adopt criteria based on unofficial information from a vendor who was trying to sell us something and is not under contract. That is a very dangerous thing that you are suggesting.

MR. ADLER: Honestly, we made an investment decision. We created an interim emerging markets policy and allowed investments in companies based on that flimsy report from a vendor who is trying to sell us

something.

MS. PENNY: I don't think that's true.

MR. ADLER: I think that's what you are saying and I don't think that's what was --

MS. VICKERS: We let that inform our decision.

MR. ADLER: A company that didn't appear on their list, we opened for investment truthfully.

MR. KAZANSKY: So my belief is that the interim policy was put into place just because of what we are dealing with right now, which is -- which was no matter best intentions of this group, that it was going to take much longer than expected to be able to put together a policy that was going to be good and long term.

So we created an interim policy at that particular moment in time to get us from point A, which is where we had our old policy in place where a huge part of the international market was completely cut off to us to where we want to be, right, as a more reasonable rationale fiduciary, right. And so at that

moment in time, with the best information that we had at that moment in time, we crafted that bridge to get us from point A to point B. So flimsy, perhaps. But it was the best information that we had at the time, right? And it gave us the ability to put together some plan to get from where we were to where we want to be.

I have no problem with that interim policy and it didn't preclude us if we had -- if we didn't use any of that data, we just -- we probably would still be cut off from -- from very much investing, specifically in China which was really the main focus of the changing policy. We should keep that interim policy in place with this overlaying it until BAM gets the contracting done. The second BAM gets the contracting done, we should be moving on, getting information from those vendors and putting criteria together. This policy allows us to make that happen. That's the next step to get off of the bridge that we are on right now and into where we need to be.

MR. ADLER: I would like to, as Valerie

suggested, set a time frame for doing that.

MS. VICKERS: I think that -- I would not agree to that in this policy, because I think this policy --

MR. ADLER: No, in a motion.

MS. VICKERS: Thank you.

MS. PENNY: So what would be a fair -- so we do have something, the policy is going to be reviewed no longer than 18 to 24 months from adoption. So we want something we want to keep that and just make it that it's going to be reviewed sooner than that.

MR. ADLER: No, that's for the policy. I want a time frame for the criteria.

MS. PENNY: So what would be a fair timeline?

MS. VICKERS: I think the timeline has to be linked to the registration of the contract. We can't say, you know, this criteria has to be developed in four weeks and then the contract isn't done; then we are just back to where we are. So I would say within a certain amount of time after the registration of the contract.

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MS. BUDZIK: I would just point out, and delivery of the reports to the board.

MS. VICKERS: Yes.

MR. ADLER: But, I'm sorry, I am not going to agree to something with an open-ended thing like that.

MS. VICKERS: So put a date in, but we are saying the start date has to be once that the vendor is hired and that the reports are delivered.

MR. ADLER: So why don't you come back to us with concrete information for what the timeline is for that.

MS. PENNY: You don't know when you are going to finished with -- so if the vendor is hired, so whatever date the vendor is hired do we want to come back?

MS. VICKERS: Well, for example -- I'm sorry to interrupt -- we might need to know from the vendor how long it takes them to do their report.

MR. ADLER: I don't think -- I didn't get the sense that it would take very long, but that's fine.

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So here is my suggestion: Why don't we ask BAM to come back to us with the answer to those questions; how long is it going to take to register the contract. And then from Sustainalytics who is coming in today, but I think it's a different part of Sustainalytics --

MS. PELLISH: Yes.

MR. ADLER: -- how long would it take them once the contract is registered to generate the annual report. And then based on that, we can set a timeline. And I would propose that we vote on the motion when we have that information.

MS. PENNY: So can we ask them for the next available report once we hire them? Certainly.

MS. PELLISH: Why can't we just pick a period of time after they deliver the report, and say we want the report as soon as possible. Maybe we can resolve that now.

MS. VICKERS: Right, because those two dates shouldn't preclude us from passing the resolution.

MS. PELLISH: Can you say something like within 90 days after the delivery of the first report; does that seem reasonable?
MR. KAZANSKY: Sure, that's fine.
MS. PENNY: So we have to take consensus. It's not an exact vote, it's a consensus if we want to agree to the policy? And then do we put the stipulation that once the vendor is hired within 90 days --
MS. PELLISH: After the delivery of the report.
MS. VICKERS: -- that criteria will be developed.
MS. PELLISH: The proposed criteria will be presented to the board for discussion.
MS. REILLY: This is consensus; not a vote?
MS. BUDZIK: It would be consensus as a policy.
MR. ADLER: It's recommended. It has to come back to the full board.
MS. PENNY: So we are going to take consensus coming back to the board at the next board meeting, knowing that it will.

MS. BUDZIK: It will come to the December board meeting, the policy.
MS. PENNY: Once the vendor is hired, then we are going to come back 90 days after the report is given. Okay.
MS. GREEN-GILES: Within 90 days?
MS. PENNY: Within 90 days.
MR. ADLER: Are you going to find out the timeline for registering the contract, Susannah?
MS. VICKERS: Yes, I can -- I don't know if I will get an exact date, but I will inquire.
MS. PENNY: Okay, and this will at least start us. So do we have consensus for going ahead with this and bringing it before the board?
MR. ADLER: Just one other point, that it also includes keeping the interim exclusion list in place until such time as we arrive at our criteria for a new analysis or whatever.
MS. PENNY: Correct. Do we all understand that and agree on that?
MR. BROWN: Yes.

MS. PENNY: Then we have consensus. Great.

Now, on a lighter note --

MR. KAZANSKY: You don't know that yet.

MS. PELLISH: Just trying to manage expectations.

MS. PENNY: -- discuss the asset allocation.

MS. PELLISH: So I am going to introduce this topic, but this is very much a collaboration among -- between BAM and Rocaton. And we have been hard at work at this for many months now and I would like to present this -- I would like the board to consider this report in -- as one in a series of pieces that have been presented for the board's consideration on this topic.

So for the past number of months, BAM and Rocaton have been presenting at the CIM, at caucus at the investment meeting, on market conditions and the themes that have been developing as we look at capital markets and we consider potential modification to the pension funds asset allocation policy. So

literally none of the recommendations or the market information that you see in this report is new. This has been presented in a variety of venues, but what we are attempting to do today is to pull together the market -- capital market information that informs the development of the themes that then were used in the modelling of various portfolio mixes.

I also want to emphasize a point that's made in this lengthy dec, which is we are not presenting this for a vote. There are certainly more than one portfolio mixes that could be considered as appropriate and consistent with the capital market themes that BAM and Rocaton have been developing. This is one policy that we thought was worthy of the board's consideration, but we fully expect and welcome the board's input, questions, feedback so that we can come back to you in response to those questions. This is a critically important topic and one that we would imagine will take several more discussions before the board is at a point where it can comfortably vote on this topic. So I apologize that you

only got this on Tuesday, but again this data -- I don't know if the data in here is new, but it is a lengthy document and it is an important discussion.

So what we are going to do next is have Mike Haddad present, as he has done in the past, the capital market information and themes that again were an important basis of the recommendation. And then Joe Nankof, who is head of asset allocation at Rocaton and I think you all met before, will walk through the process by which we came to the recommendation which, again, you saw at the CIM caucus.

MR. DORSA: Alex is on the phone, for the record.

MR. HADDAD: Alex done, our CIO, is on the phone.

MR. DONE: Good morning, everybody.

MR. HADDAD: So we have 39 slides and 45 minutes, so we got to do a slide a minute.

So let's jump to the slide for capital market conditions. And as Robin laid out, there is nothing new here that you haven't

heard from me or Rocaton before and why it's so important in coming up with what the right recommendation is. And you have to take into account where markets are, where valuations are and that's a function of what happened over the past several years so that's an important backdrop to think about. And as we think about the U.S. equity market, which is your largest single allocation currently and will remain your largest single allocation, do we want to increase that, decrease that, leave it the same? And then also important is the role of fixed income within this. As you are well-aware, U.S. equity market is at an all-time high based upon both earnings and multiple expansion and that multiple expansion also has something to do with interest rates. Very simply thinking about it: The lower the interest rate, that's the discount rate you use on a series of cash flows. So all things being equal, lower interest rates are more supportive for the economy. So the low interest rates has been a tailwind for your equity market and your portfolio over the last

few years, so that's kind of the backdrop of where we sit.

If we flip over to Slide 5, again you have seen this before. This is your current asset classes. Your actual with the Teachers' return three and five years and then the change in Rocaton's expected returns in 2016 when we did this and where we sit today. And again, you know, I would highlight on actual returns where the outliers have really been. The U.S. market has massively outperformed expectations. Real estate we have, our portfolios have outperformed. Again, a function of both -- you know, I am going to give the real estate team a shoutout -- manager selection as well as the falling interest rates. Again, private equity has outperformed expectations. Again, a lot of that had to do with manager selection and infrastructure has done well as well. And we think there is some differentiated approaches to how we go about doing that, but they are important to look at as we think about going forward.

Again, I don't want to belabor. If we switch over to Slide 6, you have seen this before. This slide was as of August of '19. So if we updated this, that top bar on the left will show 125 months now, not 122 and that trend line below it would continue. And, importantly, I would say expectations going forward are for a continuation of this slide. That is continued expansion of the U.S. of something, you know, 1-1/2 to 2 percent. No recession in sight as of yet; really no flashing signs other than the longest recovery in history. But it's also been a very slow recovery and that kind of sets the stage for how we think about markets going forward.

