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         NEW YORK CITY TEACHERS' RETIREMENT SYSTEM
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                     INVESTMENT MEETING
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    Held on Thursday, May 3, 2018, at 55 Water Street,
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     New York, New York
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   ATTENDEES:
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      JOHN ADLER, Chairman, Trustee
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      THOMAS BROWN, Trustee
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     DEBRA PENNY, Trustee
15
     ANTONIO RODRIGUEZ, Mayor's Office
      SUSANNAH VICKERS, Trustee, Comptroller's Office
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17
      DAVID KAZANSKY, Trustee
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     RAYMOND ORLANDO, Trustee
19
      PATRICIA REILLY, Teachers' Retirement System
    MELVYN AARONSON, Teachers' Retirement System
JOHN DORSA, Comptroller's Office
20
22
     MICHAEL HADDAD, Comptroller's Office
23
     REPORTED BY:
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    YAFFA KAPLAN
     JOB NO. 0611106
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   ATTENDEES (Continued):
     SUSAN STANG, Teachers' Retirement System
      RON SWINGLE, Teachers' Retirement System
 5
      MICHAEL FULVIO, Rocaton
      MATT MALERI, Rocaton
 6
 7
      ROBIN PELLISH, Rocaton
 8
      THAD McTIGUE, Teachers' Retirement System
9
      VALERIE BUDZIK, Teachers' Retirement System
     LIZ SANCHEZ, Teachers' Retirement System
10
     SHERRY CHAN, Office of the Actuary
11
     DAVID LEVINE, Groom Law Group
12
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     SANFORD RICH
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           MR. ADLER: Good morning. Welcome to
     the Teachers' Retirement System of the City of
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     New York Investment Meeting for May 3, 2018.
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           Thad, will you place call the roll?
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           MR. McTIGUE: Thank you, Mr. Adler.
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           John Adler?
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           MR. ADLER: I am here.
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           MR. McTIGUE: Pleasure to see you.
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           MR. ADLER: Thank you. The pleasure is
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     mine.
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           MR. McTIGUE: Thomas Brown?
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           MR. BROWN: I am here as well.
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           MR. McTIGUE: David Kazansky?
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           MR. KAZANSKY: Present.
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           MR. McTIGUE:
                         Debra Penny?
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           MS. PENNY: Here.
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           MR. McTIGUE: Raymond Orlando?
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           MR. ORLANDO: Here in my new seat.
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           MR. McTIGUE: We hope you are
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     comfortable.
22
           MR. ORLANDO:
                        I truly am.
                                      Love it.
23
    Never leave it.
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           MR. McTIGUE: And Ms. Susannah Vickers?
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           MS. VICKERS: Here.
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           MR. McTIGUE: We have a quorum, sir.
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           MR. ADLER: Thank you so much.
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           And with that, I will turn it over to
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     our friends at Rocaton to take us through the
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     public agenda.
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           MR. FULVIO: Good morning, everyone. I
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     would just like to start by quickly
     apologizing for the delay in getting out some
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     handouts in advance and we will strive to do
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     that more quickly and more well in advance
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     than yesterday, but some of the materials were
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     delayed for a variety of reasons. But, in any
     event, let me know if there is anything that
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     could be helpful on that.
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           We will start off with the performance
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     for the Passport Funds through the month of
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     March. The Diversified Equity Fund with about
     $15.3 billion at the end of March was down
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     about 1.8 percent and really what drove
21
     performance for that month was negative return
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     by about 2 percent for U.S. equity markets.
23
     Abroad there was also some weakness in equity
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    markets with developed non-U.S. markets down
2.5
     about 1.8 percent during the month and the
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custom proxy for emerging markets that we use here was down about 1.1 percent. So you can 4 see that really drove the negative absolute returns on. On the bright side, the defensive 6 composite did protect somewhat by posting a 7 less negative return to the tune of about 8 negative 60 basis points. So, you know, not 9 capturing all that downside. Year to date, 10 the Diversified Equity Fund has a return of 11 about negative 75 basis points, roughly in 12 line with both benchmarks that we use for 13 that. And the other composites are all 14 roughly in line with their respective proxies 15 as well. 16 The Balanced Fund at the end of March 17 was about \$380 million. That fund had a 18 modest negative return of about 30 basis 19 points during the month that brought the 20 calendar year-to-date return to negative 60 21 basis points, not far from the Diversified 22 Equity Fund. 23 The International Equity Fund assets 24 were about \$150 million at the end of the 25 month. That fund was down about 1.7 percent, 0006 1 Proceedings 2 roughly in line with its benchmark, and year 3 to date that fund is down about 1-1/4 percent. 4 The Inflation Protection Fund with 5 assets of about \$60 million, that added about 6 80 basis points return in during the month. 7 That brought the year-to-date return negative 73 basis points. And so far year to date, 8 what's been a little bit of a drag on the 9 10 performance there has been performance of 11 REITS and TIPS. And a lot of that has been 12 offset by the stronger performance we have 13 seen in commodities year to date. 14 On the Socially Responsible Equity Fund, 15 that fund had about \$190 million in assets. 16 At the end of the quarter, return there was 17 negative 1.7 percent for the month as well 18 ahead of the S&P 500 Index which was the 19 benchmark for that strategy. 20 Year to date overall fund option is up 21 about 60 basis points, which is about 140 22 basis points ahead of the S&P. 23 So I will pause there and see if there 24 are any questions. 25 MR. ORLANDO: I have a question. 0007 1 Proceedings

2 MR. ADLER: Mr. Orlando.

3 MR. ORLANDO: So I am looking at the

4 Diversified Equity Fund returns and they just 5 appear to be lagging by 80 to 100 basis points over all periods. And that sort of -- this is 6 7 the first time I noticed that. I guess maybe 8 it's my new prescription on my eyeglasses, but 9 I am just wondering if there is any light you 10 can shed on that, because that seems not 11 significant but also not insignificant to me. 12 MS. PELLISH: Yes. So there are a 13 couple of sources. The primary source for 14 that is really the actively-managed U.S. 15 equity composite. And, if you recall, we 16 recalibrated our approach to that composite. 17 We reduced it in the recent past and we also 18 developed a perspective that we don't 19 necessarily have to fully implement that 20 target and that we will do so where we find 21 particularly compelling ideas. So that is 22 something that we have observed for quite some 23 time now, and particularly in the U.S. equity 24 markets it's been a very difficult market for 25 active managers to add value. 8000

Proceedings

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MR. ORLANDO: Not to ask you to take out your crystal ball, but do you think over the next year or three years the decision to not maximize active management in the U.S. is going to result in seeing -- is the ship going to turn?

MS. PELLISH: Well, we have been waiting for it to turn for a long time, so potentially and actually if you look -- if you look at very recent -- well, I can't say that. There has been a gradual improvement in terms of many -- if you look at just peer groups, the median active U.S. equity manager relative to benchmarks has been an improvement in relative return. And what has been difficult for -active managers really only can add value if there is disparities in, you know, what they call cross-sectional volatility. So stocks behave very differently within the universe. When you have a market where everything is going up, it's difficult to add value by doing research and distinguishing among securities.

So to the extent that volatility stays at close to historical levels and there is

Proceedings

greater disparity among performance with recognition of different stock valuations, that's where active equity managers should add value. So I do think there is potential for

6 active U.S. equity managers to add value going 7 forward and I think they should start doing 8 that very soon. 9 MR. ORLANDO: Given how long the current 10 growth period is and the forecast of rising 11 rates, can you opine on the likelihood that 12 there will be more volatility and therefore 13 some hope in this sort of ship turning? 14 MS. PELLISH: Yes, I think you have seen 15 an increase in volatility and we have long 16 thought that particularly once -- and Mike 17 will talk about this in his part of the agenda 18 -- with QE abating and what some terms of 19 artificial support for risk assets abating 20 that volatility should continue at closer than 21 historical levels. 22 So I do think there are reasons to think 23 that there will opportunities for managers to 24 add value by distinguishing among securities 25 within the U.S. equity market. I do think 0010 1 Proceedings 2 that is possible and that's largely the reason why we have retained any active U.S. equity 3 4 management within this portfolio. 5 MR. ORLANDO: Thanks. 6 MR. ADLER: Other questions for Mike on the -- are you done with your presentation? 7 8 MR. FULVIO: I was going to comment 9 briefly on April. 10 MR. ADLER: Oh, April. I meant on the March. Any other questions on March for the 11 12 quarter? 13 Okay. Go for April, please. 14 MR. FULVIO: Great. 15 Well, U.S. equity markets in April were 16 modestly positive, just shy of about half of a 17 percent. The broad international composite 18 benchmark that we use for Variable C and 19 within the Diversified Equity Fund, that was 20 up about 2 percent with particular strength 21 from developed markets and developed small 22 cap, excluding U.S. emerging market had a 23 modest positive return to the tune of about a 24 quarter percent. The defensive was roughly 25 flat and all told we expected the Diversified 0011 1 Proceedings 2 Equity Fund, given its benchmark performance, 3 was up about 70 basis points during the month. 4 So calendar year to date, the fund should be 5 roughly flat in terms of absolute return. 6 The Balanced Fund during the month would

have been down about 30 basis points -- I'm

sorry, would have been flat also during the 9 There was obviously pullback within month. 10 short-duration fixed income markets given the 11 rising yields, but also the incremental performance from global equity markets would 12 13 have served that fund well. Year to date that 14 fund was down by about half a percent. 15 I commented on international equity 16 markets during the month. The underlying 17 strategy for the Inflation Protection Fund 18 should have been about 80 basis points during 19 the month, bringing the year-to-date return 20 there to also about zero flat for the calendar 21 year-to-date period. 22 And the underlying strategy for the Socially Responsive Equity Fund added about a 23 24 quarter of a percent, bringing the year to 25 date positive to the tune of roughly 70 basis 0012 1 Proceedings 2 points. 3 MR. ADLER: Questions for Mike on April? 4 Okay. We will go on. 5 MS. PELLISH: You want to go on to the 6 next agenda item? 7 MR. ADLER: I think so, yes. 8 MS. PELLISH: Mike Haddad is here to 9 provide a further insight into some of the 10 topics that were addressed at the most recent 11 CIM. And he is really going to talk in detail 12 about the most significant aspects of the 13 asset allocation strategy within the Teachers' 14 Pension Fund going forward. 15 So Mike. MR. HADDAD: So there are two handouts 16 coming your way, one titled "Asset Allocation 17 18 Review" and other entitled "Asset Allocation Review Global Macro Update." The asset 19 20 allocation review are the slides you saw from 21 Scott on your portfolio as of 3/31. Same 22 slides we took off the other four systems and 23 it's just your system on there. So let's set 24 that aside to start. We will refer to that 25 later and dig into the global macro update 0013 1 Proceedings 2 because that is, you know, what you heard me 3 rant about for a year now. MR. ADLER: We don't have it down here 4 5 yet. 6 MR. HADDAD: The one thing I would say,

as you know, I have too many slides.

couldn't cut them out, so please stop me along the way. Let's make this a dialogue rather

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than a presentation. I think that would better serve the purpose of what we are trying to get to.

So on the first page, on page 2, on the global macro review I tried to highlight how unique the environment is that we are in right now. I think interest rates are historically low. Equity markets are historically rich. And credit markets, which if we get to, I am going to try to scare you at the end about potential implications there.

And then within the rising rate environment, the real funds rate is still negative. And the real funds rate, reminder, is the funds rate minus inflation. It's very unusual to have a negative funds rate. It

Proceedings

usually has to get to plus 2 or something in a normal state and then even higher to slow down the economy. And despite 150 basis points of rate, it's still negative. That shows you how low we started with. Long-duration term premium which is a geeky bond thing, I have got a chart on that, that's negative.

Large fiscal stimulus that we talked about a little bit at the last CIM, it's coming and it's coming at a point in the cycle when the economy is running hot and the Fed is engaged in I am now calling it quantitative tightening. They are actually going from easing to tightening and then -- this is all theoretical and opinion, blah, blah, blah.

Let's get down to the concerns about your portfolio and that is the impact of the rising interest rates on the fixed income portfolio. Could that impact of rising rates be on the equity portfolio while it's historically rich, and then let's talk about the duration extension program that's in place, and then again my scare thing at the end about the credit markets if we get to

Proceedings

that.

