MINNESOTA STATE BOARD OF INVESTMENT

MINNESOTA STATE BOARD
OF INVESTMENT
MEETING
May 26, 2021

Governor Tim Walz

State Auditor Julie Blaha

Secretary of State Steve Simon

Attorney General Keith Ellison

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STATE BOARD OF INVESTMENT MEETING

AGENDA

May 26, 2021

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AGENDA
STATE BOARD OF INVESTMENT
MEETING

Virtual Meeting
Wednesday, May 26, 2021
10:00 a.m.

		TAB
1.	**Call to Order**	
2.	**Approval of Minutes of February 24, 2021**	
3.	**State Board of Investment Public Engagement Policy**	
4.	**Performance Summary (Mansco Perry)**	**A**
5.	**Executive Director's Administrative Report (Mansco Perry)**	**B**
6.	**Report from the SBI Administrative Committee (Mansco Perry)** A. Review of Executive Director's Proposed Work Plan FY22 B. Review of Budget Plan for FY22 and FY23 C. Review of Continuing Fiduciary Education Plan D. Review of the Executive Director's Evaluation E. Update of the Business Continuity Plan	**C**
7.	**Private Markets Investment Program (Gary Martin)**	**D**
8.	**Public Markets Investment Program**	**E**
9.	**Participant Directed Investment Program and Non-Retirement Investment Program**	**F**
10.	**Other Items**	

REPORTS

SBI Environmental, Social, and Governance (ESG) Report

Aon Market Environment Report

Meketa Capital Markets Outlook & Risk Metrics Report

SBI Comprehensive Performance Report

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Approval of February 24, 2021 SBI Meeting Minutes

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Minutes
State Board of Investment Meeting
February 24, 2021

Notice of Meeting
The State Board of Investment (SBI) met at 10:15 a.m. Wednesday, February 24, 2021 via Microsoft Teams. It was determined that an in-person meeting was not practical due to the current health pandemic and on-going peacetime emergency declared under Chapter 12 of the Minnesota Statutes. As is permitted under the Open Meeting Law in these conditions, this meeting of the State Board of Investment is being conducted over the phone and attendance and all votes conducted with a roll call.

Call to Order
Governor Tim Walz, Chairperson of the SBI, called the meeting to order. Governor Tim Walz, State Auditor Julie Blaha, Secretary of State Steve Simon, and Attorney General Keith Ellison were present.

Approval of Minutes
The minutes of the December 2, 2020 SBI meeting were approved by roll call vote.

Executive Director's Report
Executive Director Mr. Perry referred members to the December 31, 2020 Performance Summary provided in Tab A of the meeting materials. Mr. Perry informed the Board that as of December 31, 2020 the SBI was responsible for in excess of $114 billion in assets and that the Combined Funds represent $82 billion of those assets. Mr. Perry reported that the Combined Funds had met its long-term objectives by outperforming its Composite Index over the ten-year period ending December 31, 2020 (Combined Funds 9.9% vs. Combined Fund Composite Index 9.6%) and providing a real rate of return above inflation over the latest 20 year time-period (Combined Funds 7.3% vs CPI-U 2.0%). The Combined Funds also exceeded the composite index for all time-periods reported (Combined Funds returned 10.8% vs. Combined Funds-Composite Index 10.4% for the quarter and for the year, the Combined Funds returned 14.7% vs. Combined Funds-Composite Index 13.7%). Mr. Perry noted that the asset mix is in line with targets after the changes that were made to the Combined Funds during the latter half of the year. Mr. Perry then referred members to the Combined Funds Asset Class Performance Summary. The Public Equity Program was a large contributor to the Combined Funds quarter and one-year returns ending December 31, 2020. The Total Fixed Income Program, impacted by low rates, returned less than a percentage point for the quarter but returned 11.2% for one year ending December 31, 2020. Mr. Perry noted that the Private Markets 15.3% fiscal year to date return was higher than what was earned for the last one and three years ending December 31, 2020.

Mr. Perry noted that the Combined Funds Strategic Allocation Category Framework will undergo some revisions to accommodate changes made in the portfolio. He then referred the Board to the Volatility Equivalent Benchmark Comparison, which showed that on a risk-adjusted return basis the Combined Funds resembles a portfolio close to a 60/40 stock/bond weight. Next, Mr. Perry reviewed the Trust Universe Comparison Service (TUCS) summary. The Combined Funds performance ranked in the top quartile for six of the eight time-periods reported against other public and corporate pension plans over $1 billion in assets. Mr. Perry stated that further in the material is the comparison of the Combined Funds returns to public plans greater than $50 billion in assets. Against this universe, the Combined Funds ranked in the top decile for most time-periods ending December 31, 2020.

Executive Director's Administrative Report

Mr. Perry referred members to Tab B of the meeting materials for the Executive Director's Administrative Report and noted that the SBI continues to be under budget for the fiscal year. Mr. Perry noted that the SBI received a clean opinion from the Office of the Legislative Auditor with no written findings or recommendations, and that the 2020 Annual Report was distributed to members and is available on the SBI's website. He also stated that the Administrative Report included the Iran and Sudan summary and stated there was no litigation during the quarter.

Executive Director and Staff Performance

Governor Walz thanked Mr. Perry and Staff for their work managing the Combined Funds during the pandemic and their success in providing returns higher than 99% of other Public Funds during certain time-periods ending December 31, 2020. Governor Walz also stated his appreciation of the stewardship of Mr. Perry and Staff and that this is foundational to the fiscal health of the State of Minnesota, the long-term security of state workers' pensions, and the State's investments. State Auditor Blaha also congratulated Mr. Perry and Staff and acknowledged that these returns are particularly impressive given the number of risk mitigating changes incorporated into the Combined Funds portfolio over the last year. Secretary of State Simon also acknowledged Mr. Perry and Staff for their discipline to remain focused on long-term results with the execution of the Combined Funds asset allocation changes and still able to sustain high levels of return.

Recommendation for New Private Markets Commitments

Mr. Perry reviewed Tab E of the meeting materials, Private Markets Commitments for Consideration. Mr. Perry stated the following seven private markets investments are with existing managers: Brookfield Real Estate Finance Fund VI (Private Credit), Adams Street Global Secondary Fund 7 (Private Equity), Hellman & Friedman Capital Partners Fund X (Private Equity), KKR North America Fund XIII (Private Equity), PPC Enterprise LLC (Private Equity), Thomas H. Lee Equity Fund IX (Private Equity), and Lubert-Adler Recovery and Enhancement Capital Fund (Real Estate). State Auditor Blaha moved the approval of the seven recommendations which reads: **"The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $200 million, or 20% of Brookfield Real Estate Finance Fund VI, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Brookfield upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Brookfield or reduction or termination of the commitment.**

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $300 million, or 20% of Adams Street Global Secondary Fund 7, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Adams Street upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Adams Street or reduction or termination of the commitment.

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $300 million, or 20% of Hellman & Friedman Capital Partners X, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Hellman & Friedman upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Hellman & Friedman or reduction or termination of the commitment.

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $300 million, or 20% of KKR North America Fund XIII, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by KKR upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on KKR or reduction or termination of the commitment.

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $200 million, or 20% of Public Pension Capital, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the

State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by PPC upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on PPC or reduction or termination of the commitment.

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $150 million, or 20% of Thomas H. Lee Equity Fund IX, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Thomas H. Lee Partners upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Thomas H. Lee Partners or reduction or termination of the commitment.

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $100 million, or 20% of Lubert-Adler Recovery and Enhancement Capital Fund, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Lubert-Adler upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Lubert-Adler or reduction or termination of the commitment." The motion was passed by roll call vote.

Recommendation for a Private Markets Investment Consultant

Mr. Perry referred members to the memo listed in Tab F of the meeting materials, Recommendation for a Private Markets Investment Consultant. Mr. Perry noted that back in February 20, 2018 the Board approved Staff's recommendation, with the IAC's endorsement, to hire one or more private markets consultant(s) as an extension of Staff to help with management and oversight of the program. Mr. Perry stated that since then, Staff has done a large amount of work in determining the scope of the project, issuance of a Request For Proposal (RFP), due diligence on the ten private markets consulting firms that responded, and interviews with the three finalists. Mr. Perry then stated that Staff selected Albourne Partners from the list of finalists as the private market consultant to retain. Staff believes Albourne Partners can provide the bandwidth in operational due diligence, breadth of coverage outside the U.S., technological and data resources, and strategic capabilities allocating assets and in Environmental, Social and Governance (ESG) and Diversity and Inclusion (D&I) work.

Attorney General Ellison moved the approval of the private markets investment consultant recommendation which reads: **"The Investment Advisory Council endorsed the Executive Director and Staff's recommendation to authorize the Executive Director, with assistance from SBI's legal counsel, to negotiate and execute a contract with Albourne Partners for private markets consulting services. The contracts should cover a period of five years. The contract will also be subject to the standard termination provisions required by state statute. Approval of this recommendation is not intended to constitute in any way, a binding legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Albourne Partners upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Albourne Partners."** The motion passed by roll call vote.

Public Markets Investment Program
Mr. Perry referred members to the memo provided in Tab H of the meeting materials for the Review of Recent Changes to the Combined Funds. Mr. Perry stated that the report details the moves made in response to the Resolution Concerning Management of the Combined Funds Asset Allocation and Liquidity that the Board passed at its May 2020 meeting. Mr. Perry noted that Tab I provides a summary of the public markets during the quarter in addition to manager meetings and organizational updates.

Participant Directed Investment Program Recommendations

Recommendation to add Vanguard Total Stock Market Index Fund to the Minnesota Deferred Compensation Plan
Mr. Perry referred members to Tab K of the meetings materials for the report on the Recommendation to add Vanguard Total Stock Market Index Fund to the Minnesota Deferred Compensation Plan. He stated that the IAC endorsed Staff's recommendation to provide a U.S. equity broad market investment option in the Minnesota Deferred Compensation Plan.

State Auditor Blaha moved approval of the recommendation which reads: "**The Investment Advisory Council endorses Staff's recommendation for approval by the Board to add the Vanguard Total Stock Market Index Fund as an investment option in the Minnesota Deferred Compensation Plan."** The motion passed by roll call vote.

Recommendation to add TIAA-CREF Social Choice Equity Fund to the Minnesota 529 College Savings Plan
Mr. Perry referred members to the memo provided in Tab L of the meeting materials for the Recommendation to Add TIAA-CREF Social Choice Equity Fund to the Minnesota 529 College Savings Plan. He stated that TIAA-CREF recommended at their annual asset allocation review with Staff to add an equity option with ESG performance criteria. Staff concurred with the recommendation.

Attorney General Ellison moved approval of the recommendation which reads: **"The Investment Advisory Council endorses Staff's recommendation for approval by the Board to add the TIAA-CREF Social Choice Equity Institutional Fund as an all-cap equity investment option to the Minnesota College Savings 529 Plan."** The motion passed by roll call vote.

Report from the Proxy Committee
Mr. Perry referred members to Tab N of the meetings materials for the Report from the Proxy Committee. The Proxy Committee, which consists of designees of each of the four Board Members, must be re-authorized every two years. Mr. Perry stated that the Resolution of the Minnesota Board of Investment Concerning Proxy Voting is provided in the meeting materials as **Attachment A**. Attorney General Ellison moved approval of the recommendation which reads: **"The Executive Director recommends that the SBI adopt the resolution which reauthorizes the Proxy Committee and delegates proxy voting responsibilities according to established guidelines."** The motion passed by roll call vote.

Mr. Perry stated that the Revised Proxy Voting Guidelines provided in Tab N were included for the Board's approval. State Auditor moved approval of the recommendation which reads: **"The Proxy Committee and the Executive Director recommend that the Board approve the revised Proxy Voting Guidelines."** The motion passed by roll call vote.

ESG Report
State Auditor Blaha referred members to the ESG Report in the meeting materials. State Auditor Blaha noted that one of the coalitions the SBI is a member of is the United Nation's Principal for Responsible Investment (UNPRI) and that there will be some annual reporting as part of this membership, which she sees as a powerful tool in terms of increased data and transparency.

Adjournment of Meeting
Attorney General Ellison moved approval to adjourn the meeting. The motion passed by roll call vote. The meeting adjourned at 10:47 a.m.

Respectfully submitted,

Mansco Perry III

Mansco Perry III
Executive Director and
Chief Investment Officer

ATTACHMENT A

RESOLUTION OF THE
MINNESOTA BOARD OF INVESTMENT
CONCERNING PROXY VOTING

WHEREAS, as a stockholder, the Minnesota State Board of Investment (SBI) is entitled to sponsor and cosponsor shareholder resolutions and participate in corporate annual meetings by casting its votes by proxy or through direct attendance at the meetings; and

WHEREAS, the SBI has previously established a Proxy Committee:

NOW THEREFORE, BE IT RESOLVED THAT:

1. To advise and assist the SBI in the implementation of proxy voting guidelines previously adopted by the Board the SBI hereby authorizes and reaffirms the establishment of the SBI Proxy Committee composed of a representative selected by each member of the SBI to be chaired by the designee of the Governor and convened as necessary in accord with the Guidelines.

