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5 NEW YORK CITY TEACHERS' RETIREMENT SYSTEM
6 INVESTMENT MEETING
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9 Held on Thursday, March 3, 2016, at 55 Water
10 Street, New York, New York
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12 ATTENDEES:
13 JOHN ADLER, Chairman, Trustee
14 SANDRA MARCH, Trustee
15 THOMAS BROWN, Trustee
16 SCOTT EVANS, Comptroller's Office
17 SUSANNAH VICKERS, Trustee, Comptroller's Office
18 CHARLOTTE BEYER, Trustee
19 DAVID KAZANSKY, Trustee
20 MELVYN AARONSON, Teachers' Retirement System
21
22 REPORTED BY:
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2 ATTENDEES (Continued):
3 SUSAN STANG, Teachers' Retirement System
4 MATTHEW MALERI, Rocaton
5 MICHAEL FULVIO, Rocaton
6 ROBIN PELLISH, Rocaton
7 DAVID LEVINE, Groom Law Group
8 RONALD SWINGLE, Teachers' Retirement System
9 THAD McTIGUE, Teachers' Retirement System
10 RENEE PEARCE, Teachers' Retirement System
11 LIZ SANCHEZ, Teachers' Retirement System
12 SHERRY CHAN, Office of the Actuary
13 PAUL RAUCCI, Teachers' Retirement System
14 DEBORAH PENNY
15 ANTONIO RODRIGUEZ, Mayor's Office
16 JOHN DORSA, Bureau of Asset Management
17 JOHN MERSEBURG, Bureau of Asset Management
18 TATIANA POHOTSKY, Bureau of Asset Management
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 2   MR. ADLER: Good morning. Welcome to
 3   the Teachers' Retirement System of the City of
 4   New York investment meeting on March 3, 2016.
 5   Thad, will you please call the roll.
 6   MR. McTIGUE: Thank you, Mr. Adler.
 7   John Adler?
 8   MR. ADLER: I am here.
 9   MR. McTIGUE: Perfect. Charlotte Beyer?
10   MS. BEYER: Here.
11   MR. McTIGUE: Thomas Brown?
12   MR. BROWN: Here.
13   MR. McTIGUE: David Kazansky?
14   MR. KAZANSKY: Here.
15   MR. McTIGUE: Sandra March?
16   MS. MARCH: Present.
17   MR. McTIGUE: Raymond Orlando? Ms.
18   Vickers?
19   MS. VICKERS: Here.
20   MR. McTIGUE: We have a quorum, Mr.
21   Chairman.
22   MR. ADLER: Thank you, Mr. McTigue.
23   I think for the public agenda we are
24   going to start with the Passport Funds, so
25   take it away.

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 2   MR. FULVIO: Good morning, everyone.
 3   Actually just want to start by noting that we
 4   had a little bit of a snafu with the
 5   materials, the hardcopies being delivered. So
 6   some of the materials that you have in front
 7   of you today might be in black and white where
 8   we intended to have them in color. But we
 9   appreciate your patience and will try to help
10   navigate that as best we can.
11   The first item that's on the agenda for
12   today is the fourth-quarter report for the
13   Passport Funds which you will notice you don't
14   have in front of you. That's the larger book
15   that we usually provide that's bound. We did
16   circulate that ahead of time electronically
17   and the hardcopies we are told by FedEx are on
18   their way, but in case they don't arrive
19   before we leave today we will get them to you
20   before the next meeting. But happy to address
21   any questions you have regarding the
22   performance, which we did review with you at
23   the last meeting. Nothing there.
24   Okay, the next item on the agenda is the
25   January 31, 2016 report for the Passport

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 2   Funds. That should be the next -- the next

 3   item in front of everyone. So as you might
 4   recall from our last meeting, we talked about
 5   January being a difficult month for the
 6   markets. U.S. stocks sold off by about 5-1/2
 7   percent. Non-U.S. developed markets sold off
 8   by about 7.2 percent. And I will make mention
 9   of the emerging markets, your benchmark having
10   sold off at about 4.4 percent during the
11   month. And the reason I mention that is
12   because it was during January that your two
13   new emerging market equity managers took over
14   their portfolio. You don't see performance
15   for their specific accounts given the partial
16   month-time period in this report. But we will
17   be reporting on that going forward. And that
18   performance did play an impact in the
19   performance of the overall funds here.
20   So start with the Diversified Equity
21   Fund. For the month of January, it performed
22   about in line with the market. As I
23   mentioned, the Russell 3000 index was down
24   about 5.6 percent. The Diversified Equity
25   Fund was down about 5.5 percent. That brought

 2   the 12-month return for this fund to negative
 3   4.2 versus the broad market at negative 2-1/2.
 4   What we did see during the month, the
 5   portfolio did track relatively closely to the
 6   hybrid benchmark which is the passive
 7   representation of the underlying strategies.
 8   That said, what we also saw was a large
 9   portion of the relative performance was helped
10   by the defensive strategies composite which
11   for the month was down about 3 percent versus,
12   as I mentioned, the broader market down about
13   5.6 percent. And we did see some of that
14   offset what was otherwise relatively weak
15   performance by non-U.S. equity markets, which
16   naturally have a 15 percent allocation in this
17   fund. So we did see that sort of play off
18   each other and that the fund was relatively
19   flat for the month to the market. The bond
20   fund for the month was positive to the tune of
21   about 80 basis points, in line with its
22   benchmark.
23   The International Equity Fund was down
24   about 6-1/2 percent, ahead of the EAFE Index.
25   And again going forward we will begin

 2   reporting on a composite benchmark that
 3   includes emerging markets in this space, so we
 4   will make note of that when we talk about