So I want to go back over page 3, this equity market slide, because this one to me highlights the richness of the equity market. And this is independent of what we think about the bond market. We went through this before, but again this is a valuation that was put together by Goldman Sachs Asset Management. This isn't our genius thing. Five different inputs into the model. The model goes back

over 70 years and the inputs are pretty classical different types of valuation techniques. One uses on the broad equity market. I don't know how they are weighted, but that's what the model spits out.

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 The graph shows you ten different deciles, divides the time period -- the valuations into ten different deciles with the right side being the most expensive and the left side being the least expensive. And then what the blue bar shows is what the return has been over a five-year horizon post each of these decile valuation periods. And we are in the tenth decile on valuations and

Proceedings

historically -- history is only history, it doesn't necessarily predict forward -- returns have been terrible, .3 percent on average annualized. And the red dots shows you the number of observations within a given year when the equity market has been positive and you can see that red dot is somewhere around 35 percent when we are in this valuation period.

And the other takeaway from this is outside of the far left or the far right, returns are within norms, within expectations, and not really something I think that would consider us to rethink about the equity portfolio. But we are on that right decile and that's a big source of concern.

So let me pause there because this one is a key part of the view.

MR. KAZANSKY: So where were we two years ago if we were to look at this right? Because two years ago when we did our assets allocation study and we thought the bottom was going to drop out of the market any day and it didn't, where would we be on this chart?

1 Proceedings

MR. HADDAD: I don't know the exact answer. I am going to guess 8 or 9.

MS. PELLISH: So I don't know the exact answer either, but I think what you are pointing out is that this is not a new concern; this is not a new risk.

MR. KAZANSKY: Yes.

MS. PELLISH: And just as rising rates aren't a new risk, right, we have been talking about both of these things for a couple of years now. At some point, we will be right. I don't say that flippantly. I say that no

14 one who talks about these risks pretends they 15 can be precise as to timing.

MR. KAZANSKY: Right.

MR. HADDAD: And that gets into the unprecedented. We never had quantitative ease before, thus we never had quantitative tightening before. Never seen it, so this history has none of that. It has the easing in it; it doesn't have the quantitative tightening. We have had many Fed tightening cycles, so that's incorporated in that. We never had the removal of the quantitative 0018

Proceedings

easement before.

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Any other questions before I try and get through this?

Page 4, same chart. This speaks to valuations between the three main sleeves we have in your equity portfolio; U.S., EAFE and And the takeaway is U.S. is well above its three-year average, EAFE is right on it, and EM is below. So if we just allocate on valuations alone and ignored the antiquated basket clause, we want to shift into the other markets but we are constrained because of the basket clause.

So this slide I haven't shown you before on 5 and this gets to my point that I am going to try to get to here is how long rates are historically low. So the white line is nominal GDP. Nominal GDP, as a reminder, is real GDP plus inflation. And the red line is the ten-year yield. And one of these old rules of thumbs is that ten-year yields should approximately equal the nominal GDP. If you look at this chart going back in time, it's been above it and it's been below it, but it's

Proceedings

kind of in that neighborhood. I encourage you to ignore the downwards factor of the global financial crisis. You know, it was a collapse in GDP that came back. So if you smooth that out, you will see that the lines are somewhat similar. And post the financial crisis when QE started, we had the ten-year note significantly below nominal GDP and quantitative easement stopped. It's being reversed. It's being reversed at an accelerated pace and you can see the gap between the year and the ten-year note and where the nominal GDP is. So that speaks to a historical basis that the ten-year note is

16 very low in yield compared to where it has 17 been in the past. 18 The next slide on 6, this is one of the 19 geeky bond things. This is called U.S. 20 treasury term premium. And what term premium means is the additional yield you get for 21 22 buying long-duration fixed income securities 23 as compared to buying a short-term duration 24 security and rolling that over for the same 25 period of time. So more specifically, this is 0020 1 Proceedings 2 the yield on the ten-year note as compared to 3 the yield on the three-month bill and rolling 4 that three-month bill 40 different times. 5 said differently it's how much compensation 6 you are getting for the longer duration of 7 holding securities. And the takeaway, you can see it's historically extraordinarily low. There is also arguments as to why it should be 10 low and why it's not going to back to where it is, but even if it goes to something like plus 11 12 1 percent it's going to be very different. 13 And then the orange line is the S&P. 14 of the takeaways from this is you can see in 15 the period in the early 2000s when you get 16 rising term premium, that's usually rising 17 rates and what happens to the equity market 18 during that time. And the other takeaway is 19 when we have collapsing term premium, you can 20 see the ramp-up in the equity market. 21 MR. ADLER: So this is like -- I mean, I 22 don't know what, you know, the metric, but 23 this is like crazy. I mean, you look at this, 24 talking unprecedented. 25 MR. HADDAD: I wasn't going to show the 0021 1 Proceedings 2 S&P because of that gap now and I wouldn't 3 focus on that. What I really want is the 4 takeaway on the term premium and how you are 5 not -б MR. ADLER: That's unprecedented. 7 MR. HADDAD: We are not getting 8 compensated, yes. 9 MR. ADLER: Except for like 1960. 10 MR. ORLANDO: But that's a flat yield 11 curve, right? I mean --12 MR. HADDAD: Yes, it is partially flat 13 yield curve. It's also the total, the 14 absolute level as well. It's both of those 15 things. 16 MS. VICKERS: Okay. So the fact that 17 it's so low and we are not getting

compensated, we are taking a lot of money out for a long period of time, what's the next after that? Okay, so --

MR. HADDAD: This is going to be an argument that yields are very low and unlikely to go lower, probably higher. And it's also going to tie into -- one of the questions about TRS portfolio is what to do with the

Proceedings

duration extension plan during this period where we are concerned about rising rates. And then I will tie that into correlations between the equity market and the bond market in a second.

And then Slide 7, this is a shorter-term slide. This only goes from I guess May of last year to yesterday. And what I want to highlight is what happened on February 2nd.

MR. ADLER: What happened on February -- MR. HADDAD: February 2nd.

MR. ORLANDO: The groundhog saw its

MR. ORLANDO: The grounding saw its shadow.

MR. HADDAD: So as a reminder, we got the tax plan in December. We had all sorts of noise about it, so we had a period of time leading up to February where the equity market had an unprecedented January, rising yields both going the same direction and the rising yields were not bothering the equity market.

On February 2nd, in addition to the Groundhog Day, we had the employment number. And what was rattling to the markets about the employment number were upward revisions to

Proceedings

average hourly earnings as well as a very high average hourly earnings for that particular month. So the year-over-year number went from something, if memory serves, 23 to 29. And that did two things: It caused inflationary concerns that were beginning of the bond market to translate to the equity market and that's negative for equities, so that means it's got to raise rates more than we otherwise thought. And the second concern is if there is rising wage inflation, that's going to eat into profit margins. So it's a combination of the two things.

And you can just see from the visual here the break-in correlations. So we have had yields going up, equities going up, and on February 2nd yields continued higher at slower pace and the equity market that began its 10

20 percent correction. And then -- oh, I'm 21 sorry. The blue line is the S&P and the white 22 line is the ten-year, the yield on the 23 ten-year and then just in terms of measurement 24 things. So if you measure from Q4 to 25 yesterday, the ten-year was up 62 basis points 0024 1 Proceedings 2 and equities were up 4.2. So positive 3 correlation both moving the right way. measure from February 1st, do a three-month 5 measurement, ten-year is up 18 basis points 6 and the equity market minus 6.6 percent. So 7 it kinds of depends where you measure these 8 things on what the correlation looks like and, 9 you know, which market moves in front of the 10 other, you know, because the equity and the 11 bond market are not always focused on the same 12 thing. 13 MS. VICKERS: Ouestion. And I think 14 this shows you and I had conversations that 15 illuminates my misunderstanding of basic bond 16 math. 17 MR. HADDAD: Price and yield are 18 inversely related. 19 MS. VICKERS: That might be the answer, 20 but on page 6 the S&P which is orange and 21 which is going in one direction and the 22 treasury premium which I assume is similar to 23 the white line on 7, they are going on 24

opposite directions but on 7 they are going the same.

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Proceedings

MR. HADDAD: This is a sixty-year chart and the other one is the seven-month chart, so it's a span. That will wiggle up; that's that wiggle.

> MR. ADLER: And you see the wiggle down. MS. PELLISH: So can I interject one

thing. I just want to highlight the point Mike made because that is central to the thesis about taking sort of a -- pausing the long-duration investment plan.

If you believe that U.S. equities have a risk of declining, if you believe that U.S. interest rates are poised to rise, then what you are really concerned about is the correlation between those two phenomena. And the arguments underlying, the primary arguments underlying, the allocation to long-duration bonds in your long-term asset allocation strategy was that in periods of equity market crisis, long bonds often act as

22 a very effective hedge against U.S. --23 against equity market declines. And because 24 they -- and you can get protection against --25 you can buy hedges in other formats, but the 0026 1 Proceedings 2 benefit of long Treasuries is that they 3 actually pay you while you are holding them. And so the point that Mike just made 4 5 about correlations trending positive between 6 long bonds and equity markets mean that in a 7 scenario in going forward, there is a risk 8 that long bonds won't be an effective hedge 9 and, in fact, may -- may exacerbate the losses 10 that you realize in the U.S. equity market. 11 That is a really important point. 12 MR. HADDAD: Just to add on to what Robin said, and in periods of equity stress we 13 have to decompose what's causing the equity 14 stress. If it's, you know, a global financial 15 crisis like what we experienced, and the 16 17 negative correlations existed was a fabulous 18 piece of protection. If it's a period of 19 rising inflation, then it kind of depends 20 where we are in the cycle. And I will show 21 you a graph on that. 22 If it's -- let's do some hypotheticals going forward. You know, if war breaks out in 23 24 the Koreas, I am going to guess that the long 25 end is going to go down in yield. 0027 1 Proceedings 2 negative correlation is going to come back. 3 MR. PELLISH: So long bonds will, in 4 that case, be a good hedge. 5 MR. HADDAD: Yes. But where it's not a 6 good hedge is in periods where the economy is 7 running at full steam and the Fed is raising 8 rates to slow down the economy, but they both 9 go down. 10 So that gets to page 8. This is --11 MR. ORLANDO: I have a question. 12 MR. HADDAD: Yes. 13 MR. ORLANDO: My question is about wage 14 growth, which you noted was part of the 15 Groundhog Day incident. Is there some 16 expectation that wage growths will continue or 17 was it a one-off surprise I suppose, while I 18 keep asking crystal ball questions? 19 MR. HADDAD: The expectation. 20 MR. ORLANDO: I quess I am more likely 21 to believe wage growth in a different 22 political environment than the current one as 23 a long-term story even in an inflation

24 environment. 25 MR. HADDAD: You get to go back to geeky 0028 1 Proceedings 2 economics, the slopes of the Phillips curve. 3 As a reminder from your economic textbooks, 4 the Phillips curve is the relationship between 5 the unemployment rates and the wage growth. 6 What we experienced up to now is a very flat 7 slope of that line. So we have falling 8 unemployment and relatively stable wage 9 growth. It's up a little bit, but a little 10 bit. And it's -- the debate raging within the 11 Fed and the market participants is what is the 12 slope of the wage curve. And the economist 13 Fed staff would solidly argue it's an upwards 14 sloping relationship and it will exert itself. 15 The unemployment rate is 4.1, it's as 16 low as it's ever been just about. It's 17 projected to go lower. There is also different unemployment rates. U3 is the most 18 19 commonly used. U6 is a broader one, which 20 incorporates people working part time for 21 economic reasons. People who are -- I forget the different categories, but one that's not 22 23 in there is people not seeking work. That 24 rate, if memory serves, is mid 8s. But that's 25 back below pre-crisis levels so it's higher 0029 1 Proceedings 2 than U3, but still indicates a labor force 3 being tight. 4 MR. ORLANDO: Aren't there fewer people 5 in the labor force? Isn't one of the defining situations today is that the unemployment rate 6 7 is not reflective of the fact that no one is 8 actually working anymore? 9 MR. ADLER: That was the point he made 10 about people not seeking work. 11 MR. HADDAD: The employment 12 participation rate is down. MR. ORLANDO: There is the seeking and 13 14 also not seeking. 15 MR. HADDAD: The labor participation rate is very low, so that's the number of 16 17 working adults in that. And that's fallen 18 from mid-60s to around 60. And a big cohort 19 of that is men like 40 to 60 or something and 20 it speaks to the opioid crisis. 21 MR. ORLANDO: I might suggest it speaks 22 to the Julius Wilson idea that when work 23 disappears, dysfunction shows up in 24 populations of any sort of comprehensive 25 nature.