2. The SBI further authorizes the SBI Proxy Committee to review the Guidelines periodically and report to the SBI as necessary.

3. The SBI further directs its staff to advise and assist the Proxy Committee in the implementation of this resolution and directs its Executive Director to obtain such consulting and reporting services as may be necessary.

4. This resolution shall take effect immediately.

Adopted this 24th day
of February, 2021

Governor Tim Walz
Chair, Minnesota
State Board of Investment

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State Board of Investment Public Engagement Policy

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DATE: May 19, 2021

TO: Members, State Board of Investment

SUBJECT: State Board of Investment Public Engagement Policy

The Board welcomes public engagement on issues relevant to the SBI's activities. The proposed policy provides a procedure to ensure that members of the public have the opportunity to speak at SBI meetings and the Board has the opportunity to allocate a fair amount of time to each speaker.

RESOLUTION:

The Board adopts the State Board of Investment Public Engagement Policy attached hereto as Exhibit A.

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EXHIBT A

SBI SPEAKER POLICY DRAFT

Background

Public engagement with the Minnesota State Board of Investment (SBI), its staff, and the Investment Advisory Committee is an important part of the SBI's governance of the State of Minnesota's retirement, state trust, and other investments. This policy is designed to provide a fair opportunity for people and groups to present helpful comments to SBI. This policy balances the desire for transparency and public input with the need for organized and efficient SBI meetings. This policy will remain in effect until amended or superseded by SBI action. SBI has the authority to agree by a majority of its members to deviate from this policy under extraordinary circumstances.

Steps for Submitting a Request to Comment

1. If you or your group would like to speak on a particular topic you may do so by submitting a Request to Make Public Comment Form (Request Form), **no later than 5:00 p.m. Central Time five business days before the date of the meeting**. The Board will try to publish the Board meeting agenda ten business days before the date of the meeting.

   If an agenda item is added after the initial publication of the agenda, you or your group may submit a Request Form to the Chair after the deadline.

2. The Request to Make Public Comment Form is available on the SBI website. The Request Form contains information to assist SBI and staff in understanding the nature of the comment and amount of time that may be required to hear the comment. The form includes, among other things:

   a. Your name (or in the case of a group, each individual speaker in your group);
   b. Your or your group's contact information;
   c. A description or summary of the comment you or each person in your group wishes to make;
   d. A description of how your comments relate to investment management of state retirement, trust, or other funds; and
   e. A description of any previous presentations to the SBI you or your group have made, including the date of any such presentations.

3. When you submit your Request Form, you or your group may also provide any written materials you would like SBI to consider. If you do not provide written materials at the time of the request, the SBI staff may not be able to include the materials in the materials sent to the Board members and the Board members may not be able to review the materials before the meeting.

4. SBI staff will let you or your group know whether your Request Form and materials were received by the deadline.

5. SBI staff will provide all Request Forms to the Chair of the Board for consideration. Submitting a Request Form does not guarantee the Chair will approve your request. The Chair may decline your request for any reason, including because you have provided the same or similar comment at a previous Board meeting.

6. SBI staff will inform you whether your request has been approved before the Board meeting and will provide the Board members with a list of approved speakers and their materials.

Comment Rules

At the meeting:

1. All comments are limited to five minutes per topic. In the event a group or more than one person wishes to comment on the same topic, the five minutes must be split between those speakers. The Chair has discretion to extend or restrict the time for each speaker.

2. All comments should be relevant to the agenda before the SBI and should be presented in a helpful and appropriate manner. Speakers should present their comments to the Chair and may not engage in personal attacks. The Board reserves the right to dismiss any speaker that engages in unproductive or hostile conduct.

TAB A

Quarterly
Performance Summary

March 31, 2021

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Performance Summary

March 31, 2021

Description of SBI Investment Programs

The Minnesota State Board of Investment is responsible for the investment management of various retirement funds, trust funds and cash accounts.

Combined Funds

The Combined Funds represent the assets for both the active and retired public employees in the statewide retirement systems, the biggest of which are the Public Employees Retirement Association (PERA), the Teachers Retirement Association (TRA), and the Minnesota State Retirement System (MSRS). The SBI commingles the assets of these plans into the Combined Funds to capture investment efficiencies. All assets in the Combined Funds are managed externally by investment management firms retained by contract.

Fire Plans + Other Retirement Plans

Fire Plans and Other Retirement Plans include assets from volunteer fire relief plans and other public retirement plans with authority to invest with the SBI, if they so choose. Fire Plans that are not eligible to be consolidated with Public Employees Retirement Association (PERA) or elect not to be administered by PERA may invest their assets with the SBI using the same asset pools as the Combined Funds. The Statewide Volunteer Firefighter Retirement Plan is administered by PERA and has its own investment vehicle called the Volunteer Firefighter Account.

Participant Directed Investment Program

The Participant Directed Investment Program (PDIP) provides investment vehicles for a variety of retirement or other tax-advantaged savings plans. Investment goals among the PDIP's many participants are varied. In order to meet the variety of goals, participants may allocate their investments among one or more accounts that are appropriate for their needs within statutory requirements and rules established by the participating organizations.

Non-Retirement

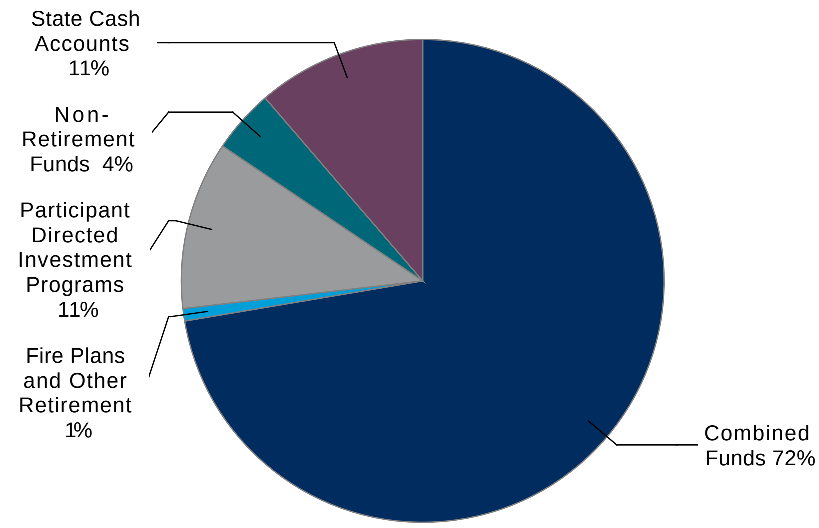
The Non-Retirement Funds are funds established by the State of Minnesota and other government entities for various purposes which include the benefit of public schools, the environment, other post-employment benefits, workers compensation insurance, and other purposes.

State Cash

The State Cash accounts are cash balances of state government funds including the State General Fund. Most accounts are invested by SBI staff through a short-term pooled fund referred to as the Treasurer's Cash Pool. It contains the cash balances of special or dedicated accounts necessary for the operation of certain State agencies and non-dedicated cash in the State Treasury. Because of special legal restrictions, a small number of cash accounts cannot be commingled.

Funds Under Management

	$ Millions
COMBINED FUNDS	$84,538
FIRE PLANS + OTHER RETIREMENT	971
PARTICIPANT DIRECTED INVESTMENT PROGRAMS	13,171
State Deferred Compensation Plan	9,185
Health Care Savings Plan	1,551
Unclassified Employees Retirement Plan	382
Hennepin County Supplemental Retirement Plan	182
PERA Defined Contribution Plan	93
Minnesota College Savings Plan	1,759
Minnesota Achieve a Better Life Experience	19
NON-RETIREMENT FUNDS	4,957
Assigned Risk Plan	299
Permanent School Fund	1,837
Environmental Trust Fund	1,543
Closed Landfill Investment Fund	123
Miscellaneous Trust Funds	332
Other Postemployment Benefits Accounts	823
STATE CASH ACCOUNTS	13,226
Invested Treasurer's Cash	13,151
Other State Cash Accounts	75
TOTAL SBI AUM	116,863



Note: Differentials within column amounts may occur due to rounding

Combined Funds Long Term Objectives

Comparison to Objective

Match or Exceed Composite Index (10 yr.)

Outperform a composite market index weighted in a manner that reflects the long-term asset allocation of the Combined Funds over the latest 10 year period.

	10 Year
COMBINED FUNDS	9.8%
COMBINED FUNDS - COMPOSITE INDEX	9.5
Excess	0.3

Provide Real Return (20 yr.)

Provide returns that are 3-5 percentage points greater than inflation over the latest 20 year period.

	20 Year
COMBINED FUNDS	7.9%
CPI-U	2.1
Excess	5.9

Note:

Throughout this report performance is calculated net of investment management fees, differentials within column amounts may occur due to rounding, and returns for all periods greater than one year are annualized.

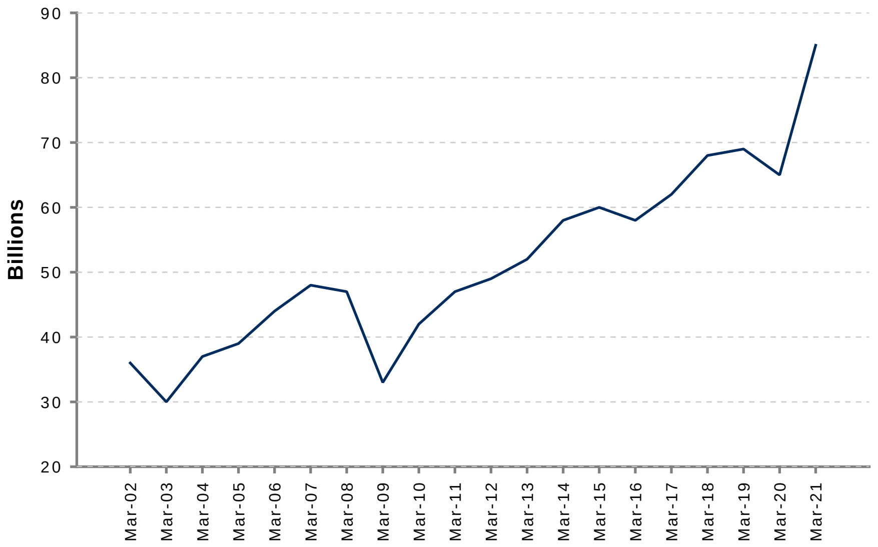
Combined Funds Summary

Combined Funds Change in Market Value ($Millions)

	One Quarter
COMBINED FUNDS	
Beginning Market Value	$82,140
Net Contributions	-705
Investment Return	3,102
Ending Market Value	84,538

The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.

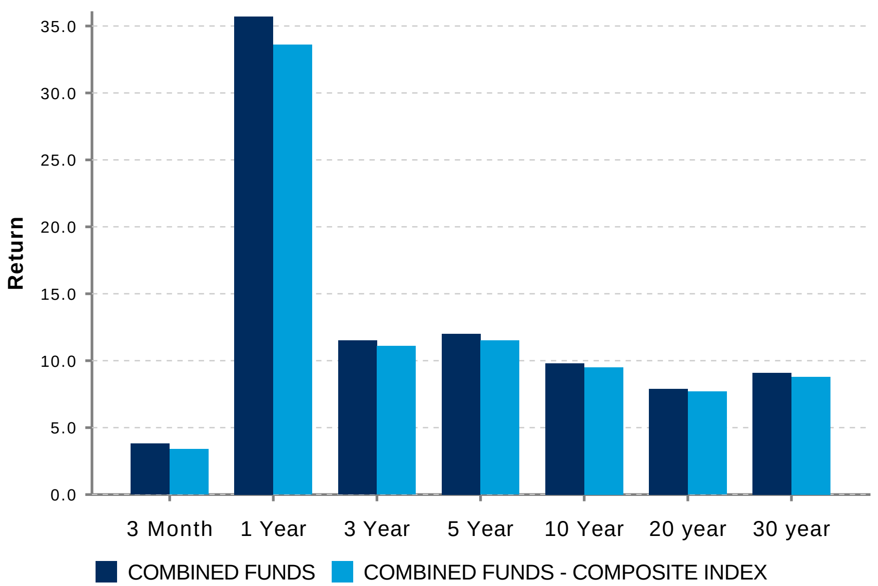
Asset Growth



Performance (Net of Fees)

The Combined Funds' performance is evaluated relative to a composite of public market index and private market investment returns. The Composite performance is calculated by multiplying the beginning of month Composite weights and the monthly returns of the asset class benchmarks.

