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3 NEW YORK CITY TEACHERS' RETIREMENT SYSTEM
4 INVESTMENT MEETING
5
6 Held on Thursday, April 7, 2022 via Videoconference
7 10:11 a.m.
8
9 ATTENDEES:
10 DEBRA PENNY, Chairperson, Trustee
11 DAVID KAZANSKY, Trustee
12 THOMAS BROWN, Trustee
13 SUMANTA RAY, Trustee, Mayor's Office
14 ALISON HIRSH, Trustee, Comptroller's Office
15 RUSSELL BUCKLEY, Trustee
16 PATRICIA REILLY, Teachers' Retirement System
17 SUSAN STANG, Teachers' Retirement System
18 ROBIN PELLISH, Rocaton
19 MICHAEL FULVIO, Rocaton
20 DEVON ALEXANDER, Rocaton
21 VALERIE BUDZIK, Teachers' Retirement System
22 LIZ SANCHEZ, Teachers' Retirement System
23
24 REPORTED BY:
YAFFA KAPLAN
25 JOB NO. 7321272
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2 ATTENDEES (Continued):
3 THAD McTIGUE, Teachers' Retirement System
4 DAVID LEVINE, Groom Law Group
5 PHILIP DUKES, Mayor's Office
6 MICHAEL HADDAD, Comptroller's Office
7 JOHN DORSA, Comptroller's Office
8 KOMIL ATAEV, Teachers' Retirement System
9 ISAAC GLOVINSKY, Teachers' Retirement System
10 JOHN MERSEBURG, Bureau of Asset Management
11 JONATHAN LESSER, Bureau of Asset Management
12 ENEASZ KADZIELA, Bureau of Asset Management
13 PETYA NIKALOVA, Bureau of Asset Management
14 WESLEY PULISIC, Bureau of Asset Management
15 BRENT PASTERNACK, Bureau of Asset Management
16 DAN HAAS, Bureau of Asset Management
17 JOHN ADLER, Comptroller's Office
18 SEAN BARBER, Hamilton Lane
19 YIN LING, StepStone
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1 Proceedings
2 MS. REILLY: Good morning. Welcome to
3 the April 7, 2022 investment meeting of the
4 Teachers' Retirement Board. I am going to
5 start by calling the roll.
6 Thomas Brown?
7 MR. BROWN: Good morning, Patricia.
8 MS. REILLY: Good morning. Russell
9 Buckley?
10 MR. BUCKLEY: Present.
11 MS. REILLY: Phil Dukes?
12 MR. DUKES: Present. I believe Suman
13 will be doing the question-asking today if
14 there are any questions.
15 MS. REILLY: Okay. So Suman Ray instead
16 of Phil Dukes. Are you present?
17 MR. RAY: Yes, I am here.
18 MS. REILLY: Alison Hirsh?
19 MS. HIRSH: Here. I have to step out
20 briefly. John Dorsa will be stepping up.
21 MS. REILY: David Kazansky?
22 MR. KAZANSKY: Present.
23 MS. REILLY: Debra Penny?
24 MS. PENNY: Good morning. I am present.
25 MS. REILLY: We have a quorum. I will
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2 turn it over to madam chair.
3 MS. PENNY: Good morning, everyone. We
4 are going to start with the Passport Funds'
5 February 2022 performance review. Mr. Fulvio,
6 over to you.
7 MR. FULVIO: Great. Good morning,
8 everyone. I am going to attempt to share my
9 screen to help facilitate that discussion
10 today. So we will start off with the
11 performance of February for the Passport
12 Funds, and at a high level what will stand out
13 here, as you will recall, February was another
14 down month for markets as we saw both
15 continued concerns around inflation and then
16 coming into the end of the month of February
17 the invasion of Ukraine by Russia and
18 obviously the market volatility that followed
19 with that. Showing up in the negative
20 numbers, you can see for various parts of the
21 equity markets. So in total what we call the
22 global market composite which is a mix here, a
23 benchmark we used for the Diversified Equity
24 Fund, you will recall it's about 80 percent US
25 equities.
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2 US equity market was down about 2 and a

3 half percent during the month of February, and
4 then the international composite market, a mix
5 of both developed and emerging markets was
6 down about 2 percent during the month. Global
7 market composite down about 2.4 percent, and
8 the Diversified Equity Fund slightly behind
9 that by a few basis points. That year to
10 date, that brought the Diversified Equity Fund
11 returns to negative 8.2 percent. That was
12 lacking, if you will, the global market
13 composite and hybrid benchmark by about 45
14 basis points. The -- I should say the
15 contribution or detraction rather in terms of
16 relative performance came predominantly from
17 the actively managed US strategies which has
18 been a challenging period for active
19 management for the first couple of months of
20 the year. And then in the international
21 equity composite again some relative
22 underperformance from active managers both
23 February and the overall year to date time
24 period.
25 The Balanced Fund had assets at the end
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2 of February of about 575 million dollars. You
3 can see both with selloff in equities and
4 fixed income assets year to date, that fund
5 was down about 3.7 percent. The International
6 Equity Fund had a return of negative 7.3
7 percent. The Sustainable Equity Fund, which
8 you will recall is more of a growth-oriented
9 strategy and has a growth-oriented benchmark,
10 that fund was down about 3.9 percent for the
11 month of February. It outpaced its benchmark
12 which was down about 4 and a quarter percent.
13 That fund so far year to date is down about 16
14 percent.
15 And then the two index oriented options,
16 down roughly in line with their benchmarks.
17 The US Equity Index down about 8.4 percent
18 year to date and the International Equity
19 Index down about 5.9 percent. The story does
20 get a little bit better with respect to market
21 returns for the month of March, but happy to
22 take any questions before we head there if
23 there is anything on February.
24 MS. PENNY: Any questions for Mike on
25 February? Okay.
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2 MR. FULVIO: Great. The March report,
3 which I will also put up on the screen. So as
4 I noted, the March numbers as you can see here

