Agenda
Investment Advisory Council (IAC)

Tuesday, December 13, 2022, 1:00 P.M.*

Hermitage Room, First Floor
1801 Hermitage Blvd., Tallahassee, FL 32308

1:00 – 1:05 P.M.	**1.**	**Welcome/Call to Order/Approval of Minutes** *(See Attachments 1A – 1E)* ***(Action Required)***	*Tere Canida, Chair*
1:05 – 1:15 P.M.	**2.**	**Opening Remarks/Reports** *(See Attachments 2A – 2E)*	*Lamar Taylor,* *Interim Executive Director & CIO*
1:15 – 2:00 P.M.	**3.**	**Strategic Investments Asset Class Review** *(See Attachments 3A – 3B)*	*Trent Webster* *SIO, Strategic Investments* *Sheila Ryan* *Richard Grimm* *Andre Mehta* *Cambridge*
2:00 – 3:15 P.M.	**4.**	**Strategic Investments Asset Class Structural Review** *(See Attachments 4A – 4B)*	*Faraz Shooshani* *Verus* *Sheila Ryan* *Richard Grimm* *Andre Mehta* *Cambridge* *Lamar Taylor,* *Interim Executive Director & CIO*
3:15 – 4:00 P.M.	**5.**	**Fixed Income Asset Class Review and Securities Lending** *(See Attachments 5A – 5B)*	*Katy Wojciechowski* *Fixed Income SIO* *Kevin Moose, Fixed Income SPM* *Jon Yeatman, Fixed Income SPM* *Jay Love* *Yasmin Ben-Yousef* *Mercer*
4:00 – 5:00 P.M.	**6.**	**Asset Allocation Results** *(See Attachment 6A – 6B)*	*Lamar Taylor,* *Interim Executive Director & CIO* *Katie Comstock,* *Aon*

5:00 – 5:10 P.M.	**7.**	**Asset Class SIO Updates** *(See Attachments 7A – 7E)*	*Steve Spook, Real Estate SIO* *Tim Taylor, Global Equity SIO* *John Bradley, Private Equity SIO* *Dan Beard,* *Chief Defined Contribution Programs* *Mike McCauley, Senior Officer* *Investment Programs & Governance*
5:10 – 5:20 P.M.	**8.**	**Major Mandate Performance Review** *(See Attachment 8)*	*Katie Comstock* *Aon*
5:20 – 5:30 P.M.	**9.**	**IAC Compensation Subcommittee Update**	*Tere Canida, Chair*
5:30 – 5:35 P.M.	**10.**	**Audience Comments/Proposed 2023 Meeting Dates/Closing Remarks/Adjourn** *(See Attachment 10)*	*Tere Canida, Chair*

***All agenda items and times are subject to change.**

MINUTES
INVESTMENT ADVISORY COUNCIL
June 28, 2022

A hybrid meeting of the Investment Advisory Council (IAC) was held on Tuesday, June 28, 2022, via Microsoft Teams. The attached transcript of the June 28, 2022, meeting is hereby incorporated into these minutes by this reference.

Members Present: Peter Jones
Tere Canida
Gary Wendt
Vinny Olmstead
Bobby Jones
Pat Neal
Robb Turner
John Goetz

SBA Employees: Lamar Taylor, Interim Executive Director & CIO
Kent Perez
John Benton
John Bradley
Wes Bradle
Dan Beard
Mini Watson
Walter Kelleher
Mike McCauley
Tim Taylor
Katy Wojciechowski
Steve Spook
Trent Webster

Consultants: Sheila Ryan (Cambridge Associates)
Katie Comstock (Aon)
Glenn Thomas (Lewis, Longman, Walker)
Amy Michaliszyn (Federated Hermes)
Paige Wilhelm (Federated Hermes)
Luke Raffa (Federated Hermes)

WELCOME/CALL TO ORDER/APPROVAL OF MINUTES

John Goetz called the meeting to order at 1:05pm. John explained that he would be conducting the meeting in lieu of Chair Tere Canida. He gave a reminder to all to state their name before speaking.

John Goetz requested a motion to approve the minutes from the March 29, 2022, IAC meeting. Senator Neal moved. Tere Canida seconded. All in favor. The minutes were approved.

OPENING REMARKS/LEGISLATIVE UPDATE/REPORTS/OTHER UPDATES & REPORTS

Lamar Taylor, Interim Executive Director and CIO provided a performance update as of close on March 28, 2022, for the total fund. The FRS Pension Plan was down 4.79 percent, and the benchmark was down 6.29 percent and 150 bps ahead of the benchmark. The Fund balance was at $183.6 billion which was $16 billion less than the beginning of the fiscal year, but that was net of $600 million of net benefit payments monthly. Lamar also briefly highlighted events that had taken place since the last IAC meeting in March. He also stated that as of the past quarter, the total fund had exceeded its alternative investments cap of 20 percent and was slightly above the cap on a net asset value basis, and he noted that there was no obligation to sell assets to get back into alignment.

Lamar went back to performance and stated that the Pension Plan was down 4.79 percent as a function of inflation and discussed actions taken by the Feds to address that. He also discussed diversification, and some of the actions that had been taken since that last IAC meeting to address some of the issues with Fixed Income and increases in inflation and rates and volatility. He also gave a reminder that at the next IAC meeting, the Asset Liability Study will be reviewed. Lamar answered questions from IAC members.

Senator Neal requested that the IAC have the ability to input their ideas to the actuarial assumptions conference and to be involved in the statement and presentation that Lamar will present at the conference. Senator Neal also requested having a discussion on the assumptions, liability asset mix, and allocation mix at the next meeting.

PRIVATE EQUITY REVIEW

John Bradley, Senior Investment Officer, discussed the asset class policy and process, overall performance, and composition of the asset class. John briefly gave an overview of the goals of the asset class; Private Equity's primary and secondary benchmarks; staff within the asset class; and Private Equity's investment process. John discussed performance of the overall portfolio and stated that since the inception of the asset class, over $32 billion has been committed to 309 funds and cumulative paid-in capital was $26.6 billion, and PE had received distributions to date of $31.3 billion. As of December 31, 2021, the asset class had outperformed the primary benchmark over all time periods, but it was expected that first quarter performance would come in relatively flat for the asset class. The asset class continued to have strong distributions, and 2021 ended as the strongest year ever with a net positive cash flow of $3.5 billion. John also provided an overview of the composition of the portfolio.

Wes Bradle, Senior Portfolio Manager, discussed substrategy exposure and performance in each substrategy within the Buyout and Growth Equity portfolio. Wes discussed target substrategy buyout allocation by size and stated that 75 percent of the portfolio is targeted to go to middle-market and small buyout, because studies indicated they have a greater potential to outperform and lower correlation with public markets than a large buyout. Performance in the Buyout portfolio remained strong, and it outperformed the benchmark over all time horizons and outperformed public markets by 600 bps.

Wes also discussed the Venture Capital portfolio and highlighted that the portfolio continues to outperform the benchmark over all time horizons and has outperformed the public markets by 900 bps. Wes gave an overview of the composition of the Distressed/Turnaround portfolio and stated that it outperformed the benchmark over all time horizons and had outperformed the public markets by 970 bps. Wes concluded by providing an overview of the Secondary portfolio and stated it had also outperformed the benchmark median over all time horizons and outperformed the public markets by 700 bps. Wes and John answered questions from IAC members.

Sheila Ryan, Cambridge Associates, discussed how the total Private Equity asset class performed against other clients and stated that it had very strong relative performance on both a short term and long-term basis. Sheila also discussed the market environment and the effect on returns in Global Buyouts, Growth Equity, and Venture Capital.

FLORIDA GROWTH FUND REVIEW

Shelia Ryan, Cambridge Associates, gave an update on performance and strategic impacts. Sheila explained that the program is authorized to invest up to 1.5 percent of the fund's assets, and as of June 2021, 0.33 percent of total assets had been invested. Sheila explained that the mandate is to invest in technology and growth businesses domiciled in Florida or have a principal address in Florida, and that the program is comprised of three funds across six tranches and is managed by two managers, which are Hamilton Lane and J.P. Morgan Asset Management.

Sheila discussed the results of the January 2022 OPPAGA report and gave an overview of the investments made as of June 30, 2021; the counties involved, and the number of jobs created in Florida; capital expenditures made; and distributions through the end of the past fiscal year. Shelia stated that although performance had been solid, Hamilton Lane's FGF Trance I & II underperformed relative to the benchmark. There was extensive discussion regarding performance and the purpose of the Fund, and Sheila Ryan, Ankur Dadhania, John Bradley, and Lamar Taylor answered questions from IAC members.

FLORIDA RETIREMENT SYSTEM INVESTMENT PLAN REVIEW

Dan Beard, Chief of Defined Contribution Programs, gave an overview and brief history of the Florida Retirement System Pension Plan and Investment Plan, and provided information regarding enrollment into the plans for new employees. He stated that there were $13.6 billion dollars under asset as of May 31st, 2022 and discussed governance of the plans; participating employers; and the total number of members and retirees in each plan.

Mini Watson, Director of Administration, provided a snapshot of the Investment Plan and discussed administration of the plan. Through May 31, 2022, distributions were at $16.8 billion, and there were 280,169 members. Mini discussed that the major components such as record-keeping and custodial services are outsourced per Florida Statute and gave an overview of the service providers and the functions that they are responsible for overseeing. Mini discussed plan choice statistics for the Investment and Pension plans as of March 31, 2022; investment plan membership growth; second election statistics; plan administration statistics; and requests for intervention. Mini answered questions from IAC members.

Walter Kelleher, Director of Educational Services, discussed the MyFRS Financial Guidance Program for both retirement plans, and gave a brief overview of the partners of the program and the tools and services that they provide to members of the plans. The financial guidance program incorporates telephone, myFRS.com, print materials, videos, and workshops/webcasts for members. During the time period of April 1, 2022, through March 31, 2022, there was a 28 percent increase in Ernst & Young financial planner calls, a 23 percent increase in financial planning workshops, attendance at financial planning workshops was up 53 percent, and there was a slight decrease in website hits and website chats. Walter closed by providing updates regarding forms, workshops, the MyFRS.com website redesign, and a new online chat provider that utilizes AI. Walter answered a question from John Goetz.

Dan Beard stated that as of May 31, 2022, performance of the asset class was -6.41 percent, and the asset class was below the benchmark by 113 bps. He explained that this was due to the market. Dan discussed available fund options; Investment Plan assets under management; current retirement date fund composition; and initiatives for fiscal year 2022-23. Dan answered questions from IAC members.

Katie Comstock, Aon, provided an investment structure overview. She stated that Aon did not have any recommended changes, and believed the SBA was in line with industry best practices and offered a strong retirement plan for participants. Katie also discussed retirement trends.

FLORIDA PRIME REVIEW

Glenn Thomas, of Lewis Longman Walker, provided a summary of the Florida PRIME legal compliance review. Glenn explained that the purpose of the study is to ensure that Florida PRIME is administered in compliance with Chapter 218, Sections 218.40 thru 218.412. Glenn stated that during the period of May 17, 2021, through May 16, 2022, Florida PRIME was administered in compliance with applicable Statutes.

Katie Comstock, Aon, provided an overview of the Florida PRIME best practices review. Katie stated that the portfolio and the pool were managed in a manner consistent with best practices and in the best interest of its participants interests. Katie discussed the result of the participant survey. Katie provided a business case update and stated that progress had been made. Katie closed with an update on proposed money market reform updates and stated that any impacts to proposed rule changes are to be determined. Overall, PRIME continues to be managed very well and the investment policy continues to be comprehensive and there are no recommended changes to the Florida PRIME IPS.

Luke Raffa, Federated Hermes, discussed participant outreach efforts and feedback of users on the Florida PRIME pool. Luke discussed the Fed and yield; market outreach and participant outreach; conference participation; and gave a brief analysis of competitive plans in Florida.

Paige Wilhelm, Federated Hermes, discussed that yields were increasing, and how the Fed's monetary policy changed dramatically over the past year and impacts on the market. Paige also gave an overview of the portfolio composition and characteristics, and performance. Paige stated that Asset Backed Commercial Paper and Bank CDs were the highest yielding securities, so the bulk of exposure in the portfolio was to those security types. Paige also discussed stress test results as of March 31, 2022.

REVIEW OF THE FLORIDA PRIME IPS STATEMENT

John Goetz explained that this item requires annual approval by the Investment Advisory Council, and there were no changes to the Florida PRIME Investment Policy Statement. John Goetz requested a motion to approve the 2022 Florida PRIME Investment Policy Statement. Senator Neal seconded the motion. All in favor. The 2022 Florida Prime Investment Policy Statement was approved.

REVIEW CHANGES TO THE FRS PENSION PLAN INVESTMENT POLICY STATEMENT

John Goetz explained that the material change to the FRS Pension Plan Investment Policy Statement was that the Private Equity policy range was being increased from a high of 10 percent to a high of 12 percent. Lamar Taylor commented that this was due to a numerator and denominator effect for valuations, and it was recommended to increase the upper policy limit and continue monitoring the valuations. Senator Neal moved to approve the 2022 FRS Pension Plan Investment Policy Statement. All in favor. The 2022 FRS Pension Plan Investment Policy Statement was approved.

ASSET CLASS SIO UPDATES

Tim Taylor, Senior Investment Officer, Global Equity, detailed the Q1 2022 market environment, and stated that during Q1 the asset class underperformed the benchmark by 95 bps which caused the active return for the 12-month ending March to trail the benchmark, and long-term performance was ahead of the benchmark. Tim stated the underperformance in the first quarter was partly due to an underweight to energy but was also due to other factors such as increasing interest rates, inflation, and the war in Ukraine. Tim stated that he expected second quarter active performance would improve, and it was up 30-40 bps as of close on June 27th. Tim also discussed the active aggregates; active performance strategy; and gave an update on Global Equity initiatives. Tim answered a question from John Goetz.

Katy Wojciechowski, Senior Investment Officer, Fixed Income, discussed asset class portfolio performance and stated the asset class outperformed the benchmark over all time periods. Katy also discussed benchmark returns and risk; outlook for the asset class; and benchmark returns. Katy also discussed active risk; the expanded risk budget for Fixed Income; and other opportunities that are being considered to reduce risk and in a rising rate environment. Katy answered a question from Peter Collins.

Steve Spook, Senior Investment Officer, Real Estate, provided an overview of the market; performance; risks and issues to consider; opportunities and priorities; the Real Estate portfolio sector allocation; leverage; diversification; and recent activity. Regarding performance, the total asset class had strong performance and discussed the contributors to the strong outperformance. Steve answered questions from IAC members.

Trent Webster, Senior Investment Officer, Strategic Investments, discussed the composition of the Strategic Investments portfolio; performance; recent activity; funds in the pipeline; and investment themes.

MAJOR MANDATE PERFORMANCE REVIEW

Katie Comstock, Aon, provided an overview of the performance of the Pension Plan and the Florida Hurricane Catastrophe Fund. Katie answered questions from IAC members.

AUDIENCE COMMENTS/2022 MEETING DATES/CLOSING REMARKS/ADJOURN

Senator Neal requested that a presentation be given to the members of the Investment Advisory Council to discuss the purpose and role of Council at the September 13th IAC meeting. Senator Neal also requested a discussion of the liability mix, asset allocation, some alternatives versus Fixed Income, and recommendations for the actuarial rate of return. Lamar and Tere Canida agreed to add the requested items to the September agenda. There being no questions or further items for discussion, John Goetz adjourned the meeting at 5:31pm.

Tere Canida, Chair

August 22, 2022

Date

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Investments Advisory Council Meeting

June 28, 2022

PHIPPS REPORTING

Raising the Bar!

STATE BOARD OF ADMINISTRATION OF FLORIDA

INVESTMENT ADVISORY COUNCIL

VOLUME 1 (Pages 1 - 204)

Tuesday, June 28, 2022

1:03 p.m. - 5:32 p.m.

State Board of Administration of Florida
1801 Hermitage Boulevard
Tallahassee, Florida 32308

STENOGRAPHICALLY REPORTED BY:

KIMBERLY S. BARTHOLOMEW
Professional Stenographer

Job No. 226483

APPEARANCES:

IAC MEMBERS:

VINNY OLMSTEAD
PETER COLLINS
PAT NEAL
JOHN GOETZ
TERE CANIDA
PETER JONES
GARY WENDT
ROBB TURNER
BOBBY JONES

SBA EMPLOYEES:

LAMAR TAYLOR
JOHN BENTON
JOHN BRADLEY
TRENT WEBSTER
KATY WOJCIECHOWSKI
STEPHEN SPOOK
TIM TAYLOR
DANIEL BEARD
MIKE McCAULEY
WES BRADLE
MINI WATSON
WALTER KELLEHER
TIM TAYLOR

CONSULTANTS:

SHEILA RYAN, CAMBRIDGE
LUKE RAFFA, FedERATED HERMES
PAIGE WILHELM, FedERATED HERMES
AMY MICHALISZYN, FedERATED HERMES
Katy COMSTOCK, AON
GLENN THOMAS, LEWIS, LONGMAN, & WALKER

INVESTMENT ADVISORY COUNCIL
COMPENSATION SUBCOMMITTEE

MR. GOETZ: This is John Goetz. I'm just standing in for Tere Canida who is in the meeting virtually, but would like me to stand in. She is not feeling quite up to par.

So I'm going to call this quarterly meeting of the IAC to order. First of all, I'd like to welcome everyone that's here in person and virtually to this meeting. I also would like to remind everybody during the question and answer periods to announce your name first if you have a question. You don't need to say chairman or anything, you just say your name first so that's in the record.

And then I think we would also like to make sure that we do the first order of business right now before I turn it over to Lamar, and that is to approve the minutes which are in your packet in Section 1 from the prior meeting. Can I hear a move to approve --

MS. CANIDA: I move.

MR. GOETZ: Thank you. Move and second in.

All in favor?

(En masse: Aye.)

Okay. With that order of business, let's turn it over to you, Lamar, and your update and a very interesting period of time we're in. So we're anxious to hear the update. Thank you.

MR. TAYLOR: Very good. Thank you very much.

Starting off with a little bit of performance. Through the close of yesterday for the total Fund of the FRS pension was down 4.79 percent, the benchmark was down 6.29 percent. So we're 150 basis points ahead of benchmark, unbalanced stands at a-- there's $183 billion which is $16 billion--

THE STENOGRAPHER: I'm sorry, can you speak up?

MR. TAYLOR: Yes.

So the Fund balance stands at a $183.6 billion, which is $16 billion less than when we started the fiscal year. But that's net of $600 million of net benefit payments on a monthly basis.

I'm going to come back and talk a little bit more about performance and sort of what we are seeing in the market and how that's driving performance a little bit later in this update. So I will come back to that.

Instead, I'm going to switch gears a little bit and talk about some of the things that have happened since our last meeting in March.

One thing was a special session on insurance which involved the State Board of Administration, because we were tasked with a new program, the Reinsurance to Assist Policyholders. So this is a new GR Funded program that provides $2 billion of reinsurance below the CAT Fund at no cost to insurers for that savings to be passed on to policyholders.

Our CAT Fund folks have been working on implementing that program, and we're going to do that through -- a large part through a new reimbursement contract which will be put out to insurers. And all that is in the works. I bring that up as sort of an information item in terms of things that happened affecting the SBA since the last meeting.

We also had a Trustees' meeting last week where we updated the principals on performance. We also updated the principals and let them know, and of course, I informed the IAC through our correspondence that as of this past quarter the total Fund has exceeded its alternative investments cap of 20 percent. That was something that we had seen coming earlier on, we tried to -- we attempted to get some legislative headroom there, we were not successful.

So as it stands now, we're slightly above our cap on a net asset, the value basis. It's important to note that there's no obligation for us to sell assets to get back into alignment. We anticipate that this will be managed through our commitment pacing process, so while we're above 20 percent we're not going to make additional commitments into this space and then to the extent we fall back below 20 percent we'll commence making commitments-- new commitments into this space.

We do plan to come back again to the legislature to seek an increase in our alternative investments cap. We got to this point totally because of valuations, it was not some sort of purpose over allocation to this space.

During the pandemic, a number of asset classes did very well, global equities did very well, and our private market assets did even better. And so from an enumerator prospective it became sort of a disproportionately large component of the total Fund. And as we see these public market assets

come back in line since the start of the year, it sort of brought them even more out of line with respect to the total Fund.

So again, gave that report to the Trustees so that they were aware of it. And I'm sort of repeating that here for the IAC today.

On the agenda last week for the Trustees we adopted the final Proxy Voting Guidelines, which, of course, this, the IAC, approved in March. We approved the CAT Fund Premium Formula and we approved our budget which by statute has to be approved before July 1 each fiscal year.

So following up on some of the performance, obviously, so we're down, as I said, 4.79 percent, and that is a function of inflation, and what the Federal Reserve is having to do to address that. So since we met, I think in our last meeting March, the Federal Reserve had just commenced its first rate hike of 25 basis points. And so since then they hiked 125 basis points since then. And the market has reacted as you might expect in terms of repricing risk.

So, obviously, future cash flows are now worth less, duration is getting hammered as well as credit spreads. And so we're seeing an impact --

we're actually seeing a slight increase in the correlations from Fixed Income and Global Equity.

I think if you get in to the report that I provided the Trustees last week, if you look at performance of the S&P since July and the performance of the aggregate, Bloomberg Aggregate Bond Index since July, both of them were down pretty significantly. So I think the S&P was down last week something like 13 percent from that period. And then the Aggregate Bond Index was down 11 percent. So again, from increasing correlations we're seeing that.

So where do we find diversification? And we are finding diversification, and where we're finding it is in our private market assets.

So number one, those valuations are slightly stickier than the public market valuation, so that's been helpful.

We're also getting good diversification, as you would expect, in Real Estate. Real Estate's doing well and are a real asset component in our strategic investments. So commodities and timber have done pretty well.

I think we're also seeing some benefit and I would expect to see some additional benefit

particularly in this rising interest in inflationary environment. Some of the structure of our portfolio, if you look at our Real Estate asset class, for example, our principal investments, and I asked Steve and Lynne to kind of look at a weighted average lease term for that portfolio, so excluding residential leases, our weighted average lease term for the entire portfolio of Real Estate is in like 5.68 years. 20 percent of that book is expected to roll within the next two years; 40 percent would roll in the next four years.

So from a term perspective, that's a pretty good place to be as we're seeing increasing interest rates, because I think that gives us the ability to reset rents. So that's helpful as well.

The structure of our Fixed Income, this is something that the IAC helped us undertake some years ago. We moved to a shorter duration benchmark. So we had -- at the time I guess it was Bloomberg -- it was Lehman & Barclays, and then so it was the Barclays Agg, and we moved to the Barclays Intermediate Agg, which is now Bloomberg, I guess.

So I think when you look at sort of where that sits, I think the intermediate aggregate has a weighted average maturity of something like 5.53 years with a duration of 4.63 years, the full aggregate has a weighted average maturity of 8.68 years and a duration of 6.43. So we are shorter duration from our Fixed Income book. So that I think is also helpful as we face these rising interest and inflationary periods.

In addition, since our last meeting because we had a very good discussion for the role of Fixed Income, the value of Fixed Income to the Pension Plan. We had proposed at that meeting a couple things we can do on the margin. I think the consensus generally was that long term we're set pretty well, but maybe there's some things we can do on the margin to kind of address some of the things that we're seeing.

So one of things that we had mentioned was providing additional headroom and active risk budget for Fixed Income, and we did. So we moved our active risk budget up from 110 basis points to 150 basis points into Katy's asset class. And we moved the active-passive split up a little bit. We had targeted 60/40 initially, historically from an active passive split and then we moved that to 70/30. So we're targeting at an active management

of 70 percent of the Fixed Income asset class.

And we think that's going to be helpful in this period simply because as you see rising credit spreads and sort of, you know, the duration risk, active management should pay off in this space. So we provided a little bit more headroom there.

Something that we also have done recently in light of what we were seeing, particularly with increased volatility and liquidity, we've increased our liquidity portfolio for the total Fund. So we have a liquidity overlay of the Fund which have been about $3 -- a little over $3 billion. We increased that by a billion dollars, $500 million at a Fixed Income of $500 million out of Global Equity.

In that we've seen some -- it's been accreted so far simply because of the makeup of the portfolio, the liquidity portfolio. A slightly less credit risk in Fixed Income and slightly more domestic focused in Global Equity. And at this point so far to date that's been slightly more accreted.

So those are the things that we've done so far to kind of address this increase in inflation and rates and some volatility. Keep in mind that the next meeting we will be reviewing our asset liability study with Aon.

So from this period over the next quarter Aon will be working with us to look at sort of, you know, the asset liability study from a total Fund perspective, where are we in terms of risk and non risk-seeking assets, where are risk premium, where do we expect long-term returns to be.

So we'll be going through that review to the extent if there is anything additionally we may want to consider, to the extent we beleive there are long-term implications here. And we have already commenced and I think we've kept the IAC informed, we've commenced a structural view on our Strategic Investments asset class. That's an asset class that started back in 2007 and it's all grown up now, so we want to take a look and see where we are, and has the world changed, is there -- are the objectives of that asset class still relevant in terms of what we're seeing?

So that is an update from my perspective. I'm happy to answer any questions from the committee, the Council.

MR. COLLINS: A couple, Mr. Chairman, if you don't mind.

On the correlation of the Fixed Income to the

market, does that always happen or does it tend to happen in periods where you have super high inflationary pressure --

MR. TAYLOR: I think --

MR. COLLINS: -- because there's something that throws that out of whack, right? So do you go back in time and see those periods of high inflation and do you see that same correlation or is this an anomaly?

MR. TAYLOR: And I can couple that with -- (inaudible.)

THE STENOGRAPHER: Excuse me --

MR. COLLINS: So it's not a strange phenomenon?

MS. RYAN: It is not. If you look back --

MR. GOETZ: You might want to use your mic.

MS. RYAN If you look back over 50 years, it is not a strange phenomenon.

MR. COLLINS: Yeah. Okay. And then I'm asking this question, and it might be embarrassing because we might have done it at the last meeting. But I'm over 50 now, so I don't remember as well.

When was the last time we did an asset allocation study?

MR. TAYLOR: Well, we do the asset liability studies annually. Historically we had only done them like every three to five years, and then we got into these patterns of looking at them annually. So we did an asset liability study last year. A lot of that I think has been relevant, because it's been helpful to inform the Assumptions Conference around what we expect to see from long-term return assumptions. And so that has been very --

MR. COLLINS: But I'm talking strict allocation, right. Fixed Income, Private Equity, Global. It's been, gosh, it's been five years maybe. Three, four years?

MR. BENTON: Well the last time that we changed, it was at least five years, and we increased the private market allocations and we decreased the Fixed Income. And through the years back in-- right before the great financial crisis, Fixed Income was around 28 percent.

MR. COLLINS: Right. I remember that.

MR. BENTON: And, you know, after that we continued to risk Fixed Income and allocation more risky assets.

MR. COLLINS: Right. Just a thought. Lamar.

MR. TAYLOR: Absolutely I think, again, so we'll look at the asset liability study. We're also doing

the structural review with Strategic were I think may help us from a total Fund perspective in terms of were we're looking at opportunities and were we see. It would be good to have the benefit of some of that additional information to review. Good point taken.

MR. WENDT: The comment is that we have not made changes in the asset mix in five years, but we have looked at them every year and there hasn't been any reason for change, perhaps it's time to look for a change. The question is this: You go to the Trustees, I don't know how often but at least once a quarter, and you tell them certain things. Do they ever have any remarks back to you?

MR. TAYLOR: Well, they understand that we're very engaged in what we do and the performance and the reporting. I think they have been satisfied with how things are going to date. We haven't gotten any firm views one way or the other in terms of changing course. You know, and I think historically the Trustees had looked to my role, the Executive Director role, to sort of make these determinations and recommendations, obviously with the benefit of the very well-informed advice and council of the Investment Advisory Council.

So I think it's more of a bottoms-up process and that's how I think they are looking into it.

MR. WENDT: Okay. So they seem to be relaxed about the way things are going.

MR. TAYLOR: I would say so. I do think they have been very interested and engaged in, again, going back to some of these actuarial assumptions where they've been very much involved in trying to make sure that the assumptions at the Actuarial Assumptions Conference, you know, uses are conservative and reasonable so that to really underscore and make sure the plan is well Funded, I think that has been where they have shown some considerable interest.

MR. WENDT: Thank you.

MS. CANIDA: Lamar, I have a quick question. In the structural review of the Strategic asset class, I don't know if I missed it, but when are you planning to complete that?

MR. TAYLOR: At this point we don't -- it would be nice to complete it by next quarter. I don't really have a target set. We want to proceed with appropriate diligence, but I also want to be thoughtful and deliberative. So ideally I would like to have that done by the end of next quarter. But I want to make sure that we feel like we're making

good progress and be able to come back to the IAC with a good report and possibly some recommendations.

MS. CANIDA: Okay, thank you.

MR. OLMSTEAD: Lamar, just a quick question to clarify. On the asset allocation, a good question that seems to be brought up every single quarter now, I'm just not clear.

Who makes the decision on changing the asset allocation, is that something that you do and come to us or is that something you do and somehow it goes to Trustees? What's the process there?

MR. TAYLOR: The asset allocation is reflected in the Investment Policy Statement, and by statute the Investment Policy Statement is the Executive Director's Investment Policy Statement. It has to be reviewed and approved by the IAC. So there's very much involvement with the IAC, and the feedback and the consulting, the recommendation.

And so IAC is very much a critical component of that process. But at the end of the day it's the Executive Director's Investment Policy Statement.

MR. COLLINS: We, in the past when we did it, it was a specialty meeting, and we'd skipped one of the asset classes and we just spent the meeting on asset allocation and going through each -- staff had put together and everybody had worked really hard on putting their best ideas together for what -- we're lining it up for the future. None of us are because market-timers, but we're trying to line it up for the future.

So to your point, we've reduced Fixed Income, because we all felt, and now history has judged us correctly, that we wouldn't earn returns there. So I think they do a really good job, but I think that we should take a look at it. But the IAC is involved.

MR. TAYLOR: Absolutely. Absolutely. I mean, that's spot on. You know, there was a very good, productive discussion when we made those changes, and that was the view. Reduce Fixed Income, increase Real Estate, increase Strategic, increase Global Equity. And those have been the right decisions.

MR. COLLINS: And I'm not sure if we decreased the duration at the same time or was that separate?

MR. TAYLOR: About the same time.

MR. COLLINS: Yeah, about the same time.

MR. GOETZ: Any other questions?

MR. NEAL: Madam Chair, this is less a

question than a statement.

The Actuarial Assumptions Conference is first week in October. I think we'll meet between then and now. It would be my goal, Madam Chair, that we have a robust discussion about not only the asset allocation rolls, but the asset liability mix. Then we'll know if the underlying earnings assumptions that we've use are not being -- are not being met and everyone knows that the retirement contributions are not catching up either. The fact is we're falling behind. It's not a pretty -- I don't want that on my resume, Madam Chair.

So the short version is, I'd like us to input our ideas to the Actuarial Assumptions Conference, and the only way we do that is to have some oversight, Lamar, and the statement that you make.

So speaking for myself, I would like to be involved in the actuarial assumptions presentation that you make and perhaps in the conference.

In response to Peter's question, I'm not sure Trustees have a lot of responsibilities. What they'll be required to do is take general revenue and either increase the retirement contribution or maybe take the economic stabilization trust Fund and make a lump sum contribution. The time for doing that is in the past actually when we had a $15.7 billion year.

I think we need to kind of get into the game. And I guess this is an election year, but after this year is over get the legislature into focusing on the 82 percent. So I would like to be involved.

And Madam Chair, I would like to have a robust discussion on the assumptions and the liability asset mix and the allocation mix, at our next meeting if...

MR. GOETZ: Okay. Thank you. Any other comments or questions?

Okay. Per the agenda, this is our opportunity to do the deep dive on Private Equity. So John Bradley, take it away.

MR. BRADLEY: Thank you and good afternoon. I'm John Bradley, Senior Investment Officer of Private Equity. It's my pleasure to present the Private Equity class today.

I'm joined by Wes Bradle, a Senior Portfolio Manager in our asset class, and Sheila Ryan, a member of our consultant team at Cambridge Associates. I don't think this -- is working. Is there another-- It's on-- I'm going to have to have you flip for me if you don't mind, so if you can go -- forward okay so here is the

agenda and what we plan on covering today. So I'm going to take us through the asset class policy and process sections as well as talk about overall performance of the asset class and composition of the asset class. Wes will then take us through the various sub-strategies and the portfolio. And then Sheila will wrap us with a few slides and a few comments. Go to the next, please, go back one. Okay. So the Private Equity asset class we have a policy target of 6 percent with an operating range of 2 to 10 percent at the end of May, and there is an error on the slide, it should say 5/31/22. But at the end of May our allocation was slightly less than 10 percent at 9.8 percent of the total Fund. And then as of yesterday's market close we were slightly above 10 percent, at 10.2 percent.

Per policy we're tasked with maximizing access to top partners with appropriate experience, alignment and transparency -- Oh, thank you.

MR. OLMSTEAD: And John, this is Vinny, that's largely due to more of a decrease in the overall Fund than a increase in --

MR. BRADLEY: Yeah, it's largely -- what it's not doing is where we haven't increased our allocations to PE, we haven't increased our commitment pacing it largely just a lag in the reporting. And so the numbers we're looking at are largely December and March market -- or quarter-end values versus an up-to-date public market value. So we would expect in the next month or two for those valuations to catch up and be back under that 10 percent.

MR. OLMSTEAD: That's what I was going to ask, makes sense.

MR. BRADLE: I mean, in addition to performance, I think on a 3 year basis it's been over 30 percent annually versus the benchmark of 12. So we've also outpaced the broader portfolio which has driven us up closer to that number.

MR. BRADLEY: And so internally our goals are to create a portfolio that outperforms our benchmarks, to construct an employee-concentrated exposure to any particular vintage manager. Strategy or geography into focus on prudent diversification. So to keep the number of managers in the program and at the appropriate level.

The asset class has both a primary and a secondary benchmark. Our primary benchmark is the Global Equity asset class benchmark plus a 300 basis point premium. You could think of this as

an opportunity cost benchmark. This measures the decision to allocate the Private Equity.

Our secondary benchmark is the Cambridge Associates Global, Private Equity and Venture Capital Index. This is our peer benchmark and this measures our effectiveness in managing the program and selecting managers.

Our asset class is currently stafFed with eight investment professionals. There is myself, three Senior Portfolio Managers, one Portfolio Manager, and three Analysts. And as I mentioned, Cambridge Associates is our asset class consultant.

So now I'm going to shift to our investment process. We have four components, two are invested in process, and I will try to quickly walk us through each of these on the next two slides.

The first step in our process is the creation of our annual investment plan, so this is our roadmap for the coming year. So here we're really trying to focus our efforts on areas of need within the portfolio and the most attractive areas within our market.

We use a number of tools when putting this together each year, including our portfolio construction model. We have a heat map, which we can see here, where we're ranking areas in the portfolio by both exposure and attractiveness. And then a focus list of GPs coming back to market. And then you also see insights from our twice a year strategy on-site with Cambridge.

MS. CANIDA: John, this is Tere.

If you go back to that slide, can you tell me a little bit about your two green areas of distress, what you are seeing there and why those are high priority?

MR. BRADLEY: Yes. These are high priority, one, it's an area in terms of how we've allocated capital within the portfolio that were a little underneath our portfolio target. And it's also an area just given current market environment that we think there could be some opportunities.

So how we really use these heat maps, is it really helps us triage opportunities that come into the asset class. And when our PMs are outsourcing new deals, talking with LPs and GPs, you know, where should we be focusing our efforts and so with this, if we see some good distressed Funds we may want to pay more attention to them, we might want to allocate some more resources as opposed to a low priority areas is like large buyout in North America

where we might not want to spend as much time in those markets with those GPs just given portfolio construction and what we see in those markets.

MS. CANIDA: Okay. Thanks.

MR. OLMSTEAD: John, also, how often do you take a look at that? Right. So if you look at -- so I think everyone in the world is thinking about distress and turnaround right now, so it's pretty in Vogue given the market.

But then if you look historically at when people made great returns during, it's during these huge dips whether it be, you know, VC or growth equity, et cetera.

So how quickly do you turn on that type of stuff and are we still looking at opportunity six months from now if the market is sort of, you know, getting pretty low, there may be opportunities outside of distressed that are pretty appealing also.

MR. BRADLEY: Yes, so we do not turn quickly and we review these areas on an every -- I'd say every week at our staff meeting, but we formally do it every six months with Cambridge.

What I would also say though is, we have allocations of these various sub-strategies and we stick to them, and so we are never out of the venture market, we are never fully into the venture market. We invest at our allocation.

What we really use this for, again, though, is just as we're thinking through opportunities and meeting new GPs, you know, we have limited resources, limited time where might we spend our time today making new relationships. It also takes into account though our allocations, so if we're over-allocated to venture today on a percentage basis, you know, we're probably not adding new GPs, we're a bit under-allocated to distress so that is an opportunity for us to find new GPs so we might spend more time in those markets and in that area.

So next we have sourcing. Sourcing is obviously a very important element of our process. So in addition to reinvesting with our existing GPs, we are constantly trying to identify and form relationships with GPs around the globe.

Forming these relationships and then really ultimately gaining access to these Funds takes a number of years. So with this Fund what we tried to show the work that went into finding what was for us three new GP commitments during 2021.

So in 2021 we reviewed over 150 new Funds, we moved 30 to full diligence, and then ultimately

closed on three investments in GPs that were new to the program during the year.

So we have a very fulsome and process oriented due diligence process. Our goal here is really consistency. And so from the initial screening process, to due diligence, to negotiations, to closing, our process and the stages in our process are consistent and so whether we are looking at a $200 million investment in a re-up of a Fund that we've invested with for ten years or a $20 million commitment to a brand new GP's Fund one, the analysis that we undergo, and the application of our process is the same.

So here we see the stages in our due diligence process. At each stage our team is debating and then deciding if an opportunity merits moving on. I'd say most Funds don't make it past our preliminary diligence phase. Those that do move to full diligence where we produce an interim diligence summary.

From there opportunities that receive a final yes vote from our full team then move to the final approval stage. And I'd say all in all, you know, we end up -- for Funds we have been investing in, it probably takes on average about three to four months to move through our full process.

MR. OLMSTEAD: John, out of curiosity, the three Funds that you, three new Funds, where do they fall on your heat map of venture versus distressed versus...

MR. BRADLEY: So two were Asian buyout Funds, and one was a secondary separate account.

MR. BRADLE: And those would be consistent with what we -- previous heat maps in the past.

MR. OLMSTEAD: Right. So you're following through for those and then moving forward, anything new would most likely fall under that upper right?

MR. BRADLEY: So maybe. If we found GPs that we thought merited putting in the portfolio, that would be the case.

So again, we're really trying to focus attention. And so if we went out, we might find a really good distressed opportunity, but that Fund might have just closed and as we look over the next three years we say, you know, rather than invest in our second choice, we will wait next year and then put the Fund in. So it doesn't match a hundred percent, but that heat map will tell you where we focused, where are we trying to find opportunities.

MR. WENDT: Question. When -- by Asian buyout

Funds, I assume you mean principally China?

MR. BRADLEY: No. One was Japan, so one was a small buyout Fund in Japan. And the other one was a, I guess, North Asian Fund we would call it. So the focus there would be China, Japan, and South Korea.

MR. BRADLE: Another heat map question. We've spent a lot of time on China, and many measures there haven't come through our filter and it just doesn't -- it just kind of comes out the other end declined. And so to John's point we eventually said, hey, let's try to get exposure other places in Asia 'cause I think is attractive and so, you know, end up doing this Funding in Korea as well as in Japan.

MR. COLLINS: Yeah, I hate to be political when making investments, but you've got to recognize the politics going on. I think anything in China these days is a little bit dangerous and I think anything that China controls or could potentially control is a little dangerous. You know. There's a lot of people want to invest in Taiwan. It's like, I'm not sure it's going to be Taiwan in a few years. But, we've got to be aware of it at least, right? We certainly donâ€™t want to back --

MR. WENDT: Yes, we do.

MR. BRADLEY: Yes, I think we would a hundred percent agree. We continue to think there is opportunity in China, but the risk part of the equation has probably--

MR. COLLINS: Yeah.

MR. BRADLEY: -- increased exponentially and so it's led us to back off.

MR. COLLINS: You can't get a risk bucket allocation for that?

MR. WENDT: May we assume that none of your employees are members of the communist party? And if that is the case, one needs to be careful.

MS. CANIDA: John, I have a quick question on your allocation to secondary Funds.

There has been a lot of wind in the financial news over the last couple months on secondary Funds and why they're popping up and the need for liquidity by some of the large investors, et cetera.

Can you just talk a little bit about how you view them and what your thought process is in that regard?

MR. BRADLEY: Yes. For the Fund we committed to, it's an opportunistic separate account. And so what it allowed us to do and how we'll use it is to tactically invest in secondary transactions, frankly, when we think there is a

good opportunity to do so.

And so we put this in place kind of thinking, hey, there is going to be a time where we're going to see valuations decline. You know, we're feeling kind of a pinch in terms of our allocation to private equity relative to targets, others have to be feeling the same thing. So let's put something together that when the market does break will allow us to go in and perhaps buy things at pretty large discounts to market value with pretty attractive go-forward returns.

And so from our perspective I think we're starting to feel that that might be the case. I don't think that's happened just yet but it feels like it's around the corner. The Fund that we did we're pretty excited about how we might use that over the coming years.

MS. CANIDA: Okay. Thank you.

MR. BRADLEY: Great. And so my last line on process was just around monitoring. So here are just some samples of our monitoring efforts. I won't go forward and read the list for you, I'll just say we are very active with our GPs and we are very active participants on the advisory boards of the overwhelming majority of Funds that we invest in.

Okay, so now I will move into overall asset class performance of the overall portfolio. Since inception our asset class we have committed over $32 billion to 309 Funds, our cumulative paid-in capital is $26.6 billion, and we have received distributions to date of $31.3 billion, which gives our program a DPI or distributed to paid in capital ratio of 1.2 X. Our program has 19 billion in remaining value which gives us a TBPI of 1.9 X, which equates to value creation in dollar terms of $23.9 billion.

Our performance as of 12/31/21 as seen here, so we ended calendar year 2021 on a very strong note and we have outperformed our primary benchmark over all time periods. Obviously, the market environment is much different today than it was as of our 12/31/21 reporting date and I'd say we are just now receiving the last of our 3/31 statements and putting our performance reports together.

But I can tell you that we expect first quarter performance to come in roughly flat for the asset class. As a group our buyout Funds look to be flat to mildly positive for the first quarter, and our venture managers are slightly down for the quarter.

Second quarter valuations usually start to come in late July, early August. But for second quarter, even though it's not done yet, we would expect valuations to be down roughly in line with the broader markets.

So this chart compares the performance of our Funds by vintage year versus the corresponding Cambridge vintage year benchmark. The green bar represents our IRR and the blue square would be the Cambridge benchmark return.

We are very proud that we have outperformed the benchmark in 21 out of the programs 23 years, our success rate of 91 percent.

Cash flow can be seen here on this line. We continue to see strong distributions from our program. 2021 ended as our strongest year ever with a net positive cash flow of almost three and a half billion dollars. I would add that so far in 2022 it looks to be on a similar pace as 2021, that is for the first two quarters. However, our expectation is that the second half of the year will look very different. We are starting to see deal activities slow which will correspond and translate into a decrease in contributions and distributions in the next coming quarters.

So I include these two charts to highlight kind of what our GPs and really what our staff, what we were doing during what really was one of the most spectacular runs of performance our asset class has seen.

So from the start of COVID through our most recent marks as of December 2021, which is a span of 21 months, we've seen unprecedented performance in the asset class, and really in asset markets in general. And what drove this in our portfolio was increased operating performance, a very strong IPO market, a lot of excess liquidity in the system and then multiple expansion.

But, we also saw our GPs and our asset class stafFed. So if you remember we did a secondary sale in September selling into this market stream. So the chart on the left shows our total asset class on March 31st, 2020. We had market value of $11.7 billion. In the following 21 months our GPs returned over $8.3 billion in distributions and called slightly more than $4 billion, which is a two to one ratio.

So our program was selling and we were doing so at historically a high rate, a rate that we had never seen in the asset class.

On the right I singled out our venture portfolio. So venture was at the absolute hottest area of the, in segment of the PE market and so here over the same 21 months starting with a market value of $2.9 billion our GPs returned $1.8 billion in distributions and called $473 million. So an almost a four to one ratio of selling versus buying.

So, yes, market values are absolutely set to come down. But what I was hoping to show on this slide is that the opportunity to realize value and generate realized returns was not wasted.

Here we have our current allocations to the four sub-strategies as well as our targets and our targets are in the red column on the right, the blue column would show our current allocation, and the total exposure column in the middle in green incorporates our unFunded commitments. So this should give you a sense where the dry powder sits in the portfolio.

And so our venture exposure does remain elevated relative to target; however, we do expect to see its wading begin to normalize as valuations come down.

MR. GOETZ: You mentioned the out-performance frequency which is very high during this period. Was there anything systematic in that in terms of the allocations or anything you can identify that was systematic, that ---

Then to Mr. Neal's point, would we reconsider if we thought the environment was shifting or is it really very anecdotal?

MR. BRADLEY: Yeah, I think it would be more anecdotal but what I would say is that, if anything, we are very, very determined to stick to our targets and stick to our allocations.

And so, you know, each year we are not making calls on the margin of, hey, we think buyouts are set to outperform relative to venture. It's, we've set allocations long term within the asset class and we're going to stick to those. And so, I truly believe that consistency across sub-asset class strategies across vintage years is what over the long-term produces above benchmark results.

MR. GOETZ: Yeah, but is there a consistent difference than what's in the benchmarks, or not?

MR. BRADLEY: In terms of allocation?

MR. GOETZ: Yeah.

MR. BRADLEY: Not -- not too much. You know, I don't know if you know the exact competition -- or composition of the benchmark, but...

MS. CANIDA: You go through much of the

numbers (inaudible), right?

MR. BRADLEY: But in terms of having -- like -- allocating 20 percent of venture versus the benchmarks --

MR. GOETZ: Yeah, any systematic allocation differences between that and benchmark.

MS. RYAN: Unfortunately, we don't track it on our system like, you know, client A has this asset allocation, client B... I wish we did so we could go back and look at that.

But, you know, Wes has some interesting slides he'll talk about relative performance to our broad market Cambridge benchmarks, and then I've got a slide that shows relative to the Cambridge Associate client universe. So we kind of piece it all together and I think you'll get there, that the bottom line is the performance of this portfolio is very strong.

MR. BRADLEY: But when we look at --if you looked at a sector, from a sector from geography, we do not deviate that much from the benchmark. From a strategy perspective there could be more venture in the Cambridge benchmark, but the deviations are not --they're not material. We also don't -- we also don't manage the benchmarks either. We manage to how we've set target allocations and how we feel long-term composition to portfolio is best optimized.

MR. GOETZ: See I was just thinking whether there is a tailwind or, that turns into a headwind or something that you ---

MR. BRADLEY: Well, so we would absolutely, we've had an overweight to tech for a fairly long time, and so that has absolutely been a tailwind for us, that could easily turn into a headwind. We'll see.

MR. GOETZ: Thank you.

MR. BRADLE: Yeah, I mean, one day at point-- when I joined eight years ago our venture allocation was 14 percent of the total Private Equity portfolio. And we said, you know, we can't really rescale these Funds, most of them are $500 million Funds, they're not going to be getting a lot bigger. That was our hypotheses at the time. And so we said, we'll just committ 10 percent of our annual allocation to venture. We've done that for the past eight years, and our venture allocation has gone from 14 percent to 33 percent, which you saw on the slide today.

So there has been this massive tailwind in venture for the past eight years. I think many of us don't expect that to continue. It was even greater during COVID when everyone said, oh wow,

these companies are growing really quickly and everyone's at home and so we think that tailwind will come-- will serve maybe turn into a headwind.

But to John's point, we realize almost $2 billion of our venture portfolio in the past, whatever, 18 months. And so we're hopeful to continue to get realizations, but I think it just shows -- it's like trying to move an oil tanker. I mean, it's something that we started eight years ago is starting to show some fruition but it just -- it just takes a really long time.

MR. COLLINS: On the topic of the asset allocation. As you look out now, like you said venture, probably going to be not depressed but just pretty flat for the next few years, right? You get inflation, you get recession, you get slow down. Most of those companies will have to churn more private cash while they wait it all out. Maybe there is a few more rounds in them, maybe. How do you -- how are you looking at the portfolio going forward and what would make, what would you change from the last eight years in that 10 percent allocation and where would you put it?

MR. BRADLE: Yeah, we'll talk about that in the sub-strategy section as it relates to venture.

But we've tried to position it to be much more early stage, because if you're investing in the next Google, it doesn't really matter if it's a $10 million valuation or a $20 million valuation, it's going to be a great outcome. So we've purposely positioned the portfolio much more towards early stage over the past five to six years, and so the hope would be that as long as we continue to have innovation in this country, that portfolio would perform better than the later stage stuff that was done at really high valuations.

MR. COLLINS: And so you wouldn't be any specific industry, looking into any specific segments in that venture to overweight or underweight in the next few years? Or would you?

MR. BRADLE: I mean, we're doing some small things on the margins. So we've set up something related to Crypto. Again, it's small dollars, but we think from a risk return, or block chain I should say-- but from a risk return perspective --

MR. COLLINS: Yeah, don't say Crypto.

MR. BRADLE: Yeah. You know, we think there may be high upside but with small dollars, so if we're wrong it is not going to have a material impact on the portfolio. But I would say other than that --

MR. BRADLEY: Yeah, I think what we find the hard

part of deviating from just, hey, here's what we do, and let's find the best GPs and give them money is if we looked at our venture program, were we have made all of our returns was from the teeth of the GFC and saying, hey, listen, everyone hates this asset class, everybody thinks it's dead. It's probably not. It's a ten-year asset class. Let's put more money in, let's kind of restructure how we do it, and we think this will pay off. And the returns that are in the portfolio today, and that we're seeing in these stabilizations where investments in 2012, 2010, 2011 companies. So as we sit here today, it looks like there is going to be some headwinds over the next couple of years. But a dollar we put in the venture asset class today in terms of a commitment will be realized in the next eight to ten years. And so that's where it gets tough for us to say what's going to happen in the next eight to ten years. And we really fall back to, lets stick to our allocation, let's stick to the relationships that we've made in our GPs, and over long periods of time we will outperform with that strategy.

MR. TURNER: Hey, John. This is Robb Turner.

I think our story that we're a little over-allocated because of timing differentials and the like, that's -- I think you'd agree that's kind of a general industry situation right now. A lot of these Funds are having a harder time raising money. So this vintage of Funds will probably be smaller, which means they probably will do better.

Do you take that into account its a different version of your, when you piled into venture 10 years ago or whatever 12 years ago, but this could be a really good vintage year, 2022, because these Funds are all going to be smaller, with less capital, because of the dynamic that we're seeing?

MR. BRADLEY: We do. What it wouldn't drive us to do would be to put more dollars into this vintage. But it does, if you had to ask us and say, hey, would we be more excited about 2022 than we were in 2018, 2017 vintages, I would say absolutely. But, you know, again, I think the hallmark of what we've done and how we've invested is we try not to get caught up in any one single market environment and we try to just take a ten-year view of, we really can't predict what's going to happen in the next ten years, so let's stick to our strategy.

But I would agree that Fundraisings have dramatically slowed, Fund sizes will likely come in

a bit. So, usually that's an indicator of a good vintage year performance.

Okay, so I will continue. Here is another look at the portfolio at year end. We have 224 Funds currently in the portfolio managed by 68 GPs, 48 of who we consider core, our GPs that we expect to continue to invest with going forward.

And at the bottom of the slide here we show the geographic and sector breakdown of those 48 core managers in the portfolio.

So here is our GP concentration slide. 60 percent of our portfolio is concentrated on these 10 firms in terms of commitments. These 10 firms represent about 32 percent of our committed capital. And so usually we say when you make this slide it's usually a result of good performance as opposed to staff overcommitting or over-allocating to these managers.

I would also point out that as you might expect, seven of these ten GPs have strategies that focus on either technology or venture. And so, it'll be interesting when we revisit this slide next year to see if that roster remains and how much turnover there is on this list.

MR. OLMSTEAD: Hey John, just a quick

question.

In looking at your portfolio composition, you only have one in health care. Maybe some of the generalists cover health care. But you know, everything you read is sort of there's been a continuing, you know aging technology, et cetera, are coming to health care. Do you guys any more emphasis or thought process in putting more money in or around healthcare?

MR. BRADLEY: We have. And I would say, you know, when we made this slide we try to say, hey, listen, you can only do this one sector if you make it sector specialist. Of the 30 generalists, maybe a handful actually invest across every sector of the economy. What we've see is a lot of Funds focus on health care and tech or health care and consumer industrials and so -- We do get a lot of health care exposure through those generalist firms, but it has been an area of focus probably for the last, what, five, six years adding smaller health care Funds in the portfolio. We've had a few, we've missed a few in legal negotiations. We had a few were we thought we identified a great team, we just couldn't get there at the end in terms of getting a commitment to them because their Funds were full and

they weren't going to let in new investors.

And so it remains an area of focus. I think if you asked us, health care is the one place today were we say, hey, this is really an area we can add a GP, if we can find one.

MR. OLMSTEAD: Makes sense.

MR. BRADLEY: All right. So here we see our total exposure by geography. Really no change here. We still remain slightly overweight in North America and slightly underweight, both Europe and Asia versus both our Cambridge and public market benchmarks.

Looking at our sector exposures, we continue to carry that overweight in technology. It's about 500 basis points at year end relative to the Cambridge benchmark, and then all other sectors are generally in line with benchmarks. And so, I am going to now turn it over to Wes. Wes is going to provide us with a little more detail on the sub-strategies within the portfolio starting with our buyout in growth equity portfolio.

MR. BRADLE: Okay. Thanks. Wes Bradle, Senior Portfolio Manager on the Private Equity team. Today I'm going to highlight our sub-strategy exposure and the performance within each sub-strategy. This slide shows our target sub-strategy buyout allocation by size.

So on the right you'll notice that 75 percent of the portfolio is targeted to go to middle market and small buyout. The reason for this overweight is that studies have shown that small and middle market buyout have a greater potential to outperform in lower correlation with public markets than large buyout.

So in order to implement these sub-strategy targets it requires a greater number of small and middle market buyout firms, which you can see in the middle and right columns on this slide. We manage our buyout portfolio a little bit like a farm system in major league baseball. So if smaller managers in our portfolio have success, they raise larger Funds and eventually become middle market firms. If they demonstrate success in the middle market, they eventually become large buyout Funds.

So an example of this would be in the left column under large cat buyout, the last firm listed is Thoma Bravo. We committed to Thoma Bravo in 2008. We committed $50 million when their buyout Fund was $800 million. And we recently committed $150 million to Thoma Bravo's buyout Fund, which is now targeting $23 billion.

So we've since backfilled our small and middle

market technology exposure with other tech focused buyout firms like Rubicon and Accel KKR. And as they have outperformed we've grown in them with size as well. In terms of sector exposure, information technology and telecom is by far the largest exposure within buyouts at 40 percent in aggregate. And this has been the case for multiple years as technology has outperformed the broader market. And our team has kind of debated this overweight -- multiple times in whether or not we should commit less capital if the sector continued to maintain the overweight.

And I think we've continued to maintain it for two reasons: The first one is just their secular tailwinds in IT which I think all of us probably recognize that business and consumers are migrating from offline to online. And we expect these tailwinds to continue. For how long, I'm not sure. But it just seems like tech is becoming more and more a part of our daily lives.

The second reason for the overweight is just technology cuts across every sector. So, you know, we looked at a company like Netflix. Is it a media company or is it a technology company. Or Amazon, is it a retailer or is it a technology company.

And so we actually think that our technology exposure may be overstated. If you actually looked at the end markets, this would be things like travel, leisure, energy, financial services. We think if you actually did that, the correlation between maybe broader tech companies like Microsoft would actually be very different.

That being said, we felt like valuations got ahead of the market and we sold almost a billion dollars of tech exposure in Q3 of 2021, at we think are very attractive prices, and we used a secondary market to do that.

In terms of geographic exposure in North America --

MR. OLMSTEAD: Hey Wes, real quick on that.

MR. BRADLE: Yeah.

MR. OLMSTEAD: So when you're thinking about -- again, it's funny, because there's a lot of theory that information technology is no longer a sector, it's a subset of every single company out there. So even health care versus information technology, would a health care software company fall in information technology or in a health care services company would fall into --

MR. BRADLEY: Yeah, the health care tech

company would fall under tech.

MR. OLMSTEAD: Okay. And have you guys thought about recategorizing it and if you look at your benchmarks or your peer groups, how are they looking at that? Again, IT just seems to be so broad.

MR. BRADLEY: I'm not sure how our peers look at it. We have done the exercise, which is very, very intensive, of looking through every tech company in the portfolio and what is the actual underlying end market that that tech company serves. That gets us back to Wes' point. Years ago we were like wow, this is a lot. Are we exposed to some kind of tech downturn. And when we looked through we know, not really, because a lot of these serve health care, might be an industrial or logistics company. And so we have done that exercise, but... we --

MR. OLMSTEAD: I don't think it helps any. There is so much -- the software is taking over. Oh-prem to all that so it's hard to understand if you're overweight or underweight to be honest with you. It's not a sector to me, it's a--

MR. BRADLEY: Yeah. And a lot of our tech exposure and where we have our overweight is not coming from our tech sector specialist, right. It's coming from the generalist Fund that is leaning into tech given performance or finding companies that might service their own companies in the portfolio and say, this is a great technology, I want to own that too. And so it's something that is very difficult to control. We could kind of bring down our tech specialist, but I don't think that's the right decision to do, because those are the guys that really do well in both up and down markets in tech, or at least relative. So it's a debate and it's something we talk about weekly. Here is our tech exposure, do we like it, do we not like it? How might we adjust kind of who we are committing to and what types of Funds we look at.

MR. BRADLE: And adding to that point, that's how we got comfortable with the exposure was, for example, I remember doing a call in April of 2020 with one of our firms who had a software company that sells tickets, right. And so obviously, you know, software did really well during COVID. Well, if you had ticketing software you did pretty poorly or if you had travel software you did poorly. But now, obviously, all of that is starting to come back. So I think for us we got comfortable with the fact that the end markets for a kind of a really, a niche vertical software company is much

different than a Microsoft or something like that.

MR. OLMSTEAD: Yeah. I mean, again the blend to me is how much is it in services versus software and not information technology.

Again, technology will continue. It's not stopping. I hope your tech increases by a ton, because this is where the market is going any way look at it, productivity, you know no work, there is no labor force, you have to turn that into software. So again, I don't think it reflects much. I think it's hard to interpret anything from this graph.

MR. BRADLE: Yeah, I think that's fair.

And then in terms of geographic exposure in North America is the largest exposure at 64 percent. Europe and Asia have continued to grow for the past few years, but to John's point, we're still below the benchmark.

This slide shows the performance of our buyout portfolio, which remains strong. It has outperformed the benchmark over all time horizons and outperformed the public markets by 600 basis points.

Moving on to venture capital. As you probably expect, there is a large overweight to technology within venture capital. The bottom right chart highlights the fact that more than 65 percent of our venture portfolio is in early-stage companies. Like we talked about a little bit earlier, we think this is important because we've seen significant valuation increases in later stage venture-backed companies over the past ten years.

According to Pitchbook, the average pre-money valuations for late-stage rounds are up almost 8X. That's compared to early-stage valuations which are up over 5X over that same time period. And then within measure we think there is better value in early-stage investments, because these companies will be less impacted by decline evaluations, or maybe said another way, they'll have more time to grow into a valuation.

In terms of performance, our venture portfolio continues to outperform the benchmark over all time horizons and has outperformed the public markets by 900 basis points.

This next slide highlights our distressed portfolio. And as a reminder, these managers focus on taking control positions in companies and fixing them, whether that's buying them out of bankruptcy or from a distressed seller. So it's not a trading strategy. Many of our distressed in turnaround firms

create value through operational improvements, balance sheet restructurings or both. And as you might expect, the portfolio is currently weighted towards sectors that are more challenged, like industrials and consumer and retail.

In terms of performance, our distressed and turnaround portfolio continues to outperform the benchmark over all time horizons and has outperformed the public markets by 970 basis points. Our Funds in this strategy could be very active over the next 12 to 18 months as rising interest rates and rising inflation could lead to more bankruptcies and more restructurings.

The next slide highlights our secondary portfolio which is concentrated with two large firms and one smaller firm. While the market remains competitive, we've leveraged our relationship with Lexington to coinvest alongside them in numerous secondary transactions. We've also been able to tactically increase our exposure to high quality Private Equity Funds at attractive economic terms.

In addition, as John mentioned earlier, we set up a separate account with Dagon (phonetic) at the end of 2021 to invest in smaller secondary opportunities as well as sector specific opportunities.

And so one example would be, we spent the last six months bidding on energy frums (phonetic), energy Funds from sellers who want to exit the sector, some of them for return reasons, some of them for ESG reasons. You can buy these portfolios at very attractive discounts. And obviously, we've all seen what has happened in the commodity price run up. So, I'm not sure if we'll get something done, but we've been trying.

And then in terms of performance our secondary portfolio has out performed the benchmark, median that over the all time horizons and has out performed the public markets by 700 basis points. Again, we expect our secondary Funds to be active over the next 6 to 12 months as limited partners potentially have liquidity issues and need to sell.

We started to see that a little bit, but it's just going to take public markets being down for a time and people starting to say, okay, we have finally gotten to the point where we have to sell, and we'll see if that creates an opportunity.

I'll turn it back over to John.

MR. BRADLEY: Great. And we're actually going to turn it over to Sheila from Cambridge, unless there's any questions for Wes?

MR. OLMSTEAD: Yes one quick, first of all, great performance comment-wise. Question on coinvest. What's your philosophy around are you getting any juice out of coinvest? Or do you guys, when you go into your contract with your GPs, are you writing it into any of the agreements?

MR. BRADLEY: So coinvests today represents about 10 percent of what we do. That allocation sits within kind of our buyout program and so the coinvest performance would be rolled up in our buyout performance and so we're very active, and we also think coinvest is something that allows us to tactically kind of hit our allocation targets for vintage year. And in times like now when markets might be stressed and GPs might be looking for a little bit more co-investments that, and valuations are down, it's a good time to do that.

We do not write in -- we do write into side letters that we like coinvest, we expect to be shown coinvest. Our history has been we've looked at more deals than we can process through the coinvest program.

MR. OLMSTEAD: So are you looking at it on a deal-by-deal basis, then?

MR. BRADLEY: So it's largely run through Lexington.

MR. OLMSTEAD: Okay.

MR. BRADLEY: So they manage it, we send it through them. We also internally, with Lexington, look at deals and certain GPs on a deal-by-deal basis and do overage investments in those call investments. We'll commit a little bit more on top.

MR. OLMSTEAD: How do the economics work on that out of curiosity? So --

MR. BRADLEY: So we do pay Lexington a fee plus a little bit of carry. We do not pay promote on co-investments from GPs.

MR. OLMSTEAD: Okay.

MR. BRADLEY: And so we wouldn't pay a GP, I shouldn't say never, but it's probably 99.9 percent of the time if it's fee-free, carry-free. If there is a promote on it, we just pass.

MR. COLLINS: Just one question. And we'll get to this a little bit when we get to Mike McCauley.

But you mentioned the LP selling for ESG reasons. You know, this is like it's creeping up more and more and more. I think you -- and I

talked to Lamar about this a couple weeks ago. There have been a couple of Wall Street Journal articles about, you know, BlackRock being really aggressive in this area, and people -- a little bit of backlash, and people taking their proxy voting back away from BlackRock. Then there was one op ed done by I think Mike Pence on the same issue.

I hope we don't get to the point where we're making investment decisions for ESG or any other reason other than wheather we think it makes us money or not. It troubles me to see other investors go down that path, because, you know, it's like where does that path end? What's the next ESG thing? If you did this, well, then you're going to have to do that.

So I would just -- we'll talk a little bit with Mike about it. But I'm glad we vote our proxies. And I don't think we should embrace the flavor of the day in this area.

MR. TAYLOR: And as you've seen, and as they were reported, from our perspective it creates some opportunity for us. These people are making noneconomic decisions based on things other than a returns base. So they're selling assets at a haircut, and we're trying our best to find them and pick them up, because we think they're going to be creative to the Fund, so... These decisions are being made from an economic perspective.

MS. RYAN: Okay. I just had a few quick slides on the PE front, and then I'm going to turn to the Florida Growth Fund program. Fast forward.

Okay. This is a slide we like to show you all each time we come and talk about this portfolio on an annual basis. So what we're showing here is how has the total PE asset class performed relative to the Cambridge clients that we track performance for. So you'll see the sample size there sort of in the middle box, your over 600 Funds. And then we've got different time periods here, one, three, five, and ten years.

So, starting on the right side, you'll see our over the long term, the Florida -- PE portfolio has ranked in the top quartile relative to this roughly 470 sample Cambridge Associates client portfolios. So very strong performance over the long term. And over the more near term, over the one, three and five years -- what's happened? Over the more near term performances bounced around a little bit. We've sort of put some history there in the bottom table. But consistently above median, bouncing around, sometimes it's top quartile, sometimes it's second quartile. And that just gets to some slightly different

asset allocations across these client portfolios whether, you know, a client may be heavy in energy, or they may be heavy in venture, you know, whatever it is, it could bounce around a little bit.

But the message here is very strong, relative performance both on a sort of short-term as well as long-term basis. And then with these numbers, we pretty much went through a lot of those numbers.

I'll just touch real quickly on the market environment. I know we talked about this a little bit, but this is just to put some more of it in broad context. You'll see here just looking at buyouts in blue, growth equity in sort of orange, and venture in green. So these are global returns. And you'll see just how strong the numbers have been over particularly the one-year period and even one year and three year.

Now, these are returns as of the end of Q3 and if you include Q4, they're up another call it five, five and a half percent. So this doesn't reflect the downturn that we've seen in the public market since then and it's going to take a little bit of time for those marks to flush their way through to the private marks. We've seen the NASDAQ down 27 percent year to date, down 19 percent in Q2. So a lot of uncertainty as to what the impact is going to be.

We're just starting to see some corrections here. We're hearing layoffs in some of the tech sector. And we're starting to see a little bit of valuation impact in the Q1, one manager that's particular heavily weighed in the late stage side is seeing marks down anywhere from down 10 to 15 percent in Q1 depending on, you know, which portfolio they're marking.

So it's been a great run but we're clearly going to see some readjustment here. We don't think it's going to be a one-to-one adjustment with public market, but we'll see. We haven't gotten a ton of visibility on that at this stage.

Just more sort of data here on the Fundraising activity. You will see how active this green part of the chart has been. That's venture capital. There has been a lot of Fundraising going on there. And so I think that's going to slow down quite a bit. We've been told that companies -- venture backed companies have been told to manage their burn, at least have, you know, two years of cash runway. Don't come back to the market Fundraising right now. So we expect these green

bars to slow down quite a bit.

More of the same here just in terms of, you know, tremendous performance through basically last year, and there's certainly going to be some readjustments going on here.

The next couple slides are pretty self-explanatory, in interest of time we're not going to spend a lot of time on them here. But we just took a look through our benchmarks to see what portion of the market here, particularly a US venture capital, is in public companies, because that's going to drive a lot of those remarks as well. You'll see late stages more heavily oriented to public companies.

And then we have a couple slides in here about a lot of the public companies are actually in the biotech center, and we show that here with health care, and on this side as well on the right hand chart you'll see that's the biotech. So, interestingly enough, a lot of that public market exposure is in this health care space.

So that's really it just some interesting market slides here. I know we're sort of running tight on time. So if there is no questions, should I turn to the next subject? Yeah? So just kind of keep going.

Okay. Great.

So I have got a pretty quick walk-through of the Florida Growth Fund. I put together a handful of slides here to give you an overview and give you an update on performance and strategic impacts and pretty interesting insights.

So the program is authorized to invest up to one and a half percent of the Fund assets. Currently it's at .33 percent of Fund assets. Actually, that's as of June, I believe.. last June. So, you know, long headway here in terms of room to get to the full one and half percent.

And the mandate here is to invest in technology and growth businesses that are either domiciled in Florida or have a principal address in Florida. And those investments can be in the form of a investment in a Private Equity Fund through a Fund manager or they can be direct investments into coinvest into specific companies. So if it's a Fund investment were you're backing a general partnership, either the GP has to be based in Florida or if they're not headquartered in Florida they need to be investing significantly in the state.

For specific deal co-investments, companies

must either be based in or have a significant portion of their actual business being conducted in the state of Florida. So those are the criteria for the program, for the investment criteria. So to date the program is comprised of three Funds across six Traunches managed by two managers. So Hamilton Lane has been managing the Florida Growth Fund, Fund 1 and Fund 2. And then in 2019, J.P. Morgan Asset Management was added to the roster, and they're managing -- the name of their vehicle is called the Florida Sunshine State Fund. But both of these mandates have the same overall strategic objectives as I've outlined.

So this is data from the January OPPAGA report which reflects data as of the end ofJune, 2021. And you'll see some pretty interesting statistics here. So this is trying to capture, you know, what has the kind of strategic impact been for the Florida Growth Fund program to date. So the program has invested over $800 million in 69 technology and growth companies, and 46 Private Equity Funds. You'll see in the graphic on the right the distribution across different counties, but 14 Florida counties have been involved in this activity with a wide range from as low as roughly

7 million in Manatee to almost a $195 million in Palm Beach, not surprisingly. A lot of GPs are based in that region.

Over 23,000 jobs have been created by companies who have received capital from this program. And the wages have been quite good. They range from a low end of $21,000 to $118,000 on the high end, which compares favorably to the state's average wage is $50,000.

A lot of capital expenditures have been made since inception, $1.6 billion. And just in the last fiscal year, $88 million. So a lot of capital being invested in the state. And the distribution activity has been quite strong as well. Just shy of $675 million in distributions from the inception through the end of June. So that gives you a little bit of a flavor.

And then this is an interesting just kind of backdrop on the overall activity level. So this goes back in time to 2010 through the first half of 2021. And on the left-hand side we're showing you Private Equity backed Florida based companies, and on the right-hand side we're showing you Florida based Private Equity firms. So a nice trend upwards on both of these charts which has created a

lot of very attractive deal flow for this mandate.

MR. GOETZ: Sheila, this is John Goetz --

MR. WENDT: Question from Wendt.

MS. RYAN: Sure.

MR. WENDT: Wendt's question is, on the previous chart which was the map of the state and the colors, did the colors represent where the GP is or where the money is being invested in the companies?

MS. RYAN: Yeah, you'll see the green -- you'll see there's a little legend there next to the chart. So the green is the Private Equity Funds, and then that blue are actual growth and technology investments, so those would be specific companies. And then that darker green is a combination where there could be some Funds as well as some direct deals.

MR. WENDT: Well, the question -- I mean, the comment you made was that, as expected, Palm Beach would be heavy, because there are a lot of GPs there, and there are, but that doesn't necessarily mean that money is being invested there, does it, in Palm Beach?

MS. RYAN: Well, there has been. It says, according to the report, it was about $195 million in Palm Beach County versus $6.8 in Manatee. That's

just one example.
MR. OLMSTEAD: Yeah, but I would venture that much of that money is the GPs who were investing outside of the state of Florida. Right? So when you look at the total investments, the investments aren't being made only in Florida.
MS. RYAN: No, that's correct.
MR. OLMSTEAD: It would be interesting to understand how much is getting -- I'm not saying it's good or bad, may be better for returns, but how much is actually being invested out of the state versus in the state. And, the perception is that it has changed over the years. It may or may not be. But if you look at the venture community and the PE community, there is a perception that it is becoming more of GP centric and investing out of the state versus in the state. I don't know if that's accurate or not.
MS. RYAN: Yeah, I can certainly take a look, I have the full report. I can certainly go back and take a look at that.
MR. BRADLEY: I think, Vinny, historically it's been a pretty good percentage of the total Funds in these programs have stayed in the state. I think it's upwards of 70/80 percent plus. And so to your point, that might be changing as more Funds, firms

that move to Florida that are more national and global in nature. But --
MR. GOETZ: Well, that was my question. Is the criteria of a Fund that we would include in the program include a minimum level of investment in the state of Florida?
MR. BRADLEY: There is not a number to it, but there is a material or meaningful amount of money historically from this firm has been invested in the state. So we have a large -- one of our larger relationships have moved an office down to Miami, and moving folks down there they would not qualify because they've only done or two deals historically ever in the state.
MR. OLMSTEAD: So they'd come under --
MR. BRADLEY: They would still stay in PE --
MR. OLMSTEAD: -- still stay in PE.
MR. BRADLEY: -- and there are Funds in the Florida Growth Fund that we look at that we could put in the PE program and so there's no hard and set rules as to where it goes. If it's a good opportunity, we're happy to have a PE commitment in a Florida Growth Fund commitment.
MR. OLMSTEAD: J.P. Morgan versus Hamilton Lane, is it the same strategy of direct investments and --

MS. RYAN: Yes.
MR. GOETZ: -- and GPs --
MS. RYAN: It's the same mandate, yeah.
MR. COLLINS: Are we going to get to performance?
MS. RYAN: Yeah.
MR. COLLINS: Okay. Sorry.
MR. NEAL: Before we get to performance, which has been subpar, is the impetus on this, does it come from the legislature or from the Trustees or from the SBA what is the reason we can't allocate up to one and a half percent to Florida investments, is it a statutory mandate?
MR. TAYLOR: It is. It's a statutory mandate.
MR. NEAL: How long has it been in the statute?
MR. TAYLOR: Since 2008.
MR. NEAL: I don't mind saying, under allocations it sounds okay to me. I was just saying.
MR. GOETZ: Official position?
MR. NEAL: That's my official position.
MS. RYAN: Okay. Well, let's go to performance, then, here. There's a lot of small numbers on this page. But I will sort of call your attention --
MR. COLLINS: Figuratively and literally.

MS. RYAN: So you'll see there is the net IRR column and then there's the PME, which is the public market equivalent. And then there's the out, you know, the relative performance relative to that PME.
So you'll see for the first Florida Growth Fund, Hamilton Lane, Traunch 1, the net IRR of 11.7 percent on a sort of combined basis. And you'll see that the objective here is to outperform the Russell 2000 by 300 basis points. So, the first Traunch did not do that. It basically matched the public-- Whats going on why is this, sorry this keeps going off on me-- It basically matched the public markets. So you'll see there was a zero performance there. The Florida Growth Fund, Traunch 2, which was a 2012 vintage generated 12.6 percent, net IRR, outperforming the public markets 120 basis points. I dont understand whats going on here. And then the credit Traunch has a different benchmark, and that outperformed its public benchmark by 400 basis points.
MR. JONES: Sheila, I have a question. This is Peter Jones.
When you're talking about out or underperformance, shouldn't that 300 basis points in addition to the PME be included in that out or underperformance?

MS. RYAN: No. Yeah, this is a question we get quite often. And we've done a lot of research on this topic.

But the way we think about it in terms of best practice is that you don't include that 300 basis points, because if you think about it at a broader asset allocation basis, you're looking at whatâ€™s an investable alternative. And if the public market is your benchmark, you're investing in an investable index, like the Russell 2000. You know, you're not investing in a Russell 2000 plus 300 basis points index, it just doesn't exist.

So that's how we think about it. What is an actual investable cost, where are you taking money out of to put into this, and adding 300 basis points is really not reflective on what you're trying to show here. Then you have the compounding effect of that 300 basis points as well. That would really kind of get the numbers out of whack.

MR. JONES: Okay. All right.

MS. RYAN: So then just going to the Florida Growth Fund, the second Traunch here, you'll see Traunch 2 was 12.9 percent net, underperformed the public benchmark here by 270 basis points. Then Traunch, the 2019 Traunch there, 35 percent, or

almost 36 percent outperforming by 270 basis points.

So the combined results for the Florida Growth Fund 2, around 14.2.

And then the J.P. Morgan, and Florida Sunshine Fund, that's a 2019 vintage, so analogous to the second Traunch of the Florida Growth Fund too. Very similar returns, 35.1 versus the Florida Growth Fund at 35.7. And very similar there, 280 basis points out-performance, so... And it's too early on the second Traunch of the J.P. Morgan. It just closed recently, so we don't have any numbers there yet. So this is meant to give you a general flavor for performance.

MR. COLLINS: So do we look at that? I mean, why is the performance poor? I mean, we just had bad investors, bad investments, both? I know we got into it the last time when Hamilton Lane was here, I won't call anyone out by name, but even in some of their reporting I had some issue with some of the numbers they were putting up. What is it --

I think the reason I ask that is, I agree with the public sentiment for -- if the legislature wants to invest in Florida companies and wants to grow the Private Equity business in Florida, I think this was a elegant solution to what could have been a messy situation. Right? And when you look at the number of GPs that have been created from 27 to 102 in Florida and all the dollars, okay. We didn't lose money; I give them that. We didn't lose money, I don't think. But why is the performance bad? Any idea on that?

ANKUR DADHANIA: This is Ankur Dadhania from Hamilton Lane. I'm happy to chime in on the performance a little bit.

So if we were to backtrack on to Florida Growth Fund one and the start of that program we were guided to at that point, was to create a holistic program to really go out to the Florida market. This include buyout investment both in Funds and co-investments, but also on the credit side. So by way of example, 20 percent of exposure in Florida Growth Fund 1 is through credit. That's both through direct credit investments through the credit Traunch but also through Fund investments across Traunch 1 and Traunch 2.

So the portfolio construction that we've seen at the Florida Growth Fund level is a bit of a -- it's a bit of everything that was in Florida back in 2009 and 2012. As you continue seeing the performance and the state mature from a private equity lense we started to craft a portfolio,

starting in FGF 2, Traunch 1. But more meaningfully in FGF 2, Traunch 2, that's much more buyout and co-investment centric. We believe that the commitment pacing, that is the distribution activity in a risk reward profile that we're achieving with buyout investments and co-investments are much more suitable for the totalitly of the Florida Growth Fund program, which is why we generate a performance in Florida Growth Fund 2, Traunch 2 versus what we've done historically back in 2009, 2012, which was a much more holistic approach to Private Equity in the state of Florida.

MR. COLLINS: Does anyone want to unpack that for me?

MR. OLMSTEAD: Could I take a shot at it?

MR. COLLINS: Yeah, great.

MR. OLMSTEAD: First of all, 2019, I mean, to me it's June, the performance isn't really there. And I'm not saying --

MR. COLLINS: I agree with that.

MR. OLMSTEAD: When you look at the state of Florida and the exits from the VC, sort of reinforcing a little of what he says, the exits above 400 million are very few. When you look at San Francisco, New York, Boston, we can actually look at the outcomes.

They're handicapped, Florida is handicapped. The buyers historically have not come to Florida like they have to other, you know, high tech or high performance PE and VC areas. So our -- they're getting multiples of higher up on exits than they do here.

The number of exits that are unicorns are very few in the state of Florida. So they're a little bit handicapped on what they're investing in. I do think that's shifting a little bit, especially from COVID and all the PEs coming down here and realizing tax-free and whatnot. So you're seeing a dynamic change of entrepreneurs, and companies, and companies willing to buy companies in the state of Florida. But I do think the state of Florida has been a handicap because the big deep tech companies aren't buying here as much as they might buy elsewhere.

MR. BRADLEY: Yeah, and I think what gentleman from Hamilton Lane, his point on earlier Traunches, I guess, was that it was a mix of Fund investments, co-investments, and even credit investments in there. And so it's not total just PE or PE-like co-investments, there's a lot of debt investments in there as well.

MR. COLLINS: So, you know, I made the comment

about ESG investing for other than purely financial return reasons, and I acknowledge that this program might fall under that same rationale, right, were it was for more than just purely financial reasons, right? And we're seeing that whether there is a bias, or whatever it is, we would have done better to go somewhere else.

Again, the legislature tells us to do something and we're doing it. But we need to be able to talk to those people when they ask us how it's going and just say, look, we haven't earned the returns that we could have earned, but there has been a positive impact for the state.

MR. TAYLOR: Right. And I think that's a great point. You know, in addition to this being a statutory requirement, there is also a statutory auditing so OPPAGA does an annual review on the Florida Growth Fund and provides a report to the Legislature. And I think it is a mix, a balance that -- and you get that in the sense of the report of returns. And that's why we needed the statutory authority, because, again, from a fiduciary standpoint this may not be something that we would say from a total investment opportunity set, it makes sense to be narrowly focused on the state. So we needed the statutory authority to give us that ability to do that, and then implement it as best we could.

But there was this overall policy perspective too from the legislative authority around state benefits, which is why there is a lot of reporting around jobs and job growth and economic activity around that. But absolutely fair point is, there is no free lunch. So when you want to put constraints on our investment opportunities set, there's tradeoffs. We're doing the best we can from an implementation perspective and so that's what you're seeing.

MS. RYAN: There was one other slide I wanted to touch on real quickly before we wrap this.

So, Hamilton Lane was the sole manager of the program until the end of 2018 when J.P. Morgan was added. And adding the second manager allows the SBA to diversify, not just from a manager exposure, but also broaden the pipeline, you know, different network, complimentary deal flow, and also allow for fee negotiations to get more competitive fees.

To date, Hamilton Lane has invested just shy of $800 million, distributed $658 million. So the net exposure just under 100 million as of June 30.

Now, of the deals that Hamilton Lane has done co-investments in, they have invested other client

capital alongside about 42, 43 percent of those same deals.

Now J.P. Morgan is newer and they've committed their first Traunch of $125 million, and they recently closed on a second Traunch of $250. But when you look at their actual co-investment deals, they've committed client capital across 85 percent of those deals. So a little bit better alignment there in terms of the deals that they're committing to relative to other client capital.

And then just to wrap up here. In terms of strategic objectives, it seems like the program has been, you know, quite attractive in terms of job creation, you know, capital investment, supporting the deal activity in the state. The current allocation in still quite low versus the target. The market opportunity set continues to grow as more Funds are relocating here and opening offices here. It seems like the venture community here has become, you know, much more growing, Miami in particular, we've heard a lot of activity going on in Miami.

Performance has been okay, but overall underperforming the benchmark of the Russell plus 300. But diversifying the exposure across two managers we think is beneficial to the program, widens the network and the sourcing channels, and allowed for some improved fee structures.

So those were just the highlights I wanted to cover today. If anybody had any other comments.

MR. COLLINS: Just so I'm clear, we have to invest five times what we're currently invested today to get to where they want us to be?

MS. RYAN: Well, you've got a long way to go to get to one and a half percent --

MR. COLLINS: Yeah, from .3.

MR. TAYLOR: It's up to. I think we're just trying to make sure we're managing overall --

MR. COLLINS: Okay great, feel better. Thank you.

MR. GOETZ: Just to comment on that, if you add third-party money that was coming in without a Florida specific objective, that makes it sound like it'll be a better return, because you have alignment just for return, right, the co-investors that we were talking about?

MS. RYAN: Right.

MR. GOETZ: And then the second point is, is there any part, this part if for you Lamar-- is there any point of saying part of the goal was to attract PE firms to the state of Florida, because they're coming anyway. I mean there's no reason, I wouldn't

give PE firms incentives to move to Florida, they've got plenty coming from the states that the PE firms are already located in. Right? There isn't an objective to attract PE firms to the state of Florida, is there?

MR. TAYLOR: That wasn't stated in the statute, it was there to provide growth and technology, and to provide up to one and a half percent of the fund target growth and technology opportunities in the state.

Again, we're managing this with an effort to make sure we don't suffer returns. We're trying to come at this in a way so this competing on equal footing. And I think that's sort of the issue, it is competing on equal footing and we're getting feedback around how it's doing on an equal footing.

So, you know, obviously our objective is to maximize the returns in the space under the -- given the constraints that we have been given. So, anyway this is where we stand. There wasn't any objective to bring PE firms into the state.

MR. OLMSTEAD: Are we going to continue with the two, are you looking at others, is there a long-term strategy around this?

MR. TAYLOR: I think for now we're looking at two. From a NAV perspective, and then I think Trent may be able to elaborate a little bit more as to the NAV perspective, it started to get pretty meaningful and we wanted to make sure we had proper manager diversification there, so we added another manager to be able to kind of help with some of that diversification. And, you know, if that increases competition the more the better. But I don't anticipate this for now, it's size and scope, going beyond the current set of managers that we have.

MR. OLMSTEAD: Yeah, I would concur. And, nor increasing the, sort of sticking with the amount that as your -- as Peter alluded to, we don't have to go to 1.5 percent.

MR. TAYLOR: It's up to -- and we want to make sure -- we're again, we're trying to put this on equal footing with other return options. So we're trying to comply with the viewpoint and policy and statute that's got to do with this to maximize returns.

So, you know, again, like you said, it's not something -- when you have this geographic sort of scope limitation, your opportunitys set by definition has got to be, you know, calibrated accordingly.

MR. GOETZ: Okay. Any other questions on either the Florida Growth Fund or Private Equity?

We kind of skipped off the Private Equity without asking if one of our, opportunity for questions. Anything else? Okay. Let's move on to the Florida Retirement System plan review. Dan, over to you.

MR. BEARD: Good afternoon. Today presenting along with me will be Mini Watson to my right. She is the Director of Administration. As well as Walter Kelleher who is the Director of Educational Services. Today we're going to give you a little bit more information on the plan, a little more data on the plan than what I normally present during these meetings.

So Florida Retirement System is made up of two plans: The pension plan and the investment plan. The pension plan started in 1970, the investment plan started, as far as enrollment, July of 2002. Currently as far as assets, we have 13.6 billion as of May 31st. So as of May 31, 13.6 billion.

Our new employees at the time of hire have to make a choice between one of the two plans, and they have approximately eight months to make that choice. If they do not make a choice they default into the investment plan. That was changed a few years ago, except for special risk. Special risk are like firefighters, policemen, correctional officers. If they do not make a choice, they default into the pension plan.

The Division of Retirement which is part of the Department of Management Services, they're day today -- they handle the day-to-day administration of the pension plan. The State Board of Administration is responsible for the day-to-day administration of the investment plans. All of the major components of the investment plan, recordkeeping, custodial services, et cetera, are outsourced per Florida Statutes.

So in 2000 the Florida legislature actually passed the law that established the investment plan that directed the State Board of Administration or the Trustees of the State Board of Administration to govern the investment plan.

The Executive Director handles all the day-to-day oversight of the plan as well as was responsible for implementing the plan.

The Deputy Executive Director, he provides guidance on the administration of the investment plan.

The Chief of Defined Contribution programs, which is my role, I handle the day-to-day operation of the plan and oversight of the plan.

The investment advisory council, which is you,

by statute, your role is to assist us, the SBA, in administering the investment plan and also to provide comments on recommendations for providers and investment Funds, and then to review any proposed changes to the Investment Policy Statement.

So we're a small group. There is eight of us that oversee the plan. The Florida Retirement System has approximately 988 participating employers. So those are employers who are new hires -- or are just about all new hires are eligible to join the Florida Retirement System.

We have as of March 31st total members was 272,000, and we had 174,000 retirees. The pension plan had 452,000 members, and then about 473,000 retirees.

Next Mini is going to provide some administration information for you.

MS. WATSON: Hi there. I'm Mini Watson, Director of Administration. This is just a snapshot of the investment plan. Dan went over a couple of the figures. And these were as of March 31, 2022. And as Dan stated, under asset we currently have 13.6 billion at through May 31st, 2022. Distributions we currently, up through May 31st, 2022, were at 16.8. Members currently, although listed, there currently are 280,169 members. We do categorize them as active and inactive. Active means contributions are actively going into their account, were inactive means they have a balance.

As Dan previously stated, all major components are outsourced by pursuant to the Florida Statutes. This includes recordkeeping and custodian along with the benefit payments. Alight Solutions is our plan administrator choice service provider. They are the record keeper for elections for both a member making a choice between the pension plan and investment plan. They also are our SBA provider. BNY Mellon is our custodian and also they do the benefits disbursement under the plan.

The Division of Retirement is the pension plan administrator and they handle the retirement reporting for both plans, the investment plan and the pension plan, along with a health insurance subsidy program, disability and inline of duty benefits for both the investment plan and pension plan members.

Plan choice. Dan previously indicated that members, when initially hired, they have eight months to choose between which plan. The change in 2018 changed it to the default to the investment plan,

except special risk members. That's why you see four bars beginning in 2018 compared to 2016. This is just a showing of how we're tracking as far the default. As you can tell, the default of investment plan is about 48, 49 percent each year.

And this is tracking our membership growth. And currently the membership is at 280,000, currently.

MR. JONES: Mini, this is Peter Jones. May I ask a question?

MS. WATSON: Sure.

MR. JONES: Yeah, just curious. When we have a new employee and they say and they come to whatever the source is to ask questions, which plan should I choose, how is that answered?

MS. WATSON: Sure. Walter will go over in just a few minutes.

We have the financial planning guidance line, and they are a provider of the umbrella of the defined contributions program. And Walter will touch on that and, or he'll provide some statistics as far as planning and retirement planning.

MR. JONES: Okay. Great. I'll wait for that, then. Thank you.

MS. WATSON: All right. We spoke about the

initial election or the default election. This is
your first selection. Members have the opportunity
in their retirement career to make a second
election. These are the statistics for the second
elections beginning in July, 2017. As you can see,
the most frequent is the second election to the
investment plan.

Some administration statistics. Alight
Solutions, our record keeper process
contributions, mail quarterly statements,
communications, and they receive telephone calls
regarding the FRS. Via mail in, they mail the
distribution checks, process of the direct deposit,
and hold the assets under custody.

Statutes also provide for members to file
what we call a request for intervention or
complaint process if they were to have an issue or
complaint with one of the vendors or an outcome
with their accounts. These are the top five
reasons of why members file complaints. However,
more than likely, we can't grant what they want
just because the Florida Statutes tie us to our
decisions. So although they have that, we look at it, we
go through to see what happened or occurred
in their account and see if the law

will provide us the opportunity to provide a
resolution; or, if not, there is steps to a hearing
process.

MS. CANIDA: Hi, Mini. This is Tere Canida.
I have a question. The second election privilege,
how long do you have to do that? I mean, do you
have a certain time or how does that work?

MS. WATSON: Sure. You have to be actively
employed earning salary and service credit in order
to make your second election. So there's not a
time frame, such as the default, were you have to
make it within your first eight months. You just
have to be working, getting paid, earning service
credit, and employed.

MS. CANIDA: Okay. Thank you.

MS. WATSON: All right. That's it for my
part. I'm going to turn it over to Walter
Kelleher.

MR. KELLEHER: Thank you, Mini.

The financial guidance program is the
education program for both retirement programs, the
pension plan and investment plan, and we have
multiple partners within the program. Ernst &
Young, who is our financial planners.

The question was brought up about how do members make an election, what resource is available. Ernst & Young fields over 300,000 calls a year. A lot of those are from new hires who call in and say, which plan should I join? Ernst & Young utilizes a tool that provided by Alight that's called the first election tool, and that tool can actually do projections into the future. You know, if you work 10 years or 15 years or 30 years, which retirement plan is going to provide the greater benefit. And they provide that information to members. Members are also permitted to go online and run the first election tool also to generate those numbers.

Ernst & Young, in addition to being financial planners, they also provide workshops all over the state. Over 500 workshops held throughout the state. I think last year we educated around 26,000 members. They do them virtual and they do them in person.

Guided Choice is an online personal advisor tool. Members can enter information in there, like an outside asset, it knows what their FRS assets are. It would give projections for Social Security and give them a total retirement picture on what it's going to look like as far as retirement. And

most importantly, are they prepared for retirement.

We also have a contract with Alight who does all the print materials for us. They also do focus groups. And once again, they also provide the online first and second election tools that are available.

We also have contract with MetLife who provides annuities to investment plan members. So when investment plan members terminate, they have a pot of money, they can convert that into lifetime income. We have immediate annuities, we also have deferred or QLAC annuities available to members. The guidance program incorporates telephone, myfrs.com, print, videos, workshops and webcast.

These are some statistics on the education program. As I mentioned, Ernst & Young financial planners during the period of April 1st through March fielded 354,000 calls. That was up 28 percent. Workshop, 664 workshops up 23 percent. Attendance of workshops was up. 26,896 members attended. That was up 53 percent. Website hits remained about the same, went down a little bit. And then chats went down a little bit.

Annuities purchased. In the past year 25 annuities purchased for 2.3 million. We're on track for I think our second greatest year, this fiscal year. Around $3.4 million in annuities and around 30 annuities purchased. In total we've had 193 total annuities and around $23.8 million.

Some highlights. A real popular thing is to enroll via these online forms that we've got were people don't have to login. We've added three additional enrollment forms electronic. We've also resumed in-person workshops. We were doing them virtually during COVID. We also redesigned myfrs.com, and we're also bringing out a new online chat provider, and that will be on probably around August, 2022, beginning of August.

MR. GOETZ: Question on the enrollments. A lot of default, you know, enrollments, which is good and I think that's great. Do you have an objective of having them make informed selections or is the default kind of the status quo kind of fine, because it gets them in an investment plan and it's a target date I guess most of it, right?

MR. KELLEHER: Yes.

MR. GOETZ: Is it fine the way it is, is my point, or do we view education as needing to go up or down or are we okay?

MR. KELLEHER: We have basically fought that fight since 2002. We've always wanted to get that default down. How do we do it? We've done multiple, multiple focus groups. We've done everything we can think of. We hit these people eight times during their initial enrollment period with emails, print materials, a new hire kit. Our goal is to get them to make an active election. Make sure that they look at the material. They understand what they're doing, because if they don't we make the decision for them. Now, based upon the focus groups that we've done, some of the people have indicated, yes, I knew if I defaulted you would do exactly what I wanted to do. But there is also a group out there, I think school boards, they're defaulting 80 percent are going into the investment plan, which is a huge statistic. So our goal is always to get them to make an active election. But over the years there is nothing that we can do that we've tried so far that can push that default number down.

MR. GOETZ: Thank you.

Other questions?

MR. BEARD: Okay. The last little part here.

So asset performance, and this is as of March 31st -- I'm just going to give you where we're at as of May 31st. As of May 31st, actual numbers was minus 6.41. We all know what was happening in the market from that period to now. We are below the benchmark of 113 basis points, again, that's as of May 31st.

Here are the options that we offer under the investment plan and their fees as of March 31st. When Aon comes up, they will actually have a slide that will show our fees compared to what is out in the retail market, and how our fees are very favorable compared to those fees that someone may get out in the retail market as well as among other plans.

So the investment plan, as you see it's broken out the majority of the assets are in the retirement Fund. Again, we have close to 50 percent. As was mentioned earlier, that is a default Fund. So we have a very high number of defaulters. And those defaults when they default they go into one of the retirement date Funds.

This here just shows the makeup of the retirement date Funds, the different assets that are spread out between the retirement date Funds.

So this is the investment manager allocations for the retirement date Funds as of July 1, 2022. So the bottom it shows the Funds that actually make up

the retirement date Funds. Our retirement date Funds are custom retirement date Funds. We have a custom glide path that is put together by Aon. And then they give us -- every year they review and they provide the glide path allocation for that next fiscal year. And these are the managers and their particular allocations.

So what are some of our initiatives for this next fiscal year? As far as investment options, we're going to do the (inaudible) that I just showed on the previous slide, those are effective July 1 of 2022. We're also going to add the retirement date Fund 2065. That'll be effective July 1, 2023.

And then we're also going to do a structure review so Aon is going to come in and do a comprehensive structure review on the plan. The last one we had done was about three years ago. They came in and did a very comprehensive structure review. So we'll have another one of those.

And as far as plan administration initiatives, as you know from our last meeting, the legislature passed an increase in the employee -- employer contribution for investment plan. So, for example, regular class starting July 1 their investment plan contribution rate is going to go from 6.3 to 9.3. Based on that, of course, we had to go in and do lots of updates. So we're doing that. So that will be available effective July 1.

We're also going to do an electronic pin reminder. So the pin number is something that we send out to all new hires. It goes out approximately two months after they're hired. They need that pin number in order to set up an account on myfrs.com, if they enroll in the investment plan they will need the pin number to request a distribution if they call and request that over the telephone. Right now the only way that they can get that pin, if they were to lose it, is by paper reminder that went out snail mail. So we all know how the mail is. And that's one of the complaints that we have been getting.

The reason we have been reluctant to actually go to some kind of electronic pin, is because that pin -- if someone had your pin and you were terminated, they could basically take a distribution on your account. So we have been very reluctant on that. However, we feel with some security measures that we can verify, we verify that yes that cellphone number belongs to John Doe, or yes, that email address belongs to Jane Doe, that we can send that pin number electronically. Additionally, we're going

to ask some questions, some personal questions about, you know, you lived at a certain address a few years ago or some addresses that are associated with you, some address that are associated with your children that only you should know. And they will have to answer them all right in order for us to send that electronically. If they answer any one of them wrong, then we'll send it by mail and only to the address we have on record.

We just feel that we have to add some security around it, we just can't mail it out just for the fact that, that pin number can be used to request a distribution.

And then the last initiative is we're going to add the ability to request a distribution from a specific investment Fund. Right now if someone requested distribution it's pro rata across whatever Funds they're invested in. Every now and then we get a request, someone say, you know, I want to take a distribution but I only want it to come out of my stable value Fund. Right now you can't do that. But, that's a project we're going to add for next fiscal year to add the ability for a member to request a distribution from a specific Fund.

So those are our 2022-2023 initiatives. And we are happy to answer any questions on anything that we've covered.

MR. NEAL: Thank you. Will you say again what the change in the contribution made by the state will be for those who go in the investment plan.

MR. BEARD: Yes. So there is a 3 percent across the board increase in employer contributions. For example, for a regular class, currently the contribution is 3.3 percent employer and 3 percent employee for a total of 6.3. Starting July 1 it's going to go to 6.3 percent employer, 3 percent employee, for a total of 9.3 percent.

MR. WENDT: Gary Wendt has a series of questions that will show his lack of understanding of this.

Let me start with this: If you, say, became an employee three years ago and you elected to take the self-investment plan, could you have the chance to pick what you wanted to invest or do they have to use your allocations?

MR. BEARD: So using your example, three years ago if they chose the investment plan, they had the option to let us put them in a retirement date Fund based on their age or they could have allocated

among any of the available Funds that we had out there. Additionally, once they had a high enough account balance, they could have actually transferred some of their Funds into the self-directed brokerage account and chose from the hundreds of mutual Funds, equities, that's available through that platform. We just ask they maintain a minimum balance in their core investment account of $5,000, but any amount over that in increments of a thousand they could transfer to their self-directed brokerage account and choose whatever Funds they want to -- or equities or ETFs through the self-directed brokerage account.

MR. WENDT: Okay. If you chose -- if you chose to invest yourself, when it comes time to retire, whenever that is, you reep what you sow, correct?

MR. BEARD: That is correct, yes.

MR. WENDT: But if you select the other plan, the pension plan I guess it's called, you get so much depending on how many years of service; is that correct?

MR. BEARD: Yes, the pension plan benefit is based on a formula, it really has nothing to do with the contributions that go into their account or what the earnings that the SBA earned on their trust Fund, it's formula based.

MR. WENDT: All right. Okay. What I'm getting at, the decrease in valuation of both stock and bond markets in the last several months and then the use of your term second choice, would it be possible for someone who started out in the self-investment plan and made some really awful -- well, it's hard not to make bad decisions on what you invest. Could they now say, whoops, changed my mind, I want to go back to the pension plan and get a fixed amount, whatever that amount is when I retire?

MR. BEARD: Yes. Yes. So they could exercise their one-time second election and switch to the pension plan. There are some pros and cons to that. They're going to have to buy into the pension plan. So it's not just taking their account value that's in the investment plan, transferring it to the pension plan, and then from that day forward they're considered in the pension plan. They have to buy in. And, depending on that buy-in calculation -- I'm sorry?

MR. WENDT: Is the buy in, whats -- how is buy in determined, the amount?

MR. BEARD: Yeah, so the Division of Retirement calculates the buy in, we don't calculate that here at the State Board. But that buy in can be a present value going back to the pension plan depending on when they started, or it can be an actuarial approved liability calculation. So it can be one of those two, depending on when they started with the Florida Retirement System.

Sometimes that amount can be more than in their-- than what's in their investment plan account. If it's more than what's in their account, then what's going to happen is their investment plan account balance is going to transfer over and they have to come up with the difference out of pocket. If they have more in their investment plan to cover it, then what's going to happen is only that amount is going to be transferred, whatever they have left will remain in their investment plan account. And actually, they will be in both plans at the same time. They can't access that investment plan money, however, until they actually retire from the pension plan.

MR. WENDT: So I think you're saying there's no real advantage to anybody to take advantage of the market that's falling and move over into the pension plan, there is no advantage to that?

MR. BEARD: Well, I think it's up to the member. I personally can't say it is, but some -- we do see a lot of members who, when the market is the way it is, like it is now, who request second election buyback cost, they want to see how much it cost, and we do see a lot of activity when members actually buy back into the pension plan during times like this.

Now, one would think, well, your account is not high, you don't have enough money. But we actually see a lot of activity when members say, you know what, I want to go back to the pension. I want that, just not have to worry about my account. So we do see that activity now. But again, a lot of people can't afford it.

MR. WENDT: Does that cost the state anything when they do that.

MR. BEARD: No, it doesn't, because the Division is going to calculate their buyback as if they were in the pension plan from day one. So they're making the I guess you could say the trust Fund whole from that standpoint, so it really doesn't cost the state anything.

MR. WENDT: Okay. Well, I'm not sure I understand that nor do I because, fortunately, I'm

not an employee of the State of Florida yet.

MR. BEARD: Okay.

MR. WENDT: Thank you. I think I understand.

MS. CANIDA: Dan, this is Tere Canida. I have a question.

When you look at the page where it shows the retirement date Fund, and I'm using this just as an example, and you look at the managers underneath, did I understand that these managers come recommended through Aon, through a path with Aon?

MR. BEARD: So those managers underneath are actually our managers in our core Funds. So they make up our core Funds. So then what we do is we take those managers and use them to create our custom target date Funds. And, yes, Aon provides that glide path to us. They provide us, you know, what managers and allocations that should make up their retirement date Fund. And it's based on our member -- the investment plan member's -- our membership data. So they're looking at our data and they're creating that glide path.

MS. CANIDA: But, and you also work with Aon in finding the managers that you use in your overall plan, correct?

MR. BEARD: No, actually we use Mercer for that.

MS. CANIDA: Oh Mercer, okay okay. And how much change do you see in that from time to time? I mean, do you have a lot of manager turnover underneath?

MR. BEARD: I guess the past year we have, because we terminated a manager which had -- and I'm going back this is about a year and a half. We terminated a manager that had two Funds in the plan. We had one manager that actually closed up shop, so we had to find a replacement for that manager.

And then, based on our structure review we had a few years ago, one of the recommendations was to switch from a money market Fund to a staple value, so we had to go out and do a search for a staple value Fund manager. And all that was probably within the last year and a half. Prior to that we very rarely changed our managers, unless we go through a structural review and there is a recommendation from Aon to maybe switch out a manager due to performance. Or when we do our performance monitoring, you know, we look at a manager and they're not performing as we think they should, we may terminate them that way.

But we don't go through managers or change out

our managers a whole lot. We have in the past year and a half for those reasons I stated.

MS. CANIDA: Okay. Thank you.

MR. BEARD: You're welcome.

MR. NEAL: Dan, I'm sorry to belabor this. I have the impression that the deposit contribution rate to the pension plan is a lot higher than six and a half percent. Is that true, or not so much?

MR. BEARD: So, for the contribution rate, all employers no matter what plan you're in pay the same contribution rate. So well take Leon County School Board. Whether that employee is in the pension plan or the investment plan, their employer contribution rate is going to be the same.

What happens when they have the assumption conference, the actuary will take the normal cost for the pension plan, the normal cost for the investment plan, and they're going to blend those together into what we call the blended rate. And that's what the employers will pay. So the actual amount that goes into the investment plan account, they're not actually paying that per se. It's part of that blended rate which the actuary has used, you know, they use the data from our investment plan, the data from the pension plan, and that's

how they come up with that normal cost. And they
blend it together into one rate.
     MR. NEAL: Where did the extra 3 percent come
from, the additional 3 percent contribution being
made at this time?
     MR. BEARD: Where is it coming from?
     MR. NEAL: Is it separate from general revenue
or is it outside the (inaudible)?
     MR. BEARD: Yeah, I don't believe it's coming
from general revenue. I mean, every employer, the
state, the school board, they all have to pay it.
So I don't think it's an actual allocation, Lamar,
correct me if I'm wrong, it has to come from the
general revenue.
     MR. TAYLOR: Yeah no, I dont think it was from--
wherever salaries are appropriated from for state --
state is only about 17 percent of the FRS. So for
the state perspective, wherever salaries would be
appropriated from would be where that would come
from. And then the employers, so school boards, they
have to figure out where they're additional--
     MR. NEAL: So the extra 3 percent would come
from whatever the employer is?
     MR. BEARD: Yes. Yes.
     MR. TAYLOR: And then just to kind of -- not

to belabor it, but there is a UAL, there's an
unFunded liability contribution, that's paid across
all employers regardless of how many people are in
the investment plan or in the pension plan, that
amortization is spread across all employers.
     MR. NEAL: UAL hasn't made (inaudible).
     MR. TAYLOR: It is, yes.
     MR. NEAL: I'll just beat this horse a little
bit more.
     All right. So we've had a slightly unFunded
plan for a number of years. Now we've displaced
maybe a very considerable part of the payroll that
we'd otherwise be paying into the pension Fund.
Presumably, notwithstanding that we're reducing
long-term liability to the state by going off the
investment plan, we would have a short-term deficit
that would be UAL in the pension plan from the
perspective of employees who are no longer paying
the (inaudible). Saying that's reciprocal, we have
a higher net payment rate for the first few years
until the investment plan employees start retiring.
     MR. TAYLOR: Yeah, I think I understand maybe
were you're coming from. And that would be, if I
understand it correctly, the question would be, if
we're seeing more participation in the investment

plan and, therefore, less participation in the investment plan --

MR. NEAL: Yes.

MR. TAYLOR: -- we are losing contributions to the pension plan with respect to what would be the amortization of the UAL? Is that --

MR. NEAL: Yes.

MR. TAYLOR: And that goes back to the structure of this blended rate. The legislature makes sure that doesn't happen because the UAL is spread across all employers regardless of how many participants are in the investment plan or in the pension plan. So employers, if they had all of their employees in the investment plan, they're still going to pay the UAL contribution. And-- And part of that is because when you think about the UAL, the UAL is generated from liabilities of past service costs. And so to the extent there is a UAL, you might have employees going forward, that are already invested, but you probably had a bunch of employees that were in the pension plan, and that UAL is basically to make up for the past service cost.

MR. NEAL: Let me try it one more time.

Is the deficit that we have, therefore,

largely the result of failure to pay the UAL from 2009 to 2013, or is there more there?

MR. TAYLOR: There's a little bit of -- gosh, John, I think we calculated it as something like $3 billion, I think, of foregone contribution. I have to go back and look at the numbers. That's kind of still there in terms of what didn't go into the plan.

But the UAL is exclusively a function the difference between the actuarial valuation of assets and the actuarial valuation of liability. So currently the liability is about $205 million of actuarial liability. Actuarial valuation of the assets is somewhere in the neighborhood of $170 billion. So it's a smoothing process as they look back over it so its not a market value determination. And that is the UAL in that piece, that -- it's complicated -- that's what gets amortized over the next number of years.

MR. NEAL: Does the actuarial investment do a robust valuation of that, or does that come from UAL pension advisor?

MR. TAYLOR: So the actuarial valuation of -- the investment valuations come from us. A Milliman looks at and runs the computation for the actuarial smoothing. It's sort of a weighted average of 20 percent of each of the differences over the last five years are kind of weighted, and so you get this kind of average over the last five years. Milliman does that computation and they provide an annual report every year.

MR. NEAL: What about the actuarial conference?

MR. TAYLOR: It's a byproduct of the actuarial. It's on the DMS website. There is an annual actuarial valuation report.

MR. NEAL: Thank you.

MR. TAYLOR: I'm sorry, it sounds like our court reporter could use a break. Would five minutes be sufficient?

MR. GOETZ: All right. We'll reconvene at 3:30.

(Recess taken from 3:22 p.m. to 3:30 p.m.)

MR. GOETZ: Alright, we're going to restart the meeting here. We're picking up with the Florida Retirement System Investment Plan review which is item number 5, were going to the plan structure review, which Aon is going to do for us here. So Katy, why don't you.

MS. COMSTOCK: Great. Thank you.

This is Katy Comstock from Aon. As Dan had

mentioned, we do a investment structure overview on an annual basis here in the June meeting. And what we cover here is the investment plan lineup, we look at the investment option fees compared to peer groups, and we look at performance, we also touch on any trends or hot topics that are going on in the industry.

As Dan also mentioned, we also do a deep dive roughly every three years, so we did that three years ago. And a number of changes are recommended and made, and I'll touch on those as we get into the slides here. But the portfolio, plan is in really good shape, the lineup is in really good shape.

We're going to kick off our next deep dive here late summer, early fall were we'll look at the underlying white legal options, management structure, as well as retirement income. And retirement income has been a hot topic lately. I'll talk about this a little bit more. But what we refer to when we speak about retirement income is once participants retire, how to manage that account balance they spend their whole lives accumulating, how to think about spending that down, what options as a plan sponsor you all can help your participants in their retirement in that regard. So to set the stage just a little bit, I'll be brief here because I know we're short on time. But I just wanted to set the stage on how we think about investment structure. And what we know and what research has shown is that generally participants are not saving enough for their retirement. The average participant when they are left to their own devices are not creating efficient portfolios. And so what we're focused on are, what can plan sponsors do to help their participants in their plan? I'm also going to focus on the investment lineup and make sure that it is streamlined, make sure that it is cost effective, that it is simple to understand, that there is ways to communicate, and help participants make informed decisions in selecting appropriate managers. And so that's what we're focused here on today.

Governance is critical, especially in this environment where I'm sure you've seen the headlines, there is a lot of lawsuits out there and these reviews, the overseeing of your investment fees and investment lineup are all strong governance practices that you have in place and that you do on a regular basis.

Key takeaways from this year's review, similar to last years, we don't have any

recommended changes at this review. Your investment structure is in very good shape. It is streamlined. You have custom target date Funds. Dan spoke a little bit about that, the roll down is reviewed every year and is based on your own participant data. The set of investment options you have is diversified across assets class type, cost, risk return spectrum, and investment style. You have use of white label Funds, we find this favorable as well. And you also have a number of ways you can assist participants not only through the target date Funds, but through the participant health, the guided choice, Ernst & Young, and those service providers.

From a plan cost perspective, when we look at your investment options compared to peers, you offer lower investment fees from the investment managers. You also do subscribe to the CEM benchmarking data which also looks at investment options as well as administrative costs. And your fees are very competitive when looking at peers as well. And then performance has been strong across short and long-term time periods, and we'll look at that as well in a little bit.

I'm going to pause on this page, what we're looking at here is just an evolution of the DC landscape. Down the left-hand side when we look at investment structure, what we believe an appropriate structure should include are these five key investment categories.

So asset allocation which are right now your target date Funds, and you have the do it for me option. This is where, as Dan mentioned, 50 percent of the participant base, roughly 50 percent, are allocated to Capital Preservation. This is a stable value Fund. Historically it was your money market Fund. Income, primarily fixed income options, low risk, and then the growth, these are your equity across U.S., non U.S. and global options intended to grow the portfolio, grow assets excuse me, and then retirement income, as I mentioned earlier is helping participants once they retire, have an income stream. You do have an option right now in your investment lineup, the inflation sensitive Fund, which we consider a type of retirement income to protect the purchasing power of your participants assets, which is another way to go about offering retirement income to your participates.

What you can see as you move from left to

right is just the evolution and the number of options offered. Research has consistently shown that participants are overwhelmed when they get too many options. One study shown that when participants that don't know what they do, they often allocate equally across every single option there. And I think we all know that would result in likely a suboptimal portfolio, and certainly one that isn't inappropriate for their risk profile.

So streamlining were your plan lines up is under that modern lineup. And you can see the number of Funds are cut by roughly in half. This has shown to help -- has shown to benefit a participant's portfolio if they're able to construct.

The emerging lineup we haven't seen much uptick in this. And really what this is doing is you'll notice that the number of options are pretty similar to the modern lineup, but it's the way that they're communicated and it's labeling of them. The goal here is to label these options as what they're intended to do. Meaning, that they may help the average participant construct better portfolios.

You all are set up to do this, given that you have white labeled Funds. Again, we think that this is something that the DC marketplace is headed towards, but there hasn't been much adoption there yet for that. But we wanted to share that with you.

On this page we highlight the apparatus investment lineup across of these five different investment objectives with the colors. And as you move from left to right we categorize them into different tiers.

Tier 1, again, is a target date Fund. These are for those that want someone to professionally manage them or they want kind of a hands-off approach.

Tier 2 are the indexed Funds or the passively managed strategies for those participants that are maybe fee sensitive or maybe that don't believe in active management but still want to construct their own portfolio.

And then Tier 3 are the actively managed strategies. As you can see, there are options across each of these categories, and for those that are more engaged in their investment lineup and maybe want to express a view in their portfolio.

We did leave off here what we considered Tier 4, and that is the brokerage window where about I think

8 to 9 percent of participant assets are invested in a brokerage window. We consider that Tier 4.

This next slide is just a depiction showing that you do offer options across the risk rewards spectrums. So if we're going from the bottom left to the top right, lower risk, lower expected, lower return, higher risk, higher reward. And then you offer them across both active and passive options.

Performance. Dan did cover this, the absolute return. So what I'll focus on is the relative results. And so when you aggregate the performance of your participant assets and where they're allocated, you see some underperformance for the year primarily stemming from the equity options. But over the long term, over the trailing five and ten-year periods, the portfolio has outperformed when we look at the aggregate assets relative to the respective benchmarks.

This is shown is a little bit -- well, if you can see this, it's shown a little bit better on this page. The green represents out-performance of these Funds relative to their specific benchmarks. We're a little bit of underperformance over that one-year time period, again, concentrated in the equity strategies. But if you look over the five and ten-year period, all of these Funds have outperformed over the long time period. So you're offering your participants strong, active management in these options.

Costs. Here we're looking at the expense ratio of each of the investment options. The middle column is for the FRS, and then we put the peer median on the right-hand side. So like invested funds, you can see that the options that you all are offering your participants are well below the median shown here. The one exception is the inflation sensitive Fund. But I would un-caveat this as this is not a fair apples-to-apples comparison. The inflation sensitive fund your participants have access to does include some private real estate, it includes some real assets. This median is primarily composed of treasury inflation tips, treasury inflation protected security fund, a more liquid funds that tend to have lower expense ratios than private assets.

So you can see even with what you're offering your participants, which we think is a more diversified portfolio, you're right about at the same costs there.

And so that, you know, at the end of the day,

a very strong investment lineup. Again, we don't have any recommendations. We think you're in line with the industry best practices.

Looking ahead we will be doing a deep dive starting here in a few months, we did want to just comment on a few trends that we are seeing. This was brought up at a few meetings. Private Equity and defined contribution plans, that is something that philosophically, you know, we do like private equity. We do think there could be a role, the issue, or the headwinds are primarily on the administrative and the operational end or including a defined contribution plan.

Some of your peers, a few, have started to look into this, some have done it. We do think that there needs to be some evolution and some work done on that administrative piece, but we're continuing to monitor it. Likely where you'll see this more come up is within a retirement date Fund or within a white label Fund. But we still think that there is some work that needs to be done around operational aspect and administrative aspects.

And then lastly, I wanted to touch on the retirement income piece. This is something that we're seeing a lot of discussion around as of late.

Part of that is because health care costs are rising, mostly corporate pensions are going away, so the guaranteed income that people had are going away. People are living longer. And so there has been a push for planned sponsors to help participants think about they've accumulated this sum of money, how do they spend it? And it's not only a psychological kind of flip that they need to do, but also how do they think about it and it's a fiduciary concern from a business case. We've been hearing a lot of questions around retirement income, and there is a lot of options out there, both in plan and out of plan.

And so the way that we think about it is kind of extending your investment lineup not only from that savings phase, which is a top half, and what we've focused historically a lot of attention on, but moving down to a spending phase.

And so this bottom half does not reflect your plan. You do offer, as your team described, some annuity options already. We will be exploring if it makes sense to add other options as well in the plan and/or out of the plan. And so we'll be continuing to look at that and I just wanted to highlight some of those trends that we're seeing.

But overall we think your participants have a strong investment plan to invest in. And I'm happy to answer any questions. Thank you.

MR. GOETZ: Thank you, Katy.

I think we will just steam right forward and go to the Florida PRIME review.

So, Mike, if you want to take control.

MR. McCAULEY: This is the deeper dive on the Local Governments Surplus Trust Fund otherwise known as Florida Prime. We just have a layer change, line up change, get the folks from and Lewis, Longman up here. So we've got the first two items are the statutorily required reviews, one is the legal compliance review, the second is the best practices for investment review. And then we'll do view a review of the portfolio and the folks at Federated Hermes. So the first item is the statutory compliance review. We've got Glenn Thomas here to provide a summary of that review. He is with Lewis, Longman & Walker. Once he gets set up we'll go into that one.

MR. THOMAS: Good afternoon. Chapter 218, Florida Statutes, has some requirements governing the administration of Florida PRIME. My review is basically to ensure that it's being administered and run-in compliance with those provisions. And for the time period of my review, which is between May 17th, 2021 and May 16th, 2022 I determined that the Florida PRIME is being administered in compliance with the requirements of Sections 218.40 through 218.412, Florida Statutes, which is the statutes that it is required to be administered in compliance with.

If there is any specific questions about my report, which I believe you all have, I'll be happy to answer them.

MR. McCAULEY: Next up we have Katy Comstock with Aon to do a review of the best practices.

MS. COMSTOCK: Great. Thank you. Good afternoon, everyone.

This is our annual report for the best practices for Florida PRIME. This is our 14th year doing this. And as per more recent years, we do continue to find that the portfolio and the pool continue to be managed in a manner consistent with best practices and in consideration of participants best interests.

We looked at this year a few things, I'll highlight here. One, the participant survey that went out through the automatic reminders did not go out this year, so we got a very low response rate.

So we'll be reissuing that survey. The response that we did get were very favorable and consistent with what we've seen in years past. But I think it was 10 or 11 respondents, so not necessarily representative of the pools participants. So we'll be reissuing that in the fall and we'll provide you all with an update on the responses after we get those back.

Two other things I want to highlight from this year's review: One is the business case update. You may recall in late 2019 as part of the strategic plan, the team was to do a full review of Florida PRIME looking at ways to improve the efficiency of the management of the pool, specifically considering if there are areas to outsource some of the functions of the management. Then COVID hit. So that was put on pause as there were other priorities. Then it was picked back up in late 2021.

At that time it was identified that the commercial banking relationship that does custody and trust for Florida PRIME needed to be rebid. So that intent to negotiate went out here this spring and will be wrapped up this month. So once that is done, then the team will pick up looking at, you know, potential outsourcing and other considerations. So progress has been made, and more to come on that.

And then the last update we wanted to provide you all was with some proposed money market reform updates. The SEC proposed reforms to their Rule 2A7 that covers U.S. registered money market Funds back in December.

Just as a quick background, the Florida PRIME local government investment pools are not governed by the SEC; Rule 2A7, they are governed by states -- or Florida PRIME is governed by state statute as well as the governmental accounting standards board, or GASB. However, historically it had been managed as 2A7-like. So a lot of the rules and guidance from the SEC under these rules were applied to local goverment investment pools.

There have been reforms historically after the '08, '09 crisis in 2010 and then again in 2014 reforms were passed. And most of those have been adopted by Florida PRIME through, you know, guidance from GASB. Recently that direct link to Rule 2A7 was eliminated as it was recognized that local government investment pools had different characteristics than do money market Funds.

An example of that was in March of 2020 when many money market Funds had seen an extreme number

of asset outflows and liquidity constraints, where local government investment pools didn't experience that as they have more steady cash flows and more steady positions. So it is to be determined whether these reforms will have an impact on Florida PRIME. Those reforms were proposed in December of 2021, there was a comment period that closed in April. And so it's to be determined what the rules will actually be and if there will be, what the impact, if any, on Florida PRIME. So I wanted to give you all a heads up on that. But overall Florida PRIME continues to be managed very well.

The investment policy, which is the third thing that we reviewed this year, continues to be very comprehensive, concise, covers all of the necessary things we believe should be covered in a policy statement. There is no recommended changes for that this year as well.

So with that I will take any questions.

MR. GOETZ: Thank you, Katy.

MR. McCAULEY: And last, but not least, we've got some folks from Federated Hermes we've got Amy Michaliszyn, Paige Wilhelm, who is the Portfolio Manager on the pool, as well as Luke Raffa. So I think Amy is going to start out.

MS. MICHALISZYN: Very briefly. So, good afternoon and our comments today will revolve around portfolio management, participant outreach and marketing support. And I've asked Luke to deliver the service report. And of course you'll hear from Paige. So, I'm hoping at the end of our remarks you'll agree it's a good story. Yields are up, assets are up, participants are happy by all accounts. So we're really happy to be here and share a good report.

So with that said, I will confine any other remarks and comments, and ask Luke to take it away.

MR. RAFFA: Sure. Thanks, Amy.

Yes, my name is Luke Raffa, I'm Senior Sales Representative with Federated. As part of my role, I provide marketing support for the Florida PRIME pool. And so as Amy mentioned, I'm just going to go through some slides related to our participant outreach efforts and some of the feedback that we hear directly from participants who use the Florida PRIME pool.

MR. McCAULEY: All right, great. So just very quickly, you know slide is just about yields of the pool, and this slide will compare the yield of Florida PRIME against the Fed Funds, the minimum of

their target range. And what you can see on this slide is that, even when the Fed had rates down at zero, and the zero to 25 basis point range, we were still able to generate some yield for participants and as it became clear what the Fed's path forward would be as far as raising rates. The pool actually tends to lead the moves that come from the Fed.

So June 1st there was a yield of 93 basis points on the pool. And as of yesterday, we are all the way up to 1.57 percent of Florida PRIME.

MR. RAFFA: So this is just a general overview of the different types of participant outreach and marketing support that we provide for Florida PRIME. I won't go through every single bullet point for you but, you know, just to highlight a few.

The first form of engagement that we do is just the tried and true direct conversations with participants, reaching out to key participants of the pool, making sure that they're satisfied with the service that they're receiving and it's meeting all their investment needs.

Now, we also talked to a lot of key prospects around the state as well as anybody who is really interested in getting more information on the pool.

Now, a lot of these conversations recently have surrounded around education on rising rates and how that ultimately affects the pool. At the local government level, a lot of this has to do with connecting the dots for people, you know, how do you connect the inflation that they see in their everyday life to the dual mandate of the Fed, and ultimately how does that affect the Florida PRIME pool.

So those conversations have resulted in a lot of new interest in Florida PRIME as they hear how well the pool has been performing. We've listed just a handful of those opportunities there on the screen. Miami-Dade County, obviously a very large county and somebody that we have been engaging with for about a year now. They were a former participant in the pool and are looking to come back. So we've been having several conversations, both Paige and I, with their team there.

Four out of five of these opportunities would be brand new accounts for Florida PRIME. One would be just a large addition to what they currently have, which is just a few thousand dollars. I would highlight one of these has already come to fruition and has entered into the pool, and that's

Santa Fe College. I first met the comptroller at Santa Fe College in January of this year at a conference. We had a, you know, an in-depth discussion about the pool, where Federated thought rates were going, and ultimately how that would affect their investments. We reconvened last month in May, talked a little bit about what they're currently using. They had a large investment in Spiel (phonetic) which is an investment product available to public colleges here in Florida that has a duration of about two and a half years. So we provided the proper education, but that investment was not going to do well in the current environment, and the pool would be a large beneficiary of the rising great environment. And ultimately they decided to move $45 million into the pool here in the last few weeks.

Conference attendance, I'll go over that in a couple slides, but I just want to point out a couple things on the marketing support. Weekly commentaries from Paige are very well received by participants. We get a lot of positive feedback there. And then the timely updates on topics of interest. You know, so this year those have included Fed hikes, they've included pool positioning, inflation.

On March 17th we sent out a blast to all participants in the pool announcing the beginning of Fed tightening. And the pool positioning, we worked closely with Mike to come up with an announcement related to Russian exposure in the pool, assuring participants that there was no direct exposure to Russia, which was an inquiry that we were getting quite frequently there for a while.

So in addition to what we do as far as direct participant outreach, we also partner with a lot of the associations that exist around the state, whether it's city and county management, whether it's the government finance officers. But, you know, we're able to partner with these organizations both through their conferences and through their directories and websites and reach many more participants than just the direct calling efforts.

So, you know, we've partnered with several throughout the year advertising in their various publications. And then this past year we've also redone the signage that we use at conferences. So we do have two examples up there. These are banners that we use at the conferences. And when we were

redoing these, you know, the thought process was, how do we shrink down the number of words that we have here and just highlight the key benefits and the selling points of Florida PRIME for people. And so we think we captured that pretty well.

And then the other thing was, we wanted to highlight both the role of the Florida SBA as well as Federated in managing the Florida PRIME pool.

And this is just a representative list of all the conferences that we attend throughout the year. You know, there is a couple others that we've added to the agenda since then. But what you can see is that we're very active on the conference circuit and we attend conferences throughout the year. I always try and mix in a couple new conferences and see what sort of impact we can have with those organizations.

But this is just a great way to reach participants, lots of them, all in one place at one time. What you can see on the schedule, is that this week was actually the Florida GFA. So I actually drove up from that event last night. And it was the first time that that event has been hosted in person in the last three years. So great attendance. A lot of excitement to be back in person and I could barely get away for a cup of coffee because there was constant traffic there at the Florida PRIME booth. A lot of people just wanted to say hello, express their gratitude for the effort that goes in to making it such a successful pool. And the positive-- feedback was very positive.

So the last slide that I have is just a analysis of the competitive landscape for pools here in Florida. So there are a handful of other local government investment pools that exist in the state. None of them have the scale that Florida PRIME does, but we wanted to put together something that gave a broad overview of maybe the main competitors here. These are the second and third largest pools in the state. Florida Class followed by Florida Palm. And here are just some data points. on each. I do want to point out that some of the data points are from different points in time. There is reason for that. It's because each pool reports different information and does so with a different frequency.

But when I'm talking to participants who are using another pool or who are maybe evaluating Florida PRIME against some of the other pools here in the state, I point out three things to them. I

tell them first, look at the fee that you're going to be charged here. In the last couple of years, you know, this really hasn't been a big point because the other pools have been waiving their fees to keep everybody in positive territory and retain assets. But I've told everyone, you know, watch that fee as we start to rise a little bit here in yield, and what you'll see is that a spread sort of arises between the yields of the different pools. And we've already seen that starting to happen.

So you can see on June 1st it was pretty close, 93 basis points down to 85. As of yesterday, Florida PRIME was 1.57 percent, Florida Palm at 1.44 percent, and Florida Class at 1.29 percent. And so those fees definitely do have an impact on the yield and we're starting to see that already.

The second thing I tell people to make sure they review is the manager behind the pool. What is their level of expertise and what is their level of resource. And out of these managers here, Federated was $631 billion in total assets and $420 billion in liquidity management. It's definitely the best resourced of the firms here on the list.

And then the final thing would be the transparency of the pool. So I mentioned just a moment ago that the reporting is kind of all over the map with some of these pools. Florida PRIME is the only place where you can go to the public website, you can find the yield, historical performance, fees and pools, assets, all in one place without needing an account login and so when it comes to transparency it's really unparalleled here at Florida PRIME.

So that's it for me as far as slides. I'll pass it to Paige, but just a couple final comments I guess on sort of the tone and tenor among the participant base. The feedback is overwhelmingly positive from participants. They're appreciative of the guidance that they've received over the last couple of years, and certainly it's been a tumultuous couple of years. But confidence in the pool is high and there is a lot of excitement around the higher yields, so we're expecting a very successful end to 2022.

MS. WILHELM: Thanks, Luke.

I'll get right into the pool information. I'm not going to read these next two slides to you, you can read them tonight when you can't sleep. They'll

help with that.

But, you know, as Luke was mentioning, yields are going up. Unfortunately -- or fortunately for me, we love that on the liquidity side. And just some of the highlights, I don't want to review the whole past year.

But we know that the monetary -- the Feds monetary policy has changed dramatically over the past year, and that has everything to do with things that they could not predict. COVID, who would guess what would happen with COVID. The supply chain issues because of COVID, that we see supply chain problems and than we get another variant, and everything starts all over again. We've got more supply chain issues. We don't have enough goods for people. We've got labor shortages. And then throw on top of that that Putin decides to invade the Ukraine. So all of those things put a lot of pressure on the economies around the world and the central banks around the world. And we have seen the Fed change their tune in the past year or so from inflation being transitory to, ut-oh, it looks like we're behind the 8 ball on inflation, so we need to raise rates, probably a little bit more rapidly than we might have thought just even a few months ago.

If you flip ahead to slide 11 for me, this is just a graphical picture of what has happened over the past year. So if you think back to September of last year, to the fall, these are the little blue, the lighter blue lines on the chart, at that time the market as well as the Fed were expecting the Fed Fund's rate to go from zero to .25 to 25 to 50 basis points. That was the market thinking. And that kind of continued through the end of the year. At year end people thought, well, you know maybe there is a little bit of inflation, maybe the Fed Fund's target range will go to 75 basis points to 1 percent.

And now we've seen a dramatic shift once we got into March. And March is represented by those dark blue lines. And then -- I'm sorry, May 15th the gold lines. So that even back in May, the expectation for the Fed Fund's target range was all the way up to two and a half to 2.75.

And now fast forward to today, now people think that the Fed Fund's target range is going to be somewhere between 3 and 4 percent. Who knows what it's going to be. I don't think the Fed knows that either.

We talked about we got a rate hike in March of

25 basis points, 50 in May, 75 in June. We're expecting another 75 in July. And even the Fed will tell you they're going to be data dependent. They can't predict what is happening with this economy. However, their goal is to have inflation run higher than 2 percent for an extended period of time. Remember, prior to COVID inflation was running way below 2 percent, one and a half, 1.75 percent. And it was at that range for years.

So the Fed feels like they can afford to have inflation run hot for a while. They obviously don't want to inflict a recession on the U.S. economy. But I think that we're seeing signs that those first couple rate moves that we've seen just this year are starting to show a little bit of an impact in the market. So housing costs -- or housing is starting to turnover ever so slightly. Consumer confidence numbers aren't looking that great. Industrial production is starting to tick back down a little bit. That doesn't mean that the Fed has done their job completely, it just means there's little signs there that maybe this policy and tightening policy is actually working.

And don't forget, on the next slide Amy, the other thing that we have going on is the Fed's balance sheet is at $9 trillion. Remember, we added to the balance sheet when COVID started back in March of 2020. So they want to start to unwind that balance sheet, they're starting the quantitative tightening process.

And if you look at that $9 trillion, there's sometimes estimates that for every one trillion that the Fed takes off of the balance sheet, that could be equivalent to the 25 basis point hike in rate. So all of these things are happening simultaneously. It's very, very hard to predict what's going to happen and how, you know, all of these things working at the same time are going to hopefully take us into a soft landing and not take us into a recession.

If we go to the next page, though, let's talk about the pool itself and what kind of impact we've seen to the yield of the portfolio. This was a yield chart as of May 31st. And remember that Florida PRIME invests in short-term securities that have credit associated with them. So even though we can buy treasury in agency securities, we typically don't do that because they're the lowest yielding securities out there. You see that reflected in the blue line at the bottom and the gray line at

the bottom of this chart.

So what we want to buy are asset-backed commercial paper, bank CDs, those lines that you see at the top, asset-backed CD in red and bank CDs in green. And at the end of May you can see that the highest yielding paper there in the one-year space was around a 275. Today that paper is at 375.

So even just in the past month and a half we've had this yield curve shift up about 100 basis points, or so. And because we're keeping an average maturity for the portfolio that's very, very short, the yield of the portfolio is keeping up with that direct market.

This next slide is just showing you the assets that Mike mentioned, the daily assets for the portfolio. This is the past three years from January of 2020 through current. You can just see that we have higher highs and higher lows. The typical cycle is that we start to see money come in during tax time, which is November, and it builds up until we get to call it January, February, and then we just start to see money trickle out throughout the summertime into the fall till tax season hits again.

But if you just look at that chart, you can see the higher highs and higher lows. I would expect that to continue because the pool is keeping up with the rates, the Fed Fund rate increases a lot more quickly than an alternative investment, a bank CD, a direct security in the marketplace. You know, over time you see that the pool will beat those types of investments. And if you think about the banks right now, they are so flush with cash they don't want anymore money, they don't want any CDs, they don't want money from outside investors. They don't need it. It will mess up their leverage ratios. Just go to your bank and ask them what they will give you on a one-year CD, and trust me, it's not going to match what the pool is paying you right now.

On the next page, this is just a breakdown of the portfolio and where it stood at the end of March. Obviously, you can see in the pie chart on the right the blue triangle, the gold and the green. This represents asset-backed commercial paper and bank CDs, which we saw on the chart before are the highest yielding securities out there. So we have the bulk of our exposure to those security types.

In the center you can see the breakdown by

country from an exposure standpoint. Remember, everythings invested in U.S. dollars. This is just where is that issue or headquartered.

The top ten holdings on the right-hand side. Mostly banks or foreign banks. As a reminder from a credit standpoint we're very comfortable with the approved list. We don't see any credit issues in the markets right now. Obviously, our analysts are following that every single day. People get spooked by the banking sector. The banking sector is much stronger today than it was back during the financial crisis or even during the European banking crisis in 2011. The banks have a lot more liquidity, a lot more capital. And as a reflection of that they don't want any more deposits. They're fine where they are. So we're comfortable with the credits that we have on the approved list. We haven't seen any big changes yet in any of our industries that cause us concern, that would make us want to downgrade a name or take it off the list.

As a reminder, at the bottom of the page there under credit quality, this pool is rated AAA by Standard and Poor's. We have to report to them on a weekly basis. One of their requirements is that at least 50 percent of the portfolio must be rated A1 plus, which is S&P's short-term rating, and the remainder A1s you can see that at the end of the month of March.

MR. COLLINS: Every week?

MS. WILHELM: We have to report every week, yeah. They get the entire portfolio every week and then a breakdown, just like this, of all of the information. So another set of eyes for the participants looking over.

In the middle, effective maturity schedule, you can see that -- this is the percentage breakdown of the maturity of the securities themselves. Remember, we can't buy anything with a maturity longer than one year. So right now, in a rising rate environment, we want to be as short as possible so that we capture that increase in interest rates on the day of the Fed meeting.

Last year at this time our average maturity target was 40 to 50 days. We wanted to be very long, because no one was expecting the Fed to move. Now we've moved that in and we're at a range of 25 to 35 days. When we get close to the Fed meeting, which the next meeting is July 27, you'll see that we'll shorten that up even more so that when the

Fed moves we can capture --

You know, today, 65 percent of the portfolio would reset to that new interest rate within the first seven days, and that strategy has been serving us well.

So the next slide is the performance of the portfolio over time. So the top line there is the performance, the net yield of the pool at the end of March, once again, versus the S&P index. S&P rates other LGIPS from other states as a AAA rated LGIP. You can see that the pool was beating the S&P average by 19 basis points at the end of month, and 9 basis points for one-year.

Remember, that one-year period was basically when the interest rates were zero to .25 basis points. So that spread will widen out.

And down at the bottom there, that's the iMoneyNet index. This is the index for institutional prime money market Funds. And those returns a little strange, you think, why is there a negative three-month return for the iMoneyNet institutional average? And that's because of what Katy was referring to earlier. The SEC changed the rules for Prime institutional money Funds, and they now have to have a four-digit NAV. So not just a dollar, 1.00, it's 1.0000. And as interest rates rise, that NAV can fall. So what you're seeing there is that NAV movement as interest rates rise is causing a negative return in that three-month area which was the first time the Fed raised rates, right, on March 17 or 16, whatever it was.

The next slide is always -- this is the most boring slide in the presentation that we usually sleep through, but right now this one is pretty important.

So the pool has a price of one dollar. And what we try to do here with stress testing is say, okay, what is the most important things to the participants? They want daily liquidity and they want it at par, at 1.00. So we like to look at the markets and say, okay, if there were other stresses on this portfolio, what would happen to that NAV, to that price? And we carry it out at the top, we carry it out five decimal places there. So you can see that at the end of March, after the Fed raised rates, the actual underlying NAV of the pool was .99958. So that obviously rounds to a dollar.

But breaking the buck, which is something we're all familiar with, is if that NAV fell to .995, below .995. So what we want to do is

stress the portfolio for what we think are maybe more stressful situations than are priced into the market. So, for example, in -- the next slide has these footnotes spelled out if you forget what I'm saying here.

But for a change in interest rates, which is the pink box, we expect the Fed to move rates by 70-- 50 to 75 basis points at the next meeting. But what if we're wrong and inflation goes to 20 percent and they raise rates by 125 basis points at a meeting, what would happen to the price of the portfolio? So if you look in those pink boxes there. If we have zero redemptions in the pool and the Fed raises rates by 125 basis points, the NAV falls to .99869, so still above a dollar. And we also stress for 10 percent increments of declines, redemptions out of the portfolio. So if we have the same day the Fed raises rates by 125 basis points, if 40 percent of the participants redeem, what happens to that NAV? It falls to .99782, so still well above a dollar.

The green boxes are credit stresses in the market. You know, if you believe somethings going to happen to the banking sector if we go into a recession, or right now we're stressing the travel and leisure sector, we look at the credit spreads widening on the banks by 50 basis points and by 25 basis points for travel and leisure. And those green boxes show you if you stress that credit event in conjunction with those redemption events, what happens to the NAV.

We also own in the blue boxes floating rate securities. We have about 23 percent in floating rate securities. If those spreads were to widen by 50 basis points, what would happen to the price. And then the bottom scenario in purple combines all of those events.

If all of those things happen simultaneously, what would happen to that NAV, and it would fall to .99554, which still rounds to a dollar.

We don't think the chance of these scenarios happening simultaneously is even in the realm of possibilities, but this is just to show you what we try to do when we structure the portfolio to make sure that we always can provide the participants with daily liquidity at a dollar.

And that's all the comments I have, unless there is any questions.

MR. GOETZ: Any questions?

MS. MICHALISZYN: Anybody? Going once, going

twice.

MR. GOETZ: Well Thank you Paige. It does look like a solid asset class.

MS. WILHELM: You should move all your money there.

MS. MICHALISZYN: Thank you for your time and attention.

MR. GOETZ: Thank you. Mike, did you have any closing comments or do you want us to move on?