	Qtr	FYTD	1 Yr	3 Yr	5 Yr	10 Yr	20 Yr	30 Yr
COMBINED FUNDS	3.8%	22.1%	35.7%	11.5%	12.0%	9.8%	7.9%	9.1%
COMBINED FUNDS - COMPOSITE INDEX	3.4	20.8	33.6	11.1	11.5	9.5	7.7	8.8
Excess	0.5	1.3	2.0	0.4	0.4	0.3	0.2	0.3



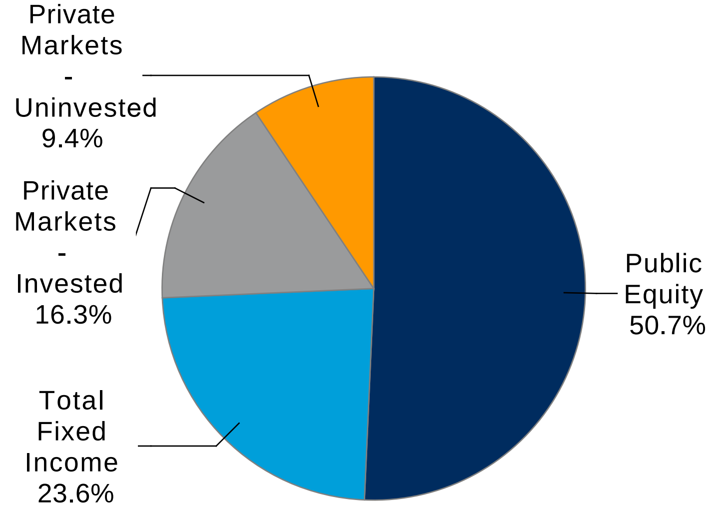
STATE STREET

Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below.

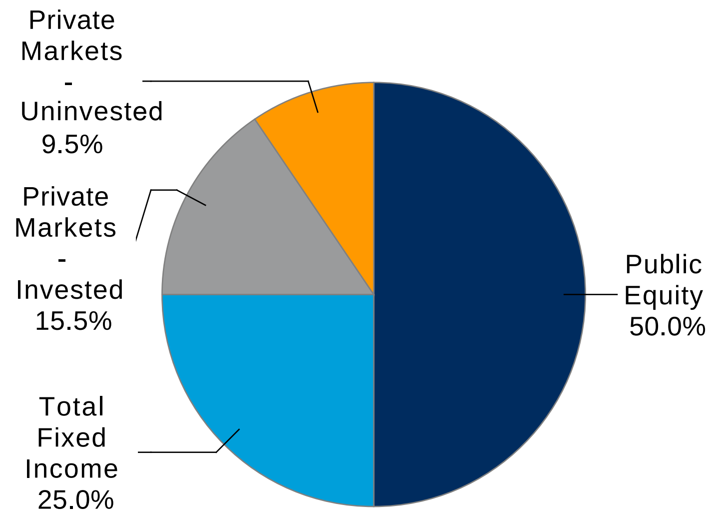
	(Millions)	Actual Mix	Policy Target
Public Equity	$42,865	50.7%	50.0%
Total Fixed Income	19,933	23.6	25.0
Private Markets - Total	21,740	25.7	25.0
Private Markets - Invested	13,788	16.3	
Private Markets - Uninvested	7,952	9.4	
TOTAL	84,538	100.0	



Composite Index Comparison

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target. Asset class weights for Private Markets - Invested and Private Markets - Uninvested are reset at the start of each month. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

	Policy Weight	Market Index
Public Equity	50.0%	Public Equity Benchmark
Total Fixed Income	25.0	Total Fixed Income Benchmark
Private Markets - Invested	15.5	Private Markets
Private Markets - Uninvested	9.5	S&P 500



Combined Funds Asset Class Performance Summary

Public Equity

The Combined Funds Public Equity includes Domestic Equity, International Equity and Global Equity.

The Public Equity benchmark is 67% Russell 3000 and 33% MSCI ACWI ex US (net).

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 year
Public Equity	$42.9	50.7%	50.0%	5.6%	32.7%	60.4%	13.8%	14.7%	11.5%	8.1%	9.6%
Public Equity Benchmark				5.4	31.9	58.5	13.5				
Excess				0.2	0.8	1.9	0.3				
Domestic Equity	28.0	33.1	33.5	6.5	34.2	64.8	17.2	16.8	13.8	8.8	10.3
Domestic Equity Benchmark				6.3	33.6	63.2	17.0	16.6	13.8	8.9	10.4
Excess				0.2	0.7	1.6	0.2	0.2	0.0	-0.1	-0.1
International Equity	13.8	16.4	16.5	4.2	30.0	51.8	7.1	10.0	5.5	6.5	
International Equity Benchmark				3.5	28.5	49.2	6.5	9.7	4.9	6.1	
Excess				0.8	1.5	2.6	0.6	0.3	0.6	0.4	
Global Equity	1.1	1.3	0.0	0.3							
MSCI AC WORLD INDEX NET				4.6							
Excess				-4.2							

Note:

Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a total Public Equity return. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

Combined Funds Asset Class Performance Summary

Total Fixed Income

The Combined Funds Fixed Income program includes Core/Core Plus, Return Seeking Fixed Income, Treasuries and Laddered Bond + Cash.

The Total Fixed Income benchmark is 40% Bloomberg Barclays U.S. Aggregate Index/ 40% Bloomberg Barclays Treasury 5+ Years Index/ 20% ICE BofA US 3-Month Treasury Bill.

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 year
Total Fixed Income	$19.9	23.6%	25.0%	-4.4%	-3.6%	-0.8%	5.9%	4.3%	4.2%	5.0%	6.1%
Total Fixed Income Benchmark				-4.9	-5.0	-3.3	5.4				
Excess				0.5	1.4	2.5	0.6				
Core/Core Plus	4.4	5.2	5.0	-3.1	-0.0	5.4	5.7	4.1	4.2	5.0	6.1
Core Bonds Benchmark				-3.4	-2.1	0.7	4.7	3.1	3.4	4.5	5.7
Excess				0.2	2.1	4.7	1.1	1.0	0.7	0.5	0.4
Return Seeking Fixed Income	3.5	4.1	5.0	-1.5							
BBG BARC Agg Bd				-3.4							
Excess				1.9							
Treasury Protection	7.5	8.8	10.0	-8.5	-9.7	-9.4	5.2				
BBG BARC 5Y + Us Tsy Idx				-8.7	-10.2	-9.7	5.2				
Excess				0.3	0.6	0.3	-0.0				
Laddered Bond + Cash	4.6	5.4	5.0	0.0	0.1	0.2	1.5	1.3	0.8	1.7	3.3
ICE BofA US 3-Month Treasury Bill				0.0	0.1	0.1	1.5	1.2	0.6	1.4	2.6
Excess				0.0	0.0	0.1	-0.0	0.1	0.2	0.3	0.7

Note: Since 12/1/2020 the Total Fixed Income includes allocations to Core/Core Plus Bonds, Return Seeking Bonds, Treasuries and Laddered Bond + Cash. From 7/1/2020 to 11/30/2020 Total Fixed Income was Core Bonds, Treasuries and Cash. From 2/1/2018-6/30/20 Total Fixed Income was Core Bonds and Treasuries. Prior to 2/1/2018, Total Fixed Income was Core Bonds. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

Combined Funds Asset Class Performance Summary

Private Markets

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 year	30 year
Private Markets - Invested	8.7%	25.4%	14.1%	11.4%	13.1%	12.0%	12.0%	13.6%	12.6%
Private Markets - Uninvested (S&P 500)	6.1								
Private Equity	11.5%	34.9%	25.1%	17.9%	18.1%	15.4%	13.2%	15.6%	
Private Credit	3.7	9.7	2.1	8.3	11.3	12.0	11.6	12.2	
Resources	2.8	6.9	-14.0	-6.8	-0.5	1.8	11.4	12.7	
Real Estate	2.7	9.3	5.0	8.2	8.8	11.2	8.4	9.7	

Private Markets

The time-weighted rates of return for the Private Markets portfolio are shown here. Private Markets included Private Equity, Private Credit, Resources, and Real Estate. Some of the existing investments are relatively immature and returns may not be indicative of future results.

Private Equity Investments

The objectives of the Private Equity portfolio, which may include leveraged buyouts, growth equity, venture capital and special situations, are to achieve attractive returns and to provide overall portfolio diversification to the total plan.

Private Credit Investments

The objectives of the Private Credit portfolio, which may include mezzanine debt, direct lending, and other forms of non-investment grade fixed income instruments, are to achieve a high total return over a full market cycle and to provide some degree of downside protection and typically provide current income in the form of a coupon. In certain situations, investments in the Private Credit portfolio also provide an equity component of return in the form of warrants or re-organized equity.

Resource Investments

The objectives of the Resources portfolio, which may include energy, infrastructure, and other hard assets, are to provide protection against the risks associated with inflation and to provide overall portfolio diversification to the total plan.

Real Estate Investments

The objectives of the Real Estate portfolio, which may include core and non-core real estate investments, are to achieve attractive returns, preserve capital, provide protection against risks associated with inflation, and provide overall portfolio diversification to the total plan.

The SBI also monitors Private Markets performance using money-weighted return metrics such as Internal Rate of Return and Multiple of Invested Capital. For money-weighted return metrics please refer to the Combined Funds Performance Report.

SBI Combined Funds Strategic Allocation Category Framework

	3/31/21 ($ millions)	3/31/21 Weights	Category Ranges	
Growth - Appreciation				
Public Equity	$ 50,820.46	60.1%		
Private Equity	$ 8,593.48	10.2%		
Non-Core Real Assets	$ 2,520.73	3.0%		
Distressed/Opportunistic	$ 1,286.82	1.5%		
	$ 63,221.48	**74.8%**	*50%*	*75%*
Growth - Income-oriented				
Core Fixed Income	$ 4,378.16	5.2%		
Private Credit	$ 910.43	1.1%		
Return-Seeking Fixed Income	$ 3,494.79	4.1%		
	$ 8,783.38	**10.4%**	*15%*	*30%*
Real Assets				
Core Real Estate		0.0%		
Real Assets	$ 426.74	0.5%		
	$ 426.74	**0.5%**	*0%*	*10%*
Inflation Protection				
TIPS		0.0%		
Commodities		0.0%		
		0.0%	*0%*	*10%*
Protection				
U.S. Treasuries	$ 7,478.07	8.8%		
	$ 7,478.07	**8.8%**	*5%*	*20%*
Liquidity				
Cash	$ 4,628.06	5.5%		
	$ 4,628.06	**5.5%**	*0%*	*5%*
Opportunity				
Opportunity		**0.0%**	*0%*	*10%*
Total	**$ 84,537.73**	**100.0%**		
Illiquid Asset Exposure	**$ 13,738.20**	**16.3%**	*0%*	*30%*

Volatility Equivalent Benchmark Comparison

Periods Ending 3/31/2021

As of (Date):	3/31/2021							
	1-year	*3-year*	*5-year*	*10-year*	*15-year*	*20-year*	*25-year*	*30-year*
SBI Combined Funds Return	**35.7%**	**11.5%**	**12.0%**	**9.8%**	**8.2%**	**7.9%**	**8.5%**	**9.1%**
Volatility Equivalent Benchmark Return			**9.6%**	**7.1%**	**6.2%**	**6.4%**	**6.7%**	**7.5%**
Value Added			**2.3%**	**2.7%**	**1.9%**	**1.6%**	**1.8%**	**1.6%**

Standard Deviation: Benchmark = Combined Funds			**9.1%**	**8.6%**	**9.7%**	**9.5%**	**9.8%**	**9.3%**
Benchmark Stock Weight			**63%**	**61%**	**59%**	**60%**	**62%**	**62%**
Benchmark Bond Weight			**37%**	**39%**	**41%**	**40%**	**38%**	**38%**

The Volatility Equivalent Benchmark stock and bond weights are adjusted to equal the standard deviation of the SBI Combined Funds portfolio. Then a return is calculated.