5   did turn positive.  Not enough to turn the
6   calendar year to date positive, but March
7   actually continued as the month began, it
8   continued much like the end of February with
9   markets selling off and being quite volatile
10   given the ongoing conflict in Eastern Europe.
11   The benchmarks did turn positive in quite a
12   notable way.  The markets rallied, equity
13   markets rallied into the end of the month of
14   March and you can see finished March with
15   positive returns.  The global market composite
16   I described earlier, that returned positive
17   2.5, 2.6 percent.  Really where that came from
18   was within US equity markets.
19         You can see the Russell 3000 Index was
20   up about 3 and a quarter percent for the month
21   of March.  Calendar year to date the US equity
22   market was still down about 5.3 percent
23   through the end of March.  The MSCI ACWI ex US
24   IMI Net Index, think of that as all global
25   equities outside the US, so encompassing both

2   developed and emerging markets.  That also had
3   a positive -- more modest but positive return
4   in the month of March to the tune of about 30
5   basis points, and year to date that portion of
6   the global market was down 5.6 percent.
7         The Diversified Equity Fund hybrid
8   benchmark for the month was up about 2 and a
9   half percent, and we would expect the
10   performance was -- we discussed in the past of
11   the fund to be somewhat similar to what we
12   have seen there in terms of market returns.
13   The Balanced Fund benchmark had a negative
14   return of about negative 71 basis points year
15   to date.  The calendar year to date return for
16   that benchmark is down about 3.97 percent, and
17   then as I noted earlier, international markets
18   with the more modest negative return for the
19   month, you can see the international composite
20   benchmark, that was down 6 basis points.
21   Developed markets with a positive return of
22   about 64 basis points and a negative return
23   for EM.  When looked at on its own, emerging
24   markets were down about 2 and a quarter
25   percent for the month of March.

2         So I will pause there and see if there
3   is any questions.
4         MS. PENNY:  Any questions for Mike?
5         MR. BROWN:  None from me.  I just want
6   to get on the record.

7 MS. PENNY: Okay. I think we are good,
8 Mike. All right. So then we turn to public
9 agenda for the pension funds, and we have a
10 quarterly fund performance overview.
11 MR. HADDAD: Dan or Kate, whoever has
12 got the slides, can we bring them up, please?
13 MR. HAAS: You see them on screen?
14 MR. HADDAD: Yes. Thank you. Just go
15 with the next slide. So I will just share
16 with you our revamped quarterly performance
17 reporting that we are going to do on your
18 behalf and some notable changes to how we are
19 going to do this. I would say first and
20 foremost, one of the benefits of reporting
21 just to you is we don't have to do any of that
22 comparative stuff. So we are going to talk
23 just about your portfolio and that's a good
24 thing.
25 I think the other major change is on a
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2 quarterly basis we are going to give you a
3 deep dive from two asset classes every quarter
4 and we are going to rotate that. So today you
5 are going to hear from John Merseburg in
6 public equities and Petya Nikalova on the
7 infrastructure portfolio. So we are going to
8 do that in executive session so they can go
9 into greater detail, and then like before, as
10 requested, we are going to give you a more
11 timely update on your performance. Given what
12 we are about to go through, feels like ancient
13 history, but nonetheless let's move forward.
14 So here are public market returns for
15 Q4. I am not going to spend a lot of time on
16 this because you heard from Mike. But a
17 couple of things to draw your attention, I am
18 going to refer back to it, is the strong
19 performance in the three months for US
20 equities, the poor performance for
21 international equities, and I am going to talk
22 about both of those in a little bit, and then
23 the other last four rows on this chart is some
24 of your fixed income exposure and note long
25 duration had positive returns while your
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2 credit portfolios were barely positive and
3 that had a function to do with the change and
4 slope of the yield curve. Next slide, please.
5 So some key drivers of market returns in
6 the fourth quarter. Reminder, the Omicron
7 really took off in the fourth quarter. In
8 this country it was December, but prior to