MR. McCAULEY: Not really, just a lot of positive tailwinds, higher yields, you know, just kind of relatively attractive returns. Rolling asset base, one of the things that we covered.

MR. GOETZ: Very good, thank you. All right. Let's move on to agenda item number seven. For those of you on the committee, we have two action items here, one in seven and one in eight. The item in seven does relate to Florida PRIME. What that is, is the policy statement which is on your tab seven, but there's no changes in it. Right, Lamar, there's no-- no changes? But we have to do this annually. So could can I get a motion to approve the policy statement?

MR. COLLINS: I motion.

MR. NEAL: Second.

MR. GOETZ: All --

(Inaudible)

MR. GOETZ: In favor? Ave?

(En masse: Aye.)

MR. GOETZ: So let's go on to item number eight. Here there actually is a change, and you'll find the change on page 387 or page five of this document. So it's lined out what the changes are. The material change is that the Private Equity we're enlarging the policy range to a high of 12 from a high of 10 percent. Lamar is there anything you want to add on this change?

MR. TAYLOR: Just briefly. If you all recall, we did this a few months back, we upped it from 9 percent to 10 percent. And it goes back to, again, what we were seeing in terms of valuations and enumerator and denominator affects. So we've seen lots of great performance from Private Equity and Venture Capital and those valuations are staying pretty static. But the underlying denominator of public market evaluations are starting to trade away, so it's just increasing this percentage limit. So we're a little above 10 percent today. And from a policy perspective what that means is if we're above 10 percent over this policy limit for 30 consecutive days, then we have to report that to the

Trustees. And we're happy to do that. But at this point there is not a whole lot we can do about it because it's all valuation driven. So I think if we can just increase the upper bound to 12 percent and continue to monitor as we are doing these valuations and have them come back in line or get an increase from the legislature, then I think that's kind of how we would propose to deal with it.

So in the meantime we would just propose that we increase this policy range high to 12 percent.

MR. NEAL: Mr. Chairman, I move adoption of this change.

MR. OLMSTEAD: Second.

MR. GOETZ: All in favor?

(En masse: Aye.)

MR. GOETZ: Opposed?

MR. TAYLOR: Alight, thank you.

MR. NEAL: Mr. Lamar, I have one question. As this is a local government surplus Funds trust Fund, I'm assuming it's not on the balance sheet of the state (inaudible). Is it on the balance sheet of the state?

MR. TAYLOR: No, sir, it's not. And I think the 3.15 percent includes the fee to Federated as well. We charge a one basis point, the State

Board of Administration charges a one basis point fee, and that goes into the SBA's administrative trust Fund. (Inaudible.) I think we passed through the Federated fees --

MR. McCAULEY: Exactly.

MR. TAYLOR:-- which I think s 72 a basis point.

MR. McCAULEY: Scale based on assets (inaudible).

MR. NEAL: Okay. (Inaudible.)

MR. TAYLOR: Well, the Federated fee goes to Federated. The state -- our fee goes into the SBA administrative trust Fund. Yes sir.

MR. GOETZ: Let's move on to item number nine, which is the SIO updates. Tim, you're on first.

MR. T TAYLOR: Thank you, thank you Mr. Vice Chair. Good afternoon everybody. Page 166, so here we are halfway through 2022, and if you recall back to when the year began people were already concerned about things. There were multiple uncertainties and concerns that investors considered. Inflation, rising interest rates, central bank activity going from quantitative easing to quantitative tightening. High valuations, because we came off, remember, a very strong return in 2021 of 18 percent which had followed the year before a very

strong return. And then in late February, as was mentioned, Russia invaded Ukraine. This heightened geopolitical risk and it added fuel to the concerns. People, investors began to focus even more in terms of the supply and price of oil, natural gas, food and other commodities.

Despite all of this, Global Equity markets fell in Q1 only, quote/unquote only, 6 percent. But the energy sector at the same time over that same period jumped up 23 percent as meaningful sanctions were imposed on Russia by western nations after the invasion on February 24. That's about four months ago now.

In retaliation to these western sanctions, Russia quickly closed its local stock exchange to foreigners, including us, and it's a lockout which remains in effect today. MSCI and other index providers like lets see... Russel and S&P moved very expeditiously to remove Russia from its global benchmarks. And MSCI was dropped -- MCI dropped Russia from its global indices as of the close of business March 9th. So it's fairly unprecedented, I would say, the speed at which they moved to remove Russia from their global benchmarks.

Next page, you can see that Global Equity experienced the very challenging quarter not just on an absolute basis, but also on a relative basis. We underperformed our benchmark by 95 basis points, and this caused our active return for the 12 months ending March to also trail the benchmark.

GE does remain ahead of the benchmark over all longer-term periods beginning with the three years ending in March.

During Q1 I'll talk briefly about what detracted. An underweight to energy of which we mentioned surged during the quarter. We also had a good bit of exposure to higher valuation, growth, and quality securities whose multiples were sharply derated. As people saw the interest rates increasing, as people saw inflation popping, those names, growth names that had done so remarkably well very much were hit, big negative returns with some of them.

The write down of Russian holdings, that added to the depth of the underperformance. We wrote down our Russian holdings, to this day they're essentially valued at nothing. And so in an already negative quarter that added to our

poor returns.

Some positive news thus far in the second quarter, our active performance is bouncing back. I expected it would probably be the case. That's generally what happens after a period of severe underperformance. We're up anywhere from 30 to 40 basis points as of last night's close, quarter to date. And here we are close to the end of Q2.

Talk a little bit about the active aggregates here on the next page. And you can see in the first quarter every active aggregate lagged its benchmark. It was evidence that not much worked during the period. The biggest attractor was our foreign developed large cap aggregate. We're underweight there, quote/unquote, the deeper value stocks in energy and also some of the banks. And we also held securities and we still hold securities which have performed exceptionally well during the pandemic, but they were, again, sold off sharply as interest rates increased or sales or earnings expectations declined.

The dedicated global aggregate underperformed as the positive performance of dividend yield and value-focused managers was eclipsed. It was overtaken entirely by the underperformance of quality and growth oriented firms. And you would think in a quarter like we had, if you had some quality in your portfolio that would be beneficial. It absolutely was not in the first quarter, which is one of the interesting things of that period.

Again, some positive news. In quarter two so far both dedicated global and foreign developed large cap are posting solid active performance. In fact, of the six aggregates you see here, four of those six are well ahead of their benchmarks in Q2. On a active relative basis we're clearly continuing to suffer poor absolute returns during the quarter. This quarter we're in now.

And the last page is an update on our initiatives. During the first quarter we did Fund a new U.S. small cap manager. We're continuing to research nontraditional strategies that can provide return and/or diversification benefits to Global Equity.

A consultant has begun an asset class structure review that we periodically complete. We did this formally last about five or six years ago. And if it proceeds as planned, we're going to share their observations with the IAC at our next meeting in September, three months from now. And usually

that's the time of the month when Global Equity provides a detailed annual presentation to the Council. We're looking forward to that. And again, if things go as planned, we'll present observations from our asset class structure review then.

And then at the very bottom, the last thing I'll mention, during a very volatile period, Q1, we raised a billion dollars for liquidity. And I find it interesting over the three years preceding this one, so from 2019 to 2021, Global Equity provided $21.3 billion for our beneficiary payment. So Mr. Vice Chair, those are my final prepared comments. Happy to take questions.

MR. GOETZ: Okay, I am going to start by asking a question.

Clearly we've been talking a lot about the shift in interest rates and inflation. And we talked, Lamar you made some comments about you know what can we do to diversify and not be vulnerable to inflation.

In the equity space, clearly there is some duration interest sensitivity. Is there -- do you -- is there anything else going on at this point that you think you should be doing to, you know, address the range of outcomes in the future?

MR. T TAYLOR: Yeah. Thank you for that question.

We've actually already done some things. We performed very well for an extended period of time on both an absolute and a relative basis. Part of that has been we've had a bit of a growth bias, and that has very much benefited us. As we've been hit with liquidity over time we've actually -- those growth bias has grown, it had been more pronounced. We'd been taking the opportunity to take profits, and we always strive to be diversified. Now, whether growth is going to work, whether value is going to work, whether the U.S. -- I'll tell you, I don't know. But we like to be structured that we can outperform -- probability of outperforming in any environment.

So we've taken over time liquidity as an opportunity to take some profits from growth oriented managers. That has helped us. We've yet -- we still retained a bit of a growth bias. That hurt us in Q1. I think we saw really a regime change. We're clearly seeing inflation. We're clearly seeing increasing interest rates. It's not transitory, as was mentioned earlier. And we've actually rotated

outside of liquidity events. We've taken some money from more growth-oriented managers, some longer duration-type managers and I'd say on the order of 500, 600 million, and we've reallocated that to more value-focused, value-oriented managers, managers who could be more opportunistic in terms of looking at the energy sector. Maybe something really important is happening in the energy sector. We've generally been -- well, we have been underweight for a long time in the energy sector generally because managers think, well, those companies aren't really high quality, they're very cyclically sensitive. We want some managers to really have a closer look at that.

So we've done some things outside of the regular liquidity assessment to reallocate, not notably, but I think meaningfully we've reallocated some Funds. Still have managers looking at growth-oriented securities. Still long term we want to have those managers, but we have I would say, you know, somewhat modestly adjusted, made some adjustments.

During the first quarter and early in this quarter I think we really saw some big changes occuring in the investment environment. And one of the things also, you know, central banks going from a decade of quantitative easing and flooding the market with liquidity to now quantitative tightening and increasing interest rates. In terms of growth, growth is going to be difficult perhaps. We think maybe things are going to change over the next few years.

MR. GOETZ: Thank you. Thanks, thanks Tim.

MR. TIM TAYLOR: Thank you.

MR. GOETZ: Any other questions? Katy?

MS. WOJCIECHOWSKI: So here we are, the last weeks of the fiscal year. And I think I came into the year saying I didn't like Fixed Income, we'd be lucky to (inaudible) I guess outperformed on that.

At the end of the (inaudible) together we were down seven and change percent. I'm sad to say we're down nine and change percent right now. Probably not much better through the end of the year.

THE STENOGRAPHER: I can't hear her.

MS. WOJCIECHOWSKI: So luckily for me, Lamar made a lot of the comments that I was going to make. Paige also (inaudible) some of the things that I was going to say, so... Remember those as we're talking.

However, I would note that as tough as this environment has been and I come in every day and say why do we own anything besides treasuries, and you guys say why do we need Fixed Income at all, we have managed to outperform (inaudible). So it's a tough environment because we are consistently (inaudible).

(Microphone interference.)

UNKNOWN SPEAKER: I think you have the volume maxed out, that's the problem.

MS. WOJCIECHOWSKI: Oh is that is, sorry? Okay, we'll try it. I apologize, I forgot to hit the button so in any case it shows that active managment can actually improve performance in tough time periods even. Alright, so we have outperformed our benchmark, as I have mentioned. If I have a glass half full comment to make about this, the low in yields in August of 2020 on the benchmark was 76 basis points, something like that. We are currently at -- closer to 4 percent, hit 405 this week -- or last week, excuse me. So we've improved our chances for having a positive return going into next year there's a good way to look at this. Ten-year treasuries now have a positive real yield. So if you look at inflation expectations, let's look at treasury yielding, 315 when I came in here. It looks like we have a chance to actually have outperformed inflation over the long run so that's a positive that we have not seen in a while. Also, the negative nominal yields throughout the globe, that's essentially been erased to, or reduced significantly. So just looking at the benchmark, as Lamar has mentioned, we've changed our benchmark in 2014. So since then I've looked at, all right, well, what were nominal returns versus a risk adjusted returns. And in general it's been better on a risk-adjusted basis to hold the shorter duration benchmark. This year it has not been. If you look on the right-hand side of the chart, the risk-adjusted returns are actually not as good for the year as the longer benchmark. However, the nominal returns this year have outperformed. So it has been a benefit for us to have a shorter duration benchmark.

So just a quick note on this. We do have actually a chance for more yield, much more yield than we did a year ago at this time. And, sadly there has been no sector. Just the right hand chart I already touched on this, but the right-hand side of the chart, no sector has been untouched. Every sector has been just abysmal.

That said, our credit guys still do the work and Fundamentally they're in good shape. So if you believe that, you know, that yield ultimately equals return over a four-year horizon, we should be in pretty good shape going forward. So at least I'm, this is more optimistic than I've been in probably five years on this. As I mentioned, we are overweight spread product, we are persistently overweight spread product, so how could we outperform? Security selection has done a great job for us this year. Our active managers have done a great job. If you look on the right-hand chart you will see that where we hugely increased risk, some of it intentionally and some unintentionally, as we went into COVID, just volatility hugely increased. Volatility has also been increased but as you can see, our risk positioning has -- we've taken off risk over the past year. Many of our managers have reduced risk. We ourselves have reduced risk in our internal active portfolios. Another thing we have done, and Lamar I belive you did touch on this we've increased our allocation to our liquidity portfolio. That's just to keep us at the ready, kind of a barbell from our credit -- what we hold in credits. And we like to hold enough if we're liquidity tapped, which we have been several times this year, for the source of monthly liquidity.

So these -- I think, Lamar, you probably already said all of these things. We did increase our risk budget a little bit earlier this year. So we are working with our managers to expand that risk. We are increasing our active allocation, so of what we have that's not in the FI liquidity portfolio, we will be expanding some opportunities. That doesn't necessarily mean we're going into EM or high yield a lot more. It may just mean we press on the gas a little bit more in opportunities that we see, a little bit less benchmark aware. Still benchmark aware but not benchmark bound, lets put it that way. We have done a couple of things that using enhanced cash portfolio, which if you look at it versus cash it has underperformed, but it has hugely outperformed. We see this in a short-range manager as well, outperformed longer duration Fixed Income.

So if you think about how much rates have gone up, even in the last quarter, as Paige mentioned, we now have rate hikes, seven, eight rate hikes priced in fully. So I guess we could have 12, and I won't sit here and say that's it. But I think we're much more aware of what inflation is doing. And as she

said, we are seeing signs of some things easing-- the biggest one in the mortgage market. Doubled the mortgage rate, which if anybody has gotten a mortgage lately, certainly wiped out all opportunity for refinance. One percent of the universe is re-financeable now. So first time in my, and I've been doing this a long time, mortgage managing a long time. Essentially a positive convexity in the mortgage market, which means that it acts like a corporate in pricing. The price of the mortgage index is in the 90s, the low 90s. So that's amazing. You don't see that very often.

So opportunities, and I'm actually more positive about Fixed Income than I have been in a bit. It doesnâ€™t mean we'll get Private Equity returns, never do that, but at least we have an opportunity to do well.

I think that's all I had to say, in essence. I'm here to take any questions.

MR. COLLINS: Will you come out ahead over a two-year period or will it take a three-year period to absorb what you had, what you've absorbed thus far?

MS. WOJCIECHOWSKI: To have positive returns?

MR. COLLINS: Yeah.

MS. WOJCIECHOWSKI: Whoa, that's a good question.

Well, we have a four-year duration. And bonds come into the world at par, go out of the world at par, hopefully. I believe they will come and go out of the world at par. How's that, so it might take a bit.

MR. COLLINS: It might take the full --

MS. WOJCIECHOWSKI: But historically if you had -- on a two-year period, you do have positive returns. We have never had this negative of a historic year. One for the books.

MR. COLLINS: Yeah. Okay. Fixed Income, you either get punched in the left side of the face or the right side of the face, but you're going to get punched.

MS. WOJCIECHOWSKI: We will get punched. That's okay.

MR. GOETZ: On to you, Steve.

MR. SPOOK: Good afternoon. Thank you for joining us.

The good news is Real Estate has positive returns, and I'm following Katy, so everything can only go up from here.

The last three months since the last IC meeting have been very eventful for Real Estate, mainly for the reasons already discussed here, inflation and interest rates.

Meanwhile, the indices continue their record setting performance with the Odyssey posting a record of 28 and a half percent -- thank you -- 28 and a half percent one-year return as of 3/31. Returns continue to be highly bifurcated. Industrial, rezzy (phonetic) and alternatives, which include data centers, life science, medical office, self-storage and others that kind of leading the way. Retail and office continue to suffer from uncertainty.

We're currently seeing a repricing of Real Estate assets with best guess estimated of five to ten percent draw drawn. I do expect further re-pricing of assets as we continue to see increases in interest rates.

Cap rates have expanded 10 to 50 basis points as leverage returns have come down. Some buyers are being sidelined.

The good news is that supply and demand Fundamentals are still very favorable. Supplying continued rent growth in certain sectors, which will provide for somewhat of a valuation offset to interest rates. The result is the situation were we have capital markets headwinds, and space market tailwinds. Interesting, to say the least.

Going to the right side, top right side of the page, performance summary. Here you can see we have strong asset class performance. More on that on later slides. Contributors to our out-performance, can be seen on the slide, are quickly summarized. We selected better office, retail and industrial properties then the benchmark. Being on the way to retail helped. Conversely, our office overweight and industrial underweight are a drag on performance.

Bottom left side of the page. Risks and issues. Interest rates we've discussed. Inflation, which was discussed at length in the last IAC meeting. We continue to beleive that Real Estate is well positioned as a hedge against inflation.

Remote work, interim work from home is still evolving but will have a profound impact on commercial Real Estate. Best guess is a 15 percent reduction in demand.

MR. GOETZ: Steve, can I interrupt for just a second and ask about the cap -- you mentioned the cap rate change. Do you think the cap rate will change more, you know, as interest rates continue to rise.

MR. SPOOK: I do believe it will.

MR. GOETZ: Yeah. And do you think it will be proportional? I'm kind of interested in your view on the proportion.

MR. SPOOK: There is a caveat to there, to that, because interest rates obviously have a big affect on valuations. But at the same time we're seeing incredible rent growth in certain high-growth sectors, life sciences, and Multi-family, industrial. That's really offsetting a lot of the cap rate increases. So it's a little bit less of an affect if it was absent that rent, growth. Does that make sense?

MR. GOETZ: Yeah, I just was wondering if there is any math to your view of the future cap rates relative to interest rate rises.

MR. SPOOK: If interest rates continue, I believe we'll see continued increase in cap rates.

MR. COLLINS: Now, wouldn't you agree that it would be different for different assets classes too, based on the demand in that asset class? Whether it be multifamily or retail --

MR. SPOOK: Right, right. So I was going to talk a little bit about the negative leverage effect. And I think in the high growth sectors, such as multifamily, industrial, life sciences, self-storage, I think we may see a little bit more cap rate expansion there, because of negative leverage. And that situation can't last for too long.

MR. COLLINS: Yeah.

MR. SPOOK: If that makes sense. I actually think some of the lower, some of the less in demand property types, such as retail, which is already perhaps overshot on a cap rate basis. Maybe some of best performing assets in the next -- in the short term, in the next year or two, as there is a little bit of a reversion to normal.

MR. COLLINS: Yeah. Thank you.

MR. NEAL: Steve, that was a very complex statement. You said that you thought you'd have cap rate expansion data at your leverage. Are you thinking cap rate -- certainly not depression. Cap rate expansion.

MR. SPOOK: Sorry, cap rate expansion. I mean, currently in multifamily the interest rates for financing are higher than the income return, which is a cap rate. In that situation, some investors are underwriting through that now, because they're looking at rent growth and they're underwriting is showing that maybe in year two,

maybe in year three, they'll grow their income enough so that leverage in now creted. And it is a risky proposition.

MR. COLLINS: Yeah, I think the interesting thing has been the first 50 basis points or so, maybe 60 basis points of interest rate -- ehh .. People started to sort of question what they were doing. But then you saw, once it got a little bit higher than that -- I mean, we were underwriting interest rates at, I don't know, 3-7-5 a year ago and now we're five and a half. And you know the seller -- the buyer can't absorb all that without price changing, which is changing of the cap rate. Right?

And so -- but it is very -- for example, I think your multifamily deal in Florida is going to look a whole lot different than your multifamily deal in, and we say this all the time, maybe in the northeast or something, just because of the demand. Right? So all of our costs are going up, we were talking about this earlier, all of our costs are going up but the rents are going up. Right? And bailing everybody out of the costs.

The question is, where does that stop too, right? How many people can live in a $4,000

apartment. But as interest rates go up, the crazy thing is as interest rates go up single family homes get tougher to buy, which drives them back to apartments. So --
MR. GOETZ: What would you say is the average duration of our Real Estate portfolio?
MR. SPOOK: As far as lease duration?
MR. GOETZ: Yeah.
MR. SPOOK: I think, Lamar just threw that number out a little while ago, it's in five and a half area range--
MR. TAYLOR: Yeah, so it's a weighted average lease term. I'm not sure in terms of who, if you're looking at duration, if you're trying to get that combination, sort of change in interest rates and versus sort of change in valuations--
MR. NEAL: So all classes --
MR. TAYLOR: Thats right except for --
MR. SPOOK: We held multifamily out of that and self-storage out of that because that's basically monthly pricing.
MR. COLLINS: Yeah, but in this environment that's actually a negative, right? If you're longer duration of your lease --
MR. GOTZ: Right. For the rent --
(Unreportable crosstalk.)
MR. SPOOK: Right. So long duration leases are viewed as a bond substite. We all know what the market

thinks of bonds right now.
MR. COLLINS: Right.
MR. GOETZ: Right. So, I'm just trying to synthesize this as I am an amateur with this. You would expect that if the rent rise which is demand driven which has been kind of true for a while now, if that abated the cap rates start going up more in proportion to the interest rate increase that we've already had. Right?
MR. COLLINS: Yeah.
MR. GOETZ: Okay
MR. COLLINS: Yeah, because they still got to fina yield.
MR. SPOOK: You won't have an offset valuation decline from a cap rate increase.
MR. NEAL: Say that sentence again Steve.
MR. SPOOK: You wouldn't have the offset to the valuation decline from the cap rate increase if rent growth goes away.
MR. NEAL: You have these complex sentences with several independent clauses also.
MR. GOETZ: Well, but just to put it in Katy's camp, I think the way to think about that might be that your market, Katy, responds instantaneously to interest rate changes, when you talk about Florida PRIME

benefiting. Right? Ultimately your portfolio rolls because of duration, but the Real Estate, when the rent abates it's still catching up to the negativity of the -- so you could actually do a little bit of a (inaudible) almost, Fixed Income today relative to the cap rate. That's what I was-- Thats were I was coming from. But, you know, I don't know that there's anything to do with the portfolio with that comment, other than to say we, you could expect that maybe Real Estate headwinds increase two years from now or one year from now is what I was thinking, where-as Katy gets it blasted immediately.

MR. SPOOK: And when I say (inaudible) 5 to 10 percent price declines, I mean, that's not reflected in our valuations. We won't see meaningful price declines probably for two quarters. It takes that long for the appraisers to get the comps and everything. But we're seeing it in trades and repricing deals. And just anecdotal evidence transaction volumes also falling up.

MR. GOETZ: Thank you.

MR. NEAL: Mr. Chairman, excuse me.

What percentage of your investments in say multifamily are direct and what percentage go through managers? Do you make these investments directly or do you go tthrough portfolio managers first?

MR. SPOOK: For all our property types we do both in Principal Investments, which are direct owned. Direct owned means wholly owned or in joint ventures. And then we also do them through comingled Funds. 65 percent of our portfolio is direct investments, 35 percent is in Funds, so probably apply that same percentage to each of the property types. 65 percent are directly owned.

MR. TAYLOR: And then, I guess, just to kind of build on that, a lot of the commingled Funds tend to be more X U.S. I mean there's a US componet to, there's also I think we only go through Funds to get non-U.S. exposure to property types.

MR. SPOOK: We don't do direct overseas. And that's a good point that Lamar brings up because even though international investments are only about 7 percent of our investments, they are heavily weighted towards office. That's just the way the market is over in Europe and Asia. And residential is not very institutionalized overseas, with the excestion of a few countries. Continuing with some of the risks and issues that we're considering, regulatory risk. Somebody just brought up a little while ago the housing affordability, and that's a big risk that we see is regulatory risk in residential area as affordability becomes more and more of an issue I think we're going to see more and more regulation around that. Then growth of E-commerce continues to be debated in the wake of COVID. There's a big increase in E-commerce penetration, whether or not that's permanent remains to be seen. And that's going to have big affects on various sectors of the Real Estate industry. Going to the bottom right-hand side of that page, opportunities and priorities. Kind of the same as the last few meetings, we continued to increase for industrial, residential and alternatives sectors. Alternatives include life sciences, data centers, self-storage, student housing, et cetera. We are also working on a master credit line facility, and will put in place a line of credit at the Fund level the pension fund level to be used for short-term Real Estate needs, to include construction loans, bridge financing, maturing loans, Funding large capital projects, and any other short-term needs that we may have. Benefits of that program, cost savings, more flexibility, less restrictive covenants, and it has the potential to make us a partner of choice with operating new partners and developers. We take that line of credit and we downstream individual loans toward joint ventures or

individual properties. We can price that either at cost or we can make it profit center, depending on the relationship we have with our partner. The line would be unsecured with a guarantee. And finally, we will continue our efforts to build out our coinvestment capabilities, which will continue to be a priority. Unlike John, they aren't no fee, no carry, but they are half fee, half carry, which in Real Estate that's a pretty good proposition.

MR. COLLINS: Steve, do you -- you know, we've talked a lot about secondaries. Would you consider selling some of your Funds in the secondary market in the next few months given, depending on the sector that they're in? You know, you don't want to go out the gate while everybody is going out the gate, but sometimes people go out the gate for really good reasons. Would you consider that as a way to reduce risk?

MR. SPOOK: We would consider it. It's only until recent years that we've begun doing some sector specific Funds, so industrial-type Funds, Rezzy type Funds, alternative focus Funds. So we don't really have a lot of Funds that are focused on the areas we'd like to lighten up on. It wouldn't be as helpful as you would think.

MR. COLLINS: Got you. Okay.
MR. SPOOK: And our diversified Funds that do include some of the property types that we'd like to lighten up on are not really targets, they're doing well despite that. So here you have --
MS. CANIDA: Steve --
MR. SPOOK: Yes, Tere.
MS. CANIDA: Steve, sorry. This is Tere.
Going back to your master credit facility, that would just be a place for individual project by project; and, second of all, the guarantor would be who, the pension Fund, the individual project?
MR. SPOOK: I'm sorry, Tere, I'm not quite sure I understood the whole question. I didn't hear the whole question.
MS. CANIDA: Okay. You were talking about one of the opportunities is a master credit facility.
MR. SPOOK: Yes.
MS. CANIDA: So can you just go into a little more detail as to the grantor and how is this going to work versus what you're doing today?
MR. SPOOK: Sure. Currently today we're doing all of our financing on a asset-by-asset -- from

an asset-by-asset basis.
MS. CANIDA: Right.
MR. SPOOK: So on a core property, we would go out and get permanent, fixed rate, long-term financing if the business plan was to hold it long term. Obviously, with shorter term business plans go out and get floating rate financing, maybe put a cap on it or collar on it. What we're looking at here would not be asset by asset. It wouldn't be secured by individual assets, which gives us the flexibility. It would be at the total pension Fund level. It would be administered by a third-party. SitusAMC is currently our appraisal administrator. They also do loan servicing. So they would actually be the loan servicer. They would administer construction loan draws. And each loan to each special purpose entity, because we own all of our properties in special purpose entities, each loan would be to a special purpose entity. And it would have covenants around those and it would be administered as if it was a third-party loan.
MS. CANIDA: Okay. I just wanted to clarify that. Thank you, that helps.
MR. SPOOK: And the guarantor, we would be looking to the total pension Fund as guarantor. We're actually working with lenders currently to try to

not provide a guarantee from a total Fund and instead provide a commitment, a Funding guarantee. In case there was ever a shortfall of Funds, we would commit to Fund the SPE to the level necessary to service the debt.
MS. CANIDA: Okay.
MR. COLLINS: Are these SPEs that don't have any debt or are you putting portfolio debt, layering portfolio debt on top of that?
MR. SPOOK: When I use the term SPE, same as THE, title holding entity.
MR. COLLINS: Sure.
MR. SPOOK: So we own all of our properties in title holding entities.
MR. COLLINS: But that --
MR. SPOOK: Some of our properties have debt, some don't have debt.
MR. COLLINS: Right. So this vehicle that you're talking about doing, is it to provide more debt or debt on assets that don't have debt?
MR. SPOOK: To provide --
MR. COLLINS: I mean, I know you're doing one --
MR. SPOOK: To provide --
MR. COLLINS: -- by doing the other, but...
MR. SPOOK: What it would use is to provide,

because this is a line, a short-term debt, so it's not permanent financing, so to take the place of, for example, construction loans that we would be doing through third parties on an asset-by-asset basis.
MR. COLLINS: Okay. And this isn't a product that we can design in-house in our Fixed Income group?
MR. TAYLOR: We talked, we had a lot of internal discussions around how we might look at cross pollination there. It gets pretty -- it becomes almost a duration mismatch. For example -- and there is actually some plans that sort of raid their cash collateral and securities lending, for example, to do projects like this. But then all of the sudden you've got some flight risk there. So that's sort of hot money Funding longer term. So if all of the sudden all of those securities come off loan they want their cash back, how do you deal with that?
So there are ways we had looked at that internally, but thought that this might be a better, more sustainable approach to be able to match that sort of that duration a little bit better and try to get it more cost effective, a

more cost effective source of financing, almost like a wholesale line rather than trying to do it property by property.

MR. COLLINS: So what does something like this price at without a guarantee from the full Fund?

MR. SPOOK: But it would come with a guarantee from the Fund or a commitment --

MR. COLLINS: I thought you said you were trying to do it without recourse?

MR. SPOOK: Well, a commitment letter from the Fund that effectively it would price the same.

MR. COLLINS: So you would do -- you would give recourse to the Fund, to the lender.

MR. SPOOK: And it would either be an explicit guarantee or a commitment letter which has the same effect as a guarantee.

MR. COLLINS: Okay.

MR. TAYLOR: And we're still -- we're sort of ironing through the details here trying to figure out what the best structure would be.

There are other -- we have had a lot of conversation, and a lot of conversation with peer plans. There is at least one or two very large peer plans who have this sort of structured and actually, they have rated, you know, gotten a

credit rating for the Fund in order to be able to provide sort of a cheaper source of financing option.

Our preference I think would be, you know, obviously, not to do that, to provide that overall Fund guarantee. But to provide that through a separate sort of Funding. We've done something similar like-- through that in Real Estate before were we provide sort of a separate Funding vehicle where the guarantee, so to speak, is that Funding vehicle which had the capital commitment.

So, in other words, there's a cap, there's always a cap in terms of what our obligation is going to be, so that we can structure that way. We are not in the business of obligating the Funds for unlimited liability. So that's not what we would do. And we would seek to sort of structure it in that way and obviously got it -- we're still in the early-on phase of trying to look at this as a feasible structure.

MR. COLLINS: And I'm sorry, Lamar. My last question.

This is only for products that we are -- or SPEs that we a hundred percent own that we're developing, or are you providing this financing to some of our partners?

MR. SPOOK: Also to JVs.
MR. COLLINS: To JVs.
MR. SPOOK: Right. So part of our thinking there is that it could make us a partner of choice, right, because --
MR. COLLINS: Yeah.
MR. SPOOK: We can waive certain conditions that the bank may require of them that are pretty onerous.
MR. COLLINS: Sure.
MR. SPOOK: Or if they're favored -- and we're still designing the product, but we could take -- we could, you know, make a draw on our line of credit and downstream it to the SPE, which includes our partner at cost. So that would also make us a partner of choice beyond, you know, being able to offer them more flexibility.
So all those things, Lamar, I think -- and we're going to have savings as well.
So -- Go ahead.
MR. WENDT: This is Gary Wendt. Gary Wendt has a comment and it is that, I think you would be just adding complexity to your business. You would be better off spending your time on trying to determine valuations and not worry about borrowing money, liquidity is hardly an

issue for us.
MR. TAYLOR: Fair point. We're trying to make sure we get the most cost -- obviously, to the extent we do this, we want to target a value add. So we would look at it in terms of what are we saving, are we expecting to save through interest costs.
In addition, as we've explored this, there are certain intangible value-enhancing features. One, again, being able to sort of provide this financing to our JV partners has some value.
But point taken that we need to make sure that we're not overcomplicating an otherwise uncomplicated process.
MR. WENDT: Sometimes complexity adds risk that you don't understand. Not that you don't understand.
MR. SPOOK: At the end of this process I think we'll be able to quantify the savings and present them to the IAC.
All right. Continuing on this slide, you can see on the top left we have a public or rate target of 10 percent as of this date, as of December 31st, 2021. We're a little bit over. You'll see in our activity in a few slides that we divested of some rates, so we're a little bit closer to our target.
Private market leverage, here are some of the

metrics that you all have asked to see. 27.7 percent in principal investments where we control the leverage. We're at 23.4 percent, which is still slightly above the benchmark.

More metrics. Given interest rates rising as they are, I'll point out the average cost of debt on a fixed rate basis, the bottom left, 3.6 percent.

I would say portfolio performance at the total portfolio basis outperformed over all time periods.

Principal Investments outperformed over all time periods with the exception of the one year where we're even with the primary benchmark.

Externally managed portfolio performance also strong performance over all time period.

We do expect going forward these returns will moderate.

We have property-type diversification, geographic diversification. And here's our recent activity, which is pretty reflective of the priorities that are listed earlier. So most of our activity was industrial, in the alternatives, also in self-storage and residential sectors. We Disposed of one power center and one student housing property whoâ€™s business plan was (inaudible).

New commitments here, PM residential co-investments and we divested of a REIT recovery separate account. That business plan was completed. We opened that account right after COVID to take advantage of what we saw major dislocations in the public market.

That's all I have.

MR. GOETZ: Okay thanks, Steve. I appreciate that.

We better get down to Trent, he's got five minutes.

MR. WEBSTER: No problem.

Okay. This is currently the Strategic Investments portfolio, currently configured we've got just under 30 percent in debt. High teens in equity. Around 22 percent in real assets. 18, 19 percent what we call diversifying strategies, which are strategies that have local relation to equity markets. And then 11 percent in what we call flexible mandates. (Inaudable) asset classes -- Thank you very much. Thank you. Another way of looking at this portfolio, we like to break it down in this manner. We've got just over 20 percent in investments which are primarily derived-- returns primarily derived from interest payments. We've got roughly 40 percent in illiquid investments that are a combination of both interest payments and appreciation, or more heavily on appreciation such as say, for instance, infrastructure.

Our liquid markets is about 20 percent of growth. And these are our activists in some hedge Funds. And then about 19 percent is what we call diversifying liquid markets diversifying, which are low correlation hedge Funds and insurance.

So you can see here we were up in quarter. We beat our benchmark over the last year. We're trailing a little bit behind over three years, but five or ten years we still are beating our benchmark. And you can see the real return target has really exploded over the last year or two. And just as I kind of go through this portfolio and think about the effects of interest rates and inflation, we had a ten-year goal from like 180 to 340. That really hurts the public markets, because that's where you're seeing a lot of the negative convexity. It really hasn't affected us a whole lot in our private credit book for a couple reasons. First of all, our straight, generic, vanilla lending strategy. Those are based off of benchmarks such as LIBOR or Sulfur. And then for our more higher returning stuff, often times a

structural return is somewhere between 8, 10, or higher. 8, 10, 12 percent. So interest rates going up 200 basis points from a low level doesn't really have a whole lot of affect on that.

On our equity book we would affect -- we would expect the interest rates to hurt that. I would say that in the first quarter our activist book was down 3-- I think it was 3.7, and the benchmark was down 7.4, so that outperformed.

Real assets would be a bit of a mix. In theory it should be inflation protecting partly because some of it will have inflation contracts, or a contracted return that is related to inflation and/or hard assets, but they're also discounted at a higher interest rate. So that could have some -- that could be a mixed bag.

And then our diversifying strategies we've seen pretty good returns from our managed futures. We're lagging unfortunately our benchmark, but that's been up, what, 4 or 5 percent this year as there has been some very pretty noticeable trends in commodities and in rates.

And then our flexible mandates, which go across all different types of investments and credit and equity other financing vehicles, we would expect that in a higher interest rate, higher inflation-- the returns to lag a little bit.

So we had $375 million go out the door. We closed three Funds. We actually just closed another Fund recently, this quarter and so we now have four Funds in the pipeline.

We haven't done a whole lot in hedge Funds over the last few years, but we're starting to refocus on that, particularly on Funds which do have low correlation to equity and credit.

And finally we've got -- if our credit books do pretty well, absent of severe recession -- but if there is, if things do get a little chocky in the economy, we've got $3 billion of unFunded commitments in credit. A lot of that are in what we call distressed, but the distressed book has become over the years more of a credit opportunities which includes distressed. But there should be some good Funding opportunities, you know, in a choppy environment.

Like I said, real assets should to continue to perform. When I wrote this, the commodities markets were blooming. The Bloomberg Commodities index I think is off 20 percent since I wrote that.

We were actually kind of interested in

Timberland. We think this could have some interesting dynamics this decade, as I think people look at -- we talked about ESG, for instance. We think ESG creates certain incentive amongst investors. And if we're going to be investing more in oil because of what's going on in the Ukraine, people may counter that with more timber investments. We're not sure. But we don't know of anything more E than owning trees. And so we think we may be able to benefit from that.

Our hedge Funds are up year to date. I think the S&P was down 13 percent as of April and we were up a little bit.

And as I'm sure, if you all own a house in this state you have seen your insurance rate skyrocket. You will be noting, you know, that at least your pension plan is benefiting some what from that. So I wish I could tell you it's going to slow down any time soon. I'm not sure. But, so we continue to look at insurance markets.

Any questions? Thank you.

MR. GOETZ: Thank you Steve. So that's it for the SIO updates. We'll move on to the major mandate performance review, which for most of you is tab 10.

Katy, back to you.

MS. COMSTOCK: Great. Thank you everyone.

So we now cover four major mandates, and we've covered two already, so two to go. The pension plan and then the hurricane catastrophe Funds.

You've heard from the asset class heads, and so now we're going to aggregate this all up and look at the total pension performance. This is all through March, the data in these slides. So you can see for the first -- at the end of the first quarter the plan dipped below the $200 billion mark. The market had an update at over the fiscal year to date period this is showing the portfolio down about $1.9 billion. It is down further than that given everything that has commenced since.

It's been a painful quarter, a painful 2022. But I would remind everyone that you are a long-term investor and you have achieved very strong returns looking back over the past decade plus. And we'll talk a little bit more about that and you'll see that here in the results.

A snapshot here of the asset allocation, again, as of 3/31 at the end of the first quarter. The portfolio was in compliance across all asset classes, but we've talked about some of the updates

since then as well as a change to the IPS, which will help assist with very quick, fluctuation changes in valuations.

Now getting to performance results here. The total FRS results are that first beige color, the performance benchmarks is dark blue, and then the long-term target, which is inflation plus 4 percent now in green.

And so when we've seen equities, both equities and bonds down about five percent, you can see what that did to the total portfolio's where about 70 percent of the portfolio invested across those assets. The total portfolio is down 3.3 percent for the quarter.

What helped offset those returns were your alternatives. Real Estate was up 5.5 percent for the quarter, Private Equity up 3.3, and Strategic Investments up about one and half percent.

Now, you did hear that most of those are lagged, so we will expect some marks to come in. That said, though, we do expect to lean on those alternative investments here in the near to medium term as we continue to see pressure on bond and equity returns.

On a relative basis, though the performance is very strong. You can see the portfolio has outperformed its performance benchmark across all of these time periods. Over the near term, Private Equity, is driving those relative return, though over the long term, five and ten year, all asset classes have contributed to the out-performance which is great-- I'm not sure how that happened. There we go. Great.

And then relative to the absolute nominal target rate of return, as I mentioned, which is inflation plus 4 percent, we all know what inflation has done here recently, so that one-year benchmark is up 12.9 percent. A hard bogey to return, to match. But if you look over the long term, the portfolio has exceeded that over the 3, 5, 10 and is in line with the 15-year period. We do look at that over a longer time period as well, over the trailing 20 and 25 years. You can see that the portfolio is up an annualized 7.6 percent and 7.9 percent, respectively, ahead of both benchmarks over the very long term.

We also look at performance relative to peers. This asset allocation data is lagged. There wasn't enough information to get the 6/30. But it is relatively consistent quarter over quarter and

consistent with past messaging the FRS relative to this peer group, which is the top ten pension plans in the U.S. It does have an overrate to public equity primarily in foreign equity.

A slight overweight to Real Estate and then slight underweights to alternatives and Fixed Income. Asset allocation being the driver of relative returns.

You can see if we look -- I'm going to skipp a few slides to look at where the portfolio is ranked there at the bottom. You can see where that did, when equities are down significantly, having greater exposure there relative to peers is driving that ranking is in the 75th percentile. If you look over the longer term though the portfolio is at median and over the ten year above the median returns of this peer group.

We also do in our longer book, we also look at a broader universe of other pension plans that have over a billion dollars. There is roughly 60 to 70 portfolios in that universe. And your rankings are very favorable there. The median for the shorter term, but in the top quartile over all of the longer term periods. Likely because that universe has a portfolios that have more equity exposure as well.

MR. COLLINS: Can you go back a page?
MS. COMSTOCK: Yes.
MR. COLLINS: I'm sorry, one more. There you go.
So we're in the 75th percentile. Is it strictly alternatives that is driving that? I mean, because Global Equity -- I don't know when your one -- when is your one-year period?
MS. COMSTOCK: The returns for this will be through the end of the first quarter.
MR. COLLINS: Through the end of the first quarter. Okay. So we maybe captured a little bit more downside on the Global Equity than everybody else did. But we've got much less Fixed Income, more Real Estate. So I'm just curious, do you further break that down? I mean, do you see where that 75th comes from or --
MS. COMSTOCK: Unfortunately, we don't get the transparency into how these are. And then also in the alternatives, there is not much transparency into what is actually included in that. There could be commodities, which have done extremely well--
MR. COLLINS: It's hard to believe we're in the 75th percentile.
MS. COMSTOCK: And that's just for the

one-year period.
MR. COLLINS: Yeah, no I hear you I'm just -- I'd be interested in where that actually was. There's got to be alternatives.
MS. COMSTOCK: (inaudible), but as well as global equities. The largest difference between asset location is going to be in that category. I can see if I can find some more information, but we, unfortunately, don't have transparency into what --
MR. COLLINS: So they just report their overall return?
MS. COMSTOCK: Right. And the rate.
MR. COLLINS: And their asset allocation.
MS. COMSTOCK: Right.
MR. COLLINS: Okay. Hard to benchmark that.
MS. COMSTOCK: It is. And that's why it's informational, its not driving our decisions.
MR. COLLINS: Yeah.
MS. COMSTOCK: But it's information only.
So, you know, that I guess covers for the pension plan. You know, I just wanted to comment on, you've heard a lot, I know we're in a very difficult period. We've heard a lot about what's happened in 2022. I think the allocation conversation is critical here, and what we're

expecting to rely on in the portfolio are some of the things that you've heard from your alternative investments. Things that have a income orientation, things that have a floating rate tie, absolute return strategies. Items that are uncorrelated with equities and bonds. Alternatives that are getting the return from skilled managers, Private Equity, Real Estate, as well as different hedge Fund managers, global macro, those types of strategies, and so you have exposure to all of that.

And then I would also, again, remind the IAC that you exceeded, well exceeded, expectations. If you look at over the ten-year period the portfolio earned a 9.3 percent annualized return of the 15-year period north of 7 percent. So keep that in mind. When we do the asset liability study, we look at situations and scenarios that include one like we're in now. And so, that has been evaluated.

And then we'll look at it again, as Lamar said coming up here in the next few months. But all in all, a tough period. But the portfolio on a relative basis continues to perform very well.

I will quickly flip to the hurricane -- I'm

going to pause. Are there any questions on the pension plan performance?

The last thing are the hurricane catastrophe Funds. Again, these are invested in short-term high-quality bonds and so you can see there, that's why the performance is negative over the quarter and the year. Eventually, as you heard, we do expect the higher yields to benefit these portfolios. But right now we're seeing those negative results. Longer term also, on an absolute basis, low returns, low returns but on a relative basis, these portfolios have modestly outperformed their benchmark. At the end of the first quarter there was north of $13 billion in these pooled assets.

And that concludes the remarks.

MR. GOETZ: Thank you, Katy.

Any other last questions?

All right. At this point we're going to go on agenda item number 11, which is to pause for any audience comments and then also to make sure we have the right meeting dates.

So, Lamar, I actually want to turn it over to you and see if you have any other closing comments, or reminding us to make sure we have the right meeting dates on our calendars.

MR. NEAL: Mr. Chairman, I'd like an audience comment along the way before we close.

MR. GOETZ: Sure. Before Lamar?

MR. NEAL: Or maybe after Lamar.

MR. TAYLOR: I don't have anything to add. You might want to make sure your mic --

MR. NEAL: My mic.

At the beginning we talked a little bit about asset allocation discussion in our September meeting.

I'm a new guy to this, Lamar. But I'd like to in the September, not today, but in the September meeting talk a little bit about, quote, why we're all here. Maybe I'd say it's our responsibility to 900,000 current or retired members of the Florida Retirement System. Maybe it's an obligation to the credit of our state.

So I'd like to talk, have your team present, give us, the uneducated members of us, which I include myself the primary member of, why we're here. And I would like to talk about four things in particular. And where I'm trying to get to is our actuarial rate of return.

So first I want to talk a little bit about the liability mix that we have in the Florida Retirement

System so we see what we're doing, if it's in fact 82 percent Funded and if we have a $36 billion deficit, and it's broadening, we should kind of just talk about that. If that's true. And these are going to be your remarks anyway to the revenue estimating conference I think. So I would like to go over that. As Peter said, I would like to talk a little bit about the asset allocation, some discussion of alternatives versus Fixed Income.

And then I guess I'd like to go over what you recommend as our actuarial rate of return. My hope would be that the Trustees would look at that, and that we weren't making our planned actuarial rate of return. And they're going to have to someday look at the under Funded liability. And talk about what the nature is of the employee contribution-- employer contribution. So I would like to have kind of a big, huge picture discussion of liabiliaty mix and whether it's our responsibility to lead others to look at that, and whether our deficit's are growing or shrinking. Of course our investments haven't done well this year. That's no fault of anyone here. We've had this great global economy for 9 years. But we need to kind of look in a new environment and look at our actuarial rate of return, in my opinion. And I'd like us to devote a little time on the big picture at the beginning or somewhere near the end of our next meeting but before the revenue estimate. Is that okay?

MR. GOETZ: Thank you for that. I think adding to the agenda in the context of the asset liability review, which we're doing anyway, that makes a ton of sense.

MR. TAYLOR: And again -- Tere, did you have a comment?

MS. CANIDA: No, no I was just listening. I didn't know, I couldn't tell who was speaking, so...

MR. NEAL: It's Pat Neal, the new guy.

MS. CANIDA: Hi. How are you?

MR. TAYLOR: So, I mean, obviously kind of deferring to the board, but I think a lot of that is very timely. A lot of those topics are very timely at that September meeting. And I think we can certainly provide a little context of, you know, really what -- we invest the Funds for the pension plan. But if there is a targeted, if there is a liability against which we're matched. And so we can provide context around that, and the role in that the IAC, the Board plays with in terms of ensuring that we're Funded on the investment side.

And so I think in terms of the asset allocation, let me sort of break this up. I heard

a number of things today, and a lot of it was really good.

So going back to Peter's point and points you're raising here about asset allocation, and looking at asset allocation, you know, if the board --maybe what we can do is we can have the asset liability study -- this is the way we did it in 2014 when we looked at it.

We first had the asset liability study so the board had a good understanding of what was driving it. And I think it's a good -- maybe a time to get a little bit deeper. And I remember back in the day we kind of talked a little bit about a stochastic process, that Monte Carlo simulation process that kind of takes all these sort of factors into account which sort of lays out what we think is a part of that process is the expected future. What we think would be the expected future rate of return.

Now, a lot of that is a function of how much we're allocating to risk versus non-risk seeking assets. And that goes back into that process.

So as we're looking at a stochastic model, we're looking at the future, you know, assumptions, we're looking at inflation, and kind of thinking about what the future risk premium is going to be and whether or not we're going to get paid for taking risk in the future. So how much risk assets do we want and how much risk assets or non-risk seeking assets do we want. And sort of that allocation, that'll determine what we think the appropriate future expected rate of return will be.

A lot of that comes down to how much risk we want to take. So there's this risk of ruin aspect associated with this process here, because we could, we look at sort of that risk not only just in terms of volatility, but contribution shock. So if we're overweight in risk assets at a time where all of the sudden the fifth percentile puts us way, way, way underFunded, that may be a little bit too much risk. So that may constrain the expected of return. All of that is a part of this asset liability study. So I think that, first and foremost, if can we get into a little bit of a deeper dive -- and we've done that, we did that way back (inaudible) before Phil -- Anyway, we did that a long time ago, and we can get back into those. That was a very good conversation. That then, I think, could kind of, number one, answer a number of questions from your perspective of what we think the rate of return

ought to be and a lot of that will be how much risk we want to take. Then we can, if we have that, that might also lead into a subsequent conversation on asset allocation which is, again, going back to what we did last time. Once everybody has a clear understanding of how we're coming up with the expected rate of return, that expected risk versus non-risk seeking assets, then it kind of helps inform, well, where do we think we want to make changes at the margin, and back in 2014? We said well let's take some of that Fixed Income exposure off and put of other places, it was a good decision. So I think those two things can kind of work together in concert. And then maybe from that point we can determine if there is anything else we want to work on.

We will typically before this assumptions conference, which is in October, statutorily the State Board is obligated to provide comment on the assumptions. And that's typically were, also, the board has been involved, the IAC has been involved with sort of making a follow on statement around, you know, supporting lowering the return assumption for various reasons. So that, then, could also be part of the process.

So that's kind of how I'm seeing these things sort of align. If that sort of maps to what you're thinking about, then that --

MR. NEAL: I think you defined it very well, Lamar. I'm not really talking about buying Bitcoin and --

MR. TAYLOR: Oh, yeah. Yeah, yeah, yeah.

MR. NEAL: -- much higher risk and assets. I just want to talk about the whole picture.

MR. TAYLOR: Yeah, yeah.

MR. NEAL: Sorry, Madam Chair.

MS. CANIDA: Lamar, I agree totally. And I think that when we do the agenda for our meeting in September that we should leave enough time for that discussion, because it's very important and it's not going to be a five-minute discussion, so we should plan accordingly.

MR. TAYLOR: Absolutely. We will get something on the agenda. We'll put an item on the agenda. And then we'll work with Aon, again, around that presentation. I think this time should be a little bit deeper dive than we've done before, and then we can get to some of the meat of the concerns.

MR. NEAL: Thank you, Madam Chair.

MS. CANIDA: Thank you.

MR. GOETZ: Any other questions from the

audience or from the board?

Okay. Very good. Meeting is adjourned.

(The IAC meeting was adjourned at 5:32 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, KIMBERLY S. BARTHOLOMEW, Professional Court Reporter, certify that I was authorized to and did stenographically report the foregoing IAC meeting, and that the transcript, page numbered 1 through 203 is a true and complete record of my stenographic notes.

DATED this 31st day of August, 2022.

KIMBERLY S. BARTHOLOMEW,
Professional Stenographer
Kimesuu@aol.com

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MINUTES
INVESTMENT ADVISORY COUNCIL
September 13, 2022

A hybrid meeting of the Investment Advisory Council (IAC) was held on Tuesday, September 13, 2022, via Microsoft Teams. The attached transcript of the September 13, 2022, meeting is hereby incorporated into these minutes by this reference.

Members Present:	Tere Canida Peter Jones Peter Collins Vinny Olmstead Pat Neal John Goetz Bobby Jones Gary Wendt
SBA Employees:	Lamar Taylor Kent Perez John Benton Maureen Hazen John Bradley Dan Beard Mike McCauley Tim Taylor Katy Wojciechowski Steve Spook Trent Webster
Consultants:	Phil Kivarkis, Aon Katie Comstock, Aon Matt Larrabee, Milliman John Pirone, Callan Weston Lewis, Callan

WELCOME/CALL TO ORDER TO THE MORNING IAC WORKSHOP

Tere Canida thanked her fellow Council members for joining the morning session.

Lamar Taylor, Interim Executive Director/Chief Investment Officer ("IED/CIO"), explained that this IAC meeting would consist of two sessions: a morning workshop which would provide background information on the IAC and the asset liability study, and an afternoon session for the regular IAC meeting which would convene at 1:00pm. Lamar gave a friendly reminder to those joining remotely to mute their device to avoid any background noise; and reminded all to identify themselves before speaking for the court reporter.

SBA GOVERNANCE/ROLE & FIDUCIARY DUTIES OF THE IAC

Maureen Hazen, General Counsel, discussed the SBA's governance and the roles and responsibilities of the Investment Advisory Council, the Trustees, and the Executive Director in the governance model. Maureen outlined the audit functions per Florida Statute 215.44, and the fiduciary duties and standards of care which apply to various internal and external parties, including IAC members, which are laid out in Florida Statutes. Maureen also discussed the fiduciary duties for the FRS Investment Plan, and process of developing the Investment Policy Statement for both the FRS Investment Plan and the FRS Pension Plan. There was discussion regarding a proposal to remove the legal list as it relates to the SBA's investments and making the prudent investor standard substitute for the legal list under Subsection 22 of Florida Statute 215.47. Maureen stated she would provide Peter Collins with the proposed language which could replace the legal list. Maureen Hazen and Lamar Taylor answered questions from IAC members.

BACKGROUND ON THE ASSET LIABILITY STUDY

Katie Comstock, Aon, discussed the importance of asset allocation and policy setting, and highlighted the investment strategy cycle and how the portfolio is constructed. Her presentation focused on the capital market assumptions that are used in the studies, and the SBA's customized approach to including assumptions in the asset allocation. Katie Comstock answered questions from IAC members.

Phil Kivarkis, Aon, explained that the asset liability study is a comprehensive toolkit which assists with the consideration of the broad asset allocation for the plan and evaluating potential modifications to the plan. Phil also discussed the various terms and charts used in the study; the simulations used in the study; balancing assets and liabilities; the benefits of conducting the asset liability study; and the models and simulations that were used in the study. He also gave an overview of some of the topics that would be discussed during the asset liability review at the afternoon IAC meeting. Phil Kivarkis and Lamar Taylor answered questions from IAC members.

PENSION PLAN CONTRIBUTION DISCUSSION/ASSUMPTIONS CONFERENCE

Matt Larrabee, Milliman, explained that as the Florida Retirement System's actuary, Milliman's role is to determine the recommended funding rates for employers to help provide long term funding stability to the program. Matt provided an overview of the investment return and inflation assumptions used in Milliman's calculations for the actuarial valuation; the actuarial valuation process for the two valuations that are conducted annually; the calculation of blended actuarial determined contribution rates for employers; and the outlook models presented at the 2021 Actuarial Assumptions Conference. Matt also discussed some of the items that Milliman planned to share at the 2022 Conference. Matt answered questions from IAC members.

The IAC workshop adjourned at 12:28pm.

WELCOME/CALL TO ORDER TO THE REGULARLY SCHEDULED IAC MEETING

Tere Canida called the IAC meeting to order at 1:04pm. The approval of the minutes from the June 28, 2022, was postponed to the December 13, 2022, IAC meeting.

OPENING REMARKS/REPORTS

Lamar Taylor, IED/CIO, gave an update on performance as of September 12, 2022, close. He discussed how inflation, employment, and interest rates were driving the markets, and how these factors had impacted the portfolio. Lamar also gave a brief update on the IAC Compensation Subcommittee meeting that had taken place the week prior and stated that there was extensive discussion around the Incentive Compensation Plan, and that Vinny Olmstead would provide an update later in the meeting. Lamar closed by providing an update on the Trustees, and he stated that following a request from the Trustees at the August meeting, actions would be taken during the IAC meeting to include language in the Investment Policy Statement and the Proxy Voting Guidelines underscoring that the SBA acts exclusively for the economic benefit of beneficiaries; and, further that the SBA will not consider non-pecuniary factors when making investments and voting proxies.

ASSET LIABILITY REVIEW

Katie Comstock, Aon, began with a friendly reminder to the IAC that the focus of Aon's presentation would be the 81% return-seeking, 19% risk-reducing allocation to the portfolio. When the IAC convenes in December, a deeper dive would be conducted reviewing the construction of those portfolios and evaluating whether the current allocation continues to be appropriate, or if the information provided warrants considering a different risk profile.

Phil Kivarkis, Aon, summarized the results of the three key facets of the 2022 asset liability study, which were portfolio analysis, asset-liability projection analysis, and liquidity analysis. The portfolio analysis indicated that the Florida Retirement System portfolio was well-constructed and diversified, and the expected return was 6.87% which exceeded the actuarial interest rate assumption of 6.8%.

Regarding the asset-liability projection analysis, the Fund was estimated to be 82.7% funded on a market value of asset basis as of June 30, 2022. Projected trend lines indicated that the Fund should reach a fully funded state by 2039. It is expected that assets would match liabilities over the next year, and in time, assets would grow even faster than liabilities to meet the estimated asset hurdle rate of 9.88%. The findings of the liquidity analysis indicated that there was sufficient liquidity in the Fund in the modeled scenarios (base case, recession, and dark skies). Phil Kivarkis and Lamar Taylor answered questions from IAC members.

Lamar Taylor suggested that Aon provide an analysis of an allocation of 81% return-seeking assets, as well as sensitivity analyses of 85% and 75% return-seeking assets, which would aid in the consideration of adjusting the asset allocation at the December 13, 2022, IAC meeting.

There was discussion between Lamar Taylor and Senator Neal regarding next steps for adjusting the asset allocation, and Lamar explained that the first step in the process would be to present a new Investment Policy Statement (IPS) to the IAC at an upcoming meeting for approval, and the IPS would then be presented to the Trustees for formal adoption. Senator Neal requested that at the December IAC meeting, the SBA examine alternatives with a higher ratio of return-seeking assets, such as 85%. He also advised seeking greater latitude from the Legislature for the SBA to invest in strategic and alternatives. Senator Neal requested to finalize these items at the December IAC meeting.

GLOBAL EQUITY ASSET CLASS REVIEW

Tim Taylor, Senior Investment Officer, Global Equity, provided an overview of Global Equity's team structure, the Global Equity Investment Policy Statement, the asset class objectives and how the team delivers on their objectives, and the benchmark. He also discussed the role of Global Equity in the Total Fund, and stated that as of June 30, 2022, the asset class made up 47% of total FRS assets, internally managed 24% of all FRS assets, and provided $19 billion in liquidity over the past 3 years. Regarding performance, in the 2nd quarter of 2022, equities markets substantially declined but Global Equity preserved capital and provided a 30 bps active return. Overall, fiscal year 2021-22 was very challenging and Global Equity trailed the benchmark by 69 bps. However, the asset class remains ahead of the benchmark over all longer-term periods. Tim Taylor and Katie Comstock answered questions from IAC members.

GLOBAL EQUITY ASSET CLASS STRUCTURAL REVIEW

Weston Lewis, Callan, discussed the items that were evaluated during the Global Equity structural review, which included the current structure of Global Equity, assessing Global Equity's current structure relative to benchmarks, IPS alignment with objectives and risk budget measures, and recommendations that could potentially add value to the portfolio.

John Pirone, Callan, summarized the results of the structural review. The portfolio analysis considered active versus passive management, the control of unintended risk exposures, and the use of the 75 bps active risk budget. Callan determined the SBA's current philosophy on using active versus passive risk was in best practice and consistent with other large public equity programs, and that it helps to mitigate misfit risk as described by Callan. The SBA's mitigation of style biases was in best practice and was done to a much greater extent that many other large public equity programs. It was

Callan's opinion that Global Equity may have latitude to seek additional return by targeting the 75 bps active risk budget instead of running below it, as had been done historically. John also discussed various methods to potentially add value to the portfolio. Some examples included lowering allocations to "lower conviction" strategies or increasing the overall use of active management thereby increasing active risk level.

REVIEW OF THE FLORIDA RETIREMENT SYSTEM PENSION PLAN INVESTMENT POLICY STATEMENT

Lamar Taylor, IED/CIO, explained that the change to the Pension Plan Investment Policy Statement would incorporate the direction received from the Trustees at the August Trustees meeting. The new language, which was redlined in the proposed IPS, repeats verbatim the resolution that was adopted by the Trustees. Lamar requested a motion to approve the Pension Plan IPS. Senator Neal seconded. All in favor. The motion carried.

REVIEW OF THE CORPORATE GOVERNANCE PROXY VOTING GUIDELINES

Lamar Taylor, IED/CIO, explained that the change to the Corporate Governance Proxy Voting Guidelines was also to incorporate the direction received from the Trustees at the August Trustees meeting. The new language redlined in the proposed guidelines repeats verbatim the resolution that was adopted by the Trustees. Lamar requested a motion to approve the revision to the Proxy Voting Guidelines. Peter Collins moved to approve the Corporate Governance Proxy Voting Guidelines. All in favor. The motion carried.

Mike McCauley, Senior Officer of Investment Programs and Governance, and Lamar Taylor answered a question from Peter Collins regarding how the SBA votes on ESG factors.

ASSET CLASS SIO UPDATES

Tere Canida requested that Katy Wojciechowski, Senior Investment Officer, Fixed Income, speak about the market. Katy stated that Fed funds would continue to hike, and the market believed that the Fed would contain inflation in the next year. Projections for longer term bonds were stable and the 10-year may approach 4% to 4.25%. Sales out of the Fed's portfolio had increased, and mortgage rates were at 6%. Katy noted there was a liquidity drain on the system and bank deposits had been shrinking.

John Goetz requested an update from John Bradley on Private Equity's expected returns and marks. John Bradley, Senior Investment Officer of Private Equity, noted the information provided in the slides were as of March and stated that June valuations were still being received, but he anticipated that Private Equity would be down 4% for the quarter and roughly 6-7% cumulative.

Peter Collins posed questions regarding rental growth and office to Steve Spook, Senior Investment Officer, Real Estate. Steve confirmed that the office market was tough due to the lending market and uncertainty around office. Steve stated rental growth in the multi-family market was slowing down but was still strong, and that there was still a chronic shortage of residential housing.

Trent Webster, Senior Investment Officer, Strategic Investments, noted the asset class hadn't seen negative marks in the private credit book but had held steady. Trent also provided an update on real assets, performance, and benchmarks.

Dan Beard, Chief of Defined Contributions Programs, shared that membership had grown with 20,000 new plan participants. It was expected that membership in the investment plan will continue to trend up as new hires defaulted into that plan. He also briefly discussed the increased employer contribution rate to the investment plan.

MAJOR MANDATE PERFORMANCE REVIEW

Katie Comstock, Aon, provided an overview of the performance of the Pension Plan, the Investment Plan, the Florida Hurricane Catastrophe Fund, and Florida PRIME. Katie answered questions from IAC members.

IAC COMPENSATION SUBCOMMITTEE UPDATE

Vinny Olmstead, Chair of the IAC Compensation Subcommittee, provided an update on the September 6th, 2022, IAC Compensation Subcommittee meeting. He discussed the mission and purpose of the Subcommittee and the process for evaluating the Executive Director/CIO. Vinny commented that because Lamar Taylor had been serving in an interim role, he was not eligible for incentive pay per the current policy, and that the Subcommittee would like to address this issue.

At the meeting, the Subcommittee requested that Mercer complete a review of the current policies and make recommendations for improvements to the SBA's Incentive Compensation Plan, not only for the Executive Director/CIO but also for other SBA staff who are eligible to participate in the plan. Once the feedback from Mercer has been received, the Subcommittee will draft a memo to the Trustees with their recommendations. Vinny also commented that by addressing some of the nuances in the Incentive Compensation Plan, it would enable Lamar Taylor to continue to recruit and retain colleagues.

AUDIENCE COMMENTS/2022 MEETING DATES/CLOSING REMARKS/ADJOURN

There being no further questions or items for discussion, the meeting was adjourned at 4:33pm.

Tere Canida, IAC Chair

Dated: December 2, 2022

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IAC Meeting

September 13, 2022

Vol 1

PHIPPS REPORTING

Raising the Bar!

STATE BOARD OF ADMINISTRATION OF FLORIDA

INVESTMENT ADVISORY COUNCIL MEETING

Volume 1, Pages 1 to 127

Tuesday, September 13, 2022
10:03 a.m. to 12:28 p.m.

Hermitage Room, First Floor
1801 Hermitage Boulevard
Tallahassee, Florida 32308

Stenographically Reported By:
JUDY LYNN MARTIN, STENOGRAPHER

Job No.: 226485

APPEARANCES

IAC MEMBERS:

VINNY OLMSTEAD

PETER COLLINS

PAT NEAL

JOHN GOETZ

PETER JONES

TERE CANIDA

GARY WENDT (Appearing remotely)

SBA EMPLOYEES:

LAMAR TAYLOR

JOHN BENTON

KENT PEREZ (Appearing Remotely)

MAUREEN HAZEN, General Counsel

JOHN BRADLEY

STEPHEN SPOOK

CONSULTANTS:

KATIE COMSTOCK - (Aon)

PHIL KIVARKIS (Aon)

MATT LARRABEE (Milliman) (Appearing remotely)

Proceedings began at 10:03 a.m.

MS. CANIDA: Good morning to everyone. I'd like to thank my fellow board members for being here today and spending this very important time in the discussions we will have this morning. With that, I will turn over to Lamar to begin guiding us.

MR. TAYLOR: Good morning and thank -- thank you all for being here, just a couple of housekeeping items. This morning we got -- we've got two sessions.

The first -- first session this morning here will be kind of a background, education session that's slated to go from 10:00 to 12:00. We may run into a little bit of our lunch hour. There's -- depending on how things go, then we'll break a little bit for lunch and then we'll reconvene the regular meeting at one o'clock.

Just remember, folks, particularly those who are not in the room, please mute your device if you're not speaking, so we don't get the background noise in the meeting. And then when you do speak those -- particularly those in the room, when you do speak, make sure you please speak into the -- the microphone.

And also those who are on the call, if you are commenting or asking a question, if you would remember just to identify yourself so the court reporter here can -- can log your name.

So that's -- that's all I had. As can you see the morning session this morning we're going to have a little bit of a discussion, my general counsel, Maureen Hazen, regarding the SBA governance and the rule and fiduciary duties of the Investment Advisory Council and then we'll have a little bit of background conversation with Aon with respect to how mechanics of how the asset-liability study data are produced. That's -- we will be going through in more detail the asset-liability study that Aon has produced in the second meeting this afternoon.

And then finally, we'll have a little bit of a discussion from Matt Larrabee with Milliman who is the state's actuary in terms of how Milliman takes the information we produce here in the asset-liability and the expected rate of return and how that's factored into their work in determining the contribution rates for the FRS.

So without further ado, I'll kick it over to Maureen Hazen our general counsel for the first

item on the agenda.

MS. HAZEN: Good morning, everybody. Good morning, council members.

So I've been asked to give this presentation about the role of fiduciary duty to the IAC and really can't do that in proper context without understanding the broader SBA governance.

And, you know, in my humble opinion, and that's exactly what it is, an opinion, Florida Legislature and past trustees were very, very wise in the way they designed the SBA governance.

My opinion, because that's exactly what it is, I believe we have one of the best -- the SBA's one of the best governance models in the United States and the IAC plays a critical role in that -- in that model.

But to really understand why that is so, it's really important to understand sort of the broader picture of what it is we're all really doing here and how those parts all interplay.

So I'm going to open my comments with some slides generally about that governance and then -- including fiduciary issues, and then we're going to talk about IAC's specific roles and duties and we're going to do a relatively I would say, considering the time we have here today, deeper dive on sort of fiduciary issues and what that really means, because it really is the polestar of everything we do here.

So what is the role and purpose of the IAC in -- may I rephrase that, what is all of our role and purpose, and here's the simple answer -- to assist the trustees in complying with their fiduciary duties. And that's a simple answer with a very complex solution, but that's really at the end of the day what we're here to do is to assist those three named fiduciaries, the trustees, with complying with their duties to the various beneficiaries that they owe those duties to.

So talking a little bit about governing authority, because that sort of sets the stage. Section 215.44 provides the trustees, which of course are the governor, the CFO, and the attorney general, to invest the funds of not just the pension fund, but also various other funds typically -- or specifically required by law.

So that would include investment plan, CAT Fund, Florida PRIME, and all the other mandates that you all hear about (inaudible) that you review performance on, and that is to be done consistent

with the cash requirements, trust agreement, and investment objectives of the fund.

So you know the slide as well as I do. This is just to give us an idea what we're talking about here in terms of dollars. This is -- these numbers are pretty stale, but you can see we're talking about dollars in the billions, 186 billion for the pension, 13 plus for the investment plan, and total AUM as of August 22nd for all of our mandates $235 billion.

So the next two slides are really important, and this relates to what the fiduciary duty and status and standard of care is in Florida statutes. And I'm going to say that the legislature didn't say this just once, they said it twice and indirectly said it three times. So that's what I'm going to present to you.

First investments by the SBA have to be designed to maximize the financial return to the fund consistent with the risks. And you see I highlighted those terms. You're going to see those terms over and over and over again.

Second investments shall be designed to preserve an appropriate diversification, and third the SBA shall discharge its duties with respect to a plan solely in the interest of its participants and beneficiaries. These are expressed words in quotes from the Florida statutes.

I'm going skip over this slide for a minute because it was sort ill placed, but we are going to come back to it and I'm going to go to the next slide, which is the second round that legislature wanted to make sure we understood this concept.

In Sila (ph) 215.47, paragraph 10 and it says: In performing our duties, we will comply with the fiduciary standards set forth in these code -- section of ERISA, which ERISA is the federal law that governs private plans.

So basically what the legislature did was incorporate federal standard into Florida law. What that Florida -- federal law says is -- has three prongs, you're going to see this several times throughout this morning's presentation, exclusive purpose, duty of loyalty, prudence, and diversification.

What does that look like? It looks like the expressed language that was already in the statute. So that's the second time that the legislature was trying to tell us how important this is.

And then in case we weren't sure, it has a

provision: In case of conflict with other laws, this subsection prevails, i.e. if there's anything else, we really meant it. And this is the highest standard of care known to the law.

And this is going to be polestar. I know I said that already, but I just can't stress it enough. This governs everything the trustees does and it governs everything that we all do.

So what does this mean? This means that these three people owe this duty, this highest standard of care under the law in managing over $235 billion of other people's money. And I say other people's money, I know that seems informal, but we sit here and we talk about funds, we talk about purpose, but we're really talking about funds that (inaudible) the benefit of people who are law enforcement in the case of pension or investment plan, teachers, public service, this is their money. And so that is why the legislature puts such a high standard of care into the law.

So how do the trustees do this? I mean, that's an awesome responsibility. Well, under our governance, the trustees operate as a policy board, which basically means other than investment policy statement, which we'll talk about a little bit later, they -- they don't operate as an operational board. They delegate authority and what their real responsibility is making sure that we, all of us that are part of the governance, are doing our jobs in making sure that things are -- decisions are made in a prudent way, and the IAC is just one critical part of that -- of all that working -- working governance.

So this again looks like a lot of mumbo-jumbo, but it's really critical to sort of again the wisdom of the legislature when -- when it decided about -- about the SBA what would it put -- what duties it would give to the SBA.

The SBA's actually a constitutional entity of its own kind. It was created back in 1885. So -- and why that's important is a couple of reasons. First of all, that means that the SBA cannot be changed by the legislature. It can only be changed through -- by the people of the state of Florida through a constitutional amendment.

So there can't be any SBA packing, you can't add members -- the legislature can't add members to the SBA. The SBA can't take members away, so we would have sole trusteeship. The legislature can't do that.

What the legislature did retain authority to do, of course, is to give pretty much everything that we do to the SBA as a matter of law. So conceptually -- or, no, not conceptually, reality if it so chose to do, legislature could say, you know what, we don't want the SBA to invest with the Florida Retirement System anymore. We're going to give it to another entity.

Well, you can see how that would be fraught with peril as far as -- so they could -- they could in practice -- they could conceptually take away the duties of the Florida Retirement System from the SBA if they so wanted to, but that obviously presents a lot of complexities when you're talking about, you know, billions of dollars of funds that are active investments, you know, everywhere throughout the world.

The other important part of this about being a constitutional entity is that means the SBA is not part of the executive branch of the government. So that means certain laws that apply to the Executive Branch of government. So that means certain laws that apply to the Executive Branch do not apply to the SBA.

Obviously a lot of them do, most of them do, public records, Sunshine, like we are here today sitting here in a public meeting, ethics, that all applies.

But things like budget, you know, we are not legislatively appropriated. The trustees approve their own budget. We are not subject to state procurement laws. We have our own investment selection processes and procurement processes, and there are very good reasons for that. And again it goes back to this polestar of the fact that we are fiduciary over other people's money.

And so things that might work for an Executive Branch agency in implementing state public policy are not really -- aren't as relevant or helpful in fiduciary administering what we're trying to do here.

So back to governance and the framework. And if I was talented at doing charts like everybody else does in these meetings, normally this would have a chart with a box on top that says trustees then it would have lines.

But I really see our governance in terms of sort of four sort of big picture parts, and that is first internal staff. That's the executive director, CIO, and the SBA staff, all of us.

Second, external would be review, the Investment Advisory Council. Third, external would be our subject matter experts and our investment managers. So these are, you know, people we actually give discretion to invest the money to, these are investment consultants that you hear from every quarter, you know, Aon and Mercer and Townsend and Cambridge.

They would -- this would be subject matter experts, so this is external legal counsel, accounting, subject matter experts in IT audit, all these network of the most expert firms and their area of responsibility throughout the world are available to us and as part -- a very important part of our governance.

And then fourth external, I would call this the oversight function. This is our audit committee and our external auditors, the auditors that audit our financial statements, the Auditor General, OPPAGA, which is the research arm in the Florida Legislature, and very special project audits that the audit committee directs with the Office of Internal Audit in its annual work plan to -- for example right now we have a special project going on, IT security, very important. So these --

these are sort of the big what I would call the four points of our governance.

So I'm going to start -- I'm going to skip around a little bit and not really talk too much about the subject matter experts, because I know we're all familiar with that. I'm going to open with internal staff.

The statute provides for the appointment of an executive director and the trustees have adopted two rules which provide a fairly broad delegation of authority to the executive director.

And I'm not going to go over all of these slides, the next four slides, but I included them because it demonstrates the breadth of this delegation. This is what the executive director is authorized to do, pretty much everything. I mean, not quite, but almost. And this goes back to sort of the governance model demonstrating that the trustees are really a policy board.

This slide demonstrates -- without going into a lot of detail about it, which is demonstrates, you know, we're not a three-person shop here. We're a shop that has very discrete units of responsibility that work together daily and cover just about everything on both the investment side

and the operational side.

In addition we have a risk management and compliance department that serves as our second line of defense and also an Office of Internal Audit that serves as our third line of defense. And as I mentioned before, it works with the audit committee in that oversight function.

In that regard, I do want to say a couple words about that oversight function. So we are required to create an audit committee and that audit committee serves as an independent and objective party to monitor processes for financial reporting, controls, risks, audit processes, and compliance.

Something that -- this is the first bullet point where this has become relevant. I'm going to mention this a couple of times. There was back in 2010 a major revision to Florida law regarding the governance of the SBA and that was a result of the financial crisis of course, but more factually on point they run on the pool. And I don't know how many of you were aware of that or involved with that.

And as a result, the legislature at the time did some significant studies on how -- what can we do to improve governance of the SBA, just because it's time. And I'm going to point out a couple of things that -- throughout the course of this presentation of things that were sort of new.

And one of the things that was new, this is just the first one, is this last bullet point: The audit committee must report to the SBA and the executive director at least quarterly. The SBA means the board of trustees.

That again goes back to the governance function of the trustees want to hear from the audit committee, the committee that's in charge of oversight.

This is also part -- something that was new in the 2010 law. The SBA must produce the annual financial statements for the Florida Retirement System and that these financial statements must be audited by commercial, independent third-party firm.

So before that time, we actually didn't have that in the law. We had other controls, but not that -- not that independent requirement. And then finally OPPAGA is required to examine the SBA's management of investments every two years.

This was also something new in the law to

ensure that the trustees were getting the information that they need to get this providing that the trustees must meet quarterly and receive reports from who, the audit committee, the IAC, the inspector general, general counsel, executive director, and any other person or entity that the trustees may require, and, you know, that is done through -- you know, we put together comprehensive materials for the trustees before each of their other quarterly meetings.

All right. So it sounds like the trustees are out there on their own being fiduciaries, but, no, that's not the case. The legislature and the trustees through policies have said, nope, we want -- if we're going to rely on this governance, we want everybody to be part of it.

And so who is a fiduciary at SBA, who has a fiduciary duty, the trustees obviously, certain SBA staff members -- and I put an asterisk there, because I'm not going to get into the weeds of what that means, but suffice to say under our Code of Conduct, we expect anybody to adhere to any SBA employee, whether technically or not, to adhere to this as a condition of their employment.

Investment Advisory Council members,

investment advisers and managers hired by the SBA are subject to fiduciary standard of care by contract. That's in all of our contracts. Most consultants, that really means investment consultants, and then our master custodian (inaudible) by law is required to be a fiduciary as well.

So before I move on to the role of the IAC, I want to go back to this slide. And I'm happy to answer questions about it now or I'm happy to do it this afternoon when the IAC reviews the investment policy statement.

But this is a trustee resolution that was adopted recently on August 23rd, and what that resolution does is it directs the SBA to initiate the process of updating the investment policy statement and that's something we're going to start doing today, and I know that you have all been involved with, you know, in the past. At the end of the presentation, I'm going to talk about what the legal requirement is on that.

But what this resolution does it basically says: When the SBA is evaluating investments, it needs to be done based on pecuniary factors. And a pecuniary factor is -- guess what, it's two bold

items that I mentioned way back at the beginning of the presentation -- factors that have a material effect on risk or return. They are not factors that include consideration of the furtherance of social, political, or ideological interests. That is very consistent with the two things in Florida law that I previously talked about.

In addition the resolution says: The SBA may not subordinate the interest of participants and beneficiaries to other objectives and sacrifice return or take on additional risks to provoke non-pecuniary factors. That's the duty of loyalty that we're going to get into again.

And then the trustees acknowledging, you know, Florida law, they have to follow Florida law. Of course having this proviso about there's a conflict. Of course Florida law will prevail. They would never do anything that's outside of their authority.

So I'm -- I'm happy to take questions or comments about this or I'm happy to reserve them until this afternoon, but I did want to alert you, you know, that this was something that is relevant to this discussion and wanted to let you know that it is out there. So I'll just defer to the council at this point.

So we go back to transitioning to your specific role and your specific duties. IAC members are appointed by the trustees and confirmed by the Senate to serve as a resource to trustees' resource, again part of the governance, a resource.

Just like staff implements all the broad delegation and the subject matter experts provide us, you know, with our -- with their expertise, investment managers invest the money and have the discretion. The audit committee has the oversight function.

This council is the resource to the trustees, because of this second bullet point: Your special knowledge, experience, and familiarity with portfolio management, institutional investments, and fiduciary responsibilities.

This third bullet point is one of those areas that was added to the law in 2010. Carrying out your duties you must make recommendations consistent with the same fiduciary standards applicable to the board. And I know I hit those points high level. I'm going to dive into them in just a minute.

But this was new to the law and it was I think

an acknowledgment and reflection that -- of how important the fiduciary standard of care is and that every part of the governance that the trustees rely upon need to be subject to that same standard of care when they're performing their part.

This fourth bullet point, this seems like intuitive, because it's Investment Advisory Council, but I just hear these words interchanged all the time and it just bugs me, but it's advisory body, not an oversight body like the audit committee.

Your role is to give advice and to be a resource, not to check and audit and review and make sure we're doing what we're supposed to do. It's to actually provide advice based on this expertise that you all have.

So the next two slides are going to cover your duties, and I really -- they have five bullet points, but it's really four, but the last one is something that's relevant to -- something you've been doing for 10 years.

So the first is: Review investments and make recommendations to the SBA regarding investment policy, strategy, and procedures; investment policy, strategy, and procedures; to meet with the staff of the SBA at least quarterly and provide a quarterly report to the trustees, that's (inaudible) from 2010; undergo regular fiduciary training as required by the SBA and complete an annual conflict disclosure statement, that's from the 2010 law.

This has been in the law for a long time and you're going to -- we're going to do this again today.

Review the executive director's recommended changes to the investment policy statement of both pension plan and investment plan and present the results of your review to the board prior to the board's final approval.

And in this fifth bullet point: You may create subcommittees as necessary to carry out your duties and responsibilities, those investment policy, strategy duties. And an example of this is the compensation subcommittee that you all have been involved with in the last I guess 10 years or so.

So now I'm going to dive into fiduciary responsibility. So again the three essential fiduciary duties -- duties of prudence, duty of loyalty, duty to diversify. Highest standard of

care known to the law, and this bullet point you're going to see stuff like this in the handful of slides throughout the rest of the presentation. You're going to say what is she talking about?

But if you see weird words like morals of the marketplace, that's because they are quotes from cases, from -- federal court cases that interpret ERISA, and so that means there's law or interpretation of the law.

But basically this high standard of care is a stricter standard in the morals of marketplace. I'm sure many of you serve on public company boards, that the business judgment rule. This is a much higher standard of care than the business judgment rule.

So breaking those down, the duty of prudence, that's the first one. This provides that fiduciary must act with the care, skill, prudence, and diligence that under the circumstances that -- so facts and circumstances, then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of enterprise with like character and with like aims.

Prudence has two components, substantive and procedural. I call this the what and the how.

Substantive is the what and procedural is the how.

Substantive prudence refers to the merits of an investment decision.

And make -- and in exercising substantive prudence, a fiduciary must act as a prudent expert would under similar circumstances taking into account all relevant substantive factors as they appear at the time of the decision, not required beyond mission.

We would be 500 percent funded if we were on mission. That's not the requirement. It's based on the facts and circumstances at the time we make the decision.

And back to my near and dear to my heart case law: Acting with a good heart but an empty head will not suffice.

So what -- how do you do that generally? This is from the guidance. What kind of things are -- is a fiduciary supposed to be considering in exercising substantive prudence. Here are some of the factors.

The role of an investment within the portfolio, and this is talking about investment in portfolio as if it's singular. You can substitute investment portfolio for portfolio construction

asset class. Asset class for total fund, you know, it's -- it's the parts to the whole, depending on what your particular role is in the SBA governance, but reasonable design of the portfolio, risk of loss, opportunity for gain, diversification, which of course is its own prong we're going to get into, liquidity and cash flow, and projected return of investment. These are all related to the investment portion of funding of a pension plan.

Procedural prudence, so this is the how. This refers to the course of action by which a prudent fiduciary makes an investment decision, due diligence: Must ascertain relevant facts, investigate your options, and obtain expert advice if needed, again back to that bullet point on subject matter experts.

And I added a fourth one here that I think is also very important, documentation, documenting everything that you're doing and why you make a decision.

That goes back again to you don't have to be on mission, just have to make good decision, the right -- a prudent decision based on the facts and circumstances as they exist at the time. And so how do you demonstrate that, through documentation of your process.

So maybe you're all sitting there thinking, well, wait, I'm a fiduciary and I'm supposed to give advice on all this stuff that relates to, you know, a public pension plan, you know, I'm an expert on real estate, not fixed income; or I'm an expert on fixed income, not private equity. How do I get comfortable doing that, and that's a very fair question. And there's actually some precedent as it relates to the Investment Advisory Council.

In the past our outside fiduciary councils opined about procedural prudence as it specifically relates to the IAC. And in that opinion there's really three parts of it which seem -- are quite nuanced, but the nuances are important.

The first is counsel opined that law does not require that the SBA retain separate consultants or experts for the IAC in addition to the ones already retained by SBA. There's no legal requirement that that be done.

In fact, I would take that a step further -- this is all driven by facts and circumstances of course, so I'll make just general comments. I would say it's probably imprudent to do that, because you're just expending unnecessary resources

if you're just talking about sort of regular review like we do every quarter. Now, there's some facts and circumstances that could change, but as a general rule I would say not only does law not require that, but would probably discourage as a general matter of that.

The second point is it is consistent with your fiduciary responsibility for you to rely on these consults, so that is consistent with your responsibility.

And then third, related but different, is your reliance on these consultants is not just consistent with your fiduciary responsibility but is also industry best practice.

So you're doing exactly what all of our peers and other entities that have same standard of care are doing in relying on the experts in satisfying your obligation for procedural prudence.

The second prong of the fiduciary standard of care is the duty of loyalty, and that is that fiduciaries must act solely in the interest of the participants and beneficiaries for the exclusive purpose of providing benefits to participants and the beneficiary and defraying reasonable expenses of administering the plan, again case law.

While performing trust business, fiduciaries may wear only one hat, not also wear a second hat. So that applies to our trustees as well. When they sit as trustees of the State Board Administration, they take off their hats as the governor, CFO, and attorney general and put on their SBA trustee hat.

Same with you when you come in here, you take off your hat. Whatever business endeavors that you do on a daily basis, you put on your hat -- the hat as an IAC member. Easier said than done when we're human beings, but that's the standard -- the highest standard of care the law requires is what is demanded.

More on the duty of loyalty. Very clear for decades that any decision to invest must be exclusively grounded in economic considerations.

And fiduciaries are prohibited from making investment decisions based solely or primarily on noneconomic factors or collateral considerations.

What this means is an investment is not appropriate if it provides the plan with less return, in comparison to the risk involved, or involves greater risk than other investments offering similar return.

This last bullet point I -- again it's one of

those law things, but it's actually got some pragmatic effect, because what this says is a fiduciary may consider other factors in choosing between two investments of equal risk and return, such as social principles. This is known as everything being equal test. It's been around for 40 years.

You may hear it out in the marketplace now the tiebreaker test. And what I'll tell you in my opinion is that the tiebreaker test is really -- it's necessary academic construct to have in the law, because it's a natural like gap like, oh, what if two things are equal, the law fills that gap. In my view it's academic. It's not pragmatic. I have never seen --

Do you have a question?

MR. COLLINS: I do. The last bullet there where it says when choosing between two investments of equal risk and return such as social principles, how does that relate to the resolution that was just done by the trustees where they said it's pecuniary interest only, shall not take social principles into account?

MS. HAZEN: So let me finish my comments on this and we'll go back to the resolution because I think that that's -- actually let me finish my comments on this in the next slide, because that answers your question and then we'll go back to the resolution.

So this all being equal test in my is an academic test that fills a gap in the law. Pragmatically I've never seen it here at the SBA. I highly doubt if any of our peers have ever really used it unless they wanted to use it to -- to justify their own sort of (inaudible) fiduciary standard of care, my particular perspective.

What I will say -- you know, I can't imagine an actual scenario which an organization of this size and diversified -- diversification group throughout invested, is various asset classes throughout the globe would ever actually have two investments of equal risk in return. But if that happened what would we do, we would invest in both, I mean, just practically.

And then -- and I don't mean to defer too much here because I do just want to go over these couple slides, because I think it might be helpful to provide a little more context to the resolution.

So again the duty of loyalty, we do have some statutory limitations, so I won't get into those.

I want to hit the first bullet point and the second bullet -- the third bullet point, because these are things that we've seen time and time again. These are not new concepts.

So back in 1985 the attorney general took the view confirming everything we're talking about this morning that until legislatively determined otherwise adoption by the SBA of investiture rule, which I would also say is a prohibitive investment rule by extension, based on ethical ideas and principles would not appear authorized in light of the board's statutory duties.

Contrast that with the last bullet point, which is very different. However, the SBA may divest, or not invest, where it finds it's not prudent to do so, so that would be politically unstable region.

So we don't, you know -- we don't want to invest in Venezuela. Well, there may be some issues about the social principles in Venezuela. But we're not investing in Venezuela anyway, because it's just not a geopolitically investable market.

So with that background, I want to go back to the -- to your question in the resolution.

So what does this say? Pecuniary, factors. What are pecuniary factors defined as? Factors that have a material effect on risk or return of an investment based on appropriate investment horizons consistent with the fund's investment objectives and funding policy. That's what -- that's what it instructs us to do. That is almost identical to the standard of care that's in Florida law. It's not any different.

Then it says: Pecuniary factors do not include consideration of the furtherance of social, political, or ideological interests.

It doesn't talk about risk there. It just says: Pecuniary factors are factors that impact risk of return, but it can't be factors that further social, political, or ideological interests.

Then the second part is: The SBA may not subordinate the interests of participants. Remember we already talked about that, so that's basically duty of loyalty.

So in my view -- I'm going to tell you what my opinion is. I can't tell you what the trustees think, because they didn't tell me. I can just tell you based on reading the words on the page and

their comments in the public meeting, okay, there's a lot of noise -- and when I say "noise," that diminishes the importance of it. Pollution I would say -- about what the fiduciary standard of care is.

And I think they understand their standard of care. They understand the legislature's seriousness of imposing the standard of care on them. And they want to make it crystal clear to all of us -- when I mean "us," I mean every single one of us that's involved in the governance of the SBA -- as well as the beneficiaries, as well as the law enforcement, teachers, money that -- people whose money this is; that they take these responsibilities clearly and that they want to make sure that we are all following the law, which is we're going to -- we're going to consider things that are related to risk and return and not all this ancillary stuff.

We're not going to make an investment just because it might be good in somebody's mind, it might be a good social, political, or ideological thing to do.

MR. GOETZ: Can I follow that up?

MS. HAZEN: Yes, please.

MR. GOETZ: In your opinion, I understand it's under the realm of intent, would that include for example if we met a manager that said their goal was specifically in ESG fund or an impact fund that that would raise question under this?

MS. HAZEN: Well, of course -- I mean --

MR. GOETZ: Meaning that unless the ESG -- this ESG strategy will produce a better return than other strategies, unless they said that or we believe that --

MS. HAZEN: They better believe it, otherwise we shouldn't be investing in it, shouldn't even be taking the meeting.

MR. GOETZ: That's what I'm saying. So that is your interpretation.

MS. HAZEN: That is my interpretation.

So the third prong is diversification: Fiduciary must diversify the investments of the plan to minimize risk of large losses.

So that's why we don't just invest in, you know, domestic equity or fixed income or Bitcoin, it's really because of the diversification requirement.

And also Florida law builds in its own statutory diversification through the legalist in

215.47. And now here's my little pet project, which I'm not authorized to talk about I suppose, but I'm going to say it anyways.

All right. My opinion the legalist is an antiquated function. Maybe it served a purpose years ago when the legislature first set this up, but it's not -- in my view, it's not necessary.

If you're going to have this highest standard of care which requires diversification and requires all of us to be prudent, why do you need a legalist that's cumbersome, not linear, it's just a hodgepodge of things that have been added over the years.

As this council knows all too well, now we actually have a practical problem with legalist, because of our alternative investment cap. So we -- we have asked before to remove the legalist. And that really hasn't gone, you know, too far just because of various things, not because of anything specific to this.

But if I had (inaudible) this council -- like I said I'm not -- I'm speaking out, I'm not authorized, but it would be to help us get rid of the legalist.

This slide, before you really throw rotten tomatoes at me, tax status of the plan. And I'm -- I'm not going to go into tax, because it's way too convoluted, except for there is some really major -- two major real points that come from this.

Both the investment plan and the pension plan are tax-qualified plans. So there is some tax laws that require that, you know, the exclusive benefit rule, some very similar concepts as we see in fiduciary law as well.

Two things I want to mention about this. Must not engage in prohibitive transaction with the state. We haven't seen this is a problem in the last 10 years, because we're less than a hundred percent funded. But back in the day when pension funds were 110 percent funded, it was like, oh, my gosh, there's this pile of money over there in the SBA and how can we rate it and take it?

Well, the answer to that other than this doesn't belong to you is this tax qualification issue. You do that and you compromise the tax status of the plan.

What's that mean? What that means is this next bullet point. I mean, the SBA is tax exempt anyway. We're a quasi-governmental entity. Under Section 115 of the code, we don't pay tax under

those circumstances.

However if you don't -- if you're not a tax-qualified plan, members who earn retirement benefits what they -- what they have is constructive receipt of income. So if you don't have an exemption -- you don't have the cash because it's a promised benefit, but they have constructive receipt of income.

So if you don't -- if you don't have this provision, people like, you know, law enforcement who are out there working every day would have to pay ordinary income -- you know, it would be ordinary income to them and they'd have to pay tax on it today. That's huge.

So this is -- I've included the slide not to bore everyone with tax, but to convey that this gets lost sometimes because we're talking about these fiduciary principles, but it's super critical that we do -- take every action we can to ensure these plans are -- continue to be qualified, and we do. We work closely with the Division of Retirement and with the legislature and with our outside tax counsel and the IRS when necessary.

Finally as it relates to -- I just want to mention two ethics requirements. The first is something that came into effect as a result of the 2010 law and that provides that no member or business organization that is owned or employed can directly or indirectly contract or provide investment services to the SBA while you're on the council or for a period of two years thereafter.

This really is a duty of loyalty issue, but legislature said: We're going to put something really expressed in the law.

And in second, this has been -- been around forever, but this is generally Section 112, that's the standard of conduct for public officers. It basically provides that a public officer doing business with an agency -- can't do business with an agency in which she is an officer -- which he or she is an officer.

The council members are public officers for this purpose. Not every purpose in Chapter 112, but for this purpose you are -- I am -- I think I'm getting kind of close on time, but I did want to include -- I did include a view slides on the investment plan, because I know that that came up a few times. So I'm going to run through just the highlights without going through all the slides.

A little -- some nuances about what's

different about what we do for the investment plan is basically we have four things that we do: Selection of investments, selection of the third-party administrator, educational services, and participant information services. So that's, you know, account statements and fund profiles and other things. Same standard of care when making investments or selecting investment providers.

The law provides that benefits under the investment plan must accrue in individual accounts that are participant directed, portable, and funded by employer, that should also say employee, contributions and earnings.

Florida law requires that it be designed as what we call 404(c) ERISA plan, which provides that participants exercise control over their own account by choosing through a broad range of investment alternatives that we offer.

I'm going to skip over some of these slides, but I do want to touch on this slide, the educational component, because I believe that's come up a couple times in the course of some of the meetings.

So under Florida law we're required to contract with organizations to provide educational services. We do this in conjunction with the Division of Retirement, which of course administers plans for the pension plan. And this is to assist employers and members to ensure compliance with this 404(c), this provision that provides it's going to be -- they're going to exercise control over their own retirement accounts.

Some of the things we do are listed in the bullet point. (Inaudible) go over that a lot with you guys, but, you know, it's basically providing materials and education explaining the pension and the investment plan and offering financial planning guidance.

This last bullet point, Florida law requires that we provide members with impartial and balanced information about plan choices. I don't know if I'm remembering this right, so if these remarks are out of context, I'll offer them anyway, but, you know, they're -- we're not -- we're not permitted to steer members to a particular plan.

It's not -- we're not authorized to do that. It could usurp what the legislature intended to do by having a 404(c) exercise your own control requirement. What we are required to do is make sure that they have relevant but complete

information so that they can make an informed choice based on their own individual facts and circumstances of who they are and what their goals are.

So I just wanted to hit that education component, because I think, you know, I believe that that's come up a couple times.

And then I'm going to wrap up and happy to take questions, but I want to talk about the investment policy statement, because I know that it's going to segue into some of Katie's next remarks as far as asset allocation.

But investment policy statement, this is the one area -- one of a few areas that the trustees do retain direct approval authority for, which again makes sense from a -- given the fact that they're a policy board.

And the mechanics under Florida law is that executive director presents recommended changes, but prior to doing that, the executive director must present those changes to the council for review. And then council must present the results of its review to the trustees prior to the trustees' final approval.

It's review. It's not approval. It's not even recommendations, it's just review. And that process is so critical, because the trustees are retaining approval for this and they want to have benefit of whatever your review is before they can make an informed decision about something that, you know, is so really big picture total fund.

I mean, we're talking about benchmarks, we're talking about, you know, how we design basically total fund construction. So that's the reason for this -- this provision of the law and why it works that way.

So those are the end of my prepared remarks, but I'm happy to take any questions.

MR. JONES: I have one question, please. Back to your comment on statutory limits, for example, the (inaudible) of 20 percent, I understand it needs to be -- a change would have to come through the legislature?

MS. HAZEN: Yes.

MR. JONES: So how would -- a more practical standpoint how would you suggest the IAC support that recommendation?

MR. TAYLOR: So there's -- great question and we would hope to have a good conversation around this point in December. We're going to talk a

little bit today about asset liability. Peter at the last meeting had pointed out that, you know, it's been a while since we've taken a look at asset allocation and so -- to the extent the council is open to that as a follow on to this meeting, that could be certainly something we could take up for the December meeting.

I think it -- based on the comments and the analysis that we've gotten from Aon over -- even last year, from an asset allocation standpoint we see that there is a continued long-term benefit to increasing alternative (inaudible) from a equity risk standpoint but from a more diversification standpoint, so credit, infrastructure, areas where there's a diversifying component against equity of risk. And we're seeing a lot of opportunities in alternative investment space.

So the way we did this in 2007 I believe, 2007, '08 when we requested a move from a 10 percent cap to a 20 percent cap was actually a transitional investment policy statement.

It was an investment policy statement that had been reviewed by the IAC and approved by the trustees that -- that provisionally increased the allocation to alternative investments to 20 percent broken out between strategic investments and private equity subject to legislative approval.

So basically saying -- and the benefit that that gave us back then was we were able to go to the legislature and say, look, it's not just the staff here at the State Board of Administration that's making this recommendation, this recommendation has been reviewed by the IAC, it's been approved by the trustees on a provisional basis subject to legislative authorization, but that we believe it's that important and we -- it just adds an additional weight around recommendation.

So do I think that that would be something that, you know, again with the council's support that we would -- we would propose this time around to the extent you all are in favor of that, and I think it would add additional weight this time to the recommendation.

MR. COLLINS: Can I make one comment on that, Mr. Chairman?

I think it's incumbent upon us up here to be knowledgeable about it as we should on the Investment Advisory Council, but also use our relationships to help foster that.

I mean, if we're passing it and if we're approving it, then we should do what we can to assist the SBA staff in that process, right, to get that message out.

And I would just encourage you to ask us, right. We talked a little bit about it after the session, but I encourage you to ask us to get involved, to the extent that you want. You know, we're happy to sit down and talk to people and let them know how important it is.

In my understanding from talking with some of the key players in it, nobody's opposed to it. We just might not have done a good job of really pushing for it. So I think we can help -- we can help in that regard.

ZOOM SPEAKER: Gary (inaudible) the question (inaudible). May he provide that question now.

MS. CANIDA: Go ahead, Gary.

ZOOM SPEAKER: I had my hand raised up. I'm asking a question for a significant reason, which is to let you know that I'm here and listening and since I needed to think of a question to be able to do that, I'm going to come up with one which you mentioned as your -- as you quickly ran through all of these very important things which means the --

which basically say be honest and thoughtful.

You mentioned that there's a list of -- and I don't know they were called the legal -- the difficult investments that were -- the list was put together 20 or 30 years ago you thought we should get rid of it, but I don't remember ever seeing such --

MS. HAZEN: Thanks for that question. This goes to my (inaudible), but it kind of relates to what Peter Jones was asking, except for we just honed in on the example as opposed to the broader (inaudible) as the example being the alternative investment cap.

So the legalist is in 215.47 and that was created back when the SBA first started making investments and, you know, back then it was, okay, you can invest a hundred percent in treasuries.

And then as the years have gone on and as the SBA staff through leadership of the trustees, through leadership of former IAC counsel said, you know what, we need to expand what our -- what we're investing in.

We would go back to the legislature and say, you know, nope, now we need to invest in short-term commercial paper, now we need to invest in domestic

equities, now we need to invest in foreign equities, now we need to invest in futures and options, now we need to -- all of these things as the financial markets and investment industry has evolved, things that would require -- would -- would further the legal requirement of diversification.

And every -- every time that happens, you know, it's worked, you know, but it's not -- it doesn't happen overnight. I mean, you know, you can't just say, you know what, it's a good idea for us -- we've done all this white paper work on investing in global equity. Oh, wait, we don't have authority to do it.

So now even if you have -- it's a collaborative process and things work smoothly, you're out after staff has already done, you know, a bunch of, you know, work on say global equity and -- and there's a lot of work that goes into educating, you know, the legislative staff about why we're asking for what we're doing and that's legitimate work and it's work that we're required to do anyway under the fiduciary standard of care.

But what's happened and why Lamar and Peter were just focusing in on the alternative investment specifically is because we have now had a real world example of why legalist really has -- isn't working.

I mean, we've been asking for a couple of years now for this authority and have given every fact, you know, relevant investment risk -- return and risk and diversification standard about why it's necessary.

We've had support. We've had support from you. We've had support from the experts. To Peter's point, I've never heard of any real objective. I've heard people who, you know, ask some really good questions about what is private equity, you know, because they're not in our world and those are highly relevant questions.

But I don't think anyone really -- who is in our space really objects to that, but here we are. Here we are. I mean, it took us a couple of months to close eight alternative investments, because we were over the cap, had eight alternative investments in the legal office ready to be signed, couldn't sign them because of this issue.

Now we ended up having an opening when we had the spike in public markets not too long ago, so we were able to get those executed and closed and --

so we're in those funds.

But we have a period where we have six months and there's no uptick in public markets, we may miss fund opportunities and that's -- that's just real.

So now we have a situation in which the Legalist has really caused, in my mind anyway, it's sort of not consistent with what -- what a prudent fiduciary would be doing, because it's really not serving to diversify really anymore. Instead it's really kind of unnecessarily sort of adding obstacles that just don't provide any real upside or protection to the beneficiaries. That's my opinion.

ZOOM SPEAKER: I'd like to thank you for that answer, but I don't -- I'm not sure I understand it. Let me ask a simpler question and that is: Does this list, does it exist?

MS. HAZEN: Yeah. It's in 215.47 of Florida statutes.

ZOOM SPEAKER: I'll look at them from my book --

MS. HAZEN: It's not in your book, but I can get it to you.

ZOOM SPEAKER: Well, I don't know. Is it any way relevant?

MS. HAZEN: It's very relevant in the sense of we are not authorized to invest in anything if it's -- if it's in excess of the authority of that legalist. And the real world example that we were just -- we have been discussing is alternative investments and exceeding the cap.

MR. COLLINS: When we work on asset allocation or when we talk about asset allocation and set the target ranges, this is something that the IAC can recommend to the trustees and the trustees can just do themselves. This has to -- if we -- if we go beyond a certain cap, we have to go to the legislature is what you're saying?

MS. HAZEN: Yes. That's what I'm saying, yes.

ZOOM SPEAKER: What we've been talking about, we talked about that last meeting; right?

(Simultaneous crosstalk)

ZOOM SPEAKER: I made (inaudible), and that was my objective.

MS. HAZEN: Well, like I said because I have an audience and I know you're like we don't want to see her again for 10 years, but, you know --

MR. COLLINS: Well, let me ask a follow-up question to Gary's.

If you got rid of the list, what would you propose in its place? What language would you propose in its place?

MS. HAZEN: Well, it's interesting you ask that, because we did propose language last year, so I can give that to you.

MR. COLLINS: Perfect.

MS. HAZEN: You know, and that is essentially that this list doesn't apply, because guess what, the -- the standard of care 215.47(10) that we went over, which is prudence, loyalty, diversification would substitute for that legalist.

So an example -- let's take an extreme example. If we get rid of the legalist, what's to stop you from going and investing a hundred percent of the fund in Bitcoin?

MR. COLLINS: Standard of care.

MS. HAZEN: Yeah, standard of care. So standard -- I mean, the standard of care way over in my opinion, my legal opinion, is way more robust and protective of the beneficiaries than some legalist. The legalist may have been relevant, like I said, 40 years ago, but now it's just -- to me it's just basically a hodgepodge of adding investment authority and I just -- I don't believe

it's necessary.
And I'll say one more thing about that, back to that oversight risk management compliance and audit function. This was a -- this isn't just, you know, Maureen, la, la, la, this was actually a funding by (inaudible) advisory services, which was the firm that the audit committee retained, I guess it was about three years ago, to basically review just about everything we do here from a risk and compliance perspective. But one of their findings was advocate to get rid of the legalist, you know, for the very reasons I'm talking, what I'm saying.
MR. TAYLOR: There are other plans that have taken this approach and implemented fiduciary standards. They've not -- they're not investing pursuant to a legalist. They invest pursuant to this language that we -- Maureen proposed fiduciary standard.
MS. CANIDA: So let me understand. We got rid of the legalist in the legislation -- legalist, that would resolve also the problem of the cap on the --
MS. HAZEN: Absolutely.
MS. CANIDA: Thank you.
MR. NEAL: Madam Chair, question, perhaps to

Lamar. Do you do the list that --
MR. PEREZ: Maureen, this is Kent Perez, can I make one quick comment?
MS. HAZEN: Defer to the chair.
MR. TAYLOR: I think Senator Neal was asking a question, Kent. Sorry, just one second.
MR. NEAL: Lamar, do you do the legislative work?
MR. TAYLOR: We here at the board, myself, Kent Perez, we have a team that works with the legislative --
MR. NEAL: Have you floated elimination of the legalist in substituting a fiduciary standard?
MR. TAYLOR: We did a couple of years ago. We approached the staff, legislative staff, with that and the feedback was, look, we feel like we've worked well with you all in the past in terms of if you need something, come and ask and we will give it to you. For various reasons that seemed to have broken down last year and so it --
MR. NEAL: Who's your leader in connection with matters in the House and Senate?
MR. TAYLOR: It varies year to year, depends on sort of who's leadership and where the -- historically in the Senate, I think it's been

governmental operations. A lot of bills come out of governmental operations from the Senate side. And then from the House, I guess it's, Kent, the committee that Heather's on?

MR. PEREZ: State affairs.

MR. TAYLOR: State of affairs tends to come out of -- out of...

MR. NEAL: Some (inaudible) who graduated or is very interested in financial issues, new leaders of the legislature less so (inaudible) big tort year, for example. You got to find somebody that's interested in finance.

MR. TAYLOR: Again all great points. We can certainly double down on the efforts. We can come -- come to you all for -- for help and support and we'll -- we'll take that guidance and see what progress we can make.

MS. CANIDA: Kent, did you have a comment?

MR. PEREZ: Yes. Thank you, Madam Chair.

Maureen, just for some context. Historically when we've gone to the legislature adding the prudent investor's standard, we've done so in a manner that would add it to the list, if you will, so that would give us the ability to go beyond the list and, you know, follow the marketplace and use

this prudent investor standard.

So we haven't actually tried to eliminate 215.47. We tried to add to the list, notwithstanding the list above, the ability for us to make investments under this prudent investor standard.

MS. HAZEN: Yes. So just a point of technical clarification on that. That has the effect of eliminating the legalist as it relates to what the SBA's investment mandates are.

The reason why the language is technically drafted that way is there are other organizations within the state -- the state of Florida, like Nika is one that comes to mind, that have absolutely nothing to do with SBA.

We have no investment responsibilities or authority, but the legislature has cross-referenced those entities' legal authority to our legalist. That's the reason why it's not just -- it hasn't -- we didn't propose just X'ng it. It's because otherwise that would have the impact of impacting organizations that have absolutely nothing to do with us.

But the effect of the language -- in which I'm happy to share with the council if they're interested in. The effect of the language that we drafted, which Kent is absolutely right, it's basically Subsection 22 of 215.47, would have the effect of eliminating the legalist as it relates to the SBA's investments and adding or making the fiduciary standard the prudent stand -- prudent investor standard, which is what's already in the law substituting for that.

So no longer would we have 20 percent. As long as investing 30 percent in alternative investments is otherwise prudent under the standard of care we discussed this morning, we would be authorized to do that, notwithstanding anything that's in the Legalist. Just a technical point of clarification. I don't know what Kent was trying to describe.

MR. PEREZ: That was it. Thank you, Maureen.

MS. HAZEN: Thank you all.

MS. CANIDA: Maureen, thank you very much. It's a lot of information here, but it's very helpful to us at the IAC. So we very much appreciate it.

MS. HAZEN: Thank you, Madam Chair.

MS. CANIDA: Lamar, I'll turn it back to you.

MR. TAYLOR: Thanks, Maureen.

So now the second item on the list is background from Aon on the asset-liability study. We've eaten into time a little bit. Maybe we can ask the council's patience, maybe we can just eat into lunch a little bit as well. I know there's a lot of material for Aon to go into.

So without further ado, we'll turn it over to Aon.

MS. COMSTOCK: Thank you, Lamar. Good morning, everyone. By way of introduction I'm Katie Comstock with Aon and I have Phil Kivarkis with me here as well.

Phil leads our investment policy services team, which is a team of 15 or so individuals that have expertise on both the investment side as well as the actuarial side, and this team is largely responsible for helping our clients manage risk. More specifically and related to today's conversation, they lead our asset-liability studies.

Phil has been working with you all for the past six --seven, eight years. So he's very familiar with the organization and portfolio.

If we -- just quickly what we're going to touch on today this morning, we also have time as

Lamar mentioned this afternoon, but is a background of asset liability.

So I need to help familiarize y'all with the terms, the charts, the things to consider when you're (inaudible) look at this afternoon. I'll make some opening remarks, we'll touch on the assumptions.

And what we mean by that are the capital market assumptions, risk return correlations, which are influx into asset liabilities study. We'll talk about the asset-liability study itself. We'll look at what that process looks like and then some steps that going forward will take us.

We have -- we can limit our comments to roughly 30 minutes. Rest assured we have a good chunk of time this afternoon to -- please interject with questions or comments as we go through all of this. So that sounds good.

You know, just quickly want to set the stage. As you all know asset allocation and asset policy study is among the most important decision -- decisions that the IAC and the trustees make when it relates to success of the investment portfolio, and this graphic here just illustrates that. When we look at differences between two portfolios, the

differences are driven 91 percent by the investment policy.

And so what we wanted to highlight and the context around is this investment strategy cycle, how do we go about constructing the portfolio. And this goes back to -- relates back to some of Maureen's comments.

As your fiduciary duty this is a -- the procedural steps that you all take and the factors that go into these different analysis factor in all those basic considerations that Maureen laid out, long-term investment returns, cash flow, liquidity, risk diversification are all factored into these different analysis. You'll all do an asset-liability study on an annual basis. As Lamar mentioned, we have been a little bit light on the asset allocation review.

So just looking at this cycle on how we approach portfolio construction, we start from the left and move to the right. It starts with asset-liability study and what this is doing is looking at your asset allocation and factoring in the liability profile.

Obviously that's why this pool of investments exist is so you can pay those benefits and pay them on time. So we need to understand that liability profile or study their strategy. So that's the first -- that's the first analysis that we do and that's what we're focused on today.

The ultimate outcome of that that we're focused on is the level of risk. The way we're defining that is percent to return-seeking assets. Right now you're 81 percent, 19 percent risk-reducing asset, which is your (inaudible) income.

After that you move to asset allocation review. This is upcoming. Over the next couple of months what we'll focus on is how do you construct that concern return-seeking portfolio, what should go into that. Right now (inaudible), private equity, and real estate strategic investments and we'll look to see if there are other categories that would better optimize that return-seeking portfolio, different weights, different categories that should be included.

This is something that can assist with looking at -- we both look at constraining (inaudible) to the current limits, but also help support you all in looking at that limit to take that constraint off and just show what the benefits of the

portfolio may be long term if you did not have that statutory limit.

Pealing back the onion or one more layer of the structure, look at how implement those asset classes, equity, how much, what types of managers, how many managers, and that's where you hear from your SIOs every quarter of how they're constructing their portfolios and what's working.

And then of course on review, making sure that the asset classes in the portfolio is performing as you'd expect it and (inaudible) understanding why and understanding the retirement.

So a lot said there. It's been a while since we've kind of taken that step back and looking at the overall process that we take to (inaudible). So if there are questions -- if I'm going too fast let me know.

We're going to touch on the capital market assumptions that go into our studies. And this is broken into two parts. First is how Aon approaches constructing capital market assumptions and then the customized approach that the SBA takes to input into the study.

So first and foremost what are the long-term expectations for return risk in correlation or otherwise how to (inaudible) asset classes and work related to each other.

The numbers that you see are best estimates are the median expectations, so there's a 50/50 return will be better or worse than what you see on the page.

High level is intended to give y'all a decent expectation of what your program can achieve. So I mention that and what I mean by that is it is intended to be net of investment management fees, and we don't factor in active management returns and market returns for the public market asset classes. Obviously for your alternatives, you can't access those passive manner, so we do factor in some asset management.

We update ours on a quarterly basis. Most advisers do that at least semiannually and some quarterly as well, and our approach is the building block approach. So we're taking in current market conditions, we're using oftentimes consensus -- forecasts as well as some oversight on some of Aon's opinion.

So what we have here are just an example of our equity capital market return assumption. You can see there's an income component, growth,

inflation, and then we get to our long-term total return expectation.

Now, we put a lot of time and effort into these assumptions. It's a big input. We guarantee we'll probably wrong with that exact number, but (inaudible) that that they are very informative in the direction and a magnitude of we expect returns, risks, and correlations to be.

We do do some benchmarking, though, to see where our assumptions fall with other advisers and so I have -- we did include this survey information. This is from horizon. They survey 39 investment advisers and their assumptions across these broad asset classes. They do so to make sure there's an apples to apples comparison as possible looking at oftentimes various time periods and different categories.

But here you can see these different (inaudible) charts. It shows the distribution of expectations across these asset classes. The red dot is where Aon's assumptions fall, so generally our assumptions across broad equities, fixed income, and alternatives is -- is our more or less right in the middle of the pack.

I went through that pretty quickly. I'm happy to answer any questions, but I do want to spend before handing it over to Phil a little bit of time on the SBA's customized approach to -- to including assumptions in our asset allocation work.

So as y'all may be familiar, you know, when we work with clients, some take our assumption as is, some use their own assumptions, and some take our hybrid approach, which is what you all do, where you're using Aon's assumptions and baseline but then adjusting for an average equity risk premium over three different advisers' assumptions.

Equity risk premium is the return of public equities. I expected to earn over core bonds compensating for the additional risk.

So what we do is we gather return assumptions from these three advisers. There's four listed. The fourth one updates on an annual basis and the timing has not worked out where it needs us to include theirs, especially given how markets have moved recently.

So currently we have three different advisers' assumptions across the top, and then the top section of this table you can see this is our most recent return assumptions for 15 years for global equity, core bonds, and then the equity risk

premium, which is the equity minus the bond return. And then on the four right, the box that is boarded up shows the average equity risk premium of 3.3 percent, so that is what we use to adjust Aon's assumptions.

You can see that Aon's equity risk premium is 3.9 percent. So we adjust all of our risk asset returns down by about 65 basis points to reflect that or just -- excuse me, equity risk premium, and really that's to eliminate any bias of any one adviser's assumptions.

Now, that's how we use that number and then we also include that -- right below that 3.9 percent what that number has looked like historically. So last year's it was 3.9 percent and then -- which you can see a little bit higher than this year's and then down below that you can see what it was for 2020, 2019, and 2018.

This next page shows that same information graphically. So the red bar shows the equity average of the three advisers' global equities return assumptions, the blue bar shows the fixed income, and then the shaded line shows the equity risk premium.

It's a little bit easier to see historically, but what we take away from this is the primary driver of the change in the equity return -- the equity risk premium is the bond assumption. You see that it bumped up to about five percent in 2020. That was largely due to interest rates falling to zero. And as those rates have risen, that risk premium has mirrored again to 3.3 percent. So that is what is included in this year's result and that has been the historical practice that the SBA has used?

MR. JONES: You referenced earlier about how do you -- how does Aon make its best estimate for other asset classes, private equity, real estate, and such. I saw the number that you came up, but I'm not sure how you -- what's the methodology behind that.

MS. COMSTOCK: So for private equity we use the factor base that we're using the data of our public equity assumptions. We're adding a risk -- we have a bucket that the factors like bio is about 50 percent of that, venture (inaudible) and mezzanine.

And then we tack on a premium that we expect for each of those and subtract fees out of that, the private equity assumption.

Real estate is building block approach, so we're taking current yields, expected rental growth, inflation, netting out fees as well expectations for appreciation. Similar for infrastructure, private debt, yields are the driving factor there, but also expect -- looking at increases, decreases, defaults.

So the building block approach we do have a deck that goes through each asset category if you want to look at one in particular.

MR. COLLINS: So under this -- under this thought process, the equity risk premium should be narrower next year if things hold?

MS. COMSTOCK: Potentially. If equity expectations stay similar and we continue to see rates rise, we would see, you know, the risk premium.

MR. GOETZ: Just to make sure we're on the same page. The calculation of the expected equity return what's changing that more rapidly in the short term is the actual change in equity prices, because the long-term equity, you know, cash flow earnings and growth isn't changing as much; right?

MS. COMSTOCK: Yes.

MR. GOETZ: So to answer, Peter, you know, what would happen is if equity markets go down from here, your equity expected return will go back up again?

MS. COMSTOCK: That's correct.

MR. GOETZ: And that gap could stay wider. Because if you notice every day that bond rates go up, the equity market takes a hit; right?

MS. COMSTOCK: Yeah.

MR. GOETZ: I think that's what equilibrates that that's spread in this calculation.

MS. COMSTOCK: You're exactly right. You can see that the expected return might throw them close to six percent, to seven percent over the course of a year. That's due to drop in equity prices that we factor in...

Any other questions on assumptions? I'll hand it over to Phil. He'll get into the background asset-liability study.

MR. KIVARKIS: So Katie covered the background about capital market assumptions and how we set those. What I'll do now is preface the actual asset-liability study, so I'll talk about -- I'll give you some background on the what, the why, the how, and I'll talk about some of the analytics that we use when we conduct studies.

So for starters, you know, the what, why, when, and how, you know, asset-liability studies are intended to be comprehensive toolkits whereby you can consider the broad asset allocation for -- for the plan.

And the focus this afternoon will be is that 81 percent allocation to return seeking assets be ideal or should you consider modifying it up or down in some way, so that's what we'll consider.

Asset-liability studies are well suited for that consideration, because they -- they contemplate things within the context of the plan. So we'll talk not -- not only about portfolio analytics, we'll cover portfolio analytics, but we'll also cover asset-liability projection results, the projected financials within the context of the plan. So we'll talk about that.

Generally we like to see studies every three years or more often. You've been great with periodicity of your look at the -- at the asset-liability studies, doing them -- taking a look every year.

And then how are we doing it? We're going to look at trend lines into the future. So not just how it looks today, but rather how it's projected to forecast into the future.

And we'll examine not just the central expectation -- we'll examine the central expectation but also the tails and we'll be able to examine central expectation for the existing strategy. And we'll also be able to examine the tails of the existing strategy and compare that to potential other strategies up and down the risk spectrum so that you'll examine really the full spectrum of potential investment solutions.

We need to talk about the cost, the cost for the plan. What is the cost for the plan? It's going to be the payouts, the ultimate benefit payouts as defined by the plan.

So benefits paid, plus administrative expenses is going to be the ultimate cost of the plan. Now, how do you finance that cost? Well, you can finance that cost with a combination of funding into the plan and investment returns on that funding.

So -- so the cost of the plan ultimately becomes what you pay out and minus the investment returns of the fund, minus employee contributions. That's the cost to state for operating the plan.

When you think about assets and liabilities,

it's important to keep things in balance. So you have assets and liabilities, and they're big dollars. We'll examine them in just a moment.

Think about how your assets and liabilities are growing every year. Well, your liabilities grow every year due to new benefits which accrue to your folks that are accruing additional service and therefore their pension benefits are growing.

Your liabilities are also growing with an interest cost effect. That's effectively the -- every year that passes, you're one year closer to the payout of your obligation and it will naturally grow by the interest rate assumption, which is 6.8 percent.

So that's how your liability is growing every year. It's growing -- it's growing around eight percent a year. We'll look at the exact numbers, and that's about 6.8 percent of interest costs and a little over one percent additionally for new benefits which accrue to your people as they earned more service and thus more pension benefits.

That's how your liability is growing every year and of course benefit payouts come out the bottom end.

How do your assets grow every year? Well, your assets are growing with cash contributions into the fund and investment performance. And the key then will be, well, if your liabilities are growing -- let's say you're a hundred percent funded. If your liabilities are growing at eight percent per year, well, to stay in balance you need your assets to grow eight percent per year as well and that will keep things in balance.

In this case the plan's underfunded, which means the assets have to grow in even faster rate to keep up with the liabilities. And we've calculated that, and that number is going to be closer to the nines. It will be in the nines in terms of the -- what we call the asset hurdle rate.

You'll hear that term, the asset hurdle rate, again, that number is going to be 9.8 or so percent is your asset hurdle rate, and I'll -- I'll walk through the numbers in just a moment.

But that's really -- that's what we're trying to achieve. What we're trying to achieve is balance. And recognizing, you know, the value of the assets and the value of the liabilities, how do we keep those two numbers in balance? Well, the assets need to keep up.

And what's the rate that's needed of growth,

9.8 percent. Of course that can be achieved with some combination of funding into the plan and investment performance. We'll walk through the breakdown of those numbers, but that's really the -- the balance of assets and liabilities is why we look at that asset hurdle rate.

I'm not going to walk into the mechanics of the asset-liability modeling process other than to say we're going to run a stochastic Monte Carlo simulation analysis 5,000 economic trials over the course of the next 30 years.

And those economic trials are utilizing base economic factors, inflation forecast, interest rate forecast, market return forecast. And we're talking not just about the expectation, we're talking about the central expectation and also the tails of those -- what is the central expectation of interest rate -- of inflation and what are the tails of potential inflation. We're in a tail event on inflation right now.

What's the central expectation for interest rates and what are the tails, and then markets, you know, equity market returns, for example, expectation and tails. And those economic factors implicate the asset values that we project and the liability values that we project.

As an example, inflation of course affects your asset values, it affects your liability values as well to the extent people's salaries go up in higher inflation scenarios. And if their salaries go up in higher inflation scenarios, their benefits will go up, their pension benefits and retirement will go up as well.

So there's an implication on both the assets and the liabilities, and our model contemplates that when we're running our projections of assets and liabilities.

This talks about risk and return, not just in the asset-only context, but also in the asset-liability context. What's the traditional risk versus reward is, you know, your standard portfolio theory, what's the portfolio's expected return versus the portfolio's volatility in a vacuum.

We study that, but what we also do is supplement that analysis with asset-liability analysis, what's the -- how is the portfolio projected to look in a risk versus reward space in terms of your pension plan's financials, what's the expected funded ratio and what's the downside

funded ratio, what's the expected contributions versus the downside contributions.

So we're going to examine things not just in a portfolio theory context, but also in the asset-liability context so you have a framework for thinking about things as it relates to the plan.

Some of the things that we're going to think about ultimately what's the right allocation between return seeking assets that is your risky assets versus your safety assets or risk reducing assets. 81 percent return seeking today, is that the ideal or not, that's what we'll examine.

And what are the things that -- that factor into the decision of risk versus reward, well, time horizon is a big one. Right. If you're a short-term investor you're probably not taking a lot of risk. If you're a long-term investor, you have a greater propensity to tolerate risk in an investment portfolio. So time horizon is a big one. Pension funds are generally long-time horizon investors.

Characteristics of plan participants. If you have a younger population that's -- that's farther away from collecting their pensions, well, I mean, you have greater time horizon, right, so the characteristics of your plan participants play into that as well.

Funded status. To the extent the plan -- if the plan's underfunded, maybe there's a greater utility for upside. If the plan were well overfunded, perhaps a lesser utility for upside. So the funded status can play a role.

Then the nature of the plan benefits, so are the plan benefits tied to inflation, for example, so that might come into play as well as we contemplate the investment strategy of the fund.

Some of the limitations of asset-liability modeling. Well, we know that asset-liability studies are a good tool to use in determining the -- the return seeking versus risk-reducing assets.

The -- that question, you know, what's the right mix of return seeking versus risk-reducing asset, that will -- studies have found that that -- that will define over 90 percent of the variability of the fund.

So taking this top-down approach it's -- this is a really important question that we're asking, and ultimately, you know, that -- that question of 81 percent return seeking, that will have a great

impact on the results going forward in terms of the projection of asset -- asset values.

We can also capture because we're running things stochastically, running 5,000 economic trials, we can capture likelihoods of various outcomes. So for example what's the likelihood of becoming fully funded in the next 10 years or 20 years or 30 years, we can run those statistics because we have the data in our models.

Then of course the last thing to keep in mind is these -- these models aren't fool proof for all, knowing of course there are potential black swan events and let's keep that in mind just as a caution against overreliance on these quantitative models.

All right. I know that we're getting close to the bottom of the hour. I just wanted to tee up some of the things that we'll talk about this afternoon. So I'm not going to spend a lot of time, but I am going to just show you some of the things that we intend to cover this afternoon.

Hurdle rate analysis is what I had teed up earlier, that's your liabilities growing around eight percent, the plan's underfunded, the asset hurdle rate is going to be something closer to 2 and the 9s, and we'll look at that at the starting point of our study.

How do we run the asset-liability simulations? Well, we run, you know, the economic projections 5,000 times over over a period of 30 years.

These aren't their numbers by the way, this is just an illustration. But just to demonstrate how we run it, you can see we start with a single simulation, right, we do that 5,000 times over. And so you have what effectively amounts to a cloud of outcomes for a variety of economic factors.

And here we're showing funded ratio projections, so you can see that the cloud becomes really difficult to interpret. And so what we do is we'll boil that down into various percentiles to make sense of it all, to say, look, the black dotted line is the central expectation, and then you have tails around it. Green -- green tails being the upside tails and blue tails being the downside tails.

So there's -- we don't know what results await us, but we know that there will probably be uncertainty and it probably lies somewhere in this distribution. Let's recognize that central expectation, but let's also recognize the

uncertainty around that central expectation.

We'll also look at, you know, some short term and long-term projections. So here short-term funded ratio projections over a one-year period and you can see that -- by the way, these are numbers from last year's study. So these were actual numbers from last year. Good news is the forecast for this year looks a bit more robust than last year.

But here we're examining short-term funded ratio projections. You can see that we examined across the page the 81 percent return-seeking portfolio, which is the current.

And you'll see going from left to right, we've examined 60 percent return seeking, 70 percent return seeing, 80, 90, and 100 percent return seeking, so we're examining a wide range of potential portfolios.

What does it do to the funded ratio projection? You can see the funded ratio is projected to get around -- in this case, it was 95 percent was the central expectation. And with tails around it, it could go as low as 67 percent in the worst case, as high as 125 percent in the most extreme best case.

You can see there, you know, the tails as you go from left to right widen as you would expect. The central expectation shifts up a little bit as well, so you can see the black diamond is the central expectation.

So your central expectation is shifting upward and your tails are widening as you're moving from left to right. That's the effect on the plan of taking risks between 60 percent return seeking and a hundred percent return seeking.

Now, to put that into broader context, to take it from the one-year look to a multi-year look, this is what it looked like when we ran the study over a 30-year period last year.

And you can see that we've studied again the 60 to a hundred percent seeking across the page. The current policy is 81 percent, and you can see what the projections looked like last year.

The black dotted line is the central expectation and you can see that largely moved sideways. It wasn't exactly sideways. It started slightly lower and then moved slightly higher over time, but it ended at around 102 percent funded in the expected case with tails.

And those tails are important, because you can

see the most downside tail was below 40 percent, whereas the most upside tail was north of 200. So there are tails around the central expectation.

Nonetheless, you can see as you move from left to right what happens to that central expectation. Right. In the 60 percent return-seeking portfolio that central expectation for funded ratio was dipped to 77 percent.

As you move all the way to the right side of the page, the hundred percent return-seeking portfolio go to a funded ration of around 130 percent. It did seem like the current policy was just about the right mix based on it landing at a hundred over the course of a period as compared to these other potential solutions. So we'll examine this -- the new numbers for this year in -- in our discussion this afternoon.

The same thing with contributions. I'm not going to belabor the point. We studied projected contributions for again 60 percent return seeking through a hundred percent return seeking. The middle one is the current policy, 81 percent return seeking.

So what do the total contributions look like? We -- we can examine the impact of different scenarios, like inflation. Inflation is high. It's high interest these days. And so we can break down our stochastics to examine specific scenarios such as inflation.

We also study liquidity of the fund. So here we're going to stress test the liquidity of the fund to see if in the worst case scenario does the fund retain sufficient liquidity to remain operable.

Well, this is important, because if we're talking about pushing further into illiquid assets, well, we don't want to push so far into illiquid assets that we risk the fund's operations because of illiquidity. So the good news is we've examined it. We find that there's sufficient liquidity. We'll show you that this afternoon.

And this is how we do it. This is how we study it, basically say, What does it look like in base case, which is smooth and steady as she goes, things grow, you know, as the expectation.

But what happens in the most pessimistic cases, the dark skies' case. This is a 99 percentile bad outcome by the way. And what happens to the assets? Well, sure, they drop.

But the green slivers are the liquid slivers

of your portfolio. And do you retain liquidity? The answer's yes. Fund retains liquidity, it retains the ability to fund operations with liquid assets. Again, these are numbers from last year. You'll see similar numbers this year, sufficient liquidity even in the most stressed of cases. And then --

MR. COLLINS: Can I ask a question, Madam Chair?

MS. CANIDA: Yes, please.

MR. COLLINS: So you're saying that under even the dark sky -- the dark sky and the base FRS, if I'm reading the chart right, we have 20 percent liquidity?

MR. KIVARKIS: Allocation to -- there are various forms of liquidity, so there's actually -- you can read across the top of the page. The darkest blue is the most illiquid, right, with time horizon basically 10-plus years. Then the lighter blue is liquidity between years 5 and 10. Then the gray is what we call quasi liquid, which is liquidity in less than five years. And then -- and then liquid return seeking, that's things like public equity and liquid risk reducing, which is your core fixed income.

MR. COLLINS: That's the top 20 percent, that's the dark green?

MR. KIVARKIS: Yes. That's right.

MR. COLLINS: So it's difficult for me to understand their risk given that everything's liquid to some degree. In the dark skies what -- is there -- do we have enough for like a run on the pension fund -- if the market falls 20 percent tomorrow, but where does that come from? Are we -- we dipping into illiquid assets and taking big hits to create that liquidity or are we selling equities even if it's a loss, but we're creating liquidity that way? I just don't -- I don't understand where the risk is.

MR. KIVARKIS: Sure. Thank you for the question.

And the answer is you're not forced to tap into the illiquids, and that's what we're testing. What we're testing is are you forced to tap into your illiquids and the answer is no, based on this analysis.

Because you have green -- in the bottom right-hand corner, that's the asset allocation in percentage terms. And what you see is there is still a very large portion of the portfolio, which

is green, which is liquid.

MR. COLLINS: Which would be at least 50 percent is liquid, in your worst case scenario?

MR. KIVARKIS: Exactly. That's right. That's right. I have seen by the way for other clients grafts in that bottom right-hand corner which go all blue in the most extreme cases.

MR. COLLINS: Really?

MR. KIVARKIS: Yes. And those are the ones that are concerning and that's why we -- that's why we run the test.

MR. COLLINS: So as we get into the asset allocation discussion, right -- this is my whole conversation about debt in the portfolio. Right.

At 15 percent debt, there's very little risk in our real estate portfolio. At 30 percent debt, there's very little risk, but you get to a point where there's a tipping point. Right.

I've been trying for 10 years to find somebody to tell me what -- where that tipping point is and we still can't get there, but...

If we're worst case scenario, we're still -- we're not tipping into illiquid assets and we've got 50 percent liquidity, that should drive some asset allocation discussion relative to return seeking, right, and risk, right, and the size of the risk budget? Maybe we're too conservative.

MR. TAYLOR: That's a good question. One thing I guess maybe asking Phil to point out as well. Particularly in these liquidity scenarios when you get a year or two out, there's also some assumptions that once this funding level becomes the way it is, that there is -- there are built-in assumptions that factors into future contributions. And so there's the assumption built into this model is that contributions are also going up.

So, yeah, asset values have gone down. Liquidity is still maintained, but it has a price and that is increasing contributions which helps keep us liquid as well. So --

MR. COLLINS: So under your worst-sky scenario, you're -- you're assuming the government's coming in and making -- making it up to some degree?

MR. KIVARKIS: Yes, in that if you --

MR. COLLINS: I don't think we should look at that, (talkover) hold that separately.

MR. TAYLOR: That's kind of the -- a lot of these things work together in -- and that goes back to some of these charts -- the contribution chart

that you showed, which has like the five graphs and looks like -- a lot of that when you start going back and -- the impact of these contributions, it's a risk factor when we're looking at returns versus risk, the cost versus the benefits, so to speak.

When we get into the actual asset liability, you'll see that what we're trying to get to is from a bottom-left corner on an asset-allocation basis that helps reduce future costs, i.e. additional contributions but that also doesn't increase risk to the point we're having to really take on this risk of ruin, which is these sort of massive potential contribution shock. So contribution shock is a risk that we're trying to mitigate in the fund as well.

So there's multiple things that are sort of playing out here. When we look at these, it's not just the impact on the asset valuation. There are some additional assumptions I think we need to keep in mind and one of them is increasing contributions are a byproduct of the risk that we take.

MR. COLLINS: That's what I wanted to try to keep in mind.

MS. CANIDA: Phil, I also have a question along those lines. If you look at the light green, I mean, the more liquid, public equities, et cetera, I mean, you also have to, your point, factor in a cost of where you -- you might have liquidity but at what cost, right, the market's down 30, 40 percent and you have to -- you know, you have to sell those to get liquidity. There is -- there could potentially be an implied cost there that's not really reflected here.

MR. KIVARKIS: That's right, but we do reflect that. We can run this type of analysis stressing not just the markets but also your funding. So let's say -- let's say we had a very bad market backdrop and let's say the funding sources became stressed, we can model that as well, so in other words bad markets and bad funding backdrop.

So we can model that as well to show what happens in not just a stressed market event, but stressed market which then implicates the ability to fund into the plan.

By the nature of the -- of the funding, you know, when the funding ratio goes down generally speaking contributions go up, but that's -- you know, sometimes that's tested, so we can model that as well.

MR. NEAL: Madam Chair.

MS. CANIDA: Yes.

MR. NEAL: Just briefly so that we can understand the magnitude of the net employee contributions of the net state contributions.

Certainly there's a slight positive employee contribution and then there's a commitment -- there was a commitment in the Scott administration to appropriate annual amounts to reduce the level of underfunded liabilities. I think it was about $125 million a year, but I don't know if that continues.

Is there net employee contribution and is there state appropriation...

MR. TAYLOR: There is an employee contribution. It's three percent.

MR. NEAL: I'm talking about there was a direct appropriation for the (inaudible) fund for a period of years.

MR. TAYLOR: I have to do some research on that, because I'm not familiar.

MR. NEAL: You (inaudible) there wasn't, so the answer is there's not any general appropriation except to the extent that we increase the employer share of the contribution?

MR. TAYLOR: That's my understanding. Again, I know DMS and they have -- here they have some more expertise. My understanding is when it goes to appropriations in the past, it's fairly -- it's been hard for me to kind of parse this out.

In the past there has been some -- there has been some funding of I believe school district portion of the liability. I think that has -- that has gone away. I think that has sort of fallen off so that now from the state appropriation perspective, my understanding is that they're only appropriating from the state's portion of the FRS and they're also not sort of subsidizing effectively, and that might be the wrong word to use, but there's not an additional appropriation for...

MR. NEAL: Can you just tell us the magnitude of the cash flow of the system from contributions. Is there net 2 or $3 billion a year?

MR. TAYLOR: Well, I think we -- we -- we receive about -- right now about $4 billion in contribution total. State's 20 percent. Roughly 17-and-a-half percent of that 4 to $5 billion number, we pay about 11 and a half million dollars in benefits.

So on a net basis, that's what we, the state board, is making up is that $7 billion

differential. And the payments every year is what's coming from investment earnings or if we have dark skies, we might dip into principal.

MR. NEAL: I'm sorry to belabor this. Total contributions are X and benefit payments are Y. Is that positive or...

MR. TAYLOR: That's negative. We're negative cash, net outflow negative.

MR. NEAL: Did you say 4 billion paid and 11 billion --

MR. TAYLOR: 4 billion coming in, 11 billion coming out. That may be increasing a little bit. It may be like four and a half maybe coming in, 12 billion going out, but that's about the right...

MR. GOETZ: So if I could just ask a question on construction, you know, scenarios, because we're kind of focused on the dark sky because that's a fifth percentile outcome.

When you construct the simulation are there then correlations between the negatives that are historical? I'm just curious, you know, the construction of the dark scenario that we're focused on right now.

Because it makes sense if we thought the dark sky scenario brought illiquidity, we'd be terrified, and you said, no, that it doesn't, but it doesn't bring a cost Tere is mentioning.

Because I was involved in a couple situations in the GOC where liquidity ran out, they used public markets, and sold at like 50 percent losses, right, in the GOC.

So I'm more interested in should we worry that the five percent probability is more material than five percent tail. Do you see where I'm going with that?

Are there correlations? Like how do you -- is it historical? I'm curious how we actually put these things together.

MR. KIVARKIS: Yeah. Absolutely. That's a great question. So the answer is the tails are quite robust. The -- our assumptions for volatility and for correlations are generally historical based, but our model is regime based as well.

So in other words in -- in times of stress, the correlations tend towards one. Right. So when things fall as they did in the GFC, global financial crisis, they -- the correlations broke down. Right. Everything -- everything fell. The only thing that went up was treasury funds.

And so that's built into our model. We have robust tails, so what does that serve to do? It serves to exacerbate the tails a little bit, right, that you have -- you have in this stressed environment and even more stressed environment because, you know, correlations are breaking down. And so what does that mean, it means that the tails are stretched out a little further than the standard normal distribution might imply.

MR. GOETZ: That's what I wanted to know. So it is a stretched tail in essence because of that. Okay. Thank you.

MS. CANIDA: Any other questions for Phil?

Phil, are you done or you have some more?

MR. KIVARKIS: Interest of time, there were only two other things I was going to point to if it's okay. My apologies, I know I'm a little -- one thing was just to point out the historical long-term policy.

You can see here we've summarized the -- the asset allocation for over the past 15 or so years, starting in 2007 through year end 2021. And what's happened over time is gradual enhancement diversification. You can see the -- the allocations as they've evolved over time.

So what we're going to examine for today is that 81 percent allocation to return-seeking assets, that's the 53 percent to public equities, 18 percent is fixed income, that's the kind of the remainder number, 10 percent to -- 10 percent to real estate, six percent to private equity, and 12 percent to strategic investments.

So what we're going to examine is not those individual pieces this time. We'll examine those individual pieces next time. What we're going to look at today is the aggregation of those return-seeking sources. Next phase will be to examine kind of the breakdown of the 81 percent, so that's where we're headed today and over the next time.

And then finally, you know, the 2022 asset-liability results. You saw 2021 in this discussion. 2022 will be presented this afternoon. The question about 81 percent return seeking is what we'll ponder and then next -- next quarter is the -- is the breakdown of the 81 percent and should we consider modifying that. With that --

MR. OLMSTEAD: Quick question.