Combined Funds Summary

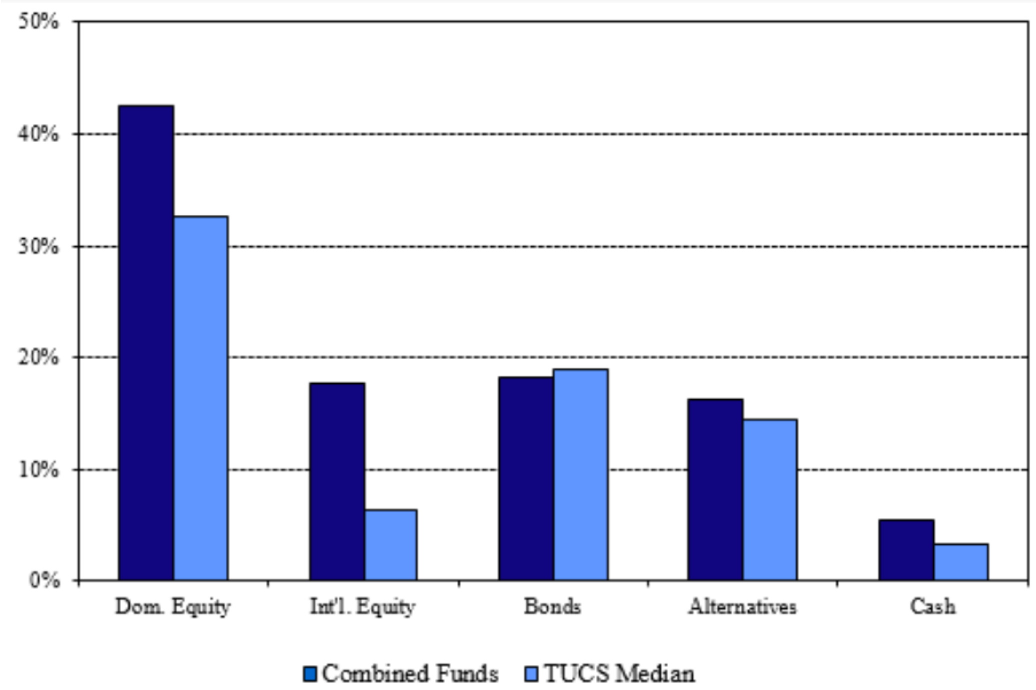
Asset Mix Compared to Other Pension Funds

The comparison universe used by the SBI is the Trust Universe Comparison Service (TUCS). Only funds with assets over $1 billion are included in the comparisons shown in this section.

Comparisons of the Combined Funds' asset mix to the median allocation to stocks, bonds and other assets of the public and corporate funds in TUCS over $1 billion are shown below:

Combined Funds Asset Mix

	($Millions)	Actual Mix
Public Equity	42,865	50.7
Total Fixed Income	19,933	23.6
Private Markets - Invested	13,788	16.3
Private Markets - Uninvested	7,952	9.4
TOTAL	84,538	100.0



	Domestic Equity	International Equity	Bonds	Alternatives	Cash
Combined Funds	42.5%	17.6%	18.2%	16.3%	5.4%
Median in TUCS	32.6%	6.4%	18.9%	14.5%	3.2%

Combined Funds Summary

Performance Compared to Other Pension Funds

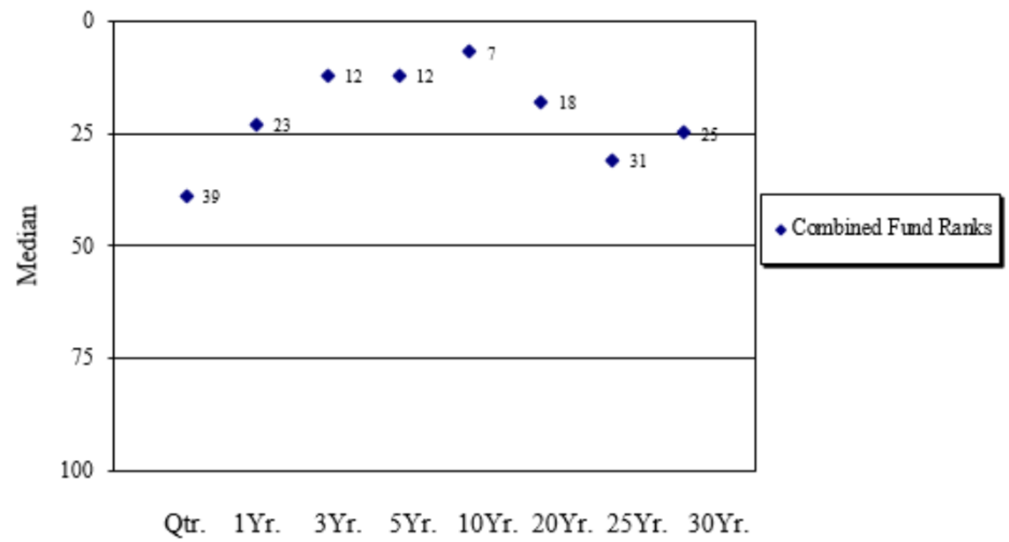
While the SBI is concerned with how its returns compare to other pension investors, universe comparisons should be used with great care. There are several reasons why such comparisons will provide an "apples to oranges" look at performance:

- Differing Allocations. Asset allocation will have a dominant effect on return. The allocation to stocks among the funds in TUCS typically ranges from 20-90%, a very wide range for meaningful comparison. In addition, it appears that many funds do not include alternative asset holdings in their reports to TUCS. This further distorts comparisons among funds.

- Differing Goals/Liabilities. Each pension fund structures its portfolio to meet its own liabilities and risk tolerance. This will result in different asset mix choices. Since asset mix will largely determine investment results, a universe ranking is not relevant to a discussion of how well a plan sponsor is meeting its long-term liabilities.

With these considerations in mind, the performance of the Combined Funds compared to other public and corporate pension funds in Trust Universe Comparison Service (TUCS) are shown below.

The SBI's returns are ranked against public and corporate plans with over $1 billion in assets. All funds in TUCS report their returns gross of fees.

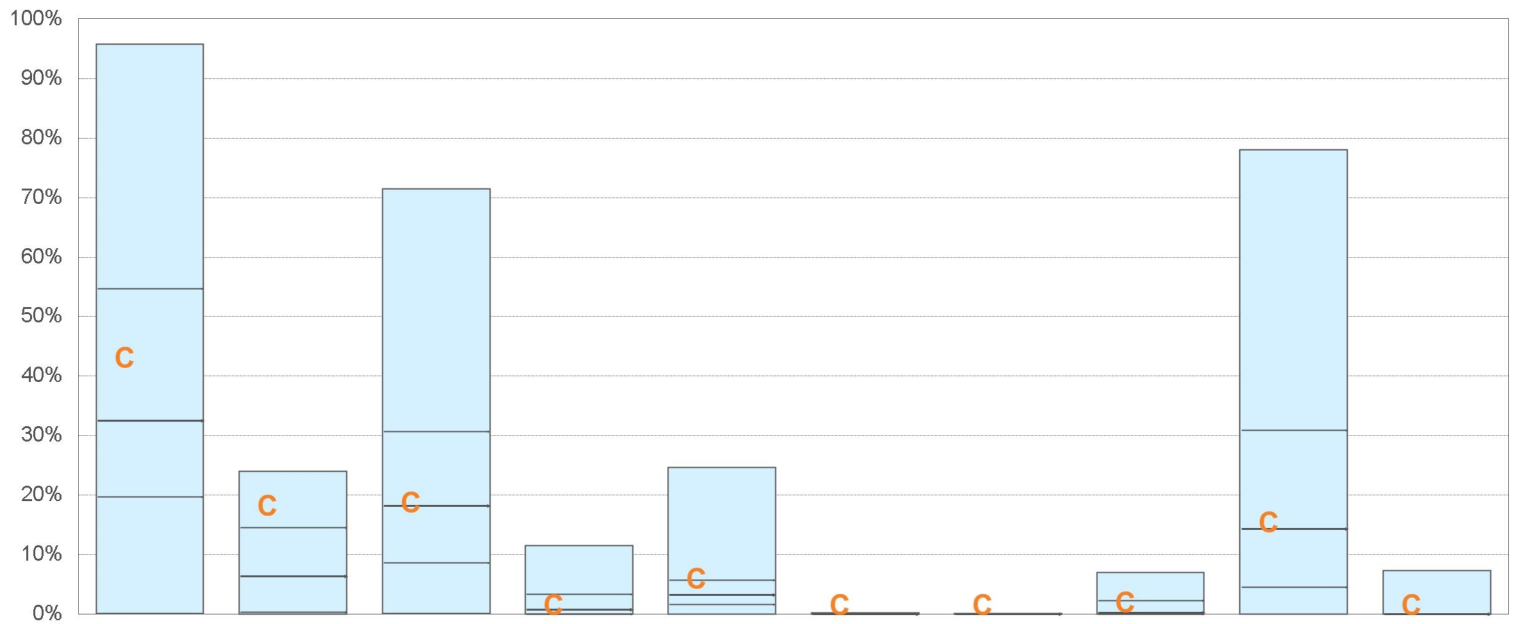


Periods Ended 03/31/2021

	Qtr	1 Yr	3 Yrs	5 Yrs	10 Yrs	20 Yrs	25 Yrs	30 Yrs
Combined Funds Percentile Rank in TUCS	39th	23rd	12th	12th	7th	18th	31st	25th

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Plans > $1 Billion

Quarter Ending March 31, 2021

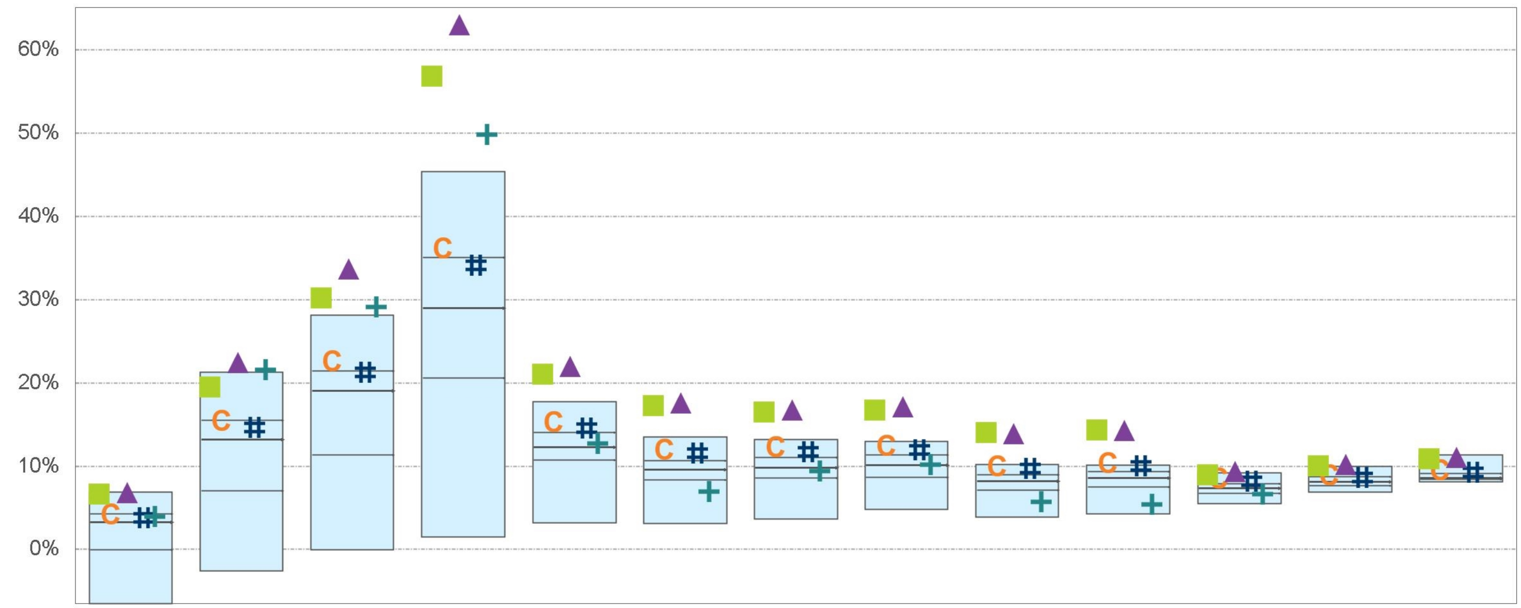


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	95.84	23.97	71.51	11.48	24.61	0.20	0.13	7.01	78.09	7.32
25th	54.68	14.57	30.65	3.35	5.68	0.01	0.00	2.25	30.92	0.00
50th	32.55	6.38	18.16	0.73	3.20	0.00	0.00	0.20	14.30	0.00
75th	19.74	0.34	8.58	0.00	1.59	0.00	0.00	0.00	4.52	0.00
95th	0.16	0.00	0.10	0.00	0.03	0.00	0.00	0.00	0.00	0.00
C Combined Funds	42.51 (33)	17.61 (16)	18.16 (50)	0.00 (100)	5.42 (29)	0.00 (100)	0.00 (100)	1.41 (33)	14.90 (48)	0.00 (100)