9 here it started in Johannesburg and quickly
10 spread to Denmark and England. And the
11 scientists had it right on its impact. So
12 that slowed the whole service sector
13 reopening, which kept long yields lower and
14 was a big impact on that. In the US the
15 inflation data worsened in the fourth quarter
16 and the markets started to price in a little
17 bit of Fed rate hikes in the front end and
18 that caused the curve to flatten.
19 So 2-year notes were up about 35 basis
20 points while 30-year bonds were down in 15
21 basis points. It's unusual to go in different
22 directions. They often go in the same
23 direction but different magnitudes, but that's
24 a big change and that's reflected in the
25 returns. The emerging markets
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2 underperformance which is in Q4 and as Mike
3 mentioned in Q1, the central banks emerging
4 markets started pricing rate hikes earlier due
5 to just the rhythm of what's happening and you
6 know, I have listed a few of them here and
7 Brazil was quite active.
8 The second theme was China's pivot in
9 this economic prosperity, and if you recall,
10 the first sector that really got beat up was
11 the private education stocks and then it
12 spilled over into the mega finance and banking
13 stocks. So that hurt the entire Chinese
14 equity market, so that's a big part of the
15 emerging markets equity negative performance.
16 Next slide, please.
17 So your portfolio. So we have listed
18 your asset classes. And in the second column
19 was the NAV at the end of the year and then a
20 look at 3-month, 1-year, 3-year, 5-year
21 returns. I would go first to your total
22 returns about two-thirds of the way down and
23 note for every -- you know, for every time
24 glimpse here, your returns were greater than
25 your policy benchmark, which is the second to
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2 bottom row on here, so that's a good thing.
3 The other thing we measure that we measure you
4 against is index 65/35 portfolio, 65 being
5 equities and you have underperformed that in
6 the last few time periods, and that is due to
7 your -- you have a heavy weight in emerging
8 markets equities. Like 9 and a half percent.
9 In this index there is zero exposure to
10 emerging markets equities, so it's really a

11   difference between your portfolio and the
12   benchmark.  The bottom one is the TUCS, which
13   as a reminder is 20 billion and larger pension
14   endowments and pools of capital.  As a
15   reminder, it's gross of fees.  Everything we
16   are showing you is net of fees.
17   Underperformance here meaningfully in the 3-
18   and 1-year and that's really due to their
19   heavy exposure to privates which were limited
20   for obvious reasons as well as their exposure
21   to venture capital which had a spectacular
22   run.
23         The other thing I would draw your
24   attention to here is the returns in private
25   market.  So private equity, real estate, and

2   infrastructure, and alternative credit, all
3   very strong in 3- and 1-year numbers and
4   that's obviously been accretive to your total
5   performance and we will go into detail on that
6   in just a minute.  Next slide here.
7         So when we decompose your returns versus
8   your benchmarks, we break it into two
9   subcomponents:  Asset allocation and manager
10   selection and you can see the excess return
11   was small, 18 basis points.  The allocation
12   effect was a small negative.  The selection
13   effect a small positive, but given the time
14   that we spent on manager selection, we are
15   going to go a little deeper into that.  Next
16   slide, please.
17         So this is another change in how we are
18   reporting to you.  We are going to show you
19   excess performance in public markets.  The
20   next slide is excess performance in private
21   markets.  In public markets we are showing you
22   the shortest time frame is three months, but
23   in private markets we are only going to go one
24   year and longer, given not a lot changes in
25   private markets quarter to quarter and we

2   really want to focus on some of the longer
3   term things that are happening in private
4   markets.  So in public markets what's
5   happening here?  The second row, world ex USA
6   underperformance in the shorter time period.
7   Still stronger performance on the longer time
8   period, and John in his deep dive is going to
9   address that for you.  And in the fourth row
10   that's your core fixed income.  Now, not a lot
11   of deviation in the shorter time periods.  The
12   longer one, the negative excess return, again

13   that was to our miss on duration on your
14   behalf so that's still showing up in those
15   numbers so that's the result of that.
16         I guess the second-to-bottom row, your
17   ETI portfolio.  Remember the duration of your
18   ETI portfolio was longer than the benchmark so
19   when rates are falling, one expects positive
20   outperformance.  When rates are rising,
21   negative.  So that's the attribution for that
22   excess performance.  So now more interesting.
23   Next slide, Dan.  On private markets you see
24   some large outperformance and large
25   underperformance numbers.  Again, I am not
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2   going to talk about infrastructure because
3   Petya is going to do that for your behalf, but
4   in private equity extraordinarily strong
5   returns across all these time series.
6   Starting with the shorter time series the
7   1-year.  Both realizations and markups in your
8   portfolio that you benefited from and the
9   really strong performers on the 1-year
10   included Apex, KKR, and EQT.  All with 1-year
11   returns in excess of 70 percent, 7-0, and then
12   Platinum was the other star performer with
13   greater than 50 percent.  The 10-year number
14   we see is still negative and that's a function
15   of your primary versus your runoff managers.
16   And again, it's something like 80/20 primary
17   but the difference in returns is like 1,200
18   basis points so that's still a drive on your
19   longer term performance.
20         In real estate you see some mixed
21   numbers here.  So in the 1-year, the
22   outperformance is due to markups that occurred
23   during the pandemic.  They were marked down.
24   Now they are marked back up.  The second thing
25   that you benefited from here is your portfolio
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2   construction and that you have had an
3   overweight relative to the index in industrial
4   and an underweight importantly to retail and
5   hospitality which has really suffered real
6   estate space.  Strong performers included
7   Exeter, KKR, and Blackstone, and your longer
8   term numbers are being hurt by your affordable
9   housing investments.  And as a reminder,
10   that's Related and Hudson and the two factors
11   hurting you there again was the change in
12   rental laws in '19 and the eviction
13   moratorium.  It hurts the cash flows so that
14   has hurt both of those investments.  To share

