BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN SYSTEM

Business and Finance Committee

Thursday, April 7, 2022 8:45 a.m. – 10:15 a.m. Dreyfus University Center Room 370 (Legacy Room) 1015 Reserve Street Stevens Point, Wisconsin

- A. Calling of the Roll
- B. Declaration of Conflicts
- C. Approval of the Minutes of the February 10, 2022 Meeting of the Business and Finance Committee
- D. UW-Stevens Point Presentation "Purpose Driven Institutional Investments: Aligning Our Financial Position for the Future"
- E. UW System Ordering Document with Oracle America, Inc.
- F. UW-Milwaukee License Agreement with Verizon Wireless
- G. UW-Madison Contractual Agreement with edX, LLC
- H. UW-Madison Standard Research Agreement with AavantiBio, Inc.
- I. UW-Madison Master Clinical Trial Agreement with Takeda Development Center Americas, Inc.
- J. UW-Madison Standard Research Agreement with Beren Therapeutics, P.B.C.
- K. UW-Madison Master Research Agreement with Flywheel Exchange, LLC
- L. UW-Madison Contractual Agreement with Raytheon Technologies Corporation
- M. UW-La Crosse Contractual Agreement with Heartland Business Systems, LLC, and Amendment to UW System Report on Strategic Plans for Major Information Technology Projects
- N. Trust Funds Quarterly Investment Report

April 7, 2022

UW-STEVENS POINT PRESENTATION – "PURPOSE DRIVEN INSTITUTIONAL INVESTMENTS: ALIGNING OUR FINANCIAL POSITION FOR THE FUTURE"

REQUESTED ACTION

Host campus presentation; for information only.

SUMMARY

UW-Stevens Point will present the successful financial journey from the difficult issues faced due to the financial impact of enrollment and other challenges (including COVID), to the university's addressing of the structural deficit and investing in strategic priorities to move into the future with an increase in freshmen enrollments, development of new programs, and improvement of the financial profile.

Presenter

• Pratima Gandhi, Vice Chancellor for Business Affairs

April 7, 2022

UW SYSTEM ORDERING DOCUMENT WITH ORACLE AMERICA, INC.

REQUESTED ACTION

Adoption of Resolution E., approving the contractual Ordering Document between the Board of Regents and Oracle America, Inc.

Resolution E.That, upon recommendation of the President of the University of
Wisconsin System, the Board of Regents approves the contractual
agreement between the Board of Regents of the University of
Wisconsin System, and Oracle America, Inc. for a five (5) year term.

SUMMARY

In 2017, UW System conducted a Request for Proposals for Budget Planning software. A contract was awarded to the highest scoring proposer, Oracle America, Inc. ("Oracle"), for its Budget Planning Cloud Service (BPCS), which became known at UW System as PlanUW. That original contract and all possible extensions are expiring, and UW System needs a new contract for Oracle's BPCS until the budgeting and planning function is transitioned to the new Enterprise Resource Planning (ERP) system, Workday. This contract is for a five (5) year term with 0% price increase over the previous five-year term. It is invoiced quarterly in arrears and allows cancelation without penalty for non-appropriation of funds. Total contract value is \$1,300,200.

Presenter

• Brent Tilton, Director of Procurement, UW System Administration

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Previous Action or Discussion

RFP RG-17-2677

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

Item F

April 7, 2022

UW-MILWAUKEE LICENSE AGREEMENT WITH VERIZON WIRELESS

REQUESTED ACTION

Adoption of Resolution F., approving the license agreement between the Board of Regents and Cellco Partnership d/b/a Verizon Wireless.

Resolution F. That, upon recommendation of the Chancellor of the University of Wisconsin-Milwaukee and the President of the University of Wisconsin System, the Board of Regents approves the license agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Milwaukee, and Cellco Partnership, doing business as Verizon Wireless.

SUMMARY

UW-Milwaukee (UWM) works with a consulting firm, Gunnerson Consulting & Communication Site Services (Gunnerson), to negotiate space use agreements with cellular service providers. Under these agreements, cellular service providers may place their equipment on UWM premises (building rooftops).

UWM contracted with PrimeCo Personal Communications, Limited Partnership d/b/a Verizon Wireless, now known as Cellco Partnership ("Verizon") to allow Verizon to place its equipment on UWM's premises at 3210 North Maryland Avenue (Bolton Hall) on November 2, 2000. This agreement was thereafter amended and expired on October 31, 2021; however, UWM and Verizon have agreed to continue their relationship since that time on an interim basis.

Verizon has expressed the desire to continue its relationship with UWM, and Gunnerson, acting on UWM's behalf, has negotiated a new agreement between UWM and Verizon. Under the proposed agreement, Verizon will increase its license fee, retroactive to the expiration of its prior lease. The new agreement would therefore commence on November 1, 2021 and continue for an initial term of five years with up to three five-year renewal terms thereafter. The initial new license fee will be \$48,000 and will increase by 4% each year thereafter. Verizon will also be liable for actual costs resulting from this relationship. Thus, the total value of this relationship may exceed \$1,000,000.

Verizon's historical use of UWM's premises has never interfered with UWM's operations, and its proposed future usage is similarly not anticipated to cause disruptions.

Presenter

• Robin Van Harpen, Vice Chancellor for Finance and Administrative Affairs, UW-Milwaukee

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

Item G

April 7, 2022

UW-MADISON CONTRACTUAL AGREEMENT WITH EDX, LLC

REQUESTED ACTION

Adoption of Resolution G., approving the contractual educational services agreement between the Board of Regents and edX, LLC.

Resolution G. That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents approves the contractual research agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Madison, and edX, LLC.

SUMMARY

Formed in 2012 by Harvard and MIT, edX has curated a student base of over 35 million learners, with total course enrollments of over 100 million, 70% of which are located outside of the United States.

In October 2021, UW-Madison signed a partnership with the nonprofit edX organization to provide online non-credit professional development programming on the edX platform, and benefit through shared revenue and marketing support. This partnership did not require Board of Regents review because it was with a nonprofit. The partnership provides greater access to the fast-growing segment of corporate and international professional development lifelong learners that use edX for noncredit training, creating a way for UW-Madison to align its non-credit offerings with online degrees for a larger audience. UW-Madison anticipates its first noncredit offerings will be available on edX by June 1, 2022.

In November 2021, edX was purchased by 2U, a for-profit online program management company. The purchase injected capital into edX, which resulted in the removal of annual fees, increases in revenue sharing, and program development funding for new degrees and certificates. These financial incentives, along with the expansion of their global online learner base, present a new opportunity for UW-Madison to expand enrollment and reach international markets with fully online for-credit master's degree programs. edX will market the program to its global portfolio of more than 42 million learners. UW-Madison, using disruptive pricing of \$800 per credit, anticipates steady state enrollment of more than 300 students. The revenue share agreement with edX delivers 60% of revenue to UW-Madison, estimated at over \$2 million annually for the School of Business. This revenue will provide important support for growth in student service and faculty to help UW-Madison and the School of Business achieve a top 10 BBA and overall excellence for the campus.

Achieving scale requires time and investment on the part of both entities. The overall agreement reflects that ramp-up, with a 10-year initial term that includes a teach-out period. The MS degree must be offered continuously through edX for at least six years, commencing in 2024. After the initial term, the parties have the right of annual renewals of the agreement.

Presenter

• Rob Cramer, Interim Vice Chancellor for Finance and Administration, UW-Madison

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

April 7, 2022

UW-MADISON STANDARD RESEARCH AGREEMENT WITH AAVANTIBIO, INC.

REQUESTED ACTION

Adoption of Resolution H., approving the contractual standard research agreement between the Board of Regents and AavantiBio, Inc.

Resolution H. That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents approves the contractual standard research agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Madison, and AavantiBio, Inc.

SUMMARY

AavantiBio, Inc. is a Boston-based biotech company originally formed in 2017 by two physician scientists from University of Florida Health, specifically to use adeno-associated virus (AAV) mediated gene therapy to target Friedreich's ataxia, a rare inherited genetic disease. Their vision moving forward is to build a diverse product pipeline of precision therapies aimed at other debilitating diseases.

Under this agreement, the Ralphe lab in the School of Medicine and Public Health will explore the feasibility of using gene therapy approaches to correct genetic mutations in a gene found in the heart which causes hypertrophic cardiomyopathy (HCM). HCM is a disease that impacts up to 1 in 500 people and leads to heart failure, arrythmias, and death if untreated. Current treatments reduce symptoms but do not prevent disease. Gene therapy has the potential to correct the underlying defect. This proposal will apply adenoassociated viruses prepared by AavantiBio to existing mouse models and human iPS cell models and assess the impact on prevention or amelioration of the disease. There are six experiments in this project. Total funding under this agreement may reach \$1,084,957. This is UW-Madison's first agreement with AavantiBio.