Minnesota State Board of Investments
Performance Comparison

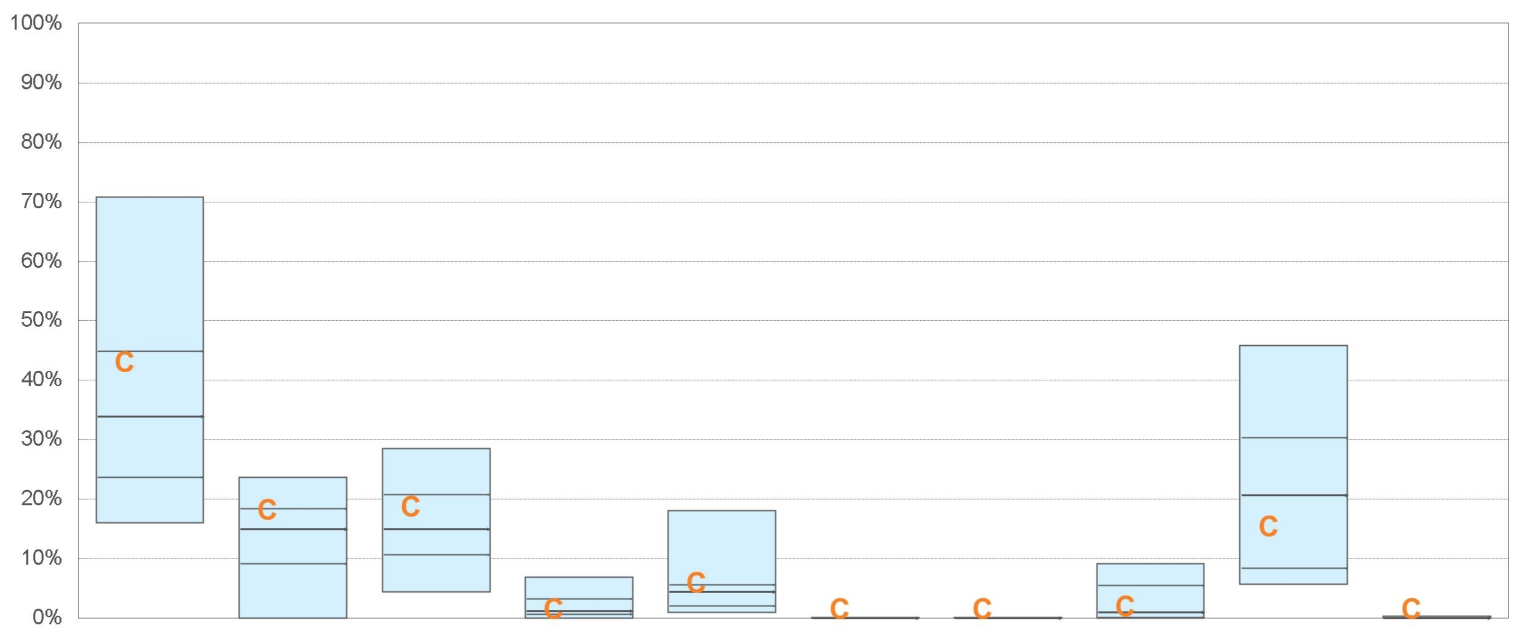
Total Returns of Master Trusts - Plans > $1 Billion

Cumulative Periods Ending : March 31, 2021



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years	20 Years	25 Years	30 Years
5th	6.86	21.27	28.16	45.35	17.74	13.54	13.22	12.97	10.22	10.09	9.20	9.97	11.33
25th	4.25	15.50	21.43	35.07	14.05	10.62	11.01	11.33	8.94	9.31	7.91	8.75	9.10
50th	3.25	13.21	19.03	28.99	12.26	9.55	9.84	10.09	8.17	8.54	7.32	8.12	8.58
75th	-0.03	7.04	11.32	20.56	10.71	8.31	8.54	8.69	7.10	7.52	6.73	7.64	8.39
95th	-6.51	-2.62	-0.06	1.47	3.16	3.12	3.68	4.80	3.86	4.26	5.48	6.92	8.14
No. Of Obs	148	147	147	146	125	120	116	116	116	115	87	64	28
C Combined Funds	3.84 (39)	15.06 (26)	22.18 (23)	35.75 (23)	14.90 (17)	11.61 (12)	11.92 (10)	12.06 (12)	9.55 (13)	9.94 (7)	8.08 (18)	8.50 (31)	9.10 (25)
# SBI Combined Funds Ind	3.36 (49)	14.16 (39)	20.84 (29)	33.64 (31)	14.11 (24)	11.08 (18)	11.30 (21)	11.51 (20)	9.26 (17)	9.54 (16)	7.74 (32)	8.20 (48)	8.79 (35)
S&P 500	6.18 (7)	19.07 (5)	29.71 (4)	56.35 (1)	20.60 (1)	16.78 (2)	16.08 (2)	16.29 (1)	13.60 (1)	13.91 (1)	8.47 (10)	9.59 (9)	10.42 (9)
+ MSCI World Ex US (N)	3.49 (47)	21.10 (5)	28.67 (4)	49.41 (2)	12.31 (49)	6.51 (90)	8.93 (72)	9.76 (59)	5.26 (91)	4.93 (94)	6.16 (92)		
Russell 3000	6.35 (7)	21.96 (4)	33.19 (3)	62.53 (1)	21.53 (1)	17.12 (1)	16.28 (2)	16.64 (1)	13.44 (1)	13.79 (1)	8.85 (7)	9.70 (7)	10.59 (5)

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $10 Billion
Quarter Ending March 31, 2021

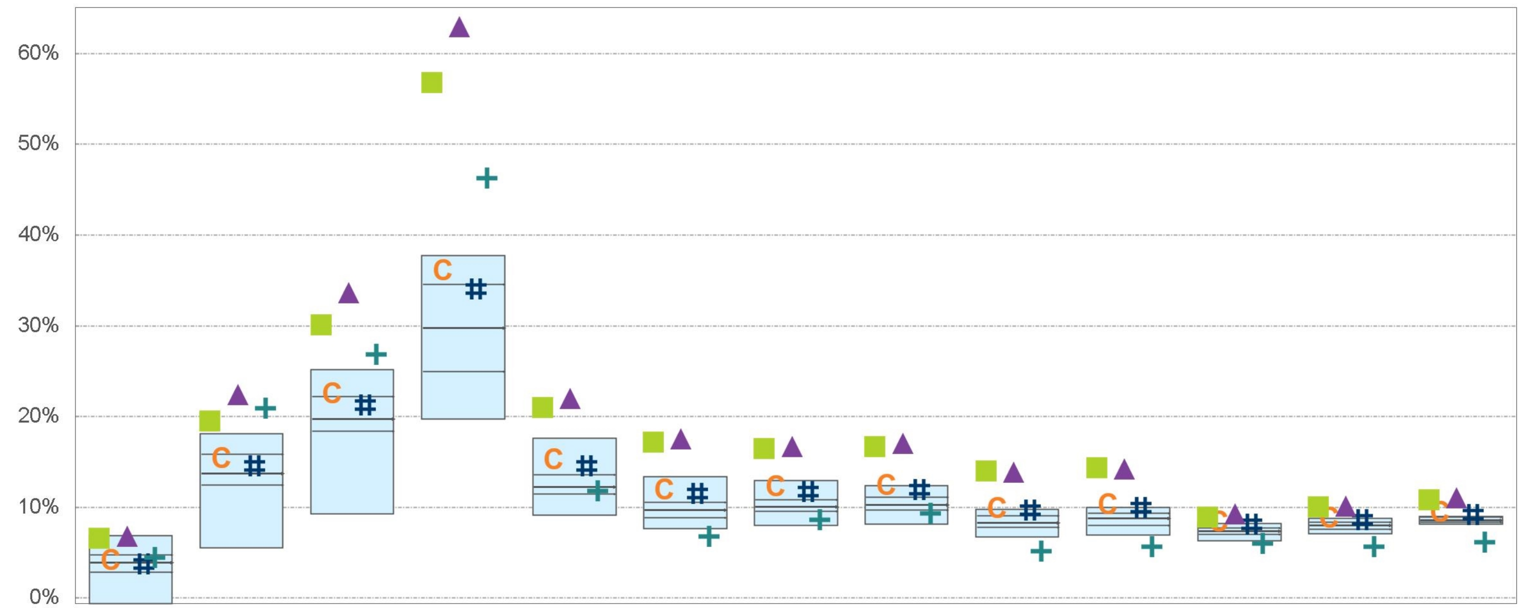


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	70.79	23.69	28.52	6.85	18.11	0.11	0.16	9.16	45.86	0.31
25th	44.92	18.41	20.79	3.24	5.61	0.02	0.00	5.46	30.40	0.00
50th	33.87	14.96	14.93	1.18	4.40	0.00	0.00	1.01	20.70	0.00
75th	23.63	9.13	10.62	0.66	2.09	0.00	0.00	0.13	8.35	0.00
95th	16.08	0.00	4.36	0.00	1.01	0.00	0.00	0.00	5.68	0.00
C Combined Funds	42.51 (28)	17.61 (32)	18.16 (42)	0.00 (100)	5.42 (28)	0.00 (100)	0.00 (100)	1.41 (46)	14.90 (60)	0.00 (100)

Minnesota State Board of Investments
Performance Comparison

Total Returns of Master Trusts - Public : Plans > $10 Billion

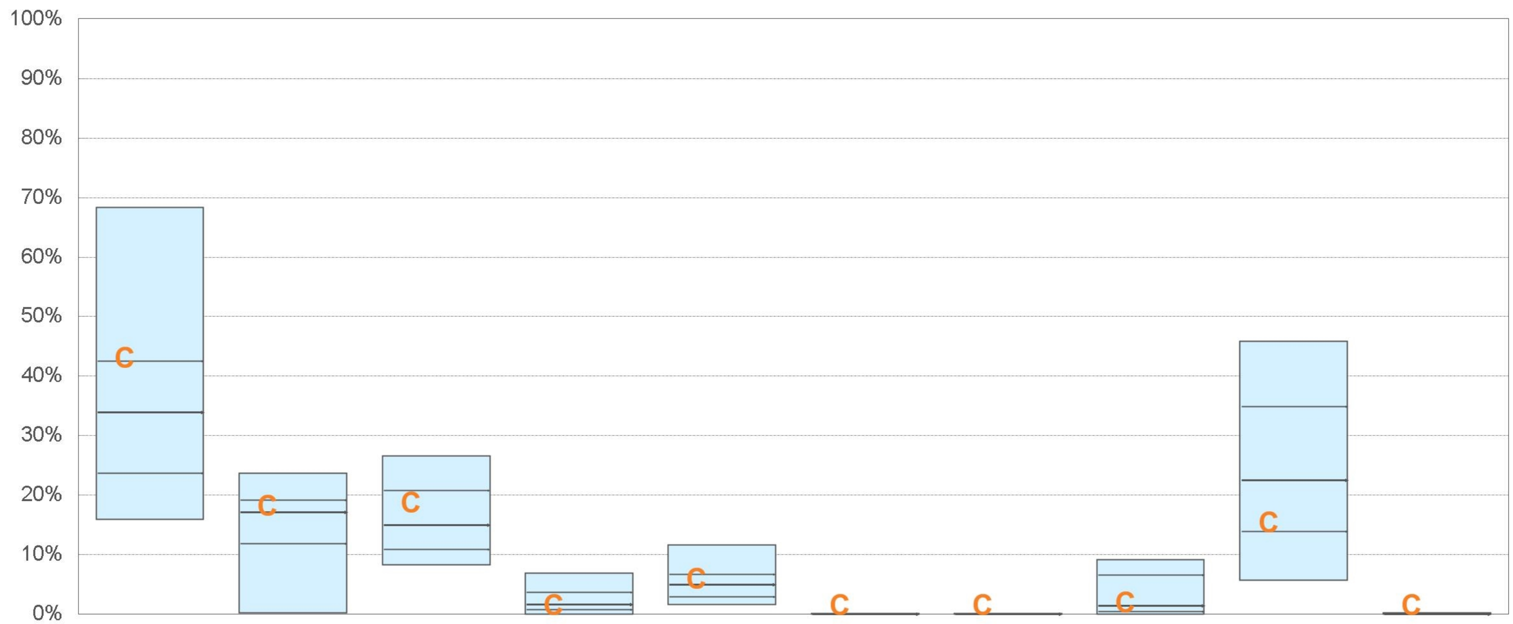
Cumulative Periods Ending : March 31, 2021



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years	20 Years	25 Years	30 Years
5th	6.85	18.10	25.17	37.73	17.57	13.40	12.94	12.38	9.74	9.94	8.22	8.75	9.01
25th	4.75	15.85	22.18	34.53	13.58	10.52	10.83	11.11	9.03	9.31	7.75	8.38	8.89
50th	3.88	13.73	19.75	29.77	12.26	9.72	10.02	10.29	8.28	8.75	7.36	7.97	8.53
75th	2.82	12.47	18.39	24.95	11.47	8.84	9.53	9.70	7.82	7.97	7.00	7.60	8.38
95th	-0.62	5.51	9.25	19.75	9.10	7.67	7.99	8.11	6.76	6.92	6.32	7.11	8.14
No. Of Obs	40	40	40	40	37	37	37	37	37	37	31	26	14