 5   February performance.
 6   The Inflation Protection Fund was down
 7   by about 1 percent during the month and that
 8   compares to CPI which was flat. You can see
 9   over the longer term this fund has not kept up
10   with CPI, given the allocation within this
11   fund to commodities which have performed very
12   -- in a difficult manner, as you know from the
13   headlines.
14   The Socially Responsive Equity Fund was
15   down about 6.3 percent and that trailed the
16   S&P 500 which was down about 5 percent. We
17   have seen this fund move around on a relative
18   basis, but unfortunately the performance of
19   late has not been quite as strong. And it's a
20   firm -- sorry, a strategy that will have more
21   to update you on in the coming meetings, given
22   a regularly scheduled update that we have with
23   them for late in the first quarter.
24   Were there any questions on the Passport
25   Funds for January?
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 2   So then, if I can, draw your attention
 3   to the next handout. This is the preliminary
 4   performance for the month of February. You
 5   can see the first line item there is the broad
 6   U.S. equity market represented by the Russell
 7   3000 Index. That index was flat for the
 8   month, that brought the year-to-date return
 9   for that benchmark to negative 5.7 percent.
10   The international composite benchmark just
11   below that you can see was down about 1.3
12   percent and that included the allocation I
13   referred to earlier to emerging markets.
14   Emerging markets, it's a line item you can see
15   in the middle of the page here. We are
16   referring to the MSCI Emerging Markets Index
17   underneath the International Equity Fund
18   benchmark. They were modestly positive during
19   the month, so that certainly helped. The MSCI
20   EAFE Index a couple of lines above that was
21   down about 1.8 percent. And the S&P developed
22   ex-U.S. small cap index, which you do have a
23   small cap strategy in that fund, was negative
24   by about 13 basis points. So we did see that
25   the exposure to emerging markets and developed
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 2   small cap helped within the International
 3   Equity Fund during February.
 4   I am going to go back up to the
 5   defensive strategies benchmark. You can see
 6   that was also flat for the month of February.

7 Year to date that composite was down about 4.1
8 percent versus the broader U.S. equity markets
9 of 5.7 percent negative. And just below that
10 the proxy for the overall Diversified Equity
11 Fund, which we would have expected, for the
12 month down about 20 basis points and year to
13 date also down about 5.7 percent. The bond
14 funds benchmark just below that was positive
15 by about 20 basis points for the month
16 bringing the year-to-date return to 1.1
17 percent. And I made reference earlier to the
18 International Equity Funds benchmark being
19 down about 1.3 percent during February. Below
20 that the Inflation Protection Funds underlying
21 strategy, you can see was down by about 25
22 basis points with a calendar year return to
23 date of negative 1.2 percent. CPI over that
24 time period was also relatively flat and below
25 that, that the underlying strategies for the

2 Socially Responsive Equity Fund outperforming
3 on a relative basis with a positive return of
4 83 basis points versus the S&P, which was
5 modestly negative for that time period.
6 Were there any questions on February?
7 MR. ADLER: I have a question. You
8 know, so our custom emerging market index does
9 not include Russia, China or Pakistan, right?
10 MR. FULVIO: That's correct.
11 MR. ADLER: And yet the -- you know, the
12 fiscal year-to-date and the one-year
13 performance is like really unbelievable. I
14 mean, you know, down 23 percent for the year.
15 You know, this is shades of 2008. Any comment
16 on that even though it doesn't include China?
17 MR. MALERI: Just emerging markets in
18 general, it's been a broad selloff. So
19 excluding China, Russia and Pakistan, we
20 wouldn't expect to have a material difference.
21 It's largely been currency driven too, so the
22 dollar being stronger and a lot of emerging
23 markets countries having devalued their
24 currency. So, again, it's been a broad-based
25 selloff. The numbers aren't too surprising.

2 I think to your point about 2008 and
3 shades of that period, it's been a tough
4 three, four, five years for emerging markets
5 and we have watched it closely. I think we
6 will spend a few moments on it when we get to
7 the asset allocation discussion, but hard to
8 know if this is a great buying opportunity or

9 if there is more weakness to come. We really
10 haven't come to any definitive conclusions on
11 that on our end.
12 MR. ADLER: Do you know, and you may not
13 know off the top of your head, how much of it
14 is due to currency and would we be better off
15 hedging the currency?
16 MR. MALERI: I guess just to maybe
17 answer the second question first which was
18 hedging emerging markets, it's pretty
19 difficult to do. There is a high cost
20 associated with hedging out those currencies.
21 So even if we said absolutely that we want to
22 do it, I am not sure it's something that's
23 really practical to do.
24 In terms of how much is it, you know,
25 how much is it cause for performance, so I
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2 have some numbers sort of through
3 mid-February. The emerging markets, broad
4 emerging markets index which includes China
5 and Russia, was down about 9 percent
6 annualized over three years, so pretty bad.
7 The local market index was only down about 1
8 percent over that same time period, so a
9 significant portion. And if you go back five
10 years, the local market index is basically
11 flat. The performance, when you include the
12 impact of the dollar, is down about 5 percent
13 annualized. So over five years, it's been all
14 currency. Over three years, it's been
15 much -- much of it is due to currency.
16 MR. ADLER: Thank you.
17 MR. FULVIO: That concludes the
18 presentations or discussions we had for the
19 Passport Funds in the public session.
20 The other item was -- which I just
21 handed out, Ron handed out the pension asset
22 allocation. There were a number of questions
23 that were brought up at the last meeting that
24 I wanted to make sure we addressed today. And
25 naturally if there are any other questions, we
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2 are happy to report back in subsequent months
3 as we move forward with the asset allocation
4 project.
5 MS. PELLISH: So there are three
6 different topics that we are going to address
7 here. One is hedging, one is emerging
8 markets, and one is long bonds. These are
9 really responsive to questions that arose at
10 the last meeting. Matt Maleri is one of the

11   partners at Rocaton and he focuses -- he
12   spends a lot of his time on the asset
13   allocation team thinking about these kinds of
14   issues, thinking about asset-class assumptions
15   and thinking about how to include various
16   asset classes and risk exposures within client
17   portfolios in a way that helps meet
18   objectives. So we put some material together
19   addressing those three topics. Matt is going
20   to go through it and we will be delighted to
21   answer any questions or comments on the topic.
22   MR. MALERI: So as Robin said, I will go
23   through these, take them one at a time. But
24   if there are any questions or spending too
25   much time on something, move me along. If you
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2   want to spend more time on something,
3   absolutely please do that.
4   So the first topic I think hopefully
5   everyone has this in front of you is currency.
6   So a timely question earlier about currency.
7   I would say the basis of this presentation is
8   largely focused on developed market currency,
9   so euro, yen, Swiss franc, British pound. So
10   we are talking about what do you want to
11   consider potentially hedging those currencies
12   within the non-U.S. developed equity
13   portfolio. Again just to set aside emerging
14   for a second, it's difficult to do so I think
15   just for a practical standpoint. The cost is
16   so high that it's probably not even worth
17   discussing. And secondarily it's a smaller
18   weight in the portfolio so the impact we would
19   expect it to have, barring recent performance
20   over the long term, is probably not that
21   significant. So, again, the conversation here
22   is largely focused around hedging developed
23   market currencies. So maybe just -- I think I
24   have touched on the intro a bit on page 4.
25   Page 5, just that the -- at the top
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2   level there, you can see performance. This is
3   through mid-February over various time
4   periods. You can see the MSCI EAFE Index in
5   dollar terms. So from the perspective of U.S.
6   dollar investors and then in local, so
7   essentially removing the impact of currency.
8   And the performance probably shouldn't come as
9   too much of a surprise. Certainly if you have
10   seen the euro or if anyone has taken a
11   European vacation recently, you know that it's
12   much cheaper these days to go overseas. The

