



**OREGON
STATE
TREASURY**

Oregon Investment Council

July 22, 2020

John Russell
Chair

Rex Kim
Chief Investment Officer

Tobias Read
State Treasurer



Investment Division
16290 SW Upper Boones Ferry Road
Tigard, OR 97224
503.431.7900

Main Office
350 Winter Street, Suite 100
Salem, OR 97301-3896
503.378.4000

oregon.gov/treasury
oregon.treasurer@state.or.us



OREGON INVESTMENT COUNCIL

Agenda

July 22, 2020
9:00 AM

Oregon State Treasury
Investment Division
16290 SW Upper Boones Ferry Road
Tigard, OR 97224

<u>Time</u>	<u>A. Action Items</u>	<u>Presenter</u>	<u>Tab</u>
9:00-9:05	1. Review & Approval of Minutes June 3, 2020	John Russell <i>OIC Chair</i>	1
9:05-9:10	2. Opening Remarks and Committee Reports	Rex Kim <i>Chief Investment Officer</i>	2
9:10-10:00	3. Market Environment	Howard Marks, CFA <i>Co-Chairman, Oaktree Capital Management, LP</i>	3
10:00-10:15	4. OPERF Fixed Income Recommendation	Geoff Nolan <i>Senior Investment Officer Fixed Income</i>	4
10:15-10:25	5. OSGP Consultant Recommendation	Michael Viteri <i>Senior Investment Officer Public Equity</i> Wil Hiles <i>Investment Officer Public Equity</i>	5
<u>B. Information Items</u>			
10:25-11:00	6. Securities Lending	Geoff Nolan <i>Senior Investment Officer Fixed Income</i> Johnson Shum <i>Vice President, State Street Global Markets</i> Tom Connelley, CFA <i>Vice President, State Street Global Markets</i>	6

John Russell
Chair

Patricia Moss
Vice-Chair

Cara M. Samples
Member

Monica Enand
Member

Tobias Read
State Treasurer

Kevin Olineck
PERS Director

11:00-11:30	7. Annual Operations Update	David Randall <i>Director of Investment Operations</i> Debra Day, CPA <i>Investment Reporting Manager</i> Kristi Jenkins <i>Investment Operations Manager</i>	7
11:30-11:35	8. Asset Allocation & NAV Updates	Rex Kim	8
	a. Oregon Public Employees Retirement Fund b. SAIF Corporation c. Common School Fund d. Southern Oregon University Endowment Fund		
	9. Calendar — Future Agenda Items	Rex Kim	9
11:35	10. Open Discussion	OIC Members Staff Consultants	

C. Public Comment

TAB 1 – REVIEW & APPROVAL OF
MINUTES June 3, 2020 Regular Meeting



**OREGON
STATE
TREASURY**

State of Oregon

Office of the State Treasurer

16290 SW Upper Boones Ferry Road
Tigard, Oregon 97224

OREGON INVESTMENT COUNCIL

June 3, 2020

Meeting Minutes

Members Present: John Russell, Tobias Read, Patricia Moss, Cara Samples and Kevin Olineck

Staff Present: Rex Kim, Karl Cheng, Geoff Nolan, Michael Langdon, May Fanning

Staff Participating virtually: Jennifer Peet, Scott Robertson, Faith Sedberry, Paul Koch, Eric Messer, Aliese Jacobsen, Meredith Coba, John Hershey, Krystal Korthals, Dmitri Palmateer, Jeremy Knowles, Caitlyn Wang, Chris Ebersole, Sommer May, Will Hampson, Robin Kaukonen, Jen Plett, Michael Viteri, Amanda Kingsbury, Missy Simpson, Jo Recht, Dana Millican, Tiffany ZhuGe, Tony Breault, Monique Sadegh, Mohammed Quraishi, Claire Illo, Perrin Lim, Ahman Dirks, Ben Mahon, Ryan Mann, Angela Schaffers, Joe Hutchinson, Sam Spencer, Ian Huculak, Deena Bothello, Wil Hiles, Mark Selfridge, David Randall, John Lutkehaus, Steve Kruth, Roy Jackson, Austin Carmichael, Mike Mueller, Andrey Voloshinov, Michael Kaplan, Debra Day, Anna Totdahl, Amy Bates, Lisa Pettinati, Andy Coutu, Kristi Jenkins, David Elott, Kenny Bao,

Consultants Present: Allan Emkin (Meketa Investment Group, Inc.); Jason Ellement (Callan LLC), Tom Marin, TorreyCove Capital Partners

Legal Counsel Present: Steven Marlowe, Department of Justice

Before proceeding with the OIC meeting, Chief Investment Officer, Rex Kim provided a disclosure pertaining to the virtual set-up of this OIC meeting, informing those in attendance (virtual and in person) of the guidelines in which this meeting will proceed.

The June 3rd, 2020 OIC meeting was called to order at 9:00 am by John Russell, OIC Chair.

I. 9:01 am Review and Approval of Minutes

MOTION: Chair Russell asked for approval of the April 22, 2020 OIC regular meeting minutes. Treasurer Read moved approval at 9:03 am, and Ms. Moss seconded the motion which then passed by a 4/0 vote.

II. 9:03 am Committee Reports and Opening Remarks

Committee Reports: Mr. Kim, gave an update on the following committee actions taken since the April 22, 2020 OIC meeting:



**OREGON
 STATE
 TREASURY**

Private Equity Committee

April 22, 2020	Thoma Bravo Fund XIV, L.P.	\$250M
May 14, 2020	Vitruvian Investment Partners IV, L.P.	€150M
May 27, 2020	CVC Capital Partners VIII, L.P. Sherpa Healthcare Fund I, L.P.	€325M \$100M

Alternatives Portfolio Committee

May 1, 2020	NGP Royalty Partners, L.P.	\$150M
-------------	----------------------------	--------

Real Estate Committee

May 19, 2020	Abacus Core Multifamily Separate Account	\$250M
	Columbia Industrial Properties, LLC	\$150M
	Sculptor Real Estate Fund IV, L.P.	\$150M

Opportunity Portfolio Committee

None

Mr. Kim also, provided opening remarks with a quick OIC agenda overview that included, the Market Commentary from the Co-CIO at Bridgewater Associates, and Asset Allocation & Capital Markets Assumption; Fixed Income Manager Recommendation, in addition to the Asset Allocation, NAV and forward calendar.

III. 9:06 am Market Environment

Mr. Joel Whidden, Head of Sales, Global Marketing, Bridgewater Associates, gave a brief introduction to the firm and went on to introduce Mr. Greg Jensen, Co-Chief Investment Officer, Bridgewater Associates, who provided the Council with a Market Environment update, sharing insight relative to the current global economic state, and how to better invest in the next decade.

IV. 10:01 am Asset Allocation, Capital Markets Assumptions

OST staff work with the Council's general consultant to annually update risk and return expectations for OPERF based on a) the consultant's Capital Market Assumptions and b) OPERF's strategic asset allocation targets. Every three to five years, the assumptions are incorporated in a rigorous study of OPERF's assets and liabilities. The Capital Market Assumptions are also more prominent every odd-number year, e.g., 2019, since they coincide with the Public Employees Retirement System (PERS) Board's biannual setting of the assumed rate of investment return. During those sessions, the PERS Board considers OPERF's asset allocation and the Capital Market Assumptions, alongside their actuary's analysis, and approves an assumed rate of return. At their July 2019 meeting, the PERS Board reaffirmed an assumed rate of 7.2%.

Karl Cheng, Senior Investment Officer, Portfolio Risk & Research, Jason Ellement, Senior Vice President, Callan LLC and Allan Emkin, Managing Principal, Meketa Investment Group, Inc., presented a thorough summary of updated capital market assumptions and revised estimates of OPERF's long-term, forward-looking risk and return.



OREGON STATE TREASURY

Furthermore, Staff recommend approval of the proposed revision to INV 1203 (Statement of Investment Objectives and Policy Framework for OPERF) with updated Capital Market Assumptions and other edits.

MOTION: Treasurer Read, moved approval of the proposed revision to INV 1203 at 10:33 am, and Ms. Moss seconded the motion which then passed by a 4/0 vote.

V. 10:33 am Fixed Income Manager Recommendation

Geoff Nolan, Senior Investment Officer, Fixed Income, started with a brief refresher of the December 2019 Fixed Income Strategic Review, and the Implementation Process and Current Status. He then proceeded to explain that shortly after the Fixed Income Strategic Review was approved in December 2019, a manager search process was initiated. The presentation provided the detailed process of selection, resulting with the following Fixed Income Staff Manager selections:

- Global Sovereign Manager Selections: Mandate: global sovereign ex-US Treasuries (hedged to USD) Morgan Stanley Investment Management (MSIM) and, PIMCO. Total mandate funding amount combined up to 8.1% of OPERF fixed income AUM. \$1.117BN based upon OPERF 4/30/20 AUM, split evenly between MSIM and PIMCO, up to \$585MM to each manager.
- Emerging Markets Debt Manager Selections: Mandate: emerging markets debt (hard dollar) Global Evolution, PGIM and Ashmore. Total mandate funding amount combined up to 2.7% of OPERF fixed income AUM. \$390MM based upon OPERF 4/30/20 AUM. Split evenly amongst Global Evolution, PGIM and Ashmore, up to \$130MM to each manager.

MOTION: Treasurer Read, moved approval of the staff's Manager recommendations at 10:45 am, and Ms. Samples seconded the motion which then passed by a 4/0 vote.

VI. 10:45 am Asset Allocation & NAV Updates

Mr. Kim reviewed asset allocations and NAVs across OST-managed accounts for periods ended April 30, 2020.

VII. 10:46 am Calendar – Future Agenda Items

A calendar listing of future OIC meetings and scheduled agenda topics was included in the Council's meeting material.

VIII. 10:47 am Open Discussion

Treasurer Read raised a question built around all that was discussed during today's meeting in relation to the world and how it will look when things go back to a certain stability, how will that impact our portfolio. He brought up a couple of examples linked to the environment, and around oil and gas, he went on to say that there's not enough visibility on how all this will play into our portfolio, and any risks that should come as a result. He said there are several ways to approach and raise these concerns and was hopeful that the Council will recognize and agree on this matter. He proposed that perhaps the CIO and his team could maybe think of ideas to better manage the potential risks. Chair Russell commented that funds may diverge in their viewpoints on the value of divesting versus not divesting.

Mr. Olineck, noted that the PERS Board, will be bringing the Capital Market Assumptions update that were discussed during today's meeting to their July PERS Board meeting.

Ms. Samples, expressed her appreciation for the participation and remarks by, Greg Jensen. She specified the value this brings in helping the Council, especially in the current environment. She also thanked everyone involved in putting this together, and suggested that having similar speakers in future meetings could be very



**OREGON
STATE
TREASURY**

beneficial. Ms. Moss also, agreed with that statement, and Chair Russell affirmed that Mr. Jensen will indeed be a tough act to follow. Nonetheless, Mr. Kim, made mention of quite a remarkable list that his staff has provided him with He also said that one of the values we have as a State is the strong reputation and the relationships with the managers and their willingness to be there to help us think through these larger issues.

10:54 am Public Comments

None

Mr. Russell adjourned the meeting at 10:54 am.

Respectfully submitted,

May Fanning

May Fanning
Executive Support Specialist

DRAFT

TAB 2 – Opening Remarks and Committee Reports

July 22, 2020

Oregon Investment Council

Opening Remarks

Rex T. Kim, Chief Investment Officer



OREGON
STATE
TREASURY



Agenda:

- Market Commentary from Howard Marks, Co-Chairman, Oaktree Capital
- Action Items: Fixed Income Manager Recommendation; OSGP Consultant
- Review Items: Securities Lending, Annual Operations Update, Asset Allocation, NAV, and a look into future meetings



OREGON STATE TREASURY

Tobias Read
Oregon State Treasurer

350 Winter St NE, Suite 100
Salem, OR 97301-3896

oregon.gov/treasury

TAB 3 – Market Environment

The Truth About Investing

Howard Marks, Chairman

Oaktree Capital Management, L.P.

The Truth About Investing

Most investors can't see the macro-future better than anyone else. Thus trying to predict the future won't make them successful investors.

“We have two classes of forecasters: Those who don't know – and those who don't know they don't know.”

– John Kenneth Galbraith

The Truth About Investing

Nevertheless, most investors act as if they can see the future. Either they think they can, or they think they have to pretend they can. That's dangerous if it turns out they can't, as is usually the case.

“It’s frightening to think that you might not know something, but more frightening to think that, by and large, the world is run by people who have faith that they know exactly what’s going on.”

– Amos Tversky

“It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so.”

– Mark Twain

The Truth About Investing

Investors would be wise to accept that they can't see the future and restrict themselves to doing things that are within their power. These include gaining insight regarding companies, industries and securities; controlling emotion; and behaving in a contrarian and counter-cyclical manner.

The Truth About Investing

While we can't see where we're going, we ought to have a good sense for where we are. It's possible to enhance investment results by making tactical decisions suited to the market climate. The most important is the choice between aggressiveness and defensiveness. **These decisions can be made on the basis of observations regarding current conditions; they don't require guesswork about the future.**

The Truth About Investing

Superior results don't come from buying high quality assets, but from buying assets – regardless of quality – for less than they're worth. It's essential to understand the difference between buying good things and buying things well.

The Truth About Investing

A low purchase price not only creates the potential for gain; it also limits downside risk. The bigger the discount from fair value, the greater the “margin of safety” an investment provides.

The Truth About Investing

The price of a security at a given point in time reflects the consensus of investors regarding its value. The big gains arise when the consensus turns out to have underestimated reality. **To be able to take advantage of such divergences, you have to think in a way that departs from the consensus; you have to think different and better.** This goal can be described as “second-level thinking” or “variant perception.”

The Truth About Investing

Superior performance doesn't come from being right, but from being more right than the consensus. You can be right about something and perform just average if everyone else is right, too. Or you can be wrong and outperform if everyone else is more wrong.

The Truth About Investing

Any time you think you know something others don't, you should examine the basis for that belief. “Does everyone know that?” “Why should I be privy to exceptional information or insight?” “Am I certain I'm right and everyone else is wrong; mightn't it be the opposite?” If it's the result of advice from someone else, you must ask, “Why would anyone give me potentially profitable information?”

The Truth About Investing

Over the last few decades, investors' timeframes have shrunk. They've become obsessed with quarterly returns. In fact, technology now enables them to become distracted by returns on a daily basis, and even minute-by-minute. **Thus one way to gain an advantage is by ignoring the “noise” created by the manic swings of others and focusing on the things that matter in the long term.**

The Truth About Investing

It isn't the inability to see the future that cripples most efforts at investment. More often it's emotion. Investors swing like a pendulum – between greed and fear; euphoria and depression; credulousness and skepticism; and risk tolerance and risk aversion. Usually they swing in the wrong direction, warming to things after they rise and shunning them after they fall.

The Truth About Investing

Most investors behave pro-cyclically, to their own detriment. When economic indicators, corporate earnings and asset prices have been rising, people become more optimistic and buy at cyclical highs. Likewise, their pessimism grows when the reverse is true, causing them to sell (and certainly to not buy) at cyclical lows. It's essential to act counter-cyclically.

The Truth About Investing

Cyclical ups and downs don't go on forever. But at the extremes, most investors act as if they will. This is a big part of the reason for bubbles and crashes.

There are three stages to a bull market:

- the first, when a few forward-looking people begin to believe things will get better,
- the second, when most investors realize improvement is actually underway, and
- the third, when everyone concludes that things can only get better forever.

The Truth About Investing

It's important to practice “contrarian” behavior and do the opposite of what others do at the extremes. For example, the markets are riskiest when there's a widespread belief that there's no risk, since this makes investors feel it's safe to do risky things. Thus we must sell when others are emboldened (and buy when they're afraid).

“The less prudence with which others conduct their affairs, the greater the prudence with which we should conduct our own affairs.”

– Warren Buffett

The Truth About Investing

To be a successful investor, you have to have a philosophy and process you believe in and can stick to, even under pressure. Since no approach will allow you to profit from all types of opportunities or in all environments, you have to be willing to not participate in everything that goes up, only the things that fit your approach. To be a disciplined investor, you have to be able to stand by and watch as other people make money in things you passed on.

The Truth About Investing

Every investment approach – even if skillfully applied – will run into environments for which it is ill-suited. That means even the best of investors will have periods of poor performance. Even if you’re correct in identifying a divergence of popular opinion from eventual reality, it can take a long time for price to converge with value, and it can require something that serves as a catalyst. **In order to be able to stick with an approach or decision until it proves out, investors have to be able to weather periods when the results are embarrassing. This can be very difficult.**

“The market can remain irrational longer than you can remain solvent.”

– John Maynard Keynes

Being too far ahead of your time is indistinguishable from being wrong.

The Truth About Investing

To succeed you have to survive, and in particular that means avoiding selling out at market bottoms. It's not enough to survive "on average"; you have to survive on the worst days. Selling out at the bottom – and thus failing to participate in the subsequent recovery – is the cardinal sin of investing. The ability to persevere requires consistent adherence to a well-thought-out approach; control over emotion; and a portfolio built to withstand declines.

Never forget the six-foot tall man who drowned crossing the stream that was five feet deep on average.

The Truth About Investing

Risk is an inescapable part of investing. You shouldn't expect to make money without bearing risk. Any approach, strategy or investment that promises substantial gain without risk is simply too good to be true.

The Truth About Investing

But you also shouldn't expect to make money just for bearing risk. Many people believe riskier investments produce higher returns, and thus the way to make more money is to take more risk. That can't be right: if riskier investments could be counted on to produce higher returns, they wouldn't be riskier.

The Truth About Investing

Controlling risk is just as important as identifying opportunities for return. For most people a desirable approach strikes a balance between offense and defense.

In American football, after four unsuccessful tries to gain ten yards, the referee stops play and turns the ball over to the other team's offensive squad. But investing is more like soccer, where every team has to comprise both offense and defense, and no one blows a whistle to tell you which way to play.

“If we avoid the losers, the winners will take care of themselves.”

– Oaktree motto

The Truth About Investing

Risk has to be dealt with, but not through quantification. Theory accepts volatility as the indicator of risk, largely because data on volatility is quantitative and machinable. But people in the real world don't worry about volatility or demand a premium return to bear it; what they care about is the likelihood of losing money. Because that likelihood can't be quantified, **risk is best handled by experienced experts applying subjective, qualitative judgment that is superior.**

The Truth About Investing

Investing can't be reduced to an algorithm or a mechanical process. Few people have demonstrated the ability to excel for long via “quant” investing. Superior results generally require insight, judgment and intuition.

“Not everything that can be counted counts, and not everything that counts can be counted.”

– Albert Einstein

The Truth About Investing

To ascertain whether a manager has above average skill, it's essential to observe performance over many years and in bad markets as well as good. Short-term outperformance and short-term underperformance are “impostors” that say very little about the skill of a manager. Randomness can cause a weak manager to show good performance for a year or two, but good long-term records are likely to be the result of skill. Absent testing in tough times, aggressive risk-taking in an environment that turns out to be salutary can easily be mistaken for investment skill.

“It's only when the tide goes out that we find out who's been swimming naked.”

– Warren Buffett

Never confuse brains with a bull market.

The Truth About Investing

Expectations should be reasonable. Aiming for too high a return will either require excessive risk bearing or guarantee disappointment . . . or both.

“The market isn’t an accommodating machine. It won’t give you high returns because you want them.”

– Peter Bernstein

The Truth About Investing

No one should expect investing to be easy.

“There is nothing reliable to be learned about making money. If there were, study would be intense and everyone with a positive IQ would be rich.”

– John Kenneth Galbraith

“It’s not supposed to be easy. Anyone who finds it easy is stupid.”

– Charlie Munger

Investing in the Pandemic World

Howard Marks, Chairman

Oaktree Capital Management, L.P.

Investing in the Pandemic World

Market Behavior

- On February 19, before Americans understood the risk from the coronavirus, the Standard & Poor's 500 reached an all-time record of 3,386
- Over the next 4½ weeks, the index lost 33.9%, falling to 2,237 on March 23
 - This was the fastest trip into “bear territory” (down 20% or more) on record
- The Fed and Treasury announced the massive support program in mid-late March and a powerful rally began. On July 7 the S&P 500 closed at 3,145, up 40.6% from the low
 - It had returned to “bull territory” (up 20% or more) in only 2½ weeks

Investing in the Pandemic World

The Dilemma

- The world is combatting a very serious pandemic and the worst economic contraction of the last 80+ years.
- And yet the stock market has been able to compile a record advance and nearly recapture an all-time high that was achieved at a time when:
 - the U.S. economy was humming,
 - the outlook was rosy, and
 - the risk of a pandemic hadn't registered
- **How could that be?**

Investing in the Pandemic World

Supportive Elements – Monetary and Fiscal Policy

- **The chant went up during the week of March 23: “You can’t fight the Fed.”** Investors believe interest rates and markets will do what the Fed wants
- The Fed and Treasury demonstrated their dedication to doing everything they can think of. Fed Chairman Powell said “we won’t run out of ammunition”
- The Fed said it would continue buying securities “for as long as it takes.” There’s no apparent reason why its ability to keep buying has to have a limit
- When the Fed buys securities, it puts money into the hands of the sellers, and that money has to be reinvested. The reinvestment process drives up the prices of assets while driving down interest rates and prospective returns
- In all, the Fed has created capital market conditions that give rise to readily available financing, bond issuance at record levels, and deals that are heavily oversubscribed

Investing in the Pandemic World

Supportive Elements – Interest Rates

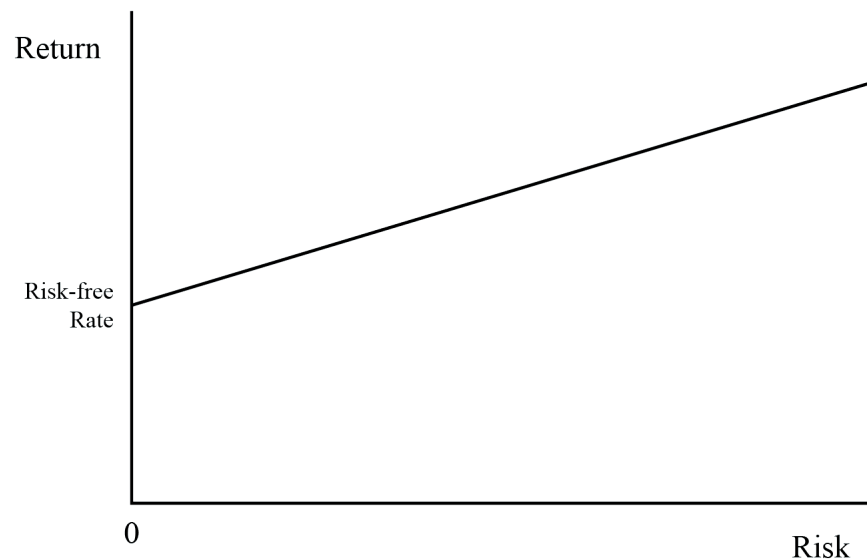
Everyone is convinced interest rates will be “lower for longer”. On June 10, the Fed strongly indicated there will be no rate increases through 2021 and possibly 2022

- Low interest rates raise the discounted present value of future cash flows
- A low risk-free rate brings down demanded returns all along the yield curve and capital market line. A low risk-free rate makes even low investment returns seem attractive
- If the Fed is buying bonds, their rising prices and falling expected returns mean most assets don't have to appear likely to return as much as they used to, so their prices can rise, too
- Low yields on bonds means they offer less competition to stocks, etc.

Investing in the Pandemic World

Why Are Prospective Returns Low?

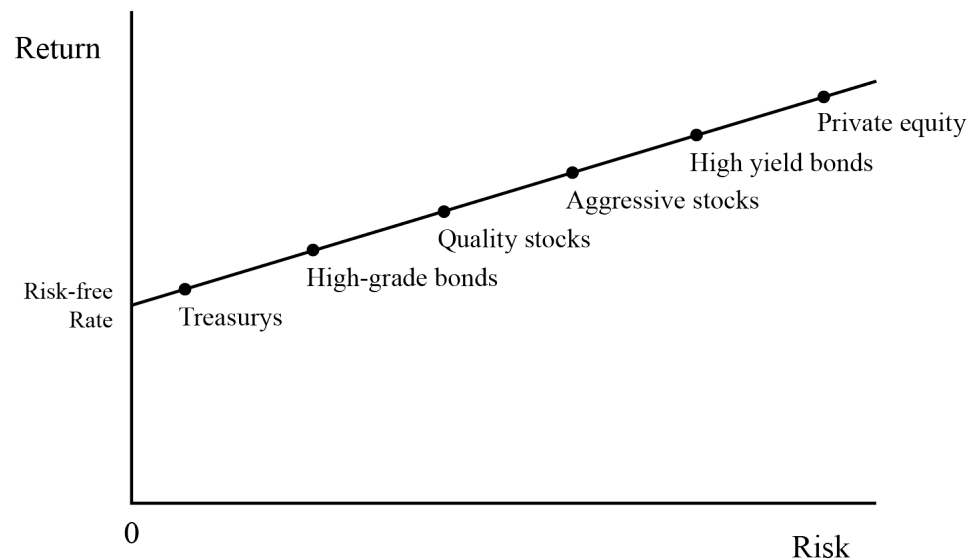
- The idealized Capital Market Line begins at the “risk-free rate” and proceeds up and to the right to offer investors a potential risk premium as an incentive for bearing incremental risk.



Investing in the Pandemic World

Why Are Prospective Returns Low?

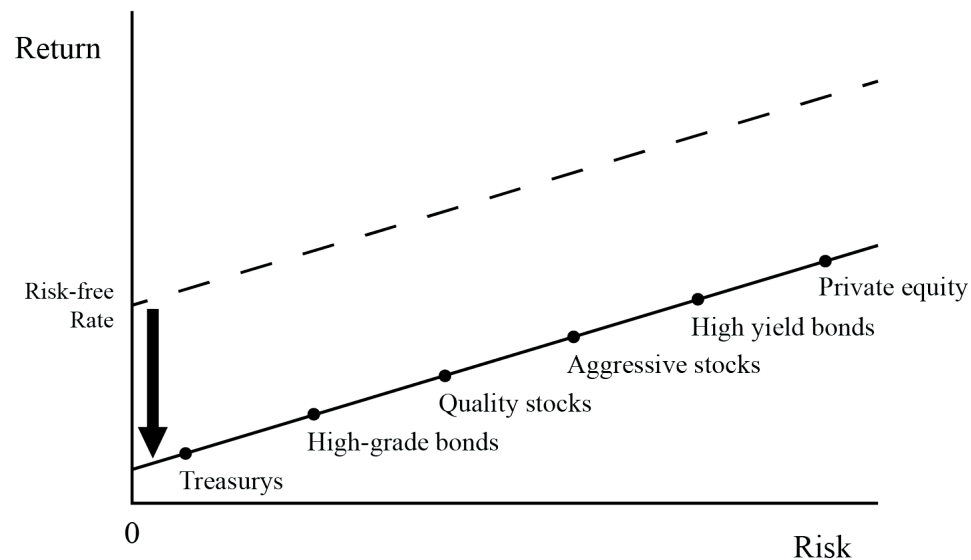
- The idealized Capital Market Line begins at the “risk-free rate” and proceeds up and to the right to offer investors a potential risk premium as an incentive for bearing incremental risk.



Investing in the Pandemic World

Why Are Prospective Returns Low?

- To counter the Global Financial Crisis, and then the economic effects of the pandemic, central banks drove down the risk-free rate



- Returns on other assets fell into line

Investing in the Pandemic World

The Dominant Question

- **To sum up and over-simplify, can the Fed keep buying debt forever, and can its doing so keep asset prices up forever?**
- **In short, many investors appear to have concluded that the answer is “yes”**

Investing in the Pandemic World

Approaching the Problem

There's no way to determine for sure whether an advance has been appropriate or irrational, and whether markets are too high or too low. But there are questions to ask:

- Are investors weighing both the positives and the negatives dispassionately?
- What's the probability the positive factors driving the market will prove valid (or that the negatives will gain in strength instead)?
- Are the positives fundamental or largely technical, relating to inflows of liquidity (i.e., cash-driven)? If the latter, is their influence likely to prove temporary or permanent?
- Is the market being lifted by rampant optimism?
- Is that optimism causing investors to ignore valid counter-arguments?
- How do valuations based on things like earnings, sales and asset values stack up against historical norms?

Investing in the Pandemic World

My Bottom Line

- **I conclude that the powerful rally we've seen has been built on optimism; has incorporated positive expectations and overlooked potential negatives; and has been driven largely by the Fed's injections of liquidity and the Treasury's support payments**
- Investors are assuming these will bridge to an economic recovery and be free from highly negative second-order consequences. They're also assuming the Fed will continue to buy assets and suppress interest rates
- A bounce from the depressed levels of late March was warranted, but it came surprisingly early and quickly went incredibly far. The S&P 500 is down only 7% from an all-time high struck in trouble-free times
- **It seems to me that the potential for further gains from things turning out better than expected or valuations continuing to expand doesn't fully compensate for the risk of decline from events disappointing or multiples contracting**
- **In other words, the fundamental outlook may be positive on balance, but with listed security prices where they are, the odds aren't in investors' favor. Caution is called for**

Investing in the Pandemic World

Investment Options in a Low-Return Environment

In a low-return world, the options are limited:

1. Invest as you always have, and settle for today's low returns.
2. Reduce risk to prepare for a correction, and accept even-lower returns.
3. Go to cash at a near-zero return and wait for a better environment.
4. Increase risk in pursuit of higher returns.
5. Put more into special niches and special investment managers.

None of these alternatives is completely satisfactory. But there are no others.

Disclosures

- *The presentation is being provided on a confidential basis solely for the information of those persons to whom it is given. This presentation may not be copied, reproduced, republished, posted, transmitted, disclosed, distributed or disseminated, in whole or in part, in any way without the prior written consent of Oaktree Capital Management, L.P. (together with its affiliates, “Oaktree”) or as required by applicable law. By accepting this presentation, you agree that you will comply with these confidentiality restrictions and acknowledge that your compliance is a material inducement to our providing this presentation to you.*
- *This presentation contains information and views as of the date indicated and such information and views are subject to change without notice. Oaktree has no duty or obligation to update the information contained herein. Further, Oaktree makes no representation, and it should not be assumed, that past investment performance is an indication of future results. Moreover, wherever there is the potential for profit there is also the possibility of loss.*
- *This presentation and the information contained herein are for educational and informational purposes only and do not constitute and should not be construed as an invitation, inducement or offer to sell or solicitation of an offer to buy any securities or related financial instruments in any jurisdiction in which such offer or solicitation, purchase or sale would be unlawful under the securities, insurance or other laws of such jurisdiction. Responses to any inquiry that may involve rendering of personalized investment advice or effecting or attempting to effect transactions in securities will not be made absent compliance with applicable laws or regulations (including broker-dealer, investment adviser, or applicable agent or representative registration requirements), or applicable exemptions or exclusions therefrom.*
- *Certain information contained herein concerning economic trends and performance is based on or derived from information provided by independent third-party sources. Oaktree believes that the sources from which such information has been obtained are reliable; however, it cannot guarantee the accuracy of such information and has not independently verified the accuracy or completeness of such information or the assumptions on which such information is based.*

TAB 4 – OPERF Fixed Income Recommendation

July 22, 2020

Fixed Income Portfolio

Structured Credit Products Manager Recommendations

Geoff Nolan, Senior Investment Officer



OREGON
STATE
TREASURY



Agenda

1. 2020: Structured Credit Products Manager Recommendation

2. 2020: External Manager Overviews

3. Appendix: Key Highlights of 2019 Fixed Income Strategic Review

2020: Structured Credit Products Manager Recommendations

- Background

- In December 2019, the Oregon Investment Council approved the Fixed Income Strategic Review in which the fixed income portfolio would be further de-risked so as to more closely align the portfolio with the objectives laid out policy INV401. (For reference, key highlights from the Strategic Review are in the appendix.)
- Fixed Income's role is to (1) provide diversification to the OPERF portfolio in general and to equity securities in particular; and, (2) provide liquidity to help meet OPERF's cash flow needs.
- Today's recommendations are a continuation of the new manager recommendation & approval process that began at the June 3rd, 2020 OIC meeting in which 2 global sovereign and 3 emerging market debt managers were approved.