C Combined Funds	3.84 (57)	15.06 (30)	22.18 (25)	35.75 (17)	14.90 (10)	11.61 (10)	11.92 (10)	12.06 (10)	9.55 (13)	9.94 (5)	8.08 (9)	8.50 (17)	9.10 (1)
# SBI Combined Funds Ind	3.36 (72)	14.16 (42)	20.84 (35)	33.64 (27)	14.11 (15)	11.08 (13)	11.30 (17)	11.51 (15)	9.26 (20)	9.54 (15)	7.74 (25)	8.20 (33)	8.79 (25)
S&P 500	6.18 (5)	19.07 (1)	29.71 (1)	56.35 (1)	20.60 (1)	16.78 (1)	16.08 (1)	16.29 (1)	13.60 (1)	13.91 (1)	8.47 (1)	9.59 (1)	10.42 (1)
+ MSCI Wld Ex US (Net)	4.04 (42)	20.53 (1)	26.46 (1)	45.86 (1)	11.42 (75)	6.34 (99)	8.18 (87)	8.92 (84)	4.75 (99)	5.21 (100)	5.58 (100)	5.21 (100)	5.72 (100)
Russell 3000	6.35 (5)	21.96 (1)	33.19 (1)	62.53 (1)	21.53 (1)	17.12 (1)	16.28 (1)	16.64 (1)	13.44 (1)	13.79 (1)	8.85 (1)	9.70 (1)	10.59 (1)

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $20 Billion
Quarter Ending March 31, 2021

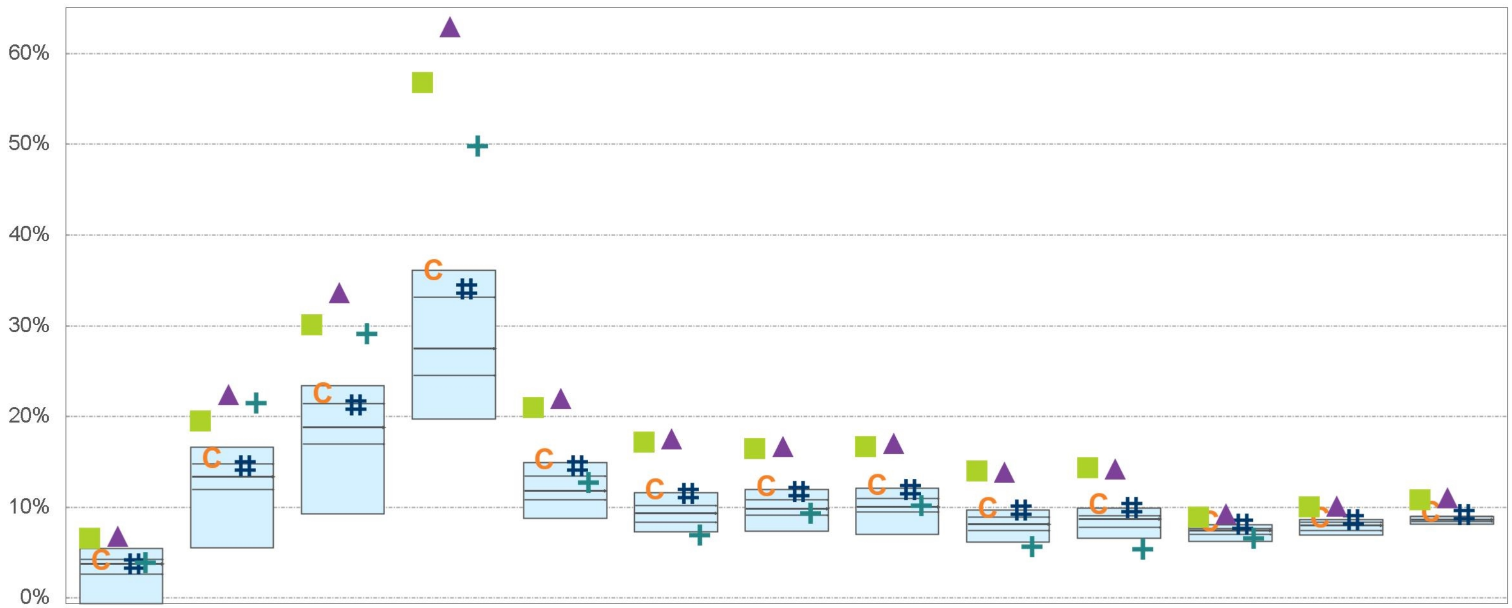


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	68.30	23.69	26.62	6.85	11.60	0.08	0.16	9.13	45.86	0.21
25th	42.51	19.13	20.79	3.69	6.70	0.01	0.00	6.61	34.87	0.00
50th	33.87	17.11	14.93	1.62	4.92	0.00	0.00	1.41	22.46	0.00
75th	23.63	11.82	10.91	0.80	2.88	0.00	0.00	0.44	13.88	0.00
95th	15.94	0.25	8.30	0.00	1.57	0.00	0.00	0.00	5.68	0.00
C Combined Funds	42.51 (25)	17.61 (45)	18.16 (45)	0.00 (100)	5.42 (30)	0.00 (100)	0.00 (100)	1.41 (50)	14.90 (68)	0.00 (100)

Minnesota State Board of Investments
Performance Comparison

Total Returns of Master Trusts - Public : Plans > $20 Billion

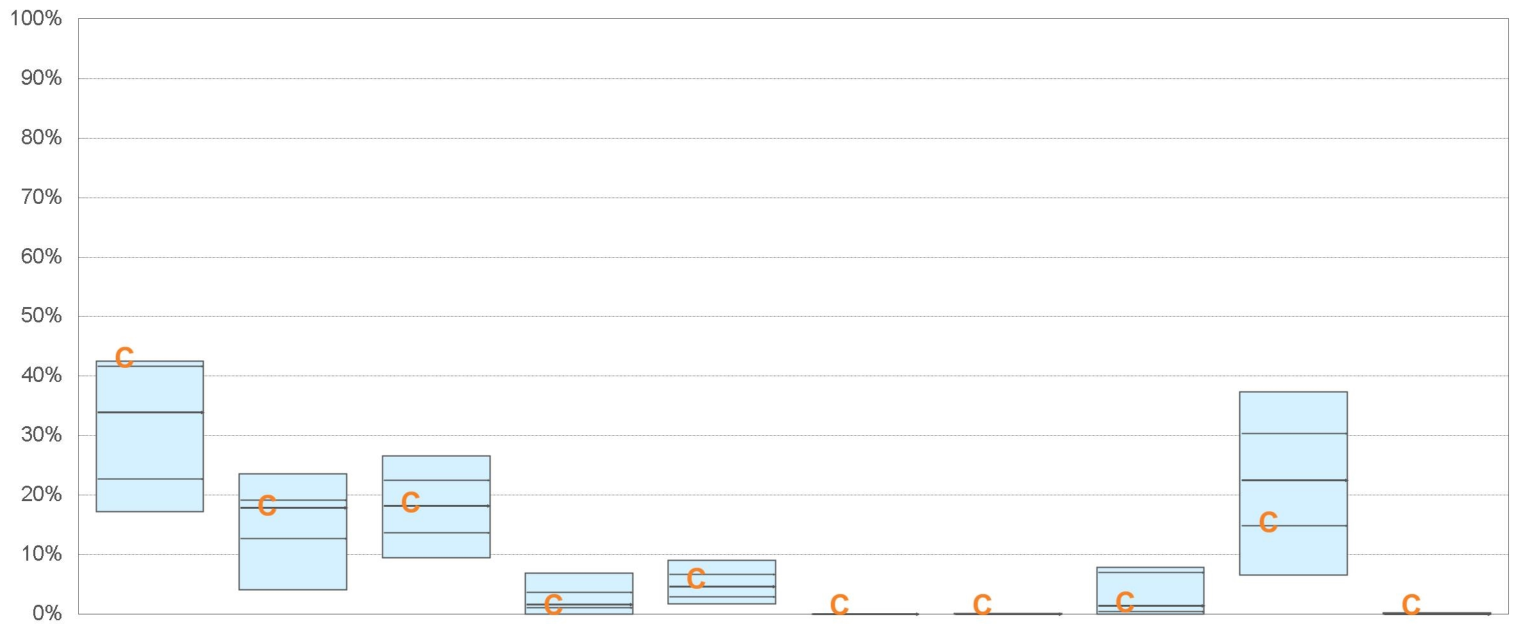
Cumulative Periods Ending : March 31, 2021



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years	20 Years	25 Years	30 Years
5th	5.45	16.60	23.38	36.13	14.90	11.61	11.92	12.06	9.71	9.88	8.08	8.63	9.01
25th	4.23	14.77	21.43	33.15	13.47	10.16	10.83	10.97	8.93	9.08	7.63	8.32	8.98
50th	3.75	13.38	18.80	27.46	11.84	9.34	9.84	10.05	8.17	8.71	7.44	7.97	8.64
75th	2.64	11.95	16.99	24.55	10.79	8.35	9.13	9.49	7.46	7.80	7.00	7.42	8.39
95th	-0.62	5.51	9.25	19.75	8.74	7.30	7.38	7.02	6.16	6.59	6.26	6.92	8.14
No. Of Obs	27	27	27	27	25	25	25	25	25	25	21	17	9

	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years	20 Years	25 Years	30 Years
C Combined Funds	3.84 (42)	15.06 (21)	22.18 (17)	35.75 (9)	14.90 (5)	11.61 (5)	11.92 (5)	12.06 (5)	9.55 (13)	9.94 (1)	8.08 (5)	8.50 (18)	9.10 (1)
# SBI Combined Funds Ind	3.36 (62)	14.16 (32)	20.84 (32)	33.64 (21)	14.11 (13)	11.08 (9)	11.30 (17)	11.51 (13)	9.26 (17)	9.54 (17)	7.74 (20)	8.20 (31)	8.79 (25)
S&P 500	6.18 (1)	19.07 (1)	29.71 (1)	56.35 (1)	20.60 (1)	16.78 (1)	16.08 (1)	16.29 (1)	13.60 (1)	13.91 (1)	8.47 (1)	9.59 (1)	10.42 (1)
+ MSCI World Ex US (N)	3.49 (62)	21.10 (1)	28.67 (1)	49.41 (1)	12.31 (41)	6.51 (99)	8.93 (75)	9.76 (62)	5.26 (99)	4.93 (100)	6.16 (100)		
Russell 3000	6.35 (1)	21.96 (1)	33.19 (1)	62.53 (1)	21.53 (1)	17.12 (1)	16.28 (1)	16.64 (1)	13.44 (1)	13.79 (1)	8.85 (1)	9.70 (1)	10.59 (1)

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $50 Billion
Quarter Ending March 31, 2021

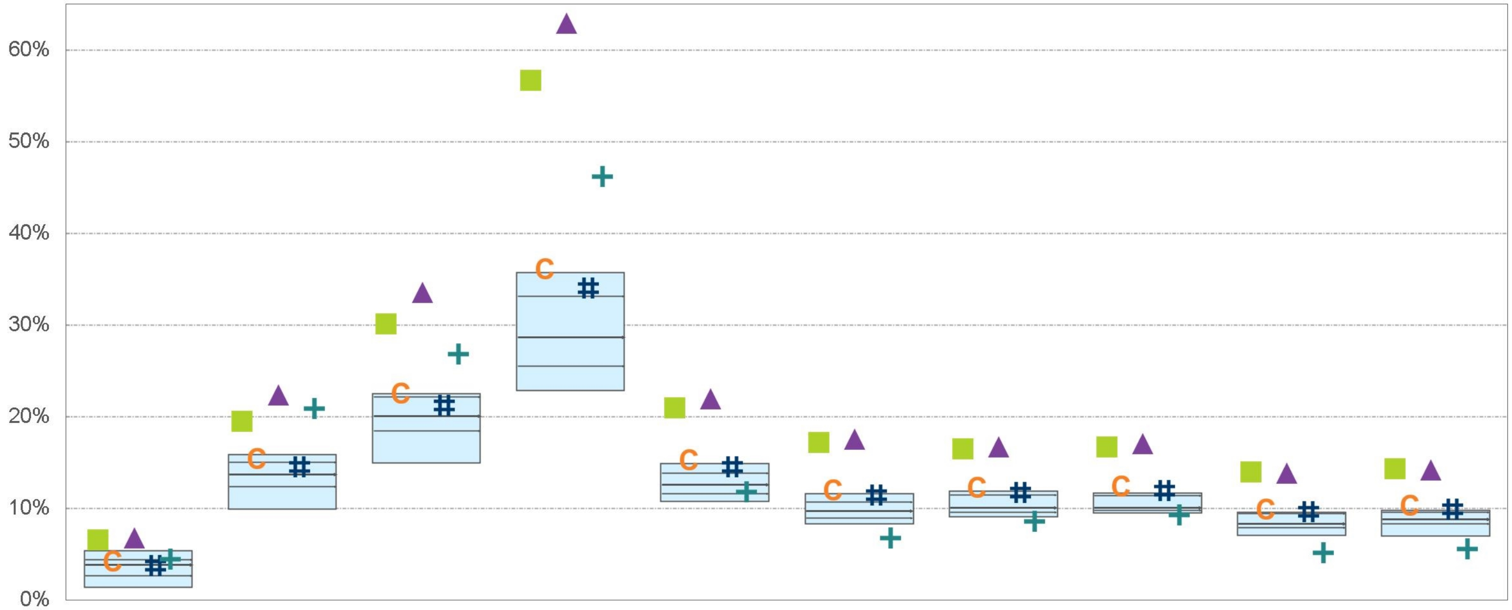


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	42.51	23.62	26.62	6.85	9.04	0.01	0.16	7.85	37.33	0.21
25th	41.62	19.13	22.52	3.69	6.70	0.00	0.00	6.97	30.40	0.03
50th	33.87	17.86	18.16	1.62	4.61	0.00	0.00	1.41	22.46	0.00
75th	22.76	12.74	13.63	1.11	2.88	0.00	0.00	0.44	14.90	0.00
95th	17.20	4.08	9.44	0.00	1.74	0.00	0.00	0.00	6.58	0.00
C Combined Funds	42.51 (5)	17.61 (58)	18.16 (50)	0.00 (100)	5.42 (33)	0.00 (100)	0.00 (100)	1.41 (50)	14.90 (75)	0.00 (100)