Presenter

• Rob Cramer, Interim Vice Chancellor for Finance and Administration, UW-Madison

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

April 7, 2022

UW-MADISON MASTER CLINICAL TRIAL AGREEMENT WITH TAKEDA DEVELOPMENT CENTER AMERICAS, INC

REQUESTED ACTION

Adoption of Resolution I., approving the contractual master clinical trial agreement between the Board of Regents and Takeda Development Center Americas, Inc.

Resolution I. That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents approves the contractual master clinical trial agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Madison, and Takeda Development Center Americas, Inc.

SUMMARY

Takeda is a global pharmaceutical company specializing in the research, development and manufacture of vaccines, biologics and plasma-derived therapies for the treatment of cancer, gastro-intestinal diseases, neurological disorders, and several rare diseases.

This five-year agreement allows the parties to specify distinct clinical study activities to be performed by the university through the issuance of multiple individual written agreements between Takeda and UW-Madison. Each study budget may be greater than \$1,000,000, and/or the sum of the individual budgets may exceed \$1,000,000.

Over the past five years, UW-Madison has executed seven (7) research or clinical trial agreements with Takeda. The sum total budgeted amount between Takeda and UW-Madison for those agreements was just over \$2.1 million.

Presenter

• Rob Cramer, Interim Vice Chancellor for Finance and Administration, UW-Madison

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

April 7, 2022

UW-MADISON STANDARD RESEARCH AGREEMENT WITH BEREN THERAPEUTICS, P.B.C.

REQUESTED ACTION

Adoption of Resolution J., approving the contractual standard research agreement between the Board of Regents and Beren Therapeutics, P.B.C.

Resolution J. That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents approves the contractual standard research agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Madison, and Beren Therapeutics, P.B.C.

SUMMARY

The proposed agreement is an amendment to a prior sponsored research agreement between UW-Madison and Beren Therapeutics for approximately \$591,000. This amendment adds additional research and funding that as a result will increase the total dollar value of the study to over \$1,000,000.

The research will be done by the Department of Animal and Dairy Sciences in UW-Madison's College of Agriculture & Life Sciences. The research will involve the continued development of Wisconsin Familial Hypercholesterolemia Miniature Swine models to study imaging and treatment modalities for atherosclerosis, which is naturally occurring in these swine models.

Beren Therapeutics is a California-based public-benefit corporation developing a novel therapeutic that targets removal of cholesterol and lipids in the arterial system. If successful, this therapy would revolutionize the treatment of atherosclerosis, specifically for individuals with vulnerable coronary plaques with lipid core. In addition, researchers are utilizing a novel imaging modality (IVUS-NIRS) that can detect the chemical signature of lipids in the arterial wall. This imaging modality has never been evaluated in the Department's animal model of disease, which mimics in less than 24 months what occurs over a lifetime (60+ years) in humans.

This agreement will help UW-Madison strengthen its relationship with Beren Therapeutics and will also attract additional research opportunities to its program based on their expertise with the unique animal model and experience with imaging modality.

Presenter

• Rob Cramer, Interim Vice Chancellor for Finance and Administration, UW-Madison

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

Item K

April 7, 2022

UW-MADISON MASTER RESEARCH AGREEMENT WITH FLYWHEEL EXCHANGE, LLC

REQUESTED ACTION

Adoption of Resolution K., approving the contractual master research agreement between the Board of Regents and Flywheel Exchange, LLC.

Resolution K. That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents approves the contractual master research agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Madison, and Flywheel Exchange, LLC.

SUMMARY

Flywheel provides a research informatics platform targeted at facilitating medical imaging related research and cross-site collaboration at cloud scale. The Departments of Radiology, Medical Physics, and Ophthalmology currently utilize Flywheel's platform for research and development primarily within the artificial intelligence space. The purpose of this five-year master research agreement with Flywheel is to facilitate collaborative projects where mutual value is anticipated through the issuance of multiple individual written work statements between Flywheel and UW-Madison.

Flywheel's platform has already been adopted with great success within Radiology and Medical Physics as the data lifecycle management and curation platform of choice. UW-Madison has collaborated with Flywheel on numerous platform improvements to better meet the needs of UW medical imaging researchers. UW-Madison wishes to greatly expand the anticipated scope of its collaboration to continue the trend of success. The university benefits through improved toolsets that increase the efficiency of research while facilitating repeatable science at cloud scale while vastly improving internal data visibility and compliance monitoring.

Presenter

• Rob Cramer, Interim Vice Chancellor for Finance and Administration, UW-Madison

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

• Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting"

April 7, 2022

UW-MADISON CONTRACTUAL AGREEMENT WITH RAYTHEON TECHNOLOGIES CORPORATION

REQUESTED ACTION

Adoption of Resolution L., approving the contractual agreement between the Board of Regents and Raytheon Technologies Corporation.

Resolution L. That, upon recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Board of Regents approves the contractual agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-Madison, and Raytheon Technologies Corporation.

SUMMARY

Raytheon Technologies is partnering with UW-Madison to prototype a first-of-a-kind ultrahigh efficiency thermal to electrical power conversion system. As UW-Madison's subrecipient under an award from Department of Energy, Raytheon Technologies will receive \$1,724,244 to do the analytical development of the turbine and generator prototype, design the prototype and integrate it into the UW-Madison machine design, and conduct performance testing and tuning. Raytheon Technologies will also be providing \$431,061 in cost share. This accounts for 56% of the \$770,209 mandatory cost share UW-Madison has agreed to with the Department of Energy. Both the Raytheon subaward and cost share are part of UW-Madison's \$3,080,397 award from the Department of Energy.

In June of 2020, the Department of Energy awarded UW-Madison a \$3,080,397 award to develop an ultra-high efficiency thermal to electrical power conversion system. Subsequently, UW-Madison issued a subagreement to Raytheon for Year 1 (6/1/2020 – 5/31/2021) of Raytheon's participation in the project. Year 1 funding was established at \$898,706. Year 2 (6/1/2021- 5/31/2022) was expected to be awarded upon (1) the addition of Year 2 via amendment from the Department of Energy, and (2) approval by the Board of Regents due to additional funds being added pushing this agreement beyond \$1 million. Unfortunately, due to unforeseen delays at the Department of Energy, Year 2 funding was not released by the Department of Energy until December 31, 2021, delaying the start of Year 2 negotiations with Raytheon. As a result, Raytheon has been working to meet Department of Energy timelines without an active contract since 5/31/2021.

Approval of this amendment to the agreement with Raytheon is now vital to continue development of the ultra-high efficiency thermal to electrical power conversion system promised to the Department of Energy. UW-Madison cannot complete the project without Raytheon's support, and Raytheon cannot continue without the funding needed to perform the work.

Presenter

• Rob Cramer, Interim Vice Chancellor for Finance and Administration, UW-Madison

BACKGROUND

Regent Policy Document 13-1 requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

Related Policies

 Regent Policy Document 13-1, "General Contract Approval, Signature Authority, and Reporting" April 7, 2022

UW-LA CROSSE CONTRACTUAL AGREEMENT WITH HEARTLAND BUSINESS SYSTEMS, LLC AND AMENDMENT TO UW SYSTEM REPORT ON STRATEGIC PLANS FOR MAJOR INFORMATION TECHNOLOGY PROJECTS

REQUESTED ACTION

Adoption of Resolution M.1., approving the contractual agreement between the Board of Regents and Heartland Business Systems, LLC, and adoption of Resolution M.2., approving the addition of a project to the February 2022 report on strategic plans for major IT projects.

- **Resolution M.1.** That, upon the recommendation of the Chancellor of the University of Wisconsin-La Crosse and the President of the UW System, the Board of Regents approves the contractual agreement between the Board of Regents of the University of Wisconsin System, doing business as UW-La Crosse, and Heartland Business Systems, LLC for the one-time purchase of \$2,100,300 of Cisco hardware.
- **Resolution M.2.** That, upon the recommendation of the President of the UW System, the Board of Regents approves the amendment to the UW System Report on Strategic Plans for Major Information Technology Projects.

SUMMARY

UW-La Crosse (UWL) is seeking Board of Regents approval to replace its wireless network. If approved, the UW System Report on the Strategic Plans for Major Information Technology Projects (approved by the Board at its February 2022 meeting) will need to be amended to include this new project as it exceeds the \$1 million threshold for inclusion.