- Structured Products Manager Recommendations

- OIC Board Members have additional manager background information included in their packets.
- Mandate: Structured Credit Products (USD).
- Guggenheim Partners Investment Management, LLC ("Guggenheim"), Putnam Investments ("Putnam") and Schroders Investment Management North America, Inc. ("Schroders")
 - Total Mandate Funding Amount:
 - Combined up to 12.8% of OPERF fixed income AUM.
 - \$1.8BN based upon 6/30/20 AUM.
 - Split evenly amongst Schroders, Guggenheim Partners, and Putnam.
 - Up to \$600MM to each manager.

Notes:

- Selections subject to satisfactory negotiation of all terms and conditions.
- Percentage funding amounts are from the approved asset allocation portfolio.
- Funding amounts not to exceed the percentage amounts noted above, but absolute dollar amounts may be less depending upon funding requirements to meet OPERF needs and capital calls associated with OST private markets activities.

Portfolio Realignment to Occur Over the Next 3-6 Quarters

Agenda

1. 2020: Structured Credit Products Manager Recommendations

2. 2020: External Manager Overviews

3. Appendix: Key Highlights of 2019 Fixed Income Strategic Review

2020: External Manager Overviews

OIC Board Members have additional manager background information included in their packets.

- Guggenheim
 - Firm:
 - \$205BN AUM (3/31/20) with \$38BN in structured credit products AUM.
 - 200 fixed income investment professionals.
 - Team:
 - 9 structured credit portfolio managers and 24 structured credit researchers supported by broader fixed income team.
 - Lead PM's are Steve Brown (Head of Total Return) and Adam Bloch.
 - Mandate Strategy:
 - Total return strategy investing in structured fixed income securities that can offer favorable risk/reward characteristics while maintaining a minimum weighted average of investment grade quality. Invest primarily across ABS with a secondary focus on commercial mortgage-backed securities and non-agency residential mortgage-backed securities.
- Putnam
 - Firm:
 - \$149BN AUM (3/31/20) with \$28BN in structured credit products AUM.
 - 169 investment professionals with 37 being fixed income.
 - Team:
 - 3 structured credit portfolio managers and 8 structured credit researchers supported by broader fixed income team.
 - Team based PM structure with Michael Salm (Co-Head of Fixed Income) working with Jatin Misra and Brett Kozlowski.
 - Mandate Strategy:
 - Strategy focusing on high conviction ideas, seeking above average returns by identifying market inefficiencies through a proprietary model-driven investment & research process.

2020: External Manager Overviews

OIC Board Members have additional manager background information included in their packets.

- Schroders
 - Firm:
 - Schroders plc (the parent) is a public company listed on the London Stock Exchange with overall AUM of \$583BN as of 3/31/2020.
 - The North America unit (which will manage the strategy) has \$108BN AUM (3/31/20) with \$12BN in structured credit products AUM.
 - 120 fixed income investment professionals.
 - Team:
 - 4 structured credit portfolio managers and 10 structured credit researchers supported by broader fixed income team.
 - Lead PM is Michelle Russell-Dowe (Head of Securitized Credit) with supporting portfolio managers Jeffery Williams, Chris Ames and Anthony Breaks.
 - Mandate Strategy:
 - Total return strategy seeking exposure across securitized assets with the ability to access prepayment, credit and liquidity risk premiums.

Agenda

1. 2020: Structured Credit Products Manager Recommendations

2. 2020: External Manager Overviews

3. Appendix: Key Highlights of 2019 Fixed Income Strategic Review

Background / Objectives

Putting Fixed Income in Context

- Oregon Investment Council (OIC) Oversight
 - The OIC sets policy and is ultimately responsible for the Investment Program
 - The OIC is a policy-setting council that largely delegates investment management activities to the Oregon State Treasury (OST) and qualified external fiduciaries.
 - The OIC has authority to set and monitor portfolio risk. Both short term and long term risks are critical.
- Role of Fixed Income in Oregon Public Employees Retirement Fund (OPERF) = Diversification & Liquidity
 - The role of fixed income investments, pursuant to policy INV 401:
 - provide diversification to the OPERF portfolio in general and to equity securities in particular; and
 - provide liquidity to help meet OPERF's cash flow needs.
- Fixed Income Strategic Review Objective = Enhance Diversification & Liquidity
 - Objective: determine whether the fixed income portfolio asset allocation can be enhanced to improve upon current diversification & liquidity benefits.
- OST staff worked with BlackRock on the Strategic Review
 - OST provided inputs, feedback & guidance on preferred model portfolios.
 - BlackRock ran the asset allocation analytics given OST's guidance.
 - Callan and Guggenheim Partners also undertook an independent analysis.

Fixed Income's Role: Providing Diversification and Liquidity for OPERF

2019 Strategic Review: Executive Summary

- Further De-Risk Fixed Income Portfolio To Enhance Diversification & Liquidity
 - Diversification & liquidity benefits can be enhanced by de-risking. De-risking entails:
 - Lowering non-investment & investment grade credit exposure;
 - Increasing US Treasury exposure;
 - Increasing Global Sovereign exposure (ex-US; hedged back to USD); and
 - Adding an OPERF Liquidity Fund “OLF” (high quality portfolio, internally managed)
 - Additional benefit of de-risking: reduced drawdown & improved credit loss stress scenarios.
- Further De-Risking Comes with Trade-Offs
 - While de-risking improves fixed income’s role within the OPERF portfolio, it comes with trade-offs:
 - Increased expected long term volatility (→ higher rate risk); and
 - Lower expected long term returns & carry (→ up in quality, shifting away from higher yielding assets).
- Leverage Helps Mitigate Some of the Trade-Offs of De-Risking & Provides a Safety Buffer in Down Markets
 - Addition of leverage (~12.5% at asset level) improves return potential & Sharpe ratio
 - Additional leverage (~12.5% at asset level) can act as a safety buffer for scenarios such as the following:
 - extended down market timeframes; and
 - capital calls associated with OST Private Market activities.

Further De-Risk Fixed Income Portfolio To Enhance Diversification & Liquidity

Add Leverage to Help Mitigate Some Trade-Offs & Provide a Safety Buffer

2019 Strategic Review: What Was Approved

Portfolio Asset Allocation

- Target Portfolio 2 (Please see next page for details)
- Additional Leverage of 12.5% (total 25% at asset class level)
 - Remaining leverage (~12.5%) to be reserved for scenarios such as the following:
 - extended down market timeframes; and
 - capital calls associated with OST Private Markets activities.
 - Use of leverage above 12.5% would require the approval of:
 - Chief Investment Officer; and
 - Director of Capital Markets.

Policy Benchmark

- Bloomberg Barclays US Aggregate Bond Index for Portfolio 2 (Leveraged 12.5%) with a return target expectation of 15 basis points above the Policy Benchmark over a market cycle.

OST Policy INV 401

- Amend “Section A, Policy Statement” return target expectation to 15 from 25 basis points over a market cycle.
- Amend “Section A, Policy Statement” Policy Benchmark per the above.
- Amend “Section B, (1)” limiting portfolio risk, as measured by tracking error, to “up to 1.0 percent” from “0.5-1.0 percent”.

2019 Strategic Review: Asset Allocation Portfolios

Portfolio 2 was Approved with ability to move to portfolio 3, subject to certain conditions.

Exposure movements refer to changes from Actual Portfolio to Unlevered and Leveraged 12.5% allocations, respectively.

Fixed Income Asset Classes	Policy Benchmark	Actual Portfolio	Unlevered	Leveraged 12.5%	Leveraged 25%
			1	2	3
Cash / OPERF Liquidity Fund (OLF)	0.0%	4.9%	18.9%	24.1%	28.8%
ABS (Credit cards, Autos, Student Loans)	0.2%	4.4%	1.9%	1.6%	1.8%
Agency MBS	12.8%	13.7%	3.7%	5.5%	6.2%
CMBS	1.0%	2.4%	5.7%	5.6%	5.7%
<i>Subtotal Securitized</i>	<i>14.0%</i>	<i>20.5%</i>	<i>11.3%</i>	<i>12.8%</i>	<i>13.7%</i>
IG Corporate 1-5	5.5%	5.6%	0.6%	1.3%	1.5%
IG Corporate 5-10	3.8%	5.9%	1.3%	1.7%	1.6%
IG Corporate 10+	4.3%	2.8%	0.0%	0.0%	0.0%
<i>Subtotal IG Corporate</i>	<i>13.5%</i>	<i>14.2%</i>	<i>2.0%</i>	<i>3.0%</i>	<i>3.1%</i>
US Treasuries 1-10	45.7%	32.4%	35.9%	38.6%	43.8%
US Treasuries 10+	9.6%	10.2%	15.0%	14.3%	14.0%
<i>Subtotal US Treasuries</i>	<i>55.3%</i>	<i>42.6%</i>	<i>50.9%</i>	<i>52.9%</i>	<i>57.8%</i>
TIPS	0.0%	1.3%	1.4%	1.6%	1.6%
Global Sovereign (ex-US) (USD Hedged)	0.0%	1.0%	5.7%	8.1%	9.3%
High Yield	4.0%	3.9%	5.2%	4.8%	5.1%
Bank Loans	13.0%	11.2%	2.1%	2.5%	2.7%
<i>Subtotal Non Investment Grade</i>	<i>17.0%</i>	<i>15.2%</i>	<i>7.4%</i>	<i>7.3%</i>	<i>7.8%</i>
EM Debt (Hard Dollar)	0.0%	0.4%	2.6%	2.7%	2.8%
Total	100%	100%	100.0%	112.5%	125.0%

Add OPERF Liquidity Fund exposure of ~14% to ~19%.

Reduce IG exposure from ~14% to ~2-3%.

Increase US Treasury exposure from ~43% to ~51-53%.

Increase Global Sovereign exposure from ~1% to ~6-8%.

Reduce Non-IG exposure from ~15% to ~7%.

Note: Policy Benchmark refers to the Portfolio's disaggregated benchmark per OIC policies.

Further De-Risking the Fixed Income Portfolio

2019 Strategic Review: Implementation Guidelines

- Given the complexity of and amount of fund movements involved in the portfolio realignment, implementation of changes from the Strategic Review would take place at a measured pace over the next 3-6 quarters.
- Internally-managed mandates:
 - US treasuries; US treasury futures; and US TIPS and OPERF Liquidity Fund.
- Step 1 – Manager Searches
 - Initiate searches for new mandates: Global Sovereign /EMD (Hard Currency); Securitized (ABS, Agency MBS, CMBS); and High yield / bank loan. Incumbent managers may be included in searches.
- Step 2 - Funding New Mandates (without using leverage)
 - Depending on timing of onboarding of new managers, funding of mandates may be run in parallel.
 - Global Sovereign / EMD expected to be largely funded with proceeds from reduction in high yield / bank loan mandates.
 - Securitized, OPERF Liquidity Fund, US Treasuries & TIPS expected to be funded with proceeds from a combination of a reduction in investment grade core mandates.
- Step 3 – Leverage
 - Leverage to be added through use of US treasury futures.
 - Given current cash allocation to US treasuries (internally managed and embedded within external core manager portfolios), sales of US treasuries to reach the asset allocation target may be modest.
 - Leverage would be added upon completion of ramp in of US treasury cash portfolio.
- Other
 - To minimize the costs of the realignment, in-kind transfers (to internal or new external managers) and arms-length crossing trades within managers may be considered.

Portfolio Realignment to Occur Over the Next 3-6 Quarters

2019 Strategic Review: Additional Leverage Guidelines

- Utilization of Additional Leverage beyond 12.5%
 - Remaining leverage of ~12.5% to be reserved for scenarios such as the following:
 - extended down market timeframes; and
 - capital calls associated with OST Private Markets activities.
 - For governance and control purposes, use of leverage above 12.5% would require the approval of:
 - Chief Investment Officer; and
 - Director of Capital Markets.
- Leveraging Sequencing Guidelines
 - Given the uncertainty surrounding forecasting down markets (e.g., timing, depth, duration, etc.), OPERF plan needs at the time as well as future fixed income and OPERF portfolio composition, a pre-set proscribed leveraging sequence is not advisable.
 - However, in an extended down market scenario, the following factors would need to be considered:
 - Expected length and/or severity of the downturn;
 - Amount of US treasuries (most liquid, easily sold assets) as well as leverage to hold in reserve in case market downturn extends and/or becomes more severe;
 - Ease and practicality of selling cash securities vs. leveraging via US treasury futures; and
 - Maintaining a reasonable risk level at the asset class and total plan level.

Additional Use of Leverage Warrants Appropriate Controls by Senior Management





OREGON STATE TREASURY

Tobias Read
Oregon State Treasurer

350 Winter St NE, Suite 100
Salem, OR 97301-3896

oregon.gov/treasury

TAB 5 – OSGP Consultant Recommendation

Extension of Oregon Savings Growth Plan General Consulting Contract

Purpose

To address the Oregon Savings Growth Plan general consulting contract, which expires on August 31, 2020.

Background

Callan LLC (Callan) was initially retained with a three-year contract that began on September 1, 2017. Under *OST Policy INV 210: Consulting Contracts*, new contracts are awarded for three-year periods and a) can be renewed no more than twice and b) are limited to a final expiration date no more than four years beyond the contracts' original expiration date. At the end of seven years, contracts must be re-bid and a new seven-year cycle can begin. Additionally, the OIC retains the contractual right to terminate such contracts, at any time, upon written notice.

Staff Recommendation

In recognition of the contributions made by Callan, Staff proposes that the OIC extend its current contract, subject to satisfactory negotiation of all terms and conditions, for a two-year period beginning September 1, 2020.

TAB 6 – Securities Lending

July 2020

Oregon Investment Council

State Street
Securities Finance



STATE STREET

Agenda

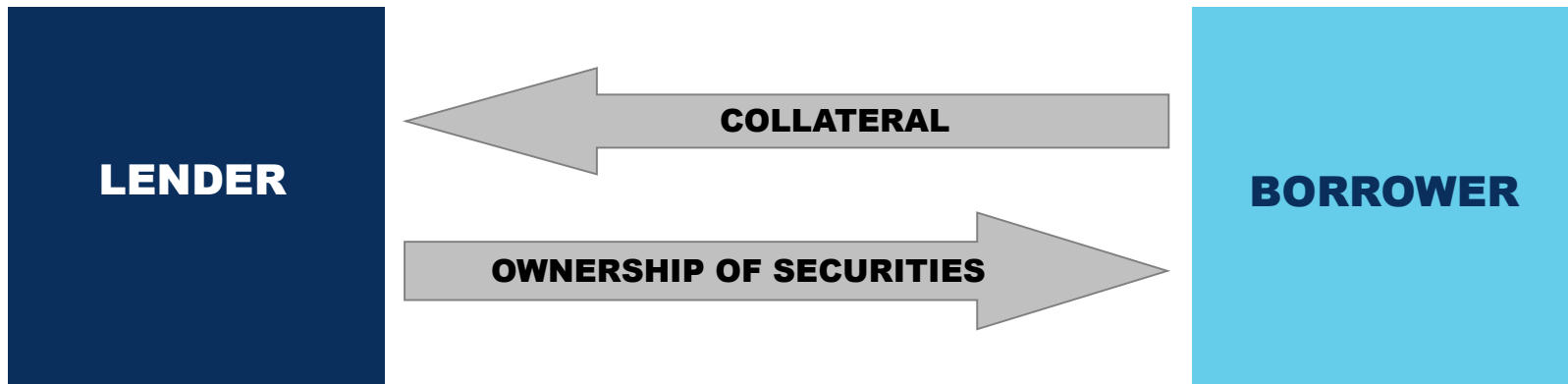
- **What is Securities Lending? - Securities Finance 101**
- **Cash Management and Securities Lending – role of State Street Global Advisors**
- **Securities Lending Market Update and Performance Review**
- **Securities Lending Cash Collateral Portfolio Review and Market Update – State Street Global Advisors**

Securities Finance 101

STATE STREET®

Securities Finance Defined

An investment management product where participants generate revenue by temporarily transferring idle securities, in a collateralized transaction, to a borrower



- Borrower becomes legal owner of securities while lender retains rights of beneficial ownership entitling it to all distributions and corporate actions.
- Lender portfolios can be managed without limitation
- The borrower is contractually obligated to return the securities upon recall by the lender

Securities Finance

Why borrow securities?



Fundamentals of Securities Finance

Transaction Basics / Demand Drivers

- Securities are borrowed by a counterparty that has a commitment to deliver those which it has sold, but does not possess.
 - All asset classes
 - Failing purchase on the other side of the trade
- Securities are borrowed to cover a “short” position in a security.
 - All asset classes, but typically seen in corporate securities
 - Broker sells a position that it doesn’t own and borrows securities to make good on their delivery
 - Bets that the price of the security will fall before it has to return shares to the beneficial owner
 - Broker profits on the difference in price minus the cost to borrow the stock
- Tax treaties between governments allow for dividend arbitrage trades.
 - These are non-U.S. equities entitled to 75%-85% of a foreign dividend, borrower in the local market entitled to 100%
- Securities are borrowed as part of a financing strategy
 - Typically U.S. and non-U.S. government securities
 - “Repo” transaction

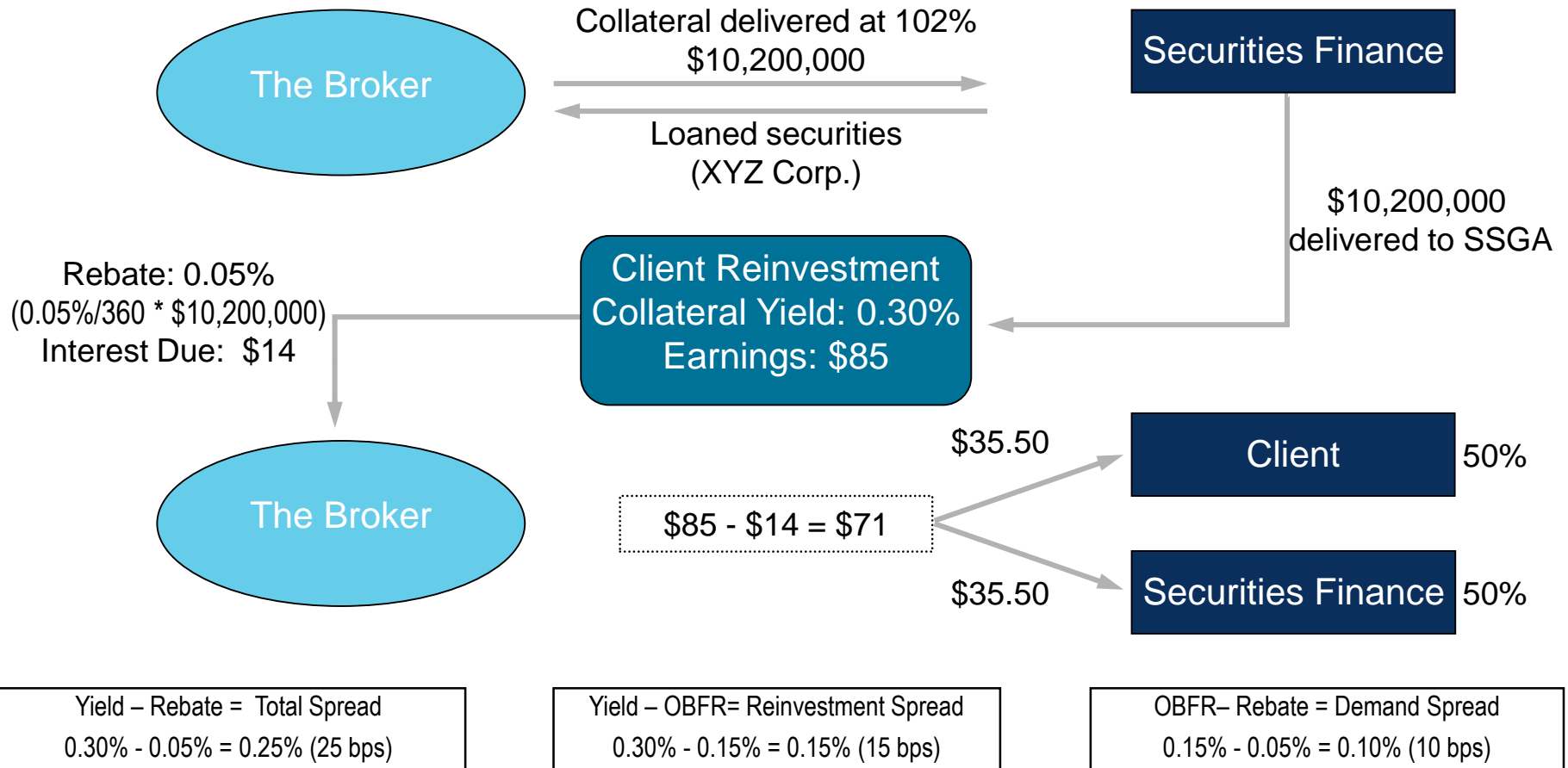
Fundamentals of Securities Finance

One Day Sample Transaction – Cash Collateral

- A Broker is looking to borrow 50,000 shares of XYZ Corp.
 - 50,000 shares of XYZ Corp. has a market value of \$10 million
- The Broker contacts the Securities Finance US Equity Trading Desk in Boston.
 - State Street has the supply/inventory
- Terms are agreed:
 - Rebate rate of 0.05%
 - Cash collateral
 - Open loan (no fixed period of time)
- Trade is executed on DML (Securities Finance's Trading and Accounting Platform).
 - The automated queuing system identifies fund ABCD as next in line for loan
 - ABCD has 50,000 shares of XYZ Corp available
- Collateral is delivered by the Broker
 - Cash collateral valued at 102% of the market value (\$10,200,000)
 - Cash is invested by SSGA in a specific, client designated re-investment portfolio, earning 0.30%
- Shares are delivered through DTC to the Broker

Fundamentals of Securities Finance

One Day Sample Transaction Diagram – Cash Collateral



Collateral Yield and Rebate Rate are annualized

OBFR – Overnight Banking Funding Rate

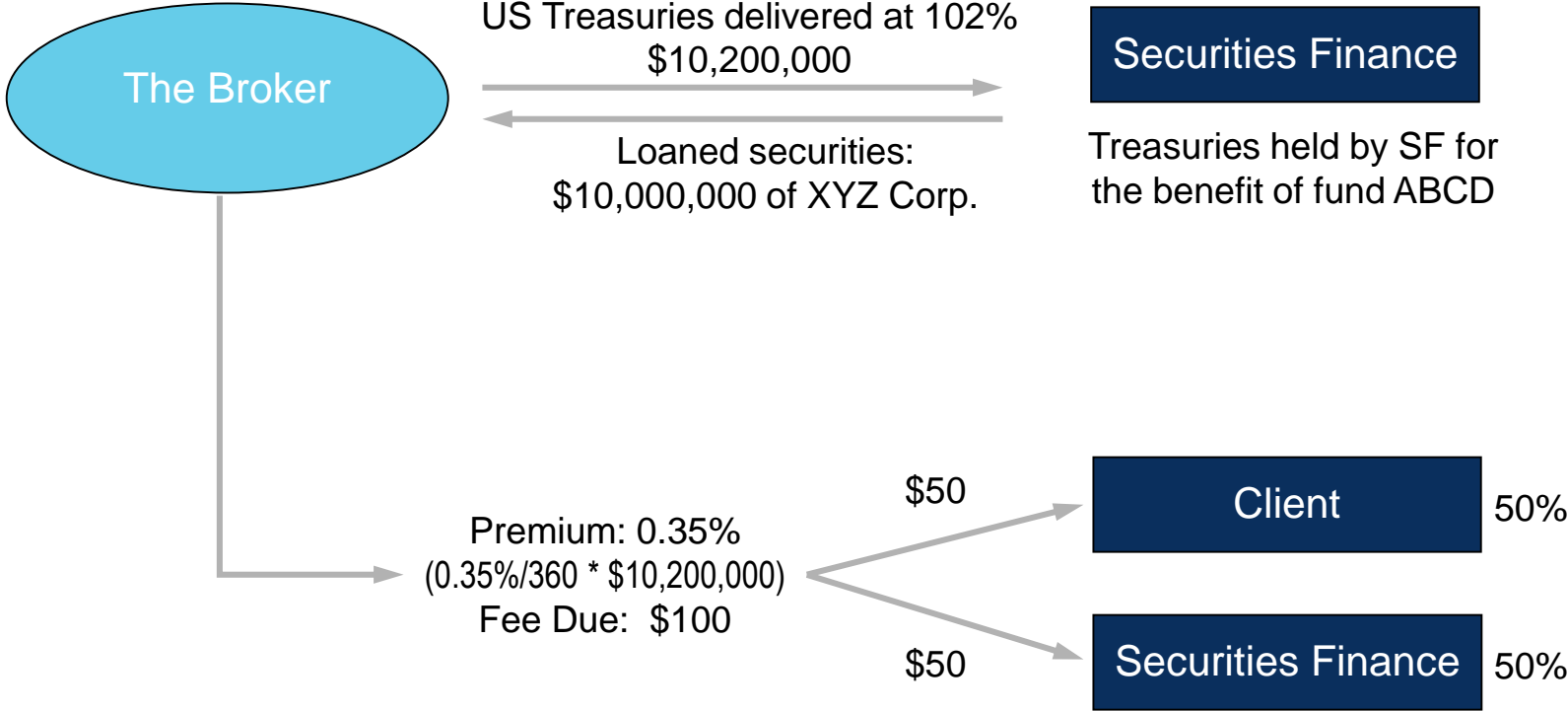
Fundamentals of Securities Finance

One Day Sample Transaction – Non-Cash Collateral

- A Broker is looking to borrow 50,000 shares of XYZ Corp.
 - 50,000 shares of XYZ Corp. has a market value of \$10 million
- The Broker contacts the Trading Desk.
 - State Street has the supply/inventory
- Terms are agreed:
 - Premium rate of 0.35%
 - Non-Cash collateral
 - Open loan (no fixed period of time)
- Trade is executed on DML (Securities Finance's Trading and Accounting Platform).
 - The automated queuing system identifies fund ABCD as next in line for loan
 - Fund ABCD has 50,000 shares of XYZ Corp available
- Collateral is delivered by Broker
 - \$10,200,000 US Treasuries, 102% of the market value of XYZ Corp.
 - US Treasuries are delivered to State Street and held for the benefit of fund ABCD
- XYZ Corp. shares are delivered through DTC to Broker

Fundamentals of Securities Finance

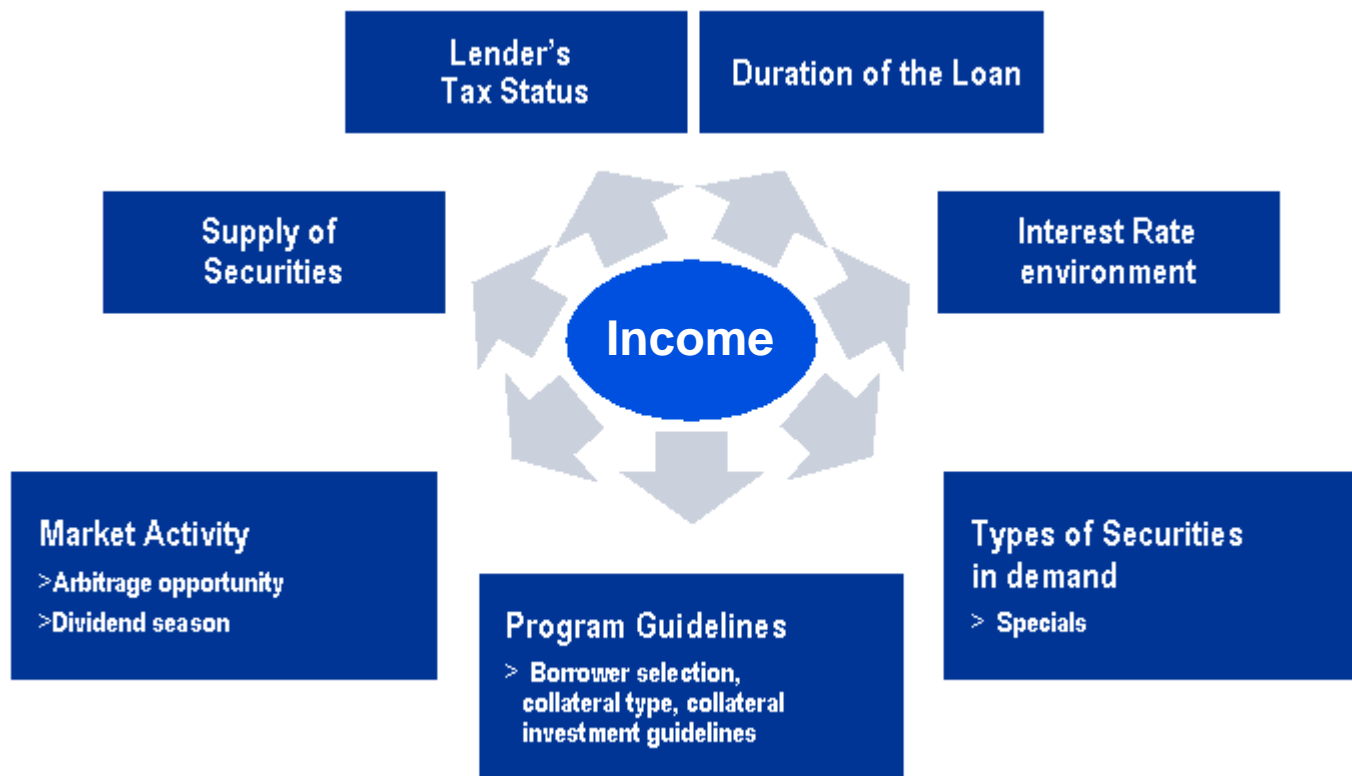
One Day Sample Transaction Diagram – Non-Cash Collateral (US Treasuries)



Premium rate annualized using a 360-day basis.