1 Proceedings

MR. HADDAD: But you see that big up-trend and if you decompose the labor participation rate, the place that looks really out of whack is that age component.

But back to your question: I think the expectation is wages will rise with the unemployments rate this low and the economy still running reasonably strong and the unprecedented fiscal stimulus that they get with the economy running above trend.

MR. ORLANDO: Thank you. I now see the argument a little clearer. Not sure I buy the argument, but I see it a little clearer.

MR. HADDAD: So page 8 ties into what Robin laid out. So I am going to do my best to explain this one so, please, I know I am not going to get it right.

The red line is the 40-week rolling correlation between returns on the equity market and the returns on the ten-year. The scale on the right is the scale for the -- that rolling correlation and you can see zero is about midway through. So when the number is above that, the red line, it's a positive

Proceedings

correlation. When it's below, that negative correlation. The blue line is the unemployment rate and this is an attempt to signal, you know, where the economy is; are we late cycle, are we early cycle, are we at full employment.

And what this chart suggests in the two areas where the circles are is when the unemployment rates is somewhere, you know, in a declining trend and near below 5 approaching 4, we get shifts in correlations between the returns from the two major asset classes from negative correlation back to positive correlation. And that happened, you know, around the 2000s and that was with the labor market very hot. The Fed had paused in raising rates because of Y2K concerns and the economy overheated and they had to raise rates. At the same time we had the equity market, the NASDAQ crash, all those other kind of stuff. And the other time was in the '04 rate cycle and again you can see the correlation shifted positive.

So brings us today where we are at the

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     far right-hand side of this chart and you can
     see we know the decline in unemployment rate
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     has gone from 10 to 4 and correlations are
     still running negative on a 40-week rolling
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     basis. And what I showed you from February
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     2nd has been a shift in correlations. Now,
     that's three months. It's not -- you know,
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     it's not robust data; it's very small amount
     of data. But if you follow my line of
10
11
     argument that interest rates have to go
12
    higher, that long rates are historically low,
13
     and that the unemployment rate is very low and
14
     that we are going to get a shift in
15
     correlation, this would speak to those markets
    moving together going forward. So that's my
16
17
     source of concern on where we are in the cycle
18
     and what's likely to happen to the rates and
19
     the impact on the equity market.
20
           MS. VICKERS: So you are saying the red
21
     line is going to go up and be positive going
22
     forward?
23
           MR. HADDAD: Yes.
24
           MS. VICKERS: And the blue line will
25
     keep going down?
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           MR. HADDAD: Yes. And that the returns
 3
     in bond market are negative and if the
 4
     correlation shifts, the returns in the equity
 5
     market are going to go negative too. Then
 6
     layer that on top of the valuations where we
 7
     are in the equity market now and you can kind
 8
     of see what keeps us up at night is that that
 9
     probability -- that potential of rising
10
     ratings and decline in the equity market.
11
           MR. ORLANDO: I'm sorry, did you just
12
     say you expect the blue line to go down --
13
           MR. HADDAD: Yes, I do. You know --
14
           MR. ORLANDO: -- below 4?
15
           MR. HADDAD: Yes.
                        Okay.
16
           MR. ORLANDO:
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           MR. HADDAD: I do. What would change
18
     that is if labor participation force goes up,
19
     supply of labor goes up. You know,
20
     immigration is restricting labor supply, the
21
     change in immigration laws, so that's a
22
     negative on supply of labor. Unless we shift
23
     somehow to supplied labor, I expect that to go
24
     down until the economy slows.
25
           MR. ORLANDO: The great new world of new
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     natural unemployment rate.
 3
           MS. PELLISH: So one question that you
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may not be able to or willing to answer is how 5 -- this is your point of view today, what do 6 you think is the investment horizon of this 7 perspective? Because if you look at the 8 historical data, most of the time the 9 correlation is negative and where there are 10 periods of positive correlation between the 11 ten-year and the equity market seem to be 12 pretty brief. So is this something you would 13 expect to revisit in a year? 14 MR. HADDAD: I don't know. Markets 15 move, you know, they move quickly. So I don't know what the catalyst will be. I don't know 16 17 when it will happen, but I do -- I think it's a short-term thing, not long-term thing. 18 19 I think your point about these are short-term 20 movements in long-term periods, I agree with. 21 And this would tie into part of our 22 conversation is it time for a new strategic 23 asset allocation or is it time to put some 24 shorter-term tilts, whatever you want to call 25 them, on the portfolio in anticipation of a 0035 1 Proceedings 2 drop in equity prices in which we can take 3 advantage of, avoid some of the loss, and then 4 reposition the portfolio back to the long-term 5 I think that kind of brings together targets. 6 what the -- what we are talking about today. 7 MS. PELLISH: So just to make sure what 8 you said is clear, in terms of moving within 9 the rebalancing rate which is what was 10 outlined --11 MR. HADDAD: Yes. 12 MS. PELLISH: -- you see this as likely 13 to be a short-term phenomenon or who knows? 14 am not being flippant, but really who knows. 15 The equity MR. HADDAD: Yes, who knows. 16 fell 10 percent in how quickly, in two weeks 17 February. It's a big correction. And then we 18 recovered about half of it, so I don't know. 19 And what would change all of that is a 20 reasonable correction in the equity market and 21 then those valuation metrics shift. So you 22 are not so concerned, so -- but it's the 23 combination of the two that has the concerns. 24 So let me kind of pause there because I 25 threw a lot at you. And, you know, any 0036 1 Proceedings 2 questions on any slides, you know, thoughts on 3

questions on any slides, you know, thoughts or what we should do, could do, strategic versus tilts, let's just kind of turn it over to you all.

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MR. ADLER: So here is my question for both you guys, which is that: Two years ago, so that would have been, you know, 2016 when we -- I think when we adopted the strategic asset allocation we, you know, went in for the long treasury, the extension duration on the treasuries as a hedge, right, insurance. And we had not fully implemented it because -- as I understand because of the cost, the cost of implementing it had gone up. And also what I just heard you say, Mike, was that that hedge worked in 2008 because the cause of the stock market decline, the equity decline was global financial crisis. It's not -- it's not -- it doesn't appear right now that if there is a further correction that it would be as a result of a financial crisis.

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So what I am really sort of asking for is, you know, it seems to me that what's incumbent upon us is to try to hedge the

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portfolio as much as we can against these conditions that you just described, right, and what is -- it sounds like, you know, again the likelihood of a correction of some sort, you know, based on the key charts that you showed us. But if it's not caused by -- what I hear you saying is that if it's not caused by financial crisis, the long-duration treasuries may not actually have the intended impact because at least right now correlation, they kind of more correlate with each other than don't correlate.

So you had mentioned in passing earlier, Mike, there are other ways to hedge against that. What are those other ways and should we consider them, implementing them as opposed to either not -- I mean, so right now basically I feel like we are sort of, you know, we are like, you know, what you guys -- as I recall at the meeting in April you talked about essentially rather than going to a target of eighteen years on the duration, sticking to about thirteen years which sort of sounds to me truthfully as betwixt, and between and not

Proceedings

necessarily providing a hedge that we were told two years ago that we would be doing when we adopted the strategic asset allocation.

And sort of what I am saying is it sounds to me like we need a hedge. So what should that hedge be and what would be the

cost or what are the different options and 9 what are the costs of the different options? 10 MS. PELLISH: Go ahead. 11 MR. ORLANDO: And if I could just add to 12 John's point, it sounds like we need a 13 different hedge. 14 MR. ADLER: Well, do we need a different 15 hedge? 16 MR. HADDAD: If we buy the arguments. 17 MR. ORLANDO: There is the decision on 18 the treasury was designed two years ago, was 19 it not, to be partly a hedge and I think the 20 question that's being called is sort of do we 21 need a different hedge. 22 MS. VICKERS: Can I just bring back on 23 that also. 24 MR. ORLANDO: I could be wrong, but 25 that's what it sounds like to me. 0039 1 Proceedings 2 MS. VICKERS: Because we are long-term 3 investors and not supposed to be market-timers 4 and react to the market as soon as things 5 happen, can you also when you answer those б questions speak to why we are designing the 7 portfolio to hedge at all and is that 8 something that we should decide, whether we 9 just want to ride it out or hedge? MR. HADDAD: Half-hour is up. 10 11 agenda item. 12 So on the plan, we executed half of it 13 according to the schedule that we laid out 14 with the help of Rocaton. We wanted to get 15 half of it done quickly because we all bought 16 into the thesis of the plan and we all wanted 17 the protection in place. Even though we 18 recognized yields were very low and we are 19 likely to lose money, but that's okay. 20 hedge and the other part of the stuff rocked, 21 so it worked. 22 Now what we are arguing, suggesting is 23 we are in an unprecedented time with risks to 24 both of the long -- long bond portfolio as well as the equity portfolio. 25 We still 0040 1 Proceedings 2 believe in the long-term correlation being 3 negative and particularly on what's called left tail events or really exogenous 5 unexpected things we can't predict. Those things usually cause the bond market to move 7 differently than the equity market. And by 8 definition, we don't know what they are going

to be. We hypothesize about Korea, Middle

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East impeachments, all sorts of different
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11
     things, but it's going to be something we
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     don't expect so we have half of it in place.
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           We have a chunk of the protection and
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     then with that anticipated shift in
15
     correlations which started on February 1st --
16
     which I want to argue and continue during the
17
     Fed heightened cycle we don't want all that
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     protection -- so how do we protect ourselves
19
           I would argue we reduce our equity
20
     holdings.
21
           And then the question is --
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           MS. PELLISH: U.S. equity.
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           MR. HADDAD: U.S. equity, yes, because
24
     of the valuations. And where do you put that
25
     money, because basically I am telling you
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     everything is kind of rich I would argue in
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     the front of the bond market. So the
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     riskiness of the front of the bond market is
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 5
     1/16 on the long of the bond market, just bond
    math. So we hide in one to two years
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 7
     treasury, you can call it cash.
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           MR. ADLER: Let me ask you a simple
 9
    question about that. That makes some sense to
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    me that, you know, flight to quality, right,
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    go to cash. However, you are also talking
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     about inflation increasing, right?
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     inflation is increasing, if you are going to
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     into one to two-year treasuries, does that
15
     actually provide you with the protection? I
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     am asking. I am not asserting; I am asking.
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           MR. HADDAD: Yes, because those
18
     treasuries are going to go down in price, but
19
     you are also earning 2-1/2 percent yield
20
    because of where they are valued now and what
21
     the Fed has done and they mature in a very
22
     short period of time.
23
           MR. ADLER: And when they expire?
24
     That's not the right word.
25
           MR. HADDAD: Mature, when they roll down
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     the curve a year from today, they are going to
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     be around the same price and you will earn the
 4
     yield.
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           MR. ADLER: And you earn the yield and
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     when you put the money back in you get a
 7
    higher rate?
 8
           MR. HADDAD: Yes. You reallocate that
 9
    money back into long duration or back into the
10
     equity market, yes, so that's the kind of
11
    protection.
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MR. ADLER: Is that the idea? I think what you said in April was that the idea there is that whatever we have in long now we keep, but the overall portfolio we are shortening the duration by going into the shorter-term treasuries.

MR. HADDAD: Yes, so I am not advocating selling anything in the long end. We are advocating holding, but we are going to add that in the short end.

MR. ADLER: Robin, if you don't mind, can you weigh in on what I said? I don't want to put you on the spot.

 ${\tt MS.}$ PELLISH: Yes, put me on the spot.

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MR. ADLER: As I recall when we did the strategic asset allocation two years ago, you were a strong advocate for going the long-duration treasuries in order to hedge against the foreseen drop in the equity markets. So what do you think about what Mike said or what would you advocate as far as the best hedge at this point in time?

MS. PENNY: Before you explain it, I had come onboard just when they were doing this reallocation. I remember it was a big debate, 5 percent, 10 percent, whatever. So when you explained that originally we were supposed to have 10 percent and you said you wanted to stop at 5 percent, so when you explain that why would you have an allocation set and stop in the middle of it? That's what I don't understand.

MS. PELLISH: Sure.