Slide 7, that's the large slide. We don't need to go over that again.

Slide 8, again, a valuation slide on the relative expensiveness of the U.S. equity market. As you can see in the source there, this is as of August of 2019. Whether that is clicked over the tenth decile or not is the question. It's either the ninth or tenth decile again highlighting if you believe in

this valuation technique, that the expected returns of the U.S. equity going forward are going to be lower than what we experienced in the past few years.

Slide 9 again, you know, a short snapshot of the history of interest rates of our country. And again if we continue all the way out in August of this year, we are sub 2 percent. So if we took out the lows that we had in the World War II environment of interest rates to the U.S., we are back up to around 220 now. So not much of a backup, but in historical perspective I think this chart explains a lot.

And if we go to Slide 10 -- 10 and 11, again you have seen these before. This speaks to private market valuations and Slide 10 is private equity. Again, very high purchase price multiples; not unexpected given the PD multiples in the equity market. So this is kind of the similar-looking chart, but it speaks to private equity. Slide 11 cap rates are what you think about for return expectations in core real estate and they are

-- they follow the ten-year note yield with some deviation of spread. And as you can see we are at or near all-time lows in cap rates in the U.S. as well, so the expectations are core real estate have to be lower than what they were previously.

And then if we switch over to 12, this gets into one of the largest constraints that we all have to deal with and it's the basket clause. And just a reminder what goes in the basket, 100 percent of private equity, 100 percent of alternative credit. The other asset class, that's 100 percent is hedge funds. Not in your portfolio, not germane. But the other ones where there are thresholds is international equities, so developed markets and emerging markets, greater than 10 percent fall into the basket. Real assets defined as real estate plus infrastructure, over 10 percent into your basket. High yield, over 10 percent into the basket. That total basket size is constrained to 25 percent of your portfolio. So if we were to run an efficient frontier and a recommendation

without that basket clause, it would not look like what you are going to see in a few slides from Robin. It is what it is. There is a lot of effort being done on this and my expectation is we are going to ask for your help as well. So just a precursor on what may be coming in your direction.

MS. VICKERS: Thanks for the plug.

MR. HADDAD: I am going to turn it over to you, Robin.

MS. PELLISH: Okay. Do you want to talk about that page or do you want us to? It's a busy page, so let me jump in.

MR. ADLER: Which page, 13?

MR. NANKOF: Page 13.

MS. PELLISH: It's a busy page, but it's important because if you run an optimizer without any constraints, it produces portfolios that are not investable. Some of the -- an optimizer is just -- you know, Joe is going to wince as I describe what an optimizer is, but it's just a box that takes in a lot of inputs and it takes in volatility expectations, it takes in expected return

expectations, it takes in correlation assumptions and out of that it tries to produce the portfolio with the highest level of return for a given level of risk. And that's the efficient frontier, but it also tends -- it can't incorporate qualitative judgemental factors that are really important in building a portfolio. That's where humans come in and so we put into place these constraints.

So the basket constraint is just an arbitrary constraint that we are forced to comply with. We put that in the modelling process. But there are other constraints that limit the portfolio mixes that come out of the modelling process because after doing this thousands of times literally, we know that you are going to get portfolio mixes that aren't pragmatic, that aren't investable that we would never consider. So there are -- for example, here we say we are only going to consider core real estate in the range of 3 to 7 percent because we know that we don't want to sell off a lot of real estate. We know we

have trouble getting fully invested in real estate because of the sale that we have to work at.

So there are all these pragmatic constraints that we put onto the optimization process and I am happy to go through any one of them.

MR. NANKOF: Another good one to reference, which is something that we incorporate in just about any asset allocation study we are working on regardless of the portfolio type, would be illiquids. So in this case, we say we want all illiquid asset classes to not represent more than 25 percent of the portfolio because illiquids generally have higher returns than liquid asset classes for good reason. But the optimizer might see that and say let me take more illiquids then, would be reasonable to have in a portfolio.

And I think you can ask some of the largest New York City endowments what it was like to have 40 or 50 or 60 percent illiquids during the financial crisis; they got caught with too much illiquid exposure across their

portfolios in many cases. And we tried to avoid that throughout all our history with our clients because we know it's hard and I am sure you all know it's hard to navigate the exact right amount to allocate to illiquids in any given year. It's a long-term game and I think we want to make sure we have a reasonable amount. They are attractive, but they are attractive to a point.

And, again, we can go through any one of these line items, but those are just some examples of what we tried to incorporate to make the output of the optimizer reasonable, something that we look at and say yes, this is a portfolio we think is a reasonable portfolio for an institutional investor to invest in.

MS. PELLISH: Just one last thought is we can modify any of these constraints. So you might come back to us and say what would happen if you relax this constraint or added a constraint or eliminated a constraint, and we can tell you what the impact on the recommendation or the output would be.

MR. ADLER: I have a question. What's

the rationale for the one that says, "Non-investment grade fixed income is less than or equal to 12 percent;" what's the rationale for that one? And it includes 50 percent of all OFI, so why 50 percent of OFI? I just don't understand where that comes from.

MR. NANKOF: In this case we are just grouping like asset classes and saying that these in combination, we would not want it to represent more than a certain percentage of the portfolio. So we are just trying to recognize that these are similar in some ways.

They offer spreads above investment grade asset classes. They have some -- they are semiliquid or semiilliquid, either way you want it to look at it, and given those factors we are trying to consider them as a group and limit the amount of exposure. So what's the logic for 12 versus 15 versus 20 versus 8?
MR. ADLER: What's the logic for 50 percent?
MS. PELLISH: That was a ballpark to represent below-investment grade less liquid portion of OFI, because it's not all illiquid.

MR. ADLER: Really?
MS. PELLISH: Yes.
MR. ADLER: Okay. It's all invested, right?
MR. HADDAD: Yes. OFI, 100 percent invested.
MR. ADLER: Why is some of it not illiquid?
MR. FULVIO: For the same reason like bank loans. I think 90 to 100 percent bank loans go into the basket. You do have some liquidity with bank loans; it just cost a lot more to transact in those markets.
MR. ADLER: But OFI is all in either separate accounts or partnerships. I just don't understand why 50 percent would be illiquid.
MS. PELLISH: We will come back to you on that in more detail.
MR. NANKOF: Any other questions or comments on the constraint?
MR. KAZANSKY: Just one: Private equity, is that greater or equal to 6 percent?
MR. NANKOF: That's correct. Very good

eye. We are at 6 percent today. That was the logic for that. And given what we discussed earlier about illiquids only representing 25 percent or less and the fact that private equity return assumptions, return expectations are tied very much to the U.S. market which means that they are low relative to what would normally be considered to be normal, the optimizer could look at that and say we want less private equity given the group constraint we put on the illiquids. And we said well, that would be -- that is all well and good if we wanted less private equity, but we have 6 percent already so we wanted to be realistic

about it.
MR. HADDAD: Let me add a little basis. This is one that evolved over our many discussions over the months. We started with plus or minus 2 percent for private equity for the reasons Robin articulated. We didn't want to go down too hard because selling it, there is a transaction cost involved. We didn't want to increase too much because it's hard to get the money to work in a reasonable amount

of time and you don't want vintage risk.
So if I recall, the optimizer came out with 5 percent recommendation at one point. And one of the lenses we at BAM have are seeing five different consultants' capital markets assumptions. And Rocaton is an outlier on the low side for U.S. equities and private equity. So within that, we didn't think it -- you know, we don't want to -- we don't want to challenge them on the capital markets assumption, but we want to say you are an outlier and, you know, the returns that we have had relative to the previous recommendation or two or three X that, so let's not decrease this, let's at least hold it equal. And if you don't want any more, that's one thing. So this is kind of one that we I think negotiated on.
But then to Robin's point, we are happy to go back with iterations if you guys want more or less to show you what that looks like.
MR. ADLER: I understand you don't want to challenge them on their capital markets assumption, but I don't think we are under

such a limitation. When is the appropriate time to have that discussion?
MS. PELLISH: Well, I think --
MR. ADLER: It may not be right now.
MS. PELLISH: It could be, but I think rather than saying to us well, I think the right number is 7 --
MR. ADLER: I am not going to say that.
MS. PELLISH: No, but I think it could be -- if I were inclined, internally we do challenge because we have lived with this for a long time and we will be right at some point. But I think it's reasonable for the board to say, what if you were more in line on your equity assumptions, on your U.S. equity assumption. I don't think we are so far off

on non-U.S. or emerging --

MR. HADDAD: I think that's right.

MS. PELLISH: -- but what if your U.S. equity and private market equity assumption was more in line with other consultants, how would that affect this recommendation? So rather than debate what's the right number is --

MR. ADLER: I don't want to debate the right number. I just want to understand some things.

Like just one example -- and this may not be the right time to do it, but comparing 2016 to 2019 your premium for private equity over U.S. equity went from 100 basis points to 330 basis points. So last time 4.6 to 5.6, this time 3.4 to 6.7; that's pretty shocking. Could you just explain that one? And there is other ones that are surprising, but that one is just like -- I can't wrap my head around.