Fundamentals of Securities Finance

Factors Affecting Income



Securities Finance

Major risks and mitigating factors

Credit Risk

State Street controls the quality of its **approved borrower list** and monitors all borrowers daily against credit limits approved by Enterprise Risk Management.

The optional borrower default **indemnity** transfers credit risk to State Street Bank & Trust Co which is rated AA- by S&P, the joint highest of any major agent lender.*

Market Risk

State Street **marks to market** all loans and collateral daily, takes a positive margin on collateral, and actively monitors value-at-risk in addition to stress scenario exposures.

The optional borrower default **indemnity** transfers market risk to State Street, who will cover the shortfall in collateral value in the event of a borrower default.

Ops Risk

State Street has **dedicated operations teams** to monitor daily processes and industry standard systems such as Pirum to reconcile positions with borrowers.

Security-level **buffers** are imposed to ensure that most sales can be facilitated through swaps with other clients, removing the need for a loan recall.

Legal Risk

Clients sign a single **Securities Lending Agency Agreement** (SLAA) defining all terms and parameters for their program.

The SLAA should be regularly reviewed and updated to ensure that it properly reflects the client's **risk/reward appetite**.

Reinvest Risk

Cash collateral is managed by **State Street Global Advisors**, one of the world's largest cash managers with over \$387.59 billion under management.**

State Street's optional borrower default indemnity typically **does not cover cash collateral** and clients should ensure that their reinvestment policy is appropriate.

State Street Agency Lending

Program Overview

State Street's securities finance program launched in **1974** and is one of the largest agency lending programs in the world today.

Leveraging our experienced global trading teams, State Street provides follow-the-sun **access to demand** within a **customized** framework that fits each client's requirements.

45 years of experience in securities lending

\$4.49 trillion of lendable assets

\$380.7 billion of active loans

34 security markets for equities and fixed income

251 active clients, **47** approved jurisdictions

157 borrowers, **16** approved jurisdictions

US (BTC) and **German** (GmbH) legal entities

Cash collateral is managed by **State Street Global Advisors** (SSGA), one of the world's largest cash managers

9 regional offices with **5** trading desks

405* dedicated employees

AA- rating from Standard & Poor's (since Dec 2015)

As of April 2020

¹ <https://globalinvestorgroup.com/uploads/BeneficialOwnersSurvey2020.Online2.pdf>

² Asia Asset Management Best of the Best Awards 2020

³ The Triple A Asset Asian Awards 2019

⁴ Globally and in Americas when rated by G1 Borrowers, weighted and unweighted

* Headcount data as of 31 December 2019. This headcount figure does not include contractors

"State Street provides us with regular updates on industry events and new opportunities. We've mandated State Street as our securities lending agent for many years. We are very satisfied with the service they offer. Their service is very reliable and high quality."

#1 Custodial lender (weighted) for the third consecutive year in the Global Investor/ISF 2020 Beneficial Owners Survey and **#1** in nine service categories including collateral management and parameter management¹

#1 Securities Finance House, since 2012²

#1 in Securities Lending for 5th consecutive year³

#1 Agent Lender in Global Investor/ISF 2019 International Securities Finance Survey⁴

Glossary

- **Asset-Backed Commercial Paper (ABCP)¹** - A short-term investment vehicle with a maturity that is typically between 90 and 180 days. The security itself is typically issued by a bank or other financial institution. The notes are backed by physical assets such as trade receivables, and are generally used for short-term financing needs.
- **Asset-Backed Security (ABS)¹** - A financial security backed by a loan, lease or receivables against assets other than real estate and mortgage-backed securities. For investors, asset-backed securities are an alternative to investing in corporate debt.
- **Asset/Liability Mismatch** - The process of maintaining assets and liabilities with different durations in an attempt to optimize return. In securities lending transactions, securities loans (liabilities of the lender) are typically overnight instruments while the reinvestment securities (assets of the lender) have various durations, depending on the condition of the yield curve at the time of purchase.
- **Counterparty Risk** - The risk that a counterparty will not settle an obligation in full, either on the due date or at any time afterwards. This risk is present on both the lending side (borrower as counterparty) and the collateral reinvestment side (reinvestment security issuer as counterparty) of a securities lending transaction. Synonymous with credit risk.
- **Demand Spread** - For loans vs. cash collateral, it is the weighted average risk-free rate less the rebate rate. It represents a measure of the demand value of the loaned security and is also referred to as the funding spread, the intrinsic spread, the intrinsic value, the natural spread or the below-the-line spread. For loans vs. non-cash collateral it is equal to the premium paid by the borrower.
- **General Collateral** - Securities that are not highly sought after in the market by borrowers; demand for general collateral is not issue specific. Repo rates, rebate rates and premiums for these specific securities tend to be lower than the prevailing rate for special collateral.
- **Gross Spread** - The difference between the yield generated by the cash collateral and the rebate paid on the securities loans (or, the in case of loans vs. non-cash collateral, the premium). It is comprised of the demand spread and the reinvestment spread. Also referred to as combined spread, integrated spread or total spread.
- **Mark to Market** - The practice of (re)valuing securities and financial instruments using current market prices. Both securities loans and collateral are revalued daily.

Glossary

- **Open Transactions** – Transactions with no fixed maturity date that are subject to the possibility of daily termination or renegotiation of rebate rates. Securities loans are generally considered overnight, or open, transactions.
- **Rebate Rate** - The interest rate that a securities lender pays the borrower on cash collateral. This will normally be below the risk-free rate and will reflect the demand value of the securities. Also referred to as the funding rebate.
- **Reinvestment Spread** - Weighted average collateral yield less the weighted average risk-free rate. This represents a measure of the excess return generated by the investment process. This is also referred to as asset spread, investment spread, above-the-line spread or collateral spread.
- **Repurchase Agreement (Repo)** - A financing arrangement in which the holder of securities sells them to a lender under an agreement to repurchase them on a specified date at an agreed-to price.
- **Risk Free Rate** - A theoretical interest rate that would be returned on an investment that was completely free of risk. The very short-term government securities are usually used as proxies for the risk free rate, since they are virtually risk-free. In securities lending transactions the Overnight Banking Funding Rate (OBFR) and the Eonia are used as close approximations of the risk-free rate for loans vs. USD collateral and loans vs. Euro collateral, respectively. The risk-free rate serves as the breakpoint that segments the total spread/income earned on a securities lending transaction into the portion of spread/income attributable to the demand for the loaned securities and the portion attributable to the reinvestment process.
- **Specials Collateral** - Securities that, for a specific reason, are highly sought after in the market by borrowers. Funding rates, rebate rates and premiums for these specific securities tend to be higher than the prevailing rate for general collateral.
- **Substitute Payment** - A payment made by the borrower of securities to the lender in lieu of actual dividends or other income earned on the securities (net of any applicable taxes). This payment is equal to that which the lender would have received if it had not lent the securities. Also referred to as a manufactured payment.
- **Weighted Average Maturity (WAM)²** - The length of time until the average security in a fund will mature or be redeemed by its issuer. It indicates a fixed income fund's sensitivity to interest rate changes: longer average weighted maturity implies greater volatility in response to interest rate changes.

1. Source: investopedia.com

2. Source: Investorwords.com

Market Update

Market Update

- The COVID-19 pandemic and its subsequent ramifications on the economy/markets have remained the focus for the last couple of months. The Federal Reserve has been heavily involved in the markets by basically offering “unlimited” Quantitative Easing (QE)/Liquidity through outright security purchases and various lending facilities. The massive issuance of Treasury Bills has created liquidity and consistent market supply.
- The volatility in the US equities market has created demand in the technology sector and online only retailers, while others such as airlines, energy, and cruise lines continue suffering and these names are starting to attract the attention of short sellers.
- Temporary short sell bans in a number of EMEA and APAC markets did not prevent lending as we continued to meet borrower demand in these markets with increased activity. There was no ban on lending and no requirement to close existing short positions. EU companies cancelled or postponed their dividends either because social distancing has prevented companies hosting their Annual General Meeting at which the dividend would be approved, or the crisis has forced companies to redirect their capital.
- Corporate bond issuances were robust in both the Investment Grade (IG) and High Yield (HY) markets. With the additional supply and strong liquidity in the HY market, loan balances and demand spreads have seen a gradual compression.

Performance Review

Relationship Summary

- Earnings Overview
 - \$429.1M* in securities lending revenue for Oregon State Treasury since 2001
- Cash Collateral
 - Separately accounts for Oregon PERS Funds and Oregon Non – PERS Funds managed by SSGA with same custom investment guidelines as Oregon Short - Term Fund
 - Non-Cash Collateral
 - US Treasury and US Agency Bonds, Sovereign Debt
- Approved Borrowers
 - Oregon PERS Funds - State Street approved Borrowers list
 - Oregon Non - PERS Funds - Fed Primary Dealers list
- Program Parameters
 - Limits: 20% per Borrower
- Borrower Default Indemnification provided by State Street

• As of May 31, 2020
• Source: my.statestreet.com
Data represents past performance and is not a guarantee of future results

Securities Lending Performance

State of Oregon - All Accounts Performance

	2016	2017	2018	2019	Jan - May 2019	Jan - May 2020	% Change
Average Lendable Assets (\$)	46,860,853,506	51,858,652,901	52,365,296,785	53,347,700,173	53,065,798,003	51,043,417,297	-3.81%
Average On Loan (\$)	3,345,928,200	3,290,834,044	4,189,356,035	3,200,047,303	3,716,842,940	2,868,299,010	-22.83%
Utilization	7.14%	6.35%	8.00%	6.00%	7.00%	5.62%	-19.77%
Earnings by Program (\$)							
US Equity	6,011,253	4,378,891	4,005,729	3,215,650	1,412,815	1,178,726	-16.57%
US Corporate Bond	998,690	899,955	2,087,163	1,297,278	668,534	626,246	-6.33%
US Government	1,504,167	1,108,839	1,866,601	1,964,452	919,039	1,533,992	66.91%
Non-US Equity	5,313,485	3,835,483	4,298,421	2,918,137	1,430,526	677,849	-52.62%
Non-US Fixed Income	27,893	20,182	14,096	2,770	1,331	1,931	45.02%
Total Earnings (\$)	13,855,487	10,243,350	12,272,010	9,398,287	4,432,246	4,018,744	-9.33%
Components of Spread (bps)							
Demand Spread	47	41	34	24	26	23	-13.52%
Reinvestment Spread	16	7	26	29	24	55	127.31%
Net Spread	63	48	60	53	50	77	54.06%
Non-Cash Collateral Spread (bps)	31	29	22	22	22	21	-2.79%
Return to Lendable Assets (bps)	2.96	1.98	2.34	1.76	2.00	1.89	-5.74%

Notes:

- (1) Risk-Free rate used for spread calculations was Fed Funds Open, which changed to OBFR on 9/19/2016
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence
- (4) Components of Spread encompass only "cash collateral" backed loans during the period

Securities Lending Performance

State of Oregon - PERS Performance

	2016	2017	2018	2019	Jan - May 2019	Jan - May 2020	% Change
Average Lendable Assets (\$)	29,289,150,404	33,296,379,135	32,168,041,226	31,248,473,537	31,012,882,028	28,955,497,370	-6.63%
Average On Loan (\$)	2,518,154,606	2,596,442,241	2,683,687,926	2,255,996,575	2,513,452,406	2,046,933,359	-18.56%
Utilization	8.60%	7.80%	8.34%	7.22%	8.10%	7.07%	-12.77%
Earnings by Program (\$)							
US Equity	5,951,586	4,287,278	3,940,306	3,146,126	1,399,196	1,159,964	-17.10%
US Corporate Bond	445,389	421,351	874,550	513,865	255,828	336,515	31.54%
US Government	721,885	609,248	852,960	933,727	438,862	750,284	70.96%
Non-US Equity	5,047,557	3,704,779	4,187,004	2,846,314	1,397,498	665,442	-52.38%
Non-US Fixed Income	27,893	20,182	14,096	2,770	1,331	1,931	45.02%
Total Earnings (\$)	12,194,309	9,042,839	9,868,917	7,442,801	3,492,715	2,914,136	-16.57%
Components of Spread (bps)							
Demand Spread	62	46	48	42	47	32	-31.68%
Reinvestment Spread	16	7	23	25	23	55	138.25%
Net Spread	77	52	71	67	70	88	24.38%
Non-Cash Collateral Spread (bps)	34	35	29	24	24	21	-12.70%
Return to Lendable Assets (bps)	4.16	2.72	3.07	2.38	2.70	2.42	-10.64%

Notes:

- (1) Risk-Free rate used for spread calculations was Fed Funds Open, which changed to OBFR on 9/19/2016
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence
- (4) Components of Spread encompass only "cash collateral" backed loans during the period

Securities Lending Performance

State of Oregon - Non - PERS Performance

	2016	2017	2018	2019	Jan - May 2019	Jan - May 2020	% Change
Average Lendable Assets (\$)	17,571,703,102	18,562,273,766	20,197,255,559	22,099,226,635	22,052,915,975	22,087,919,926	0.16%
Average On Loan (\$)	827,773,594	694,391,803	1,505,668,109	944,050,728	1,203,390,534	821,365,651	-31.75%
Utilization	4.71%	3.74%	7.45%	4.27%	5.46%	3.72%	-31.85%
Earnings by Program (\$)							
US Equity	59,667	91,612	65,422	69,524	13,619	18,762	37.76%
US Corporate Bond	553,301	478,603	1,212,613	783,414	412,706	289,731	-29.80%
US Government	782,283	499,592	1,013,641	1,030,725	480,177	783,708	63.21%
Non-US Equity	265,928	130,704	111,416	71,824	33,028	12,407	-62.44%
Non-US Fixed Income	-	-	-	-	-	-	
Total Earnings (\$)	1,661,178	1,200,511	2,403,093	1,955,486	939,531	1,104,608	17.57%
Components of Spread (bps)							
Demand Spread	11	20	7	2	10	4	-56.01%
Reinvestment Spread	18	10	31	36	25	54	112.51%
Net Spread	30	31	38	38	34	58	68.33%
Non-Cash Collateral Spread (bps)	17	13	11	14	15	13	-14.66%
Return to Lendable Assets (bps)	0.95	0.65	1.19	0.88	1.02	1.20	17.38%

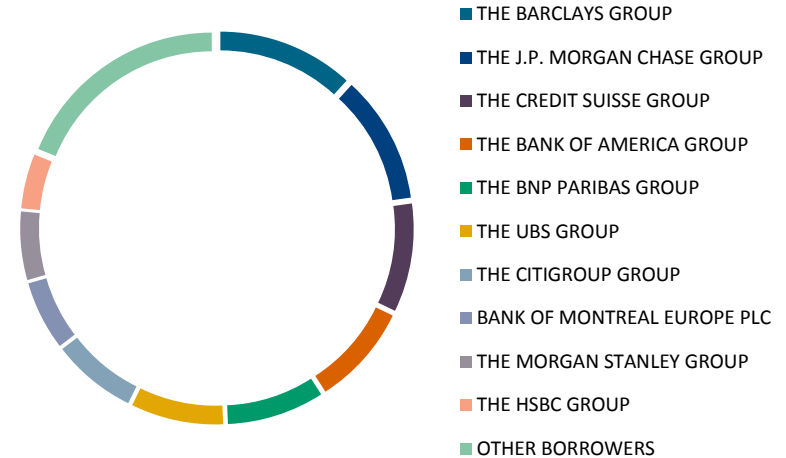
Notes:

- (1) Risk-Free rate used for spread calculations was Fed Funds Open, which changed to OBFR on 9/19/2016
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence
- (4) Components of Spread encompass only "cash collateral" backed loans during the period

Borrower Diversification – May 31, 2020

State of Oregon Borrower Diversification

Borrower	On-Loan Market Value	% of Total
THE BARCLAYS GROUP	495,178,998	12%
THE J.P. MORGAN CHASE GROUP	353,939,496	11%
THE CREDIT SUISSE GROUP	274,943,833	9%
THE BANK OF AMERICA GROUP	199,908,264	9%
THE BNP PARIBAS GROUP	170,333,043	8%
THE UBS GROUP	145,114,211	8%
THE CITIGROUP GROUP	126,410,279	7%
BANK OF MONTREAL EUROPE PLC	121,808,753	6%
THE MORGAN STANLEY GROUP	103,846,142	6%
THE HSBC GROUP	101,617,317	5%
OTHER BORROWERS	598,978,348	19%
Total	2,692,078,684	100%



Notes:

- (1) Based Currency (USD) Loan balance as of: May 31, 2020
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence

Disclaimer

State Street Global Markets® is a registered trademark of State Street Corporation® used for its financial markets business and that of its affiliates (collectively “State Street”).

This document and information provided herein is for marketing and/or informational purposes only and is not intended for retail clients, nor for distribution to, and may not be relied upon by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to applicable law or regulation. It is not intended to constitute investment, legal, regulatory, tax or accounting advice regarding any securities or futures and does not take into account any client's particular investment or other financial objectives or strategies, nor any client's legal, regulatory, tax or accounting status, nor does it purport to be comprehensive, nor intended to replace the exercise of a client's own careful independent review and judgment regarding any corresponding investment or other financial decision. All information has been obtained from sources believed to be reliable at the time of publication, but we make no representation or warranty as to its accuracy and you should not place any reliance on this information.

This document and information provided herein is not intended to suggest or recommend any investment or investment strategy, and does not constitute investment research. These written materials do not constitute, and should not be construed as constituting, (1) a solicitation, offer or invitation to subscribe for, or purchase securities or futures or the making available of securities or futures for purchase or subscription in any jurisdiction; (2) the provision of investment advice concerning securities or futures; or (3) an undertaking by State Street to manage the portfolio of securities or futures contracts on behalf of other persons. This material is not intended to constitute any binding contractual arrangement or commitment by State Street to provide securities services nor any other financial services.

Any market commentary provided by Securities Finance Trading Desks is not investment research. Performance data shown represents past performance and is no guarantee of future results.

State Street hereby disclaims all liability, whether arising in contract, tort or otherwise, for any losses, liabilities, damages, expenses or costs arising, either direct or consequential, from or in connection with the use of or any reliance placed upon any information provided.

Clients should be aware of the risks of participating in securities lending, which may include counterparty, collateral, loss of investment, tax and accounting risks. The communication and information or any portion thereof may not be reprinted, sold or redistributed without the prior written consent of State Street Global Markets.

The products and services described herein are offered by State Street Bank and Trust Company, authorized and regulated by the Federal Reserve Board.

Products and services may not be available in all jurisdictions. Please contact your sales representative for further information.

SF GEN GL 2020-01.

To learn how State Street looks after your personal data, visit: <http://www.statestreet.com/utility/data-processing-and-privacy-notice.html>

© 2020 State Street Corporation - All Rights Reserved

State of Oregon

Tom Connelley CFA
July 22nd 2020

This material is solely for the private use of State of Oregon and is not intended for public dissemination.
The information contained in this document is current as of the date presented unless otherwise noted.

Cash Management

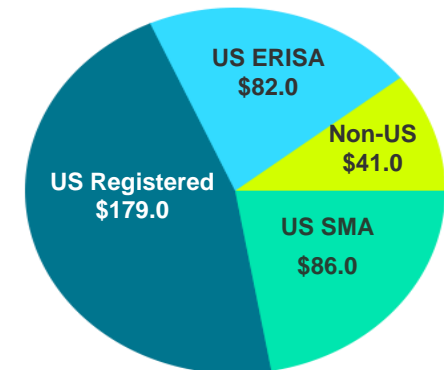
State Street's Cash Management Team

22 professionals averaging **20** years of industry experience managing **\$388B** in AUM across **14** strategies globally

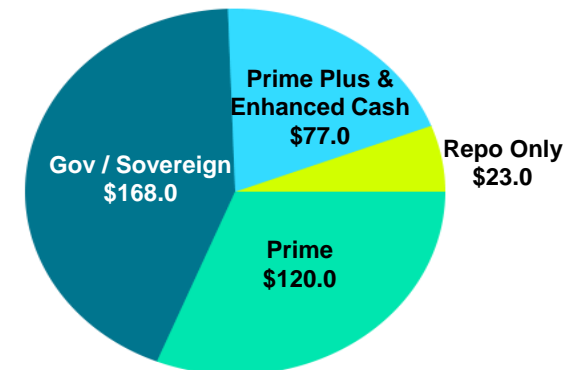
Cash Management	Role	Location	Years Experience
Pia McCusker	Global Head	Boston	19
Peter Hajjar	Global Head of Credit Research	Boston	18
Todd Bean, CFA	Head of US Traditional Cash Strategies	Boston	20
Sean Dillon	Head of US Securities Lending Cash Strategies	Boston	25
Simon Mullumby, CFA	Head of APAC Cash Management	Sydney	23
Nicholas Pidgeon	Head of EMEA Cash Management	London	31

Traditional Repo	ABS and Structured	Money Market
Sovereign Rates Government Agencies	Non-Traditional Repo	Term Unsecured

Vehicle Type



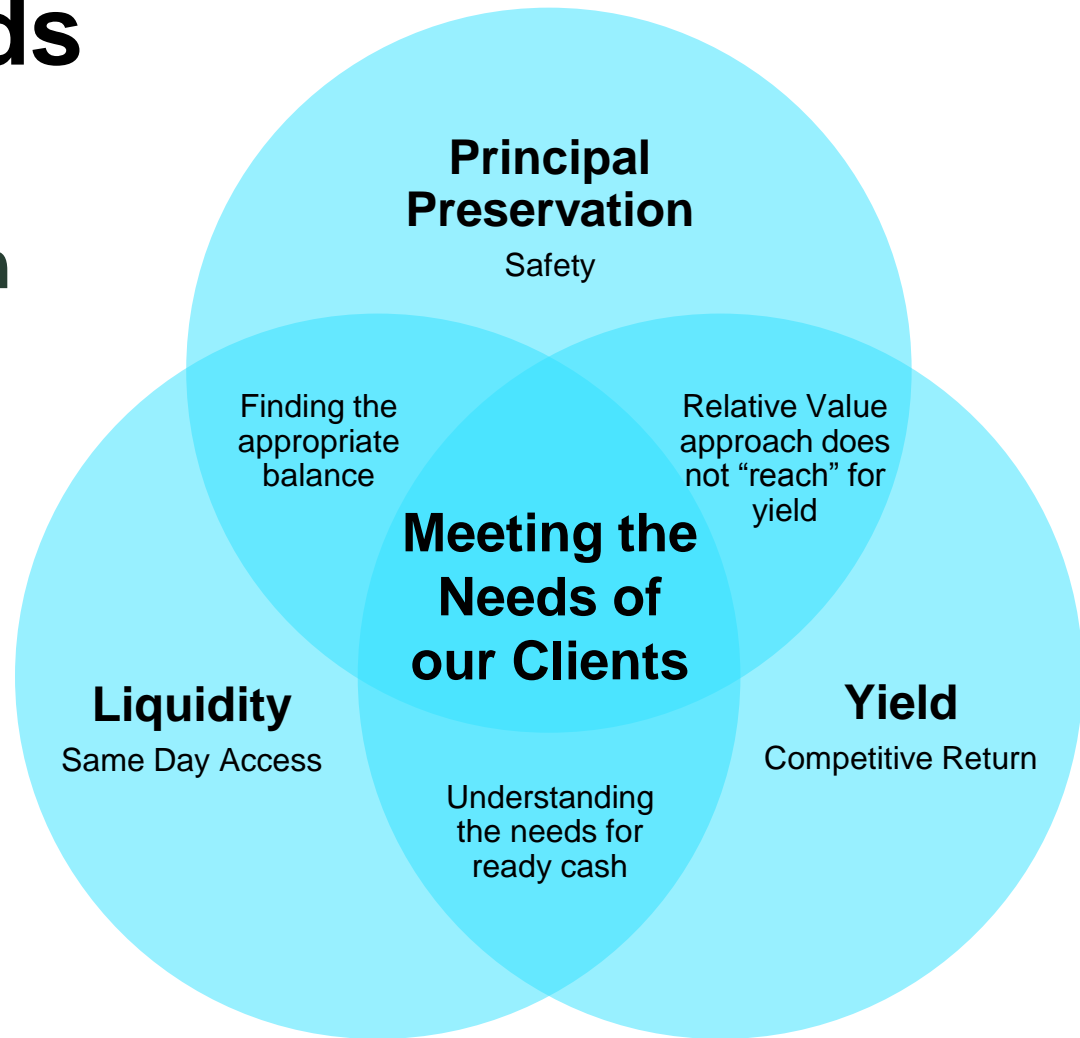
Strategy Type



Source: State Street Global Advisors, as of March 31, 2020. Figures provided in billions USD.

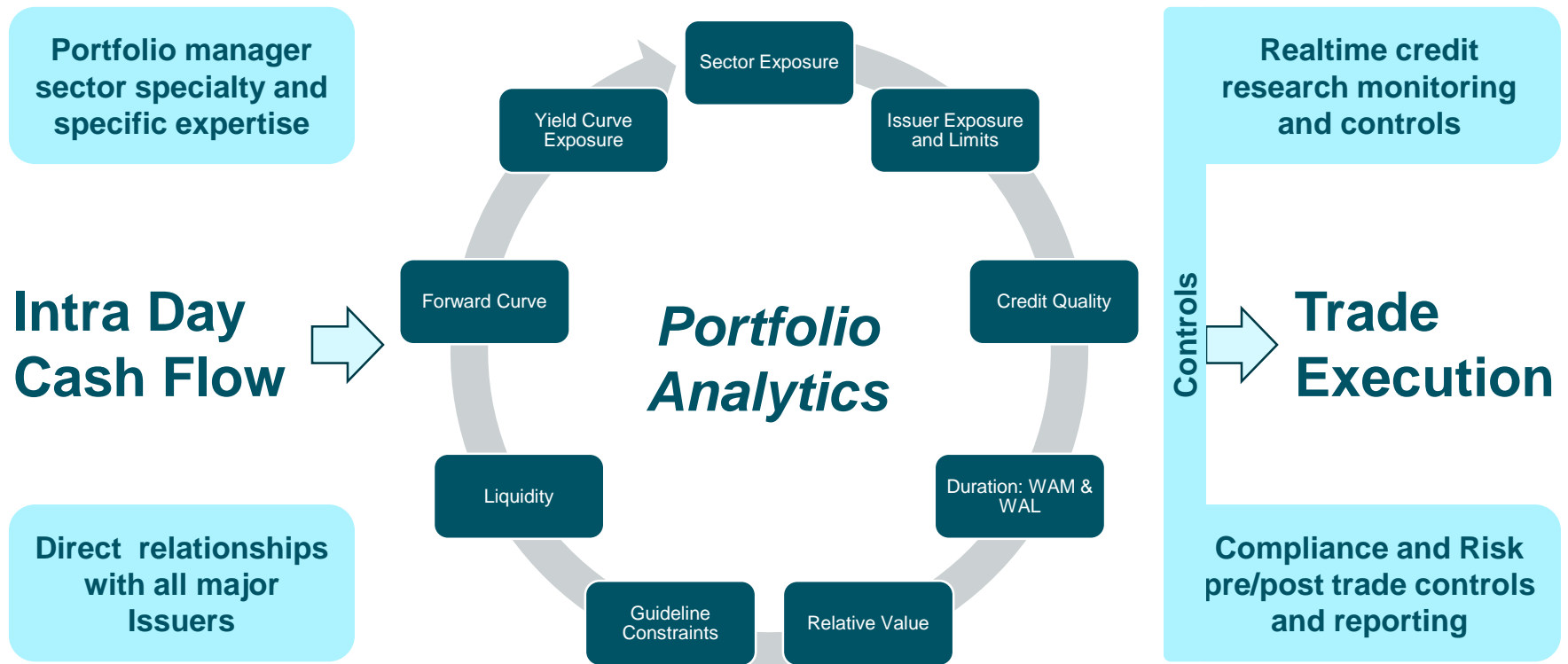
We Deliver Outcomes Based on Our Clients Needs

Our Approach



Portfolio Construction

Portfolio activity revolves around liquidity management and generating relative value through security selection all while ensuring proper oversight and controls

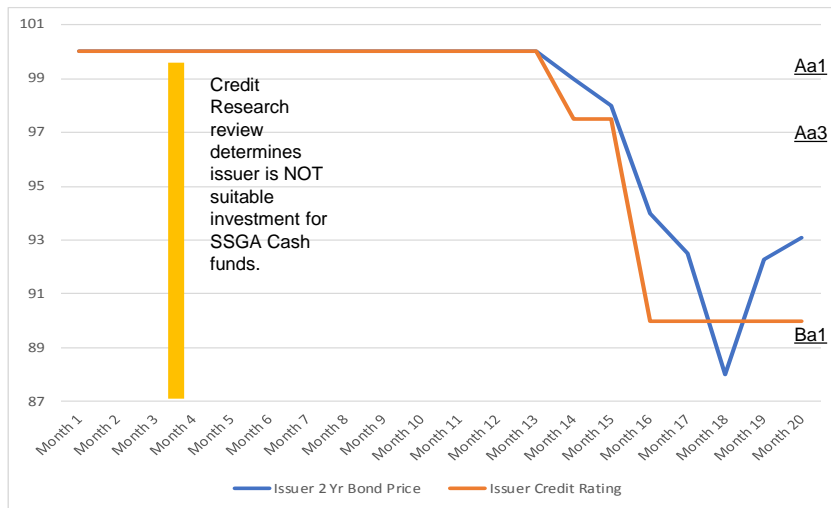


Source: SSGA as of March 4 2020. Key: WAM weighted average maturity, WAL weighted average life

Credit Research Process at Work

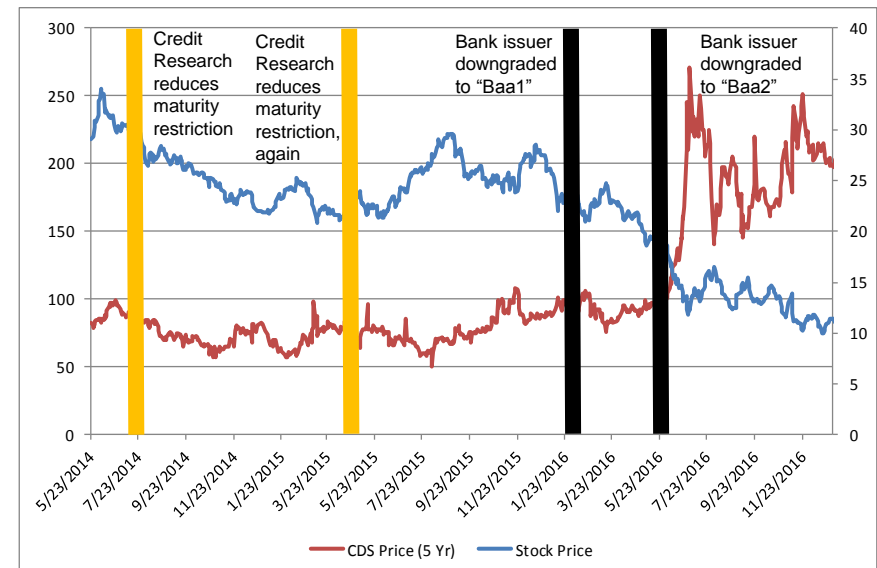
Case Study #1

- SSGA Cash Credit Research team reviews for approval a European government-supported credit institution (with Aa1/AA credit rating).
- An in-depth analysis revealed poor lending standards at the institution, and the Credit Research team determined that the government support mechanism was all that underpinned its strong external credit rating. As such, issuer was not approved.
- Concerns were validated a year later when the European government removed its support, a move that immediately led to multiple notch downgrades for the issuer, all the way to HY status.