13   euro at call it a dollar 8, a dollar 9 to the
14   dollar versus just about a year or two ago a
15   dollar 25, dollar 30, a dollar 40, so --
16   MR. ADLER: Please stop for a minute
17   because, Charlotte --
18   MS. BEYER: I have a question on the
19   introduction, the third bullet point. Most
20   institutional investors are not hedging. They
21   don't have long-term strategic policies in
22   order to hedge. Is that a change from 10, 20
23   years ago and do you anticipate that changing
24   yet again given that there is such a currency
25   impact?

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2   MR. MALERI: I don't know that's a
3   change from 15 years ago. I think it's sort
4   of always been the case.
5   MS. BEYER: That's what I thought, but
6   what about the future?
7   MR. MALERI: No, that's a good question.
8   We spent a lot of time on this last year. We
9   actually wrote a paper on the subject. I
10   guess a couple of things to point out.
11   For our client base, there is -- well,
12   let me step back a second. For a lot of
13   clients, it's actually difficult to do. So
14   for smaller clients, you know, not yourself
15   but smaller clients, getting access to hedge
16   non-U.S. equity products is quite difficult to
17   do. We saw a lot of reaction to -- from the
18   asset management industry as well as from our
19   own clients sort of early last year after the
20   dollar had climbed 20, 30 percent. We got a
21   ton of inbound calls from clients saying
22   should we hedge and we will go through why we
23   don't think you should hedge. But one of our
24   first responses was: You know, gees, the
25   dollar just went up 30 percent, is now the

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2   time that you really want to do this? There
3   is reasons why you might want to do it from a
4   strategic standpoint. I think the questions
5   we got were more tactical in nature and I
6   think the answer to that was sort of probably
7   not.
8   MS. BEYER: Coming from a strategic
9   policy standpoint, my question is when the
10   opportunity like that exists, you know that
11   people are going to enter that market and
12   start offering it. That's my point. And if
13   people start quickly adapting it, I just
14   wondered what the impact that -- that you see

15   might be.
16   MR. MALERI: In the short term could the
17   dollar be going up? Absolutely.
18   MS. BEYER: That's not my question.
19   MS. PELLISH: You are asking whether
20   people will start implementing that kind of
21   policy?
22   MS. BEYER. Right. And if they are,
23   will that put pressure on others that aren't
24   doing it?
25   MS. PELLISH: So we are certainly
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 2   getting a lot of inquiry and there are some
 3   large institutional investors who are hedging,
 4   absolutely. But we haven't seen a groundswell
 5   of activity. And for those of you who have
 6   been in the industry a long time, you will
 7   recall that maybe ten years ago there was
 8   actually a part of the market that focused on
 9   providing both passive and active hedging of
10   currencies and that those firms have largely
11   stopped doing that.
12   MS. MARCH: Right. And if I remember
13   correctly, Robin, when we first did this, we
14   went through this whole exercise and the
15   decision was should we or shouldn't we and you
16   correctly advised us not to -- that you didn't
17   think it was right to do. And what I hear you
18   just saying is that the firms who thought it
19   was the latest hot gimmick -- gimmick is the
20   wrong word, but I will use it. The latest
21   gimmick to do was that and we did not do it.
22   MS. PELLISH: We didn't do it. Although
23   over the past couple of years if we had done
24   it, we would have looked very smart.
25   So the issue is -- so the issue here is
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 2   and I am going to take a little bit what Matt
 3   is going to say: If you think about this from
 4   a 10,000-foot perspective, there is broad
 5   agreement that the net return to currency over
 6   long periods of time is zero. So there is
 7   an -- and currencies are very volatile. So
 8   there is a question, which is: If the net
 9   return is expected to be zero and it's very
10   volatile, why would you hold that risk? You
11   are not making any money off it. And the
12   answer is -- and it's not a black and white
13   answer, but our answer after thinking about
14   this a long time is that currencies are very
15   cyclical. Sometimes you are going to make
16   money, sometimes you are going to lose money.

17   Hedging is always a cost and so let's not
18   incur the cost because we have a very
19   long-term perspective and therefore we can
20   ride the cycle, although the cycle could be
21   very long, as it has been, and painful. So
22   reasonable people can disagree on this, but we
23   have gotten, as I said, a lot of inbound
24   inquiry and Matt said that too. And we spent
25   a lot of time checking ourselves to make sure
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2   that we still have this conviction. And Matt
3   will go through the data and show really what
4   we are focused on is the cyclicality of
5   currencies and the fact that there is a cost
6   to hedging.
7   The last thing I want to point out is if
8   we were having this discussion ten years ago
9   we might have said, well, currencies add
10   diversification. But, in fact, what we have
11   seen over the last five, seven, maybe even ten
12   years is that there is already these global
13   macrocycles among developed markets and we no
14   longer argue that currency can be consistently
15   excepted to provide a high level of
16   diversification. Nor do we argue that even
17   investing globally provides a high level of
18   diversification. And in addition the emerging
19   markets, economies are very closely aligned.
20   And, you know, you sneeze in one place, you
21   get a cold in the other place right. So we
22   are not making this argument based on
23   diversification, which is something that has
24   changed over time as virtually all economies
25   around the globe have become much more closely
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2   interrelated.
3   MS. MARCH: Bring all the money home?
4   MS. PELLISH: Well, the argument for not
5   doing that is that you are missing a big chunk
6   of the world's opportunities.
7   MS. MARCH: Okay.
8   MR. MALERI: So maybe just to bring some
9   of those data points to life, we can spend
10   just a moment on pages 6 and 7 which speak to
11   the cyclicality of the currencies.
12   So page 6 just shows the dollars, the X,
13   Y index which really measures the dollar
14   against the euro, the yen, the Swiss franc,
15   all the major developed market currencies and
16   this is going back to 'late 60s. You can see
17   after periods of dollar strength, it's tended
18   to go in the opposite direction and it's