15   some numbers with you that the team gave me
16   this morning, Related on the 1-year is up 4
17   and a half percent but on 3 years is down 14.4
18   percent, where Hudson more on the eviction
19   stuff down 7.4 percent on the 1-year.  On the
20   3-year it basically is flat.  So it is what it
21   is.
22         And opportunistic fixed income strong
23   outperformance and 1-year outperformance
24   really came from four of your managers who
25   really have a broad mandate, and the sum of
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2   those four accounted for over 50 percent of
3   the total returns, and those managers were
4   KKR, Marathon, Apollo, and Oak Hill.  Next
5   slide, please.
6         So rebalancing activity on your behalf
7   in the fourth quarter.  I think we shared this
8   with you before, but if you remember, again
9   the first -- the fourth quarter, US equity
10   outperformance as it continued to rally, we
11   sold into that very slowly and we took your
12   overweight in equities from like 2 percent
13   closer to zero as we were concerned about the
14   rising inflation and potential impacts on
15   markets and that resulted in nine separate
16   transactions and about 2 and a half billion
17   out of your US equity portfolio, again, to get
18   you closer to neutral.  Where did that money
19   go?  Primarily to the cash desk and also to
20   some of your underweights which was in
21   different components of the structured fixed
22   income, and that's reflected in the sums of
23   these numbers here.  Next slide, please.
24         And these are your overweights and the
25   change here too.  I really like the bubble
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2   charts, but the bubble charts didn't show a
3   time series.  They showed you a point in time.
4   I thought this would be more instructive to
5   see how your over and underweights have
6   changed over the trailing three quarters and
7   as I alluded to your cash number went up.  And
8   the core fixed income stayed about the same,
9   and importantly your equity overweights if you
10   look at the end of June, they were in excess
11   of 2 percent.  At the end of September about,
12   you know, 1.7 and then importantly at the end
13   of the year, that number had come back down to
14   being barely overweight.
15         So I am going to turn it over to Dan who
16   is going to do some risk analytics on the

17 fourth quarter unless there are questions or
18 comments on Q4.
19 MR. BUCKLEY: The cash is doubling from
20 1 percent to 2 percent in the context of
21 rising inflation. Can you just explain a
22 little bit more about the strategy there?
23 MR. HADDAD: Yes. So long-term
24 allocation to cash is zero. So you have to
25 have some cash balances for professional
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2 needs. In a rising rate environment obviously
3 that's bad for fixed income, so we don't want
4 to put the money in fixed income. We are
5 concerned about valuations in the equity
6 market and how rising rates are going to cause
7 P/E multiple compression. So we took it out
8 of equity market because you are overweight,
9 so we are really left with not a lot of places
10 to put it recognizing the real return on cash
11 is highly negative given the inflationary
12 environment. It's better than highly negative
13 and minus if we had stuck it into the other
14 asset classes. So it was a last choice if you
15 will, and in terms of trying to be a little
16 defensive in the portfolio, it's the only
17 option. If we put it in private markets, it
18 takes years to deploy and they march to their
19 pacing plan. Thus the decision to go to cash,
20 and again small under and overweights. Really
21 small under and overweights. Over to you,
22 Dan.
23 MR. HAAS: Thanks, Mike. And good
24 morning, everyone. Again, two slides here
25 today at least in this section showing you
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2 some of the highlights for the risk summary
3 quarterly report that appears on your
4 quarterly. Jump right in here. Look at the
5 top left panel. The total plan risk for
6 quarter ended December 31st was 10.59 percent,
7 which is down from 11.3 percent in September.
8 Your benchmark risk also fell currently at
9 10.33 percent which was down from 10.84
10 percent in September. Portfolio risk declined
11 a little bit more than the benchmark risk over
12 the quarter. You can see small corresponding
13 reductions in active risk and beta quarter
14 over quarter.
15 As we look at the bottom panels, going
16 to move the slide there. We plot as before
17 the ex ante portfolio risk. That's the blue
18 line. Benchmark risk is the red line and

19 beta, portfolio beta is the gray bars there
20 for each of the last 12 months ending in
21 December. The projected portfolio benchmark
22 risk continued the downward trends that we
23 have seen in quarters past. Moving to the top
24 right, that chart breaks down the change in
25 risk in the fourth quarter into three



2 categories. There is a change in volatility,
3 change in correlation, and change in portfolio
4 exposures. Those top categories, the change
5 in volatility and change in correlation are
6 market-driven phenomena, meaning the risk
7 declines in step with market risk. They were
8 not the result of specific portfolio weights
9 or tilts within your investments.
10 The change in portfolio exposures, the
11 third line there, represents a portion of the
12 portfolio risk that was detached from the
13 market trends. Here the 29-basis-point
14 reduction in risk was led by US and eurozone
15 equity market factors. And then the last
16 section there, the asset class contribution to
17 risk in the top center. The table shows you
18 the difference between portfolio allocation by
19 assets and your allocation to risk. As in
20 quarters past, you will note we have allocated
21 about 60 percent of the portfolio to equities.
22 Standalone risk coming from the equity portion
23 of the portfolio was 16.71 percent. And
24 standalone risk coming from the fixed income
25 investments is 2.94 percent, and on a