The electronic equipment for the wireless network at UWL is nearing the end of its planned life and is due for a complete replacement. While the trend began before COVID-19, the pandemic has accelerated the reliance on wireless technology in classrooms, dormitories, and public spaces across the campus. Wireless access is increasingly essential for students and faculty at UWL to:

- 1. Continue to access class instruction and communication anywhere on campus,
- 2. Protect personal information on the wireless network,
- 3. Improve outreach for prospective new students by showing prospects that UWL has modern infrastructure to meet academic needs and lifestyle preferences,
- 4. Ensure emergency notification capabilities,
- 5. Allow for additional methods of direct outreach regarding services such as financial aid.

Since the aging network is unable to accommodate this increased demand, UWL conducted two (2) studies from third-party vendors to evaluate options and recommend a path forward. Based on these assessments, UWL is planning to refresh the switches that support the wireless network, which will increase its capacity and improve its overall reliability. The modernized network will also introduce new security features (unavailable on the old equipment) to significantly improve the security posture of the wireless network.

The rules for the Higher Education Emergency Relief Fund (HEERF) allow UWL to leverage these federal funds for the \$2,400,000 in necessary upgrades and replacements. That total project cost includes the \$2,100,300 purchase for Cisco hardware contemplated in this proposed agreement. Heartland Business Systems, LLC is a Wisconsin-based designated reseller of Cisco equipment. A NASPO/ValuePoint contract for which the Department of Administration (DOA) has an existing Participating Addendum will be used.

Due to pandemic-induced global supply chain disruptions, which are being amplified by the war between Russia and Ukraine, the vendors are unable to provide a reliable target for the delivery of electronic equipment. However, the project is tentatively scheduled to start in August 2022 and be completed by June 2023.

Presenters

- Steven Hopper, Associate Vice President for the Office of Learning and Information Technology and Chief Information Officer, UW System Administration
- Brent Tilton, Director of Procurement. UW System Administration

BACKGROUND

<u>Regent Policy Document 13-1</u> requires any grant or contract with private, profit-making organizations in excess of \$1,000,000 be presented to the Board of Regents for formal approval prior to execution.

<u>Section 36.59, Wis. Stats</u>., requires all UW institutions to adopt and submit to the Board of Regents annual strategic plans for the utilization of information technology no later than

March 1st of each year to cover the following fiscal year. <u>Regent Policy Document 25-4</u> requires that all projects over \$1 million or defined as high-risk be approved by the Board before the project can begin.

Related Policies

- <u>Section 36.59, Wis. Stats</u>., "Information Technology"
- <u>Regent Policy Document 25-4</u>, "Strategic Planning and Large or High-Risk Projects"
- <u>Regent Policy Document 13-1</u>, "General Contract Signature Authority, Approval, and Reporting"

ATTACHMENT

A) Project Summary for the Project Added to the UW System Strategic IT Plan

PROJECT SUMMARY FOR THE PROJECT ADDED TO THE UW SYSTEM STRATEGIC IT PLAN

Wireless Network Refresh (UWL)



Milestone

Request for

Approval

Description: Increase wireless capacity and improve reliability by replacing aging and endof-life equipment to support the growing demand of wireless across the campus. This project will focus on the switches that support the wireless services.

Impact: Maintain the growing use of wireless access to support students in the classroom, help maintain a secured environment, and support any emergency notifications when needed. Providing adequate and consistent service is critical, especially with the number of students living on campus.

Notes: The final design was based on two studies from third-party vendors to address the increased wireless demands from COVID-19.

<u>Timeline</u> August 2022 – June 2023

> Budget \$2,400,000

Source of Funds

Federal Higher Education Emergency Relief Fund (HEERF)

<u>Current Status:</u>			
Schedule			
Scope			
Budget			
Other			

April 7, 2022

UNIVERSITY OF WISCONSIN SYSTEM TRUST FUNDS QUARTERLY INVESTMENT REPORT AS OF DECEMBER 31, 2021

REQUESTED ACTION

No action is required; this item is for information only.

SUMMARY

As of December 31, 2021, UW System Trust Funds assets totaled \$758.8 million, comprised of \$610.1 million in the Long Term (endowment) Fund and \$148.7 million in the Income Cash Fund (a component of the State Investment Fund). Cash flows into/out of the SWIB-managed portfolios for the period included a \$163,757 contribution from the Long Term Fund. There was also a distribution of \$3,594,361 from the private markets portfolio. \$340,252 was contributed to the SWIB-managed funds for payment of fees.

The emergence of a new Covid-19 variant (Omicron) in November dampened market performance and put pressure on central banks as they faced rising inflation rates on the back of supply chain disruptions. In December, markets rebounded as the new variant was reported to be less severe than expected despite higher transmissibility. The Fund's public equity investments increased +5.58% during the quarter, while the bond investments returned +0.12% and the inflation sensitive investments returned +3.48%.

For the quarter ended December 31, the well-diversified Long Term Fund increased in value +4.50% (before fees), while the UW Fund Custom Benchmark increased +4.47%. The Income Cash Fund gained +0.02% for the period.

Presenters:

- Charles Saunders, Executive Director, UW System Administration Office of Trust Funds
- Rob Thornton, Business Director, State of Wisconsin Investment Board

BACKGROUND

The attached UW System Trust Funds Quarterly Investment Review as of December 31, 2021, prepared by the State of Wisconsin Investment Board (SWIB), provides the following information: 1) an overview and summary of total Trust Funds assets, investment performance, and cash flows to/from the SWIB-managed portfolios for the period; 2) a market discussion and commentary section; 3) market overview indicators; 4) asset allocation information; 5) more detailed investment performance information at the overall Fund as well as individual asset class levels; and 6) in the appendix, detailed "fact sheets" for each of the BlackRock common trust index funds, which have been selected by SWIB to provide for Trust Funds' investments in public markets.

ATTACHMENT

A) University of Wisconsin System Trust Funds Quarterly Investment Review December 31, 2021



University of Wisconsin System Trust Funds



Quarterly Investment Review December 31, 2021

Investment Objective

To achieve, net of administrative and investment expenses, reasonable, attainable and sustainable returns over and above the rate of inflation. SWIB seeks to achieve this objective through the use of passive, externally-managed, public markets funds.

Market Values as of December 31, 2021

Income Cash Fund (State Investment Fund 'SIF') 4	\$148,699,000
Total UW System Long Term Fund ³	\$610,064,100
Other Cash and Accruals ²	\$162,973
Total Legacy Private Market Assets ¹	\$97,074,758
Total Public Market Assets ¹	\$512,826,369

1 Market values are net of accrued external investment management fees, and internal UW fees.

2 Other Cash and Accruals include custody & middle office fees, SWIB internal management fees, fund-level STIF cash, STIF interest and other pass through fees that either accrue until paid or are pre-paid. Balances vary intra-month and can cross into new quarters.
3 Market values are net of SWIB internal and external investment management fees, custody & middle office fees, other pass through fees accrued and paid, and internal UW fees.

4 Data is sourced from the Quarter End Pool Sheets provided by the DOA and represents the monies available in UW Funds 161 and 162 (STAR account(s) 51100 and 51200).

Performance for Quarter Ended December 31, 2021

	Oct-21	Nov-21	Dec-21	3 Months
UW System Long Term Fund (Gross of Fees)	2.55%	-1.20%	3.14%	4.50%
UW System Long Term Fund (Net of All Fees) 5	2.54%	-1.20%	3.14%	4.49%
UW Fund Custom Benchmark	2.52%	-1.20%	3.14%	4.47%

5 Returns are net of SWIB internal and external investment management fees, custody & middle office fees, and other pass through fees accrued and paid. Returns are gross of internal UW fees.

Contributions/Withdrawals for Quarter Ended December 31, 2021

UW System Long Term Fund - Public Markets ⁶	\$163,757
UW System Long Term Fund - Private Markets 7	(\$3,594,361)
UW System Long Term Fund Contributions for Fees	\$340,252
UW System Long Term Fund Fees Expensed ⁸	(\$156,184)

6 Amount represents the net of new contributions and withdrawals by UWS, including endowment spending distributions, assessment of UWS internal fees, as well as reallocations among the public and private market portfolios.

7 Distributions from StepStone and other private market underlying funds are net of external investment management fees paid.

8 Fees expensed can include external and internal management fees, custody & middle office fees, and other pass through fees accrued and paid from both the public and private market accounts.

Performance and Market Discussion

For the quarter ended December 31st, the UW investment portfolio returned +4.50%, performing in-line with its benchmark.

The emergence of a new Covid-19 variant (Omicron) in November dampened market performance and put pressure on central banks as they faced rising inflation rates on the back of supply chain disruptions. In December, markets rebounded as the new variant was reported to be less severe than expected despite higher transmissibility.