19 somewhat intuitive. If you think about, you
20 have probably seen a lot of the headlines the
21 dollar strengthening and, therefore, corporate
22 earnings in the U.S. have come under pressure.
23 So naturally it's led to -- it makes the
24 countries where the currency is weakened
25 should become more competitive and then

2 countries where the currency is strengthened
3 should become less competitive and, therefore,
4 there is this natural balancing act.
5 Companies in Europe can now export goods at a
6 much -- it's much easier for them to export
7 goods. So, again, we think there is this
8 natural balancing act to currency.
9 The other thing, which just to go back
10 to what Robin was saying earlier, should we
11 invest all in the U.S.? Companies are
12 becoming so global. The revenues are not just
13 in the U.S., expenses are not just in one
14 country. They are spread out across many
15 countries. So I think that's why markets have
16 become more correlated and why you still want
17 to maintain exposure to companies outside the
18 U.S.
19 MR. ADLER: But my question is:
20 Volatility itself is a negative for us and I
21 have heard it said that it's expensive to
22 hedge, but how much, how expensive? In other
23 words, is it worth the diminishing volatility
24 even if we end up in the same place?
25 We have always said that, you know,

2 ending up in the same place, it's better to
3 get there with a less volatile ride as opposed
4 to a more smooth ride. And the question is:
5 Is it a material cost that would have material
6 impact on our returns to do the hedge?
7 MR. MALERI: Well, the cost itself, no,
8 is not, especially for an investor of your
9 size. It's a bit small, in the order of a few
10 basis points. I think there is -- so that's
11 the -- you know, the explicit cost, if you
12 will. There are some other implicit costs in
13 terms of you have now added another
14 layer, another, you know, complexity to the
15 program that needs to be monitored. There are
16 questions that sort of need to be addressed in
17 terms of which currencies do you hedge, what's
18 the hedge ratio, is it 100 percent, how
19 frequently do you reevaluate the hedge. So it
20 does create sort of more time -- you know,

21 time, management, oversight for not only this
22 group, but on down to the staff as well as
23 Rocaton. So I think sometimes those costs
24 can't be ignored.
25 The other thing I would say to sort of
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2 address the point on volatility: So, yes, you
3 will see -- I guess if you flip ahead the
4 slide to page 8, you will see the differences
5 in volatility between various portfolios. The
6 top portfolio there which was about 15 percent
7 non-U.S. equity, that was sort of our proxy
8 for the Teachers' portfolio. So, yes, you can
9 see again this is sort of -- you know, take it
10 as a rough estimate. About 50 basis points of
11 additional volatility was measured by standard
12 deviation.
13 MS. PELLISH: Over?
14 MR. MALERI: Over the most recent period
15 and which may sound like a lot.
16 If you look at page 9 which shows
17 drawdown which I think is actually more what
18 you care about, it's not so much how far
19 things bump around, but in really bad periods
20 how much better off were we by hedging. And
21 this shows in 2008 you are roughly about 2
22 percent better by hedging. And, you know,
23 over almost all the other time periods, it's
24 virtually a wash. So, again, do you want that
25 added complexity as well as, you know, again
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2 somewhat very modest cost to say that in the
3 worst environment when we know there is a
4 million other things to deal with that could
5 save 2 percent, we might say it's not worth
6 it.
7 MR. EVANS: There are other alternatives
8 we have to bring down the volatility of the
9 portfolio as well, even some things that can
10 increase the return like real estate. Real
11 estate is an extra unit you bring down the
12 volatility more and you can actually get paid
13 for it.
14 MS. PELLISH: But someone else could
15 look at that chart and say I think it is worth
16 it.
17 MR. MALERI: That's -- I think that's
18 all. There is another -- few other slides in
19 here. I think I already touched on it.
20 I think for an investor of your
21 size -- we have another large investor
22 similar-type program in terms of their asset

23   allocation. They have decided to hedge all
24   non-U.S. currencies and we had a very lengthy
25   and great discussion with them. And for them

 2   it was -- we think it was the right decision,
 3   so...
 4   MS. PELLISH: So let me contrast. So
 5   you might say well, in what situation would an
 6   investor of your size? So they have actually
 7   a very similar level of assets to you and in
 8   what situation would it be appropriate given
 9   all this data to hedge your non-U.S. exposure?
10   And so anyway, so for that organization
11   they have no contributions coming in,
12   they -- and pay out close to something like 8
13   or 9 percent of their assets every year. So
14   for that organization, short-term volatility
15   is a huge deal and it's -- and if -- what they
16   are doing is they are spending down their
17   assets over the next 40 years without any
18   safety net. If they lose a lot upfront, then
19   the benefits just won't be paid at the end and
20   there is not much they can do about it. So
21   for that organization, smoothing risks to the
22   maximum extent possible while still generating
23   a reasonable level of return is paramount.
24   And so after a lot of back and forth they
25   always were 50 percent hedge, they decided to

 2   move to 100 percent hedge. I would say you
 3   are in a different situation where there are
 4   inflows you have an even longer horizon. You
 5   are not a plan with a fixed timeline. It's a
 6   perpetual timeline, in essence.
 7   MS. MARCH: Robin, you are giving us
 8   something else, the historical data. So why
 9   would I want to do it?
10   MR. ADLER: To smooth volatility.
11   MS. MARCH: Well, look at the historical
12   data, how much when we did it one moment in
13   time. We did it for a short moment in time.
14   John, when I started in 1984 and for the first
15   four or five years, I wasn't in the closet as
16   an indexer. I may leave here coming out of
17   the closet because it's moments in time that
18   you do well by paying all these high fees in
19   all of these little products that come in and
20   out over the years. I think our assets
21   invested in a fixed portfolio and an equity
22   portfolio at the lowest possible fees will
23   probably produce the same kind of event for
24   the one year that I smoothed the volatility.