MR. NANKOF: Sure.

MS. PENNY: John, where are you looking?

MR. ADLER: I am looking at page 5 at the capital markets expectations. So the third and fourth column, you see in June, 2016 Rocaton had a capital markets expectation of 4.6 for U.S. equity and private equity 100 basis point spread, 5.6. And today, the street -- you know, so it's more than 200 basis points lower, but they increased the private equity by 100 basis points. So the total difference is over 300, so how do you

get from --

MR. NANKOF: During that three-year period, we changed the methodology -- "changed" it may be too strong a term, modified the methodology for private equity modelling to loosen the tie. It loosened the tie to U.S. equity, the current valuation in U.S. equity markets, and U.S. equity returned expectation over the next five or ten-year horizon. And that's -- that's with recognition of what we have seen -- how clients are investing in private equity which is yes, there is a lot that is very equity, very much equity linked in private equity portfolio. But there are other things that are less equity linked, like credit or -- it could be -- it's just different types of strategies that are not, you know, strictly buyouts.

MR. FULVIO: To be more focused in the smaller --

MR. ADLER: But we don't do that in private equity; we do that in OFI. We don't do debt investing.

MR. DONE: I would add that in private equity, there is a buy-in in the capital markets cycle for us to invest in strategies that are -- I call it special situations, as we mentioned in the annual plan, if things were more value credit oriented.

MR. NANKOF: We understand there are different flavors of credit; some that are more liquid, semiliquid which are probably in your OFI portfolio, definitely in your OFI portfolio. But there are other less-liquid credit strategies which are in limited partnerships, which belong more in the -- they are in drawdown structures which belong and end up in private equity portfolios, again, like you are doing. So there has been a recognition. We have seen with our clients results that the private equity allocations are not behaving as closely to U.S. equity markets as we had originally thought.

The other piece to it is there is a global -- there is a global piece to it as well, so some non-U.S. exposure in private equity portfolios. And we recognize that more

explicitly in our forecast going forward as well because if it were just tied to the U.S. then, yes, the return expectations were much more closely tied to the U.S. equity market, but private equity portfolios in general do have non-U.S. exposure and you can see there is growing disparity between U.S. and non-U.S. forecast in our forecast as well.

MR. ADLER: Alex, how much non-U.S. exposure do we have in our private equity portfolio?

MR. DONE: I want to say it's about 20, plus or minus, percent in aggregate. I don't know Teachers' numbers specifically, but it's in that neighborhood.

MR. ADLER: That seems high. I don't really think we have 20 percent, but we can check.

MR. DONE: On an MAB basis you do.

MR. YUAN: I just want to highlight,

historically if we -- 15.9 says 14.3 to private equity, 160 basis points historically -- so I will just comment on the historical performance, private equity outperformed U.S.

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equity by 160 basis points versus our current forecast of 330 basis points.

MR. ADLER: Anyway, we can come back on the whole capital markets assumption. That was just one that stuck out at me.

MR. NANKOF: Of course.

MR. ADLER: So let me not interrupt your presentation any further.

MR. NANKOF: Please keep interrupting with any questions.

MR. ADLER: Oh, you better not say that.

MR. NANKOF: So on page 14, we already discussed some of this. I think the message I want to leave you with on this page is: What you can see if you look across the 5, 10 and thirty-year assumptions, for just about every asset class the next five years is below the next ten years and the next ten years is below the next thirty years. And that's a function of everything Mike Haddad went through a few minutes ago; low rates, low spreads, and higher equity market valuation more so in the U.S., less outside the U.S. as we already discussed. And I think that's -- those are

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the key things, the key message I want to leave you with on page 14.

On page 15 I would refer to this as a bit of a scorecard across all the asset classes trying to measure them, I would say, in loose terms across a number of metrics that are important when you consider how an asset class fits into a portfolio. So things like -- and, again, we have talked about this already -- what the valuation is, where are they relative to history trading. And you can see it's not a pretty picture; that generally things are expensive or moderately priced relative to history. Then returns of course, how they contribute to returns to a portfolio. And then diversifications properties is another one I want to highlight. And you can see -- in the middle of the column, going down the column you can see treasuries, mortgages, and credit generally offer the greater diversification properties. And when we say "diversification," that's relative to equity risk in the portfolio. You can see U.S. equity is low diversification relative to

itself of course. We already talked about liquidity, and we will talk about target allocations, and the basket clause we already discussed. Again, we created a checklist here of how they contribute to the basket as well.

MS. PELLISH: But just to highlight this page, this is -- really these are the tradeoffs that are involved in optimization. This is all we have. We have these criteria and we are trying to put together a basket -- a portfolio that isn't dramatically different from the portfolio you have today, because we are not going to change 50 percent of the portfolio. But we are trying to identify based on these tradeoffs, what relatively modest changes would enhance outcomes over the next five to seven years.

MR. NANKOF: This is a way to just provide a visual and just, again, a bit of a scorecard which is what really the optimizer is taking into consideration. So when you say think about the optimizer, as Robin put it earlier, I didn't wince at all. It's just a mathematical formula which is solving -- given

all these inputs, it's solving for what the best risk-adjusted return portfolio is across the risk curve. And we will look at the visual in a minute of what the optimizer gave us.

On pages 16 and 17 -- and I am looking at these together, everybody else can do the same -- we have the current actual asset allocation for the portfolio as of September 30th. And you can see here it's about 50 percent in public equity. There is a variety of other illiquid asset classes; real estate, private equity, infrastructure, real assets, and then we have total investment grade fixed income which I will have you focus on which is about 23 percent. And then we again have got, I will call it, credit-oriented asset classes; high-yield bank loans, convertibles, and TIPS of 4 percent, and OFI is at the bottom of almost 3 percent.

If you just slide your eye over to the right you can see the policy target, we are very close on public equity. We are above our target in investment grade fixed income. That is a function of placeholders which we will talk about in a minute for asset classes which we have targets to, but we are not funded at that level yet. And I think everyone is familiar with how we have treated unfunded targeted commitments to private assets and that falls -- that falls into investment grade fixed income to a great extent; not entirely -- not the only thing that's driving that, but that's most of what's driving that. If you look at the recommended targets, the most notable change -- and we will talk in a minute about why and I think we have already covered a lot of this -- is to reduce public equity by 7 percent roughly and increase commensurately investment grade income fixed income by 8 percent. There are a number of other, I will say much, smaller changes. That's the main -- that's the primary change that I think is worth discussing today.

We can discuss anything else you would like. I think the motivation for this -- as represented by the optimizer, but again we have talked about a lot of the rationale -- is

on page 17. And the way I would really characterize this curve is again this is what the optimizer, the red line -- so the efficient -- the red line and the efficient frontier is just given all the inputs we talked about; the returns, the risks, how correlated the assets classes are with one another. Optimizer asks the question, the following question: What's the best -- what is the mix of assets at every risk level that gives me the best return? Okay, so the optimizer says there is no better return I can get than if you look at 10 percent risk portfolio. If you just slide your eye up, I can't get better than 6.2 percent. That's what it's telling us. Compound and there is a mix of assets which gets us that.

Now, this curve -- and we looked at this, as Robin said, thousands of times; not just a thousand, thousands of times over the years. This curve is extraordinarily flat today. Meaning that as you move from left to right and take on more risk, you are getting less and less return. You get some incremental return to a point, but we have lived through periods if you go back to '09 the U.S. equity market is another data point has generated more than 13 percent annualized returns over the last ten years. From the bottom in '09, that's an over 13 percent annualized for ten years. That's an extraordinary return. That's almost double per year what we expect over the very long term, which is about 7 percent. So we have enjoyed a fantastic period in history for the last ten years being an investor, but I think our assumptions recognize it would be difficult to reproduce that for the next five or ten years. And that's what this curve is really a function of; saying if U.S. equity is a big part of our portfolio, we can't get much more return as we continue to increase risk. So we are saying if we are not getting a lot more return per unit of risk when we go out on the curve, maybe it's a good time to ratchet back risk a little bit and take money out of the U.S. equity particularly and put money in fixed income, which is a more defensive place

to be for the near term.

And when we say "near term," more immediate term. We are not making a decision and expecting to make a change in six to twelve months. We should think of any strategic change to be a minimum of three years. Not to say we won't review this between now and then, but we want to be willing to live with this decision -- any decision we make when we make a decision which is not today, for three years or more. We have plotted the policy targets, policy target and what we are intending to recommend at some future meeting for consideration. But, again, we are looking for input and questions today.

And what you can see looking at page 16 is that for the next five years -- well, I would say for the next five, ten or thirty years, we are bringing the risk down from about 11 percent to about 10 percent. So we are reducing risk about by 10 percent; 1 percent reduction on 11 percent start. It's a meaningful reduction in risk. And then we are sacrificing almost no return against any of

the time horizons we are looking at. So for the next five years, we would say they are equivalent from a return standpoint. And for the next ten years, we would say it's about a 10 basis points, 6.2 versus 6.1 percent expectation. So we think risk-adjusted return has improved. Risk is lower, return is about the same for the next ten years. And we would also say if I kept these portfolios for the next thirty years, the expectation is that you get -- you would get a 7 percent or more return for the next thirty years in either portfolio. Of course, that's not the way things work. We don't just put a portfolio in the drawer for thirty years and come back thirty years later. We are going to be looking at this obviously on a regular basis over that time.