In the U.S., preliminary data indicated the Covid-19 vaccine is effective against the new variant, and as the Federal reserve shared more clarity on next year's policy path, the market recovered and finished the quarter with a strong positive return. The Fed conceded the non-transitory nature of inflation and brought forward the dates of tapering to spring 2022. The falling unemployment rate and the \$550bn bipartisan infrastructure bill signed by President Biden supported the positive market sentiment over the quarter.

Equity Performance

The UW System's combined equity portfolio returned +5.58% during the quarter versus the combined equity benchmark return of +5.52%.

The U.S. broad-market Russell 3000 Index increased 9.28% in the fourth quarter of 2021.

Following a strong earnings season that boosted the positive sentiment early in the quarter, the emergence of the new Covid-19 variant (Omicron) and the concerns about higher inflation rates weighed down on the U.S. market performance in November. However, preliminary data showed that the vaccine is effective against Omicron, and the Federal Reserve shared more clarity on next year's policy path, leading to strong positive returns to end the fourth quarter. The falling unemployment rate and the \$550bn bipartisan infrastructure bill signed by President Biden supported the market performance over the quarter.

From a GICS sector perspective, Information Technology (+13.51%), Real Estate (+13.09%) and Utilities (+12.23%) were among the best performers. While Communication Services (-1.14%), Financials (+3.43%), and Energy (+5.28%) were among the worst performers.

The MSCI World ex-U.S. Index returned 3.14% during the quarter.

Developed non-U.S. equity markets posted a gain in October on the back of strong corporate earnings reports and robust economic data. However, the emergence of the new Covid-19 variant (Omicron) dampened markets performance in November and put pressure on central banks as they faced rising inflation rates on the back of supply chain disruptions. In December, markets rebounded as the new variant was reported to be less severe than expected despite higher transmissibility.

In Europe, the market recovered in December after the concerns regarding the new variant were lessened. The European Central Bank committed to end the emergency bond buying program in March but promised to keep low borrowing costs over 2022 and to keep the door open for restarting emergency support in the event of turbulence. On the other hand, the Bank of England raised the policy interest rate in December from 0.10% to 0.25%, signaling that the inflation risk outweighed the disruptions risk of the Omicron variant.

UW System Trust Funds: Market Discussion & Commentary Quarter Ended December 31, 2021

Asian developed markets finished the quarter in negative territory. The uncertainty of the impact of Omicron and the higher commodity prices weighed down on the performance of Asian markets. Japanese equities were the worst performer on the back of a weakened Yen and renewed ambiguity regarding new mobility restrictions.

From a sector perspective, Utilities (+7.16%), Materials (+6.64%), and Consumer Staples (+5.01%) were the best performers. Communication Services (-5.88%), Real Estate (-0.57%), and Energy (+0.41%) were the worst performers.

Emerging markets equities, as represented by the MSCI Emerging Market Index, posted a quarterly return of -1.31%.

Emerging markets equities declined over the quarter due to exacerbating inflationary pressures and supply chain disruptions. The market downturn in November washed out the slight positive return in October and December. The results were mixed among EM as each country is at a different stage of its economic recovery with differing constraints, economic conditions, and inflation rates.

The Chinese market lost momentum over the quarter as it grappled with a slowing manufacturing sector, debt problems in the property market and Covid-19 resurgence. China maintained a zero-tolerance approach for new Covid-19 cases and re-imposed lockdown restrictions. The strong economic data and the pickup in e-commerce and technology sectors that were negatively impacted by regulatory actions earlier in the year, supported the market performance, but were not enough to offset the market decline in November.

Turkey dominated the EM news and was the worst performer over the quarter. The country found itself in the throes of a currency crisis coupled with rising cyclical inflation. The currency struggles were a result of a series of interest rate cuts by Turkey's central bank which has been overhauled by President Erdogan.

Net energy exporters like Russia, Saudi Arabia, and Colombia finished the quarter in negative territory as crude oil prices tumbled in November. Crude oil slid over fears of the Omicron variant, and the derailment this would potentially cause to the global economic recovery.

Fixed Income Performance

The UW System's Government/Credit index fund returned +0.12% for the quarter, while the Bloomberg Barclays U.S. Government/Credit Index posted a return of +0.18%.

In December, the Federal Open Market Committee (FOMC) doubled the pace of tapering signaling that asset purchases will be reduced by \$20 billion per month for treasuries and \$10 billion per month for agency MBS. The FOMC prescribed the reduction for January and, at the new pace, will wrap up asset purchases in the middle of March. When finished, the Chair said he doesn't expect an extended wait time between the end of asset purchases and rate hikes. This was reflected in the December Summary of Economic Projections (SEP) and dot plot which showed that participants expect that three hikes will be appropriate in 2022. All FOMC participants expect the maximum employment portion of the mandate to be met next year. However, the committee could raise rates before reaching maximum employment. The Chair referred to the balanced approach provision in the framework that addresses times when the maximum employment and price stability goals are not complementary. Under these scenarios the committee takes account of the distance from the goal and the speed at which they're approaching it. This provision will enable them to raise rates because of high inflation, before achieving maximum employment. However, in the Chair's opinion, they are making rapid progress towards maximum employment. The Chair sounded less confident on the pick-up in labor supply than he has previously, highlighting aging population and retirements – a demographic unlikely to re-join the labor force.

UW System Trust Funds: Market Discussion & Commentary Quarter Ended December 31, 2021

Inflation is no longer described as 'transitory' and the risk of more persistent, higher inflation has increased, reflected in the SEP which showed higher core and headline inflation through 2023. November Core CPI, released in December, increased 0.53% MoM, almost exactly in line with consensus average expectations for a 0.52% MoM increase, pushing the year-over-year figure to 4.58%. There were large increases in specific CPI components such as rents, owners'-equivalent-rent (OER), used vehicles and airfares with broad based strength across both goods and services components. Energy prices increased 3.5% over the month and food prices increased 0.7% pushing headline CPI up 0.78% over the month, and up 6.88% year-over-year. This marks the highest level of inflation since 1982.

In December the Bloomberg US Credit Index tightened 7bps to 87bps, outperforming duration-matched Treasuries by 58bps. Although Omicron cases continued to rise in December, preliminary data suggesting the variant will be less severe despite higher transmissibility and that vaccines will mostly be effective moved the market back to a risk-on tone over the month. Credit spreads contracted after widening in November, and risk assets were further propelled by the Federal Reserve's updated forecast for three rate hikes in 2022. In the primary market, December was an interesting month setting both a record for the most issuance in December (\$62bn) and the earliest date the market "shut-down" with the last deal printing in the second week of the month. Total gross supply for the year was \$1.67tn. While this was more than most analysts expected, net supply only printed \$560bn which, in light of strong demand over the year, provided a supportive technical environment for investment grade credit.

Inflation Sensitive Performance

The Bloomberg Barclays U.S. TIPS Index returned +2.36% for the quarter ended December 31st. The UW System's TIPS portfolio returned +2.33%.

In Q4 of 2021, the Bloomberg Barclays US TIPS Index returned 2.36%. Breakevens in the U.S. surged as trading in nominal and real rates bifurcated significantly. Investors focused on the development of the Delta and Omicron variants, and the Federal Reserve's (Fed) further guidance on the central outlook for monetary policy. The Senate and House of Representatives approved the bill to raise the U.S. debt ceiling temporarily and avert a potential default. On November 5th, the House of Representatives passed President Biden's \$1.2 trillion bipartisan infrastructure bill. Over the quarter, 10year real rates decreased ~20 bps while 10-year nominal rates sold off ~2 bps. The movement contributed to a ~22 bps expansion in 10-year inflation expectations to ~2.59%. Inflation data over the quarter printed stronger than expected. October's Core CPI increased by ~0.6% MoM or ~4.6 % YoY, while headline CPI increased ~0.9% MoM or ~6.2 % YoY. November's CPI data was in line with consensus. Core CPI increased by ~0.5% MoM or ~5.0 % YoY, while headline CPI increased ~0.8% MoM or ~6.9 % YoY. Details showed core components, such as Rents and Owners' Equivalent Rent (OER), used vehicles and airfares were the largest contributors to this gain. This marks the highest level of inflation since 1982. The labor market recovery was strong but showed signs of slowing due to increasing difficulties filing vacant positions and the looming uncertainties around the Delta variant. Non-farm payroll roared ahead in October, adding ~531k jobs. Hiring in November slowed as the headline number printed well below the consensus, adding only 210k jobs vs. the estimated 550k. However, the underlying details of the November report showed a very strong labor market, with labor force participation increasing to 61.85% MoM, the highest level since the pandemic trough in April 2020. The Federal Open Market Committee (FOMC) stated, on Wednesday, December 15th, that they will double the pace of the taper, resulting in asset purchases being reduced by \$20 billion for Treasuries and \$10 billion for agency MBS. In contrast to the prior QE taper plan, Chair Powell doesn't expect an extended wait time between ending taper and raising rates. Notably, inflation is no longer described as 'transitory', and the risk of more persistent, higher inflation has increased.