25   I don't believe it's worth it because there
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2   could be ten years that it's hurting us. I am
3   tired of the press releases that talk about
4   our high fees when you can't make the world
5   understand that we have always been opposed to
6   that. And every time there is a new product,
7   there is a newer higher fee.
8   MR. ADLER: I hear Robin saying that
9   fees are really minimal and if I look at this
10   chart on page 7, you know, the volatility
11   seems, you know, pretty substantial. And page
12   6 too.
13   MR. EVANS: I think, John, this becomes
14   a bigger issue as currency-exposed countries
15   that are not in your portfolio, you are not
16   spending from, become a larger and larger part
17   of the portfolio. And you find many European
18   pension funds where most of their assets are
19   outside of their home country hedge. The
20   hedging while not costly on -- or on a
21   financial basis is possibly on an operational
22   basis. Posting collateral can be massive for
23   a large pension fund and problematic in
24   periods of crisis. And we have options to
25   reduce volatility, other than doing it here
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2   where there is no value that is going to come
3   from it. So you are paying -- you are getting
4   no return to reduce the volatility slightly
5   when you have other options that can reduce
6   the volatility in the portfolio, not this
7   piece of the portfolio but the whole
8   portfolio, and get paid for it. So that's why
9   when we do the asset allocation, we are
10   looking for different mixes of assets that
11   help dampen the overall portfolio rather than
12   trying to extract it with a hedging program.
13   So we concur with the outlook that has
14   been expressed by Rocaton. The argument for
15   tactical hedging is different. This would be
16   the absolute wrong time to put a hedge -- the
17   folks that are hedged tactically are thinking
18   about unwinding it because the dollar is
19   extremely strong. Every emerging market
20   currency is in the tank and it would be a big
21   re-call right now, but this wouldn't be the
22   time -- it would be a bad cyclical time to put
23   a hedge on, as Robin said.
24   MR. KAZANSKY: What percentage of our
25   total fund would be affected by this?
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2 MS. PELLISH: So if you look at the
3 report, if you look at page 8, the top line
4 roughly describes your portfolio today. So we
5 are focusing on the 15 percent non-U.S.
6 equity.
7 MR. FULVIO: I would go further to say
8 about half of that 15 percent emerging
9 markets, which you couldn't really hedge at
10 this point.
11 MS. PELLISH: So that's why even though
12 the currency is very volatile, because it's
13 an -- it's a modest percentage of your
14 portfolio you don't see all that volatility go
15 through. But volatility is absolutely a cost
16 and this is why we have had a lot of debates
17 internally at Rocaton, because it's not an
18 obvious decision. But at the end of the day,
19 we think the additional complexity just isn't
20 warranted for a fund with a 40, 50-year time
21 horizon. But it's a judgment call.
22 So should we move on to the next topic?
23 MR. MALERI: So the next topic, and
24 again as Robin pointed out was a response to
25 perhaps a question that came up last time with
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2 the asset allocation work, speaks to emerging
3 markets. Again, another one of those topics
4 where we spent tons of man hours trying to
5 figure out what's the right answer. I think
6 just at the high level, you know, Rocaton sort
7 of has a value philosophy of value mentality,
8 meaning when assets are cheap you should want
9 to own more of them. So emerging markets are
10 the classic value trap. They were cheap, they
11 got cheaper and they are cheaper today, so the
12 good news you have got -- personally if you
13 have got a 25, 30-year horizon probably, a
14 good time to buy. But that doesn't solve
15 problems in the short term. So one of the
16 questions we have gotten from folks such as
17 yourself or their clients, what if you are
18 wrong, what if this is a new regime? Emerging
19 markets don't have high growth rates, they
20 don't have this competitive advantage, what if
21 things go back to 20 years, 30 years ago when
22 they were emerging markets for a reason? And
23 what impact does that have on your outlook and
24 how much you might invest in emerging markets?
25 So we tried to stress test our capital market
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2 assumptions to see, okay, what would that say

3 for the asset class itself, but then what
4 impact would that have on the portfolio.
5 So page 13, just to -- and 14 even if
6 you want to see, if you like the chart better,
7 just to sort of tell you what we thought. So
8 the Rocaton baseline forecast we use PEs,
9 price earnings ratios. That's our measure of
10 value and basically what -- the way we handle
11 this, we set what we think is normal, what is
12 fair value. We do this for U.S. and non-U.S.
13 developed markets, but in the case of emerging
14 we say what do we think investors should pay
15 to own emerging market equities and then we
16 look at where we are currently. So at a high
17 level, we think about 17 times earnings is
18 fair value for emerging equities. As of
19 yearend we were trading about ten times, so a
20 touch lower today. So what does that
21 translate to? On page 13 you see the column
22 baseline, which is the second column in.
23 MS. PELLISH: So these are trailing,
24 these are adjusted.
25 MR. MALERI: It's a measure we use

2 called cyclically adjusted fees, so puts back
3 a trailing ten year. Robert Schiller
4 pioneered this methodology. So looking again
5 the table on page 13, you can see baseline is
6 Rocaton's current capital market assumptions
7 which assumes we get that inversion, assumes
8 that emerging markets trade from current PE of
9 about 10 all the way back to about 17. And
10 that happens sort of over a three to five-year
11 period. And you can see the three, five and
12 ten-year return forecasts that were generated
13 from that mean reversion occur, so pretty
14 attractive.
15 So now the question we have posed and
16 the work we have done says: What if we don't
17 get full mean reversion, what if we only go
18 about halfway back so instead of going from 10
19 to 17, we go from 10 to 14? And the last
20 scenario we posed is: What if we don't get
21 any mean reversion, what if emerging markets
22 really are in a regime change and earnings
23 don't pick up, prices doesn't revert and we
24 are sort of stuck in this regime shift? So
25 you can see the two additional columns, it's

2 hopefully fairly intuitive. 50 percent mean
3 reversion falls almost exactly in between and
4 the no-mean reversion, you can see what the

5 forecast are there. That column essentially
6 is in line with what you would expect from
7 developed markets, so U.S. and non-U.S.
8 developed markets. That sort of a long-term
9 equity risk premium of about 7 percent and
10 that's shown visually.
11 You can see -- on page 14 you can see
12 where we have come that PE ratios are falling
13 for close to four years now and the three
14 forecast paths, one where nothing changes and
15 then two where we get some level of reversion
16 back towards normal levels.
17 So flipping ahead just you can see first
18 on page 15, this is -- you have sort of
19 already seen this, how does the asset class
20 differ under three and five years scenarios.
21 But I think perhaps more instructive is
22 page 16, which shows the current New York City
23 Teachers' policy target portfolio and then the
24 expected return for that portfolio under those
25 three different scenarios under different time