So to clarify one point you made, we -- and my partner Matt Maleri is here and he knows infinitely more about this topic than I do, so I am just going to make a few comments and then have him weigh in because he is part

Proceedings

of the asset allocation and actually is the architect for a lot of the work we have for the asset allocation.

But the long bond allocation was a recommendation by us not only because of where the equity market valuation is, but we see it as a long-term strategy target. And no matter where the equity market is at any point in time, we think it makes sense because -- and this is a slight digression, but I think it's relevant. In any portfolio -- you have -- the best hedge against equity market risk is

diversification and you have a very diversified portfolio. You are allocated among the global capital markets, private and public. But the fact is when you look at the risk of your portfolio and any diversified portfolio -- I don't know what the number is, maybe 85 percent.

MR. FULVIO: 92 we just --

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MS. PELLISH: You looked at it, so I stand corrected -- 92 percent of the risk or volatility of your portfolio is contributed by the equity allocation, because equities are so

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much riskier than fixed income. And, therefore, the long bond allocation is intended to balance those risks out. And historically, typically long bonds have been a very powerful friend when equity markets have suffered significant market downturns.

What Mike is asserting, and has provided a lot of data in support of, is that this time it's different for very real reasons because of where we are in the market cycle, because how long the equity market has generated very significant positive returns, because we are in unknown territory. We are going into this what he called quantitative tightening and because we passed this big tax bill, tax reduction so -- you know, you could see in the paper today we are issuing more and more debt. So there is fiscal stimulus, there is Fed tightening, and so we are in a little bit of somewhat uncharted territory. And in that territory -- I don't want to speak for Mike, the arguments that Mike and others, he is certainly not alone -- is that long bonds actually may be a very expensive hedge that on

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average long term everybody still thinks they are an effective tool, but in the near term they may be a very expensive insurance policy.

So I can't -- and I don't think Matt would contradict any of the facts laid out and I think the logic underlying this point of view is sound. This is -- it comes to a judgment call about whether we want -- to go back to the point that Susannah raised, whether we want to ride this out, whether we want to say over the long term we think these allocations having long bonds as a hedge makes sense. And we understand that there are sound reasons to believe that over the next three,

maybe even five years might not work as we expect, but we think over the next twenty years it will work.

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And we are a little -- this has been -this has been the policy to date or I think the perspective of the board to date; we think it's too hard to forecast three to five-year results and so, therefore, we are going to ride it out. That would be the basis for I guess rejecting this argument. That's really 0047

Proceedings

the basis. It's too hard to predict three to five-year results and I think the opposite --I hate to say on one hand and the other hand, but the counter to that is these are pretty extreme market situations. And if we can -if we believe that these are very extreme, then it is prudent to step out of the way for a little while.

MR. MALERI: I don't know if I would be the arbiter here, but there may actually be a compromise in some regards in the sense that, Mike, you talked about actually lowering the U.S. equity allocations given where valuations are and maybe in my mind means maybe I don't need as much protection. I am actually lowering the U.S. equity allocation so you may be able to accomplish both, which says I am lowering my U.S. equity allocations therefore I don't need as much protection from the long bond which we are proponents of.

So that may actually be the compromise in that scenario in that you can actually both be right where you still own long bonds, they still act as a hedge to the U.S. equities you

Proceedings

own, but at the same time you are recognizing that valuations are expensive therefore I should reduce some of that. And maybe the placeholder is, you know, short-duration fixed income to the extent that's allowable, but that again sort of may marry the best of both worlds here.

MR. HADDAD: I want to respond to your question, Susannah, and speak to what Robin said.

11 12 We have laid out a lot of rationale. 13 have no idea what's going to happen. You 14 know, we are basing it on some historicals, 15 some market observations, you know, our 16 combined many years in the markets as 17 participants and the risks. And are we

getting compensated for the risks and I would arque we are not in either U.S. equities or long-duration fixed income and so that ties into do we ride it out because we are long-term investors. This pool of capital exists for a hundred years serves your beneficiaries. That would argue for not, but again to argue for how unprecedented we are,

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that would argue for some tweaks against the margin and that begs the question when you are doing that, when you are taking it off, and when do you say you are wrong. So if we are going to get onboard for this, you should hold us accountable for answering those questions for you.

MR. BROWN: Is it time to do a new allocation study?

MR. ADLER: Well, that's what -- in a way what we are discussing. We said we are going to review it after 18 to 24 months, which is right now.

MS. VICKERS: And, for the record, I was asking a question and bringing up a discussion point, not advocating for any position.

MR. ADLER: I heard you advocating, let the record reflect. I just want to ask a followup to Matt, if you don't mind.

What you said makes sense to me, Matt, that by reducing the equity exposure you reduce the need for the hedge, right? But I think the question I have is: Are you talking about reducing strategic equity exposure or

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what Scott had told us in the meeting in April was that -- and I am looking at the other -- the other deck, the thin deck, thank you, where on page 2 on the growth, you know, the target is 30.9 percent I guess and the range goes down 5 percent from that, so Scott talked about lowering the allocation within the range. And then if you turn to page 4 he talked about increasing the treasury allocation within that range, which also has a 5 percent range.

So, I mean, in theory I guess you could do dollar for dollar, but the other question about that, I don't think that we have -- I don't know, refresh my memory. It's not on here. Do we have a duration range? In other words, we had set a target duration point of 17.4. I remember it being 18 percent. I

20 guess it is 18 percent and the current 21 duration is 12.6; am I reading that right? 22 MR. HADDAD: Yes. 23 MR. ADLER: Is there a range on duration 24 around the target? 25 MS. PELLISH: No, I don't think that was 0051 1 Proceedings 2 defined. But I do want to make a point that I 3 should have made clear. Everything we are talking about today is talking about operating within the current IPS targets. There is no 5 б change to the strategic allocation. This is 7 simply the BAM saying we want to move to the 8 edges of the rebalancing ranges. 9 MR. HADDAD: Or in that direction; maybe 10 to the edge, maybe to somewhere between 11 neutral and the edge. 12 MR. KAZANSKY: So when we did the asset 13 allocation work there were like Monte Carlo 14 scenarios, right, to see all the different 15 kinds of possible outcomes going forward. 16 there or was there any ever that stuff done 17 with this so that we could get a sense of is 18 it even -- I mean, you may be right, you may 19 be right, somebody else may be right and 20 ultimately it's a dollar difference here or 21 there and we are just expecting all this air for not much of real difference down the road 22 23 in ten or twelve or twenty years as far as 24 where we are going to be. 25 So my concern is that I understand we 0052 1 Proceedings 2 are in uncharted territory, but tomorrow could 3

are in uncharted territory, but tomorrow could be completely different uncharted territory. If we are not looking at all the different scenarios, right, is this exercise even -- does it -- I know it has value. I am not saying it doesn't have value. But is it -- is there a point to it if down the road we are really just going to be where we are, there is really not going to be a monumental change in the returns that we are looking for over the long term? Maybe I am looking at it too simplistically.

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MR. HADDAD: I would argue there is a big difference. So let's call the value of the portfolio say a hundred dollars and that some of the concerns that we have actualized and we don't change anything. Let's say the value of the portfolio falls to 92 over the next two years and then it compounds at 7 percent for the next twenty years, so that's

example one. Example 2, you do a couple of tactical shifts and the value of the portfolio falls from 100 to let's call it 96 instead of 92. We are compounding at 96 now for the next

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twenty years versus compounding at 92. It's a big difference.

MS. PELLISH: Mike, to get to that point because that's an important question, this is a battleship. Making this change doesn't really turn the battleship.

So Mike just pointed out how the compounding effect over time is really important and any losses you avoid at this point compound out over, you know, this hundred-year horizon, which is really important. We look -- we -- there is another very simplistic way to look at this, just to get a sense of the orders of magnitude, and that's what Mike is passing out because this is a question we asked ourselves and we shared this with Mike. So if you go to page 4, I am going to let Matt talk to what we have done here.

MR. MALERI: Essentially what we have done here is taken the two different portfolios that are in those two different scenarios that we are debating, do we hold long duration or do we not, and try to frame

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out what the different outcomes might be for those two portfolios.

So the current target which we labelled there on the left side of the page is assuming you were at your full long-duration portfolio and then what we are calling the modified target on the right-hand side of the page is a portfolio that owns some long duration, but also owns short-duration fixed income so much more similar to what Mike had suggested. So both these charts assume the same starting portfolio market value.

MS. PELLISH: About 72 billion.

MR. MALERI: 72 billion. And on the Y axis we plotted changes in the equity market, which we are using as a broad proxy for all the risk assets in the portfolio. And then across the X axis we are showing changes in interest rates, so changes in treasury yields and essentially you can pick which scenarios you think are most likely.

So the far upper left box, just to put

some numbers to it, has a 10 percent gain in the equity market along with a hundred basis 0055

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point decline in treasury yields, so that seems unlikely.

MS. PELLISH: So that box says that in that environment with only long -- owning target allocations to long bonds and the target allocations for equities, if equity markets rose instantaneously 10 percent and interest rates fell a hundred basis points you would make \$6.6 billion. Okay, so that's a great outcome and very unlikely. If -- so keep going.

MR. MALERI: And, again, you can follow through the rest of the scenario. We tried to highlight a few here which really are at the heart of this discussion and which we think are much more likely.

So the first one that I would call your attention which we have circled in the middle of the page for both the boxes there is simply looking at what happens if equity markets don't change at all, but we get a large increase in interest rates. And the outcome should be apparent that owning a shorter duration portfolio would be more beneficial.

Proceedings

MS. PELLISH: By the tune of over a billion dollars, so it's real money.

MR. ADLER: This is over what period of time?

MS. PELLISH: This is, just to be simplistic, instantaneous just to give you a sense of orders of magnitude.

MS. VICKERS: Did you say owning a shorter duration?

MS. PELLISH: That's the modified target. The modified target is owning half long, half shorts because --

 $\ensuremath{\mathsf{MS}}.$ VICKERS: Because you are losing less.

MR. MALERI: So we could have circled one more here. Which is really at the heart of this debate are those bottom left chart, bottom left corner, which is a significant decline in the equity market along with the significant fall in interest rates. And then again the other one which we could have circled would be the bottom far right, so a significant decline in equity markets along with a significant rise in interest rates. In

Proceedings

this scenario where rates fall and equity markets fall we are looking at a savings if, you want to call it that, of somewhere on the order of 400 million.

MS. PELLISH: So I want to emphasize that the reason it matters much less is because the equity market risk really just swamps, so we are talking about rates rising. What you really care about is equity markets falling and if you have a high conviction that rates at the long end are going to rise significantly, you want to get out of the way of that, but what you are really worried about is equity markets falling. And I think by orders of magnitude the most important thing that Mike has described here is reducing the U.S. equity allocation. That's much more important than in terms of a risk mitigator than reducing duration.

I'm sorry, go ahead.

MR. MALERI: You know, just about at the end of my formal comments which is: If you look at the bottom far right column, again a significant rise in interest rates and

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significant fall in equity markets. You can see if it's much more beneficial on the order of about 1.3 billion or so to own that shorter duration portfolio. So again you can -- the reason we have laid it out this way is such that you can decide or try to think about which scenarios are more likely or less likely and start to weigh the cost of that insurance, if you will. Certainly it's natural that in a falling equity market and falling rate environment, you are going to want to own long bonds. In the opposite scenario where equity markets fall and rates rise again, naturally you will want to own short duration. simply helps you think about what is the cost impact and again which scenarios do I think are more likely.

MS. VICKERS: Can I ask a question about the chart, because I don't think I am reading it correct or I am missing something. So if the right-hand boxes are the modified target with less equity, I would expect that you would do better.