Case Study #2

- For large global banks, fundamental credit profile deterioration often occurs over multiple years, even if financial markets don't reflect the degradation immediately.
- The Global Cash Credit Research process aims to identify credit profile degradation in "real-time", and reduce maturity restrictions to limit exposure to weakening credits for our Cash clients.
- In the case of this large global bank, maturity restrictions were reduced multiple times and well-in-advance-of 3rd party credit rating downgrades, and more material volatility in equity and CDS prices.

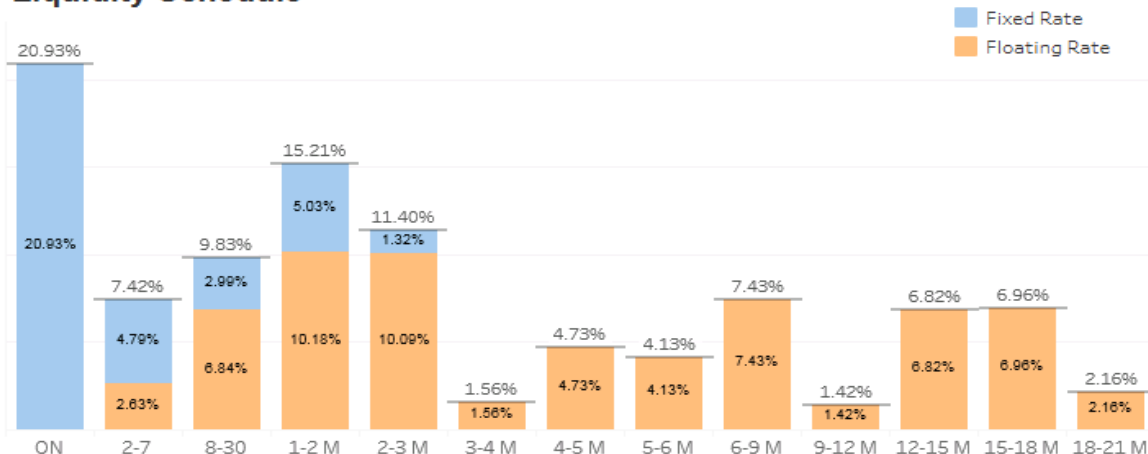


Account Summary

The Oregon State Treasury (FC5L)

As of:	May 29, 2020
Total Par AUM:	835,204,630
Uninvested/unsettled Cash:	837
Net AUM:	835,205,467
1-Day Yield% (360 365 Basis):	0.5100 0.5200
WAM (in days):	21.66
WAL (in days):	129.1
Fund Price as of May 29, 2020	0.9986

Liquidity Schedule



Floating Rate Breakdown

1M LIBOR	39.93%	ON	5.39%
3M LIBOR	19.63%	2-7	1.80%
FED FUNDS	2.75%	8-30	44.25%
SOFR	2.63%	1-2 M	6.05%
Total	64.95%	2-3 M	7.46%
		Total	64.95%

Sectors

ABS	140,000,000 16.76%
REPO	168,567,000 20.18%
Bank Note	94,385,000 11.30%
CD	206,500,000 24.72%
CP	132,000,000 15.80%
Corporate	5,550,000 7.85%
GOVERNMENT	22,000,000 2.63%
M-MKT FUND	6,202,630 0.74%
Total	835,204,630 100.00%

Repo Collateral

Treasury	138,567,000 16.59%
Agency Debt	30,000,000 3.59%
Total	168,567,000 20.18%

S&P Ratings

AAA	15.21%
AA+	2.63%
AA-	16.89%
A+	32.44%
A	5.15%
A-	7.66%
BBB+	1.92%
A-1+	11.97%
A-1	3.83%
Other	2.30%

Country of Issuer

AUSTRALIA	3.59%
CANADA	9.63%
LUXEMBOU..	2.99%
SWEDEN	2.39%
US	81.39%

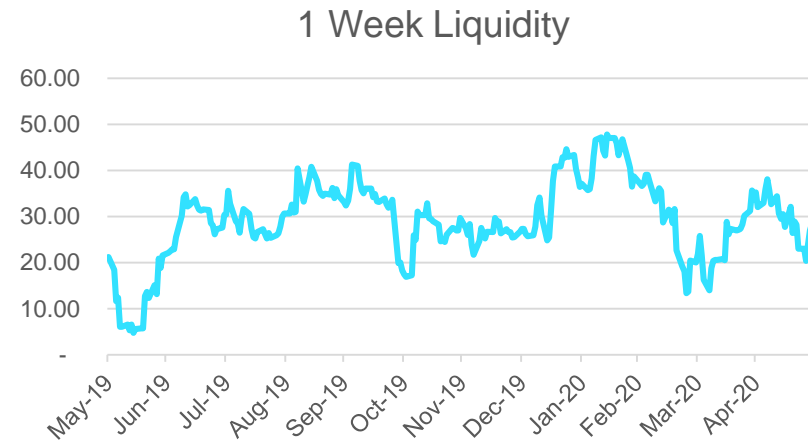
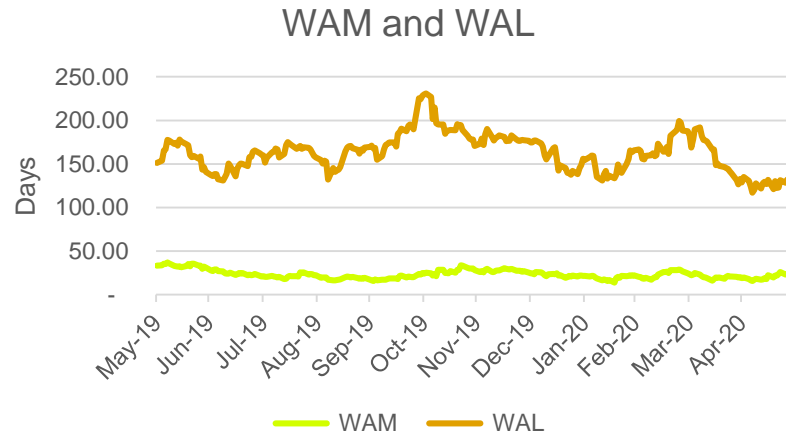
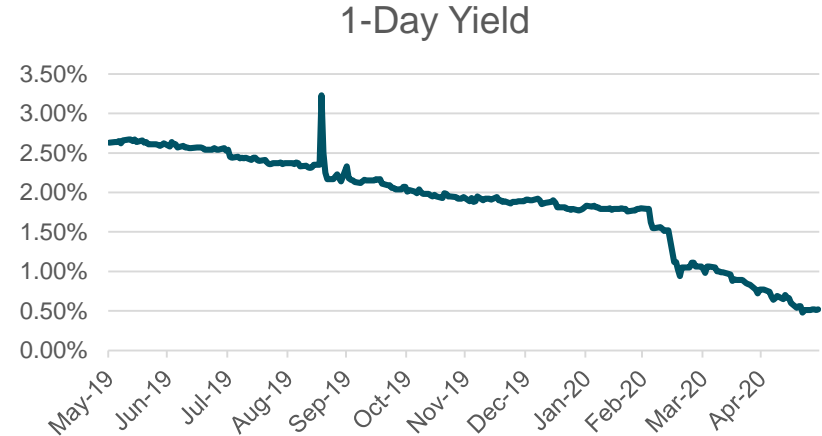
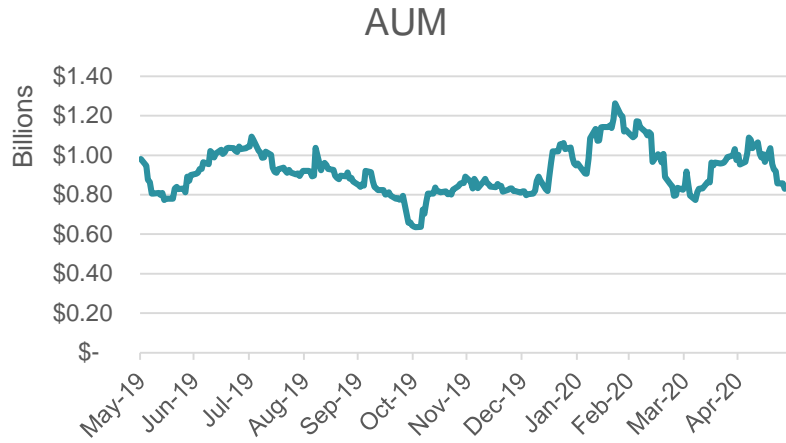
Country of Risk

AUSTRALIA	3.59%
CANADA	21.06%
GERMANY	1.92%
JAPAN	3.26%
LUXEMBOURG	2.99%
SINGAPORE	1.92%
SWEDEN	13.77%
UK	10.78%
US	40.72%

Source: SSGA, Bloomberg Finance, L.P.

*The yield quotation stated above more closely reflects the current earnings of the fund than the total return quotation. Ratings are from Bloomberg Finance L.P. and S&P. All YCD's and Repo are being reported as Domestic and thus not included in the % Foreign Issuers. Weighted Average Maturity (WAM): Aggregation of WAM of underlying securities in fund defined as Floating rate securities: Next Reset Date — Current Date; Fixed Rate: Maturity Date — Current Date defined in days. Weighted Average Life (WAL): Aggregation of WAL of underlying securities in fund defined as Floating rate securities: Expected Maturity Date — Current Date; Fixed Rate: Expected Maturity Date — Current Date (defined in days). Sector information/security type is an internal characterization created and applied by SSGA analysts for internal surveillance based on market convention and security characteristics. Sector information/security type designations may vary according to analyst or security characteristics, and they should not be construed as formal statements or interpretations of asset classes or sectors. Characteristics, allocations and sector weightings are as of the date indicated, subject to change, and should not be relied upon as current thereafter. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. Visit <http://www.SSGA.com/cash/funds/> for most recent month-end performance.

The Oregon State Treasury (FC5L)

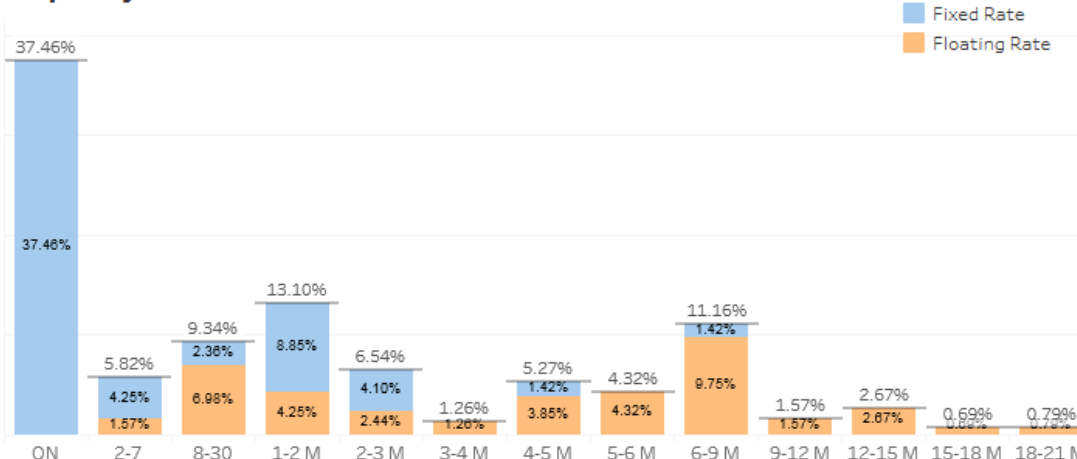


Source: SSGA as of May 31 2020

Oregon State Treasury Short Term Fund (FC91)

As of:	May 29, 2020
Total Par AUM:	635,962,000
Uninvested/unsettled Cash:	230
Net AUM:	635,962,230
1-Day Yield% (360 365 Basis):	0.5100 0.5200
WAM (in days):	25.47
WAL (in days):	78.56
Fund Price as of May 29, 2020	0.9999

Liquidity Schedule



Floating Rate Breakdown

1M LIBOR	18.22%	ON	3.62%
3M LIBOR	19.09%	2-7	2.52%
FED FUNDS	1.26%	8-30	22.06%
SOFR	1.57%	1-2 M	5.90%
Total	40.14%	2-3 M	6.05%
		Total	40.14%

Sectors

ABS	65,100,000	10.24%
REPO	238,262,000	37.46%
Bank Note	52,700,000	8.29%
CD	114,500,000	18.00%
CP	90,900,000	14.29%
Corporate	51,700,000	8.13%
GOVERNMENT	22,800,000	3.59%
Total	635,962,000	100.00%

Repo Collateral

Treasury	178,262,000	28.03%
Agency Debt	60,000,000	9.43%
Total	238,262,000	37.46%

S&P Ratings

AAA	7.37%
AA+	1.57%
AA-	17.19%
A+	46.80%
A	1.10%
A-	5.66%
BBB+	3.14%
A-1+	8.87%
A-1	5.42%
Other	2.87%

Country of Issuer

AUSTRALIA	2.59%
CANADA	8.95%
LUXEMBOU..	2.36%
NETHERLA..	0.55%
SWEDEN	3.30%
UK	0.47%
US	81.78%

Country of Risk

AUSTRALIA	2.59%
CANADA	16.42%
GERMANY	3.14%
JAPAN	1.97%
LUXEMBOURG	2.36%
NETHERLANDS	3.62%
SINGAPORE	1.26%
SWEDEN	12.58%
UK	10.06%
US	46.00%

Source: SSGA, Bloomberg Finance, L.P.

*The yield quotation stated above more closely reflects the current earnings of the fund than the total return quotation. Ratings are from Bloomberg Finance L.P. and S&P. All YCD's and Repo are being reported as Domestic and thus not included in the % Foreign Issuers. Weighted Average Maturity (WAM): Aggregation of WAM of underlying securities in fund defined as Floating rate securities: Next Reset Date — Current Date; Fixed Rate: Maturity Date — Current Date defined in days. Weighted Average Life (WAL): Aggregation of WAL of underlying securities in fund defined as Floating rate securities: Expected Maturity Date — Current Date; Fixed Rate: Expected Maturity Date — Current Date (defined in days). Sector information/security type is an internal characterization created and applied by SSGA analysts for internal surveillance based on market convention and security characteristics. Sector information/security type designations may vary according to analyst or security characteristics, and they should not be construed as formal statements or interpretations of asset classes or sectors. Characteristics, allocations and sector weightings are as of the date indicated, subject to change, and should not be relied upon as current thereafter. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. Visit <http://www.SSGA.com/cash/funds/> for most recent month-end performance.

Oregon State Treasury Short Term Fund (FC91)

AUM



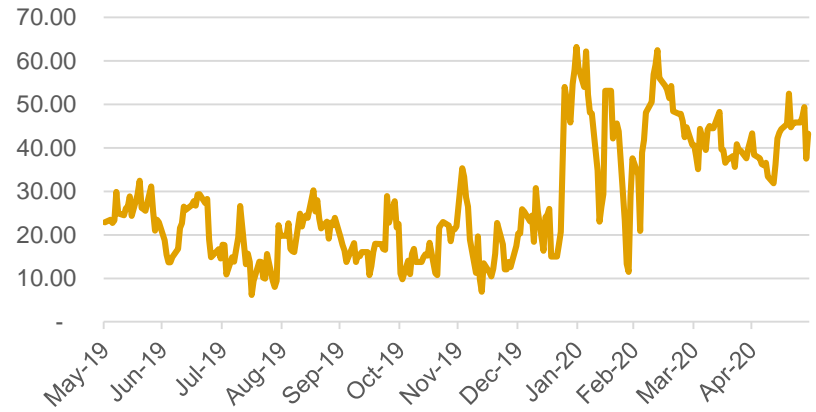
1-Day Yield



WAM and WAL



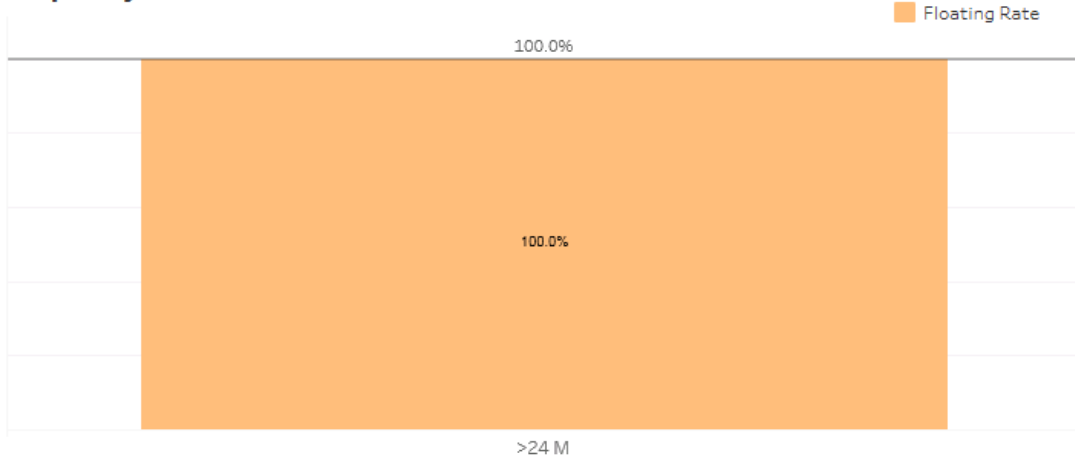
1 Week Liquidity



Oregon Public Employees Retirement Fund (FC5N)

As of:	May 29, 2020
Total Par AUM:	6,201,185
Uninvested/unsettled Cash:	0
Net AUM:	6,201,185
1-Day Yield% (360 365 Basis):	1.050 1.070
WAM (in days):	40.62
WAL (in days):	1,669
Fund Price as of May 29, 2020	0.9046

Liquidity Schedule



Floating Rate Breakdown

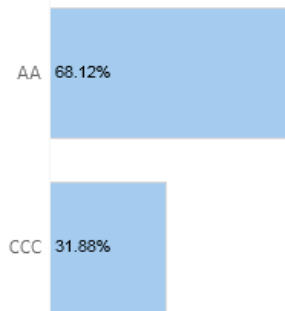
1M LIBOR	31.88%	8-30	31.88%
3M LIBOR	68.12%	1-2 M	68.12%
Total	100.00%	Total	100.00%

Sectors

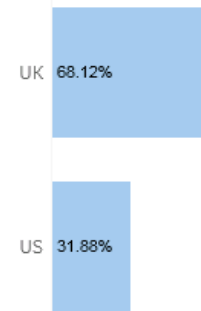
ABS	6,201,185 100.00%
Total	6,201,185 100.00%

Repo Collateral

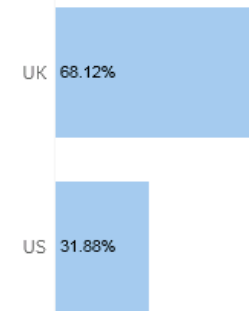
S&P Ratings



Country of Issuer



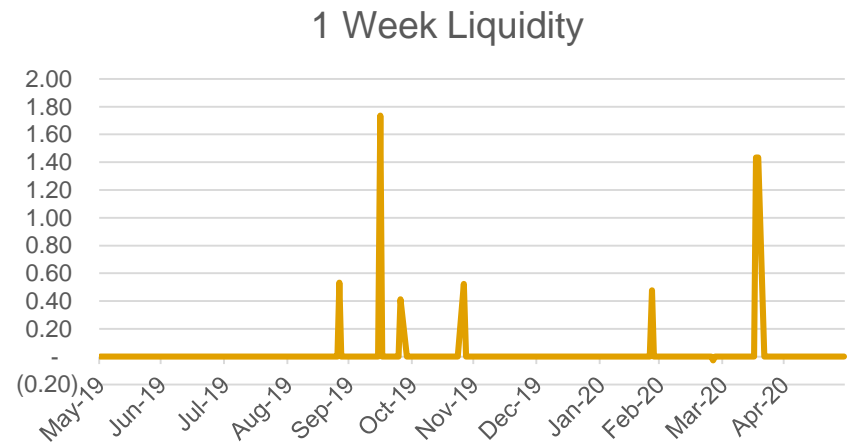
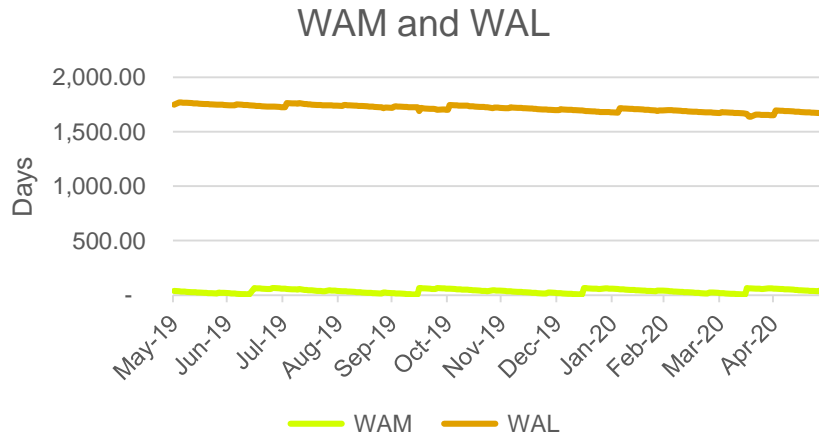
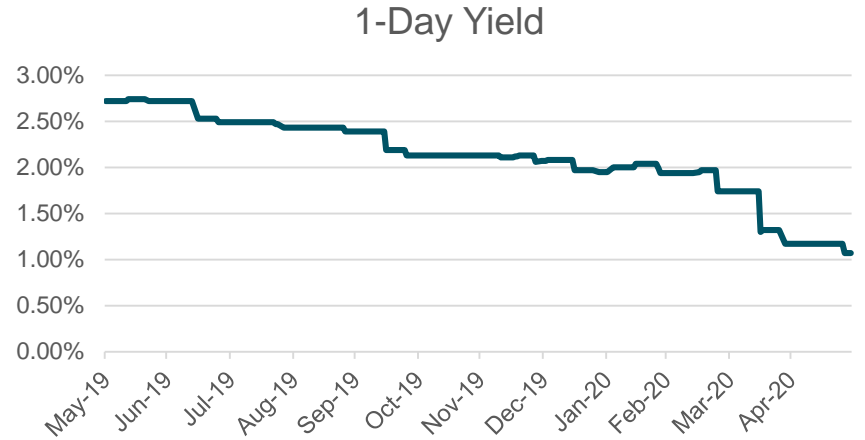
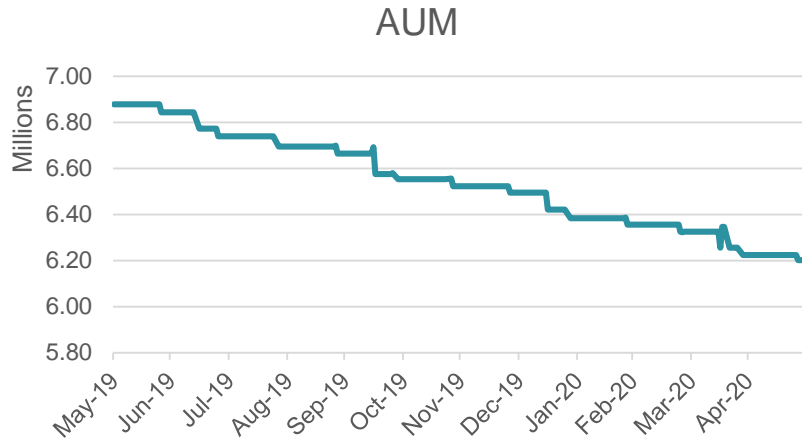
Country of Risk



Source: SSGA, Bloomberg Finance, L.P.

*The yield quotation stated above more closely reflects the current earnings of the fund than the total return quotation. Ratings are from Bloomberg Finance L.P. and S&P. All YCD's and Repo are being reported as Domestic and thus not included in the % Foreign Issuers. Weighted Average Maturity (WAM): Aggregation of WAM of underlying securities in fund defined as Floating rate securities: Next Reset Date — Current Date; Fixed Rate: Maturity Date — Current Date defined in days. Weighted Average Life (WAL): Aggregation of WAL of underlying securities in fund defined as Floating rate securities: Expected Maturity Date — Current Date; Fixed Rate: Expected Maturity Date — Current Date (defined in days). Sector information/security type is an internal characterization created and applied by SSGA analysts for internal surveillance based on market convention and security characteristics. Sector information/security type designations may vary according to analyst or security characteristics, and they should not be construed as formal statements or interpretations of asset classes or sectors. Characteristics, allocations and sector weightings are as of the date indicated, subject to change, and should not be relied upon as current thereafter. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. Visit <http://www.SSGA.com/cash/funds/> for most recent month-end performance.

Oregon Public Employees Retirement Fund (FC5N)

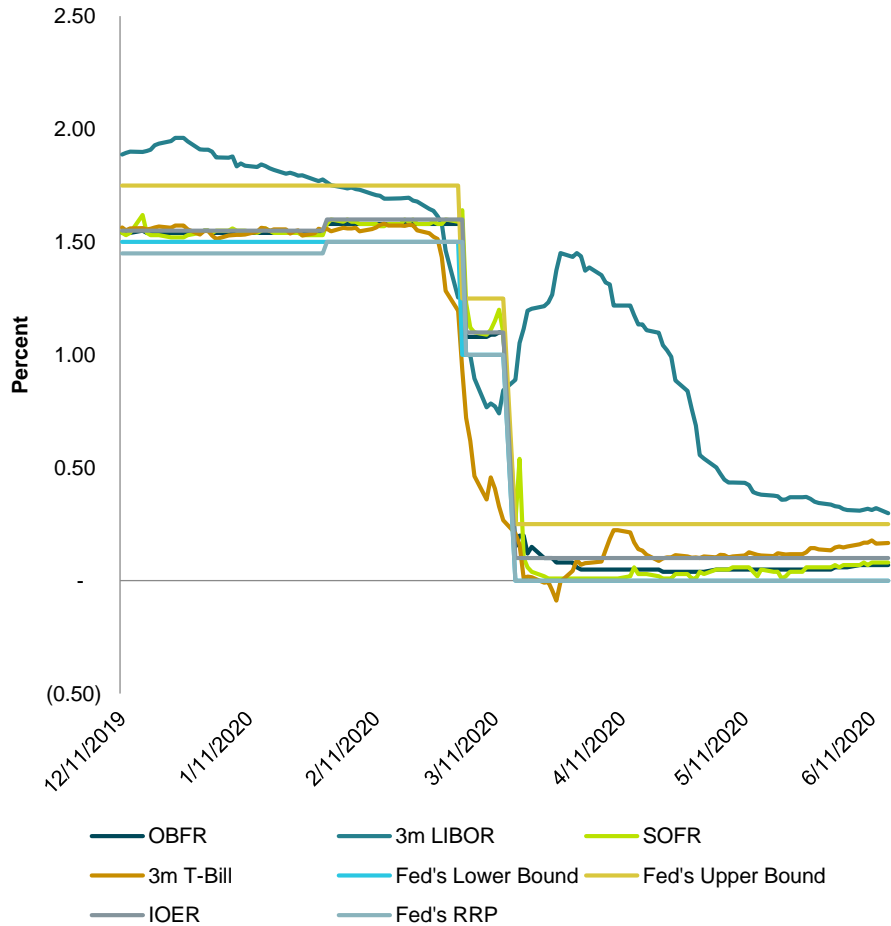


Source: SSGA as of May 31 2020

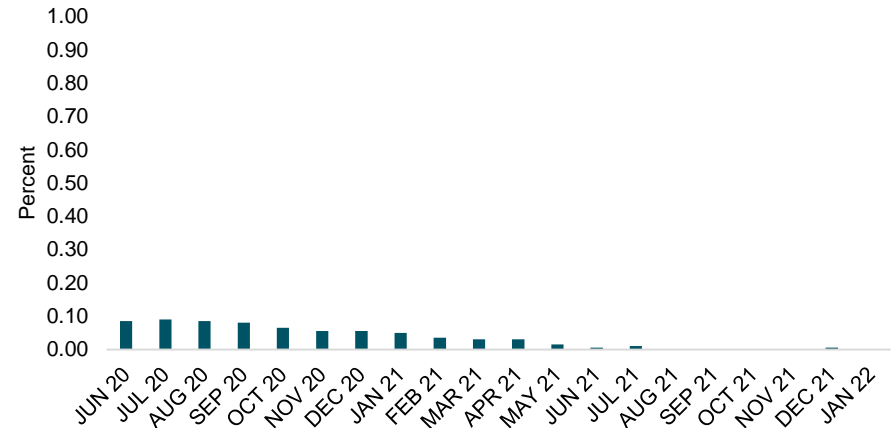
Market Update

Rates settling into an old routine: Zero

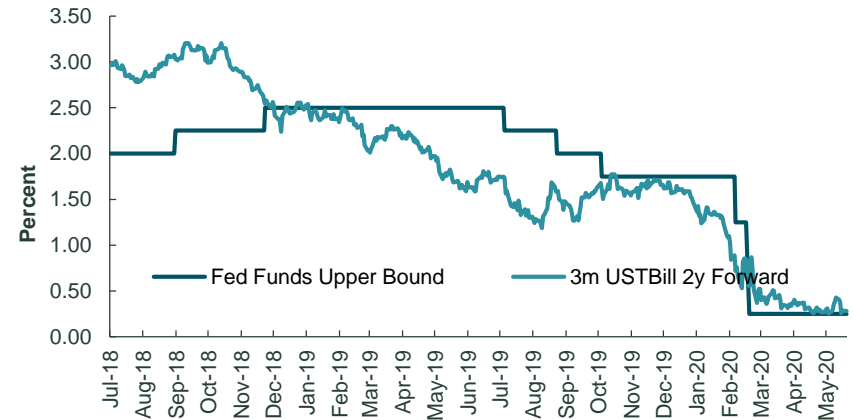
US Market Rates - 6 months



Federal Fund Futures Rate Expectations



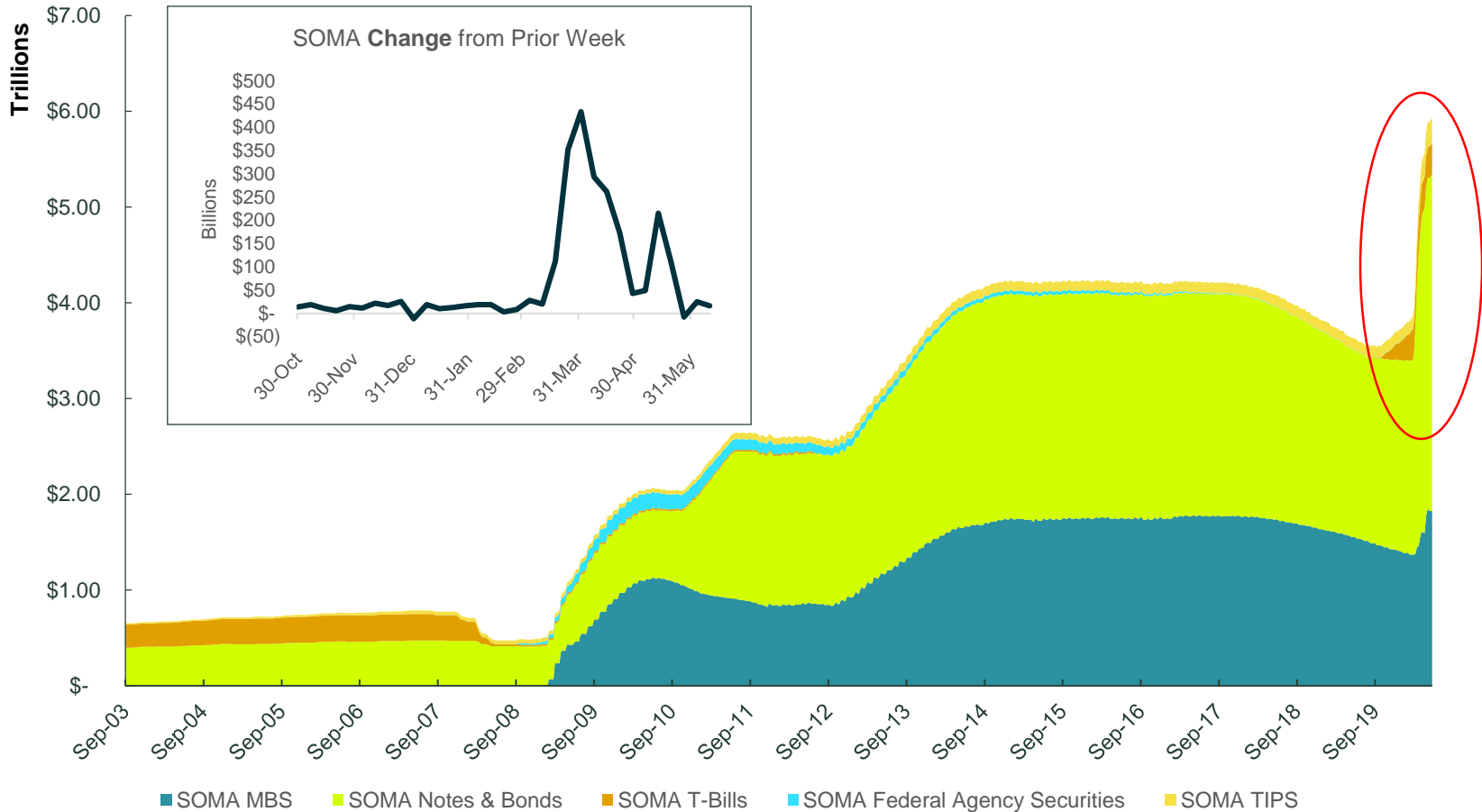
Fed Funds Upper Bound vs. 3m T-Bill 2yr Forward



Source: Federal Reserve, Bloomberg Finance, L.P., as of June 15, 2020. Key: OBFR: Overnight Bank Funding Rate, 3M Libor: 3 Month Libor Rate, SOFR: Secured Overnight Finance Rate; 3M Bill: 3 month Treasury Bill; FF Target Lower: Federal Funds Target Range Lower Bound; FF Target Upper: Federal Funds Target Range Upper Bound. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Performance quoted represents past performance, which is no guarantee of future results.