2 horizons. So the baseline you can see is the
3 far left column; three years 6 percent, five
4 years 6.3, ten years 6.8. And you can see
5 that despite the fact that emerging market
6 equities are a relatively small part of the
7 portfolio, the three different stress
8 scenarios that we presented have a fairly
9 meaningful impact on what you can see expect,
10 particularly over the three years. You can
11 see that they're less over ten years. But
12 it's -- a legitimate question, something we
13 have tried to ask ourselves is: What if we
14 are wrong, what if emerging market
15 equities -- we are in the new regime, they
16 never rebound and what does that mean for the
17 outlook? So we try to use this frame work to
18 question our assumptions and say here is the
19 risk that we are wrong. So hopefully this
20 sheds some light on the process.
21 MR. EVANS: When you do this do you
22 change your expected PEs for the developed
23 market and isn't that sort of unrealistic to
24 do because the factors that would make it
25 permanently lower emerging markets PE would

2 have to eventually make a permanently lower
3 developed markets PE? Because so much of the
4 world's incremental demand is coming from
5 emerging markets, it's not possible to have
6 the gap in PE that we have.

 7 MR. MALERI: That is a very fair point
 8 and something we can look at.
 9 MR. EVANS: It would make it a lot
10 worse.
11 MS. PELLISH: The numbers would be
12 lower.
13 MR. EVANS: A lot worse.
14 MS. PELLISH: Yes.
15 MR. MALERI: I would say one thing that
16 is maybe an offset to that is the U.S. markets
17 had a great run, as we all know. Non-U.S.
18 developed markets have not had a great run, as
19 we all know. So if you just take the
20 developed markets separately, there is perhaps
21 some balancing there. U.S., maybe things slow
22 down a bit. And non-U.S. developed markets,
23 things pick up. So those balance each other a
24 little bit, but you are right. If we make
25 this sweeping assumption, lower PEs across the

 2 board then, yes, it looks bad.
 3 MR. EVANS: So what you are doing is
 4 making a hostile assumption towards emerging
 5 markets almost unrealistically biased against
 6 emerging markets?
 7 MR. MALERI: Yes.
 8 MS. PELLISH: But it basically brings
 9 emerging markets return expectations down to
10 that of developed U.S. And the point is if
11 you go to the next page, the basket clause is
12 a very limiting factor. So do you want to
13 talk to the next page?
14 MR. MALERI: Yes. So page 17 basically
15 what we did is we ranked two different
16 frontiers which they are virtually on top of
17 each other so perhaps not that helpful, but I
18 can tell you what we did. We ran one which is
19 the baseline, that very high -- rosy high
20 return expectation for emerging markets and
21 then we ran another version which is
22 essentially the no-mean reversion example
23 where we are saying the returns are equal to
24 developed markets equities. And you can see,
25 as Robin pointed out, the basket clause is the

 2 limiting factor. So even if we have very high
 3 expectations for emerging markets or normal
 4 expectations, you are sort of constrained
 5 across the frontier in terms of how much you
 6 can actually allocate to emerging market
 7 equities. This is just showing sort of the
 8 total portfolio expectations. We actually are

9   able to see down into how much does the
10   frontier take from emerging markets versus
11   developed markets and it's virtually the same
12   in all cases. It's -- again, the basket
13   clause sort of limits how much you can take
14   anyway and sort of what we found the optimizer
15   is doing is it's saying well, if I can't take
16   emerging I will take developed, if I can't
17   take developed, I will take emerging. So it's
18   kind of a tradeoff anyway because both
19   developed non-U.S. equity and emerging equity
20   are in the basket clause. The optimizer is
21   sort of indifferent. It will choose either
22   one depending, how much we allow it to have.
23   So that's the overriding factor here.
24   MS. PELLISH: So just to say one last
25   thing which is: So it's a great question
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2   about emerging markets and if emerging markets
3   stay at this level for pricing, then the
4   returns for the total portfolio will suffer
5   significantly. For emerging markets
6   particularly will suffer, but as Scott pointed
7   out they are going to be an effect across the
8   globe and we will be in the middle-single
9   digits rather than upper-single digits for
10   expected returns.
11   And then I think the other important
12   conclusion is given the basket clause, we can
13   change our assumption and not -- that will
14   change our projected returns, but it won't
15   significantly change the asset allocation
16   because of the basket clause.
17   MR. EVANS: Basically what this is
18   showing us: If you assume emerging markets
19   can't do to what we think they are going to
20   do, can't come up with it, they will be much
21   worse than domestic markets. There is no
22   place the basket clause will allow us to go
23   that can improve the risk reward, even if we
24   assume away emerging markets. So there is
25   certainly the opportunity to return to normal,
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2   but it's not -- and it's certainly not going
3   to cost us a lot not to play. So it's as if
4   you are sort of a mean-reversion person, it's
5   as fat a pitch as you can imagine. The world
6   may be fall apart, but there will be another
7   big shoe to drop in terms of valuations of
8   developed market if that happens. So it's
9   a -- you know, it's sticking out pretty far in
10   terms of something that deserves an

11   intermediate term for five to ten-year
12   overweight, which is what these guys are
13   recommending and I think their arguments are
14   strong.
15   MR. MALERI: Around the world in 30
16   minutes. So the last topic we wanted to
17   address again as a response to a question that
18   came up last time is as part of the asset
19   allocation study, which as everyone knows we
20   are proposing moving to long-duration
21   government bonds, long-duration treasuries.
22   So one of the questions I think we got
23   was: Okay, moving a large portion of a
24   portfolio to treasury bonds which have the
25   ultimate -- are unexciting at this point, to