MS. CANIDA: Sure.

MR. OLMSTEAD: In that next meeting, you will

go through and do sort of analysis on if you reallocated to PE or real estate, et cetera, on what not only the implications are but all the dark skies and the other...

MR. KIVARKIS: That will be more portfolio analysis rather than a deep dive asset-liability projection analysis. We could run -- fire back to the model and see what it looks like in asset-liability terms as well.

MS. CANIDA: Any other questions?

Thank you, Phil and Amy (sic), and this will really serve us well this afternoon as we go into a deeper dive. Thank you.

Lamar, over to you.

MR. TAYLOR: Thanks, Phil and Katie.

So this is -- we'll turn this over now to Matt Larrabee. I guess is on the -- virtually. Again just asking indulgence of the council. We may sort of slide into lunch for like 15 minutes or so, if that's okay, but we'll turn it over to Matt with Milliman. Milliman is the state's actuary.

So in terms of -- actually works with DMS and is the consultant and provides the official numbers for the legislature in determining the contribution rates for the FRS. So they are authority when it comes to what the liability is.

With that, I'll turn it over to Matt.

MR. LARRABEE: Thank you, Lamar. Good morning, members of the council, Madam Chair.

As Lamar mentioned, my name is Matt Larrabee. I'm with Milliman, which is a large -- large multinational actuarial consulting firm. We are retained by DMS to do the annual work for the Florida Retirement System, provide the official numbers to the legislature, and I have personally been working with FRS for about nine years right now.

I'll try to be very cognitive of time. I know this is an informational (inaudible) -- is there a question there? No. Okay. So I've got a limited number of goals I hope to get across to you all today.

I'd like to give you kind of a quick overview of the role that we play as a systems actuary, so a quick overview of the work that we do. That importantly -- and there was some mention in the last session with Aon about plan funding. Milliman calculates the recommended funding rates for employers, which help provide long-term funding stability to the program. So we'll talk a little

bit about that.

And then all of our calculations are informed by key assumptions. Two of the most prominent ones are investment return and inflation. Aon will certainly be talking about that quite a bit more this afternoon as they continue in session, but I wanted to give you a little bit of perspective on what we do as well in the role that we play.

So first chart I have here is actuary (inaudible) process. We love data. So this is kind of a pictorial, pictograph of the annual process that we do to conduct the actuarial valuation.

We get a lot of data, that's highlighted by the green, we get census data, and we get asset data. Both balances and transactions during the year. We get that through the Department of Management Services and the SBA.

Then we take that data, review it for consistency, correctness, things like that, and then we need to apply a significant number of assumptions. Those assumptions can be economic in nature thinking primarily of investment return expectations, the 50 percentile going forward.

There's also a lot of demographic assumptions that we have to make. This applies to both active and retired members. Active members there's a lot more assumptions. What's the likelihood someone will continue working until retirement age. If they do, what age will they retire. Will they enter what's called the DROP program or will they retire immediately. What will be their annual salary increases for members, so that we can project their pay at time of retirement.

On the retiree side, of course we're looking at primarily mortality. When someone has commenced their benefits under the pension plan, how long do we expect on average that a retiree at a given age and gender and work classification will live.

There's also actuarial methods. These are things like how we allocate costs across a working career. There was a mention in the prior section about amortization of unfunded liabilities. A key actuarial method is how do we attack that unfunded liability, what period of time over which do we try to address it through the actuarial calculated contribution rates.

All of those assumptions and methods are controlled by what's referred to as the FRS actuarial assumption conference. It's an annual

conference that's held typically in the Senate building. It's -- SBA comes and speaks at it, I speak at it, Aon has a representative that speaks at it, and that conference has a representative from OECD. The legislature of the House -- of the Senate, House, and the Governor's Office and they hold the statutory authority to set assumptions and methods for calculations every year.

That meeting typically takes place in October, so we expect to have -- don't have the date yet, but expect to have that take place in October 2022.

And then we come back at the start of December based on the input that we have from the conference and we issue our final report and that includes the actuarial determined contribution rates that we recommend to the Florida Legislature.

And then the legislature, it's their choice about whether to adopt those rates or adopt a different set of rates to fund the program over the long term.

Next slide. So take those data coming from SBA and from DMS, assumptions and methods that's provided by the conference, and then the planning system provisions, and those are the benefit provisions, and those of course are set by the

Florida Legislature. They're laid out in law.

We take all those items, apply professional expertise. We come up with year-by-year projected benefit payments. Discussion in the prior section -- session about liquidity, projected benefit payments are a key input to that liquidity analysis. And then that -- those projected benefit payments year by year, we come up with a couple of key metrics shown on the right of the slide.

Funded status, which is really just the ratio of assets on hand over liabilities today for service already performed, those actuarially determined contribution rates that are paid by employers or recommendation, and then because some of the program in the system is of significant size, not just at a statewide level, but participating employers, we also prepare a lot of financial reporting information for balance sheet liabilities so that we can have properly audited financials for each and every participating employer in the system.

So little bit more on the projected benefit payments. We get significant amount of census data for actives, retirees, folks that have left active service and haven't started their benefit but have

a vested right to a future benefit. We apply a lot of those key demographic assumptions that I mentioned.

And in terms of the demographic assumptions we use, FRS pension plan is a very large system. We have over 1 million participants, and so we set the demographic assumptions based on what we see for actual experience specific to FRS and we review that in detail every five years as part of what's called an actuarial experience study, do that deep-dive data analysis and then make recommendations to the FRS assumption conference and they adopt or modify those recommendations as they see fit.

So I mention the benefit payments in several slides. I really feel this is the core of the actuarial work and this certainly has significant input in terms of some of the liquidity analysis that Aon conducts.

What you see on the slide here is a year-by-year projection over a 70-year period starting in 2021 for what I project will be the annual benefit payments out of the pension plan, the defined benefit program. And it's color coded here based on what the member's status was as of

July 1st of 2021, which is our last snapshot date for the valuation. This year's valuation is currently in progress.

You can see our retired members are here in gray. They're a little bit above $10 billion in benefit payments right now. As you slide to the right of the chart, there's a couple things to note.

Folks that are currently active, will start to be the majority of benefit payments when we get 15, 20 years down the road. Also the benefit payments, and these are shown on non-inflation adjusted dollars. We're in that 11 to $12 billion payout range right now. We would anticipate that over a 20-year period those will climb up to about $20 billion dollars of payments.

One of the things that can help a little bit and provide some stability in terms of liquidity analysis is that these benefit payments are fairly predictable. So even if we have significant amount of turbulence in the investment markets, that turbulence in the investment markets is not going to have a direct and substantial effect on our year-by-year benefit payments from the program. So there's a little bit of balance, if you will, I

think from the demographics that underlie the pension program.

So those benefits payments (inaudible) the years, we then take those 70 years plus in benefit payments. We bring them back today to calculate a present value. We use the investment return assumption as the discount rate.

Currently our investment return assumption is 6.8 percent and we really take that overall present value and we break it up into several pieces. The biggest piece is what we refer to as the actuarial liability. That is the portion of the present value that is allocated to serve as already performed.

So someone's retired, all of their present value is in the actuarial liability. If someone is active and they're halfway through their projected working career, half of their present value will be in the actuarial liability and the rest will be for projected future service, what we refer to as the normal cost.

The normal cost is an actuarial term of art. And really what it refers to is the kind of contribution cost that we attach to the benefits being earned by this current year of service.

Do all that work and we establish what we refer to in next month's conference as our 2022 preliminary results. In essence we will know -- we already know what the actual investment returns are for the fiscal year that ended in June of this year. We know the demographic census. We have that data from the Department of Management --

(Clarification of the record)

MR. LARRABEE: So we take -- we get our preliminary results, actual returns on the investment side, updated census as of the middle of this year, which is our snapshot date of the demographic census, and then we take last year's assumptions and methods that were approved by the conference, and those were informed by really the last experience study that we conducted, and we come up with preliminary results and then we discuss with the conference principals if they would like to reaffirm the current assumptions and methods or alternatively if they would like to consider changing some assumptions and methods.

And if you change assumptions and/or methods, you're going to change valuation results, you're going to change funding status results, you're going to change your actuarial calculated

contribution rates.

So biggest volatility that we have in the actuarial calculations typically is going to be on the investment market side. We have an assumption that the conference adopts every year based on advice from Aon, based input from SBA, based on advice from Milliman about what our average future return will be after the valuation date.

But of course actual returns every year in the markets can and will be volatile. This is illustrated very well by the blue bars in this chart, which show a period from 1993 through 2021 for the pension plan.

The blue bars are the market value of assets from the program, and you can kind of quite evidently see here the decrease that we had in assets, for example, between 2008 and 2009. You can also see the big runup we had between 2020 and 2021 due to very strong investment returns during that year, a plus 30-percent return.

So to help stabilize contribution rates rather than calculating contribution rates for the pension plan cited in the ledger every year based on the blue market values, instead we use what's referred to as a smoothed actuarial value of assets, or AVA.

The smoothed actuarial value of assets is shown by the orange line in this chart. You can see it provides significantly more stability and methodologically what it does is any given market return year, we're going to see, okay, what was our market return, how does that compare to the assumed return, and then the difference between the two, which would be an actuarial investment gain in a good year or an actuarial investment loss in a poor return year.

We're going to systematically recognize that gain or loss over a five-year period. This is a widely used technique and it's kind of built on the theory that good markets tend to follow bad and vice versa.

So quite naturally gains and losses in the market side of the ledger, the fair market side of the ledger, will to a great extent cancel each other out in a smoothed measure that's used for funding calculations so that we don't have as much volatility in our year-to-year actuarial calculations.

Importantly as noted on the bottom of the slide here when we did our last measurement in July of 2021 because of that big runup, our market value

assets was $27.2 billion above the smoothed asset measure we used for the funding calculations.

So while we had, you know, like with the rest of the markets unwelcome and poor returns during the fiscal year ending in 2022, we did not really take much credit for what happened in 2021, so we got a cushion that's built up for the rough patch of waters that we saw in 2022.

So diving in a little bit on the smoothed and fair market asset measures, the blue bars here show where the fair market assets were for the FRS pension plan at the last two completed valuations -- 2021 shown on the right, 2020 shown on the left.

You can see that we had a $40 billion runup in in the pension plan's fair market asset value. We went from a little over 160 billion to a little over 200 billion.

However in the terms of our smoothed calculation, our smoothed asset value calculations, we have much more stability. We started at $164 billion of smoothed assets for our 2020 contribution calculation measurements. And we have the good returns in 2021, but we did not reflect most of those good returns. So our smoothed asset measure, we moved that only up by about $10 billion.

What will that mean when we get to the conference results for 2022, our fair market value obviously will come down again, but our smoothed asset value is likely to modestly increase as part of that systematic kind of deferred recognition over a five-year period smoothing method for investment gains and losses compared to the long-term assumption.

So a lot of talk about funding in the prior section, and there will be -- certainly be a focus of some of the ALN work that Katie and Phil and the folks at Aon are doing in your afternoon presentations.

So actuarially determined contribution rates for the pension plan really just have two components and they serve distinct purposes. The first component and it's the more stable of the two is what's referred to as the normal cost rate.

So we have a cost allocation method and we try to have a normal cost rate that spreads costs across the members full projected working career as a level percentage of projected payroll, so it's --

MR. TAYLOR: Matt, just slow down just a bit

more.

MR. LARRABEE: So the normal cost rate, I think of it as almost actuarial scoring for the value of the employer paid piece of the benefits that a member is earning every year in the program. It's a really good proxy for the value of the benefits being earned today.

That ties to the membership class, because we have different levels of benefits, for example, for our special risk members. Those are folks like fire and police and corrections than we do for some of our regular class members, which are more kind of general service employees. Then we have different benefit levels and different normal cost rates for folks that are in senior management or in judiciary or job classifications like that.

The second component of our actuarial contribution rate is what's referred to as the unfunded actuarial liability, or UAL, rate.

As noted on the slide here, every year we establish funding status. And then to the extent that assets are above our accrued liability -- sorry, accrued liabilities are above our assets, we calculate a rate that is projected.

If future experience follows assumptions both on the investment side and on the demographic side, what contribution rate would we need to make in order to systematically get the system back to 100 percent funded status over a specified amortization period.

So it's kind of a financial solve for type of calculation and that one is going to be more variable in nature because a decent amount of the unfunded liability is going to depend on what has happened, actual experience in the investment markets after applying that asset smoothing method compared to what we assumed was going to happen.

Couple of key assumption -- a key assumption and a key method are involved in that UAL rate. A key assumption, it's general wage increase. We are trying to calculate contributions for the system so that they remain stable as a percentage of payroll, so kind of a fringe rate on top of salary, if you will.

To try to have a stable projection there, you need to make an estimate about what we think the payroll for the Florida Retirement System as a whole will do year over year.

The other key method, and this is where the conference gets in the way, and I'll talk about

this more in a subsequent slide, is the length of the amortization period. Almost you can think of it in a way like mortgage.

A 30-year mortgage is going to have a lower payment but a longer payment period and more total payments. A 20-year mortgage in contrast will have higher payments, but those payments will end earlier.

So where the conference chooses to select that amortization period is a key input as well and with some very good advice from folks at SBA. There have been some changes on that front that I will get to in subsequent slides.

MR. NEAL: Madam Chair or Mr. Larrabee, it says that first year of adoption of the 20-year amortization of funded liability was last year, 2021.

My question is -- kind of is is that really true and, two, was that by direction of the actuarial assumptions conference or the legislature or someone here? How is that adopted? Who made the decision?

MR. LARRABEE: So, yes, I'll go ahead and answer that. The -- it is correct that 20-year amortization was first adopted in 2021 and that adoption was made by the assumption conference, which holds the kind of statutory authority to set methods and assumptions from my calculations.

And that 20-year amortization period was in my view was a more conservative approach. It was an improvement over historical practice. I mentioned that I started working with FRS about nine years ago. Nine years ago we had amortizations at 30 years. So getting them to 20 years is a pretty key threshold.

Because 20 years, given we're doing this as a level percentage of projected pay rather than a level dollar amount, we're avoiding negative amortization projected to happen, and this is something that was done -- well, it was done by the conference. It was done with certainly strong encouragement from SBA, and certainly we were very happy.

In my role as the actuary, I would encourage systems to be at no longer than -- no longer than 20-year amortization.

Here's a slide that mentioned the 20-year amortization was first adopted in 2021. Importantly when this adoption was done by the conference in 2021, we already had previously

established amortization basis that had 26, 27, 28 years left to run. And as part of its adoption of this new policy in 2021, the conference said any tranche that has a remaining amortization period of more than 20 years, we're going to go ahead and shorten that down to no more than 20 years right now.

As I noted in my verbal remarks on the -- in response to the question, this avoids periods of net negative amortization for each of those tranches.

Another key method change that we have -- this is another one where I would like to give thanks to SBA, both director and staff, is in terms of that cost allocation method.

Cost allocation method is an actuarial term of art that is really how do we take that present value for the overall projected benefits for a current active member, we know where they are right now, where do we think they'll be at the end of their working career, when will they start their benefits.

That cost allocation method is really the slicing mechanism to determine the normal cost and the accrued liability. The normal cost being the value of the benefits this year. We score it. We moved -- the conference moved to what's referred to as individual entry age normal. They did that in 2019 based on encouragement from SBA, myself, and DMS. That lines up our calculation methodology for doing the funding calculations with what is mandated for the financial reporting calculations.

It also draws a distinction between the benefits and the pension plan. You have Tier 1, which are folks that entered -- entered the pension plan prior to mid-2011. And we have Tier 2, who are folks who entered subsequent to that.

Those members have differing retirement eligibilities, differing levels of COLA available, and by adopting this method we have differing -- at an individual member level, differing projected cost rates for our Tier 1 pension members versus our Tier 2 pension members.

So this is a slide here that shows kind of a summary of our last two actuarial evaluations, which are really snapshots of assets versus liabilities. So I've got 2020 on the left, 2021 on the right.

Preliminary 2022 results will be presented to the conference next month and finalized results

will be published in December based on the conference's assumptions and methods decisions.

What can we see here? Well, we can see that the liabilities in 2020 were about $200 billion for the pension plan. They went up to a little bit under $210 billion. That was about five -- five percent growth in the liability level. There were two drivers for that.

Naturally we expect liability to go up somewhat over time as we have more retirees, new actives enter the system. Our current actives are earning additional year of service, but there was one additional thumb on the scale on the liability side and that's kind of shown towards the top of this chart.

So I mentioned that we use the investment return assumption as the discount rate assumption as the discount rate.

Well, when we did the 2020 valuation, the conference adopted a seven percent investment return assumption. When we did last year's conference in October of 2021, the conference adopted 6.8 percent return assumption. If you lower your discount rate, you increase your actuarial liability.

The asset line shown on these two slides, there's about a 10 million -- $10 billion climb from year over year, that's the smoothed actuarial value of assets. So while our actual market value of assets in July 2021 was in excess of $200 billion. For purposes of the contribution rate and funded status calculations, we use the lower smoothed actuarial value of assets. That's one of the orange bars from my chart. It was $175 billion. Funded status, which is assets over liabilities, went from 82 percent to 83 percent.

So thinking ahead to our 2022 preliminary results, I think that that funded status even with negative return in 2022 due to the asset smoothing methodology, I think our funded status will remain very much in that 83 to 84 percent neighborhood, because we'll still be systematically recognizing the good investment results we had in 2021 as we start to recognize the poor investment results in 2022.

So all the prior slides are all materials that I could present to any pension system regardless of size, statewide, county, small local, special district, something like that.

Something on this slide going forward it's

fairly unique about FRS is the fact that we calculate what I refer to as blended proposed statutory contribution rates versus y'all know members in FRS have two systems -- two plans they can choose to participate in. They can participate in the pension plan, which is defined benefit, or they can participate in the investment plan, which is defined contribution.

Each of those two programs has their own cost rate. The pension plan cost rates are calculated by me in my role as a system actuary. They're going to vary annually due to some of the things I've discussed with you on prior slides.

Actual returns will affect the rates. Assumption changes, method changes can affect those calculated rates as well. The investment plan rates are more stable. They are set by statute. That's the nature of the defined contribution program.

In terms of what we turn around and hand off to DMS and then gets handed off to the legislature, we take those two rates and we blend them based on the payroll ratings to come up with level rates for each and every membership class in the system.

So regardless of member in a particular class, say we have a teacher who is in our -- what's called regular class, teacher for a school district, that teacher's contribution rate that they will contribute to FRS will not depend upon whether the teacher chose to be in a pension plan or the investment plan, they will get charged the same rate. And that rate is blended and it's based on the observations that we see for a given fiscal year about what percentage of each membership class is in each plan, if you will.

This provides a more stable funding platform for the system, and I think there was some discussion from your general counsel about wanting to provide kind of independent clear advice from members when they're selecting plans. This structure also means that there would be no financial incentive for an employer to steer an individual employee to one plan or the other, because the cost to that employer is going to be the same regardless of which plan the member chooses to participate in.

So this grid gives you a sense at a composite system level, so weighing all of our membership classes for the proposed statutory rates that we developed last year as part of last year's

valuation, those rates went into effect July of this year. So they're running from July of 2022 to June of 2023.

You can see on the normal cost rate column that is the value of the benefits. I would say that our composite employer normal cost rate is 7.77 percent of payroll. That's about where I score the value of the employer portion of the new pension plan benefits that are being earned. Investment plan is 7.64 percent, so those are very close to each other.

The Florida Legislature improved the investment plan level benefits significantly in 2022. They raised those up by three percent of payroll.

So at a system level, our value of benefits on the employer paid portion of benefits is between seven-and-a-half and eight percent on the employer paid side and then there's also the three percent employee contribution as well.

So you can think of the overall benefit package at the system level as being between 10 and a half and 11 percent with about three quarters of it paid by the employer.

Next I move to the UAL rate column. UAL rate is really that catch-up rate to get where we want to go, which is to be -- get rid of (inaudible) liability systematically over a 20-year period. I calculate that for the pension plan and then I blend it with the investment plan payroll.

Our current catch-up rate is 5.80 percent of pay. You combine those two together, you get that bolded 13.54 percent total employer rate. At a system average level, that's what employers are contributing to the system and it is designed both to fully fund new benefits as they are being earned and to deal with any unfunded liability from the pension plan over a 20-year period.

So that was kind of an overview of the blended rate structure and rate calculations. The last item I'd like to touch on briefly are assumptions, particularly the investment return and the inflation assumption.

Every year at that assumption conference SBA, Aon, and Milliman all take a turn providing their advice and opinion to the conference principals before they make their deliberations.

When we conducted the meeting last year, Aon using this blended SBA approach outlook model had an outlook of 6.13 percent as its median return.

Milliman has its own investment professionals and we have an outlook model. Our outlook model was 6.67 percent. So those were kind of two key outlook models that were presented to the conference last year. Bearing in mind that the year prior to that, the conference was a seven percent return assumption.

Based on that input and based on discussion, the conference lowered its assumption last year. They selected a 6.8 percent investment return assumption, which was pretty close to the Milliman outlook at the time, and a 2.4 percent assumption for long-term average future inflation.

So really I use kind of that mathematical formula multiplication formula you can see on the slide here. And if you know what your investment return assumption is and you know what your inflation assumption is, you've effectively picked an inferred real return assumption.

The conference -- conference effectively selected a real return assumption based on last year's outlooks of 4.30 percent, so return, in excess of inflation forward looking over the long term.

One of the key things of course that's

happened with these outlooks, these were based on outlooks a year ago, is we have the -- kind of a pretty significant beat down on the equity side, decreases in price-to-earnings ratios, and, you know -- and fixed income yields went up. That's going to affect kind of -- it's near-term fixed income losses but better prospects for fixed income going forward. That (inaudible) is going to affect forward looking outlooks.

So this slide kind of shows where on Milliman's perspective and things we anticipate presenting at the conference next year. Last year the conference selected a 4.3 percent real return.

Milliman updates its outlook every six months, so we updated it based on market conditions of June 30 this year reflecting the equity losses we've seen and the fixed income losses we've seen yield increases. And what we see is that our 20 and 30-year outlooks are both above the conference's real return assumption right now.

Our 10-year outlook is a little bit more on the conservative side. We're about 4.1 percent. This is an outlook that we'll provide to the conference.

I do when I make my remarks to the conference

make it quite clear that I think Milliman's, kind of in a medical sense, Milliman's opinion on this is decidedly secondary or tertiary compared to that of Aon and SBA who understand and control the investments to the system.

On the inflation side, the conference adopted a 2.4 percent long-term inflation assumption. The advice that I provide to the conference on that front is I kind of look at the Social Security trustees' long-term intermediate outlook as my North Star and kind of center of gravity.

Social Security trustees issued their report couple months ago. They are holding at 2.40 percent. You can also get inflation outlooks from CBO. CBO issued their report in July. You can get an implied market expectation for 30 outlooks by comparing treasury and TIPS yields.

Milliman has its own outlook. A lot of our inflation outlooks are lining up with 2.4 percent. So while the conference holds the statutory authority to make any changes they see fit, I would say there doesn't seem to be any compelling case for example to lower or even necessarily increase the inflation assumption during this year's review.

And then the final slide that I have before in case -- before we take any additional questions is I think there's a natural tendency for big systems such as FRS to not want to act completely in a bubble. Be cognizant of what your peers are doing and this chart really shows on that key investment return assumption what are FRS' true peers doing.

From top to bottom here, I've got the sixth largest pension system in the country, two systems from California, New York state employees, New York city employees, and then the Texas teacher system. These are all systems that are 200 billion to $450 billion in terms of asset size.

Top half of the chart shows where that investment return assumption was for each of those systems back in 2010. FRS was kind of right there with peers at 7.75 percent conservative to a couple systems.

Now we move to a decade later and where are we at, we're -- with the most recent change by the conference, we're at 6.80 percent. We're on the conservative side. We're on the conservative half of groups.

But this idea of lowered expectations phenomenal returns and real returns, it's not just an -- and then kind of increasing present value,

decreasing (inaudible), higher actuarial calculated contribution rates and response to that. It's certainly not an FRS specific phenomenon. It's something that all systems are going through nationwide.

And I think very importantly from discussions that I've had with some folks at SBA. I think the fact that the conference that we are now -- we are conservative to half of the big systems in the country, I think that's something that the bond markets and rating agencies would look on very favorably from the state of Florida versus other peers around the country.

And so with that, I hope Lamar I managed to slow myself down enough, but find that sweet spot where I'm not completely destroying lunch opportunities and I would be happy to feel any -- appreciate everybody's time and attention. I'd be happy to field any questions folks might have.

MS. CANIDA: Thank you very much, Matt.

Any questions?

Again thank you very much. Very informative.

MR. TAYLOR: That brings us to the end of the first section. We do have lunch over in the break room right across the hall. There is enough for all the IAC members and the consultants, if you'd like some.

Madam Chair, we'll reconvene at 1:00 here for the afternoon portion.

(Proceedings recessed at 12:28 p.m. to continue in Volume 2)

CERTIFICATE OF REPORTER

STATE OF FLORIDA
COUNTY OF LEON

I, JUDY LYNN MARTIN, Stenographer, certify that I was authorized to and did stenographically report the foregoing proceedings, and that the transcript, pages 1 to 126, is a true and complete record of my stenographic notes.

Dated this 30th day of September, 2022.

Judy Lynn Martin

JUDY LYNN MARTIN, Stenographer

IAC Meeting

September 13, 2022

Vol 2

PHIPPS REPORTING

Raising the Bar!

STATE BOARD OF ADMINISTRATION OF FLORIDA

INVESTMENT ADVISORY COUNCIL MEETING

Volume 2, Pages 128 to 283

Tuesday, September 13, 2022

10:00 a.m. to 4:35 p.m.

Hermitage Room, First Floor
1801 Hermitage Boulevard
Tallahassee, Florida 32308

Stenographically Reported By:

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JOHN GOETZ
PETER JONES
TERE CANIDA
GARY WENDT (Appearing remotely)

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LAMAR TAYLOR
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JOHN BRADLEY
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KATY WOJCIECHOWSKI
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JOHN BRADLEY
MICHAEL McCAULEY

APPEARANCES (Continued)

CONSULTANTS:
KATIE COMSTOCK - (Aon)
PHIL KIVARKIS (Aon)
MATT LARRABEE (Milliman) (Appearing remotely)

Proceedings, Volume 2, began at 1:04 p.m.)

MS. CANIDA: Good afternoon. I want to thank everyone. We had a very productive morning session and getting ready to start again. I will call the meeting to order. The approval of the minutes will be moved to the next meeting. We had -- we did not get them ready on time, so we will move on that next meeting.

With that, Lamar, I'll turn it over to you for your opening remarks.

MR. TAYLOR: Thank you, Tere.

So I'll try to keep it relatively brief. I've got a few things, just a kind of overview. So we'll start with performance, a little bit on markets, talk about people, then a brief update on the last trustee meeting.

So in terms of performance looking at daily numbers, the fund -- as of yesterday's close, the Florida Retirement System defined benefit pension plan is down 8.2 percent, which is 16 basis points below benchmark. So the benchmark's a little bit ahead of us as it stands currently.

From a market's perspective, I think everyone's relatively familiar with what's driving markets, and so it's three things, it's inflation,

employment, and interest rates. We got a reminder of that this morning with the new CPI number coming in, (inaudible) in July, still lightly ahead. Obviously -- the market is expecting market's reacting pretty violently to that right now, so the number came in at 8.1 percent on the headline basis, but from a core perspective it actually increased a little bit.

So it sounds like folks anticipated maybe a greater spike, which might precipitate less aggressiveness from the fed.

Employment however continues to remain relatively robust. I think the last reading from the employment numbers that we had, depending on the survey, between 300 and 500,000 jobs. Unemployment picked up just a bit, but it seems that that's a function of people coming back into the labor force as opposed to just an overall unemployment generally.

There still remains almost two open jobs for every one person looking, so about 11 million jobs open, about 6 million people looking. The participation rate is still below where we were in February '20, so some pressure there.

I think all of that speaks to the Federal

Reserve to have some latitude to continue to fight inflation. And so, you know, the last increase was 75 basis point increase. I think there had been some that had thought around June, particularly in the equity markets, that maybe the fed wouldn't have to be quite as hawkish and they could modulate some of their rate increases.

And then of course the chairman spoke after Jackson Hole and said that they would continue to do whatever it takes to fight inflation and kind of took a risk off -- brought a risk-off mentality back into the market, and then the reading today I think sort of underscores that.

So how is that impacting our portfolio? I think it's basically doing -- it's a lot of the same that we saw in June. So from an equity market's perspective, we're continuing to see stocks that perform very well during the pandemic, a lot of growth and tech, large cap U.S. stocks, a lot of those values are coming back down, largely a function of the repricing of the multiples, the discount rate that impacts those growth stocks slightly more than say value stocks. There's been a slight -- value has improved or has been relative basis a better performer, but both value and growth

are down, particularly in the United States.

One area that's been doing pretty well is energy. So we've seen equity markets largely retrench the United States. There's concern in Europe, given the war in Ukraine and the energy issues there, the sort of inability to rely on sources of energy. Europe may be facing a pretty tough winter.

So the -- and there's some concern that that would then play itself into the economy over in Europe. Of course China is continuing to deal with COVID lockdowns. So overall global equity markets are also down for a variety of factors, and so we're seeing that in the portfolio.

Because of inflation and the interest rates and -- the rise in interest rates, we're seeing higher correlation, continue to see higher correlations with fixed income and equity. So equity's down. We're seeing fixed income down as well.

Our portfolio I think, and Katie can -- if you have any questions about it, Katie can fill you in. We've been slightly underweight duration, which has been beneficial probably -- especially today. And then slightly overweight duration, which has been beneficial probably -- especially today, and then slightly overweight credit, which has been very recently (inaudible) the portfolio spreads that have come in.

I think we continue to believe that this environment is a good environment for active investment and fixed income, so as a result, and we mentioned this last time, we've increased Katie's active passive split. So 75 percent active, 25 percent passive, which is up from 65 percent active, 35 percent passive. We've increased the risk by fixed income as well.

Private equity, very much a similar story to -- to public market equities, although valuations have been steadier, just a function of the marks for one. Although we have seen valuations come back in again in those growth and tech areas, which are capital, to some degree a function of adding some public market assets in those funds as a result of IPOs and so on.

But valuations remaining steady largely as well because of -- you know, reports we get is there's some -- some still strong underlying fundamentals of portfolio companies in those funds, so we can see robust demand and the ability for a

lot of these businesses to pass on cost increases and maintain margins.

And so valuations we will expect to kind of continue the role we see and continue erosion in public markets, but at least for now they've been relatively steady.

Where we've seen diversification as I mentioned last time has been in our real asset areas, so real estate and to some degree strategic investments. So real estate valuations continue to stay steady in part because of the inflation hedge. So we have seen cap rates increase as a result of the increase in cost of financing, but we've also been able to see some increase in rents that offset that.

So from a valuation perspective things remain somewhat stable. Could also be a function of the fact again from a private market standpoint, there's a lag in the appraisal process, so we can see some steady valuations there.

Continue to see high demand for certain property types, industrial, and multifamily residential, so that's been helpful overall to the portfolio, and again sort of rounding out the portfolio from a diversification standpoint seeing performance and strategic investments from certain areas, real assets, natural resources, mining, commodities, infrastructure as well as some of our CTAs and global macros have been doing relatively well in this environment.

So kind of a summary of the market and then, you know, that is sort of the backdrop of what we will talk about little more in detail with Aon, which is that is the overall, you know, set of assets, both risk and non-risk and sort of taking from -- the discussions we'll have later on today we'll be looking at how we adjust that overall split of risk and non-risk assets in light of the information Aon will present to us.

And then from there, you know, how we might want to look at how that risk is expressed in the portfolio in terms of asset allocation. So that's kind of the performance and market update.

Switching to people, for those that were in the IAC compensation subcommittee last week, we mentioned that the SBA is not immune to some of the tightness in the labor markets. I think we've been doing pretty well. We've seen higher turnover particularly in the non-asset classes. We've seen higher turnovers as a result of retirements. We've

seen fewer applications in these open positions that we've had, but I do believe we continue to get good applicants and -- so I'm very -- I'm very fortunate that we -- we are able to do that.

I am happy to announce that for one key position we have finalized a hire there, so my previous role as chief operating financial officer, and we have made an offer and I'm happy to say received an acceptance to an individual to fill that position in early October.

This is -- the name is Chad Foote (ph). He is currently the chief operating officer of Galliard -- I believe it's Galliard Financial Management. They're a $90-plus billion stable value provider. And so he is a CPA and is currently their chief operating officer. He will be joining us in October. I'm very happy for that.

In addition to the -- on the people front and I know Vinny will give us an update this afternoon on the discussions in the IAC compensation subcommittee meeting. A lot of discussions there on compensation, particularly incentive compensation plan, so I'll defer to Vinny on the update there.

Then finally the trustees' update. It was definitely a conversation about that this morning. We'll be taking some action throughout the meeting today to formalize the actions that were taken by the trustees in the August meeting wherein they asked us to include in our investment policy statement and our proxy voting guidelines the -- the underscoring of the fact that when we act and invest on behalf of our beneficiaries, we're doing so exclusively with the economic benefit, pecuniary benefit. We're not taking into account non-pecuniary factors, whether we're making investments or we're voting proxies.

So we'll have an action item in terms of the amendments to reflect the action in the investment policy statement and an action item to reflect that in our proxy guidelines as well. So that is my list. I'm happy to answer any questions.

MS. CANIDA: Any questions?

Thank you very much.

So we'll turn it back to your asset-liability review. We had some good discussion this morning to start out with that.

Phil, I'll turn it over to you.

MS. COMSTOCK: I'm just going to just remind the -- I see just really quickly getting oriented

to where we are investment strategy process, but again this is something you all look at on an annual basis.

So today what we are focused on is evaluating that 81 percent return seeking, banking percent risk reducing allocation to the portfolio. At the next meeting we'll dive deeper into the construct of each of those portfolios.

So as Phil walks through the analysis, we'll talk about the tradeoffs and the things that we look at to assess if this continues to be appropriate or if some of the information warrants looking at a different risk profile.

Again, please interject with questions or comments, but with that, I'll turn it over to Phil.

MR. KIVARKIS: So we intro'd the topic earlier today, but now what I'd like to do is get into the meat of the material in terms of what it is we studied and before we get into that, maybe what we found.

So this slide summarizes the key takeaways across the three key facets of asset-liability studies, portfolio analysis, asset-liability projection analysis, and liquidity analysis.

Just as it relates to portfolio analysis, we looked at the portfolio. We think it's generally well diversified, well constructed, well diversified. We'll study it in a deeper dive in the next quarter's discussion.

Expected return on this portfolio, 6.87 percent, recall the actuarial interest rate assumption is 6.8. So it exceeds the -- the expected return for the portfolio exceeds the actuarial interest rate assumption as of the latest -- latest actuarial evaluation.

In terms of the asset-liability projection, results we'll -- we start with the estimated midyear 2022 numbers, which are around 80 percent funded, but the good news is we're -- we're projecting forward a trend line that's moving towards a fully funded state and moving towards a fully funded state by 2039.

So we'll examine what those trend lines look like and also details of the analysis. But generally speaking, good trend lines as it relates to the funded status of the plan.

And then finally as it relates to liquidity, I alluded to this this morning. We find sufficient liquidity and we'll walk through the analysis -- the liquidity analysis, but generally speaking we

find sufficient liquidity in the fund as well.

So those are the three key facets of our study. And what I'm going to do is walk through a deep dive of each of these three facets. I'll provide some background before getting into the conclusions of our -- of our analysis.

So diving into the analysis, first let's look at a bit of history -- history lesson on where the funded status has been.

Over the past couple of decades you can see here the orange line is the actuarial liabilities. Those have grown steadily over time. The blue line represents the actuarial value of assets. This is the smoothed, and Matt mentioned it this morning, this smoothed value of assets.

And you can see that generally speaking they've trended -- both trended up, which you'll notice that crossover point happening in 2008. That was the global financial crisis and the impact there, but generally speaking both trending up.

Now, the question is how do we get those -- the trends together and eventually converge. So that's -- that's what we'll examine and what we found is they eventually -- we're expecting that they will converge.

So here's the -- here's the starting point of our analysis. This is a snapshot as of today. Upper left-hand corner shows the asset-liability snapshot first as of July 1 of 2021. That was the last official actuarial evaluation result.

But we know that quite a bit's happened between 7/1 of '21 and 6/30 of '22. We've estimated the funded status as of 6/30/22. Now, the actuary hasn't released their valuation, and so these numbers are simply estimates at this point.

Nonetheless we know that whereas last year the funded ratio was 96.4 percent on a market-value basis, 83.45 percent on actuarial basis. You can see assets of 202 billion with liabilities of 209 billion as of the last actuary valuation.

What do we estimate for this year, 180 billion of market value assets, 217 billion of liabilities, those have continued to grow, 82.7 percent funding on a market value of asset basis. That will be our starting point for projections going forward. So you'll see 30-year projects using a jumping off point of the 82 percent.

Bottom left-hand corner shows the asset-liability growth measures. Recall the scale where we were trying to find balance between the

liabilities' growth rate and the asset hurdle rate.

And I mentioned liabilities are growing to the tune of about eight percent per year, 8.17 percent to be precise, and that's a combination of growth due to interest -- or discount cost. Effectively that's the 6.8 percent natural rate of growth of liability, that's about $14.8 billion.

Of the $3 billion due to normal costs, that's the cost of new benefits which accrue to your people over the last year because of additional service and additional benefits. 17.8 billion is the amount of growth as the rate versus liabilities.

We simply took 17.8 billion divided it by 217 billion, that rate 8.17 percent. So that's the liability growth rate. But as a percentage of the assets, of course the assets' value is less than the liabilities. It's a higher rate, 9.88 percent.

So that's the asset hurdle rate. That's the amount the assets would have to grow to keep pace with the 17.8 billion of liability growth, 9.88 percent.

What -- do we expect the assets to grow? Well, we expect the assets to grow about 9.8 percent due to investment performance and then also due to contributions into the fund. So by and large we're expecting the assets to about match the liabilities over the next year and we're expecting that the assets in time will grow even faster than the liabilities and that's how we'll pay catch-up on that funded ratio. You'll see that in the -- in the projection results in just a moment.

Last thing I'll mention is the --

MR. COLLINS: Madam Chair, can I ask a question?

MS. CANIDA: Yes, please.

MR. COLLINS: How does that 9.8 jive with our 6.8 actuarial return?

MR. KIVARKIS: Excellent. Great question. So you can see -- if you'll look at the bottom left-hand corner, you can see the first three rows AL discount cost, AL normal cost, total liability hurdle rate, that's -- what we're trying to do is capture the liabilities growth there.

The next three rows are trying to capture the asset growth. So you'll see expected return on assets is that fourth line. And if you scan across the rows, the final column, 6.87 percent, that is the -- that is your assumption on asset growth due to investment performance.

MR. COLLINS: So is the asset -- the total contribution of the percentage of assets, the 2.95, is that the employee contribution plus the state part of the contribution from the 6.8 percent actuarial -- that's how we're getting to 2.95? It's not all just employee contribution; right?

MR. TAYLOR: That would be -- that would be correct.

MR. KIVARKIS: I believe it's employee plus employer.

MR. TAYLOR: That's right.

MR. KIVARKIS: Yeah. Total employee plus employer. That's right.

So your assets will grow if everything were to work as expected by the 6.87 percent that we're assuming in the assumptions plus another 2.95 percent because of contributions coming in at 5.3 billion (inaudible), meaning the assets are expected to grow about 17.7 billion. And as a rate, that's 9.82 percent.

Other questions here? That's an important concept, so I want to make sure we take a minute there.

The final thing on this page then, bottom right-hand corner, the target asset allocation.

You can see 81 percent allocated to return-seeking assets and you can see how it breaks down, 53 percent of global public equity, six percent to private equity, 12 percent to the strategic allocation, and 10 percent to real estate, and then you can see the risk reducing is the remaining 19 percent. That's generally investment grade fixed income.

Now, the question we'll be examining is that 81.19 mix today. And again in the next quarterly discussion, we'll take a harder look at the construct of the 81. Okay.

Now, just a minute to talk about the hurdle rate, and the hurdle rate is dependent on the funding ratio. So for example if your funding ratio is a hundred percent and your liabilities are growing at 8.17, well, then your assets would have to grow at 8.17 to keep pace.

But to the extent the plan becomes -- is an underfunded plan, 90 percent funded or 80 percent funded or what have you, that -- that asset hurdle rate grows, right, because the assets have to work even harder. There's fewer assets than there are liabilities. Assets have to work even harder as a rate to keep pace with the liabilities growth and

that's how we get to the hurdle rate of 9.88 percent. You can see as you move from right to left how that hurdle rate starts growing expedientially.

Now, this next section, the SBA approach to assumption development is a bit of a rehash versus what we discussed in the morning, so I don't intend to cover this in great detail. I'll just point to what's here, but Katie by and large discussed a lot of this in the morning discussion.

So here just as a reminder the averaging method, so these -- these assumptions that we're using are an averaging of the Aon assumptions, Mercer assumptions, and Wilshire's assumption. So we're using this averaging method effectively to remove any inherent bias of one firm or another. And so that's what's used to derive the expected returns, the equity risk premium.

For risk assets, this table will look familiar to you. You can see the average of 3.3 percent as was calculated for -- for this year study. And the history as Katie went over previously, here you can see how those -- how those numbers have changed over time and what the average looks like.

Generally speaking you'll see the three firms have the -- have their numbers moving pretty similarly year over year. You can see the patterns over -- not exactly the same, but pretty similar year over year.

So now taking those assumptions as Katie discussed this morning, we run an analysis and first -- the first phase of our analysis is the portfolio analysis. Here we're going to look at standard risk versus reward within the portfolio realm.

The top half of the page shows a graph. Vertical access is the expected return. Horizontal access is the volatility of that portfolio return. You can see a curve here. The curve which represents varying degrees of return-seeking assets and you can see a dotted line.

That dotted line is the actuarial interest rate assumption. The actuarial interest rate assumption is 6.8 percent. You can see the current policy is the blue dot and 81 percent return seeking.

Down below we have some summary statistics. Expected return of 6.87 percent, volatility of 12.6 percent, sharp ratio .31. Off to the right you can see how that portfolio is constructed in

terms of return-seeking assets, risk reducing.

And then what we've done is we've summarized down below that the 60 to a hundred percent return-seeking portfolios. Summary (inaudible) look like with returns ranging from 6.13 percent for 60 percent return-seeking portfolio to 7.47 percent for the hundred percent return-seeking portfolio.

Now, we're going to examine these portfolios for purposes of our asset-liability projections. So the findings will be based on these portfolios.

This slide covers the -- the FRS asset allocation versus public peers. And my apologies, these numbers are quite small, but just to say lots of similarities. A couple of key -- key differences that I wanted to point out. I'm going to pull it up on my screen here in just -- because the numbers are too small to read off there. Again my apologies for that.

The allocation to equity, pretty similar, 59 percent for FRS, 56 percent for the largest of public plans in the north of 5 billion camp. 59 versus 56, but a greater exposure to public equities for the FRS plan versus private -- more private assets for -- for other public plans.

As it relates to fixed income, again pretty similar, a fixed income exposure 18 percent shown here for -- for your plan, 21.8 is the average for your public plan peers.

Real estate again, total real assets, pretty similar, 10 percent for each. And then finally your opportunistic -- your strategic funds, 12 percent allocation there, a bit higher than the field. Although there is a 5.2 percent allocation to what's called other for public plan peers. So lots of similarities, a few differences there.

MS. COMSTOCK: So one of the things I would just quickly point out on this is -- and this will come up when we look at performance and it often does. But when you look within the public equity, your peers tend to continue to have a U.S. bias relative to international, so that has impacted -- when we look at relative performance relative to peers is given how the U.S. has outpaced international markets.

Then the other is that within strategic investments as you all know, there is a wide variety of types of investments. So it's sometimes tricky recategorizing and comparing apples to apples, but you certainly have some exposure to

things like private debt, opportunistic debt with other funds may be categorizing a total fixed income as well. There is some equity exposure within the strategic investments, so just keeping that in mind when we look at these numbers.

MR. KIVARKIS: So quite a few similarities, a few differences thematically perhaps, lesser allocation to private assets and greater allocation to public assets than peers.

Next slide covers the expected returns and the distributions of those expected returns over varying time periods, one year, five year, 10, 15, and 30.

And so you can see 6.87 percent is the central expectation. That's the black diamond in the middle of the distribution, and you can see upside and downside from there. In the worst case scenario, that would be a fifth percentile outcome over a one-year period, negative 11.85 percent, and on the upside nearly 30 percent.

You can see that over time if you were to take a longer period what happens is the center remains about the same, but the tails come in. So there's quite a bit of tail contraction when you look at cumulative periods.

The same analysis on real returns, the 4.3 percent real return that was discussed this morning is shown here, 4.3 percent with tails around that as well.

So that was the portfolio analysis. Now what we're going to do is shift gears a little bit and start looking at our asset-liability projection analysis.

This slide may look familiar to you as well from the morning. Again this is how we conduct our stochastic Monte Carlo simulation analysis, 5,000 trials over the 30-year period. These numbers are just illustrative, but we'll talk about the numbers in just a moment.

We'll start with just the one-year look at the funding ratio. So what's the funding ratio projected to be one year from now, and you can see for the current 81 percent return-seeking portfolio, the center of that distribution 84.1 percent, that's the black diamond with an upside and a downside. Again this is market value of assets, not the actuarial smoothed value, but rather the full market value of assets.

On the downside in the worst case event, the 50 percent downside event, 66.7 percent is

possible. On the upside, a hundred percent. There's quite a wide range there of potential outcomes. Of course that comes with the territory with a risky asset portfolio.

Now, you can see what happens as you -- as you examine the 60 percent to a hundred percent return-seeking portfolio. So what's happening is that black diamond is nudging higher. As you move from left to right, that central expectation is increasing and the tails as you might expect as well are widening. In other words, there's greater upside and downside as you move towards the right of the page. So that's the one-year look.

And then we -- and here's what it looks like five-year risk analytics, what's the likelihood of being below 90, 70, and 50 percent funded, and you can see it's a very low probability of being below 50 percent. For the current portfolio, about 4.4 percent. Twenty-four percent probability of being below 70 five years from now. Fifty-four percent chance being below 90.

So in other words, you're probably going to be below 90 percent funded five years from now with 54 percent probability below 90 and 46 percent probability of above 90.

You can see we examined varying allocations to return-seeking assets. What we see is, you know, smaller -- the less risky portfolios have smaller probabilities of dipping below 50 and 70, but a lesser chance of eclipsing 90.

Then taking that analysis to the multiyear look, what we've done here is we started with midyear '21 numbers, which recall were 96 percent. If there was an initial drop between '21 and '22 dropping from mid-90s to low 80s percent funded, and then the 82 percent funded ratio is our jumping off point.

Now, what does it look like in terms of the central expectation, you can see that the funding ratio is projected -- if I'm following the black diamond -- I'm sorry, the black-dotted line, 2039 is when we're expected to hit a hundred percent funding, of course with upside and downside tails.

The downside tails are north of 40 this year. Last year you'll recall they were south of 40. A couple of things are happening here, one is the change in your contribution policy, contributions being with amortization periods of 20 years rather than 30 years effectively means that you're projected to hit full funding about 20 years out

instead of 30 years out, so that's one thing. It accelerates the time to full funding.

The other is that we're expecting now that the assets are going to outpace the actuarial assumption. What does that mean? It means that well, if you were normally expected to hit full funding in 20 years, outpacing the actuarial assumption means it will shorten that time to full funding even further, right, because you're earning a little bit extra and that will serve to -- to hit full funding a little bit sooner.

Now, you can examine the page. Across the page from left to right, you'll see the 60 percent return-seeking portfolio never quite hits a hundred. Whereas the hundred percent return-seeking portfolio blows through a hundred. It hits a hundred sooner and it blows through a hundred thereafter.

So there's a lot to like with the -- kind of the graphs in the middle of the page, 81 percent return seeking, there's a lot to like there. It hits a hundred in less than a 20-year period while -- while having downside risks that are pretty comparable across the board.

MR. OLMSTEAD: Madam Chair, may I ask a

question, please?
     MS. CANIDA: Yes, please.
     MR. OLMSTEAD: If you look back in time on these studies, right, off the (inaudible) at 239 we sort of hit a hundred percent funding. If we went back two years, four years, and six years, what were the years that we were going to hit hundred percent funding in your previous analysis?
     MR. KIVARKIS: So generally -- thank you for the question. Generally it's been about 30-year periods in line with the amortization period for the shortfall. So the previous rule was to fund any shortfall over a 30-year period.
     So generally speaking, you're going to be hitting full funding about 30 years out and with a little bit of wiggle around the 30 due to assumption changes and things like that, but by and large about 30 years was the previous and it's about 20 years now. And I would expect it to be around 20 years going forward given the funding change.
     MR. JONES: Quick question.
     MS. CANIDA: Please.
     MR. JONES: A key component is the contribution, we talked about that earlier. I'm

just curious the history with the state in terms of making contributions that match with these assumptions, just kind of historical reference.
     MR. TAYLOR: So historically the state and the legislature's quite supportive and fiscally responsible in contributing the actuarial required contribution.
     There has been -- there was a period right after the financial crisis where they did not fully fund the UAL portion of the contribution, but it was pretty severe stressed. They didn't then later come and make that back up, they just -- we just kind of had a little bit of a funding hold and that increased the UAL and they just advertised that.
     I think over the last several years again where we saw maybe areas of improvement had been in the assumptions, and so that also factors in.
     So it's one thing to say, well, we're going to contribute to actuarially require contribution, but it's the assumptions that go into the fact -- go into what is determined to be the actuarially required contribution are not very conservative and you could be systematically and underfunding the plan.
     That's where I feel like the legislature and

the trustees have been -- have made a lot of great progress on really focusing on the validity of the assumptions and continuing to make it more conservative, which has added more funding to the plan. So by and large, I think they've been very responsible in funding.

MR. GOETZ: Madam Chair --

MS. CANIDA: Yes, please.

MR. GOETZ: Yeah. I just want to understand in these different scenarios. The 90 percent return seeking actually in the out years, 30 years dominates the 81, right, meaning it has a better low side and a better high side.

But just so we're talking about the 20-year amortization, that 90 percent return seeking, that bottom line, the worst case there, that incorporates bigger contributions because the 20-year amortization requirement is bigger in the early years of that downside; is that correct?

MR. KIVARKIS: That's right. That's right. And the contribution projections are coming up next. You'll see that in just a moment.

But that coupled with -- you can kind of see what happens in the first few years of the projections. You'll notice that it's a steeper

potential drop on the downside with a 90 percent return-seeking portfolio than the 80 percent return-seeking portfolio -- or the current policy.

So there's -- you know, the steepness of the initial year's drop is -- you know, it's a steeper drop with the 90 percent return-seeking portfolio. Which by the way is -- is part of what we're trying to accomplish with -- with this look, which is to say, you know, you could move to the 90 percent return-seeking portfolio and the risk of falling below key thresholds 70 and 50 percent is increased.

Now, the question is, you know, is it a large increase? It's not a huge increase in the risk on the downside, but there is an increased risk and you can see that quantitatively on this page as well.

MS. CANIDA: Phil, may I ask you a question. I think -- am I correct to assume that the reason is too because the shorter years you could have more of an impact by your inputs; right? If your return inputs are wrong on the short term or off more significantly, you're going to have much more of an impact in the short years than you will as you go out longer. The inputs are return for the different asset classes?

MR. KIVARKIS: That is true. It's -- you know, the early years there's a -- the path matters. The path of results matter, so the early year's performance will have a greater impact than the later years. That's true.

MR. COLLINS: Can I ask a question too?

MS. CANIDA: Yes.

MR. COLLINS: Getting at the risk part of it again, so if we -- before we made the change, and I hate how it gets categorized, Katie, that you're not return seeking. I think you should take offense to that, but before we made the change from 23, 24 percent fixed income and we went to 18, we had an unfunded ratio, right, and I'm assuming it was in the mid-'80s.

So we ramped up return seeking by taking that away from fixed income and we're still at 83. Now, I know the market's gone down in the last, you know, year, but we didn't -- we didn't help ourselves. I mean, we didn't hurt ourselves, but we didn't make any real gains.

I guess you can say we made real gains before the market turned down, but these assumptions are going to have the market turning down too, so do we

have to have more return seeking, do we have to even have a hope of getting there, because we did it a few years ago and we still aren't there.

MR. KIVARKIS: So a couple points -- it's a great question. Thank you for the question. A couple points, the first is the -- if you look at what happened, the 7/1/21 numbers were quite healthy. Right.

At the tail end of the strength of the market post-COVID, the numbers were really strong, 96 percent funded I think is what we were at the 7/1/21 actuarial evaluation. So by and large that was a result of having the allocation that you did, which was even more slanted towards return seeking, and the converse is also true. So in up markets, you tend to be better off and in down markets, you'll be worse off with a higher allocation to return seeking.

Do you need it, I think that's what we're -- one of the things we're trying to capture on this page, which is to say how do those trend lines look and which of these trend lines looks most desirable.

You can see that four of the five graphs hit a hundred in the central expectation, you know, with varying speeds and varying degrees of downside risk.

The current policy doesn't -- it doesn't appear the current policy's broken. The current policy is a hundred, hits a hundred in 2039, 17 years, and so there's merit to that strategy. You could make it even faster with a 90 percent return-seeking portfolio or you're taking a little bit more downside risk. That's really the tradeoff.

The pension funds are long-term investors. It's just a question of balancing the long-term needs with short-term concerns about downside risk.

MR. COLLINS: That's really what I care most about is the incremental risk we're taking for those -- for those returns and understanding that -- that risk, because then I go back to the graph where it says even in the bad years where 50 -- we have 50 percent liquidity, we're not forced sellers of illiquid assets.

And we -- if there's any -- if there's any position that you'd like to be in as an investor, it would be the state of Florida, right, that has a really long horizon in which to manage that over.

So I -- but I don't -- I can't quantify going

from 81 percent return seeking to 85 and its affect on the 50 percent liquidity, right, in the worst case scenarios.

So I don't think since -- since I've been affiliated with the pension fund, which goes back to when I used to work here, I don't even know if we were forced sellers in the GFC materially. So I just -- if that's what we managed -- if that's what our risk tolerance is that we can't -- that we can't be a forced seller, I don't know how much risk there is in that.

MR. TAYLOR: I think there's a -- I want to take a little bit of a step back. There's some points you made that -- sorry, Gary.

MR. WENDT: Please answer that and then I would like to be able to ask a question for clarification purposes. Please answer that one.

MR. TAYLOR: Just take a step back. You made a great point around -- you know, in the great financial crisis, which is when we crossed the rubric from overfunded to underfunded, and even at that point in time we were in the mid 80s. And it's been 11, 12, 13 years, and we're still in the mid 80s.

Something I don't want to lose site of, which

I think is super important is our assumed rate of return at that point in time was 7.57 percent and our assumed rate of return today is 6.8 percent. And we bring that down, the present value of that liability goes up.

So we treaded water essentially on an unfunded basis, but we've essentially increased the liability over that period of time just by virtue of bond math that's there. So I do think it probably is fair to say we have benefited additional risk that we took on, because we were able -- and it doesn't look like -- it's not reflected.

It's kind of like not a fair way to reflect the progress, but we probably made more ground by taking additional risk over that -- over that period of time than is reflected in the funding status, because we've made more conservative functions.

MR. COLLINS: I guess my point is here we are again. Right. Are we going to benefit from that again or do we -- have we gone as far as we can go?

MS. CANIDA: Go ahead, Gary.

MR. WENDT: I have a question of clarification on the subject that's a little bit off of what we

just talked about, but there was a question asked earlier which I thought was about the contribution made by the employees. The answer that I think came out, that I heard anyway was the -- the legislature has always been responsive.

Does that mean that the employees are paying more today as a percentage of their salary than they were in the past and has that been a variable thing where every year they decide on what the -- what the contribution level is? Because that's the fastest way to get out of this problem.

MS. CANIDA: Go ahead, Lamar.

MR. TAYLOR: Thank you, Gary. No. It's been a -- it's been a flat -- the employee's contribution rate is not variable. It's a flat three percent pay and really -- and the employees really weren't required to contribute until after 2011, so the -- that's just the structure of this plan.

MR. WENDT: That three percent wasn't in effect at all until 2011 and then it's been fixed since that time with more variability in the three percent?

MR. TAYLOR: That's correct. I think there may have been a time way, way back where it was also contributory. I just can't remember -- yeah, Gary's shaking his head.

So it was -- it was -- there was a time in the past. I just can't remember what the -- it's been a long time in the past. It was made noncontributory and then it was -- in 2011 they brought it back.

MR. WENDT: I assume there's no political will to raise that percentage?

MR. TAYLOR: We've recommended that that be considered simply because when you look across peer plans, employees tend to contribute more than our employees do currently in contributory plans, but it hasn't --

MR. WENDT: Other states' contribution levels are higher?

MR. TAYLOR: That's correct. Our data shows that other states have higher employee contribution rates.

MR. BENTON: Yes. For employees it's a little over six percent, the median, so they're contributing twice as much. And then overall, it's approaching the median with employer/employee combined. It's about 20 percent. And currently, you know, we're at 13-and-a-half percent. So we're

contributing a lot less than a lot of funds.

MR. COLLINS: It would be interesting to see what that -- what a one percent increase in the employee contribution, or any contribution, would do to that 2039 at the 81 percent return seeking.

I know you said we recommended that. We should put some math behind it and show them and just say -- and show them what it looks like.

I'm not advocating for it, mind you, I'm just saying we should know what we're talking about when we say, hey, have you considered four percent.

MS. CANIDA: That makes a lot of sense.

MR. WENDT: Then you should run for governor right after that.

MR. COLLINS: I think I would kill my chances, Gary.

MR. WENDT: Thank you for allowing me...

MS. CANIDA: Any other questions?

Phil, Katie, back to you guys.

MR. KIVARKIS: We'll keep going. So funding ratio projections, this is an important -- important slide. It shows not just central expectation, but also the tails around that central expectation for the various strategies 60 to a hundred percent return seeking. Here we shift gears.

We start looking at the employee -- employer contribution rate. So looking at the projection, again I'll start with the current policy. What are we expecting? We're expecting the contribution rate to remain pretty stable over the -- over the next almost 20 years, low teens. We're expecting that until the plan becomes fully funded.

When the plan becomes fully funded, the shortfall amortization is expected to drop off where the contribution then reverts back to just the simple normal cost, the cost of new benefits which accrue to your people every year. You're no longer amortizing away a pension shortfall.

So that's the central expectation, but of course there are tails around the distribution. You can see for example if -- if the markets were to treat us particularly poorly, that that contribution rate could -- could effectively double or more in the worst case scenario.

This is an examination of contributions over a one-year period, so you were looking at a 30-year projection period. What does it look like over a one-year period? You can see the numbers -- the expected contribution 5.62 billion is the central

expectation for contributions. These are employer plus employee contributions by the way.

But there's a range of outcomes. On the downside in a good scenario, 5.05 billion. On the upside in a bad market scenario, 6.32 billion. You can see how that compares to the 60 to a hundred percent return-seeking portfolios.

As you move from left to right, the central expectation for contributions goes down. In other words that black diamond just nudges down ever so slightly from 5.65 billion to 5.60 billion is the central expectation, but can see what those tails are doing.

So in the -- in the farthest right portfolio, that's a hundred percent return-seeking portfolio with no risk-reducing assets. There's quite a bit of tail risk to that portfolio, 6.86 billion in contribution in the worst case scenario for that portfolio.

These are the -- as we're looking at percentages before, this shows the dollars. You can see the dollars are trending up, but that's because payroll is trending up. The percentage is expected to be flat, but the dollars go up as the payroll goes up with the same dynamics in dollar terms as we saw in percentage terms.

Now, there's a question that came up, I believe it was this morning, about net outflows. So the by and large the fund is paying out benefit pavements in excess of contributions.

The net outflow as a percentage of assets is just shy of four percent. It's about three -- high three percent I believe.

How are we projecting that forward, well, we're projecting that it's going to stay around three or four percent for the next 30 years. Now, you'll notice it ebbs and flows a little bit. Most of that ebb and flow is as a result of those contributions. What happens 20 years out, the shortfall is fully amortized. The contributions fall. And as a result, this calculation is impacted. But by and large, we're expecting three to four percent net outflows.

Now, in the worst case scenario, net outflows could increase to seven percent and you can see in the out years of projections. The -- that orange line grows to seven percent net outflows. Now, that's the most extreme scenario. That's 25 years out or so.

Now, in that case -- even in that case, that

strikes us as fairly manageable worst case scenario. Generally speaking the worst, worst case scenario is that we see in these projections tend to be around that 10 percent threshold.

We receive, you know, risk -- tail risks of net outflows of 10 percent or more. That's where we find it particularly concerning. Here even the worst case scenario seems manageable.

Now, this -- this page is also an important one. I want to talk about economics over varying time horizons. So here we're examining economic cost.

So we talked about funding ratio. We talked about contributions. Economic cost is an effort to merge those two discussions into one, into one financial metric.

So the economic cost is the -- it's defined as the present value of contributions plus any remaining shortfall at the end of the period in question. You can think of it this way more simply: It's the cost to fully fund the program over these varying time horizons.

So what's the cost to fully fund the program, we studied that over two, five, 10, and 15-year periods. And we examined it for a variety of portfolios ranging from zero percent return seeking all the way to a hundred percent return seeking.

You'll note at the two year -- the two-year horizon, the distribution of economic cost, pretty similar. Regardless of whether you're zero percent return seeking or a hundred percent return seeking, what's the cost to fully fund the program over the -- over the next two years, it will be about 40 billion.

By the way, that's about your shortfall, the existing shortfall today is about 40 billion. Now, it changes a little bit. Right. You can decrease the expected economic cost a little bit if you were to increase to a hundred percent return-seeking portfolio. You could take some risk out by moving to a zero percent return-seeking portfolio.

But the distribution of outcomes is relatively small. It's also fairly horizontal. What does that tell us. It tells us by moving in a short-time horizon by moving to more risky portfolio, you're taking on more obvious risk. The economic reward though isn't that great.

Think of it this way, if you're investing for a day, you're probably just sticking the money in the bank. If you're investing for a year, well,

maybe you're a little bit more likely to take risks. If you're investing for 10 years, a little bit more likely. But if you're investing for very short-term periods, you're probably just sticking money in the bank, because you're not rewarded for the risk you're taking for that one-day period.

Well, what happens as you move to five years? Notice -- I mean, the range of outcomes widens, but the slope of that curve steepens. And that trend continues as you move from five years, to 10 years, to 15 years.

Now, what are we looking at with the 15 years? It's almost a vertical curve. So what is that telling us? It's telling us now you're not taking a whole lot more risk economically speaking, but you're getting a lot of reward, because the cost is reducing when you're increasing the return-seeking allocation from zero to a hundred.

So what does this -- what is this display telling us? It's telling us -- it's showing graphically how an investor is incentivized economically by investing in return-seeking assets the longer the time horizon.

Horizontal curves mean you're taking a lot more risk without a lot of reward. Vertical curves means you're getting a lot of reward without a lot of additional risk economically speaking.

So that's -- that's an important takeaway. As we look at the longer term time horizons, you can see that there's an incentive to take investment risks where there wasn't one at the two-year mark.

To take that a step further, what we did is we isolated the five year and 15-year points and we stress tested the assumptions. So what happens if the equity risk premium, 3.3 percent equity risk premium were to change? You recall that's based on averaging methodology that we talked about before averaging Aon and Wilshire and Mercer and we arrived at 3.3.

What if it was 4.3 or what if it was 2.3? Well, if it was 2.3 what will happen is you'll get the -- you'll get a flatter curve by and large. In other words if there's less equity risk premium, there's less incentive to take that risk. If it's 4.3, you'll get a more steep curve.

In other words if there's more equity risk premium, there's more incentive to take risk. And this is simply a graphical representation of that stress test.

MR. GOETZ: The point on page 30, the vertical

nature of the curve, obviously if you went from 15-year horizon to a 30-year horizon, it's even more vertical, right, it's just the extension of the time horizon.

As Peter Collins mentioned because we have in essence a very long duration situation and a reasonably funded status, if any state plan were to pursue return instead of risk reduction --

Again, Katie, I feel the same way. The fact you don't get included...

-- but it is very low return. So if we were looking at a 30-year horizon you really thought you had the liquidity, it would push you further out than 81, just logically. Are we interpreting that correctly?

MR. KIVARKIS: That's fair. If let's say your horizon was 30 years and only 30 years and you didn't care what happened in the interim, so your only -- your only concern was maximizing the value of the fund in the year 2052, right, that was your only -- that's the only data point you're concerned about, there's a lot of merit to investing in a heavy risk -- a heavy return-seeking portfolio.

And that's what young investors do all the time in their 401(k) accounts. Right. I mean, it stands to reason that if you have the time horizon, you can afford to take the -- take the risk.

The question becomes this: What's the balance of the long-term need with the short-term concern? Because reality is we can't just close our eyes for 30 years and follow the markets. The reality is there will be interim periods which will be reported, which will be caught in the news, you know, that there's going to be risk to downside.

And so the question then becomes: Well, what's the balance of the need for short-term safety with long-term growth? And generally speaking, public pension sponsors have found that they're on the heavier end of the risk spectrum, but not all the way for that -- for that very reason.

MS. CANIDA: Phil, to your point, which I think is a very good point, if we could invest today and close our eyes and come back 30 years, but as we all know, we've been in the business, it doesn't happen that way.

The other thing that I want to make sure I'm looking at correctly, the curve is very vertical. But when you go from 81, what we are, to a hundred, I mean, that slope is not as steep as the slope

coming.

So I think that's something else that you have to keep in the back of your mind as an investor. So I just point that out. Thank you.

MR. TAYLOR: This is a question for Phil but kind of I guess exploring a little further Mr. Goetz' question, which is -- this is a 15 year, they're thinking about 30 years and how vertical the line is.

Going back to the question I asked earlier (inaudible) duration of the liability, so we have a $209 billion liability that has a duration, has essentially a weighted average life for the existing -- which the $209 billion is the existing liability that we have.

That weighted average life of my understanding is somewhere around 11 -- 11 years. Essentially when you look at -- when you look at the curve payments, the payment stream in terms of how that's going to build over time and then sort of decay over time, so I -- I only raise that just again for context around the extent of what is -- what is an appropriate horizon?

We are long-term investors. This is a long-term plan. But when you think about what we're trying to match against from a liability perspective, it may not be 30 years in light of -- in light of the existing liability. That's my question. That's really the question.

Is it fair to look at that time in that -- in that sense in terms of trying to think about an investment horizon and how that may overlap with some duration of the liability? That is the question.

MR. KIVARKIS: It's a good question.

What you're describing is really popular with corporate pension funds these days, so liability driven investing and what have you. And, you know, those folks have a much shorter -- shorter horizon, you know, it's -- it's much more mature population, because they froze their plans by and large of the last 10, 20 years.

And so what's happened is now they've gotten into the runoff mode by and large that you're talking about. You're not quite -- you're still -- your hump is still going -- you're still going up to the hump before decline, but they're much, much closer to their end game and the regulations have prompted them to point them towards more liability-driven investing where there's more an

asset-liability duration match in play, much less in the way of return-seeking assets. It's much less focused on long-term growth and more -- much more focused on short-term risk management.

MR. TAYLOR: The only reason I -- again it goes back and sounds like a broken record, but I just want to get the (inaudible) perspective when we look at the growth of the plan and the liability.

It is still an open plan. The rate at which we're adding members to the pension plan is significantly less after 2018 than it was before 2018 and what we're seeing in terms of the flows into the defined contribution plan versus defined benefit plan. So again, from contextual perspective, it's just better to consider that.

MR. GOETZ: Let me just make sure I understood that point. Are you saying that right now the plan participants that are both retired and will retire, that's an 11-year duration? There will be new plan participants, because it's still open, so the 11 is shifting -- the 11 will continue but move out. That's where I was getting it's longer than 11.

But you're saying because even on a volunteer basis it's declining, that we shouldn't bet that the plan is stable 20 years from now. It could be a runoff?

MR. TAYLOR: I think that is truly a question for just in terms of how we think about the investment horizon. I'm just posing that in terms of -- because I think we certainly have to continue to take risks would be my opinion, but, you know, it's -- I don't know that it's necessarily fair to think of it in terms of this is really a 30, 40, 50-year risk horizon.

MR. COLLINS: But the phenomenon that you're talking about after 2018, that's not static either. I bet you if we ask Daniel if he's got more people now talking about transferring back to the defined benefit plan, that he might have a few more calls today, right.

So people were wanting to get into it in '18, not the fund benefit plan, but the contribution plan, because they saw the market going like this. When it goes like that, you know -- so that moves too. I wouldn't call that a big long-term trend of what happened in '18. I don't think so, because I think that will ebb and flow in the marketplace.

MS. CANIDA: Your point is not that it's -- I mean, that's what's happened, yeah.

MR. TAYLOR: That's fair, but there's the question around data points. We got a short period of time. It's hard to know exactly what -- do we have all the data points.

MS. CANIDA: Back to you, Phil.

MR. KIVARKIS: Lamar, to your point. The ultimate result, up the change to basically split the participants between D.B. and D.C. retirement sources is that you will have that duration decay that we talked about. It will be slow probably, but there will be over the very long term a subtle short name of the time horizon, all else equal.

Let's see. So we were through the projection analysis. We've covered the economics. I'm going to shift gears again and talk about the third facet for our asset-liability projection analysis, the third of three facets, and that's the liquidity analysis.

I mentioned earlier that when we ran liquidity analysis, we found generally sufficient liquidity. Here's the analysis that we ran. So we studied it under the 81 percent current policy and what we studied was -- we wanted to do a -- stress test the portfolio to see if the portfolio becomes overly swamped with illiquid assets.

Now, here you'll recall the bucketing approach that I described this morning, bucketed in five buckets, liquid risk-reducing assets, liquid return-seeking assets, that's things like (inaudible) equity, quasi liquid, things like hedge funds and open-ended real estate, illiquid with five to 10-year lockups, that's things like closed end real estate and the illiquid 10-plus, typically private equity.

So here's how -- here's how it broke down -- when we look at the 81 percent return seeking, 19 percent risk-reducing portfolio, here's how it broke down by -- by liquidity buckets. And you can see 73 percent is what we call liquid, 13.65 percent was quasi liquid, 7.35 was illiquid five to 10, and six percent -- 10 plus, that six percent being private equity allocation.

So how does this play out in kind of the base case and also the stressed tested scenario?

Well, here you go. Top half of the page shows the dollars over the next 10 years. The bottom half of the page shows percentages, what's the asset allocation -- the actual asset allocation doing in each of these scenarios.

You can see base case the dollars are rising

as you would expect, slow and steady rising of dollars and the percentage is very stable. Recessionary scenario is a 95th percentile bad outcome. It's two years -- two years of down markets followed by a subtle recovery. You can see that in the dollars.

And you can see what happens with the dark -- and the percentages flip up in terms of the illiquids. The illiquids being the shades of blue. Here it seems we've changed the color scheme to grays, but nonetheless the liquid assets remain significant.

And then with the dark skies that's three years of pronounced market drop with little to no recovery thereafter. So it's -- you can see it's three years of pronounced downturn followed by sideways movement of the dollars.

And in percentage terms you can see what's happening is a -- there's a flip up in terms of percentage of illiquids. But even then, sufficient liquidity to fund operations off liquid assets. Similar story to what we saw -- what we saw last year.

So as we find sufficient liquidity in the base case recessionary, and the dark skies scenario, we saw some drift in some of those stressed market scenarios.

And to -- I think it was Peter's point earlier today regarding that the contributions, this analysis is sensitive to those assumed contributions. Here we assumed full actuarial contributions. If the market stressed environment led to -- led to stressed contributions as well that might further stress the stressed test analysis.

I think that takes us to the summary and conclusions. And here summary of results, a massive table of numbers. The -- just reading across the page, we've got a couple of portfolio stats, expected return, and volatility and sharp ratio and then contributions expected and downside contributions and then expected funded ratios 30 years out.

And you can see the current policy, their summary stats, 6.87 percent expected return's probably familiar to you. The expected contributions $79.8 billion dollars over the next 30 years. But in the worst case scenario, that would be 149 billion. Expected funding ration 126 percent downside of 48 percent.

And you can see zero to a hundred percent return seeking is summarized on the page as well, returns ranging from 3.45 percent to 7.47 percent were studied. Contributions ranging from 122 billion down to 75 billion, and funded ratios expected between 53 percent and 158 percent, just depending on the portfolio in question.

Of course the 53 percent funded ratio, that's why we don't invest in zero percent return-seeking portfolios for public funds, whereas on the other end of the spectrum, 158 percent overshoots the mark.

So the question then becomes what's the sweet spot in this distribution? A lot to like with the current portfolio, hitting a hundred percent by 2039. It does move well past a hundred percent though thereafter, but that's a question for a day 17 years from now.

Finally to conclude where we started, again the three facets of our analysis, portfolio analysis, the asset-liability projection analysis and liquidity analysis, and to restate what was the bottom line on top, which is now the bottom on bottom, we think the portfolio is well diversified.

We're going to study it in even more detail in the next quarterly discussion. Expected return on the portfolio per the SBA assumption approach, 6.87 percent versus the actuarial assumption of 6.8 percent.

In terms of the asset-liability projection analysis, we're expecting the funded ratio to increase to a hundred percent for most of the portfolios that we examined. 2039 was the time we expect the current policy to hit a hundred percent funded.

Then as far as liquidity analysis goes, we see such liquidity in the stressed test analysis for the current portfolio in the base case but also the recessionary and even the most stressed dark skies scenario.

Then just to wrap that -- that brings us to the conclusion of the discussion. Again today's focus is 81 percent return seeking, the right mix of return seeking versus risk-reducing assets. There's a lot to like with the -- with the strategy.

You could make a case to go up or down suddenly from the 81 percent, but by and large it feels like about the right zone for return-seeking assets.

And with that, the -- the next discussion point is, well, what is the construct of that return-seeking portfolio, that's -- that's what we intend to analyze and discuss next.

With that I'll pause, see if there are questions.

MS. CANIDA: Phil, Katie, excellent work. I think it's helpful to us.

Any other questions or discussion?

MR. COLLINS: I would just -- Madam Chair, I would just say that this is good prep for December, right, and as we contemplate the asset allocation. It's just Chairman Benny, you know, he -- we have two levers, right, risk and asset allocation. Asset allocation helps determine risk, but we can -- you know, we can allocate extra risk as you want, as you all want, but this is good prep going into December.

MR. TAYLOR: It might be good to get some feedback around maybe what (inaudible) some things we need to look at. So couple of questions to Phil.

Going back to the summary of results slide. We're looking at the risk return, return seeking, and I think it -- just for my (inaudible), scaling up the risk here. So we're at 81 percent return seeking now and if you were to scale up 90 and 100 percent, how did you all -- in terms of the assumptions of the different -- of additional risk was -- it looked like earlier on there was like so much additional added to our global equity, so much additional added to our strategic investments as it's currently constructed and so on.

So how did you all scale up those expected outcomes by assuming additional risk in our portfolio; right? That's what I mean.

MR. KIVARKIS: Absolutely. So thank you for the question. What we did was a simple pro rata increase of the return-seeking allocation. So the hundred percent return-seeking portfolio is simply a hundred over 81 times the first row.

MR. TAYLOR: Then it seems it would be possible that -- it may be such that in that draft right there, we might be able to move that blue dot a little to the left and a little to -- north even with an 81 percent risk seeking if we were to look at asset allocation in a way so that we could take roughly the same amount of risk, but generate a better risk (inaudible) returns depending on how we allocate with our risk buckets; right?

MR. KIVARKIS: Absolutely. That's the question that we'll ponder in the next quarterly discussion. Absolutely.

MR. TAYLOR: So the question I think from the feedback from the IAC might be what -- in terms of how we might put together some options, ideas (inaudible) come back, is it the idea that we would want to stay within the 81 percent risk seeking and look at allocating within the 81 percent risk seeking or is there a different number?

I don't want to get too many variables involved, because then we get this sort of grid of outcomes. But at least in terms of -- is it the council's view that 81 percent is right about the right amount or do you want us to take a look at increasing or decreasing but still look at asset allocation?

MR. OLMSTEAD: I would say it's inclusive at this point, but maybe that's the wrong way to look at it. If we have the asset -- the implication -- I understood the implications on the asset allocation, if we look at both of those and then do sensitivity on 85 percent (inaudible) 81 percent, and 75 percent what are the returns.

I think the way Peter put it, which is this is great prep for December, which we'll have both the 81 percent, I don't think there's -- maybe there's not a reason to go make a recommendation on changing 81 for seven right now, but I think we can change our minds in December after we get our (inaudible) asset allocation.

MS. CANIDA: I agree. I think from everything we've heard today, I mean, unless we were going up significantly, we can get that same risk by the asset allocation. I think it would make a lot more sense and not impact liquidity side.

MR. GOETZ: Can I mention --

MS. CANIDA: I'm sorry. Yes.

MR. GOETZ: One of the things though -- the difference between that is we're assuming that in that 19 percent non-risk, that it isn't correlated with the other ones. You know, I understand on any given day, the bond market and the stock market are not correlated.

If interest rates are eight percent six years from now, it will have been intensely correlated over that eight-year time frame. So I just want to make that point that we're kind of assuming it's interchangeable, but it's not, because that bond portion we're assuming in the math, because

historically we have all that data that bonds and stocks are not related to the extent that they could be related.

So that's where accepting a two percent return instead of a seven percent return with the same risk would have a different result than what we've put in all these numbers.

Is that fair, Phil? I understand it's out of the realm of some of the correlations that we have, but it's possible.

MR. KIVARKIS: In the scenario you describe is in our 5,000 trials. It's not fairly -- it's not very common, but, you know, what would be the case where interest rates rise to eight percent, you know, generally an inflationary scenario, higher interest rates, it probably shows, you know, I'm assuming the -- the scenario analysis would show equities, which are challenged at the same time as fixed income being challenged.

So, you know, whereas the correlation tends to be generally uncorrelated, there are scenarios that will show correlation and those can be particularly painful. And then what does that do, it effectively stretches the tails out, right, your tails are getting stretched out by having those stressed events.

MR. GOETZ: I'll ask the question a different way just to make sure we understand (inaudible). The lower return you put -- the lower the real return for fixed income, the more you would lean towards a risk, a bigger risk allocation (inaudible); right?

MR. KIVARKIS: That is true. That's a true statement.

MR. GOETZ: I'm just throwing that out. What happened over the last 40 years is interest rates went one direction. I'll rest my case at that point.

MR. KIVARKIS: For what it's worth, the interest rates, you know, are going straight down the last three or four decades.

Our model has a different interest rate environment for the next 30 years, which is using starting point of, you know, low interest rates and with an upward bias to those interest rates on a going forward basis.

So it's a really important point, right, because the market over the next 30 years will be different than the market over the last 30 years, because we saw interest rates go straight down

previously. That's not going to happen. You're not going to have negative interest rates, so by and large our models do reflect kind of a reversal of that trend, which will lead to different dynamics going forward versus what we see...

MR. TAYLOR: Maybe just to kind of circle back, maybe what -- maybe what we do is we come back, we look at -- and we've got -- we've already had some thoughts around some allocations scenarios.

We look at allocating within an 81 percent, but we also do a little bit of a sensitivity analysis, maybe an 85 and a 75, or something like that, and we kind of -- it's a little bit of a -- some perimeters, but we maybe see directionally what might happen...

MR. WENDT: Madam Chair.

MS. CANIDA: Yes. Go ahead, Mr. Wendt.

MR. WENDT: This is to -- Peter said a few minutes ago there were (inaudible) things we were dealing with, one was risk and I've forgotten the other one, but there are two others and we need to keep these in mind we as -- as an organization make recommendations, one is the government itself and the other is the employees who are part of the fund. Those need to be in our thought process.

MS. CANIDA: Agree. Thank you very much.

Lamar, any other comments?

MR. TAYLOR: I don't think so.

MR. NEAL: Madam Chair.

MS. CANIDA: Yes.

MR. NEAL: Can I just ask you a little bit about the process by which we might render advice. I think we're going through the investment strategy now and I think I've heard that we're going to go through an allocation of our risk -- our risk-seeking assets in December?

MS. CANIDA: Correct.

MR. NEAL: Would it be then your intention that we discuss and formalize our recommendations in the December meeting; is that where you and Lamar are going?

MS. CANIDA: Lamar, would you be comfortable -- I think so, but I'll let Lamar speak for...

MR. TAYLOR: Yes. At least one way we can -- we can do it -- because I think ultimately where this ends up in the investment policy statement. Any changes to asset allocation, anything that we would want to do to reflect these (inaudible), we

would need to implement through the investment policy statement, which that is where it would need to be presented to the council, the council will need to review it before we can present it to the trustees for their approval. So that would be the formal process we would --

MR. NEAL: Just to comment, we'd be advising the trustees and perhaps to some extent the legislature, because the requirements of FS-215.47.

So speaking for my own self, I would like you to examine some alternatives with a higher ratio of return-seeking assets. I'd prefer you look at 75, but more interested in 85.

I certainly think we're going to give to ask the legislature to give us more -- give the SOBA greater latitude for strategics and alternatives and more modern asset (inaudible). So that's the way I'd like to go. In December I'd like to try to come up with a succinct piece of advice to people we're giving advice to.

MS. CANIDA: Thank you.

ZOOM SPEAKER: I agree. I think we're long-term investors. Equities are always better over the long run, so I agree.

MS. CANIDA: Go ahead, Peter.
MR. JONES: Just my own caveat on that. With everybody on the long term and what that does for us over the long term, comment Phil made earlier is a headline risk if it doesn't go in short term, and we've got to deal with headlines. So we want to make sure that we assess what the downside is. We just have to keep that in mind.
MS. CANIDA: Thank you. I totally agree and I think, Lamar, the way you're looking at it, to look (inaudible) the allocation but also 75, 85 makes a lot of sense. It would be good to have that in December.
MR. TAYLOR: A lot of great feedback. So I think that's what we'll do, we'll look at the scenario analysis and I think maybe part of that probably also will be the impact on contribution risk. So it's looking at risk and return. This might help with some of the downside issues as well.
MR. NEAL: Of course you're going to have the estimating conference, quote, sometime in October and then the December meeting we'll know what their attitude is toward the contribution and so forth. I'm guessing we'll have additional information on

whether to make that decision.
MR. WENDT: Madam Chairman, Gary Wendt would like to make a comment.
MS. CANIDA: Go ahead, Gary.
MR. WENDT: There were several comments made that seem to indicate that of course not very surprisingly based on mathematics, if we put a higher return you'll get better if you can get that, but I personally don't think this is a good time to be taking more risk.
MS. CANIDA: Thank you. Duly noted. Thank you.
Any other questions?
Thank you again, Phil and Katie. Great work. A lot of things for us to ponder and think about for the team to work on. So thank you.
With that, I think we'll take a short break and then we'll come back and do the Global Equity piece.
(Recessed at 2:32 p.m. to 2:48 p.m.)
MS. CANIDA: So we will turn it over to Tim Taylor for review of the Global Equity asset class.
MR. T. TAYLOR: Thank you, Madam Chair. Good afternoon, everyone. My name is Tim Taylor. I'm

pleased today to provide the committee with an update on the Global Equity asset class. This is our annual more-detailed presentation.

A high level outline of the topics that I plan to cover today are on this page. The slides do not have page numbers. You may have materials that have been attached to the invite. They do have some page numbers just to point out for those of you looking on Teams or here in the room, no page numbers on this.

This would be page 142. This is the agenda. We're going to do an overview of Global Equity's team structure, policy, and objectives and what we do to meet those objectives.

We will take a top-down view of Global Equity and consider its role and impact on Florida Retirement System Trust Fund. We'll provide details on how we structure our investments. And finally we're going to review aggregate performance and provide visibility into the drivers of active returns.

Global Equity staff are largely organized by responsibility with respect to risk and analytics, administration and logistics, internal management and trading and external manager oversight.

These individuals are most important asset. Say that again. These individuals are most important asset. They produce complex reports, which support investment decisions. They create and implement processes that foster efficient operations. They have value of generated trade list, minimizing trading cost, and make funding and defunding recommendations, and they consistently oversee external manager relationships.

What this slide tries to indicate is that there is significant overlap and collaboration among staff. So for example internal portfolio managers and traders will provide insights to those individuals on staff who are overseeing external asset manager relationships. That knowledge is translated and used to more thoroughly question and understand external money managers.

As we return to work in the office, we anticipate that collaboration and dialogue among staff will increase further leading to staff development and growth, new internal solutions, and more robust investment analytics and decisions.

The FRS' investment policy statement or the acronym, IPS, I'll refer to that a couple of times during the presentation, directs Global Equity to invest, to achieve, or exceed the return of the benchmark over a long period of time.

We are to remain well diversified relative to the benchmark, maintain a reliance on low-cost passive strategies scaled according to the degree of efficiency and underlying securities markets and capacity in active strategies. There's a lot there. We'll expand on that. And to remain aware of ongoing total funds liquidity requirements.

The next page more on the IPS, it defines our benchmark to which risk and return will be evaluated and it's the custom MSCI All Country World, IMI, or Investable Market Index.

It contains securities of large, mid, and small cap companies. It includes over 45 countries, more than 9,000 securities, and reflects provisions of protecting Florida's Investment Amount, the PFIA, and other Florida legislation. That's why it's custom. We remove those securities from which we're prohibited from legally investing.

The benchmark's largest country rate is the U.S. It represents about 60 percent of our benchmark with approximately 11 percent of the remaining weight, non-U.S. percentage in emerging markets. So emerging market's about 11 percent of

our target.

The largest sectors that you can see there at the bottom are information technology, financials, and health care. Those are driven by U.S. domicile stocks.

Implementation relative to the benchmark is on this next page. The 85 billion approximately that we invest as of June 30 is diversified withholdings in 62 countries and over 9,500 securities.

Note that we internally manage seven strategies, four are passive, three are active, and this represents almost 59 percent of the total asset class. So SBA's staff internally manage about 51 percent, or a majority, of the asset class.

The upper right-hand graph indicates that a total of just under 52 percent of the asset class is actively managed. The majority of this is driven by active allocations to foreign and dedicated global strategies.

Another way to think of this is that Global Equity is predominantly passive, but solely passive, but predominantly passive when investing in the U.S.

This slide, which is -- we're now up to 147 if you've got page numbers, list Global Equity's objectives on the left-hand side as we strive to meet those standards defined in the investment policy statement.

Our mission is to provide data for the market return, means that we will always invest a significant amount of funds passively, yet we don't want to become an index fund. As we structure our active strategies and allocate our risk budget we don't want to rely on of specific market condition or environment to drive relative performance.

Our risk budget or active risk standard I just mentioned is 75 basis points. It's measured over rolling three-year periods.

For several years Global Equity's been a significant provider of funds to pay beneficiaries and this will continue going forward. All decisions that we make in terms of funding and restructuring must include a consideration of the liquidity of the asset class knowing that we must be able to quickly and efficiently raise funds to be distributed to our beneficiaries.

Just as an aside the last month, we received a liquidity assessment not just for beneficiaries, but for some other fund things. It was $999

million and we have about roughly a week to a week and a half to raise that quickly and efficiently.

As we pursued our objectives, we navigated a very dynamic environment during the most recent fiscal year. You can make that statement just about every fiscal year. The last fiscal year maybe a little extra emphasis on dynamic.

The last six months of 2021 were very positive for equity markets. Remember 2021 returned 18 percent. That was following on a return of like 16 percent. However the new year brought about a significant change in direction.

I'll comment just on a couple of items listed on this slide. When managing and considering costs, overall industry pressure on the fees have benefits to investors. However they do create manager risk, particularly when combined with declining markets and poor active performance records.

This increase our need to understand and evaluate organizational or non-investment risk in addition to understanding investment risk. Our active risk levels increased during the period as market volatility remained elevated from historically low levels driven by uncertainties related to inflation, interest rates, and global economic growth, concern about global economic growth. All of that intensified further after Russia invaded Ukraine in late February of 2022, so six months ago now.

Challenges to active management continued. Benchmark concentration is a challenge for active managers, the (inaudible) passive, the growth of exchange-traded funds, all of those things continued and proved a difficult period for our active aggregates.

One development during the fiscal year was the discontinuation of our dedicated currency program. After our prime broker requested it, we removed the managers and ourselves from that platform.

This next slide notes some of the actions that we took during the fiscal year in order to meet our objectives. We continued to develop internal passive management resources focusing on staff development and an efficient trading to minimize transaction costs. Always remember the benchmark to which we are measured does not include transaction costs or any trading costs. And as we raise money pretty much every month that's -- makes it even more important that we minimize those costs

as much as possible.

With respect to managing costs, we aggressively negotiated fees for newly funded strategies resulting from manager searches. We also successfully renegotiated select existing fee schedules.

Percentage of assets that we internally manage continue to rise, I mention this 51 percent, including active mandates targeting potential alpha generating factors. Of course there are benefits to managing money internally.

As to diversifying alpha sources, new funding starting the fiscal year included six dedicated global strategies and one U.S. small cap account. In addition we completed modest reallocations and restructurings across other aggregates. Global Equity raised over $4 billion for liquidity in Fiscal Year 2022.

A statistic that I find interesting to say the least, from the inception of Global Equity as an asset class in 2010, and this is when we used to have domestic equity as a class and foreign equity, international equity, up until 2010. In 2010 we merged investments and we merged staff. Since that time in July 2010, we have raised and distributed

$49 billion to support FRS liquidity requirements, $49 billion.

As we look forward into this new fiscal year that we're now in, this lists some of the objectives from our work plan. Within diversified sources of alpha, we have worked with Callan and we're continuing to work with Callan.

As they independently reviewed the investment structure of the asset class, they (inaudible) here today -- John and Weston are here today to present their observations. They're going to follow up with comments after me. They're going to discuss their recommendations and we're going to work with them to address those observations and research ideas they've suggested.

We'll continue to build our analytics and reporting capabilities by investing in human capital and systems and enhance the framework for evaluating risk at the total asset class and subaggregate levels.

Within the selectively opportunistic -- opportunistic, we are continuing our efforts to identify and evaluate nontraditional strategies at increased return and/or provide diversification benefits to the asset class.

During the last fiscal year we restructured our process to analyze these strategies which will help us isolate and move forward the most promising strategies.

Next section is entitled Global Equity By the Numbers. Page 152 for those of you with page numbers.

This shows Global Equity's role in the total Florida Retirement System Trust Fund from an up-above look. All of these figures are as of the end of June of 2022, end of the fiscal year.

At that time Global Equity is 47 percent of the total fund (inaudible) our target of 53 percent. Global Equity staff internally managed 24 percent of all FRS assets. And our asset class they provided 19 billion of liquidity over of the past three years or 84 percent of all liquidity.

Our percentage contribution to the fund's absolute return was 50 percent over the last three years. Our percentage contribution to total excess return of the last three years positive, although at a lower level relative to previous periods. And our percentage contribution in the lower right-hand portion of the graph there, our percentage contribution to total FRS active risk continues to be very low.

As the U.S. equity markets continue to outpace the rest of the world and also as a result drive up our passive percentage -- because remember 60 percent of our target in the U.S. were predominantly passive. As U.S. continues to outperform, our passive percent continues to rise.

We've continued to maintain however and even increase our overall active weight. The liquidities' active risk levels or our tracking error levels have increased due to an increase in market volatility yet have remained below the 75 basis point monitoring standard.

And our recent performance has been challenged and disappointing has also caused our information ratio to decline.

The next slide speaks to performance consistency and shows that from our inception in July 2010 I mentioned earlier, we've outperformed net of fees in 120 of the 132 rolling one-year periods again from inception.

Clearly 2022 has been a very poor year for performance specifically in Q1 when we underperformed by 95 basis points. And I'm going to provide more detail on that very shortly.

We're structured to perform we believe in a variety of market -- market environments, a variety of market conditions. This slide shows our batting average for the percentage of months that both GE, Global Equity, outperformed its benchmark in several environments, such as when the overall market was up or down or when the U.S. either outperformed or underperformed.

In those conditions, what percentage in terms of months did Global Equity outperform? The only condition when our batting average has not been greater than 50 percent, it's close, but it's not at 50, is when value outperforms growth.

One reason I think for this is that for many years growth has contently led the market and there have been few occasions where value has consistently outperformed. That said we have made some adjustments that will better position us going forward when value outperforms -- particularly outperforms on a consistent basis.

This is snapshot of a lot of boxes and checks and this and that on that, but this is really just to show you diversity of investment structure. Diversity in investments is not simply defined by style, such growth or value. We try to diversify and actively outperform in various market conditions by having defensive, core, upmarket strategies.

We also strive to have investment process diversification. What's that mean? Well, process, is it a fundamental process, is it a quantitatively driven process.

Across the style spectrum, capitalization focuses well, large cap, small cap, such as U.S., international small cap, regionally focused emerging markets and also we want to have factor premium strategies that target the diversified array of factors, such as quality, momentum, growth, value, et cetera.

So we try to diversify the asset class simplistically I would say on this growth and value and core. There are many other metrics which I believe define diversification, which we try to have in our aggregate.

Next slide demonstrates that we attempt to add value in all segments of our benchmark. We're active in all segments of our benchmark. However we are the most active in what are considered to be the least efficient areas of the equity market.

For those areas where the probability of

successful active management is higher. Many consider the U.S. (inaudible) to be the most efficient market and therefore the most difficult in which to beat the benchmark, and historical information does support this.

So you can see that of our $41 billion in the U.S. in this large gap, only seven percent of it is actively invested. But on the other hand emerging markets, which is considered by many to be very inefficient, in that space we're a hundred percent active.

So we try to take our active risks in the places where the probability of success in terms of active performance is the highest. The next section of -- a review of performance, and this will take us to page 159.

During the second quarter of '22 -- 2022, equity market substantially declined, like double-digit declines. Global Equity preserved capital and did provide a 30 basis point active return. However that was not enough to offset a very challenging year over which we trailed the benchmark by 69 basis points. We do remain ahead of the benchmark over all longer term periods beginning with a three-year period ending in June

2022.

As we turn to the next slide, I'm going to focus my comments and provide more details on that negative performance over the last one-year period of 69 basis points.

This slide indicates that are underperformance for the fiscal year was driven by actively managed strategies, which trailed the benchmark by 1.71 percent. Specifically this underperformance as you cast your eyes down on the page was due to active management within both foreign or non-U.S. and dedicated global mandates.

This next page is going to have more information on this underperformance. I apologize. There's a lot of information here I don't think is useful to you. And this is the last page I'll be presenting today, after which I'll be happy to take questions.

The performance of each of our active aggregates is presented on this last slide. And the aggregates are listed from the largest to the smallest based on active dollars invested and their associated weight in Global Equity asset class.

So for example foreign developed large cap, 20 percent of the asset class are active positions,

active managers within foreign developed large cap. My comments are going to be focused on the key drivers of one-year returns, and you can see that it was a tough year overall as during that period four of our six active aggregates flagged our benchmark.

The foreign developed large cap aggregate I just mentioned has been incredibly successful for many years, but it had a very challenging period. The sharp selloff in higher valuation, growth-oriented securities, Lamar mentioned this earlier, which had performed exceptionally well during the pandemic, notably detracted from returns.

An underweight to the soaring energy sector, (inaudible), energy was the only thing that made funding on a positive basis over this time period. Underweight to energy also hurt performance. And quality stocks, quality did not offer any protection, which was surprising, so much rising uncertainty and tightening monetary policy, quality stocks, however you want to define also did not -- did not help. It's difficult period for that -- for that aggregate.

Also emerging markets aggregate, it struggled over the fiscal year due to underweight to Saudi Arabia. When you think Saudi Arabia what do you think, you think energy. That was the only thing that did well. We were underweight in Saudi Arabia. Poor stock selection in Brazil and India and Taiwan.

Performance was also negatively impacted by losses in Russian holdings after the invasion of Ukraine in the first quarter of 2022. You may recall -- you may not recall, but near the end of January 2022 we probably had a little over $300 million of Russian holdings and by the end of the quarter, they've largely been written down to nothing and we've been locked out. We continue to be locked out of the market -- Russian market. The impacted performance negatively.

The dedicated global aggregate underperformed. As active performance lagged a strong rising market the last half of 2021, and then disappointed by not preserving capital during the selloff of the first half of 2022.

This aggregate, dedicated global, has been -- recently been restructured with the additions of both value and growth-oriented strategies that are going to complement a continued emphasis on capital

preservation.

Over the one-year period, we did experience very strong active returns in the U.S. in both U.S. large and small cap aggregates you can see there.

And I'll end my prepared comments with one more positive observation. During the second quarter of five of our six active aggregates outperformed, and Global Equity has started to begin and demonstrating a more positive active return profile.

Thank you, Madam Chair. Those are my prepared comments. I'm happy to take any questions.

MS. CANIDA: Thank you very much, Tim. I think Vinny has a --

MR. OLMSTEAD: Yeah. A clarification to help me out, Tim. When you look at excess, is that excess over that -- that class or is it over absolute, so when you --

MR. T. TAYLOR: It's relative to a benchmark, to their benchmark.

MR. OLMSTEAD: So when you look at -- do you have any numbers on absolute returns?

MR. T. TAYLOR: These are all -- these will be all excess. That would be -- to respond to your question, so absolute returns, so for the one year our Global Equity asset class was down. Our managed return was 17 negative, 17.2 percent relative to our benchmark of negative 61.5. So there -- 69 is the excess return, active return positive or negative.

MR. OLMSTEAD: I may be (inaudible) about this subject, but I'm trying to understand the allocation of global -- I get the excess piece, but the absolute piece I guess I don't see.

So we hear a lot of comments that the global -- or that the global is underperforming versus U.S. and U.S. large caps, small caps should be the allocated -- again, it's hard to tell from this data whether we're allocating (inaudible) to U.S. versus international, because when we look at excess we don't look at absolute.

I don't know the numbers. Maybe international has higher benchmarks versus lower. What's -- is our allocations appropriate given the fact that, you know, you may be underperforming?

MR. T. TAYLOR: Our targets and where we're going to invest in terms of region are predominantly if not entirely informed by the target that we're given. So out of the asset-liability study, the asset allocation

studies, the -- under the investment policy statement, we're given a benchmark, a target, and it's MSCI, All Country World, Investable Market Index. Essentially give us Global Equity returns of the Global Equity markets. So we use that as our base from which to build the asset class.

So that's going to inform, because we will try to stay pretty close to allocation targets. So, for example, MSCI ACWI IMI 60 percent of it is the U.S. Almost all the time we're going to have about 60 percent of asset class U.S. We're going to try to stay pretty close to that 60 percent.

We're going to try to stay -- I mentioned 11 percent of that target is emerging markets. We're going to try to stay pretty close to that 11 percent emerging market.

We're not going to deviate, we're not going to make an active bet one way or the other on U.S. (inaudible). So we're going to build from that base, that custom benchmark, that custom target and then, you know, we're given, well, you can try to add value, but you need to do it within a risk budget. A risk budget for you is 75 basis points. Where do we want to spend that risk budget? Well, the U.S. we're not going to want to spend too much of our risk budget, we want to spend some, when we're going to be mostly passive there, because it's hard to add value there.

We're going to use most of our risk budget in areas that are least efficient of our target, so emerging markets, non-U.S. small cap, even U.S. small cap.

So in terms of, you know, U.S. verse non-U.S, emerging markets verse developed markets, Global Equity we will try to not make a call. In fact, we're going to try to minimize that -- I would do that if we were overweight to the U.S. and that it wasn't an intentional overweight.

If we were doing something that caused us to be overweight more than 60 percent to the U.S. and it was unintentional, I'd do that as -- as -- that's a risk that we can't accept.

We're not experts on making a call, U.S. verse none-U.S. We need to bring that U.S. weight down. We need to be more like the target to minimize any unintentional and unrewarded risk that I would do.

I hope that's responsive to your question, but it's really informed by the custom target. If 60 percent of our target is U.S., we're going to be pretty close to that 60 percent in the other areas

of the target most of the time.

MR. OLMSTEAD: When you say our benchmarks are outperforming us because they're not as exposed to global, is that because they have just a different strategy?

MR. T. TAYLOR: Other pension plans?

MR. OLMSTEAD: I thought there was some other comment Katie might have made earlier. Like should we challenge the -- I don't know. This is not by bailiwick, but should we be challenging the 60 percent in the global strategy with a bunch of uncertainty?

I don't know if that's part of the asset allocation conversation or if it's just, look, I just follow the 60 percent, 11 percent, 34 percent, and that's all -- that's all we do. Do we have a conversation about whether that's appropriate or not appropriate?

MS. COMSTOCK: Yeah, that's something that the SBA took on a global opportunity set and that's where you're getting the current weight which fluctuates modestly. The U.S. has done well, so that's grown. But that's something that we can evaluate if the IAC wants to consider overweighting the U.S. or taking some other allocation that deviates from the global opportunity set. That's something that we can evaluate that takes somewhat of an active perspective and belief that certain markets will outperform others.

That has been the case and we can look at our assumptions, you know, long term and help you all evaluate that, but right now you are globally oriented, so there's not really any active bets being taken from a U.S., non-U.S. merging market perspective.

MS. CANIDA: Katie, can I ask you a question. Just a broad perspective, you don't have to give me exact numbers, but can you tell me like in the last one year, three year, five year the difference between a U.S. -- U.S. mandate and a global mandate?

MS. COMSTOCK: So the U.S. -- roughly over the past year, the U.S. market was down about 14 percent. Foreign equities, those would be developed in emerging markets, were down about 20 -- little less than 20 percent.

Longer term this has been a trend as well, kind of given the market environment we've been in. So over the past five years, domestic equities have been up for the past five years 10.6 percent.

Foreign equities have been up 2.5 percent. There's been a pretty strong deviation for a number of reasons between U.S. in and non-U.S. returns.

MS. CANIDA: Thank you.

MR. COLLINS: Tim, on your next page -- well, not the next page, because you went back. On your last page, it was right there, how many managers -- and these are only active, right, so how many managers do you have in each of those aggregates?

MR. T. TAYLOR: It's a good test for me here.

MR. COLLINS: Just generally, is it five, is it eight, is it two?

MR. T. TAYLOR: Starting from the top to bottom, 10 foreign developed large cap, 10 emerging markets, eight dedicated global, eight foreign developed small cap, three U.S. large cap, and probably 10 U.S. small cap.

MR. COLLINS: You've obviously gone back. Those people make up whatever those numbers are there, right, you've gone back and you've seen some individual strategies that these active managers were taking; right?

MR. T. TAYLOR: Yes.

MR. COLLINS: I'm assuming the ones that were really negative were heavy growth; right?

MR. T. TAYLOR: Yeah.
MR. COLLINS: Even globally?
MR. T. TAYLOR: That's true. The more -- managers have performed really, really well over the last few years as a very general statement. We've had some managers perform very, very well. Growth oriented, not just quality growth, even non-quality growth or aspirational type growth, they've done really well, not recently though.
Those have really -- those have really punished us recently. So they're down over the one year, but even including that you look out over three, five, 10 years, they're still well above their benchmarks.
MR. COLLINS: Do you ever think that you get too much diversification in any of these aggregates that you -- that maybe you've added too many managers? Maybe the -- maybe it's just -- it's spread out, you're making some bets, but by the time you get to 10 managers in an aggregate, I mean, your individual bet isn't that great, right, because it's spread across 10 different managers?
MR. T. TAYLOR: We think about that.
MR. COLLINS: I don't say bet, I mean your -- your underwriting on the individual managers.

MR. T. TAYLOR: We do think about that. We did. We always ask the question of why do we have this manager in our aggregate. There are some aggregates that maybe -- and we're actually -- one of the things that Callan I believe is going to mention is perhaps looking at the number of managers we have and perhaps streamlining a little bit. Maybe we have some room for that.
One of the things that keeps us on certain aggregates from getting a little too concentrated is capacity for example in emerging markets or an international small cap.
If we have too few -- too few managers, something we want to move quickly because there's an issue with one of our managers and redeploy the fund, many times strategies in those types of aggregates are closed for capacity or nearing capacity or maybe they haven't closed and we think they should close because (inaudible).
So to balance that, I think maybe there's some scope at the margin to maybe streamline, but I think we always need to be aware. In some aggregates I'd rather have little bit more just in case something happens and we need to redeploy assets.

I think we're pretty -- I think we're pretty streamlined. That's not the word I'm looking for, but I think we're pretty streamlined right now. I maybe mentioned this before, but since 2020 began right before the pandemic up until the end of the fiscal year and even -- even now, we've made a lot of management changes and that -- really in every aggregate we've looked at what we have.

We made some difficult decisions and hired some managers and think that will put us in a better position going forward. Every time we go through an exercise with each particular aggregate, we're looking at structurally how do we diversify, what does this manager bring to us.

Just the number -- I think we've terminated 15 managers and added 15 managers since the start of 2020. So we've been pretty active in making changes and then hires, but making fundings while addressing what is this manager going to bring us in terms of diversification and looking at how their size relative to the others, so I think we're pretty -- pretty streamlined right now, but perhaps there's some room -- particularly in the areas that we've got less concern about capacity, I think we might be able to streamline that a little bit more

perhaps.

MS. CANIDA: Any other questions for Tim?

Thank you very much, Tim.

We'll turn it over to Callan.

MR. WENDT: I'm sorry, I keep forgetting to turn my -- Gary Wendt.

MS. CANIDA: Okay, Gary. Go ahead.

MR. WENDT: (Technical interference).

MS. CANIDA: Can you repeat the question, please. We didn't hear that.

MR. WENDT: If you had removed Russia, all your numbers would be (technical interference)?

MR. T. TAYLOR: So if we have -- if I understand your question correctly, sir, no. We -- that -- for us it was just Russia. That was not a big enough thing to drop. What our underperformance was driven by was predominantly the sell down of gross stocks, the underweighted energy, the sell down of the quality stocks that we have. That's really the bigger drivers of our underperformance.

Russia didn't help. We still hold those on our books as perhaps an option because they're priced at essentially nothing right now, but perhaps we could get something out of it if there

was a time we would be able to -- to liquidate.
One of the things we've talked about with our managers is we were trying to maximize the value of every asset we have, and we would be comfortable with you holding onto those assets and not just selling them at a penny on the dollar.
We would be willing to be patient with you and whoever's interested in buying this -- well, perhaps they're sympathetic to what Russia is doing. If that's the case, well, then just get as much as you can from them when the time does come. But it wasn't Russia, it was the other things that really drove that underperformance.
MR. WENDT: Thank you for that and I fully endorse the strategy (technical interference).
MS. CANIDA: Any other questions before we move on?
Okay. Callan.
MR. LEWIS: Great, Madam Chair. My name is Weston Lewis. I am general consultant at Callan. Callan is one of the consultants I guess on your -- on SBA's farm team, so we were thrilled to be called up to the big leagues here. And I'm joined by John Pirone. John is based in our San Francisco office. He's a member of our capability markets

group. So as you think about what they do really everything is geared toward strategic planning for clients, so development of capital market assumptions, big structure studies like we did today, so that's -- that's why we're here.
Going to the next slide, Callan was engaged to really look at the structure. So as our colleagues from Aon correctly pointed out, the highest level and most important investment decision that you all make is -- as an investment committee really is that strategic asset allocation decision.
Next, how do you structure those asset classes? So a lot of the questions that you all have asked, how much global, you know, relative to more regional focused mandates, how much active, how much passive, really those are secondary drivers, but still important drivers of return.
And what we're trying to go after is maximize that return per unit of risk and really meet those objectives that Tim mentioned that are in the investment policy statement.
So what we did is we looked at the amount of active and the amount of passive, the weights between the various large cap and small cap, developed versus emerging and really tried to point

out where there are any unintended bets relative to your benchmark.

So we -- that's what we want to do away with. We're not opposed to intended bets, but the surprise is the unintended bets are what we try to minimize.

So another part of our engagement here was just reviewing the investment policy document and looking for alignment. As Tim mentioned earlier, that risk budget or, you know, the monitoring standard of 75 basis points is that reasonable given how you all are allocated.

And the final thing is was there anything that, you know, we're seeing that could help add value to the portfolio.

The good news and bad news on that front is we see a lot of large public plans like you all and their investment programs. And really as we went through, this is a very well run and thoughtfully constructed portfolio. So that is the good news. The bad news is there aren't a lot of easy kind of solutions here to go out and find those fat pitches, so --

MR. PIRONE: Yeah. Usually there's a lot of low hanging fruit.

(Simultaneous crosstalk)

MR. LEWIS: With that, I'll turn it over to John and let him summarize.

MR. PIRONE: I'm just going to kind of start with kind of high level -- so I guess kind of back it up to 30,000 feet, what are we talking about. Okay. So we've been talking about, you know, all morning and early afternoon about data in terms of asset allocation. Right.

And, you know, right now kind of your roadmap is okay. For Global Equity, we're going to have a global benchmark. It's called the ACWI IMI. And so Tim and team's job is to beat that, right, on a consistent basis, but doing it in a fashion where he's not betting the farm on any individual bet. What you want to do is have -- the idea is to have a bunch of coins, they're slightly loaded, you get 51 percent, and over time that's how you deliver consistent returns versus a benchmark. If you look at (inaudible), you know, the Global Equity program has been able to -- to return over 50 basis point off of a year, excess return over that benchmark, but again very low risk level on the order of 60 basis points, so we're talking -- and that's kind of -- and that consistency, right, you can see it in the metrics where essentially nine out of 10 years y'all have outperformed. Right.

It's not magic the way this thing happened. What I want to do is kind of walk through some of the ideas that kind of enable you to have consistent outperformance over time.

So -- but that kind of 30,000 feet, let's kind of dive into it. So first topic is going to be active versus passive. Okay. So the idea is, hey, you know, we want to make our bets where we have a tailwind in terms of active managers and be able to demonstrate outperformance.

So we look at some of the empirics quickly as we jump into that. So that's one way you can kind of build this consistency over time. Another key point is in the second part, which is the control of unintended risk exposures.

This actually leads into Vinny's question in terms of would we want to for example overweight the U.S. in terms of making a bet. The reality is that you really want the managers to do the work in terms of all their individual security selection decisions, kind of hit those singles in incurring that alpha over time as opposed to make any single large tactical bet. We'll dig into that a little

more.

I guess one point I would say here is the reality is on the first piece of active versus passive, you know, when we look at all the large public plans we work with, everybody has pretty similar philosophy in terms of where to make the bets.

What I would suggest is where SBA really distinguishes themselves is in terms of the amount of control of those unintended risk exposures. I'll give you a couple anecdotes as we get downstream, but again I want to highlight that.

Then lastly again Tim and team has been handed a 75 basis point risk budget. So again the idea is he has some latitude to make bets versus a benchmark. We want this to be in a measured fashion.

And what I would say is there may be a little bit of I guess error in there -- it may be possible to incrementally increase the active risks of the plan.

This is actually linked to Peter's question in terms of maybe on the margin there could be some -- some kind of distillation of the managers, because the reality is that if you incrementally reduce the managers, that's going to incrementally increase your active risk.

And why would you want to have more active risks if end of the day, those active risk bets are where that alpha comes from. Right. So there -- the plan might be possible to run in, you know, kind of 90 percent of what that (inaudible) budget is, so that's a high level.

So let's -- we're going to take probably three minutes and hit each -- hit each of these three key points. So let's start with the -- so we're on 166 for y'all that are remote.

So to Mr. Taylor in his remarks mentioned by some asset class the amount of indexing or passive management depends on the degree of market efficiency. So let's -- so what you see here is kind of tale of the tape, if you will, you know, so -- and there's a variety of studies out here.

This is Callan's -- based off Callan's data and so we want to keep it a high level. Basically what we're doing is we're looking at what has historical active management performance been in the U.S. markets, and that's what you see at the top of the table on the right. And you can see for example, large cap, mid cap.

You can see here on a gross of fees basis that there's, you know, basically a zero negative performance on average, okay, (inaudible) average, that again all we're trying to do is say where do we want to go fishing at the end of the day. Well, if we look at the results for large and mid cap U.S., there doesn't seem like there's a lot of fish there. Right. It's going to be more challenging.

Now, as we move to small cap U.S., you can see again for these kind of broad group of averages, look at all those 130s, 140s, right, you can see active management having historically worked in small cap.

Then as we move down to the bottom of the table, now we're transitioning from the U.S. to the foreign equity piece of the portfolio. Foreign equity, when you look at it, seems to have a good historical performance.

And again intuition there, you're thinking about the -- the large cap U.S. Securities market is the most covered market of the world, you know, 40 different investments banks covering (inaudible) security, whereas as you move down into international markets, emerging markets, likely little bit less efficient. But again if you focus on empirics, empirics suggest that (inaudible) add value.

Then the last category that Global Equity uses is global managers. They have latitude to move between the U.S. and foreign markets and there as well the evidence is supportive of active management.

Let's take a look at --

MS. CANIDA: Sorry. Can I ask you a question just so I make sure I understand you correctly?

MR. PIRONE: Yes, ma'am.

MS. CANIDA: When you talking about excess return over benchmark, are you talking about that independent benchmark, you're not comparing benchmarks to benchmarks?

MR. PIRONE: Yes, ma'am. We're just talking about the excess returns. So for example let's take that second one, large cap growth, that we're looking at the universal large cap growth managers and we're looking at the performance relative to large cap growth. Because you have to compare apples to apples, otherwise it's meaningless.

MS. CANIDA: But it misses that side of the equation of what different benchmarks do to each other; correct?

MR. PIRONE: Well, that's where -- that's where the portfolio construction piece comes in, because you want to for just -- I'll just keep it simple.

That if you hire a large cap growth manager, you're going to have a large cap value manager so that collectively, you've got that neutral style exposure. And the idea is, Hey, if I hire a good large cap growth manager that can add alpha -- a good large cap value manager can add alpha, then irrespective whether the value goes up or down if I'm getting -- you get it; right?

MS. CANIDA: I understand. I just want to make sure --

(Simultaneous crosstalk)

MR. PIRONE: So we're going to transition. Now we're on 167. So as I mentioned that -- okay. In practice that FSBA spends the risk budget, but here what you see -- let's focus on that shaded most left table, right, that there's a sliver of active in large and mid cap U.S.

But again if I've been tasked with spending my risk budget, I want to spend more of the risk budget where I have the tail end, where the odd's in my favor, so you can see almost exclusively active in the developed foreign equity, emerging markets, heavily active in small cap as well.

We -- what we did was we compared FSBA to 10 large kind of mega public plans, and you can see that peer average over the far right.

So again kind of all the big -- all the big boys kind of work -- voting with their feet, okay, that they have tons of money to invest. It's like, Well, (inaudible) a cost by being predominantly indexed in the large cap U.S. space. Right. And then we're going to add our alpha in those other markets. Right.

So point being that, you know FSBA's behavior obviously very consistent and completely rational given that backdrop in terms of how the empirical results played out.

Let me pause there to see if there's any questions.

Okay. So we're going to transition back to passive to this idea of controlling misfit bets and the exposure. Again this is one of the key ways you can have consistency in your plan results over time. So -- bear with me.

So what we're doing here is we're decomposing the portfolio's active risk into two pieces. So

one piece we call selection risk and that represents all the individual managers' bets versus their benchmarks, all the securities selection bets.

And, Tere, I think this is linked back into the discussion we were having earlier, it's just more macro now.

So you have all the individual managers' bets but all these managers are carrying styles along with them, right, one guy's value, one guy's growth, one guy's international, one guy's U.S.

And so what we want to do is take all those styles and add them up and combine them together at the end of the day to understand what, you know, Tim's aggregate Global Equity style is.

And so he wants that to look as close as reasonable to his plan benchmark, which is ACWI IMI, so 60 percent U.S., 11 percent emerging, 29 percent, you know, developed, right, because he doesn't want to make a big bet on a -- on a style, because he's -- at the end of the day, I'm paying my active managers to add value through securities selection, not having incidental bets.

And so -- so this is the place where again I mentioned in my initial remarks. I think SBA really distinguishes itself relative to other large public plans in terms of -- like literally on a daily basis, team goes through, looks at all the style exposures of all the managers, aggregates them up, compares -- compares them to the benchmark, again trying to squeeze that misfit risk out.

So -- and let me just give you -- I said -- told you I'd give you an anecdote. Okay.

We work with another -- okay. We work with another large state plan where you look at all their exposures and they are six percent overweight versus the -- versus their benchmark.

So for example say the benchmark is ACWI, they have a 66 percent U.S. exposure relative to 60. Okay. And the reality is they've done well, right, because U.S. -- you have a six percent overweight to the U.S. The U.S. has done well.

But think about that from a risk perspective, like you -- they're going out and hiring 50 managers, paying all those managers -- active managers' fees. At the end of the day whether performance -- plan succeeds or fails is driven by this coin flip on whether U.S. is going to help form international.

So I guess I would argue pretty strongly that's an improved way to construct a portfolio. And, moreover, you're never going to get consistency of returns if you've got these large misfit bets.

So let me pause there, because this is kind of a nuance topic and kind of complicated. So let me just make sure everybody gets it.

MR. COLLINS: Can I ask a question, Tere?

MS. CANIDA: Yes. Please go ahead.

MR. COLLINS: So you're opposed, I don't know that I understand what you're saying, I'm not sure they were -- is it coin flipping in practice, but you -- so it was a good bet in that case, right, because U.S. outperformed?

MR. PIRONE: Exactly. Exactly. Well, it's a bet that worked, let me speak more precisely.

MR. COLLINS: It's a bet that worked. Any bet at this level, any bet hopefully has a lot of research behind it, hopefully has a lot of experience behind it and -- we made a bet a few years ago to take our fixed income from 23 or 24 percent down to 18 percent, and it was a good bet. It worked out in your -- in your -- in your words, it worked out?

MR. PIRONE: Yes.
MR. COLLINS: Most of us are investors --
MR. PIRONE: Sure. Sure.
MR. COLLINS: -- up here. I understand making that bet, right, I understand making that choice. I'd almost -- I understand -- I understand the risk budget piece of it, but I'd almost rather -- if you're going to just invest in active managers that are just nailing the ACWI, right, why wouldn't you do it passive if you're concerned about all the fees and everything, especially in the U.S. why wouldn't you just do it passively live?
MR. PIRONE: Well, that's what -- that's what in essence Global Equity did (inaudible) that they have 90 percent of their -- basically the preponderance of their U.S. large cap assets are managed passively, but again everywhere else they're highly active because the empirics suggest that active managers pay it off and then kind of scoreboard in terms of what y'all's plan has done, you know, plus 50 basis points over the benchmark on 10 years if you will.
And let me -- I'm kind of working backwards. Let me get back. I think -- you are making a really good point on the first piece --

(Simultaneous crosstalk)
MR. COLLINS: I'm not sure I am. Let me just finish this.
I think the active manager bets in certain areas, like your chart up there that showed the outperformance to the benchmark and active in all the different areas, you know, active management certainly has a place in a lot of those areas, especially when you get into small caps, maybe especially when you get into emerging markets, maybe -- I don't know. We could have an argument about large cap international.
But I don't know, I think that -- I don't have a problem with people making bets against -- moving things around inside ACWI and I don't think that's -- but I don't understand the risk. Right. I don't understand what that really adds in terms of risk, but I don't mind that. Is that bad?
MS. CANIDA: Tim, you want to take a shot at it?
MR. T. TAYLOR: What I would say -- so what John brought up, I'm familiar with that plan. And while it worked out for them, because the U.S. outperformed, it wasn't an intentional decision that they made.

MR. COLLINS: Well, that's totally different, yeah.

MR. T. TAYLOR: So that's -- that's the thing. If you have intentional risk -- if you have unintentional risk in your portfolio that's a danger, because then you have to address that risk. That could easily go the other way. I think what happened is based on how you fund -- how you funded more U.S. managers.

Those managers did well. They didn't restructure at all. They just kind of just -- they weren't aware of that risk and that was unintended. I think that's where you just want to allow your managers to make that decision as opposed to having some unintentional allocation, that's really the misfit. Minimize that misfit as much as you can.

One of the things I'll add in terms of -- I do complain about the -- I shouldn't complain about paying beneficiaries, but we get the bill -- what we're here for, we get the bill every month but we -- we use that as an opportunity to look at our structure and see where -- where are we over at underweight, what is unintended, who has done really well and has taken us out of whack relative to other places.

We use that to get -- to address those biases and try to maybe, run a (inaudible) now, maybe we got to bring that down. That's unintended.

So we use those monthly liquidity opportunities -- you have training costs, they're going to hit our performance, but it does allow us -- maybe that's one reason we look good relative to other plans, John.

We use that as an opportunity to address those unintended risks that again are unintended. We want to have intentional risk or active positions as opposed to unintentional.

MR. JONES: To that point when you -- when you look at your global managers that are investing in U.S. and non-U.S., you're looking through the portfolio to see what the weightings are then some maybe 80 percent or -- whatever, they're not going to be exactly 60...

MR. T. TAYLOR: Correct.

MR. JONES: So you look through that and then adjust accordingly?

MR. T. TAYLOR: Yeah. We will fund and give them a global benchmark fund and they have rein to go over, underweight with U.S.

But it's their -- the active manager is making a determination based upon their information. One (inaudible) example to provide is we're Global Equity, we're underweight in Japan fairly consistently.

Well, why is that? Well, it's not because of how we've allocated the money to our managers, it's because our long and only investment managers generally don't like Japan. That's why. It's them and their decision. It's an active -- they've implemented -- it's an active decision. It's an intentional decision. That's why we're (inaudible) Japan. It's not because we have anything against Japan. It's driven by managers we've allocated to and given them discretion to make the call.

MR. PIRONE: Let's turn to our final topic, which is the risk budget. So we're going to fast forward and go on to page 171.

So what you see here -- the yellow line represents Global Equity's realized risk budget over time, okay, and note the dotted line, which is 75 basis points, that represents -- that represents the target.

So the point is there may be some incremental latitude to seek additional return by instead of kind of running below the 75 basis points,

targeting 75 basis points.

And on the last slide I'm going to -- I'm going to talk through a couple potential ways where it could increase the risk budget and -- so the (inaudible). So we're going to go to the last slide.

So now we're on 172. And actually this -- this first bullet links directly to discussion between Tim and Peter at the end of the last discussion in terms of what is the right number of managers.

That one way to increase the active risk budget would be if -- if you emphasize or increase your allocations to the managers you have a higher conviction with and then protect -- potentially either lowering allocations or potentially eliminating a few of the managers that you have less conviction with. Again that's -- the challenge is figure out who you have conviction and don't have conviction in.

But again on -- on the margin what that would do, right, if you reduce managers, that's going to increase the active risk budget. Okay. Because now it's kind of less (inaudible) of those active manager bets on the margin.

And so what that means is if you're -- they could potentially increase the amount of alpha in the portfolio because again the amount of your -- you track here the amount of your bets, that -- it kind of drives at the end of the day both kind of potential outperformance and underperformance.

Again if you think you have a set of managers that's strong, you know, by perhaps increasing the weighting to the ones where you have high conviction and that could potentially increase the total alpha from the portfolio.

Another more straightforward way to think about this is if you look across the -- the universe that Global Equity is currently 52 percent invested and active.

And there's kind of a range where they're allowed to go, which is from 47 up to 57, so about five percent lower relative to the current spec.

So you can see that kind of second bullet, if you will, perhaps consideration should be given to some modest redeployment to active management on the margins to again try -- try to get a little more juice out of the portfolio.

The third thing is actually kind of a variation or kind of a refinement of that last

point that -- again if we think about it at the end of the day, we have a big slug of large gap U.S. assets that are indexed. Right. So by definition we can't get any excess return on it.

So one thing that might be interesting to explore is the idea of portable alpha strategies. The idea there is that you have the underlying market exposure of the U.S. large cap index and then you pour it on an alpha strategy such that (inaudible) introducing misfit to the portfolio. Right. You still have your large cap exposure, but then have you an alpha engine on top.

There's a variety of different things that can be potentially used for that. For example currency could be one. I won't mention specific names, but again we're really talking about on the margin, right, things that we might be able to do to kind of tweak up that active percentage from 52, maybe a little bit north, again to try to be potentially (inaudible) over time.

So those are kind of -- those are kind of the main things. I know we've done kind of a whirlwind in a short amount of time. Again I was kind of hoping -- you kind of hope and kind of don't hope low hanging fruit, you know, here. We didn't.

But again -- yeah, really enjoyed working with you guys. It's a really nice structure, so I appreciate it.

MS. CANIDA: Any questions for Callan or Tim?

Thank you very much, Weston.

Thank you, Tim.

Next I'm going to turn it to Lamar. As we discussed this morning, we have some changes to our investment policy statement, and Lamar will go through them on Section 8 and -- an action is required by the committee, so.

MR. TAYLOR: Thank you, Madam Chair.

I'm happy to go through them. I think they're fairly self-explanatory (inaudible) in Tab 8. The first item -- the first item is investment policy, that's in Tab 8, the second in Tab 9. We'll take them separately. Make sure that we document the action.

So in both instances it's just simply incorporating the direction that we received from trustees at the last trustees meeting in August to include these statements in our investment policy statement. The information has been Redlined. It repeats verbatim the resolution that we adopted by the trustees.

I'm happy to go through it and answer any questions. I think at this point, it's really just sort of getting a -- if there are no questions, maybe just a motion for the approval and vote.

(A motion was made and seconded)

MS. CANIDA: All in favor?

(Members respond with aye)

MS. CANIDA: We have a similar section. It was a sheet that was included in our materials today, which is Redlined.

MR. TAYLOR: Thank you. So this next very similar thing, Item 9, is the SBA's proxy voting guidelines, which again directed the resolution adopted by the trustees in the last meeting was to include statement of proxy voting guidelines.

We handed out material today that just Redlines that and makes it clear in case you didn't get that. It's on page 200 of your materials. It's a section on the top of that page it indicates -- it's just a statement on proxy voting, again repeating verbatim what is in the resolution such that the SBA must act prudent and solely in the interest of the participants and beneficiaries on voting, and may not subordinate the interest of the participants and beneficiaries other objectives.

We'll go through it in more detail and answer any questions. If there aren't any questions, request a motion.

(A motion was made and seconded)

MS. CANIDA: All in favor?

(Members respond with aye)

MR. COLLINS: Can I ask a real quick question about this -- and I know we're going to get to Mike in a second. Mike, if you want to just say, Hey, I'm going to cover this later.

I've had several people talk to me up at the Capital about our voting and how we're voting and ESG and all of that. And I think -- and I don't want to -- I don't want to assume this, but I'm thinking that, you know, they'll point to some different votes. They'll point to like the Exxon vote or something as -- as proof that we're ESG woke. But there's a lot more that goes into that proxy -- that vote than just one issue, right, oftentimes.

So can you talk about that for a second or if you want to cover it later, that's fine, but since we're making this change.

MR. McCAULEY: Yeah. I don't have any planned

remarks later, by the way.

(Simultaneous crosstalk)

MR. McCAULEY: I don't have any slides or anything.

But, yeah, no, we -- we vote. Like, you know, we went through the deeper dive in the first quarter. We vote on a lot of different types of ballot items. Board members, so either, you know, reelection of existing incumbent directors on the board of directors or new nominated directors, that is on virtually every ballot for, you know, every annual meeting, U.S. and non-U.S. meetings.

You've got (inaudible), you've got all sorts of executive compensation setup, programs, omnibus plans, adopting, and amending, you know, individual equity plans at the corporate level, and then you have a variety of shareholder submitted resolutions commonly called ESG resolutions and they fall in that -- in those three categories, environmental, social, governance.

Those ESG resolutions of the shareholder submitted proposals are very, very few in number, both in the U.S. and non-U.S. They're really present in almost every market. Japan was talked about earlier, they have quite a few number of resolutions every year in addition to U.S.

Those proposals can span a very wide spectrum. They always do. There's usually several hundred of them, which might sound like a lot, but in terms of the total aggregate number of ballot items, they are a very, very small percentage.

We went back and looked at the five-year numbers for some of the environmental proposals specifically and they were less than a 10th of a percent of all of our votes.

And we typically support ESG resolutions at a much lower level. Some caveats to that with respect to the (inaudible) board of directors were fairly detailed in our compensation voting, so that can become a little more aggressive, certainly compared to the -- but there's a number of different ballot items. General proposals are just one -- you know, one type or one dimension of a typical U.S. company ballot.

MR. COLLINS: So under ESG there is the governance piece and there's good governance; right?

MR. McCAULEY: Yes.

MR. COLLINS: Not a -- not a, Hey, we want to bring in a bunch of directors who want us to get

out of the oil business that we're in to -- to create solar energy, it's not that that we're getting involved in.

It's, Hey, how many -- do you have enough independent directors, do you have enough directors that know what they're doing, do you have enough outside people. It's more things like that. You're not staking out, you know, territory where you're saying, Hey, Exxon, you need to get out of the petroleum business or you need to be carbon neutral by 2035?

MR. McCAULEY: Not at all. I mean, it's generally -- most of the shareholder proposals are disclosure reporting centric. That's, you know, the basic ask.

They are what are called purgatory or advisory so they're not legally binding. It doesn't necessarily make it easier for investors to support them, but it's just the caveat in terms of the context for those type of proposals.

But historically we've supported the G proposals, the governance proposals, at a much higher rate than we have the environmental social for that very reason.

We think those are more fundamental. They get core general rights, protection, lowering risk, just greater financial transparency, higher financial quality, higher ethics. You just kind of go through that governance spectrum.

We've never submitted an environmental or social proposal ever in the history of the SBA. We have submitted governance proposals. We were -- this was like from 2010 to 2014.

We were involved with a group initiative to submit proposals at S&P 500 companies on their director terms, what are called classified boards, where they vote essentially -- typically a third of the board is up for reelection every year. We supported annual elections. We believe it just provides a higher level of accountability and ultimately performance.

That program was wildly successful. We went from 70 or 80 percent of the S&P having classified more to what's today low single -- low single digit figures. It went well under 10 percent in just three or four years. So it was very, very successful.

A lot of those proposals were opposed by management as you -- they typically are, but we got a high degree of majority plus, you know,

investors -- or we did have a few of those that were backed by management and those received a much higher levels of support.

But those are the kind of things we tend to focus our time and effort on, board quality, skill sets, independent experience that the board members have, structural features, you know, articles, bylaws, (inaudible) protections, anything that has to do with like antitakeover devices is -- market for control is particularly important.

We've done studies on proxy contest voting, et cetera. So we try to -- we try to focus on those things that are truly material, truly significant drivers of value.

MR. TAYLOR: If I could go back to the proxy initiative there. That (inaudible) is exactly to facilitate shareholder value by increasing the possibility of sort of these takeover arrangements where you've got market for control. It makes it easier. So eliminating the poison pills, things that would facilitate shareholder value and that was -- that was the motivation behind that. So that's the -- that's the prism through which we're looking at these kind of initiatives.

MR. COLLINS: So the only thing I would say --

the last thing I'd say is all of us just supported both of these changes. I don't think there's anybody that shouldn't support those changes.

My only thing that I would say to you is there's some misperception out there on what people out here are doing. And they see other pension funds or they see BlackRock or whoever it is and they've -- you know, they've clearly been on a quasi mission, right, with regard to some of this stuff and we have not been -- I'm just making sure we're not on that mission and we haven't been on that mission.

MR. McCAULEY: I would not say we've been on that mission.

MR. TAYLOR: No.

MR. NEAL: Madam Chair.

MS. CANIDA: Yes, please.

MR. NEAL: As we've now adopted both of these provisions and we've read them carefully, are they new? Is this proxy voting for 2022 radically different than previous policy or was there...

MR. TAYLOR: I guess in terms of the language that's being included now, I don't think it is new or radically different. I think it's just underscoring, making crystal clear, sort of

removing doubt, and really establishing that you have a pretty good bright line for the future so the people can look back and understand what needs to be done and decisions.

Even though we might think that that's not necessary to be stated. We might sort of live and breathe that, it never hurts to be clear about it.

MR. NEAL: I'll ask this a different way. This has a very pretty booklet with a cypress tree with (inaudible), pretty and well written document.

Has there been a document in this format done before?

MR. TAYLOR: Yes, sir. That's standard every year. In fact it came up before this IAC -- well, any time there's any changes to it, it comes up to IAC for review and then changes are adopted by the trustees. Is it an annual thing?

MR. McCAULEY: We review it annually. We don't necessarily make any changes or proposed changes. In the first quarter for the 2022 -- before the trustee resolution was passed, well before that, we added a public benefit corporation amendment to one of the guidelines. That was the first change we had done in I think three years.

So they've been pretty stable and static. We haven't added or changed much at all over the last several years, but they are reviewed annually.

MR. TAYLOR: Thank you, Michael.

MS. CANIDA: Thank you. Today we thought we would do something a little different. I know there's been a lot of information that we've had to absorb.

So first of all thank you to all the investment leaders for their slides and what -- I think what we'd like to do is open it up to anybody from the investment side that has comments in a particular asset class or anything specific they would like us to hear and from our side if there's any questions on the slides that have been presented to us.

With that, I think Katy, given today's market, you need to make some comments.

MS. WOJCIECHOWSKI: Fed funds will continue to like -- I thought I would be able to say we have positive returns here today, which we did at one point in the end of July. We now have negative returns and fixed income, so I guess I can't produce returns.

We have a better shot at it this year. I'm more optimistic about it. If you look forward, the

market believes somewhere next year that the fed will contain inflation and that very likely if you -- projections for longer term bonds, fairly stable.

So the 10 year may approach four percent, may stick there. Federal funds may get to 4-4 and a quarter by the end of the year. I'm taking bets if you'd like. I'll lay a line on that. But it's very unsettled right now.

Liquidity has gotten worse. This is the first month that we truly are increasing sales out of the fed's portfolio, if you will. So our maturities go -- so it should actually shrink, begin to shrink the portfolio.

Mortgage rates are at six percent, so you won't see anything in the (inaudible) portfolio. It will probably shrink for them for the foreseeable future.

But I should note there's been a lot of liquidity drain on the system and we have seen deposits -- bank deposits shrinking, so it's getting squeezed. So we're starting to see it in talks of layoffs, so perhaps we'll see unemployment pick up.

That's really -- by the way corporations that we've invested in is still in fundamentally good shape. So returns might not be pretty, but they're still in good shape.

MS. CANIDA: Thank you. I didn't mean to put you on the spot.

MS. WOJCIECHOWSKI: That's okay. Wish I had better news.

MR. GOETZ: John, I have a question for you. What's going on with the marks? I mean, what you saw on the expected returns of private equity (inaudible) where it's all off an equity premium and risk adjustment, but I'd would appreciate a little bit of an update with --

MR. BRADLEY: What we have in the slides were our March portfolio was down I think a little over two percent for the quarter. We're still -- we probably have 80 percent of June valuations in. I think my best guess would be we're somewhere down four percent for the quarter, and so we're still seeing that kind of slow catch-up at least to the public --

MR. GOETZ: So cumulative you'd be like seven-ish?

MR. BRADLEY: I'd say, yes, seven, six down. So, you know, I think the expectation I think like

eight, seven -- when we look through the fundamentals of the portfolio companies, they're still performing fairly well.

So most are still in that budget in terms of revenue. There's weakness in the public markets, but we still have not seen our GPs yet catch up those private marks to what we're seeing in the public markets today, but we would expect it to gradually occur over the next couple quarters.

MS. CANIDA: Any other questions or comments?

MR. COLLINS: Steve and I were talking about this earlier. Office market, tough, just because of the lending environment?

MR. SPOOK: Yes. The office market's tough. We -- you know, prior to the sharp rise in interest rates, we prepared a bunch of assets for disposition. We've been advised that there's no lending market for office assets at this point. So there's really not going to be any good bidding. For those that (inaudible) just going to pull those...

MR. COLLINS: These are good assets in core markets that are good --

MR. SPOOK: These are great assets for the most part. There's, you know, still -- I mean, it's all the uncertainly around the office. Right. People don't like retail either, but you can kind of look at retail and you can kind of tell what the future is, office uncertainty. You know, investors hate uncertainty, so that's the big issue with office.

I think there's still a pretty big (inaudible) down on valuations for office. Because if you look at the public markets, the rates, they're still -- you know, they're pricing up as, you know, in the sixes and sevens caps and a lot of the odyssey funds, which make up our benchmark, are still pricing office in the fours and fives. We're at a disconnect there.

And a lot of that is just -- Lamar mentioned earlier the appraisal leg and the appraisal leg is of course (inaudible) by the lack of transactions. So we still haven't really seen it yet, although, you know, Q2 real estate returns are still incredibly strong at 28.3 percent, the benchmark.

Early indications are a guidance for Q3 odyssey, that's going to be pretty much flat. So with office leading the way down, apartments and -- well, all the residential sectors. Big industrial also seeing increases in their cap rates, but those

would be an offset (inaudible).

MR. COLLINS: What are your people telling you about the rental growth in the multifamily market flattening? I mean, you can't just keep going the way it's been going.

MR. SPOOK: Slowing down, but still strong. I mean, nobody has been underwriting what we really think for the last couple years, what we really think is going to come, because that would look kind of ridiculous on paper, but it happened.

But we still think that there is a chronic shortage of residential units, whatever kind it is, manufactured housing, single family, rental, multifamily, you know, anywhere from one to 4 million unit shortage (inaudible).

Unemployment, you know, people may move back in with their parents, but there's still going to be a shortage of housing units. So we expect it to continue...

Construction, you know, development, you know, most of what we've been doing over the last few years in industrial, multifamily because of great development spreads, we've been doing (inaudible) development.

Inflation has kind of thrown a wrench into that game with construction costs. So we are kind of at an inflection point where we may be tipping over into those sectors by core stablized assets if we can find them at good prices in this environment. We may be able to.

MS. CANIDA: Trent, anything on your side?

MR. WEBSTER: Yes, a couple things. So in our private credit book to answer the question earlier about marks, we really haven't seen negative marks. They've backed up a little bit, because a lot of our stuff is LIBOR plus (ph), so LIBOR's gone up a bit so you see the returns go up, you see spreads go up 50 to 75 basis points.

For the most part, our marks held pretty steady. We have over $3 billion of uncalled commitments and kind of credit. So if you start to see some dislocations, we've got a lot of fire power ready to go.

Our managers have been fairly discipline about putting money to work, that might be because they got long investment period, so they're not feeling pressure to get it to work.

But this is really an interesting opportunity for us because the thing we've posited -- or wondered about is what happens when you get kind of

a mild recession? The fed doesn't come rushing in to bail everything out the last two times and -- like they did in the global financial crisis and the pandemic and that can present some very interesting dislocations and (inaudible) risk-adjusted returns.

So a lot of the stuff that we did of the global financial crisis that happened pretty quickly, but what it allowed us to do is build up this reserve, the one called capital, we think will be good and marketable for the next few years when things get a little choppy.