MR. MALERI: Same equity, the only thing

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    we are toggling is the duration.
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           MS. VICKERS: Okay, that's what I
 4
     missed. Okay, but the modified -- oh, so it's
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     just the target of the yield?
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           MR. MALERI: Should have paused on page
 7
     3 which actually shows the differences.
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           MR. ADLER: What does page 3 show?
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           MR. MALERI: It shows the actual
     allocation. You could see the middle of the
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     page there we are showing the current target
12
     as well as the modified target and the
13
     differences.
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           MS. VICKERS: Because I think the two
15
     options we have been talking about, the
16
     modified option with different duration would
17
     also have significantly different amount of
18
     equities.
19
           MS. PELLISH: Well, they would have a
20
     lower allocation to equities. Just to be
     clear, the total allocation to equities I
21
22
     think declines by 1 percent maybe because we
23
     are increasing the non-U.S.
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           MS. VICKERS: So would this scenario
25
     still hold for what we were discussing?
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           MS. PELLISH: Largely. What we are
 3
    really trying to isolate is what happens with
 4
     shortening duration and what scenarios do you
 5
     really care about shortening duration.
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           MS. VICKERS: But then if that's true,
 7
     how come with the modified scenario when the
 8
     equity markets go down you are losing more,
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     15,486 versus 15,107?
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           MR. MALERI: That's -- again, the
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    duration difference plays in there as well so
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     that scenario has a hundred basis point fall
     in rates. The one if you are just trying to
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     isolate the equity difference, it's looking at
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     that column which is zero for changes in rates
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     and following it all the way down to the bond
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    market they are almost the same. Again a
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     slight difference in the composition of the
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    portfolios, but you can see about $16.3
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    billion for the current target and 16.1 for
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    the modified.
           MR. ADLER: What you guys did for the
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    modified, what I heard Mike saying, is the
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     idea of taking U.S. equities and not
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     redistribute it to international, but
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     redistribute is it to short duration, right?
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           MR. HADDAD: So let's go back to growth
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on page 2 on the portfolio.
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           MS. VICKERS: The skinny one?
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           MR. HADDAD: The skinny one. So this is
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     a snapshot as of year-end and the first three
     bars are your equity exposure U.S., EAFE, and
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 9
          If you total those three, it's roughly 53
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     percent. So as of these three and your
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     strategic allocation is 50, so what did we do
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     throughout '17? We let your EAFE run, we let
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     the gains accumulate, we let the gains in EM
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     accumulate and the rebalanced to U.S. to keep
15
     it at target. So we rebalanced U.S. to fund
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     the long duration, we rebalanced the U.S. to
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     fund the private market allocations, and we
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    kept the U.S. right around on target but let
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     the other two run. So as of year-end, you
     were overweight equities.
20
21
           And what these arrows suggest is, the
22
     inclination based on our analysis is, the
     direction we want to tilt the portfolio is to
23
     leave those overweights and foreign equities
24
25
     there and take the U.S. component down.
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 2
     that really speaks to the different valuations
 3
     in those two different markets. And then, you
     know, with that, with what we will do with
     those proceeds, we target the front of the
 6
     bond market as a place of safety.
                                        So that's
 7
    kind of the way we are.
 8
           MR. ADLER: And also you talked about
 9
     putting some in bank loans?
10
           MR. HADDAD: Right.
11
           MR. ADLER: What is that little green on
12
     bank loans on page 3? Not just green arrow,
13
     it's green shade box.
14
           MR. HADDAD: That was just our APM
15
     attempt to put this together and figure out
16
     how to fix that.
17
           MR. ADLER: I can totally identify with
     that. Okay, so basically you are not talking
18
19
     about adding new money to the non-U.S; you are
20
     talking about just keeping it -- letting it
21
     run but you are talking about taking -- taking
22
     money out of the U.S. equity as well as high
23
     yield it looks like and putting it into the
24
     short end of the treasuries as well as some of
25
     the bank loans?
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           MR. HADDAD: Yes. The arrows are
 3
     strongly-held views on the direction of those
 4
     asset classes. And the treasury, we have an
 5
     up green arrow on that. But again for
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everything we talked about, that's the front 6 7 of the bond market, not the long end of the 8 bond market. 9 MR. ADLER: So is there a target? 10 think that might be -- so as of 12/31, the 11 duration on the treasuries is 12.6 years? 12 MR. HADDAD: Yes. 13 MR. ADLER: And so you don't have an overall on your chart, Matt, so what would be 14 15 the target duration for the treasury 16 portfolio? MR. HADDAD: So this is at the April CIM 17 18 we introduced another metric for you in fixed 19 income dollar value of a basis point and 20 that's on page 6. So there is a couple of 21 different ways to look at your treasury 22 portfolio. Duration is the one I think we are 23 all comfortable with. But in the environment 24 where we sell U.S. equities and buy short-end 25 treasuries, the duration of your portfolio is 0064 1 Proceedings 2 going to shrink. Just because we are adding assets which are shorter duration, the target 3 comes back down. But what's going to happen 5 is the dollar value of the basis point of your б portfolio, it's going to increase. 7 8 9 10 the relative riskiness, so the longer 11

So this speaks to the difference between the two year and third year. The dollar value of a basis point is what helps you understand maturities are more risky. How do you measure that? You measure it in duration or you measure it in -- again the geeky bond math is DV01, so the dollar value of a basis point for the two note is -- if you guys can help me.

MR. MALERI: It's very small.

MR. HADDAD: Like \$4 for basis, basis point, and the bond is 16X that, so it's like 40-something. But when you are adding to your notes, you are adding DV01 to your portfolio. It's just not as powerful as 1. So looks like that we shrinking duration, it looks like we are going back on our plan, but we are not going back on our plan. We are increasing our exposure to the bond market. We just have to

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measure it in a different way.

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MR. ADLER: I'm sorry, can you explain? MS. PELLISH: I can't believe you are going into DV01.

MR. ADLER: I am professing my ignorance as usual. I don't really understand this

measure because at the CIM it was variable for 8 9 Passport Funds and I was told that has to do 10 with the amount of assets, so can you explain? 11 MR. HADDAD: What I am trying to tie 12 together, that we want do increase our 13 exposure to treasuries but in the front end. 14 And when we do that the duration of your 15 portfolio is going to shrink, but your 16 exposure to the bond market goes up and how do 17 we capture that. And if you have a better way 18 of capturing, I am open to suggestions. But I 19 thought dollar value to basis point was a good 20 way to try. 21 MR. MALERI: We typically think about 22 it, and I think this is almost the literal 23 definition, is for every basis point. So for 24 ten-year it goes from 2.99 to 3, so 1 basis 25 point move you would lose 8.7 million in your 0066 1 Proceedings 2 bond portfolio. And it works the other way as 3 well. As well so ten-year goes from 3 to 2.99 4 that's a 1 basis point drop, you would gain 5 8.7 million. 6 MR. ADLER: So given we expect interest 7 rates to rise, we have this rising environment and the Fed is signaling -- well, anyway given that, why would we be wanting to increase the 10 amount that we lose per basis point increase 11 if that's a measure of how we are hedging, how 12 we are increasing our hedge? 13 MR. HADDAD: By increasing the 2s, we 14 are adding minimally to the dollar value of 15 the basis point. If we increase the 30s, we 16 would be adding significantly higher dollar 17 value of the basis point. And what this 18 captures is your whole portfolio across all maturities and we are doing it on a small 19 20 basis. And I am not -- I think it's our 21 choice of asset classes that's going to get 22 hurt the worst in this scenario that we are 23 concerned about. 24 MR. ADLER: The choice of asset classes? 25 MR. FULVIO: Equities versus bonds. 0067 1 Proceedings 2 MS. PELLISH: So this is the target in 3 terms of percentage allocation? 4 MR. HADDAD: With a 10 percent 5 allocation, yes. 6 MS. PELLISH: With a 10 percent long? 7 MR. HADDAD: Yes. And this is where we sit today. And, again, we are about 50 8

percent from where we started when we made the

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10
     strategic asset allocation. You all approved
11
     that.
12
           MR. ADLER: So what was the number when
13
     we started the dollar value for basis points?
14
          MR. HADDAD: It should be on the chart.
15
     I am going to guess just ratchet it down, the
16
     same difference between these two is 50
17
18
           MR. ADLER: Difference percentage-wise
19
     or dollar-wise? So, in other words, dollar
20
     wise-would be about 3.4, so it would have been
21
     8.7 minus 3.4?
22
          MR. HADDAD: No, 12.1 minus 8.7 is 3.4,
23
     so subtract 3.4 minus 8.7.
          MR. ADLER: That's what I just did.
24
25
          MR. HADDAD: I thought you meant AUM.
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          MR. ORLANDO: Carry the 1.
          MR. HADDAD: DV01. Come on, John, get
 3
 4
     it right.
 5
          MR. ADLER: You guys are way beyond my
     level here. I shouldn't be announcing that in
 6
 7
     public, but I am being honest.
 8
           MR. LEVINE: You are a fiduciary with
9
     good outside experts.
10
          MR. ADLER: So says one of our outside
11
     experts.
12
          MS. PELLISH: I think all Mike is trying
13
     to point out is that we have talked about in
14
     general the fixed income as a generic
15
     homogenous and having a hundred dollars in
16
     thirty-year bonds is very different in terms
     of risks if rates rise then if you have a
17
    hundred dollars in a two-year. And that's the
18
19
     only point of this and it can make a real
20
    difference in terms of dollars.
21
          MR. ADLER: Okay. So in other words,
22
     you are saying that by raising the dollar
23
     value per basis point we are lowering the
24
     risk; is that an accurate statement?
25
          MS. PELLISH: No, you are not going to
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     move -- so you are not moving, right?
          MR. ADLER: I thought he said --
 3
 4
          MR. HADDAD: 5 is duration and 6 is
 5
     DV01.
 6
           MR. ADLER: I am on page 6.
 7
           MS. PELLISH: You told us to go to 6 so
 8
     we are on 6. So this is where you are
9
     proposing to be with the two years?
10
          MR. HADDAD: No, this is a snapshot.
11
          MS. PELLISH: And then the 12.1 --
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MR. HADDAD: -- is the target.

MR. ADLER: So your DV01 will move down?

MR. HADDAD: No. DV01 is going to go

up. When you buy two-year notes it's going to

go up small, but duration is going to go down

big.

MS. PELLISH: So what's missing here is

MS. PELLISH: So what's missing here is what happens when you reallocate to more than two years, so this is where you were at year-end. We are going to be in between 8.7 and 12.1 because he is suggesting putting more dollars into the two-year, but this plan we are not going to go all the way up to the 12.1.

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Proceedings

MR. HADDAD: So at the June CIM when we look at the Q1 portfolio and we have done the things that we have talked about, if we do them you are going to see the duration. And what we will do is we will do this, we will do D31 view and March 31st view. You will see the duration will go down and you will see the dollar value of the basis point will have gone up.

MR. ADLER: But not all the way?
MR. HADDAD: Not all the way; barely.
MR. ADLER: I am going to call on
Antonio.

MR. RODRIGUEZ: Two questions with regard to timeline and attribution. I will start with the attribution question.

Given we have had scenarios before in the past before you got here, Mike, where we did have tilted a different direction in this case -- well, I won't describe the title and at the time, at least, our attribution analysis wasn't robust enough to kind of capture the effects of this change versus the strategic portfolio. Do you believe that our

Proceedings

current risk system will be able to capture that? Is there a way we could capture the attribution for this decision?

And also given added onto that the timeline, like how long or when do you think this will be in effect and will we start getting attribution on this fairly shortly.