The UW System's REIT portfolio returned +10.22% during the quarter. The FTSE EPRA NAREIT Developed Index returned +10.16% in Q4.

UW System Trust Funds: Market Discussion & Commentary Quarter Ended December 31, 2021

Global REITs returned +10.4% in Q4 after losing -0.7% in Q3 2021 bringing the 2021 return to 27.2%. Global REITs outperformed both the FTSE Developed Index and MSCI World Index in 2021, which returned 21.4% and 21.8%, respectively. And, in Q4 2021, global REITs outperformed the FTSE Developed Index which returned +7.6% and the MSCI World Index which returned +7.2%. As of 12/31/2021, global REITs had a dividend yield of 2.96%, compared to 1.66% for the FTSE Developed Index and 1.67% for the MSCI World Index.

U.S. REITs closed out Q4 with positive returns (+21.6%) surpassing the S&P 500 Index which gained +11.0% and the Russell 1000 Index which gained +9.8%. Global REITs performed in line with major US indexes and outperformed global indexes in 2021, but US REITs outperformed the US indexes by over 10% (+43.2% return in 2021 compared to +26.5% for Russell 1000 Index and +28.7% for S&P 500 Index). This was the second largest annual return for the index since inception in 1971. Investors turned to REITs as inflation picked up in the second half of 2021. Historically, REITs have performed well during periods of high and moderate inflation.

While all REIT sectors besides Mortgage REITs contributed to REIT's stellar performance in Q4 there were several standouts. Regional Mall REITs as well as Self-Storage REITs ended Q4 up +44.4%. Following closely behind were Industrial REITs up +40.9% in Q4. Regional Malls and Self-Storage REITs continued their epic run in Q4 bringing their 2021 returns to +92.1% for Regional Malls and +79.4% for Self-Storage REITs. Industrials REITs also finished out 2021 with a whopping +62.0% return attributable to a rise in e-commerce. Industrial REITs own properties such as warehouses and distribution centers which play a huge role in the supply chain of e-commerce companies.

Other notable gains in Q4 include Residential REITs up +26% in the quarter, with Apartment REITs being the highest contributor in that sector. People are moving back to the cities and rents are rising. And, within Retail REITs, Shopping Center REITs were up +25.5% helping that sector in addition to the +44.4% return of Regional Malls in Q4. With the supply chain disruptions amid the holiday shopping season, consumers are coming back to brick and mortar stores to get their goods quicker.

Real Estate holds a weight of 2.8% in the MSCI World Index and accounted for 3.9% of the total return in Q4 which is more than its weight in the index. The MSCI World Index returned 7.2% over the quarter and the Real Estate sector contributed 0.30% of that return. Over the 1-year period in 2021, Real Estate accounted for 3.5% of the index's total return, still greater than its weight in the index. The only other sectors that contributed more than their weight to the index's total return as a percentage in 2021 were Energy, Tech and Financials. In global REITs, at the country level, the US and UK were the largest contributors to positive performance while France, Germany and Japan were the only 3 countries to detract from performance in Q4.

Asset Allocation

Public Markets allocations ended the quarter with 59.2% in equities, versus a target of 57%; 18.3% in fixed income versus a target of 20%; and 22.5% in inflation sensitive assets versus a target of 23%.

UW System Trust Funds: Market Overview

Quarter Ended December 31, 2021

Economic Indicators	Quarter Ending	YTD	1 Year	3 Year	5 Year	10 Year
US CPI - U All Urban Consumers Index	1.64%	7.04%	7.04%	3.53%	2.92%	2.14%

* All returns and growth rates greater than 1 year are annualized.

Market Indicators	Quarter Ending	YTD	1 Year	3 Year	5 Year	10 Year
U.S Large Cap Stocks (S&P 500 Index)	11.03%	28.71%	28.71%	26.07%	18.47%	16.55%
U.S. Small Cap Stocks (Russell 2000 Index)	2.14%	14.82%	14.82%	20.02%	12.02%	13.23%
U.S. Broad Market Stocks (Russell 3000 Index)	9.28%	25.66%	25.66%	25.79%	17.97%	16.30%
International Stocks (MSCI World ex US Index)	3.14%	12.62%	12.62%	14.07%	9.63%	7.84%
International Stocks - Local Currency (MSCI World ex US Index)	4.21%	19.30%	19.30%	13.62%	8.42%	9.90%
Emerging Markets Stocks (MSCI EM Net Index)	-1.31%	-2.54%	-2.54%	10.94%	9.87%	5.49%
Global Stocks (MSCI ACWI Net Index)	6.10%	18.22%	18.22%	20.20%	14.12%	11.84%
Government/Credit (Bloomberg Barclays Capital Gov/Credit)	0.18%	-1.75%	-1.75%	5.50%	3.99%	3.13%
U.S. TIPS (Bloomberg Barclays U.S. TIPS Index)	2.36%	5.96%	5.96%	8.44%	5.34%	3.09%
Real Estate (FTSE EPRA/NAREIT Developed Net Index)	10.16%	26.09%	26.09%	11.82%	7.81%	8.64%

* All returns and growth rates greater than 1 year are annualized.



* Asset Class Allocation percentages are derived using the Net of Fee market value. Sum of asset class market values may not equal total level Net of Fee market value due to the exclusion of fund level other cash and accruals. Excluded amount is immaterial.

UW System Trust Funds: Actual Versus Target Asset Allocation Quarter Ended December 31, 2021								
Asset Class/Strategy	Current Allocation (\$)	Current Allocation (%)	Target Allocation (%)	Min./Max. Guidelines				
Total Public Markets	\$512,826,369	100.0%	100.0%					
Public Equities	\$303,663,775	59.2%	57.0%	51-63%				
Global Equities	\$258,278,377	50.4%	48.0%	44-52%				
Hedged Non-U.S. Equities (Developed Markets)	\$30,284,699	5.9%	6.0%	5-7%				
Emerging Markets Equities	\$15,100,699	2.9%	3.0%	2-4%				
Fixed Income	\$93,971,822	18.3%	20.0%	18-22%				
Investment Grade Government/Credit	\$93,971,822	18.3%	20.0%	18-22%				
Inflation Sensitive	\$115,190,772	22.5%	23.0%	20-26%				
TIPS (Treasury Inflation Protection Securities)	\$97,593,432	19.0%	20.0%	18-22%				
REITS (Real Estate Investment Trusts)	\$17,597,341	3.4%	3.0%	2-4%				
Private Markets ²	\$97,074,75 8							
Terrace Holdings II	\$97,074,758							
Other Cash and Accruals ³	\$162,973							
4 Long Term Fund Total Assets 1 There is a statutory limitation of 85% maximum exposure to public equiti	\$610,064,100							

1 There is a statutory limitation of 85% maximum exposure to public equities. (§36.29)

2 Private Markets is not included in the target allocation. The Terrace Holdings II Fund comprises private equity funds of J.P. Morgan, Adams Street Partners, and a TRG Forestry Fund.

3 Other Cash and Accruals include custody & middle office fees, SWIB internal management fees, fund-level STIF cash, STIF interest and other pass through fees that either accrue until paid or are pre-paid. Balances vary intra-month and can cross into new quarters.

4 Market values are net of SWIB internal and external investment management fees, custody & middle office fees, other pass through fees accrued and paid, and internal UW fees.

Rebalancing Policy:

The asset allocation of fund investments shall be reviewed at the end of each quarter. Quarterly net capital flows to/from the UW System shall be utilized to rebalance toward the target allocations. If the allocation by asset class falls outside the rebalance range following quarterly cash flows, assets will be systematically rebalanced back to the target allocation as soon as practicable and in any event prior to the next quarterly net capital flows. Only the Public Markets allocations will be included in any rebalancing. The legacy Private Markets investments will receive additional inflows based only upon past commitments. No new commitments will be made to private markets. Eventually the legacy Private Markets investments will self-liquidate as distributions are made from existing funds without any new commitments.

Guidelines

Current SWIB Guidelines for UW can be found at https://www.swib.state.wi.us/statutes-guidelines under Board of Trustees State Investment Fund & Separately Managed Funds Investment Guidelines.