Massive and making a difference

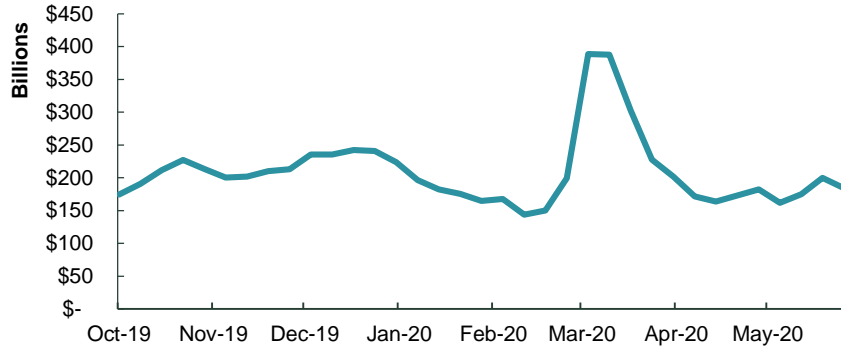
System Open Market Account (SOMA: Fed's Holdings)



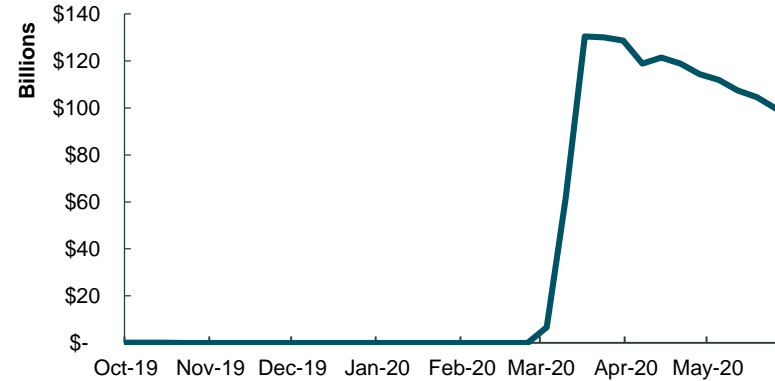
Source: Federal Reserve NY as of June 15, 2020

Perception and Reality

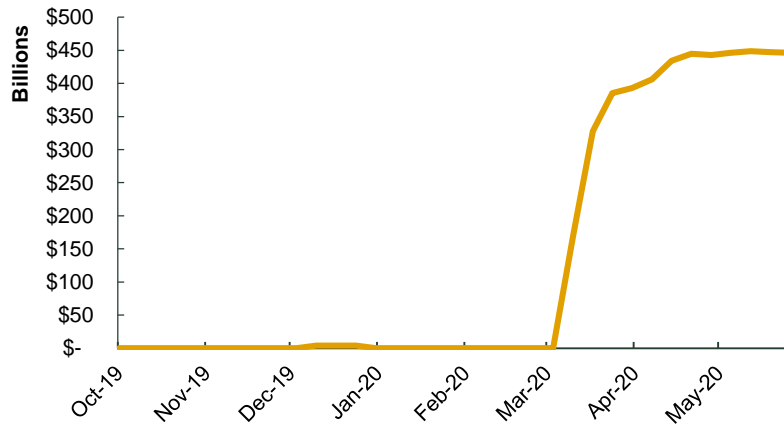
Fed's TOMO, Repurchase Agreements



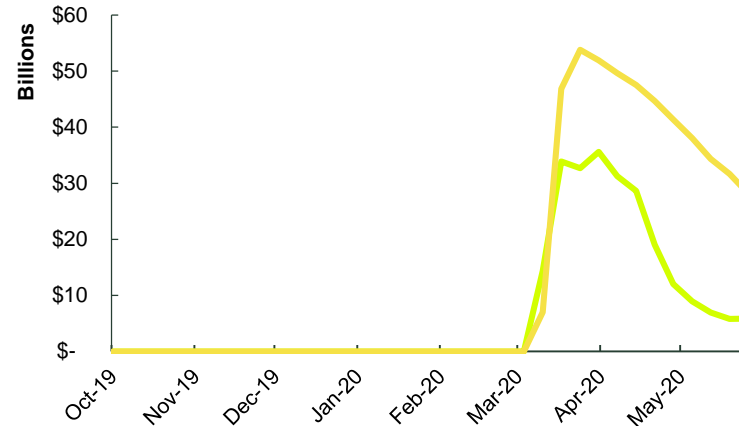
Discount Window Borrowing



Fed's Central Bank Liquidity Swaps (FX)



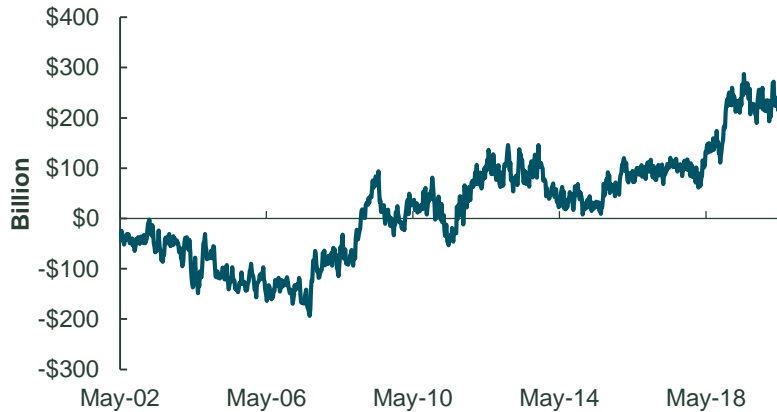
Primary Dealer Credit Facility (green) Money Market Liquidity Facility (orange)



Source: Bloomberg Finance, L.P., Federal Reserve, as of June 15th 2020

Other things we keep an eye on

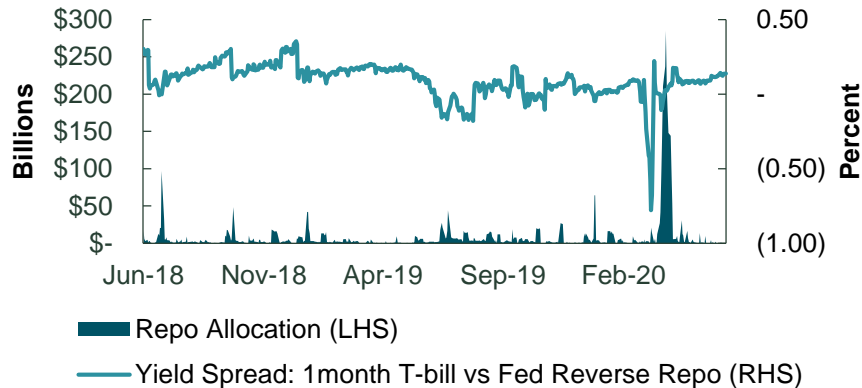
Primary Dealer Positions: US Government Securities



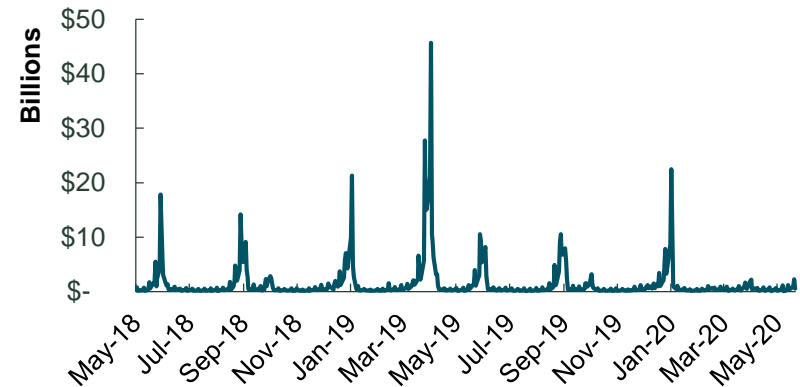
US Treasury's Cash Balance



Fed's Reverse Repo Allotment and Bill yields



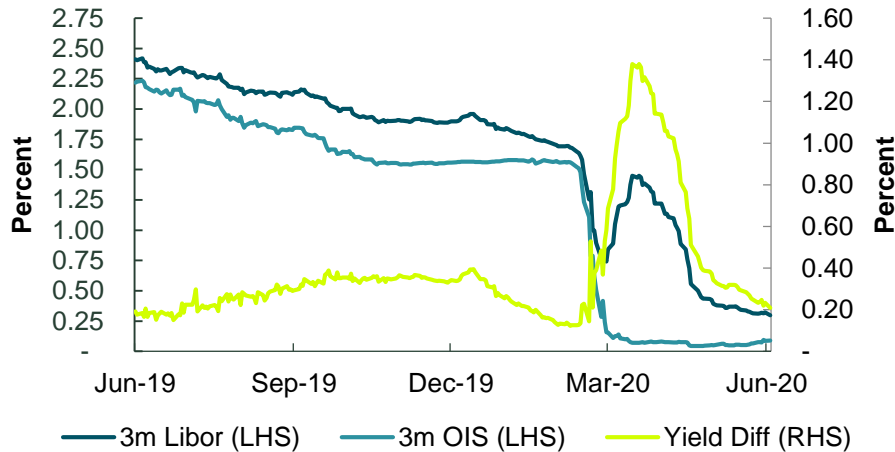
US Treasury Tax Receipts



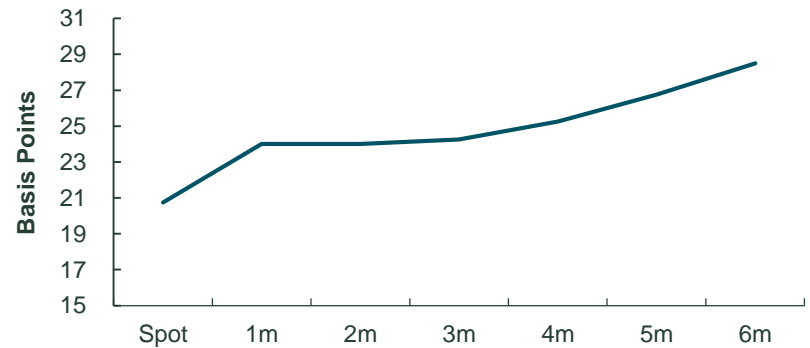
Source: Bloomberg Finance, L.P., Federal Reserve, as of June 15, 2020

A nice improvement in credit conditions

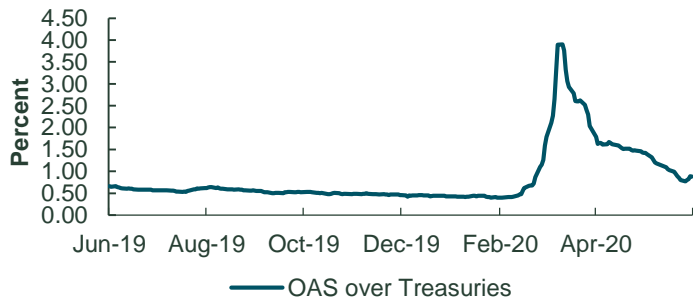
3 Month Libor & OIS with Yield Difference



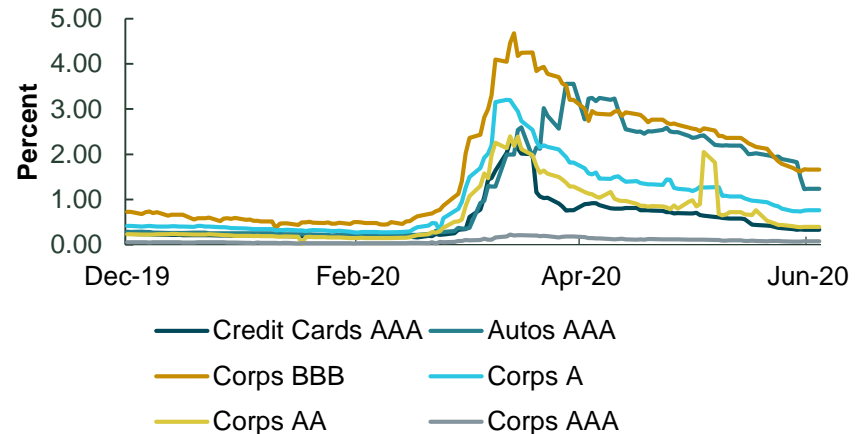
3m LOIS Forward



Bloomberg Barclays 1-3 year Corporate



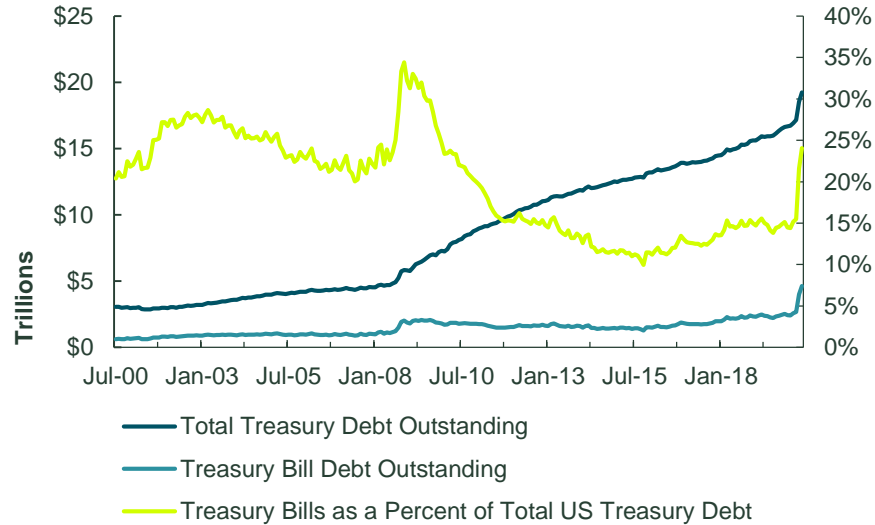
Floating Rate Notes OAS vs. Swap



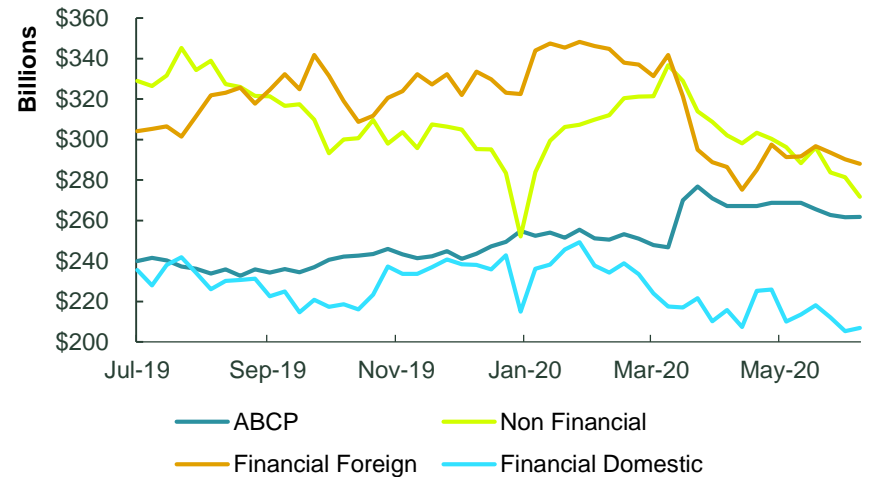
Source: Federal Reserve, Bloomberg Finance, L.P., as of May 17, 2020. Key: OBFR: Overnight Bank Funding Rate, 3M Libor: 3 Month Libor Rate, SOFR: Secured Overnight Finance Rate; 3M Bill: 3 month Treasury Bill; FF Target Upper: Federal Funds Target Range Upper Bound. OIS: Overnight Index Swap. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Performance quoted represents past performance, which is no guarantee of future results.

The Treasury's Printing Press is running overtime

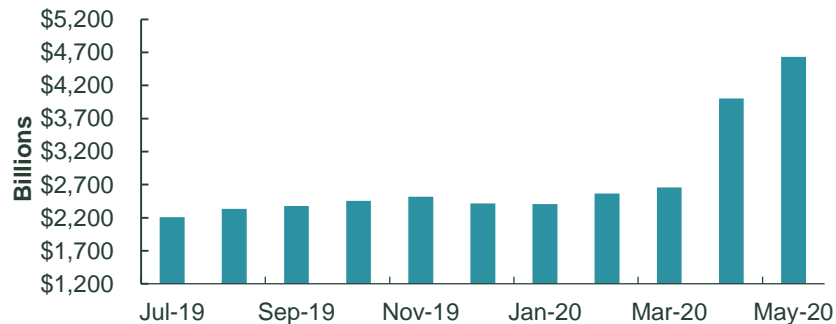
Treasury Bills as a % of Public Treasury Debt



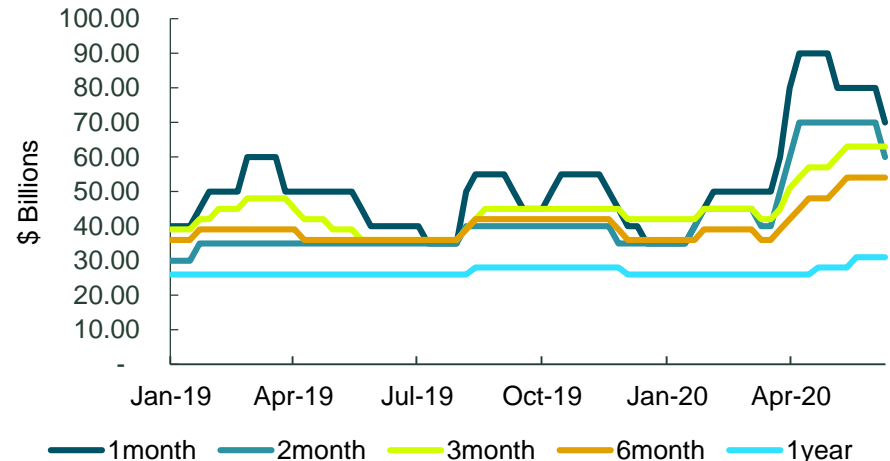
Commercial Paper Outstandings



Treasury Bill Debt



US Treasury Bill total Auction



Source: Bloomberg Finance, L.P. Federal Reserve, as of June 15, 2020.

Appendix A: Important Disclosures

Important Disclosures

For Investment Professional Use Only.

Investing involves risk including the risk of loss of principal. The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without State Street Global Advisors SGA's express written consent. The views expressed in this material are the views of US Fixed Income Portfolio Strategy and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected. The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor.

All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information. The trademarks and service marks referenced herein are the property of their respective owners. Third party data providers make no warranties or representations of any kind relating to the accuracy, completeness or timeliness of the data and have no liability for damages of any kind relating to the use of such data.

Web: www.ssga.com

© 2020 State Street Corporation — All Rights Reserved.

Tracking Code: 2391902.3.1.GBL.INST

Expiration Date: July 31, 2021

TAB 7 Annual Operations Update

July 22, 2020

Investment Operations

Dave Randall

Director of Investment Operations

Debra Day

Investment Reporting Manager

Kristi Jenkins

Investment Operations Manager



**OREGON
STATE
TREASURY**



Executive Summary

Data accuracy, analytics, reporting, and business intelligence are critical to investment decision-making.

Continued utilization of Blackrock's Aladdin platform and the evolution and maturation of dedicated OST operational staff and infrastructure have enabled Investment Officers to focus on informed decision-making and produced the following bottom line results:

- Cost Savings
- Value Added Returns
- Data Integrity
- Expanded Capabilities

Background - Audit and Peer Reviews

Common theme of findings

- The investment division was significantly under-resourced relative to the size and complexity of its asset management responsibilities.
- This gap created substantial and avoidable risks.
- Given its fiduciary obligations, the Council determined that the status quo was untenable.

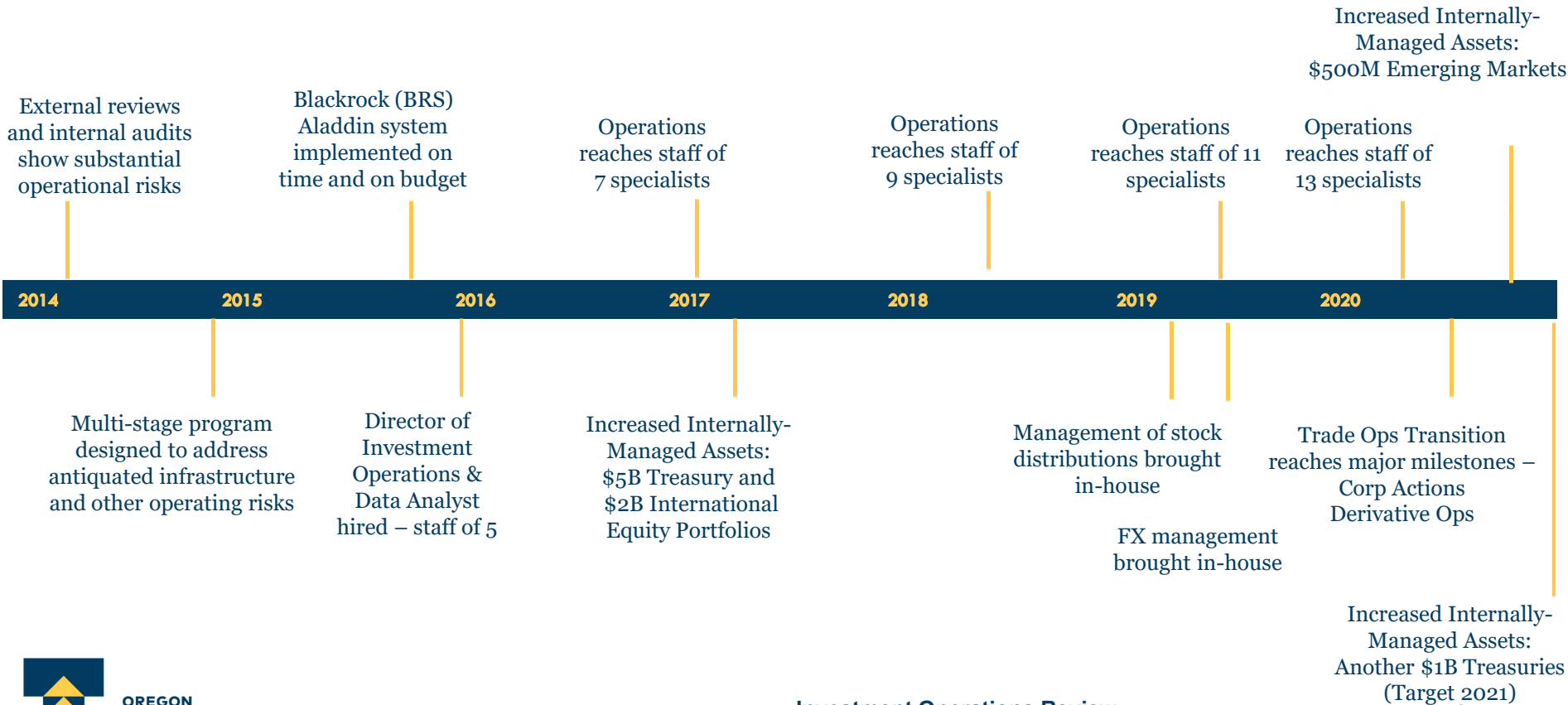
ANALYSES

CUTTER (2011-14)
FUNSTON ADVISORY SERVICES (2012)
HEWITT ENNIS KNUPP (2012)
CORTEX (2012)
OST INTERNAL AUDIT (2013)
CEM BENCHMARKING (ANNUAL)
WILSHIRE/TRUST UNIVERSE COMPARISON
SERVICE (ANNUAL)



Background - Timeline

OST undertook a multi-year business transformation project that included the addition and assimilation of dedicated operational resources as well as the acquisition and integration of the BlackRock Solutions (BRS) Aladdin platform. Today, OST's Aladdin utilization rates are top among peers, and the Investment Operations Unit is now comprised of 14 FTEs across Investment Accounting, Performance, Reporting, Reconciliation, Trade Operations, and Data Management.