MR. HADDAD: Yes. So we give you attribution now on excess returns. We break it into asset allocation on manager effect. Yes, we will be able to -- if we implement these tilts, we will be able to give you P&L

14 on those specific ones and we can break that 15 out for you. 16 When? I am trying to think whether it's 17 two months or six months, but it's in that 18 range. We are moving quickly with MSCI and 19 one of the work streams that we have in place 20 is how to capture this P&L, because we need to 21 have P&L on this which speaks to having an 22 objective on it and where we are wrong. 23 Because if we are wrong, we don't want to just 24 sit on it; we want to reverse it. So, yes, we 25 need those tools to be able to monitor that. 0072 1 Proceedings 2 MS. VICKERS: I don't know if people are 3 done discussing. 4 MR. ORLANDO: Is it time for my question 5 yet? 6 MS. VICKERS: Oh, sorry. 7 MR. ADLER: Yes, go ahead. 8 MR. ORLANDO: Are you sure? 9 MR. ADLER: I apologize, I skipped you 10 One of my many -over. 11 MR. ORLANDO: New seat, same treatment. 12 So I am in the Rocaton deck, that looks 13 like this for those of you playing along at 14 home. So I would like to ask the panel of 15 experts and you can self-define that, so which 16 is the most likely scenario at the end of the 17 day? Thanks for circling those four boxes, 18 but it doesn't feel like those four boxes are 19 the most likely scenarios. So can you draw my 20 attention to what anyone considers the likely 21 scenario? Thanks. Don't all go at once. 22 MS. PELLISH: Well, so I think what we 23 are -- the temporary fall to the long bond 24 implementation is based on the belief that we 25 are going to realize some sort of decline in 0073 1 Proceedings 2 equity markets accompanied by some sort of 3 rise in interest rates. And so I don't think anyone on the panel of experts is going to 5 specify what level, but it would be, you know, 6 just to call your attention to something that 7 is let's say a hundred basis points rise in 8 rates and a 10 percent decline in equity 9 markets. 10 MR. ORLANDO: So in the southeast 11 quadrant of the boxes? 12 MS. PELLISH: Yes. And in that 13 particular box on the current target, that 14 would be a loss of 6.7 billion and in the 15 modified target in the same box you would save

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16
     about $600 million.
17
           MR. ORLANDO: Okay. Anyone else want to
18
     play bingo with me?
19
           MR. ADLER:
                      So in the southeast quadrant
20
     which I was also thinking, then under any of
21
     the scenarios we do better with a modified
22
     than we do with the current, right?
23
           MS. PELLISH: Right.
2.4
           MR. ADLER: Whereas if we were in the
25
     northwest, which I think none of us think is
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     where we are heading, we would do better with
 2
 3
     the current than with the modified, right?
 4
           MS. PELLISH: Right. And in the, you
 5
     know, southwest you would be worse off with
 6
     the modified. Any environment in which rates
 7
     fall further, you will want the full long bond
     implementation. And this is -- and that's an
 8
 9
     obvious statement, but this gives you some
10
     orders of magnitude. It's hundreds of
11
     millions of dollars under any likely scenario.
           MR. ADLER: You know, I don't know if
12
13
     this is possible but, you know, I always feel
14
     like we sit here and make these decisions
15
     about asset allocation and it's like okay and
16
     you actually never go back and look at oh,
17
     what would we -- suppose we had made a
18
     different decision, how would we have done it.
19
     And, you know, obviously 20/20 hindsight and
20
     all that jazz. However, I think it is -- you
21
     know, for example, capital markets
22
     expectations never play out according to
23
     expectations. They might be directionally
     correct, but sometimes they are not.
24
25
           MS. PELLISH: At best. At best.
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           MR. ADLER: For example, nobody expected
 3
     two years ago that the equity markets would
 4
     have performed the way they did. The way they
 5
     have, right. And, you know, so we all expect
 6
     equity markets to decline as per the southeast
 7
     quadrant at this point and who knows, they
 8
     could -- they could, you know, not perform to
 9
     expectations again over the next two years,
10
     four years, whatever.
11
           MS. PELLISH: This is all probabilities.
12
           MR. ADLER: It's probabilities. Anyway
13
     in some ways, especially given that we are
14
     doing this tactical reallocation, that's what
15
     you are recommending. I think it would be
16
     very interesting to sort of go back and review
17
     how the bet has played out since we -- since.
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18 You know, in other words, we are making 19 this -- assuming we are going forward here, we 20 are in the second quarter beginning to make 21 this play and then, you know, you have these 22 two likelihoods there. How did it actually 23 work, you know, looking at it in six months, 24 in a year, in two years, something like that. 25 I guess what I would do is ask BAM, if you 0076 1 Proceedings 2 could figure that out for us. 3 MR. HADDAD: Same thing Antonio asked or 4 5 MS. PELLISH: I think it's attribution, 6 that's what you are asking for. 7 MS. VICKERS: Can I make a suggestion. 8 MR. ORLANDO: Great minds think alike. 9 MR. ADLER: We spend too much time 10 together. MS. VICKERS: Just in terms of concrete 11 12 next steps, I think the board has two 13 decisions to make. First to kind of --14 whether we are comfortable with BAM 15 directionally tilting the portfolio to the 16 edges of some asset classes because of, you 17 know, everything that we have discussed today, 18 not changing anything that's -- you know, 19 targets that are in the IPS, just 20 understanding that we might go up to the limit in certain asset classes and that is something 21 22 that's very short term and something that I 23 think, you know, we are kind of directionally 24 doing and my personal opinion is that we 25 should continue to do and that's something 0077 1 Proceedings 2 that I think they need our feedback on sooner 3 rather than later. You know, some of the attribution and the further study might be a 5 decision that would play into an overall б decision and discussion about whether we want 7 to do another strategic asset allocation at 8 this point. 9 So I think that there is kind of a 10 shorts-term thing that we could do that I am comfortable with sort of making the decision 11 12 without further study and then there is 13 further study that might play into whether we 14 want to do a strategic revisit of the 15 portfolio. 16 MR. ADLER: I just have a question. 17 we get your Rocaton's current capital markets 18 expectations, have you distributed that?

MS. PELLISH: We --

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20
           MR. FULVIO: Should have been
21
     distributed last week. I think we sent that
22
     to our clients last week, so you should have
23
     received that. We can recirculate that on the
24
     board mailing, if that's helpful.
25
           MR. HADDAD: John, what we have asked
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     Rocaton to do and they've done is to update
 3
     the asset allocation that their revised
 4
     capital market assumption and I think you did
 5
     that for D/31, I don't think March 31st.
 6
           MS. PELLISH: Probably not.
           MR. HADDAD: It's a mini-version of the
 7
 8
     strategic asset allocation. And I don't
 9
     remember, I can't remember exactly where it
10
     came out, but I think you might be 100 percent
11
     in agreement with our directional arrows.
12
           MS. PELLISH: Yes. So quarter to
13
     quarter the numbers don't change very much,
14
     but I think there is value going back and
15
     looking at the assumptions that were built in
     for the study several years ago saying what
16
17
    has changed in those assumptions, what has
18
     changed in the environment, is there anything,
19
     or what has changed in our risk posture and
20
     perspective. So I think there is value in
21
     doing that, even though our capital market
22
     assumptions don't change much over 90 days.
23
           MR. HADDAD: I would ask you to share
24
     your three to five-year capital market
25
     assumption on the U.S. equities.
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           MS. PELLISH: I think it's something
 3
     less than 4 percent on average.
 4
           MR. ADLER: For U.S. equities?
 5
           MR. MALERI: It's actually zero for the
 6
     next three years.
 7
           MR. ADLER: Capital market expectation
 8
     is zero for the next three years?
           MR. FULVIO: 2.8 percent for ten years.
 9
10
           MR. HADDAD: That speaks to the
     valuation situation and what drives their
11
12
     returns expectation valuation is a big part of
13
     it.
14
           MS. PELLISH: It dominates, yes.
15
           MR. ADLER: What was it two years ago?
16
           MR. MALERI: It was higher. Probably
17
     closer to 4, 4-1/2 I would guess.
18
           MS. PELLISH: So we did not see -- to be
19
     very clear, we did not see what happened in
20
     2017 and --
21
           MR. MALERI: Only to defend myself:
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22 When we do this work while we show you kind of 23 the expected case, we do build in a very wide 24 range of outcomes. So it was in there; it was 25 certainly at the upper end of those 0800 1 Proceedings 2 expectations. 3 MS. PELLISH: We were much more 4 optimistic about non-U.S. equities and 5 emerging market equities, which actually did 6 play out. 7 MR. HADDAD: Well, in excess. 8 MR. ADLER: In response to your 9 question, Susannah, what I would suggest, what 10 I would ask, I don't think we should answer 11 the question about strategic asset allocation today because I think we want to get 12 13 additional information and analyze it and so 14 But I think the first question you asked is are we comfortable with this tactical 15 16 direction that BAM is proposing. You know, I 17 would ask the board is there comfort with that 18 as an immediate -- because actually we really 19 want to put this in effect, so I would ask if 20 there is --21 MS. VICKERS: I think it is happening. 22 MR. ADLER: It is happening. So I guess let me put it on the reverse. Is anybody 23 24 uncomfortable with saying to BAM, yes, that's 25 the right direction to go right now? 0081 1 Proceedings 2 MR. KAZANSKY: Well, I guess my question is is that -- when we voted on the asset 3 allocation and we voted on the rebalancing ranges, the understanding was that it wouldn't 6 necessarily be needed for us to interject as 7 long as they were moving within those 8 rebalancing ranges. Were there any caveats to 9 that as far as a time period or rationale 10 behind it? 11 MS. VICKERS: No. And I just want to 12 jump in. I think the reason we are even 13 discussing it today is because we are at this 14 extraordinary point. And the mayor's office 15 had asked for a review of the strategic 16 allocation and so BAM's response to that was, 17 we are already kind of doing this strategic 18 tilt. 19 MR. ADLER: Tactical tilt. 20 MS. VICKERS: Strategic, sorry. 21 not strategic at all. 22 MR. ORLANDO: It's within the strategy.

MS. VICKERS: So we want to make sure

everybody is on the same page. What BAM is
doing is completely within the rebalancing
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Proceedings
ranges that BAM has discretion, but we want to
make sure everybody is comfortable and
everybody is on the same page. So it's not an
action item we have to vote on; it's just is

everybody cool of it kind of.

MR. ADLER: That's exactly what I was going to ask.

MR. HADDAD: I think if I could channel my inner Scott Evans, I think what he said I am not going to tilt the portfolio, we are not good at it, I don't believe in it, it's hard to do, blah, blah. When I got him over the hurdle, it is -- the high hurdle is we are at extraordinary time periods, a point in time and that argues for doing some within the existing ranges, some of that. And as either Susannah or John pointed out, these are three-month snapshots. I am not going to comment on what May 3rd snapshots look like. I want to say they are different.

We want to be transparent, we want to be informed, and we want to get your temperature on whether this is okay or not. And if it's not, then we will take appropriate action.

Proceedings

And if it is, we might do different appropriate actions. It's public session. I don't want to comment on what we are going to do, but -- you know.

MR. ADLER: I just want to make one comment on this too, which is that in 2008 virtually every pension fund got slammed. And, you know, that's a technical term but the, you know, correlations went, you know, everybody was correlated and so on. The one exception that I am aware of, and Robin might remember others, was the GM Pension Fund. And they went -- they went to cash big time and so they survived. I mean, when I say "they survived," they didn't have the double-digit drops that virtually every other pension fund had. You can look at that and I was very impressed they did that.

MS. PELLISH: Did they reinvest back into the market?

MR. ADLER: Yes, after the crash. That's my understanding.

MR. AARONSON: After the crash or after the market was up?

1 Proceedings

MR. ADLER: They went to cash when the market was inflated and then the market crashed. Then I believe -- I don't know if they timed it perfectly, you know, because you don't know when the bottom is. So they may have done it on the way up, I am not sure. But my understanding, they went to cash so they survived much more so than every other pension fund that I am aware of the drop.

Now, we are not obviously -- A, we can't time it and, B, we are not going to take on that kind of thing. But the fact is I honestly found it very reassuring that what you are basically telling us what we are going to do is rebalancing into a greater cash position, because I think that given this description of the market conditions that we are in that that is probably the safest place to be in terms of trying to minimize the drop that we anticipate through the equity decline and interest rates rise. But I agree we don't have to make any decision today. But I really just wanted to see if as of today folks, trustees are comfortable with the direction

Proceedings

that BAM has laid out for us. Does anybody like feel like no, we got to put the kibosh on this? Okay.

MR. ORLANDO: I guess I feel like when we made the decision two years ago to go into the long duration, we made it at a point in time. And we should recognize that as time goes by, more data points appear, right, things either go the way you expect them to which never happens or, you know, other things happen. And this action is us recognizing that the world has changed a little bit. We have got more information to make better decisions with and so I am comfortable within the strategic allocation that we already decided on not to exceed with this decision to move a little closer towards the high end of the range, personally.

MR. ADLER: Great.