UW System Trust Funds: Investment Performance Analysis Quarter Ended December 31, 2021

Fund and Benchmark Performance Data	Quarter Ending	Year to Date	One Year	Three Years	Five Years	Since Inception
UW System Long Term Fund	4.50%	17.22%	17.22%	15.94%		11.75%
UW Fund Custom Benchmark	4.47%	17.05%	17.05%	15.67%		11.45%
CPI + Spending Rate ³	2.63%	11.29%	11.29%	7.66%	7.03%	7.11%
Income Cash Fund (SIF) ⁴	0.02%	0.06%	0.06%	0.93%	1.11%	1.16%

Performance results for the UW System Long Term Fund are shown below, both graphically and in table format.

1 The UW System Long Term Fund's return is a gross of fees return. Inception date is 4/1/2018.

2 The "UW Fund Custom Benchmark" is asset weighted using the UW Public Equity Benchmark, the Bloomberg U.S. Gov't/Credit Index, the Inflation Sensitive Benchmark, and the net Terrace Holdings II returns. The Bloomberg U.S. Gov't/Credit Index, and the Bloomberg Barclays U.S. TIPS Index are gross returns. All other benchmark components are net returns (net of fees or tax withholdings on dividends). The Private Markets Benchmark change has been approved by both the Investment and Benchmark Committees.

3 The annual spending rate is 4.0% and the change in CPI is used as the inflation indicator.

4 Relevant to the extent recipients have allocated a portion of their funds to the Income Cash Fund (SIF). The Income Cash Fund (SIF) is used for receiving spending distributions from the Long Term Fund. UW investment account holders may also allocate a portion of their expendable principal to this fund.



UW System Trust Funds: Fund and Benchmark Performance Data by Asset Class

Quarter Ended December 31, 2021

Asset Class/Strategy	Quarter	YTD	One Year	Three Years	Since Inception
– UW System Long Term Fund					
Gross of Fees	4.50%	17.22%	17.22%	15.94%	11.75%
Net of Fees	4.50%	17.19%	17.19%	15.90%	11.70%
Net of All Fees	4.49%	17.13%	17.13%	15.83%	11.64%
UW Fund Custom Benchmark ¹	4.47%	17.05%	17.05%	15.67%	11.45%
Public Equities					
Gross of Fees	5.58%	17.53%	17.53%	19.38%	12.42%
Net of Fees 2	5.57%	17.50%	17.50%	19.35%	12.39%
2 UW Public Equity Benchmark	5.52%	17.26%	17.26%	19.20%	12.18%
Blackrock MSCI ACWI Index Fund B ³	C 4 C0/	40.400/	10,100/	20 570/	42.200
Gross of Fees	6.16%	18.49%	18.49%	20.57%	13.289
Net of Fees	6.15%	18.47%	18.47%	20.54%	13.269
MSCI ACWI IM Net Index	6.10%	18.22%	18.22%	20.20%	12.89%
Blackrock EAFE Currency Hedged Equity Index Fund B ³					
Gross of Fees	4.24%	19.53%	19.53%	15.13%	10.36%
Net of Fees	4.23%	19.48%	19.48%	15.08%	10.32%
MSCI EAFE Net 100% USD Hedged Index	4.21%	19.43%	19.43%	15.12%	10.28%
Blackrock Emerging Markets Free Fund B ³					
Gross of Fees	-1.28%	-2.75%	-2.75%	10.70%	3.64%
Net of Fees	-1.30%	-2.80%	-2.80%	10.64%	3.59%
MSCI Emeging Markets Net Dividend Index	-1.31%	-2.54%	-2.54%	10.94%	3.80%
ixed Income					
Blackrock Government/Credit Bond Index Fund B ³					
Gross of Fees	0.12%	-1.74%	-1.74%	5.62%	4.829
Net of Fees	0.12%	-1.76%	-1.76%		4.80%
Bloomberg Barclays U.S. Government/Credit Bond Index	0.18%	-1.75%	-1.75%	5.50%	4.70%
Inflation Sensitive					
Gross of Fees	3.48%	8.80%	8.80%	9.50%	7.45%
Net of Fees	3.48%	8.78%	8.78%	9.48%	7.42%
Inflation Sensitive Benchmark	3.38%	8.48%	8.48%	9.10%	7.06%
Blackrock U.S. Treasury Inflation Protected Securities Fund B ³					
Gross of Fees	2.33%	5.97%	5.97%		6.75%
Net of Fees	2.33%	5.95%	5.95%		6.749
Bloomberg Barclays U.S. TIPS Index, Series L	2.36%	5.96%	5.96%	8.44%	6.569
Blackrock Developed Real Estate Index Fund B ³				,	
Gross of Fees	10.22%	26.97%	26.97%		9.82
Net of Fees	10.21%	26.87%	26.87%		9.74
FTSE EPRA/NAREIT Developed Net Index	10.16%	26.09%	26.09%	6 11.82%	9.01
Private Markets					
Terrace Holdings II 5					
Gross of Fees	6.80%	53.68%	53.68%	6 23.45%	21.40
Net of Fees 6	6.80%	53.68%	53.68%		21.21
UW Private Equity Benchmark	6.80%	53.68%	53.68%	6 23.29%	21.21

* Net of Fee Returns are net of accrued external manager fees (e.g. BlackRock fees). Net of All Returns are net of SWIB internal and external investment management fees, custody & middle office fees, and other pass though fees accrued and paid. Returns are gross of internal UW fees. All Funds have an inception date of 04/01/2018.

1 The "UW Fund Custom Benchmark" is asset weighted using the UW Public Equity Benchmark, the Bloomberg U.S. Gov't/Credit Index, the Inflation Sensitive Benchmark, and the net Terrace Holdings II returns. The Bloomberg U.S. Gov't/Credit Index, and the Bloomberg Barclays U.S. TIPS Index are gross returns. All other benchmark components are net returns (net of fees or tax withholdings on dividends).

2 The "UW Public Equity Benchmark" is comprised of 84% MSCI ACW IM Net Index, 11% MSCI EAFE Net 100% USD Hedged Index, and 5% MSCI Emerging Markets Net Index. 3 Effective 3Q 2021, the valuation frequency for Blackrock mutual funds has been modified from monthly to daily. To correct for the impact of large cash flows, the performance was restated from April 2020 to July 2021 and the revised numbers are included in the 9/30/2021 performance. Note that no impact to performance occurred at the mandate level. 4 The "Inflation Sensitive Benchmark" is comprised of 87% Bloomberg Barclays U.S. TIPS Index, Series L and 13% FTSE EPRA/NAREIT Developed Net Index.

5 The Private Markets valuation update occurs on a lag. The portfolio's performance is updated when SWIB receives an updated quarterly statement, which may not occur in every quarter. The net of fees and net of all returns are net of StepStone manager fees.

6 The "Private Equity Benchmark" is comprised of the net of fees return of Terrace Holdings II, a Private Equity fund of funds being administered by StepStone.

APPENDIX


A common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC") for investment of fiduciary client assets held by BTC in its capacity as trustee

Investment objective and strategy

The Developed Real Estate Index Fund B (the "Fund") is an index fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. The Fund invests in US and non-US equity securities whose total return will approximate as closely as practicable the capitalization weighted total return net of dividend withholding taxes of the Benchmark listed herein. The investment universe consists of publicly traded real estate equity securities of issuers whose principal business is the ownership and operation of real estate as defined by the Benchmark listed herein.

Performance

Total return % as of 12/31/2021 (return percentages are annualized as of period end)

	Q4*	YTD*	1 Year*	3 Year	5 Year	Since Inception
Fund return %	10.22	26.95	26.95	12.51	8.57	6.84
Benchmark return %	10.16	26.09	26.09	11.82	7.81	6.10
Difference	0.06	0.86	0.86	0.69	0.76	0.74

Performancedisclosure:

The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. Past performance is not necessarily an indicator of future performance.

Period returns for less than one year are cumulative

Investment details (as of 12/31/2021)

Benchmark	FTSE EPRA/NAREIT Developed Index
Total fund assets	\$0.51 billion
Fund inception date	11/18/2014

Characteristics (as of 12/31/2021)

	Fund	Benchmark
Number of securities	351	379
Dividend yield	2.82	2.82

Top 10 holdings (as of 12/31/2021)

	Country	Fund (% assets)
Prologis REIT Inc	United States	5.99
Equinix REIT Inc	United States	3.64
Public Storage REIT	United States	2.74
Simon Property Group REIT Inc	United States	2.50
Digital Realty Trust REIT Inc	United States	2.40
Vonovia SE	Germany	2.09
Realty Income REIT Corp	United States	1.92
Welltower Inc	United States	1.79
AvalonBay Communities REIT Inc	United States	1.69
Alexandria Real Estate Equities RE	United States	1.65

Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Country allocation (% as of 12/31/2021)



Sources: BlackRock, FTSE International Ltd

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100% due to rounding, exclusion of cash, STIF and other statistically immaterial factors.