Increased Internally-Managed Assets: \$500M Emerging Markets



OST Investment Division Org Chart 2016

CIO

Investment Management

Risk Management

Operations

Capital Markets

Director of Capital Markets

Alternatives

Director of Alternative Investments

Portfolio Risk and Research Inv Officer

Director of Inv Operations

Fixed Income

Public Equity

Private Equity

Real Estate

Alternatives

Investment Reporting Mgr

Investment Analyst

Investment Analyst

Data Analyst

Operations Analyst (VACANT)

Operations Analyst (VACANT)

Investment Officer

Senior Investment Officer

Senior Investment Officer

Senior Investment Officer

Senior Investment Officer

Investment Officer

Investment Officer

Investment Officer

Investment Officer

Investment Officer

Investment Analyst

Investment Analyst

Investment Officer

Investment Analyst

Sr. Investment Analyst (VACANT)

Investment Analyst (VACANT)

Exec Support Spec

Investment Analyst (VACANT)

Exec Support Spec (VACANT)

Executive Support Spec



Investment Division Org Chart - Today

Rex Kim
Chief Investment
Officer



May Fanning
Executive Support
Specialist

Capital Markets

VACANT
Director of
Capital Markets



John Hershey
Director of Alternative
Investments

Alternatives

VACANT
Executive Support
Specialist

Operations



David Randall
Director of Investment
Operations

Risk



Karl Cheng
Senior Investment
Officer, Portfolio
Risk and
Research



Geoff Nolan
Senior Investment
Officer, Fixed Income



Michael Viteri
Senior Investment
Officer, Public Equity



Ben Mahon
Senior Investment
Officer, Alternatives



Anthony Breault
Senior Investment
Officer, Real Estate



Michael Langdon
Senior Investment
Officer, Private Equity



Debra Day
Investment Reporting
Manager



Kristi Jenkins
Investment Operations
Manager



Jen Peet
Corporate
Governance
Director

John Lutkehaus
Investment Officer,
Fixed Income



Robin Kaukonen
Investment Officer,
Public Equity



Mike Mueller
Investment Officer,
Opportunity



Austin Carmichael
Investment Officer,
Real Estate



Ahman Dirks
Investment Officer,
Private Equity



Roy Jackson
Senior Investment
Accountant



Mark Selfridge
Data Investment
Analyst



Anna Totdahl
Investment Officer,
ESG



Perrin Lim,
Investment Officer,
Fixed Income



Wil Hiles
Investment Officer,
Public Equity



Paul Koch
Investment Officer,
Alternatives



Chris Ebersole
Investment Officer,
Real Estate



Tiffany ZhuGe
Investment Officer,
Private Equity



Jo Recht
Senior Investment
Accountant



Tyler Bernstein
Operations
Analyst



Jen Plett
Investment Officer,
Portfolio Risk &
Research



Will Hampson,
Investment Officer,
Fixed Income



Claire Ilio,
Investment Analyst,
Public Equity



Faith Sedberry
Investment Officer,
Alternatives



Sam Spencer
Investment Officer,
Real Estate



Eric Messer
Investment Officer,
Private Equity



Joe Hutchinson
Senior Investment
Accountant



Ian Huculak
Operations
Analyst



Angela Schaffers
Senior Investment
Analyst, Fixed Income



Amanda Kingsbury
Investment Officer,
Alternatives



VACANT
Investment Analyst,
Real Estate



Dana Millican
Investment Analyst



Monique Sadegh
Investment
Accountant



**Mohammed
Quraishi**
Trade Support
Analyst



Andrew Coutu
Investment Analyst,
Fixed Income



VACANT
Investment Analyst,
Alternatives



VACANT
Investment Analyst,
Private Equity



Aliese Jacobsen
Trade Support
Analyst



Scott Robertson
Investment Analyst,
Fixed Income



Tiffany Zahas
Data Investment
Analyst



Jeremy Knowles
Investment Analyst,
Fixed Income

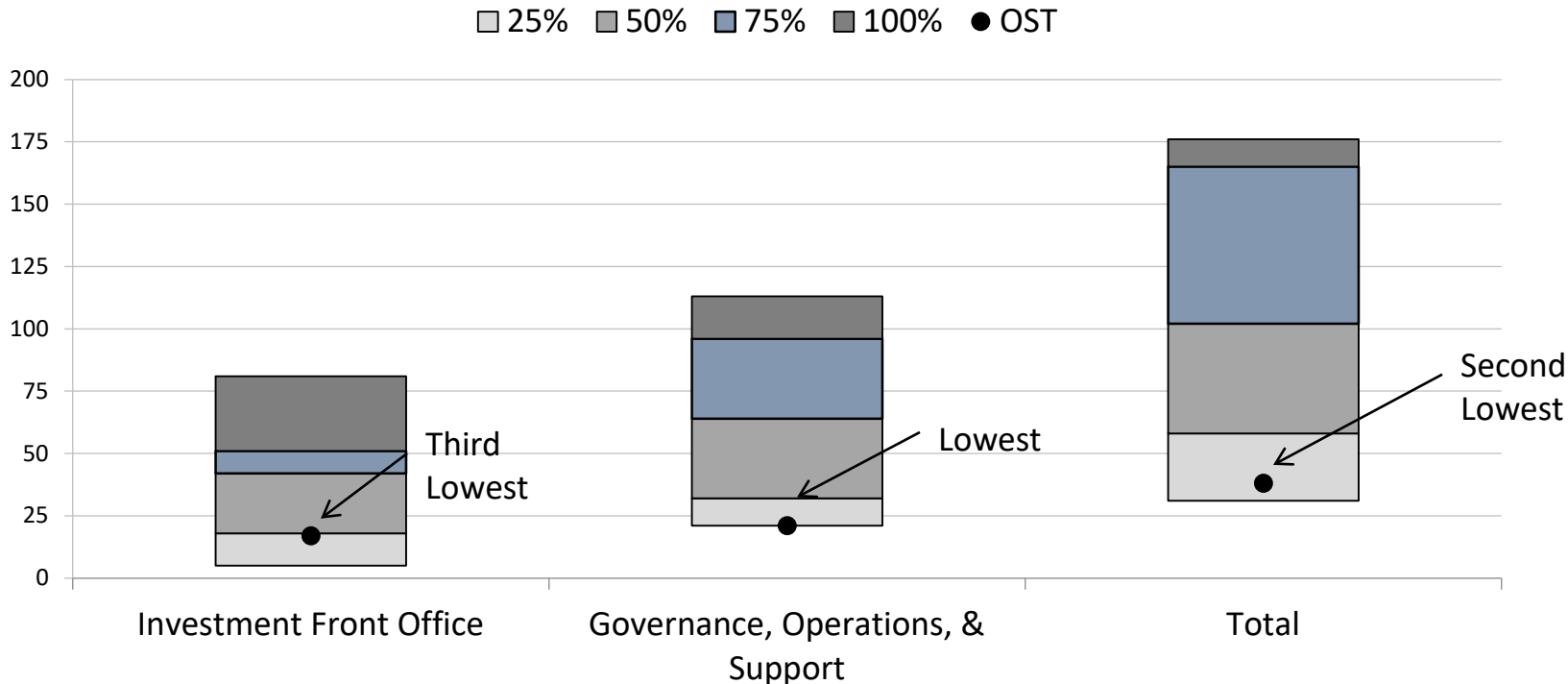


Kenny Bao
Operations
Analyst



Caitlyn Wang
Data Investment
Analyst

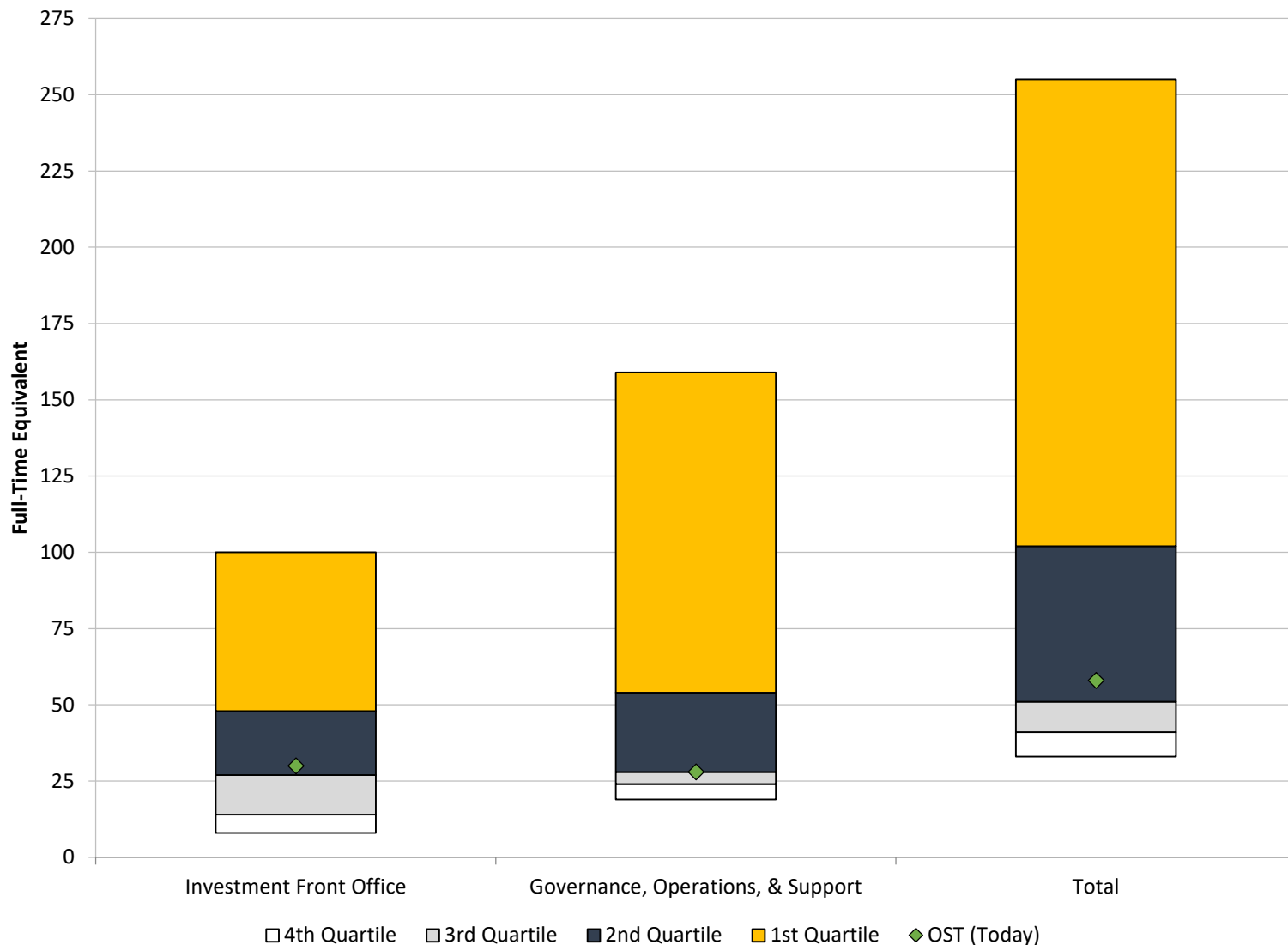
OST Staffing Compared to Peers - 2016



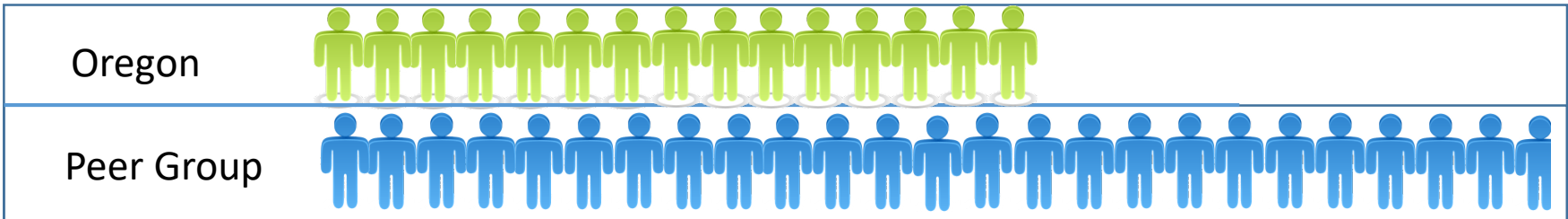
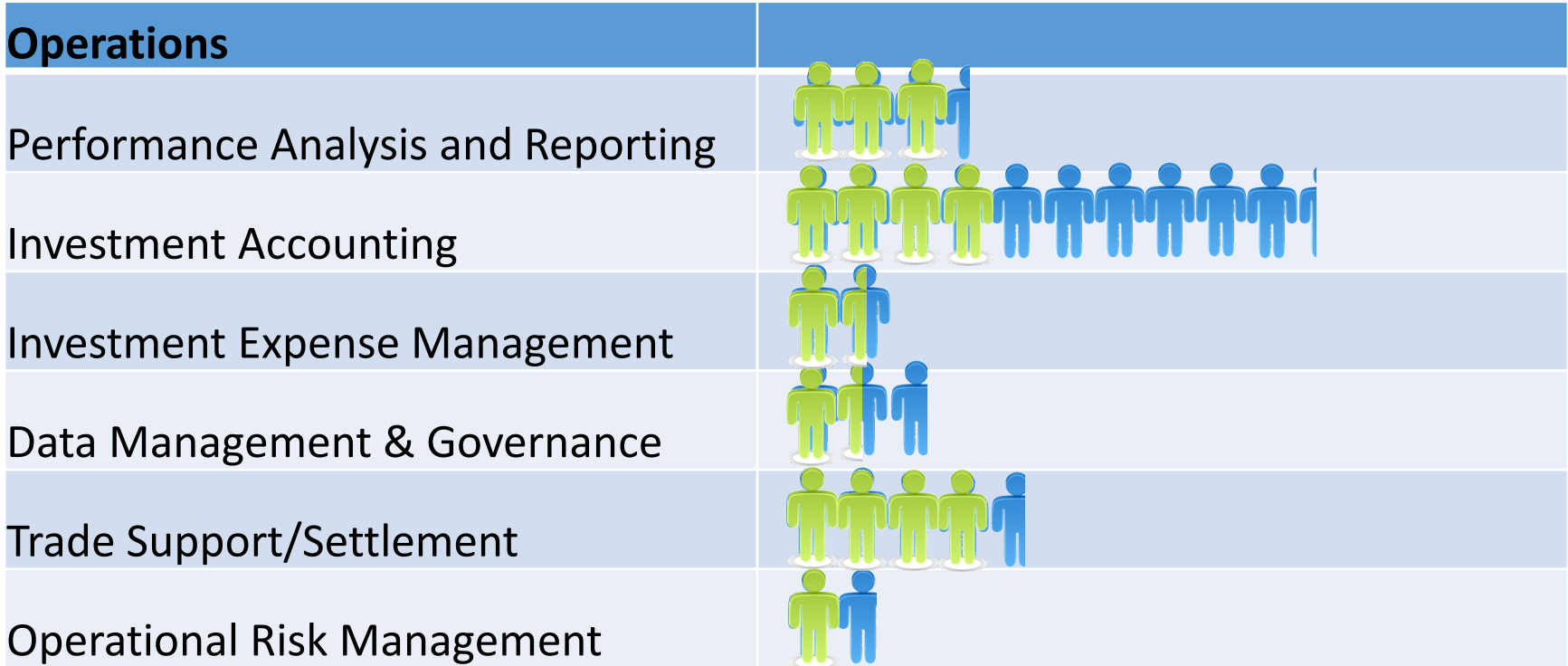
Rankings based on custom peer group of 13 global asset owners of similar size and portfolio composition.

Source: CEM Benchmarking, November 2016 report.

OST Staffing Compared to Peers - Today



BUILDING CAPACITY



Source: Cutter Associates Public Funds Resource Allocation Peer Group Study.
 Note: Peer group numbers reflect peer group average.

Investment Operations Organizational Chart



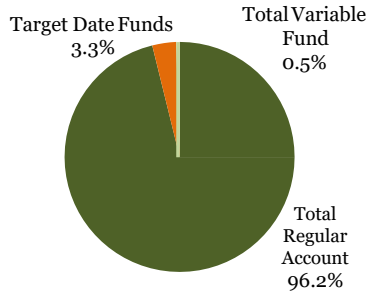
Assets Under Management

(Data as of 3/31/2020)

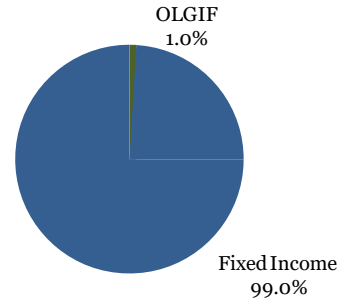
\$103.2
BILLION

OREGON TREASURY ASSETS UNDER MANAGEMENT

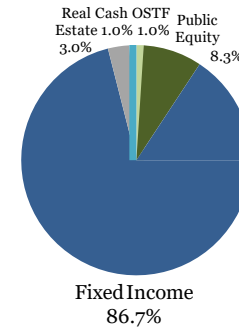
Public Employee Retirement
\$75.6 Billion



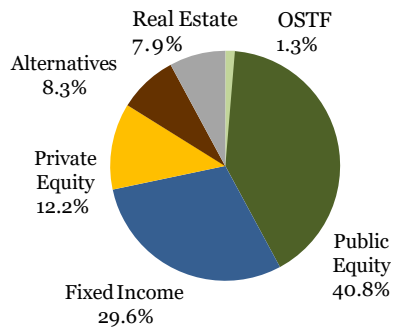
Oregon Short-Term Fund
OSTF - \$22.7 Billion



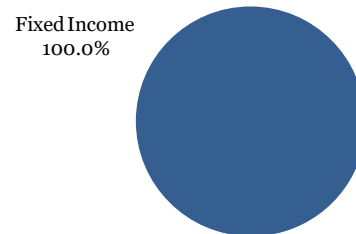
State Accident Insurance Fund
SAIF - \$4.6 Billion



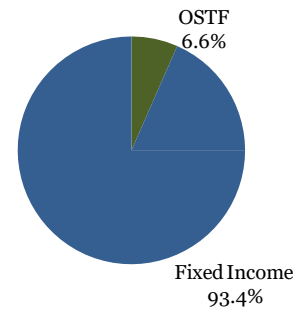
Common School Fund - \$1.7 Billion



Local Government Intermediate Fund
OLGIF - \$0.2 Billion

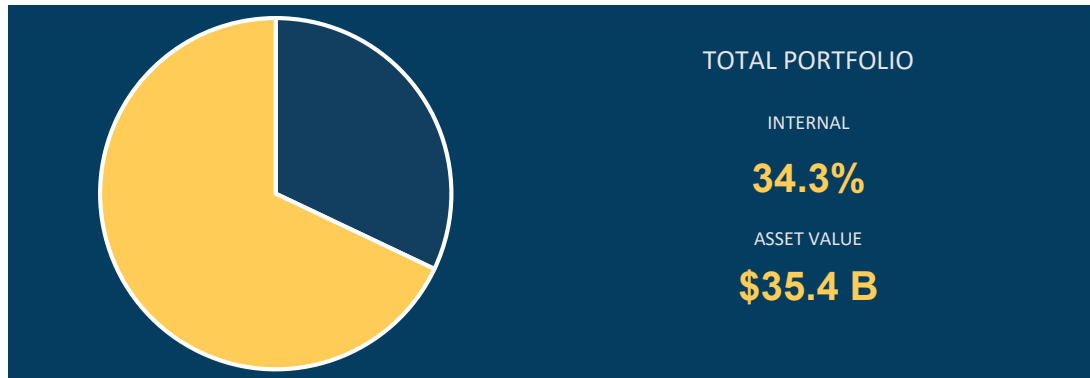


Oregon Intermediate-Term Pool
OITP - \$0.1 Billion



Managing Billions Internally

(Data as of 3/31/2020)



Building Capacity – Internal Management

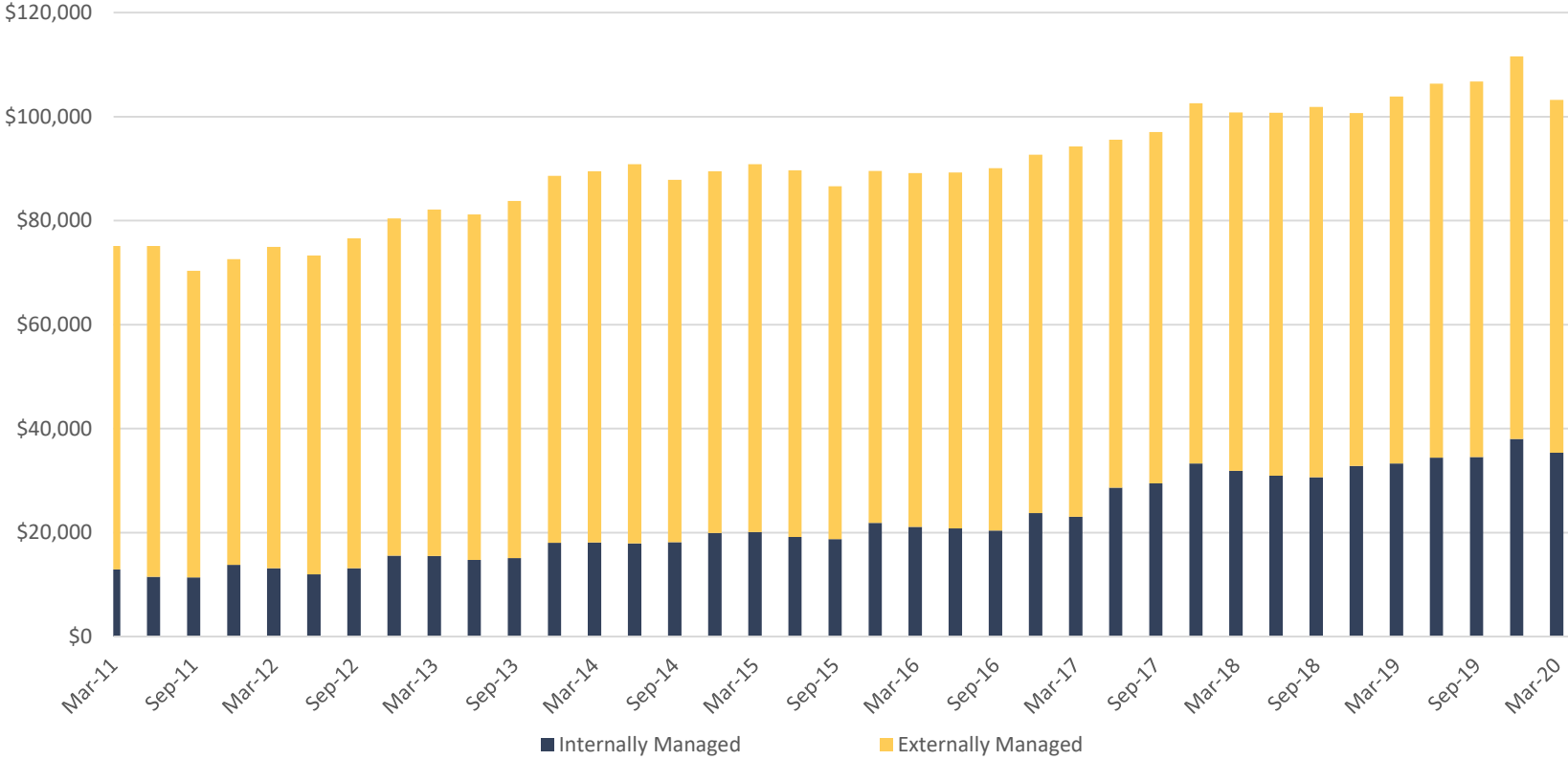
Through benchmarking an aggregation of pension funds across the globe, research shows that internally-managed assets, over the long term, produce cost savings and improved investment returns. Overall staffing levels tend to increase, but the investment management costs are reduced.

-CEM



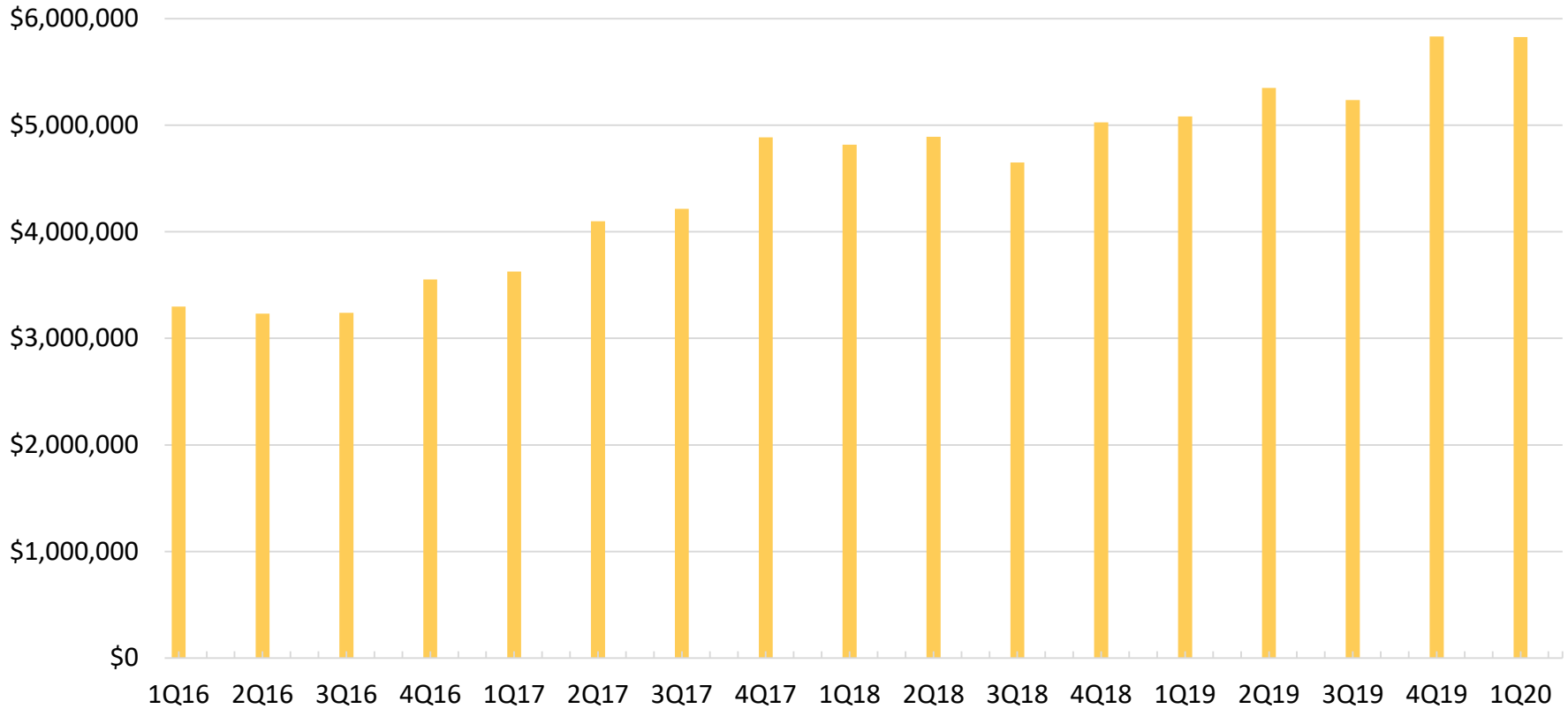
Internally-Managed Assets

Total OST Assets (\$ millions)



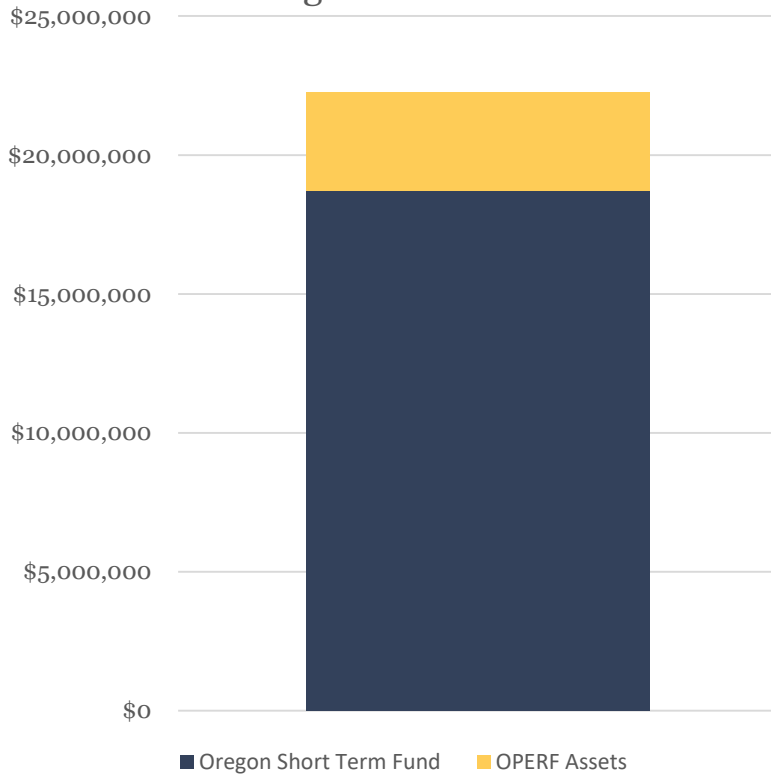
Estimated Cost Savings

Incremental Quarterly Internal Management Fee Savings
Since January 2016

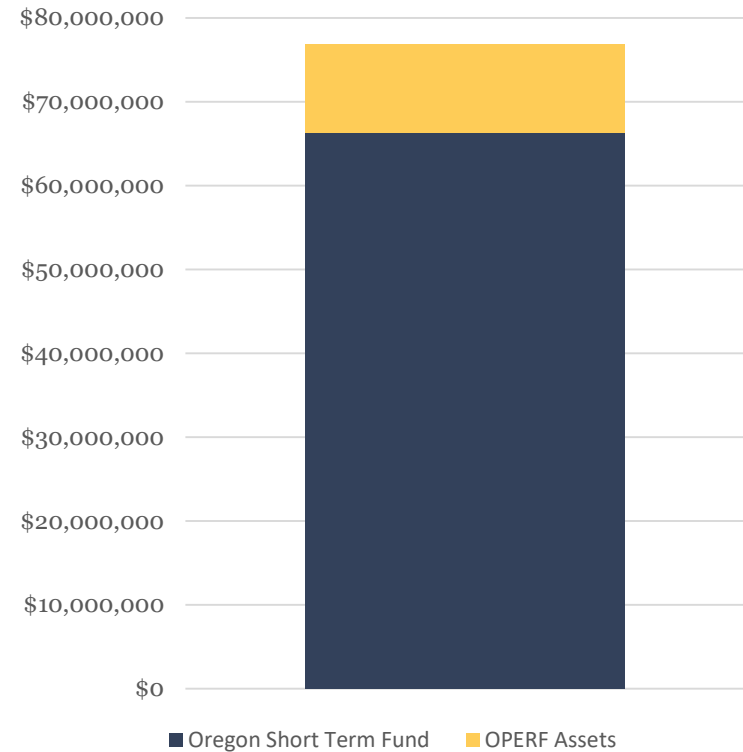


Estimated Cost Savings

Estimated Trailing Year as of March 31, 2020 Fee Savings from Internal Management Activities

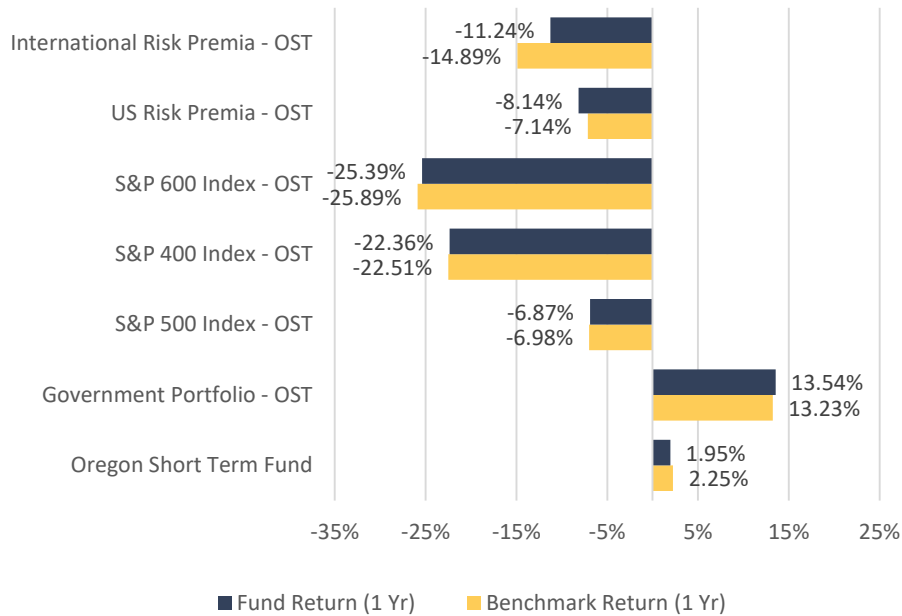


Estimated Fee Savings from Internal Management Activities January 1, 2016 to March 31, 2020

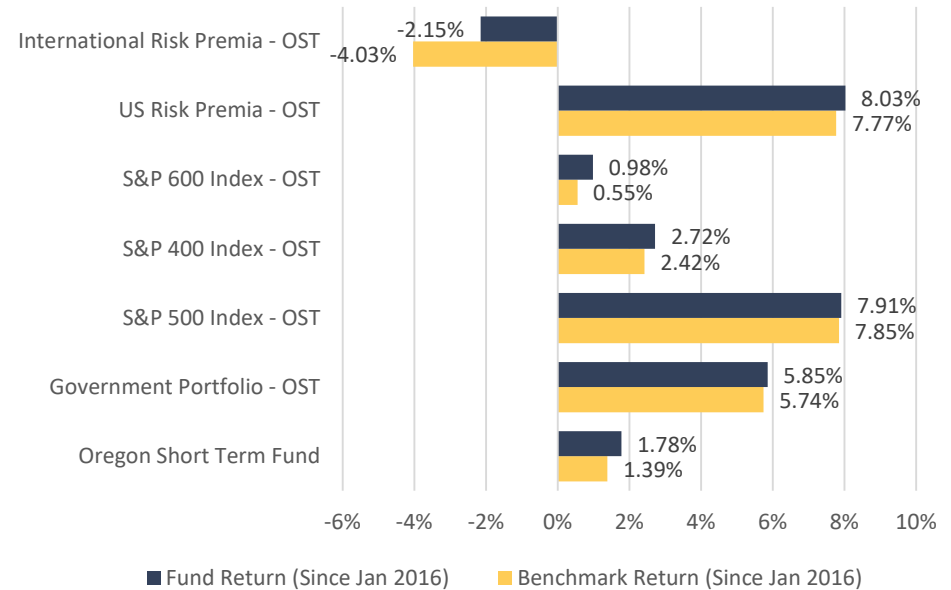


Value Added Performance

Trailing Year Fund and Benchmark Performance as of March 31, 2020

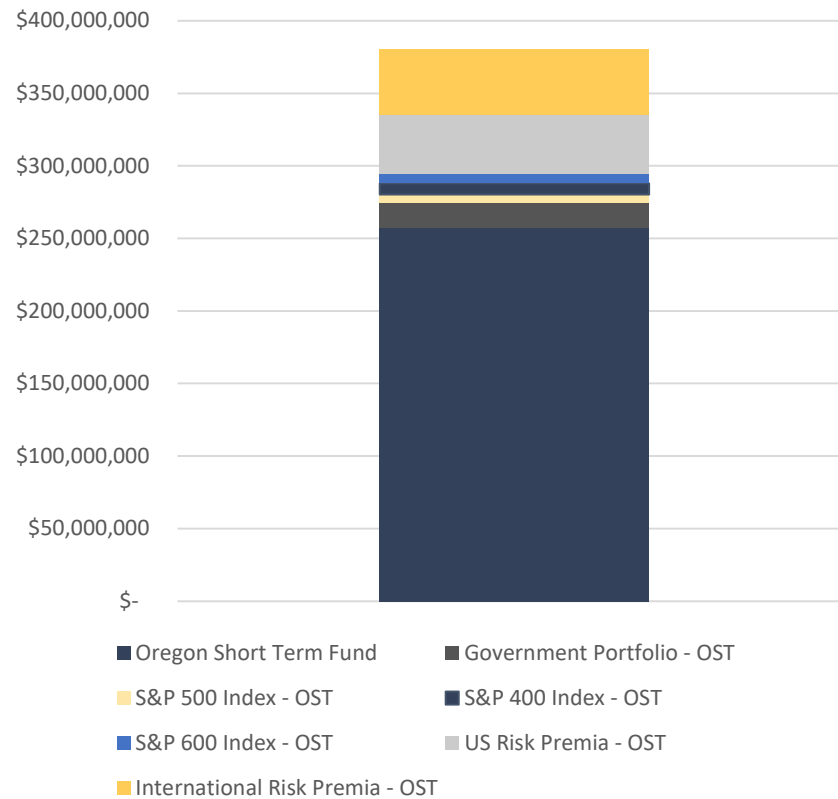


Fund and Benchmark Performance Since January 2016 (As of March 31, 2020)



Investment Performance Value Add (Estimated \$\$\$s)

Estimated Dollar Contribution
Versus Benchmark January 1,
2016 to March 31, 2020



Combined Value Add Estimated

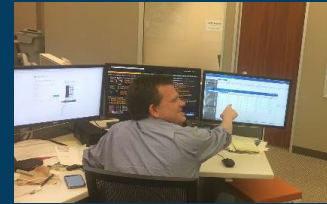
Estimated Cumulative Internal Management Benefit Since January 2016 (as of March 31, 2020)



Data Integrity

Given the size, scale and complexity of the OST investment program, even slight discrepancies in data accuracy can magnify performance distortions which may result in unintended investment consequences and fund valuation errors.