But real assets, I think I made a comment on there about how commodities were booming. I wrote that about a month and a half ago. The commodities are booming but we still think the fundamentals are pretty good on that with commodities that are outperforming.

On hedge funds, our hedge fund book was up slightly for this year. The stocks were down 15, 20 percent. But we're underperforming a little bit in our hedge fund portfolio, but we designed this to a large extent to withstand times like this, so that's working.

I would also say that, you know, we got

roughly -- we benchmark each fund on a very methodical framework. And so we can -- we can identify a benchmark that is similar to a public market -- public markets (inaudible) similar to this strategy. We use that plus premium. Where we don't, we use -- we use the real return benchmark.

Over the last few years, the number of funds -- or the percentage of the portfolio using the real return benchmark has gone down. The percentage using the public market benchmark's gone up, but about 40 percent of the book is currently still benchmarked to the real return -- real return (inaudible). We saw, you know, 10, 12 percent returns for these benchmarks over the last 12 months.

And I bring -- get up here and tell you that, you know, pat ourselves on the back, but if you told me that if that were to happen, what we would have done. I would have said we would have underperformed had -- if our public -- if our real return benchmark for 11, 12 percent, but we didn't.

I will give credit to my group, because they're the ones selecting the funds. In my estimation had a very, very good fiscal year last year, better than I would have thought.

Now, we have 30 -- we've got about a third of the portfolio on public markets, and so some of the public markets have fallen. So we got -- going to have a bit headwind in front of us going forward, so we can get some of that back, but I -- I am quite surprised at how well we did over the last fiscal year, because I would have thought -- if you had told me we were going to have eight, nine percent inflation would we outperform or underperform, I would have said, oh, you know, we certain (inaudible). So it's better than expected.

MR. COLLINS: Was that intentional or unintentional?

MR. WEBSTER: Unintentional.

MR. COLLINS: You don't have to answer that.

MR. WEBSTER: I retract that. That's all I have.

MS. CANIDA: Thank you very much.

Dan, any updates?

MR. BEARD: One of the things as we continue to grow in membership. So for the last fiscal year, we had approximately 20,000 new plan participants. Again driven by the default last year -- we look at last fiscal year, approximately 68 percent of all new hires are rolled into the investment plan and that was through default and active elections.

So it's about three percent higher than the previous fiscal year. So you're basically looking at about out of every 10 new employees, seven are enrolled in the investment plan. We expect that trend to continue.

As far as the new contribution rate, it's too early to see what affect that may have on participation rate. I can tell you that it has been noticed by our university providers that are the providers for the optional retirement plan.

One of my staff members was at a benefit fair earlier last month and they came up to them and said, Hey, how can we get our rate increased for those university people who are in the optional plan?

The reason is because now that our rate is higher, they have lost their one calling card, (inaudible) calling card to get these people to enroll or (inaudible), which is the higher rate.

So it is being noticed. It has been noticed by (inaudible) university folks, by professors, because now for the first time in probably since the plan -- or even before that. For the first

time our rate is now higher, so -- but it's still -- we just started, so we'll wait and see how -- what affect that may have.

We do -- we have run some numbers and we have a chart. I think we might have shown it to you in June. We have a chart that shows that with the rate increase now for someone who works a full career, mainly the investment plan will give them the higher rate.

Somebody working a full career, there are certain areas in here where pension plan will provide a higher rate -- a higher benefit, but for the most part we've seen those numbers flip with just that three percent increase in the contribution rate. That's about all I have to add. Answer any questions.

MS. CANIDA: Great update.

Any questions for the investment team?

Thank you very much and thank you for all the work you put into doing these slides for us.

So next item number -- oh, Katie will give us performance review. Thank you, Katie.

MS. COMSTOCK: So we have the four major mandates and this is all through the end of June 2022. I'll hit the highlights, but please let me know if there are questions.

End of the fiscal year, the assets that are just shy of 180 billion. I was thinking that -- I was thinking hopefully clearly due to public market investment losses largely. The portfolio was down about $20 billion over the fiscal year.

When you look at the asset allocation here what you'll see is this is the interim policy in orange relative to the actual. So the actual -- the portfolio is managed very closely to targets.

I will point out though that we continue to see some (inaudible) to the long-term policy to private equity. Private equity has exposure of about 10 percent at the end of the year. That was the tailwind. Private equity has done extremely well.

We did hear some recent marks are going to be coming in in the future quarters, but for the fiscal year (inaudible) having a greater exposure to private equity has been beneficial, and it's been subsequently lower allocation to the Global Equity, which is also a tailwind.

I do want to point out we need to update the maximum allocation for private equity. You all are in compliance with your policy statement. The

maximum should be 12 percent and that was a change you made at the last quarterly meeting, that range, so we will correct that for the next report.

Now, onto performance, here we're showing the total performance in that beige color relative to two benchmarks, one is a performance benchmark and the one in green is the absolute nominal target rate of return, which CPI plus four percent.

So few comments here. When you have Global Equity down 17 -- roughly 17 percent, bonds down close to eight percent, it shouldn't be a surprise that over the year, the total fund is also down. It was negative 6.3 percent for the 2022 fiscal year.

What helped offset that were your alternative investments. Over the year real estate was up about 22, percent private equity was up 24 percent, and strategic investments was up 7.8 percent. So that diversification has benefited and has helped smooth this pattern of returns, but we did see correlations between equity and bonds, which were positive.

That's what we've been talking to our clients about is when that diversification allocation to bonds becomes less effective, how do you offset that and it's more diversification for cost of return seeking portfolio.

But to that effect, you need to balance those long-term results with a short-term potential volatility. You can see that FRS has been very successful with the policy that you had in place, a strong allocation to public equities. Over the 10 years, the portfolio has earned 8.6 percent, well above the assumed rate of return even going back when it was north of seven percent.

So it's -- long-term returns have been very strong, but we'll look at if the next quarter is how do you want to position the portfolio on a go-forward basis? Are there ways to still earn an attractive return but reduce the risk, smooth that pattern of return especially for over shorter time periods.

On a relative basis, performance continues to look very favorable. You can see relative to your performance benchmark, the portfolio has outperformed over all of these trailing time periods quite notably.

As I mentioned private equity is a large contributor to that. The private equity is benchmarked to a public equity plus a premium. So

there -- take it with a grain of salt. I would say public equities got clobbered recently, but longer term private equity continues to also outpace the public equity benchmark, and then having (inaudible) has also been beneficial.

Now, the numbers that might stick out are the performance relative to the absolute nominal target rate of return. We saw inflation hit 9.1 percent at the end of June. So you can see the one year rate of return is at 13.4 percent, a fairly tough bogeta (ph) hit when you have interest rates spiking and equity markets falling, but that's why we look at that benchmark primarily over longer term periods.

We do that on the following page where we look at the trailing 20, 25, and 30-year periods where the FRS has kept up with or has exceeded this long-term benchmark, so we'll see how that plays out as we continue to watch the inflation numbers come in.

Next we'll touch base on the pension plan relative to a peer group. This is the TUCS to 10. This reflects the 10 largest public pension plans in the U.S. So similar to previous years, the largest difference typically with the FRS plan and

the median plan. This universe is Global Equity.
You can see the actual Global Equity for the FRS has declined from the long-term to roughly 48 percent, so you're more in line with that median peer. But it's that allocation within Global Equity that FRS has greater exposure to foreign equities relative to most peers.
At the end of this period, it's roughly three to four percent. Looking back (inaudible) it has been a little greater than that. And what we can see is how that plays out into the numbers.
We're making an educated guess here, but it's a given we don't have the full transparency. But when you see large discrepancies between foreign and U.S. equities, that will impact the relative performance of your plan versus your peer group.
So what you're looking at here are gross returns. But if you want to look at the rates, we include that as the following page there at the bottom. Below median rates at the end of 6/30 likely largely driven by just the discrepancy between U.S. and non-U.S. and the SBA's (inaudible) exposure to international securities.
Any question on pension plan performance?
Just quickly touching on the investment plan.

I want to hit this top chart here. At the end of the year there's about $12.8 billion in assets in this plan. What I'll focus your attention on again is the investment plan at the bottom row there, the excess return of the aggregated returns versus the benchmark.
You heard earlier some difficult time for active management across your equity portfolios for that one-year period, but longer term active options in this plan have outpaced their benchmark, ranging from 10 to 30 basis points over the three, five and 10 years.
Hurricane catastrophe funds had -- the operating fund had about 12 billion in assets under management at the end of June. As you can see as rates have risen, that has impacted your return results. So losses in terms of investment results, but over the long term they continue to remain fairly low but above their benchmark over the three, five, and 10-year periods.
And then the last (inaudible) that we cover is Florida PRIME. At the end of June, there was $18.7 billion invested in the PRIME portfolio. These assets are up over the year and down over the most recent quarter due normal cyclical cash flows.

This portfolio was able to generate some positive, though modest returns and well above their -- I say well above their benchmark, but above benchmark which is a peer group of other like invested money market funds. So that concludes the performance the coverage for the fiscal year 2022.

MS. CANIDA: Thank you, Katie.

Any questions on performance?

Thank you. I will now turn it over to Vinny. The IAC compensation subcommittee met last week and Mr. Vinny Olmstead is the chair and he will give us an update.

MR. OLMSTEAD: Quick update. Vinny Olmstead, compensation chair, and we had our annual compensation meeting on September 6. The members are myself, Peter Collings, and Gary Wendt, who is on the phone. Tere was nice enough to join us as was Lamar and some of the staff.

As a quick refresher, the mission of this group is to really focus on the CIO and the subjective portion of the incentive plan. So 85 percent is quantitative, 50 percent is subjective, which is what the plan is for the CIO. That's our focus. It's pretty narrow, but we often observe have broader discussions, that's the intent.

Normally we go through a process of having the CIO provide some -- a memo and information on the year of review. Mercer sends out a survey and walks the compensation committee plus others who want to participate through a process of evaluation. We provide feedback and then send I think a note to the trustees.

This year is a little bit different. Part of the compensation plan was I think written years ago was if you're in an interim role, you're not eligible for any of the incentive -- incentive pay.

I think this was a really -- I think there was a lot of thought, time, et cetera into -- obviously put into this plan. I don't think there was a contemplation that somebody internally would be get moved up, so a little inconsistency on that front and a little irony in that if Lamar wasn't promoted, he would be eligible for the entire incentive plan. So we're going to address that. I'll address that in a second.

Lamar called and said should we have a meeting. I said, absolutely. This is a good policy, it's a good process and we want to provide some feedback. So we got the memo, we went through it in great detail, provided a little feedback that

I think was helpful.

We did sort of then take a few minutes to sort of -- you know, sort of take a step back and look at, hey -- like any compensation plan, you have to get a rate on this. I'm on a number of compensation committees.

The compensations plans when they're originally done, you have to get a rate. A lot of them have a lot of flexibility because things happen like COVID, things happen like Ukraine that are just not anticipated. Those are tough situations. You all faced it a couple years ago. Those were part of the plan based on a little bit of a technicality.

So our thought process this year was to have Mercer do some work for us from a benchmarking standpoint, for us to take a look at some of the policies that are in place and perhaps make some recommendations, not only for CIO, Lamar, but also for the -- for the broader group, because again there's a couple of quirks and nuances that I don't think possibly could have been anticipated in the three to five years it took to actually develop the -- develop the plan.

So our process -- our thought process now is

to get feedback from Mercer, draft a memo to trustees making some recommendations to make this a little bit smoother.

We also had a lot of conversation about, you know, the broader team. Which when we look at the incentive plan, the incentive plan is to do a couple of things that are super important, one is to recruit and one is to retain and there's probably some nuances that need to be fixed in order to, you know, enable Lamar in his current role to continue to do that.

As it is for I think a lot of the folks across the aisle from here who are part of the incentive plan and some of these little nuances that make it a little bit tougher to recruit and a little bit tougher to retain, especially in today's market, which is very, very difficult.

We've got our thumb on that. We think we have some good recommendations. We're going to get some feedback from Mercer, send some recommendation to trustees, and we'll shoot from there.

That's the quick summary. If anybody else has any comments, I absolutely welcome.

MR. COLLINS: I would just say this just to get in a little bit more detail on one of the pieces that Vinny was talking about.

You know, when we first designed this plan, the headline risk is just because of the relative numbers, right, versus other agencies involved. So I think that there was some -- it was getting ratified right as I was coming on board, so probably, what, I don't know, nine years old, eight years old.

But there's some clear deficiencies in it and one of those has to do with performance. If you beat your benchmark but the benchmark was negative, you get pushed out. Who -- which one of you controlled the pandemic; right? Which one of you decided to invade Ukraine? Yet you showed up every day and outperformed your benchmark, and so that was one that we talked quite a bit about.

And I don't know that it was an oversight in the beginning, because what we were doing was revolutionary relative to other state agencies and people were cautious, but it's absolutely something that we have to fix.

MS. CANIDA: Thank you very much for all the work that went into that.

Next item is -- are there any comments or questions from the audience?

Hearing none, I think we can adjourn.

Lamar, do you have any other --

MR. TAYLOR: Just wanted to say thank you all for being here and those virtually. This was a long meeting and a lot was really, really good engagements, so I just wanted to thank you all for the time and energy and that's it.

MS. CANIDA: I echo that and I want to add to all the work that was done by everybody to get us here today. So I really appreciate it. Thank you very much.

(Proceedings, Volume 2, concluded at 4:35 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA
COUNTY OF LEON

I, JUDY LYNN MARTIN, Stenographer, certify that I was authorized to and did stenographically report the foregoing proceedings, and that the transcript, pages 128 to 282, is a true and complete record of my stenographic notes.

Dated this 30th day of September, 2022.

Judy Lynn Martin

JUDY LYNN MARTIN, Stenographer

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OF FLORIDA

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POST OFFICE BOX 13300
32317-3300

Date: November 21, 2022

To: Board of Trustees

From: Mark Thompson, Audit Committee Chair

Subject: Quarterly Audit Committee Report

The State Board of Administration's Audit Committee met on November 21, 2022. Please see the attached agenda for the items discussed. Also please see the attached Office of Internal Audit Quarterly Report presented to the Audit Committee at the meeting.

STATE BOARD OF ADMINISTRATION
Audit Committee Open Meeting
Agenda
November 21, 2022
10:00 A.M. – Conclusion of Business

1. Call to Order

2. Approve minutes of closed and open meetings held on August 15, 2022

3. SBA Interim Executive Director & CIO status report
   - SBA Update: Investment performance, risks, opportunities and challenges

4. Presentation on the results of the following 2022 financial statement audits:
   a. Crowe
      i. Florida Hurricane Catastrophe Fund (FHCF)
   b. Crowe
      i. Florida Retirement System Trust Fund
      ii. Florida Retirement System Investment Plan Trust Fund

5. Presentation by Funston on scope of the 2022-23 Governance, Risk Management and Compliance (GRC) Assessment

6. Chief Risk & Compliance Officer Quarterly Report
   a. Renaissance Regulatory Services (RRS) SEC Mock Exam Presentation

7. Office of Internal Audit Quarterly Report

8. Interim Inspector General Quarterly Report

9. Other items of interest

10. Closing remarks of the Audit Committee Chair and Members

11. Adjournment

Office of Internal Audit (OIA) Quarterly Report to the Audit Committee

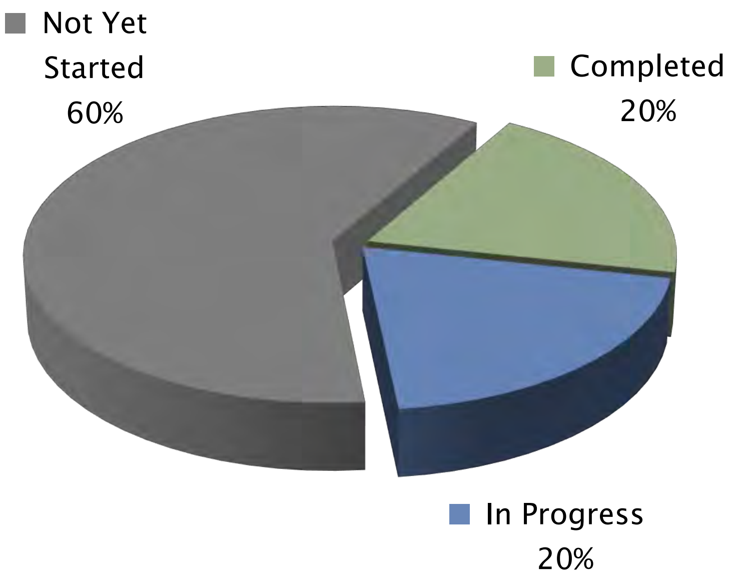
November 21, 2022

Table of Contents

Status of the FY 2022-2023 Annual Audit Plan

Status of the FY 2022-23 Annual Audit Plan

Internal Audit and Advisory Engagements

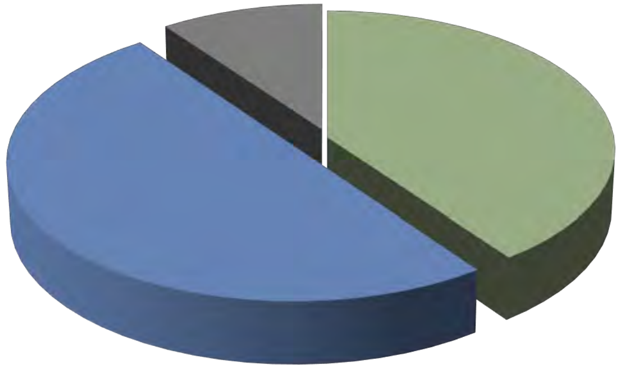


Projects Status	Type	Planned Timing
Completed		
Performance Reports for Alternative Investments	OIA Operational Audit	Q1
Identity and Access Management Advisory	OIA Advisory	Q1
In Progress		
Public Market External Manager Oversight	OIA Operational Audit	Q1-Q2
Cybersecurity Incident Response Plan	OIA Operational Audit	Q2
Not Started		
Critical Programming Documentation	OIA Advisory	Q3
External Real Estate-Search/Selection	OIA Operational Audit	Q3
Payroll	OIA Operational Audit	Q4
Incentive Compensation	OIA Operational Audit	Q4
Vendor Management	OIA Operational Audit	Q4
Periodic Follow-up Audit	OIA Operational Audit	Q2-Q4

Highlighted: Completed since prior quarterly report.

Status of the FY 2022-23 Annual Audit Plan

External Engagement Oversight

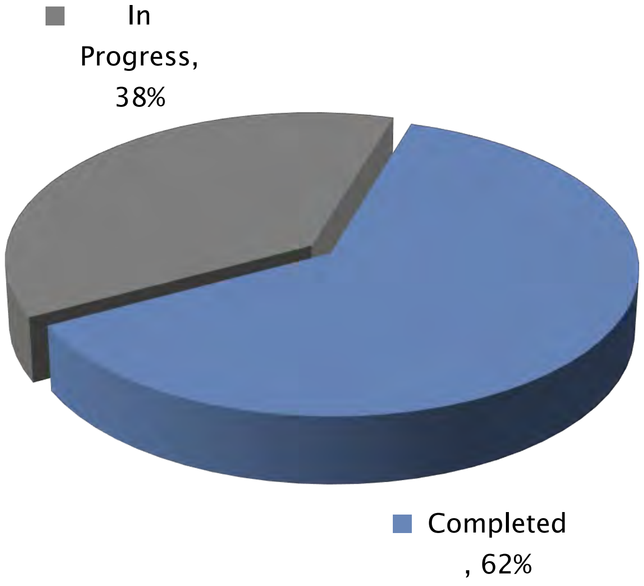


Highlighted: Completed since prior quarterly report.

Project Status	Service Provider	Type	Planned Timing
Completed			
Florida Retirement System (FRS) Trust Fund	Crowe	External Financial Statement Audit for FY21-22	Q1/Q2
FRS Investment Plan Trust Fund	Crowe	External Financial Statement Audit for FY21-22	Q1/Q2
Florida Hurricane Catastrophe Fund	Crowe	External Financial Statement Audit for FY21-22	Q1/Q2
Network Security Assessment, outsourced	Peraton	External IT Assessment	Q1/Q2
In Progress			
Florida PRIME Financial Statement Audit	Auditor General	External Financial Statement Audit for FY21-22	Q1/Q3
FRS Biennial Review	OPPAGA	External Review	Q1/Q3
Florida Growth Fund Initiative	OPPAGA	External Review	Q1/Q3
AG Statewide Financial Statement Audit	Auditor General	External Financial Statement Audit for FY21-22	Q1/Q3
AG Financial Systems Operational Audit – PSFS, Eagle, PRIME	Auditor General	External Assessment	Q2/Q3
Not Started			
AG Operational Audit – Topic TBD	Auditor General	External Assessment	TBD

Status of the FY 2022-23 Annual Audit Plan

Special Projects, Risk Assessments, Annual Audit Plan and QAR



Project Status	Type	Planned Timing
Completed		
None		
In Progress		
Annual Quality Assessment Review - Self-Assessment	OIA Quality Assurance	Q2/Q3
GRC Assessment	OIA Special Projects	Q2/Q3
Investment Performance and Risk Analytics Data Assessment Project	OIA Special Projects	Q2/Q3
AuditBoard Configuration Updates and New Templates	OIA Special Projects	Q1-Q4
Continuous Risk Assessment	OIA Risk Assessment	Q1-Q4
Not Yet Started		
Annual Risk Assessment	OIA Risk Assessment	Q4
Annual Audit Plan	OIA Risk Assessment	Q4
Complimentary User Entity Control Testing Validation	OIA Special Projects	Q1-Q4

Highlighted: Completed since prior quarterly report.

Completed Projects & Status of Management Action Plans/Recommendations

Performance Reports for Alternative Investments

The State Board of Administration (SBA) provides Florida Retirement System (FRS) Defined Benefit (DB) Plan (FRS-DB) performance reports to the Trustees, Investment Advisory Council (IAC), and other external and internal stakeholders, to report on total fund performance, net asset value (NAV), asset allocation performance returns, asset class benchmarks, and cash flow. Our risk-based audit assessed the existence, adequacy, and efficiency of internal controls over Performance Reports for Alternative Investments for the period January 2020 through October 2021. We also assessed the efficiency and effectiveness as to how and by whom the reports are used internally and externally specifically for the private market asset classes – Private Equity and Strategic Investments.

- We tested 31 of the 37 key controls identified by Performance Reporting & Analytics (PRA) management and OIA. There is only one key control considered not effective and only four with some improvement needed for the 31 controls. The other 26 key controls were considered effective. Based on these results, we are of the opinion that the PRA key controls and processes are in place, operational, and provide reasonable assurance that the performance reports for alternative investments processes are in compliance with applicable guidelines.

- We identified performance reports used by internal and/or external resources for decision-making purposes for the private markets (SI & PE) excluding RE. Obtained an understanding of the processes to produce these reports, including the sources of the data for generation of these reports, by interviewing the following groups:

  i. BNYM-IPMP (Book of record for SBA performance)

  ii. Cambridge (External consultant for SBA alternative investments, including Private Equity and Strategic Investments)

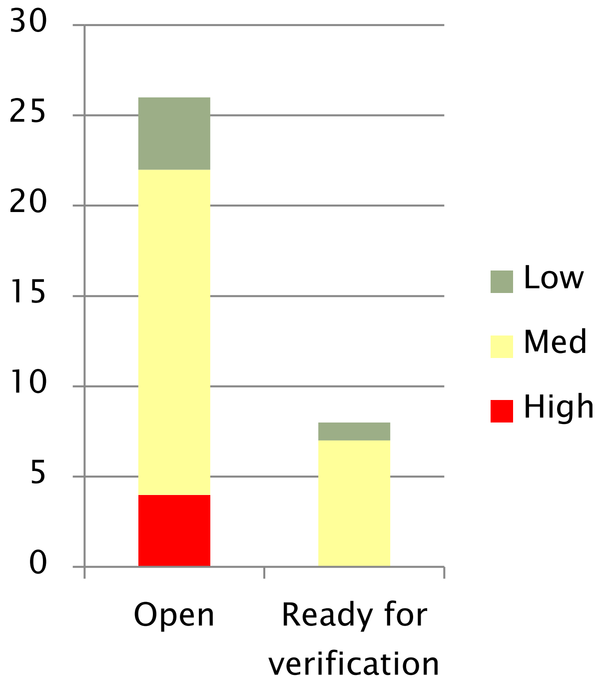
  iii. SBA – Deputy Chief Investment Officer

  iv. PRA – Chief Risk and Compliance Officer IPAA – Senior Investment Policy Officer

  v. Internal stakeholders – Asset classes

Based on interviews conducted and the support and advice from our contracted subject matter expert, ITCI, we identified other areas not necessarily associated with the PRA key controls testing that need improvement. The overarching criteria and comment in the report, based on comments 1 through 8 and management's corresponding action plans, it is recommended that management consider restructuring how performance is monitored for alternative investments. For the full report, please refer to Appendix B of this report.

Status of Management Action Plans–Audits



		Risk Rating for Open Recs			Status		
Report Title	Report Date	High	Med	Low	Open	Ready for verification	*Verified during Qtr*
AG - Operational Audit 2017	11/13/2017			1		1	
Procure to Pay Operational Audit	6/30/2020		4		2	2	
Real Estate Direct Owned Operational Audit	10/6/2020		1		1		
AG – ITGC and PRIME 2020	10/16/2020		2		2		
AG – ITGC and PRIME 2020 Confidential	10/16/2020		5		5		
AG – FRS Investment Plan Operational Audit 2021	2/22/21		3		3		
Business Continuity and Disaster Recovery Operational Audit	3/19/2021		3		1	2	
Private Equity Operational Audit 2021	9/9/2021		1	2	3		
Derivatives Collateral and Cash Management Operational Audit	3/31/2022		1	1	1	1	
Performance Reports for Alternative Investments Operational Audit	9/19/2022	4	5	1	8	2	
		4	25	5	26	8	
		12%	74%	15%	76%	24%	

For details, see Appendix A.

Changes highlighted in yellow

Management Action Plans relate to findings from audits performed by internal or external auditors. The OIA monitors and performs follow-up procedures on the management action plans in accordance with the IIA Standard 2500. A1. In certain cases, follow-up procedures are performed by external auditors.

Status of Recommendations – Advisory Projects

Report Title	Report Date	Status: Open	Status: Closed per Mgmt	Status: Total
Governance, Risk Management, and Compliance Assessment (Funston)[1]	1/15/2018	2	4	**6**
Network Security Assessment 2018 (BDO)[2]	11/15/2018	1		**1**
Network Security Assessment 2019 (BDO)[2]	11/21/2019	5	1	**6**
CIS CSC Framework Gap Assessment Advisory[1]	3/19/2020	12		**12**
Network Security Assessment 2020 (BDO)[2]	1/5/2021	12	2	**14**
Security Configuration and Vulnerability Management Advisory[1]	8/3/2021	24		**24**
Network Security Assessment 2021 (BDO)[2]	2/2/2022	19	11	**30**
Identity and Access Management Advisory[1]	9/27/2022	9		**9**
		84	18	**102**

Changes highlighted in yellow

Advisory Recommendations made by OIA or external consultants resulting from an assessment of a program or activity such as governance, risk management, compliance, ethics, disaster recovery preparedness program, etc. The OIA monitors the disposition of these recommendations in accordance with the IIA Standard 2500.C1.

[1]At the advice of the Audit Committee, the OIA closes Advisory Recommendations that management represented as "complete" once the OIA has considered those in the annual risk assessment.

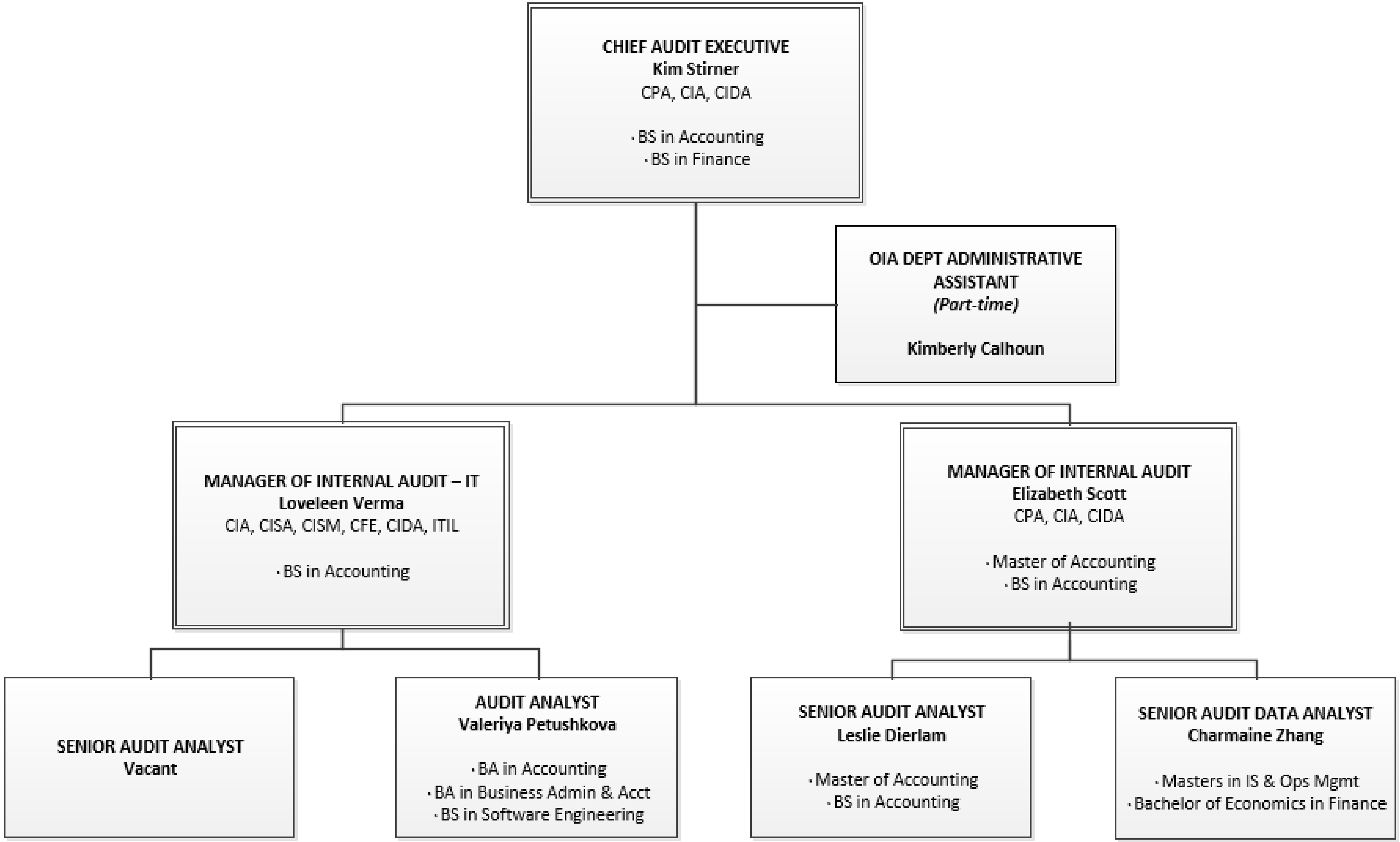
[2]Recommendations will be reviewed for remediation and closure as part of the subsequent Network Security Assessment.

Other OIA Activities

Status of OIA Department Goals FY 2022-23

TOPIC	ACTIVITIES	IMPLEMENTATION EFFORTS	STATUS
INTERNAL AUDIT PROCESSES	Data Analytics: Use for continuous risk assessment (CRA), engagement planning, continuous monitoring and auditing, and evaluate the potential use of robotics process automation for audit projects.	The use of data analytics is underway for engagement planning, continuous monitoring and auditing. Also, an RPA is in the queue to assist with the dashboards for continuous monitoring. The CRA development is ongoing.	In progress
	Engage consultants (co-source or outsource) to assist with high-risk areas relating to investments and IT audits.	Peraton is engaged to conduct the network security assessment which is scheduled to begin in August 2022. ITCI is engaged on a retainer basis to assist with investment-related audits throughout the fiscal year. Contracting is complete.	Complete
	Identify and discuss with management potential areas where we may add value either as advisory/consulting projects or informal initiatives.	The current annual audit plan includes IT/IS related advisory projects.	In progress
	Update the pipeline of projects on at least a quarterly basis. Consider agile focused audits and advisory projects.	We set up a tab in our Risk Channel in Teams to document and review pipeline as needed.	In progress
USE OF TECHNOLOGY	Continue to increase automation of continuous data analytics where possible and support the SBA's use of Tableau Server and data governance.	Continue to do this in conjunction with the data analytics activity mentioned above under internal audit processes.	In progress
	Begin using our new automated workpaper solution, AuditBoard for all audit projects.	Templates have been developed for audit projects and it is being utilized for two audit projects. Additional templates for advisory are in progress. We are currently evaluating AuditBoard for recommendation monitoring.	In progress
PEOPLE	Develop a training plan based on knowledge gaps for each member of the OIA to close those gaps.		In progress
	Have at least one team building event during the fiscal year to enhance the team.	Team building event held August 2022.	Complete
	Fill the open Audit Analyst position.	Hired Audit Analyst in October 2022. However, Lead IT Audit Analyst position is now vacant. Changing to Senior Audit Analyst position vs Lead.	In progress

OIA Organizational Chart



Other Items for Discussion

- Changes to OIA organizational chart
  - Senior Audit Data Analyst – Charmaine Zhang – change from intern back to FTE
  - New Audit Analyst - Val Petushkova
  - Senior Audit Analyst - Vacant
- Audit Committee meeting dates in 2023
  - February 27, 2023
  - May 22, 2023
  - August 21, 2023
  - November 20, 2023

Questions/Comments

OFFICE OF INTERNAL AUDIT

OIA

SBA

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MEMORANDUM

To: Lamar Taylor
From: Michael McCauley
Date: November 17, 2022
Subject: Quarterly Standing Report - Investment Programs & Governance

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GLOBAL PROXY VOTING & OPERATIONS

During the third quarter of 2022, SBA staff cast votes at 1,396 meetings worldwide, voting on ballot items including director elections, audit firm ratification, executive compensation plans, mergers & acquisitions, and a variety of other management and shareowner proposals. These votes involved 10,559 distinct voting items—voting 82% "For'' and 16.9% "Against/Withheld," with the remaining 1.1% involving abstentions. Of all votes cast, 17.1% were "Against" the management-recommended vote. SBA proxy voting occurred in 50 countries, with the top five by meeting volume comprised of India (393), China (364), Japan (299), United States (235), and the United Kingdom (117). For the quarter ending September 30, 2022, the table below provides the SBA's major proxy voting statistics across all markets.

Individual Meetings	1,396
Individual Ballots	2,777
Individual Proposals	10,559
Percent Votes "For"	82.0%
Percent Votes "Against"/"Withhold"	16.9%
Percent Votes Not Voted	0.3%
Percent Ballots Not Voted	0.6%
Proxy Paper ID	1,342
Issue Descriptions	178
Companies	1,238
Portfolios	83
Country of Origin	50
Percent Votes Against Management Reco..	17.1%
Percent Votes in Favor of Directors	76.9%
Percent Votes in Favor of Auditors	99.4%
Percent Votes in Favor of Merger/Acquisi..	97.5%
Percent Votes in Favor of Compensation I..	65.3%
Percent Votes in Favor of SHP Environme..	0.0%
Percent Votes in Favor of SHP Social Issues	27.3%
Percent Votes in Favor of SHP Governanc..	50.0%
Percent Votes in Favor of All SHP Issues	39.6%

CORPORATE GOVERNANCE & PROXY VOTING OVERSIGHT GROUP

The most recent meeting of the Corporate Governance & Proxy Voting Oversight Group (Proxy Committee) occurred on September 14, 2022, and the next meeting will be held December 6, 2022. The Proxy Committee continues to review ongoing governance issues including the volume and trends for recent SBA proxy votes, company-specific voting scenarios, corporate governance policies, governance-related investment factors, major regulatory developments and individual company research related to the Protecting Florida's Investments Act (PFIA), and other statutory investment requirements related to Israel and Venezuela.

LEADERSHIP & SPEAKING EVENTS
Staff periodically participates in investor and corporate governance conferences. Typically, these events include significant involvement by corporate directors, senior members of management, and other key investor or regulatory stakeholders. The following items detail involvement at events that occurred recently:

- In September, SBA staff participated in a meeting of the Board of Directors of the Council of Institutional Investors (CII), discussing a range of topics affecting the organization. Staff also attended the Fall Conference of CII.
- In October, SBA staff participated as a speaker (virtually) during the Annual Forum and Auxiliary Corporate Governance Conference sponsored by the Independent Oversight Committee (IOC) of the Best Practice Principles Group (BPPG). The event covered a variety of investor topics, with a focus on the corporate governance practices of Italian companies. During the event, staff also participated in the quarterly meeting of the IOC, discussing several issues affecting the proxy advisory industry.
- In early November, SBA staff participated in the Harvard Law School Corporate Governance Roundtable. The event included coverage of a variety of investor topics, with a focus on recent academic research on corporate governance.
- In late November, SBA staff participated as a speaker during the joint Council of Institutional Investors (CII)-New York University (NYU) Corporate Governance Executive Education Course. The event included coverage of a variety of corporate governance topics, notably with a focus on executive compensation design and related shareowner analysis.

ACTIVE OWNERSHIP & CORPORATE ENGAGEMENT
The SBA actively engages portfolio companies throughout the year, addressing corporate governance concerns and seeking opportunities to improve alignment with the interests of our beneficiaries. From late August through early December 2022, SBA staff conducted engagement meetings with several companies owned within Florida Retirement System (FRS) portfolios, including Bank of America, Honeywell, Constellation Brands, Amgen, Johnson & Johnson, Huntington Bank, and Turquoise Hill.

HIGHLIGHTED PROXY VOTES
Constellation Brands, Inc.—Constellation Brands had a special shareowner meeting on November 9, 2022, regarding the reclassification of common stock. The board sought shareowner approval to amend the company's charter to reclassify all outstanding Class B shares into Class A shares. SBA staff voted to approve the transaction. As a practice, the SBA opposes dual class share structures. Dual class shares distort the relationship between economic interest and voting power and risk harm to companies and their shareowners.

Approximately 75% of the issued and outstanding shares of Class A Common Stock held by the unaffiliated Class A holders voted to approve the amended and restated charter. The company announced that its stockholders approved and adopted an amended and restated charter, which will effectuate the previously announced elimination of Constellation's Class B Common Stock. Following completion of the transaction and cessation of trading in the Class B Common Stock, Constellation's publicly listed stock will consist of a single class of Class A Common Stock, with "one share, one vote" rights.

Turquoise Hill Resources, Ltd. (TRQ)—The TRQ board sought shareholder approval for TRQ to be acquired by Rio Tinto (RIO), TRQ's controlling shareholder with 50.79% ownership, at the November 15, 2022, special shareowner meeting. Under applicable law, approval of the proposal requires the support of a majority of the minority. Glass Lewis & Co. (GLC), a proxy advisor used by the SBA, recommended a vote for the transaction.

Institutional Shareholder Services (ISS) recommended that shareowners vote against the transaction. Two shareholders, SailingStone (2.2 % ownership) and Pentwater (14.5% ownership), expressed opposition to the proposed transaction, citing concerns with valuation, timing, and other factors. After reviewing research provided by both sets of providers and an engagement meeting with TRQ, SBA staff voted in support of the transaction. As noted by GLC, the proposed merger is in the best interests of TRQ and is fair to TRQ's minority shareholders for various reasons, including market trends, financing risks, the market premium of the merger consideration, and limited available alternatives.

REGULATORY AND MARKET DEVELOPMENTS

Securities and Exchange Commission (SEC) Charges Investment Adviser with Violating the Proxy Voting Rule

In September, the SEC announced settled charges against a small, registered investment adviser for making proxy votes on behalf of clients without taking any steps to determine whether the votes were in the clients' best interests and for failing to implement policies and procedures reasonably designed to ensure it voted client securities in the best interests of its clients. The SEC's order finds that during a five-year period ending in January 2022, the investment adviser directed a third-party service provider it engaged to cast proxy votes on behalf of registered investment companies ("RICs") it managed to always vote in favor of proposals put forth by the issuers' management and against any shareholder proposals. According to the SEC's order, in connection with over two hundred shareowner meetings, the adviser caused the third-party service provider to vote the RICs' securities pursuant to this standing instruction without exception and without any review of the proxy materials associated with those votes. The adviser did not otherwise take steps to determine whether the votes were cast in the RICs' best interests and failed to implement policies and procedures reasonably designed to ensure that it voted proxies in its clients' best interests, as required by the Investment Advisers Act of 1940.

Inaugural Report issued by Proxy Advisory Group

In September, the Independent Oversight Committee (IOC) of the Best Practice Principles Group (BPPG) issued its first annual report covering the disclosures and compliance by proxy advisors with the group's Principles. The purpose of the BPPG is to promote greater understanding of the proxy research industry by developing and regularly updating a set of Best Practice Principles for Providers of Shareholder Voting Research & Analysis that signatories to the Principles adopt on a comply-or-explain basis. BPPG launched the first edition of the Principles in 2014, with the current version issued in 2019. The current BPPG Members include Federated Hermes (EOS), GLC, ISS, Minerva Analytics and PIRC. In 2019, the BBPG appointed the IOC to provide an annual review of the Best Practice Principles and the public compliance statements of each BPP Signatory. The IOC's purpose is to independently assure international markets that firms in the proxy voting research and advisory industry are meeting agreed best practices and serving the interests of their investor customers while treating issuers and other stakeholders fairly, with accuracy, integrity, and responsiveness. The IOC is comprised of an independent Chair and six institutional investor representatives (including SBA staff), three public company representatives, and two independent academic representatives.

Securities and Exchange Commission (SEC) adopts Execution Compensation Clawback Rule

In October, the SEC adopted final rules requiring the recovery of erroneously awarded compensation as required by the Dodd-Frank Act. The rule requires national securities exchanges to establish listing standards that would require listed issuers to adopt and comply with a compensation recovery policy, often known as a "clawback" policy, and require listed issuers to provide disclosure about such policies and how they are being implemented. The Dodd-Frank Wall Street Reform and Consumer Protection Act added Section 10D to the Securities Exchange Act of 1934. Section 10D requires the SEC to direct the national securities exchanges and associations that list securities to establish listing standards that require each issuer to develop and implement a clawback policy. That policy must provide that, in the event the issuer is required to prepare an accounting restatement, the issuer will recover incentive-based compensation paid to its current or former executive officers based on any misstated financial reporting measure. The policy must apply to compensation received during the three-year period preceding the date the issuer is required to prepare the accounting restatement. A company will be subject to delisting if it does not adopt and comply with a compensation recovery policy that meets the requirements of the listing standards. If a company is required to prepare an accounting restatement, including to correct an error that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period, the issuer must recover from any current or former executive officers' incentive-based compensation that was erroneously awarded during the three years preceding the date such a restatement was required. Data from ISS shows that as of August 2022, more than 90% of companies in the S&P 500 stock index (and slightly more than half of companies in the Russell 3000 stock index) have adopted clawback policies covering both cash and equity. Although a minority, some Boards have expanded the scope of recovery beyond the new SEC clawback rules, by including violation of non-compete, non-solicitation, and confidentiality agreements, compliance with intellectual property rights protection, disparagement, and other types of workplace misconduct.

Investor Polling Emerges within Investment Management Industry

In October, Schwab Asset Management announced new efforts to gauge its investors in certain exchange-traded-funds (ETFs) base across several governance issues. Schwab is one of the first known examples of a large investment firm attempting to gauge the preferences of its clients on corporate governance items. The new effort is merely a pilot program that utilizes a new service offered by Broadridge Financial Solutions which is like the process for tabulating proxy voting activities. Schwab has indicated it is not planning to use the client survey results with its specific proxy voting decision making and it has no intentions of allowing clients to make specific proxy voting decisions on the ETF's underlying securities. Rather, the survey instrument is only intended to generally inform their engagement/proxy voting activities. These new survey instruments are separate and apart from Schwab's pass-through proxy voting offerings, which have continued to ramp up alongside industry efforts. BlackRock, which rolled out pass-through voting to institutional clients in late 2021, recently reported that approximately 25% of its investors have utilized their "Voting Choice" option for certain funds, and both firms are exploring allowing their retail clientele to use pass-through voting.

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MEMORANDUM

To:	SBA Trustees Lamar Taylor, Interim Executive Director & CIO
From:	Maureen M. Hazen, General Counsel Maureen M. Hazen
Date:	November 17, 2022
Subject:	Office of General Counsel: Standing Report For Period August 12, 2022 – November 10, 2022

SBA Agreements.

During the period covered by this report, the General Counsel's Office drafted, reviewed and negotiated: (i) 22 new agreements – including 1 for Global Equity; 6 Private Equity investments; 1 Strategic Investment; and 2 for Real Estate; (ii) 178 contract amendments, addenda or renewals; and (iii) 3 contract termination.

SBA Litigation.

(a) Passive. As of November 10, 2022, the SBA was monitoring (as an actual or putative passive member of the class) 661 securities class actions. During the period of August 12 - October 31, 2022, 2022 the SBA collected recoveries in the amount of $598,567.80 as a passive member in 27 securities class actions.[1]

(b) FRS Investment Plan. During the period covered by this report, the General Counsel's Office monitored and/or managed the following cases for the Florida Retirement System Investment Plan (the "Investment Plan"). The SBA issued 5 Final Orders, received notice of filing of 5 new cases (including 1 at DOAH), and continued to litigate 4 cases that were pending during the periods covered by previous reports (including one case at DOAH and appellate cases).

Other Matters.

[1] Recoveries for November 1-9, 2022 were not available as of the date of this report.

(a) Public Records. During the period covered by this report, the General Counsel's Office received 46 new public records requests and provided responses to 48 requests. As of November 10, 2022, the General Counsel's Office continues to work on 5 open requests.

(b) SBA Rule Activities. During the period covered by this report, the SBA timely filed its Annual Regulatory Plan on September 28, 2022. There only were two pieces of legislation that specifically modify the duties or authority of the SBA. However, neither legislative change requires any new rules or rule amendments.

STATE BOARD OF ADMINISTRATION
OF FLORIDA

1801 HERMITAGE BOULEVARD, SUITE 100
TALLAHASSEE, FLORIDA 32308
(850) 488-4406

POST OFFICE BOX 13300
32317-3300

MEMORANDUM

DATE: November 17, 2022

TO: SBA Trustees
Lamar Taylor, Interim Executive Director & CIO

FROM: Maureen M. Hazen, General Counsel and Acting Inspector General

Maureen M. Hazen

SUBJECT: Quarterly Report on SBA Inspector General Activities

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The SBA's Inspector General, Ken Chambers, retired on March 31, 2022, and I have been serving as Acting Inspector General since his departure. The SBA Inspector General (IG) is responsible for serving as the organization's ethics officer; conducting certain internal investigations; and handling special projects as directed by the Executive Director & CIO.

Ethics and Training

- Mandatory ethics training and certification of compliance are required for all SBA employees on an annual basis. The on-line training covers gifts, conflicts of interest, financial disclosure, outside employment, lobbyist/principal restrictions, honorarium related events, etc. In addition to ethics training, mandatory training is required annually for all employees in the areas of harassment prevention, personal investment activity, insider trading, incident management framework, and use of information technology resources. Employees are also required to complete training courses for public records, confidential information and the Sunshine Law every other year (these were required in 2020) and a fiduciary responsibility course every 4 years. The deadline for completing the courses was June 30, 2022, and all SBA employees are in compliance. New employees are required to take all of the mandatory training courses (which also includes a fiduciary responsibility course) within 30 days of their start date. In addition to the annual mandatory training classes, employees are also required to complete quarterly on-line training courses concerning cyber security awareness.

- During the period from August 17, 2022 to November 15, 2022, no instances were reported to the Inspector General concerning non-compliance with the SBA's Ethics Policy (including with respect to gifts).

SBA Fraud Hotline

Since July 2006, the SBA has utilized an independent provider of SBA Fraud Hotline services. Through an 800 number, SBA employees, service providers, and others may anonymously report tips or information related to fraud, theft, or financial misconduct. The telephone number and information is prominently displayed on the SBA intranet home page. Additionally, the hotline information is available on the SBA internet site as part of the SBA contact page, and online reporting is available. In September, 2021, the SBA transitioned to a new hotline service provider, EthicsGlobal.

During the quarter, no complaints were received by the Hotline.

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POST OFFICE BOX 13300
32317-3300

MEMORANDUM

DATE: November 10, 2022

TO: Lamar Taylor, Interim Executive Director & CIO

FROM: Sooni Raymaker, Chief Risk & Compliance Officer SR

SUBJECT: Trustee and Audit Committee Report – November 2022

The following is a summary report of Risk Management and Compliance (RMC) activities and initiatives completed or in progress since the last dated report of August 2022 to the current period. All RMC activities, reviews, controls, and processes are continuing to operate effectively and as expected during this reporting period.

The role of the RMC unit is to assist the Executive Director & CIO in maintaining an appropriate and effective risk management and compliance program to identify, monitor and mitigate key investment and operational risks. RMC plays a critical role in developing and enhancing the enterprise-wide system of internal controls. RMC proactively works with the Executive Director & CIO and designees to ensure issues are promptly and thoroughly addressed by management.

SBA senior management has created a culture of risk management and compliance through the governance structure, allocation of budgetary resources, policies and associated training and awareness. Management is committed to ethical practices and to serving the best interests of the SBA's clients.

Compliance Exception:
Due to negative market conditions and lagged alternative market valuations, the 20 percent allocation limit continues to be exceeded in accordance with Section 215.47(15), Florida Statutes, which states: "With no more, in the aggregate, than 20 percent of any fund in alternative investments through participation in an alternative investment vehicle as those terms are defined in s. 215.4401(3)(a), or in securities or investments that are not publicly traded and not otherwise authorized by this section".

Enterprise Risk Management (ERM) The Risk & Compliance Committee (RCC) held its quarterly meeting November 8, 2022. The RCC discussed the results of the recent Risk Identification Questionnaire sent by ERM to senior and middle management which asked participants for feedback on top risks faced by the SBA. Comments were collected and categorized to illustrate the top risks identified. The top risks will be assessed in the upcoming 2022 Risk Assessment, with an expected completion date of January 2023. Additionally, the RCC reviewed highlights from the latest Enterprise Risk Management Plans with associated metrics, the 3rd quarter Gartner Emerging Risks report, updated operational due diligence reporting, and highlights from the recent SEC Mock Exam.

Trading and Investment Oversight

The Trading and Investment Oversight Group (TOG) met on October 27, 2022. The group reviewed quarterly internal trading activity, compliance reports and trading counterparty oversight updates. The annual review and approval of the slate of counterparties for internal trading was approved on October 1, 2022.

TOG also reviewed the results and recommendations from the SEC Mock Examination, conducted by Renaissance Regulatory Services, Inc. (RRS). The SBA retained RRS in February 2022 to conduct an Investment Adviser Examination that would benchmark the SBA's compliance program against current and applicable SEC examination protocols and priorities and provide feedback concerning the SBA's progress toward complying with industry best practices, particularly those related to trading and conflicts of interest. The exam, which focused on process design, workflow, systems, and key controls for the internally managed public market asset classes, covered the period July 1, 2020 – December 31, 2021. The exam was completed in July 2022, with no material weaknesses in compliance or operational controls identified. RRS determined that SBA management had properly identified the primary compliance risks and implemented reasonable control activities related to internal trading and operations. To further strengthen the SBA's compliance program and more closely align its operations with SEC regulated entities and industry best practices, RRS recommended eleven areas for further enhancement. The SBA has begun the process of implementing these recommendations.

External Manager Operational Due Diligence (ODD)

During the period, the ODD team reviewed and commented on eleven consultant operational due diligence reports on investment managers as part of the investment approval process, which represents approximately $1.4 billion in potential investments. The team reviewed nine real estate property acquisitions which represents approximately $600 million in new investments. Twenty-five new consultant ODD reports were added to the Manager Operational Risk Oversight page for use by the asset classes since the last meeting.

The ODD team requested annual Investment Protection Principles (IPP) certifications from the SBA broker dealers. Eight of the 2021 IPP forms have not been received. Three manager onsite visits are planned for December.

Public Market Compliance (PMC)

PMC is currently involved with the Florida PRIME Financial Audit conducted by the Auditor General's Office and the Public Market External Manager Monitoring Audit conducted by the Office of Internal Audit. PMC has responded to audit requests by participating in process walk-throughs and providing documentation such as internal procedures, compliance reviews, and exception reports.

PMC has been exploring and evaluating new workflow functionality within the BNYM Compliance Monitor (CM) application. This process has included discussions with Global Equity (GE), as well as enhancement requests to BNYM. Using the new functionality, GE in conjunction with PMC, will be able to easily identify managers which are triggering soft guidelines and thereby provide more timely and robust portfolio monitoring.

Hannah Day has joined PMC as the new Investment Compliance Analyst.

Performance Reporting & Analytics (PRA)

The PRA team is nearing completion of a project to leverage the existing Eagle PACE (a performance management system) to build portfolio composites based on General Investment Performance Standard (GIPS) best practices. The PACE system can aggregate all composites and produce reports with performance returns in a more efficient manner. This will allow the PRA team to reduce reliance on excel spreadsheets or other business intelligence tools to reconcile the official monthly performance data and reporting, relieving the need for ongoing maintenance between the systems. PRA will begin the next project along with an Eagle SME in December to start using PACE to calculate Time Weighted Returns and Dollar Weighted returns. Currently, PRA uses a different database to do this. By utilizing PACE to calculate TW and DW returns, there will be more efficiencies gained as another database will not have to be maintained.

PRA also finished all Fiscal Year reconciliation for financial statement reporting as well as incentive compensation data.

Policy Activity and Regulatory Monitoring

Since the last report, revisions were implemented to twenty-five policies. Most of these policies were revised to update processes, roles, and responsibilities, due to the departure of the Deputy Chief Investment Officer. Among those were three private market allocation policies, which were also updated for consistency with recent changes implemented to the Risk Budget policy. In addition, the Identification and Reporting of Investments in Florida Businesses policy was modified to expand identification criteria to reflect the universe of holdings more accurately in Florida companies; and the Personal Investment Activity policy was revised to update employee pre-clearance and certification requirements.

Investment guidelines for the Florida Hurricane Catastrophe Fund Operating Claims Paying and Liquidity portfolios were revised, and new guidelines were developed for the Administrative and Disbursement Funds under the Reinsurance to Assist Policyholders (RAP) Program. The Investment Policy Statements for the FRS Defined Benefit Plan and the Local Government Surplus Funds Trust Fund (Florida PRIME) were also approved by the Trustees during this period.

On the regulatory front, exposures to companies conducting business in certain designated Japanese business sectors continued to be monitored daily, to ensure compliance with the Japanese Foreign Exchange and Foreign Trade Act, which established a 1% reporting threshold for share ownership or voting rights held. Requirements for the SEC 13H Large Trader filing were also reviewed for reportable changes, but no amended filing was necessary for the quarter ended September 30, 2022.

Personal Investment Activity (PIA)

During the period (July 27, 2022, through October 31, 2022), there were 178 requests for pre-clearance by SBA employees, with 138 being approved, 36 being denied (due to blackout restrictions), and 4 being retracted (not traded). There was one violation which was reviewed by the CRCO, Acting Inspector General, Acting SOO-Human Resources, and the ED & CIO.

State Board of Administration

Strategic Investments Asset Class Review

Trent Webster

Senior Investment Officer – Strategic Investments

Investment Advisory Council Meeting

December 13, 2022

Policy Objectives

- Generate a 4% real return over the long-term
- Dampen the volatility and improve the risk-adjusted return of the FRS
- Outperform the FRS during periods of significant market declines
- Increase portfolio flexibility by investing in new strategies and opportunistically across current strategies

Other Roles

- Repository for strategies that may not be a good fit in other asset classes
- Home for cross-asset class strategies
- Act as an incubator for potential new asset classes

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Structural Review

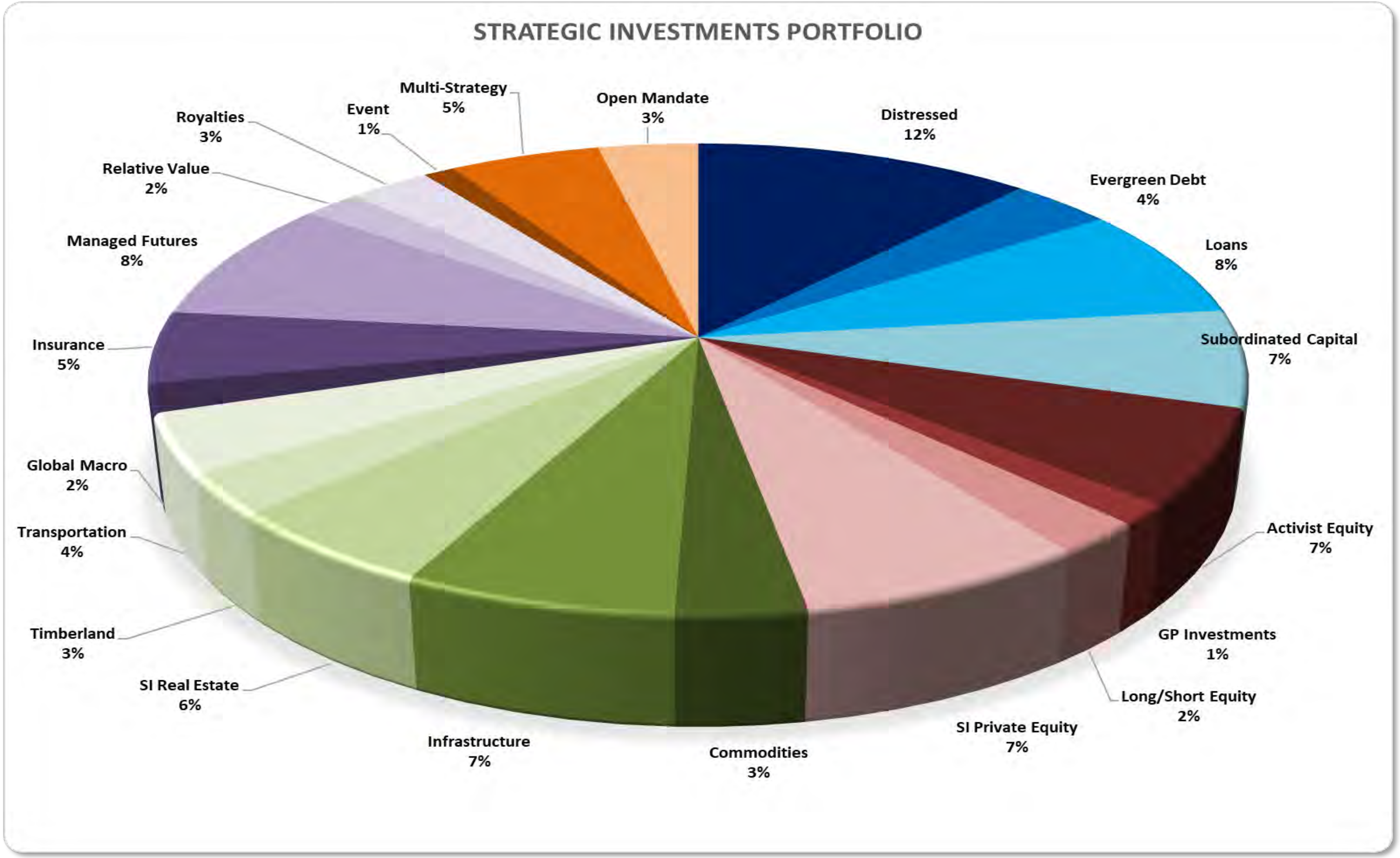
- Strategic Investments undergoing a structural review
- Considering a change in policy objectives
- Asset classes will likely look different in the future

Portfolio

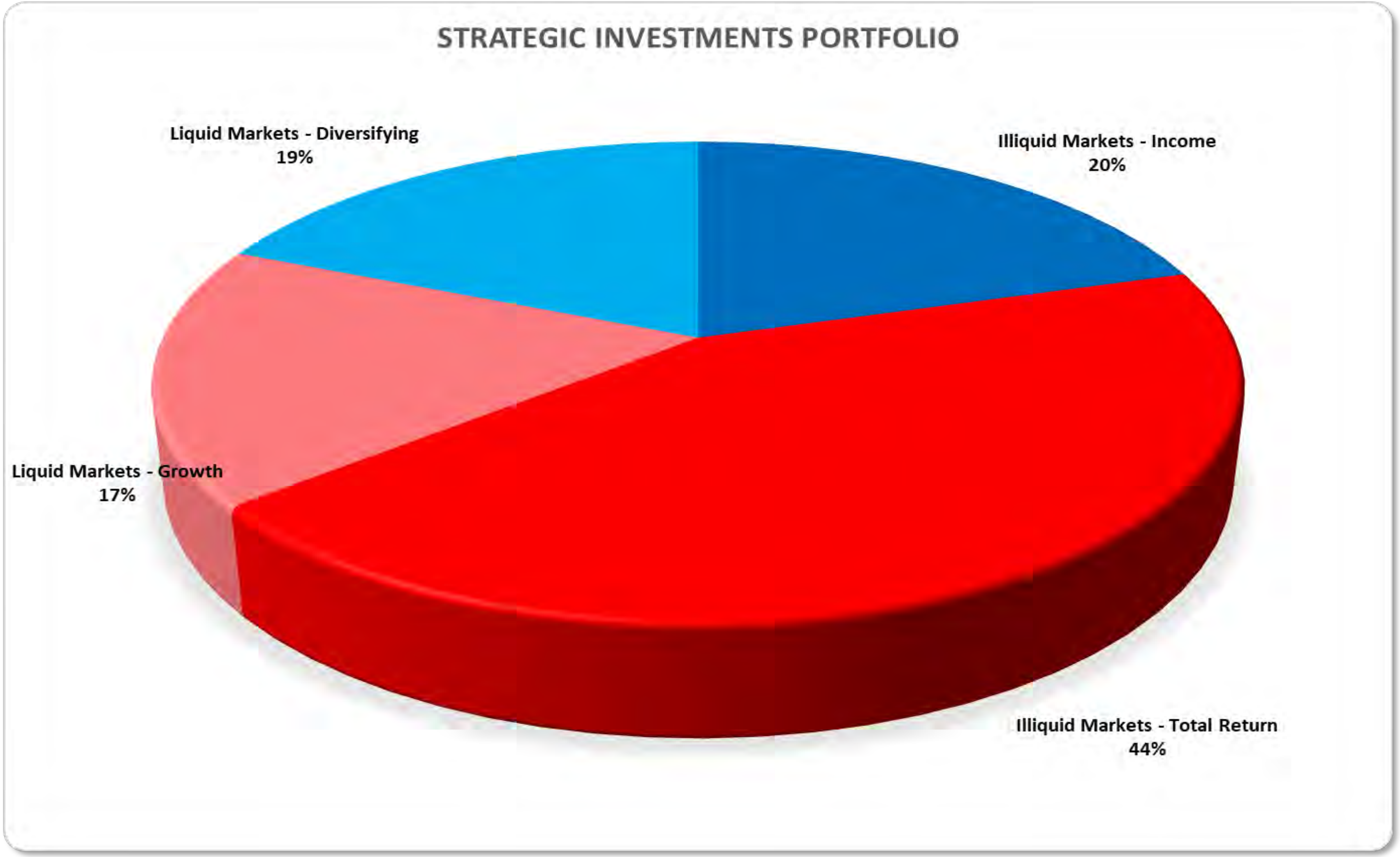
- Net asset value of $20.0 billion
- Net asset value plus unfunded commitments of $25.5 billion
- 116 relationships managing 187 funds
- Private market strategies 64% of NAV, liquid strategies 36% of NAV
- Currently 11.7% of Total Fund, target 12%

SBA FLORIDA STATE BOARD OF ADMINISTRATION

Portfolio


STRATEGIC INVESTMENTS PORTFOLIO
Distressed 12%
Evergreen Debt 4%
Loans 8%
Subordinated Capital 7%
Activist Equity 7%
GP Investments 1%
Long/Short Equity 2%
SI Private Equity 7%
Commodities 3%
Infrastructure 7%
SI Real Estate 6%
Timberland 3%
Transportation 4%
Global Macro 2%
Insurance 5%
Managed Futures 8%
Relative Value 2%
Royalties 3%
Event 1%
Multi-Strategy 5%
Open Mandate 3%

Portfolio


STRATEGIC INVESTMENTS PORTFOLIO
Liquid Markets - Diversifying
19%
Illiquid Markets - Income
20%
Liquid Markets - Growth
17%
Illiquid Markets - Total Return
44%

Recent Activity

- Quarterly cash outflow was $54 million
- Cash outflow for the calendar year has been $482 million
- Fourteen funds totaling $2.11 billion closed this calendar year
- Two funds totaling $250 million closed in the third calendar quarter
- No funds closed in the fourth calendar quarter
- Seven funds totaling $1.05 billion in the Pipeline

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STATE BOARD OF ADMINISTRATION

Pipeline

- Four Debt funds – Four Loan
- Three Real Asset funds – One each in Commodities, Infrastructure and SI Real Estate

- Three new relationships
- Seven private markets strategies
- No hedge funds

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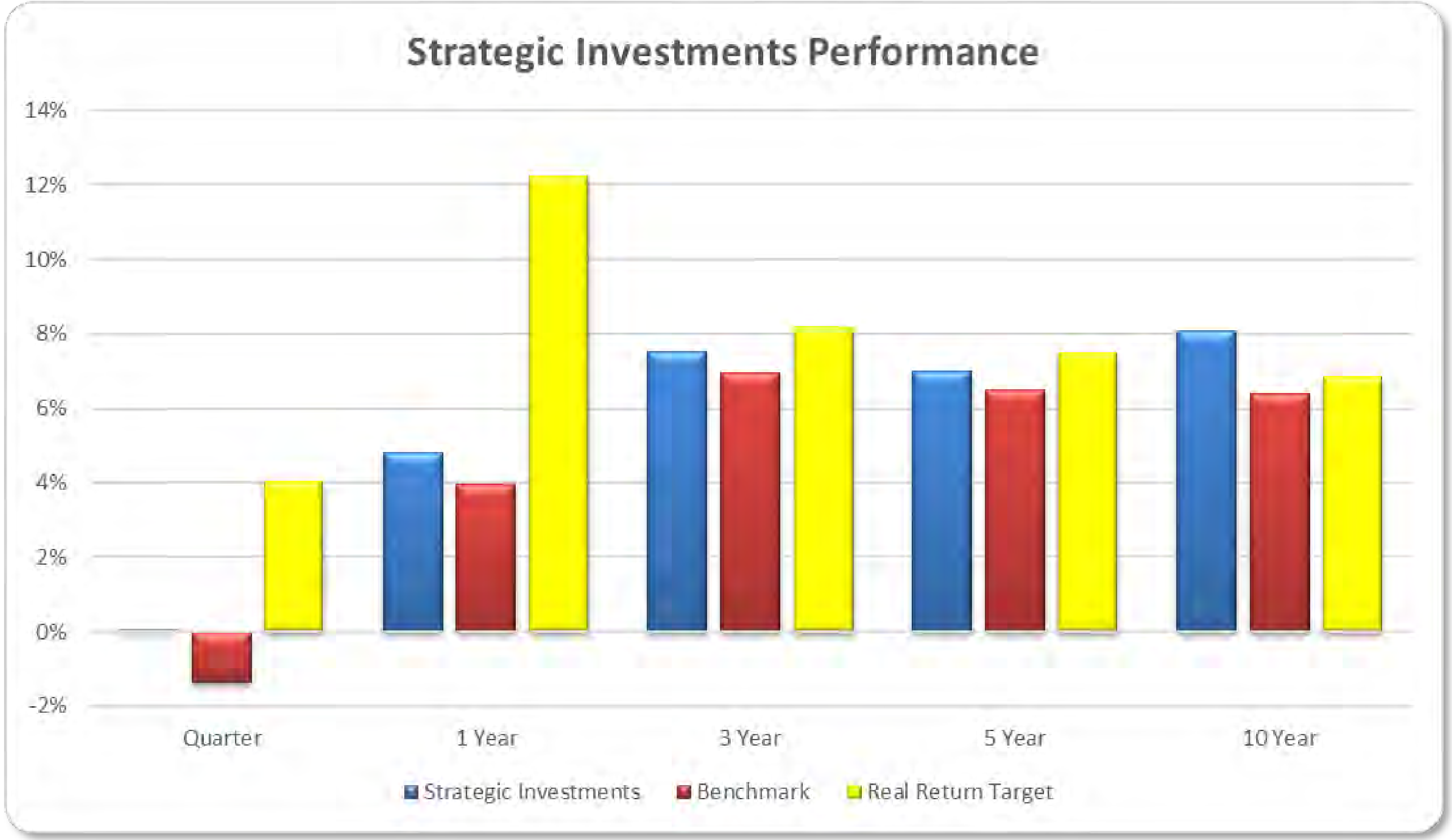
STATE BOARD OF ADMINISTRATION

Performance



Performance

Debt

- 30% of Strategic Investments NAV
- 44 relationships, 79 funds
- Closed six funds at $880 million this calendar year

- Sub-strategies
  - Distressed
  - Evergreen Debt
  - Loans
  - Subordinated Capital

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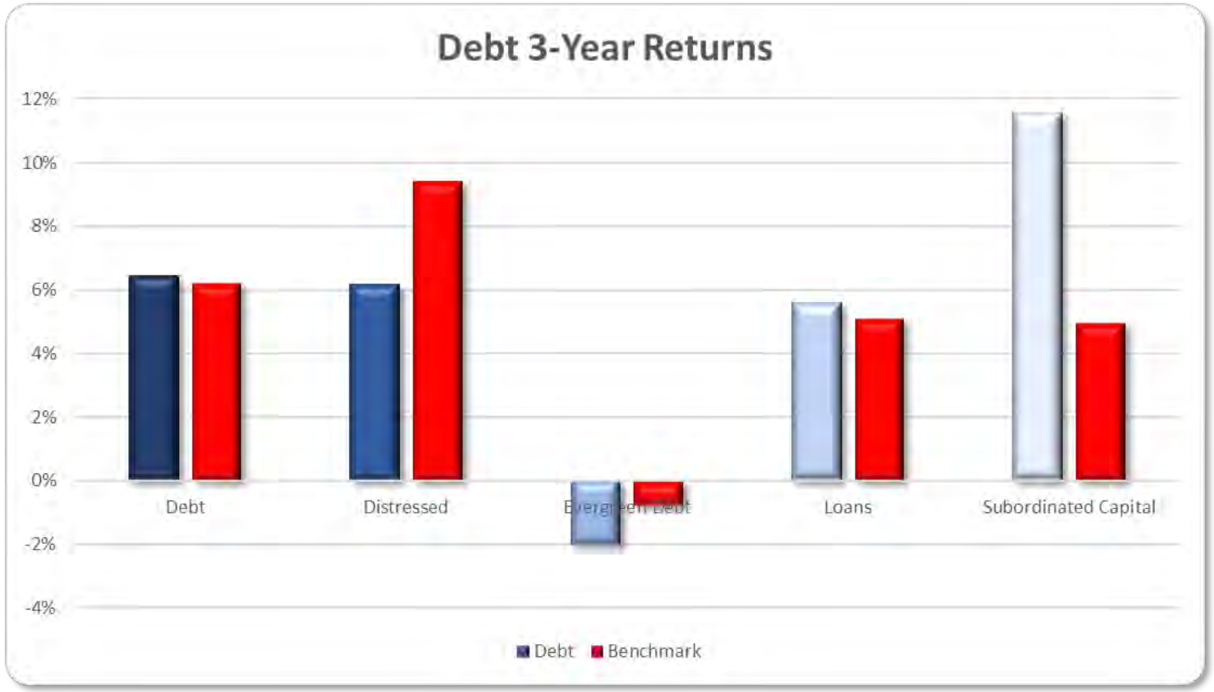
Debt

- Performance v benchmark
  - 1 Year – 3.7% v 3.8%
  - 3 Year – 6.4% v 6.2%
  - 5 Year – 6.1% v 6.4%

- Distressed funds have lagged due to non-distressed investments
- Evergreen Debt funds struggled during pandemic
- Loans a bit better than benchmark
- Technology overweight in Subordinated Capital drove outperformance



Debt

- Nearly $3 billion in private credit dry powder, much in Distressed funds
- Distressed funds diversified into other credit markets with mixed success
- Likely will reorganize Debt strategy as Private Credit has evolved since the Global Financial Crisis
- Emphasis has been on more opportunistic strategies to exploit gaps in markets and deterioration of docs
- Loans becoming more interesting as rates rise

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Equity

- 18% of Strategic Investments NAV
- 16 relationships, 23 funds
- Closed one fund at $250 million this calendar year

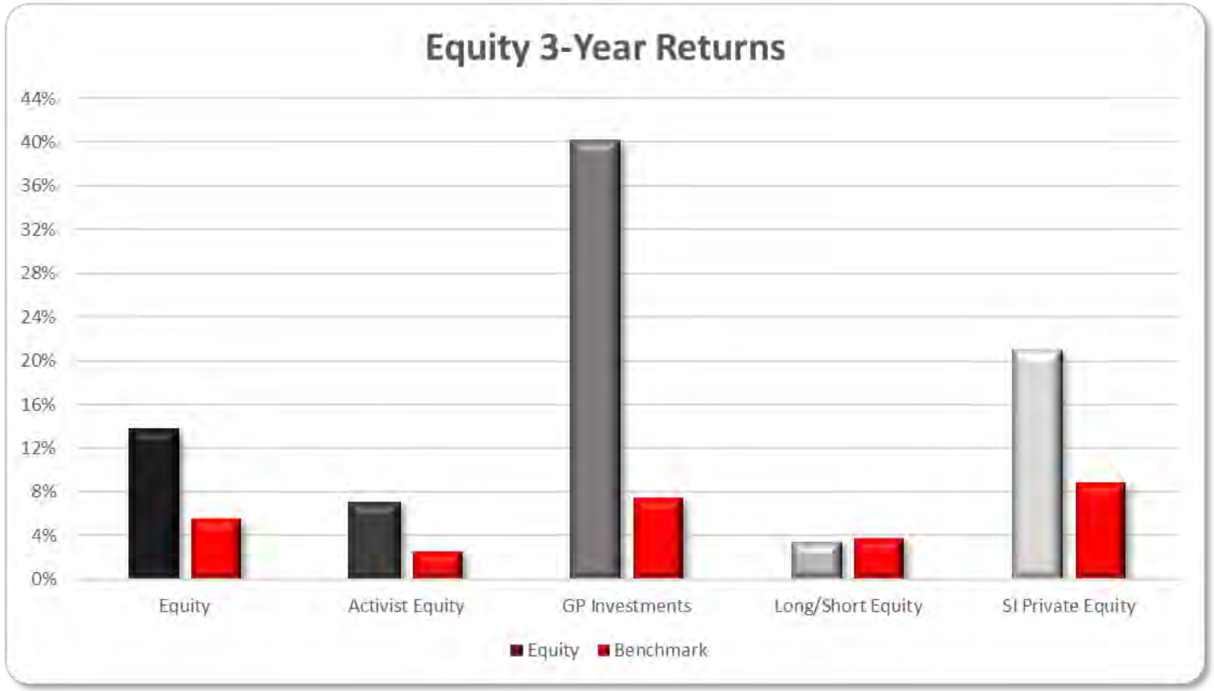
- Sub-strategies
  - Activist Equity
  - GP Investments
  - Long Equity
  - Long/Short Equity
  - SI Private Equity

SBA FLORIDA STATE BOARD OF ADMINISTRATION

Equity

- Performance v benchmark
  - 1 Year – 2.2% v -12.1%
  - 3 Year – 13.4% v 5.5%
  - 5 Year – 11.4% v 4.9%

- Activists one of the top-performing public equity strategies
- Strong performance in GP investments due to sale
- Long/Short Equity in line with peers
- Private Equity on fire
- No Long Equity funds to date



Equity

- Activist funds in Japan present long runway of opportunity
- Lack of growth in local economies presents tailwinds for European activists
- Very high bar for Long/Short Equity funds
- GP Investments expensive

SBA FLORIDA STATE BOARD OF ADMINISTRATION

Real Assets

- 23% of Strategic Investments NAV
- 31 relationships, 53 funds
- Closed four funds at $530 million this calendar year

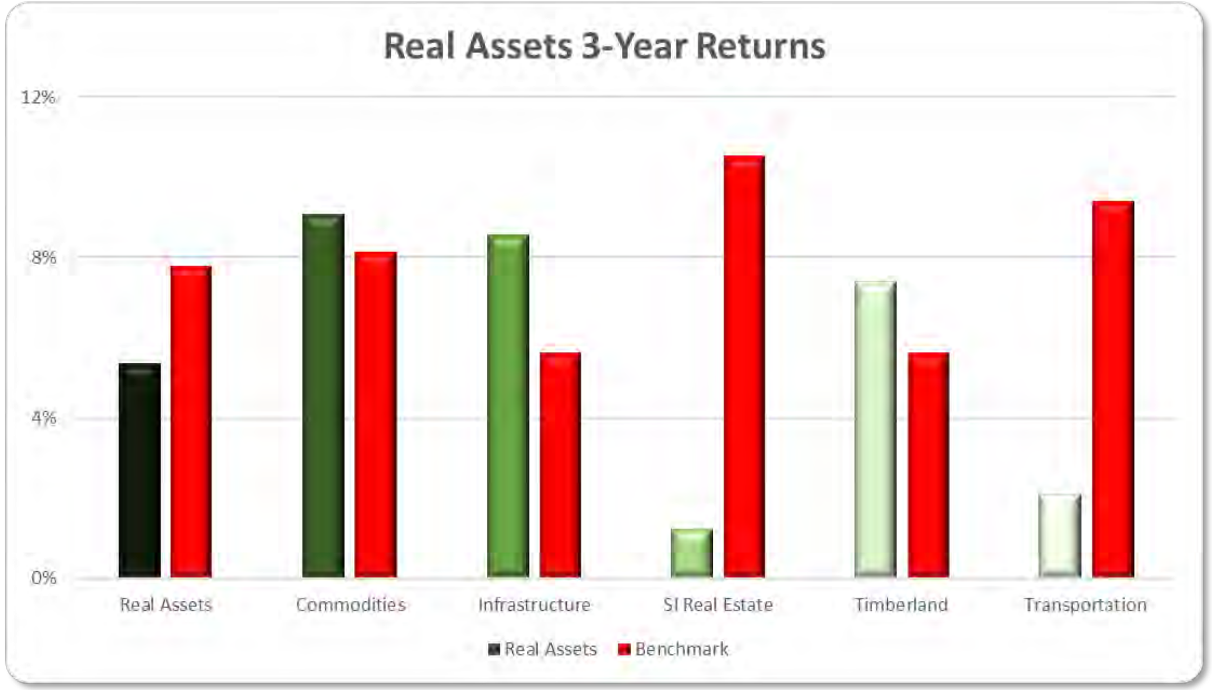
- Sub-strategies
  - Commodities
  - Infrastructure
  - SI Real Estate
  - Timberland
  - Transportation

SBA FLORIDA
STATE BOARD OF ADMINISTRATION

Real Assets

- Performance v benchmark
  - 1 Year – 8.2% v 8.6%
  - 3 Year – 5.4% v 7.8%
  - 5 Year – 7.2% v 7.4%

- Commodities are expected to outperform this decade
- Infrastructure portfolio performing well as public markets struggle
- Real Estate debt and Transportation struggling
- Strong returns for Timberland over the past year



SBA FLORIDA STATE BOARD OF ADMINISTRATION

Real Assets

- Bullish on commodities
  - On oil and gas due to past losses and ESG
  - On base metals due to lack of investment and renewables investment
- Focused on niche opportunities in Infrastructure
- Real estate debt markets have lagged but are improving
- Timberland will benefit from ESG
- Tailwinds in Transportation
  - Aircraft as travel improves
  - Shipping performing well after decade-long bear market

SBA FLORIDA
STATE BOARD OF ADMINISTRATION

Diversifying Strategies

- 20% of Strategic Investments NAV
- 16 relationships, 20 funds
- Closed one fund at $150 million this calendar year

- Sub-strategies
  - Global Macro
  - Insurance
  - Managed Futures
  - Relative Value
  - Royalties

SBA FLORIDA STATE BOARD OF ADMINISTRATION

Diversifying Strategies

- Performance v benchmark
  - 1 Year – 9.6% v 11.8%
  - 3 Year – 5.8% v 7.5%
  - 5 Year – 4.0% v 6.4%

- Global Macro and Managed Futures bounced back but underperforming peers
- Insurance only negative sub-strategy
- Relative Value performance strong
- Royalties outperforming

Diversifying Strategies

- Central bank policy is now providing opportunities in Global Macro
- Managed Futures performance flat for eight years, then double-digit returns over past three years
- Insurance markets roiled by multiple perils and social inflation
- Searching for attractive relative value managers
- Positive developments in Royalties

SBA FLORIDA STATE BOARD OF ADMINISTRATION

Flexible Mandates

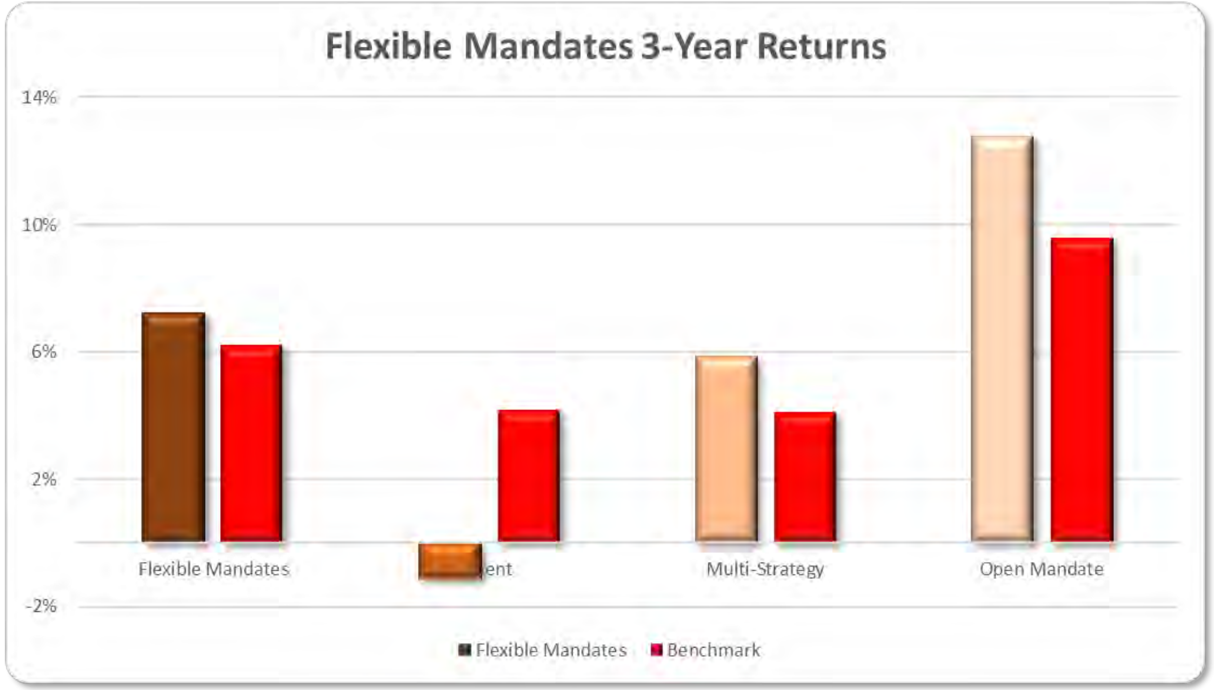
- 11% of Strategic Investments NAV
- 9 relationships, 12 funds
- Closed two funds at $300 million this calendar year

- Sub-strategies
  - Event
  - Multi-Strategy
  - Open Mandate

Flexible Mandates

- Performance v benchmark
  - 1 Year – -3.6% v 0.8%
  - 3 Year – 7.2% v 6.2%
  - 5 Year – 6.9% v 5.1%

- Event funds lagging
- Multi-Strategy outperforming
- Open Mandate funds aggressively deployed capital during pandemic



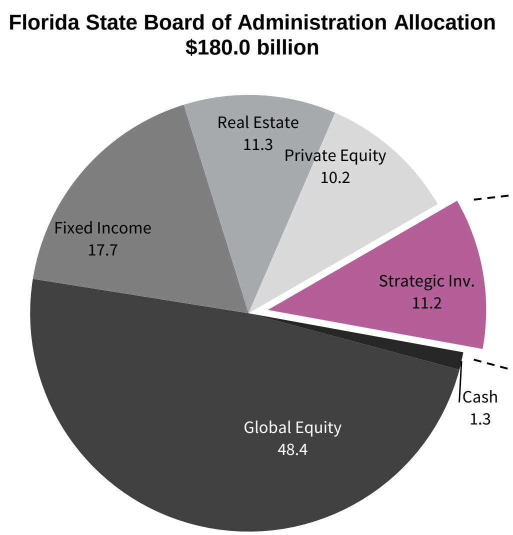
Flexible Mandates

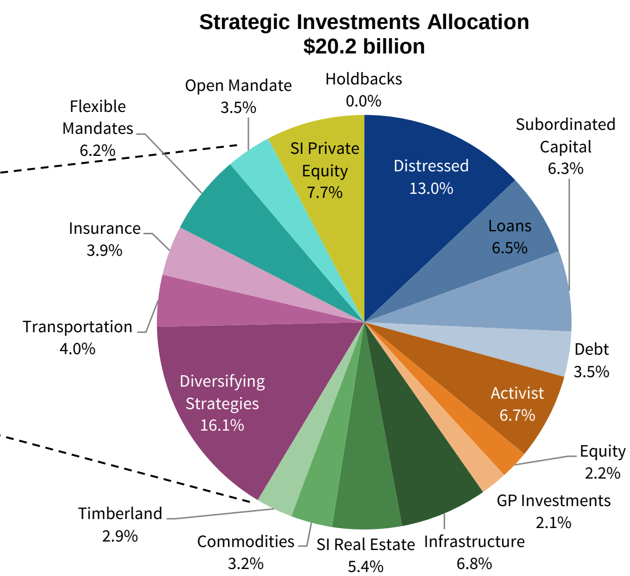
- Event funds correlation to risk markets have generally been high
- Multi-Strategy funds have been additive to the portfolio on a risk-adjusted basis
- Open Mandate funds interesting episodically

Overview of FSBA's Strategic Investments

Strategic Investments is well diversified by strategy

As of June 30, 2022 • USD





Color	Asset Class	% Of NAV
Blue	Debt Strategies	29.2%
Orange	Equity Strategies	11.1%
Green	Real Assets	18.3%
Purple	Diversifying Strategies	24.0%
Light Blue	Flexible Mandates	9.8%
Yellow	Special Situations	7.7%

Notes: Strategic Investment performance from June 30, 2022 is preliminary.

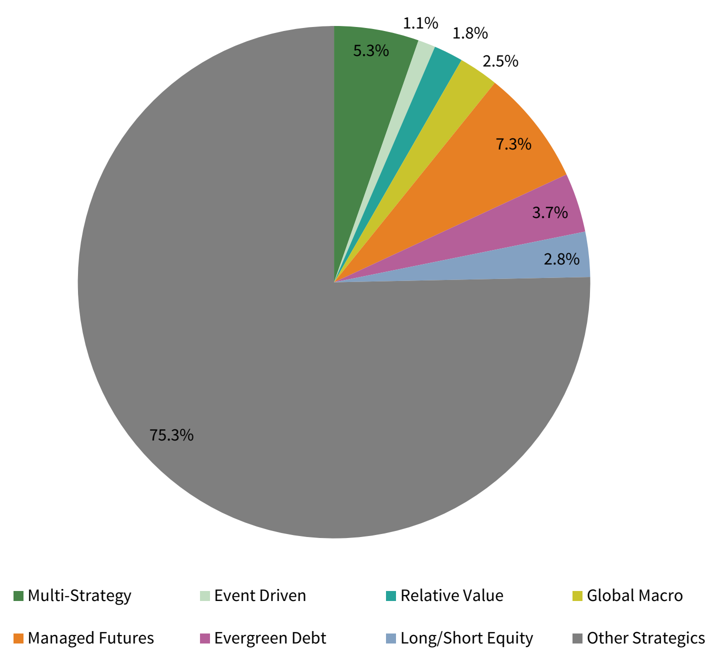
HEDGE FUNDS

CAMBRIDGE
ASSOCIATES

Hedge Fund Allocation

The hedge fund allocation seeks to diversify the economic sources of returns of the Plan

Hedge Fund Allocation
$4.9 billion, 2.7% of FRS Pension Plan



Multi-Strategy/Event Driven

- Flexible mandate across various equity, credit, and arbitrage strategies—mostly in a well-hedged portfolio
- Event Driven typically determined by company specific events rather than broad market movements
- Aim is for positive returns regardless of market environment

Evergreen Debt

- Long and short credit investments, typically with focus on total return rather than income
- Opportunistic investments in distressed as spreads widen and defaults increase

Relative Value

- Invests in financial instruments that are the same or similar to take advantage of price discrepancies—across both sovereign and corporate investments
- Tendency to be tightly risk managed to limit downside
- Performance tends to be higher in periods of higher interest rate volatility
- Judicious use of leverage inherent in the strategy

Global Macro

- Investing with a focus on large-scale events and market trends—typically across rates, currencies, commodities and equities
- Flexible strategy. Utilizes long and short positions. Often includes a portfolio allocation to relative value strategies
- Tend to have stringent risk management and focused on capital preservation in down markets
- Judicious use of leverage inherent in the strategy

Managed Futures

- Managers build a diversified portfolio of futures contracts where they take both long and short positions
- Some CTAs may manage their portfolio by employing proprietary trading systems, utilizing systematic, computer-driven mechanical strategies, and or other discretionary methods.
- CTAs will trade highly liquid, regulated, exchange-traded instruments and foreign exchange markets.

Long/Short Equity

- Bottom-up investing strategy taking long and short positions in individual equities
- Manages portfolios with net equity exposure that is a fraction of the market (by balancing longs against shorts) with an aim to create a positive long/short spread
- Returns are driven by idiosyncratic positions yet tends to have some equity market dependency

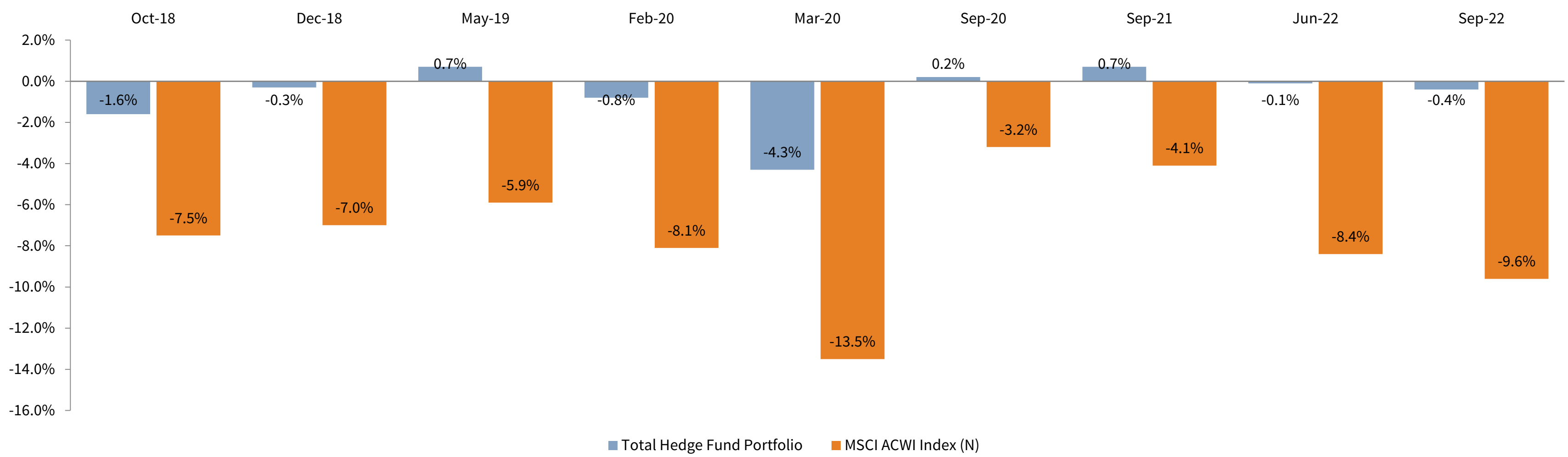
Notes: All exposures as of 6/30/2022. Private Credit funds, Liquid insurance and transportation funds are captured In “Other Strategics”.

Hedge Fund Program: Prioritizing Diversification

Efforts in recent years to prioritize diversification have resulted in a portfolio that has little equity market dependency

- On a trailing 5-year basis, the SBA hedge fund allocation has a 0.15 beta to the MSCI ACWI, signaling an uncorrelated return profile rather than one that is dependent on the performance of equities
- The hedge fund allocation has been able to successfully navigate periods of distress and outperform the broader market, as a result of low equity beta.

Total Hedge Fund Portfolio During Recent Monthly Downturns



Notes: All returns are monthly and net of fees. Beta and Correlation are calculated versus the MSCI ACWI IMI (net). Beta represents an average of 5 year rolling periods for the time periods described below.

Correlation of Hedge Fund Sub Asset Classes

Low correlations across the hedge fund portfolio, including multiple sub asset classes with negative correlation to global equities

Trailing 5 Years • Oct 1, 2017 - Sep 30, 2022 • USD

	EVENT DRIVEN	MULTI-STRAT	FLEXIBLE MANDATES	GLOBAL MACRO	MANAGED FUTURES	RELATIVE VALUE	DIVERSIFYI...	EVERGREEN DEBT	LONG/SHORT EQUITY	MSCI ACWI N
Event Driven	1.0	0.4	0.7	-0.3	0.0	-0.1	-0.1	0.3	0.4	0.4
Multi-Strategy	0.4	1.0	0.9	0.1	0.1	-0.1	0.1	0.9	0.5	0.7
Flexible Mandates	0.7	0.9	1.0	-0.1	0.1	-0.1	0.0	0.8	0.6	0.7
Global Macro	-0.3	0.1	-0.1	1.0	0.3	0.1	0.7	0.1	0.0	-0.1
Managed Futures	0.0	0.1	0.1	0.3	1.0	-0.1	0.9	0.0	0.2	0.1
Relative Value	-0.1	-0.1	-0.1	0.1	-0.1	1.0	0.2	-0.1	0.1	0.0
Diversifying Strategies	-0.1	0.1	0.0	0.7	0.9	0.2	1.0	0.1	0.2	0.1
Evergreen Debt	0.3	0.9	0.8	0.1	0.0	-0.1	0.1	1.0	0.3	0.6
Long/Short Equity	0.4	0.5	0.6	0.0	0.2	0.1	0.2	0.3	1.0	0.5
MSCI ACWI Index (N)	0.4	0.7	0.7	-0.1	0.1	0.0	0.1	0.6	0.5	1.0

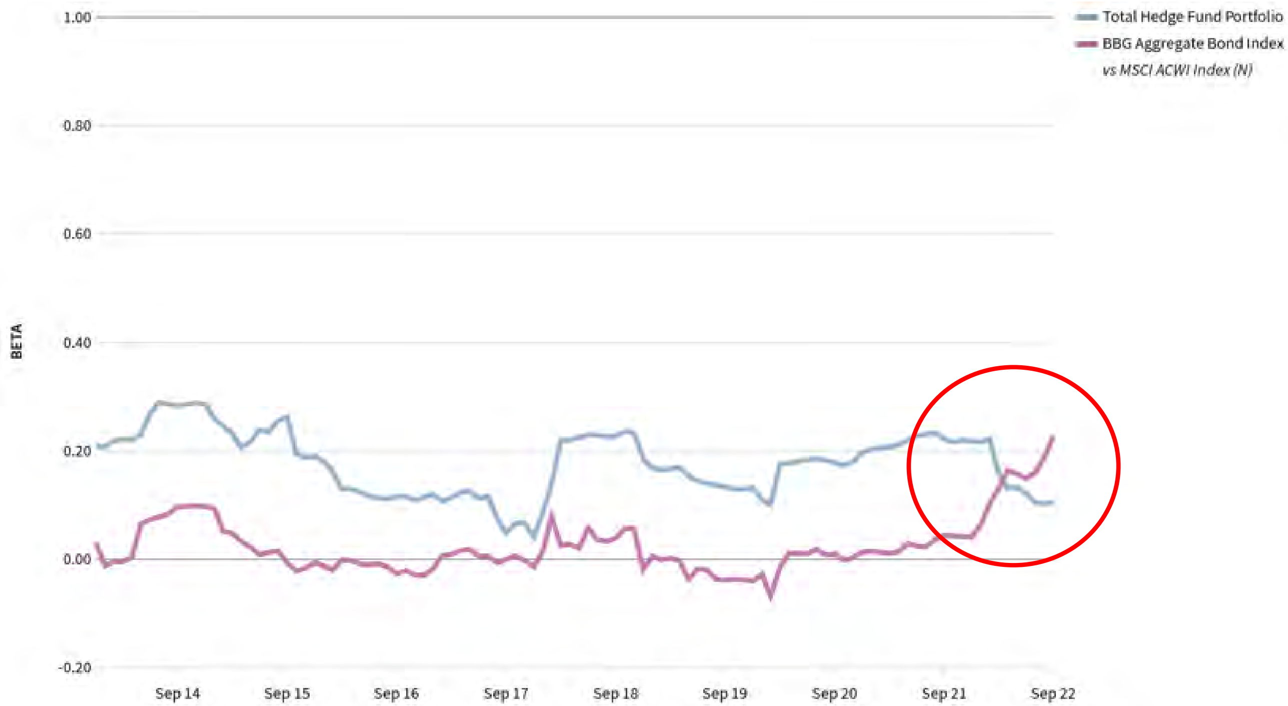
-1 -0.9 -0.7 -0.5 -0.2 0.2 0.5 0.7 0.9 1

Notes: Correlations are on a two-year trailing basis as of September 30, 2022. Strategy categories represent underlying strategies within the SBA's hedge fund portfolio.

Equity Market Sensitivity

Equity beta for bonds has increased during the recent market turmoil, while the hedge fund portfolio has remained steady

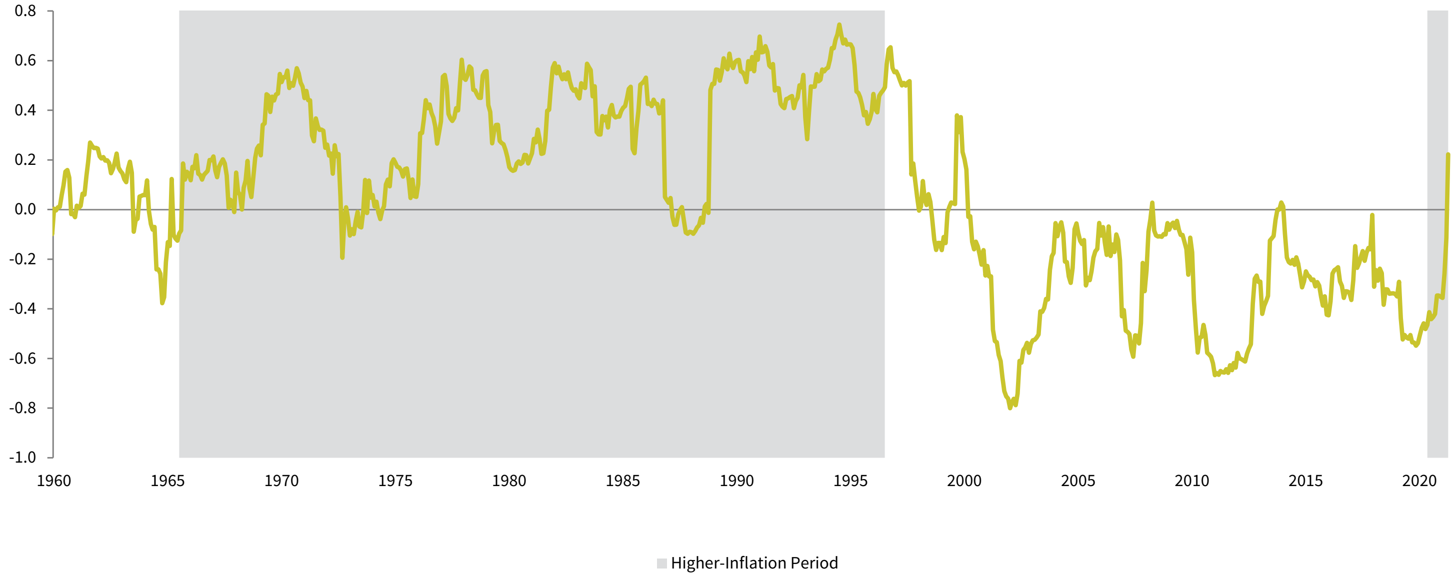
Rolling 2-year Beta • January 1, 2021 – September 30, 2022



Notes: Graph represents beta to MSCI ACWI Index (N).

Rising Stock Bond Correlation Amid Periods of Uncertainty

US Stock-Bond Correlation (Rolling 2-Yr)
December 31, 1960 – March 31, 2022

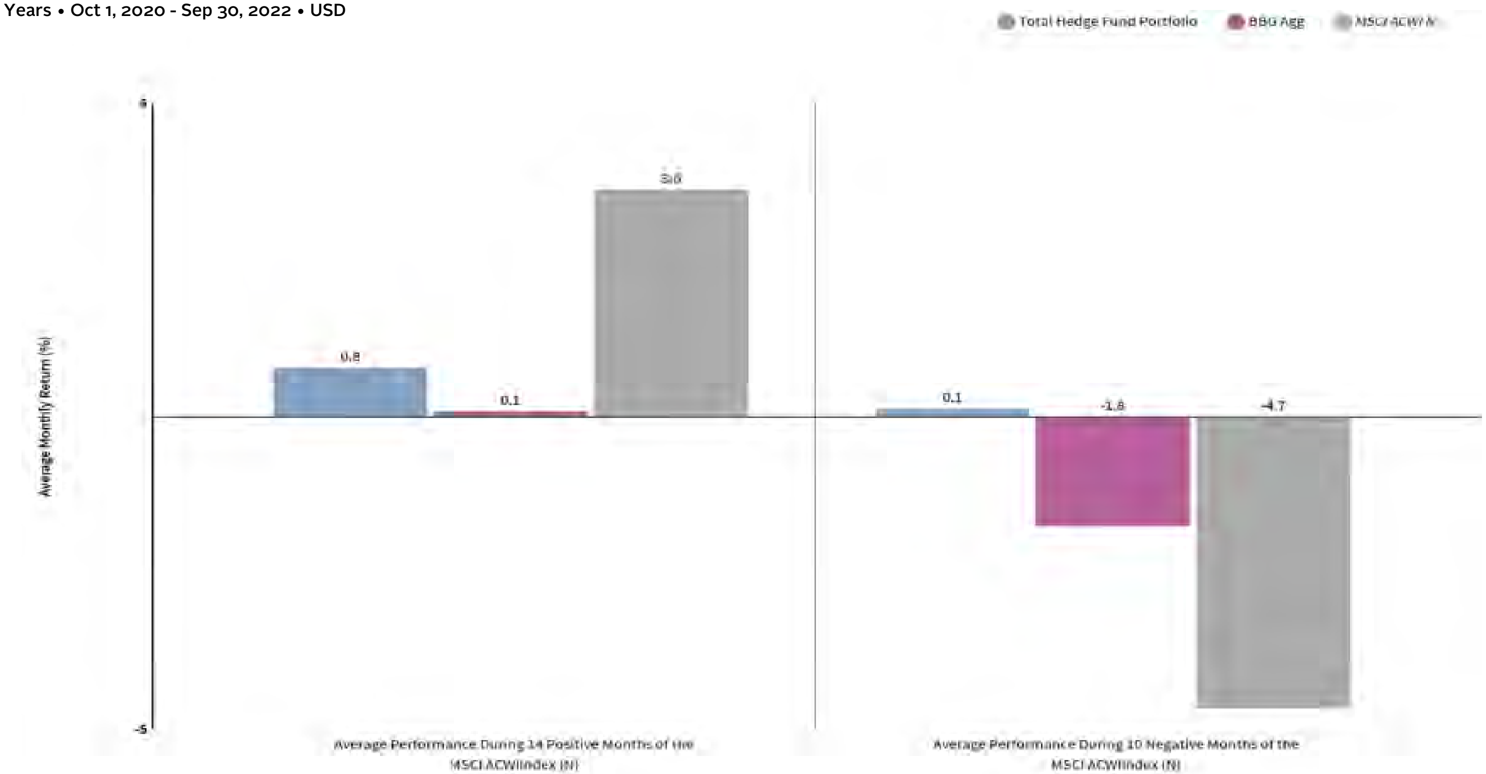


Sources: Bloomberg Index Services, Standard & Poor's, and Thomson Reuters Datastream.
Notes: Stocks are based on S&P 500 monthly total returns and bonds are based on ten-year US Treasury Bond monthly total returns. Higher-inflation period represents periods where year-over-year CPI-U was persistently well above the Fed's long-term 2% target rate.

Hedge Fund Allocation Market Capture

Hedge funds have outperformed bonds significantly during both up and down months for global equities over the past 24 months

Trailing 2 Years • Oct 1, 2020 - Sep 30, 2022 • USD



C|A

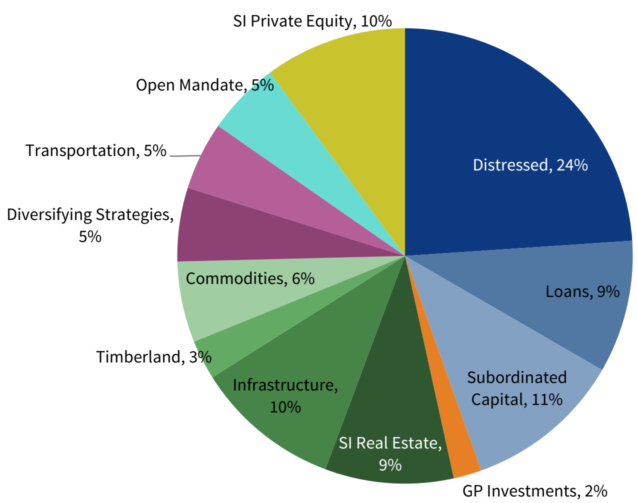
Notes: This statistic should not be interpreted as sensitivity to the market (beta) as it does not account for alpha. The range of positive and negative benchmark returns may be limited and may or may not include extreme returns. This describes a purely historical experience and should not be extrapolated to future behavior.

PRIVATE MARKET ENVIRONMENT

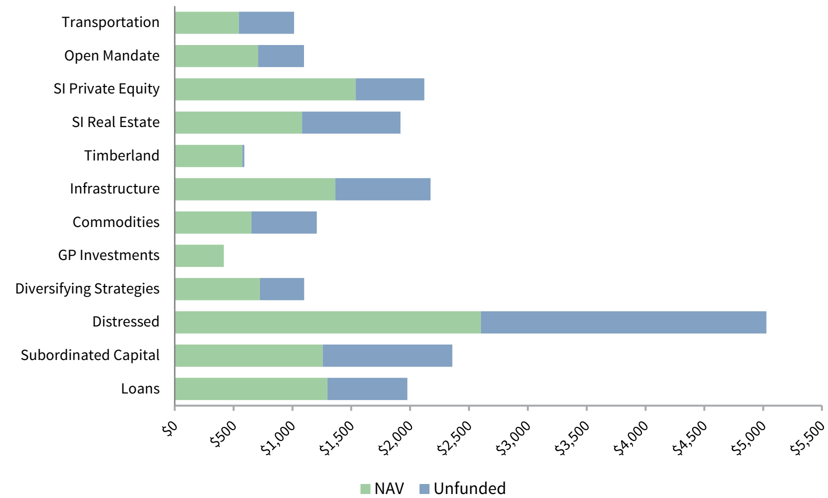
CAMBRIDGE ASSOCIATES

Private Strategic Investments Overview

TOTAL EXPOSURE (NAV + UNFUNDED)
As of June 30, 2022



ASSET CLASS EXPOSURE ($ MILLIONS)
As of June 30, 2022



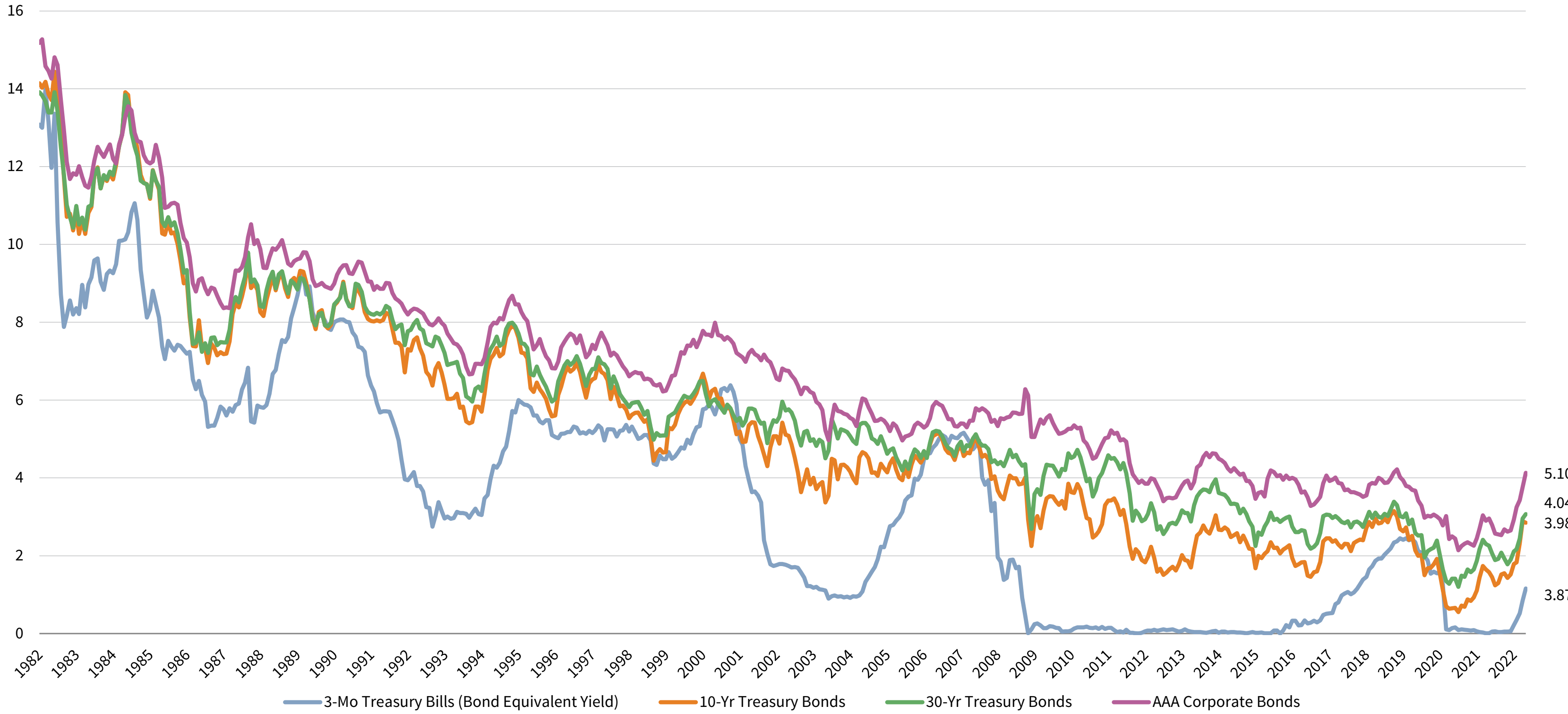
- As of June 30, 2022, total exposure of the FSBA's private strategic investments program was $21.0 billion (11.7% of FRS Pension Plan), with $12.8 billion (7.1% of FRS Pension Plan) of unrealized value (NAV).
- The program is diversified across strategies and geographies and is well positioned to take advantage of current trends in the credit markets.
- The overall program is performing well, generating a net IRR of 10.0% and net TVPI of 1.4x since inception.

Note: Asset allocation data calculated by Cambridge Associates. Performance figures are based on Cambridge Associates preliminary data as of 6/30/2022.

US Fixed Income Yields Have Increased Meaningfully in 2022 Yet Are Far From High Relative to Historical Standards

US FIXED INCOME YIELDS

January 8, 1982 – October 31, 2022 • Percent (%)

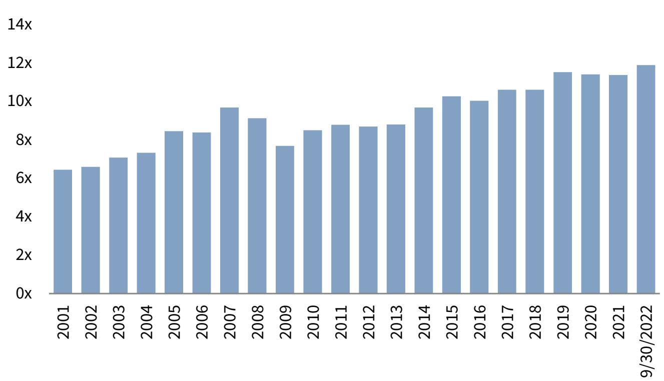


Sources: Federal Reserve, Moody's Investor Service, and Thomson Reuters Datastream.
Notes: The Federal Reserve ceased publication of the 30-year constant maturity series on February 18, 2002, and reintroduced it on February 9, 2006. During that period, the 30-year Treasury yield is an extrapolation of the Long-Term Average Rate series.
Data are based on weekly yields through October 31, 2022.

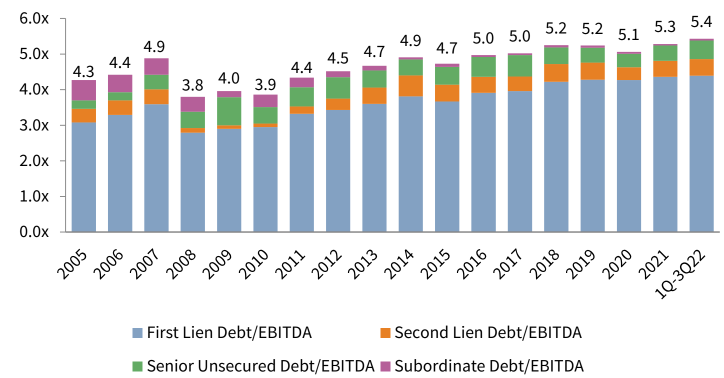
Valuations Were at a Peak Leading Into This Environment

- Valuations leading into this environment were near all-time highs – with strong cash flows buoyed by low interest rates
- Private market purchase multiples have yet to compress; although, anecdotally, company quality in YTD M&A has increased substantially
- If the current higher rate environment continues, ultimately purchase price multiples will compress

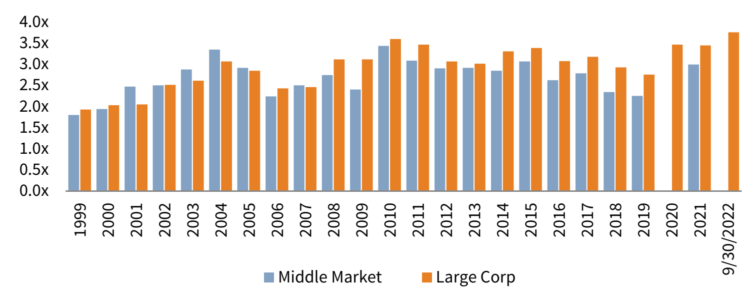
US LBO PURCHASE PRICE MULTIPLES[1]



AVERAGE DEBT MULTIPLES BY TRANCHE[2]



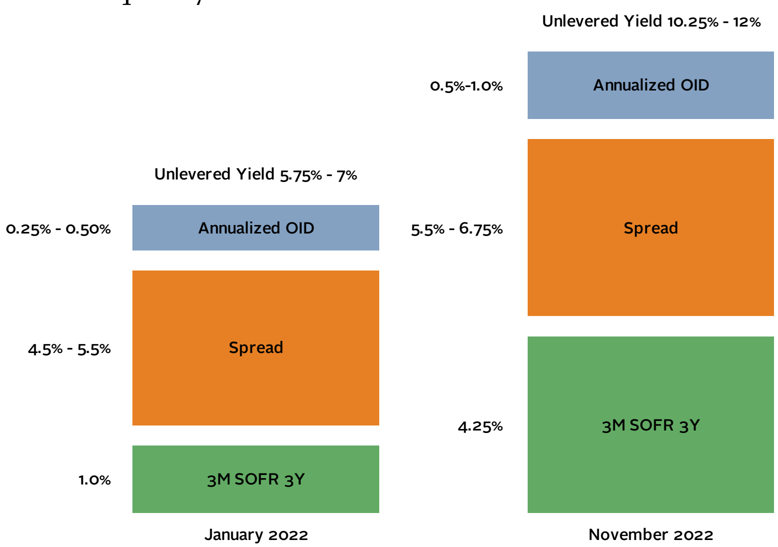
US EBITDA - MAINT CAPEX/CASH INTEREST[3]



Sources:
(1) Pitchbook, LCD
(2) Pitchbook, LCD; As of 3Q, 2022
(3) Pitchbook, LCD

Borrowers Ability to Withstand Increased Interest Rates is Being Scrutinized; Lenders Reaping Greater Portion of Cash Flows

- The rapid increase in rates is just starting to impact borrowers' cash flow
- Run-rate analyses paint a negative picture relative to actuals
- Managers are identifying borrowers that may have liquidity issues



Illustrative Borrower Free Cash Flow Analysis

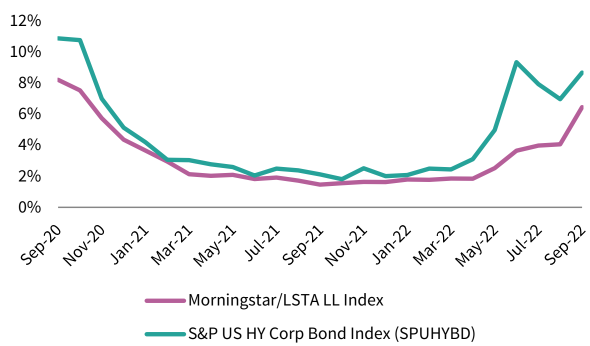
($ million)	Existing Deal Jan 2022	Existing Deal Nov 2022	Newly-Priced Deal Nov 2022
Loan Outstanding	$500	$500	$500
Interest Cost Calculation:			
SOFR	1.00%	4.25%	4.25%
Margin (Spread)	5.25%	5.25%	6.50%
Prevailing Interest Rate	6.25%	9.50%	10.75%
Run-rate Annual Interest Expense	$31	$48	$54
Free Cash Flow Calculation (Proxy):			
EBITDA	$100	$100	$100
less: Interest Expense	($31)	($48)	($54)
less: Maintenance Capital Expenditures	($15)	($15)	($15)
Free Cash Flow (Proxy)	$54	$38	$31
% decrease in FCF from Jan 2022		(30%)	(42%)
EBITDA - Capex / Interest	2.7x	1.8x	1.6x

Notes: Calculation provided as a simplified proxy for free cash flow; excludes assumptions for tax expense and changes in working capital.

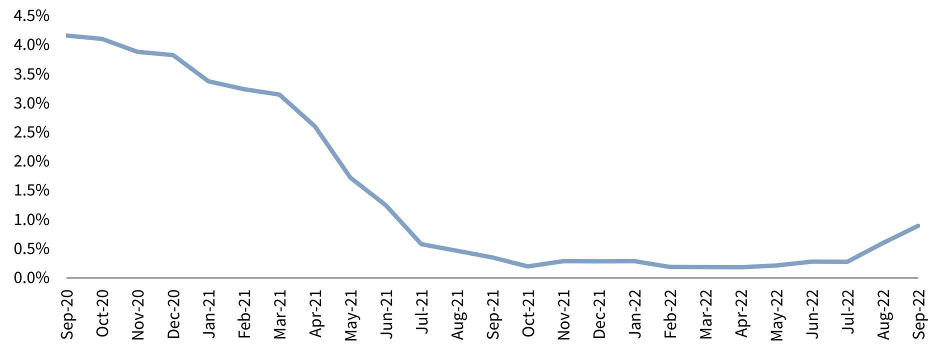
Credit Markets are Signaling a Slowdown in the Economy

- Default rates – a trailing indicator - remain low by historical standards, but are increasing
- The public leveraged finance markets are signaling concern, as a growing percentage of the market is trading at distressed levels
- The S&P downgrade-to-upgrade ratio is beginning to increase sharply, which has meaningful technical knock-on effects

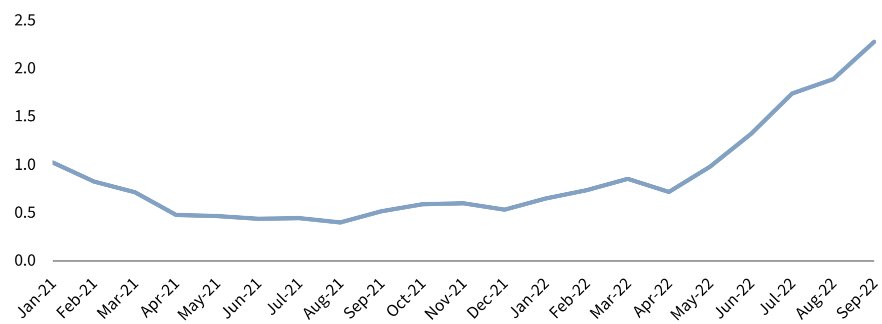
DISTRESS RATIOS BY COUNT[2]



US LEVERAGED LOAN DEFAULT RATE[1]



US ROLLING 3-MONTH DOWNGRADE-TO-UPGRADE RATIO[3]

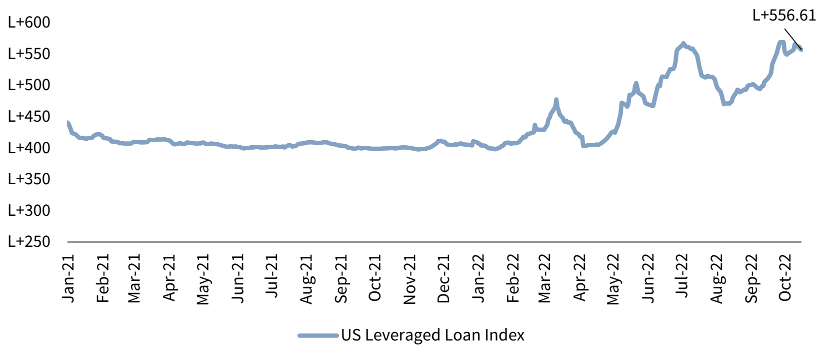


Sources:
(1) Pitchbook, LCD
(2) Pitchbook, LCD ; Broadly Syndicated Loan distress ratio defined as the share of the S&P/LSTA Loan Index that is trading below 80. High yield distress ratio defined as the proportion of speculative-grade issues with option-adjusted composite spreads of more than 1,000 bps relative to U.S. Treasuries.
(3) Pitchbook, LCD

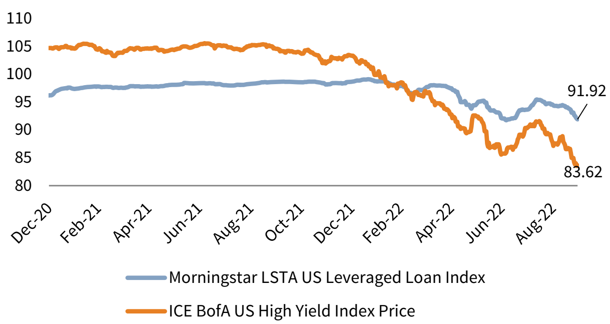
Public Markets Under Stress Creating Opportunities for Private Lenders

- Private credit spread widening lagged public markets earlier this year; now catching up
  - Anecdotally spreads 50 to 150bps wider year-to-date
- Managers reporting recent reduction in leverage and improving terms and documentation
- Limited debt capital market activity increasing opportunities for private credit
- Attractive stressed/distressed environment building

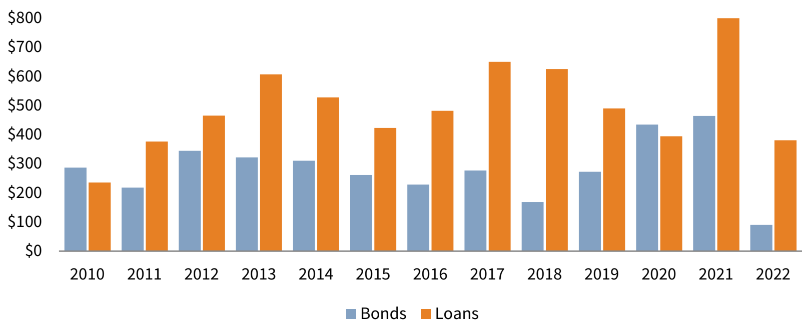
PUBLIC MARKET SPREADS[1]



WEIGHTED AVERAGE BID OF US LEVERAGED LOANS[2]



US LOANS NEW ISSUANCE ($BN)[3]



Sources:
(1) Pitchbook, LCD
(2) Pitchbook, LCD; Bloomberg
(3) Pitchbook, LCD

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Verus

Pensions&Investments
2021 LARGEST CONSULTANTS OF INSTITUTIONAL ASSETS
U.S. INSTITUTIONAL TAX-EXEMPT ADVISORY ASSETS
#10 RANKED VERUS

STRATEGIC INVESTMENTS PORTFOLIO RECOMMENDATIONS – 8/26/2022

Florida State Board of Administration

Summary of recommendations

Overall SI program

1. Role of SI should be re-cast as 'Diversifying' bucket with current secondary objective as primary objective ("Dampen volatility and improve risk-adjusted return of the FRS") and added to SI policy for role clarity
2. Revise strategic objectives *(Section II, 15-601 Strategic Investments Allocation Policy)*
3. Revise SI portfolio structure
   a. transfer Private Equity exposures to current Private Equity asset class
      i. this includes Florida Growth Fund portfolio
   b. transfer Real Asset exposures to expanded FRS Real Assets asset class (currently Real Estate)
4. Implement range-based strategic asset allocation policy for SI portfolio components
5. Maintain current primary performance benchmark
6. Revise secondary performance objective to generate long-term annual return of 2.0 percent above CPI

Summary of recommendations

Individual portfolio components

- Absolute return:
  - —Change hedge fund sector allocations to achieve a more efficient mix that is consistent with overall portfolio return, risk, and diversification goals.
  - —Reduce capital from areas of concentration including Activists, CTAs, Insurance and certain Flexible mandates.
  - —Add capital to new and/or existing alpha sources to benefit portfolio risk and return characteristics (*more details in body*)
- Private credit (*more details in body*):
  - —Increase allocations to direct lending strategies over time via fund commitments or strategic SMAs
  - —Maintain steady commitments to junior capital strategies while focusing on reducing the unfunded exposure relative to NAV
  - —Reduce allocations to credit opportunities strategies while maintaining sub-strategy diversification
  - —Reduce allocations to distressed strategies until current dry powder is reduced and distributions are made from legacy fund commitments

Recommendation #1: Define role of SI

- Verus believes current SI program objectives of growth commensurate with FRS growth objective and to dampen overall FRS volatility through outperformance of the FRS during periods of significant market declines are (1) competing objectives and (2) impact strategic implementation decisions
- Verus recommends clients group asset strategies by their respective key risk drivers and portfolio role when setting strategic asset allocation policy. Every strategic asset class exposure should have defined role and unique contribution to asset allocation policy defined by return and risk contribution to overall FRS
- SI has meaningful strategic asset allocation policy target allocation (12%). It should serve unique role in FRS so there is no overlapping primary objective and role served by another FRS strategic asset allocation exposure
- Put another way, if SBA wants an exposure to serve chiefly as growth asset, public and private equities are best implementation alternatives and should be grouped together or segregated from other strategic asset class exposures
- ***Verus recommends role of SI be defined as "Diversifying Assets"***

Recommendation #1: Define role of SI

FRS

Growth 59%	• Global public equities • Private equities
Income 19%	• Core bonds • Core+ bonds • Cash
Inflation hedge 10%	• Real estate
??? 12%	• Strategic investments

Rationale behind recommendation #1

- FRS now has well developed strategic asset classes with distinct roles and risk (return) drivers
- SI is large enough to warrant role different from initial asset class conception – evolution is ok!
- As Diversifying Assets, SI will:
  - Serve clear role in FRS as well as provide best exposure to primarily equity risk mitigation, particularly in periods similar to current environment where equities *and* bonds are selling off
    - Should produce improved Sharpe at FRS Total Fund level (a current objective) through reduced risk and similar expected return
    - Defined role can be added to SI Allocation Policy which will be useful for SBA Advisory Committee's and Board's (and public's) understanding of asset class
  - Given defined role and primary objective, SI staff can be more focused on identifying strategies to implement within SI
  - Defined role and objective will better facilitate modeling of SI in conjunction with remaining FRS asset classes during asset allocation setting process
  - As SBA's peers are introducing or increasing Diversifying Assets buckets, networking may expand sourcing opportunities

Recommendation #2: Revise strategic objectives

- If SBA re-defines SI per Verus' Recommendation #1, then SI Allocation Policy should be revised to reflect different strategic objectives
- ***Verus recommends long-term annual return be CPI + 2%, which is appropriate for Diversifying Assets bucket and reflective of its role***
- ***Verus further recommends maintenance of remaining current strategic objectives***:
  - — dampen volatility and improve risk-adjusted return of FRS
  - — outperform FRS during periods of significant market declines
  - — increase portfolio flexibility by investing both in new strategies and opportunistically across current strategies
- These strategic objectives would <u>uniformly</u> represent SI return and risk expectations and drive implementation decisions to result in aggregate consistency of SI portfolio's attributes

Recommendation #3: Revise SI portfolio structure

- If SBA re-defines SI (*Verus Recommendation #1*) and revises SI's strategic objectives (*Verus Recommendation #2*), then SI portfolio structure would need to be revised to align portfolio with new strategic role and revised objectives
- **Verus recommends transfer of Private Equity strategies to current FRS Private Equity portfolio, including Florida Growth Fund**
- **Verus recommends transfer of Real Assets strategies to current FRS Real Estate portfolio, which should then be re-named Real Assets**
- Rationale:
  - (*Private Equity*) SI's Private Equity strategies reflect key risk drivers and characteristics (i.e., risk exposures, vehicles, terms, investment horizons, expected return objective (i.e., > CPI + 4%), etc.) common to those in the current strategic policy allocation to Private Equities
  - (*Private Equity*) During equity market drawdowns, SI Private Equity portfolio will likely drawdown similar to other private equities, which is counter to current SI volatility dampening and improved return/risk objectives
  - (*Real Assets*) Verus views role of SI's Real Assets strategies as similar to Real Estate, which is inflation hedging. Verus believes SBA should aggregate strategies (public and private) defined by ability to principally benefit FRS Total Fund during periods of rising inflation

SI portfolio structure analysis results

Verus 2022 CMA's (10 Yr)

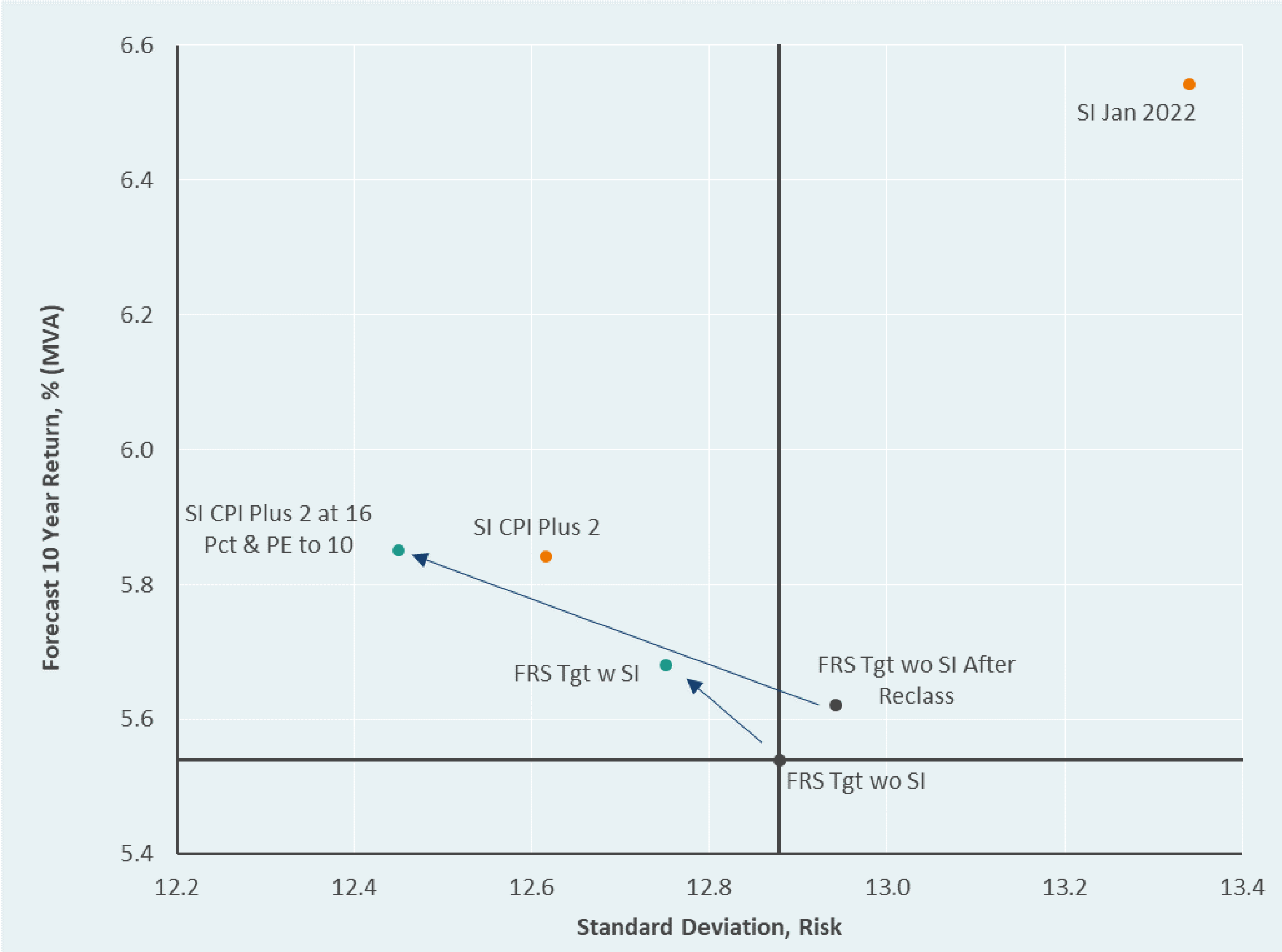
	SI Jan 2022	FRS Tgt w SI	SI After Reclass	FRS Tgt w SI After Reclass	SI CPI Plus 2	SI CPI Plus 2 at 16 Pct & PE to 10	Return (g)	Standard Deviation	Sharpe Ratio (a)	Correlation to FRS Tgt w/o SI
Global Equity	1.8	53.1		53.1		45.2	*5.7*	*17.3*	*0.39*	*0.83*
Hedge Fund (Equity Style)				1.3		1.2	*4.5*	*15.0*	*0.34*	*0.81*
Commodities				0.4		0.3	*3.0*	*15.9*	*0.24*	*0.56*
Total Public Equity	***2***	***53***		***55***		***47***				
Private Equity	***7***	***7***		***7***		***10***	*9.5*	*26.0*	*0.46*	*0.26*
Core Fixed Income		9.0		9.0		8.3	*2.2*	*4.1*	*0.46*	*0.04*
[1] Short-Term Gov't/Credit		9.0		9.0		8.3	*1.5*	*3.6*	*0.33*	*-0.01*
Total Public Fixed Income		***18***		***18***		***17***				
Core Real Estate		10.0		10.0		9.2	*6.5*	*12.5*	*0.54*	*0.04*
Opportunistic Real Estate				0.7		0.6	*9.5*	*18.7*	*0.57*	*0.04*
Total Real Estate		***10***		***11***		***10***				
Commodities	3.1	0.4					*3.0*	*15.9*	*0.24*	*0.56*
Opportunistic Real Estate	5.5	0.7					*9.5*	*18.7*	*0.57*	*0.04*
Infrastructure	13.3	1.6	18.5	1.6	10.0	1.6	*6.6*	*17.6*	*0.43*	*0.79*
Hedge Fund (General)	10.8	1.3	15.0	1.3	5.0	0.8	*3.8*	*7.7*	*0.48*	*0.81*
Hedge Fund (Equity Style)	10.4	1.3					*4.5*	*15.0*	*0.34*	*0.81*
Hedge Fund (Credit Style)	4.0	0.5	5.6	0.5	10.0	1.6	*3.6*	*10.1*	*0.37*	*0.63*
Hedge Fund (Asymmetric Style)	16.6	2.0	23.2	2.0	30.0	5.6	*2.3*	*4.9*	*0.41*	*0.59*
Private Credit (Direct Lending - Levered)	6.7	0.8	9.3	0.8	10.0	1.6	*8.0*	*17.4*	*0.51*	*0.67*
Private Credit (Credit Opportunities)	2.7	0.3	3.8	0.3	15.0	1.6	*7.0*	*15.0*	*0.51*	*0.67*
Private Credit (Junior Capital - Mezzanine)	6.3	0.8	8.8	0.8	10.0	1.6	*8.8*	*19.0*	*0.53*	*0.67*
Private Credit (Distressed)	11.3	1.4	15.8	1.4	10.0	1.6	*9.0*	*29.1*	*0.42*	*0.67*
Total SI	***91***	***11***	***100***	***9***	***100***	***16***				
Cash		1.0		1.0		0.9	*0.4*	*1.2*	*-*	*-0.18*
Total Allocation	***100***	***100***	***100***	***100***	***100***	***100***				
Total Real Assets	*22*	*13*	*19*	*13*	*10*	*12*				

[1] Used only to account for FRS Intermediate Core Fixed Benchmark

Mean Variance Analysis	SI Jan 2022	FRS Tgt w SI	SI After Reclass	FRS Tgt w SI After Reclass	SI CPI Plus 2	at 16 Pct & PE to 10
Forecast 10 Year Return	***6.5***	***5.7***	***6.1***	***5.7***	***5.8***	***5.9***
Standard Deviation	13.3	12.8	13.6	12.8	12.6	12.5
Return/Std. Deviation	*0.490*	*0.445*	*0.451*	*0.445*	*0.463*	*0.470*
1st percentile ret. 1 year	*-20.1*	*-19.9*	*-20.9*	*-19.9*	*-19.6*	*-19.3*
Sharpe Ratio (a)	0.506	0.463	0.470	0.463	0.474	0.484
Correlation to FRS Tgt wo SI	0.89				0.84	

- Changes to diversifying allocations do not typically have a large impact on total fund expectations
- However, combined with a higher Private Equity cap (10%), the SI recommendations are expected to provide both a meaningful reduction in FRS fund risk level and an increase in expected return

SI portfolio structure analysis results



Recommendation #4: Range-based policy allocations for SI portfolio components

- While Verus has specific recommendations for classification of various strategies within SI, we believe actual exposure targets are best represented by ranges *(i.e, 0% to x%)* versus discreet policy targets
  - provides Staff greater flexibility to express conviction in individual strategies as well as to be opportunistic where feasible and desired
  - important to get correct overall policy allocation exposure for SI within FRS. Asset allocation study is best means for determining this policy exposure

Recommendation #5: Maintain current primary SI performance benchmark

- SBA's primary performance benchmark per Strategic Investments Allocation Policy, Section IV. Performance Benchmark is weighted average of individual portfolio level benchmark returns. Verus concurs with this benchmark objective for SI
- Verus believes in maintaining both strategic and implementation benchmarks in situations where Staff has implementation authority, which is case for SBA
  — assists Board/Committee in monitoring Staff's effectiveness and in fulfilling overall FRS fund oversight responsibilities
  — delineates results from beta (i.e., strategic, board-level) decisions and alpha (i.e., implementation, staff-level) decisions

Recommendation #6: Revise secondary SI performance objective

- SBA's secondary performance benchmark per Strategic Investments Allocation Policy, Section IV. Performance Benchmark is currently CPI + 4%. Verus believes this benchmark is incongruous with strategic objectives to dampen volatility and improve risk-adjusted FRS return
  - 10-year capital market projections have come down overtime, in general, with public equities now expected to provide mid-single digit returns and akin to CPI + 3-4%
  - Hedging strategies are expected to earn returns only modestly above fixed income, which would be well below CPI + 4% with exception of Private Credit
  - Maintaining CPI + 4% benchmark may constrain staff's ability to invest in strategies which would primarily serve as source of risk reduction and low equity beta correlation
- Verus recommends more modest secondary benchmark of CPI + 2%. Our analysis (*slide #8*) illustrates implementation of structure in line with this long-term objective would not produce different FRS contribution in terms of effect on risk-adjusted return relative to current SI structure

Individual SI portfolio component recommendations

Private real assets

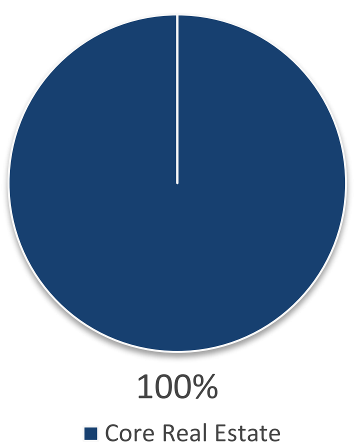
Real asset portfolio

— Verus recommends SBA move SI's Real Asset strategies into current FRS Real Estate allocation and create "Real Asset" or "Inflation Hedge" portfolio component

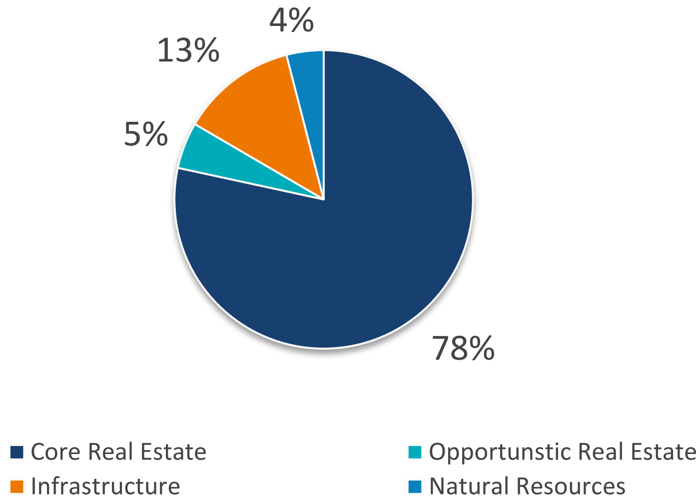
— Dedicated portfolio of inflation sensitive assets will allow SBA to better track and manage its exposure to investments that provide varying levels of inflation beta, income and diversification

— After dedicated Real Asset or Inflation Hedge portfolio is agreed upon and sized, SBA can create target allocations to sub-asset classes such as, real estate, infrastructure and natural resources. Depending on desired level of inflation protection, income, diversification, etc. SBA can size up and down these sub-asset class targets to achieve overall asset class objectives.