The Developed Real Estate Index Fund B is not in any way connected to or sponsored, endorsed, sold or promoted by the London Stock Exchange Group plc and its group undertakings (collectively, the "LSE Group"), European Public Real Estate Association ("EPRA"), or National Association of Real Estate Investments Trusts ("NAREIT") (together, the "Licensor Parties"). The Licensor Parties do not accept any liability whatsoever to any person arising out of the use of Developed Real Estate Index Fund B or the underlying data.

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The Fund is also subject to other key risks, as described in the Fund's Collective Investment Fund Profile. Some or all of those risks may adversely affect the value of units in the Fund, yield, total return and the Fund's ability to meet its investment objective. See the Collective Investment Fund Profile for additional information.

Past performance does not guarantee future results. Investment return and principal value of an investment will fluctuate so that an investor's units, when redeemed, may be worth more or less than the original cost. Any opinions expressed in this publication reflect our judgment at this date and are subject to change. No part of this publication may be reproduced in any manner without the prior written permission of BTC. The Fund's net asset value does not include an a ccrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. Risk controls, asset allocation models and proprietary technology do not promise any level of performance or guarantee against loss of principal.

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BES-0161

BlackRock.

MSCI EAFE Currency Hedged Equity Index Fund B

A common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC") for investment of fiduciary client assets held by BTC in its capacity as trustee

Investment objective and strategy

The MSCI EAFE Currency Hedged Equity Index Fund B (the "Fund") is an index fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. The Fund invests primarily in international equity securities whose total return will approximate as closely as practicable the cap weighted total return of the markets in certain countries for equity securities outside the US, while seeking to eliminate variations based solely on the value of the currencies in the Fund as compared to the US dollar. The primary criterion for selection of investments in the Fund is the Benchmark listed herein.

Performance

Total return % as of 12/31/2021 (return percentages are annualized as of period end)

	Q4*	YTD*	1 Year*	3 Year	5 Year	Since Inception
Fund return %	4.23	19.49	19.49	15.11	10.21	11.11
Benchmark return %	4.21	19.43	19.43	15.12	10.17	11.09
Difference	0.02	0.06	0.06	-0.01	0.04	0.02

Performancedisclosure:

The Fund's net assetvalue does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. **Past performance is not necessarily an indicator of future performance.**

* Period returns for less than one year are cumulative

Sector allocation

% of Fund or Benchmark as of 12/31/2021



Investment details (as of 12/31/2021)

Benchmark	MSCI EAFE 100% Hedged to USD Net Dividend Return Index
Total fund assets	\$0.15 billion
Fund inception date	04/30/2016

Characteristics (as of 12/31/2021)

	Fund	Benchmark
Number of securities	834	830
Dividend yield	2.34	2.34

Top 10 holdings (as of 12/31/2021)

	Country	Fund (% assets)
Nestle SA	Switzerland	2.28
ASML Holding NV	Netherlands	1.92
Roche Holding Par AG	Switzerland	1.69
LVMH	France	1.32
Toyota Motor Corp	Japan	1.12
Novartis AG	Switzerland	1.12
Novo Nordisk Class B	Denmark	1.10
AstraZeneca PLC	United Kingdom	1.05
Sony Group Corp	Japan	0.92
SAP	Germany	0.86

Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Country allocation (% as of 12/31/2021)



Sources: BlackRock, MSCI Inc.

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The funds or securities referred to herein are not sponsored, endorsed, or promoted by MSCI, and MSCI bears no liability with respect to any such funds or securities or any index on which such funds or securities are based. The Prospectus contains a more detailed description of the limited relationship MSCI has with BlackRock and any related funds.

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The Fund is also subject to other key risks, as described in the Fund's Collective Investment Fund Profile. Some or all of those risks may adversely affect the value of units in the Fund, yield, total return and the Fund's ability to meet its investment objective. See the Collective Investment Fund Profile for additional information.

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It is not possible to directly invest in an unmanaged index.

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BES-0161

BlackRock.

MSCI Emerging Markets Free Fund B

A common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC") for investment of fiduciary client assets held by BTC in its capacity as trustee

Investment objective and strategy

The MSCI Emerging Markets Free Fund B (the "Fund") is an index fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. The Fund invests primarily in international equity securities of issuers in emerging markets, with the objective of providing returns which approximate as closely as practicable the capitalization weighted total rates of return of the markets in certain countries for equity securities traded outside of the United States. The primary criterion for selection of investments in the Fund shall be the Benchmark listed herein.

Performance

Total Return % as of 12/31/2021 (return percentages are annualized as of period end)

	Q4*	YTD*	1 Year*	3 Year	5 Year	10 Year	Since Inception
Fund return %	-1.29	-2.76	-2.76	10.68	9.69	5.36	7.64
Benchmark return %	-1.31	-2.54	-2.54	10.94	9.87	5.49	7.75
Difference	0.02	-0.22	-0.22	-0.26	-0.18	-0.13	-0.11

Performancedisclosure:

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* Period returns for less than one year are cumulative

Sector allocation

% of Fund or Benchmark as of 12/31/2021



Sources: BlackRock, MSCI Inc.

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Investment details (as of 12/31/2021)

Benchmark	MSCI Emerging Markets Net Dividend Return Index
Total fund assets	\$4.41 billion
Fund inception date	07/31/2000

Characteristics (as of 12/31/2021)

	Fund	Benchmark
Number of securities	1,432	1,418
Dividend yield	2.05	2.05

Top 10 holdings (as of 12/31/2021)

	Country	Fund (% assets)
Taiwan Semiconductor Manufacturing	Taiwan Rep of China	6.94
Tencent Holdings Ltd	China	4.28
Samsung Electronics Ltd	South Korea	3.98
Alibaba Group Holding Ltd	China	2.94
Meituan	China	1.50
Reliance Industries Ltd	India	1.15
Infosys Ltd	India	1.10
China Construction Bank Corp H	China	0.84
MediaTek Inc	Taiwan Rep of China	0.82
SK Hynix Inc	South Korea	0.76

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Country allocation (% as of 12/31/2021)





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The Fund is also subject to other key risks, as described in the Fund's Collective Investment Fund Profile. Some or all of those risks may adversely affect the value of units in the Fund, yield, total return and the Fund's ability to meet its investment objective. See the Collective Investment Fund Profile for additional information.

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BES-0161

BlackRock.

BlackRock. MSCI ACWI IMI Index Fund B

A common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC") for investment of fiduciary client assets held by BTC in its capacity as trustee

Investment objective and strategy

The MSCI ACWI IMI Index Fund B (the "Fund") is an index fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. The Fund invests primarily in U.S. and non-U.S. equity securities with the objective of approximating as closely as practicable the capitalization weighted rates of return of the markets in certain countries for publicly traded equity securities. The primary criterion for selection of investments in the Fund shall be the Benchmark listed herein.

Performance

Total Return % as of 12/31/2021 (return percentages are annualized as of period end)

	Q4*	YTD*	1 Year*	3 Year	5 Year	10 Year	Since Inception
Fund return %	6.16	18.46	18.46	20.51	14.45	12.22	10.51
Benchmark return %	6.10	18.22	18.22	20.20	14.12	11.84	10.15
Difference	0.06	0.24	0.24	0.31	0.33	0.38	0.36

Performancedisclosure:

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* Period returns for less than one year are cumulative

Sector allocation

% of Fund or Benchmark as of 12/31/2021



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Investment details (as of 12/31/2021)

Benchmark	MSCI ACWI IMI Net Dividend Return Index
Total fund assets	\$4.73 billion
Fund inception date	03/23/2010

Characteristics (as of 12/31/2021)

	Fund	Benchmark
Number of securities	9,364	9,305
Dividend yield	1.56	1.57

Top 10 holdings (as of 12/31/2021)

	Country	Fund (% assets)
Apple Inc	United States	3.66
Microsoft Corp	United States	3.00
Amazon Com Inc	United States	1.90
Tesla Inc	United States	1.11
Alphabet Inc Class A	United States	1.09
Alphabet Inc Class C	United States	1.04
Meta Platforms Inc Class A	United States	1.00
Nvidia Corp	United States	0.92
Taiwan Semiconductor Manufacturing	Taiwan Rep of China	0.68
UnitedHealth Group Inc	United States	0.59

Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Country allocation (% as of 12/31/2021)



Canada	2.94	Saudi		Philippines	80.0
France	2.65	Arabia	0.36	Kuwait	0.07
Switzerland	2.45	Singapore	0.34	Portugal	0.05
Germany	2.12	Finland	0.29	Chile	0.04
Taiwan Rep	of	lsrael	0.28	Turkey	0.04
China	1.89	Belgium	0.26	Greece	0.03
Australia	1.87	Norway	0.24	Hungary	0.02
India	1.50	Mexico	0.23	Peru	0.02
South Korea			0.21	Colombia	0.02
Sweden	1.15	Malaysia	0.18	Czech	
Netherlands	1.14	Ireland	0.17	Republic	0.01
Hong Kong	0.67	Indonesia	0.17	Egypt	0.01
Italy	0.65	UAE	0.12	Virgin Island	s,
Denmark	0.65	Poland	0.09	British	0.00
Spain	0.56	Qatar	0.09	Argentina	0.00
Brazil	0.46	Austria	0.09	Luxembourg	0.00
South Africa	0.36	New		Malta	0.00
Russian Fed	0.36	Zealand	0.08		



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The Fund is also subject to other key risks, as described in the Fund's Collective Investment Fund Profile. Some or all of those risks may adversely affect the value of units in the Fund, yield, total return and the Fund's ability to meet its investment objective. See the Collective Investment Fund Profile for additional information.