Every basis point counts!



Infrastructure

- BlackRock Aladdin Platform

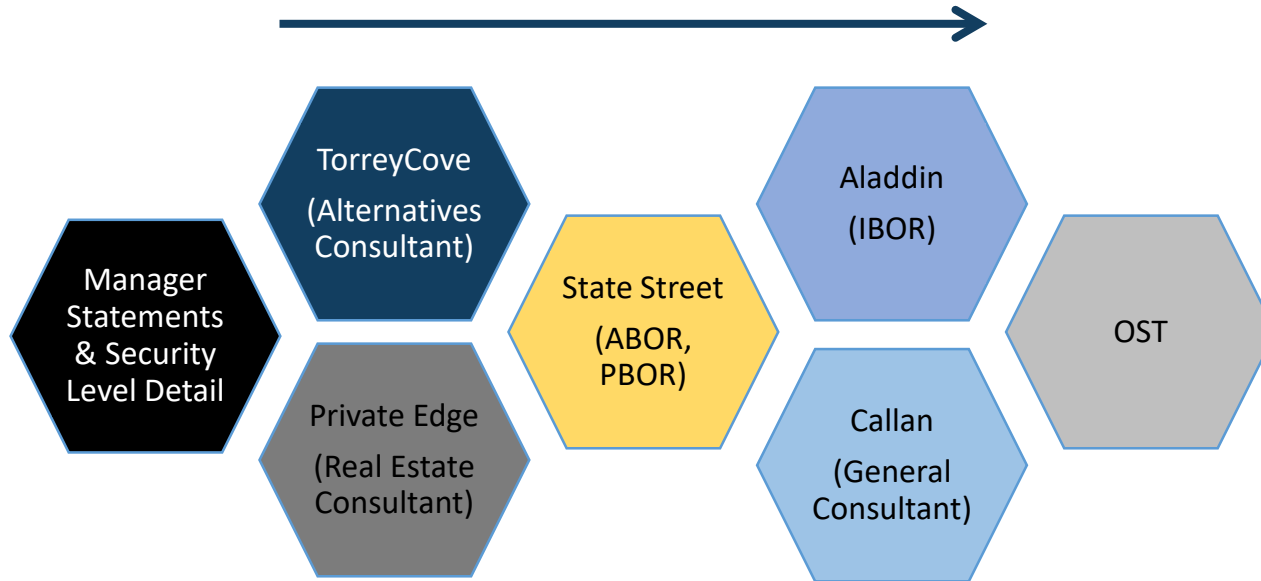
Investment Operations

- Checks and balances
- Valuation and Performance Reconciliation



Improving Data Reliability

Valuation and Performance Data Flow



Improving Data Reliability – Issue Recon Log

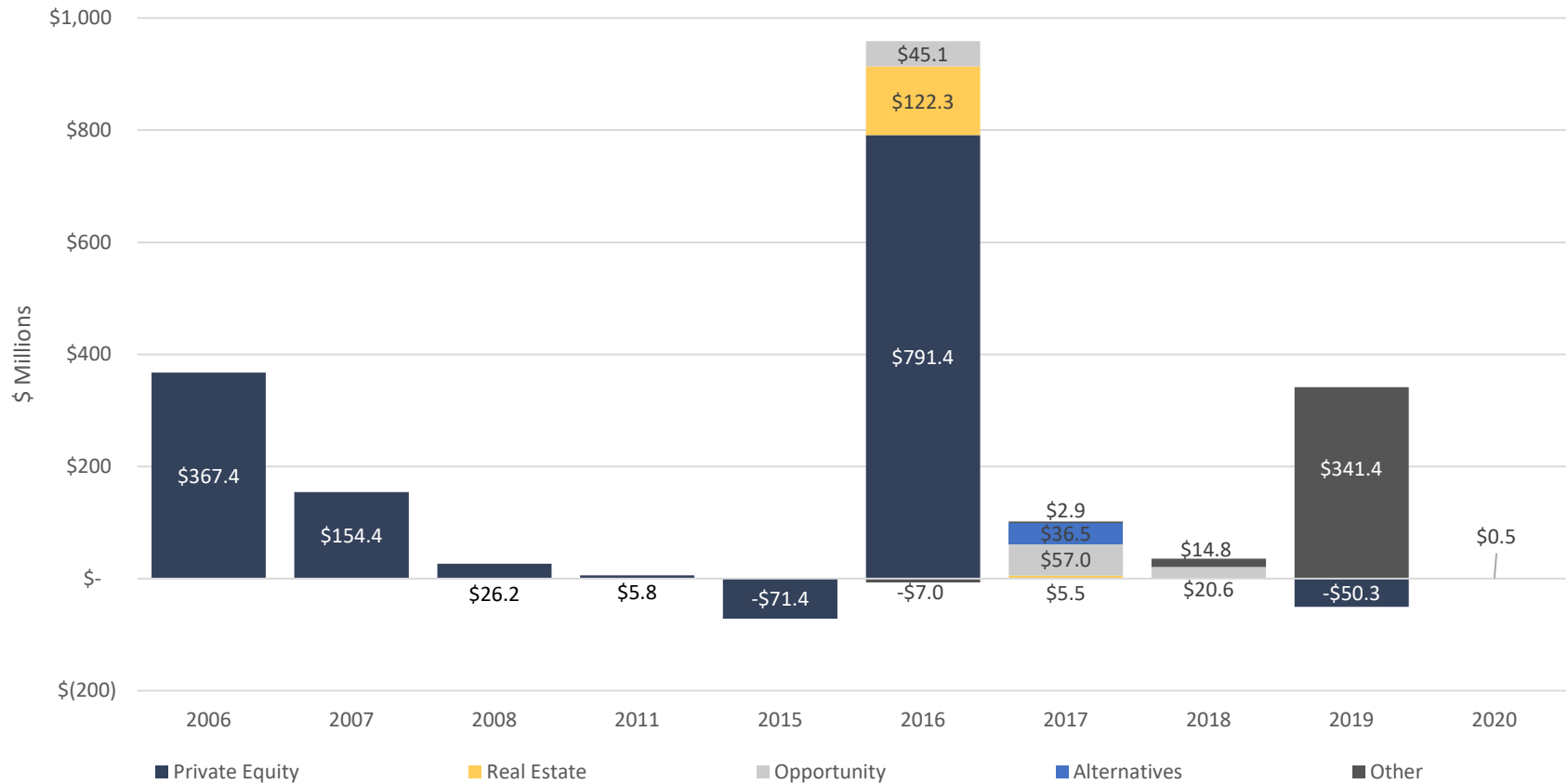
Date Discovered	Report Date	Effective Dates	Report	Account Impacted	Plan/Fund	Summary	Estimated Impact (\$)	Root Cause Means Precluded
Jan-16	Jan-16	Jan 2016	ART	Real Estate	OSTP	Cash manual cleared from OSTP	N/A	YES
4/19/2016	4/18/2016	Mar 2016	ART	Real Estate	OPERF/Alta	Alternative Portfolio - Stop the Clock Performance not set for a liquid alternative fund	\$15,000,000	YES
7/15/2016	8/5/2016	Jan 2016	ART	Real Estate	OITP	Re individual cash monthly performance was uncalculated	(6,15,000)	YES
8/2/2016	8/5/2016	Q2 2016	ART	Real Estate	OPERF/Private Eq	Private Equity Performance - Data Error - Wrong E entered	\$750,000,000	YES
8/26/2016	8/30/2016	Jul 2016, Oct 2016, Jan 2016	ART	Real Estate	OPERF/Real Estate	Real Estate Portfolio - Reconciliation Value did not match performance value for one of the funds	\$7,000,000	YES
9/7/2016	9/28/2016	Dec 2015, Jan 2016	ART	Real Estate	OPERF/Real Estate	Real Estate Portfolio - Reconciliation Value did not match performance value for one of the funds	\$7,000,000	YES
1/18/2017	1/28/2017	Dec 2016	ART	Real Estate	OPERF/SGAW World Ex-MUSCOR	SGAW Fund - \$68MM Cash Flow not annualized for. Explanation was that prior report was annual error	(67,000,000)	YES
1/28/2017	1/31/2017	Dec 2016	ART	Real Estate	OPERF/Alta/Warwick	Warwick Portfolio III - used 6/30 instead of 5/31 manager statement	\$17,492,600	YES
2/12/2017	2/14/2017	CV 2016	TUCS	Real Estate	OPERF/Private Eq	Incorrect Release Used For Private-Equity 2016 TUCS prior rankings	N/A	YES
3/19/2017	3/15/2017	Q2 2014, Q3 2015, Q4 2015, Q1 2016	ART	Real Estate	OPERF/Private Eq	Reported release in mg.slatecell.com did not match the source file and spreadsheet used to calculate private equity	(67,000,000)	YES
5/1/2017	5/25/2017	Q3 2002 to Q3 2008	ART	Real Estate	OPERF/Private Eq	1) By making updates to the opening value for all 8 quarters in 2006 and 2007, the calculated release were lower than the prior period reported value were used. 2) Beginning in Q3 2002, the team changed the factor for monthly cash flow volatility.	\$10,000,000	YES
8/28/2017	8/28/2017	Q3 2017	ART	Real Estate	OPERF	Uncollected market value	\$230,340	YES
10/23/2017	10/23/2017	Jan 2017 to Apr 2017	ART	Real Estate	OPERF/Real Estate	Woodhouse Real Estate - error	\$5,500,000	YES
1/3/2018	1/11/2018	Dec 2017	ART	Real Estate	SAIF	Issue	\$1,300,000	YES
1/11/2018	1/12/2018	Dec 2017	ART	Real Estate	CSF	Issue	\$1,200,000	YES
1/12/2018	1/16/2018	12/1/2017	ART	Real Estate	CSF	Issue - manually reported.	(6,000,000)	YES
Multiple (see 1/18/2018 Memo)	1/25/2018	Q3 2002 to Q3 2008, Q2 2011, Q3 2015, Q4 2015, Q1 2016	ART	Real Estate	OPERF	Private Equity and Real Estate reissues. Reported impact reflects only new Real Estate reissues; combined impact would be \$500 million.	\$100,000,000	YES
1/30/2018	2/19/2018	inception Date to Jan 2018 for all funds	Performance Audit	Real Estate	OPERF	Data files containing historical performance erroneously used in performance annualized calculation with OSTP.	N/A	Yes
2/6/2018	2/25/2018	Mar 2016 to Dec 2017	ART	Real Estate	OPERF	Adjusted Opportunity Investments (AOI) 3.0 value not reflected since first incremental in Q4 2015.	\$185,242,672	YES
4/28/2018	4/26/2018	Q1 2018	ART	Real Estate	OPERF/Opportunistic	SSP used wrong valuation when transacting in RIS.	\$28,619,395	Yes
7/5/2018	7/24/2018	Q2 2018	ART	Real Estate	OPERF	300 bps reduction in Sullivan's quarterly return, 3 day delay in performance reports	N/A	Yes
7/12/2018	7/26/2018		ART	Real Estate	OPERF, SAIF, CSF	Reconciling values in official Q1 management fees were inaccurately posted.	\$210,234	Yes
9/24/2018	10/8/2018		ART	Real Estate	OITP	In performance calculation, portfolio redemption erroneously reduced as quarterly loss.	N/A	Yes
9/28/2018	10/1/2018		Working Total	Real Estate	D&S, DCBS, ODOT, OITP	Reporting discrepancy of NAVs in four portfolios.	\$85,552	Yes
10/1/2018	10/15/2018		Aladdin Cash	Real Estate	OSTP	Interest payment used for a quarterly within issue	\$75,000	Yes
10/1/2018	10/1/2018	6/30/2018 to 7/31/2018	ART	Real Estate	OPERF	Back Forward - incorrect market value as of 6/30/2018	\$16,400,045	Yes
10/1/2018	1/14/2019	12/31/2018	ART	Real Estate	OPERF	Performance Only Adjustment in the handling of a corporate action on 12/28/2018, in error an error in handling by Reconciling	\$1,330,438	Yes
12/28/2018	1/14/2019	12/31/2018	Working Total	Real Estate	SAIF	Issue held as alternative STIP position at month end	\$1,300,384	Yes
2/19/2019	8/8/2018	1/1/2019	N/A	Real Estate	OLGIP	Yasill County application was not processed - Application was received in October, payment was in the invoice for December. Was later included on 1/1.	\$2,350	Yes
2/12/2019	2/14/2019	2/7/2019 - 2/19/2019	N/A	Real Estate	OPERF	FX used not processed for Euros Received. Subsequent change in value were the work was not in the plans source.	\$4,476	Yes
5/5/2019	5/14/2019	12/22/2018-2/1/2019	N/A	Real Estate	IAP	30 bps management fee was applied as an expense and not equal amount management fee payable, leading to an overstatement of expense. This was corrected/offset with effective date of 2/1/19	\$750,457	Yes
9/12/2019	4/1/2019	1/31/2019-2/28/2019	ART	Real Estate	CSF	On 3/12/2019, during a month end roll of a quarterly level release of CUSIP amounts in SSPR, an error was discovered resulting in an uncalculated transfer linked of \$2.5 million. The correction was made on 3/19/2019.	(62,200,000)	Yes

For Illustrative Purposes

Reconciliation Impact

Updated as of 3/31/2020

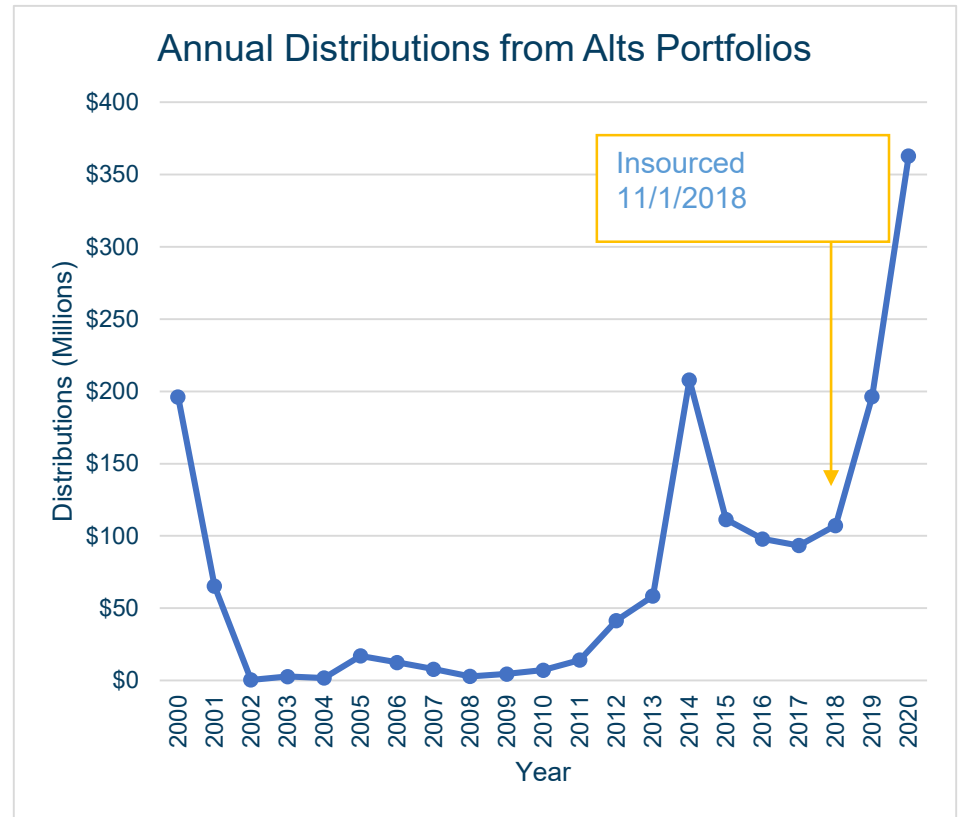
Estimated Historical Dollar Impact of Issues Handled by OST Operations Staff



Bringing Functions In-House: Stock Distributions

OST began managing Stock Distributions in-house on 11/1/2018 (previously managed by external consultant).

- \$576 million in distributions as of 3/31/2020
 - 117 separate lots
 - 25 million shares
- Cost Savings
 - Consultant's average annual fee over the final 5 year period was \$1.5 million
- Developed a streamlined process in collaboration with State Street and OST Operations and Equity teams

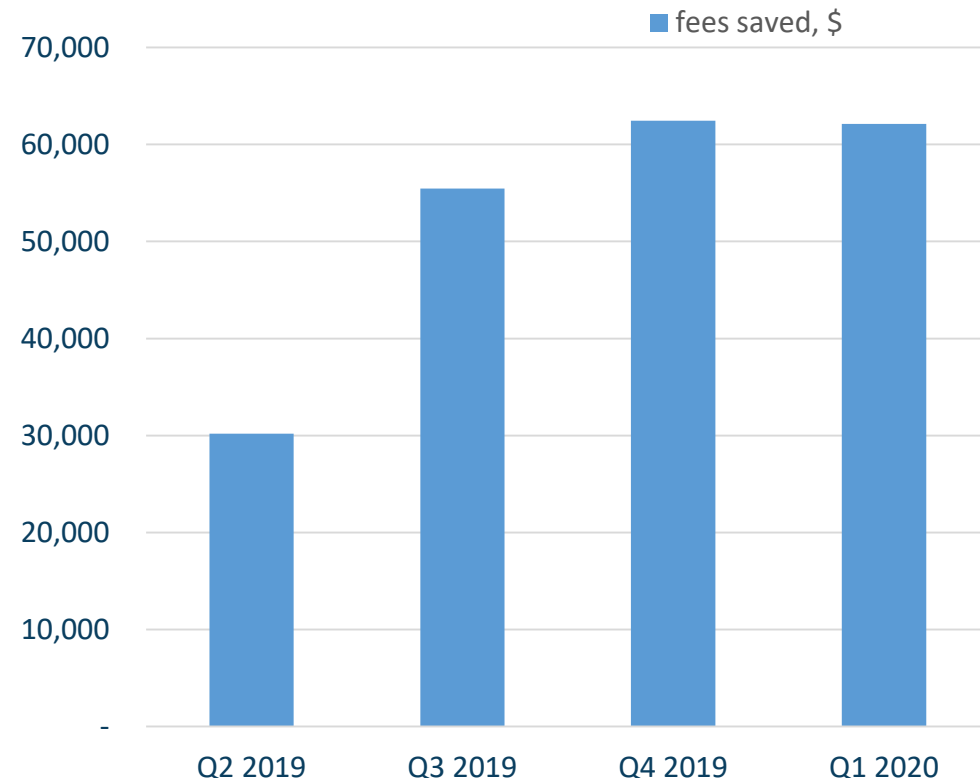


Bringing Functions In-House: Foreign Exchange (FX) Processing

OST took over FX transaction processing from State Street Bank mid-Q2 2019:

- Over \$700 million in FX transactions since program inception
 - Average of \$66 million/month
 - 61 transactions processed in total, \approx 6 transactions/month
- Fee Savings
 - Average fee for processing OST FX transactions was \$240k per annum
- Equities and Accounting teams worked together to develop a streamlined process to ensure a seamless transition

OST In-House FX Program Fee Savings



Bringing Functions In-House: Automated Reporting

Oregon Intermediate Term Pool
March 31, 2017

Oregon Short Term Fund
March 31, 2017

Oregon Public Employee Retirement Fund
December 31, 2016

Asset Allocation (\$Millions)

Alternative:	Cash:	Domestic Equity:	International Equity:	Global Equity:	Real Estate:	Fixed Income:	Opportunity:
\$4,034	\$1,588	\$13,235	\$11,406	\$1,685	\$8,663	\$13,687	\$1,473

Asset Manager Table:

Rank	Asset Manager	Market Value (\$Millions)	Market Weight	Asset Class
1	Internally-Managed	6,672	9.55%	Cash, Pub Eqty
2	DFA	4,971	7.12%	Pub Eqty
3	BlackRock	3,788	5.42%	Fxd Inc, Pub Eqty
4	Alliance Bernstein	3,572	5.26%	Fxd Inc, Pub Eqty
5	Wallington	3,307	4.73%	Fxd Inc, Pub Eqty
6	KKR	3,156	4.53%	Fxd Inc, Pub Eqty
7	Western Asset	2,816	4.03%	Fxd Inc
8	AQR	2,557	3.65%	Alts, Pub Eqty
9	Arrowstreet Capital	1,641	2.35%	Pub Eqty
10	Lazard	1,441	2.06%	Pub Eqty

Annualized Asset Class Performance (%)

Asset Class	1 Year	3 Years	5 Years	10 Years
Total Regular Account	8.9	10.2	11.4	11.4
Domestic Equity	14.8	10.2	11.4	11.4
International Equity	8.9	9.9	11.4	11.4
Global Equity	8.9	9.9	11.4	11.4
Real Estate	8.9	9.9	11.4	11.4
Fixed Income	8.9	9.9	11.4	11.4
Opportunity	8.9	9.9	11.4	11.4
Alternative	8.9	9.9	11.4	11.4

Ten-Year Risk Analysis vs Large Public Funds (~10B)

OPFER NAV
15 years ending March 2017
(\$ in Millions)

Asset Allocations at March 31, 2017

OPFER	Policy	Target	Regular Account		Net Position	Actual	Variable Fund	Total Fund
			\$ Thousands	%				
Public Equity	32.5-42.3%	37.2%	28,054,075	39.3%	(606,159)	27,447,916	38.4%	28,064,958
Private Equity	13.5-21.3%	17.0%	13,895,566	19.5%		13,895,566	19.5%	13,895,566
Total Equity	46.0-63.6%	54.2%	41,949,641	58.8%	(606,159)	41,343,482	57.9%	41,960,521
Opportunity Portfolio	0-3%	0.0%	1,477,260	2.1%		1,477,260	2.1%	1,477,260
Fixed Income	18-20%	20.0%	13,683,478	19.4%		13,683,478	19.4%	13,683,478
Real Estate	9-13.8%	12.0%	8,969,134	12.4%	1,613,484	8,866,994	12.4%	8,866,994
Alternative Investment	0-12.5%	12.5%	4,586,288	6.9%	(33,200)	4,586,288	6.9%	4,586,288
Cash	0-6%	0.0%	94,884	1.4%	(974,006)	38,780	0.0%	21,117
TOTAL OPFER		100%	\$ 71,251,541	100.0%		\$ 71,251,541	100.0%	\$ 71,251,541

Target established in June 2015. Internal policy/benchmark consists of 40% MSCI ACWI DGI Net, 21.5% Custom FI Benchmark, 30% Russell 2000-3000 (1 quarter lagged). 13.5% NCREIF ODCE net (1 quarter lagged), & 5% CFI-400pp.

Includes cash held in the policy implementation overlay program.

SAF

OPFER	Policy	Target	\$ Thousands	Actual
Total Equity	7.31%	10.0%	696,448	10.6%
Fixed Income	80.89%	85.0%	4,237,633	88.9%
Real Estate	6.7%	5.0%	9	0.0%

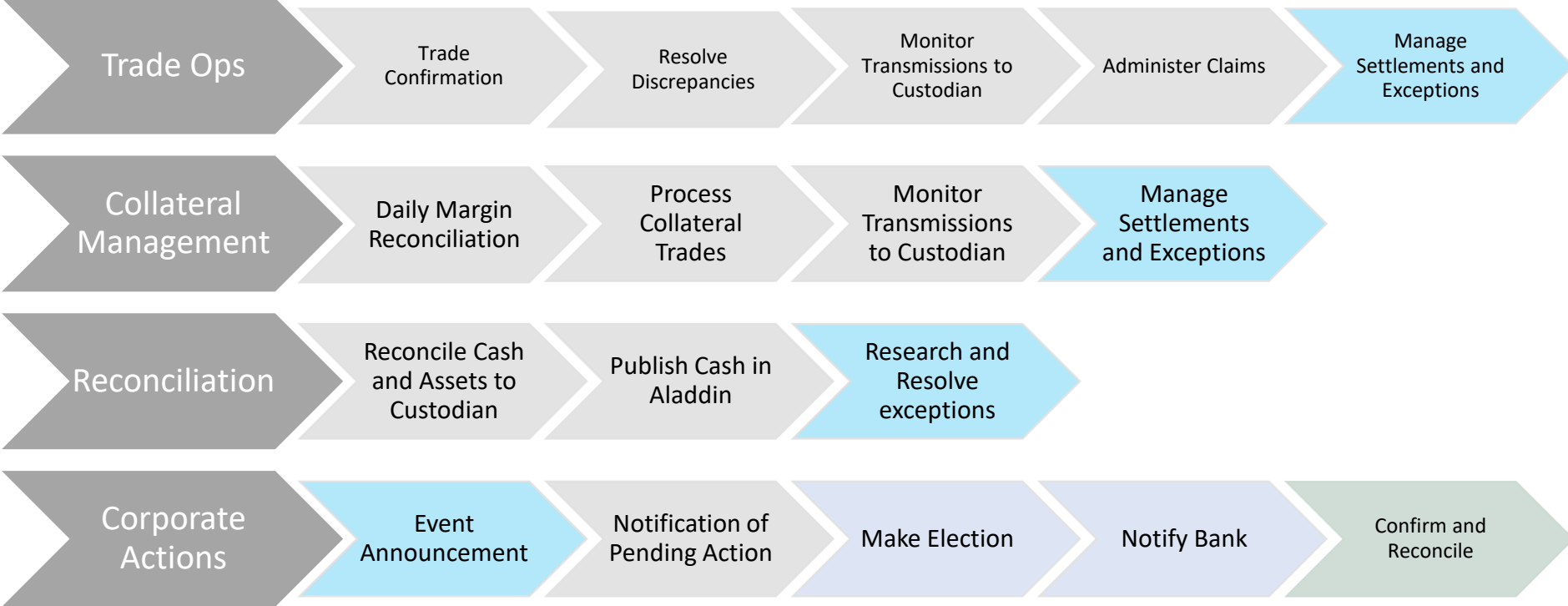
Returns for periods ending FEB-2017

OPFER	Policy	Target	\$ Thousands	Actual	Financial Performance (Annual Percentage)									
					Year-To-Date	1	2	3	4	5	6	7	8	9
Public Equity	32.5-42.3%	37.2%	\$ 27,649,451	38.0%	5.24	24.11	4.45	5.96	9.83	9.30	9.68	4.46		
Private Equity	13.5-21.3%	17.0%	\$ 13,785,572	19.4%	(0.10)	6.08	6.84	9.84	11.40	11.99	11.48	9.60		
Total Equity	46.0-63.6%	54.2%	\$ 41,435,023	58.4%										
Opportunity Portfolio	0-3%	0%	\$ 1,467,727	2.1%	(0.33)	4.46	2.48	3.84	6.80	8.39	8.32	6.62		
Total Fixed	18-20%	20.0%	\$ 16,386,543	21.7%	1.89	3.97	1.75	2.22	2.18	3.28	4.81	5.22		
Real Estate	9-13.8%	12.0%	\$ 8,615,689	12.1%	0.85	6.45	8.17	10.14	10.93	11.38	9.98	6.09		
Alternative Investment	0-12.5%	12.5%	\$ 4,092,966	5.8%	0.33	6.12	4.07	1.97	3.22	2.42				
Cash w/Overlay	0-6%	0%	\$ 6,520	0.0%	0.26	1.27	0.89	0.77	0.75	0.82	0.78	1.38		
TOTAL OPFER Regular Account		100.0%	\$ 70,995,517	100.0%	2.83	11.49	4.60	5.87	7.91	8.51	9.06	6.61		
OPFER Policy Benchmark					2.49	14.69	5.63	6.88	8.58	9.39	9.40	6.13		
Value Added					(0.25)	(2.20)	(0.93)	(1.01)	(0.66)	(0.87)	(0.25)	(0.51)		
TOTAL OPFER Variable Account			\$ 425,733		5.57	22.92	4.16	5.16	6.50	6.81	9.31	2.74		

Asset Class Benchmarks:

Benchmark	1 Year	3 Years	5 Years	10 Years
Russell 2000	5.67	24.59	7.88	9.92
MSCI ACWI DGI NET	5.38	19.33	(0.10)	0.00
OPFER MSCI ACWI EX US DGI NET	5.54	22.65	3.73	4.78
Russell 3000-100 BPS QTR LAG	0.00	13.37	10.15	13.73
OPFER CUSTOM FI BENCHMARK	0.92	2.60	1.29	1.81
OPFER CUSTOM REAL ESTATE BENCHMARK	0.00	9.62	11.53	11.44
CPPI-4%	1.56	4.84	5.94	5.23
91 Day Treasury Bill	0.09	0.26	0.23	0.16

Bringing Functions In-House: Trade Operations



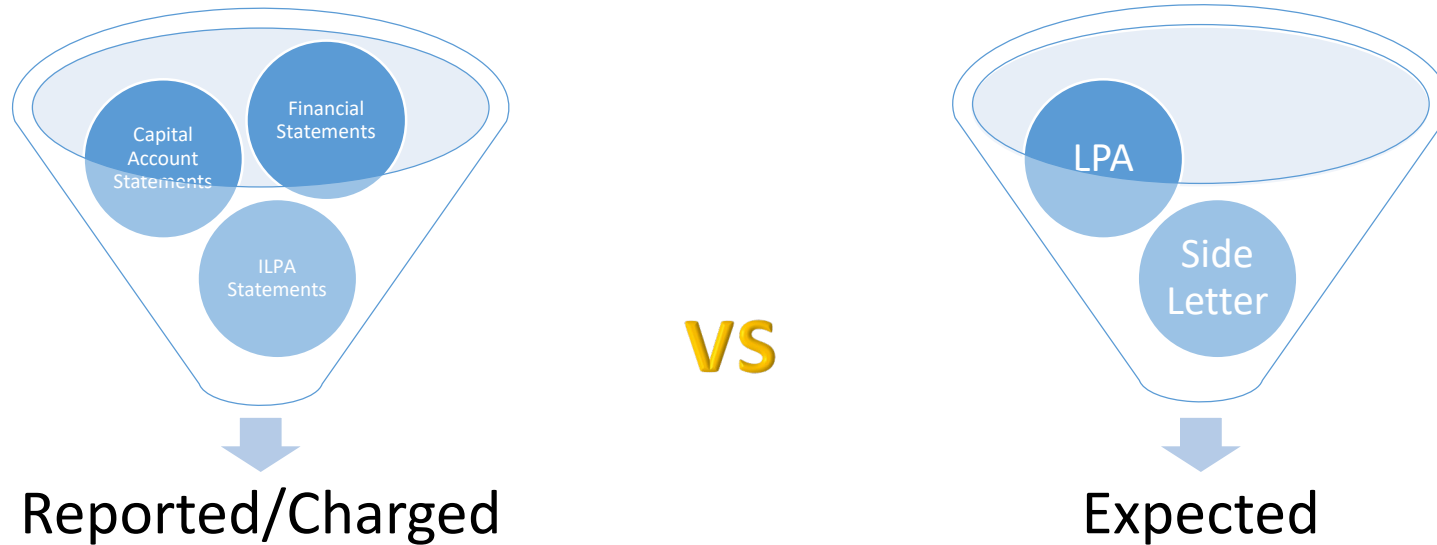
Key Workflows OST manages:

- Order/Trade Entry on Aladdin
- New account set up (Custodian and Broker) – ADAM and CPM templates
- ISDA/CSA/MSFTA agreements – DECO set-up
- New Cash – Capital Flows Entry in Aladdin
- Security Master – Time series data, public securities, including client defined fields



Bringing Functions In-House: Fee Monitoring and Oversight

Alternatives Fees & Expenses: Validation Process



- Reported Expenses & Fees: Data extracted from capital account statements, financial statements, and ILPA statements provide us with a snapshot of expenses and fees that have been charged to the fund.
- Expected: Data extracted from LPAs and side letters provide economic terms, which allow us to calculate and model expected expenses and fees.
- The 'recipe' for validating alternatives fees and expenses is to compare what is reported against what is expected. Should a difference between the two amounts arise, further investigations will ensue.