2 contributory basis we see 10.13 percent is the
3 next column over or about 96 percent of the
4 total risk is coming from equities, and we
5 will elaborate on that theme.
6 The next slide here where we are showing
7 you the portfolio allocations performance and
8 then risk broken down by strategy as of
9 December 31st last year. If we look at the
10 leftmost section, we will take the allocation
11 first. We see a snapshot of your parking
12 place adjusted allocations as of
13 December 31st. This is echoing, you know,
14 some of the slides Mike showed you a few
15 minutes ago. At that time, again, we had
16 slight overweights to cash and we are
17 underweight core fixed income strategy. The
18 performance section in the center shows you
19 1-year return by strategy relative to the
20 benchmarks. Here we see the alternatives up,

21 outperforming their benchmarks and we show
22 underperformance in developed markets equity.
23 Again, John will be breaking that down for you
24 in more detail in a few minutes.
25 Next, we decompose the risk by strategy



2 in the rightmost section. The first three
3 columns in that section show you the portfolio
4 risk, the benchmark risk, and asset risk or
5 tracking error for each strategy. As a
6 reminder, tracking error is an indication how
7 closely the portfolio follows the index to its
8 benchmark. For context you either expect to
9 see very little or almost no tracking error
10 coming from a pure passive portfolio. You see
11 maybe 1 or 2 percent coming from an enhanced
12 index fund and then you see about -- you
13 expect something 4 percent for actively
14 managed funds.
15 Along those lines, you note the tracking
16 error is comparatively low for US equities.
17 We are mostly in passive strategies and a
18 little higher in emerging markets. We have a
19 greater asset allocation. And then lastly, we
20 show you how the individual strategies
21 contribute to the overall portfolio risk with
22 the rightmost column. As you recall from the
23 last slide, 96 percent of the overall risk
24 comes from equities and here you can see how
25 the individual equity strategies, for example,



2 contribute to the total. Also interesting,
3 you look at about two-thirds of the way down
4 the page in that rightmost column, you see our
5 core fixed income strategy slightly detracted
6 from risk. Negative 0.3 percent. That's due
7 to the strategies' slightly negative
8 correlation to the risk portfolio.
9 That wraps up the section for today.
10 Happy to take any questions you may have or we
11 can turn the conversation over to more recent
12 trends in the portfolio in executive.
13 MS. PENNY: Questions for Dan? Okay.
14 MR. HADDAD: So now part 2,
15 forward-looking issues that the markets are
16 facing, and then Dan is going to do some
17 stress test analysis around the right box on
18 here. Two different scenarios on the -- I
19 always struggle what the word is. I used
20 "conflict", "invasion", "war". I think I used
21 all three. Anyway, next slide, please.
22 So the Fed rate hike cycle has begun.

23 Go to the next one, please. So the important
24 determinants for markets on our rate cycle
25 either up or down is when does it start, what
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2 pace is it going to go, and where are we going
3 to. So we are going to talk a little bit
4 about all three of those for both the change
5 in the policy rate and then also quantitative
6 tightening.
7 So the Fed has two tools in their
8 toolkit and they are going to use both of
9 them. So we start with the slide here shows
10 the Fed, the starting point of where they are.
11 The orange dots represent the starting point
12 where we are when they started the cycle,
13 vis-à-vis five other rate cycles going back up
14 in history. On the vertical axis, it's the
15 deviation from inflation target and you can
16 see the further away from inflation target
17 than any of the other past cycles. The
18 horizontal line is deviation from full
19 employment, and what this slide shows is they
20 are not quite at full employment but two
21 updates to that. One, we got the last
22 employment number post putting this graph
23 together, so that would shift that a little
24 bit to the right, and then importantly
25 Chairman Powell's testimony a week ago Monday
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2 he talked about the unemployment rate is one
3 indication of employment, but another one
4 being jobs openings versus the number of
5 unemployed and that is roughly 11 million
6 unfilled jobs versus 6 million people
7 unemployed. If you put that together with
8 wage growth, arguably that orange dot belongs
9 somewhere in the upper right-hand quadrant,
10 which means that is a lot of work to do. So
11 that speaks to how much they have to do to get
12 inflation down. Next slide, please.
13 So the pace of rate hikes. That's an
14 important one as well. So you can see the
15 acceleration starting in the fourth quarter
16 and really in the first quarter on the number
17 of rate hikes priced into the end of '22 and
18 this speaks to the acceleration. There are
19 six meetings left. There are eight FOMC
20 meetings in every calendar year. We had two.
21 There are six more left, so now the markets
22 are pricing 50 for the May meeting and 50 for
23 the June meeting so the pace is accelerating
24 of what the front end of the bond market is