Any questions?

MS. VICKERS: I don't know if now is the best time to sort of talk about -- to discuss the last thing that you said about sort of, you know, where we are right now, which is discussing a portfolio that is significantly

below our targeted rate of return, and you know, sort of how the board feels about that.

MR. NANKOF: Part of the response would be: So the targeted return I will say actuarially is a very, very long-run expectation and I would probably look at it more relative to the third-year expectations. Now, I would say as a function of our forecasts or capital market assumptions -- and if you look at this efficient frontier, we are saying for -- and this efficient frontier is based on the next ten years. There is not a portfolio with our assumptions that can generate 7 percent for the next ten years.

MS. PELLISH: And our constraints.

MR. NANKOF: And the constraints.

MS. VICKERS: Understood, but the actuary is here and, you know, I don't know -- I don't think that the implications of less than 7 percent are kind of what -- the shorter-term impact than thirty years is what I am trying to get at.

MS. CHAN: I will say for when you look at a portfolio, I know that the thirty year is

above 7 percent, the expected return. But when you look at the liability and you weight it on present value basis, the first ten years has a lot heavier weight than a thirty-year horizon. So there is -- there should be -- even though, you know, pensions -- obviously liabilities is a long-term investment horizon, you should be putting more weight in the first ten years.

MS. VICKERS: From a planning perspective?

MS. CHAN: From just a pure present value perspective. Because cash flows down the road once they are discounted so many years down, they don't have as high an effect as the first ten years because your money is, you know, closer to -- you need to plan for the next ten years more than you need --

MS. VICKERS: So that over 7 percent return is worth less the farther out you go?

MS. CHAN: Right.

MS. VICKERS: So I understand sort of what you are saying. And what BAM has said, that there is just -- there is nothing on this

line that get us even close to consider where we need to be. So I don't know how to address that, but it is an issue that I would like to kind of discuss more and, you know, just maybe think about, you know, any stone unturned. Is there anything that we can do to kind of even get incremental increases?

MS. PELLISH: So one thing I will say is that although we haven't explicitly noted it here, our assumptions are all beta assumptions, passive assumptions. So we can't -- we are trying to stay in a broad asset class, and this is particularly relevant for private markets; the broad asset class within private markets, this is what we think the universe of opportunities will generate. Now, your investments in private markets have done much better than the universe of opportunities. So I think there is -- these numbers do not reflect the incremental returns we would anticipate that you earn in your private equity private real estate and infrastructure portfolios.

MR. ADLER: That's true of the capital

markets. I mean, I know it's supposed to be true.

MS. PELLISH: Yes.

MR. ADLER: But I, again, was questioning some of the private markets assumptions given these larger spreads. They don't take into account --

MS. PELLISH: We don't assume skill, seriously.

MR. HADDAD: Ouch.

MS. PELLISH: But maybe we should in your case.

MR. KAZANSKY: To all active members watching --

MS. VICKERS: We are being asked to make decisions based on the lowest common denominator; just the average general return for each of these things. And I don't know if there is a way to bake in some of those other assumptions or the assumptions that you are not making.

MR. NANKOF: We have, for clients, added active management premiums across asset classes to approximate what the -- the actual

portfolio -- well, the portfolio's expectation is with the market, plus active management net of fees. So we have done that and we have standard assumptions, which is not to say we never customize them for clients. But we do have assumptions across asset classes which attempt to estimate what that might be, what skill could generate.

MR. KAZANSKY: So for private markets -- I will use private equity as an example: If we have the ability to hire only managers in the top two quartiles, would it make sense to use return assumptions based on the top -- you know, the top of the spectrum rather than the entire spectrum of managers?

MR. NANKOF: I think that -- that is the type of thing we can absolutely do; we can add those premiums. Typically the way we would do it is we optimize the way we have done already, so the process that you have -- we have tried to illustrate for you today and describe to you today would -- would be identical. And then we would say well, given the asset allocation that we are recommending

and the premiums we believe we can attain across each of the asset classes, what would the portfolio level premium be that we would add to the 6.2 percent or whatever the number is for the next ten years. And I would just give you a sense of can we get you to the 7 percent given this asset allocation and the skill that you think you are deploying across the portfolio or accessing.

MR. ADLER: It strikes me -- and you mentioned this before, Robin -- that the determinant here is your U.S. equity assumption, which is -- as you said, it's way below all the other assumptions we see from all the other consultants and from the market as a whole. So what would this look like if you were to use more of a consensus U.S. equity assumption and you had suggested --

MS. PELLISH: We could look at that.

MR. ADLER: I would ask to look at that, whether it's the other New York City consultants or the eVestment, whatever it is out there as a consensus. Because, Mike, what would be the consensus of U.S. equity?

MR. HADDAD: Six.

MS. PELLISH: It's a big difference.

MR. ADLER: It's a huge difference. And it seems to me obviously even if we just took your thing with a 6 percent allocation, you are looking at a much higher expected return. Now, it's going to -- obviously doing that you are going to change everything as well, but that 3.4 is such a killer, truthfully, in terms of expected return.

MS. PELLISH: Yes.

MR. YUAN: So what John said, I do have two slides maybe I can just give you just to follow up that discussion.

MS. PENNY: What is this we are giving out?

MR. YUAN: The U.S. equity return.

MS. PENNY: I would ask if you have anything in the future, give it to us ahead of time so we know what --

MR. ADLER: We just talked about it late yesterday, so I apologize. And, by the way, we only got Robin's thing yesterday, so it's hard to --

MS. PENNY: We have had this for a while.

MR. ADLER: We only had Robin's.

MS. REILLY: The recommendations we have had for a while.

MR. ADLER: Go ahead, Steve, explain this.

MR. YUAN: I guess explain the table. For example, the last twenty-five years I highlighted in yellow: What it means is in the last twenty-five years, average inflation is about 2.2 percent. The Fed fund raised about 2.6 percent, which is the kind of return you will get from the savings bank. Money in the bank, that's average twenty-five years what you are going to get; average ten years is about 4.1 percent. And if we use Rocaton cap PE model, the expected S&P return is about 6.5 percent compound for the next ten years.

So I guess just want to make a quick -- I guess using one hundred years data, can you say the expected S&P report will be only 2 percent, which is kind of this in the green column which is basically to say S&P Index is

going to be flat if you exclude the dividend. And if you use fifty years, which is what Rocaton is using, we are getting 3.5 percent which is very close to 3.4 percent; that's in the presentation. But if we are using other data like thirty years, twenty years, we are getting to 6.5 percent or 6 percent. So it's a very wide range how many years of data we use; we are getting from 2 percent to 7 percent.

MS. PENNY: We will just ask Rocaton to look at it. And in the future if you have anything, please let us know ahead of time.

MR. ADLER: This would be a hard thing to just send out because it needs an explanation.

MS. PENNY: But to have somebody who is not part of the board --

MR. ADLER: He is part of the board because he is with me. He is a designated trustee; he is a designated trustee.

MS. PENNY: Robin, will you continue.

MR. KAZANSKY: We can all bring our own analysts. The meeting will go till 3:00 in

the morning.

MS. PELLISH: Sure.

So we have taken away a few points and I think we are virtually done.

MS. VICKERS: I have two more. And it might be in here and I sort of missed it, but just going back to the basket: Do we have your example and recommended portfolio and then unconstrained portfolio, what that would look like?

MS. PELLISH: No, but we can.

MS. VICKERS: That would be great.

MR. ADLER: Oh, I have another.
MS. VICKERS: Oh, go ahead.
MR. ADLER: Can you explain why you increased your return assumptions for core real estate from 6.4 to 7.4 even though cap rates are what lower? Yes, cap rates have gone down; isn't that what you said, Mike?
MR. HADDAD: Yes.
MR. ADLER: Cap rates have gone down, but you are increasing assumption for core real estate? I don't understand that. I mean, what you said, Mike, I think was that

generally cap rates are the sort of predictor for core real estate returns.
MR. NANKOF: I mean, we will take that back and we can do it. I would say that, you know, that we are now explicitly incorporating the leverage that the core real estate managers incorporates into the portfolio. So historically core real estate funds have about -- and this represented the index that we use for core managers. The OECD Index which is open, that has about 30 percent leverage in it. And I am not -- could be that three years ago, we were not as explicitly incorporating that. So -- but we will go back and look into that because I understand that it seems a little bit strange that the returns have gone up given, the cap rates have gone down in that period.
MR. ADLER: And sort of one other question: So your return expectation for high yield goes down by 80 basis points. You are now recommending an increase of 3 percent in the high-yield allocation. The original proposal that your -- "proposal" is the wrong

word, but proposal that you put out I think in the summer had a zero allocation to high yield. So I am just trying to understand where the high-yield thinking comes from.
MS. PELLISH: It came --
MR. NANKOF: Well, I think that -- that came from the fact that, I mean, if we are reducing equity by as much as we are reducing equity, we are also looking to replace and we are also looking to reduce risk. High yield is a way to get return with less risk. It also doesn't contribute to the basket clause like some of the other asset classes that could get us return to substitute for the fact