 2   say the least, and also it certainly increases
 3   the duration, what's the best way to do that;
 4   aren't we -- are we buying rates at a low
 5   point? To set that part of the question
 6   aside, I would say we faced that question head
 7   on for ten years, at least in the almost ten
 8   years I have been at Rocaton. And we continue
 9   to be proven wrong, which is rates continue to
10   fall and continue to do well.
11   The other part of it, which we -- I
12   think will always believe in no matter what
13   point we get to at rates is the
14   diversification benefits of treasuries. So I
15   don't know what the numbers are as of
16   yesterday, but I know I looked about a week
17   ago. Equities were down call it 6, 7 percent
18   total equities year to date. Long treasuries
19   were up about 10 percent. So six, seven weeks
20   doesn't make the case, but we saw it in 2008,
21   we saw it in 2011, we have seen this pattern
22   emerge where long treasuries are the one asset
23   that just provides this flight to quality in
24   times of crisis.
25   And the other thing which maybe Scott

 2   addressed in a comment earlier, you get paid
 3   to take that risk so it's not a tail hedge
 4   where you are buying insurance. Yes, the
 5   yield is not exciting, but you are getting
 6   paid hopefully to get that diversification
 7   benefit during times of equity market stress.
 8   MR. EVANS: I am going to let you
 9   finish.
10   MR. MALERI: So the question that I
11   think we are trying to address today, we can
12   certainly come back to the broader or long

13 treasury conversation, is: How would we move
14 from the current core plus 5 portfolio to a
15 long-duration treasury portfolio and do it in
16 a thoughtful manner?
17 So page 22 starts to outline -- this is
18 somewhat a sample. It gives you a sense of
19 how we think about this issue. There are sort
20 of two ways to tackle the problem. One is you
21 can see simply say we want to wait until
22 interest rates are higher and, therefore, buy
23 long treasuries at more attractive yields.
24 Very reasonable thing to say. The challenges,
25 we all know, is you could actually be waiting
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2 a long time to actually buy those treasury
3 bonds. So what we typically do in this case
4 is we pair that part of the schedule with a
5 time-based schedule, a date schedule. So you
6 will see on page 22, we list out how you would
7 step out of core plus 5 and into long
8 treasuries. We are suggesting in this case
9 four movements. Could be five, could be
10 three, the number is somewhat arbitrary, but
11 the point is that you want to -- even absent
12 of rates, you want to lay out offer time. So
13 what we have done here is we said essentially
14 every six months, you would start to lay out
15 part of the portfolio. If rates move higher
16 over a shorter period of time, you would do it
17 sooner. So if you woke up tomorrow and
18 interest rates were 100 basis points higher,
19 you might want to accelerate that transition.
20 If we stay in this low interest rate
21 environment or if rates go lower, you should
22 just simply adhere to the date schedule. You
23 would take every six months, 4 or 5 percent of
24 the portfolio from core plus 5 into long
25 treasuries. And again if the world changes
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2 and you can go out and buy long bond at 4,
3 4-1/2 percent yield, you might do this sooner.
4 So that's the basic premise. Obviously
5 we can refine the dates and the exact treasury
6 levels, yield levels that we would take these
7 stuff on, but that's the idea at a high level.
8 And we would -- again, we would suggest laying
9 out core plus 5 and into long treasuries
10 regardless of a view, but this hopefully helps
11 speed up or slow down the transition.
12 MR. ADLER: If I am remembering
13 correctly, the asset allocations from last
14 time didn't actually go to 100

15 percent -- didn't transition the core plus 5
16 to 100 percent long on treasuries; you went 50
17 percent long on treasuries and 50 percent long
18 on credit?
19 MS. PELLISH: Right. That's right. So
20 you can -- we are focusing on treasury here,
21 but it could be long treasury, long corporate.
22 You are absolutely right.
23 MR. EVANS: 100 percent of the desired
24 position?
25 MS. PELLISH: Yes.
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1 Proceedings
2 MR. EVANS: It's a dollar cost-averaging
3 process with a rate accelerated?
4 MS. PELLISH: That's exactly right.
5 MR. FULVIO: And that bodes well just
6 given the current market environment,
7 corporate debt with a spread of about 200 over
8 treasuries at this point.
9 MR. MALERI: Pretty attractive.
10 MR. FULVIO: Pretty attractive range.
11 MR. EVANS: You have like a spread
12 accelerator.
13 MS. PELLISH: You could. We have
14 clients that do that as well. That's a third
15 dimension.
16 MS. BEYER: We had talked in January
17 about looking at the last 15 years at the long
18 treasuries and the impact of outside of the
19 U.S. investments in long treasuries and you
20 were going to come back with some data that
21 showed trend or -- because it could have an
22 impact if the non-U.S. buyer of long treasury
23 suddenly evaporated and wasn't in the market.
24 MR. MALERI: That's a very fair point.
25 Anecdotally, we still believe that there is
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2 strong demand from foreign hires. The other
3 thing, we wrote a piece on this not too long
4 ago, just a week or two ago: If you look at
5 yields outside of the U.S., in many cases they
6 are negative. But barring negative rates,
7 they are actually much lower. So look at
8 Germany, Japan, even other parts of Europe,
9 Spain, France, Italy, they all have rates that
10 are lower than the U.S. So we think that
11 actually continues to drive the brand. If you
12 are a non-dollar investor, a foreign investor
13 and your choice is 20 basis points for a
14 German ten-year bond or a 180 basis points for
15 a U.S. ten-year bond, it may seem obvious
16 there is probably other reasons for making

17   that decision. But we can't see why investors
18   would continue to buy U.S. treasuries with
19   that type of disparity. And you are talking
20   in the case of Germany and the U.S., two very
21   high-quality borrowers. So it's not that
22   there is a credit mismatch there, but it's a
23   good question in terms of: If they go away,
24   what happens to rates?
25   MS. BEYER: And the other part of the

 2   question was: What was it like in the last 15
 3   years; how rapidly did they come in as
 4   purchasers and has that trend changed?
 5   MS. PELLISH: You did ask that and we
 6   will follow up at the next meeting.
 7   MR. EVANS: So quick question: When you
 8   did your scenario analysis and it came out
 9   with a 5 percent worst scenario, 5 percent
10   best scenario, would you constrain the heights
11   that the line could get to by basically
12   putting a minimum rate at zero, for instance,
13   or did you allow rates to go very negative
14   which might be producing sort of unrealistic
15   correlation?
16   MR. MALERI: No. No, that's a good
17   question. So when we built or I was involved
18   early days in building out the capital markets
19   model about eight years ago at this point, we
20   set a floor at various points on the yield
21   curve for how low treasury yields can go. So
22   I think for the ten year we said maybe 1
23   percent. They are somewhat arbitrary, but
24   seemed practical at the time. But we
25   have -- actually, we have sort of gone back