Okay. Let me just say thank you to Mike and to the whole Rocaton team. I thought this was a really good discussion and you are illuminating things that, speaking for myself, about which I need to be illuminated so I

2 appreciate it. 3 Okay, so I think our next agenda item. 4 We are running very late, but so we have the 5 Verite presentation. 6 MS. PELLISH: So they are waiting 7 outside; we have their presentation. Just one 8 person. 9 MR. ADLER: Welcome. If you would, please introduce yourself for the record and 10 11 then the floor is yours. And we really want 12 to try to keep this to thirty minutes total. 13 MR. FULVIO: Maybe I will just make a 14 quick introductory comment. So we would like 15 to welcome Shawn MacDonald from Verite. 16 You might recall at the last meeting we 17 discussed a broad review of the emerging 18 market equity country screens. As part of 19 that review, we are considering an alternative 20 approach to thinking about how we look at 21 different factors we previously have been 22 screening on and how under a new approach we 23 might think about that a little bit more 24 differently by expanding the opportunity set 25 from where we are today. And rather than 0087 Proceedings 1 wholesale exclusions, thinking more about how 2 3 we engage based on the holdings and focusing 4 on the similar factors, but more a way of 5 using that information to engage with б companies in emerging markets. 7 So today we have invited one of the 8 experts we referred to at the last meeting who is involved in the process that NYCERS 9 10 undergoes today, but that's only a very small 11 portion of what they do and the type of work 12 they work with clients. We will let Shawn 13 introduce Verite and speak more broadly about 14 how they work with other clients of theirs and 15 the work that they do which is very 16 interesting, but also talk a little bit about 17 some of the ideas they have based on the 18 broader view we shared with them about the 19 direction of the futures board. 20 So with that, I will turn it over to 21 Shawn. 22 MR. MacDONALD: Thank you, Mike and 23 Robin, for inviting me. It's a pleasure to 24 see you all. I know you have a short amount 25 of time, so I will try to be quick. 0088

1 Proceedings

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I am Shawn MacDonald. I am the CEO of Verite. Verite is a nonprofit organization

that was founded more than twenty years ago to 5 promote fair safe legal work globally. We 6 work concretely on supply chain practices and 7 policies. Verite is quite unique in that we 8 work with all stakeholders in the labor space, 9 meaning we work directly with workers 10 themselves, with suppliers on factories and 11 farms, multinational corporations, investors, unions, governments, the whole range which is 12 13 actually quite unusual in the labor space. 14 We were founded in 1995. We have a 15 footprint of about 100 people globally, 16 offices in places where you would expect there 17 is a lot of our kind of work; China, Southeast 18 Asia, South Asia, Latin America, with 19 headquarters of about 35 people in 20 Massachusetts. We do things ranging from 21 assessments and audits in supply chains to 22 policy advocacy work around supply chain practices and policies as well as a lot of 23 24 training and consultations for businesses. 25 What I would like to do is really emphasis the 0089 1 Proceedings 2 fact that much of our work focuses on risk 3 assessment. 4 If you take a look at page 4, I will try 5 to go through these quickly and I will let you 6 know once in a while when you should flip 7 pages, since it's not on the screen. 8 our work focuses on risk assessment because, frankly, where a lot of investors and 9 10 companies are at the moment is still coming to grips with their risks around the world. 11 12 could be risks related to human trafficking to 13 unsafe workplaces to gender discrimination. 14 And so for many of our clients, we really help 15 them figure out what is their risk profile and 16 that can come in four major ways. Looking at 17 evaluating the country, commodity, or sector 18 risk, we do also a lot of work in combining 19 risk profiles where you are looking at how a 20 particular sector is actually operating in a 21 company, because obviously conditions can vary 22 a good deal between countries in the same sector. We also do a lot of individual 23 24 company benchmarking. And the reason that's 25 important is because as more multinationals 0090 1 Proceedings 2 are trying to understand what risks they face 3 in the suppliers they are choosing, they want 4 to be able to know how they could

differentiate between which supplier may be

presenting more risk to them than others. And 7 in our work with investors they want to have a 8 handle on how well the holdings they have, 9 those companies, are understanding the risks 10 and practically what are they doing to deal 11 with them. And then we do a great deal of our 12 work, more than half of our officer work, 13 within company engagement where the level of 14 risk analysis is much more practical and in 15 depth where we do audits and assessments, 16 self-assessments questionnaires, working with 17 grievance mechanisms to hear directly from 18 workers about what the status of the situation 19 is and then tailoring our trainings and toolkits and consultation capacity building to 20 21 work to help that company deal with this risk 22 more appropriately. 23 On page 5, I wanted to give you now a 24 couple of examples of the kind of risk 25 assessment work we have done over time and be 0091 1 Proceedings 2 able to give you some sense of how we may be 3 able to help you transition. Since 2000, we have worked with retirement systems to 5 understand country level risk. So back in 2000, we worked with CalPERS and more than 25 7 countries. We provided an analysis of what 8 risks existed on labor matters, that was mixed 9 with other information about countries' 10 investment openness and transparency and things like for CalPERS to decide whether they 11 12 would invest in a particular country. 13 they moved away from that methodology, that's 14 why we no longer work with them. But since 15 2000, we have worked with NYCERS. And I think 16 the important thing to note, some of you are 17 familiar with the work we have done for 18 NYCERS, is that we have a really comprehensive 19 approach to how we do the analysis. And 20 what's really important is we don't just have 21 some kind of algorithm that says throw in some 22 information based on publicly available

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sources, but every year have in-country

researchers update the situation across all

the national labor organizational corp labor

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criteria as well as a lot of other quantitative and qualitative factors. And then that's all analyzed by experts in-country as well as our headquarters so that we are able to provide really valuable up-to-date information. So that's what we provide for an

organization like NYCERS.

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On the next page is another really interesting example, particularly for those of who you may still be in the classroom for your teaching colleagues, where we created for the U.S. government a website called the Responsible Sourcing Tool where we were helping the world's largest supply chain, which is really the federal government, come to grips with how to implement President Obama's executive order that would require federal contractors of a certain size to have an antihuman trafficking plan in place. Our policy team was actually very active with the White House in crafting that executive order. And then they asked us to do a full analysis of 15 major sectors globally for which sectors were most at risk for human trafficking as

Proceedings

well as analyzed more than 44 commodities and then present sociopolitical and economic risk information for more than 100 countries, wrapped that altogether into that website Responsible Sourcing Tool that other companies can access to better understand where risks may be and then create open source-compliance tools to help those companies figure out how to deal with this. So this was an example where our policy company engagement as well as research work all come together around a particular type of risk, that is human trafficking, for a wide variety of companies.

And then the next page you will see how we took that concept and dug a little deeper into Africa where we had a client. In this case, it was the state department asked us to go really deep onto trafficking risk in Africa with particular criteria where they wanted us to provide more in-depth information. I think this is really important because all of our efforts end up being tailored to the needs of a particular client. They wanted us to really focus not just on the typical indicators of

Proceedings

trafficking, but also what was the links to environmental crises, political crises, that sort of thing. And also there we worked very closely with union affiliates in many of the countries there to get really in-depth information about things from a worker's perspective.

On the next page you will see some

examples of how with individual's socially-responsive investment firms or their advisors or companies themselves were able to do risk profile information. And this is really based on -- it always ends up being based on their willingness to share a certain amount of data or their comfort with digging in or getting information for companies. for example, one client asked us to look at whether -- the risks in the electronic sector not just generally, but specifically focused on foreign contract workers for example, or how we could benchmark their holdings against peer companies. Because, as you know, many companies will try to tell you all the wonderful things they are doing and a lot of

Proceedings

our investor clients really want to know how can we really evaluate and judge the information that they are giving us; are they basically, you know, telling us a lovely story, but how do they really compare against their colleagues. So we also very often will do risk assessment based on the spend and the leverage of the company; where are they putting most their money, where do they have most leverage in terms of the size and durability of the contracts they have.

On page 9, so just another quick example focussed particularly on work we do when it's just based for various reasons on public sources of information. So along with Sustainalytics and Business & Human Rights Resource Center, we created this Know the Chain that evaluates companies on their human trafficking and forced-labor transparency statements and efforts based on publicly available information. And then I think it's really particularly important to note that when we focus specifically on SRI firms and the information that they need, that we spend

Proceedings

a lot of time helping them weight how they want us to evaluate the companies, so what kind of scoring methodology is created.

On the next page, 10, this just gives you a really brief overview when we work directly with companies and that can be companies at the headquarters level, multinational headquarters level, or at the major supplier level where we help them start off essentially with mapping their exposure,

evaluating the levels of risk, figure out how to build capacity, or provide the tools they need to deal with these and really focus on the root cause analysis and improving their systems and processes.

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On the next page -- I won't get into all this, but you can see a lot of the larger in-depth practical types of engagements that we have with companies where we really help them figure out how to improve their due diligence systems, create management systems approach. Because frankly no company deals really well with labor issues, so it's a journey for all of them. So really helping a

Proceedings

company figure out in which particular supply chains and which countries they should do which steps at what robust pace is really the kind of work that we are able to do based on the experience we have working for more than twenty years across different countries and sectors. So that's a really brief overview of the type of work that Verite does.

On page 12, I laid out just -- and 13 -some basic options for the kind of engagement that we had been brainstorming. Obviously we're very eager to hear your questions and comments, but we really thought if and when you decide to transition away from a country-level screening approach, that we could advise based on our previous experience how to facilitate that transition to looking at a sector based or a commodity-based or actually evaluating individual companies or groups of companies. Obviously we would be able to give a lot of in-depth analysis based on particular sectors or commodities or countries with that expectation that it would be based not just on desk research or publicly

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available information, but in-depth expertise on the ground in these countries. And also potentially if you are trying to figure out what is the right sort of methodology for how you evaluate companies, what are the kind of things like self-assessment questionnaires, other forms of data-gathering, types of engagement, types of questions to be asked, processes, even building the capacity of your team or your advisors team to interact with companies to really better understand how to benchmark them against their peers or, more

14 importantly, how to benchmark them against 15 what your expectations and goals are for them. 16 And I know that can be a difficult process, 17 but we really work with clients to say what is 18 your short and long-term goals for the 19 companies that you are invested in, are you 20 expecting them to be above average, how 21 important is it to you that you work with them 22 over many years and that you see continual 23 progress, how can you evaluate that progress, 24 that sort of thing, or are you going to take a 25 more indirect approach and just try to avoid 0099

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particular sectors or try to benchmark your holdings against a certain level of performance for companies in a particular industry. So those are the kinds of things.

On page 13, if and when you are interested in more direct company engagement obviously this is work, our bread and butter, that we have done for many years and that way we can help you benchmark, help you rank, figure out the criteria, actually engage with individual companies as appropriate or perhaps build the capacity of you all to figure out what kind of questions you want to ask, what level of information you want to get from them, what is the nature of the back and forth of engagement that you want to have with them and if necessary, possible, and desirable from your perspective actually provide some capacity-building or advice for the companies that you invest in to actually improve their performance. So that's actually a spectrum in terms of how deeply involved you want to get or if you want to help in developing the journey, so to speak, for how you might pilot

Proceedings

particular approaches for different sectors or companies rather than necessarily jumping right off a cliff into direct engagement with individual companies on improving their performance.

So there you have it, a couple of ideas for how you may transition based on a lot of experience that we have had doing this type of thing. And I will hear whatever questions or discussion you would like to have at the time, I am available.

13 MR. ADLER: Questions for Shawn? 14 MS. PENNY: This sounds great. We 15 started this work because we had a list of

excluded countries and we were not really sure should they still remain on the list and, you know, what has changed. But this also gives us the ability to make changes for some of the countries that we feel -- so this sounds wonderful. Thank you, very interesting. MS. VICKERS: I will just say, I also sit on the NYCERS board along with the mayor's office. So we are very familiar with this and had a great experience at NYCERS, but one

Proceedings

question that we have been batting around a little bit is: How fresh is the data? You know, sort of we have a particular way of doing things at NYCERS. With Callan's involvement it sometimes seems like we might be looking at research or information that Verite did maybe not particularly in the most recent past. So can you talk about timing a little bit, how it works maybe, how it could work or how it should work?

MR. MacDONALD: Yes. So our -- I can't speak for Callan, although my sense is some of the other types of information and analysis they provide you is based on older information. Our information is updated every year and so it includes not just the freshest desk research available, but in-country experts who go out and do interviews with relevant stakeholders. That would include government people, union officials, civil society activists, and so on as well as a legal analysis of how laws have changed. So our information is fresh every year. Of course certain reports or information, legal

Proceedings

analyses and things don't refresh every year. Because of many things around legal statutes and so on, changes don't happen every year. But we provide an annual refresh of how stakeholders in these countries are understanding and forecasting what may happen.