Current Real Estate Portfolio



Initial Real Asset Portfolio



Absolute return strategies

Verus hedge fund CMA framework

Mapped to current SI classification

- **Hedge Funds Expected Return: 3.8%**
  - Flexible: Event SI: $231M
  - Flexible: Multi Strategy SI: $1,109M
- **Hedge Funds – Equity Strategies Expected Return: 4.5%**
  - Activist SI: $1,523M
  - Long/Short Equity SI: $477M
- **Hedge Funds – Credit Strategies Expected Return 3.6%**
  - Evergreen Debt SI: $774M
- **Hedge Funds – Asymmetric Strategies Expected Return: 2.3%**
  - Diversifying: Relative Value SI: $374M
  - Diversifying: Managed Futures SI: $1,541M
  - Diversifying: Global Macro SI: $361MM
  - Diversifying: Insurance SI: $909MM

** Source: Verus, Aksia hedge fund strategy classification scheme and SBA Excel file "SI Portfolio as of 01.30.2022 (Updatied 03.14.22).xls"*

Verus hedge fund CMA framework

SI funds mapped to Verus strategy classification with suggested weightings

Hedge Funds Expected Return 3.8%

- Event & Merger — SI: $593M — Verus: $330M
- M-S: Directional — SI: $274M — Verus: $330M

Hedge Funds - Equity Strategies Expected Return 4.5%

- Activist — SI: $1,523M — Verus: $660M
- Fundamental Value — SI: $155M — Verus: $330M
- Sector Specialist — SI: $183M — Verus: $0M
- Fundamental Growth — SI: $0M — Verus: $330M

Hedge Funds - Credit Strategies Expected Return 3.6%

- Event Credit — SI: $143M — Verus: $0M
- Structured Credit — SI: $351M — Verus: $660M
- Credit Long/Short — SI: $260M — Verus: $660M

Hedge Funds - Asymmetric Strategies Expected Returns 2.3%

- Fixed Income Arb — SI: $374M — Verus: $660M
- M-S: Relative Value — SI: $473M — Verus: $660M
- Global Macro — SI: $216M — Verus: $330M
- CTA — SI: $1,541M — Verus: $660M
- Insurance — SI: $909M — Verus: $660M
- Alternative Beta — SI: $142M — Verus: $0M
- EQ L/S: Multi-PM — SI $139M — Verus: $330M
- EQ L/S: Low Net — SI: $0M — Verus: $660M
- Quant Strategies — SI: $0M — Verus: $660M

** Source: Verus, Aksia hedge fund strategy classification scheme and SBA Excel file "SI Portfolio as of 01.30.2022 (Updated 03.14.22).xls"*

SI Portfolio – Hedge Funds

Current portfolio allocation is relatively concentrated in Activists, CTAs, and Insurance Linked strategies. There are pockets of relatively high correlation across certain Activist, Evergreen Debt, and Flexible mandate funds.

Recommendation

— Change hedge fund sector allocations to achieve a more efficient mix that is consistent with overall portfolio return, risk, and diversification goals.

— Reduce capital from areas of concentration including Activists, CTAs, Insurance and certain Flexible mandates.

— Add capital to new and/or existing alpha sources to benefit portfolio risk and return characteristics.

- Add new growth-oriented equity long/short (ELS), (fundamental) low net ELS, and quantitative strategies.
- Rotate additional capital to credit long/short, structured credit, and fixed income arbitrage and non-directional multi-strategy funds.

Private credit/debt strategies

Private credit strategy classification

Verus classifies private credit strategies under four broad categories

Strategy	Description	Examples	CMA Return Target
Direct Lending	Corporate cash flow senior lending	Originated senior debt securities; strategies may be levered at the fund level	5.0 – 8.0%
Junior Capital / Mezzanine	Corporate junior debt and mezzanine	Originated junior capital securities; strategies may have modest leverage at the fund level	5.0 – 9.0%
Credit Opportunities	Variety of strategy types	Broad range of strategies that may include credit or credit-like securities; royalties, insurance, yield oriented real assets, and opportunistic credit	8.8%
Distressed Debt	Debt oriented distressed strategies	Purchasing and originator of securities issued by stressed or distressed borrowers	9.0%

Private credit landscape – strategy details

Direct lending

U.S. middle market lending
- Sr. focus
- Opportunistic
- Lower middle market (sponsored focus)
- Lower middle market (non-sponsored focus)
- Private BDC's

European middle market lending
- Sr. focus
- Opportunistic
- Lower middle market
- Country-specific funds

Emerging markets lending
- Asia lending
- Africa lending
- CEE/Middle East lending
- Latin America lending
- Pan-EM lending

Global middle market lending

SBIC lending

Mezzanine

U.S. mezzanine
- Upper middle market
- Middle market
- Lower middle market

European mezzanine

Real estate credit

U.S. CRE lending
- Bridge lending
- Transitional lending
- Core lending

European CRE lending
- Bridge lending
- Transitional lending
- Core lending

Emerging markets CRE lending

Residential mortgages
- Residential NPLs
- Single family rental
- Mortgage servicing rights
- U.S. resi origination
- European resi origination

Real assets credit

Infrastructure lending
- Sr. focus
- Mezz focus

Energy credit
- Direct lending
- Opportunistic credit

Trade finance

Metals & mining finance

Agriculture credit

Specialty finance

Consumer & SME lending
- Marketplace finance
- Lender/platform finance

Factoring & receivables

Regulatory capital relief

Royalties

Healthcare lending

Venture lending

Insurance linked

Litigation finance

Merger appraisal rights

Structured credit

CLO
- CLO debt
- CLO multi
- CLO risk retention
- 3rd party CLO equity

CRE
- Non-agency CRE B-piece
- Agency CRE B-piece
- CMBS/CRE

RMBS

Consumer ABS

Esoteric ABS

Europe structured credit

Structured credit multi-sector

Distressed & special situations

Corporate distressed
- U.S.
- European
- Emerging markets
- Global
- Single trade

Stressed credit

Real estate distressed
- U.S.
- European
- Global

Cross-asset
- U.S.
- European
- Emerging markets
- Global

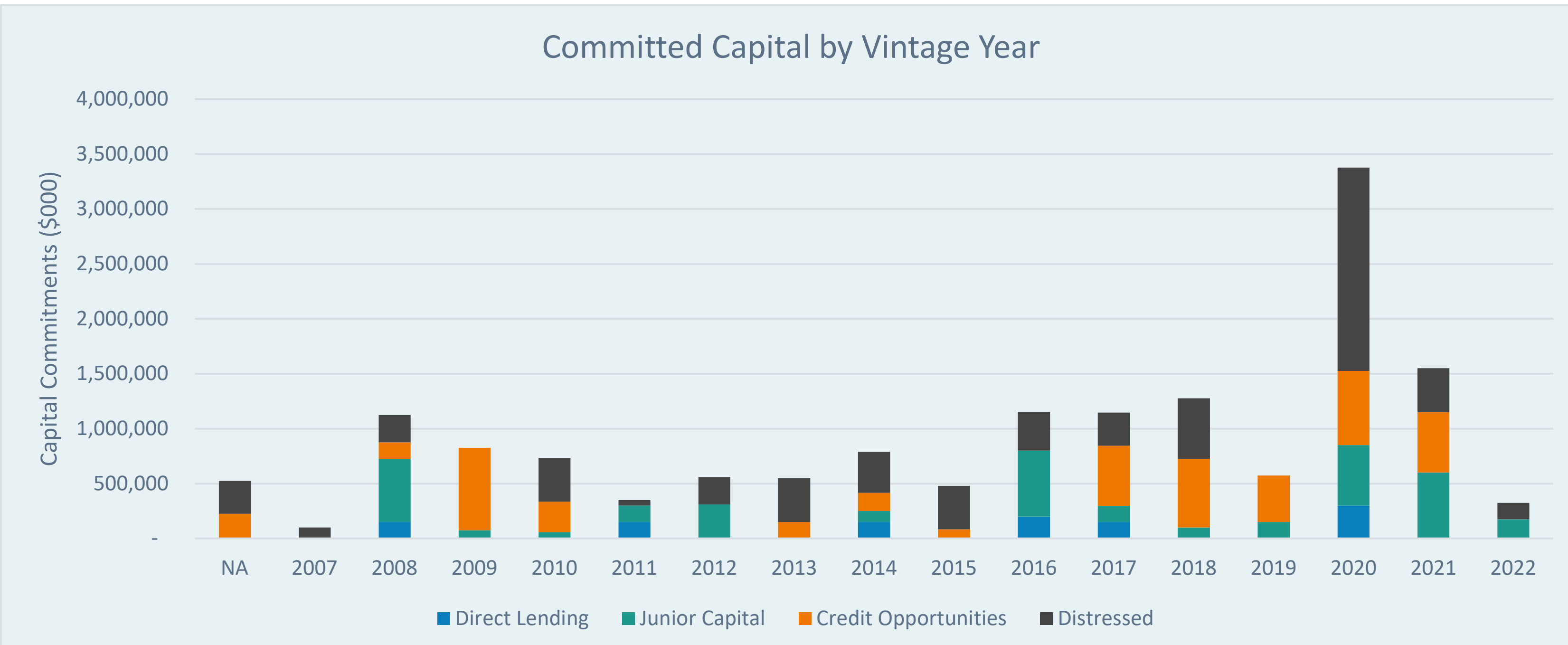
Legend
- Direct lending
- Junior debt / mezzanine
- Credit opportunities
- Distressed debt

SI Portfolio – vintage year exposure

Capital commitments across debt and credit-like diversifying strategies has been opportunistic in recent years

— Distressed strategies received an outsized portion of capital commitments in 2020

— Strategies with an opportunistic focus are more prevalent in the portfolio across vintage years

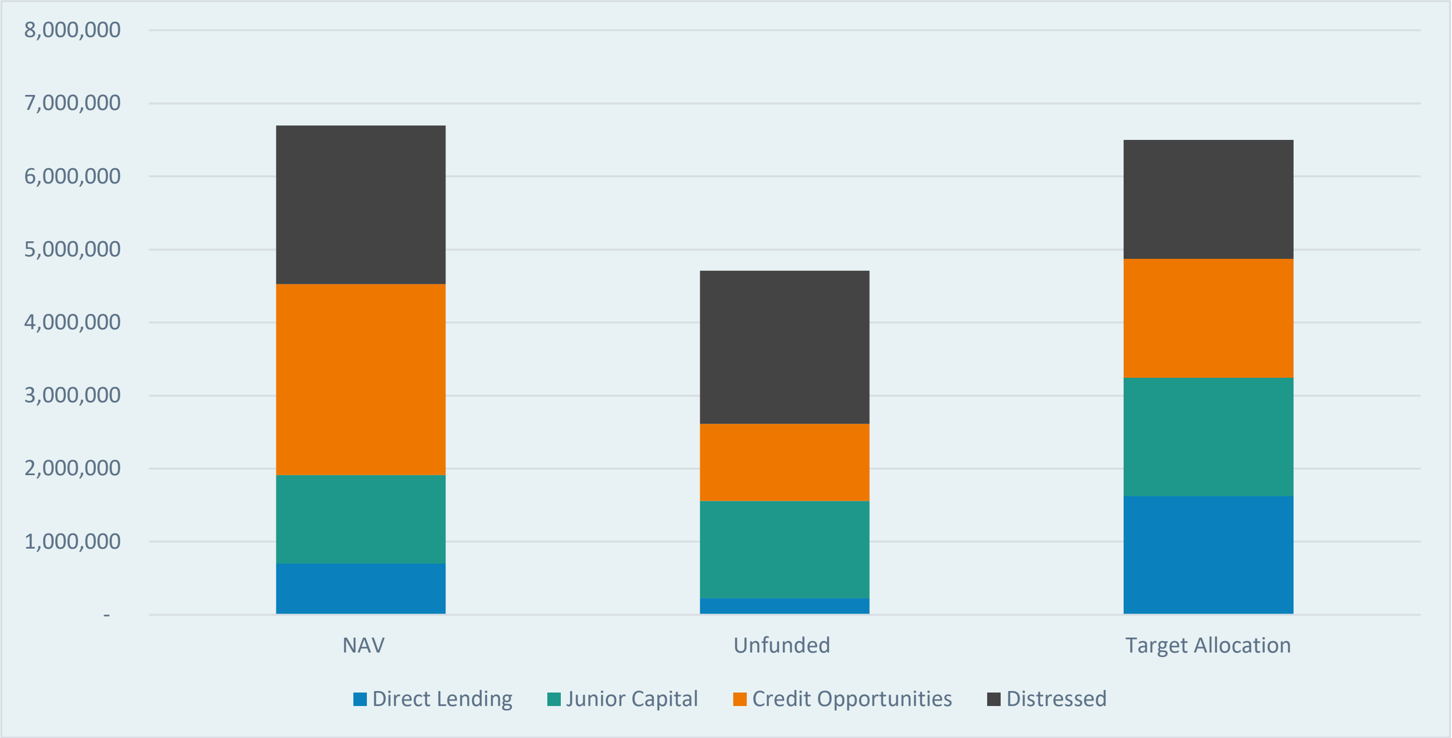


SI Portfolio – current vs target allocation

Current debt exposure within the SI Portfolio slightly exceeds the target allocation

— When including unfunded commitments, exposure may further exceed its target

— The largest NAV over exposures are in credit opportunities and distressed



NAV and unfunded figures taken from SI Portfolio as of 01.30.2022 (Updated 3.14.22) document. Target allocation based on total plan value of $203 billion an 3.2% target to SI Portfolio debt strategies

SI Portfolio – private debt recommendations

Recommendation

- Increase allocations to direct lending strategies over time via fund commitments or strategic SMAs
- Maintain steady commitments to junior capital strategies while focusing on reducing the unfunded exposure relative to NAV
- Reduce allocations to credit opportunities strategies while maintaining sub-strategy diversification
- Reduce allocations to distressed strategies until current dry powder is reduced and distributions are made from legacy fund commitments

NAV and unfunded figures taken from SI Portfolio as of 01.30.2022 (Updated 3.14.22) document. Target allocation based on total plan value of $203 billion an 3.2% target to SI Portfolio debt strategies

SI Portfolio – direct lending

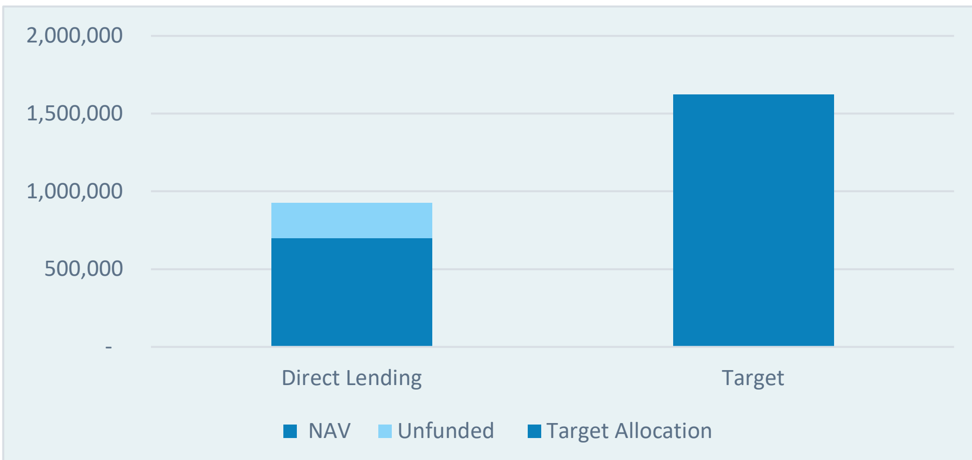
Direct lending exposure is low within the SI Portfolio

— Commitments have not been consistent across vintage years

— Dry powder is relatively low compared to current NAV

Recommendation

— Consider increasing commitments to direct lending strategies on an annual basis or develop perpetual SMA relationships to gain exposure



NAV and unfunded figures taken from SI Portfolio as of 01.30.2022 (Updated 3.14.22) document. Target allocation based on total plan value of $203 billion an 0.8% target to direct lending

SI Portfolio – junior capital / mezzanine

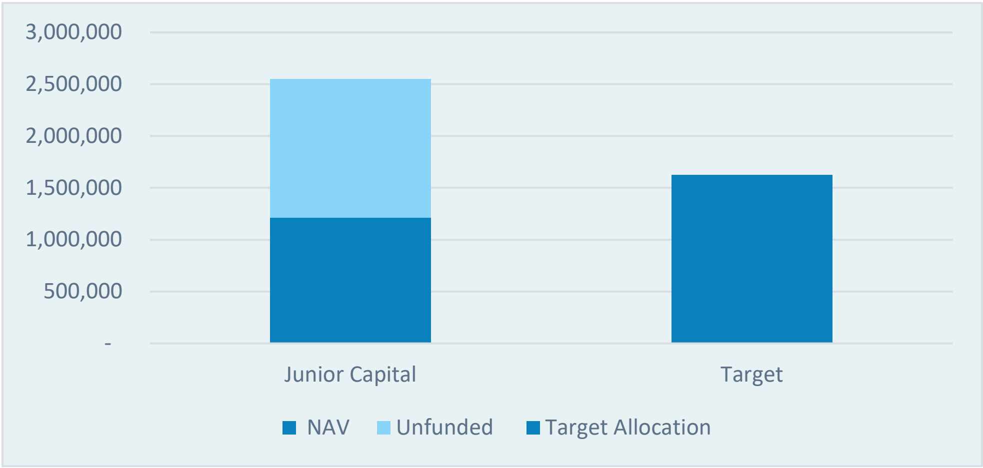
Commitment pacing has been relatively consistent over time

— Annual commitment sizing has varied dependent on the market opportunity

— Current dry powder for junior strategies exceeds NAV and NAV + unfunded exceeds target allocation

Recommendation

— Continue to commit to highest quality managers while considering deployment pacing to avoid overallocation



NAV and unfunded figures taken from SI Portfolio as of 01.30.2022 (Updated 3.14.22) document. Target allocation based on total plan value of $203 billion an 0.8% target to junior capital

SI Portfolio – credit opportunities

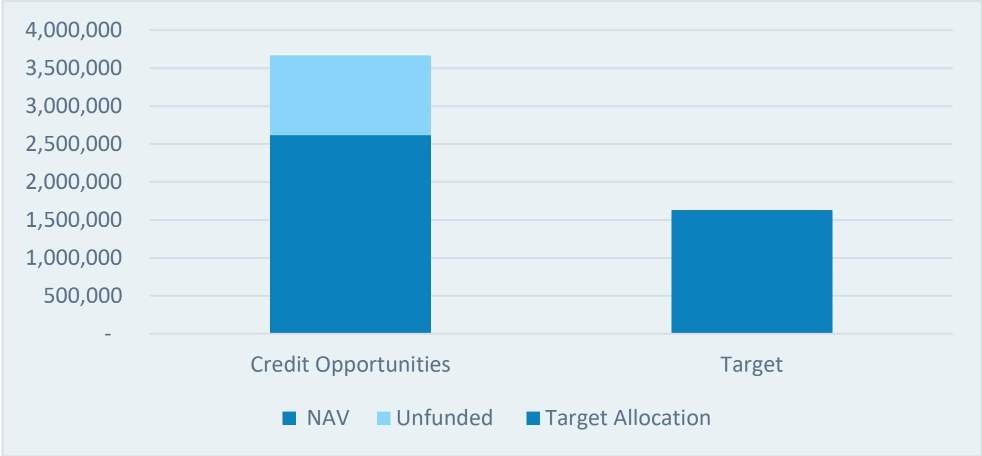
Commitments to credit opportunities strategies has been consistent in recent years

— Exposure is diversified across leasing, insurance, royalties, and other opportunistic credit strategies

Recommendation

— Continue consistent vintage year commitment pacing at reduced annual levels while diversifying by strategy type

— Consider credit opportunities strategies to invest into market dislocations



NAV and unfunded figures taken from SI Portfolio as of 01.30.2022 (Updated 3.14.22) document. Target allocation based on total plan value of $203 billion an 0.8% target to credit opportunities

SI Portfolio – distressed

Commitments have been steady over time with a significant spike in activity in 2020

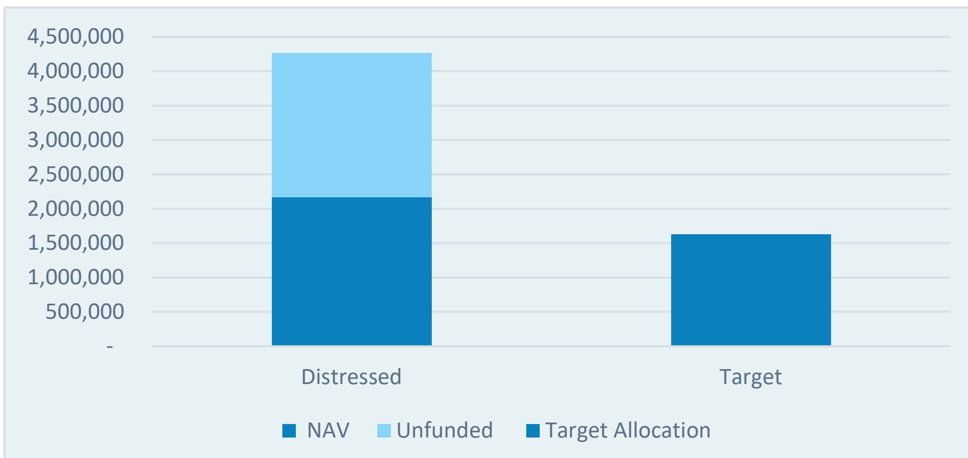
— Exposure exceeds recommended portfolio target

— Significant dry powder primarily from 2020 commitments

Recommendation

— Maintain consistent commitments to highest conviction managers

— Reduce annual commitment amounts to avoid significant target allocation overshoot



NAV and unfunded figures taken from SI Portfolio as of 01.30.2022 (Updated 3.14.22) document. Target allocation based on total plan value of $203 billion an 0.8% target to distressed

APPENDIX

10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast: Geometric	Ten Year Return Forecast: Arithmetic	Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
Equities								
U.S. Large	S&P 500	5.3%	6.4%	15.7%	0.31	0.39	1.21	1.19
U.S. Small	Russell 2000	5.3%	7.4%	21.6%	0.23	0.32	0.77	0.81
International Developed	MSCI EAFE	6.1%	7.6%	17.9%	0.32	0.40	0.52	0.57
International Small	MSCI EAFE Small Cap	4.7%	6.9%	22.2%	0.19	0.29	0.66	0.71
Emerging Markets	MSCI EM	6.1%	8.9%	25.3%	0.23	0.34	0.32	0.40
Global Equity	MSCI ACWI	5.7%	7.1%	17.3%	0.31	0.39	0.84	0.86
Private Equity	Cambridge U.S. Private Equity	9.5%	12.4%	26.0%	0.35	0.46	-	-
Private Equity (Direct)	Cambridge U.S. Private Equity	10.5%	13.4%	26.0%	0.39	0.50	-	-
Private Equity (Fund of Funds)	Cambridge U.S. Private Equity	8.5%	11.4%	26.0%	0.31	0.42	-	-
Fixed Income								
Cash	30 Day T-Bills	0.4%	0.4%	1.2%	-	-	-	-
U.S. TIPS	Bloomberg U.S. TIPS 5-10	1.7%	1.8%	5.3%	0.25	0.27	0.59	0.60
U.S. Treasury	Bloomberg Treasury 7-10 Year	1.5%	1.7%	6.8%	0.16	0.20	0.43	0.45
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	0.5%	1.0%	9.5%	0.01	0.06	-0.01	0.02
Global Aggregate	Bloomberg Global Aggregate	1.4%	1.6%	6.1%	0.16	0.20	0.28	0.30
Core Fixed Income	Bloomberg U.S. Aggregate Bond	2.2%	2.3%	4.1%	0.44	0.46	0.80	0.80
Core Plus Fixed Income	Bloomberg U.S. Universal	2.4%	2.5%	4.0%	0.50	0.51	0.82	0.83
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1-3 Year	1.5%	1.6%	3.6%	0.31	0.33	1.07	1.06
Short-Term Credit	Bloomberg Credit 1-3 Year	1.6%	1.7%	3.6%	0.34	0.35	1.25	1.24
Long-Term Credit	Bloomberg Long U.S. Corporate	2.4%	2.8%	9.4%	0.21	0.26	0.67	0.70
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	3.1%	3.7%	11.2%	0.24	0.30	1.01	1.00
Bank Loans	S&P/LSTA Leveraged Loan Index	2.3%	2.7%	9.3%	0.20	0.25	0.82	0.83
Global Credit	Bloomberg Global Credit	1.5%	1.8%	7.3%	0.15	0.19	0.67	0.68
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.2%	5.9%	12.6%	0.38	0.44	0.66	0.68
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	4.2%	4.9%	12.2%	0.31	0.37	0.04	0.09
Private Credit	S&P LSTA Leveraged Loan Index	6.8%	7.8%	14.6%	0.44	0.51	-	-
Private Credit (Direct Lending - Unlevered)	S&P LSTA Leveraged Loan Index	5.0%	5.5%	10.5%	0.44	0.49	-	-
Private Credit (Direct Lending - Levered)	S&P LSTA Leveraged Loan Index	8.0%	9.4%	17.4%	0.44	0.51	-	-
Private Credit (Credit Opportunities)	S&P LSTA Leveraged Loan Index	7.0%	8.0%	15.0%	0.44	0.51	-	-
Private Credit (Junior Capital / Mezzanine)	S&P LSTA Leveraged Loan Index	8.8%	10.4%	19.0%	0.44	0.53	-	-
Private Credit (Distressed)	S&P LSTA Leveraged Loan Index	9.0%	12.6%	29.1%	0.30	0.42	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast Geometric	Ten Year Return Forecast Arithmetic	Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
Other								
Commodities	Bloomberg Commodity	3.0%	4.2%	15.9%	0.16	0.24	-0.25	-0.18
Hedge Funds	HFRI Fund Weighted Composite	3.8%	4.1%	7.7%	0.44	0.48	0.88	0.49
Hedge Funds (Fund of Funds)	HFRI Fund of Funds Composite	2.8%	3.1%	7.7%	0.31	0.35	-	-
Hedge Funds (Equity Style)	Custom HFRI Benchmark Mix*	4.5%	5.6%	15.0%	0.27	0.34	-	-
Hedge Funds (Credit Style)	Custom HFRI Benchmark Mix*	3.6%	4.1%	10.1%	0.32	0.37	-	-
Hedge Funds (Asymmetric Style)	Custom HFRI Benchmark Mix*	2.3%	2.4%	4.9%	0.39	0.41	-	-
Real Estate Debt	Bloomberg CMBS IG	2.1%	2.4%	7.4%	0.23	0.27	1.12	1.11
Core Real Estate	NCREIF Property	6.5%	7.2%	12.5%	0.49	0.54	2.08	2.02
Value-Add Real Estate	NCREIF Property + 200bps	8.5%	9.8%	16.7%	0.49	0.56	-	-
Opportunistic Real Estate	NCREIF Property + 300bps	9.5%	11.1%	18.7%	0.49	0.57	-	-
REITs	Wilshire REIT	6.5%	8.2%	19.3%	0.32	0.40	0.67	0.72
Global Infrastructure	S&P Global Infrastructure	6.6%	8.0%	17.6%	0.35	0.43	0.45	0.51
Risk Parity	S&P Risk Parity 10% Vol Index	5.4%	5.9%	10.0%	0.50	0.55	-	-
Currency Beta	MSCI Currency Factor Index	0.8%	0.9%	3.4%	0.12	0.13	0.24	0.25
Inflation		2.5%	-	-	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

**To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro*

Methodology

CORE INPUTS

— We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
— For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
— Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the 10-year TIPS breakeven rate	-
Cash	75% * current federal funds rate + 25% * U.S. 10-year Treasury yield	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Levered gross return (LIBOR + spread + original issuance discounts) – management fees – carried interest	Estimated volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 3%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

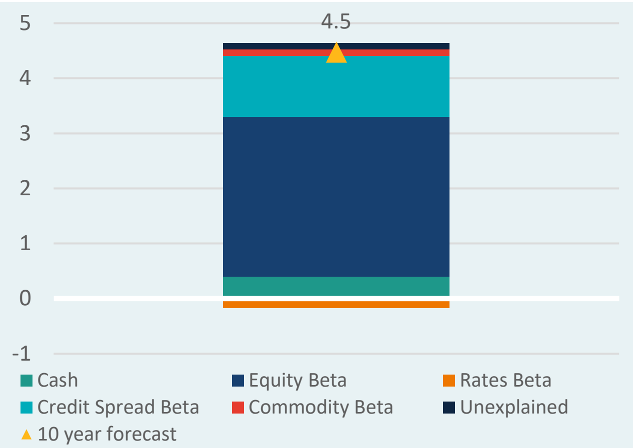
**Long-term historical volatility data is adjusted for autocorrelation (see Appendix)*

Hedge fund styles

As mentioned, we do not believe hedge funds should be thought of as an asset class, and in most situations we recommend benchmarking and modeling individual hedge funds in line with the underlying asset class exposure set. In line with this view, we forecast three broad hedge fund categories - equity hedge funds, credit hedge funds, and asymmetric hedge funds. To forecast hedge fund returns, we identified the portion of historical hedge fund performance that can be attributed to public market betas, and the portion of hedge fund returns that cannot be attributed to public market beta. This means our forecast has two components: the public market return (explained return) and the non-public market return (unexplained return).

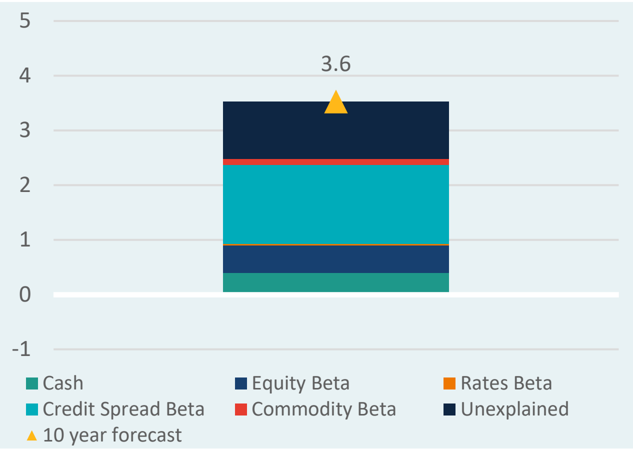
In practice, we believe hedge funds that have both identifiable core capabilities and persistent high correlations to equities fit equity sleeves. We take a similar approach with credit hedge funds and fixed income sleeves. Funds designed to have little persistent relationship with public market exposures while exhibiting a high degree of tactical or opportunistic trading behaviors fall into a third category, which we call Asymmetric hedge funds. Our forecast for "hedge funds" that we show here match the use cases outlined above as opposed to a broad universe approach.

HEDGE FUND: EQUITY



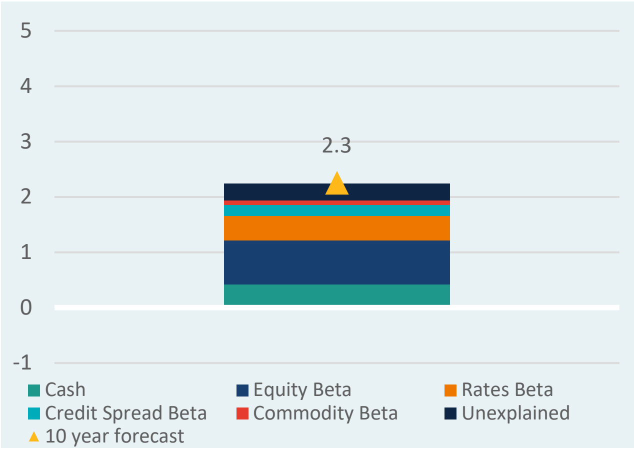
Source: Verus

HEDGE FUND: CREDIT



Source: Verus

HEDGE FUND: ASYMMETRIC



Source: Verus

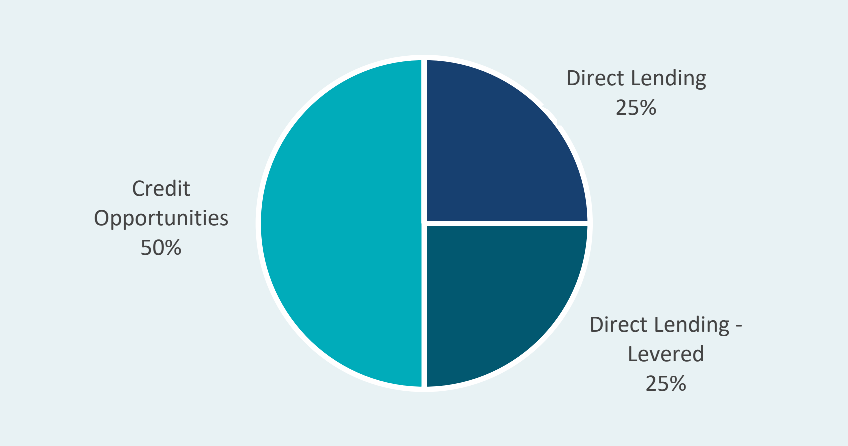
Private credit

The spectrum of private credit is broad and the types of investments in this asset class can differ considerably in terms of return expectations and risks involved. To reflect the disparate characteristics of this asset class, our private credit forecast assumes a diversified portfolio comprised of 25% direct lending, 25% direct lending with fund-level leverage, and 50% credit opportunities strategies. Our resulting private credit forecast is a result of our combined expectations for each of these exposure types.

We follow a building block approach to build return expectations.

Direct lending expected return is a product of interest rates (LIBOR with a 0.5% rate floor), a floating rate credit spread above LIBOR, plus original issuance discounts, minus management fees and carried interest. Direct lending with fund-level leverage includes these same building blocks but is adjusted for the added spread from leverage and the costs of that leverage. The expected return of credit opportunities strategies is a result of interest rates (U.S. Treasury yield), credit spread, original issuance discounts, minus management fees and carried interest, with an adjustment for added spread from leverage and the costs of that leverage. Further details of this methodology is provided on the next page.

PRIVATE CREDIT WEIGHTS



Source: Verus

FORECAST

	10-Year Forecast
Credit Opportunities *(50% weight)*	7.0%
Direct Lending – Unlevered *(25% weight)*	5.0%
Direct Lending – Levered *(25% weight)*	8.0%
Private Credit Weighted Return Forecast	6.8%
Inflation Forecast	-2.5%
Real Return	4.3%

Source: Verus, as of 9/30/21 – assuming universe weights as indicated by left-hand chart
Please reach out to your Verus consultant for Private Credit universe forecast methodology

Private credit

Below we illustrate the specific building blocks of our private credit forecasts. The build up method is used to calculate a gross investment level return, which is adjusted to account for fund level leverage, management fees, and carried interest.

	Direct Lending –Unlevered	Direct Lending – Levered		Credit Opportunities*		Junior Capital / Mezzanine	Distressed	
Interest Rate Floor	0.5%	0.5%	Base Interest Rate	0.7% - 1.2%	Fixed rate coupon	8.5%	Return expectations for distressed have been developed on a range bound basis given the diversity of strategies included in the asset class: Distressed strategies are highly opportunistic by nature and returns are primarily, if not entirely, driven by capital appreciation limiting the ability to use a build up method. Distressed strategies typically target 10%+ net returns, but market conditions often weigh heavily into the overall performance. Periods of market volatility, dislocation, and economic downturns generally provide a more attractive investment environment for distressed strategies where outperformance may be expected. Historically, median fund level net returns have ranged between 9-10% although top to bottom quartile dispersion is has been wide historically.	
Spread	5.5%	5.5%	Spread	4.5% - 9.0%	Paid-in-kind coupon	3.5%		
Original Issuance Discount	2.0%	2.0%	Original Issuance Discount	1.5%	Annualized equity upside	1.5%		
Gross return	*6.7%*	*6.7%*	*Gross return*	*5.7% - 10.7%*	*Gross return*	*13.5%*		
Leverage Cost	NA	2.3%	Leverage Cost	2.34%	Leverage Cost	NA		
Leverage Level	0.0x	1.0x	Leverage Level	0.3x – 0.5x	Leverage Level	0.0x		
Levered gross return	*6.7%*	*11.0%*	*Levered gross return*	*7.4% - 13.2%*	*Levered gross return*	*13.5%*		
Effective Management Fees	1.0%	1.8%	Effective Management Fees	1.5% - 2.0%	Effective Management Fees	1.5%		
Carried Interest	0.7%	1.2%	Carried Interest	0.9% - 2.3%	Carried Interest	3.2%		
Total Net Return	***5.0%***	***8.0%***	***Total Net Return***	***7.0%***	***Total Net Return***	***8.8%***	***Total Net Return***	***9.0%***

**Return expectations for credit opportunities have been developed on a range-bound basis given the diversity of strategies included in the asset class. Values represent the mid-point estimate of those ranges. For Credit Opportunities, our return assumption is the midpoint of the total net return range of 5.0% - 9.0%.*

Source: Verus

Credit summary

	Core	Long-Term Credit	Global Credit*	High Yield*	Bank Loans*	EM Debt (USD)	EM Debt (Local)	Private Credit	Real Estate Debt
Index	Bloomberg U.S. Aggregate	Bloomberg Long U.S. Corporate	Bloomberg Global Credit	Bloomberg U.S. High Yield	S&P LSTA	JPM EMBI	JPM GBI-EM	N/A	Bloomberg CMBS IG
Method	OAS + U.S. 10-Year	OAS + U.S. 10-Year	OAS + Global 10-Year Treasuries	OAS + U.S. 10-Year	LIBOR + Spread	OAS + U.S. 10-Year	Current Yield	Build up method using Direct Lending (unlevered), Direct Lending (levered), Opportunistic Credit**	LIBOR + Spread
Spread to	Intermediate U.S. Treasury	Long-Term U.S. Treasury	Global Long-Term Treasuries	Intermediate U.S. Treasury	LIBOR	Intermediate U.S. Treasury	-	-	LIBOR
Default Assumption	-0.5%	-4.5%	-	-	-	-0.5%	-0.5%	-	-3.7%
Recovery Assumption	80%	95%	-	-	-	60%	40%	-	47%
Spread	0.8%	1.1%	0.8%	3.2%	4.3%	3.9%	-	-	4.0%
Yield	-	-	-	-	-	-	4.5%	-	-
Risk Free Yield	1.5%	1.5%	1.2%	1.5%	0.1%	1.5%	-	-	0.1%
Effective Default	-0.1%	-0.2%	-0.4%	-1.6%	-2.1%	-0.2%	-0.3%	-	-2.0%
Nominal Return	2.2%	2.4%	1.5%	3.1%	2.3%	5.2%	4.2%	6.8%	2.1%
Inflation Forecast	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Real Return	-0.4%	-0.2%	-1.0%	-0.6%	-0.3%	2.7%	1.7%	4.3%	-0.4%

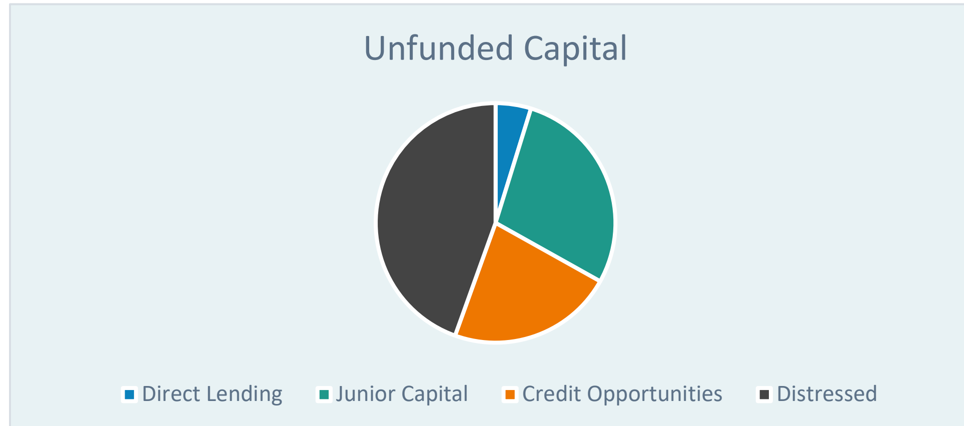
**We assume half of the spread of higher risk credit will be lost to defaults, as this has roughly been the case throughout history.*

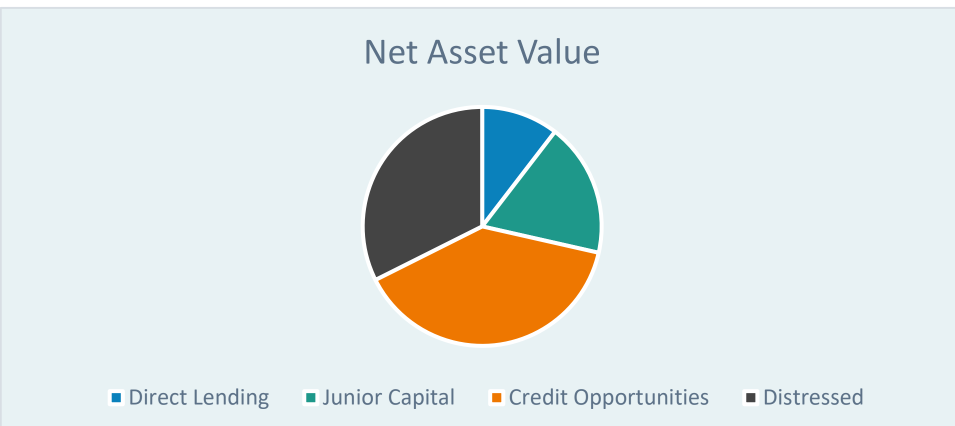
***We assume 25% Direct Lending (Unlevered), 25% Direct Lending (Levered), 50% Credit Opportunities – please refer to the previous page for more information.*

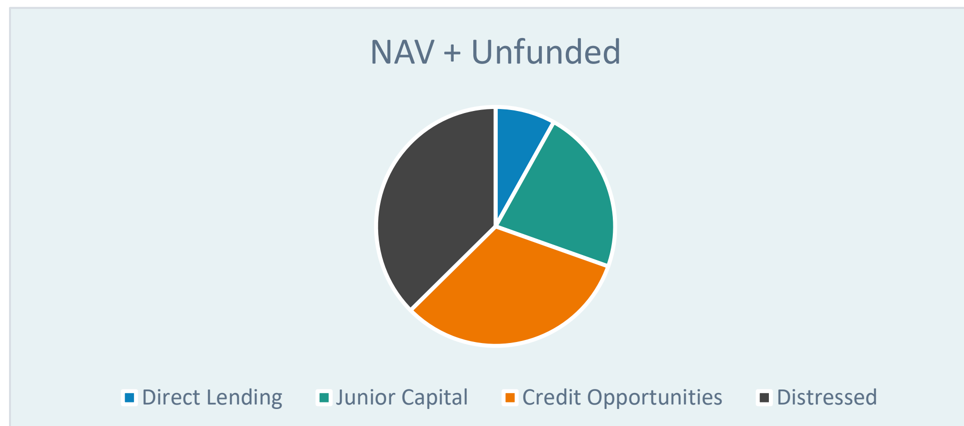
Source: Verus

SI Portfolio – strategy classification

Verus has categorized each debt-oriented fund to fit into four primary categories

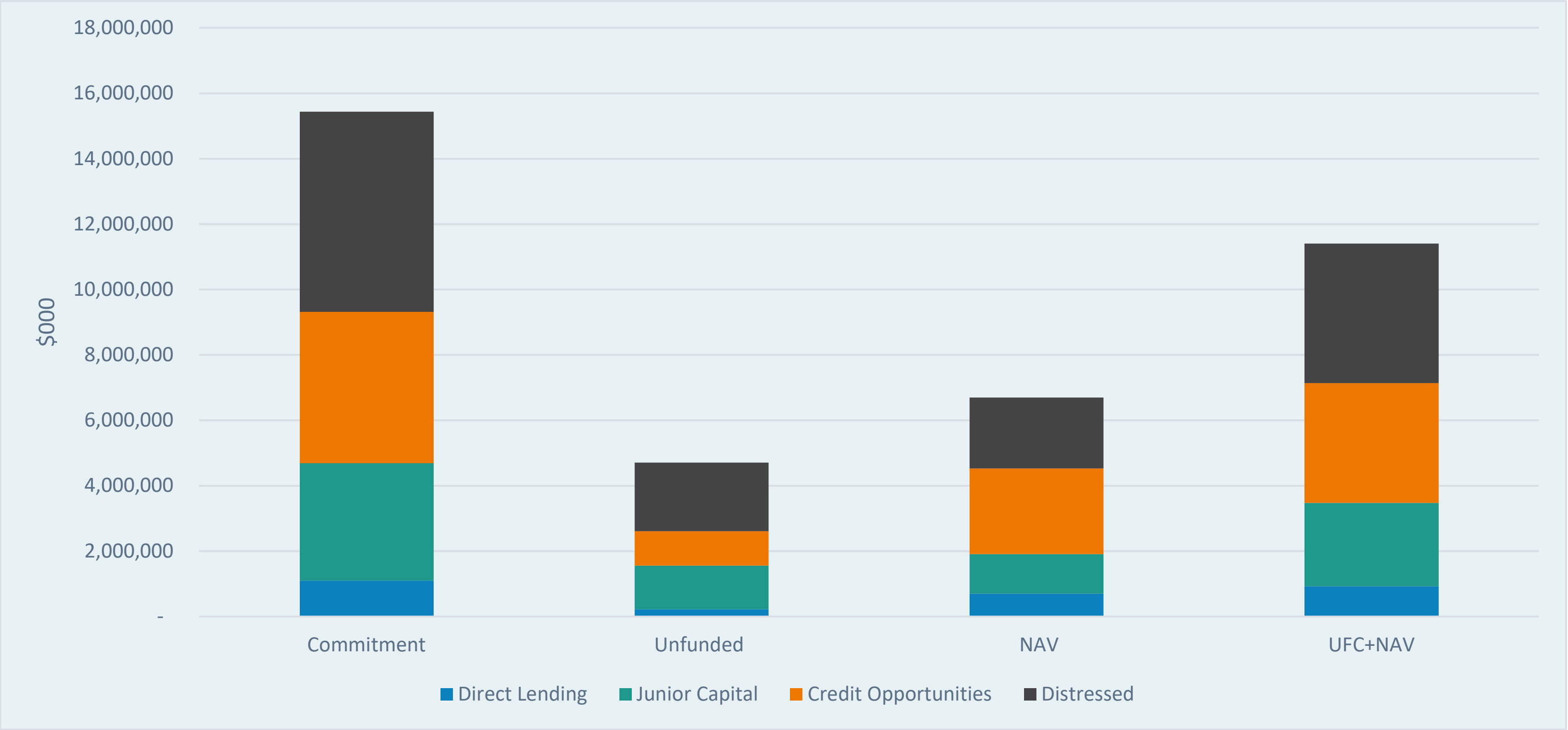






SI Portfolio – current allocation

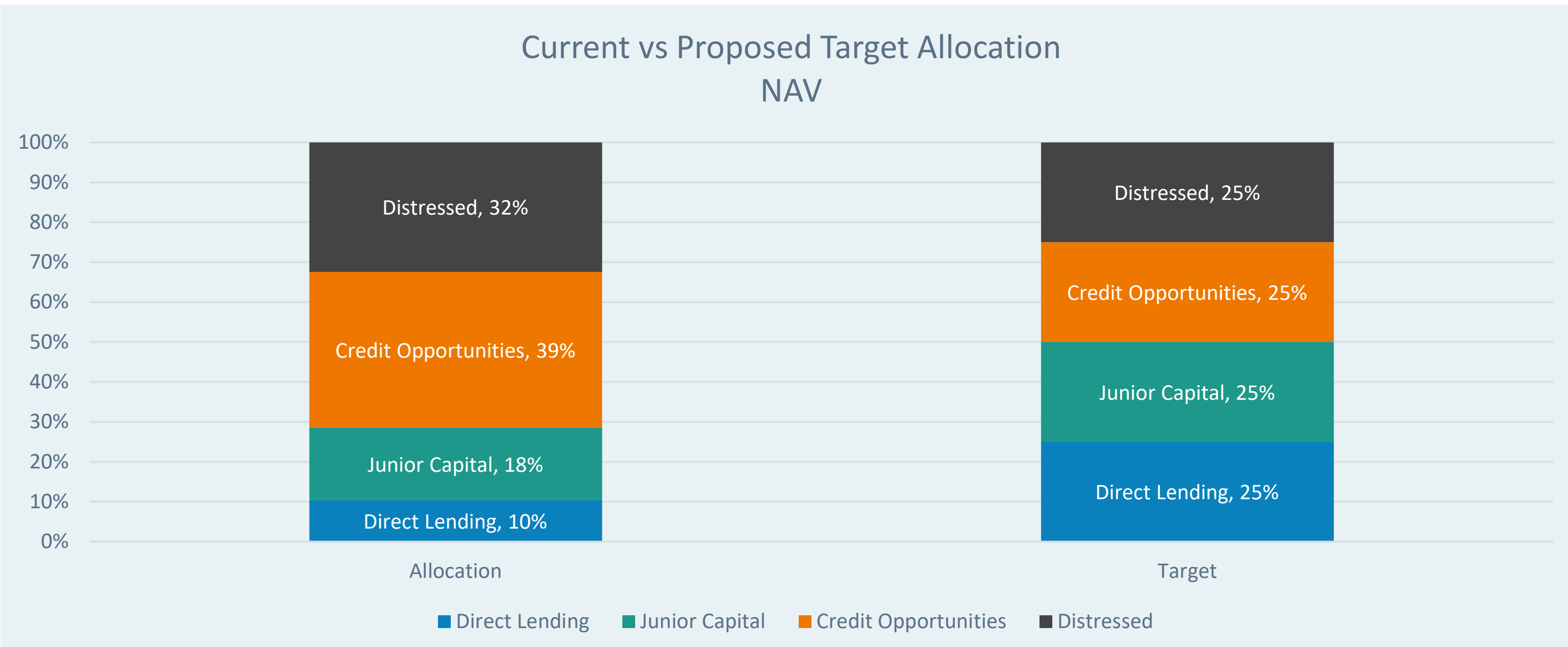
SI portfolio's exposure are generally diversified across junior strategies, credit opportunities, and distressed debt with a small exposure to direct lending



SI Portfolio – NAV vs target allocation

Allocations to distressed and credit opportunities strategies exceed the recommended portfolio target on a NAV basis

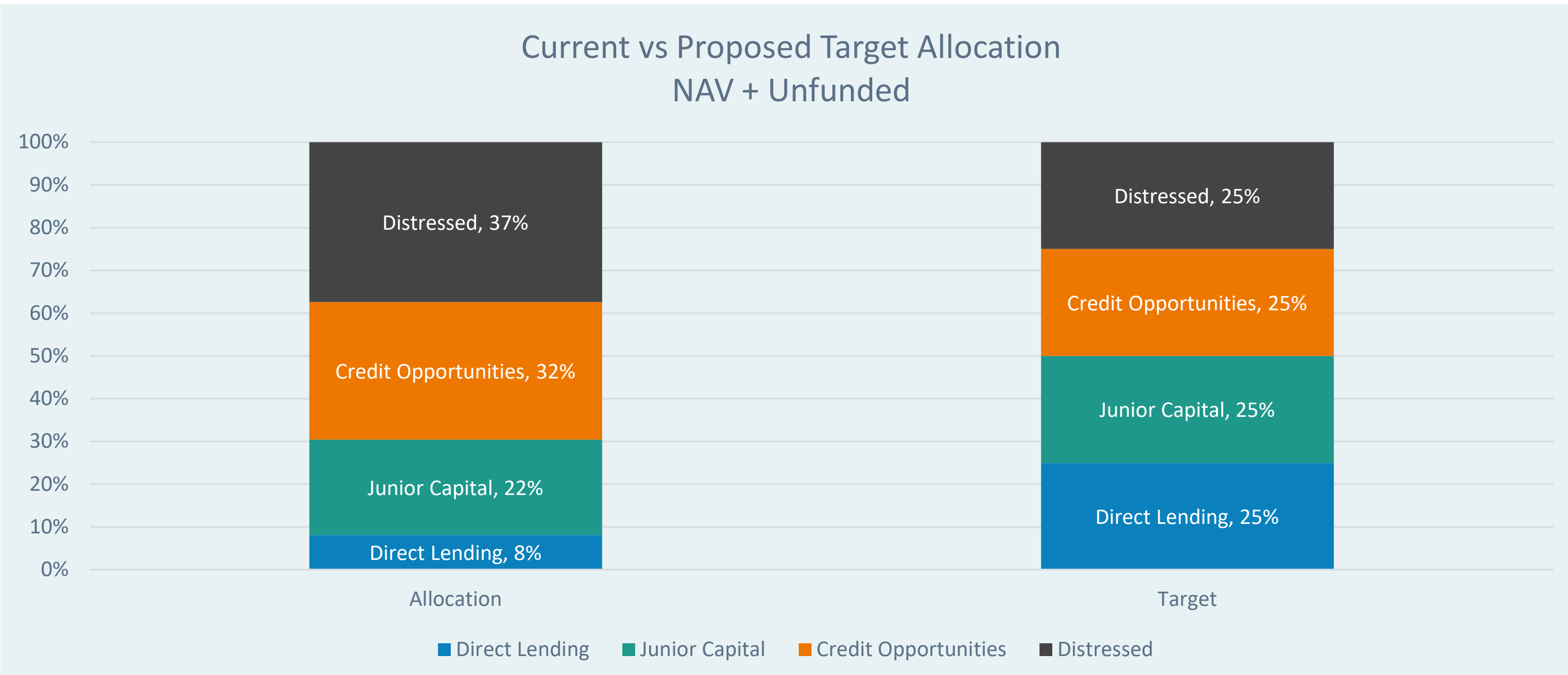
— Distressed strategies have the largest overweight while direct lending has the largest underweight



SI Portfolio – NAV + unfunded vs target allocation

When including unfunded capital, exposure to distressed strategies further exceeds the recommended target allocation

— Given ongoing market dynamics, this exposure positions the portfolio well to capitalize on market dislocations



APPENDIX
SI Portfolio Manager List

SI Portfolio fund list

Primary Category	Secondary Category	Account Name	Vintage	Commitment	Net Contributed Capital	Unfunded	NAV
Debt	Distressed	Edelweiss Fund of One	NA	200,000	73,312	90,250	77,731
Debt	Distressed	PCG Special Situation Partners II	NA	100,000	(26,286)		45,068
Debt	Distressed	Atalaya Special Opportunities VIII	2022	150,000	17,330	150,000	17,330
Debt	Distressed	Searchlight Opportunities Fund II	2021	200,000	42,501	65,554	42,966
Debt	Distressed	Kennedy Lewis Capital Partners ERISA E III	2021	200,000	161,052	168,015	32,360
Debt	Distressed	Blantyre Special Situations Fund II LP	2020	200,000	44,759	176,453	45,839
Debt	Distressed	CarVal Credit Value Fund V	2020	350,000	69,874	280,000	77,639
Debt	Distressed	LCM Credit Opportunities IVa	2020	200,000		173,603	50,464
Debt	Distressed	Kennedy Lewis Capital Partners Master Fund II	2020	200,000	161,052	53,968	190,361
Debt	Distressed	Highbridge Convertible Dislocation Fund	2020	200,000	16,620	60,169	46,409
Debt	Distressed	Apollo Accord Fund IV	2020	200,000	6,559	169,500	13,712
Debt	Distressed	Oak Hill Tactical Fund	2020	200,000	102,116	148,009	118,503
Debt	Distressed	Cerberus Corporate Credit SBA	2020	300,000	86,737	213,461	110,621
Debt	Distressed	GSO Capital Solutions III	2018	200,000	24,722	149,724	32,418
Debt	Distressed	Atalaya Special Opportunities VII	2018	150,000	112,753	12,535	135,418
Debt	Distressed	Oaktree Opportunities Fund Xb	2018	200,000	120,044	80,000	171,644
Debt	Distressed	CarVal Credit Value Fund IV	2017	150,000	112,571		145,141
Debt	Distressed	Glendon Opportunity Fund II	2017	150,000	105,018	45,000	149,023
Debt	Distressed	Varde Fund XII	2016	200,000	105,173		152,614
Debt	Distressed	LCM Credit Opportunities III	2016	150,000	48,306	60,489	67,269
Debt	Distressed	CarVal Credit Value Fund III	2015	200,000	(557)		64,128
Debt	Distressed	Castlelake IV LP	2015	95,000	44,041		87,877
Debt	Distressed	Atalaya Special Opportunities VI	2015	100,000	(33,977)		21,488
Debt	Distressed	GSO Capital Solutions II	2014	200,000	(29,445)		19,765
Debt	Distressed	Castlelake III LP	2014	75,000	14,200		48,032
Debt	Distressed	Marathon European Credit Opportunities II	2014	100,000	(19,658)		13,990
Debt	Distressed	Varde Fund XI	2013	200,000	(9,370)		59,163
Debt	Distressed	CarVal Credit Value Fund II A	2013	200,000	(75,616)		5,510
Debt	Distressed	Wayzata Opportunities Fund III	2012	150,000	25,933		20,307
Debt	Distressed	Oaktree Opportunities Fund IX	2012	100,000	36,825		78,936
Debt	Distressed	Oaktree Opportunities Fund VIII B	2011	50,000	(4,344)		18,624
Debt	Distressed	GSO Capital Solutions	2010	100,000	(28,632)		1,073
Debt	Distressed	Oaktree Opportunities Fund VIII	2010	100,000	(45,537)		1,159
Debt	Distressed	Varde Fund X	2010	100,000	(66,901)		6,995
Debt	Distressed	CarVal Credit Value Fund A	2010	100,000	(119,186)		151
Debt	Distressed	CarVal Global Value Fund A	2008	250,000	(310,554)		128
Debt	Distressed	Oaktree Opportunities Fund VII B	2007	50,000	(32,862)		43
Debt	Distressed	Wayzata Opportunities Fund II	2007	50,000	(52,577)		0
Debt	Evergreen Debt	Highbridge Tactical Credit Fund	2020	200,000	200,133		260,215

SI Portfolio fund list

Primary Category	Secondary Category	Account Name	Vintage	Commitment	Net Contributed Capital	Unfunded	NAV
Debt	Evergreen Debt	ICE Canyon EM Credit Absolute Return	2018	75,000	12,682		407
Debt	Evergreen Debt	DoubleLine Opportunistic Income	2017	300,000	300,022		352,341
Debt	Evergreen Debt	Canyon Value Realization Fund	2015	100,000	100,060		142,677
Debt	Evergreen Debt	King Street Capital	2011	200,000	(55,338)		17,931
Debt	Loans	CRC Single Investor Fund XIX LLC	2021	150,000	58,615	91,500	58,736
Debt	Loans	LCM Partners Strategic Origination and Lending Opps V SLP	2020	50,000	17,525	34,100	17,427
Debt	Loans	Blue Torch Credit Opportunities Fund II LP	2020	250,000	147,837	123,301	159,007
Debt	Loans	Babson CLO (Lake Jackson)	2020	100,000	72,565	86,213	110,278
Debt	Loans	Benefit Street Debt Fund IV	2017	150,000	114,844	10,128	145,135
Debt	Loans	Cerberus Leveraged Loan Opportunities III	2016	200,000	142,594	57,525	240,855
Debt	Loans	ABRY Advanced Securities Fund III	2014	150,000	135,589		129,792
Debt	Loans	Providence Debt Opportunities Fund III	2013	150,000	4,044		52,773
Debt	Loans	ABRY Advanced Securities Fund II	2011	150,000	(67,591)		5,575
Debt	Loans	Audax Credit Opportunities	2010	200,000	201,307	-	361,587
Debt	Loans	Providence TMT Special Situations Fund	2008	150,000	(102,113)		1,301
Debt	Loans	ABRY Advanced Securities Fund	2008	150,000	(91,526)		908
Debt	Subordinated Capital	Intermediate Capital Group (ICG) Europe Fund VIII SCSp	2022	175,000		175,000	
Debt	Subordinated Capital	Audax Mezzanine Fund V	2021	200,000	73	200,000	7
Debt	Subordinated Capital	Gallatin Point Capital II	2021	200,000	23,793	200,000	20,246
Debt	Subordinated Capital	Crescent Credit Solutions VIII	2021	200,000	54,432	180,923	94,806
Debt	Subordinated Capital	MCP Private Capital Fund IV	2020	200,000	51,909	150,435	70,727
Debt	Subordinated Capital	Silver Lake Waterman III	2020	150,000	63,336	80,438	65,972
Debt	Subordinated Capital	MSD Private Credit Opportunity Fund	2020	200,000		104,036	126,056
Debt	Subordinated Capital	SVB Innovation Credit VIII	2019	150,000	89,452	38,981	140,834
Debt	Subordinated Capital	Gallatin Point Capital	2018	100,000	42,630	19,222	74,449
Debt	Subordinated Capital	Metric Capital Partners III	2017	86,000	42,720		65,782
Debt	Subordinated Capital	ABRY Senior Equity V	2017	60,000	43,022	4,164	61,193
Debt	Subordinated Capital	GSO Capital Opportunities Fund III	2016	200,000	75,403	62,106	95,532
Debt	Subordinated Capital	Crescent Mezzanine Partners VII	2016	150,000	66,993	45,583	56,616
Debt	Subordinated Capital	Audax Mezzanine Fund IV	2016	150,000	34,751	52,950	56,819
Debt	Subordinated Capital	Deerfield Private Design IV	2016	100,000	79,048	20,992	120,059
Debt	Subordinated Capital	FL Growth Fund Credit Tranche	2014	100,000	1,790		24,928
Debt	Subordinated Capital	Falcon Strategic Partners IV	2012	100,000	41,057		76,155
Debt	Subordinated Capital	Crescent Mezzanine Partners VI	2012	150,000	(34,311)		21,711
Debt	Subordinated Capital	ABRY Senior Equity IV	2012	60,000	(34,667)		9,076
Debt	Subordinated Capital	GSO Capital Opportunities Fund II	2011	150,000	(29,445)		14,095
Debt	Subordinated Capital	ABRY Senior Equity III	2010	60,000	(35,357)		1,080
Debt	Subordinated Capital	VSS Structured Capital II	2009	75,000	(91,196)		2,842
Debt	Subordinated Capital	Carlyle Mezzanine Partners II	2008	150,000	(31,743)		565
Debt	Subordinated Capital	Falcon Strategic Partners III	2008	75,000	(32,830)		10,075

SI Portfolio fund list

Primary Category	Secondary Category	Account Name	Vintage	Commitment	Net Contributed Capital	Unfunded	NAV
Debt	Subordinated Capital	TCW/Crescent Mezzanine Partners V	2008	150,000	(56,637)		629
Debt	Subordinated Capital	GSO Capital Opportunities Fund	2008	200,000	(126,067)		2,824
Diversifying Strategies	Global Macro	Bridgewater Pure Alpha Major Markets	2018	200,000	200,050		215,946
Diversifying Strategies	Global Macro	AQR Style Premia	2016	150,000	150,054		141,756
Diversifying Strategies	Global Macro	Graticule Asia Macro Fund	2015	150,000	(32,514)		3,726
Diversifying Strategies	Insurance	Juniperus Insurance Opportunity Limited	NA	225,000	225,043		244,560
Diversifying Strategies	Insurance	Miravast ILS Credit Opportunities LP	2019	150,000	107,281	55,612	122,797
Diversifying Strategies	Insurance	ILS Property and Casualty II	2018	150,000	46,890		3,992
Diversifying Strategies	Insurance	Rubik Fund	2018	175,000	175,027		153,715
Diversifying Strategies	Insurance	Aeolus Property and Catastrophe Keystone PF Fund LP	2018	150,000	141,152		138,663
Diversifying Strategies	Insurance	Tintoretto Partners	2017	300,000	239,590	42,667	245,032
Diversifying Strategies	Managed Futures	AQR Managed Futures Fund II	2015	250,000	250,122		220,107
Diversifying Strategies	Managed Futures	Caerus DT Fund	2014	475,000	475,105		613,518
Diversifying Strategies	Managed Futures	Elan Fund LP	2014	525,000	524,588		707,465
Diversifying Strategies	Relative Value	Garda Fixed Income Relative Value Opportunity Fund Ltd	2019	300,000	300,073		373,717
Diversifying Strategies	Royalties	Primary Wave Music IP Fund 3	2021	200,000	120,823	166,033	119,850
Diversifying Strategies	Royalties	Primary Wave Music IP Fund 2	2020	150,000	129,349	12,904	145,853
Diversifying Strategies	Royalties	Primary Wave Music IP Fund 1	2020	75,000	17,268		45,548
Diversifying Strategies	Royalties	NovaQuest Pharma Opportunities Fund V LP	2019	125,000	43,328	83,310	56,954
Diversifying Strategies	Royalties	Vine Media Opportunities IV	2017	100,000	41,921	54,968	51,974
Diversifying Strategies	Royalties	Vine Media Opportunities III	2014	100,000	59,316		64,745
Diversifying Strategies	Royalties	HealthCare Royalty Partners III	2014	65,000	17,470		32,650
Equity	Activist Equity	EQMC Europe Development Capital Fund PLC	2020	200,000	170,088		168,267
Equity	Activist Equity	Starboard Value and Opportunities Fund	2011	200,000	175,012		620,997
Equity	Activist Equity	Cevian Capital II	2010	100,000	100,000		326,059
Equity	Activist Equity	P2 Capital Fund	2010	100,000	100,000		407,597
Equity	GP Investments	Providence EGG	2012	150,000	43,833		172,092
Equity	GP Investments	Lexington GP	2010	41,250	(94,405)		174,510
Equity	SI Private Equity	Levine Leichtman Lower Middle Markets III	2021	150,000	18,769	126,657	15,709
Equity	SI Private Equity	Centerbridge Capital Partners IV Fund	2020	300,000	49,747	300,000	56,097
Equity	SI Private Equity	Florida Growth Fund II Tranche II	2019	125,000	64,567	63,602	87,052
Equity	SI Private Equity	Florida Sunshine State Fund (JP Morgan)	2019	125,000	68,088	49,607	99,486
Equity	SI Private Equity	Mill Road Capital III LP	2019	150,000	62,218	102,946	134,491
Equity	SI Private Equity	Levine Leichtman VI	2017	200,000	126,993	71,970	174,070
Equity	SI Private Equity	Florida Growth Fund II Tranche I	2015	250,000	71,005		184,452
Equity	SI Private Equity	GI Partners Fund IV	2014	150,000	(46,906)		111,899
Equity	SI Private Equity	Centerbridge Capital Partners III	2014	125,000	43,860	21,291	131,390
Equity	SI Private Equity	Levine Leichtman V	2013	200,000	(50,932)		180,767
Equity	SI Private Equity	Florida Growth Fund I Tranche II	2011	250,000	(8,184)		108,983
Equity	SI Private Equity	Florida Growth Fund I Tranche I	2009	250,000	(58,534)		113,278

SI Portfolio fund list

Primary Category	Secondary Category	Account Name	Vintage	Commitment	Net Contributed Capital	Unfunded	NAV
Equity	SI Private Equity	Levine Leichtman IV	2009	100,000	(61,759)		11,288
Equity	Long/Short Equity	Yiheng Capital Partners	2019	150,000	150,076		154,787
Equity	Long/Short Equity	Monashee Pure Alpha	2019	150,000	150,088		183,502
Equity	Long/Short Equity	Marshall Wace Eureka	2017	100,000	100,038		138,719
Flexible Mandates	Event	Highbridge SPAC Opportunity Fund	2021	100,000	74,703	24,906	76,636
Flexible Mandates	Event	Luxor Capital Partners	2014	100,000	100,022		154,679
Flexible Mandates	Multi-Strategy	Hudson Bay Fund	2020	200,000	200,095		253,142
Flexible Mandates	Multi-Strategy	HBK Fund II	2013	150,000	150,093		220,055
Flexible Mandates	Multi-Strategy	Sculptor Domestic Partners II, LP	2012	200,000	80,016		273,943
Flexible Mandates	Multi-Strategy	Taconic Opportunity Fund	2011	200,000	200,000		361,855
Flexible Mandates	Open Mandate	Blackstone Tactical Opportunities Fund II	2019	250,000	105,754	120,816	181,561
Flexible Mandates	Open Mandate	BlackRock SMA Coastline (Tranche II)	2017	250,000	152,624	72,550	205,856
Flexible Mandates	Open Mandate	BlackRock SMA Coastline	2015	250,000	44,411		111,111
Flexible Mandates	Open Mandate	TSSP Tactical Adjacent Opportunities	2015	200,000	85,890		158,193
Flexible Mandates	Open Mandate	Blackstone Tactical Opportunities Fund II	2015	200,000	(19,295)		70,081
Real Assets	Transportation	Falko Regional Aircraft Opportunities II	2019	150,000	81,523	63,391	80,453
Real Assets	Commodities	EIG Global Project Fund V	2020	200,000	32,065	179,756	33,456
Real Assets	Commodities	Chambers Energy Capital IV	2020	200,000	92,625	153,194	117,173
Real Assets	Commodities	Sprott Private Resource Lending II	2019	150,000	89,296	52,595	106,022
Real Assets	Commodities	GSO Energy Select Opportunities II	2019	150,000	23,875	111,468	34,148
Real Assets	Commodities	Orion Mine Finance II - Coinvestment	2018	50,000	25,108	9,609	41,367
Real Assets	Commodities	Orion Mine Finance II	2017	100,000	67,508	7,115	104,276
Real Assets	Commodities	Sprott Private Resource Lending	2017	100,000	(14,187)		2,901
Real Assets	Commodities	Chambers Energy Capital III	2016	50,000	26,532		37,844
Real Assets	Commodities	GSO Energy Select Opportunities	2015	100,000	4,469		21,746
Real Assets	Commodities	EIG Energy XVI	2013	100,000	40,829		63,114
Real Assets	Commodities	Orion Mine Finance I	2012	100,000	31,831		39,210
Real Assets	Infrastructure	Hull Street Energy Partners II	TBD	150,000	103	150,000	-
Real Assets	Infrastructure	Actis Energy 5	2021	150,000	3,147	150,000	335
Real Assets	Infrastructure	Grain Communications Opportunity III	2021	100,000	36,145	83,559	32,613
Real Assets	Infrastructure	Orion Energy Credit Opportunities III	2020	150,000	31,240	135,542	28,374
Real Assets	Infrastructure	Grain Spectrum Holdings III	2020	100,000	79,881	20,331	78,725
Real Assets	Infrastructure	Patria Infrastructure IV	2020	100,000	17,303	85,830	18,025
Real Assets	Infrastructure	Global Infrastructure Partners IV	2019	225,000	60,021	185,517	48,946
Real Assets	Infrastructure	Grain Communications Opportunity II	2019	70,000	59,318	14,509	75,923
Real Assets	Infrastructure	Global Infrastructure Partners III	2016	150,000	110,491		144,496
Real Assets	Infrastructure	IFM Global Infrastructure	2014	300,000	292,796	-	663,457
Real Assets	Infrastructure	Global Infrastructure Partners II	2012	150,000	(44,146)		91,647
Real Assets	SI Real Estate	Blackrock US CRE Debt Fund - C7	2021	200,000	121,036	143,205	121,413
Real Assets	SI Real Estate	TriGate Property Partners IV	2020	150,000	32,060	124,521	23,042

SI Portfolio fund list

Primary Category	Secondary Category	Account Name	Vintage	Commitment	Net Contributed Capital	Unfunded	NAV
Real Assets	SI Real Estate	Torchlight Debt Fund VII	2020	250,000	62,410	187,500	63,812
Real Assets	SI Real Estate	PAG Loan Fund IV LP	2020	150,000	23,430	70,134	76,821
Real Assets	SI Real Estate	Cerberus Real Estate Partners V	2020	225,000	97,390	145,463	110,450
Real Assets	SI Real Estate	Blackrock Carbon Capital VI	2016	150,000	61,377	-	72,372
Real Assets	SI Real Estate	TriGate Property Partners III	2016	75,000	24,861		44,488
Real Assets	SI Real Estate	Colony Distressed Credit IV	2015	150,000	119,580		108,701
Real Assets	SI Real Estate	Cerberus Real Estate Partners IV	2015	200,000	148,186		188,042
Real Assets	SI Real Estate	Colony Distressed Credit III	2014	150,000	(4,257)		31,713
Real Assets	SI Real Estate	Bayview Opportunities Master Fund IV B	2014	150,000	(34,368)		19,343
Real Assets	SI Real Estate	Blackrock Carbon Capital V	2013	150,000	(31,655)		-
Real Assets	SI Real Estate	TriGate Property Partners II	2013	50,000	(9,941)		12,686
Real Assets	SI Real Estate	Cerberus Real Estate Partners III	2013	150,000	(44,836)		61,308
Real Assets	SI Real Estate	Tricon Housing Partners US II	2012	100,000	(1,151)		11,023
Real Assets	SI Real Estate	Colony Distressed Credit II	2011	75,000	(16,504)		4,189
Real Assets	SI Real Estate	Principal SBAF Mortgage Fund	2009	750,000	(45,859)	-	102,702
Real Assets	SI Real Estate	Tricon Housing Partners US	2008	105,000	(56,964)		10,480
Real Assets	SI Real Estate	Square Mile Partners III	2008	100,000	(38,485)		277
Real Assets	Timberland	Boston Timber Opportunities	2012	300,000	215,583	14,404	313,728
Real Assets	Timberland	Jackson Timberland Opportunities	2012	200,000	113,367	2,359	205,649
Real Assets	Transportation	Carlyle Aviation Leasing Fund LP	2020	200,000	28,349	184,222	27,005
Real Assets	Transportation	SASOF V LP	2020	150,000	79,785	70,276	79,667
Real Assets	Transportation	Global Transportation Income Fund	2020	200,000	191,948	-	199,938
Real Assets	Transportation	Sciens Aviation Special Opportunities IV	2018	150,000	69,492		61,871
Real Assets	Transportation	ITE Rail Fund	2018	200,000	200,076	(1,810)	254,148
Real Assets	Transportation	Castlelake Aviation III Stable Yield	2017	150,000	65,720		116,855
Real Assets	Transportation	Sciens Aviation Special Opportunities III	2015	85,259	(9,174)		12,551
Real Assets	Transportation	Castlelake Aviation II	2010	75,000	(39,473)		5,582

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STATE BOARD OF ADMINISTRATION OF FLORIDA

STRATEGIC INVESTMENTS STRUCTURAL REVIEW

CAMBRIDGE ASSOCIATES

DECEMBER 2022

Summary Observations

Based upon our review of the Strategic Investment (SI) asset class, Cambridge Associates suggested the following for consideration by the FSBA:

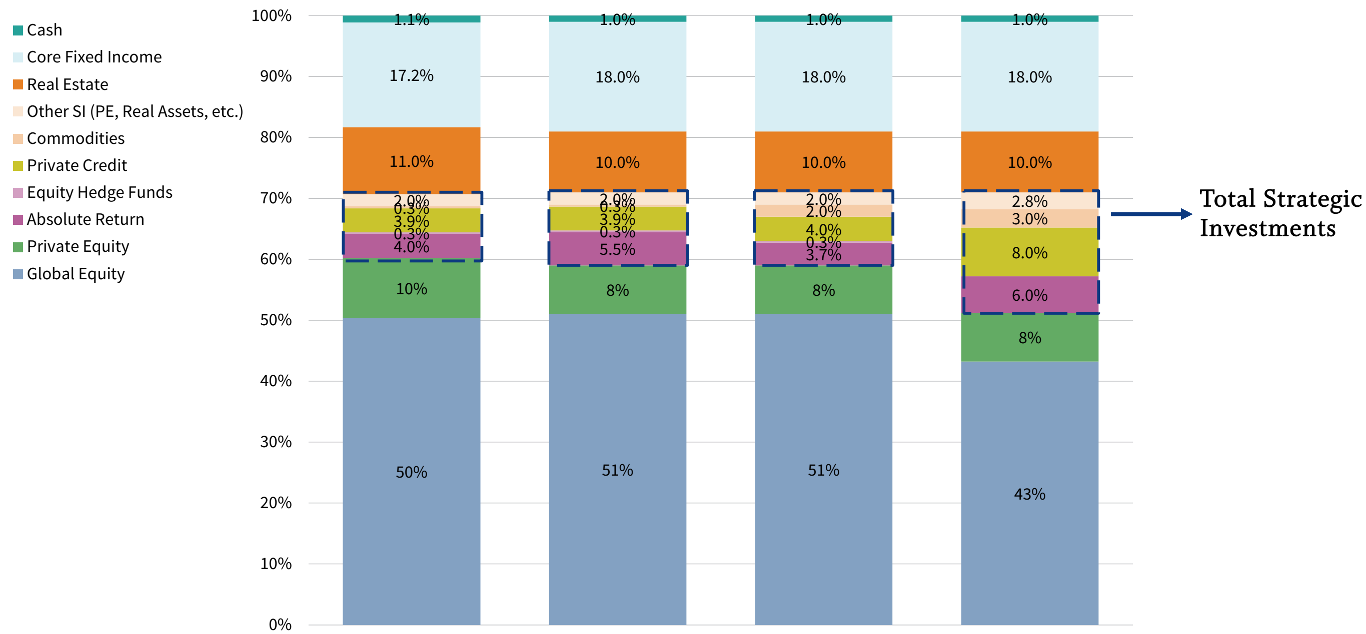
1. Increase the total SI allocation to 20% from the current limit of 12%
2. Prioritize diversification over return seeking/maximization by emphasizing debt and diversifying strategies
    a. Reduce Strategic Investments exposure to equity risk
3. Consider larger strategic relationships and co-investments to gain better fees/terms and access differentiated opportunities
4. Consider evergreen and SMA structures when appropriate

STRATEGIC INVESTMENTS ASSET ALLOCATION

CAMBRIDGE ASSOCIATES

Asset Allocation Comparison

Increasing the SI allocation to 20% results in enhanced risk reduction properties for the total pool, without sacrificing of expected returns

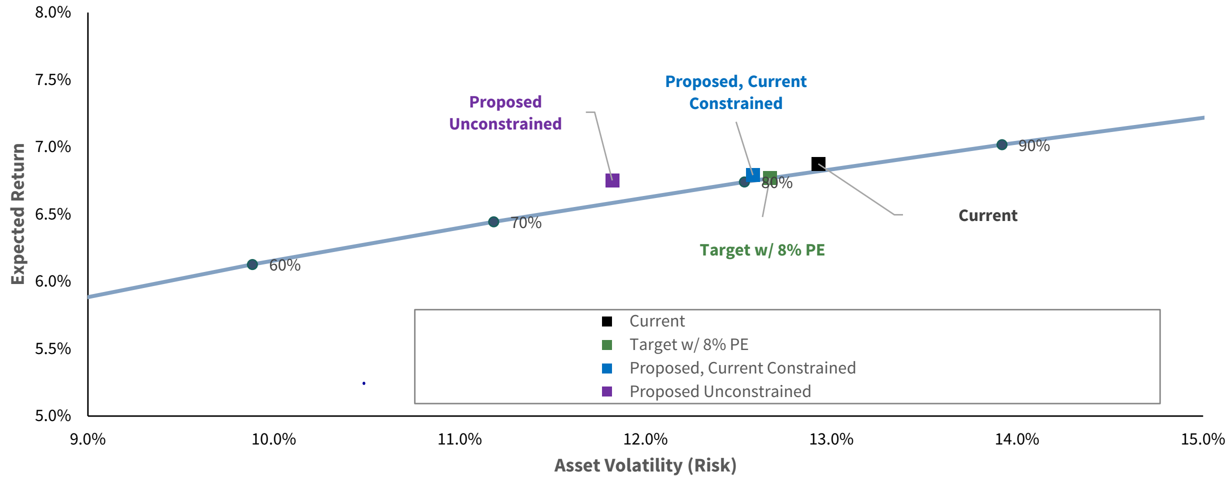


	CURRENT	TARGET	PROPOSED, CURRENT CONSTRAINED	PROPOSED UNCONSTRAINED
EXPECTED RETURN – STEADY STATE	6.9%	6.8%	6.8%	6.8%
ASSET ONLY RISK	12.9%	**12.7%**	**12.6%**	**11.8%**
BETA	0.72	0.70	0.70	0.65
SHARPE RATIO	0.466	0.467	0.472	0.499
STRATEGIC INVESTMENTS	*10%*	*12%*	*12%*	*20%*

Notes: All returns are nominal, are net of investment manager fees, and assume no manager value-add in excess of the manager fee. Data is as of March 31, 2022. Current constrained represents an asset allocation that remains within the current policy target ranges, whereas proposed unconstrained represents asset allocations outside the bounds of policy targets.

Asset Allocation Comparison: Risk-Return

Steady state assumptions



	EXPECTED RETURN	ASSET STANDARD DEVIATION	SHARPE RATIO	GLOBAL EQUITY	HEDGE FUNDS	PRIVATE EQUITY	PRIVATE CREDIT	REAL ESTATE	COMMODITIES / REAL ASSETS	CASH	CORE FIXED INCOME
CURRENT	**6.9%**	**12.9%**	**0.466**	**50.9%**	**4.2%**	**10.6%**	**3.9%**	**11.0%**	**1.1%**	**1.1%**	**17.2%**
TARGET W/ 8% PE	**6.8%**	**12.7%**	**0.467**	**51.5%**	**5.7%**	**8.8%**	**3.9%**	**10.0%**	**1.1%**	**1.0%**	**18.0%**
PROPOSED, CURRENT CONSTRAINED	**6.8%**	**12.6%**	**0.472**	**51.5%**	**4.0%**	**8.8%**	**4.0%**	**10.0%**	**2.8%**	**1.0%**	**18.0%**
PROPOSED UNCONSTRAINED	**6.8%**	**11.8%**	**0.499**	**43.2%**	**6.0%**	**8.8%**	**8.0%**	**10.0%**	**5.0%**	**1.0%**	**18.0%**
EFFICIENT FRONTIER (CONSTRAINED TO TARGET PORTFOLIO)											
50% GROWTH	5.8%	8.7%	0.570	31.8%	3.5%	5.4%	2.4%	6.2%	0.7%	1.0%	49.0%
60% GROWTH	6.1%	9.9%	0.534	38.1%	4.3%	6.5%	2.9%	7.4%	0.8%	1.0%	39.0%
70% GROWTH	6.4%	11.2%	0.500	44.5%	5.0%	7.6%	3.4%	8.6%	0.9%	1.0%	29.0%
80% GROWTH	6.7%	12.5%	0.470	50.8%	5.7%	8.7%	3.9%	9.9%	1.1%	1.0%	19.0%
90% GROWTH	7.0%	13.9%	0.443	57.2%	6.4%	9.8%	4.4%	11.1%	1.2%	1.0%	9.0%
99% GROWTH	7.2%	15.2%	0.421	62.9%	7.0%	10.7%	4.8%	12.2%	1.3%	1.0%	0.0%

Notes: All returns are nominal, are net of investment manager fees, and assume no manager value-add in excess of the manager fee. Data is as of March 31, 2022. Current constrained represents an asset allocation that remains within the current policy target ranges, whereas proposed unconstrained represents asset allocations outside the bounds of policy targets.

Percentage of Credit in the SI Portfolio by NAV and Total Exposure

CA models that approximately 50% or less of the SI portfolio has equity exposure, including uncorrelated equity strategies

- Cambridge estimates that a minimum of ~50% of SI's total exposure is comprised of credit investments. Furthermore, Cambridge concludes that well less than 50% of SI's portfolio is highly-correlated to broader equity markets.

	SI Portfolio (as at 12/31/21)		
Sub-Strategy	NAV	Total Exposure	
Senior Debt	9%	8%	
Mezzanine	3%	4%	
Capital Appreciation	6%	8%	
Credit Opportunities	15%	16%	
Distressed (Corporate)	7%	8%	
Specialty Finance	16%	17%	
PI Credit as % of SI PI	55%	60%	
	x	x	
PI Weighting of Total SI Portfolio	63%	75%	
	=	=	
PI Credit as % of Total SI	35%	45%	A
Public Strategies (Credit %)	25%	25%	
	x	x	
Public Weighting of Total SI Portfolio	37%	25%	
	=	=	
Public Credit as % of Total SI	9%	6%	B
Total Credit as % of Total SI	44%	51%	A + B

Notes: Total exposure represents NAV + Unfunded. Figures are rounded without decimal places and may differ by plus or minus 1% from actual values.

Historical Correlations of Private Credit Strategies to Private Equity & Public Market Equivalents

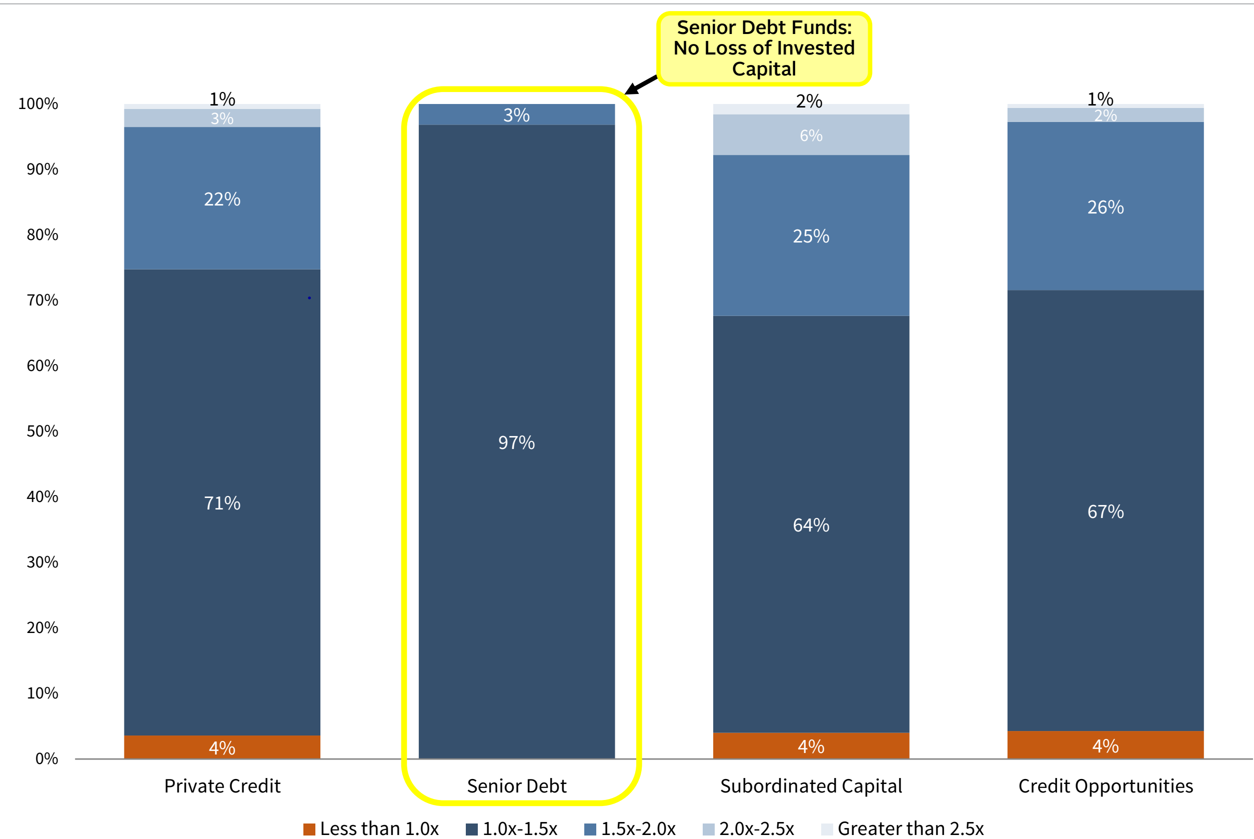
Private credit strategies have historically exhibited minimal positive correlation to public fixed income & equity indices; senior debt likewise less-correlated to private equity and venture

	CA SENIOR DEBT	CA SUBORDINATED CAPITAL	CREDIT SUISSE LEVERAGED LOAN	BAML US HIGH YIELD	BLOOMBERG AGG BONDS	S&P 500
CA SENIOR DEBT	1.00	0.17	0.43	0.37	-0.11	0.29
CA SUBORDINATED CAPITAL	0.17	1.00	0.29	0.29	-0.24	0.54
CA PE &VC	0.19	0.75	0.40	0.40	-0.26	0.61

Source: Cambridge Associates LLC Private Investments Database
Notes: Correlations are generated for the time periods ending March 31, 2022. Includes funds formed in the vintage years 1996-2022. Color codes used to indicate degree of correlation: green (positive correlation) and red (negative correlation). Credit Suisse Leveraged Loan Index is often used as a Public Market Equivalent (PME) to CA Senior Debt. BAML US High Yield refers to the Bank of America Merrill Lynch U.S. High Yield Master II Index, which is often used as a PME to CA Subordinated Capital. Bloomberg Agg Bonds refers to the Bloomberg Aggregate Bond Index. CA Senior Debt and CA Subordinated Capital represent the CA benchmarks for each, which are comprised of the respective managers tracked in each manager universe.

Global Credit Return Breakdown by Asset Class: TVPI

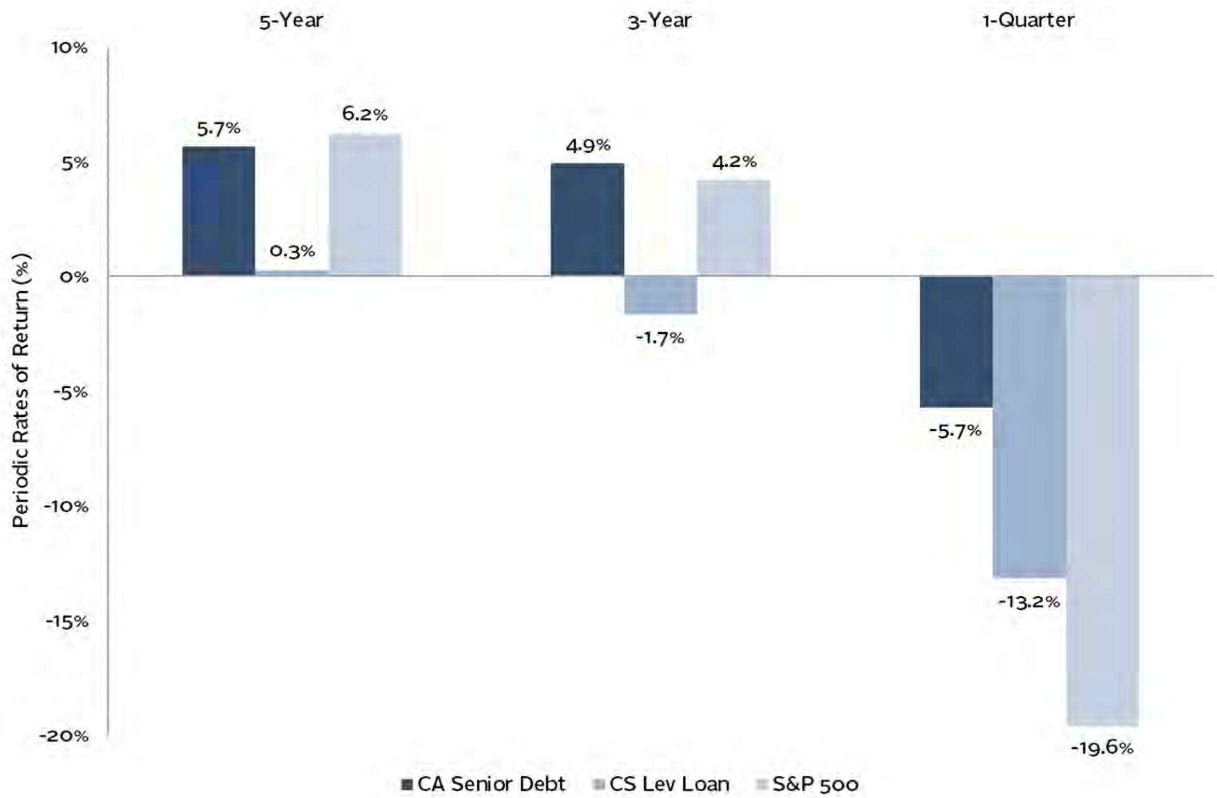
Private credit strategies - in particular, senior debt – have impressive loss ratios through credit cycles



Source: Cambridge Associates LLC.
Notes: Data as of March 31, 2022. Cambridge Associates Private Credit Benchmark is comprised of 561 funds and is broken down as follows: Senior Debt Funds (90), Subordinated Capital Funds (185), Credit Opportunities Funds (286). Returns are net of fees, expenses and carried interest. TVPI denotes total value to paid-in capital.

Private Credit Trailing Returns

Private credit strategies exhibit less volatility to public market comps during times of stress (e.g., Q1' 2020)

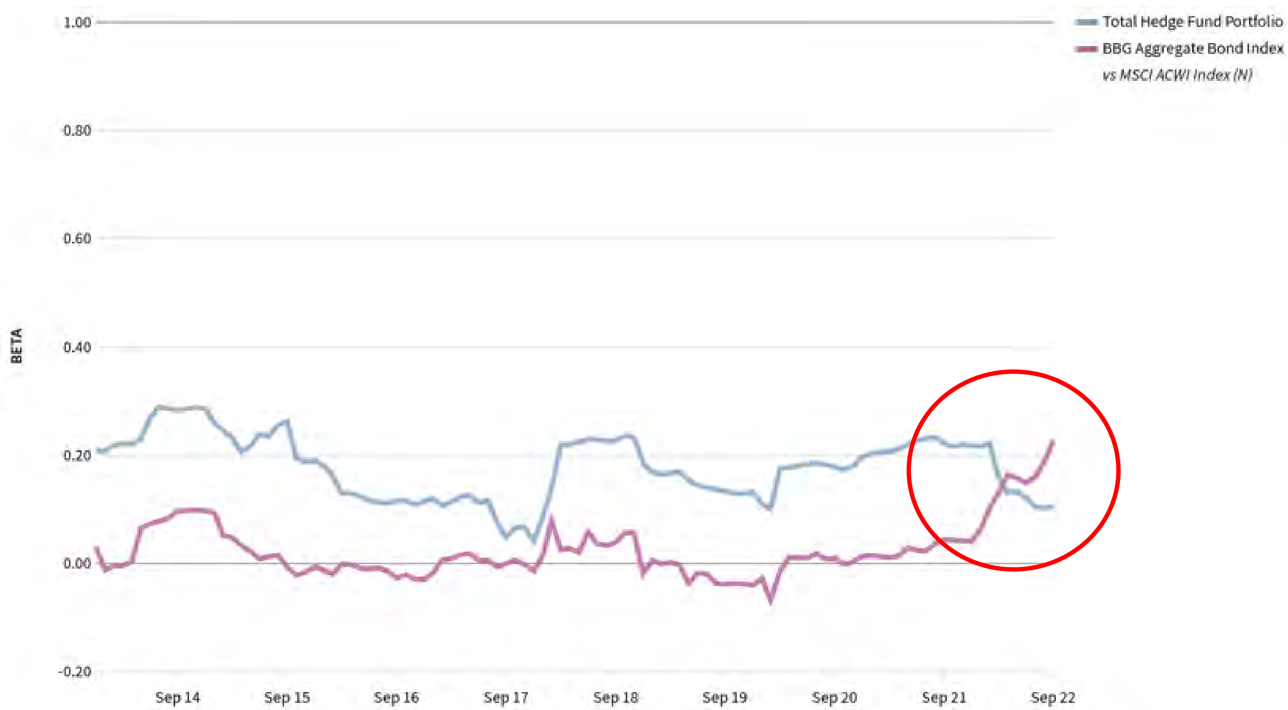


Source: Cambridge Associates LLC and Credit Suisse.
Notes: Private investment periodic returns are net of fees, expenses and carried interest. Multi-year annualized returns are generated for time periods ending March 31, 2020. Includes funds formed in vintage years 1999-2020.

Equity Market Sensitivity

Equity beta for bonds has increased during the recent market turmoil, while the hedge fund portfolio has remained steady

Rolling 2-year Beta • January 1, 2021 – September 30, 2022

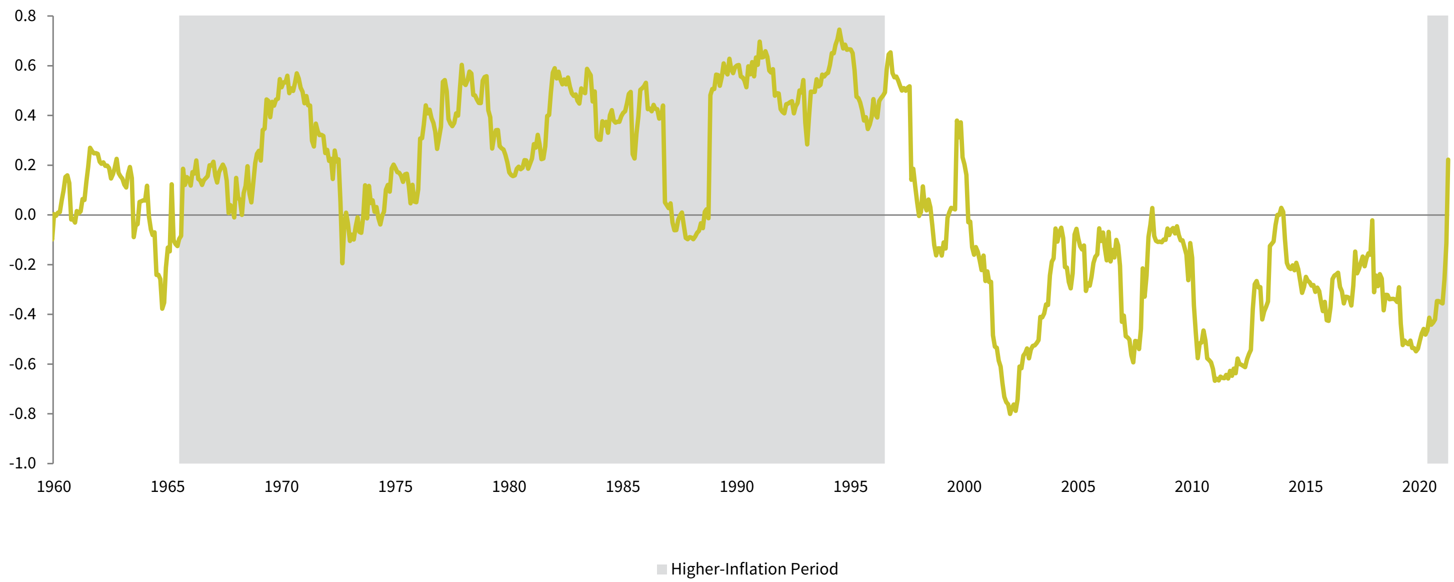


Notes: Graph represents beta to MSCI ACWI Index (N).

Rising Stock Bond Correlation Amid Periods of Uncertainty

US Stock-Bond Correlation (Rolling 2-Yr)

December 31, 1960 – March 31, 2022



Sources: Bloomberg Index Services, Standard & Poor's, and Thomson Reuters Datastream.
Notes: Stocks are based on S&P 500 monthly total returns and bonds are based on ten-year US Treasury Bond monthly total returns. Higher-inflation period represents periods where year-over-year CPI-U was persistently well above the Fed's long-term 2% target rate.

Fund Structure Considerations

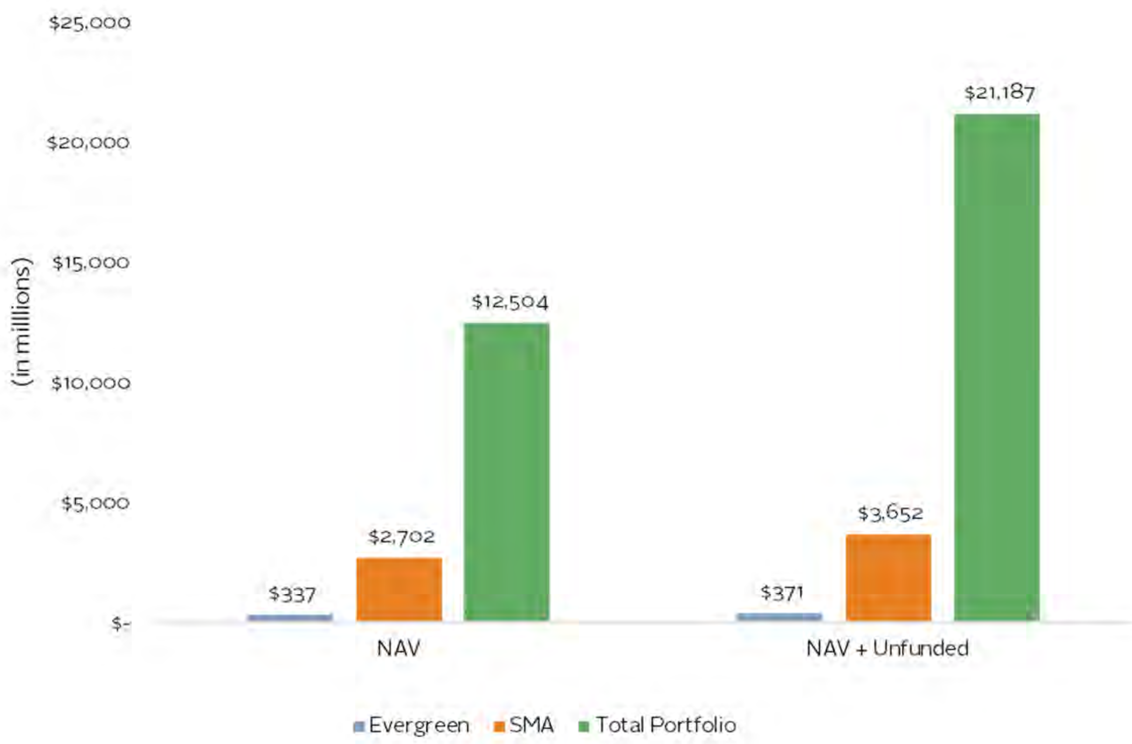
- Evergreen structures
  - Avoid frequent re-up process which can be administratively burdensome
  - Flexible wind down feature
  - Some provide ability to buy into an existing portfolio of assets, thereby offsetting j-curve
  - However, need to monitor overall exposure relative to prescribed limit to avoid over allocation
  - Incorporate carried interest structure to minimize fee leakage

- SMAs
  - Fee savings
  - Implement at scale
  - Customized strategy and guardrails

- Incorporate Co-Invest / Overflow Vehicles
  - Increase exposure to highest conviction managers/strategies
  - Flexibility to be tactical deploying capital

Fund Structure Considerations for Private Strategies

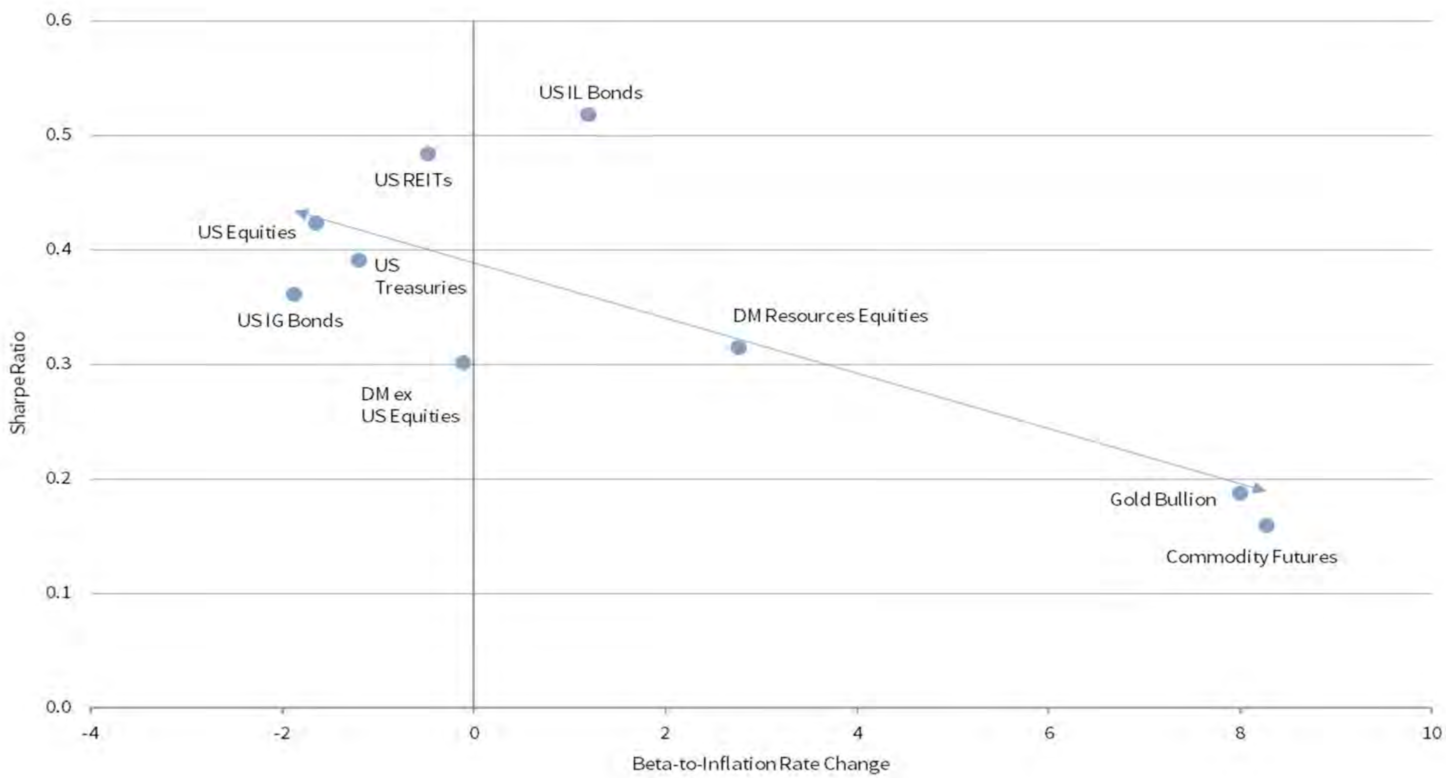
NAV and Total Exposure by Vehicle Type



Notes: Data as of March 31, 2022. Evergreen includes investments in ITE Rail Fund LP and BioPharma Credit Investments V LP. Evergreen NAV + Unfunded is comprised of ITE NAV as of July 31, 2022 and Pharmakon NAV and unfunded data as of March 31. Data does not include investments committed to after Mach 31. SMA includes the following managers: Audax, Blackstone, Blue Torch, Boston Timber, Cerberus, CRC, Edelweiss, Florida Growth Fund, Florida Sunshine State fund, Jackson Timberland, MSD, and SBAF Mortgage Fund.

Return per unit of risk relative to sensitivity to inflation rate changes

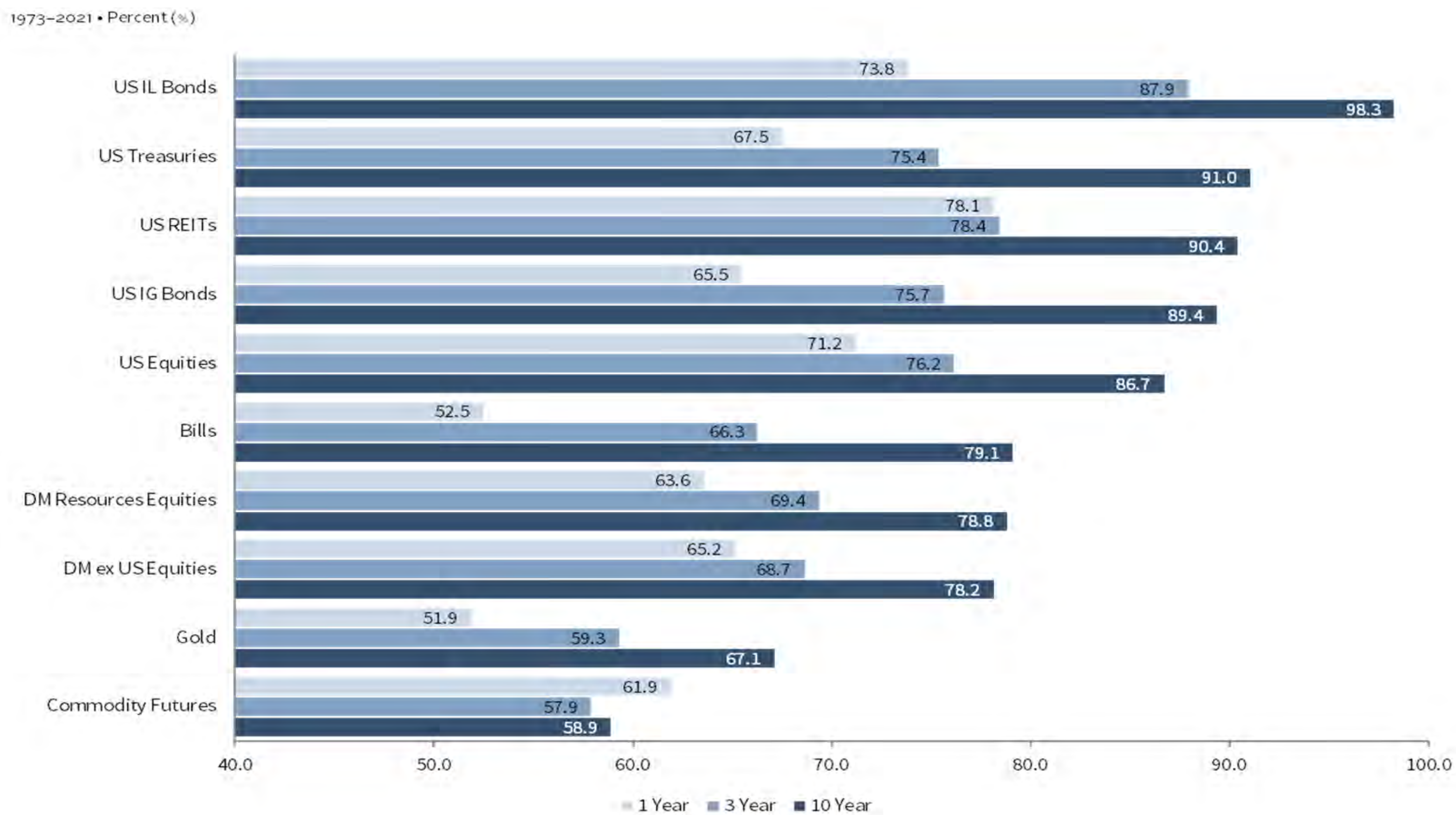
1973-2021



Sources: Bloomberg Index Services Limited, FTSE International Limited, London Bullion Market Association, MSCI Inc., National Association of Real Estate Investment Trusts, Standard & Poor's, Thomson Reuters Datastream, and US Bureau of Labor Statistics. MSCI data provided "as is" without any express or implied warranties.
Notes: Values are the long-term asset class excess returns divided by the standard deviation of annual returns relative to beta coefficients for a change in the inflation rate variable, as calculated in a multiple linear regression model that relates asset class performance to the change in the inflation rate and the one-year lagged inflation rate.

Frequency of Asset Class Performance that Exceeds Inflation

Bonds & equities have outpaced inflation over long periods



Sources: Bloomberg Index Services Limited, FTSE International Limited, London Bullion Market Association, MSCI Inc., National Association of Real Estate Investment Trusts, Standard & Poor's, Thomson Reuters Datastream, and US Bureau of Labor Statistics. MSCI data provided "as is" without any express or implied warranties.
Notes: Data summarizes 10,000 random samples of annual data between 1973 to 2021. Each sample compares the total asset performance over the one-, three-, or ten-year period to the change in price levels. For example, US inflation-linked bonds outperformed inflation across ten-year periods 98.3% of the 10,000 random samples drawn.

Private Credit Positive Attributes Relative to Fixed Income and Equities

We can rely on the attributes of performing private credit strategies to underline its relative attractiveness in a rising rate environment

1

Floating Rate Loans

- LIBOR / SOFR floating rate protects asset (loan) value

2

Shorter Duration

- Direct lending maturities (5 years) versus high yield (typically 7 - 10 years)

3

LTV Protection from Multiple Compression

- Placement in capital structure with LTVs commonly at 50% +/- creates compression buffer

4

Robust Interest Coverage and Fixed Charge Coverage

- Robust interest coverage ratios; borrowers can absorb meaningful interest rate increases

5

Tighter Terms / Stronger Documentation Lead to Borrowers' Earlier Action

- Fewer EBITDA add-backs, maintenance financial covenants, and tighter baskets prevent priming

- Fixed Income Update

- Katy Wojciechowski: Senior Investment Officer Fixed Income

- Investment Advisory Council
- December 13, 2022

Agenda

Program Overview

- **Fixed Income Investment Objectives**
- **Benchmark Makeup**
- **Investment Allocation and Risk Parameters**
- **Structure and Characteristics of FI Allocation**

Performance Review

- **Periodic Returns**
- **Contribution**

Investment Process Review

- **Internal Active and Passive Management**
- **External Manager Oversight**

Program Review and Outlook

- **Accomplishments and Initiatives**
- **Outlook**

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Fixed Income Investment Objectives

- Provide Stable Fixed Income Returns with Low Risk Budget that Exceed Benchmark over Long Horizon
- Provide Liquidity on Demand
- Serve as Diversification for Equity Allocation

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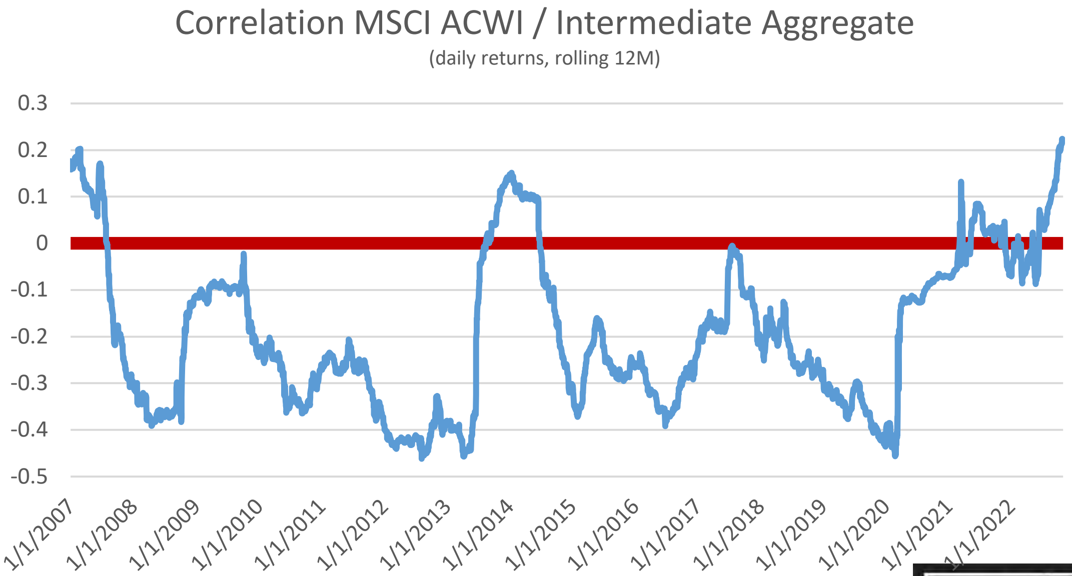
Fixed Income + Equities Correlation

- Historically, Fixed Income and Equities exhibit negative correlation.
- Intermediate aggregate typically provides stable and negatively correlated returns to equities.
- The Federal Reserve's 2020 emergency market intervention initiated a sharp reversal of the correlation.



Source: Bloomberg

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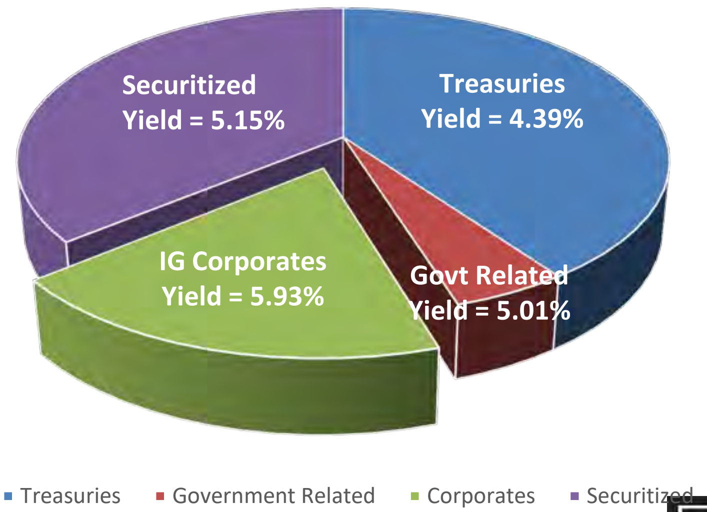
Fixed Income Benchmark

Key Benchmark Risk Metrics

As of 10/31/2022

	10/29/2021	10/31/2022
Duration	4.23	4.71
Maturity	4.95	5.55
Yield	**1.43**	**4.95**
Coupon	2.22	2.41
Option Adjusted Spread (to UST)	**0.24**	**0.57**
Average Quality/Rating	AA1/AA2	AA1/AA2
Size ($B)	21,300	19,856
Members	9,234	9,399

Bloomberg US Intermediate Aggregate Bond Index



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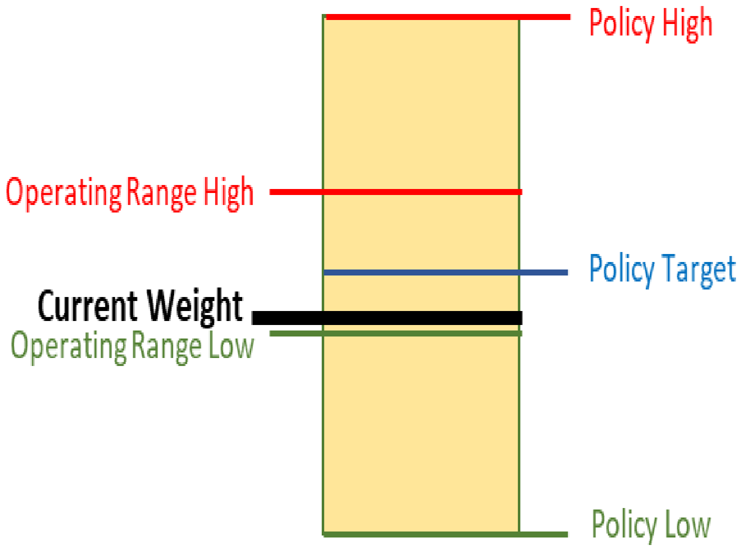
Fixed Income Allocation Overview

Total Fund Investment Policy Allocation:

As of 10/31/2022

o Policy High	26.00%
o Current Operating Range High	18.44%
o **Current Weight (10/31/2022)**	**16.44% (+1.18% Cash)**
o Current Operating Range Low	15.44%
o Policy Target Weight	18% (+1% Cash)
o Policy Low	10.0%
o Active Risk Budget (Tracking Error vs. Benchmark)	1.00% monitoring standard 1.50% escalation



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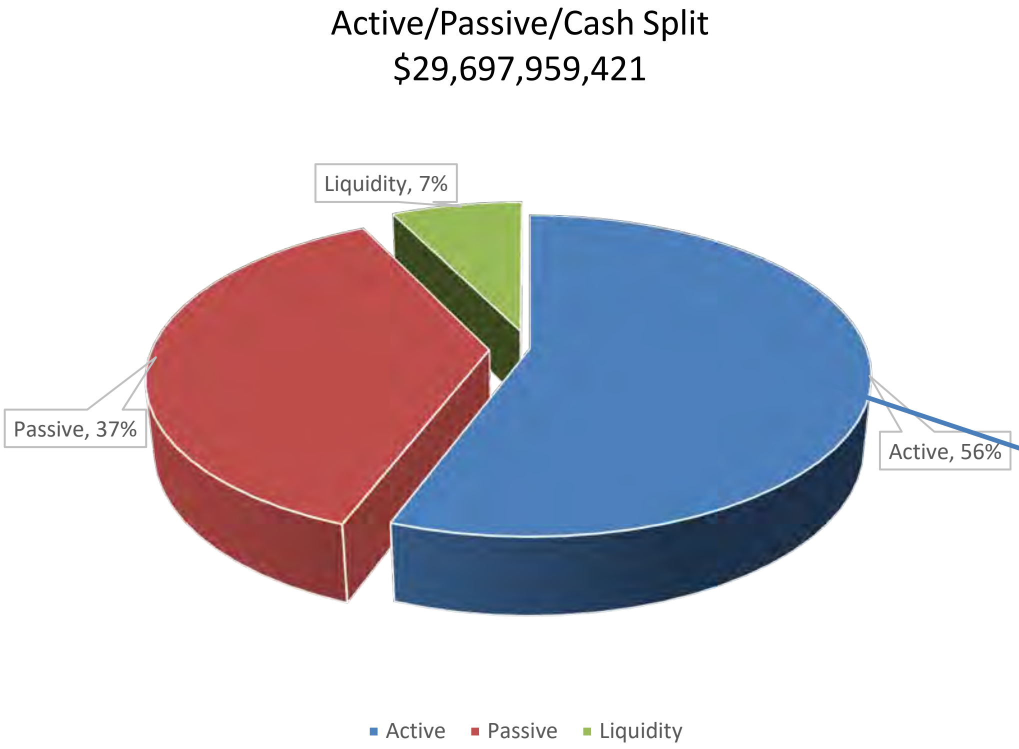
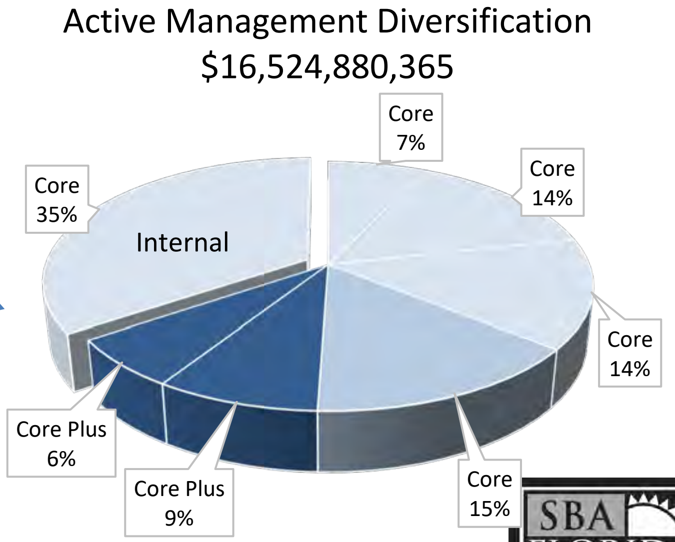
Structure + Characteristics of FI Allocation





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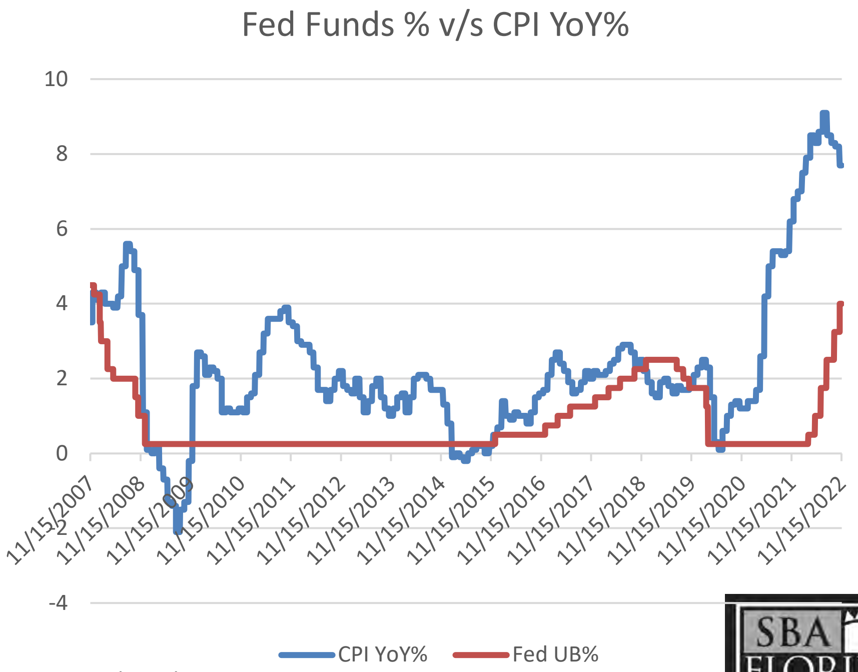
Asset Class Performance Drivers

- Absolute and excess returns broke historical records with their negative performance this year.
- Federal Reserve began moving from accommodative to restrictive due to 40-year high inflation and near record low unemployment.
- Federal funds upper bound target increased from 0.25% to 4.00%.
- Yield curve inversion and negative GDP prints indicate a recession likely.
- Risk assets universally underperformed.

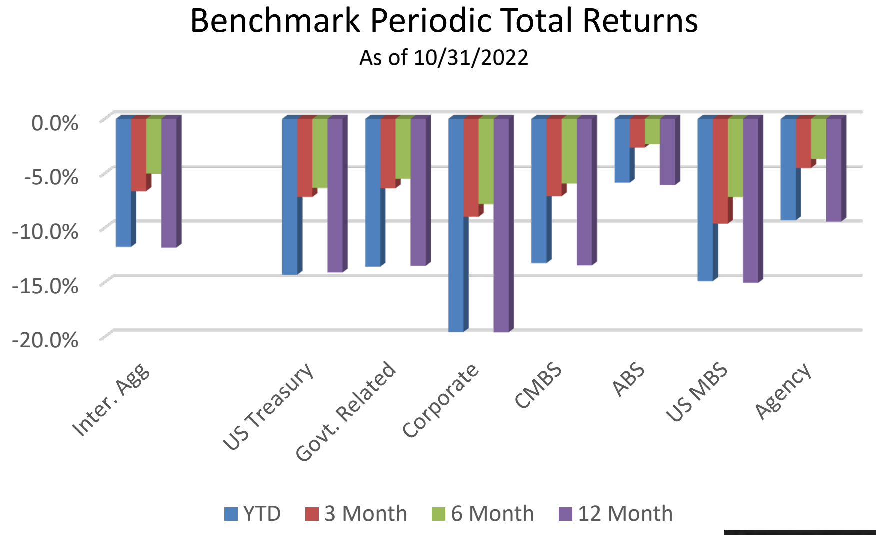


Source: Bloomberg

Fixed Income Benchmark Total Returns

Twelve-month total returns for the Fixed Income benchmark – Barclays Intermediate Aggregate through 10/31/2022 were -11.81%.

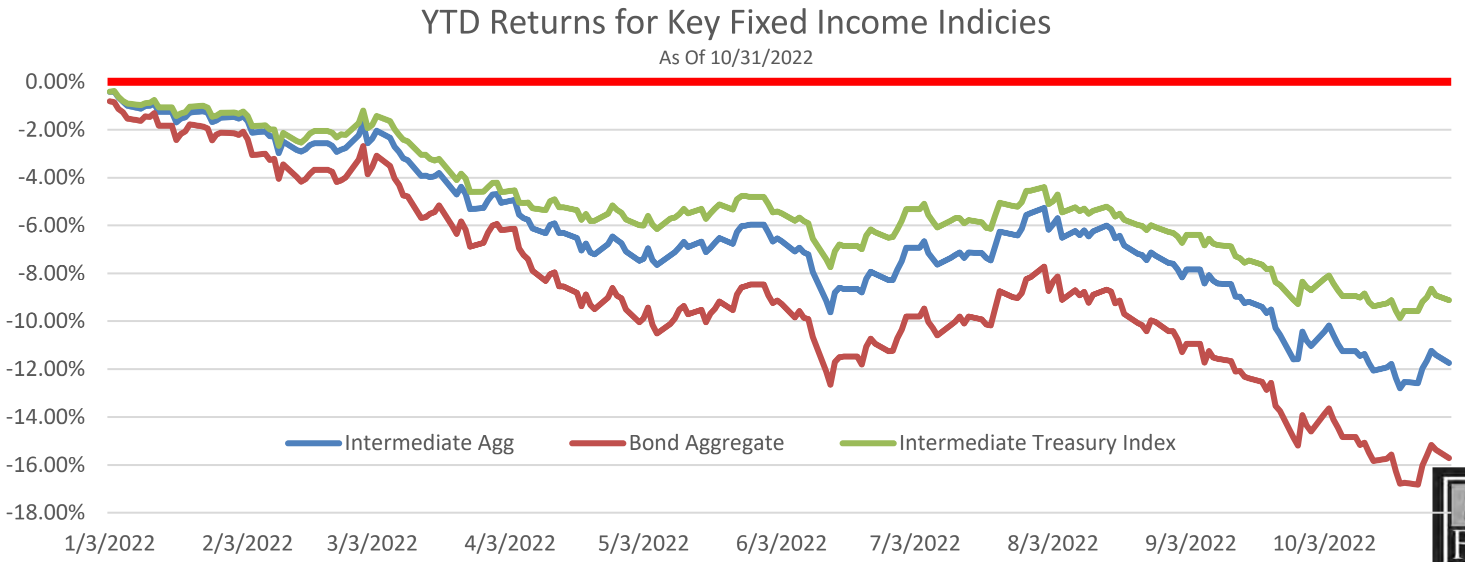
- The US Bloomberg Bond Aggregate 10/31/2022 YTD performance was the worst in history.
- Longer-duration maturities (>=10yr maturity) performed especially poor with 12month total return -31.15%.
- Risk assets, particularly investment grade credit, outperformed treasuries in the broad US Bloomberg Bond Aggregate.



Source: Bloomberg

VERY Negative Fixed Income Returns:

The historically fast policy tightening by the Federal Reserve pushed fixed income valuations to their worst returns in history.