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BES-0161

BlackRock.



Government/Credit Bond Index Fund B

A common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC") for investment of fiduciary client assets held by BTC in its capacity as trustee

Investment objective and strategy

The Government/Credit Bond Index Fund B (the "Fund") is an index fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. The Fund shall be invested and reinvested primarily in a portfolio of debt securities with the objective of closely approximating the total rate of return of the Benchmark listed herein.

Investment details (as of 12/31/2021)

Benchmark	Bloomberg U.S. Government/Credit Bond Index
Total fund assets	\$0.31 billion
Fund inception date	03/31/1991

Characteristics (as of 12/31/2021)

	Fund	Benchmark
Number of securities	6,289	8,510
Market value (B)	\$0.31	\$18,834.35
Coupon (%)	2.56	2.34
Yield to maturity (YTM) (%)	1.67	1.68
Weighted avg life (yrs)	9.81	9.78
Effective duration (yrs)	7.50	7.50
Spread duration (yrs)	3.65	3.64
Option adjusted spread (bps)	35	35
Convexity (yrs)	1.16	1.14

Quality breakdown (as of 12/31/2021)



The credit quality of a particular security or group of securities may be based upon a rating from a nationally recognized statistical rating organization or, if unrated by a ratings organization, assigned an internal rating by BlackRock, neither of which ensures the stability or safety of an overall portfolio.

Performance

Total return % as of 12/31/2021 (Return percentages are annualized as of period end. Returns for periods less than one year are cumulative.)

	Month*	Q4*	YTD*	1 Year*	3 Year	5 Year	10 Year	Since Inception
Fund return %	-0.41	0.11	-1.78	-1.78	5.57	4.07	3.23	5.73
Benchmark return %	-0.32	0.18	-1.75	-1.75	5.50	3.99	3.13	5.69
Difference	-0.09	-0.07	-0.03	-0.03	0.07	0.08	0.10	0.04

Performance disclosure:

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* Period returns for less than one year are cumulative

Sector allocation

% of Fund or Benchmark as of 12/31/2021



Sources: BlackRock, Bloomberg Finance L.P.

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FIRate-0088

BlackRock.



U.S. Treasury Inflation Protected Securities Fund B

A common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC") for investment of fiduciary client assets held by BTC in its capacity as trustee

Investment objective and strategy

The U.S. Treasury Inflation Protected Securities Fund B (the "Fund") is an index fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. The Fund shall be invested and reinvested primarily in a portfolio of debt securities with the objective of closely approximating the total rate of return for all outstanding U.S. Treasury Inflation Protected Securities with a maturity of one year or greater, as defined by the Benchmark listed herein.

Investment details (as of 12/31/2021)

Benchmark	Bloomberg U.S. Treasury Inflation Protected Securities (TIPS) Index (Series-L)
Total fund assets	\$5.30 billion
Fund inception date	03/05/2002

Performance

Total return % as of 12/31/2021 (Return percentages are annualized as of period end. Returns for periods less than one year are cumulative.)

	Month*	Q4*	YTD*	1 Year*	3 Year	5 Year	10 Year	Since Inception
Fund return %	0.28	2.32	5.95	5.95	8.54	5.47	3.21	5.35
Benchmark return %	0.32	2.36	5.96	5.96	8.44	5.34	3.09	5.27
Difference	-0.04	-0.04	-0.01	-0.01	0.10	0.13	0.12	0.08

Performance disclosure:

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an indicator of future performance.

* Period returns for less than one year are cumulative

Characteristics (as of 12/31/2021)

	Fund	Benchmark
Number of securities	45	45
Market value (B)	\$5.30	\$1,235.43
Coupon (%)	0.65	0.65
Yield to maturity (YTM) (%)	1.28	1.28
Weighted avg life (yrs)	7.98	7.98
Effective duration (yrs)	7.53	7.52
Convexity (yrs)	1.11	1.11

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The Fund is also subject to other key risks, as described in the Fund's Collective Investment Fund Profile. Some or all of those risks may adversely affect the value of units in the Fund, yield, total return and the Fund's ability to meet its investment objective. See the Collective Investment Fund Profile for additional information.

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Fourth Quarter 2021 Newsletter

Portfolio Update

The current RegentFund team has been managing the portfolio since May 8, 2021. During September we elected to reallocate our Treasury holdings to investment grade and high yield. We added the following names to the portfolio during the quarter: Chevron, Nvidia, Ecolab, Apple, Macy's, Toll Brothers, Occidental Petroleum, and Goodyear Tire. During the fourth quarter, \$64,611.57 of income generated by the portfolio was swept in October; we expect \$58,677.53 of income to be swept in January 2022.

Performance

The BOR Portfolio returned -0.46% during the fourth quarter, 7bps above the benchmark's¹ return of -0.53%. Our outperformance for the quarter was mainly attributable to our duration exposure (+4bps) and selection (+4bps). The returns and relative performance of each asset type are shown in Table 1. Performance attribution is shown in Table 2.

Table 1. Contribution to Return by Asset Class								
Asset	Fourth Quarter							
Class	Portfolio Benchmark Difference							
IG Bonds	-0.43%	-0.50%	0.07%					
Treasurys	-0.07%	-0.10%	0.02%					
НҮ	0.04%	0.07%	(0.03%)					
Cash	0.00%	0.00%	0.00%					
Total	-0.46%	-0.53%	0.07%					

Source: BNY Mellon, Bloomberg

Source: BNY Mellon, Bloomberg

*Numbers may not sum due to rounding

Table 2. Performance Attribution

Active Return Attribution Summary	Fourth Quarter
Curve Carry	0.00%
Curve Change	0.04%
Total Curve Return	0.04%
Allocation	(0.02%)
Selection	0.04%
Total Excess Return	0.07%

Source: BNY Mellon, Bloomberg

*Numbers may not sum due to rounding

Figures 1 & 2 and Table 3 display our monthly performance relative to the benchmark.



Figure 1. Monthly Performance vs. Benchmark

Table 3. Monthly Performance vs. Benchmark				
Time Period	Portfolio	BOR BMRK	Difference	
January 2021	(0.46%)	(0.22%)	(0.24%)	
February 2021	(1.09%)	(1.22%)	0.13%	
March* 2021	(0.95%)	(0.88%)	(0.06%)	
April 2021	0.89%	0.88%	0.01%	
May* 2021	0.68%	0.62%	0.07%	
June* 2021	0.45%	0.40%	0.04%	
July* 2021	0.71%	0.89%	(0.18%)	
August* 2021	(0.21%)	(0.08%)	(0.13%)	
September* 2021	(0.63%)	(0.67%)	0.04%	
October* 2021	(0.48%)	(0.60%)	0.12%	
November* 2021	(0.35%)	(0.12%)	(0.22%)	
December* 2021	0.37%	0.19%	0.17%	
Time Period	Portfolio	BOR BMRK	Difference	
4Q21*	(0.46%)	(0.53%)	0.07%	
3Q21*	(0.13%)	0.13%	(0.26%)	
2Q21*	2.03%	1.91%	0.12%	
1Q21*	(2.48%)	(2.31%)	(0.17%)	
2021*	(1.09%)	(0.84%)	(0.25%)	
2020*	7.11%	8.60%	(1.48%)	
Since Inception*	13.45%	14.72%	(1.27%)	

Source: BNY Mellon, Bloomberg

*Time-Weighted Returns, values may not sum due to rounding

¹ The benchmark is comprised of 66.5% Intermediate Corporates (C3A0), 19% Intermediate Governments (G3O2), 9.5% BB/B High Yield (H5A4) and 5% 1-3month Treasury Bills (BIL).