that we are -- you know, we are losing return by reducing risk.
MS. PELLISH: Bank loans for example went down to zero, so there was a tradeoff between bank loans and high yield.
MR. ADLER: But bank loans is basket; high yield is not.
MS. PELLISH: Some of high yield is.
MR. ADLER: Very little.
MS. PELLISH: Yes, so we were creating

basket availability.
MR. ADLER: But couldn't again just -- you get a much higher Sharpe ratio from OFI and then you can take -- you know, what you had explained last time was that you were taking bank loans and putting them into infrastructure. So now you are saying bank loans going into OFI -- not into OFI, into high yield.
MS. PELLISH: But if you look at the combination: What I am saying the combination of high yield and bank loans in the current allocation, the current target is 7 percent so we are raising high yield to 8 percent. And bank loans are going to zero, so there is a net additional 1 in the combination of bank loans and high yield.
MR. NANKOF: High yield -- again, high yield has diverged, as low as the return might seem, and it is relative to what a normal return would be for high yield over a reasonable time horizon. If it were fairly valued, it doesn't take up basket clause -- it doesn't take up basket, I should say, and it

offers a better return than U.S. equity with considerably less risk. It's -- it's the best among a number of not great choices I guess is the way -- that's the way the optimizer would tell us.
MR. ADLER: I still wonder about the reduction in OFI, given that OFI I think has, I think, the highest Sharpe ratio by far of anything in your list except for -- well, it's still the highest at 48.
MR. NANKOF: I think that's a basket issue.
MR. HADDAD: It's completely basket, John. It's competing with basket assets so competing with EM equity, international equity, private equity, infrastructure; that's

where it comes from.

MR. ADLER: It's strange to me because they all had lower Sharpe ratios. Now, there may be a correlation issue.

MR. NANKOF: Yes, there is a lot that's going into the optimizer and correlations are a factor.

MR. ADLER: Well, it would be

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interesting to see that and say what if we put some of that into OFI. Again, we are not seeing -- I would be interested in seeing sort of the alternatives here and how they play out because just looking at the numbers, some of it is kind of strange. It's not intuitively making sense. And you talked about earlier, Robin, the optimizer spits out numbers, but there are qualitative determinations. It just looks like OFI, you know, pretty high return, pretty low volatility.

MS. PELLISH: So we can look at what happens if we apply a constraint to OFI and raise that allocation.

MR. HADDAD: Just intuitively if you go through it, if you increase OFI you have to take something out of the basket; that's where it's got to come from. So run through your options on the basket and you cannot do the math in your head, but you can see the direction of that.

MR. ADLER: Well, again just looking at Sharpe ratio and correlation, you would think you would be better off. Again, I realize you

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have to take into account the implementation challenges because OFI is -- it's not liquid. But from a correlation and Sharpe ratio perspective, you would think OFI would be better than either international or emerging markets. I mean, they both have lower Sharpe ratios and higher correlation to U.S. equities than does OFI, you know.

MS. PELLISH: We will look at that.

MR. ADLER: I want to see -- you know, I want to taste the cooking, but I want to see what the ingredients are.

MS. PELLISH: The way to really look at it is yes, because there are so many pieces moving simultaneously and it's hard to identify all the tradeoffs, but we can look at different portfolio mixes. So for example what would happen if we changed the U.S.

equity assumption, what would happen if we forced the higher allocation to OFI, and we can also look at an unconstrained portfolio; just all items that have been raised.

MS. PENNY: I think Susan has been waiting.

MS. VICKERS: We talked a little bit about it. I want to go back to convertibles, because on all of these charts I don't know if convertibles count against the basket or not. So they are not basket assets and, you know, the return assumptions and the actual returns are pretty good.

MS. PELLISH: So we did include converts to -- converts today have a zero target allocation. They have a little bit of a natural allocation because it's used as a parking place, but we did include converts as well as other asset classes in the original runs. And the optimizer was I think producing target allocation, something under 2 percent and we decided that was a suboptimal -- that was too small and we decided to move that down to zero.

The other issue with converts that we ran into -- and we did have an allocation to converts and you may or may not recall that Rocaton was a big advocate of converts historically. Because there are some interesting properties in that asset class,

the system had a hard time finding managers to implement a reasonably -- an allocation of virtually any size. And so it was a combination of two things; one, having a reasonable allocation, 3 percent or more, to convert to is hard to implement across the system. Secondly, the optimizer given all the tradeoffs and converts have a pretty high equity correlation, it produced a very modest allocation to it. So we rounded down to zero, essentially.

MR. NANKOF: The next ten-year assumptions for convert forecast is 3.1 percent return, which is close to U.S. equity. And it's driven by its link to U.S. equity, so that's a factor. That's driving convert, the allocation to convertible that the optimizer gives down and then took the additional steps that Robin mentioned.

MS. VICKERS: I would just say, can we

throw that back in? Because if it's either, you know, sort of in the no stone left unturned, trying to buck up sort of wherever we can, because historically there has been

this outperformance of U.S. equity. And I think that convertibles are for this kind of crazy interim plan of the market. I don't know exactly what to do.

MR. ADLER: And high yield too.

MR. NANKOF: If we look at a U.S. equity return which is closer to the 6 percent we talked about earlier, we would want to change the way we model asset classes, given that other asset classes are -- we don't want to just change one asset class and ignore the fact that there are these linkages across other asset classes. We want it all to make sense together, so converts would be a byproduct of that.

MR. HADDAD: But if you look at the capital markets assumptions, now converts have one of the lowest Sharpe ratios on the entire list. So that's intuitive as to why the optimizer for these capital markets assumptions would not go for them.

MS. VICKERS: Right, and that means when you say -- remind me what that means.

MR. HADDAD: Low Sharpe is bad.

MS. PELLISH: Return for per unit of risk. So I'm going to jump in because we have a presenter from Sustainalytics waiting. I want to tell you the last two pages in this dec are important, but -- I don't want to give it short shrift, but we will be continuing this discussion.

The next-to-last page, 18, talks about how we are proposing that the investment grade fixed income allocation be structured. And importantly the headline here is we are proposing a reasonably significant increase in the capital allocation to investment grade fixed income, but not the duration target. So your current target has a duration of investment grade fixed income of over thirteen years. You haven't gotten there and, you know, that you haven't gotten there. The implementation of that has been slowed down since you approved the last target allocation. We are suggesting that you keep the current duration allocation close to what it is currently, about eight years, by allocating between shorter-term treasury bonds and

longer-term treasury bonds. And the logic for keeping, not lengthening duration as we initially proposed three years ago is if we reduced the allocation to U.S. equity, the need for that level of insurance goes down. And another important factor is it's particularly unattractive to buy long government bonds today. So those two factors lead us to recommend an increase in the capital allocation, but not an increase in the target duration exposure.

And then the last page, page 19, is a list of other items that will be addressed once the board has voted on any changes to the target asset allocation policy and there is a lot of things like parking places, rebalancing ranges, pacing analyses. All of these are really important items that focus on the implementation of the policy, but you have to get to the policy before we address the implementation issues.

MR. KAZANSKY: Robin, you are mentioning and really this whole thing is based on modifying the decision or adjusting our

choices that we made three years ago?

MS. PELLISH: Yes.

MR. KAZANSKY: Wasn't the return expectation three years ago in the 6s for the immediate future at that point in time, as well so is this?

MS. PELLISH: That's a good question.

MS. VICKERS: I think it was like 6.8.

MR. HADDAD: If you go to Slide 5 --

MR. KAZANSKY: I have a draft.

MS. PELLISH: No, you are right. 6.7. I'm sorry, that is --

MR. KAZANSKY: So it's not drastically far off where we were a few years ago as far as our expectation.

MS. PELLISH: Yes, that's a very good point. Thank you.

MR. NANKOF: To that point, the fund's return for the last three years since that study is 9.4 percent annualized, so we have exceeded the expectations and that's -- that's part of --

MR. KAZANSKY: Nothing wrong with exceeding expectations.

MR. NANKOF: No, that's great. And part of the logic for our lower-return expectations today is that we don't believe you can continue to exceed long-term expectations in the short term and just continue to have that be true in the future.

MR. ADLER: You don't think we should change our assumed interest rate to 9.4 percent?

MR. NANKOF: Probably a little bit, you know -- you know, unrealistic.

MS. PELLISH: So thank you. And this is really helpful to get all the feedback from the board and we will be back to you. I don't know if we will be able to be back in January because there is a fair amount of work that we need to do, but we will be back as soon as possible so we can continue this dialogue and hopefully get to a point where we are comfortable taking a vote.

MS. PENNY: Do we need to stretch for five minutes, anyone, before Sustainalytics comes?

MR. ADLER: Sure.

MS. PENNY: Okay, five-minute stretch.

(Recess taken.)

MS. PELLISH: We have representatives from Sustainalytics in to talk to the board about their activities in terms of engagement with companies. And I am going to allow them to introduce themselves and I think we have -- so we have about 25 minutes scheduled. So thank you.

MS. PENNY: And welcome again to Teachers' Retirement System.

MS. SOLOVIEVA: Wonderful. Thank you so much. Thank you, Robin. So I think many of you know me already. It's wonderful to be here again. Thank you for the opportunity to speak about our engagement services. It's a unique opportunity.