Minnesota State Board of Investments
Performance Comparison

Total Returns of Master Trusts - Public : Plans > $50 Billion

Cumulative Periods Ending : March 31, 2021



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	5.38	15.85	22.52	35.75	14.90	11.61	11.88	11.65	9.60	9.81
25th	4.40	15.06	22.18	33.15	13.86	10.68	11.45	11.40	9.45	9.62
50th	3.84	13.73	20.08	28.67	12.62	9.72	10.11	10.05	8.32	8.83
75th	2.64	12.41	18.44	25.53	11.61	8.98	9.57	9.83	7.93	8.31
95th	1.40	9.91	15.00	22.90	10.79	8.31	9.13	9.49	7.04	6.98
No. Of Obs	16	16	16	16	15	15	15	15	15	15

C Combined Funds	3.84 (50)	15.06 (25)	22.18 (25)	35.75 (5)	14.90 (5)	11.61 (5)	11.92 (1)	12.06 (1)	9.55 (15)	9.94 (1)
# SBI Combined Funds Ind	3.36 (68)	14.16 (37)	20.84 (37)	33.64 (15)	14.11 (15)	11.08 (15)	11.30 (25)	11.51 (15)	9.26 (25)	9.54 (25)
S&P 500	6.18 (1)	19.07 (1)	29.71 (1)	56.35 (1)	20.60 (1)	16.78 (1)	16.08 (1)	16.29 (1)	13.60 (1)	13.91 (1)
+ MSCI Wld Ex US (Net)	4.04 (37)	20.53 (1)	26.46 (1)	45.86 (1)	11.42 (91)	6.34 (100)	8.18 (99)	8.92 (99)	4.75 (100)	5.21 (100)
Russell 3000	6.35 (1)	21.96 (1)	33.19 (1)	62.53 (1)	21.53 (1)	17.12 (1)	16.28 (1)	16.64 (1)	13.44 (1)	13.79 (1)

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TAB B

Executive Director’s Administrative Report

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EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

DATE: May 19, 2021

TO: Members, State Board of Investment

FROM: Mansco Perry III

1. Reports on Budget and Travel

A report on the SBI's administrative budget for the fiscal year to date through March 31, 2021, is included as **Attachment A**.

2. Legislative Update

I will present an update on legislative matters. A summary is included in **Attachment B.**

3. Sudan Update

Each quarter, staff provides a report to the Board on steps taken to implement *Minnesota Statutes*, section 11A.243 that requires SBI actions concerning companies with operations in Sudan. Staff receives periodic reports from the Vigeo Eiris Conflict Risk Network (CRN) about the status of companies with operations in Sudan.

The SBI is restricted from purchasing stock in the companies designated as highest offenders by the CRN. Accordingly, staff updates the list of restricted stocks and notifies investment managers that they may not purchase shares in companies on the restricted list. Staff receives monthly reports from the SBI's custodian bank concerning SBI holdings of companies on the CRN list and writes letters as required by law.

According to the law, if after 90 days following the SBI's communication, a company continues to have active business operations in Sudan, the SBI must divest holdings of the company according to the following schedule:

- at least 50% shall be sold within nine months after the company appeared on the scrutinized list; and
- 100% shall be sold within fifteen months after the company appeared on the list.

In the first quarter, there was twelve restricted companies on the SBI divestment list, and 13,711 shares were sold due to the restriction.

On March 24, 2021, staff sent a letter to each international equity manager and domestic equity manager containing the most recent restricted list and the list of stocks to be divested in compliance with Minnesota law.

4. Iran Update

Each quarter, staff provides a report to the Board on steps taken to implement *Minnesota Statutes*, section 11A.244 that requires SBI actions concerning companies with operations in Iran.

SBI receives information on companies with Iran operations from Institutional Shareholder Services, Inc. (ISS). Staff receives monthly reports from the SBI's custodian bank concerning SBI holdings of companies on the restricted list and writes letters as required by the law.

According to the law, if after 90 days following the SBI's communication a company continues to have scrutinized business operations, the SBI must divest all publicly traded securities of the company according to the following schedule:

- at least 50% shall be sold within nine months after the company appeared on the scrutinized list; and

- 100% within fifteen months after the company appeared on the scrutinized list.

In the first quarter, there were no restricted companies on the SBI divestment list, therefore no restricted shares to sell.

On March 24, 2021, staff sent a letter to each international equity manager, domestic equity manager and fixed income manager containing the most recent restricted list and the list of companies to be divested in compliance with Minnesota law.

5. Litigation Update

SBI legal counsel will give a verbal update on the status of any litigation at the meeting.

ATTACHMENT A

STATE BOARD OF INVESTMENT
FISCAL YEAR 2021 ADMINISTRATIVE BUDGET REPORT
FISCAL YEAR TO DATE THROUGH MARCH 31, 2021

ITEM	FISCAL YEAR 2021 BUDGET	FISCAL YEAR 2021 3/31/2021
PERSONNEL SERVICES		
FULL TIME EMPLOYEES	$ 6,721,000	$ 3,500,378
PART TIME EMPLOYEES	0	0
MISCELLANEOUS PAYROLL	125,000	0
SUBTOTAL	**$ 6,846,000**	**$ 3,500,378**
STATE OPERATIONS		
RENTS & LEASES	285,000	233,660
REPAIRS/ALTERATIONS/MAINTENANCE	21,000	1,875
PRINTING & BINDING	12,000	7,000
PROFESSIONAL/TECHNICAL SERVICES	360,000	63,764
COMPUTER SYSTEMS SERVICES	150,000	138,593
COMMUNICATIONS	25,000	10,313
TRAVEL, IN-STATE	3,000	0
TRAVEL, OUT-STATE	235,000	0
SUPPLIES	150,000	8,270
EQUIPMENT	188,000	8,416
EMPLOYEE DEVELOPMENT	150,000	80,791
OTHER OPERATING COSTS	125,000	101,613
INDIRECT COSTS	300,000	116,343
SUBTOTAL	**$ 2,004,000**	**$ 770,638**
TOTAL ADMINISTRATIVE BUDGET	**$ 8,850,000**	**$ 4,271,016**

Updated 05.18.2021

BILLS OF INTEREST TO THE MINNESOTA STATE BOARD OF INVESTMENT

Bill No.	Author	Name of Bill	Current Status	Notes
SF959	Ingebrigtsen, et al.	Omnibus Environment and Natural Resources Policy and Finance Bill	04/27: SF959 was sent to conference committee	The bill would create an account with the SBI through which the Commissioner of Natural Resources would be authorized to deposit and invest financial assurance funds received from private entities that lease mineral rights from the state. The account would be a separate account with SBI and the SBI staff would assist in determining an asset allocation for the funds. The language relevant to the SBI's responsibilities is contained in Art. 2, Sec. 1 of the Senate version of the omnibus bill.
HF2610	Rasmusson	Volunteer Firefighter Investments	05/11: HF2610 was referred to the State Government Finance and Elections Committee	The bill would require fire relief associations not currently part of the statewide fire plan to invest through the SBI. Currently, such plans are able to invest through the SBI or private financial institutions. Associations not currently invested with the SBI must transition their assets (in cash, not in-kind) to the SBI by January 1, 2023, unless the association has reasonably determined an asset cannot be liquidated by the deadline. If the asset cannot be liquidated, the association must prepare a report to document the issue and the plan for liquidation.
HF1664	Schultz	Long-Term Services and Supports Trust Fund	02/25: HF1664 was referred to the Human Services Finance and Policy Committee	The bill would establish a Long-Term Services and Supports Trust Fund from which the Commissioner of Human Services would be authorized to pay for certain services benefiting qualified individuals requiring long-term care services. The trust would be a separate account in the general fund and all investment returns associated with the trust would be credited to the trust. The SBI would serve on an advisory board responsible for policies related to the trust.
HF1258 SF0976	Becker-Finn, et al. Pappas, et al.	Minnesota Secure Choice Program	02/18: HF1258 was referred to the State Government Finance and Elections Committee 02/15: SF0976 was referred to the State Government Finance and Policy and Elections Committee	The bill creates two state-sponsored retirement plans for private employers. The bill provides for auto-enrollment of private employees. The SBI would be responsible for choosing the investment options for the employee directed plans. The SBI executive director (or designee) would serve on the secure choice board responsible for administering the plan. The plan would be subject to ERISA, which may place investment responsibilities/duties on the SBI which are different from the investment responsibilities/duties the SBI has under Minnesota law.

Bill No.	Author	Name of Bill	Current Status	Notes
HF2076 SF1910	Lislegard Tomassoni, et al.	Giants Ridge Account Established in State Treasury	03/09: HF2076 was referred to the Industrial Education and Economic Development and Finance Policy Committee 03/10: SF1910 was referred to the Taxes Committee	The bill creates an account in the state treasury for appropriations and other funds which will be utilized for operations and maintenance of the Giants Ridge Recreation Area. The account would be administered by the Department of Iron Range Resources and Rehabilitation. The SBI is responsible for investing the funds pursuant to law. It appears this would remain in the ITC.
SF593	Ingebrigtsen	Funds to make annual payments for certain state lands in lieu of taxes	02/04: SF593 was referred to the Environment and Natural Resources Policy and Legacy Finance Committee	The bill establishes an outdoor heritage trust account to be invested through the SBI. The trust is funded by one-time payment of 30 times the property taxes payable in the year prior to the year the state acquires land using funds from the environment and natural resources trust fund and the outdoor heritage fund. The Department of Revenue acts as agent for making deposits and withdrawals from the account maintained at the SBI.

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TAB C

Report from the SBI Administrative Committee

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DATE: May 19, 2021

TO: Members, State Board of Investment

FROM: SBI Administrative Committee

The Administrative Committee met on April 15, 2021 and May 17, 2021 to consider the following agenda items:

- Review of Executive Director's Proposed Work Plan FY22
- Review of Budget Plan for FY22 and FY23
- Review of Continuing Fiduciary Education Plan
- Review of the Executive Director's Evaluation
- Update of the Business Continuity Plan

The members of the SBI Administrative Committee are:

Karl Procaccini	Chair and Governor's Representative
Bibi Black	Secretary of State's Representative
Ramona Advani	State Auditor's Representative
Luz Frias	Attorney General's Representative
Erin Leonard	Minnesota State Retirement System (MSRS)
Jay Stoffel	Teachers Retirement Association (TRA)
Doug Anderson	Public Employees Retirement Association (PERA)
Gary Martin	IAC Representative
Shawn Wischmeier	IAC Representative

Action is required by the SBI on the first four items.

1. Review of Executive Director's Proposed Work Plan for FY22

The Executive Director's Proposed Work Plan for FY22 was presented. As in previous work plans, the FY22 plan follows the same category order found in the Executive Director's position description. The plan is a compilation of on-going responsibilities as well as the new initiatives the Executive Director will undertake during the next fiscal year.

A summary of the proposed plan is shown in **Attachment A on Page 7** of this tab. The Executive Director will review the work plan summary. Supporting information is included in the FY22 Management and Budget Plan document.

RECOMMENDATION:

The Committee recommends that the SBI approve the FY22 Executive Director's Work Plan. Further, the Committee recommends that the Work Plan serve as the basis for the Executive Director's performance evaluation for FY22.

2. Review of Budget Plan for FY22 and FY23

The SBI's Administrative Budget is set annually by the Board. The budget is comprised of several portions:

Personnel Services
Operating Expenses
Investment Support Services
Directed Commission Services

The budget is funded by a combination of:

- direct charge-backs to entities that invest with the SBI;
- an appropriation by the legislature from the general fund to support management of general fund assets;
- directed appropriations budget from the investment asset pool; and
- the directed commissions budget received from the SBI's use of active investment management.

An overview of the budget is shown in **Attachment B on page 15 of this Tab**. Supporting information was sent to each Board member in April 2021 as part of the FY22 Management and Budget Plan.

RECOMMENDATION:

The Committee recommends that the SBI approve theFY22, and FY23 Administrative Budget Plan, as presented to the Committee, and that the Executive Director have the flexibility to reallocate funds between budget categories if the Executive Director deems necessary.