25   pricing in.  So this is meaningful as well.
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 1                Proceedings
 2   Next slide, please.
 3         As to the terminal rate, the third key
 4   component.  What this slide shows, again based
 5   on the front in the bond market, the peak in
 6   the funds rate.  This chart is a little bit
 7   old.  The bond market has been in motion
 8   rapidly over the past two weeks.  This shows
 9   the terminal rate around 2.40.  I think that
10   number today is closer to 2.60, and then as
11   market participants, we think based upon the
12   starting point and how far away they are from
13   their targets, is this adequate or is this
14   inadequate?  I think I would argue that it's
15   inadequate given headline inflation is 8
16   percent.  You remember what their target is is
17   2 and that implies a rapid decline in
18   inflation.  Is it transitory?  Is it supply
19   chain-driven?  We don't know in the future but
20   to me we still have it priced in a policy
21   rate.  Next slide, please.
22         So tool number 2, the Fed's balance
23   sheet.  So what this slide shows is the
24   aggregate quantitative easing put in place by
25   the major central banks over the past 12 years
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 2   or so.  The Fed is colored red.  The black
 3   line on the top of this is the sum of all the
 4   central banks and what this shows is the
 5   quarterly flow of quantitative easing that's
 6   taking place.  So key takeaways.  This
 7   magnitude of quantitative easing during the
 8   pandemic as compared to the global financial
 9   crisis, which is over in the left-hand side
10   and then like '11 through '14, remember that
11   was with QE2, QE3, whatever they were and the
12   European debt crisis going on at the same time
13   but just look how big this was during the
14   pandemic.  So the Fed's balance sheet swelled
15   to almost 9 trillion dollars.  Prepandemic it
16   was 6.  Preglobal crisis it was less than 1.
17   Are they going to get down to less than 1?
18   Absolutely not but the Fed minutes from the
19   last FOMC meeting that was released yesterday
20   and some key takeaways on start date, pace,
21   and magnitude, they have indicated they are
22   going to start in May if you dissect their
23   words, and importantly this cycle is going to
24   be unlike the past cycle which was '17 and '18
25   and that in '17 and '18 they left the balance
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2 sheet unchanged for three years. Here they
3 are leaving the balance sheet unchanged for
4 one month. The pace in '17 and '18 started at
5 10 billion a quarter. Got up to 50 billion.
6 We expect the starting point to be larger and
7 to get to 100 billion a month in three months,
8 and they are going to attempt to reduce the
9 balance sheet by almost 3 trillion dollars.
10 That's kind of reading the tea leaves of what
11 they said yesterday.
12 What does that mean for markets? It
13 means all things being equal, less demand for
14 fixed income securities, and if you believe in
15 the laws for supply and demand, that's lower
16 prices, higher yield. So that's bad for your
17 fixed income portfolio, and to the extent that
18 impacts other risky assets, again, time will
19 tell but to me two important dynamics that the
20 Fed was doing for policy hikes. Next slide,
21 please.
22 So as to the impact on the equity
23 market, the largest allocation in your
24 portfolio. What the slide shows here is the
25 forward P/E ratio in the S & P 500 going back

2 almost 25 years, and while you see on the
3 right-hand side that forward P/E has come
4 down, this is as the markets have come back
5 down and earnings have remained strong.
6 What's concerning is that that number is still
7 higher than any time period over the past 25
8 years with the exception of the NASDAQ bubble.
9 You can kind of ignore the numbers in the box
10 that shows a handful of different valuation
11 measure for the equity market, and they all
12 show the equity market relatively overvalued
13 with the exception of comparing it to yields.
14 If you compare it to yields, the equity market
15 has gone from more overvalued to undervalued,
16 but you know, what's happening with yields and
17 that's continuing today. So this is a source
18 of concern to the US equity market in our
19 opinion. Next slide.
20 So more concern. This shows again the S
21 & P forward price/earnings ratio in mustard
22 yellow, and the dotted blue line is the
23 10-year real yield on TIPS. So treasury
24 inflation protection securities. As a
25 reminder they got to about minus 1 percent

2 real rates. When you get to negative real

3 rates, you get to P/E expansion. If you think
4 about equity as a series of cash flows and if
5 you lower that discount rate, the net present
6 value of the cash flow is worth more. If you
7 increase that discount rate, the net present
8 value of cash flows is worth less. So what's
9 happening to that discount rate? It's going
10 up. What most market participants thinks are
11 real yields have to get somewhere between zero
12 and 1 percent and if that relationship holds,
13 that means the P/E ratio is somewhere between
14 14 and 18X as a reminder on that last graph.
15 We are currently at 19X so more P/E
16 compression. Next slide, please.
17 So these are meant to be less alarming
18 slides. So this aggregates the P/E ratio
19 between the 25 largest stocks and remainder of
20 the S & P 500 and the takeaway is the index is
21 heavily influenced by the high market cap
22 stocks. So think Microsoft, Apple, the Google
23 complex, and they trade at high multiples for
24 really good reasons. They make a lot of
25 money. So if you look at the rest of the