Source: Bloomberg

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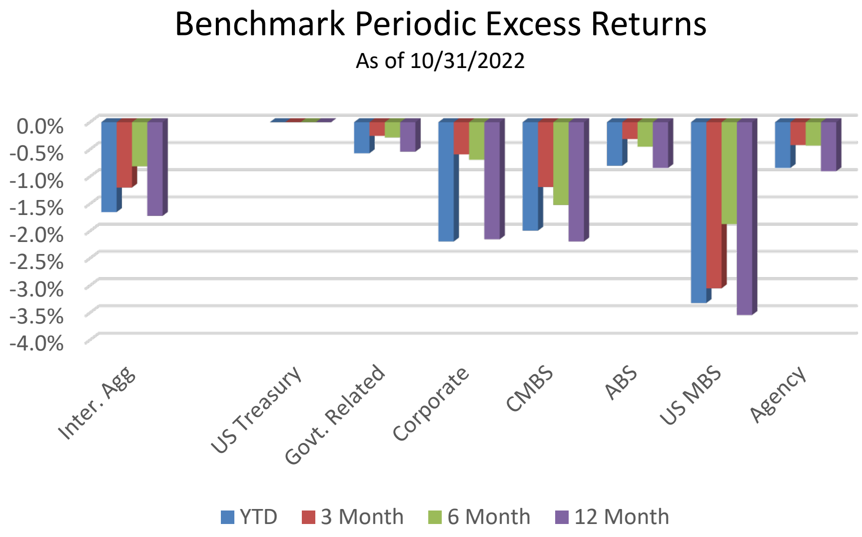
Fixed Income Benchmark Excess Returns

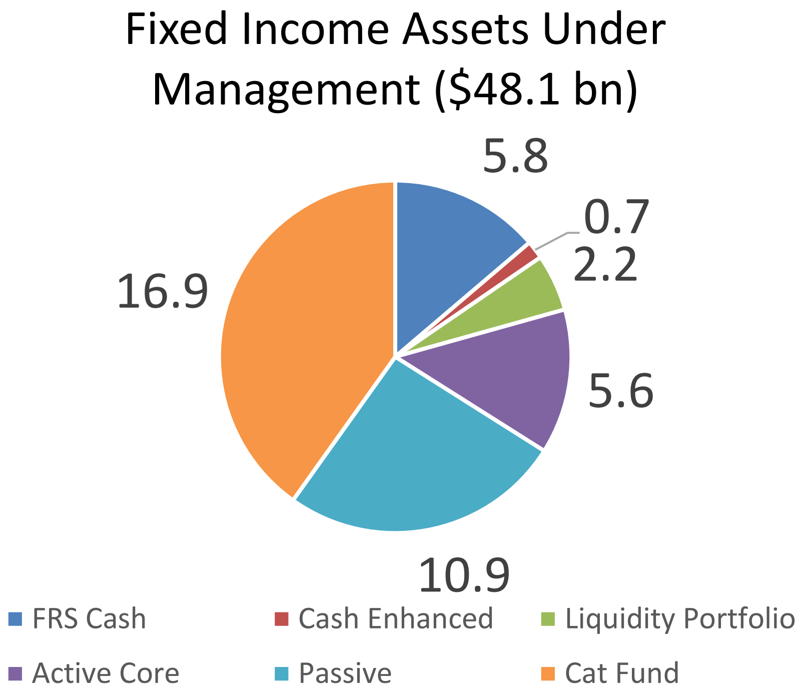
- Fixed income risk underperformed across all measurement periods and across all fixed income asset classes.
- Mortgages performed well through first quarter, however as the Federal Reserve balance sheet expansion ended, mortgages underperformed all other asset classes in fixed income.
- Long Corporates (outside our benchmark), also performed very poorly with 12m excess returns of -4.62%



Source: Bloomberg

Internal Fixed Income Overview

Internal Fixed Income



Other responsibilities include:

- Lottery
- Debt Service
- Securities Lending

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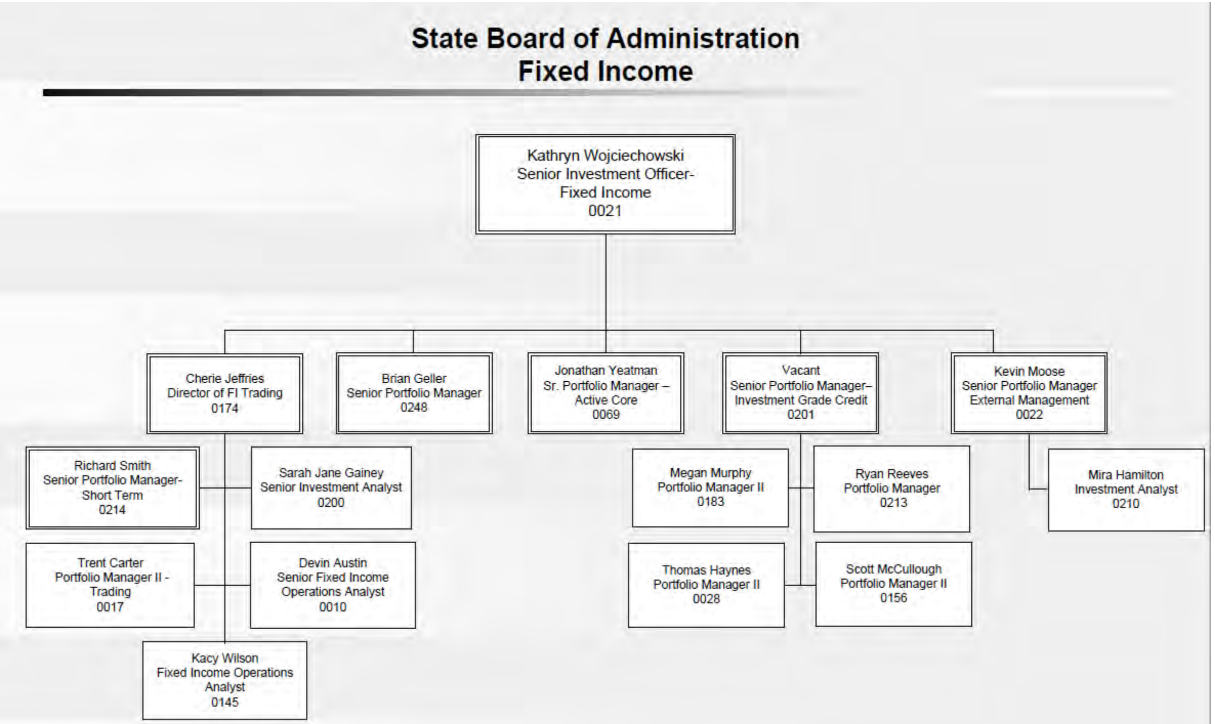
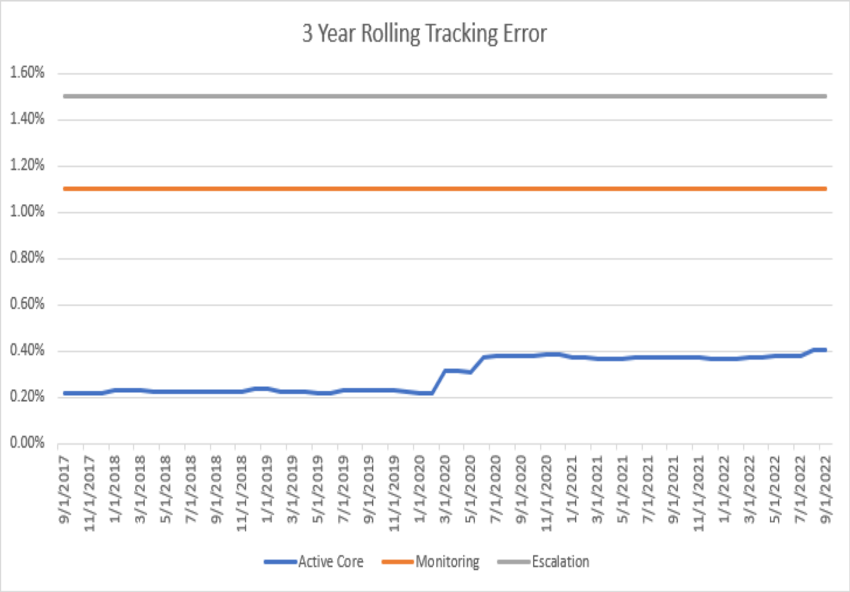
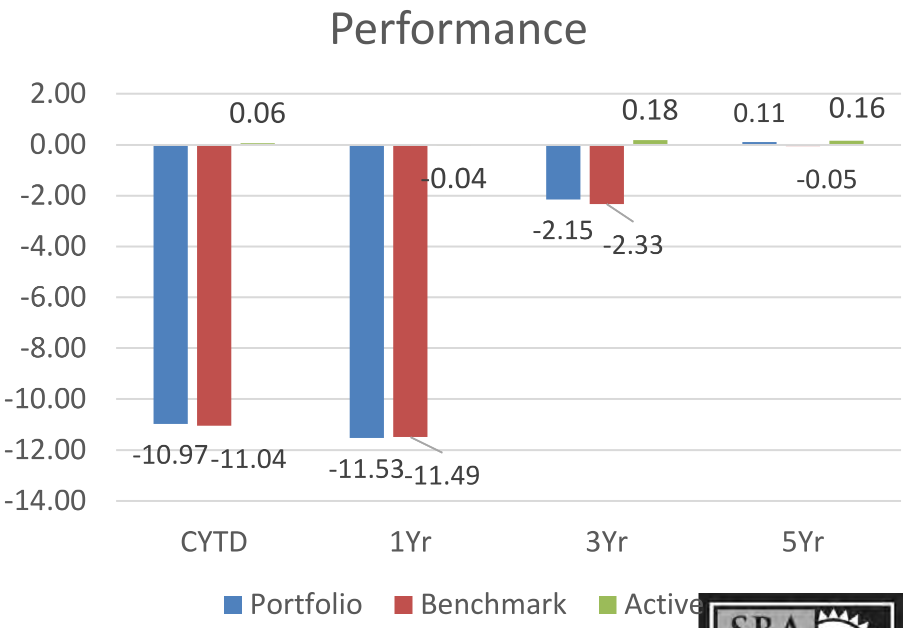
Internal Fixed Income Org. Chart



Active Core





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Securities Lending

- The purpose of the program is to generate additional income by loaning out our securities within an extremely risk controlled program in the Defined Benefits Program
- Securities Lending program is value driven with a conservative collateral profile
- Fixed Income, Global Equity and Real Estate participate
- Lend securities to qualified borrowers through the use of multiple agents
- Agents can reinvest cash collateral in money market type securities
- Lendable Assets: $121.9 billion for Fiscal Year 2021/2022
- Utilization: 5.77% for Fiscal Year 2021/2022

Calendar Year Net Earnings - FRS	
2017	$45,948,125
2018	$36,242,476
2019	$29,521,705
2020	$24,687,080
2021	$21,474,718
YTD: 06/30/2022	$8,858,829

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External Management Overview

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External Manager Oversight

Fixed Income maintains a small stable of external managers. Their main purpose is to:

- Diversify and expand the core bond strategy managed internally
- Expand the fixed income opportunity set by investing with Core Plus managers in:
  - High Yield
  - Emerging Markets
  - Structured Credit
- Provide research, market color, strategic outlook & scenario analysis

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External Manager Ranking Criteria

We rank our managers on numerous factors, some of which include:

- Overall performance
- Volatility of active returns
- Adherence to stated investment objectives and strategy
- Ability and willingness to take appropriate risk
- Consistency of investment team and organization as a whole

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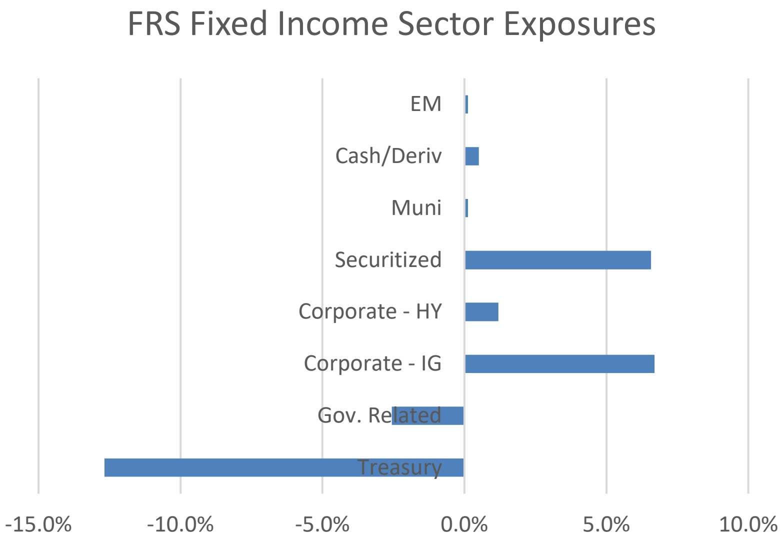
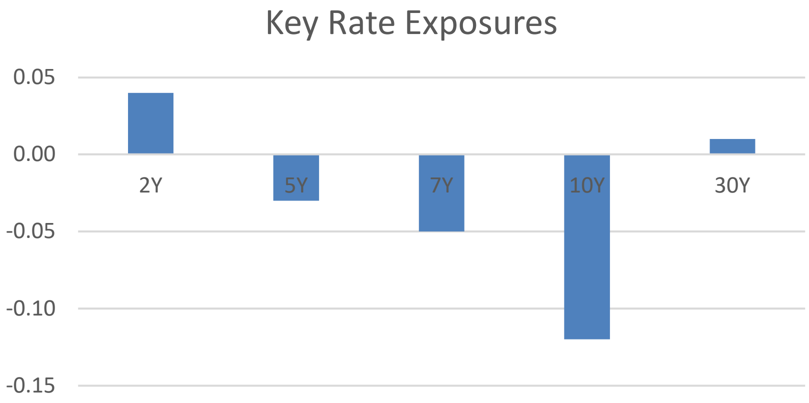
Total Fixed Income Portfolio Positioning

Portfolio Continues to Overweight Spread Product



The portfolio is underweight interest rate risk against the benchmark with a bias toward curve steepening



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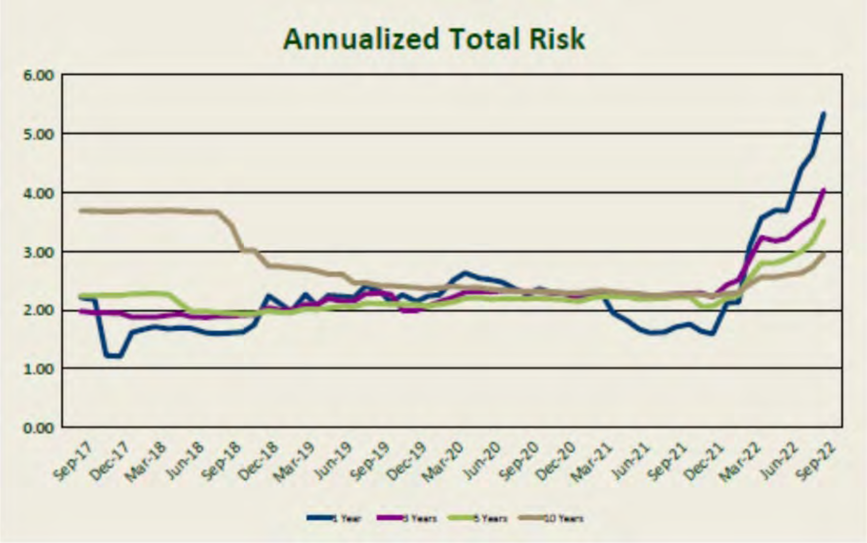
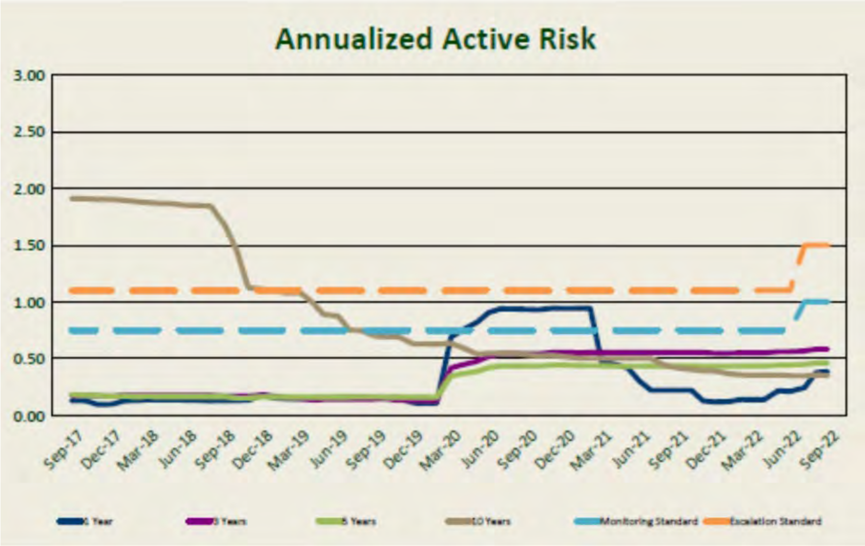
As of 09/30/2022

Total Fixed Income Review: December 2022

Increased volatility pushed total risk considerably higher during the year



Active risk is also edging higher but well below the monitoring and escalation standards



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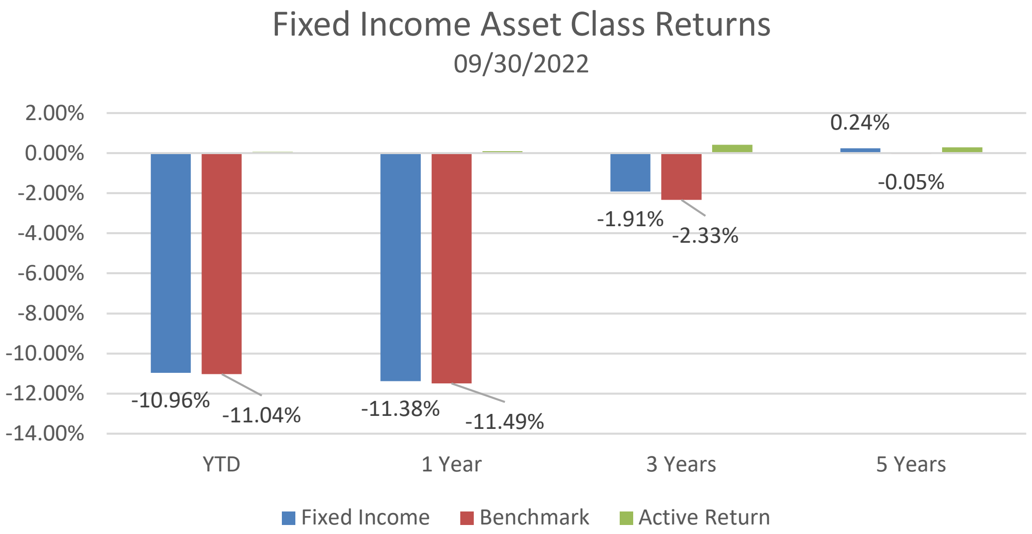
As of 09/30/2022

Total Fixed Income Portfolio Performance

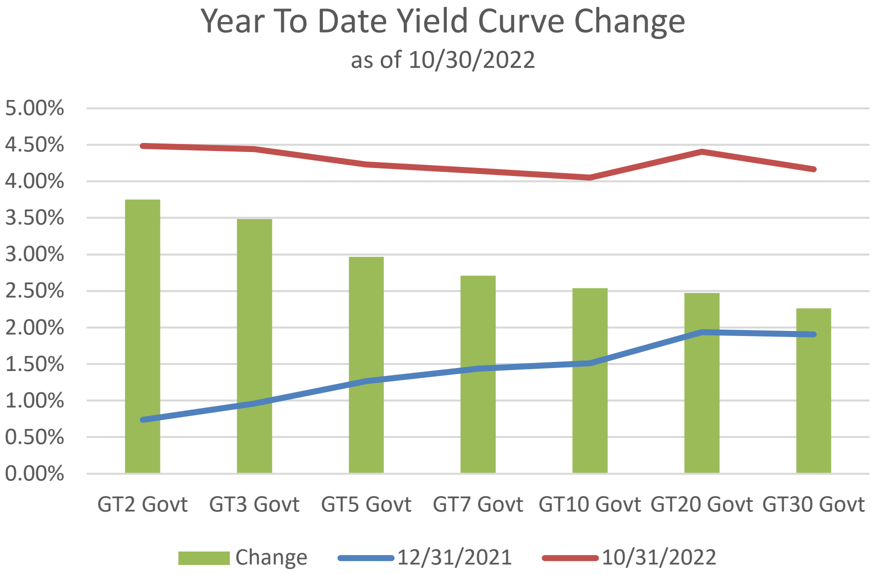
The Fixed Income asset class outperformed the benchmark over ALL time periods, however total returns for the year are negative.



Program Review and Outlook

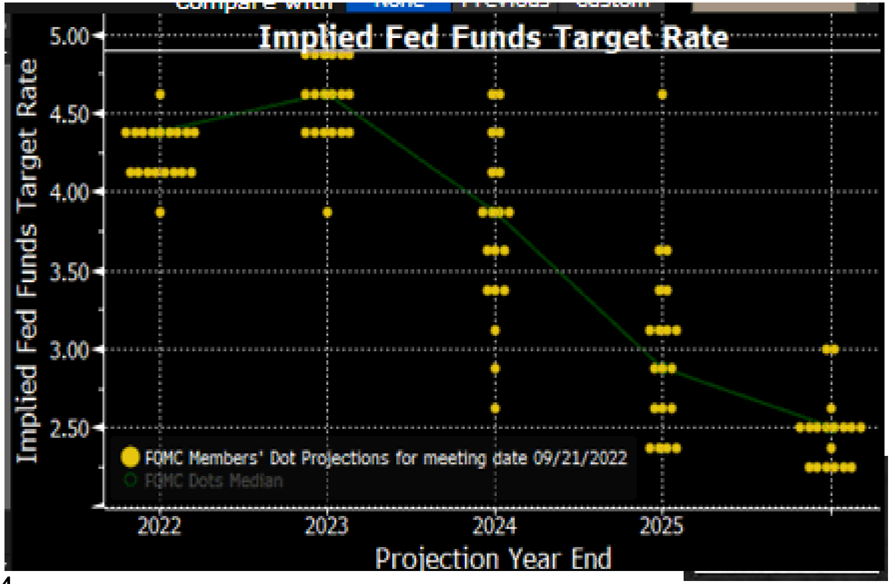
Fixed Income Review: December 2022

The Federal Reserve hiking the federal funds rate 375bps, allowing balance sheet run-off, and moving to an extremely hawkish policy outlook, the UST yield curve moved roughly 300bps higher and inverted.



Evolution of US Treasury yield curve through 10/30/2022 Source: Bloomberg

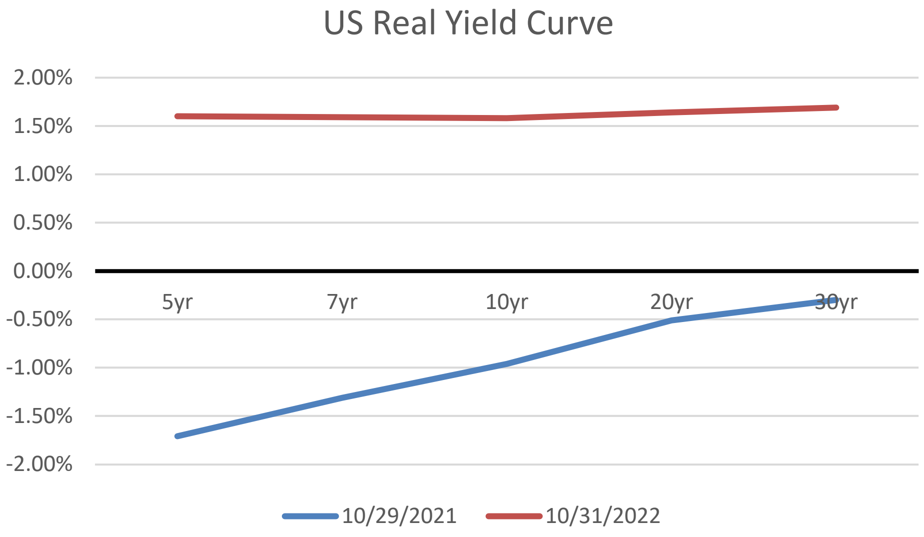
The Fed's Dot Plot indicates more hikes are on the table, but many members feel a policy reversal will occur in 2024. The market is currently pricing in an additional 50bps hike in December 2022.



Dot plot changes from beginning of year through 9/22/2021 Source: Bloomberg

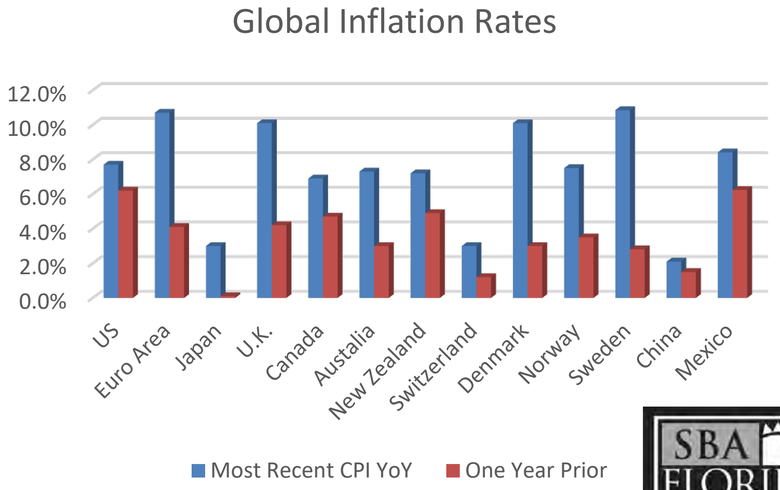
Fixed Income Review

Inflation expectations remain anchored and real yields in the US return to positive territory



Source: Bloomberg, Federal Reserve US Treasury H15 Constant Maturity Real Yield Curve rates

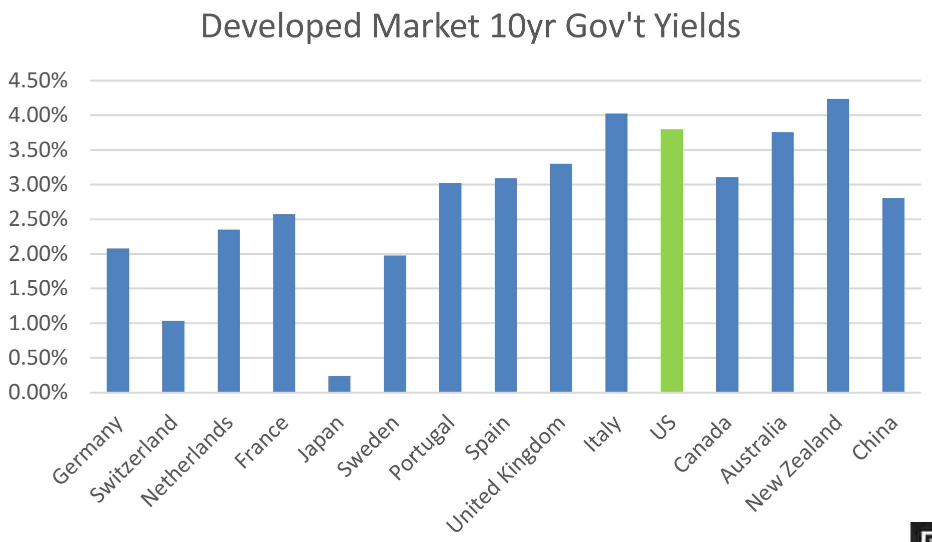
Inflation rates in most developed countries and our major trading partners remain elevated and significantly higher than last year



Source: Bloomberg

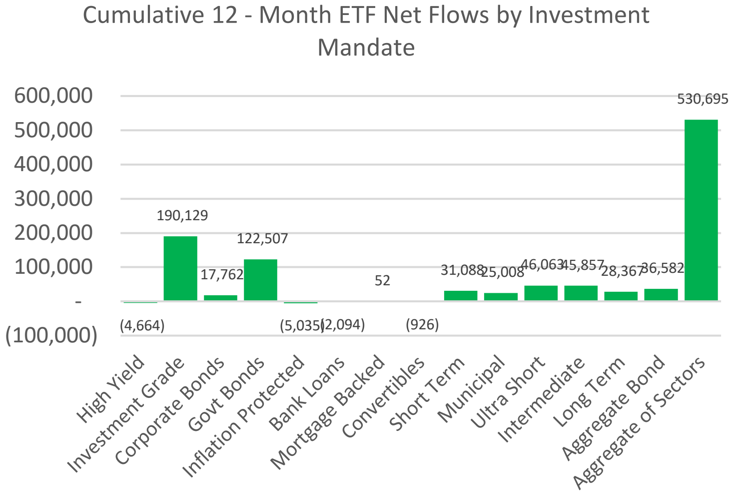
Fixed Income Review

Developed market government yields climbed significantly this year and well through the post GFC highs:

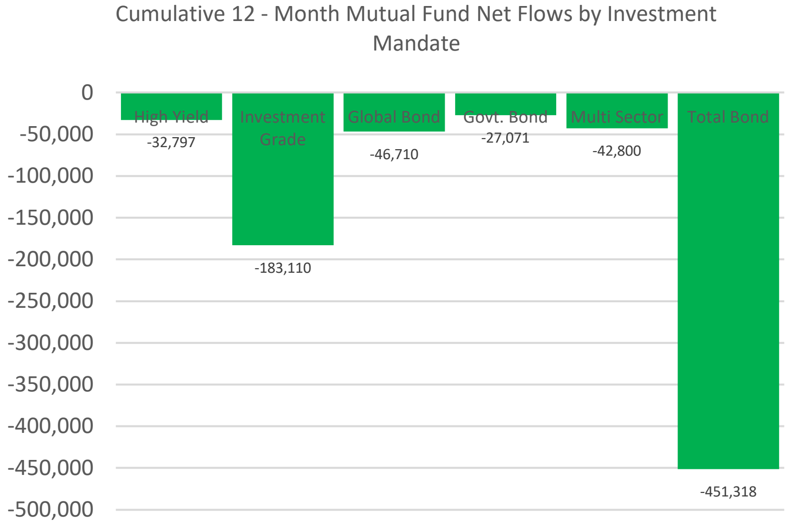


Fixed Income Review

Steady flows out of fixed income mutual funds were not mirrored in ETF's. ETF's experienced large inflows to government funds, but all other sectors experienced moderate declines.



Source: Bloomberg



Source: Bloomberg

Fixed Income Outlook

- Bloomberg Intermediate Agg OAS widened significantly this year.
- Credit markets are stressed, but still functional.

Source: Bloomberg

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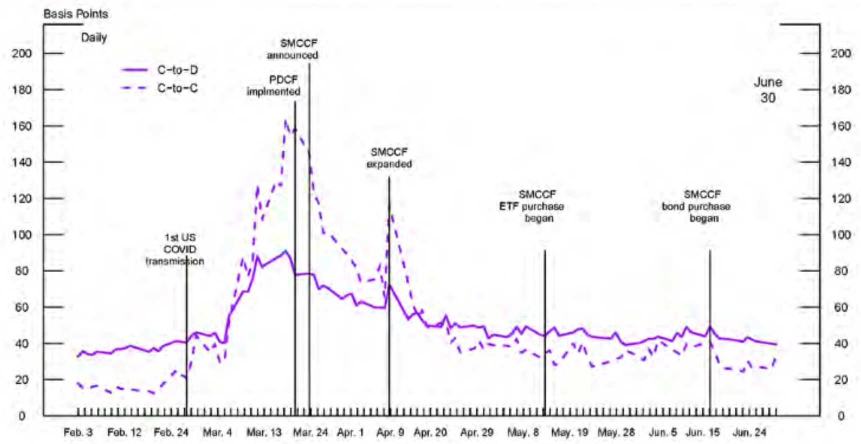
Fixed Income Outlook

- Transaction costs indicate less than ideal liquidity, but not near the disfunction witnessed during the pandemic when markets seized.

Figure 4. Transaction costs for customer–to–dealer (C–to–D) and customer–to–customer (C–to–C) trades

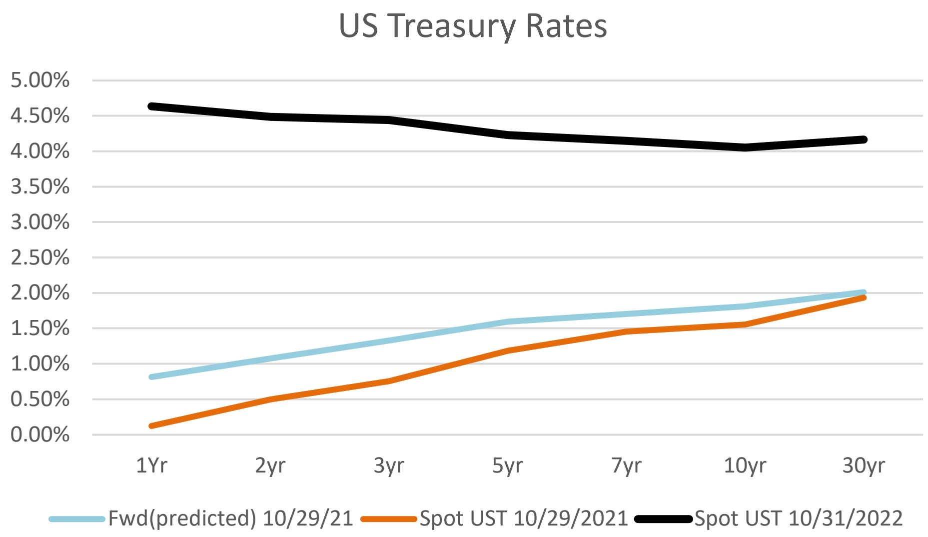


Data source: TRACE data provided by FINRA. See O'Hara and Zhou (2020) for details on estimating transaction costs for C–to–D and C–to–C trades.

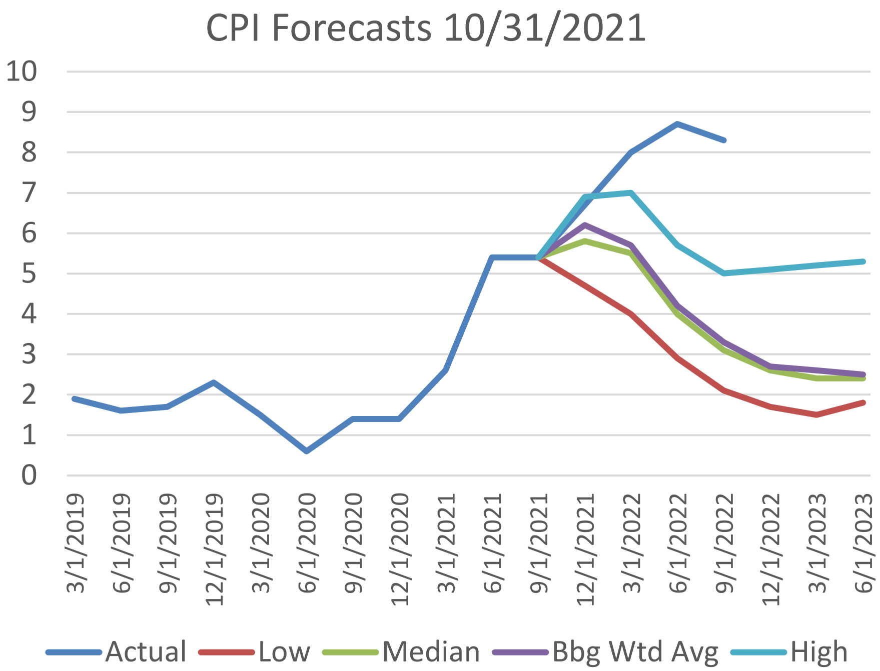
Source: Federal Reserve

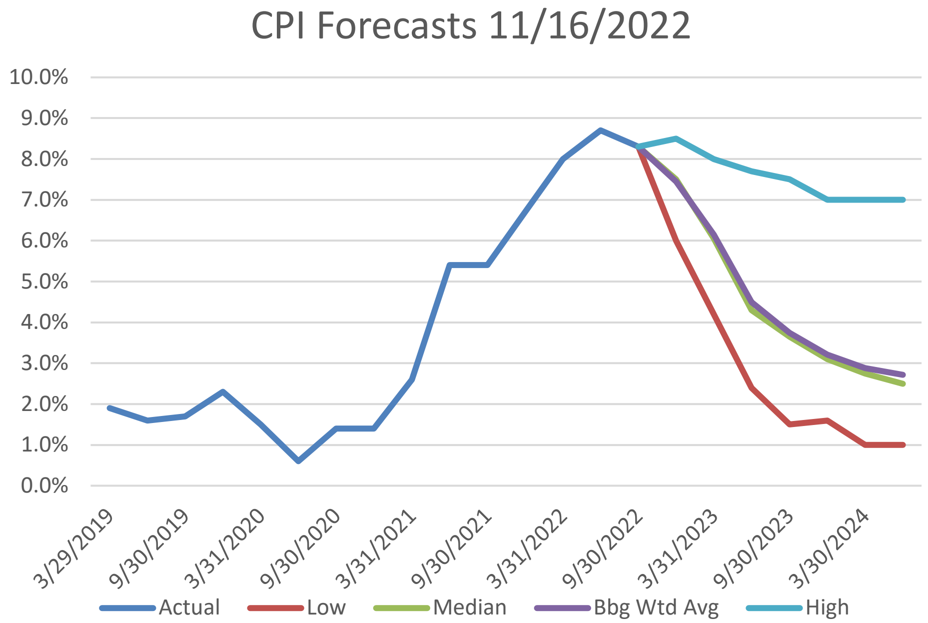
Fixed Income Outlook

The predicted 100bps sell-off in front end yields by the forward curve late last year significantly underestimated this year's move in US Treasury yields:



Market Outlook





Source: Bloomberg

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Potential Benchmark Migration Initiative

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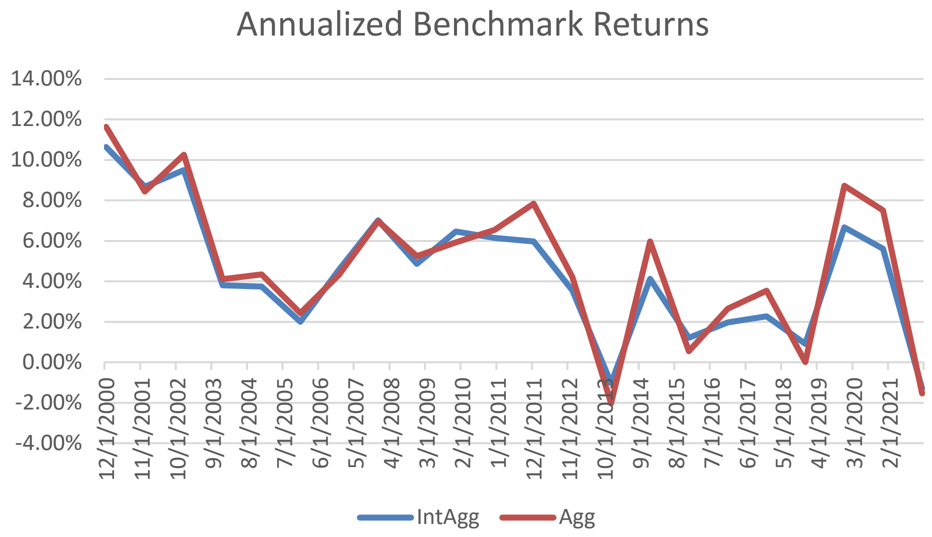
Full Bond Aggregate v/s Intermediate

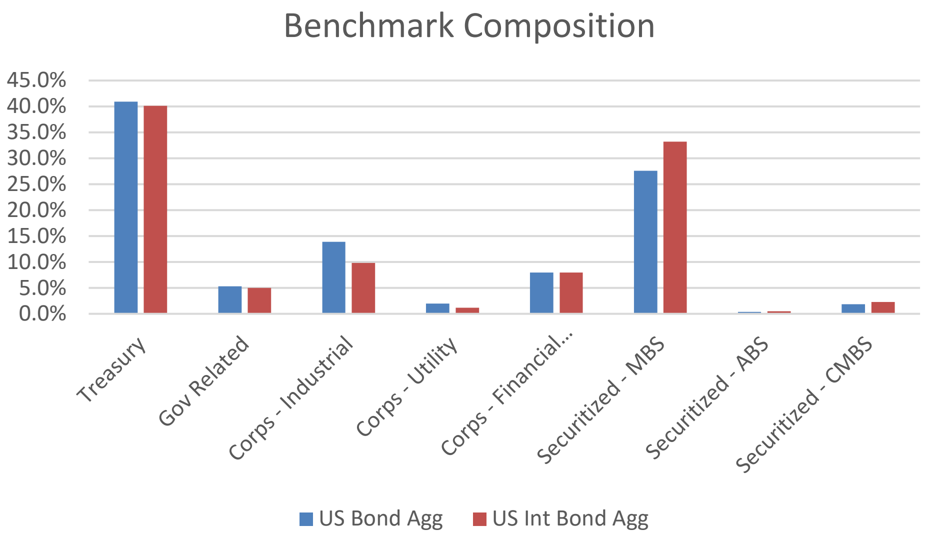
The full bond aggregate tends to outperform the intermediate aggregate during years with positive fixed income performance



As of 12/31/2022 Source: Bloomberg

Benchmark Composition Comparison

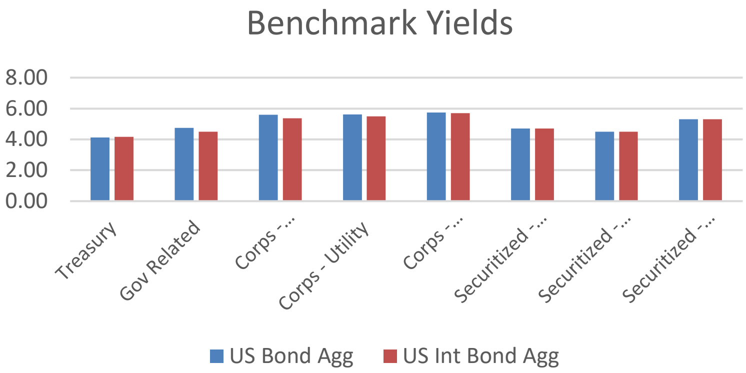
The full bond aggregate provides exposure to longer maturity corporates (industrials and financials) and treasury securities at the expense of securitized sectors.

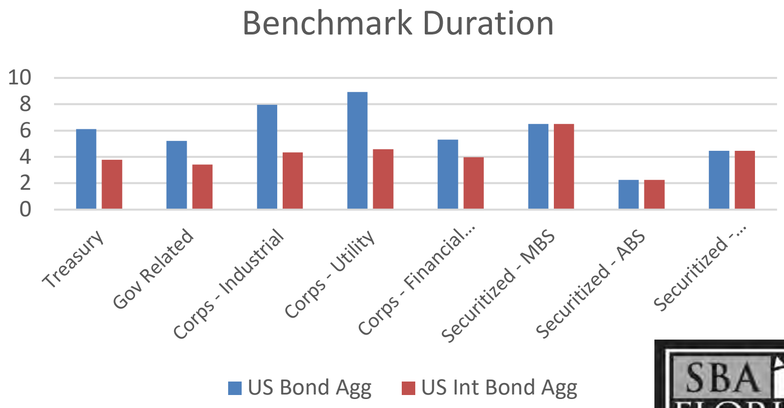


As of 09/30/2022 Source: BlackRock Aladdin

Yield and Duration Comparison

The incremental pick-up in yield and potential for increased annual returns is not free. There is an increase in risk, particularly duration.





As of 09/30/2022 Source: BlackRock Aladdin

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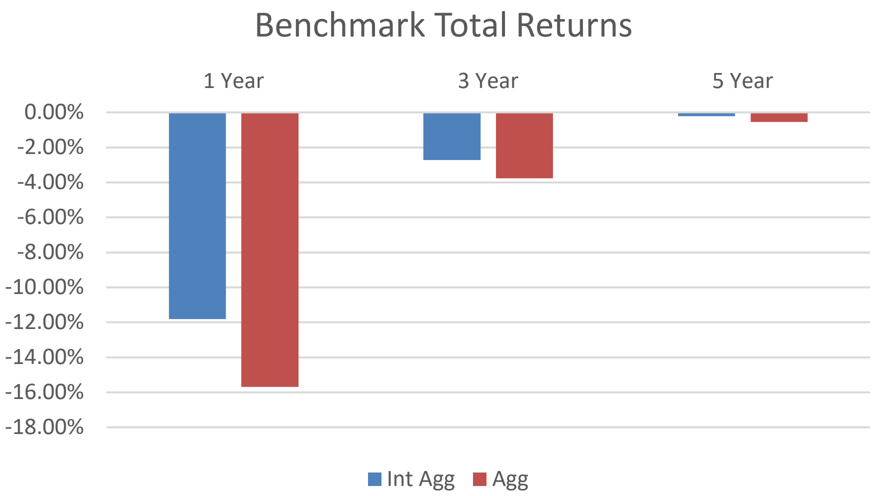
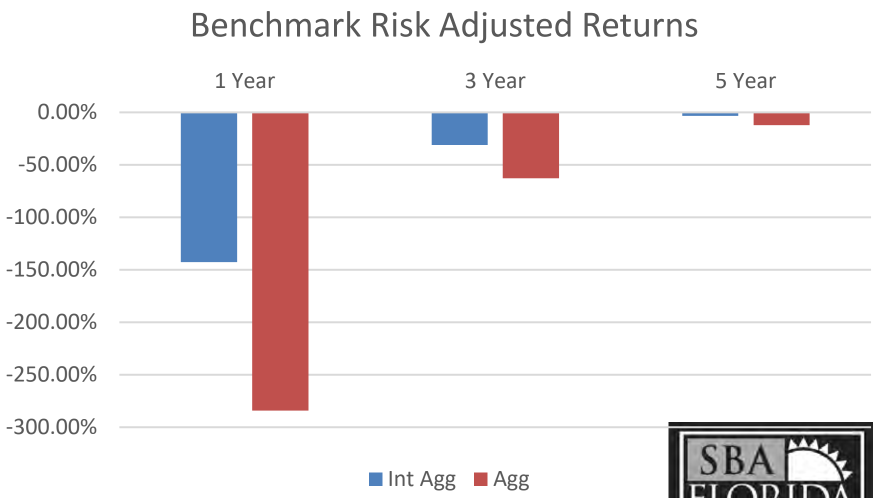
IG yields have climbed to some of the highest levels in over a decade

Source: MIM, Bloomberg

Benchmark Comparison

The Intermediate Aggregate normally outperforms during abnormally fast rising rate environments.





Source: Bloomberg, as of 10/31/2022

Next Steps…

- Quantify total risks associated with transition
- Calculate appropriate mix of intermediate and full aggregate investments
- Identify operational hurdles with migrating to full aggregate benchmark
- Write white paper
- Formally request transition upon positive research findings

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Fixed Income Review December 2022

Fixed Income Activity

Provided $2.7bln liquidity in 2022

Moved additional $700mm to FI Liquidity to better weather the storm of increased market volatility

Late-stage planning for deploying funds for increased Risk Budget

Research/discussion about risk/reward of benchmark shift

Fixed Income Review December 2022

Looking Forward: Pockets of Value

- Continue to increase active allocation:
  - **Preparing to deploy additional funds to Core Plus**
  - **Giving skilled managers as many levers as possible, within our risk budget, has produced durable excess returns**
- Add exposure to out of benchmark structured products or other in a dedicated strategy:
  - **Maintain barbell with Short Duration/Full Aggregate Core Plus manager**
  - **Discussing opportunities in dedicated Credit strategies**
- Execute on tactical opportunities, especially in shorter duration credit securities:
  - **Continue to take opportunities in our Active internal portfolio**
  - **Overweighted Short Duration portfolio in our Core Plus barbell to capture additional return**

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Florida State Board of Administration

Review of Public Fixed Income Markets

December 2022

welcome to brighter

Agenda

- SBA's Public Fixed Income Markets Investment Program
- Review of Fixed Income
- Recent Activity

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SBA's Public Fixed Income Markets Investment Program

SBA's Public Markets Investment Programs
Guiding Principles

- All asset classes shall be invested to achieve or exceed the return of their respective benchmarks over a long period of time. To obtain appropriate compensation for associated performance risks:
  - Public market asset classes shall be well diversified with respect to their benchmarks and have a reliance on low cost passive strategies scaled according to the degree of efficiency in underlying securities markets, capacity in effective active strategies, and ongoing total fund liquidity requirements (Investment Policy Statement).
- Investing Guidelines:
  - The primary benchmark index was formally changed from the Bloomberg US Bond Aggregate Index to the Bloomberg US Bond Intermediate Aggregate Index in 4Q13 in order to decrease the overall interest rate sensitivity of the fixed income program.

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SBA's Public Markets Investment Programs
Mercer's General Observations

- FRS Pension Plan
  - All public market investment portfolios are managed in a prudent, risk-controlled fashion
  - Appropriate levels of delegation are given to the staff
  - FRS is a significant user of passive management (39% of Portfolio vs. 16% of Peers' Portfolios)[1]
  - Active risk levels are monitored against predetermined ranges

[1] Represents percentage of total fund assets as of 12/31/20. Source: CEM 2021 Survey.

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Review of Fixed Income

Review of Fixed Income

Asset Allocation: Fixed Income

- Within Fixed Income, the SBA utilizes more passive management and internal management relative to peers.

Product[1]	FRS	Peers
US Fixed Income		
Internal Passive	39.1%	3.8%
Internal Active	22.8%	54.7%
External Passive	0.0%	11.8%
External Active	38.1%	29.6%

Source: Data as at 12/31/2020 CEM 2021 Survey

[1] May not add to 100% due to rounding.

Review of Fixed Income
Performance: Fixed Income

- Over the 3- and 5-year period, the FRS Fixed Income Portfolio has ranked at or below the peer group universe median for performance, but has outperformed its custom benchmark over both periods. The universe rank can be attributed to the SBA using a shorter duration benchmark than many peers, as well as the SBA having limited exposure to high yield fixed income.
- The information ratios, a measure of return per unit of risk taken, are strong over the trailing 3- and 5-year periods.

Periods Ending 9/30/2022	Year to Date Return (Rank)	1 Year Return (Rank)	3 Years Return (Rank)	5 Years Return (Rank)	Inception (April 1988) Return (Rank)
FRS Fixed Income[1, 2]	-11.11% (20)	-11.53% (22)	-1.95% (50)	0.23% (70)	5.68%
FRS Benchmark	-11.04%	-11.49%	-2.33%	-0.05%	5.50%
Value Added vs. FRS	-0.07%	-0.04%	0.38%	0.28%	0.18%
Information Ratio	--	-0.16 (25)	0.61 (8)	0.54 (8)	--

[1] Compared to the Public Funds >$1B - US Fixed Income universe; rankings are based on gross-of-fees FRS performance.
[2] Comprised of both active and passive strategies.

Review of Fixed Income

Performance: Fixed Income

- The FRS Fixed Income Internal Active Portfolio has outperformed its benchmark but trailed its universe median over the 3- year, 5-year and inception periods. Additionally, its information ratio ranked in the bottom quartile of the universe over the same period.
- The FRS Fixed Income Internal Passive Portfolio has exceeded its benchmark over all periods examined.

Periods Ending 9/30/2022	Year to Date Return (Rank)	1 Year Return (Rank)	3 Years Return (Rank)	5 Years Return (Rank)	Inception (January 2000) Return (Rank)
Fixed Income Internal Active[1,2]	-10.97% (92)	-11.53% (92)	-2.15% (97)	0.12% (98)	3.91% (77)
Benchmark	-11.04%	-11.49%	-2.33%	-0.05%	3.88%
Value Added	0.07%	-0.04%	0.18%	0.17%	0.03%
Information Ratio	--	-0.13 (92)	0.46 (75)	0.49 (66)	0.02 (81)
					Inception (Sept 2010) Return
Fixed Income Internal Passive	-10.80%	-11.21%	-2.12%	0.11%	1.58%
Benchmark	-11.04%	-11.49%	-2.33%	-0.05%	1.48%
Value Added	0.24%	0.28%	0.21%	0.16%	0.10%
Information Ratio	--	2.04 (40)	1.37 (6)	1.14 (3)	--

[1] Compared to the SBA Intermediate Core Fixed Income Custom Universe; rankings are based on gross-of-fees FRS performance.

[2] Excludes the AA Investment Grade account.

Review of Fixed Income
Performance: Fixed Income

- The FRS Fixed Income External Portfolio has outperformed its benchmark but trailed its universe median over the 3- and 5-year periods. The information ratio also ranked in the bottom half of the universe over the trailing 3- and 5-year periods.

Periods Ending 9/30/2022	Year to Date Return (Rank)	1 Year Return (Rank)	3 Years Return (Rank)	5 Years Return (Rank)	Inception (January 2002) Return (Rank)
External[1]	-11.52% (93)	-11.90% (93)	-1.71% (82)	0.39% (71)	3.85% (6)
Benchmark	-10.77%	-11.18%	-2.19%	0.04%	3.40%
Value Added	-0.75%	-0.72%	0.48%	0.35%	0.45%
Information Ratio	--	-1.03 (94)	0.25 (89)	0.24 (88)	0.29

[1] Compared to the SBA Intermediate Core Fixed Income Custom Universe; rankings are based on gross-of-fees FRS performance.

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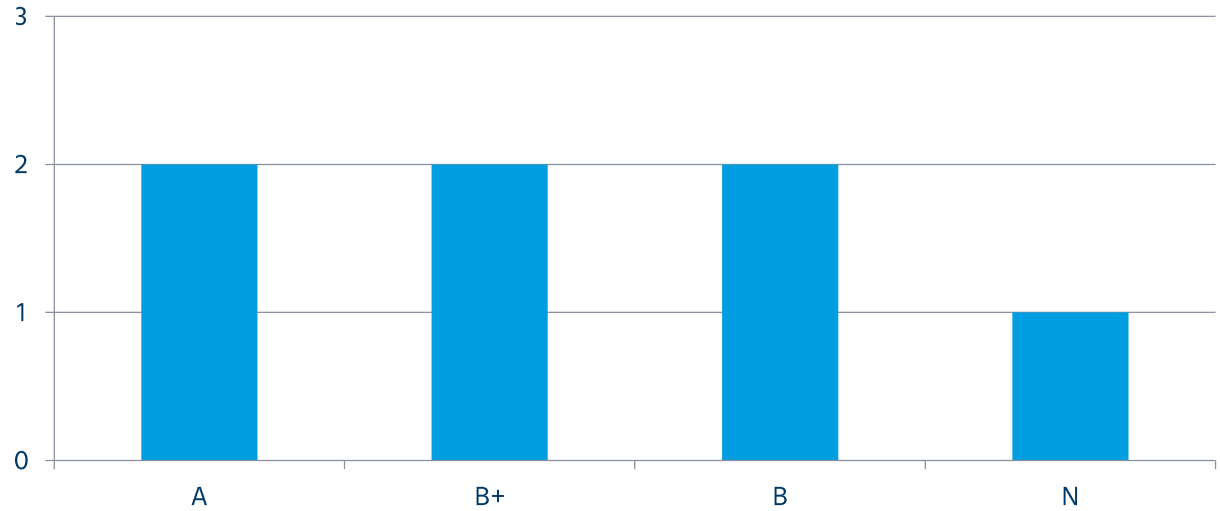
Recent Activity

Mercer Research Rating Review
Breakdown of Strategies by Rating

- Of the 7 FRS active fixed income strategies in the Plan, 4 strategies are rated "B+" and above.
- The graph below shows the breakdown of the strategies by their Mercer Rating.
- The assets managed by PGIM represent a core plus mandate and are managed against the full Bloomberg US Bond Aggregate Index.
- SBA will consider expanding the Plan's opportunity set beyond the benchmark.



Mercer Ratings:

A = "above average" prospects of outperformance

B+ = "above average" prospects of outperformance, but there are strategies in which Mercer has greater conviction

B = "average" prospects of outperformance

C = "below average" prospects of outperformance

N = not rated

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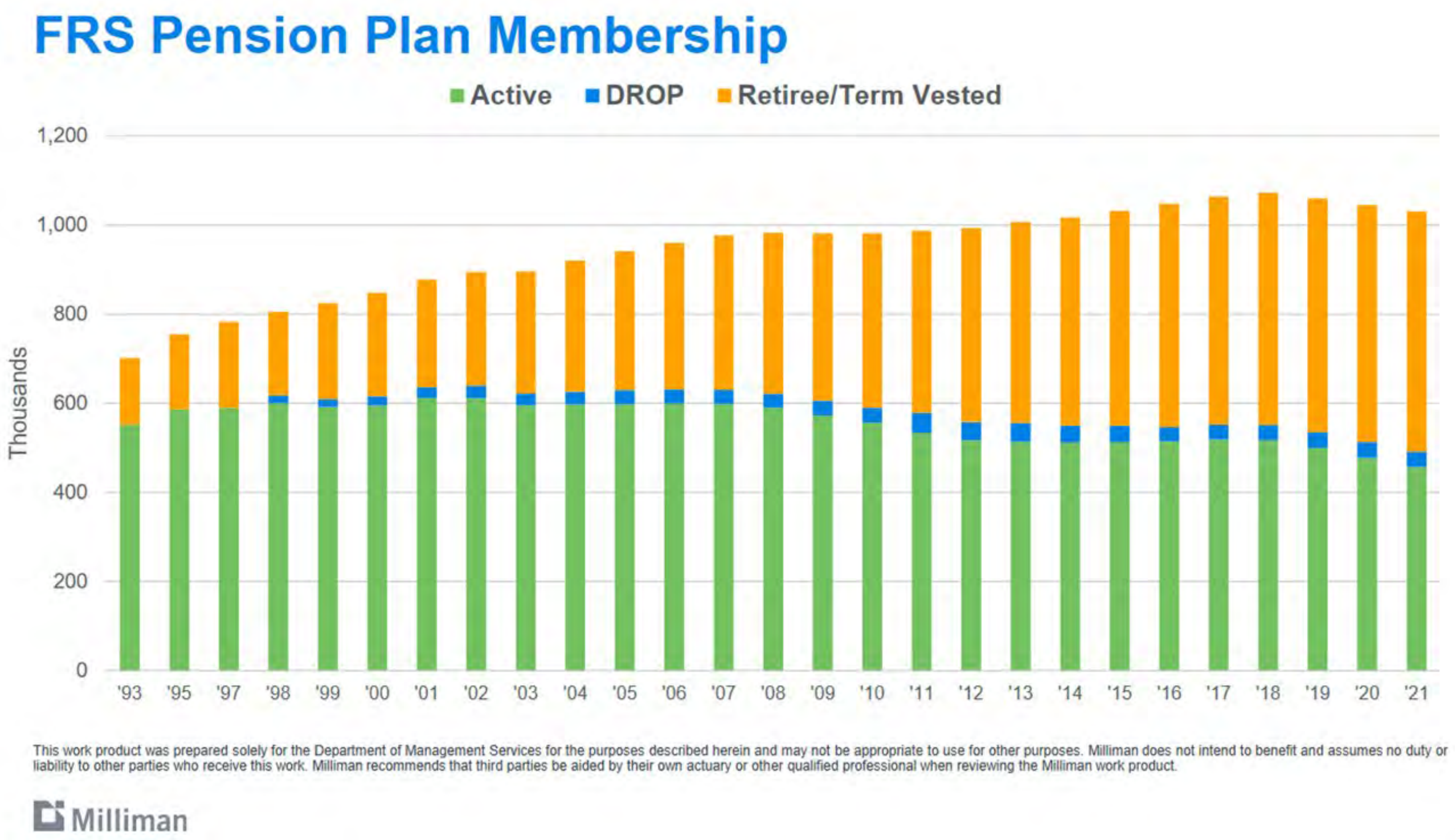
State Board of Administration

Asset Allocation Context

Challenges - Maturity of Pension Plan



- Most recent numbers from Division of Retirement indicate more Pension Plan Retirees than Active Pension Plan Members

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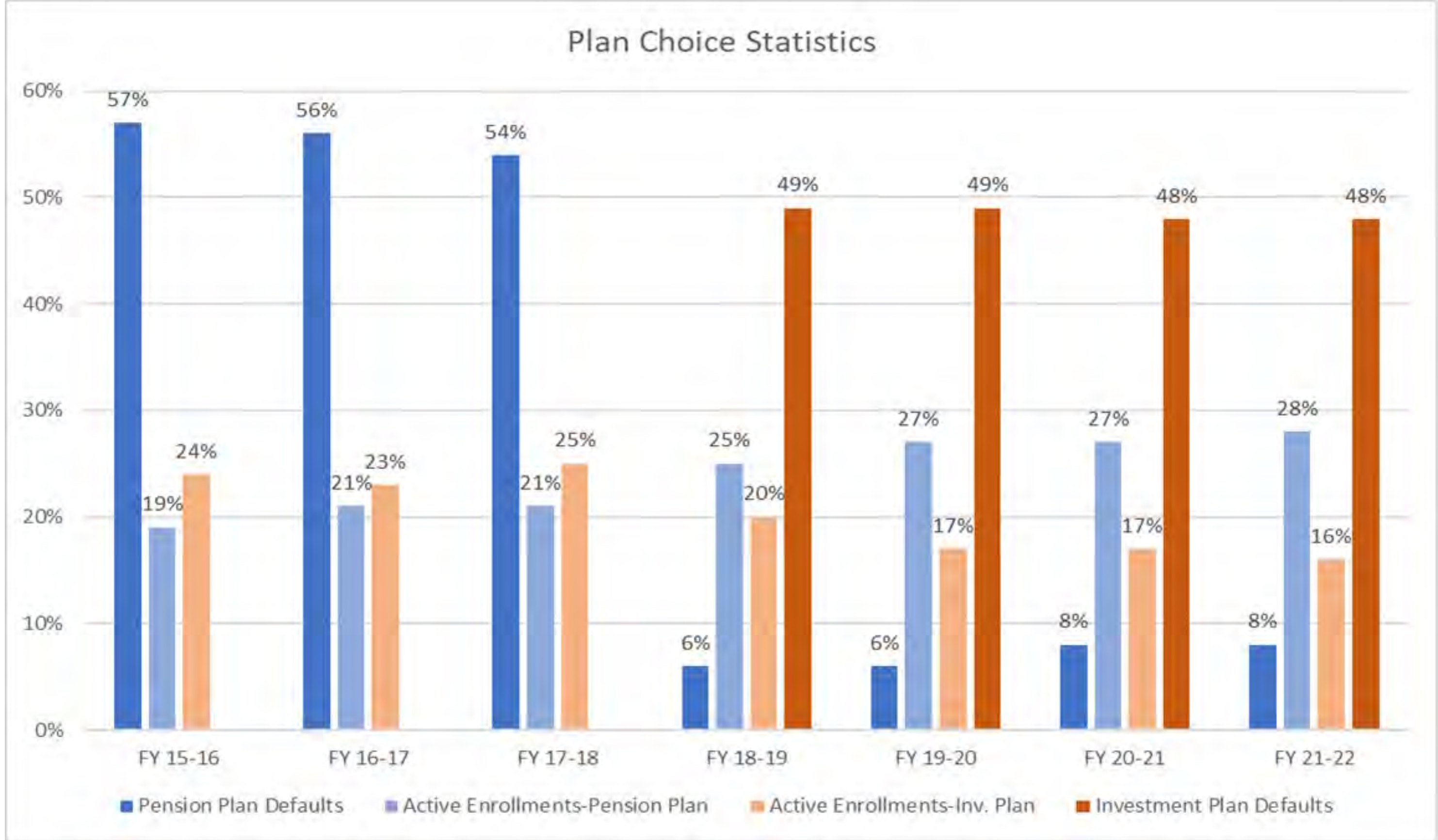
Challenges - Growth in the Investment Plan



- In 2018, the Legislature designated the Investment Plan as the default retirement plan for non-Special Risk new hires

- Approximately two thirds of all new hires either default or elect into the Investment Plan, slowing the growth of contributions into the Pension Plan and reducing its liability duration

Sources: State Board of Administration of Florida

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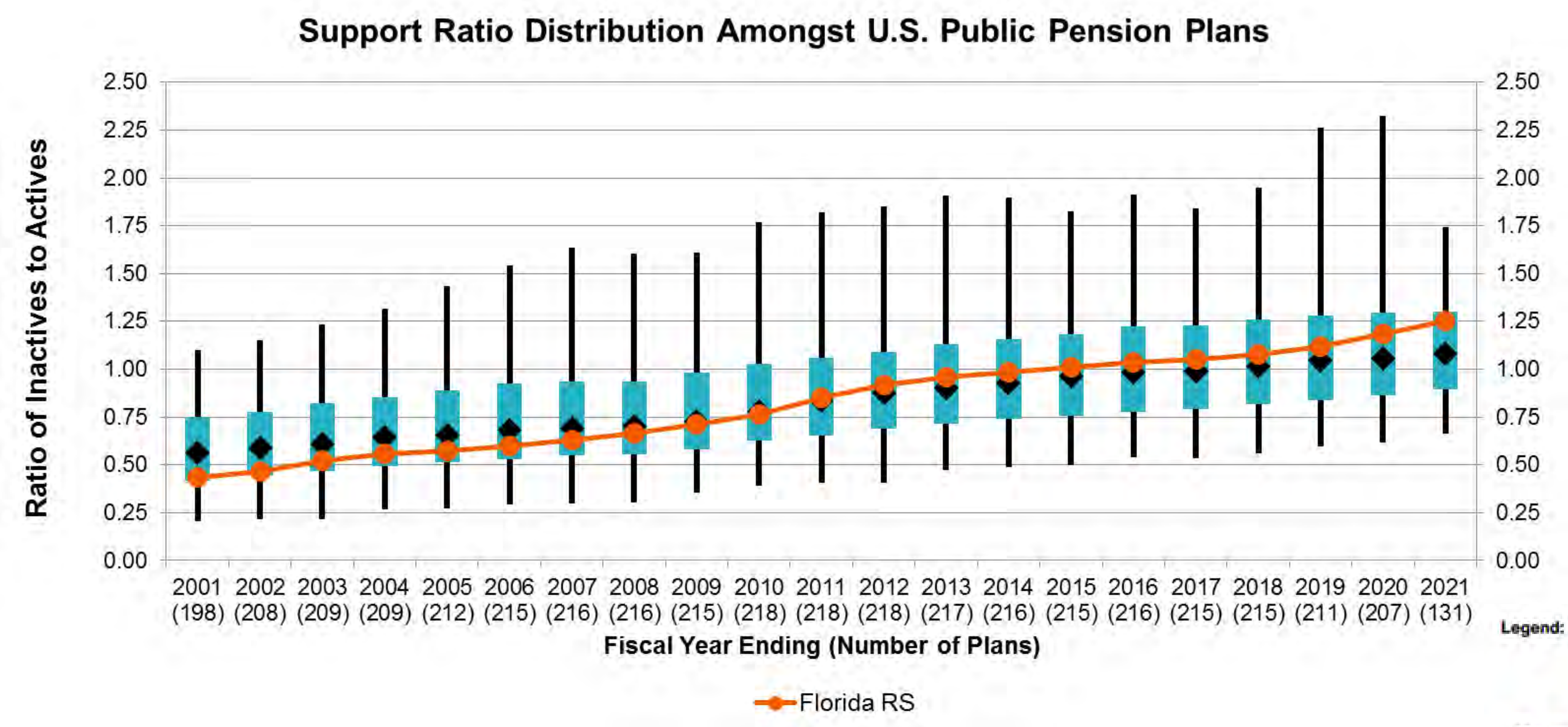
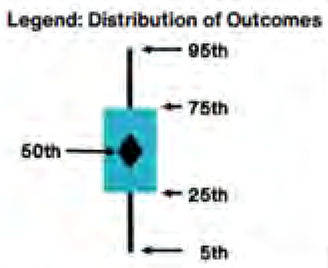
Florida Retirement System Public Plan Peer Comparison Support Ratio versus Peers[1]



- "Support Ratio" defined as the ratio of inactive participants to active participants
- The ability for new hires to elect the Investment Plan has subdued the increase in active participants, increasing the Support Ratio over time



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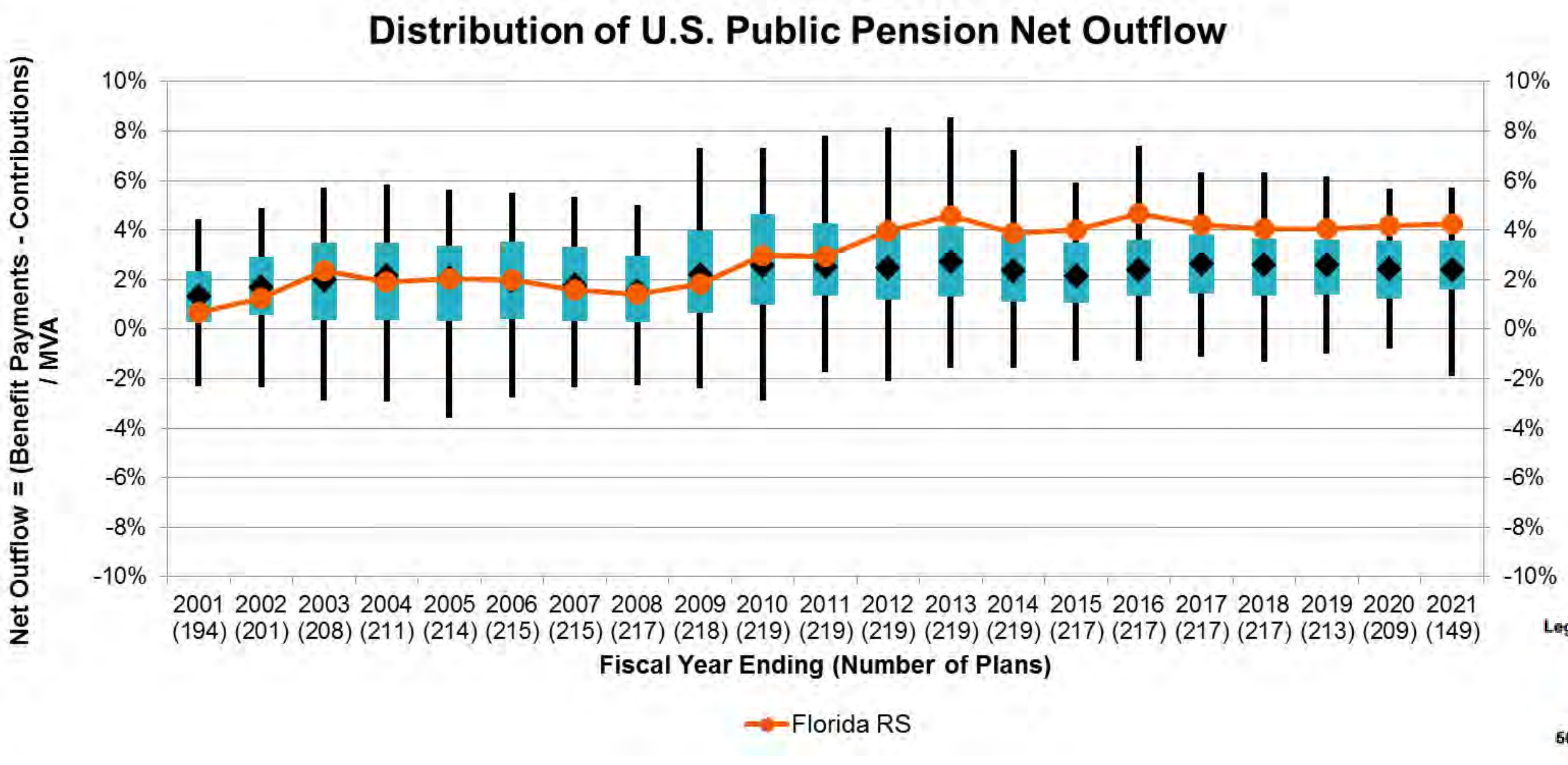
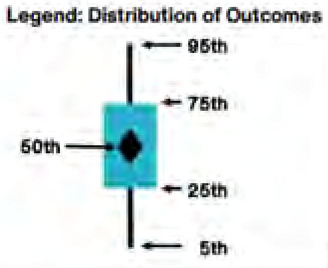
Sources: Public Plans Data (publicplansdata.org) as of July 2022

[1]Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

Florida Retirement System Public Plan Peer Comparison Net Outflow versus Peers



- The median net outflow as of FYE 2021 was 2.4% based on the latest survey data.
- FRS' FYE 2021 net outflow (4.3%) fell between the 75th and 95th percentile relative to its peers.[1]
- Higher net outflows, contribute to higher funding and liquidity risks.



Sources: Public Plans Data (publicplansdata.org) as of July 2022

[1]Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

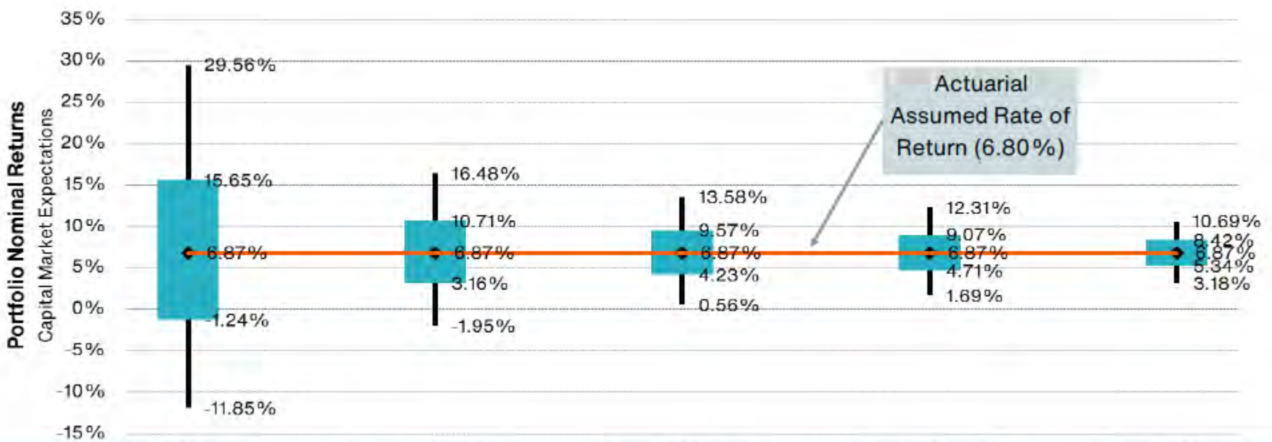
Comparison Among The Top 5 US Pension Plans By Assets

FYE 2021 ($ in thousands)	CalPERS	CalSTRS	NY Common	FRS	TRS
Net Position	$ 477,322,749	$ 310,293,453	$ 273,718,723	$ 202,534,800	$ 201,807,002
Funded Status	70.56%	72.98%	92.73%	83.43%	79.12%
Assumed Rate of Return	7.00%	7.00%	5.90%	6.70%	7.25%
Contributions	$ 24,791,757	$ 13,231,626	$ 6,332,048	$ 5,153,954	$ 7,842,825
Benefit Payments	$ (27,415,194)	$ (16,606,579)	$ (14,905,023)	$ (11,966,297)	$ (11,802,310)
Net Outflow	$ (2,623,437)	$ (3,374,953)	$ (8,572,975)	$ (6,812,343)	$ (3,959,485)
Retirees	633,469	281,302	390,691	435,944	427,995
Active Members	878,084	429,681	497,659	457,249	918,545
Retirees/Active Members	72.14%	65.47%	78.51%	95.34%	46.59%

Estimated Forward Rate of Return Is A Median Expectation

Portfolio Analysis

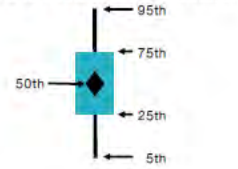
Range of Nominal Returns[1]



Percentile	Current Policy – 1 Year	Current Policy – 5 Year	Current Policy – 10 Year	Current Policy – 15 Year	Current Policy – 30 Year
5th	-11.85%	-1.95%	0.56%	1.69%	3.18%
25th	-1.24%	3.26%	4.23%	4.71%	5.34%
50th	6.87%	6.87%	6.87%	6.87%	6.87%
75th	15.65%	10.71%	9.57%	9.07%	8.42%
95th	29.56%	16.48%	13.58%	12.31%	10.69%

[1] Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022 adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Legend: Distribution of Outcomes



- Expected 6.87% Rate of Return is the 50th percentile expectation
- There is a large range of possible outcomes in the early years that narrows over time

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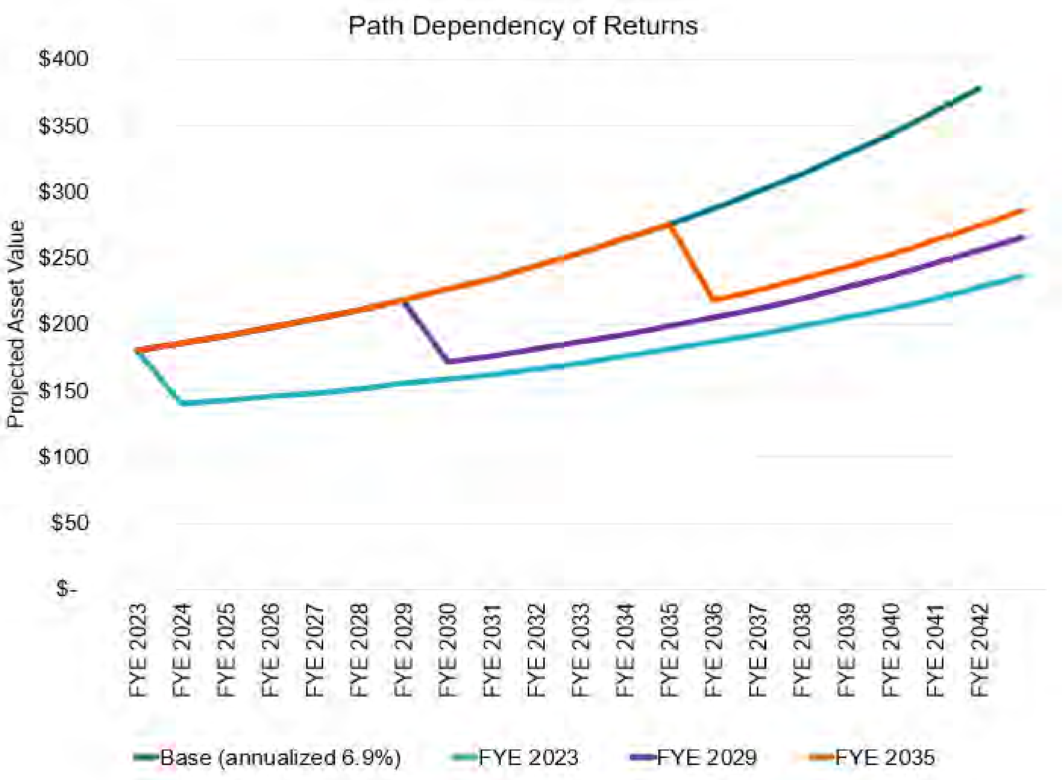
Ending Investment Balances Are Path Dependent

Path Dependency – Isolating Returns (Illustrative Example)

Assuming a Similar Return Series, the Specific Path Implicates Asset Value

- The chart to the right assumes an annualized 6.87% return and static cash flows over a 30-year time horizon, testing one negative period of returns (-18.4%, representing a two standard deviation event) in various years
  - Each line refers to the year in which the negative event occurs
  - The earlier the negative event occurs, the lower the ultimate ending market value of assets



- This example uses a static level of cash flows and does not take into account contribution funding policy, which could materially affect results.

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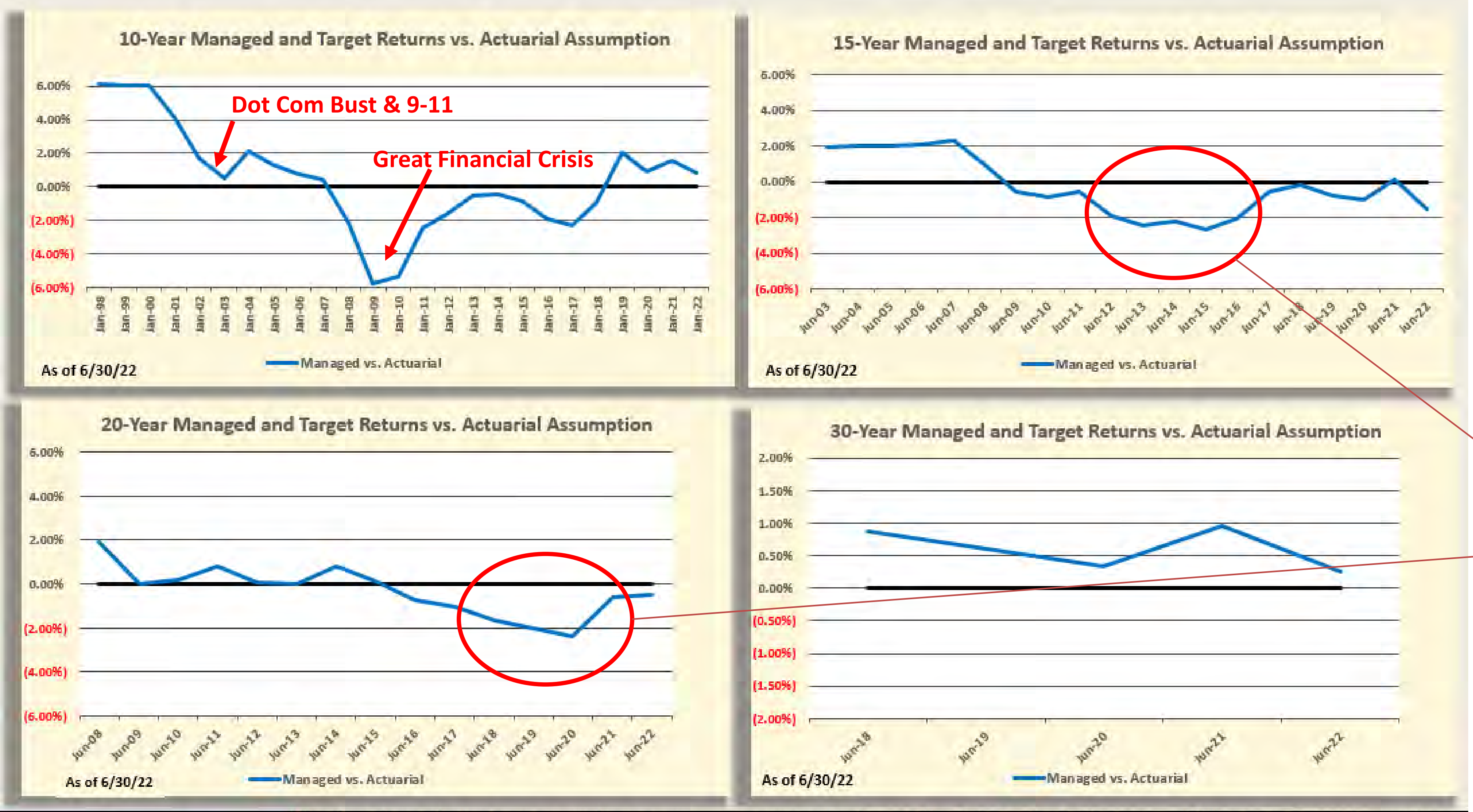
Actual Ensuing Returns Compared to Previous Actuarially Assumed Rates of Return (How Did We Actually Do)



- SBA has achieved the Actuarial Rate of Return in the long run, but volatility can impact medium term results

Dot Com Bust/9-11 and Great Financial Crisis smoothing out over time

Purpose	This chart shows whether prior actuarial return expectations were realized, over rolling 10-, 15-, 20- & 30-year periods following return predictions (e.g., 15 year realized return – point in time expectation from 15 years prior = chart data point)

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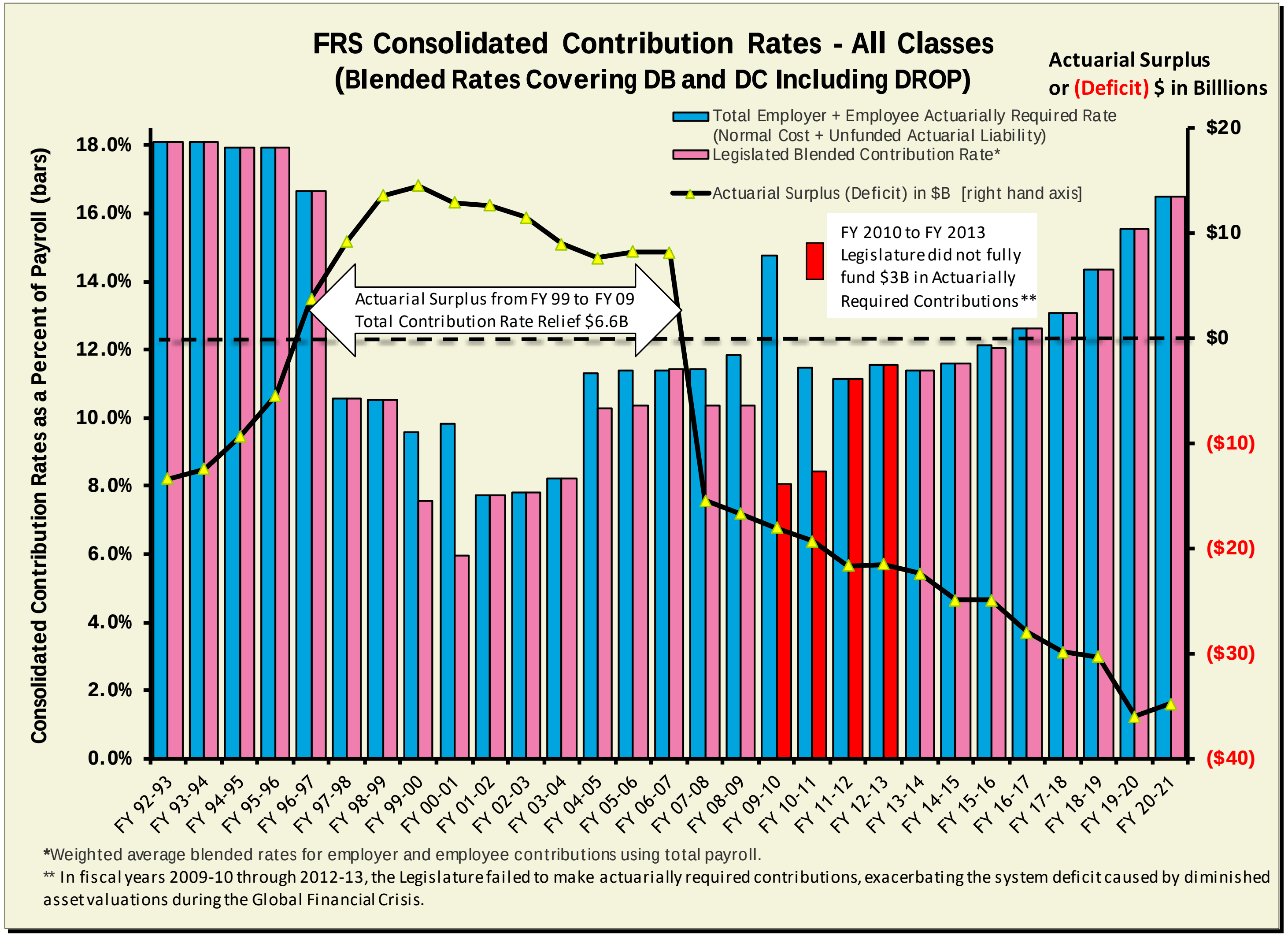
Contributions and Funded Status



*Weighted average blended rates for employer and employee contributions using total payroll.

** In fiscal years 2009-10 through 2012-13, the Legislature failed to make actuarially required contributions, exacerbating the system deficit caused by diminished asset valuations during the Global Financial Crisis.

- 11-years of actuarial surpluses from 1998 thru 2008 and employers saving a cumulative $6.6B through reduced contributions.
- From FY 2009-10 through 2012-13, the Legislature failed to make $3 billion in actuarially required contributions. Had the Legislature fully funded the required contributions, the FRS Pension Plan's market value would have been approximately $7.3B. higher by June 30, 2022. The FRS Pension Plan lost an opportunity for an investment gain of $4.3B (on $3B in missing contributions).
- Plan contributions have been approximately $285 million to $1.8 billion less (actuarial return assumption vs. SBA return forecast) than they should have been every year for the past 11-years (cumulative total $11.5B). The FRS-PP lost out on an opportunity for an investment gain of $5.0B on $11.5B in missing legislative contributions.
- Through time, the funding shortfalls have contributed to the increase in the UAL.

SBA FLORIDA STATE BOARD OF ADMINISTRATION

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Asset Allocation Review

Florida State Board of Administration (SBA)

December 13, 2022

Table of Contents

1

Overview

AON

Executive Summary
Introduction

Following the 2022 Asset-Liability Study, Aon engaged with the SBA on a more detailed Asset Allocation Review

Key Take-Aways from the Asset-Liability Study:

- Funding ratio expected to trend towards 100% by fiscal year 2039
- Current portfolio appears to be in an appropriate return-seeking range

Asset Allocation Study reviews the construct of the return-seeking portfolio and the risk-reducing portfolio

- Are there any gaps in the current asset allocation?
- Is there an opportunity to improve risk-adjusted returns?
- Are there implementation challenges associated with potential enhancements?

Today's goals:

- Review and discuss asset allocation optimization analysis and asset allocation study findings
- Gather IAC feedback in order to revert back in 2023 with actional asset allocation recommendations

Current Portfolio Observations

FRS portfolio is currently well-constructed to meet its long-term objectives

Asset-Liability Study Observations:

- Funding ratio expected to trend towards 100% by fiscal year 2039
- Current portfolio appears to be in an appropriate return-seeking range

Current Asset Allocation Observations

- Below we highlight the SBA's coverage of key portfolio characteristics

Attribute	Role	SBA Coverage
Diversification	• Risk control • Balanced returns	✓ Diversified across 5+ asset classes
Return	• Meet or exceed actuarial assumed rate of return • Reduce cost of plan	✓ Expected to exceed actuarial ROR ✓ Alternatives ✓ Active risk budget
Inflation Protection	• Keep pace with or outpace inflation over the long-term	✓ Public equity, real estate, certain strategic investments
Liquidity	• Ability to pay promised benefits in normal and adverse markets	✓ 72% liquid portfolio ✓ No liquidity concerns under stressed scenarios
Downside Protection	• Avoid losses in weak or negative equity markets	✓ 19% dedicated safety asset allocation (high quality FI) ✓ Elements held within Strategic Investments ✓ Diversified return-seeking allocation
Efficiency	• Straightforward, simple asset allocation • Cost effective	✓ Streamlined Policy ✓ Strong use of internal and passive management
Flexibility	• Allow for opportunistic, smaller or unique investments	✓ Strategic Investments allocation

Asset Allocation Review

Key findings from asset allocation review

- **Opportunity to improve risk-adjusted returns via additional diversification**
  - **Reducing global equity in favor of alternatives and/or core fixed income** can improve risk/reward expectations
  - **Aggregate fixed income** preferred over Intermediate Aggregate fixed income
- **Improved risk-adjusted results driven by greater long-term targets to private equity, non-core real estate, infrastructure, hedge funds and/or new allocation to liquid return-seeking fixed income**
  - Currently, certain alternative exposures are via the Strategic Investments asset class and more fluid or tactical rather than long-term Policy targets
- **Increasing the cap on alternatives (currently 20%) can further improve expected risk-adjusted results**
  - Primary changes include addition of strategic allocation to **private debt** and **maxing out of private equity**
- **While the results of the asset-liability study demonstrated that the current portfolio was well-constructed, additional portfolio enhancements will only serve to further improve the risk/reward characteristics of the fund**
- **Identifying the balance between desired risk reduction and return enhancement will inform asset allocation changes**

2

Portfolio Analysis

- Assumptions & Constraints
- Efficient Frontier Analysis

Process & Assumptions

Section 2: Portfolio Analysis

Overview of Analysis
Process

Initial phase was to run a mathematical analysis using mean-variance optimization to develop portfolios that maximize return for a given level of risk

- Utilize the same CMAs underlying the 2022 asset-liability study (returns, volatility and correlations)
- De-construct the portfolio using Aon's portfolio building blocks
- Apply constraints to the optimization to limit concentrated allocations and comply with regulatory considerations (i.e., maximum alternative allocations)
- Target optimized portfolios with returns of at least 6.8% (expected results from A-L study) and volatility that is similar or lower than the current portfolio

Aon's Return-Seeking Building Blocks

- Aon's seven return-seeking building blocks were developed to help clients create more flexible and diversified investment portfolios
- Intended to provide exposure to and harvest a complete spectrum of return-seeking opportunities, while achieving sufficient diversification

Characteristics / Blocks	Equity	Credit	Illiquidity	Inflation Hedging	Complexity
Public Equity	■■■			■	
Private Equity	■■■		■■■	■	■■■
Liquid Alternatives	■■	■	■		■■
Liquid Return-Seeking FI	■	■■■			
Illiquid Fixed Income	■	■■■	■■	■	■■■
Open-Ended Real Assets	■		■	■■■	■
Close-Ended Real Assets	■■		■■■	■■■	■■■

- The number of squares in the above table represent a rough measure of the magnitude of the exposure of each building block to different characteristics.

Translation of SBA Current Policy to Building Blocks

Unpacking the Strategic Investment allocation to see current portfolio exposures

Target Policy per IPS	Allocation
Global Equity	53%
Private Equity	6%
Real Estate	10%
Strategic Investments	**12%**
Intermediate Aggregate Fixed Income	18%
Cash	1%
Total	100%

Strategic Investment Allocation	Allocation
Commodities	0.38%
Global Public Equities	1.05%
Hedge Funds - Buy List (Diversified Portfolio of Direct HFs)	1.67%
Hedge Funds - CTAs (Buy List)	0.99%
Hedge Funds - Distressed Debt (Buy List)	0.45%
Hedge Funds - Equity Long/Short (Buy List)	0.27%
Hedge Funds - Event Driven (Buy List)	0.14%
Hedge Funds - Global Macro (Buy List)	0.24%
Infrastructure	1.29%
Insurance-Linked Securities (ILS)	0.57%
Non-Core Real Estate	0.33%
Private Debt - Commercial Mortgages	0.33%
Private Debt - Direct Lending	0.86%
Private Equity	0.88%
Private Equity - Distressed Debt	1.41%
Private Equity - Mezzanine	0.78%
Timberland	0.34%
Total	12.00%

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Unpacked Policy Grouped within Aon's Building Blocks	Allocation
Equity	
- Global Equity	54.05%
- Private Equity	9.07%
- *Subtotal*	*63.12%*
Return-Seeking Fixed Income	
- Private Debt	1.20%
- *Subtotal*	*1.20%*
Liquid Alternatives	
- Hedge Funds	3.77%
- ILS	0.57%
- *Subtotal*	*4.34%*
Real Assets	
- Real Estate (Core)	7.65%
- Real Estate (Non-Core)	1.68%
- Real Estate (REITs)	1.00%
- Commodities	0.38%
- Infrastructure	1.29%
- Timberland	0.34%
- *Subtotal*	*12.34%*
Safety Assets	
- Intermediate Aggregate	18.00%
- Cash	1.00%
- *Subtotal*	*19.00%*
Total	**100.00%**

Percentages may not sum to total due to rounding.

Custom SBA Capital Market Assumptions

Inputs to mean-variance optimization as of 6/30/2022

	Asset Classes	Nominal Return[1]	Volatility	Individual Constraints	Alternative Constraints
1	Global Equity	7.2%	18.5%	35-100%	
2	Private Equity	9.6%	25.5%	0-10/12%	≤18%/26%
3	Core Real Estate	4.5%	15.5%	6-10%	
4	Non-Core Real Estate	6.1%	25.5%	0-3%	
5	REITs	5.8%	19.0%	0-1%	
6	Infrastructure	7.1%	15.0%	0-2%	≤18%/26%
7	Timber	4.3%	12.5%	0-5%	≤18%/26%
8	Commodities	5.4%	17.0%	0-5%	≤18%/26%
9	ILS	4.9%	7.5%	0-5%	≤18%/26%
10	Private Debt	6.5%	17.5%	0-10%	≤18%/26%
11	Multi-Asset Credit	6.3%	9.0%	0-10%	
12	Hedge Funds	6.7%	9.0%	0-5%	≤18%/26%
13	Core Fixed Income	3.7%	4.5%	14-100%	
14	Intermediate Agg.	3.5%	3.5%	0-100%	
15	Cash	2.9%	2.0%	1-100%	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.00	0.63	0.36	0.47	0.64	0.35	0.02	0.48	0.01	0.41	0.66	0.51	0.02	-0.01	0.06
	1.00	0.32	0.37	0.43	0.32	0.01	0.13	0.01	0.30	0.40	0.33	0.03	0.00	0.07
		1.00	0.97	0.43	0.18	0.01	0.10	0.02	0.15	0.22	0.17	0.05	0.04	0.13
			1.00	0.47	0.22	0.01	0.16	0.02	0.19	0.30	0.23	0.04	0.03	0.12
				1.00	0.24	0.01	0.28	0.01	0.25	0.40	0.34	0.02	0.01	0.07
					1.00	0.01	0.09	0.03	0.15	0.22	0.18	0.05	0.04	0.11
						1.00	0.09	0.01	0.00	0.02	0.01	0.00	0.00	0.06
							1.00	0.04	0.18	0.39	0.26	0.03	0.04	0.17
								1.00	-0.03	0.01	-0.01	0.09	0.11	0.21
									1.00	0.68	0.44	0.07	-0.02	-0.17
										1.00	0.54	0.25	0.16	0.04
											1.00	0.04	-0.02	-0.02
												1.00	0.98	0.41
													1.00	0.51
														1.00

[1] Expected returns are using Aon Investments Q3 2022 30-Year Capital Market Assumptions adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment). Assumptions do not include fees/expenses. All expected returns are geometric (long-term compounded; rounded to the nearest decimal) and net of investment fees. Expected returns presented are models and do not represent the returns of an actual client account. Not a guarantee of future results.

Efficient Frontier Analysis

Section 2: Portfolio Analysis

Portfolio Analysis

Description of three portfolio runs

Aon ran three optimization analyses that build upon themselves

1. Diversify within 18% Alternative cap and across *existing* asset classes
    - —Legislative limit to alternatives is 20%; however, 18% constraint used to mitigate risk of breaching limit
2. Diversify within 18% Alts cap and allow for asset categories not currently held within FRS portfolio
3. Increase alternatives cap to 26%
    - — Assumed 30% legislative limit; however, 26% constraint used to mitigate risk of breaching limit

Following slides highlight the differences between the current FRS portfolio and a sample portfolio that falls on the efficient frontier

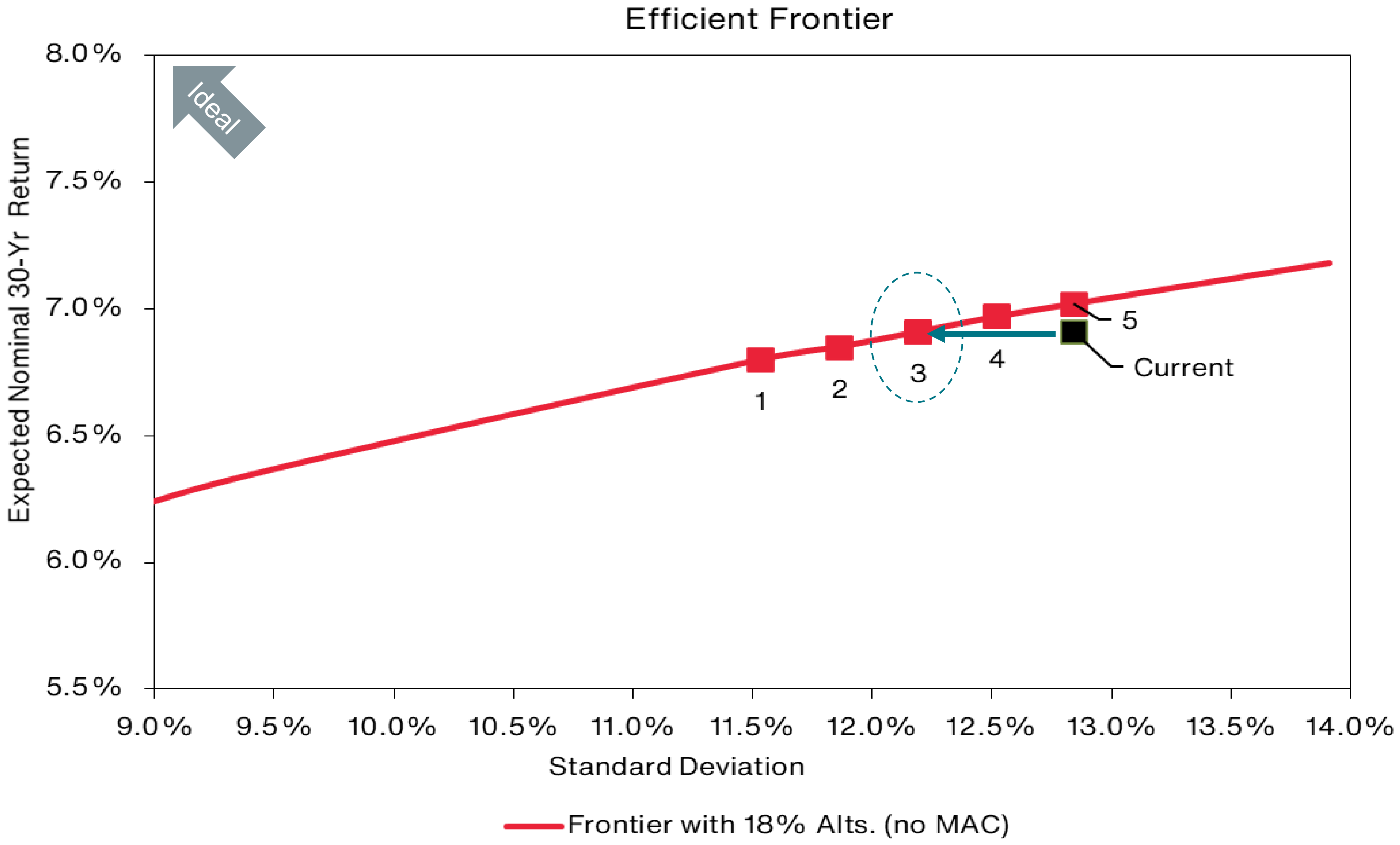
—Additional portfolio details can be found in the appendix

Portfolio Analysis | 18% Alternatives Cap (w/existing asset classes)

Optimization favors core fixed income and slight increases to equity diversifiers

		A. Current	B. Portfolio #3 (18% Alts. Cap w/o MAC)	C. Delta (B – A)
Equity	Global Equity	54%	48%	-6%
	Private Equity	9%	10%	1%
	- Subtotal	*63%*	*58%*	*-5%*
R-S Fixed Income	Multi-Asset Credit (MAC)		0%	0%
	Private Debt	1%	2%	0%
	- Subtotal	*1%*	*2%*	*0%*
Liquid Alts	Hedge Funds	4%	4%	1%
	ILS	1%	0%	-1%
	- Subtotal	*4%*	*4%*	*0%*
Real Assets	Real Estate (Core)	8%	6%	-2%
	Real Estate (Non-Core)	2%	3%	1%
	Real Estate (REITs)	1%	1%	0%
	Commodities	0%	0%	0%
	Infrastructure	1%	2%	1%
	Timberland	0%	0%	0%
	- Subtotal	*12%*	*12%*	*0%*
Safety Assets	Core Fixed Income		23%	23%
	Intermediate Aggregate	18%	0%	-18%
	Cash	1%	1%	0%
	- Subtotal	*19%*	*24%*	*5%*
	Total	100%	100%	0%
Portfolio Metrics	**Expected Return[1]**	6.91%	6.91%	0.00%
	Volatility	12.84%	12.19%	-0.65%
	Sharpe Ratio	0.312	0.329	0.017

[1] Based on SBA's custom 6/30/2022 30-year capital market assumptions
Calculations may not sum to total due to rounding



- **Reducing overall return-seeking asset exposure (public equity) in favor of U.S. core fixed income and modest allocation changes, including**
  - Non-core real estate, private equity, infrastructure and hedge funds
- **Assumes strategic (long-term) policy targets to private equity, real estate, infrastructure and hedge funds**

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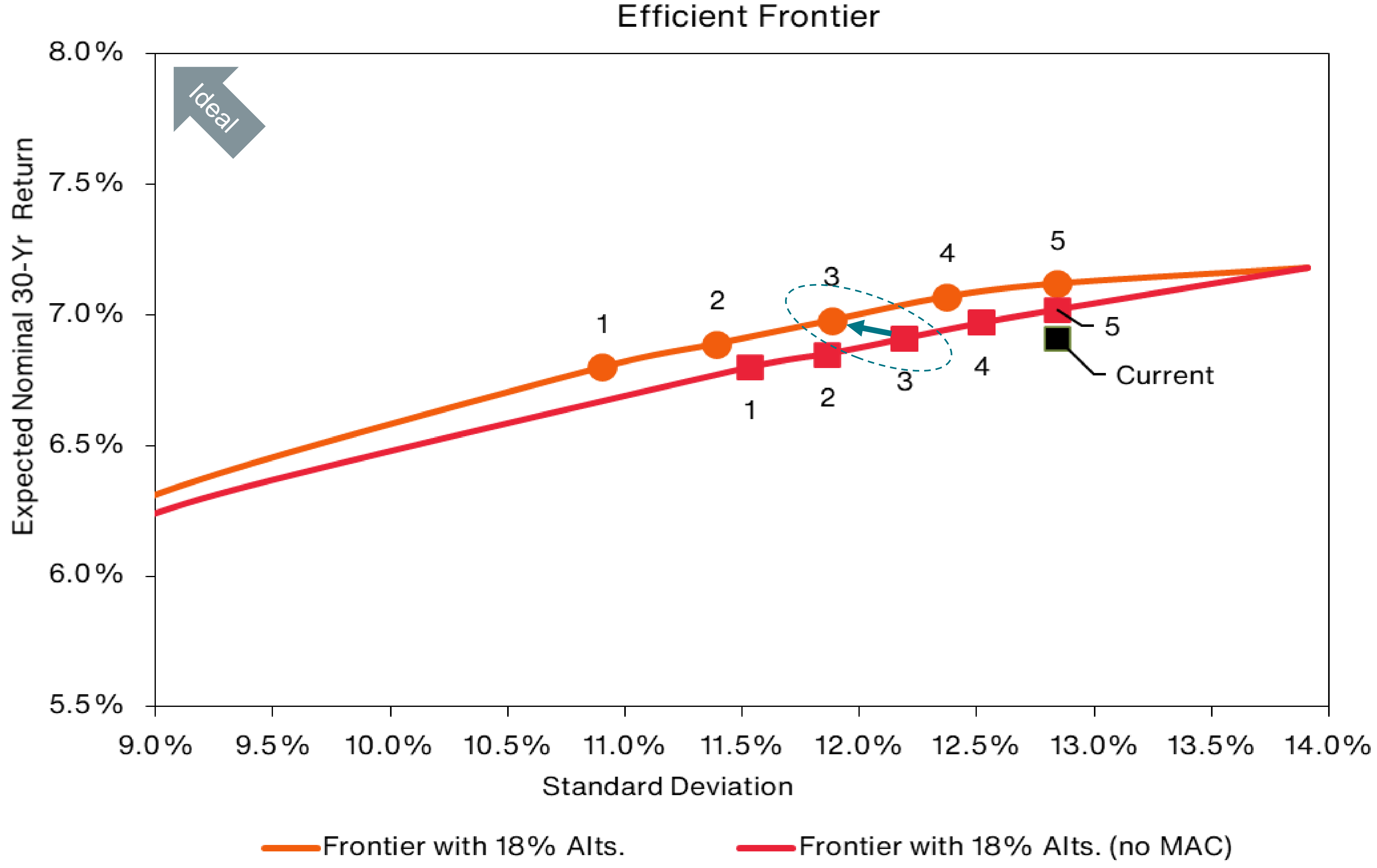
Portfolio Analysis | 18% Alternatives Cap (with new asset classes)

Multi-asset credit (MAC) selected in place of global equity and core fixed income

		A. Portfolio #3 (18% Alts. Cap w/o MAC)	B. Portfolio #3 (18% Alts. Cap w/ MAC)	C. Delta (B – A)
Equity	Global Equity	48%	43%	-5%
	Private Equity	10%	10%	0%
	- Subtotal	*58%*	*53%*	*-5%*
R-S Fixed Income	Multi-Asset Credit (MAC)	0%	10%	**10%**
	Private Debt	2%	1%	-1%
	- Subtotal	*2%*	*11%*	*9%*
Liquid Alts	Hedge Funds	4%	5%	1%
	ILS	0%	0%	0%
	- Subtotal	*4%*	*5%*	*1%*
Real Assets	Real Estate (Core)	6%	6%	0%
	Real Estate (Non-Core)	3%	3%	0%
	Real Estate (REITs)	1%	1%	0%
	Commodities	0%	0%	0%
	Infrastructure	2%	2%	0%
	Timberland	0%	0%	0%
	- Subtotal	*12%*	*12%*	*0%*
Safety Assets	Core Fixed Income	23%	18%	-5%
	Intermediate Aggregate	0%	0%	0%
	Cash	1%	1%	0%
	- Subtotal	*24%*	*19%*	*-5%*
	Total	100%	100%	0%
Portfolio Metrics	**Expected Return[1]**	6.91%	6.98%	0.07%
	Volatility	12.19%	11.88%	-0.31%
	Sharpe Ratio	0.329	0.344	0.015

[1] Based on SBA's custom 6/30/2022 30-year capital market assumptions
Calculations may not sum to total due to rounding



- **Able to incrementally improve return with slightly lower risk**
- **Multi-asset credit (MAC) assumption used as proxy for liquid, return-seeking fixed income allocation**
  - MAC offers returns associated with liquid credit markets
- **MAC sourced primarily from global equity and U.S. core fixed income**

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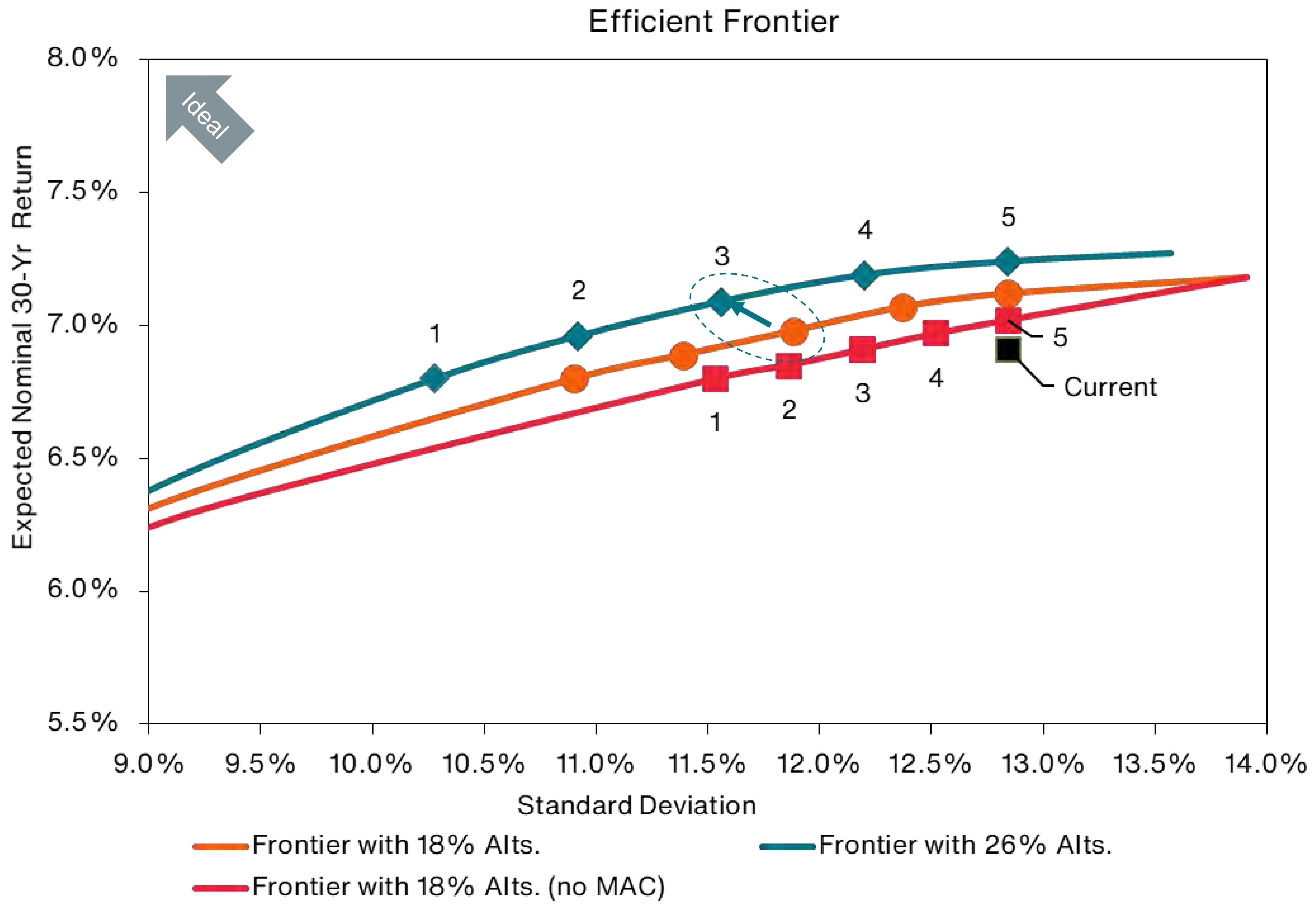
Portfolio Analysis | 26% Alternatives Cap

Incremental risk/return improvement from raising the alternatives cap

		A. Portfolio #3 (18% Alts. Cap w/ MAC)	B. Portfolio #3 (26% Alts. Cap w/ MAC)	C. Delta (B – A)
Equity	Global Equity	43%	36%	-7%
	Private Equity	10%	12%	**2%**
	- Subtotal	*53%*	*48%*	*-5%*
R-S Fixed Income	Multi-Asset Credit (MAC)	10%	10%	0%
	Private Debt	1%	7%	**6%**
	- Subtotal	*11%*	*17%*	*6%*
Liquid Alts	Hedge Funds	5%	5%	0%
	ILS	0%	0%	0%
	- Subtotal	*5%*	*5%*	*0%*
Real Assets	Real Estate (Core)	6%	6%	0%
	Real Estate (Non-Core)	3%	3%	0%
	Real Estate (REITs)	1%	1%	0%
	Commodities	0%	0%	0%
	Infrastructure	2%	2%	0%
	Timberland	0%	0%	0%
	- Subtotal	*12%*	*12%*	*0%*
Safety Assets	Core Fixed Income	18%	17%	-1%
	Intermediate Aggregate	0%	0%	0%
	Cash	1%	1%	0%
	- Subtotal	*19%*	*18%*	*-1%*
	Total	100%	100%	100%
Portfolio Metrics	**Expected Return[1]**	6.98%	7.09%	0.11%
	Volatility	11.88%	11.56%	-0.32%
	Sharpe Ratio	0.344	0.363	0.019

[1] Based on SBA's custom 6/30/2022 30-year capital market assumptions
Calculations may not sum to total due to rounding



- **Increasing Alts cap can further improve risk-adjusted results**
- **Primary changes include addition of private debt and maxing out of private equity**

Asset Allocation Review Summary Considerations
What did we learn?

- **Within current alternative constraints (18%), there is an opportunity to improve risk-adjusted returns via**
  - Greater allocation to core bonds sourced from public equity and
  - Optimization of alternative investments and transition to long-term policy targets
  - Expanding fixed income mandate to aggregate from intermediate aggregate
- **By allowing new liquid asset classes, there is an opportunity to further improve risk-adjusted returns via**
  - Addition of liquid return-seeking fixed income (modelled as MAC) sourced from public equity and core bonds
- **By gaining additional alternatives flexibility (26% cap), can further improve risk-adjusted returns via**
  - Addition of long-term target to private debt and maxing out of private equity
- **Identifying the balance between desired risk reduction and return enhancement will inform asset allocation changes**

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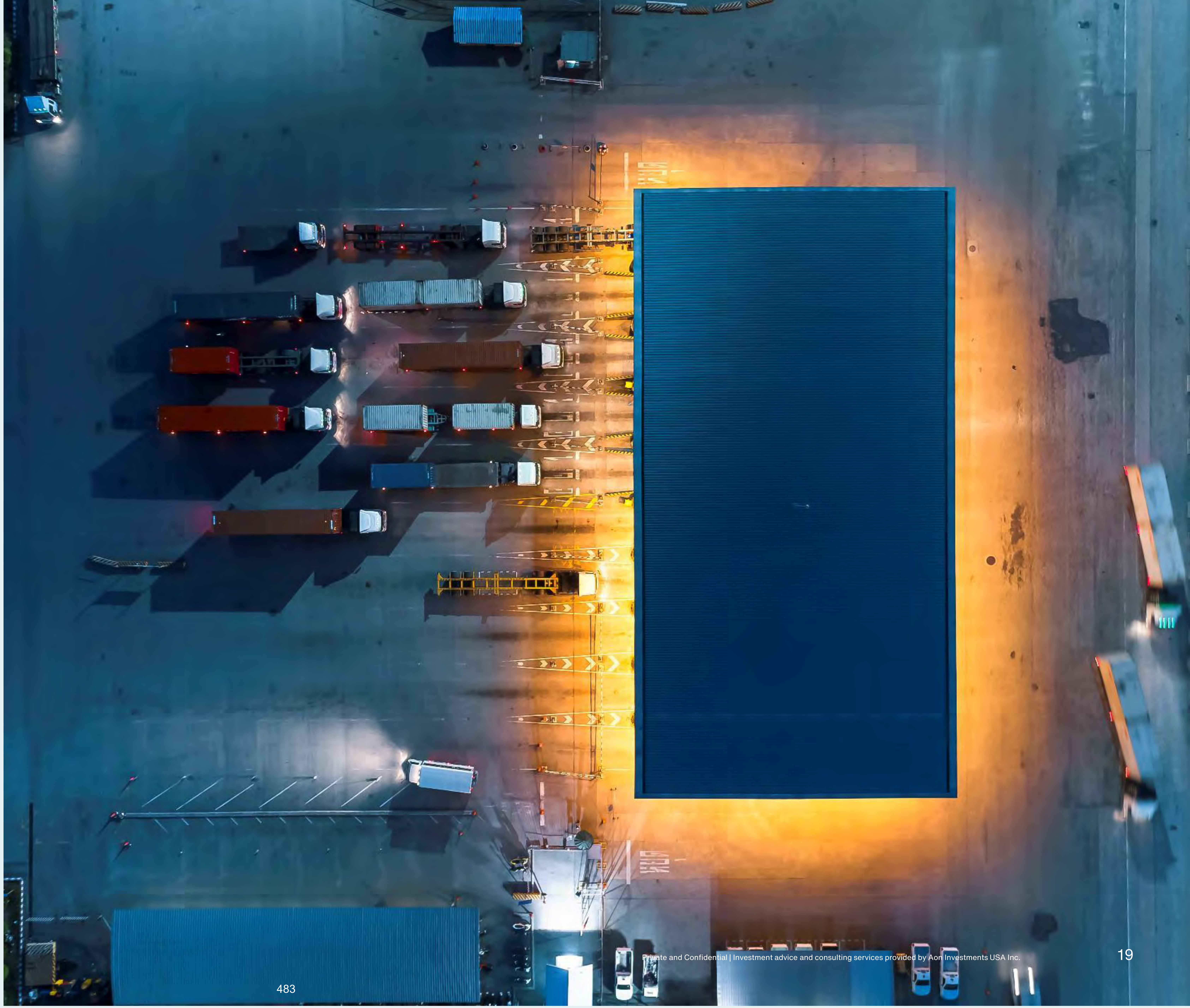
Strategic Investments Discussion



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Strategic Investments
Current role

Current Strategic Investments Objectives:

- Generate a long-term annual return of 4.0 percent above the Consumer Price Index commensurate with risk
- Dampen the volatility and improve the risk-adjusted return of the FRS
- Outperform the FRS during periods of significant market declines
- Increase portfolio flexibility by investing both in new strategies and opportunistically across current strategies

Philosophy:

- The SBA believes that it can implement a prudent process to access non-traditional and opportunistic investments that deliver attractive risk-adjusted returns through the use of business partners with appropriate
  1. Financial, operational and investment expertise and resources;
  2. Alignment of interests;
  3. Transparency and repeatability of investment process; and
  4. Controls on leverage.

Asset Allocation (AA) Analysis

Re-packing the asset allocation analysis – Example AA change (Not a recommendation)

	Unpacked Policy Grouped within Aon's Building Blocks	Current	Portfolio #3 (26% Alts. Cap w/ MAC)
Equity	Global Equity	54%	36%
	Private Equity	9%	12%
	- Subtotal	*63%*	*48%*
R-S Fixed Income	Multi-Asset Credit (MAC)		10%
	Private Debt	1%	7%
	- Subtotal	*1%*	*17%*
Liquid Alts	Hedge Funds	4%	5%
	ILS	1%	0%
	- Subtotal	*4%*	*5%*
Real Assets	Real Estate (Core)	8%	6%
	Real Estate (Non-Core)	2%	3%
	Real Estate (REITs)	1%	1%
	Commodities	0%	0%
	Infrastructure	1%	2%
	Timberland	0%	0%
	- Subtotal	*12%*	*12%*
Safety Assets	Core Fixed Income		17%
	Intermediate Aggregate	18%	0%
	Cash	1%	1%
	- Subtotal	*19%*	*18%*
	Total	100%	100%
Portfolio Metrics	**Expected Return[1]**	6.91%	7.09%
	Volatility	12.84%	11.56%
	Sharpe Ratio	0.312	0.363

Target Policy per IPS	Allocation	Portfolio #3 26% Alts. Cap w/MAC
Global Equity	**53%**	**36%**
Private Equity	**6%**	**12%**
Real Estate	**10%**	**10%**
Core	7.65%	6%
Non-Core	1.68%	3%
REITs	1.00%	1%
Strategic Investments	**12%**	**14%**
Equity (public + private)	4%	
Debt	1%	7%
Real Assets	1%	2%
Other (Diversifying, Flex, SS)	6%	5%
Return-Seeking Fixed Income	--	**10%**
US Fixed Income	**18%**	**17%**
Cash	**1%**	**1%**
Total	**100%**	**100%**

Key Changes:

- **Reduction in Global Equity**
- **Greater target to Private Equity**
- **More Non-Core RE, reduced Core**
- **Strategic Investments increase to 14%**
  - Re-allocating to PE and RE from SI to stand-alone asset classes
  - Does this change the role of SI?
- **Creation of Return-Seeking Fixed Income asset class**
- **Broaden Fixed Income mandate from Intermediate to Aggregate**

Percentages may not sum to total due to rounding.

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Strategic Investments Considerations

Example portfolio modification – impact on role of Strategic Investments?

Target Policy per IPS	Allocation	Portfolio #3 26% Alts. Cap w/MAC
Global Equity	**53%**	**36%**
Private Equity	**6%**	**12%**
Real Estate Core Non-Core REITs	**10%** 7.65% 1.68% 1.00%	**10%** 6% 3% 1%
Strategic Investments	**12%**	**14%**
Equity (public + private)	4%	
Debt	1%	7%
Real Assets	1%	2%
Other (Diversifying, Flex, SS)	6%	5%
Return-Seeking Fixed Income	**--**	**10%**
US Fixed Income	**18%**	**17%**
Cash	**1%**	**1%**
Total	**100%**	**100%**

Considerations:

- Modeling suggests benefits of transitioning certain existing exposures to long-term policy targets
- Asset allocation changes may modify role of Strategic Investments
- As role/objectives of Strategic Investments are modified, benchmarking should revisited
- There may be merit to adding underlying policy targets within Strategic Investments

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Summary Discussion & Next Steps

Asset Allocation Review Summary Conclusions

Opportunity exists to incrementally improve risk-adjusted returns

Key Take-Aways

- **Opportunity to improve risk-adjusted returns via additional diversification**
  - Reducing global equity in favor of alternatives and/or core fixed income can improve risk/reward expectations
  - Aggregate fixed income preferred over Intermediate Aggregate fixed income
- **Improved risk-adjusted results driven by greater long-term targets** to private equity, non-core real estate, infrastructure, hedge funds and/or new allocation to return-seeking fixed income
- **Increasing the cap on alternatives can further improve expected risk-adjusted results**
- While the results of the asset-liability study demonstrated that the current portfolio was well-constructed, additional portfolio enhancements will only serve to further improve the risk/reward characteristics of the fund
- Identifying the balance between desired risk reduction and return enhancement will inform asset allocation changes

Next Steps

- Gather IAC Feedback
- Revert back in 2023 with actionable asset allocation recommendations

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Appendix

- Portfolio Analysis Details
- Aggregate versus Intermediate Aggregate
- Return-Seeking Fixed Income
- 2022 A-L Study Funded Ratio Projection
- Aon Model Portfolios

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Portfolio Analysis Detail

Section 5: Appendix

Portfolio Analysis | 18% Alternatives Cap (w/existing asset classes)

Summary of portfolios modeled

	Current	Portfolio #1	Portfolio #2	Portfolio #3	Portfolio #4	Portfolio #5	Portfolio #6
Global Equity	54%	45%	46%	48%	50%	52%	58%
Private Equity	9%	10%	10%	10%	10%	10%	10%
Total Equity	**63%**	**55%**	**56%**	**58%**	**60%**	**62%**	**68%**
Core Real Estate	8%	6%	6%	6%	6%	6%	6%
Non-Core Real Estate	2%	3%	3%	3%	3%	3%	3%
REITs	1%	1%	1%	1%	1%	1%	0%
Real Estate	**10%**	**10%**	**10%**	**10%**	**10%**	**10%**	**9%**
Infrastructure	1%	2%	2%	2%	2%	2%	2%
Timber	0%	0%	0%	0%	0%	0%	0%
Commodities	0%	0%	0%	0%	0%	0%	0%
Real Assets	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**
Private Debt	1%	1%	1%	2%	2%	2%	6%
Multi-Asset Credit	0%	0%	0%	0%	0%	0%	0%
Return-Seeking Bonds	**1%**	**1%**	**1%**	**2%**	**2%**	**2%**	**6%**
Insurance Linked Securities (ILS)	1%	0%	0%	0%	0%	0%	0%
Hedge Funds	4%	5%	5%	4%	4%	4%	0%
Liquid Alternatives	**5%**	**5%**	**5%**	**4%**	**4%**	**4%**	**0%**
Core Fixed Income	0%	26%	25%	23%	21%	19%	14%
Intermediate Aggregate	18%	0%	0%	0%	0%	0%	0%
Cash	1%	1%	1%	1%	1%	1%	1%
Risk-Reducing Fixed Income	**19%**	**27%**	**26%**	**24%**	**22%**	**20%**	**15%**
Return[1]	6.9%	6.8%	6.9%	6.9%	7.0%	7.0%	7.2%
Volatility	12.8%	11.5%	11.9%	12.2%	12.5%	12.8%	13.9%
Sharpe	0.31	0.34	0.33	0.33	0.33	0.32	0.31
Total Alternatives	18%	18%	18%	18%	18%	18%	18%

Key Takeaways:

- Optimizer maxes alternatives at the expense of public equity
- Private equity and infrastructure are most favored within alternatives and maxed out with the remainder to private debt and hedge funds
- Outside of alternatives, non-core real estate is favored over public equity and core real estate
- Core fixed income is preferred over intermediate aggregate

[1] Expected returns are using Aon Investments Q3 2022 30-Year Capital Market Assumptions adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment). Assumptions do not include fees/expenses. All expected returns are geometric (long-term compounded; rounded to the nearest decimal) and net of investment fees. Expected returns presented are models and do not represent the returns of an actual client account. Not a guarantee of future results.

Percentages may not sum to total due to rounding

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Portfolio Analysis | 18% Alternatives Cap (with new asset classes)

Summary of portfolios modeled

	Current	Portfolio #1	Portfolio #2	Portfolio #3	Portfolio #4	Portfolio #5
Global Equity	54%	38%	41%	43%	46%	49%
Private Equity	9%	10%	10%	10%	10%	10%
Total Equity	**63%**	**48%**	**51%**	**53%**	**56%**	**59%**
Core Real Estate	8%	6%	6%	6%	6%	6%
Non-Core Real Estate	2%	3%	3%	3%	3%	3%
REITs	1%	1%	1%	1%	1%	0%
Real Estate	**10%**	**10%**	**10%**	**10%**	**10%**	**9%**
Infrastructure	1%	2%	2%	2%	2%	2%
Timber	0%	0%	0%	0%	0%	0%
Commodities	0%	0%	0%	0%	0%	0%
Real Assets	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**
Private Debt	1%	1%	1%	1%	1%	6%
Multi-Asset Credit	0%	10%	10%	10%	10%	9%
Return-Seeking Bonds	**1%**	**11%**	**11%**	**11%**	**11%**	**15%**
Insurance Linked Securities (ILS)	1%	0%	0%	0%	0%	0%
Hedge Funds	4%	5%	5%	5%	5%	0%
Liquid Alternatives	**5%**	**5%**	**5%**	**5%**	**5%**	**0%**
Core Fixed Income	0%	23%	20%	18%	15%	14%
Intermediate Aggregate	18%	0%	0%	0%	0%	0%
Cash	1%	1%	1%	1%	1%	1%
Risk-Reducing Fixed Income	**19%**	**24%**	**21%**	**19%**	**16%**	**15%**
Return[1]	6.9%	6.8%	6.9%	7.0%	7.1%	7.1%
Volatility	12.8%	10.9%	11.4%	11.9%	12.4%	12.8%
Sharpe	0.31	0.36	0.35	0.34	0.34	0.33
Total Alternatives	18%	18%	18%	18%	18%	18%

Key Takeaways:

- Optimizer maxes alternatives at the expense of public equity
- Private equity and infrastructure are most favored within alternatives and maxed out with the remainder to private debt and hedge funds
- Outside of alternatives, multi-asset credit and non-core real estate are favored over public equity and core real estate
- Core fixed income is preferred over intermediate aggregate

[1] Expected returns are using Aon Investments Q3 2022 30-Year Capital Market Assumptions adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment). Assumptions do not include fees/expenses. All expected returns are geometric (long-term compounded; rounded to the nearest decimal) and net of investment fees. Expected returns presented are models and do not represent the returns of an actual client account. Not a guarantee of future results.

Percentages may not sum to total due to rounding

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Portfolio Analysis | 26% Alternatives Cap
Summary of portfolios modeled

	Current	Portfolio #1	Portfolio #2	Portfolio #3	Portfolio #4	Portfolio #5
Global Equity	54%	35%	35%	36%	41%	46%
Private Equity	9%	12%	12%	12%	12%	12%
Total Equity	**63%**	**47%**	**47%**	**48%**	**53%**	**58%**
Core Real Estate	8%	6%	6%	6%	6%	6%
Non-Core Real Estate	2%	1%	3%	3%	3%	3%
REITs	1%	0%	0%	1%	0%	0%
Real Estate	**10%**	**7%**	**9%**	**10%**	**9%**	**9%**
Infrastructure	1%	2%	2%	2%	2%	2%
Timber	0%	2%	0%	0%	0%	0%
Commodities	0%	0%	0%	0%	0%	0%
Real Assets	**2%**	**4%**	**2%**	**2%**	**2%**	**2%**
Private Debt	1%	1%	4%	7%	8%	10%
Multi-Asset Credit	0%	10%	10%	10%	9%	4%
Return-Seeking Bonds	**1%**	**11%**	**14%**	**17%**	**17%**	**14%**
Insurance Linked Securities (ILS)	1%	5%	3%	0%	0%	0%
Hedge Funds	4%	5%	5%	5%	4%	2%
Liquid Alternatives	**5%**	**10%**	**8%**	**5%**	**4%**	**2%**
Core Fixed Income	0%	21%	19%	17%	14%	14%
Intermediate Aggregate	18%	0%	0%	0%	0%	0%
Cash	1%	1%	1%	1%	1%	1%
Risk-Reducing Fixed Income	**19%**	**22%**	**20%**	**18%**	**15%**	**15%**
Return[1]	6.9%	6.8%	7.0%	7.1%	7.2%	7.2%
Volatility	12.8%	10.3%	10.9%	11.6%	12.2%	12.8%
Sharpe	0.31	0.38	0.37	0.36	0.35	0.34
Total Alternatives	18%	26%	26%	26%	26%	26%

Key Takeaways:

- Optimizer maxes alternatives at the expense of public equity
- Private equity and infrastructure are most favored within alternatives and maxed out with the remainder to private debt and hedge funds
- Outside of alternatives, multi-asset credit and non-core real estate are favored over public equity and core real estate
- Core fixed income is preferred over intermediate aggregate

[1] Expected returns are using Aon Investments Q3 2022 30-Year Capital Market Assumptions adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment). Assumptions do not include fees/expenses. All expected returns are geometric (long-term compounded; rounded to the nearest decimal) and net of investment fees. Expected returns presented are models and do not represent the returns of an actual client account. Not a guarantee of future results.

Percentages may not sum to total due to rounding

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Aggregate vs. Intermediate Aggregate

Section 5: Appendix

Fixed Income Policy

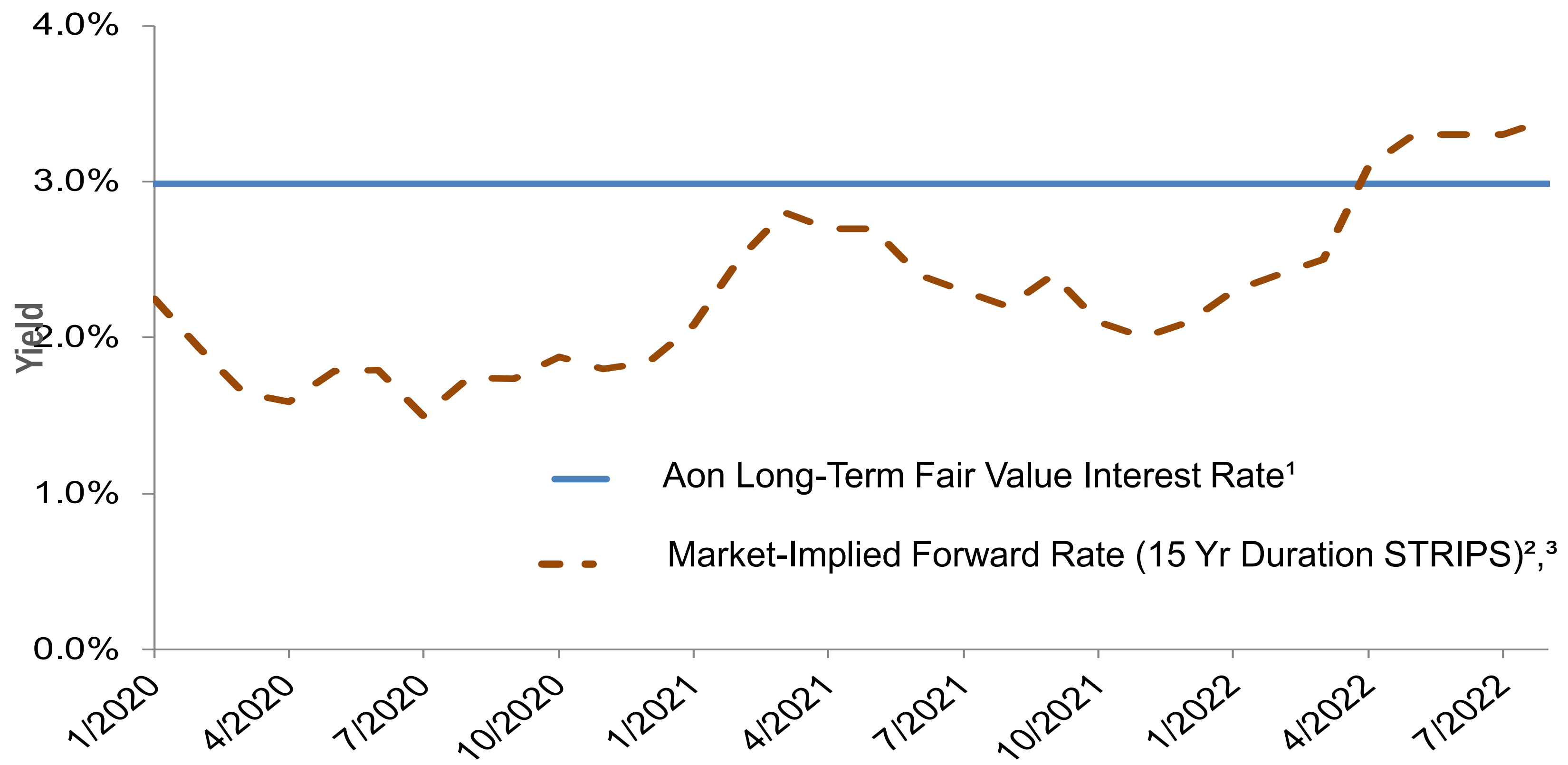
Background

- Aon supports broadening the fixed income mandate from the Intermediate Aggregate to the full Aggregate
  - o FRS moved to an intermediate fixed income mandate in October 2013 with the goal of providing diversification and mitigating interest rate risk
- As interest rates have risen recently, having an intermediate duration mandate has benefitted performance
- Given where interest rates are today, we see less reason to be underweight duration

Index Returns As of 10/31/2022	YTD
BB Intermediate Aggregate	-11.7%
BB Aggregate	-15.7%

10-Year US Treasury Yield

Aon Long-Term Fair Value vs. Market Implied Forward Rate



Sources: FactSet, Bloomberg Barclays, Aon; all data as of 08/31/2022

[1] Pricing information for Aon spot treasury yield curve is sourced from Bloomberg Barclays, which publishes pricing indices in one year maturity bands from which Aon calculates composite yields and durations. Aon then linearly interpolates between these data points to create a piecewise linear yield curve. See Appendix for index definitions.

[2] Aon Investments Long-term Fair Value interest rates are based on expectations for long-term steady states for the Federal Funds Rate, real term premium, and inflation risk premium.

[3] Market forward rates are based on implied forward rates extrapolated from Aon spot treasury yield curve.

Fixed Income Policy

Prefer Aggregate Over Intermediate Aggregate

- Strategically, the aggregate mandate is preferred to allow for greater opportunity to add value given the ability to invest across the full market opportunity set

As of 11/16/22	Intermediate Agg.	Aggregate
Maturity Breakout		
1-3 Yr.	26%	22%
3-5 Yr.	20%	17%
5-7 Yr.	21%	17%
7-10 Yr.	33%	27%
10+	0%	18%
# of issues	9,399	12,671
Duration	4.6 years	6.3 years
Yield to Worst	4.56%	4.62%
Market Cap	$20.2t	$24.3t
YTD Return*	-11.7%	-15.7%

As of 10/31/2022

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Return-Seeking Fixed Income

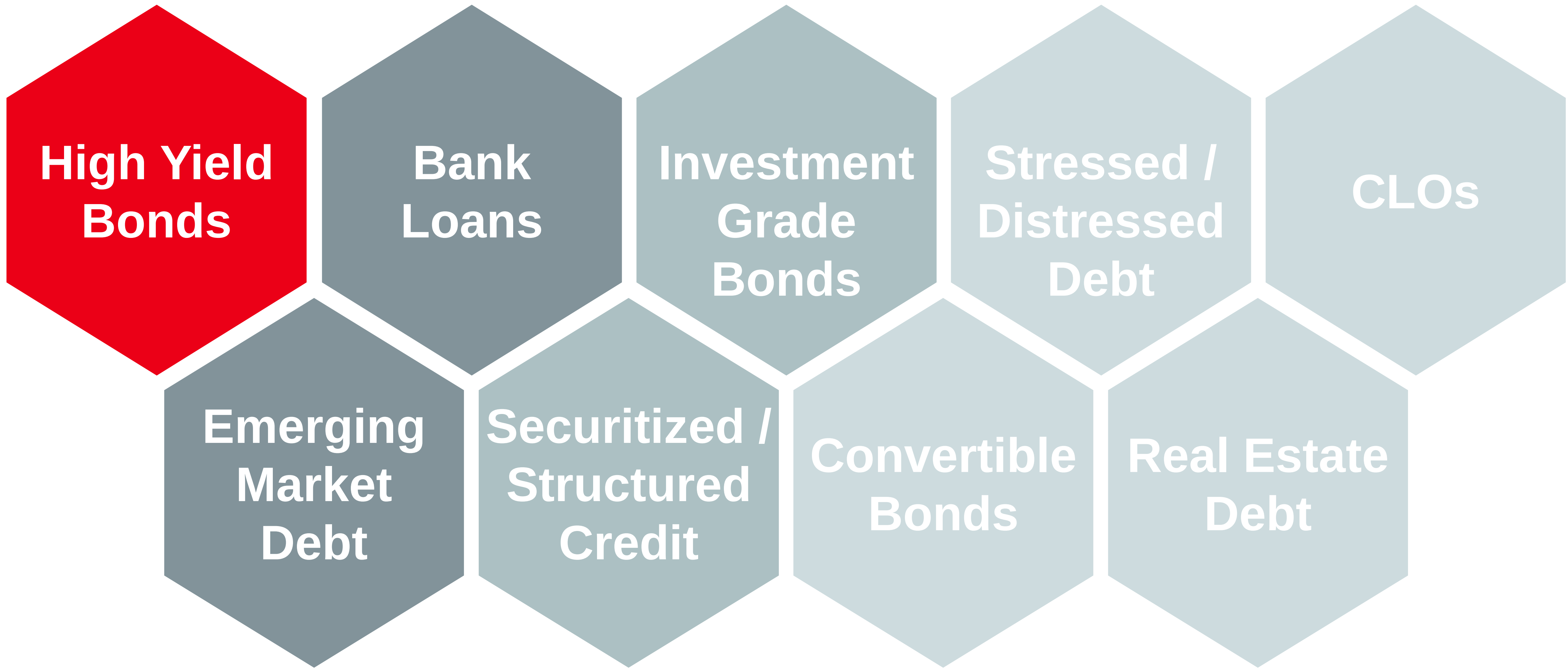
Section 5: Appendix

Return-Seeking Fixed Income Opportunity Set

Common Sectors Included in Return-Seeking Fixed Income allocations

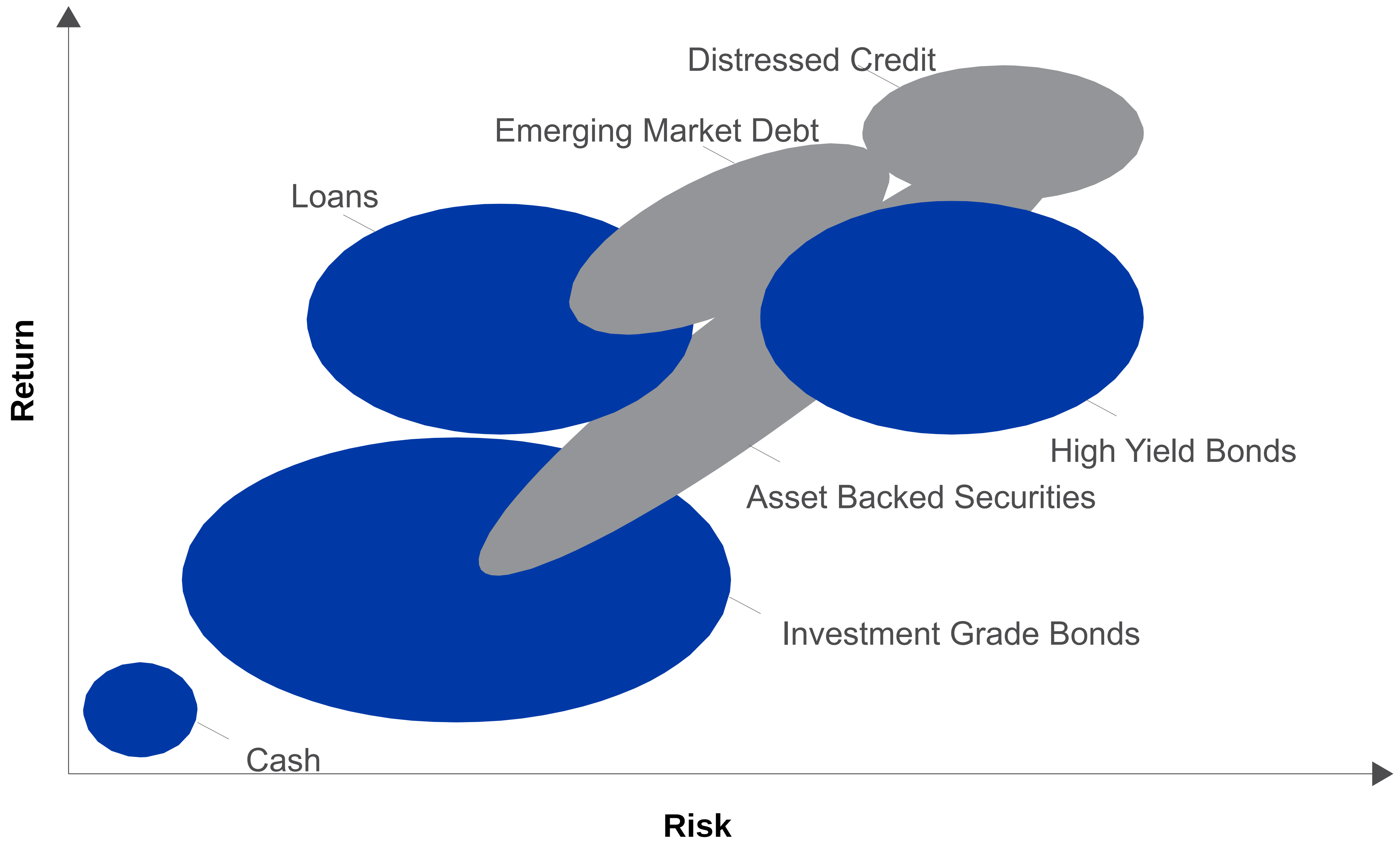
- Multi-asset credit (MAC) is a common approach towards implementation
- While some of these sectors may be found within existing dedicated mandates, the extent of exposure is likely not as wide as a MAC strategy
- MAC funds primarily seek to receive income from managing credit beta, either from a simple combination of a few credit classes, or from more complex combinations of global credit beta. Where possible, they should also seek opportunities to invest both up, and down, company capital structures.