 2   and said gosh, our floor is at 1 percent
 3   on -- so we don't allow it to go negative at
 4   all points on the curve. I think for the very
 5   short end, like the one-year treasuries which
 6   they can go negative 50 basis points, we
 7   do -- as you go further along on the yield
 8   curve, we do have floors in place every ten
 9   years.
10   MR. EVANS: What's the --
11   MR. MALERI: Probably 50 basis points
12   so -- and 1-1/4 point lower, so we are
13   cognizant of that.
14   MR. EVANS: So as the mayor's office
15   certainly knows and as I said before, we
16   have -- we are doing asset allocation for all
17   five boards right now and we have five
18   consultants weighing in. And for the most

19   part people generally agree on their
20   assumptions and the differences don't make
21   that big of a difference. They have slightly
22   different assumptions about opportunistic real
23   estate versus core real estate. Kind of comes
24   out in the wash.
25   MS. MARCH: Workforce real estate in
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2   there?
3   MR. EVANS: As you know, Sandy, we have
4   got workforce real estate in our portfolio.
5   It's a main feature.
6   MS. MARCH: Is it in the computer in the
7   models?
8   MR. EVANS: It's absolutely part of the
9   asset class and so this is different. This
10   assumption about long treasuries is different
11   and the major difference is the assumption
12   these guys are going through on the
13   correlations. Recently there has been a lot
14   of negative correlation. If you look at
15   shorter periods of time, very negative
16   correlation between equities and long-term
17   treasuries. And when Rocaton puts that into
18   their model, they put a minus .4 correlation
19   in. When the others use similar models, they
20   are putting much, much lower negative
21   correlation in. Negative correlation is a
22   very rare property and the optimizer is going
23   to go to it like a heat-seeking missile, so
24   becomes a critical assumption.
25   Rocaton has extreme assumptions, extreme
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2   relative to the other consultants, so we are
3   going to have a big meeting with all five
4   consultants to which any one of the trustees
5   that wants to come is welcome. It's going to
6   be a very technical discussion, but you are
7   welcome to come. We are going to go through
8   the assumptions underneath the correlation
9   properties, similar things we talked about
10   here. And BAM is going to have to come out
11   with a sort of BAM view to talk about it
12   across the five boards. So it's probably the
13   most important topic in our asset allocation
14   discussions when we go to recommend an
15   allocation going forward, so this will take
16   place in the next couple of weeks. We will
17   certainly let you guys know about it. You
18   don't have to come, but you are certainly
19   welcome.
20   MS. PELLISH: So I think that concludes

21 the public session.
22 MS. MARCH: No, I don't have a question.
23 MR. ADLER: Any other issues for public
24 session?
25 Okay, is there a motion to go into

2 executive session?
3 MS. VICKERS: So moved.
4 MS. BEYER: Second.
5 MS. MARCH: We are in executive session.
6 We have a move and a second. Pursuant to
7 Public Officer Law Section 105, I move that we
8 go into executive session for discussion
9 regarding the purchase and sale of securities
10 and updates on specific investment managers.
11 MR. ADLER: Thank you. Is there a
12 second?
13 MS. VICKERS: Second.
14 MR. ADLER: Any discussion? All in
15 favor of the motion to go into executive
16 session, please say aye. Aye.
17 MS. VICKERS: Aye.
18 MR. BROWN: Aye.
19 MS. MARCH: Aye.
20 MS. BEYER: Aye.
21 MR. KAZANSKY: Aye.
22 MR. ADLER: Opposed? Any abstentions?
23 Okay, so we are done with public session.
24 Move to executive session.
25 (Whereupon, the meeting went into executive session)

1 MR. ADLER: Okay, any other questions
2 for Susan?
3 Okay, so I think that concludes the
4 executive agenda. So I think a motion would
5 be in order to exit executive session and
6 return to public session.
7 MS. MARCH: So moved.
8 MR. ADLER: Is there a second?
9 MS. BEYER: Second.
10 MR. ADLER: Motion has been moved and
11 seconded. Any discussion? All in favor of
12 the motion to exit executive session and
13 return to public session please, say aye.
14 Aye.
15 MS. VICKERS: Aye.
16 MR. BROWN: Aye.
17 MS. MARCH: Aye.
18 MS. BEYER: Aye.
19 MR. KAZANSKY: Aye.
20 MR. ADLER: Any opposed? Any
21 abstentions? Okay, we are done with executive
22 session.

23   (Discussion off the record.)
24   MR. ADLER: We are back in public
25
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1   session. Susan, will you report out public
2   executive session, please.
3   MS. STANG: Yes.
4   In executive session there was a further
5   discussion on asset allocation study update on
6   a very specific security issue. There was a
7   presentation from an emerging market manager
8   for the pension fund. An exception to the IPS
9   infrastructure asset class in the pension fund
10   was discussed. Consensus was reached which
11   will be announced at the appropriate time.
12   There were also several manager updates in
13   both pension and variable funds that were
14   presented and there was an update on a very
15   specific procurement issue.
16   MR. ADLER: Very good, thank you. So I
17   think that concludes our business for today.
18   Is there a motion to adjourn?
19   MS. MARCH: So moved.
20   MR. ADLER: Is there a second?
21   MS. VICKERS: Second.
22   MR. ADLER: Any discussion? All in
23   favor of the motion to adjourn, please say
24   aye. Aye.
25
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1   MS. VICKERS: Aye.
2   MR. BROWN: Aye.
3   MS. MARCH: Aye.
4   MS. BEYER: Aye.
5   MR. KAZANSKY: Aye.
6   MR. ADLER: Opposed?
7   Okay, the motion carries. Thank you
8   very much.
9   [Time noted: 12:19 p.m.]
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1 Proceedings
2 C E R T I F I C A T E
3 STATE OF NEW YORK)
4 : ss.
5 COUNTY OF QUEENS)
6
7 I, YAFFA KAPLAN, a Notary Public
8 within and for the State of New York, do
9 hereby certify that the foregoing record of
10 proceedings is a full and correct
11 transcript of the stenographic notes taken
12 by me therein.
13 IN WITNESS WHEREOF, I have hereunto
14 set my hand this 7th day of March, 2016.
15
16
17 ______________________
18 YAFFA KAPLAN
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