A Quantifiable Improvement

Accomplishments

- Cost Savings
- Value Added Performance
- Improved Data Integrity
- Enhanced Capabilities
 - Stock Distributions
 - FX Transactions
 - Centralized/Automated Reporting
 - Trade Operations
 - Fee Oversight

Looking Forward

Strategic Initiatives

- Internal Management Committee
- Research Management System (RMS)
- Continuous Improvement





OREGON STATE TREASURY

Tobias Read
Oregon State Treasurer

350 Winter St NE, Suite 100
Salem, OR 97301-3896

oregon.gov/treasury

TAB 8 Asset Allocation & NAV Updates

Asset Allocations at May 31, 2020

OPERF	Regular Account						Target Date Funds	Variable Fund	Total Fund	
	Policy	Target ¹	\$ Thousands	Pre-Overlay	Overlay	Net Position	Actual	\$ Thousands	\$ Thousands	\$ Thousands
Public Equity	27.5-37.5%	32.5%	22,530,812	30.6%	729,191	23,260,003	31.6%	1,083,738	372,319	24,716,060
Private Equity	13.5-21.5%	17.5%	17,026,271	23.1%		17,026,271	23.1%			17,026,271
Total Equity	45.0-55.0%	50.0%	39,557,083	53.7%	729,191	40,286,274	54.6%			41,742,331
Opportunity Portfolio	0-5%	0.0%	1,588,346	2.2%		1,588,346	2.2%			1,588,346
Fixed Income	15-25%	20.0%	14,109,638	19.1%	645,321	14,754,959	20.0%	1,701,063		16,456,022
Risk Parity	0.0-2.5%	2.5%	906,143	1.2%		906,143	1.2%			906,143
Real Estate	9.5-15.5%	12.5%	8,475,519	11.5%	(4,500)	8,471,019	11.5%			8,471,019
Alternative Investments	7.5-17.5%	15.0%	7,713,177	10.5%		7,713,177	10.5%			7,713,177
Cash²	0-3%	0.0%	1,368,026	1.9%	(1,370,012)	(1,986)	0.0%		7,451	5,465
TOTAL OPERF		100%	\$ 73,717,932	100.0%	\$ -	\$ 73,717,932	100.0%	\$ 2,784,802	\$ 379,770	\$ 76,882,504

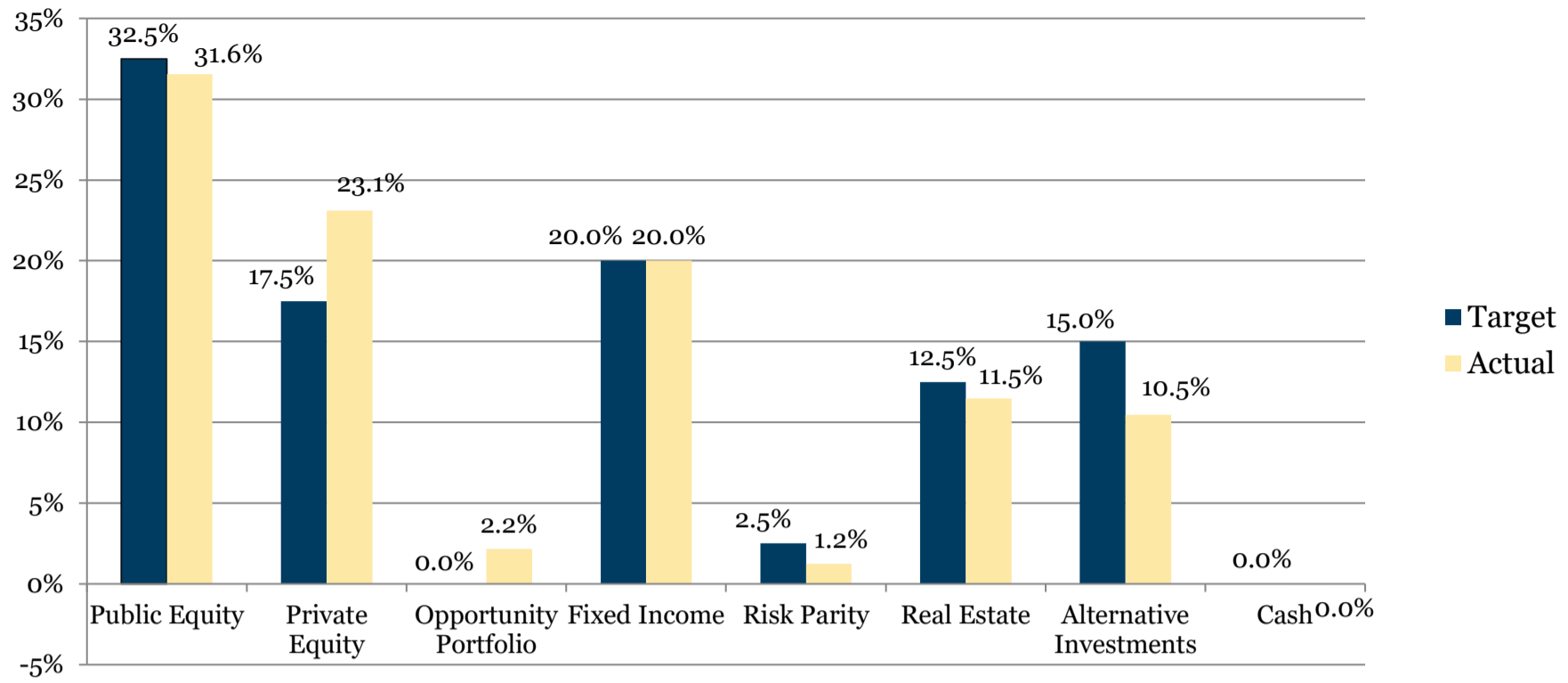
¹Targets established in April 2019. Interim policy benchmark effective January 1, 2019, consists of: 37.5% MSCI ACWI IMI Net, 21% Custom FI Benchmark, 19% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), & 10% CPI+400bps.

²Includes cash held in the policy implementation overlay program.

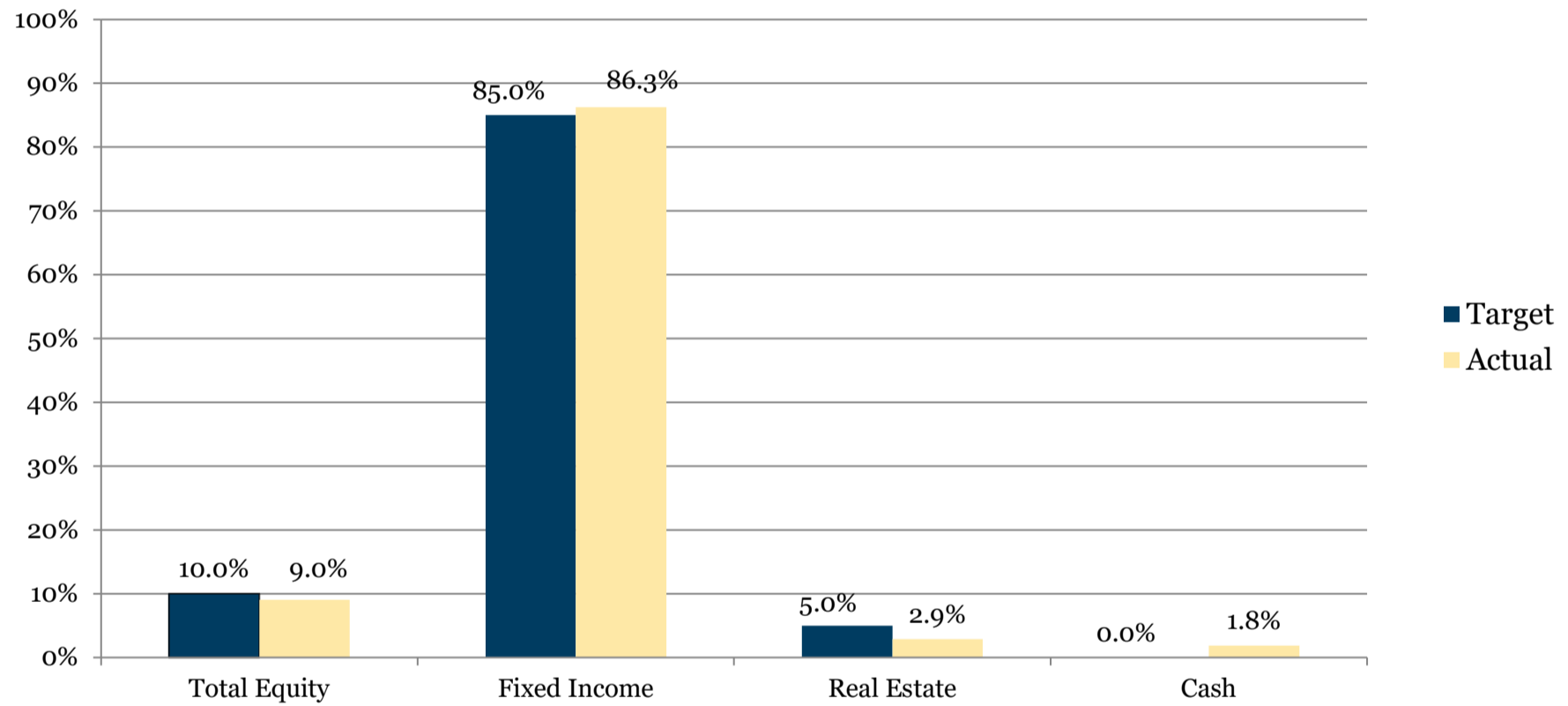
SAIF	Policy	Target	\$ Thousands	Actual
Total Equity	7-13%	10.0%	444,461	9.0%
Fixed Income	80-90%	85.0%	4,238,874	86.3%
Real Estate	0-7%	5.0%	140,553	2.9%
Cash	0-3%	0.0%	90,272	1.8%
TOTAL SAIF			\$ 4,914,160	100.0%

CSF	Policy	Target	\$ Thousands	Actual
Global Equities	40-50%	45.0%	675,685	38.9%
Private Equity	8-12%	10.0%	181,305	10.4%
Total Equity	58-62%	55.0%	856,991	49.4%
Fixed Income	25-35%	25.0%	509,563	29.4%
Real Estate	8-12%	10.0%	131,710	7.6%
Alternative Investments	8-12%	10.0%	120,571	6.9%
Cash	0-3%	0.0%	116,154	6.7%
TOTAL CSF			\$ 1,734,989	100.0%

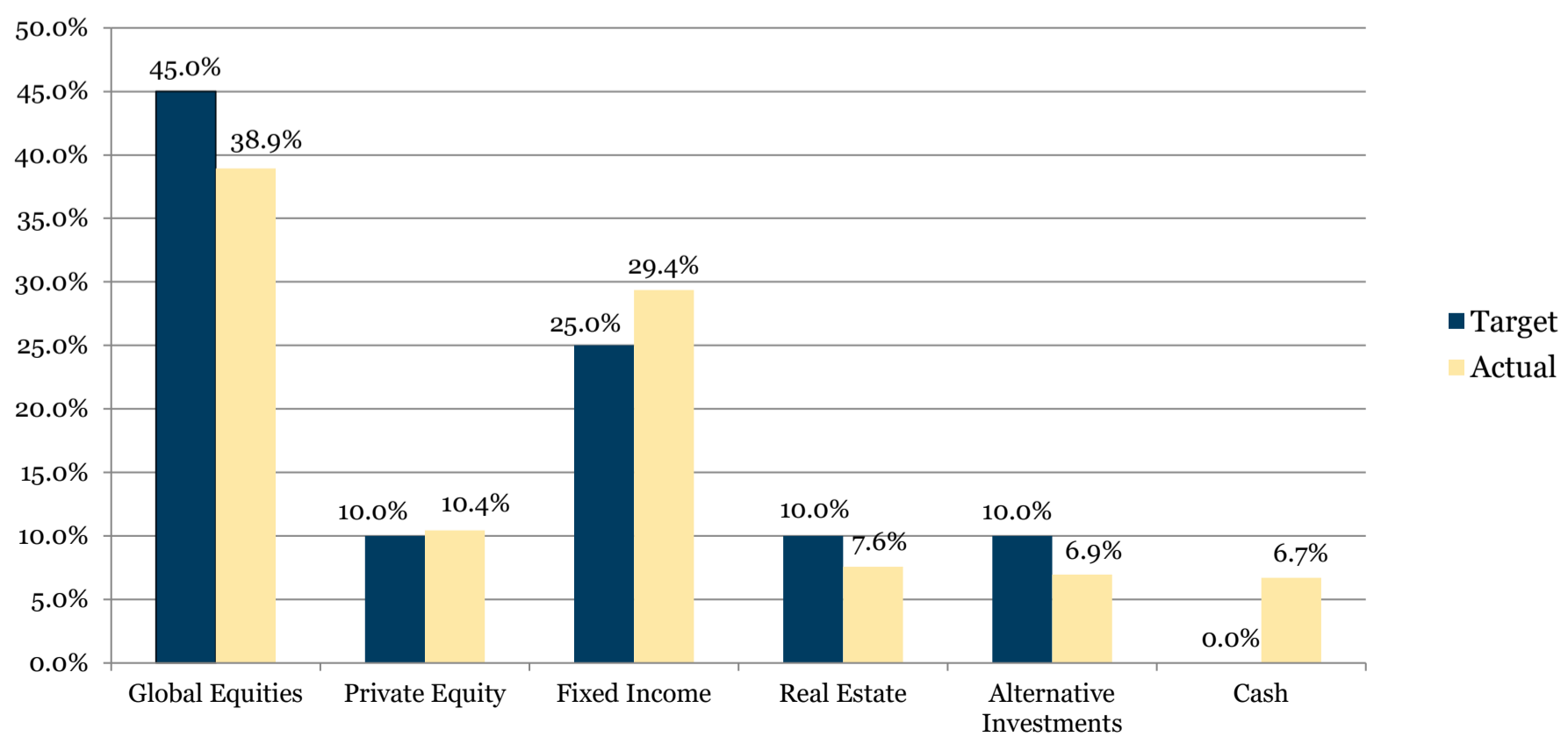
OPERF Asset Allocation



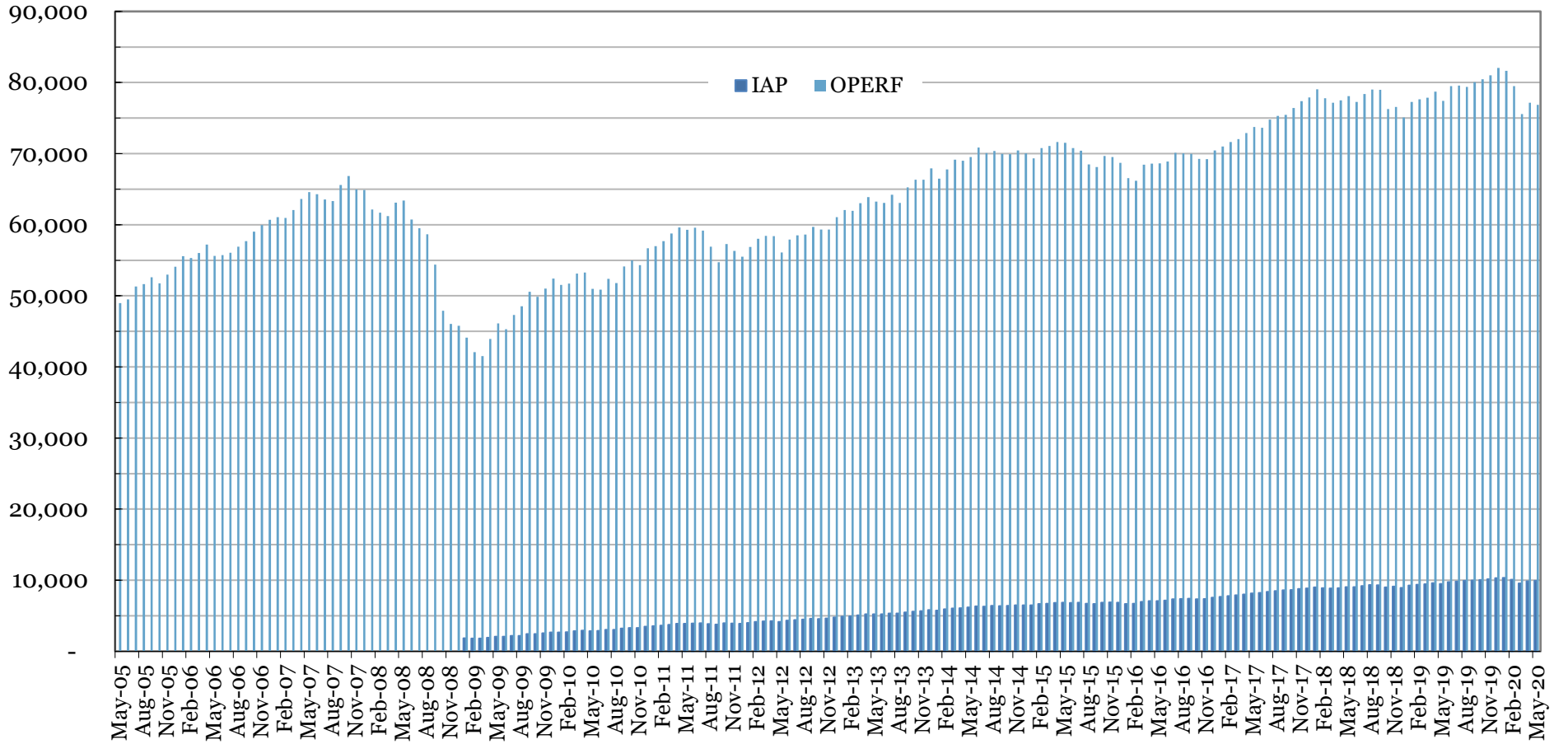
SAIF Asset Allocation



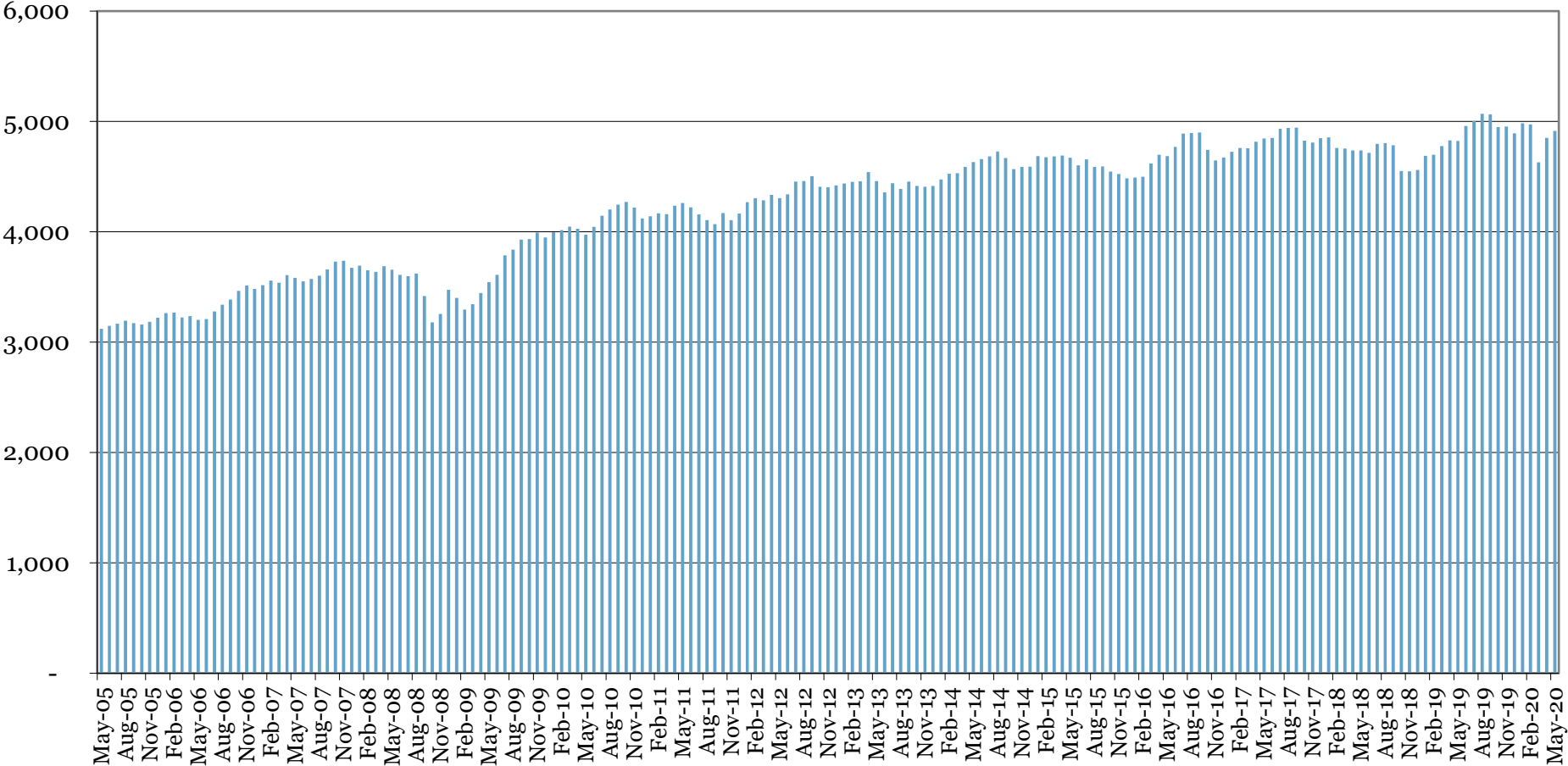
CSF Asset Allocation



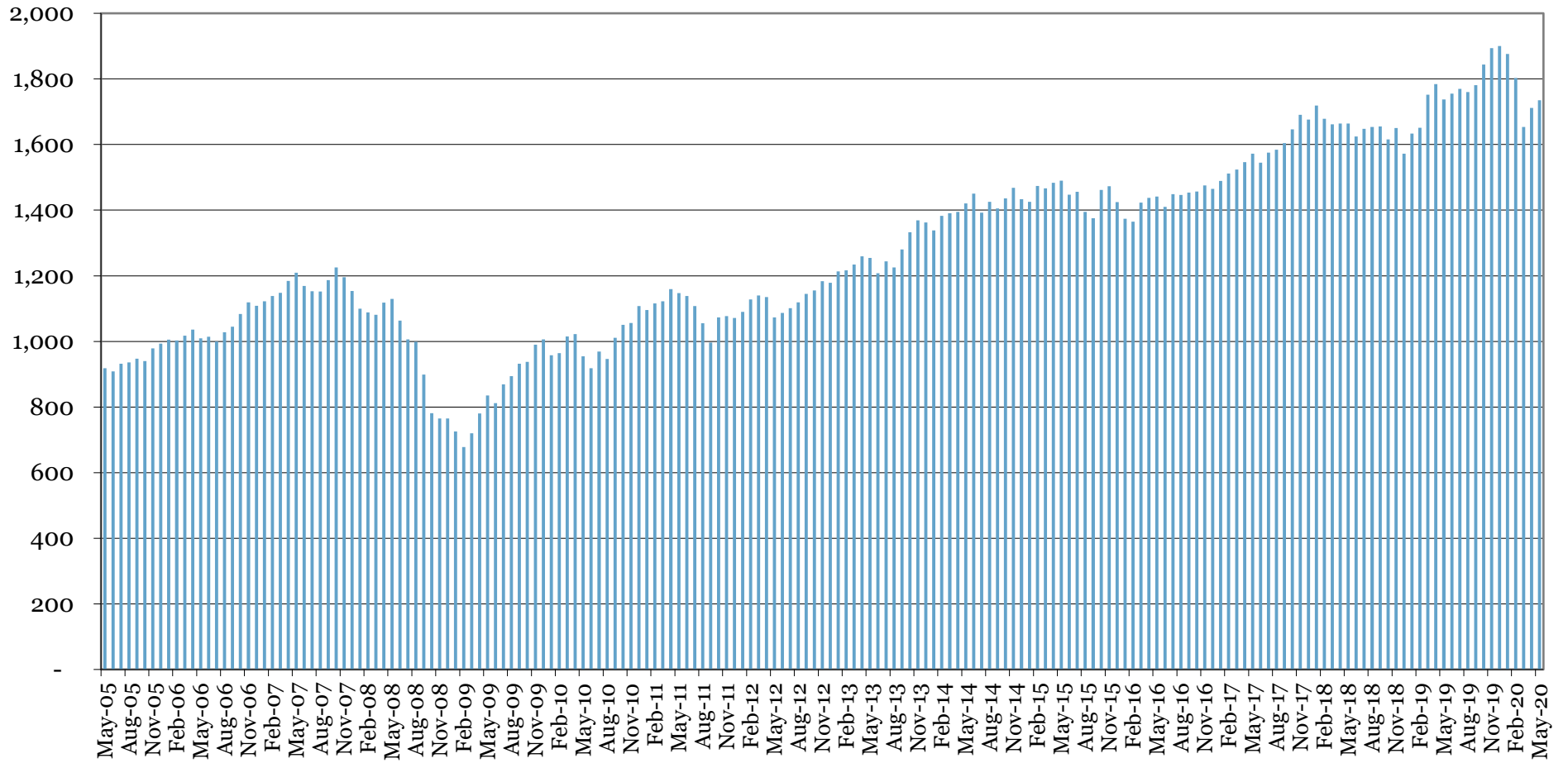
OPERF NAV
15 years ending May 31, 2020
(\$ in Millions)



SAIF NAV
15 years ending May 31, 2020
(\$ in Millions)



CSF NAV
15 years ending May 31, 2020
(\$ in Millions)



TAB 9 Calendar – Future Agenda Items

2020/21 OIC Forward Calendar and Planned Agenda Topics

September 9, 2020	Alternatives Portfolio Review ESG Update Corporate Governance Update SAIF Annual Review Q2 Performance & Risk Report
October 28, 2020	Public Equity Program Review Opportunity Portfolio Review Currency Overlay Review CEM Benchmarking
December 9, 2020	Fixed Income Program Review Q3 Performance & Risk Report Policy Updates Placement Agent Report
January 28, 2021	2022 OIC Calendar Approval Private Equity Program Review IAP Update OSGP Annual Review
March 10, 2021	Real Estate Portfolio Review CSF Annual Review Q4 Performance & Risk Report
April 21, 2021	Asset Allocation & Capital Market Assumptions Update Overlay Review
June 2, 2021	Q1 Performance & Risk Report
July 21, 2021	Alternatives Portfolio Review Operations Update Securities Lending Update