Common Credit Sectors



Source: Aon Investments, illustrative only

Risk/Return Profiles



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Benefits of Multi-Asset Credit (MAC) Strategies

Broaden Opportunity Set

- MAC strategies include a diverse set of sub-asset classes, many of which may not otherwise be included in a plan's portfolio. This can introduce unique risk and return profiles to a portfolio, and potentially reduce overall correlations within a portfolio.

Optimize Portfolio

- A large portion of alpha is expected to come through bottom-up security selection, however the inclusion of a broader set of unique sub-asset classes allows the manager to tactically adjust the weights of these sectors to further add value.
- Favoring certain sectors over others depending on where a manager sees value can help enhance the portfolio's return or reduce its risk.

Streamline Manager Lineup

- Allowing managers to invest in a wide variety of sub-asset classes can allow for the reduction or elimination of narrower dedicated strategies that overlap with these opportunity sets. Thus, manager oversight requirements can be simplified through a condensed set of mandates, while still maintaining the ability for outperformance.

Multi-Asset Credit Statistics

- Multi-Asset Credit driven by credit cycle, expected to offer attractive risk-adjusted returns over a full cycle and can serve to reduce overall portfolio volatility
- Over time, despite high correlation to equities, MAC* has exhibited low equity beta and lower volatility than global equities

3-Year

	Return	Standard Deviation	Beta	Sharpe Ratio	Actual Correlation
MAC Benchmark*	-1.39	9.84	0.42	-0.15	0.85
MSCI AC World IMI (Net)	3.64	19.82	1.00	0.25	1.00

5-Year

	Return	Standard Deviation	Beta	Sharpe Ratio	Actual Correlation
MAC Benchmark*	0.75	7.99	0.38	-0.01	0.83
MSCI AC World IMI (Net)	4.16	17.47	1.00	0.25	1.00

10-Year

	Return	Standard Deviation	Beta	Sharpe Ratio	Actual Correlation
MAC Benchmark*	2.56	6.46	0.37	0.32	0.81
MSCI AC World IMI (Net)	7.25	14.18	1.00	0.52	1.00

15-Year

	Return	Standard Deviation	Beta	Sharpe Ratio	Actual Correlation
MAC Benchmark*	4.33	8.42	0.40	0.46	0.82
MSCI AC World IMI (Net)	4.18	17.17	1.00	0.28	1.00

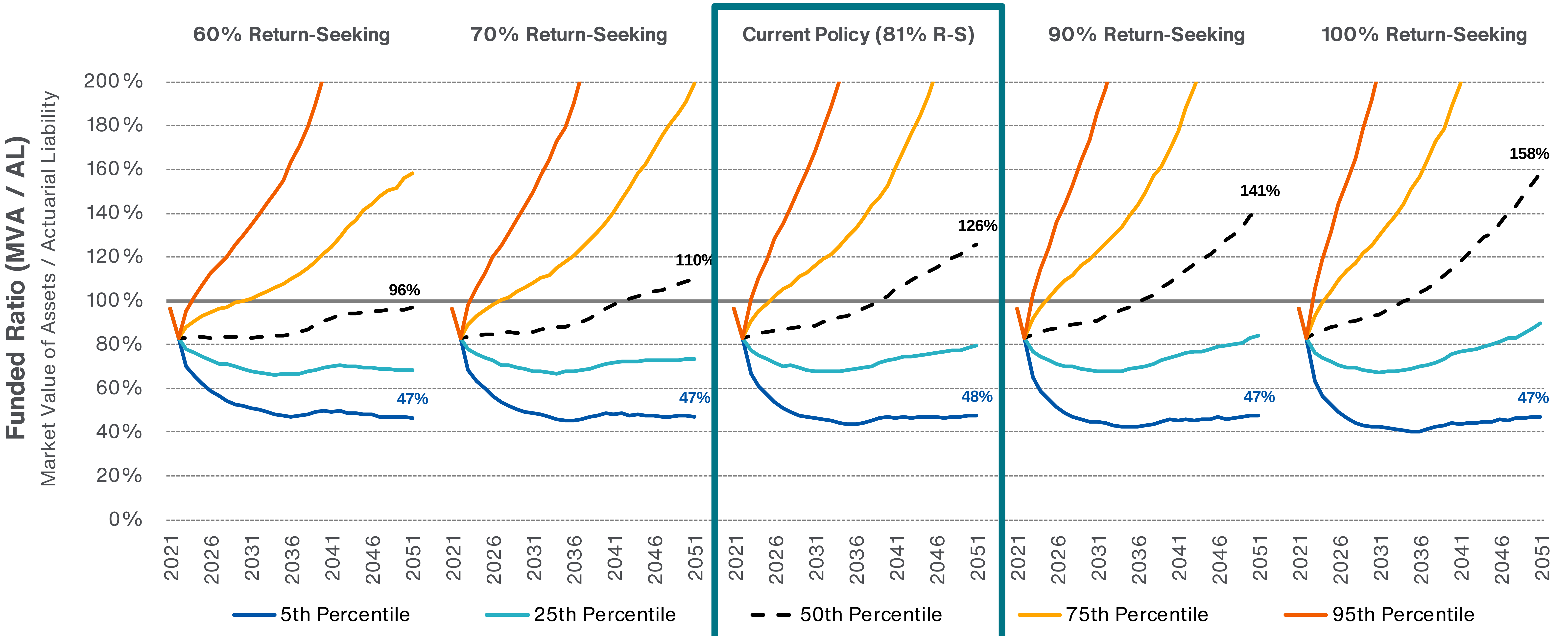
*33.3% ICE BofA U.S. High Yield Index, 33.3% Morningstar LSTA US Leveraged Loan Index, and 33.3% EMD Debt Blend (40% JPM GBI-EM Global Diversified, 30% JPM EMBI Global Diversified, 30% JPM CEMBI Broad Diversified)
Data through 9/30/22

2022 A-L Study Funded Ratio Projection

Section 5: Appendix

Asset-Liability Funded Ratio Projection Impact

Results from 2022 Asset-Liability Study



Strategy	60% Return-Seeking			70% Return-Seeking			Current Policy (81% R-S)			90% Return-Seeking			100% Return-Seeking		
Year	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051
5th Percentile	51%	49%	47%	49%	48%	47%	47%	47%	48%	45%	45%	47%	43%	44%	47%
25th Percentile	68%	70%	68%	68%	72%	74%	68%	74%	79%	68%	75%	84%	67%	77%	89%
50th Percentile	83%	92%	97%	86%	98%	110%	89%	105%	126%	91%	111%	141%	94%	118%	158%
75th Percentile	101%	125%	159%	108%	140%	199%	116%	160%	>200%	122%	178%	>200%	130%	199%	>200%
95th Percentile	135%	>200%	>200%	150%	>200%	>200%	169%	>200%	>200%	186%	>200%	>200%	>200%	>200%	>200%

* Projections assume constant 6.80% discount rate for pension liabilities for all investment policies studied

Key Takeaways:

- A-L Study indicates portfolios with at least 70% R-S allocation are expected to achieve 100% funded status within 25 years
- Downside risk (5th percentile outcomes) across portfolios is similar
- Analysis here reflects the current FRS asset allocation across various R-S allocations
- Asset allocation changes will impact A-L projections at the margin, assuming similar R-S allocations (70-90%)
- Can be further studied as desired portfolios are narrowed

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Aon Model Portfolios

Section 5: Appendix

Aon's Model Portfolios

Reflects our best ideas for a typical pension plan

Aon's Model Portfolios reflect Aon's best ideas for a typical total return defined benefit plan across a range of circumstances noted below

- Intended as a ***starting point*** for asset allocation analysis and decision-making and to be customized based on client-specific needs and circumstances

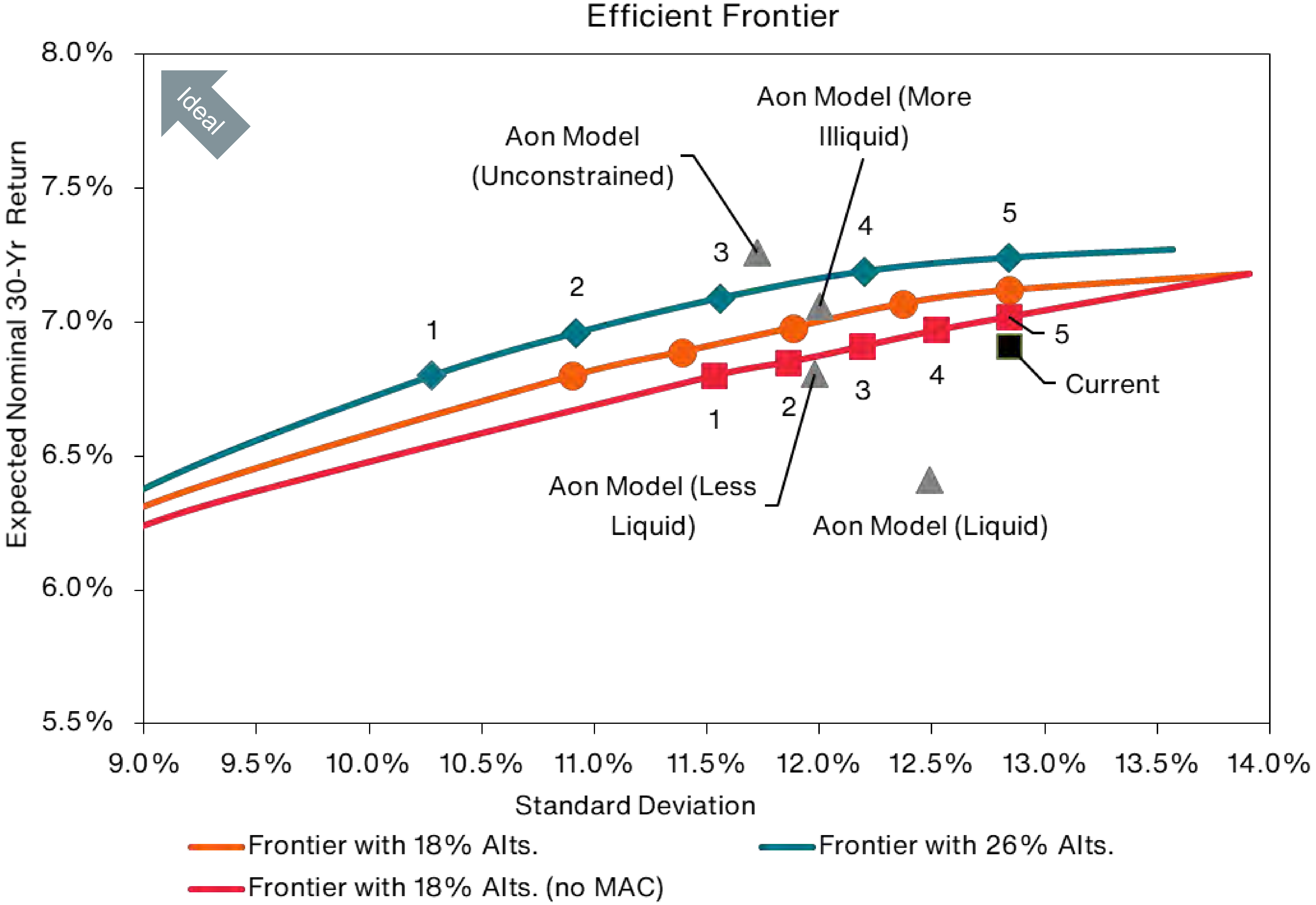
	Liquid	Less Liquid	More Illiquid	Unconstrained
Complexity	Simple			Complex
Costs	Low Cost			Higher Cost
Resources	Light Resources			Deep Resources
Governance	Modest Governance			Strong Governance
Liquidity	More Liquid			Less Liquid

- As a general statement, moving from left-to-right on the above spectrum increases both investment portfolio return potential and risk-adjusted return potential, based on our capital markets modelling
  - It also increases the reliance on "alpha" (manager skill) and reduces the emphasis on market "beta" (market risk premiums); alpha is not guaranteed

Portfolio Analysis | Aon's Model Portfolios

Aon's model portfolios span the frontiers being studied

Asset Class	Aon Model (Liquid)	Aon Model (Less Liquid)	Aon Model (More Illiquid)	Aon Model (Unconstrained)
Equity				
- Public Equity	61%	51%	46%	35%
- Private Equity	0%	5%	10%	15%
- Subtotal	61%	56%	56%	51%
Liquid Alternatives				
- Subtotal	0%	5%	8%	8%
Return-Seeking Fixed Income				
- Multi-Asset Credit	8%	8%	5%	5%
- Private Debt	0%	0%	3%	5%
- Subtotal	8%	8%	8%	10%
Real Assets				
- Real Estate (Core)	13%	8%	5%	5%
- Real Estate (Non-Core)	0%	3%	3%	4%
- Infrastructure	0%	3%	3%	4%
- Subtotal	13%	13%	10%	13%
Risk-Reducing				
- Cash	1%	1%	1%	1%
- Core / Core Plus Fixed Income	18%	18%	18%	18%
- Subtotal	19%	19%	19%	19%
Expected Return[1]	**6.41%**	**6.81%**	**7.06%**	**7.26%**
Expected Risk[1]	12.49%	11.98%	12.00%	11.73%
Sharpe Ratio	0.281	0.326	0.347	0.372



[1] Based on SBA's custom 6/30/2022 30-year capital market assumptions

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Aon Investments USA Inc.
200 E. Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer

Real Estate Update

Steve Spook
Senior Investment Officer

Investment Advisory Council Meeting
December 13, 2022

SBA FLORIDA
STATE BOARD OF ADMINISTRATION

Quarterly Highlights: Real Estate

Market Overview

- Indices continue strong performance. ODCE 1-year 28.3% (net), as of 6/30/2022, is the highest since inception.
- Returns expected to moderate sharply going forward.
- Appreciation is strongly bifurcated with industrial, residential and alternatives the leading performers. Retail and office continue to be out of favor.
- Rising interest rates have led to a repricing of asset values.
- Transaction volume has come to a halt.
- Negative leverage in most sectors.
- Lenders becoming extremely selective or retreating from market.

Performance Summary

- Total Asset Class
  - 1 year: 22.5% (Benchmark 24.0%)
  - 3 year: 11.6% (Benchmark 10.9%)
- Contributors – 1 year
  - Principal Investments selection: Office/Retail/Industrial
  - Principal Investments allocation: Retail Underweight/Alternatives Overweight
  - Externally Managed drivers: Core Industrial/Core Diversified/REITs
- Detractors – 1 year
  - Principal Investments allocation: Office Overweight/Industrial Underweight
  - Externally Managed detractors: International/Opportunistic

Risks and Issues to Consider

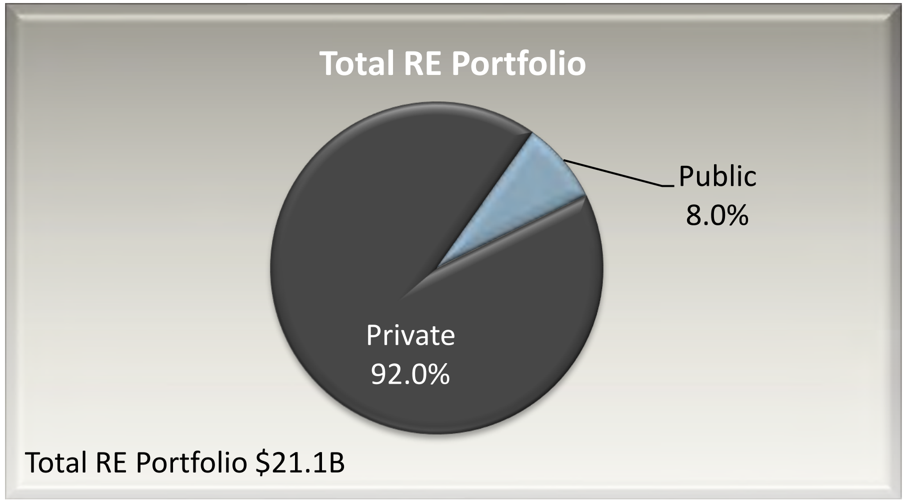
- Interest rates
- Availability of credit
- Inflation – Consumer buying power and construction costs
- Remote work
- Regulatory risk
- Growth of ecommerce

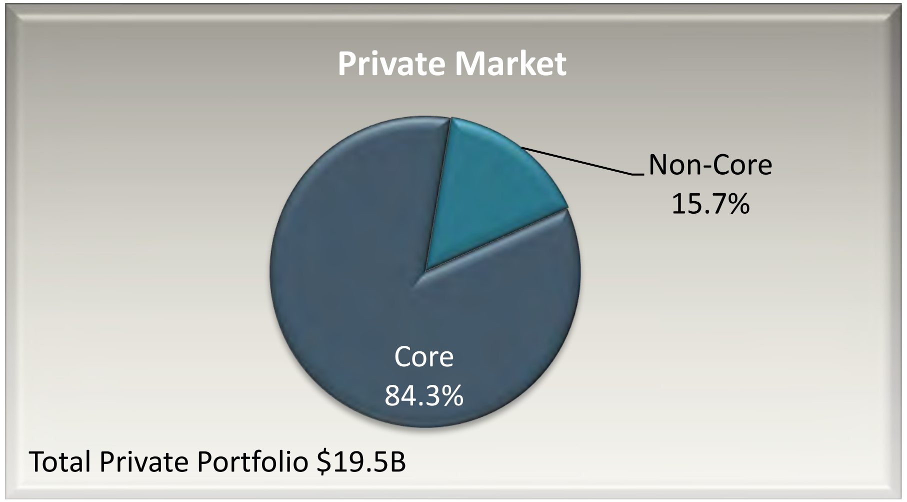
Opportunities and Priorities

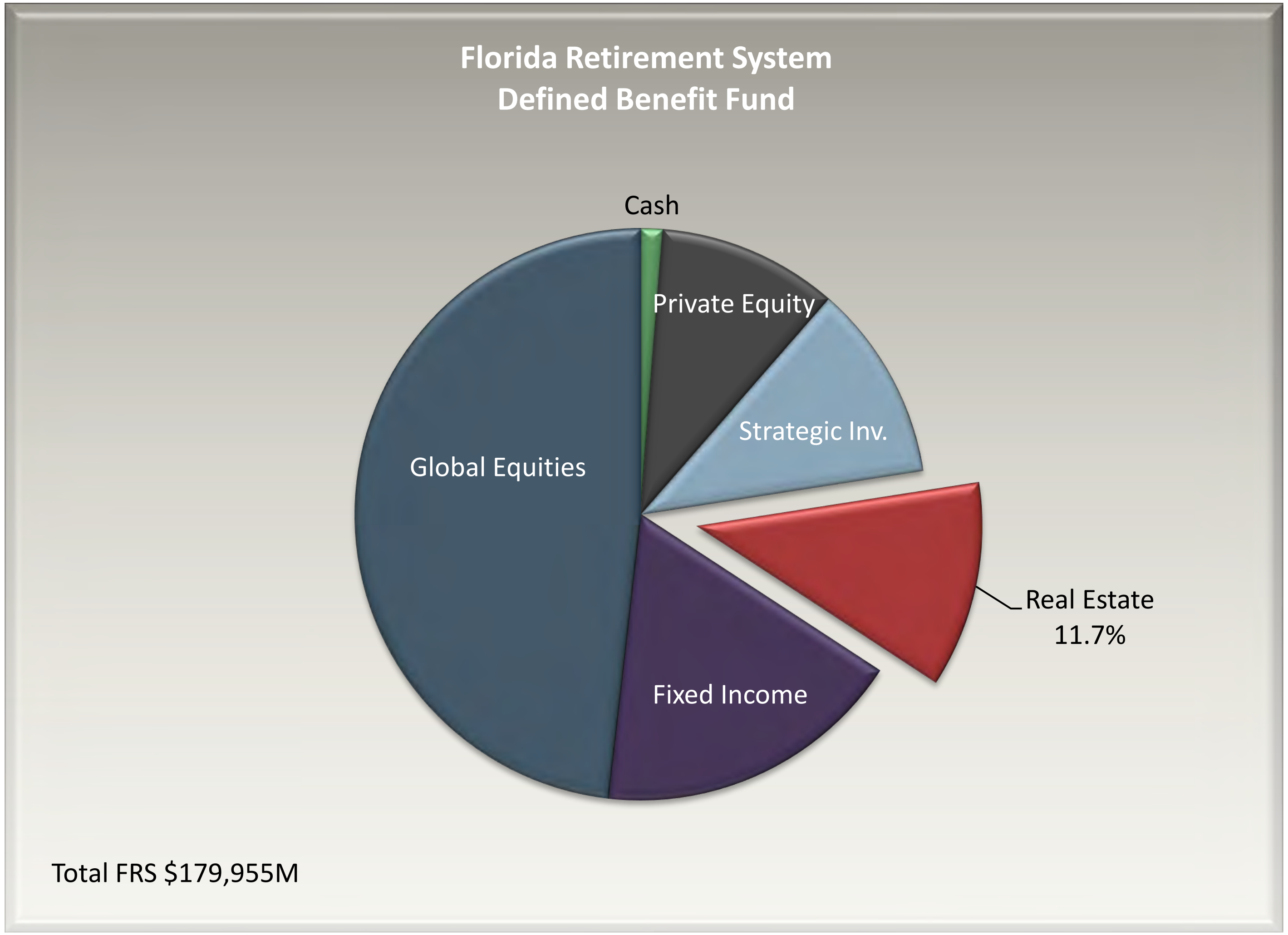
- Increase industrial/living/alternatives allocation
- Master Credit Facility
- Co-investments

Real Estate Portfolio Sector Allocation

as of 06/30/2022

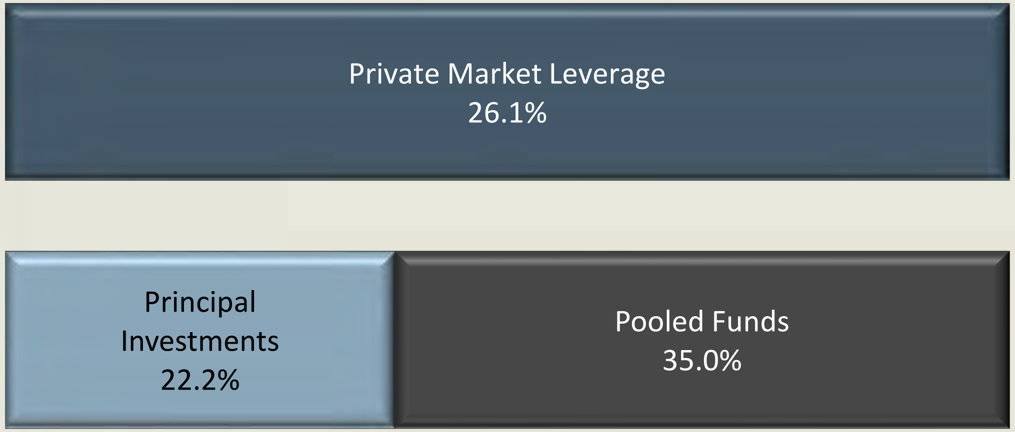


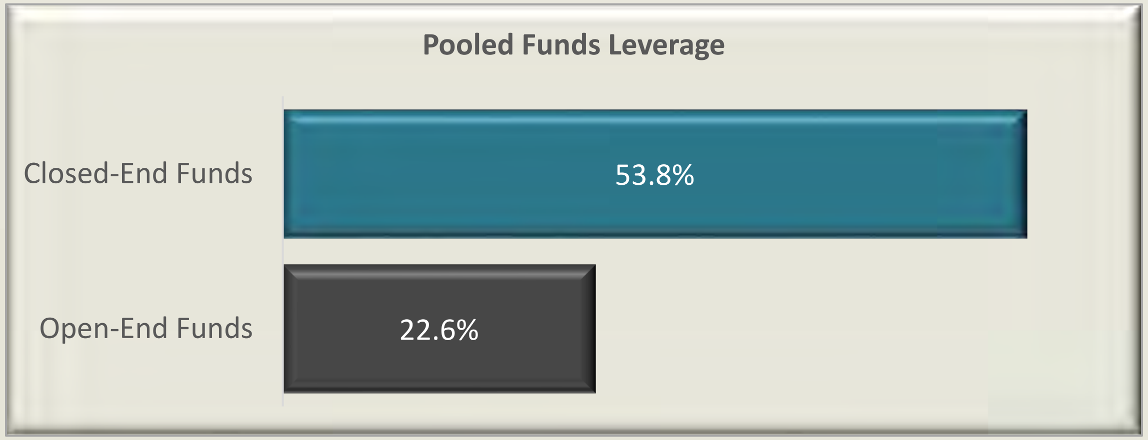




Private Market Leverage

as of 06/30/2022



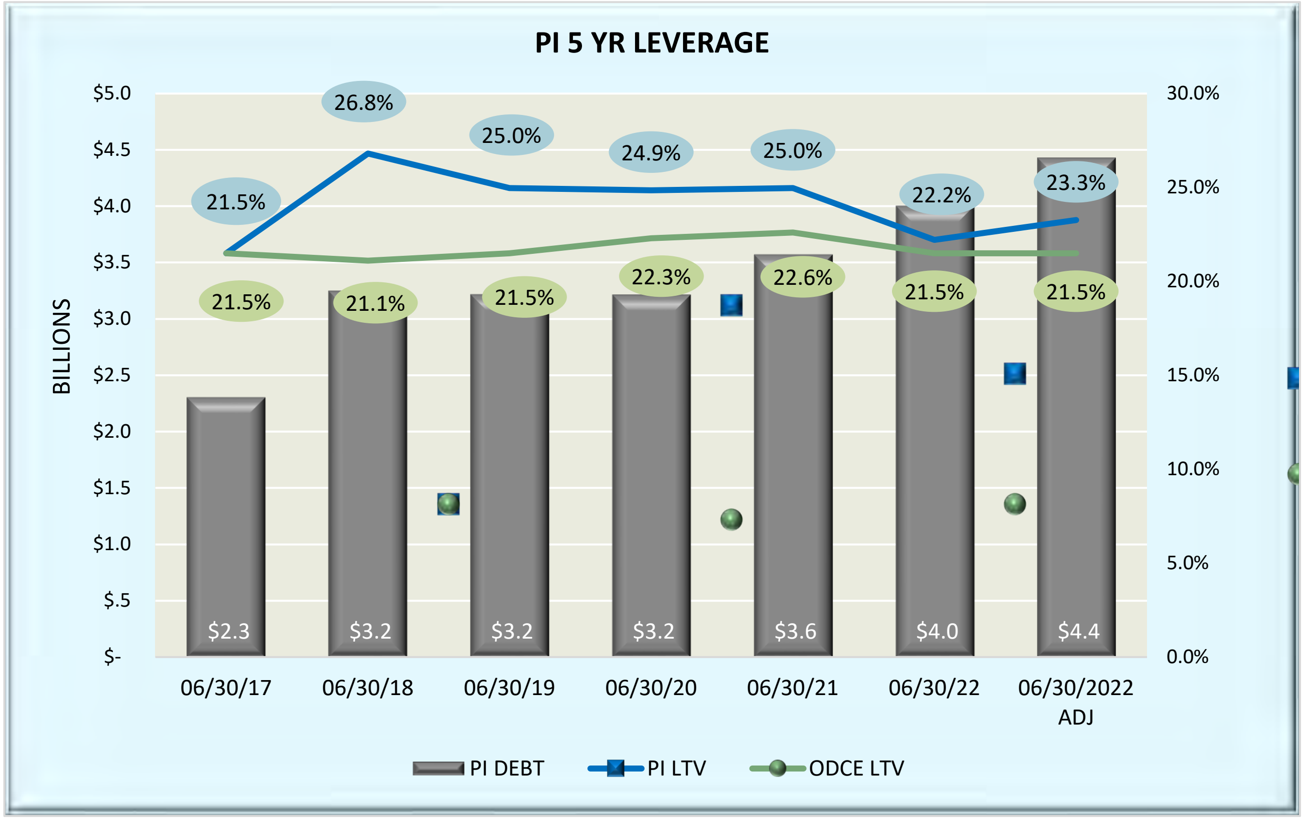


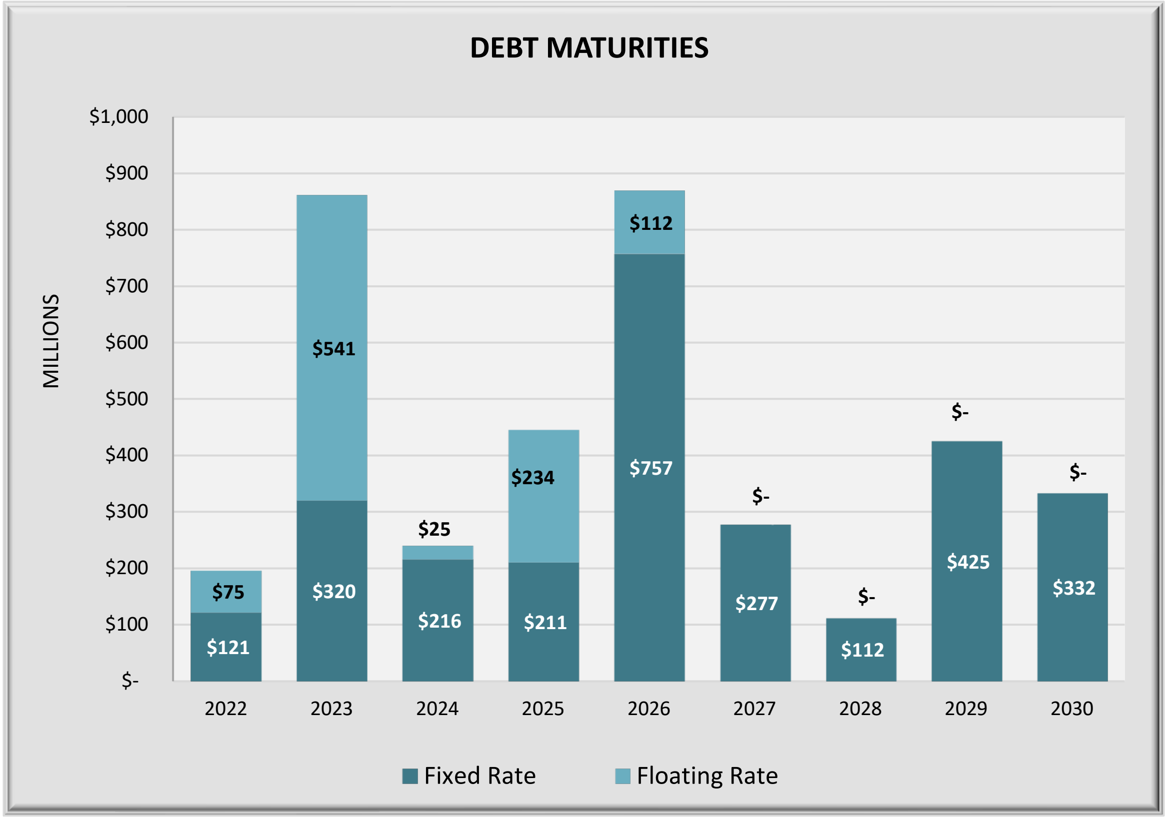
Investment Portfolio Guidelines:

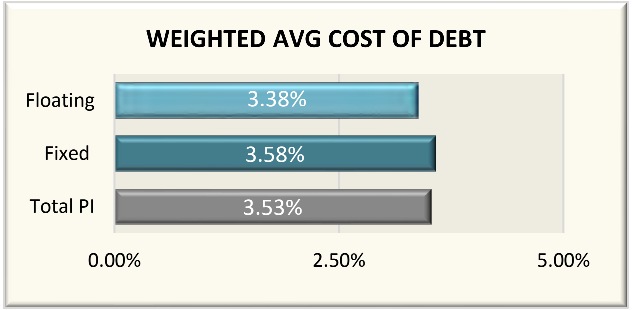
- Private Market Portfolio leverage limited to 40% Loan to Value (LTV).
- Principal Investments Portfolio leverage limited to 30% Loan to Value (LTV).

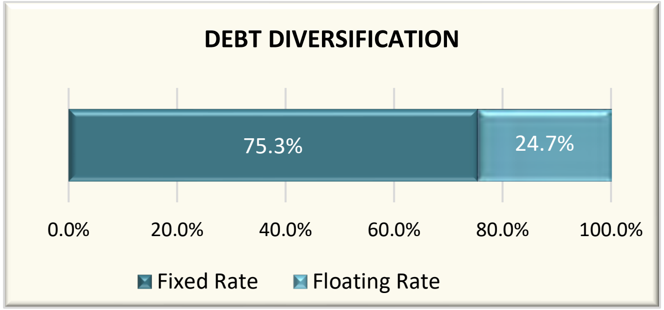
Principal Investments Leverage

as of 06/30/2022







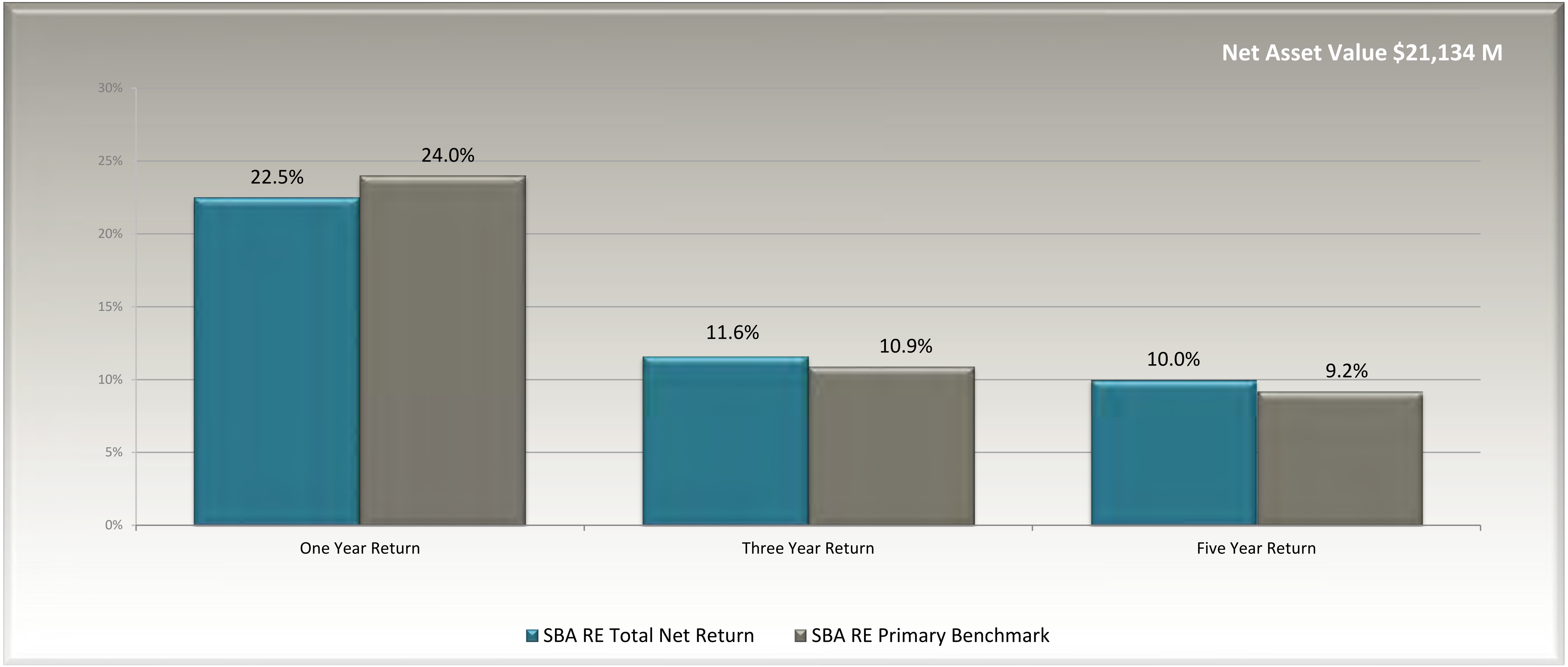


Investment Portfolio Guidelines
- Portfolio Leverage limited to 30% Loan To Value (LTV)
- Individual Asset Level limited to 50% LTV
- JV Individual Asset limited to 70% LTV
- Nonrecourse to the SBA

PI NAV at 06/30/22: $14 billion

Total Real Estate Portfolio Performance

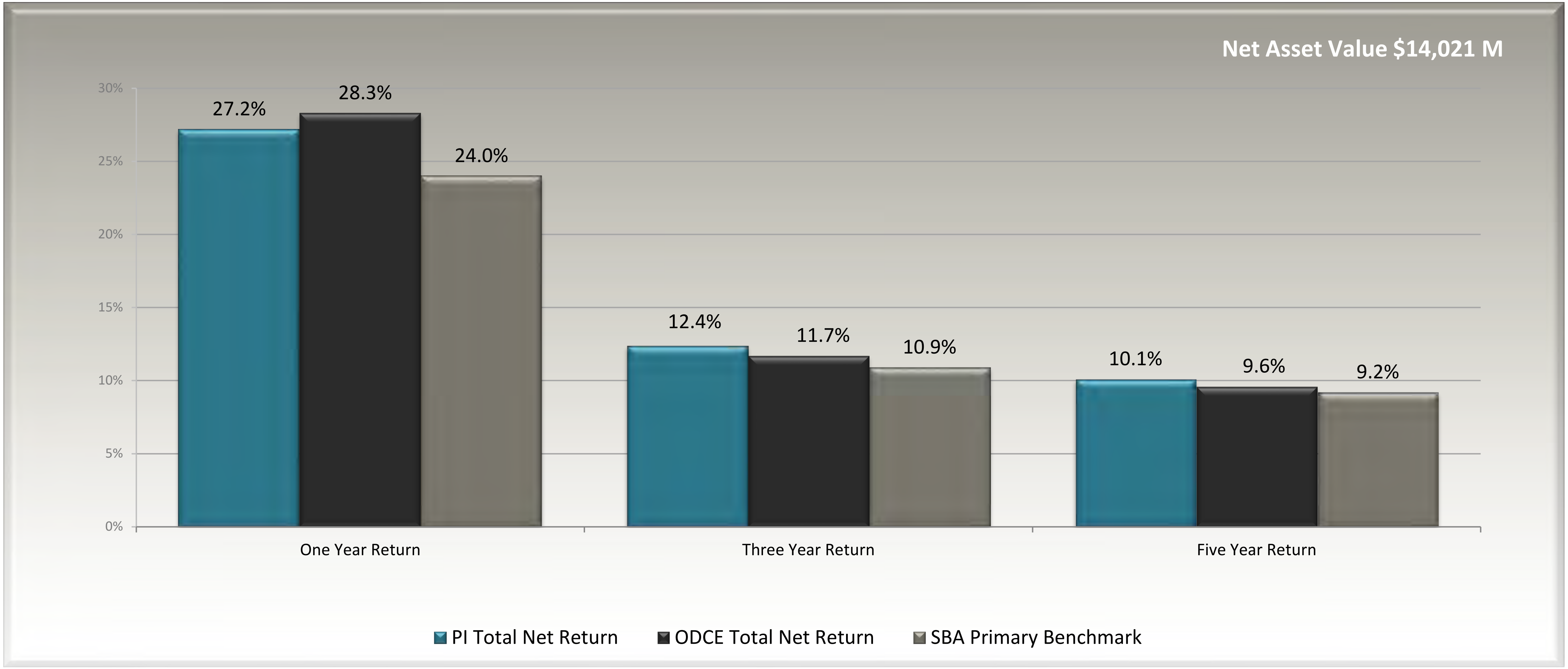
as of 06/30/2022



Source: The Townsend Group

Principal Investments Performance

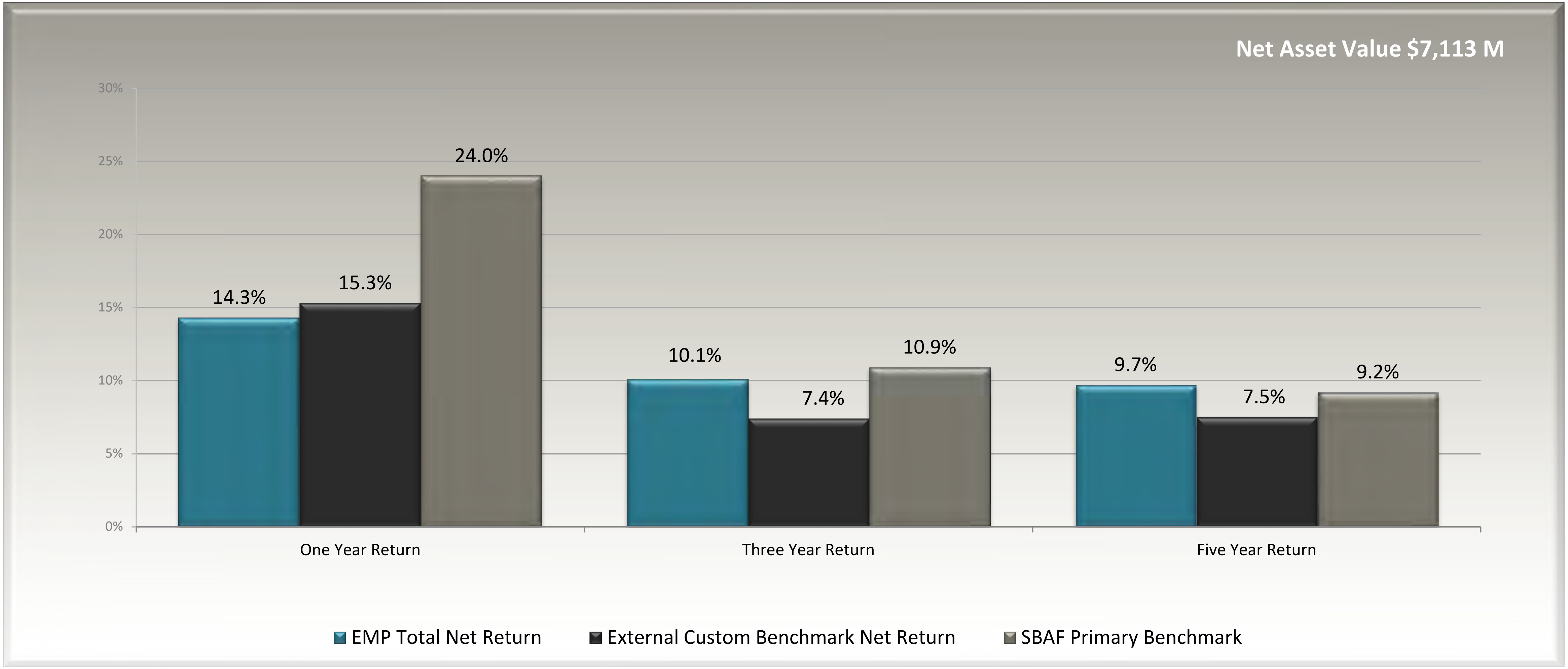
as of 06/30/2022



Source: The Townsend Group

Externally Managed Portfolio Performance

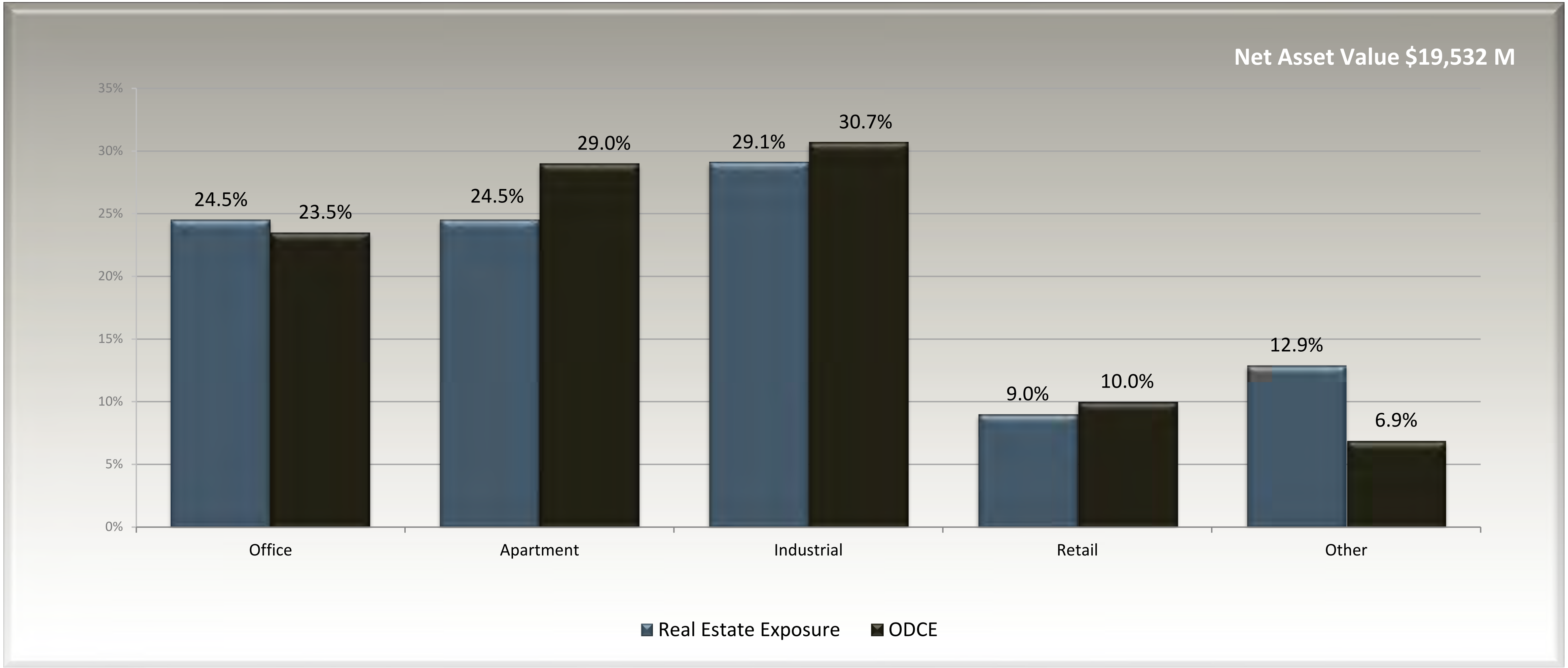
as of 06/30/2022



Source: The Townsend Group

Private Market Property Type Diversification

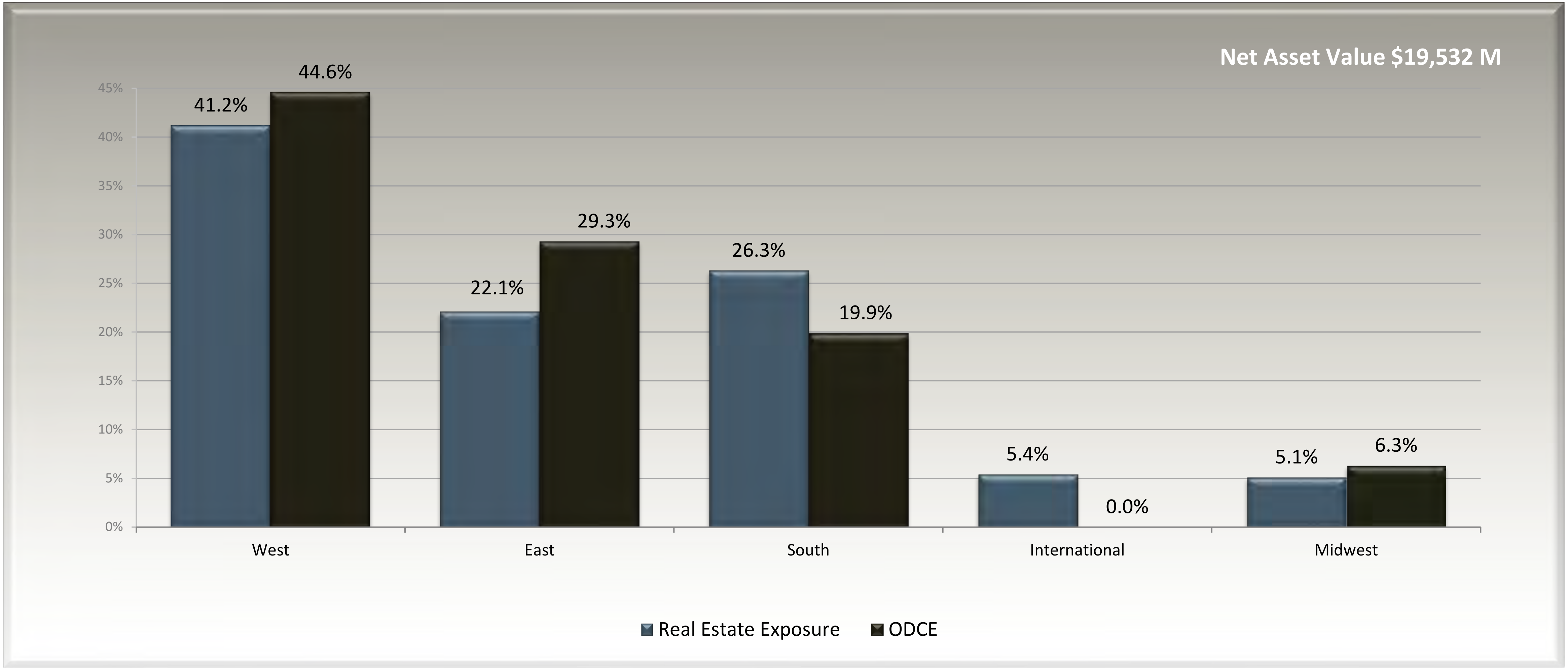
as of 06/30/2022



Source: The Townsend Group

Private Market Geographic Diversification

as of 06/30/2022



Source: The Townsend Group

Recent Activity

(Since Last IAC Report)

Principal Investments	Externally Managed
Acquisitions (Price/Equity) • Industrial $278 million/$227 million • Medical Office $137 million/$71 million **Dispositions (Price/Equity)** •N/A	**New Commitments** • N/A **Redemptions** • N/A

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Global Equity Update

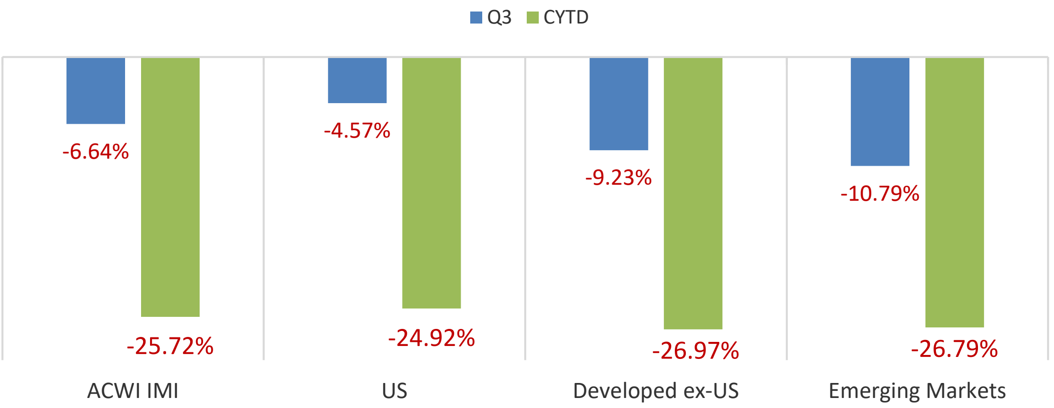
Tim Taylor, Senior Investment Officer

December 13, 2022

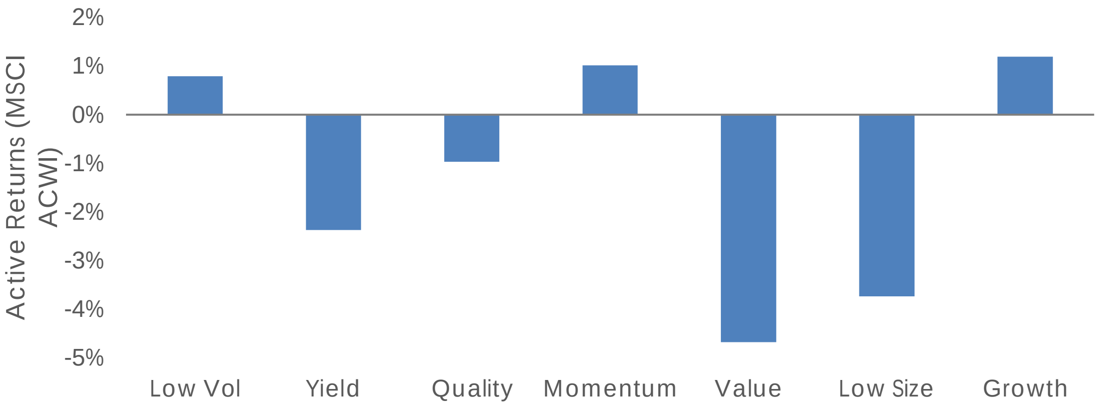
SBA FLORIDA STATE BOARD OF ADMINISTRATION

Q3 2022 Market Environment

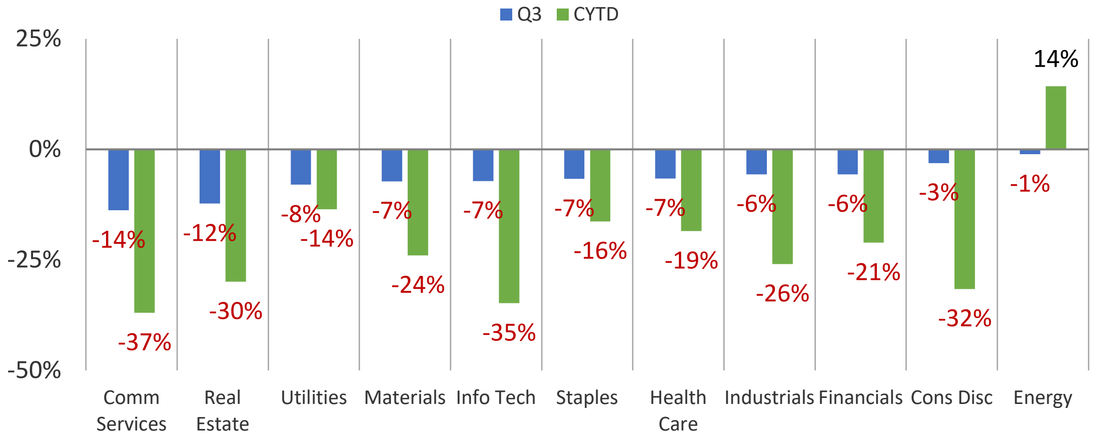
Global Markets Continue Decline



Low Vol, Momentum & Growth Factors Outperformed



Energy the Only Place to Hide



Q3 2022 Global Market Dynamics

- Global equity markets declined for the third consecutive quarter and extended year-to-date losses. A short-lived summer rally ended in mid-August after the Federal Reserve reaffirmed its commitment to fighting inflation and raising interest rates.
- In Q3, US indexes outperformed as foreign equities declined sharply due to the US dollar's steep rise against other currencies.
- All sectors declined in Q3 with Communication Services and Real Estate posting double-digit negative returns.
- Calendar year-to-date, Energy is the only sector with positive returns.

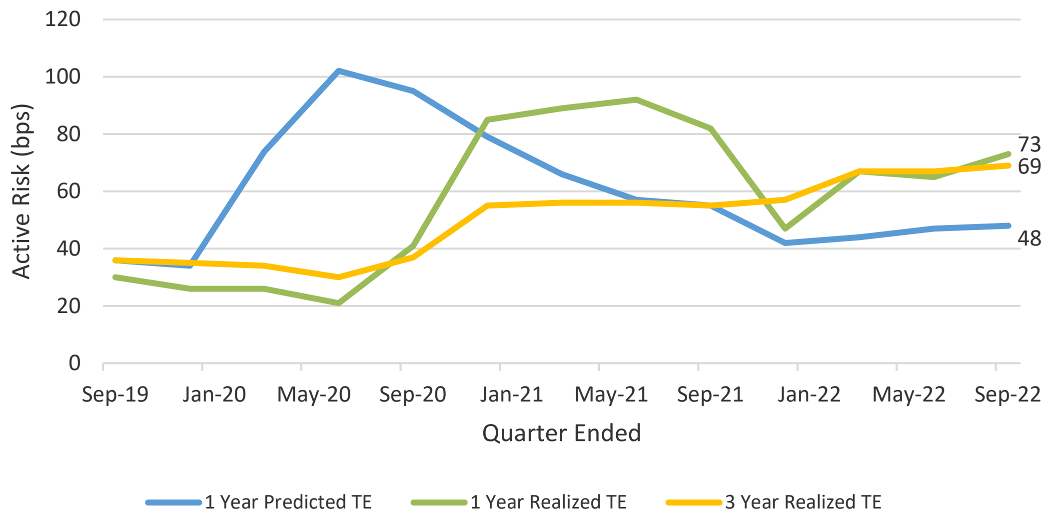
SBA FLORIDA STATE BOARD OF ADMINISTRATION

Note: As of September 30, 2022. Based on MSCI ACWI IMI for regional and sector returns. Factor returns are compared to the MSCI ACWI benchmark.

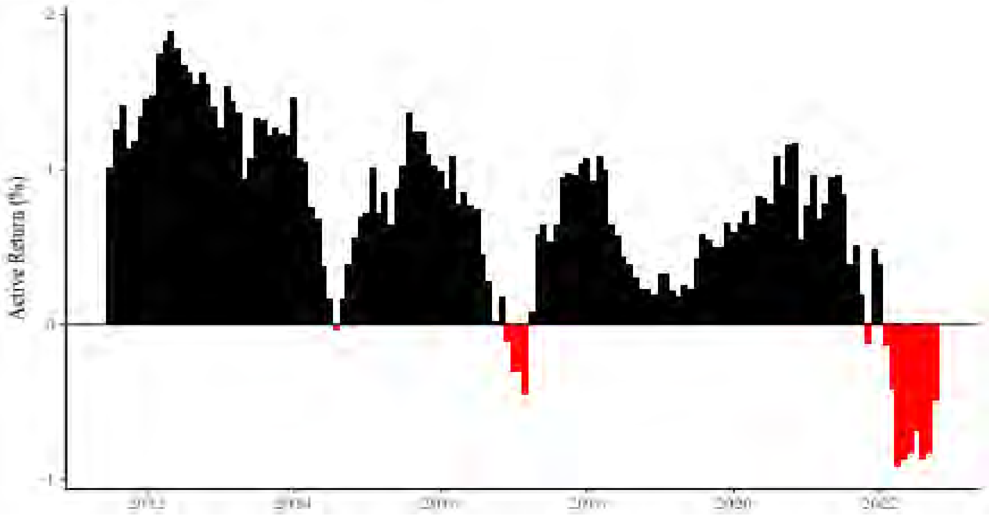
Aggregate Performance Summary

Total Global Equity	EMV ($M)	Q3 '22	CYTD	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI
Asset Class Return	$78,486	-6.53%	-26.10%	-21.66%	3.86%	4.44%	7.60%	7.80%	8.84%
vs Target		-6.65%	-25.71%	-21.17%	3.66%	4.17%	7.28%	7.28%	8.17%
Excess Return		**0.12%**	**-0.38%**	**-0.49%**	**0.20%**	**0.26%**	**0.32%**	**0.52%**	**0.66%**
Tracking Error					0.69%	0.57%	0.55%	0.54%	0.55%
Return/Risk (IR)					0.22%	0.39%	0.50%	0.85%	1.08%

Realized Active Risk Increased in Q3 2022



Global Equity has outperformed the benchmark, net of fees, in 121 of 136 rolling one-year periods



Note: All returns through 9/30/2022. Inception 7/1/10. Benchmark is Custom Iran Sudan Free MSCI ACWI IMI Index. Realized Risk is compared to prior 1 year Predicted Risk.

Active Strategy Performance Summary

	Excess Returns by Aggregate					What Happened in Q3 2022
Active Strategy Group	**% of Asset Class**	**Q3 2022**	**1 Year**	**3 Year**	**5 Year**	**Recent Performance Drivers**
Foreign Developed Large Cap	20%	0.28%	-2.31%	1.03%	0.79%	In an inflationary environment contributions came from the defensive elements of the aggregate and exposure to industry dominant companies with compound growth and pricing power. Also additive was stock selection in the Energy sector.
Emerging Markets	11%	0.40%	-0.95%	0.57%	0.55%	Relative outperformance during the quarter was driven by an underweight to, and stock selection within, China. An overweight to Brazil was also a positive contributor.
Dedicated Global	10%	-0.62%	-0.61%	-2.62%	-1.51%	The aggregate lagged due to stock selection in the Information Technology, Consumer Discretionary, and Health Care sectors. An underweight to Energy also continued to detract from performance
Foreign Developed Small Cap	4%	0.24%	-1.08%	-0.12%	-0.45%	Growth-exposed mandates modestly led as early-quarter belief in a dovish Fed sent longer-duration names higher. Subsequently various momentum signals began a solid run of performance benefitting strategies targeting, or incidentally tied, to the factor.
US Large Cap	4%	1.18%	3.26%	1.42%	0.02%	The aggregate continues to provide strong downside protection, led by strong stock selection in Information Technology and Industrials during the period. A negative contribution from an Energy underweight was offset by both an overweight to industrials, and a below-benchmark position in Communication Services.
US Small Cap	2%	-1.42%	2.26%	1.17%	1.68%	Positive tilts to value and higher quality hurt as did the lack of exposure to longer term growth. An underweight to the Biotech and Pharmaceuticals industries notably detracted in a quarter that rewarded speculative names.
Total Active Aggregate	**50%**	**0.19%**	**-1.28%**	**0.10%**	**0.13%**	

Note: All returns through 9/30/2022. Excess returns are relative to strategy group benchmark. Weights are relative to total equity assets under management.

Update on Initiatives

Provide Alpha

•Continued to implement structural enhancements.

•During Q3 2022 completed restructuring and funded three Emerging Markets Small Cap Strategies.

•Streamlined and enhanced process to identify and review "non-traditional" strategies that add alpha and/or diversification to the Global Equity asset class.

•Began reviewing and addressing recommendations in Callan's Asset Class Structure Review.

Provide Liquidity

•Global Equity continues to be a significant provider of liquidity to support benefit payments.

•Raised $1.2 billion in Q3 2022 and $3.4 billion for calendar year-to-date 2022. GE has provided $50 billion of liquidity since July 2010.

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Private Equity Asset Class Update

John Bradley, SIO Private Equity

Investment Advisory Council

December 13, 2022

Market/Portfolio Update

- Market/Portfolio Update:
  - Market
    - Private equity activity continues to slow
      - Rising interest rates and declining stock markets continue to weigh on the PE market
      - Q3 global LBO volume down over 60% while European LBO volume down 90%
      - Fundraising activity continues to slow; Q3 down 20%
  - Portfolio
    - PE portfolio down 5.3% for Q2 2022, longer-term performance remains strong on an absolute and relative basis
    - Venture (-10.7%) and European buyout (-5.8%) strategies were the worst performers during Q2
    - 2022 net cash flow (as of 10/31/22) $322 million
      - $1.83 billion in GP distributions
      - $1.51 billion of contributions
    - Q3 contributions down 30% from Q2, distributions down 37%

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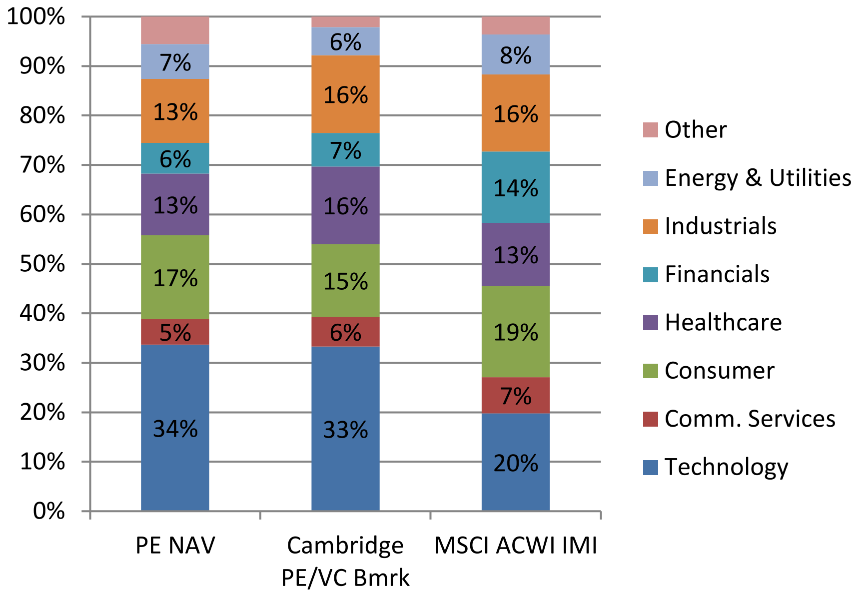
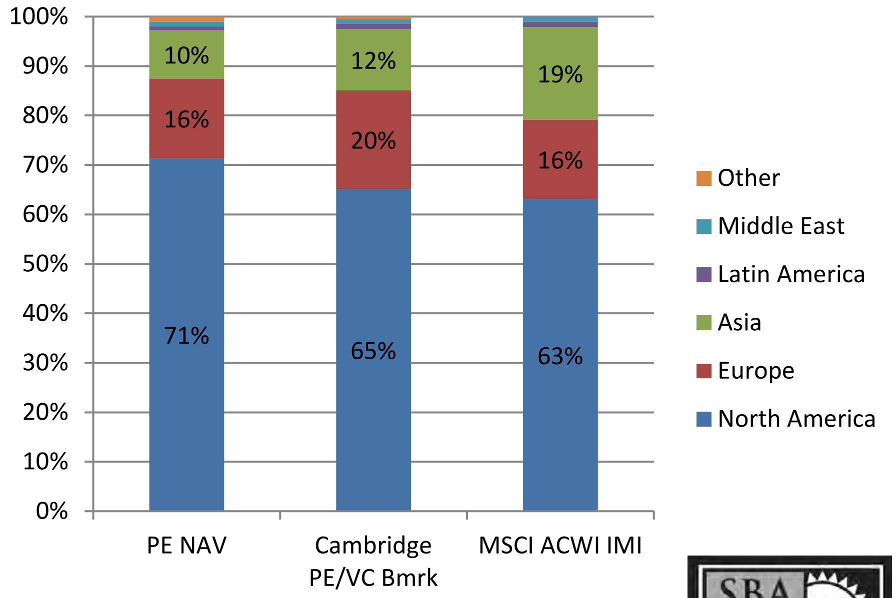
Sector and Geographic Exposure

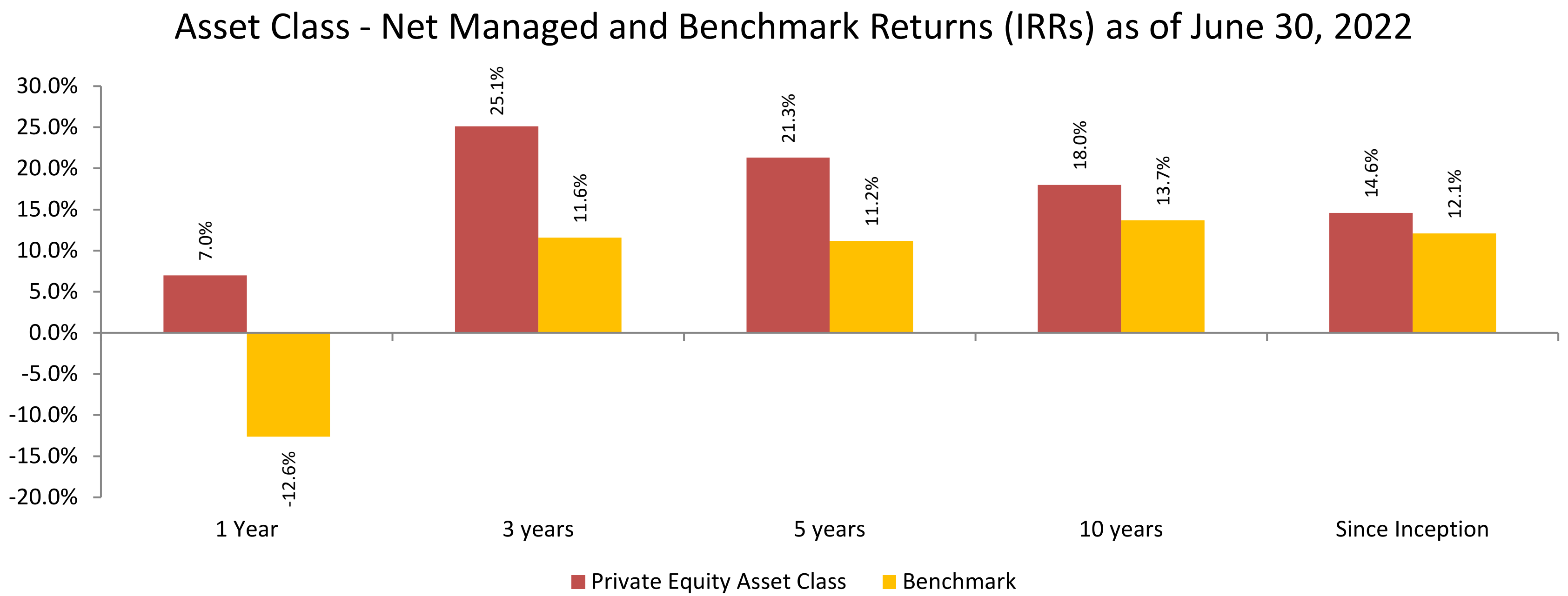
As of June 30, 2022





Source: Cambridge Associates

Private Equity Performance



Note: Asset class IRR performance data is provided by Cambridge Associates. The PE benchmark is currently the Custom Iran- and Sudan-free ACWI IMI + 300bps. From July 2010 through June 2014 the benchmark was the Russell 3000 + 300 bps. Prior to July 2010 , the benchmark was the Russell 3000 + 450 bps. Prior to November 1999, Private Equity was part of the Domestic Equities asset class and its benchmark was the Domestic Equities target index + 750 bps.

Please see Appendix for performance of the Legacy or pre-asset class portfolio.

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Sub-strategy Performance

As of June 30, 2022

	1yr	3yr	5yr	10yr	Since Inception	Cambridge Median
U.S. Buyouts	8.2%	19.9%	18.6%	17.1%	13.2%	14.0%
Non-U.S. Buyouts	1.1%	19.8%	17.8%	17.2%	13.4%	13.8%
U.S. Venture	3.8%	39.8%	30.9%	22.2%	17.4%	17.1%
U.S. Growth Equity	2.8%	25.0%	22.7%	19.4%	16.0%	15.4%
Non-U.S. Growth Equity	3.1%	14.9%	13.4%	12.5%	10.8%	15.1%
Distressed/Turnaround	18.2%	22.1%	16.0%	16.1%	18.6%	11.7%
Secondaries	20.2%	21.7%	16.9%	14.2%	16.0%	18.1%
Total PE Asset Class	7.0%	25.1%	21.3%	18.0%	14.6%	14.4%

Sub-strategy returns and benchmark returns provided by Cambridge Associates and are calculated net of all fees and expenses. The Cambridge benchmark is the weighted average median return for the respective sub-strategy.

2022 Commitment Activity

- Commitments totaling $1.1 billion to 12 funds through November 30, 2022
  - – $802 million to 8 buyout funds
    - Small 25%, Middle-Market 37%, Large 37%
  - – $115 million to 3 venture funds
  - – $150 million to 1 secondary fund
  - – Geographic Focus
    - US 63%, Europe 9%, Asia 0%, Global 28%

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Appendix

Private Equity Aggregates

Dollar-Weighted Performance (IRRs) as of June 30, 2022

	Inception Date	Market Value (in Millions)	1yr	3yr	5yr	10yr	Since Inception
Total Private Equity	1/27/1989	$17,485.4	7.0%	25.1%	21.2%	17.6%	11.1%
Custom Iran- and Sudan-free ACWI IMI +300bps			-12.6%	11.6%	11.2%	13.7%	10.9%
Private Equity Legacy Portfolio	1/27/1989	$2.6	0.0%	0.0%	-6.9%	-19.4%	3.7%
Custom Iran- and Sudan-free ACWI IMI +300bps			-13.7%	8.9%	10.1%	13.8%	9.7%
Private Equity Asset Class Portfolio	8/31/2000	$17,482.8	7.0%	25.1%	21.3%	18.0%	14.6%
Custom Iran- and Sudan-free ACWI IMI +300bps			-12.6%	11.6%	11.2%	13.7%	12.1%

Note: Asset class IRR performance data is provided by Cambridge Associates. The PE benchmark is currently the Custom Iran- and Sudan-free ACWI IMI + 300bps. From July 2010 through June 2014 the benchmark was the Russell 3000 + 300 bps. Prior to July 2010 , the benchmark was the Russell 3000 + 450 bps. Prior to November 1999, Private Equity was part of the Domestic Equity asset class and its benchmark was the Domestic Equity target index + 750 bps.

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FLORIDA RETIREMENT SYSTEM (FRS) INVESTMENT PLAN

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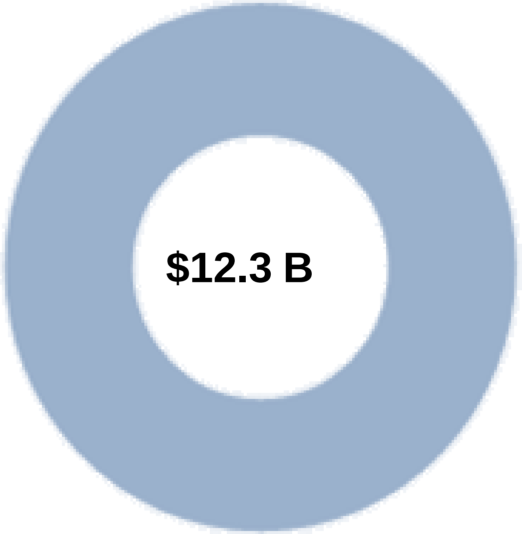
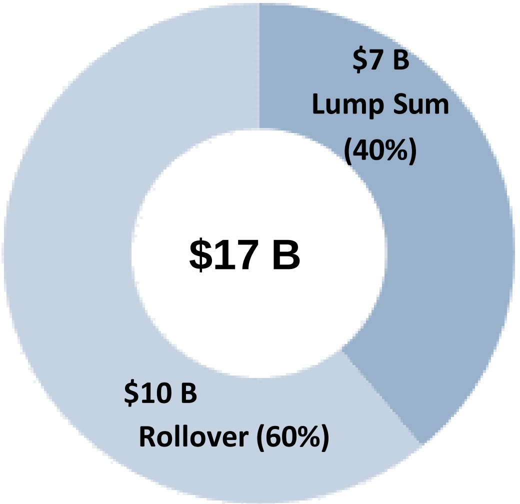
FRS INVESTMENT PLAN SNAPSHOT

(as of September 30, 2022)

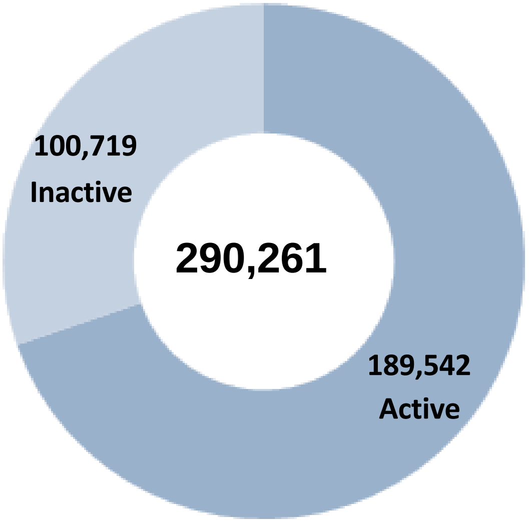
Assets



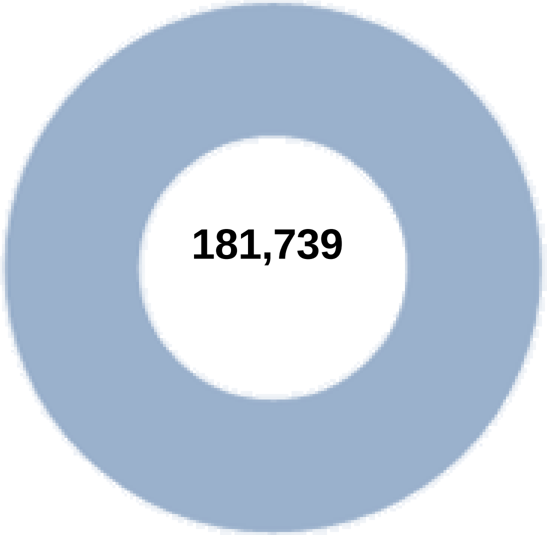
Distributions



Members



Retirees

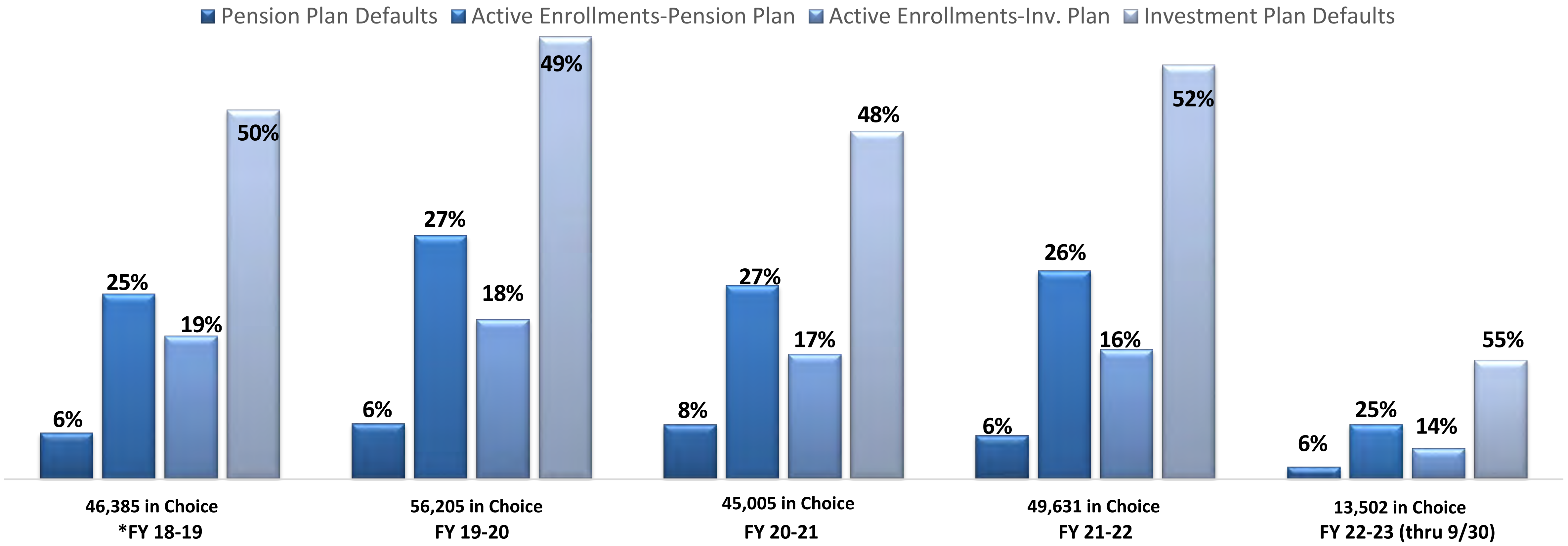


Average Statistics

Female 64% Male 36%
Age 46
$42,229 balance
5 years of service

PLAN CHOICE STATISTICS

(as of September 30, 2022)



*Default Change to Investment Plan (except for Special Risk)

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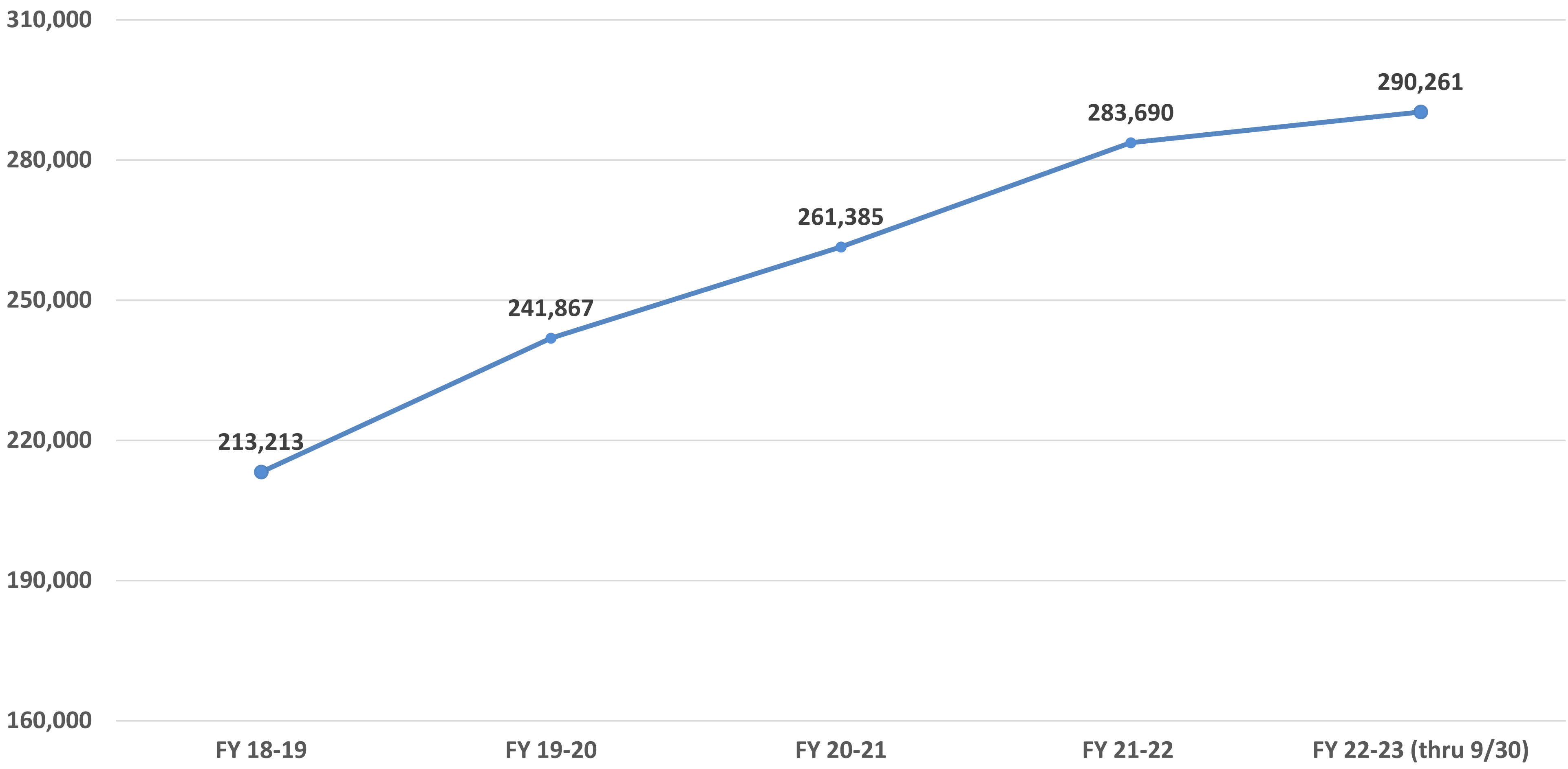
INVESTMENT PLAN MEMBERSHIP GROWTH



ASSET CLASS PERFORMANCE

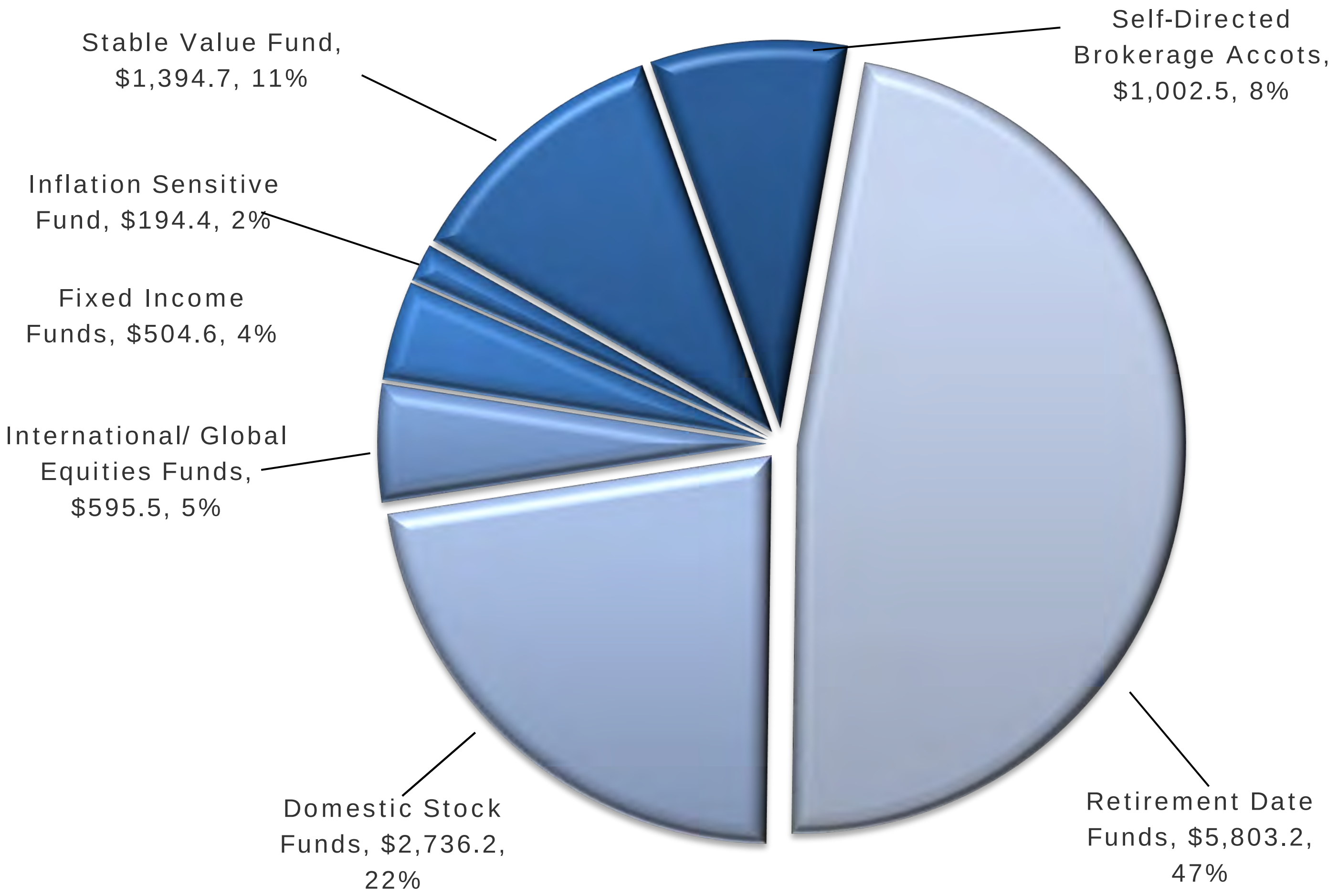
(as of September 30, 2022)

	QTD	FYTD	1 Yr	3 Yr	5 Yr	Incept.
Total Fund	-4.87%	-4.87%	-16.38%	3.09%	4.07%	6.30%
Stable Value	0.48%	0.48%	1.69%	1.95%	2.05%	2.00%
Inflation Protected Assets & TIPS*	-6.06%	-6.06%	-7.58%	2.58%	2.60%	1.35%
Fixed Income	-4.04%	-4.04%	-14.27%	-2.44%	0.31%	3.77%
Domestic Equities	-4.36%	-4.36%	-19.77%	6.56%	7.46%	9.49%
Global & International Equities	-9.87%	-9.87%	-26.49%	-0.24%	0.42%	6.54%
Retirement Date Funds	-5.95%	-5.95%	-16.20%	2.74%	3.67%	4.27%
Real Estate	-1.00%	-1.00%	14.93%	10.46%	n/a	9.39%
TF x RDFs	-3.68%	-3.68%	-16.58%	3.42%	4.42%	5.09%

*Prior to 2014, TIPS only.
Retirement Date Funds Inception July 1, 2014
TF x RDFs Inception July 1, 2014
Real Estate was added January 1, 2018
Stable Value Fund Inception July 1, 2021

FRS INVESTMENT PLAN AUM

(by Asset Class—in $millions, as of September 30, 2022)



Asset alocation is a result of member investment selection

MyFRS FINANCIAL GUIDANCE PROGRAM

(October 1, 2021-September 30, 2022)

INVESTMENT EDUCATION

EY FINANCIAL PLANNER CALLS	FINANCIAL PLANNING WORKSHOPS	ATTENDANCE FINANCIAL WORKSHOPS	WEBSITE HITS	WEBSITE CHATS
348,769	599	23,737	2,668,148	126,385
+13%	-13%	-12%	-20%	+4%

(% change from previous 12 months)

40 Annuities purchased last 12 months - $4.9 million
219 Total Annuities purchased inception to date - $27.3 million

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QUESTIONS

Investment Programs & Governance (IP&G)

Michael McCauley
Senior Officer

Investment Advisory Council Meeting – December 13, 2022

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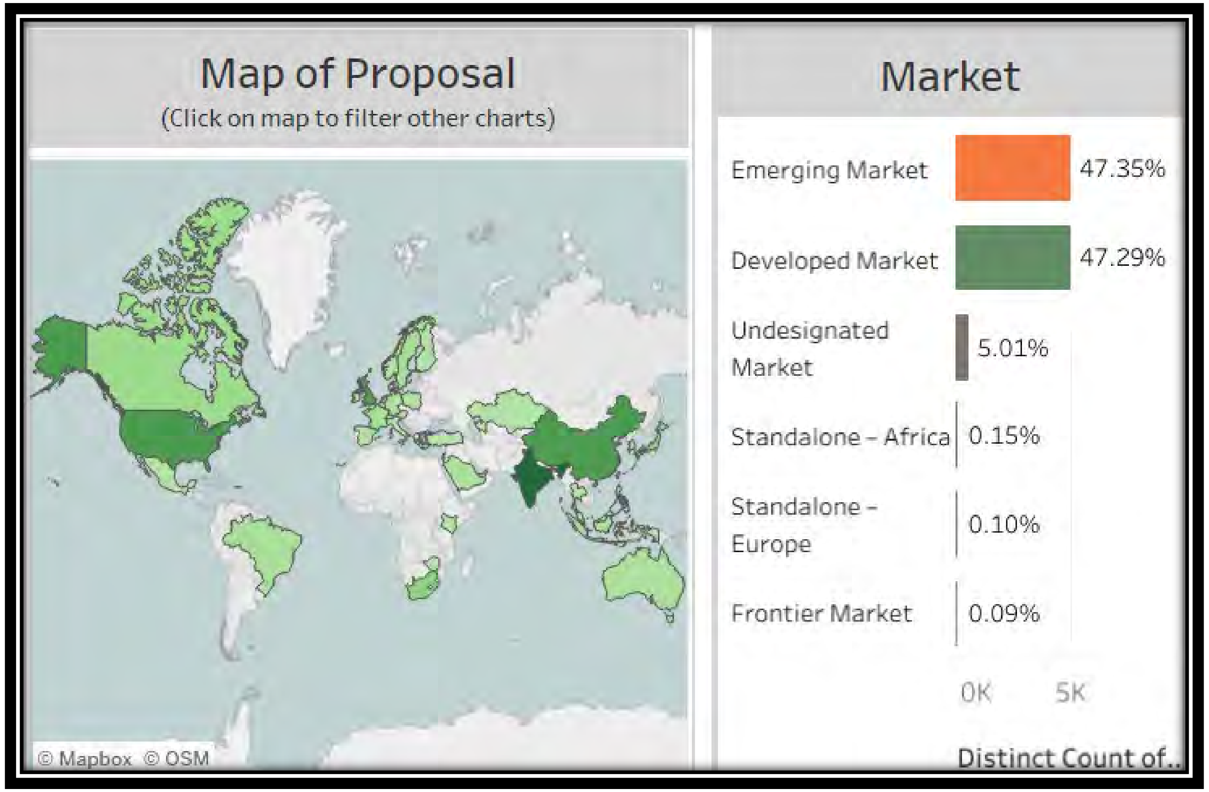
Corporate Governance/Proxy Voting Summary

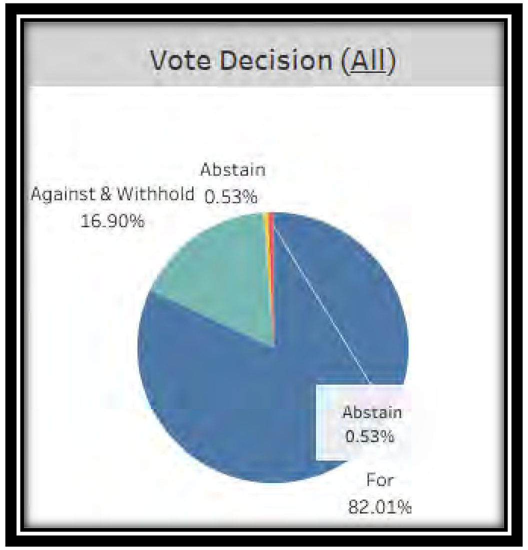
Significant Activities

- SEC Regulatory Rampage (P4P, NP-X, Clawback, etc.)
- Universal Proxy Cards
- Pass Through Voting & Client Polling
- PFIA / Divestment



SBA Proxy Voting – Major Statistics

- 1,396 meetings / 2,777 ballots / 10,559 individual proposals / 50 markets
- 82% For / 16.9% Against / 1.1% Abstain or did-not-vote (DNV)
- 17.1% Against management-recommended-vote (MRV)
- Director elections: 76.9% For / Auditor ratification: 99.4% For
- Compensation items: 65.3% For / Merger-Acquisition items: 97.5%
- All shareowner resolutions: 39.6% For (48 proposals)
    - Governance issues: 50% For (32 proposals)
    - Environmental issues: 0% For (5 proposals)
    - Social issues: 27.3% For (11 proposals)



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STATE BOARD OF ADMINISTRATION

State Board of Administration of Florida

Major Mandate Review

Third Quarter 2022

Table of Contents

Executive Summary

- The major mandates each produced generally strong returns relative to their respective benchmarks over both short- and long-term time periods ending September 30, 2022.
- The Pension Plan outperformed its Performance Benchmark over the quarter and trailing one-, three-, five-, ten-, and fifteen-year periods.
  - Over the trailing five-year period, Private Equity and Real Estate were the leading contributors to relative returns
- The FRS Investment Plan outperformed the Total Plan Aggregate Benchmark over the trailing five-, and ten-year periods.
- The CAT Funds' performance is strong over long-term periods, outperforming the benchmark over the trailing three-, five- and ten-year periods.
- Florida PRIME has continued to outperform its benchmark over both short- and long-term time periods.

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Pension Plan: Executive Summary

- The Pension Plan assets totaled $170.9 billion as of September 30, 2022, which represents a $9.1 billion decrease since last quarter.
- The Pension Plan, when measured against the Performance Benchmark, outperformed over the quarter and trailing one-, three-, five-, ten-, and fifteen- year periods.
- Relative to the Absolute Nominal Target Rate of Return, the Pension Plan outperformed over the trailing ten-year time period and underperformed over the trailing one-, three- and five-year time periods as inflation has surged recently.
- The Pension Plan is well-diversified across six broad asset classes, and each asset class is also well-diversified.
  - Public market asset class investments do not significantly deviate from their broad market-based benchmarks, e.g., sectors, market capitalizations, global regions, credit quality, duration, and security types.
  - Private market asset classes are well-diversified by vintage year, geography, property type, sectors, investment vehicle/asset type, and investment strategy.
  - Asset allocation is monitored on a daily basis to ensure that the actual asset allocation of the Pension Plan remains close to the long-term policy targets set forth in the Investment Policy Statement.
- Aon Investment Consulting and SBA staff revisit the plan design annually through informal and formal asset allocation and asset liability reviews.
- Adequate liquidity exists within the asset allocation to pay the monthly obligations of the Pension Plan consistently and on a timely basis.

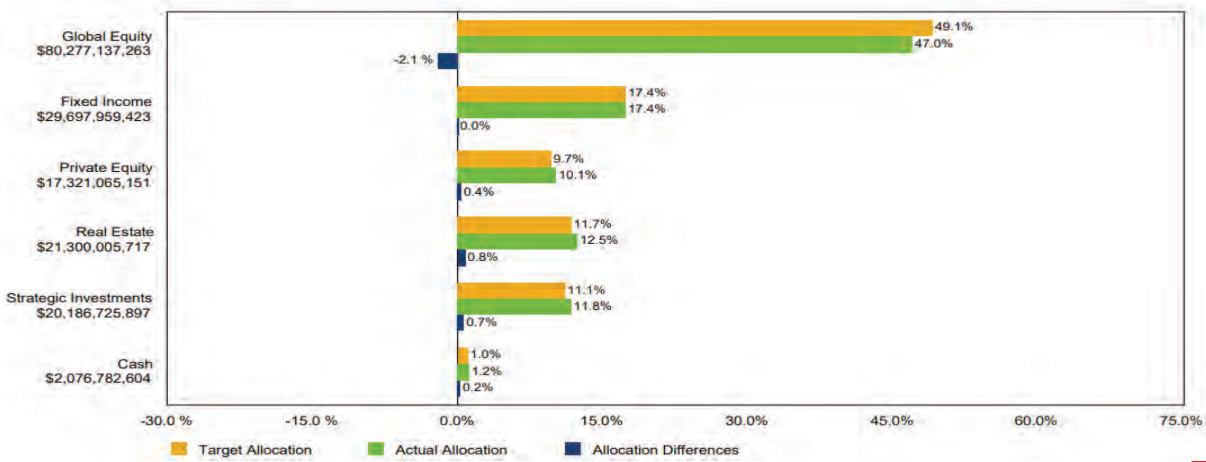
FRS Pension Plan Change in Market Value
Periods Ending 9/30/2022

Summary of Cash Flows		
	Third Quarter	**Fiscal YTD***
Beginning Market Value	$179,954,710,565	$179,954,710,565
+/- Net Contributions/(Withdrawals)	$(2,157,831,194)	$(2,157,831,194)
Investment Earnings	$(6,937,203,317)	$(6,937,203,317)
= Ending Market Value	$170,859,676,055	$170,859,676,055
Net Change	$(9,095,034,510)	$(9,095,034,510)

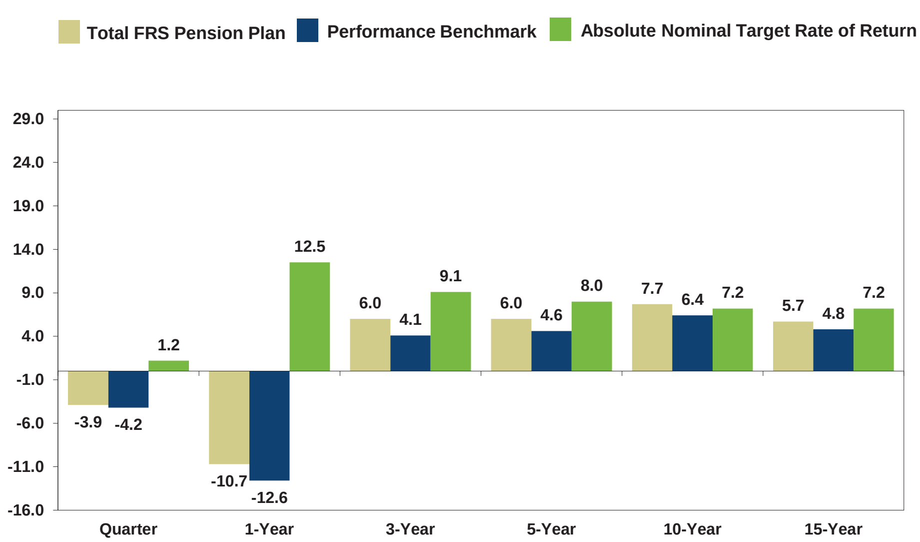
*Period July 2022 – September 2022

Asset Allocation as of 9/30/2022
Total Fund Assets = $170.9 Billion

	Market Value ($)	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund	170,859,676,055	100.0	100.0		
Global Equity	80,277,137,263	47.0	49.1	45.0	70.0
Fixed Income	29,697,959,423	17.4	17.4	10.0	26.0
Private Equity	17,321,065,151	10.1	9.7	2.0	12.0
Real Estate	21,300,005,717	12.5	11.7	4.0	16.0
Strategic Investments	20,186,725,897	11.8	11.1	0.0	16.0
Cash	2,076,782,604	1.2	1.0	0.3	5.0

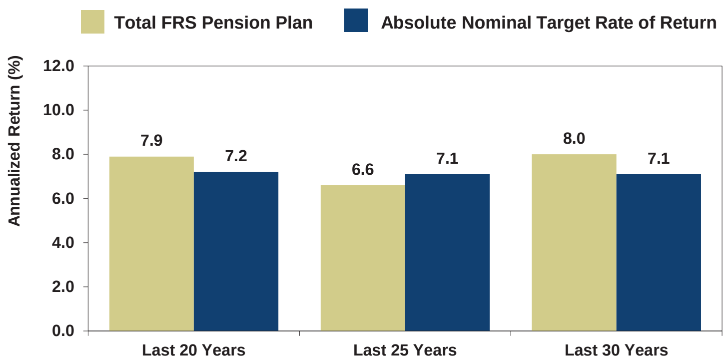


FRS Pension Plan Investment Results
Periods Ending 9/30/2022



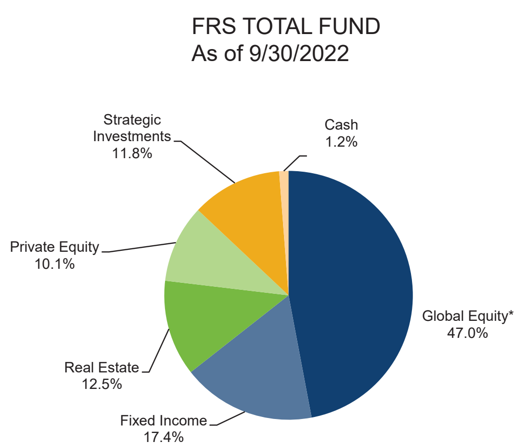
FRS Pension Plan Investment Results
Periods Ending 9/30/2022

Long-Term FRS Pension Plan Performance Results vs. SBA's Long-Term Investment Objective

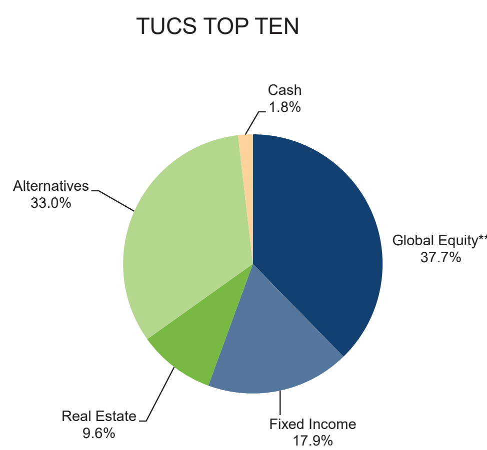


Comparison of Asset Allocation (TUCS Top Ten)

FRS Pension Plan vs. Top Ten Defined Benefit Plans



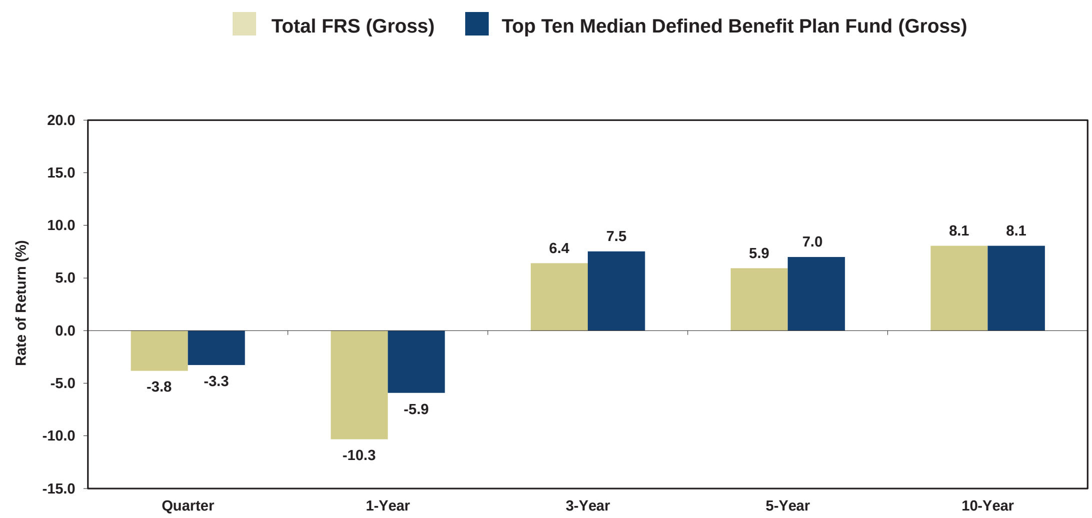
*Global Equity Allocation: 24.1% Domestic Equities; 15.8% Foreign Equities; 5.9% Global Equities; 1.1% Global Equity Liquidity Account. Percentages are of the Total FRS Fund



**Global Equity Allocation: 25.0% Domestic Equities; 12.7 Foreign Equities.

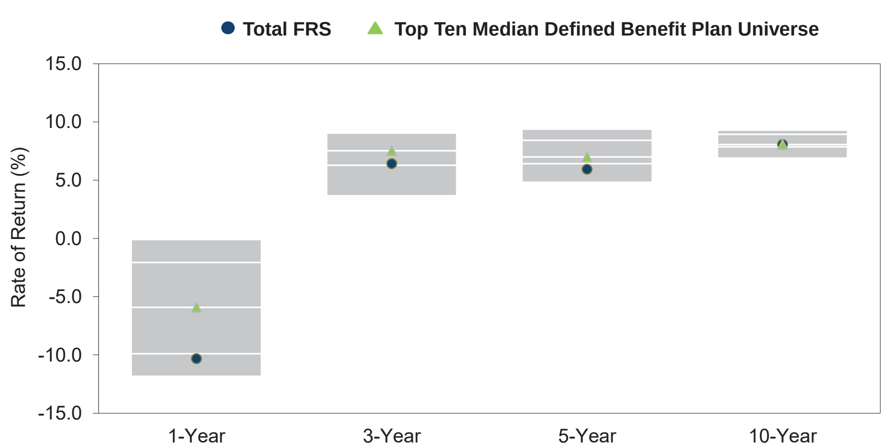
Note: The data set includes $1,832 billion in total assets. The median fund size was $171 billion and the average fund size was $183 billion.
Note: Due to rounding, percentage totals displayed may not sum perfectly.

FRS Results Relative to TUCS Top Ten Defined Benefit Plans
Periods Ending 6/30/2022



Note: The TUCS Top Ten Universe includes $1,832 billion in total assets. The median fund size was $171 billion and the average fund size was $183 billion.

Top Ten Defined Benefit Plans FRS Universe Comparison (TUCS)
Periods Ending 9/30/2022



	1-Year	3-Year	5-Year	10-Year
FRS Percentile Ranking	87	62	75	50

Note: The TUCS Top Ten Universe includes $1,832 billion in total assets. The median fund size was $171 billion and the average fund size was $183 billion.

Investment Plan: Executive Summary

- The FRS Investment Plan outperformed the Total Plan Aggregate Benchmark over the trailing five-, and ten-year periods. This suggests strong relative performance of the underlying fund options in which participants are investing.
- The FRS Investment Plan's total expense ratio is in line with peer defined contribution plans, based on year-end 2021 data. The total FRS Investment Plan expense ratio includes investment management fees, as well as administration, communication and education costs. Communication and education costs are not charged to FRS Investment Plan members; however, these and similar costs may be charged to members of plans within the peer group.
- Management fees are lower than the median as represented by Morningstar's mutual fund universe for every investment category.
- The FRS Investment Plan offers an appropriate number of fund options that span the risk and return spectrum.
- The Investment Policy Statement is revisited periodically to ensure that the structure and guidelines of the FRS Investment Plan are appropriate, taking into consideration the FRS Investment Plan's goals and objectives.

Total Investment Plan Returns & Cost

Periods Ending 9/30/2022*

	One-Year	Three-Year	Five-Year	Ten-Year
FRS Investment Plan	**-16.4%**	**3.1%**	**4.1%**	**6.0%**
*Total Plan Aggregate Benchmark***	-15.0%	3.1%	4.0%	5.8%
FRS Investment Plan vs. Total Plan Aggregate Benchmark	(1.4)	0.0	0.1	0.2

Periods Ending 12/31/2020***

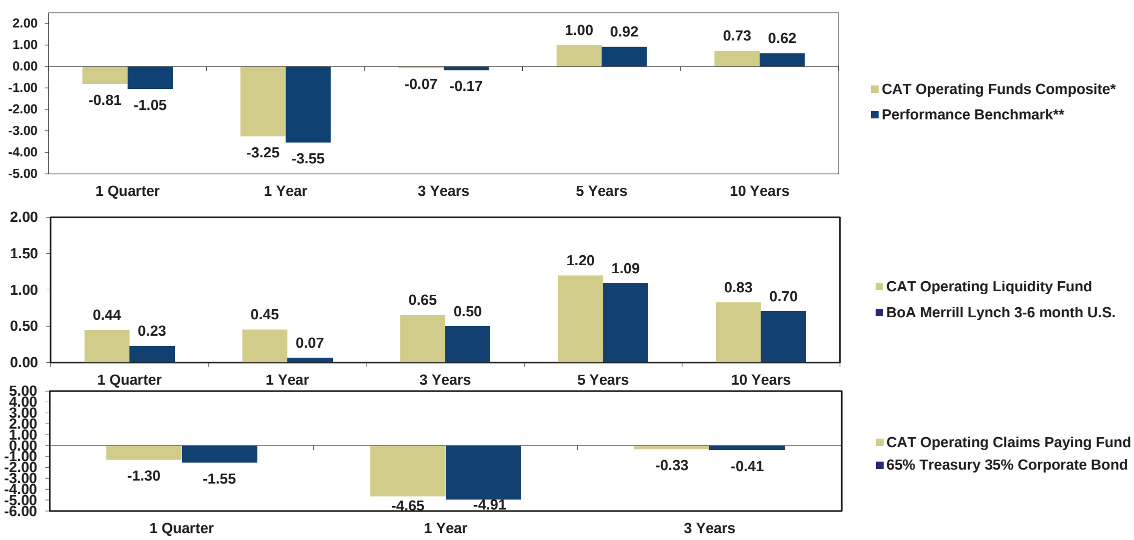
	Five-Year Average Return****	Five-Year Net Value Added	Expense Ratio
FRS Investment Plan	**10.1%**	**0.2%**	**0.27%*******
Peer Group	*10.0*	*0.2*	*0.27*
FRS Investment Plan vs. Peer Group	0.1	0.0	0.00

*Returns shown are net of fees.
**Aggregate benchmark returns are an average of the individual portfolio benchmark returns at their actual weights.
***Source: 2021 CEM Benchmarking Report. Peer group for the Five-Year Average Return and Value Added represents the U.S. Median plan return based on the CEM 2021 Survey that included 136 U.S. defined contribution plans with assets ranging from $72 million to $68.7 billion. Peer group for the Expense Ratio represents a custom peer group for FSBA of 18 DC plans including corporate and public plans with assets between $3.4 - $28.4 billion.
****Returns shown are gross of fees.
*****The total FRS Investment Plan expense ratio includes investment management fees, as well as administration, communication and education costs. These latter costs are not charged to FRS Investment Plan members; however, these and similar costs may be charged to members of plans within the peer group utilized above.

CAT Fund: Executive Summary

- Returns on an absolute basis are modest and negative near term given the rising rate environment and previously low interest rate environment.
- All CAT Funds are adequately diversified across issuers within the short-term bond market.
- The Investment Portfolio Guidelines appropriately constrain the CAT Funds to invest in short-term and high-quality bonds to minimize both interest rate and credit risk.
- Adequate liquidity exists to address the cash flow obligations of the CAT Funds.
- The Investment Portfolio Guidelines are revisited periodically to ensure that the structure and guidelines of the CAT Funds are appropriate, taking into consideration the CAT Funds' goals and objectives.
- Over long-term periods, the relative performance of the CAT Operating Funds has been favorable as they have outperformed the Performance Benchmark over the trailing three-, five- and ten-year time periods.

CAT Operating Funds Investment Results
Periods Ending 9/30/2022

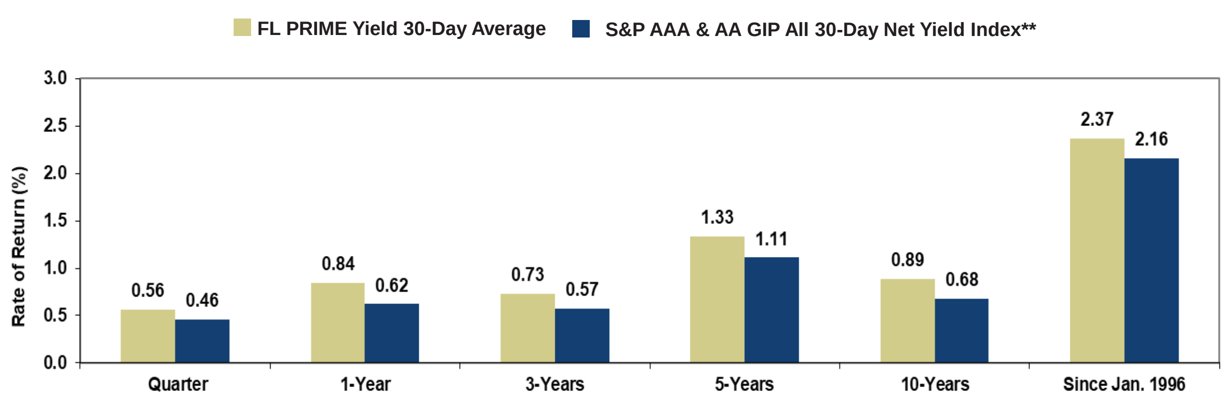


*CAT Operating Funds: Beginning March 2008, the returns for the CAT Operating Funds reflect marked-to-market returns. Prior to that time, cost-based returns are used. Beginning February 2018, the CAT Operating Funds were split into two different sub funds, the CAT Fund Operating Liquidity Fund and the CAT Fund Operating Claims Paying Fund. Performance for each sub fund is shown below.
**Performance Benchmark: Effective January 1, 2021, the CAT Fund Operating Liquidity Fund is benchmarked to the Bloomberg U.S. Treasury Bills 3-6 Months & U.S. Treasury Bills 6-9 Months Custom Blend Index. This benchmark is comprised of 60% of 3-6 month U.S. Treasury Bills and 40% 6-9 month U.S. Treasury Bills Beginning February 2018, the CAT Fund Operating Liquidity Fund was benchmarked to the B of A Merrill Lynch 3-6 Month U.S. Treasury Bill Index. Effective January 1, 2021, the CAT Operating Claims Paying Fund is benchmarked to the Bloomberg U.S. Treasury 1-3 Years & Corporate AA+ ex 144A with Reg S Custom Blend Index. This benchmark is comprised of 65% 1-3 year U.S. Treasury and 35% of 1-3 year Corporate AA or better excluding 144A and Reg S securities. Beginning February 2018, the CAT Fund Operating Claims Paying Fund benchmark is a blend of 35% of the Bank of America Merrill Lynch 1-3 Year AA U.S. Corporate Bond Index and 65% of Bank of America Merrill Lynch 1-3 Year U.S. Treasury Index. Additional benchmark history can be found in the appendix.

Florida PRIME: Executive Summary

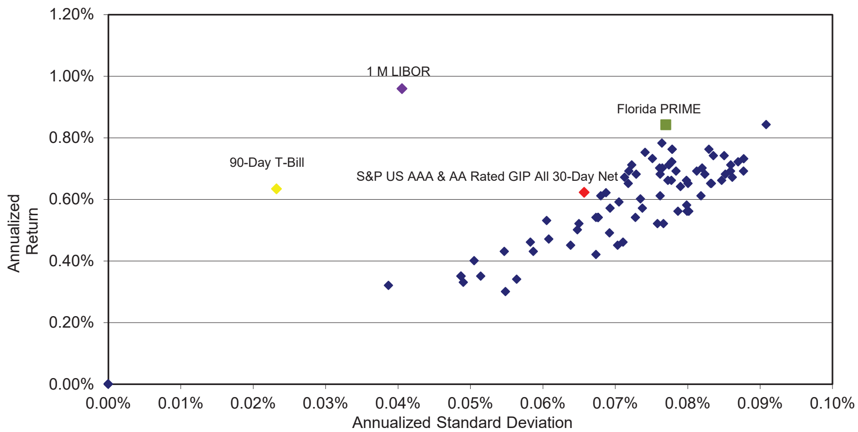
- The purpose of Florida PRIME is safety, liquidity, and competitive returns with minimal risk for participants.
- The Investment Policy Statement appropriately constrains Florida PRIME to invest in short-term and high quality bonds to minimize both interest rate and credit risk.
- Florida PRIME is adequately diversified across issuers within the short-term bond market, and adequate liquidity exists to address the cash flow obligations of Florida PRIME.
- Performance of Florida PRIME has been strong over short- and long-term time periods, outperforming its performance benchmark during the quarter and over the trailing one-, three-, five-, and ten-year time periods.
- As of September 30, 2022, the total market value of Florida PRIME was $17.4 billion.
- Aon Investments USA Inc., in conjunction with SBA staff, compiles an annual best practices report that includes a full review of the Investment Policy Statement, operational items, and investment structure for Florida PRIME.

Florida PRIME Investment Results
Periods Ending 9/30/2022

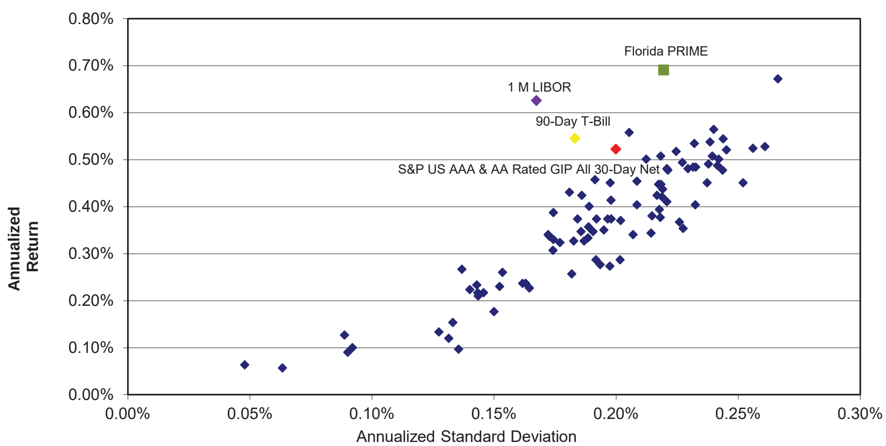


*Returns less than one year are not annualized.
**S&P AAA & AA GIP All 30-Day Net Yield Index for all time periods shown.

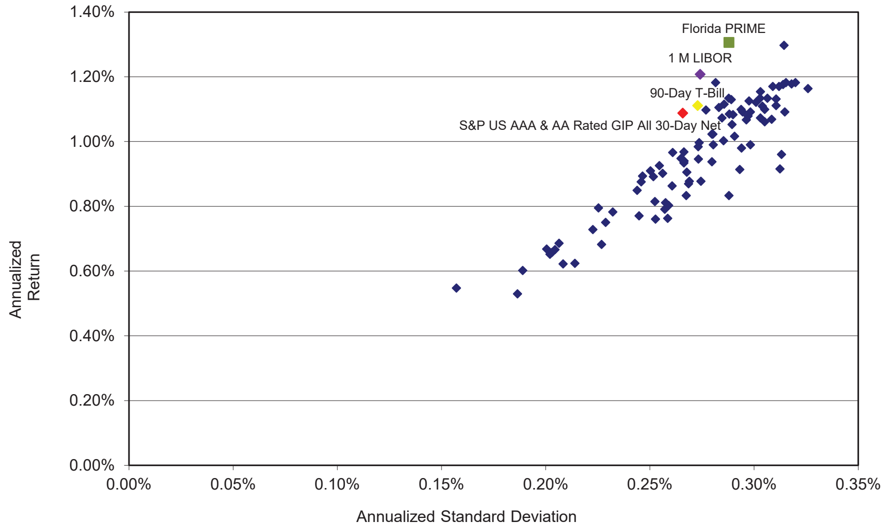
Florida PRIME Risk vs. Return
1 Years Ending 9/30/2022



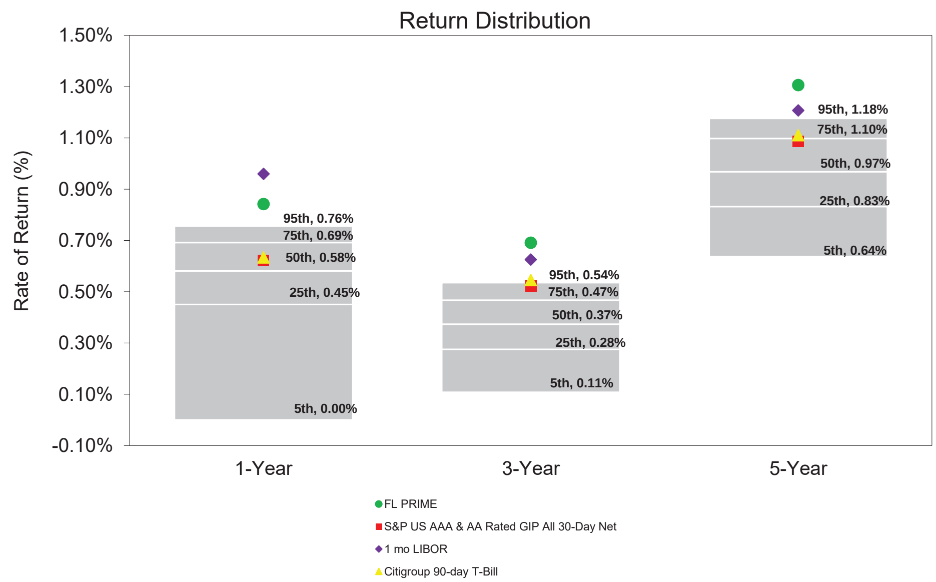
Florida PRIME Risk vs. Return
3 Years Ending 9/30/2022



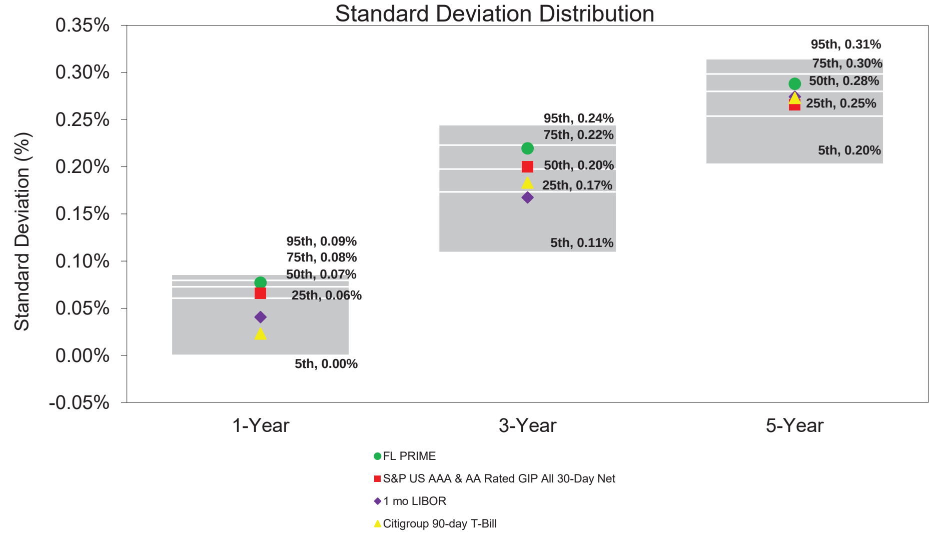
Florida PRIME Risk vs. Return
5 Years Ending 9/30/2022



Return Distribution
Periods Ending 9/30/2022



Standard Deviation Distribution
Periods Ending 9/30/2022



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Appendix

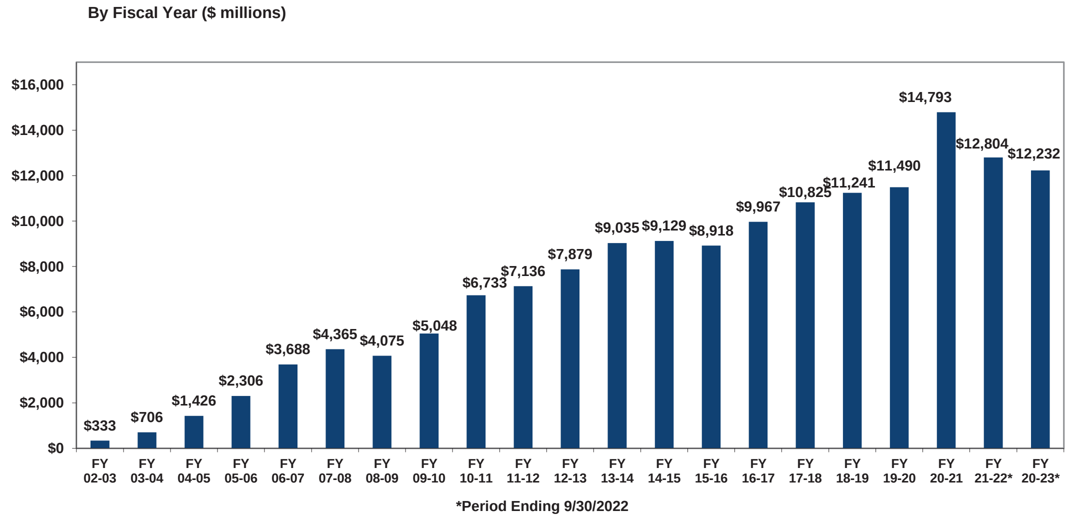
FRS Investment Plan Costs

Investment Category	Investment Plan Fee*	Average Mutual Fund Fee**
Domestic Equity	0.20%	0.84%
International Equity	0.31%	0.94%
Diversified Bonds	0.14%	0.45%
Target Date	0.14%	0.35%
Stable Value	0.19%	0.40%
Inflation Protected Securities	0.36%	0.34%

*Average fee of multiple products in category as of 9/30/2022.

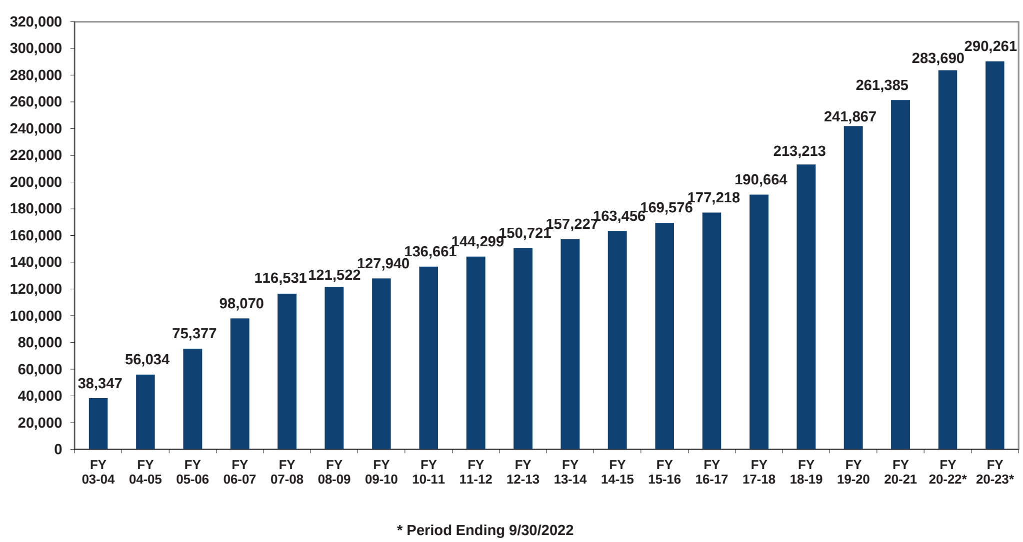
**Source: Aon's annual mutual fund expense analysis as of 6/30/2022.

Investment Plan Fiscal Year End Assets Under Management



Source: Investment Plan Administrator

Investment Plan Membership



Source: Investment Plan Administrator

Florida Hurricane Catastrophe Funds Background and Details

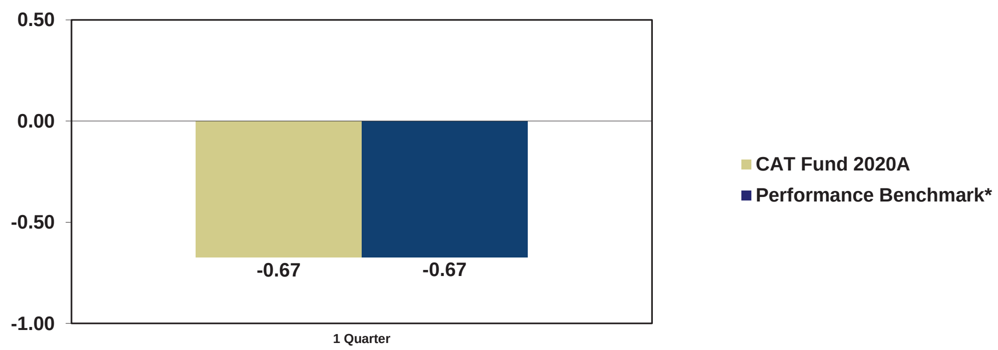
- The purpose of the Florida Hurricane Catastrophe Fund (FHCF) is to provide a stable, ongoing and timely source of reimbursement to insurers for a portion of their hurricane losses.

- The CAT Operating Funds, along CAT 2020 A Fund are internally managed portfolios.
  - CAT 2013 A Fund was liquidated during 4Q 2020
  - CAT 2016 A Fund was liquidated during 3Q 2021

- As of September 30, 2022, the total value of:
  - The CAT Operating Funds was $12.6 billion
  - The CAT 2020 A Fund was $3.3 billion

- History of the CAT Funds Benchmarks: *Beginning February 2018, the CAT Fund Operating Liquidity Fund was benchmarked to the B of A Merrill Lynch 3-6 Month U.S. Treasury Bill Index, and the CAT Fund Operating Claims Paying Fund benchmarked to a blend of 35% of the Bank of America Merrill Lynch 1-3 Year AA U.S. Corporate Bond Index and 65% of Bank of America Merrill Lynch 1-3 Year U.S. Treasury Index. Beginning January 2021, the CAT Fund Operating Liquidity Fund was benchmarked to Bloomberg U.S. Treasuries Bills 3-6 Months & U.S. Treasury Bills 6-9 Months Custom Blend Index. This benchmark is comprised of 60% off the 3-6 month U.S. Treasury Bills and 40% 6-9 month U.S. Treasury Bills., and the CAT Fund Operating Claims Paying Fund is benchmarked Bloomberg U.S. Treasury 1-3 Years & Corporate AA+ ex 144A Reg S Custom Blend Index. This benchmark is comprised of 65% 1-3 year Treasury and 35% of 1-3 year Corporate AA or better excluding 144A and Reg S Securities.*

CAT 2020 A Funds Investment Results
Periods Ending 9/30/2022



*Performance Benchmark: The CAT 2020A Fund is benchmarked to itself.

CAT Operating Funds Characteristics
Period Ending 9/30/2022

Maturity Analysis	
1 to 30 Days	7.97%
31 to 60 Days	5.89
61 to 90 Days	2.88
91 to 120 Days	2.91
121 to 150 Days	1.02
151 to 180 Days	5.06
181 to 270 Days	6.52
271 to 365 Days	7.12
366 to 455 Days	9.15
>= 456 Days	51.48
Total % of Portfolio:	100.00%

Bond Rating Analysis	
AAA	59.95%
AA	16.03
A	24.02
Baa	0.00
Other	0.00
Total % of Portfolio	100.00%

CAT 2020 A Fund Characteristics
Period Ending 9/30/2022

Maturity Analysis	
1 to 30 Days	0.50%
31 to 60 Days	3.26
61 to 90 Days	1.64
91 to 120 Days	6.49
121 to 150 Days	2.67
151 to 180 Days	3.68
181 to 270 Days	13.43
271 to 365 Days	12.55
366 to 455 Days	17.49
>= 456 Days	38.29
Total % of Portfolio:	100.00%

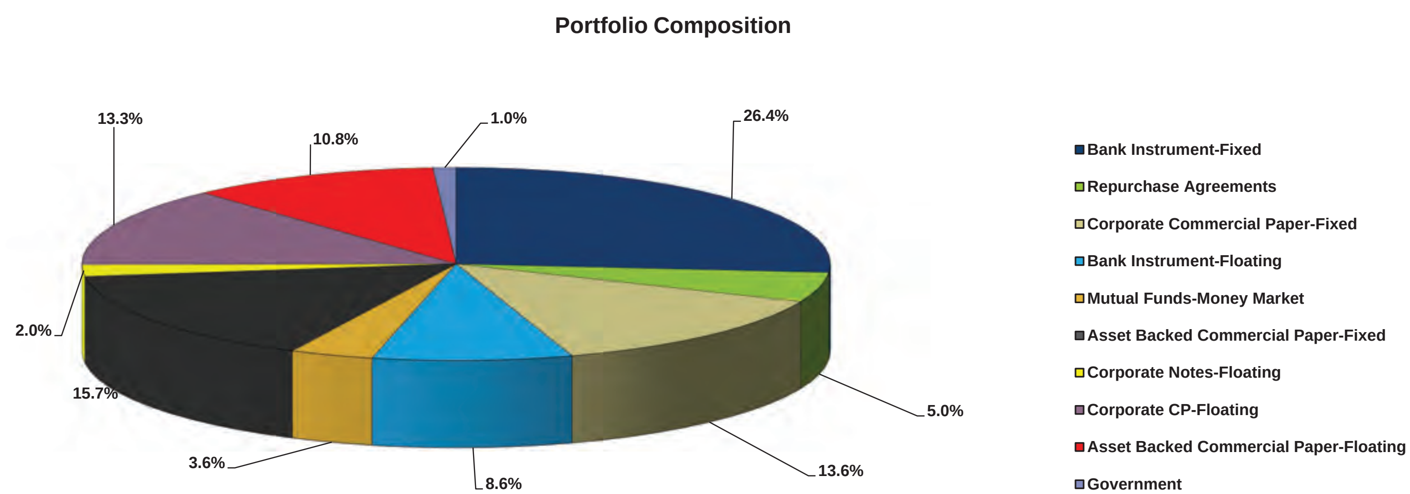
Bond Rating Analysis	
AAA	62.34%
AA	18.76
A	18.90
Baa	0.00
Other	0.00
Total % of Portfolio	100.00%

Florida PRIME Characteristics
Quarter Ending 9/30/2022

As of 9/30/2022	Third Quarter	Fiscal YTD*
Opening Balance	$18,690,168,082	$18,690,168,082
Participant Deposits	$5,770,523,219	$5,770,523,219
Gross Earnings	$105,600,586	$105,600,586
Participant Withdrawals	($7,133,155,915)	($7,133,155,915)
Fees	($1,475,123)	($1,475,123)
Closing Balance	$17,431,660,849	$17,431,660,849
Change	**($1,258,507,233)**	**($1,258,507,233)**

*Period July 2022 – September 2022

Florida PRIME Characteristics
Quarter Ending 9/30/2022



Florida PRIME Characteristics
Period Ending 9/30/2022

Effective Maturity Schedule	
1-7 Days	73.8%
8 - 30 Days	3.2%
31 - 90 Days	18.9%
91 - 180 Days	0.6%
181+ Days	3.5%
Total % of Portfolio:	**100.0%**

S & P Credit Quality Composition	
A-1+	60.3%
A-1	39.7%
Total % of Portfolio:	**100.0%**

FRS Pension Plan | Third Quarter 2022

Quarterly Investment Review

Visit the Investments Thought Leadership Site (https://insights-north-america.aon.com/investment); sharing our best thinking.