We have Charlotte here who is based actually in our Copenhagen office and really runs the commercial engagement activities, really an expert in this field. So we really want to take this opportunity to have Charlotte introduce herself and help answer any questions that you might have. I think one of the things we want to touch on is how assets in Europe are usually engaged in services in particular. I think that might be something that's of interest, so Charlotte.

MS. MANSSON: Great. Thank you very much for having us here. I am really thrilled to have a chance to come to speak to you.

Just very briefly about myself, I worked in the responsible investing for like a long time coming up to thirteen, fourteen years and I focus on our engagement plans like. That means I am often out and about meeting with clients, investors in general, getting an understanding for what are the trends that we see in the market and how are investors reacting to increasing legislative pressures or stakeholder pressures in general, and of course ESG members. I also work very closely with some of our pension fund clients in Europe where I meet with their trustees, with their investment committees. We go through engagement strategies, we talk about their overall stewardship activities so their approach to stewardship, and that also

includes their wishes to focus on impact and reporting through engagement also. So that's just a little bit about myself.

You know everybody.

MR. RAIMONDI: I have met most of you before so Matt Raimondi, Sustainalytics. I am on the client advisor team. So nice to see all of you again.

MS. MANSSON: So I also want to spend one minute reflecting. I remember the first time I came to New York to meet with investors to talk about responsible investing and that's about ten years ago. And it was quite difficult to get a meeting with investors to discuss this; there just wasn't that much of an interest. We met with some of the faith-based investor organization endowments, but otherwise you didn't see very much traction in this field. And I just spent the past few days attending events and conferences and when I see how that has changed, it's really quite remarkable. So I just -- I attended the Responsible Investor Conference yesterday and there were so many pension fund

representatives there. And it's really encouraging to see how it has moved up the agenda so, yes, I am thrilled to be here also.

I was looking -- when I was preparing for the meeting, I was looking at TRS' investment beliefs and I see that the ultimate goal is to provide secure and sustainable pensions. Now engagement is really about that, right? It's about long-term value, preservation of your members' pensions. Now it's about addressing any of those long-term risks that are in the portfolios and engagement is very much a strategy for doing that. It's -- first of all, you are managing the risks in your portfolio, but it's also about embracing stewardship responsibilities. So as an asset owner there are ways that you can really show the investment beliefs you have and really make sure that you have an impact; a positive impact on society, on the environment, and so forth. It's also about having a link between engagement and voting, so ensuring that there is that connection so that you can vote in accordance or in

alignment with what you are engaging and vice versa. Because, otherwise, you might actually hamper the activities of the engagement program. So there is a lot of different cases and I just want to highlight some of those.

We have a lot of slides here and we only have 25 minutes, so I am going to dip in and out of the dec. Please feel free to contact us afterwards if you have a question about some of the slides.

I am going to go to Slide Number 8, which just kind of highlights the kind of engagement we have. So -- and we call them pillars, so engagement pillars and it's based around three different approaches to shareholder engagement:

The first one is around the thematics, so we call it stewardship and risk. And it's focusing on certain amount of -- like it could be climate change, it could be workers' rights, it could be plastics in the economy, and so on. So we have a large number of different themes that are identified by Sustainalytics, but also by our clients. So

they come to us and say, here is a topic which is of particular importance to our members or our clients and we would like to do something around that.

The second one that we have is around business conduct. So, as you will know, when you are a large global investor there are lots of things in your portfolio; holdings that aren't always so nice, to be quite honest. It's about being aware of that. It's about business' conduct, so here we are talking about violations of like laborer rights, child labor, it's about environmental pollution, it's about corruption, money laundering, and so on. We gauge on the back end of the extensive research that we have in this field. So we identify the companies that are violating many of these standards, norms and conventions and then focus the engagement around bringing those companies into a compliant status where they are no longer breaching and where they -- we ensure that they have processes in place so that will not happen again in the future.

The third pillar is really where we focus on very much the materiality aspects and here it's a direct link with our risk rating, which identifies companies that are either high or severe risk. And we look at a large number of different indicators where we evaluate a company's ability to manage those risks and then we engage on the back end of that.

So just to give you -- those are the three approaches that we see that most investors use. So it's the proactive, the thematics, but also about business conduct and managing the risks.

If you go to the next slide, I just want to highlight a few things about why we think Sustainalytics' engagement is a really strong offering and really solid position.

So we have been doing it for a long time. And what I mean by that is earlier this year Sustainalytics acquired a firm called GES International. I was part of that firm and we were a shareholder engagement firm having a large global client base. We have been doing

that for about 25 years. Now we work with the likes of the Swedish AP funds that you might be aware of. We also work with the UK postal pension fund, the London Transport for London pension fund, and so forth. So really large pension fund schemes and we represent almost

60 clients globally with about 2 trillion a year in assets under advisement, which is quite significant when you are trying to get Facebook to agree to a meeting or trying to get Shell or BP to discuss some of their large-scale environmental issues, right.

So we also have a very transparent engagement program and that means that clients can participate in meetings, they can dip in and out of conference calls. We also organize trips. We go to a lot of different locations. We went to visit cocoa plantations in the Ivory Coast, do see how child labor is being addressed. We went to visit dams in Brazil. And clients can participate if they want to in those. However not everybody can go along to these things or might not have the resources, so we make everything available on the client

platform. So you can go in and see, well, what letters were sent to which representatives of the company, what were the responses, what were the agenda items. And it really allows you to report extensively to your stakeholders as well, so it means you can follow the engagement very close either in person or also do it by a report. The engagements are really focused on specific goals. So whenever we find an issue that needs to be engaged on, we will develop it to your strategy; so who do we speak to within the company, what is it that we are trying to obtain through the engagement dialogue, where is it that we want to try to move the company. And then we measure very carefully what the progress is, what the milestones achieved are, and so forth.

We also have a terrific team. We have 25 engagement managers based in North America and Europe. You might have seen that Wanda Brower has just joined the New York team. We are really delighted to have her onboard. Super excited because we are expanding our

North American presence, so we have a team here and in Toronto and then a large part of the team is also in Europe.

And then just lastly: It's about having a global coverage, global presence. So we engage globally, which means we also need to be a global firm and a global team. So we have a large engagement presence in emerging markets where we have a dedicated emerging markets part of the engagement team. They travel extensively, probably about 150 days a year. They are currently in China at the moment meeting with some of the quite challenging engagement companies that we have there, but it also means that they understand the context that the companies are operating in. They have the language capabilities. We are frequently in Moscow where we engage with the likes of Gazprom and Norilsk and you need to have not only the language, but also cultural awareness and understanding what the context is, especially for emerging markets.

So just a little bit about how we approach engagement. I want to emphasize that

because there are a lot of different understandings or perceptions of what shareholder engagement is. So for us it's really about building up a constructive dialogue, so we don't go out and name and shame to the media and so forth. We really approach the company in a constructive way where we work together on furthering their corporate agenda and making right any wrongs that have taken place. Now, it means that we build up the relationship around confidentiality and trust, so we don't share information or responses to the wider public; it's between the clients and the company and ourselves. And we conduct our meetings in a very, you could say, mutually respectful manner and the dialogue really affects that very much. As I say, the clients can be a big part of it if that's what they want to do. We also have some clients that do some engagement as well and the rest is done in parallel. This is in particular with clients who want to engage in home market companies or they have a specific sector they want to focus on and then

we do something in parallel as well.

Are there any questions so far?

MS. GREEN-GILES: Can you elaborate a little bit about your success metrics for engagement? So idealistically you are going to see some culture behavior change perhaps, but we know realistically there is a lot of cost of doing business box checking that happens among a lot of these offenders. So how do you sift through real change, which is procedural change?

MS. MANSSON: That's a really good question, because I have also seen a lot of change over the years.

So in the beginning there was a term which was "Tea and Biscuits" which is meet with the company, have a nice cup of tea and a biscuit, and then meet again, and that's it; and then there was no followup, no measuring. That's not really how engagement is done anymore. So you have these clear goals and objectives in the beginning and we measure progress in three parameters. We look at the response of the company, so how willing are

they to speak to their shareholders or their investors and ourselves. We look at the progress. So are we actually making any progress, is the company disclosing information, are they making changes to whatever it was that wasn't right. And then the last parameter are milestones. So we have five milestones in an engagement where the first one is establishing contact and then the last five, last one is the objectives have been met and we have now resolved the case; we have now closed the case. We measure that on a three-year basis and we are looking at tangible outcomes, tangible impact that we can measure, and we can report on.

When we don't see any progress or any willingness to interact or we are just being stonewalled or they are not really sharing anything, we also have a process which is called "Low-Performance Process." And that means we throw everything at it, so we will exhaust all our tools. We will write to the board, the CEO, we will get shareholders involved and they will co-sign letters and so

on; try to encourage the company to come to the table. If nothing happens still, then we will disengage and what that means is that we will stop our engagement efforts. We notify the company that now on behalf of our clients, we have decided to disengage. Now, for some of our clients it also means they will exclude the company from their investment portfolio. This is in particular many of our Nordic pension fund clients; they have in their investment policy that we can -- you know, we can accept that there are violations in our portfolio, but if the company isn't interested in addressing them that's sort of that red line that they don't want to have the company any longer.

So, yes, so that's a little bit about how we measure progress.