So, for example, Freedom of Association Laws rarely change so we would note there hasn't been a change, but we would also note that maybe the recent spate of strikes in that country should be viewed in this way or in a particular way. It can be seen as a positive sign of more strength and growths of the union sector or it can be seen, you know, usually in a mixed way of course, but the bottom line is that it's refreshed every year. I think some

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of the other information about market
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     transparency and things that we don't do,
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     because we are only a small part of what
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     Callan provides, may be based on older
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     information.
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           MS. VICKERS: Thank you.
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           MR. ADLER: So I have a question.
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     the way our emerging markets policy works is
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     it's based on the country, where a company is
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     traded; have I got that right?
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           MS. VICKERS: Listed, yes.
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           MR. ADLER:
                      So what you are talking
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     about here I think is more about, you know,
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     operations, particular supply chains. For
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     example, there is lots of companies that are
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     U.S.-traded companies, you know, Nike and
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     Apple and on and on, but where their supply
     chain operations are in some of the countries
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     that are considered emerging markets.
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     those are not considered emerging market
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     countries because they trade in the U.S., but
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     supply chain issues, you know, are all over
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     the world.
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           MR. MacDONALD: Of course, yes.
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           MR. ADLER: So part of my question is:
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     You know, if we are talking about moving from
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     a country screen to a company screen, are we
     limiting that to companies that are actually
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     traded in these emerging markets and -- you
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     know what I mean?
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           MR. MacDONALD: Yes.
                                 I mean, obviously
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     I can't make that decision for you.
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           MR. ADLER: But I would like your
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     reflection on that.
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           MR. MacDONALD: It seems quite
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     arbitrary. If you tend to lead with your
     values and look at labor risks in particular
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     and other kind of social risks, then the
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    relatively arbitrary notion of where they are
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     traded or where their headquarters is is
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     really sending you off in the wrong direction.
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     Because that's where if you are saying, okay,
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     based on our holdings and the products supply
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     chains associated with, that's where you can
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     say, okay, we are really heavily invested in
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     electronics and then you say, okay, what are
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     the several countries where electronics are
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    mostly produced that would have a risk for us;
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     say Malaysia or Taiwan or China and go from
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     there. So it takes a little bit of data, but
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20 it's not that difficult, you know, to leapfrog 21 to where your problem is.

MR. ADLER: I think that's a challenge for us, because I don't disagree with you that's sort of an arbitrary distinction. So really I think are we limiting ourselves to

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examining, in your case, the labor practices of companies that are traded in emerging markets, on emerging market stock exchanges as opposed to the country where operations or supply chain, what have you, take place. I mean, I think that's really a question for the board as opposed to Verite because I understand you could actually provide these services for any country that's traded anywhere, including much of the S&P 500.

MR. MacDONALD: Sure, or finding a way to slice and dice the holdings and say we see these top fifty companies, they are breaking down in electronics, food and beverage, apparel, construction, something like that. And say of those, unless you have additional information that would say otherwise, we would be able to say the likely countries where those things are being sourced would be these ten. And then you can do an overlay to say are you particularly interested in the country risk, are you particularly interested in what the sector is like in that country and how do the risks stack up there. Because even

Proceedings

countries right next door to each other can present a quite different labor profile on whether they are a sending or receiving country for migrant workers or the situation in China is quite different than the situation in Taiwan, even though you are dealing in the same Taiwanese-owned electronic companies.

So that's where with a little bit of data based on the company, what they are selling, what the shape of their supply chain is or, as I said, other kind of ways of cutting it where you say of a huge multinational company like a Unilever or something, you know, what are you spending most on, or we can look at the top say twenty commodities that they are associated with and say, okay, here are the top five to be concerned with. And then, importantly, that can give you a sense of, depending on the nature of the engagement, where do they rank

22 compared to their peers, how are they ranked 23 in terms of the existence or the effectiveness 24 of their compliance system. That's probably a little bit further down the road in terms of 0107

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really understanding when they say they have compliance in place, how do you judge that. But I think country-level sectorial information and commodity-level information, there is a lot there that can be easily worked with that can give you a much more nuanced picture without too much difficulty and actually without too much sharing of really in-depth proprietary information, because a lot of these companies have that information anyway.

So it's really about what level of comfort and leverage you have in gaining that kind of information from them. And that's where I talk about being able to advise you this is the information you have, these are the sources of information you think you can likely get from them based on the nature of your relationship, based on your capacity of your team to get that information, how much of a hassle are they willing to go to mag the companies, speaking frankly, to give you that information and then say, okay, with that we would be able to provide these kind of risk

Proceedings

2 profiles for you and once you have those risk 3 profiles say, okay, what might you do with those because, this is the information we face 5 with all sorts of people. You know, you can 6 give more and more information, that doesn't 7 mean it's easy for companies to then turn on a 8 dime and begin to do things differently or an 9 investor to say all right, wow, I didn't 10 realize things were that bad. Doesn't mean you are going to sell off or should sell off 11 12 right away and it doesn't mean you have 13 terrific alternatives to buy into either, so 14 -- but it gives you kind of a picture of which 15 -- a better picture of what you are faced with 16 with these companies and then perhaps work 17 through and say, okay, what do you want to do 18 with this information, what do you want to try 19 out in the next year or two.

MS. PENNY: So how does this work? would give us a list of countries or you give us reports on some of these or we would contact you when there is an investment coming 24 up in a country that we didn't normally invest 25 in? Like how does that work or how does it

Proceedings

work with NYCERS?

MR. MacDONALD: With NYCERS, for example, we have a set of countries. They changed a little bit over the years, but it's 25, sometimes 23 countries. So it's the routine set. I think it really depends on, you know, first determining what your goals are, but certainly we are able to provide country and levels, sectorial level, commodity level. But it's based on the type of company and the kind of information based on their compliance profile. What I mean by that, what are they doing or not doing to deal with these company problems, what kind of confidence can you have in the fact that they are moving in a positive direction or not.

MS. PENNY: So it would be -- so if we wanted to invest in one of those countries we would say, okay, we are looking at this country, has there been any change or --

MS. VICKERS: I don't think it's sort of that one-off like we would have Verite consult every time we are looking at a country. It would be if we decide to kind of go, it seems

Proceedings

like on page 12 there could be a discussion about what kinds of things we want to look at whether it's the sector level, the commodity level. And once we get past that discussion, then they would do like an annual report for us that would help inform our guidelines. So it's not on a case-by-case basis.

MS. PENNY: It would be there forever?
MS. VICKERS: It would probably be a regular review.

MR. BROWN: I am impressed with your presentation and with you. I have a question. Thank you for coming, by the way.

You talked about foods and commodity, food and beverage. Let's say we invest in a company that transports food and beverage from the U.S. into Mexico let's say through that corridor between Ciudad Juarez and Mexico City up to Yucatan and Acapulco. There are criminals and there are bandits and there are people in kidnapping truck drivers. You did mention that you have in-depth expertise on the ground, so other than the published reports and a lot of crime -- what's happening

Proceedings

in Cancun now, a lot of the crime is just not reported. In Cancun terrible crime situation there, bombings, the ferries going in between Isla Mujeres and Cancun, and just we are just not hearing any of this. So when you mention you have in-depth expertise on the ground, what does that mean; how would you know about things that are happening locally?

MR. MacDONALD: Right. That is ironic you mentioned that because that's a situation we are facing right now with some of our colleagues in Latin America, that we have to change our protocols and people's public profiles sometimes so that they don't get into trouble as they are poking around on some of these issues. So specifically we have people from those countries who work with us as consultants usually or as staff who have their finger on what's happening there.

And so as an example, in a place like Mexico we were hired by a company to do an assessment of migrant workers from the Northern Triangle countries, Guatemala, El Salvador and Honduras, going into the coffee

Proceedings

sector in Mexico. So there we would have people, who spoke the indigenous language of Guatemala in particular, go into Mexico with people from Mexico who do work for us. They would go and assess this information and they would get information both at the community level by talking to church people and local nonprofits as well as the companies. So these are people who are really in-depth experts on labor issues. Now, some of those same people may then spend the month of September and October doing these interviews that then go into our NYCERS report. So because of the diversity of the engagements we have, our people are exposed to conditions from a lot of different sectors. And then, as I mentioned before, they are interacting with workers one day, with CEOs the next, or with government people. Not all of them, some specialize, but those are the type of people we have.

And in terms of the really specific criminal gangs and so on, we had mentioned that we tailor our work so that our people aren't put into too much danger, but we

certainly analyze the nature of those situations and then highlight the risk information to the company. But then also try to figure out what's an appropriate thing that can be done under those circumstances based on those -- based on those challenges, but also particularly from the angle of workers. are not there to say ten-point plan on how you deal with criminal gangs, but rather looking at what does this mean for the workers, what additional risks are they facing, what does this mean for what usually-expecting company should have to be dealing with there. Because many companies throw up their hands and say it's really bad, we don't know what to do. And that would be a problem because it doesn't mean they should have a solution necessarily, but they should be trying things and having a continuous improvement process. MR. BROWN: You couldn't have answered it better just knowing that in Southern

it better just knowing that in Southern Mexico, a lot of counties in Mexico, so many people are not Spanish. There are so many indigenous languages and cultures, so your

Proceedings

answer --

MR. MacDONALD: Right. It's a really challenging situation because -- yes, because there is a lot of violence against people dealing with these kind of issues around the world, so you have to be really very careful.

MR. BROWN: The fact that you said they to go in and get to know the local people before making decisions, that's fine.

MR. KAZANSKY: So we also have a country screen in our private market investments as well. How would you be able or would you be able to help us with that? For example, if you were going to do some infrastructure investment, you know, in Honduras or something like that, currently we have one kind of setup and we are interested in reevaluating that, how or would you be able to help us?

MR. MacDONALD: Yes, definitely. The issue of construction is one that's getting a lot more attention in recent years because of the dirty, dangerous, and difficult nature of the work, and because very often there is a link to trafficking because so many foreign

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contract workers are involved, whether it's
construction here or in the Middle East or

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elsewhere. And so without a doubt, we would
     be able to mix that information about what we
     know about the country with the particular,
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     you know, construction scenario in that
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     country and then also again, you know, look to
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     see what due diligence is in place, if
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     anything, for that. Some cases around
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     construction we even played an onsite role as
     grievance advisors for really large
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     construction projects because of the nature of
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     the difficult situations.
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           MR. ADLER: Other questions for Shawn?
           Okay, thank you so much for coming in
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     and you will be hearing from us probably at
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     some point in time. Thank you for your
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     patience this morning.
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           Okay, if I am not mistaken, that
     concludes our public agenda. We do have a
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     couple of items for executive session, so a
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     motion would be in order to enter executive
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     session.
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           MR. BROWN:
                       So moved.
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           MR. ADLER: I am not going to recognize
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     the motion.
           MS. PENNY:
                      I move pursuant to Public
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     Officers Law Section 105 to go into executive
     session for discussion on particular
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 7
     investment matters.
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           MR. ADLER: Thank you, Ms. Penny.
                                               Is
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     there a second?
           MR. BROWN:
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                       Second.
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           MR. ADLER: Any discussion? All in
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     favor of the motion to enter executive
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     session, please say aye.
14
           Aye.
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           MS. VICKERS: Aye.
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           MS. PENNY: Aye.
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           MR. ORLANDO: Aye.
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           MR. KAZANSKY: Aye.
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           MR. BROWN: Aye.
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           MR. ADLER: All opposed, please say nay.
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     Any abstentions? Motion carries. Okay, I
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     believe we are in executive session.
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           (Whereupon, the meeting went into executive session.)
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           MR. ADLER: Okay, we are back in public session.
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     Susan, would you please report out of executive session?
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           MS. STANG: Certainly. In executive
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     session there was a discussion on regulatory
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     matters. Consensus was reached which will be
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     announced at the appropriate time.
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MR. ADLER: Thank you so much. With
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     that, I think we conclude our agenda for
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     today.
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             Is there a motion to adjourn?
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            MS. VICKERS: So moved.
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            MR. ADLER: Thank you. Is there a
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     second?
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            MS. PENNY: Second.
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            MR. ADLER: Thank you. Any discussion?
     All in favor of the motion to adjourn, please
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16
     say aye.
17
            Aye.
            MS. VICKERS: Aye.
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19
            MS. PENNY: Aye.
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            MR. ORLANDO: Aye.
21
            MR. KAZANSKY: Aye.
22
            MR. BROWN: Aye.
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            MR. ADLER: All opposed, please say nay.
24
     Any abstentions? The motion carries, the meeting is
25 adjourned. Thank you very much.
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             [Time noted: 12:45 p.m.]
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                  I, YAFFA KAPLAN, a Notary Public
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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 14th day of May, 2018.
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18	YAFFA KAPLAN
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