2 market, in the blue line the P/E multiple is
3 more reasonable. What is that, somewhere
4 around 18, maybe 17 times, so not as alarming.
5 Next slide, please.
6 Same theme, different expression. This
7 slices the equity markets into many different
8 subcomponents. On the left-hand side is the S
9 & P 500, on the right side NASDAQ composite,
10 and then some small cap and large cap in
11 between. The takeaway is the same in all
12 three. The blue line represents the index.
13 I'm sorry. The yellow bar represents the
14 median stock price, and the red bar the
15 average stock price, and what you see here is
16 the indices are outperforming the components.
17 Again, the large caps are holding up the
18 indices, but there has been a lot of carnage
19 under the surface. Particularly the NASDAQ,
20 the average stock is down 40 percent from its
21 high. That gets lost in Microsoft being 10
22 percent off its high and Apple 7 percent off
23 its high. A lot of things have really been
24 taken to the proverbial woodshed.
25 MS. PELLISH: This is a really important

2 point, and it's why active managers have
3 tended to underperform because active managers
4 equal weight with portfolio. They don't

5 market weight the largest cap stock. So
6 that's been a big contributor. It's been hard
7 to do even as well as the benchmark unless
8 your portfolio is concentrated in the largest
9 tech stocks.
10 MR. HADDAD: Next slide, please. So
11 this is meant to show again some of the
12 effective excesses taken out of the market.
13 So there are four different lines on here.
14 The takeaway, they are all down 50 percent
15 plus off their highs. The IPO Index, the SPAC
16 Index, the Renewable and Clean Tech Index, and
17 the Fintech Index. What I would add to that
18 is the crypto complex. So the crypto complex
19 at peak was over 3 trillion dollars and now
20 it's under 2, so that's down almost 45 percent
21 as well. So if you think that there was
22 excess liquidity in the markets due to
23 monetary policy, a lot of the -- much of the
24 -- a lot of excess has been taken out.
25 Enough? You know, we will know in the future


2 but a lot has come out. Next slide, please.
3 Okay. The implications of the Russian
4 invasion of the Ukraine. You know, I put up
5 here a quote from Biden a couple of weeks into
6 it. His words are there, but you know what he
7 is really saying is war is inflationary.
8 Always has been and there is no reason to
9 think not so in this case as well. What does
10 this mean for markets? One could argue we
11 have been in a deflationary environment for
12 the past 30 to 40 years and this is going to
13 accelerate at least a diminishing of the
14 deflationary environment, if not to
15 inflationary environment.
16 Second key takeaway. The EU has to
17 reduce its dependency on Russian energy. I
18 put up their numbers here across the three
19 subcomponents of energy and it's also going to
20 accelerate their path to renewables but as we
21 know, that doesn't happen overnight. So at
22 least what Germany has publicly announced is a
23 shift in the near term to increase of
24 renewable energy. It's not just energy as
25 well. It's commodities as well. Russia and


2 Ukraine are big suppliers of a handful of
3 commodities and importantly fertilizer and
4 something like 80 percent of the cost of
5 fertilizer is the cost of natural gas and the
6 cost of natural gas in Europe, depending on

7 what country, is four to eight times the cost
8 in US. We are abundant in natural gas in this
9 country so our prices are relatively low.
10 Europe is not. They are dependent on Russia
11 for it, and all signs point to that change in
12 the future.
13 Another important change. Germany has
14 pledged to increase its defense spending to 2
15 percent of its GDP. This is likely to push
16 Germany away on a forward basis away from a
17 fiscal surplus to a fiscal deficit, and that
18 has implications for German interest rates
19 which has been one of the things holding down
20 global interest rates, and to that point
21 German tenures have gone from in the pandemic
22 to maybe minus 40, something like plus 70
23 basis points. So that transition is underway
24 as well.
25 And a graph I didn't share on here but I


2 think I shared in the past the amount of
3 negative yielding government debt in the
4 world. That has peaked at about 18 trillion.
5 It's about 2 trillion now. So that's still in
6 Japan and a little bit in Europe, but most of
7 it is positive yield now.
8 The Russian economy, to the extent that
9 one cares, this was a quote from the deputy
10 national security advisor on 60 Minutes a
11 couple of weeks ago, "an economic abyss".
12 Going back in history, the Soviet Union at its
13 peak was something like 16 percent world GDP.
14 The Soviet Union broke up, it became high
15 single digits. If they become isolated and
16 just a petrol state, it's going to be 2
17 percent of GDP and importantly because of the
18 ramifications on inflation on global central
19 banks leads to sooner/faster/more rate hikes
20 and that increases the probability of a hard
21 landing.
22 Let me turn it over to Dan. He is going
23 to lead you through a couple of stress tests
24 on your portfolio.
25 MR. HAAS: Thanks, Mike. Hello again,


2 everyone. So again as in times past, I am
3 sort of cribbing some research MSCI did on the
4 invasion and exposing your portfolio to it.
5 The research here really is attempting to --
6 I'm sorry. To frame the market's reaction to
7 the invasion of Ukraine. You will see a lot
8 of themes playing out here that Mike just

9   discussed.  We know that the incursion, of
10   course, is bad for markets.  There is a lot
11   more uncertainty with regard to supply chains,
12   commodities shortages, unknown impacts to
13   corporate earnings.  So along those lines,
14   MSCI research developed these two scenarios
15   that helps us frame the potential impact of
16   that invasion.
17         Looking at the left side or left of the
18   two, there is a soft landing scenario where
19   the conflict de-escalates before the market
20   prices in more structural changes.  This is an
21   optimistic scenario.  A ceasefire and
22   deescalation of the conflict would stabilize
23   energy prices around pre-conflict levels.
24   Apart from a small short-term impact, there is
25   no persistent inflationary pressures.  The hit