MS. VICKERS: A different question. You know, we are working with Sustainalytics to firm up an arrangement to have you annually report back in our portfolio and do some the screens. Can you just describe how the engagement practice works with that practice

within Sustainalytics?

MS. MANSSON: The overlay, because actually the engagement is an overlay to two of those screenings. So we engage on, it's called "Global Standard Screening." So the identification of violations right? So this is conduct violations, so we engage on all what we call the noncompliant and watchlist companies and there is a direct link between the two. And then the other one that's an overlay is surrounding risk rating that we have. So we engage with companies that are either high or severe risk, so these are companies that are not managing their risks and they have a high risk already. So let's imagine an extractor company exposed to a lot of risks in that sector and they are not managing those risks properly, so we would engage those as well. So that's really the advantage of being a one-stop shop, as we call it, because there is that seamless link between the research. You can always refer back to the research and explain why did we choose that company to engage on and how does

the engagement reflect or how is it reflected in the research later on, right?

MS. VICKERS: Right. Can you talk about that a little more, how it's reflected in the research later on?

MS. MANSSON: Yes. For the business conduct where we are engaging on the violations, the goal is obviously to stop the violations and to make the companies compliant. So hopefully after the engagement process has taken place, then the status would change to compliant or at least to watchlist, if it's not compliant down to watchlist.

MS. VICKERS: So is it the engagement

team that's sort of informing the research team and would cause the rating or the color or the --

MS. MANSSON: Well, there is a lot -- we have a lot of acronyms as well, so yes and no. So we believe it's quite important that each of our services has its own sort of integrity so it isn't influencing the other services in an unduly way, but what happens is that the engagement managers will -- with respect to

the company, they will encourage them to make information publicly available; so you really should be disclosing this widely, it should be on your website, you should be sending this information out proactively and so forth, which will influence either your rating or it will influence your noncompliant status as well.

MS. VICKERS: So it's more objective if it's out there transparent to everyone oh, yes, success with this one?

MS. MANSSON: Exactly, because we also believe that there needs to be -- there needs to be more widespread verification of facts as well. So it can't just be the companies sitting and saying to us in private yes, we are on top of that, we fixed it, here is something, here is a policy that we might be implementing next year. Okay. Okay, no, we actually do need you to implement it and it needs to be known to everybody. All the stakeholders need to be aware of that and the best way to do it is to make it publicly available. So it's really holding them

accountable and make sure there is followup to the discussions that we have with them so that it isn't just in that -- you know, that closed forum where we are discussing it; we need to see it implemented as well.

MS. SOLOVIEVA: Maybe just another thing to add, there are two separate teams; so the team that is doing the research and then there is the engagement team. So there is a separation there as well. And the engagement teams do have the ability to of course leverage all of the research that the research team has done, which is one of the really I think big advantages of Sustainalytics; the fact that the engagement managers have access to a lot of research we have already done, but they are two different teams.

MS. MANSSON: I should also say that the clients have access to the engagement managers as well. So that's why for example you are speaking to one of your external managers that holds a problematic company, then you would want to ask that manager about what it's doing; you could look up the information,

also. And this is how the engagement with Walmart is going for example and then you can call up the engagement manager for a quick briefing when you speak to your external manager. You say, we understand Sustainalytics has a conversation with Walmart, these are some of the problems, are you aware of that, are you also asking Walmart about these things. At the end of the day -- and that's a very clear trend we have seen with our pension fund clients; they are holding their external managers much more accountable, so there/that is really all the way from the due diligence of the new managers onboarding throughout the relationship of the managers. They are asking for more reporting, for alignment with the pension fund's own investment beliefs, and so forth. So that's one way to look at that, also.

I just wanted to touch on a couple --

MR. ADLER: No, go ahead. I will ask afterwards.

MS. MANSSON: I just want to touch on a couple of things. And I am conscious of time,

also.

If you go to slide 14, just to say a little bit about one of the trends that we see, what are investors really concerned about from a thematic perspective as well. I think it almost doesn't need mentioning, but climate change is very high up in the agenda. To such an extent that some investors maybe feel that it's hijacking the agenda a little bit too much sometimes, because it is an incredibly important topic but there are also other topics that are very important also, especially in the social area and the governance area as well. And of course you can argue if you have a really good corporate governance, they would be managing other aspects also. So we do have a lot of corporate governance in our engagement.

We are launching a theme which is all about tomorrow's board, so how do company boards manage the ESG challenges the company is facing, how do they incorporate it into the long-term strategy and so forth. But we also focus on such things as child labor in the

cocoa sector, food supply chain. So we took a number of investors to Italy to visit tomato farms and it was interesting because we brought along supermarket chains as well as investors to visit the farmers. And the farmers explained to the supermarket chains, we are under such price pressure from the supermarket chains that we are having to employ very, very low wage workers which then means that there is a lot of illegal immigrants working in the plantations or having very poor working conditions as well.

So really bringing all the stakeholders together into one room and saying, how do we address that. These are, you know, across the sector. It wasn't just about what does Walmart do, no; what do all large supermarket chains do to address this. So the thematics are very, very much focused on raising standards across different sectors. And in here, I mean for your own sort of reading later on, there are some examples as well of cases. There is a study on or a case we have had on Walmart for a long time. You can have

a look at that just to see how that engagement has been led. We have examples on child labor in the cocoa sector just to give you an idea of what does an engagement look like, how does it start, how do we measure it, what are the kind of activities that we do, and what are the potential outcomes of an engagement also.

When it comes to reporting, I mentioned before we are focusing a lot on really the tangible impacts and so forth. Just to give you a little bit of an overview: Last year we resolved 34 cases and moved 48 milestones which might not seem like a very large amount, but keeping in mind that some of these large companies take a really long time to engage with and I think it's important to recognize that. On average, we looked at all the engagements we have done on average. An engagement case is about three years from start to finish. So from the time that we are made aware that there is a problem that needs to be engaged on until it's resolved, on average it's about three years; sometimes it could be faster and other times it can on drag

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on for a really long time. A lot of different factors play into that, so we will keep you informed as we go through the reporting. And there is really expansive reports; quarterly report, annual reports, and loss statistics, and case studies that you can share with your stakeholders as well for your own annual reporting and so on, but this is -- it's a patience --

MR. BROWN: Is there any followup after you complete a case, you go back after a year or so and be a --

MS. MANSSON: And see if it's starts to -- well, I mean, yes. So we have re-offending companies for sure and the way we identify is really through our research. So if a company -- if a case has been resolved but we will pick up another controversy or allegation or that the company has relapsed, we will reopen a case because clearly it didn't quite work right; they didn't stick to the processes they had implemented or there just wasn't enough coordination throughout the large organization of.

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MR. BROWN: You said you never go to the news media. Is there ever a case where you see something so upsetting that you feel compelled to go to the news media?

MS. MANSSON: No, we leave it to our clients to do it actually.

MR. BROWN: Do you recommend that they go to the news media?

MS. MANSSON: Oh, I don't know what to say. It can be effective. I think if you have a very high-profile case which might need additional nudging from investors, it can be effective for a client to go and talk to the media about it. It's --

MR. BROWN: Big decision.

MS. MANSSON: It's a big one. And you are also putting your own name on the line, so to speak. So it's a bit -- we have clients that do it, that go or HAGMs are very vocal about certain cases and so on. And if they need us to help them getting the research, you know, go speak to whoever they want to speak to, we can do that as well. But we have a lot of clients, especially pension fund clients,

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that don't wish us to take that role. They don't want us to speak that publicly on their behalf. You see what I mean, in terms of naming and shaming a company.

MS. SOLOVIEVA: I think another interesting thing to note is that the anonymity that's possible for clients.

MS. MANSSON: That's an important point. So not all our clients wish to be public about their names with the investors, so what we do is we contact the companies initially and say we are here representing a number of clients and then we would mention the clients that are happy to be mentioned. But the ones that don't wish to, we wouldn't disclose the name of the investor to them.

MS. GREEN-GILES: That makes me wonder if you in the course -- so it's a private relationship. You are hired by the investigator, you go and you discover something illegal or -- I mean, how much are you responsible for reporting to local government, to NGOs on top of whatever you are going to report to the client?

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MS. MANSSON: So, I mean, we will engage on the back end of the research and that is typically where anything illegal would have been disclosed, right, would have been revealed, so to speak. I mean, we are not -- we are not investigative reporters in that sense. We will go in and assess the processes and the management systems based on what -- what the company discloses or based on what's publicly available, but we don't -- we don't investigate in that sense. You see what I mean, the difference between -- so we will see what they are disclosing or what is publicly available. I don't recall any instances where we had discovered anything illegal that wasn't already known to be illegal.

MS. PENNY: Do you have any statistics about how successful the engagement is? And also so you engage, everything is good, we decide to invest, and then a repeat offender; do you have any --

MS. MANSSON: Yes. I mean, so last year 73 percent of the engagements had a medium to high progress, which you -- if you remember, I said we have these -- those three parameters that we measure that, so that's quite good; things moving along definitely quite nicely. In terms of reopening of cases I don't have the have the statistics sort of on me now, but I can find out.

MS. PENNY: Again most concern everything is final, we invest and then there is a problem.