Visit our new video library with our views on key investment topics for this quarter using access code "aon!" (https://site-494121.bcvp0rtal.com/category/videos/key-topics-by-investor-type)

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Table of Contents

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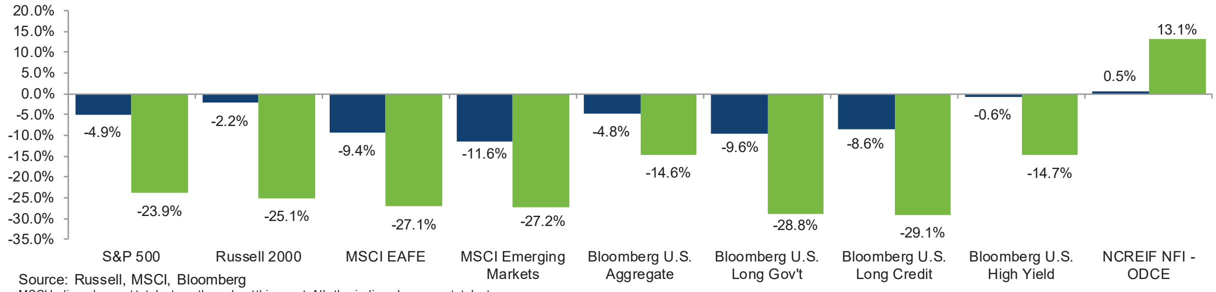
Market Environment

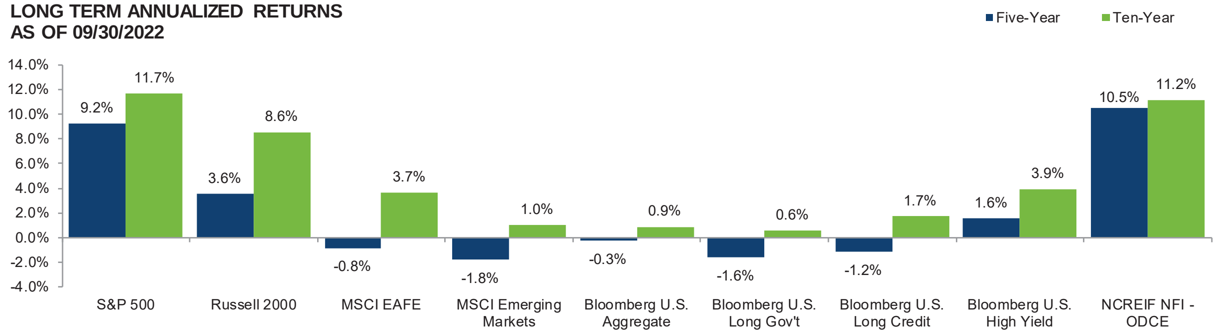
Market Highlights

SHORT TERM RETURNS
AS OF 09/30/2022



Source: Russell, MSCI, Bloomberg
MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

LONG TERM ANNUALIZED RETURNS
AS OF 09/30/2022



Source: Russell, MSCI, Bloomberg

Note: MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

Market Highlights

Returns of the Major Capital Markets

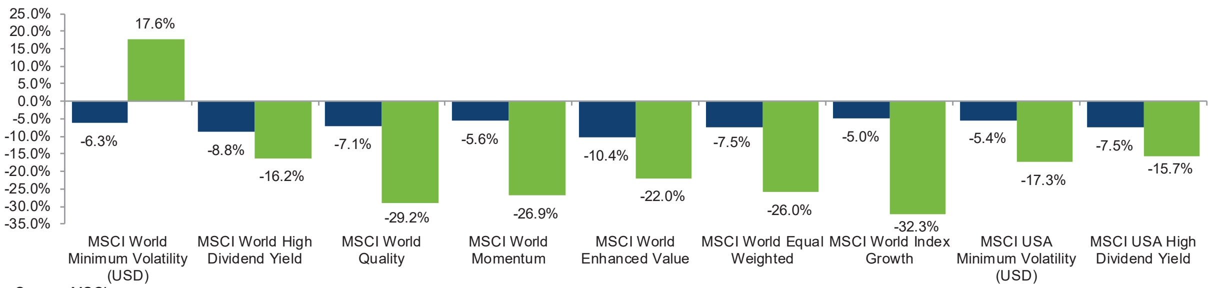
Period Ending 09/30/2022

	Third Quarter	YTD	1-Year	3-Year[1]	5-Year[1]	10-Year[1]
Equity						
MSCI All Country World IMI	-6.64%	-25.72%	-21.18%	3.64%	4.16%	7.25%
MSCI All Country World	-6.82%	-25.63%	-20.66%	3.75%	4.44%	7.28%
Dow Jones U.S. Total Stock Market	-4.56%	-24.92%	-18.05%	7.51%	8.48%	11.28%
Russell 3000	-4.46%	-24.62%	-17.63%	7.70%	8.62%	11.39%
S&P 500	-4.88%	-23.87%	-15.47%	8.16%	9.24%	11.70%
Russell 2000	-2.19%	-25.10%	-23.50%	4.29%	3.55%	8.55%
MSCI All Country World ex-U.S. IMI	-9.69%	-26.92%	-25.72%	-1.27%	-0.78%	3.19%
MSCI All Country World ex-U.S.	-9.91%	-26.50%	-25.17%	-1.52%	-0.81%	3.01%
MSCI EAFE	-9.36%	-27.09%	-25.13%	-1.83%	-0.84%	3.67%
MSCI EAFE (Local Currency)	-3.59%	-14.46%	-11.11%	2.51%	2.83%	7.44%
MSCI Emerging Markets	-11.57%	-27.16%	-28.11%	-2.07%	-1.81%	1.05%
Equity Factors						
MSCI World Minimum Volatility (USD)	-6.28%	-11.83%	17.60%	0.26%	4.54%	7.83%
MSCI World High Dividend Yield	-8.82%	-16.17%	-10.16%	1.98%	3.52%	6.67%
MSCI World Quality	-7.06%	-29.17%	-21.86%	6.92%	8.81%	10.45%
MSCI World Momentum	-5.60%	-26.94%	-22.67%	4.82%	7.67%	10.46%
MSCI World Enhanced Value	-10.39%	-21.97%	-18.70%	-0.11%	0.25%	6.19%
MSCI World Equal Weighted	-7.55%	-25.97%	-23.68%	0.61%	1.77%	6.64%
MSCI World Index Growth	-5.01%	-32.28%	-26.74%	6.60%	8.08%	10.10%
MSCI USA Minimum Volatility (USD)	-5.41%	-17.29%	-8.68%	2.94%	7.70%	10.66%
MSCI USA High Dividend Yield	-7.54%	-15.71%	-7.28%	3.23%	5.89%	9.80%
MSCI USA Quality	-7.38%	-29.23%	-21.40%	7.36%	10.36%	12.34%
MSCI USA Momentum	-3.03%	-26.34%	-23.57%	4.50%	7.97%	12.58%
MSCI USA Enhanced Value	-8.77%	-23.48%	-16.17%	2.82%	4.01%	10.01%
MSCI USA Equal Weighted	-4.74%	-24.34%	-18.75%	5.71%	6.84%	10.70%
MSCI USA Growth	-3.55%	-32.37%	-25.59%	10.62%	12.10%	13.50%
Fixed Income						
Bloomberg Global Aggregate	-6.94%	-19.89%	-20.43%	-5.74%	-2.32%	-0.93%
Bloomberg U.S. Aggregate	-4.75%	-14.61%	-14.60%	-3.26%	-0.27%	0.89%
Bloomberg U.S. Long Gov't	-9.60%	-28.77%	-26.60%	-8.48%	-1.62%	0.60%
Bloomberg U.S. Long Credit	-8.57%	-29.05%	-27.98%	-7.02%	-1.17%	1.73%
Bloomberg U.S. Long Gov't/Credit	-9.03%	-28.94%	-27.41%	-7.35%	-1.17%	1.35%
Bloomberg U.S. TIPS	-5.14%	-13.61%	-11.57%	0.79%	1.95%	0.98%
Bloomberg U.S. High Yield	-0.65%	-14.74%	-14.14%	-0.45%	1.57%	3.94%
Bloomberg Global Treasury ex U.S.	-9.08%	-24.71%	-25.80%	-8.85%	-4.36%	-2.78%
JP Morgan EMBI Global (Emerging Markets)	-4.20%	-22.24%	-22.23%	-6.10%	-2.31%	0.95%
Commodities						
Bloomberg Commodity Index	-4.11%	13.57%	11.80%	13.45%	6.96%	-2.14%
Goldman Sachs Commodity Index	-10.31%	21.80%	23.64%	12.19%	7.75%	-3.95%
Hedge Funds						
HFRI Fund-Weighted Composite[2]	-0.57%	-6.18%	-5.77%	6.18%	4.52%	4.61%
HFRI Fund of Funds[2]	0.72%	-5.92%	-5.51%	4.52%	3.30%	3.57%
Real Estate						
NAREIT U.S. Equity REITS	-9.94%	-28.13%	-16.41%	-2.05%	2.93%	6.26%
NCREIF NFI - ODCE	0.52%	13.08%	22.10%	12.37%	10.24%	10.92%
FTSE Global Core Infrastructure Index	-8.37%	-13.29%	-4.60%	1.74%	5.30%	7.86%
Private Equity						
Burgiss Private iQ Global Private Equity[3]			22.21%	23.77%	20.18%	16.03%

MSCI Indices show net total returns throughout this report. All other indices show gross total returns.
[1] Periods are annualized.
[2] Latest 5 months of HFR data are estimated by HFR and may change in the future.
[3] Burgiss Private iQ Global Private Equity data is as at March 31, 2022

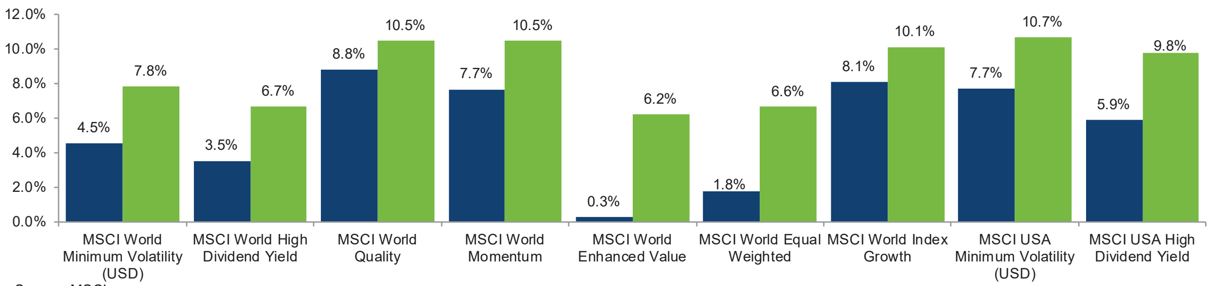
Factor Indices

SHORT TERM RETURNS
AS OF 09/30/2022



Source: MSCI

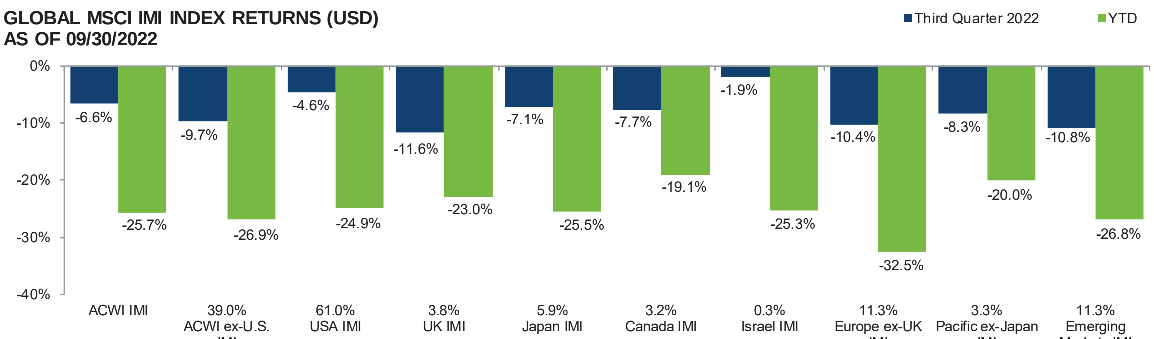
LONG TERM ANNUALIZED RETURNS
AS OF 9/30/2022



Source: MSCI

Global Equity Markets

GLOBAL MSCI IMI INDEX RETURNS (USD)
AS OF 09/30/2022



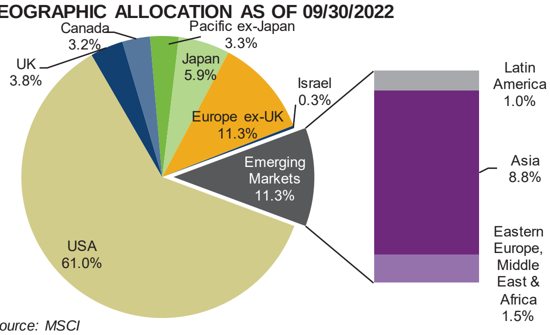
Source: MSCI

- In Q3 2022 capital markets were dominated by geopolitical uncertainty and higher interest rates amidst soaring inflation. Volatility remained elevated throughout the quarter. Yields trended higher with major central banks indicating an aggressive monetary policy stance to control rising inflation. The MSCI All Country World Investable Market Index (ACWI IMI) returned -6.6% for the quarter and was down 25.7% on a year-to-date basis.
- Across international markets, all the regions were weak over the quarter.
- UK equities were the worst regional performer with a return of -11.6% in US dollar terms due to sharp sterling depreciation against the dollar. Index heavyweights like Financials and Consumer Staples underperformed. Former UK foreign secretary, Liz Truss, became the new UK prime minister as she beat former chancellor Rishi Sunak by a 57-43 margin in a ballot of Conservative party members.
- Emerging Markets was the second worst performer at -10.8% with Chinese and Korean equities weighing on the region. U.S.-China tensions escalated after the U.S. House of Representatives Speaker, Nancy Pelosi, visited Taiwan and pledged U.S. commitment to the country. The U.S. Senate committee passed the Taiwan Policy Act (TPA) to provide a $6.5bn fund that would enhance U.S. military support for Taiwan to counter increasing Chinese military activity around the country.

Global Equity Markets

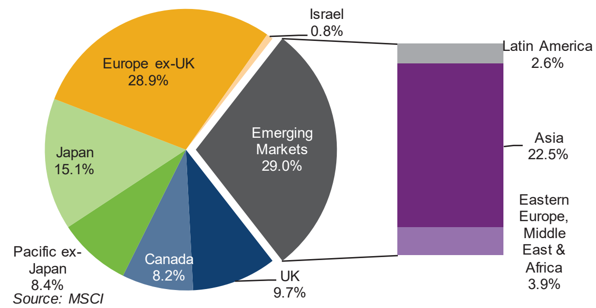
Below is the country/region breakdown of the global and international equity markets as measured by the MSCI All Country World IMI Index and the MSCI All Country World ex-U.S. IMI Index, respectively.

MSCI ALL COUNTRY WORLD IMI INDEX GEOGRAPHIC ALLOCATION AS OF 09/30/2022



Source: MSCI

MSCI ALL COUNTRY WORLD EX-U.S. IMI INDEX GEOGRAPHIC ALLOCATION AS OF 09/30/2022

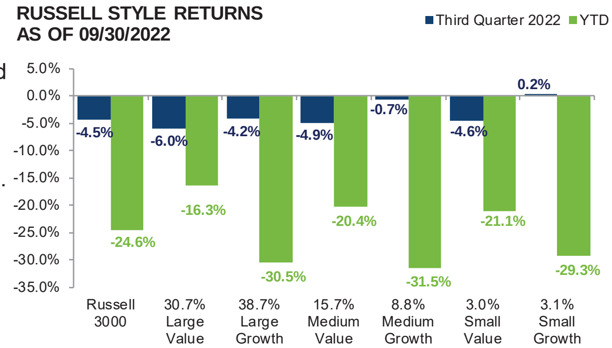


Source: MSCI

U.S. Equity Markets

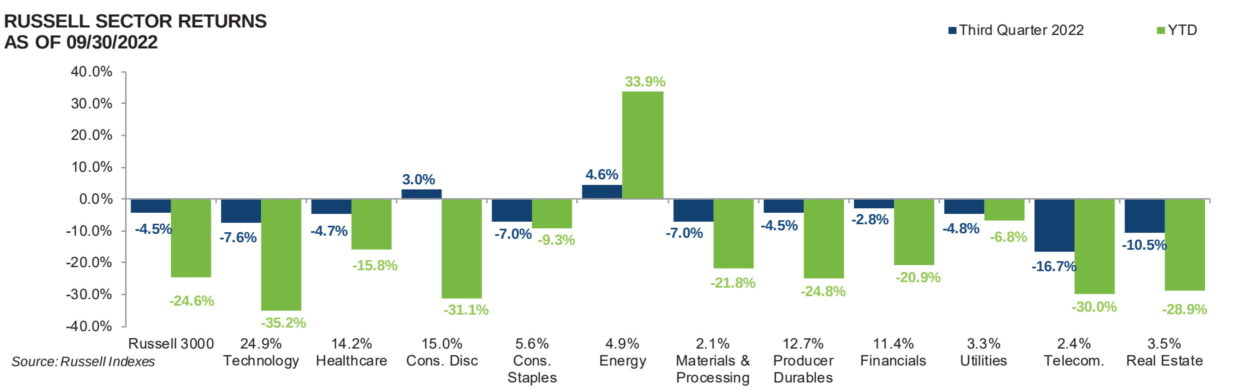
- U.S. equities had a weak quarter with the S&P 500 index falling by 4.9%.
- The Russell 3000 Index fell 4.5% during the third quarter and was down 24.6% on a year-to-date basis. Performance among sectors was generally negative. Energy and Consumer Discretionary were the best performers while the Telecom and Real Estate sectors were the worst performers.
- Small cap stocks have outperformed large and medium cap stocks over the quarter. On a style basis, growth outperformed value across market capitalizations over the quarter, however, value outperformed growth on a year-to-date basis.

RUSSELL STYLE RETURNS AS OF 09/30/2022



Source: Russell Indexes

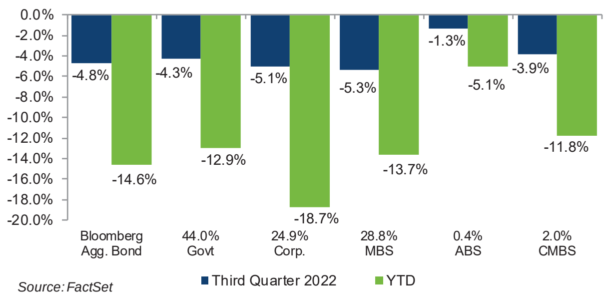
RUSSELL SECTOR RETURNS AS OF 09/30/2022



Source: Russell Indexes

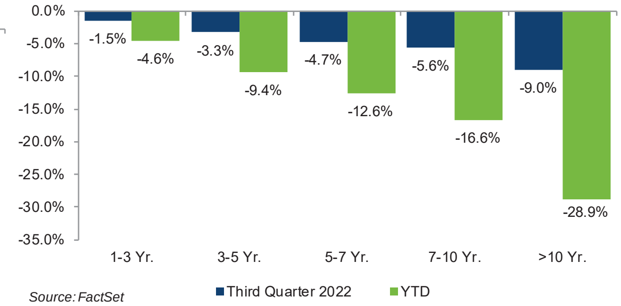
U.S. Fixed Income Markets

BLOOMBERG AGGREGATE RETURNS BY SECTOR AS OF 09/30/2022



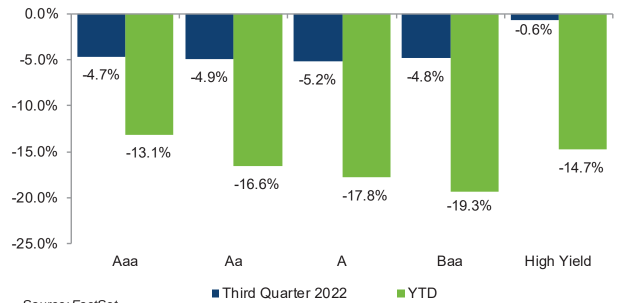
Source: FactSet

BLOOMBERG AGGREGATE RETURNS BY MATURITY AS OF 09/30/2022



Source: FactSet

BLOOMBERG AGGREGATE RETURNS BY QUALITY AND HIGH YIELD RETURNS AS OF 09/30/2022

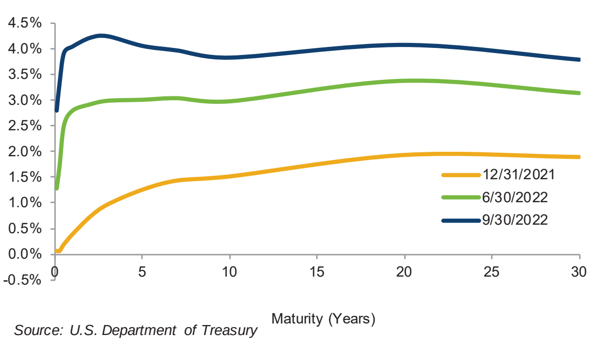


Source: FactSet

- The Bloomberg U.S. Aggregate Bond Index was down 4.8% over the quarter and 14.6% on a year-to-date basis.
- Across durations, all maturities finished the quarter in negative territory.
- Within investment-grade bonds, lower-credit quality generally outperformed higher-quality issues, with Baa bonds falling by 4.8%. High-yield bonds fell by 0.6%.

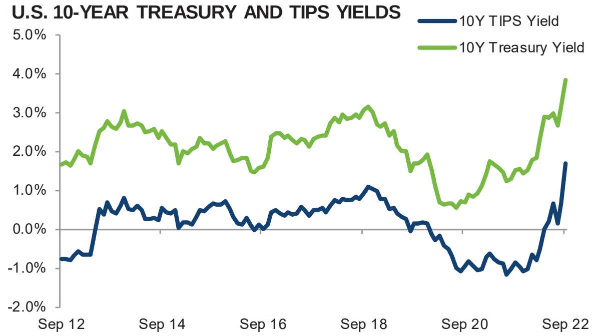
U.S. Fixed Income Markets

U.S. TREASURY YIELD CURVE



Source: U.S. Department of Treasury

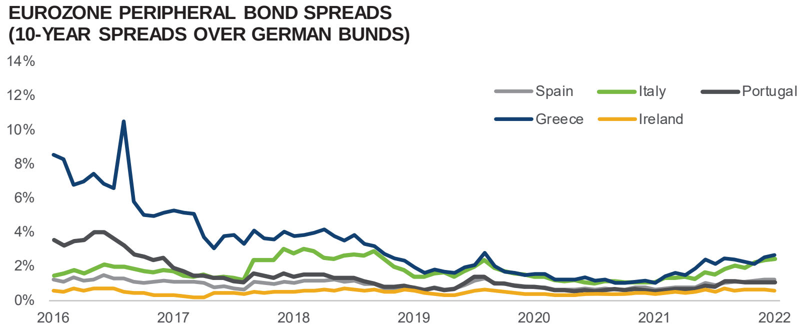
U.S. 10-YEAR TREASURY AND TIPS YIELDS



Source: U.S. Department of Treasury

- U.S. Treasury yields saw notable increases across the maturities which moved the yield curve upwards over the quarter. The 10-year Treasury yield was up 85bps to 3.83%, and the 30-year Treasury yield was up 65bps to 3.79% over the quarter.
- The U.S. Federal Reserve (Fed) increased its benchmark interest rate by 150bps to a range of 3-3.25% over the quarter. Fed chair Jerome Powell indicated that monetary policy needs to be “more restrictive or restrictive for longer” to contain soaring inflation and also refused to rule out a recession. According to the median estimate on the Fed dot plot, officials expect the interest rate to reach 4.4% by the end of the year, before peaking at 4.6% next year. The central bank downgraded its U.S. annual GDP growth forecast to 0.2% for 2022 and expects core inflation to fall to 3.1% from 4.5% by the end of next year.
- Inflation slowed down but still remained high historically as food prices continued to accelerate. The U.S. annual consumer price index (CPI) rose 8.3% year on year in August, down from 8.5% recorded in the previous month.
- The 10-year TIPS yield rose by 103bps over the quarter to 1.68%.

European Fixed Income Markets



Source: FactSet

- European government bond spreads over 10-year German bunds were mixed across the Euro Area. The European Central Bank (ECB) raised its benchmark interest rates by 125bps to 0.75% over the quarter, the highest level since 2011, to tackle surging inflation. The ECB president, Christine Lagarde, signaled several interest rate increases in the coming months to bring inflation down to the bank's target of 2%.
- German government bund yields rose sharply, up 75bps to 2.13% over the quarter.
- Eurozone inflation hit an all-time high of 9.1% over the year to August.

Credit Spreads

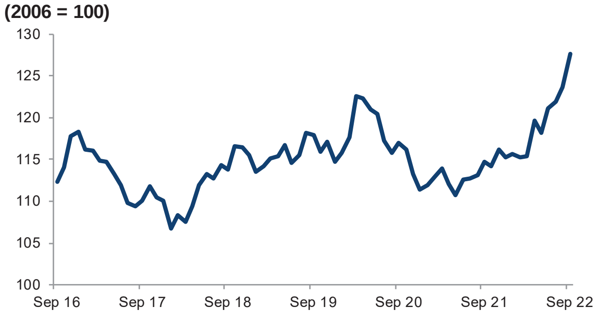
Spread (bps)	09/30/2022	06/30/2022	03/31/2022	Quarterly Change (bps)	YTD Change (bps)
U.S. Aggregate	62	55	36	7	26
Long Gov't	1	-1	0	2	1
Long Credit	196	184	130	12	66
Long Gov't/Credit	107	101	74	6	33
MBS	69	46	31	23	38
CMBS	105	101	68	4	37
ABS	53	75	38	-22	15
Corporate	159	155	92	4	67
High Yield	552	569	283	-17	269
Global Emerging Markets	403	404	285	-1	118

Source: FactSet, Bloomberg

- Credit markets declined from risk-averse sentiment during the quarter, with spreads generally widening.
- MBS and Long Credit spreads widened by 23bps and 12bps respectively while ABS and High Yield spreads narrowed by 22bps and 17bps, respectively.

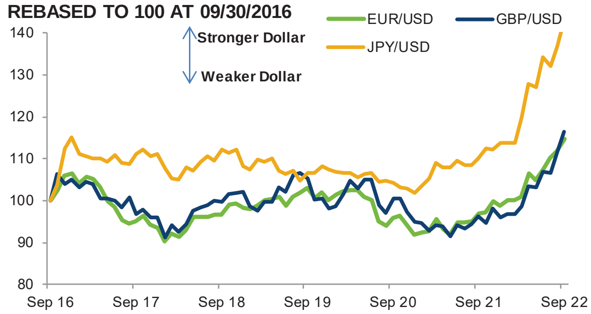
Currency

TRADE WEIGHTED U.S. DOLLAR INDEX (2006 = 100)



Source: Federal Reserve

U.S. DOLLAR RELATIVE TO EUR, GBP AND JPY REBASED TO 100 AT 09/30/2016

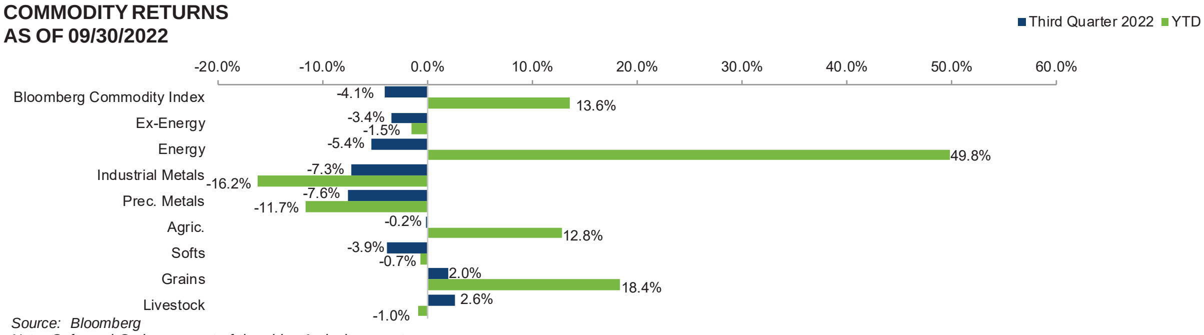


Source: FactSet

- The U.S. Dollar strengthened against all major currencies over the quarter. On a trade-weighted basis, the U.S. dollar appreciated by 5.4%.
- Sterling depreciated by 8.8% against the U.S. dollar. The Bank of England (BoE) raised its benchmark interest rate by 100bps to 2.25% over the quarter, its highest level since 2008. The BoE now expects the UK economy to contract by 0.1% in Q3 2022 and inflation to fall back in the short term due to the government's energy price guarantee.
- The U.S. dollar appreciated by 6.7% against the Euro.
- The U.S. dollar appreciated by 6.5% against the yen as the Bank of Japan continued to maintain its ultra-loose monetary policy stance as compared to the current monetary tightening stance of other major central banks. The BoJ sold U.S. dollars for the first time since 1998 after the yen hit a low of ¥145.89 against the dollar.

Commodities

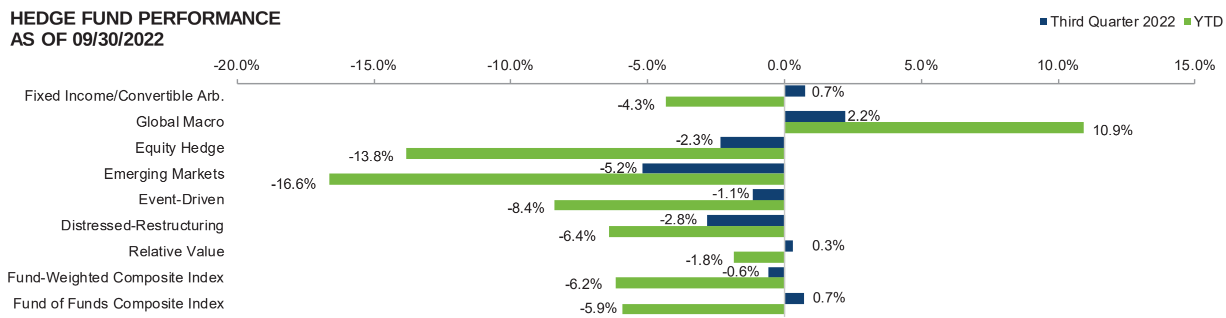
COMMODITY RETURNS AS OF 09/30/2022



Source: Bloomberg
Note: Softs and Grains are part of the wider Agriculture sector

- Commodity prices fell sharply over the quarter amid growing fears of recession and weak oil demand from China due to Covid-19 lockdowns, with the Bloomberg Commodity Index falling by 4.1% for the quarter.
- The energy sector fell 5.4% over the quarter but has risen by 49.8% on a year-to-date basis. The price of WTI crude oil was down by 24.8% to U.S.$79/BBL.
- Precious Metals fell the most over the quarter at -7.6%.
- Meanwhile, OPEC+ agreed to a 100,000 barrels a day oil production cut from October to lift oil prices.

Hedge Fund Markets Overview

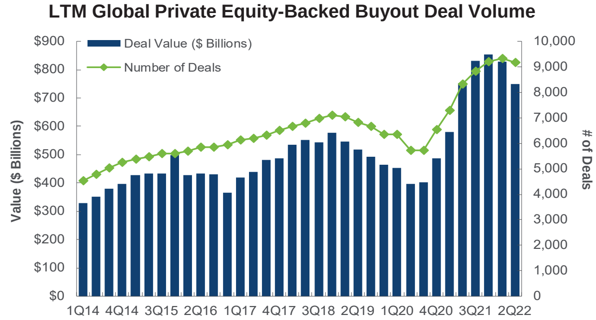


Note: Latest 5 months of HFR data are estimated by HFR and may change in the future.
Source: HFR

- Hedge fund performance was mixed over the quarter.
- The HFRI Fund-Weighted Composite and HFRI Fund of Funds Composite Index produced returns of -0.6% and 0.7% over the quarter, respectively.
- Over the quarter, Global Macro was the best performer with a return of 2.2%.
- Emerging Markets and Distressed-Restructuring strategies were the worst performers with returns of -5.2% and -2.8% respectively.
- On a year-to-date basis, Global Macro has outperformed all other strategies.

Private Equity Market Overview – 2Q 2022

LTM Global Private Equity-Backed Buyout Deal Volume

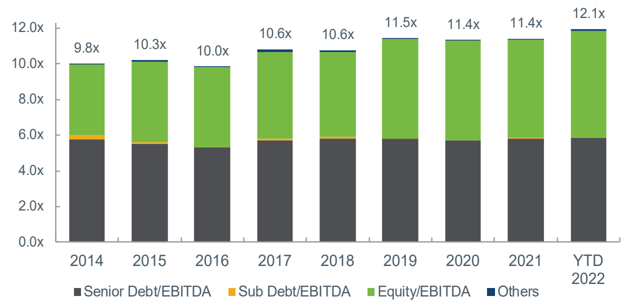


Source: Preqin

- **Fundraising:** During Q2 2022**,** $278.1 billion was raised by 553 funds, which was down 6.7% by number of funds raised but up 1.5% by capital raised compared to Q1 2022. This represented a decrease of 23.3% on a capital basis compared to Q2 2021. Dry powder stood at $3.0 trillion at the end of the quarter, an increase of 5.5% and 35.2% compared to Q1 2022 and the five-year average, respectively.[1]
- **Buyout:** Global private equity-backed buyout deals totaled $159.2 billion in Q2 2022, which was a decrease on a capital basis of 9.5% compared to Q1 2022, but an increase of 8.2% compared to the five-year quarterly average.[1] During the quarter, the average purchase price multiple for all U.S. LBOs was 11.5x EBITDA, down from Q1 2022's average of 12.2x but up from the five-year average (11.1x). Large cap purchase price multiples stood at 11.5x during the quarter, up compared to full-year 2021's level of 11.2x. The LTM average purchase price multiple across European transactions greater than €1B averaged 11.3x EBITDA at the end of Q2 2022, down from 11.6x at year-end 2021. Purchase prices for transactions of €500M million or more averaged 11.2x EBITDA on an LTM basis, lower than the 11.5x seen at the end of 2021.[2] Globally, exit value totaled $153.1 billion on 503 deals during the quarter, higher than the $118.5 billion across 586 deals during Q1 2022.[1]
- **Venture:** During the quarter, an estimated 3,374 venture-backed transactions totaling $62.3 billion were completed, which was a decrease on a capital and deal count basis over the prior quarter's total of $81.9 billion across 4,467 deals. This was an increase of 30.9% compared to the five-year quarterly average of $47.6 billion. Total U.S. venture-backed exit value totaled approximately $13.1 billion across an estimated 379 completed transactions in Q2 2022, down substantially from $267.6 billion across 447 exits in Q2 2021.[3]
- **Mezzanine:** 7 funds closed on $3.8 billion during the quarter. This was a significant decrease from the prior quarter's total of $11.7 billion raised by 10 funds and a decrease from $7.0 billion raised by 11 funds in Q2 2021. Estimated dry powder was $50.6 billion at the end of Q2 2022, up from $50.0 billion at the end of Q1 2022.[1]

Private Equity Market Overview – 2Q 2022

U.S. LBO Purchase Price Multiples – All Transactions Sizes



Source: S&P

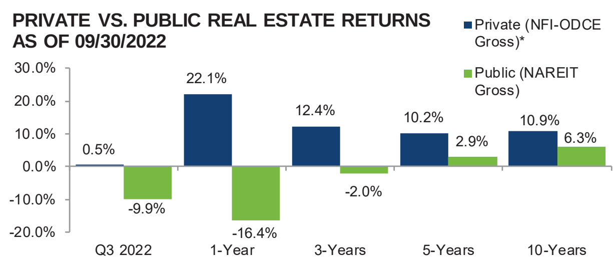
- **Distressed Debt:** The TTM U.S. high-yield default rate was 0.8% as of May 2022, which was up from 0.5% as of March 2022. Fitch predicted the default rate may rise to 1.0% by August. The high-yield default rate is projected to trend higher through 2022 and into 2023.[4] During the quarter, $27.4 billion was raised by 15 funds, up significantly from the $4.4 billion raised by 9 funds during Q1 2022. Dry powder was estimated at $160.3 billion at the end of Q2 2022, which was up 10.3% from Q1 2022. This remained above the five-year annual average level of $130.6 billion.[1]
- **Secondaries:** 18 funds raised $13.8 billion during the quarter, up from the $8.3 billion raised by 14 funds in Q1 2022. This was 26.7% higher than the five-year quarterly average of $10.9 billion. Secondary dry powder was estimated at $131.6 billion at the end of the quarter.[1]
- **Infrastructure:** $50.2 billion of capital was raised by 15 funds in Q2 2022 compared to $72.4 billion of capital raised by 24 partnerships in Q1 2022. At the end of the quarter, dry powder stood at $319.5 billion, up from year-end 2021's total of $282.3 billion. Infrastructure managers completed 544 deals for an aggregate deal value of $104.8 billion in Q2 2022 compared to 634 deals totaling $88.4 billion in Q1 2022.[1]
- **Natural Resources:** Through Q2 2022, an estimated 19 funds closed on $3.4 billion compared to 29 funds totaling $13.0 billion in 2021. Energy and utilities industry managers completed 53 deals totaling $11.6 billion in Q2 2022, compared to $33.0 billion across 55 deals in Q1 2022.[1]

Sources: [1] Preqin [2] Standard & Poor's [3] PwC/CB Insights MoneyTree Report [4] PitchBook/NVCA Venture Monitor [5] Fitch Ratings [6] Thomson Reuters [7] UBS

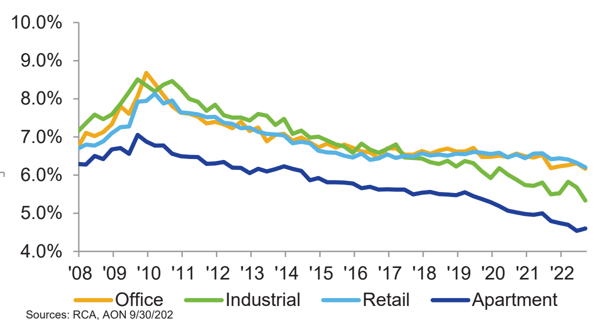
Notes: FY=Fiscal year ended 12/31; YTD=Year to date; LTM=Last 12 months (aka trailing 12 months); PPM=Purchase Price Multiples: Total Purchase Price ÷ EBITDA.

U.S. Commercial Real Estate Markets

PRIVATE VS. PUBLIC REAL ESTATE RETURNS AS OF 09/30/2022



Third quarter returns are preliminary
Sources: NCREIF, FactSet



Sources: RCA, AON 9/30/202

- U.S. Core Real Estate returned 0.5%* in third quarter 2022, equating to a 22.1% total gross return year-over-year. The US real estate markets experienced a robust recovery in 2021, although momentum has begun to moderate through the first half of 2022. During the third quarter 2022, REITs continued to decline driven by increasing volatility in the public market and rising interest rates.
- Global property markets, as measured by the FTSE EPRA/NAREIT Developed Real Estate Index, returned -11.4% (USD) in aggregate during the third quarter and experienced a cumulative decline of 22.1% over the trailing 1-year period. REIT market underperformance was driven by North America (-10.2% USD), Asia Pacific (-11.5% USD), and Europe (-21.6% USD). The U.S. REIT markets (FTSE NAREIT Equity REITs Index) returned -9.9% in the third quarter.
- In the third quarter of 2022, U.S. private real estate transaction volumes declined 21% year-over-year to $172 billion. The office sector transaction volumes in the U.S. have notably not recovered to pre pandemic levels. While office sector fundamentals signaled mild improvement, the sector faces significant headwinds in the capital markets, driven by a dramatic increase in the cost of debt.
- Recent action from the Federal Reserve to tighten monetary policy has led to deterioration in the capital markets. Recent bank stress tests have increased capital requirements for borrowers and caused banks to tighten borrowing terms or pause lending. This has led to reduced liquidity levels and increased financing costs across every property type, though there still remains significantly better demand and liquidity for multifamily and industrial compared to office and retail assets.
- In the US, rising mortgage rates coupled with elevated costs for labor and materials have resulted in decreased affordability of new homes and a slowdown in new construction. Most would-be buyers continue to be priced out of the housing market which has caused many to remain renters. Durable rent collections and record low vacancy across the US have prompted continued institutional investment in the multifamily sector.

*Indicates preliminary NFI-ODCE data gross of fees

Total Fund

As of September 30, 2022

Highlights

Executive Summary

- The Total Fund outperformed the Performance Benchmark over the trailing quarter, one-, three-, five-, and ten-year periods.
- Performance relative to peers is also competitive over short- and long-term time periods.
- The Pension Plan is well-diversified across six broad asset classes, and each asset class is also well-diversified.
- Public market asset class investments do not significantly deviate from their broad market based benchmarks, e.g., sectors, market capitalizations, global regions, credit quality, duration, and security types.
- Private market asset classes are well-diversified by vintage year, geography, property type, sectors, investment vehicle/asset type, or investment strategy.
- Asset allocation is monitored on a daily basis to ensure the actual asset allocation of the plan remains close to the long-term policy targets set forth in the Investment Policy Statement.
- Aon Investments and SBA staff revisit the plan design annually through informal and formal asset allocation and asset liability reviews.
- Adequate liquidity exists within the asset allocation to pay the monthly obligations of the Pension Plan consistently and on a timely basis.

Performance Highlights

- The Total Fund outperformed the Performance Benchmark over the trailing quarter, one-, three-, five-, and ten-year periods.

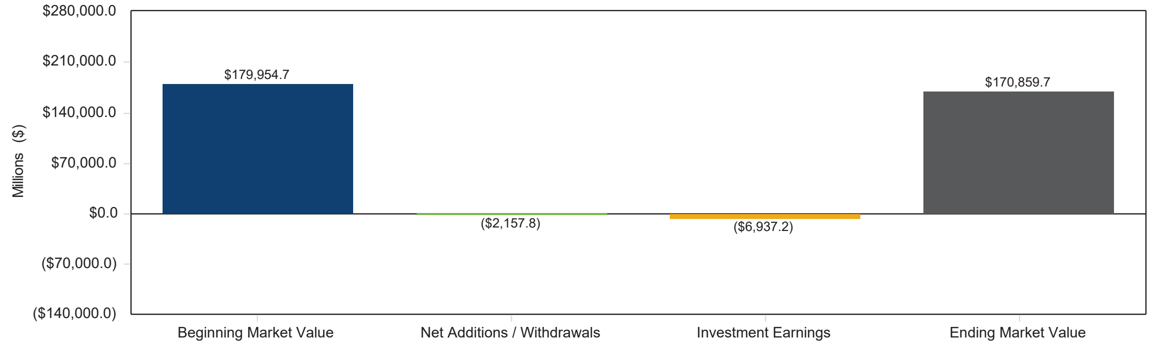
Asset Allocation

- The Fund assets total $170.9 billion as of September 30, 2022, which represents a $9.1 billion decrease since last quarter.
- Actual allocations for all asset classes were within their respective policy ranges and in line with the current policy at quarter-end.

Total Fund As of September 30, 2022

Total Plan Asset Summary

Change in Market Value
From July 1, 2022 to September 30, 2022



Summary of Cash Flow

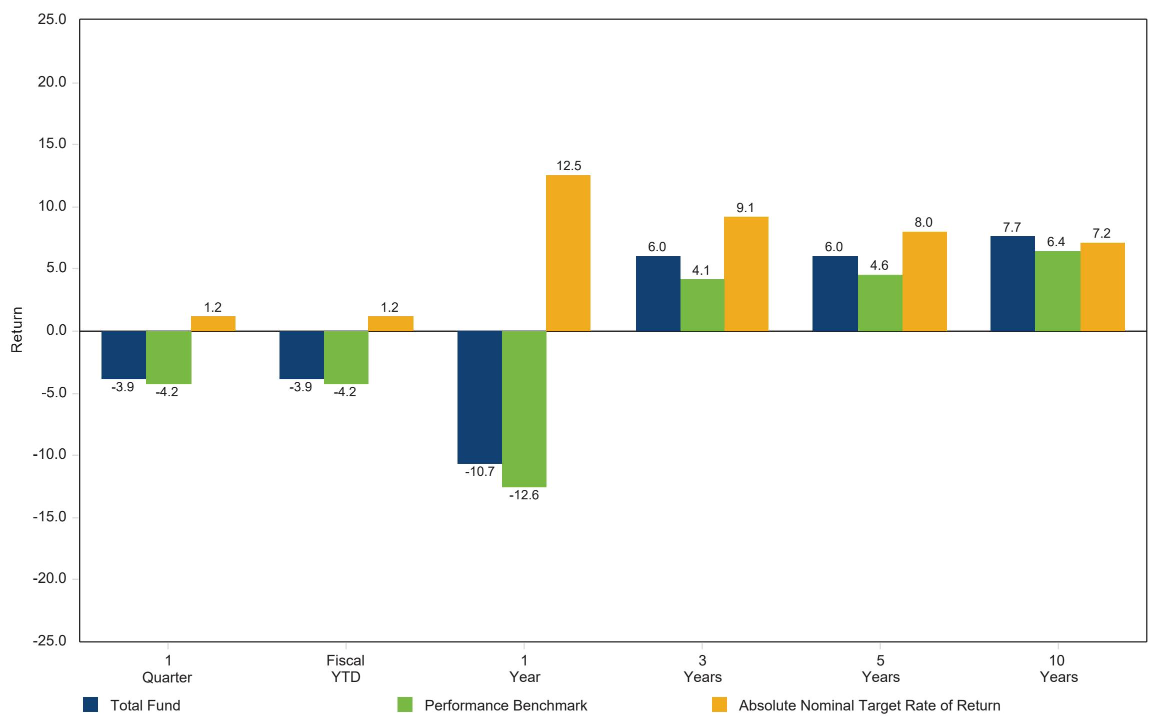
	1 Quarter	Fiscal YTD*
Beginning Market Value	179,954,710,565	179,954,710,565
+ Additions / Withdrawals	-2,157,831,194	-2,157,831,194
+ Investment Earnings	-6,937,203,316	-6,937,203,316
= Ending Market Value	170,859,676,055	170,859,676,055

*Period July 2022 - Present

Total Fund As of September 30, 2022

Total Plan Performance Summar y

Return Summar y



As of September 30, 2022

Asset Allocation & Performance

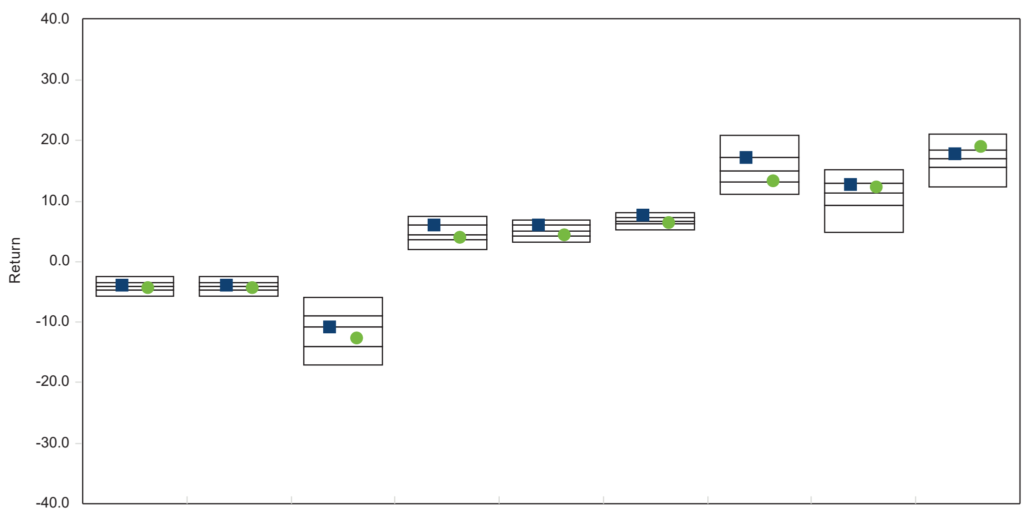
	Allocation			Performance(%)					
	Market Value ($)	%	Policy(%)	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years
Total Fund	170,859,676,055	100.0	100.0	-3.9 (49)	-3.9 (49)	-10.7 (50)	6.0 (25)	6.0 (26)	7.7 (9)
Performance Benchmark				-4.2 (62)	-4.2 (62)	-12.6 (60)	4.1 (65)	4.6 (65)	6.4 (59)
Absolute Nominal Target Rate of Return				1.2 (1)	1.2 (1)	12.5 (1)	9.1 (1)	8.0 (2)	7.2 (36)
Global Equity*	80,277,137,263	47.0	49.1	-6.5	-6.5	-21.6	3.9	4.5	7.8
Asset Class Target				-6.7	-6.7	-21.2	3.7	4.2	7.3
Domestic Equities	41,126,325,924	24.1		-4.4	-4.4	-17.3	7.7	8.6	11.3
Asset Class Target				-4.5	-4.5	-17.6	7.7	8.6	11.4
Foreign Equities	27,081,045,127	15.8		-9.6	-9.6	-27.6	-0.7	-0.4	3.9
Asset Class Target				-9.8	-9.8	-25.7	-1.2	-0.8	3.2
Global Equities	10,030,335,509	5.9		-6.9	-6.9	-20.6	2.3	4.0	7.4
Benchmark				-6.4	-6.4	-20.2	4.2	5.0	7.8
Fixed Income	29,697,959,423	17.4	17.4	-3.6	-3.6	-11.4	-1.9	0.2	1.0
Asset Class Target				-3.8	-3.8	-11.5	-2.3	0.0	0.7
Private Equity	17,321,065,151	10.1	9.7	-5.3	-5.3	8.0	25.1	21.6	18.2
Asset Class Target				-7.5	-7.5	-18.2	6.7	7.2	10.9
Real Estate	21,300,005,717	12.5	11.7	3.5	3.5	20.5	11.1	9.7	11.0
Asset Class Target				3.0	3.0	22.5	10.2	8.9	9.7
Strategic Investments	20,186,725,897	11.8	11.1	0.1	0.1	4.8	7.5	7.0	8.1
Short-Term Target				0.7	0.7	3.0	6.8	6.3	6.3
Cash	2,076,782,604	1.2	1.0	0.5	0.5	0.7	0.6	1.2	0.8
Bank of America Merrill Lynch 3-Month US Treasury Index				0.5	0.5	0.6	0.6	1.1	0.7

Benchmark and universe descriptions can be found in the Appendix.
* Global Equity became an asset class in July 2010. The historical return series prior to July 2010 was derived from the underlying Domestic Equities, Foreign Equities, and Global Equities components.

As of September 30, 2022

Plan Sponsor Peer Group Analysis

All Public Plans > $1B-Total Fund

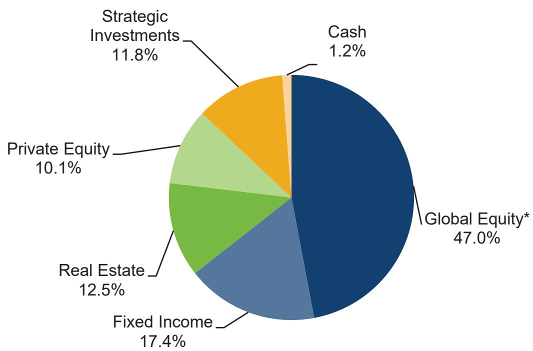


	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	2021	2020	2019
■ Total Fund	-3.9 (49)	-3.9 (49)	-10.7 (50)	6.0 (25)	6.0 (26)	7.7 (9)	17.2 (26)	12.9 (26)	17.8 (32)
● Performance Benchmark	-4.2 (62)	-4.2 (62)	-12.6 (60)	4.1 (65)	4.6 (65)	6.4 (59)	13.3 (74)	12.4 (34)	19.1 (18)
5th Percentile	-2.5	-2.5	-5.9	7.5	6.8	8.2	21.0	15.2	21.2
1st Quartile	-3.5	-3.5	-8.9	6.0	6.1	7.3	17.2	13.0	18.4
Median	-4.0	-4.0	-10.8	4.5	5.0	6.7	15.0	11.3	17.1
3rd Quartile	-4.6	-4.6	-14.0	3.7	4.2	6.2	13.2	9.2	15.6
95th Percentile	-5.7	-5.7	-17.1	2.1	3.2	5.2	11.2	4.8	12.4
Population	63	63	56	53	52	48	133	158	159

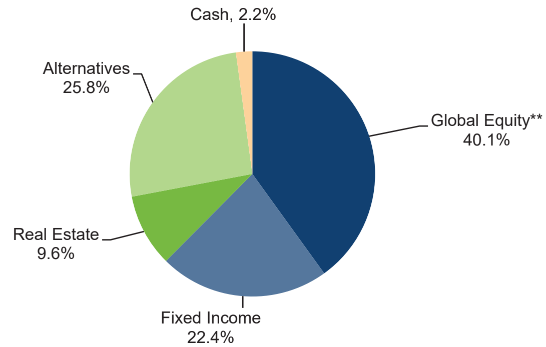
Parentheses contain percentile rankings.

Universe Asset Allocation Comparison[1]

Total Fund



BNY Mellon Public Funds > $1B Net Universe

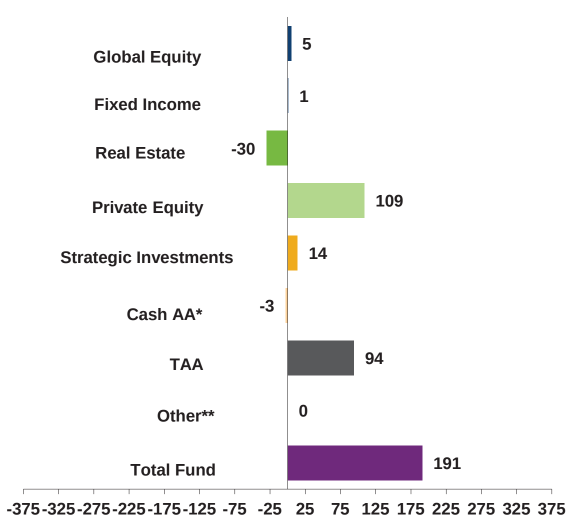


*Global Equity Allocation: 24.1% Domestic Equities; 15.8% Foreign Equities; 5.9% Global Equities; 1.1% Global Equity Liquidity Account. Percentages are of the Total FRS Fund.

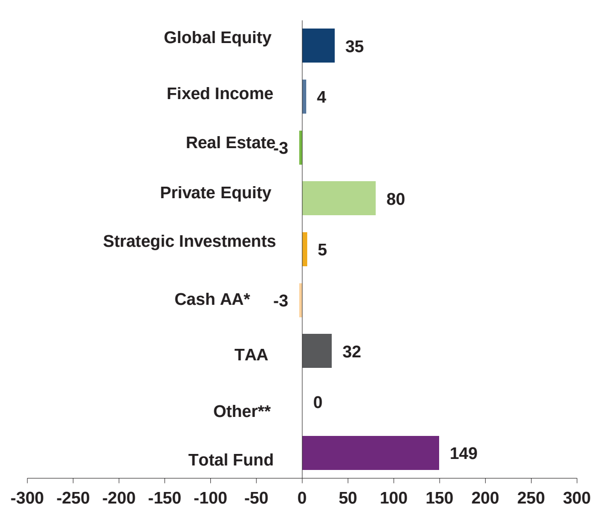
**Global Equity Allocation: 25.6% Domestic Equities; 14.4% Foreign Equities.

[1]Allocations may not sum too 100.0% due to rounding.

Attribution



1-Year Ending 9/30/2022



5-Year Ending 9/30/2022

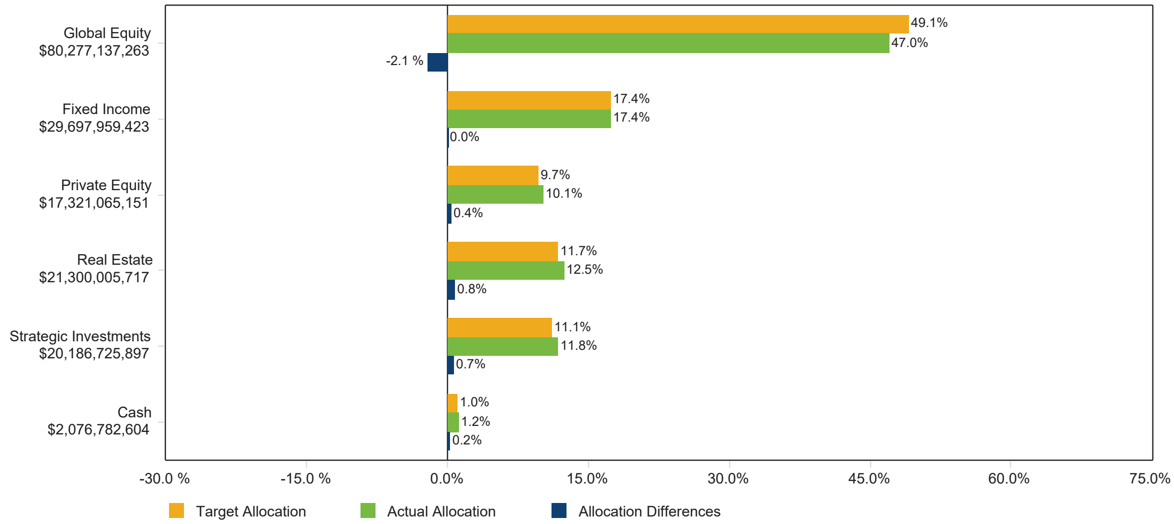
*Cash AA includes Cash and Central Custody, Securities Lending Account income from 12/2009 to 3/2013 and unrealized gains and losses on securities lending collateral beginning June 2013, TF STIPFRS NAV Adjustment Account, and the Cash Expense Account.

**Other includes legacy accounts and unexplained differences due to methodology.

Total Fund As of September 30, 2022

Asset Allocation Compliance

	Market Value ($)	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund	170,859,676,055	100.0	100.0		
Global Equity	80,277,137,263	47.0	49.1	45.0	70.0
Fixed Income	29,697,959,423	17.4	17.4	10.0	26.0
Private Equity	17,321,065,151	10.1	9.7	2.0	12.0
Real Estate	21,300,005,717	12.5	11.7	4.0	16.0
Strategic Investments	20,186,725,897	11.8	11.1	0.0	16.0
Cash	2,076,782,604	1.2	1.0	0.3	5.0



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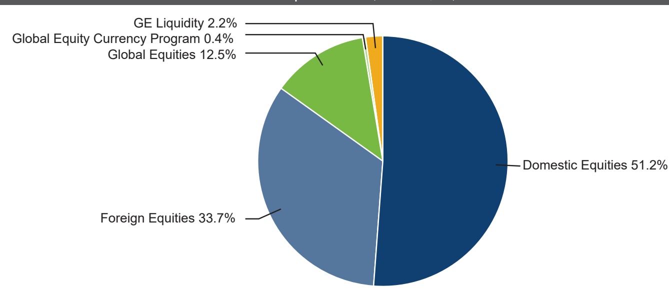
Global Equity

Global Equity* As of September 30, 2022

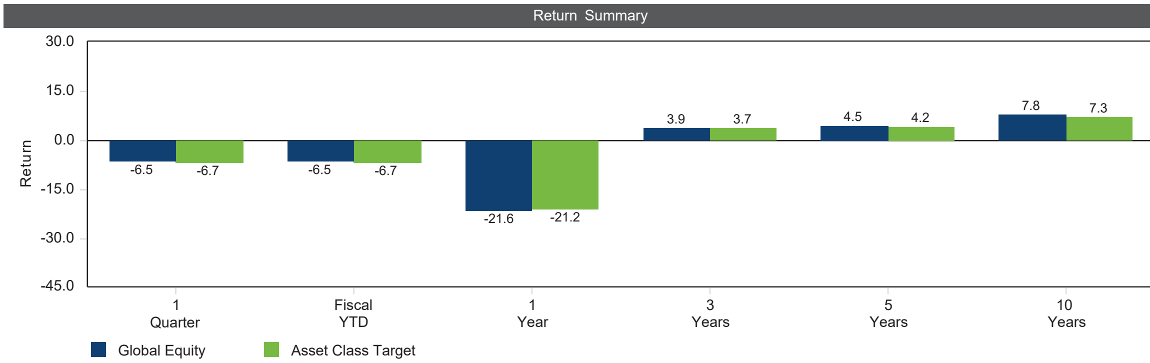
Global Equity* Portfolio Overview

Current Allocation

September 30, 2022 : $80,351M



Return Summary



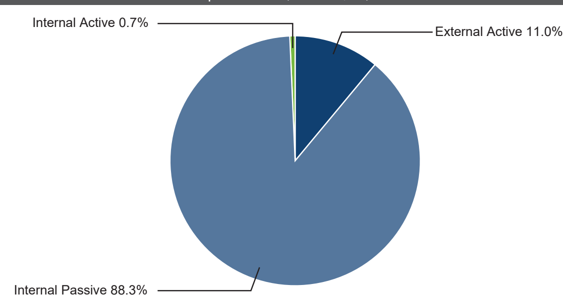
* Global Equity became an asset class in July 2010. The historical return series prior to July 2010 was derived from the underlying Domestic Equities, Foreign Equities, and Global Equities components.

Domestic Equit ies

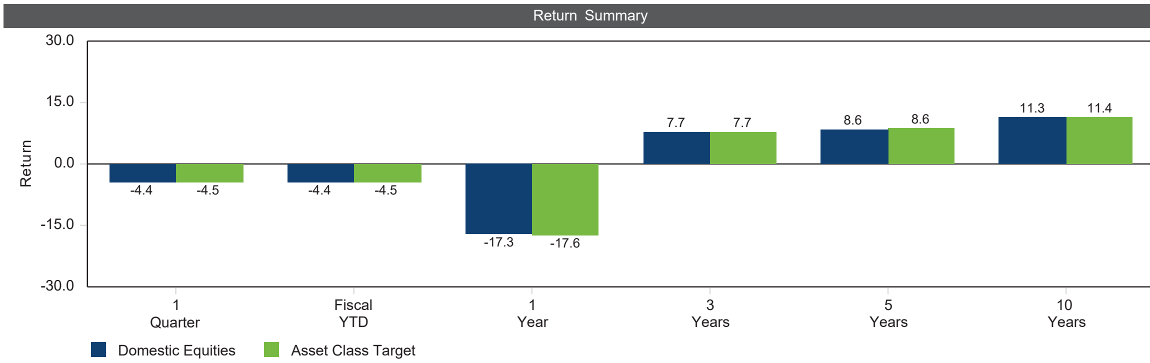
Domestic Equities Portfolio Overview

Current Allocation

September 30, 2022 : $41,126M



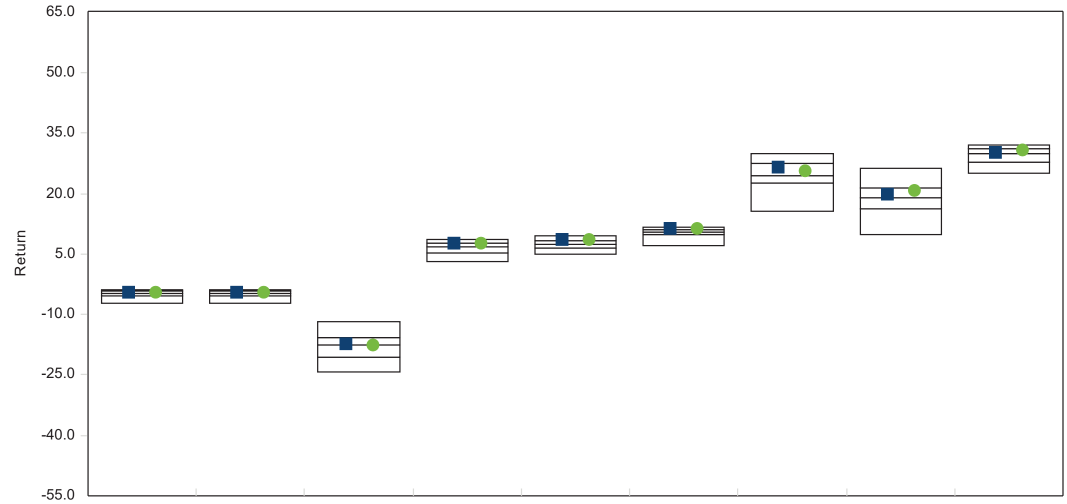
Return Summary



As of September 30, 2022

Plan Sponsor Peer Group Analysis

All Public Plans > $1B-US Equity Segment



	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	2021	2020	2019
■ Domestic Equities	-4.4 (38)	-4.4 (38)	-17.3 (47)	7.7 (25)	8.6 (20)	11.3 (20)	26.6 (30)	19.9 (40)	30.4 (38)
● Asset Class Target	-4.5 (41)	-4.5 (41)	-17.6 (51)	7.7 (25)	8.6 (19)	11.4 (19)	25.7 (38)	20.9 (29)	31.0 (28)
5th Percentile	-3.7	-3.7	-11.9	8.6	9.5	11.8	30.0	26.4	32.2
1st Quartile	-4.2	-4.2	-15.6	7.7	8.4	11.2	27.5	21.5	31.2
Median	-4.9	-4.9	-17.5	6.8	7.4	10.6	24.3	18.9	30.1
3rd Quartile	-5.4	-5.4	-20.7	5.3	6.5	9.7	22.6	16.1	27.7
95th Percentile	-7.2	-7.2	-24.1	3.2	4.9	7.1	15.7	10.0	25.0
Population	48	48	47	40	38	29	56	55	52

Parentheses contain percentile rankings.

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Foreign Equit ies

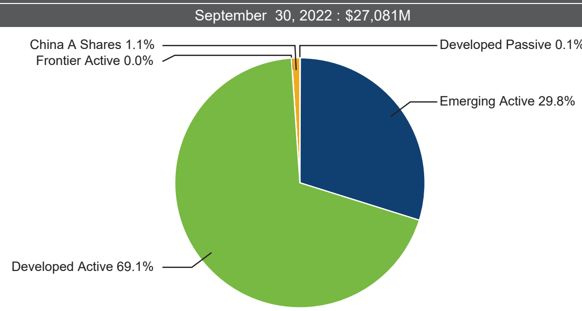
Aon Empower Results®

Forei gn Equities As of September 30, 2022

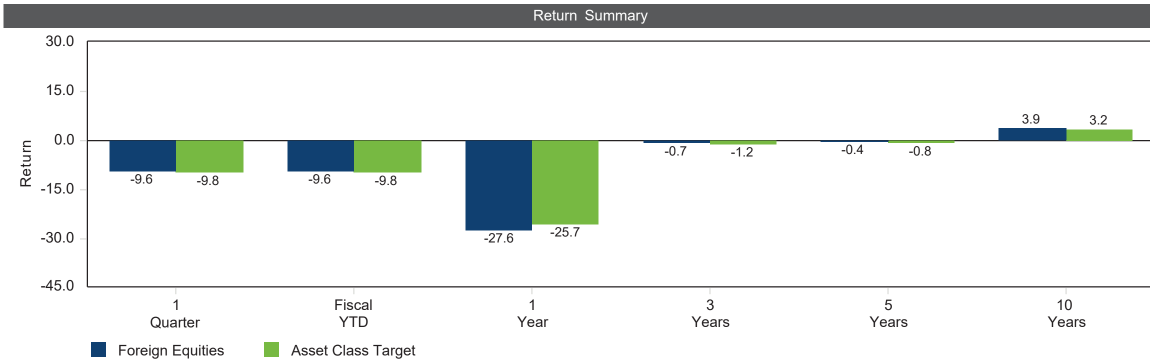
Forei gn Equities Portfolio Overview

Current Allocation

September 30, 2022 : $27,081M



Return Summary

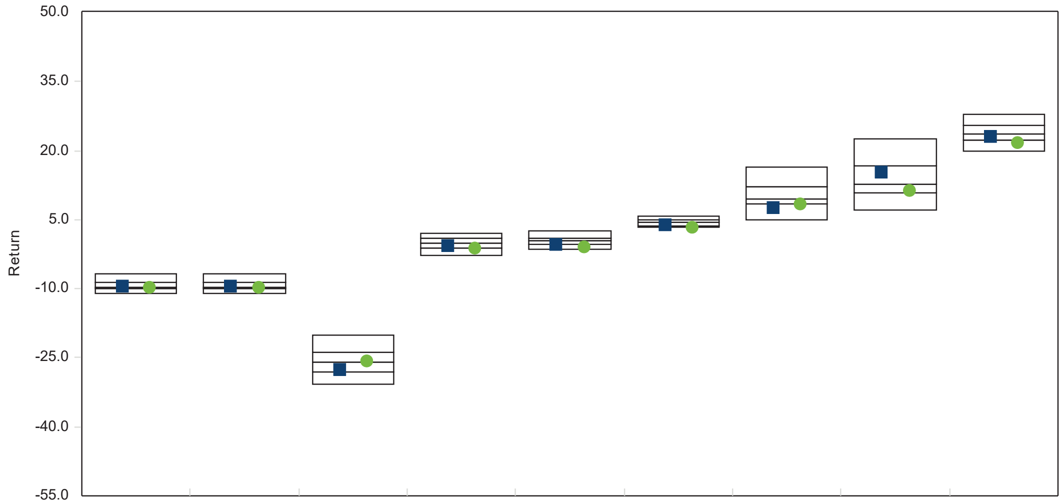


Aon Empower Results®

As of September 30, 2022

Plan Sponsor Peer Group Analysis

All Public Plans > $1B-Intl. Equity Segment



	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	2021	2020	2019
■ Foreign Equities	-9.6 (46)	-9.6 (46)	-27.6 (71)	-0.7 (62)	-0.4 (78)	3.9 (72)	7.6 (80)	15.4 (34)	23.1 (63)
● Asset Class Target	-9.8 (56)	-9.8 (56)	-25.7 (47)	-1.2 (80)	-0.8 (87)	3.2 (99)	8.4 (71)	11.3 (64)	21.7 (84)
5th Percentile	-6.8	-6.8	-20.1	1.9	2.7	5.8	16.5	22.4	27.9
1st Quartile	-8.6	-8.6	-23.8	0.9	1.0	4.9	12.2	16.8	25.5
Median	-9.7	-9.7	-26.0	-0.1	0.4	4.5	9.6	12.8	23.7
3rd Quartile	-10.1	-10.1	-28.0	-1.1	-0.4	3.8	8.3	10.7	22.4
95th Percentile	-10.9	-10.9	-30.7	-2.7	-1.5	3.4	4.9	7.1	20.0
Population	51	51	50	45	45	35	56	58	53

Parentheses contain percentile rankings.

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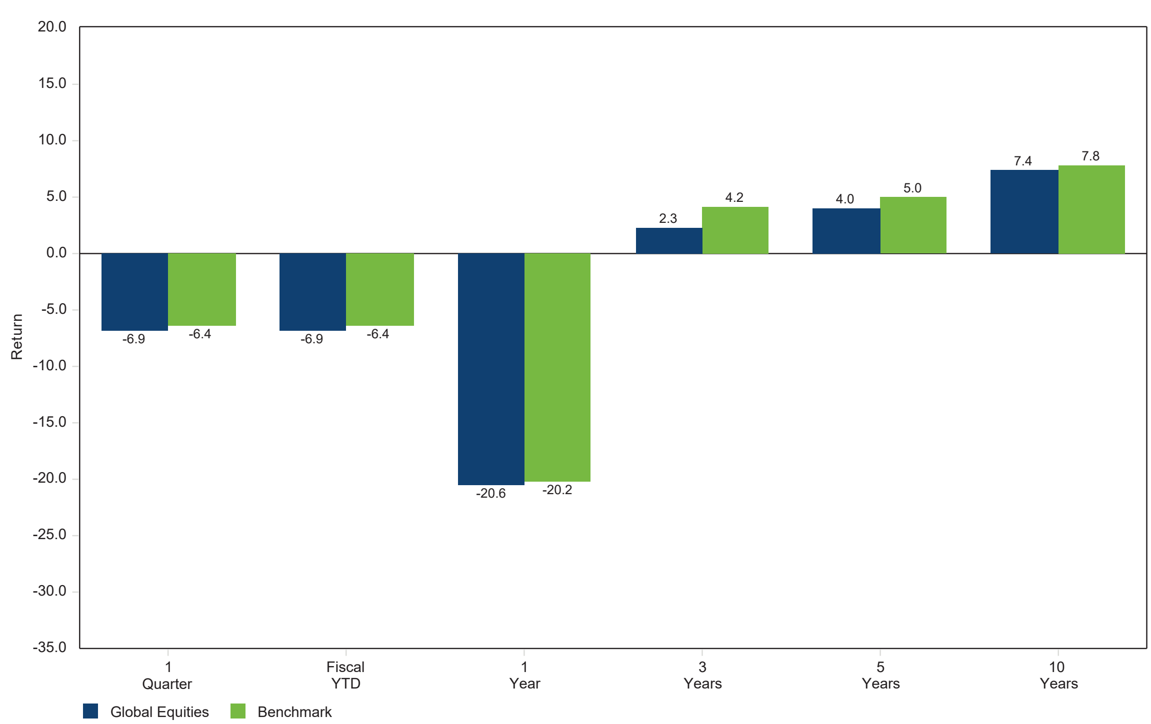
Global Equities

Global Equities Performance Summary

Return Summary

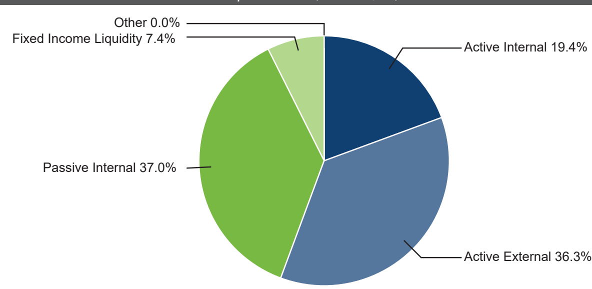


Fixed Income

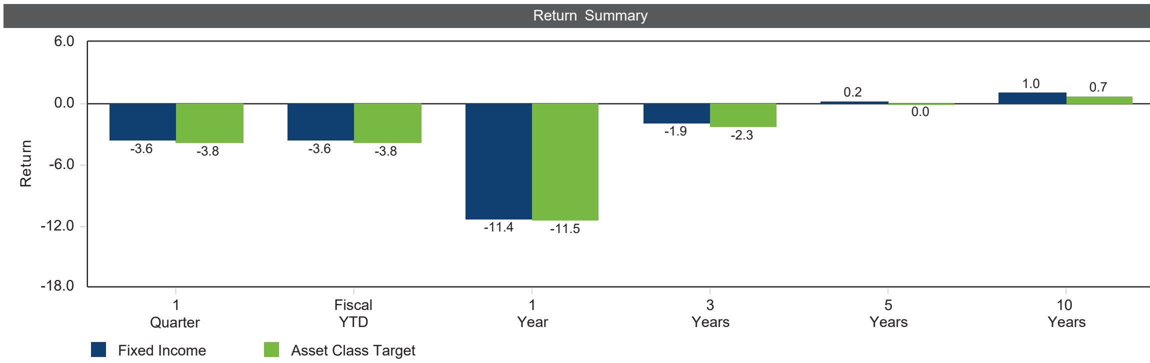
Fixed Income Portfolio Overview

Current Allocation

September 30, 2022 : $29,698M



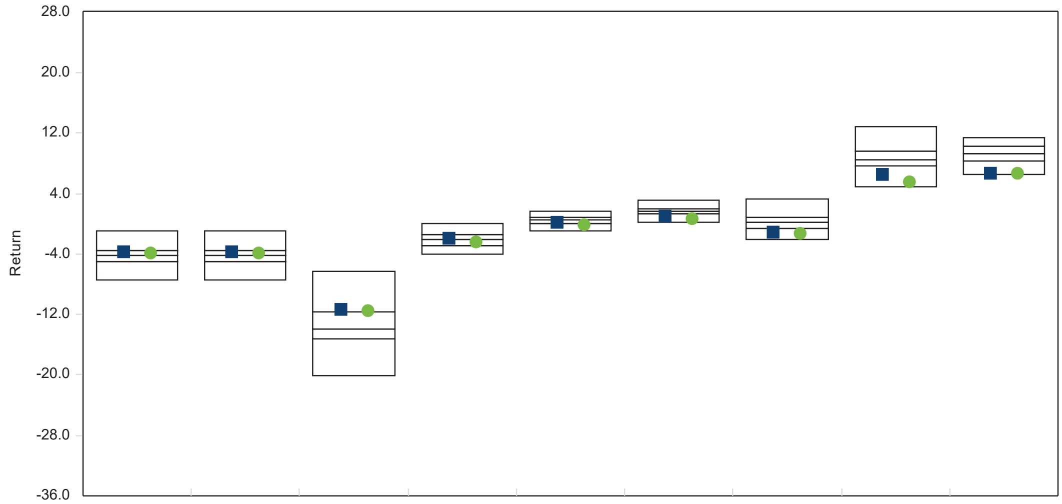
Return Summary



As of September 30, 2022

Plan Sponsor Peer Group Analysis

All Public Plans > $1B-US Fixed Income Segment



	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	2021	2020	2019
■ Fixed Income	-3.6 (33)	-3.6 (33)	-11.4 (24)	-1.9 (50)	0.2 (70)	1.0 (89)	-1.0 (86)	6.6 (87)	6.7 (95)
● Asset Class Target	-3.8 (37)	-3.8 (37)	-11.5 (25)	-2.3 (64)	0.0 (85)	0.7 (90)	-1.3 (91)	5.6 (90)	6.7 (95)
5th Percentile	-0.8	-0.8	-6.3	0.0	1.7	3.1	3.3	12.9	11.4
1st Quartile	-3.4	-3.4	-11.7	-1.5	0.9	2.0	0.8	9.7	10.3
Median	-4.2	-4.2	-13.9	-2.0	0.6	1.6	0.1	8.6	9.3
3rd Quartile	-5.0	-5.0	-15.2	-2.8	0.0	1.3	-0.6	7.7	8.4
95th Percentile	-7.4	-7.4	-20.1	-4.0	-0.9	0.2	-2.0	4.9	6.5
Population	53	53	52	44	43	34	58	59	53

Parentheses contain percentile rankings.

AON Empower Results®

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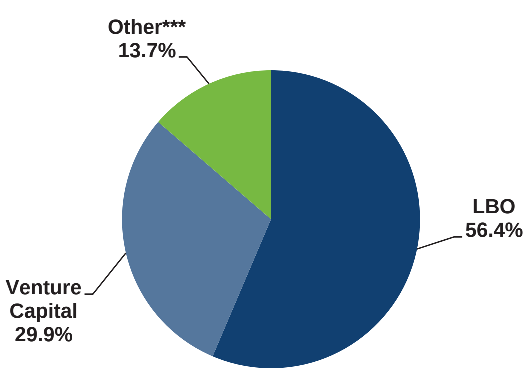
AON Empower Results®

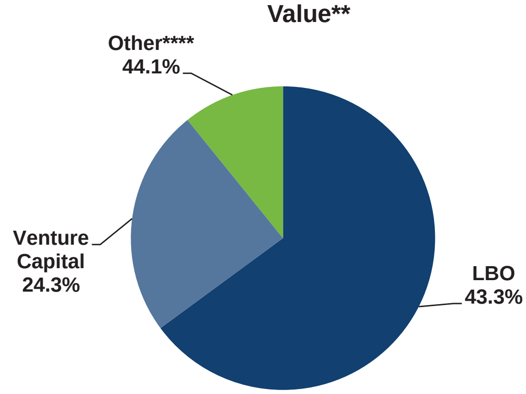
Private Equity

Overview

FRS Private Equity by Market Value*



Preqin Private Equity Strategies by Market Value**

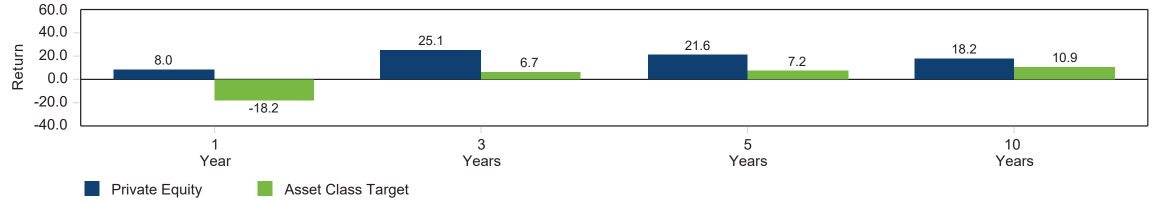


*Allocation data is as of September 30, 2022.
**Allocation data is as of June 30, 2019, from the Preqin database.
***Other for the FRS Private Equity consists of Growth Capital, Secondary, PE Cash, and PE Transition.
****Other for the Preqin data consists of Distressed PE, Growth, Mezzanine, and other Private Equity/Special Situations.
Preqin universe is comprised of 10,000 private equity funds representing $4.8 trillion.

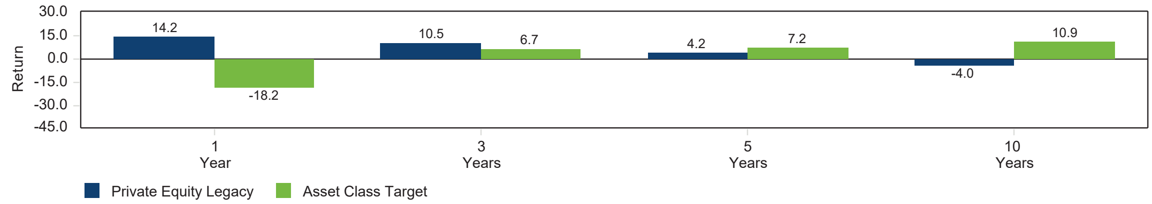
Private Equity

Time-Weighted Investment Results

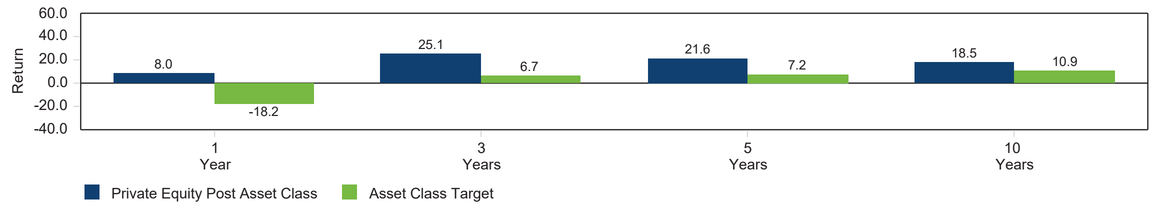
Private Equity Return Summary as of September 30, 2022



Private Equity Legacy Return Summary as of September 30, 2022



Private Equity Post Asset Class Return Summary as of September 30, 2022



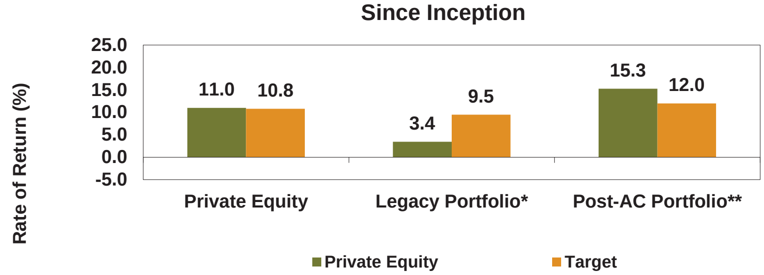
AON Empower Results

Private Equity

Dollar-Weighted Investment Results

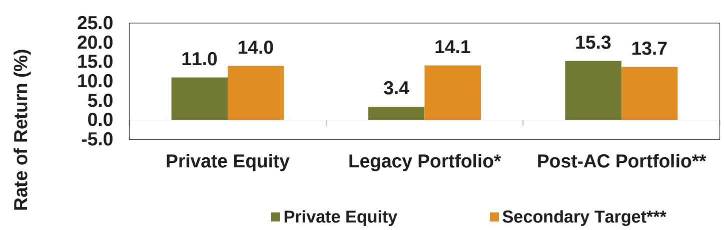
As of September 30, 2022

Since Inception



As of September 30, 2022

Since Inception



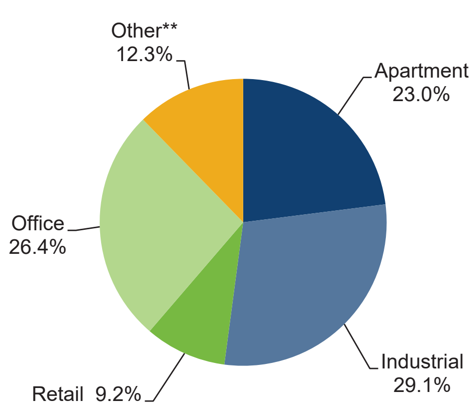
*The Inception Date for the Legacy Portfolio is January 1989.
**The Inception Date for the Post-AC Portfolio is September 2000.
***The Secondary Target is a blend of the Cambridge Associates Private Equity Index and the Cambridge Associates Venture Capital Index based on actual ABAL weights. Secondary Target data is on a quarterly lag.

AON Empower Results

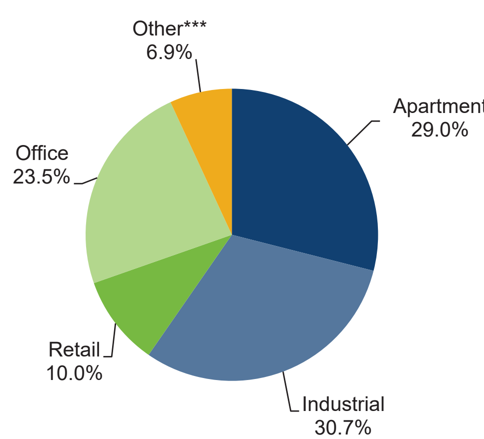
Real Estate

Overview

FRS*



NFI-ODCE Index*

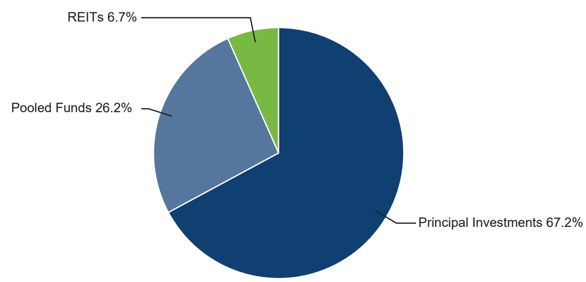


*Property Allocation data is as of June 30, 2022. The FRS chart includes only the FRS private real estate assets. Property type information for the REIT portfolios is not include
**Other for the FRS consists of Hotel, Land, Preferred Equity, Agriculture, Self-Storage and Senior Housing.
***Other for the NFI-ODCE Index consists of Hotel, Senior Living, Healthcare, Mixed Use, Single Family Residential, Parking, Timber/Agriculture, Land and Infrastructure.

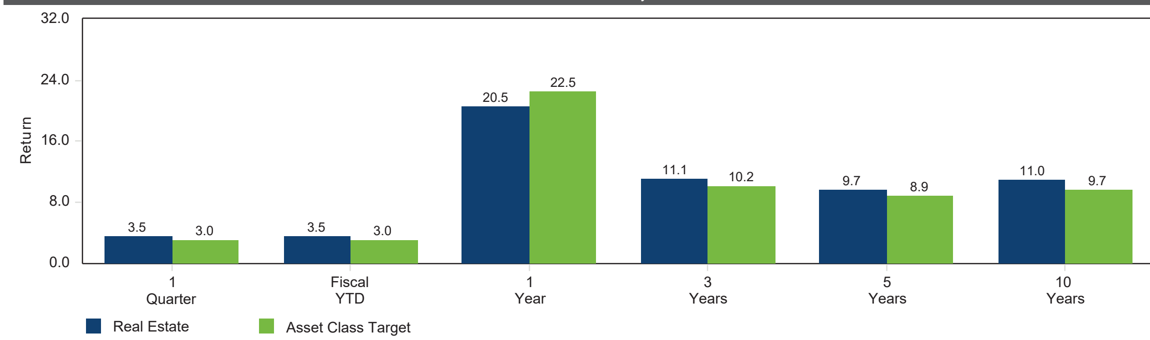
Real Estate Portfolio Overview

Current Allocation

September 30, 2022 : $21,300M

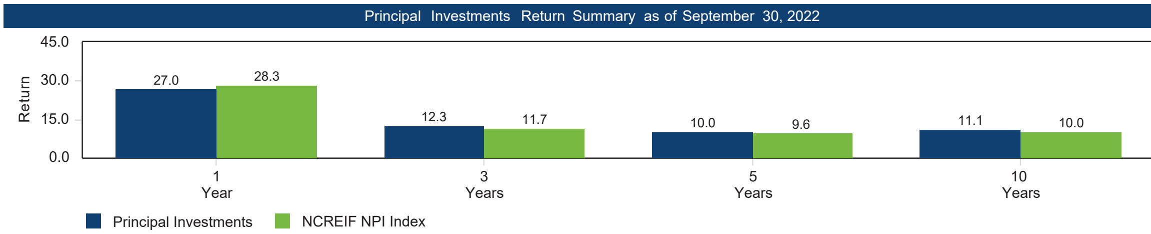


Return Summary

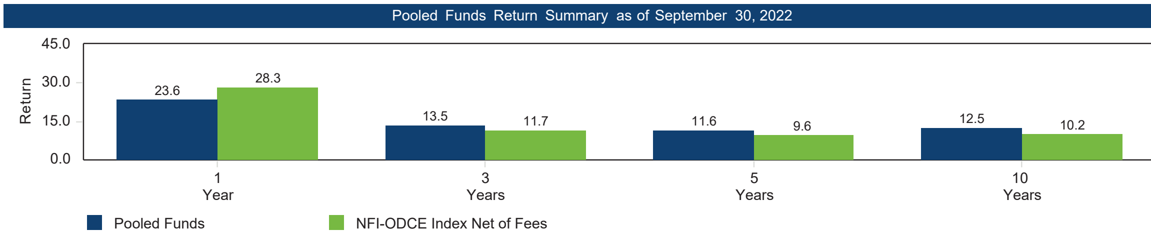


Real Estate

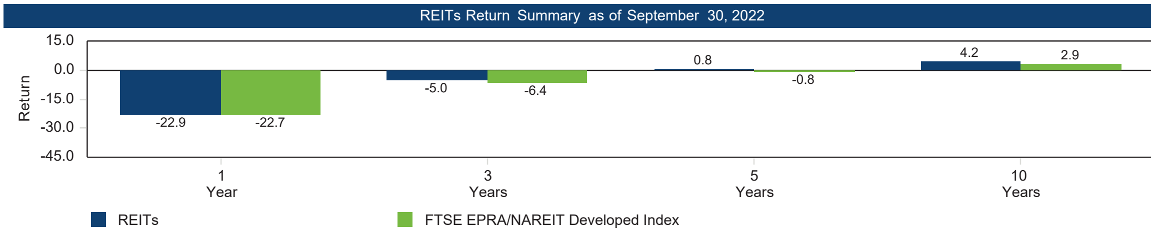
Principal Investments Return Summary as of September 30, 2022



Pooled Funds Return Summary as of September 30, 2022



REITs Return Summary as of September 30, 2022



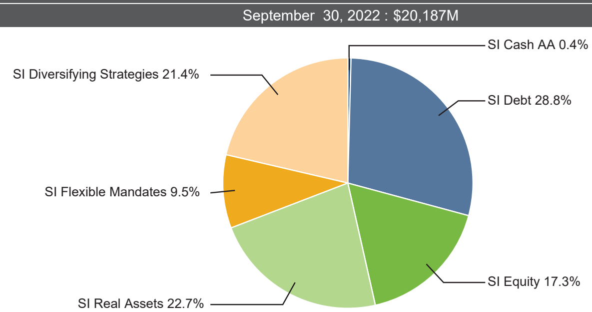
Strategic Investments

Strategic Investments As of September 30, 2022

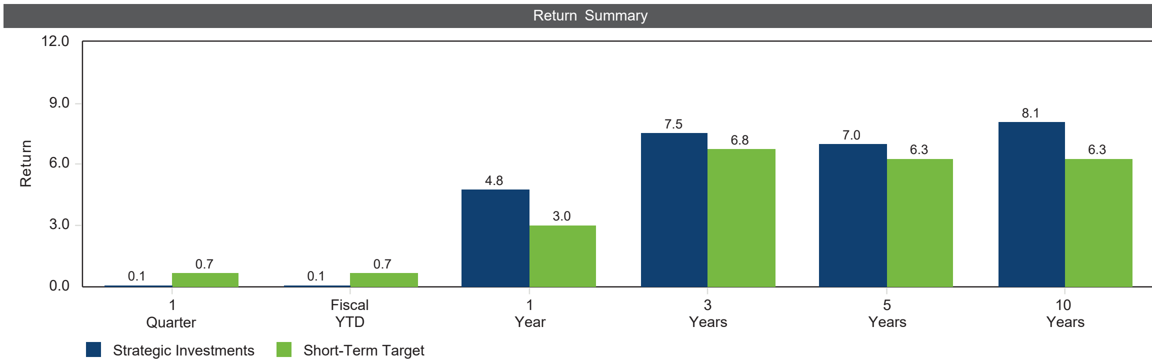
Strategic Investments Portfolio Overview

Current Allocation

September 30, 2022 : $20,187M



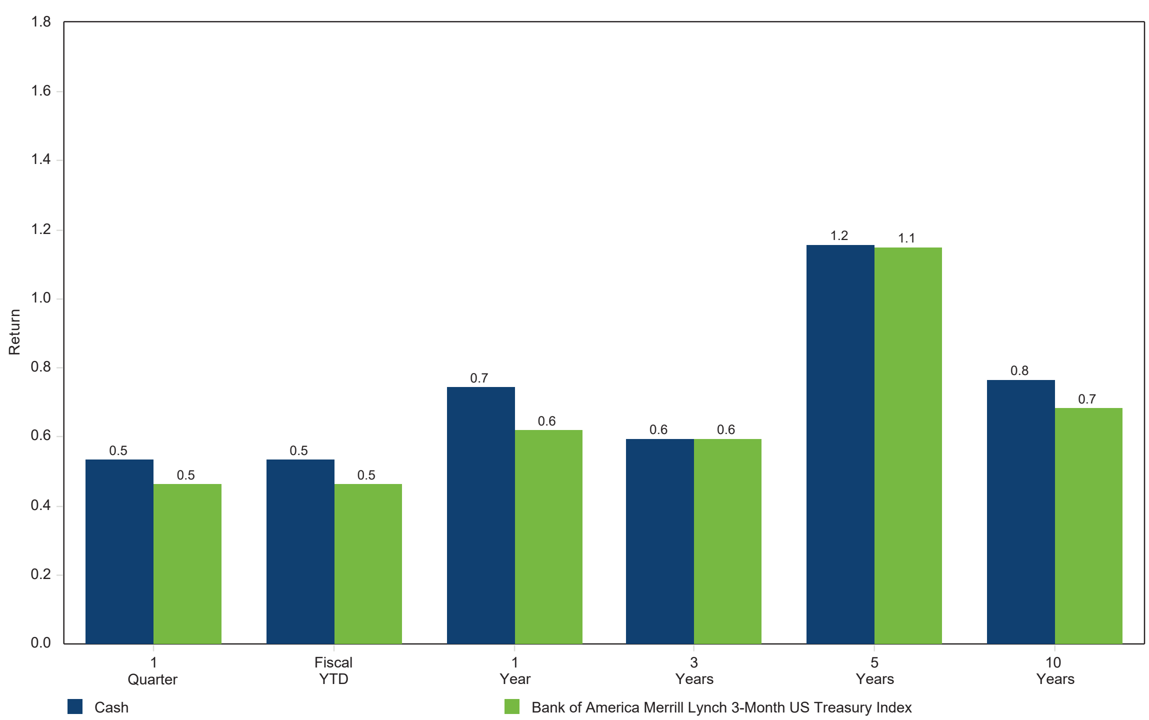
Return Summary



Cash

Cash Performance Summar y

Return Summary



Appendix

As of September 30, 2022

Appendix

Total FRS Assets

Performance Benchmark- A combination of the Global Equity Target, the Barclays Capital U.S. Intermediate Aggregate Index, the Private Equity Target Index, the Real Estate Investments Target Index, the Strategic Investments Target Benchmark, and the Bank of America Merrill Lynch 3-Month US Treasury Index. The short-term target policy allocations to the Strategic Investments, Real Estate and Private Equity asset classes are floating and based on the actual average monthly balance of the Global Equity asset class. Please refer to section VII. Performance Measurement in the FRS Defined Benefit Plan Investment Policy Statement for more details on the calculation of the Performance Benchmark. Prior to October 1, 2013, the Performance benchmark was a combination of the Global Equity Target, the Barclays Aggregate Bond Index, the Private Equity Target Index, the Real Estate Investments Target Index, the Strategic Investments Target Benchmark, and the iMoneyNet First Tier Institutional Money Market Funds Net Index. The short-term target policy allocations to the Strategic Investments, Real Estate and Private Equity asset classes are floating and based on the actual average monthly balance of the Global Equity asset class. Prior to July 2010, the Performance Benchmark was a combination of the Russell 3000 Index, the Foreign Equity Target Index, the Strategic Investments Target Benchmark, the Barclays Aggregate Bond Index, the Real Estate Investments Target Index, the Private Equity Target Index, the Barclays U.S. High Yield Ba/B 2% Issuer Capped Index, and the iMoneyNet First Tier Institutional Money Market Funds Gross Index. During this time, the short-term target policy allocations to Strategic Investments, Real Estate and Private Equity asset classes were floating and based on the actual average monthly balance of the Strategic Investments, Real Estate and Private Equity asset classes. The target weights shown for Real Estate and Private Equity were the allocations that the asset classes were centered around. The actual target weight floated around this target month to month based on changes in asset values.

Total Global Equity

Performance Benchmark- A custom version of the MSCI All Country World Investable Market Index (MSCI IMI), in dollar terms, net of withholding taxes on non-resident institutional investors, adjusted to reflect securities and other investments prohibited by Florida law or that would be prohibited by Florida law if acquired as of the date of measurement of such Index notwithstanding that the securities or investments were actually acquired before such date. Prior to July 2010, the asset class benchmark is a weighted average of the underlying Domestic Equities, Foreign Equities and Global Equities historical benchmarks.

Total Domestic Equities

Performance Benchmark- The Russell 3000 Index. Prior to July 1, 2002, the benchmark was the Wilshire 2500 Stock Index. Prior to January 1, 2001, the benchmark was the Wilshire 2500 Stock Index ex-Tobacco. Prior to May 1, 1997, the benchmark was the Wilshire 2500 Stock Index. Prior to September 1, 1994, the benchmark was the S&P 500 Stock Index.

Total Foreign Equities

Performance Benchmark- A custom version of the MSCI ACWI ex-U.S. Investable Market Index adjusted to exclude companies divested under the PFIA. Prior to April 1, 2008, it was the MSCI All Country World Index ex-U.S. Investable Market Index. Prior to September 24, 2007, the target was the MSCI All Country World ex-U.S. Free Index. Prior to November 1, 1999, the benchmark was 85% MSCI Europe, Australasia and Far East (EAFE) Foreign Stock Index and 15% IFCI Emerging Markets Index with a half weight in Malaysia. Prior to March 31, 1995, the benchmark was the EAFE Index.

Total Global Equities

Performance Benchmark- Aggregated based on each underlying manager's individual benchmark. The calculation accounts for the actual weight and the benchmark return. The benchmarks used for the underlying managers include both the MSCI FSB All Country World ex-Sudan ex-Iran Net Index and MSCI FSB All Country World ex-Sudan ex-Iran Net Investable Market Index (IMI).

Total Fixed Income

Performance Benchmark- The Barclays Capital U.S. Intermediate Aggregate Index. Prior to October 1, 2013, it was the Barclays U.S. Aggregate Bond Index. Prior to June 1, 2007, it was the Fixed Income Management Aggregate (FIMA). Prior to July 1, 1999, the benchmark was the Florida High Yield Extended Duration Index. Prior to July 31, 1997, the benchmark was the Florida Extended Duration Index. Prior to July 1, 1989, the Salomon Brothers Broad Investment-Grade Bond Index was the benchmark. For calendar year 1985, the performance benchmark was 70% Shearson Lehman Extended Duration and 30% Salomon Brothers Mortgage Index.

Total Private Equity

Performance Benchmark- The MSCI All Country World Investable Market Index (ACWI IMI), adjusted to reflect the provisions of the Protecting Florida's Investments Act, plus a fixed premium return of 300 basis points per annum. Prior to July 1, 2014, the benchmark was the domestic equities target index return (Russell 3000 Index) plus a fixed premium return of 300 basis points per annum. Prior to July 1, 2010, it was the domestic equities target index return plus a fixed premium return of 450 basis points per annum. Prior to November 1, 1999, Private Equities was part of the Domestic Equities asset class and its benchmark was the domestic equities target index return plus 750 basis points.

Total Real Estate

Performance Benchmark- The core portion of the asset class is benchmarked to an average of the National Council of Real Estate Investment Fiduciaries (NCREIF) Fund Index- Open-ended Diversified Core Equity, net of fees, weighted at 76.5%, and the non-core portion of the asset class is benchmarked to an average of the National Council of Real Estate Investment Fiduciaries (NCREIF) Fund Index- Open-ended Diversified Core Equity, net of fees, weighted at 13.5%, plus a fixed return premium of 150 basis points per annum, and the FTSE EPRA/NAREIT Developed Index, in dollar terms, net of withholding taxes on non-resident institutional investors, weighted at 10%. Prior to July 1, 2014, the benchmark was a combination of 90% NCREIF ODCE Index, net of fees, and 10% FTSE EPRA/NAREIT Developed Index, net of fees. Prior to July 1, 2010, it was a combination of 90% NCREIF ODCE Index, gross of fees, and 10% Dow Jones U.S. Select RESI. Prior to June 1, 2007, it was the Consumer Price Index plus 450 basis points annually. Prior to July 1, 2003, the benchmark was the Dow Jones U.S. Select Real Estate Securities Index Un-Levered. Prior to November 1, 1999, the benchmark was the Russell-NCREIF Property Index.

Total Strategic Investments

Performance Benchmark- Long-term, 4.0% plus the contemporaneous rate of inflation or CPI. Short-term, a weighted aggregation of individual portfolio level benchmarks. Prior to July 1, 2018, a Performance Benchmark-Long-term, 4.5% plus the contemporaneous rate of inflation or CPI. Short-term, a weighted aggregation of individual portfolio level benchmark.

Total Cash

Performance Benchmark- Bloomberg Barclays U.S. Treasury Bill: 1-3 month index. Prior to October 1, 2020, it was the Bank of America Merrill Lynch 3-Month US Treasury Index. Prior to July 1, 2018 it was the iMoneyNet First Tier Institutional Money Market Funds Net Index. Prior to July 1, 2010, it was the iMoneyNet First Tier Institutional Money Market Funds Gross Index. Prior to June 1, 2007, it was the return of the Merrill Lynch 90-Day (Auction Average) Treasury Bill Yield Index.

Description of Benchmarks

Bloomberg Barclays U.S. Treasury Bill: 1-3 month Index- Consists of U.S. Treasury Bills that have a remaining maturity of greater than or equal to 1 month and less than 3 months

Barclays Capital U.S. Intermediate Aggregate Bond Index - A market value-weighted index consisting of U.S. Treasury securities, corporate bonds and mortgage-related and asset-backed securities with one to ten years to maturity and an outstanding par value of $250 million or greater.

Consumer Price Index (CPI)- The CPI, an index consisting of a fixed basket of goods bought by the typical consumer and used to measure consumer inflation.

FTSE EPRA/NAREIT Developed Index - An index designed to represent general trends in eligible real estate equities worldwide. Relevant real estate activities are defined as the ownership, disposure and development of income-producing real estate. This index covers the four primary core asset classes (Industrial, Retail, Office, and Apartment).

MSCI All Country World Investable Market Index - A free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of developed and emerging markets. This investable market index contains constituents from the large, mid, and small cap size segments and targets a coverage range around 99% of free-float adjusted market capitalization.

NCREIF ODCE Property Index - The NCREIF ODCE is a capitalization-weighted, gross of fee, time-weighted return index. The index is a summation of open-end funds, which NCREIF defines as infinite-life vehicles consisting of multiple investors who have the ability to enter or exit the fund on a periodic basis, subject to contribution and/or redemption requests.

Russell 3000 Index - A capitalization-weighted stock index consisting of the 3,000 largest publicly traded U.S. stocks by capitalization. This represents most publicly traded, liquid U.S. stocks.

Description of Universes

Total Fund - A universe comprised of 150 total fund portfolio returns, net of fees, of public defined benefit plans calculated and provided by BNY Mellon Performance & Risk Analytics and Investment Metrics. Aggregate assets in the universe comprised $2.0 trillion as of quarter-end and the average market value was $13.2 billion.

Domestic Equity - A universe comprised of 52 total domestic equity portfolio returns, net of fees, of public defined benefit plans calculated and provided by BNY Mellon Performance & Risk Analytics. Aggregate assets in the universe comprised $1.0 trillion as of quarter-end and the average market value was $18.5 billion.

Foreign Equity - A universe comprised of 55 total international equity portfolio returns, net of fees, of public defined benefit plans calculated and provided by BNY Mellon Performance & Risk Analytics. Aggregate assets in the universe comprised $1.0 trillion as of quarter-end and the average market value was $18.5 billion.

Fixed Income - A universe comprised of 55 total fixed income portfolio returns, net of fees, of public defined benefit plans calculated and provided by BNY Mellon Performance & Risk Analytics. Aggregate assets in the universe comprised $1.1 trillion as of quarter-end and the average market value was $19.5 billion.

Real Estate - A universe comprised of 42 total real estate portfolio returns, net of fees, of public defined benefit plans calculated and provided by BNY Mellon Performance & Risk Analytics. Aggregate assets in the universe comprised $1.0 trillion as of quarter-end and the average market value was $24.1 billion.

Private Equity - An appropriate universe for private equity is unavailable.

Strategic Investments - An appropriate universe for strategic investments is unavailable.

Explanation of Exhibits

Quarterly and Cumulative Excess Performance - The vertical axis, excess return, is a measure of fund performance less the return of the primary benchmark. The horizontal axis represents the time series. The quarterly bars represent the underlying funds' relative performance for the quarter.

Ratio of Cumulative Wealth Graph - An illustration of a portfolio's cumulative, un-annualized performance relative to that of its benchmark. An upward-sloping line indicates superior fund performance versus its benchmark. Conversely, a downward-sloping line indicates underperformance by the fund. A flat line is indicative of benchmark-like performance.

Performance Comparison - Plan Sponsor Peer Group Analysis - An illustration of the distribution of returns for a particular asset class. The component's return is indicated by the circle and its performance benchmark by the triangle. The top and bottom borders represent the 5th and 95th percentiles, respectively. The solid line indicates the median while the dotted lines represent the 25th and 75th percentiles.

Notes

- The rates of return contained in this report are shown on an after-fees basis unless otherwise noted. They are geometric and time-weighted. Returns for periods longer than one year are annualized.
- Universe percentiles are based upon an ordering system in which 1 is the best ranking and 100 is the worst ranking.
- Due to rounding throughout the report, percentage totals displayed may not sum to 100%. Additionally, individual fund totals in dollar terms may not sum to the plan total.

Disclaimer

Past performance is not necessarily indicative of future results.

Unless otherwise noted, performance returns presented reflect the respective fund's performance as indicated. Returns may be presented on a before-fees basis (gross) or after-fees basis (net). After-fee performance is net of each respective sub-advisors' investment management fees and include the reinvestment of dividends and interest as indicated on the notes page within this report or on the asset allocation and performance summary pages. Actual returns may be reduced by Aon Investments' investment advisory fees or other trust payable expenses you may incur as a client. Aon Investments' advisory fees are described in Form ADV Part 2A. Portfolio performance, characteristics and volatility also may differ from the benchmark(s) shown.

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Refer to Hedge Fund Research, Inc. www.hedgefundresearch.com for information on HFR indices.

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FRS Investment Plan | Third Quarter 2022

Quarterly Investment Review

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Empower Results®

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Empower Results®

FRS Investment Plan

As of September 30, 2022

Asset Allocation & Performance

	Allocation: Market Value ($)	Allocation: %	Performance(%): 1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
FRS Investment Plan	12,232,141,697	100.0	-4.9	-20.0	-16.4	3.1	4.1	6.0
Total Plan Aggregate Benchmark			-4.7	-19.0	-15.0	3.1	4.0	5.8
Retirement Date	5,803,186,309	47.4						
FRS Retirement Fund	591,042,830	4.8	-5.5 (94)	-15.8 (40)	-13.2 (25)	1.8 (1)	2.9 (1)	3.5 (57)
Retirement Custom Index			-5.2 (87)	-15.3 (35)	-12.7 (14)	1.5 (4)	2.7 (6)	3.4 (65)
FRS 2020 Retirement Date Fund	458,513,075	3.7	-5.5 (82)	-16.2 (4)	-13.4 (6)	2.2 (5)	3.3 (15)	4.7 (90)
2020 Retirement Custom Index			-5.2 (63)	-16.0 (4)	-13.2 (6)	1.9 (17)	3.1 (26)	4.6 (100)
FRS 2025 Retirement Date Fund	802,868,761	6.6	-5.6 (62)	-17.5 (14)	-14.4 (11)	2.6 (5)	3.6 (8)	5.6 (58)
2025 Retirement Custom Index			-5.3 (51)	-17.5 (14)	-14.3 (11)	2.3 (13)	3.4 (25)	5.4 (73)
FRS 2030 Retirement Date Fund	780,338,094	6.4	-5.7 (56)	-18.8 (13)	-15.4 (15)	2.8 (10)	3.8 (22)	6.3 (43)
2030 Retirement Custom Index			-5.4 (37)	-18.8 (13)	-15.3 (15)	2.6 (18)	3.6 (38)	6.1 (53)
FRS 2035 Retirement Date Fund	766,721,451	6.3	-5.9 (48)	-20.0 (9)	-16.5 (10)	3.0 (29)	3.9 (43)	7.0 (43)
2035 Retirement Custom Index			-5.6 (32)	-20.0 (9)	-16.4 (10)	2.8 (33)	3.8 (57)	6.7 (50)
FRS 2040 Retirement Date Fund	702,059,276	5.7	-6.1 (40)	-21.2 (8)	-17.5 (12)	3.1 (42)	4.0 (58)	7.1 (44)
2040 Retirement Custom Index			-5.8 (32)	-21.2 (8)	-17.5 (12)	3.0 (44)	3.9 (72)	6.9 (69)
FRS 2045 Retirement Date Fund	700,450,510	5.7	-6.3 (44)	-22.2 (14)	-18.4 (16)	3.2 (50)	4.0 (80)	7.2 (63)
2045 Retirement Custom Index			-6.0 (29)	-22.1 (12)	-18.2 (16)	3.2 (50)	4.0 (82)	7.0 (92)
FRS 2050 Retirement Date Fund	469,566,077	3.8	-6.4 (42)	-22.6 (7)	-18.6 (15)	3.4 (47)	4.1 (72)	7.2 (65)
2050 Retirement Custom Index			-6.1 (26)	-22.4 (7)	-18.4 (14)	3.4 (50)	4.1 (74)	7.1 (84)
FRS 2055 Retirement Date Fund	324,624,113	2.7	-6.5 (47)	-22.8 (8)	-18.8 (16)	3.5 (46)	4.2 (71)	7.3 (87)
2055 Retirement Custom Index			-6.1 (27)	-22.5 (7)	-18.4 (14)	3.4 (48)	4.1 (78)	7.1 (99)
FRS 2060 Retirement Date Fund	207,002,122	1.7	-6.5 (46)	-22.8 (3)	-18.8 (11)	3.6 (43)	4.2 (-)	-
2060 Retirement Custom Index			-6.1 (29)	-22.5 (2)	-18.4 (9)	3.4 (71)	4.1 (-)	-
Stable Value	1,394,697,066	11.4						
FRS Stable Value Fund	1,394,697,066	11.4	0.5 (52)	1.3 (50)	1.7 (50)	-	-	-
ICE BofA US Treasuries 1-3 Year Index			-1.6 (94)	-4.4 (93)	-4.9 (93)	-	-	-

As of September 30, 2022

Asset Allocation & Performance

	Allocation		Performance(%)					
	Market Value ($)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
Real Assets	194,407,717	1.6						
FRS Inflation Sensitive Fund	194,407,717	1.6	-6.1	-11.1	-7.6	2.6	2.6	0.9
FRS Custom Multi-Assets Index			-5.6	-10.1	-6.8	1.9	2.4	0.9
Fixed Income	504,616,357	4.1	-4.0 (18)	-14.3 (22)	-14.3 (21)	-2.4 (22)	0.3 (17)	1.5 (12)
Total Bond Index			-3.9 (14)	-13.8 (15)	-13.7 (13)	-2.6 (26)	0.1 (28)	1.2 (33)
FRS U.S. Bond Enhanced Index Fund	195,929,564	1.6	-4.8 (74)	-14.7 (41)	-14.8 (43)	-3.3 (64)	-0.3 (57)	0.9 (64)
Blmbg. U.S. Aggregate			-4.8 (69)	-14.6 (37)	-14.6 (32)	-3.3 (64)	-0.3 (59)	0.9 (70)
FRS Core Plus Bond Fund	308,686,793	2.5	-4.1 (37)	-15.2 (54)	-15.0 (48)	-2.5 (36)	0.4 (28)	2.0 (14)
FRS Custom Core-Plus Fixed Income Index			-3.9 (28)	-14.5 (34)	-14.4 (29)	-2.7 (51)	0.2 (45)	1.7 (30)
Domestic Equity	2,736,223,913	22.4	-4.4 (40)	-25.8 (68)	-19.8 (68)	6.6 (43)	7.5 (41)	11.0 (26)
Total U.S. Equities Index			-4.4 (40)	-24.6 (60)	-17.7 (59)	7.1 (36)	7.8 (37)	10.9 (26)
FRS U.S. Stock Market Index Fund	1,237,284,012	10.1	-4.5 (43)	-24.6 (60)	-17.6 (58)	7.7 (27)	8.7 (22)	11.5 (17)
Russell 3000 Index			-4.5 (43)	-24.6 (60)	-17.6 (58)	7.7 (27)	8.6 (22)	11.4 (18)
FRS U.S. Stock Fund	1,498,939,900	12.3	-4.2 (35)	-27.7 (76)	-23.1 (77)	-	-	-
Russell 3000 Index			-4.5 (43)	-24.6 (60)	-17.6 (58)	-	-	-
International/Global Equity	596,519,955	4.9	-9.9 (41)	-28.0 (51)	-26.5 (48)	-0.2 (30)	0.4 (22)	4.7 (19)
Total Foreign and Global Equities Index			-9.4 (32)	-26.8 (40)	-25.0 (36)	-0.6 (34)	-0.1 (27)	4.1 (29)
FRS Foreign Stock Index Fund	216,473,904	1.8	-10.5 (54)	-27.1 (43)	-25.9 (44)	-1.2 (43)	-0.6 (36)	3.9 (32)
MSCI All Country World ex-U.S. IMI Index			-9.7 (38)	-26.9 (42)	-25.7 (43)	-1.3 (44)	-0.8 (39)	3.6 (37)
FRS Foreign Stock Fund	127,343,493	1.0	-9.3 (32)	-32.1 (75)	-32.9 (80)	-1.2 (43)	-0.2 (28)	4.5 (21)
MSCI AC World ex USA Index (Net)			-9.9 (42)	-26.5 (38)	-25.2 (38)	-1.5 (48)	-0.8 (39)	3.0 (52)
FRS Global Stock Fund	252,702,558	2.1	-6.0 (36)	-31.5 (67)	-26.9 (67)	6.0 (20)	6.9 (11)	9.8 (10)
MSCI AC World Index (Net)			-6.8 (46)	-25.6 (45)	-20.7 (46)	3.7 (38)	4.4 (35)	7.3 (43)
FRS Self-Dir Brokerage Acct	1,002,490,379	8.2						

The returns for the Retirement Date Funds, Inflation Sensitive Fund, and Core Plus Bond Fund use prehire data for all months prior to 7/1/2014, actual live data is used thereafter.
Note: The SDBA opened for members on 1/2/2014. No performance calculations will be made for the SDBA.

As of September 30, 2022

Asset Allocation & Performance

	Performance(%)									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
FRS Investment Plan	14.1	13.1	20.5	-5.7	16.4	8.0	-0.9	4.9	15.2	10.5
Total Plan Aggregate Benchmark	14.2	11.7	20.0	-5.8	15.5	8.5	-1.3	4.9	14.6	9.7
Retirement Date										
FRS Retirement Fund	9.6 (1)	10.2 (38)	14.8 (36)	-3.7 (69)	10.8 (24)	6.2 (18)	-2.6 (100)	4.4 (69)	3.5 (88)	10.7 (14)
Retirement Custom Index	8.9 (9)	9.6 (61)	14.5 (40)	-3.8 (69)	10.4 (41)	6.2 (18)	-1.8 (87)	3.6 (85)	3.4 (88)	8.5 (86)
FRS 2020 Retirement Date Fund	10.5 (10)	10.5 (69)	16.3 (67)	-4.4 (51)	14.0 (29)	7.4 (22)	-2.1 (100)	4.4 (100)	9.6 (98)	12.4 (73)
2020 Retirement Custom Index	10.0 (22)	10.2 (72)	16.0 (73)	-4.5 (53)	13.3 (49)	7.1 (25)	-1.6 (85)	3.9 (100)	9.7 (98)	11.0 (93)
FRS 2025 Retirement Date Fund	11.7 (14)	11.4 (72)	18.2 (75)	-5.2 (51)	16.1 (25)	8.0 (22)	-1.7 (79)	4.5 (100)	13.7 (77)	13.5 (62)
2025 Retirement Custom Index	11.3 (24)	11.2 (74)	17.8 (82)	-5.3 (56)	15.5 (39)	7.6 (26)	-1.5 (72)	4.2 (100)	13.8 (76)	12.4 (88)
FRS 2030 Retirement Date Fund	12.8 (29)	12.0 (76)	19.8 (80)	-6.0 (46)	18.0 (27)	8.5 (20)	-1.3 (60)	4.5 (96)	18.1 (64)	14.6 (53)
2030 Retirement Custom Index	12.4 (40)	12.0 (76)	19.4 (82)	-6.0 (47)	17.3 (46)	8.0 (28)	-1.5 (63)	4.4 (96)	18.2 (64)	13.8 (71)
FRS 2035 Retirement Date Fund	13.8 (66)	12.6 (85)	21.1 (81)	-6.7 (45)	19.8 (21)	9.1 (16)	-1.4 (54)	4.4 (100)	22.0 (58)	15.8 (36)
2035 Retirement Custom Index	13.4 (72)	12.7 (84)	20.8 (87)	-6.8 (46)	18.9 (48)	8.3 (37)	-1.7 (62)	4.3 (100)	22.0 (58)	15.2 (67)
FRS 2040 Retirement Date Fund	14.6 (80)	13.3 (77)	22.5 (77)	-7.5 (51)	20.9 (24)	9.2 (14)	-1.4 (49)	4.4 (96)	22.3 (58)	15.8 (51)
2040 Retirement Custom Index	14.3 (85)	13.4 (75)	22.1 (82)	-7.5 (51)	20.4 (42)	8.6 (45)	-1.7 (65)	4.3 (96)	22.4 (58)	15.2 (73)
FRS 2045 Retirement Date Fund	15.4 (90)	13.8 (77)	23.4 (81)	-8.0 (57)	21.5 (24)	9.4 (25)	-1.5 (52)	4.4 (100)	22.3 (70)	15.8 (45)
2045 Retirement Custom Index	15.1 (91)	13.9 (75)	23.0 (87)	-8.0 (57)	21.2 (41)	8.9 (38)	-1.7 (64)	4.3 (100)	22.4 (70)	15.2 (97)
FRS 2050 Retirement Date Fund	16.1 (88)	14.0 (75)	24.0 (82)	-8.4 (66)	21.6 (26)	9.5 (24)	-1.5 (61)	4.4 (95)	22.3 (66)	15.8 (60)
2050 Retirement Custom Index	15.8 (94)	14.1 (72)	23.6 (83)	-8.4 (66)	21.3 (49)	8.9 (42)	-1.7 (66)	4.3 (96)	22.4 (66)	15.2 (88)
FRS 2055 Retirement Date Fund	16.4 (86)	14.3 (69)	24.1 (88)	-8.4 (60)	21.5 (40)	9.3 (35)	-1.4 (53)	4.4 (100)	22.3 (86)	15.8 (67)
2055 Retirement Custom Index	16.0 (92)	14.1 (79)	23.7 (90)	-8.4 (60)	21.3 (56)	8.9 (39)	-1.7 (64)	4.3 (100)	22.4 (85)	15.2 (98)
FRS 2060 Retirement Date Fund	16.4 (80)	14.5 (78)	24.2 (-)	-8.3 (-)	-	-	-	-	-	-
2060 Retirement Custom Index	16.0 (89)	14.1 (81)	23.7 (-)	-8.4 (-)	-	-	-	-	-	-
Stable Value										
FRS Stable Value Fund	-	-	-	-	-	-	-	-	-	-
ICE BofA US Treasuries 1-3 Year Index	-	-	-	-	-	-	-	-	-	-

As of September 30, 2022

Asset Allocation & Performance

	Performance(%)									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Real Assets										
FRS Inflation Sensitive Fund	12.8	4.0	13.0	-5.5	8.1	6.0	-7.9	3.2	-9.1	9.1
FRS Custom Multi-Assets Index	11.5	2.3	13.0	-5.5	8.1	6.2	-5.0	1.8	-8.9	6.6
Fixed Income	-0.3 (15)	8.0 (54)	9.8 (22)	-0.1 (36)	4.4 (22)	4.7 (12)	0.3 (59)	4.7 (77)	-1.1 (24)	6.0 (47)
Total Bond Index	-0.7 (27)	7.2 (83)	9.2 (47)	-0.1 (30)	3.9 (42)	4.3 (18)	0.1 (72)	4.9 (76)	-1.2 (25)	4.8 (72)
FRS U.S. Bond Enhanced Index Fund	-1.7 (68)	7.8 (62)	8.7 (61)	0.0 (23)	3.6 (58)	2.7 (66)	0.7 (26)	6.2 (29)	-2.0 (63)	4.4 (73)
Blmbg. U.S. Aggregate	-1.5 (62)	7.5 (71)	8.7 (61)	0.0 (24)	3.5 (63)	2.6 (66)	0.5 (37)	6.0 (39)	-2.0 (66)	4.2 (77)
FRS Core Plus Bond Fund	-0.1 (23)	8.6 (55)	11.0 (18)	-0.5 (40)	5.3 (28)	5.7 (15)	0.1 (47)	4.6 (73)	0.8 (14)	11.1 (16)
FRS Custom Core-Plus Fixed Income Index	-0.3 (32)	7.6 (75)	10.0 (41)	-0.4 (36)	4.2 (69)	4.9 (33)	0.2 (43)	5.1 (50)	0.8 (14)	7.8 (74)
Domestic Equity	24.6 (57)	20.0 (35)	30.1 (38)	-6.5 (49)	20.8 (49)	13.7 (30)	0.7 (32)	11.5 (47)	35.2 (43)	16.9 (34)
Total U.S. Equities Index	25.9 (44)	18.9 (38)	30.0 (38)	-6.5 (49)	19.6 (57)	14.9 (23)	-0.5 (42)	11.1 (51)	34.0 (52)	16.5 (39)
FRS U.S. Stock Market Index Fund	25.7 (46)	21.0 (31)	31.1 (28)	-5.2 (36)	21.2 (43)	12.9 (35)	0.6 (32)	12.6 (31)	33.6 (56)	16.5 (40)
Russell 3000 Index	25.7 (46)	20.9 (31)	31.0 (28)	-5.2 (36)	21.1 (46)	12.7 (37)	0.5 (33)	12.6 (33)	33.6 (56)	16.4 (41)
FRS U.S. Stock Fund	22.9 (65)	-	-	-	-	-	-	-	-	-
Russell 3000 Index	25.7 (46)	-	-	-	-	-	-	-	-	-
International/Global Equity	9.5 (49)	15.2 (40)	23.7 (38)	-13.5 (32)	28.6 (49)	4.5 (44)	-2.6 (47)	-3.2 (43)	21.6 (36)	18.6 (52)
Total Foreign and Global Equities Index	9.8 (47)	11.7 (51)	22.3 (47)	-14.0 (39)	27.3 (58)	4.9 (41)	-4.4 (54)	-3.0 (42)	20.6 (41)	16.6 (70)
FRS Foreign Stock Index Fund	8.6 (53)	11.5 (51)	22.3 (47)	-14.7 (45)	28.3 (51)	5.3 (38)	-4.4 (54)	-4.5 (57)	20.5 (42)	17.6 (60)
MSCI All Country World ex-U.S. IMI Index	8.5 (53)	11.1 (53)	21.6 (53)	-14.8 (47)	27.8 (54)	4.4 (44)	-4.6 (55)	-4.2 (53)	21.0 (39)	16.4 (71)
FRS Foreign Stock Fund	2.8 (71)	25.3 (17)	27.4 (21)	-14.9 (49)	31.2 (40)	1.0 (68)	-0.5 (36)	-2.3 (35)	20.6 (41)	19.6 (41)
MSCI AC World ex USA Index (Net)	7.8 (56)	10.7 (55)	21.5 (54)	-14.2 (41)	27.2 (59)	4.5 (43)	-5.7 (59)	-3.9 (48)	15.3 (56)	16.8 (69)
FRS Global Stock Fund	18.1 (45)	33.8 (23)	30.5 (25)	-5.6 (21)	29.3 (18)	2.2 (84)	5.6 (12)	3.7 (53)	27.1 (43)	21.0 (14)
MSCI AC World Index (Net)	18.5 (40)	16.3 (45)	26.6 (47)	-9.4 (52)	24.0 (41)	7.9 (47)	-2.4 (57)	4.2 (47)	22.8 (66)	16.1 (38)

The returns for the Retirement Date Funds, Inflation Sensitive Fund, and Core Plus Bond Fund use prehire data for all months prior to 7/1/2014, actual live data is used thereafter.

FRS Investment Plan As of September 30, 2022

Asset Allocation

Asset Allocation as of 9/30/2022

	U.S. Equity	Non-U.S. Equity	U.S. Fixed Income	Real Assets	Stable Value	Brokerage	Total	% of Total
FRS Retirement Fund	86,883,296	79,790,782	193,862,048	230,506,704			591,042,830	4.8%
FRS 2020 Retirement Date Fund	86,200,458	79,781,275	133,885,818	158,645,524			458,513,075	3.7%
FRS 2025 Retirement Date Fund	199,914,321	184,659,815	213,563,090	204,731,534			802,868,761	6.6%
FRS 2030 Retirement Date Fund	234,881,766	216,153,652	181,038,438	148,264,238			780,338,094	6.4%
FRS 2035 Retirement Date Fund	264,518,901	243,817,421	151,044,126	107,341,003			766,721,451	6.3%
FRS 2040 Retirement Date Fund	270,994,881	249,933,102	110,925,366	70,205,928			702,059,276	5.7%
FRS 2045 Retirement Date Fund	291,387,412	268,972,996	81,952,710	58,137,392			700,450,510	5.7%
FRS 2050 Retirement Date Fund	203,791,678	187,826,431	37,565,286	40,382,683			469,566,077	3.8%
FRS 2055 Retirement Date Fund	141,860,737	130,823,518	23,697,560	28,242,298			324,624,113	2.7%
FRS 2060 Retirement Date Fund	90,459,927	83,421,855	15,111,155	18,009,185			207,002,122	1.7%
Total Retirement Date Funds	**$ 1,870,893,377**	**$ 1,725,180,847**	**$ 1,142,645,597**	**$ 1,064,466,488**	**$ -**	**$ -**	**$ 5,803,186,309**	**47.4%**
FRS Stable Value Fund					1,394,697,066		1,394,697,066	11.4%
Total Stable Value	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,394,697,066**	**$ -**	**$ 1,394,697,066**	**11.4%**
FRS Inflation Sensitive Fund				194,407,717	-		194,407,717	1.6%
Total Real Assets	**$ -**	**$ -**	**$ -**	**$ 194,407,717**	**$ -**	**$ -**	**$ 194,407,717**	**1.6%**
FRS U.S. Bond Enhanced Index Fund			195,929,564				195,929,564	1.6%
FRS Core Plus Bond Fund			308,686,793				308,686,793	2.5%
Total Fixed Income	**$ -**	**$ -**	**$ 504,616,357**	**$ -**	**$ -**	**$ -**	**$ 504,616,357**	**4.1%**
FRS U.S. Stock Market Index Fund	1,237,284,012						1,237,284,012	10.1%
FRS U.S. Stock Fund	1,498,939,900						1,498,939,900	12.3%
Total Domestic Equity	**$ 2,736,223,913**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,736,223,913**	**22.4%**
FRS Foreign Stock Index Fund		216,473,904					216,473,904	1.8%
FRS Global Stock Fund		252,702,558					252,702,558	2.1%
FRS Foreign Stock Fund		127,343,493					127,343,493	1.0%
Total International/Global Equity	**$ -**	**$ 596,519,955**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 596,519,955**	**4.9%**
FRS Self-Dir Brokerage Acct						1,002,490,379	1,002,490,379	8.2%
Total Self-Dir Brokerage Acct						**$ 1,002,490,379**	**$ 1,002,490,379**	**8.2%**
Total Portfolio	**$ 4,607,117,290**	**$ 2,321,700,802**	**$ 1,647,261,954**	**$ 1,258,874,205**	**$ 1,394,697,066**	**$ 1,002,490,379**	**$ 12,232,141,697**	**100.0%**
Percent of Total	**37.7%**	**19.0%**	**13.5%**	**10.3%**	**11.4%**	**8.2%**	**100.0%**	

The returns for the Retirement Date Funds, Inflation Adjusted Multi-Assets Fund and Core Plus Bond Fund use prehire data for all months prior to 7/1/2014, actual live data is used thereafter.
Note: The SDBA opened for members on 1/2/14. No performance calculations will be made for the SDBA.

As of September 30, 2022

Multi Time Period Statistics

	3 Years Return	3 Years Standard Deviation	3 Years Sharpe Ratio	3 Years Tracking Error	3 Years Information Ratio	3 Years Up Market Capture	3 Years Down Market Capture
FRS Investment Plan	3.09	14.40	0.24	0.70	0.08	102.51	102.77
FRS Retirement Fund	1.78	9.96	0.16	0.51	0.50	102.33	100.55
FRS 2020 Retirement Date Fund	2.18	10.82	0.20	0.60	0.37	100.06	98.37
FRS 2025 Retirement Date Fund	2.60	12.15	0.22	0.61	0.40	99.88	98.25
FRS 2030 Retirement Date Fund	2.82	13.44	0.23	0.62	0.27	99.84	98.80
FRS 2035 Retirement Date Fund	2.99	14.58	0.23	0.64	0.19	99.74	99.02
FRS 2040 Retirement Date Fund	3.13	15.70	0.23	0.65	0.14	99.75	99.21
FRS 2045 Retirement Date Fund	3.19	16.67	0.23	0.66	-0.01	99.99	100.03
FRS 2050 Retirement Date Fund	3.42	17.26	0.24	0.67	0.01	99.99	99.95
FRS 2055 Retirement Date Fund	3.52	17.48	0.25	0.65	0.12	100.79	100.61
FRS 2060 Retirement Date Fund	3.58	17.48	0.25	0.66	0.20	100.95	100.53
FRS Stable Value Fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FRS Inflation Sensitive Fund	2.58	10.59	0.23	0.91	0.79	102.76	97.13
FRS U.S. Bond Enhanced Index Fund	-3.26	5.42	-0.69	0.20	0.00	102.55	101.59
FRS Core Plus Bond Fund	-2.47	6.63	-0.43	1.74	0.14	117.47	109.57
FRS U.S. Stock Market Index Fund	7.74	20.96	0.43	0.03	1.60	100.08	99.95
FRS U.S. Stock Fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FRS Foreign Stock Index Fund	-1.22	18.98	0.00	1.41	0.04	100.89	100.69
FRS Global Stock Fund	6.04	21.64	0.35	N/A	N/A	N/A	N/A
FRS Foreign Stock Fund	-1.24	20.21	0.01	N/A	N/A	N/A	N/A

The returns for the Retirement Date Funds, Inflation Sensitive Fund, and Core Plus Bond Fund use prehire data for all months prior to 7/1/2014, actual live data is used thereafter.

As of September 30, 2022

Multi Time Period Statistics

	5 Years Return	5 Years Standard Deviation	5 Years Sharpe Ratio	5 Years Tracking Error	5 Years Information Ratio	5 Years Up Market Capture	5 Years Down Market Capture
FRS Investment Plan	4.07	12.67	0.29	0.61	0.22	102.43	102.29
FRS Retirement Fund	2.90	8.40	0.24	0.46	0.40	102.45	101.23
FRS 2020 Retirement Date Fund	3.27	9.30	0.27	0.52	0.35	100.69	99.13
FRS 2025 Retirement Date Fund	3.62	10.55	0.28	0.53	0.41	100.44	98.80
FRS 2030 Retirement Date Fund	3.79	11.75	0.28	0.54	0.30	100.20	99.04
FRS 2035 Retirement Date Fund	3.92	12.81	0.27	0.56	0.27	100.19	99.24
FRS 2040 Retirement Date Fund	3.99	13.84	0.27	0.58	0.19	100.06	99.38
FRS 2045 Retirement Date Fund	4.02	14.69	0.26	0.59	0.07	100.09	99.87
FRS 2050 Retirement Date Fund	4.13	15.22	0.27	0.61	0.10	100.09	99.79
FRS 2055 Retirement Date Fund	4.18	15.37	0.27	0.59	0.16	100.61	100.25
FRS 2060 Retirement Date Fund	4.23	15.38	0.27	N/A	N/A	N/A	N/A
FRS Stable Value Fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FRS Inflation Sensitive Fund	2.60	9.03	0.20	1.07	0.19	102.92	101.57
FRS U.S. Bond Enhanced Index Fund	-0.26	4.81	-0.27	0.16	0.10	101.45	101.16
FRS Core Plus Bond Fund	0.45	5.54	-0.10	1.36	0.23	111.80	107.15
FRS U.S. Stock Market Index Fund	8.66	18.62	0.48	0.04	1.03	100.14	100.00
FRS U.S. Stock Fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FRS Foreign Stock Index Fund	-0.62	16.77	-0.02	1.31	0.13	100.96	100.22
FRS Global Stock Fund	6.91	18.81	0.39	N/A	N/A	N/A	N/A
FRS Foreign Stock Fund	-0.23	17.79	0.01	N/A	N/A	N/A	N/A

The returns for the Retirement Date Funds, Inflation Sensitive Fund, and Core Plus Bond Fund use prehire data for all months prior to 7/1/2014, actual live data is used thereafter.

Appendix

As of September 30, 2022

Benchmark Descriptions

Retirement Date Benchmarks - A weighted average composite of the underlying components' benchmarks for each fund.

ICE BofA US Treasuries 1-3 Year Index - An unmanaged index that tracks the performance of the direct sovereign debt of the U.S. Government having a maturity of at least one year and less than three years.

FRS Custom Multi-Assets Index - A monthly weighted composite of underlying indices for each TIPS and Real Assets fund. These indices include Barclays U.S. TIPS Index, MSCI AC World Index and the Bloomberg Commodity Total Return Index, NAREIT Developed Index, S&P Global Infrastructure Index, S&P Global Natural Resources Index.

Total Bond Index - A weighted average composite of the underlying benchmarks for each bond fund.

Barclays Aggregate Bond Index - A market value-weighted index consisting of government bonds, SEC-registered corporate bonds and mortgage-related and asset-backed securities with at least one year to maturity and an outstanding par value of $250 million or greater. This index is a broad measure of the performance of the investment grade U.S. fixed income market.

FRS Custom Core-Plus Fixed Income Index - A monthly rebalanced blend of 80% Barclays U.S. Aggregate Bond Index and 20% Barclays U.S. High Yield Ba/B 1% Issuer Constrained Index.

Total U.S. Equities Index - A weighted average composite of the underlying benchmarks for each domestic equity fund.

Russell 3000 Index - A capitalization-weighted index consisting of the 3,000 largest publicly traded U.S. stocks by capitalization. This index is a broad measure of the performance of the aggregate domestic equity market.

Total Foreign and Global Equities Index - A weighted average composite of the underlying benchmarks for each foreign and global equity fund.

MSCI All Country World ex-U.S. IMI Index - A capitalization-weighted index of stocks representing 22 developed country stock markets and 24 emerging countries, excluding the U.S. market.

MSCI All Country World ex-U.S. Index - A capitalization-weighted index consisting of 23 developed and 24 emerging countries, but excluding the U.S.

MSCI All Country World Index - A capitalization-weighted index of stocks representing approximately 47 developed and emerging countries, including the U.S. and Canadian markets.

Descriptions of Universes

Retirement Date Funds - Target date universes calculated and provided by Lipper.

FRS Stable Value Fund - A stable value universe calculated and provided by Lipper.

FRS U.S. Bond Enhanced Index Fund - A broad market core fixed income universe calculated and provided by Lipper.

FRS Core Plus Bond Fund - A broad market core plus fixed income universe calculated and provided by Lipper.

FRS U.S. Stock Market Index Fund - A multi-cap U.S. equity universe calculated and provided by Lipper.

FRS U.S. Stock Fund - A multi-cap U.S. equity universe calculated and provided by Lipper.

FRS Foreign Stock Index Fund - A foreign blend universe calculated and provided by Lipper.

FRS Foreign Stock Fund - A foreign blend universe calculated and provided by Lipper.

FRS Global Stock Fund - A global stock universe calculated and provided by Lipper.

Notes

- The rates of return contained in this report are shown on an after-fees basis unless otherwise noted. They are geometric and time-weighted. Returns for periods longer than one year are annualized.
- Universe percentiles are based upon an ordering system in which 1 is the best ranking and 100 is the worst ranking.
- Due to rounding throughout the report, percentage totals displayed may not sum to 100%. Additionally, individual fund totals in dollar terms may not sum to the plan total.

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Aon Investments USA Inc.
200 East Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer

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Proposed 2023 IAC Meeting Dates

Tuesday, March 28, 2023

Tuesday, June 27, 2023

Tuesday, September 19, 2023

Tuesday, December 12, 2023