2   to economic growth is relatively small, and
3   central banks stick to their plans for
4   tightening monetary policy.  US and German
5   sovereign yield curve slightly flatten due to
6   slower growth, global equities decline, credit
7   spreads widen, and the US dollars strengthens
8   a  little bit relative to the euro.
9         And then on the right there, sort of a
10   dimmer scenario that we call the prolonged
11   conflict, and again this has longer reaching
12   market impact.  The idea is that these
13   sanctions impose a significant drag on growth
14   and inflation.  You see more extreme
15   inflationary shocks, long-term rates go up as
16   long-term inflation expectations rise, but
17   real long-term rates drop as the economy slows
18   down.  Higher energy prices and lower business
19   and consumer confidence slow economic growth,
20   so you see equities selling off more extremely
21   and credit spreads rise and the US dollars
22   gains more significantly versus the euro.
23         Given these assumptions, we show some
24   results on the next slide here.  And again,
25   these are the predictors for each of the

2   scenarios for both the overall portfolio and
3   selected strategies within your portfolio.
4   Each scenario is represented by a different
5   color bar.  I would say the softer landing is
6   blue, the prolonged conflict is in red there,
7   and the resulting particular change in value
8   is, of course, plotted along that horizontal
9   axis.  The total portfolio level you can see
10   that the results range from a 5.3 percent

11 decline under the de-escalation scenario to a
12 14.2 percent decline in the prolonged conflict
13 scenario. You also note that international
14 equities sell off more extremely in the US as
15 they are expected to feel the impacts more
16 deeply than our markets will, and then finally
17 you can see the more defensive strategies like
18 TIPS and structured fixed income mitigating
19 some of these losses. I will leave you there.
20 Glad to address any questions you may have
21 either now or offline.
22 MS. PENNY: Thank you. Questions?
23 Thank you so much.
24 MR. HAAS: Sure thing.
25 MR. HADDAD: So now we want to shift to




2 executive session. I don't know how --
3 MS. PENNY: Okay. All right, well, then
4 here we go. Do we have a motion to move to
5 executive session?
6 MR. BROWN: So moved.
7 MS. PENNY: Thank you, Mr. Brown. Do we
8 have a second?
9 MR. DORSA: Second.
10 MS. PENNY: All those in favor, please
11 say aye. Aye.
12 MR. DORSA: Aye.
13 MR. RAY: Aye.
14 MR. BUCKLEY: Aye.
15 MR. BROWN: Aye.
16 MR. KAZANSKY: Aye.
17 MS. PENNY: Any opposed? Any
18 abstentions? Okay. We are moving to
19 executive session. I think we just need --
20 Patricia, we need like two minutes in between.
21 MS. REILLY: We are first going to do
22 the Passport.
23 MS. PENNY: We are moving to executive
24 session. Okay. We are in executive session.
25 (Meeting moved to Executive Session)




2 (Discussion off the record.)
3 MS. PENNY: We are back in public
4 session. Hello, everyone. Susan will you
5 please report out?
6 MS. STANG: Certainly. You can now see
7 me? Okay. Great. In executive session, we
8 received a transition report on a completed
9 transition within the Diversified Equity Fund
10 and the variable funds. We received an
11 overview of quarterly performance at the fund
12 level and also more detailed information on

13   two specific asset classes.  We laid over an
14   issue within the private equity asset class.
15   We received two presentations within the
16   private equity asset class.  Consensus was
17   reached.  We received an infrastructure
18   presentation.  Consensus was reached.  We
19   received a presentation in the emerging
20   manager alternative credit asset class.
21   Consensus was reached.  Two administrative
22   matters were discussed, and a personnel matter
23   was discussed.
24         MS. PENNY:  Thank you, Ms. Stang.  Does
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2   anyone have any further business?  Okay.
3   Hearing none, do I hear a motion to adjourn?
4         MR. BUCKLEY:  So moved.
5         MS. PENNY:  Thank you, Mr. Buckley.  Do
6   I hear a second?
7         MR. BROWN:  Second.
8         MS. PENNY:  Thank you, Mr. Brown.  All
9   those in favor, please say aye.  Aye.
10         MS. HIRSH:  Aye.
11         MR. RAY:  Aye.
12         MR. BUCKLEY:  Aye.
13         MR. BROWN:  Aye.
14         MR. KAZANSKY:  Aye.
15         MS. PENNY:  Any opposed?  Any
16   abstentions?  We stand adjourned.
17   (Time noted: 1:27 p.m.)
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2                    C E R T I F I C A T E
3   STATE OF NEW YORK    )
4                        : ss.
5   COUNTY OF QUEENS     )
6
7              I, YAFFA KAPLAN, a Notary Public
8        within and for the State of New York, do
9        hereby certify that the foregoing record of
10        proceedings is a full and correct
11        transcript of the stenographic notes taken
12        by me therein.
13              IN WITNESS WHEREOF, I have hereunto
14        set my hand this 20th day of April, 2022.

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17 ______________________
18 YAFFA KAPLAN
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