MS. MANSSON: I can find out. We do have repeat offenders for sure. I mean, Walmart is one of them. Walmart -- actually, it's an interesting case. You will see in the papers that they used to be on a disengage list as well, but then they changed a lot of their management and they became much more interested in speaking to their shareholders. And now it's quite a good dialogue we have with them. They are willing to meet and go invest in road shows and so on, so they have done a full -- sort of full turnaround. But I think there is also the recognition that some of these large companies that have massive supply chains, things happen and I think there

is a recognition of that and that's really working with a company to address that.

MR. BROWN: Do you ever fear the safety of the people who are going to the engagement?

MS. MANSSON: That's a good question. Yes, yes.

MR. BROWN: It's a little dangerous.

MS. MANSSON: So we went last year, our team went. We went to Zambia in Africa last year to visit Glencore mines and we were supposed to go to the DRC as well, but we had to cancel that part of the trip because there was too much civil war and unrest in the area. So we will absolutely check with embassy recommendations and foreign service recommendations before we go anywhere. And when we go to problematic areas the company or the companies that we visit, they will set up, you know, a program for us and their security will get involved to make sure that everybody is looked after really well. But if it's deemed anywhere too risky, then we absolutely don't go; we cancel it as well.

But, yes I think -- I mean, we

definitely have some clients that are very adventurous, up for going to many different interesting places, but -- yes, but obviously always with safety in mind.

MR. ADLER: Question: So it's not clear to me, how do you select the companies for engagement? If a client says to you we would like you to engage with company XY, do you say sure, we will do that or do you have a process for determining what your engagement targets are?

MS. MANSSON: Yes, we do have a process. So the way it works is that for the business conduct cases, we look at a large universe; so a large investment universe which will follow some of the large benchmarks. And then our research will identify which of the companies in there are noncompliant or on a watchlist, then we will engage on that group. For the material risk engagement, it's really looking at those companies that we have identified as being high risk or near risk. If you come to us and say this is the universe that we develop in, we will notify you these are the

companies in that universe that are eligible for engagement. So we have a case where there is a violation or we deem that this company has a large unmanaged risk that needs to be engaged in the last pillar, the thematic one, there we look very much on client holdings. So we work with the clients to choose the companies for the themes.

So, first of all, we will do a benchmark report off of a large benchmark and we will identify the companies that are most exposed to whatever risk it is that we want to focus on for the theme. And then we will work together with the clients on selecting 20 companies for each theme and this is to ensure that client holdings are part of the theme, right? Because this is a more -- it's a three-year very focused thematic engagement, so we want to make sure the clients have the most important holdings in that theme.

MR. ADLER: So back to the business conduct, to be clear: Business conduct, you saw a company that is deemed to be noncompliant or watchlist, that's through the

Sustainalytics rating system?

MS. SOLOVIEVA: The UN Global Compact

screening.

MR. ADLER: So the company is on that list as noncompliant or watchlist, you are going to engage with that company?

MS. MANSSON: Yes. So we currently have about 600 companies that we engage on. Yes, and --

MR. ADLER: But that's worldwide.

MS. MANSSON: Yes.

MR. ADLER: Do you know how many in the emerging markets?

MS. MANSSON: Out of that group, 250. Keeping in mind, we have a lot of developed market companies that have operations in emerging markets as well. So the 250 are the ones with headquarters in emerging markets.

MR. ADLER: Domiciled in emerging markets.

MS. MANSSON: Then you have a whole other string.

MS. SOLOVIEVA: What I thought was particularly interesting when we were

preparing for this meeting is that two of the companies that you asked me to showcase in the case studies are actually companies that we are actually engaging in, so Gazprom and Norilsk Nickel.

MS. MANSSON: So Anya was telling me you were interested in those two places. Our emerging markets team has gone to Moscow several times to visit with the companies and we do the engagements in Russian. We bring along our Russian colleague who helps us translate. It's definitely been very interesting to meet with them. And we also -- if you are familiar with Climate Action 100 which is a large investor, we are the leads on Norilsk Nickel on that one. So we do that on behalf of AB 7, which is a large pension fund. So we know those two companies quite well, actually.

So I have tried to pick out and highlight the -- I think what would be most interesting for you, but please if you have any questions or if there is anything I missed or -- please let me know.

MS. PENNY: Any questions?

MS. GREEN-GILES: Just procedurally, we contract on an annual basis. It's a three-year cycle time you are saying, so how --

MS. MANSSON: Just for the thematic one, just for the theme. For the other engagements you can join any time and leave any time, so to speak. For the themes, we ask that you sign up for the duration of the theme. So if you join in the first year, then you would sign up for three years. But if you join in the second year, you would join just for the second and third year. We typically don't recommend joining for the third year because you just join the back end of it and miss out on being able to engage with the companies. But it's a for -- for a clients that sort of are starting out, want to dip their toes in the sort of the engagement pool, it's quite nice to do a little bit of a combination of having that Global Compact engagement. A lot of investors call it the hide gene; there are not nice things in your portfolio and I need

to engage on that, but then there is also thematic. So if there is a topic they feel is particularly important to them, it could be in the climate space or labor rights, whatever it might be where you think here is something which is really close to the DNA of our organization of our members, we want to focus on that for the next two, three years or something like that.

MR. ADLER: I'm sorry, how does the pricing work? Maybe someone can explain that. Is it just like a straight fee and then we choose what to do; is it a la carte?

MS. MANSSON: No. So it's relatively straightforward in that sense that you define to us well, this is the investment universe that we are interested in and then we give you a fee for that. And then for the themes, it's a fixed fee for -- on an annual basis.

MR. ADLER: For each theme?

MS. MANSSON: Yes.

MS. SOLOVIEVA: Or there is a bundled option, so there are four themes.

MS. VICKERS: So do we have a bundled

option based on the other stuff that we were talking to Sustainalytics about.

MS. SOLOVIEVA: Blue in terms of if you are subscribing to the research and then engagement.

MS. VICKERS: It wasn't one of the add

ones?

MS. SOLOVIEVA: No. So we can't add any pricing for engagement because engagement in the U.S., it's only something now we are starting to offer to clients.

MS. VICKERS: Is it the same entity, still Sustainalytics?

MS. SOLOVIEVA: It's Sustainalytics, yes. Actually, the contracts already have language around engagement as well as a baseline in the framework, so it becomes -- let's say you did want to consider engagement down the line; it becomes an addendum to the existing agreement. And of course regarding pricing we of course take into consideration the fact that you are also research subscribers et cetera, but they are separate services; viewed as separate services.

MS. PENNY: Okay, fine.

Thank you so much for joining us. Again, we appreciate it.

MS. SOLOVIEVA: Wonderful. Thank you very much for the opportunity. And if -- again if there is any kind of follow-up questions, I would be very happy to answer. There is one aspect about statistics that we will absolutely share.

MS. PENNY: Okay. Thanks, everyone.

Do I hear a motion to move into executive session?

MR. BROWN: I move pursuant to Public Officers Law Section 105 to go into executive session for discussions on specific investment matters.

MS. PENNY: Thank you, Mr. Brown.

Do I hear a second?

MS. VICKERS: Second.

MS. PENNY: Thank you, Ms. Vickers.

All in favor? Aye.

Mr. BROWN: Aye.

MS. VICKERS: Aye.

MR. KAZANSKY: Aye.

MR. BUCKLEY: Aye.

MR. ADLER: Aye.

MS. GREEN-GILES: Aye.

MS. PENNY: Any opposed? We are in executive session.

(Whereupon, the meeting went into Executive Session.)

MS. PENNY: Okay. Do I hear a motion to move out of executive session?

MS. VICKERS: So moved.

MS. PENNY: Thank you, Ms. Vickers.

Do I hear a second?

MR. KAZANSKY: Second.

MS. PENNY: Okay, all in favor?

Aye.

Mr. BROWN: Aye.

MS. VICKERS: Aye.

MR. KAZANSKY: Aye.

MR. BUCKLEY: Aye.

MR. ADLER: Aye.

MS. GREEN-GILES: Aye.

MS. PENNY: We are out of executive session.

Okay, we are back. Susan, update and report.

MS. STANG: In executive session a discussion was held about a procurement matter; consensus was reached on the next steps. Discussion was held about a specific investment; consensus was reached as to the path forward. A discussion was held about a modification to a previously approved recommendation; consensus was reached which will be announced at the appropriate time.

MS. PENNY: Okay, thank you. Is there anything else?

Okay, do I hear a motion to adjourn?

MS. VICKERS: So moved.

MS. PENNY: Thank you, Ms. Vickers.

Do I hear a second?

MR. BROWN: Second.

MS. PENNY: Thank you, Mr. Brown.

All in favor? Aye.

Mr. BROWN: Aye.

MS. VICKERS: Aye.

MR. KAZANSKY: Aye.

MR. BUCKLEY: Aye.

MR. ADLER: Aye.

MS. GREEN-GILES: Aye.

MS. PENNY: We are adjourned.

[Time noted: 1:03 p.m.]

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C E R T I F I C A T E

STATE OF NEW YORK)
: ss.
COUNTY OF QUEENS)

I, YAFFA KAPLAN, a Notary Public within and for the State of New York, do hereby certify that the foregoing record of proceedings is a full and correct transcript of the stenographic notes taken by me therein.

IN WITNESS WHEREOF, I have hereunto set my hand this 16th day of December, 2019.

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YAFFA KAPLAN