3. Review of Continuing Fiduciary Education Plan

Minnesota Statutes, Chapter 356A requires each public pension plan to establish a continuing education plan for its fiduciaries. The Continuing Fiduciary Education Plan is shown in **Attachment C on page 21 of this Tab**. Please note that the travel allocation policy for Board members and their designees is included in the plan.

RECOMMENDATION:

The Committee recommends that the SBI adopt the attached Continuing Fiduciary Education Plan.

4. **Review of the Executive Director's Evaluation**

The Committee discussed the process that will be used by the Board to evaluate the Executive Director. The Committee members agreed that the performance reviews should be completed by October 1st and should follow the process as discussed.

RECOMMENDATION:

The Committee recommends that the SBI adopt the following performance evaluation and salary process for the SBI Executive Director:

- **Evaluations by each Board member should be completed by October 1.**

- **The evaluations will be primarily based on the results of the Executive Director's Work Plan for the fiscal year ending the previous June 30.**

- **The SBI Deputies/Board designees will develop an appropriate evaluation form for use by each member.**

- **The Governor's Board designee will coordinate distribution of the evaluation forms. Board members will forward completed evaluations to the Executive Director. Board members will also send a copy of the Overall Evaluation (summary page 1) to the Governor's designee. Board members are encouraged to meet individually with the Executive Director to review their own evaluation.**

- **Upon satisfactory performance evaluations from a majority of responding Board Members, the Executive Director's annual salary will be adjusted to include any Cost-of- Living Adjustment (COLA)/Across the Board (ATB)/General Salary Increases and/or any Performance-Based Salary Increases contained in the FY22-23 Managerial Plan, to the extent that the resulting salary is within the Executive Director's salary range. The adjustments shall be effective on the relevant dates set forth in the FY22-23 Managerial Plan (anticipated to be July 1, 2021 for COLA/ATB/General Salary Increases and January 1, 2022 for Performance-Based Increases).**

- **The Governor's Board designee will provide a letter to the Executive Director confirming the status of the Executive Director's evaluation results by November 1.**

5. **Update of Business Continuity Plan**

Staff noted that the annual SBI Business Continuity Plan update had been completed.

ATTACHMENT A

STATE BOARD OF INVESTMENT
Executive Director's Proposed Work Plan
FY22
(Categories A, B, C, D, E correspond to the position description)

A. DEVELOPMENT OF INVESTMENT POLICIES

1. Participant Directed Investment Program (PDIP)

2. Comprehensive Review of Private Markets Portfolio

3. Climate Risk Analysis

4. Addressing Diversity Equity and Inclusion with SBI Investment Program

B. IMPLEMENTATION OF INVESTMENT POLICIES APPROVED BY THE SBI

1. Review of the current Minnesota Target Retirement Fund Option and Establish a Bench List of Approved Target Date Fund Managers

2. Portfolio Rebalancing: Transition Management

3. Meet or Exceed the Performance Objectives

4. Investments with New and Existing Private Markets Managers

5. Public Markets Manager Search Process

6. Conduct Investment Manager Portfolio and Compliance Review of Guidelines and Contracts

7. Internal Management of State Cash and Related Accounts

8. Implement State Law Concerning Iran

9. Implement State Law Concerning Sudan

C. REVIEW AND CONTROL OF INVESTMENT POLICIES

1. Monitor and Evaluate Investment Manager Performance
2. Public Markets Manager Guidelines
3. Provide Staff Support to Proxy Committee
4. Monitor Implementation of Northern Ireland Mandate
5. Provide Staff Support for Corporate Actions and Miscellaneous Legal Issues

D. ADMINISTRATION AND MANAGEMENT

1. RFP for General Consultant(s)
2. RFP for Custodial Services
3. RFP for Accounting System
4. Internal Cash Management RFP for Major Revenue Banking Services for State Cash Accounts
5. Coordinate Financial Audit by Legislative Auditor
6. Legislative Package Fiscal Year 2022
7. Prepare Fiscal Year 2023 Management and Budget Plan
8. Annual Update of Business Continuity Plan
9. Prepare Annual Supplemental Investment Fund (SIF) Investment Options Prospectus and Information Booklet for the Statewide Volunteer Firefighter Retirement Plan (SVFRP)
10. Prepare Annual Non-Retirement Prospectus for the Trusts and Other Participating Entities; Other Postemployment Benefits (OPEB); and Qualifying Governmental Entities
11. Respond to Minnesota Government Data Practices Act Requests

E. COMMUNICATION AND REPORTING

1. Prepare Reports on Investment Results

2. Meet with State Board of Investment (SBI) and Investment Advisory Council (IAC) Members

3. Meet with Board's Designees

4. Prepare Fiscal Year 2021 Annual Report

5. Investment Advisory Council (IAC) Discussions

F. OTHER ITEMS

During the course of the year, the Executive Director may encounter other significant items which must be addressed that were not contemplated at the time the annual workplan was developed. Any such items will be reported in the Executive Director's Workplan Status Report.

STATE BOARD OF INVESTMENT

Project Summary
FY22

DEVELOPMENT OF INVESTMENT POLICIES
Participant Directed Investment Program (PDIP)

GOAL: To support participants in their long-term financial wellness goals with a low cost, effective plan design for Participant Directed Investment Program (PDIP) participants. Staff will affirm that the investment options offered continue to be the lowest costs vehicle and reflect relevant broad asset class offerings.

BACKGROUND: The investment vehicles offered within the Participant Directed Investment Program have different fund structures and eligibility requirements. Consequently, not all investment funds are available to all plans. Currently, Public Employees Retirement Association (PERA) Defined Contribution (DC) participants invest in the Supplemental Investment Fund (SIF) platform, while other plans administered by MSRS invest in the Mutual Fund platform. The Executive Director has been segregating the defined benefit pension assets from the PDIP plans due to conflicting investment objectives. Staff will work with PERA to develop an alternative investment program or platform for the PERA DC plan.

Review of fund structures in each asset class.	Jun. – Dec.
Present recommendation to Plan Administrator, Minnesota State Retirement Systems (MSRS) and Public Employees Retirement Association (PERA)	Dec. – Mar.
Conduct due diligence if a new fund manager is required.	Mar. – Jun.

STATE BOARD OF INVESTMENT

Project Summary
FY22

DEVELOPMENT OF INVESTMENT POLICIES
Comprehensive Review of Private Markets Program

GOAL: To review the components and restructure of the Combined Funds Private Markets Program and to develop a strategic plan for the Program. The Executive Director will engage the Private Markets Consultant, IAC members, SBI Consultants, Staff and external experts to research and/or provide their perspective in order to assist him in developing prospective recommendations for the program.

BACKGROUND: The Combined Funds Private Markets Program began more than forty years ago and for the first quarter of the century was comprised primarily of private equity, real estate and resource investments. Over the past decade, the focus of the Program has broadened to include a variety of funds which in the earlier years had been included in many private equity portfolios; e.g., private credit, distressed and opportunistic strategies as well as an expansion of real asset based funds beyond the oil and gas/energy-focused funds which were a major focus of the Combined Funds portfolio.

The SBI has been very fortunate with the success of the Private Markets Program, having earned the reputation of one of the best performing Programs in the country. Despite its success, it is a worthwhile endeavor to review and examine the capability of further improving the performance of the Program.

The Executive Director, in consultation with the SBI's Private Markets Consultant, will review and analyze the following:

- Re-classify current funds into four major asset classes (Private Equity, Real Estate, Private Credit and Real Assets), with each categorizing distinct sub classes.
- Define the role of each major asset class in the Combined Funds. Assess prospective performance and risk characteristics of each of the classes.
- For each major asset class:
  - Review and analyze SBI historic performance.
  - Assess general asset class performance and composition.
  - Compare SBI performance vs. industry performance by Asset Class.
  - What could enhance SBI portfolio?
  - What has impaired SBI?
  - Candidates to dispose of (sell)?

- Analyze potential Private Market allocation structures.
  - We presume Private Equity will always be the cornerstone of the Program. The analysis will consider the impact that the addition/diminution of other asset classes would have on the Program.
  - Should the Program be predominantly Private Equity, or 100%, as a possibility?
  - Should other asset classes be excluded from the Program?
  - Do we need multiple asset classes for diversification purposes? Given the makeup of the non-Private Markets allocation, is it necessary to have a diversified Private Markets Program as part of the Total Fund portfolio?

- To what extent should the Private Markets Program have International exposure? Should each asset class include International exposure?

- To what extent should the Private Markets Program diversify by size of the underlying investment for the various Asset Classes?

- What role should secondary funds have in the Program?

- What role should co-investments have in the Program?

- Explain alternative approaches to commitment pacing.

- Explain impact of commitment pacing to the management of unfunded commitments.

- Explain impact of comment pacing and management of funded commitments on total fund liquidity.

- What impact would any of the above recommendations have in terms of Private Markets team structure?

- Explain how Environmental, Social, and Governance factors should be incorporated into the program.

Outline review project and develop timeline with Private Markets Consultant.	Apr. – Jun. 2021

The review is anticipated to continue into Fiscal Year 2023 to cover all parts of the project.

STATE BOARD OF INVESTMENT

Project Summary
FY22

DEVELOPMENT OF INVESTMENT POLICIES
Climate Risk Analysis

GOAL:	Review the impact of climate risk and address how best to mitigate its impact on the SBI Investment Assets.
BACKGROUND:	The SBI has been reviewing the topic of climate change for the past several years. The organization has recognized that climate change presents a critical risk to its investment program. We also recognize that divestment does not necessarily represent the best approach to responsible investing. It should be acknowledged that the SBI will need to transition aspects of the portfolio in meeting certain terms of the Paris Agreement. The task of determining the SBI's obligations and corresponding strategy is a complicated one. We have determined that we would benefit from a better understanding of the obligations as we attempt to establish and implement a successful transition strategy. The Executive Director plans to engage the SBI special project consultant to aid in this important undertaking.

STATE BOARD OF INVESTMENT

Project Summary
FY22

DEVELOPMENT OF INVESTMENT POLICIES
Addressing Diversity Equity and Inclusion with SBI Investment Program

GOAL: To address the issue of Diversity, Equity and Inclusion (DEI) in the SBI Investment Program in response to the Board directive included in the Environmental, Social, and Governance (ESG) Resolution dated February 26, 2020. The Executive Director will assemble a task force to advise him with the objective of presenting a potential recommendation to the Board during the first half of Fiscal Year 2022.

BACKGROUND: In an effort to provide opportunities for women and minority investment managers to manage institutional portfolios, Public Pension Funds have historically created Emerging Manager Programs to manage some of their assets. Many of these programs have been successful; not only from a performance perspective but also in enabling such firms to grow their businesses and compete on a level playing field with other investment managers.

The State Board of Investment created such a program in 1994, focusing solely on public equities managers. By most accounts, the Program was successful as several of the managers graduated from the emerging manager program in the early 2000's and some remain in the SBI portfolio today.

The Executive Director, who managed the aforementioned SBI emerging managers Program, also subsequently created the Terra Maria Developing Manager Program for the State of Maryland Retirement System. This Program received national recognition. The program was created at the beginning of the Great Financial Crisis in the fall of 2008 and continues to be a part of the Maryland portfolio today. While this Program initially focused on public market managers, it was expanded to include private market managers as well.

The above efforts were early attempts by public pension plans and other institutional investors to address the issue of diversity and inclusion within the investment industry. Recently, there has been an increasing appetite among institutional investors to promote Diversity, Equity and Inclusion (DEI) within investors' portfolios. As there has been a greater adoption of Environmental, Social, and Governance principles amongst investors, it has been recognized that investors have driven relatively rapid action on climate change and other environmental issues. Many believe that collaborative support could also lead to swift, positive change on DEI.

The Executive Director has been reviewing how other institutional investors have been approaching the issue of DEI in their portfolios. Much of the dialogue has centered around increased advocacy towards corporations, instituting or increasing programs geared towards greater engagement with diverse asset managers, and directing fund commitments towards return-seeking funds that will invest and engage with businesses owned and operated by minorities or women, or with entities seeking to promote improving economic prosperity among undercapitalized racial and ethnic groups or communities, or similar ventures. The intent of these efforts are not simply to do good but also to provide investors with a return.

The Executive Director believes these efforts are in concert with the Boards' directive to him from the Resolution of the Minnesota State Board of Investment Concerning Environmental, Social, and Governance Initiatives dated February 26, 2020. In order to advance this initiative, the Executive Director will form a task force to advise him with plans to bring a recommendation to the Board for potential action either the first or second quarter SBI meeting of Fiscal Year 2022.

STATE BOARD OF INVESTMENT

Project Summary
FY22

IMPLEMENTATION OF INVESTMENT POLICIES
Review of the current Minnesota Target Retirement Fund Option and Establish a Bench List of Approved Target Date Fund Managers

GOAL: To gather data from the record keeper so that the consultant can provide a thorough review of the glide path in the Minnesota Target Retirement Fund offered to participants in the 457(b) Minnesota Deferred Compensation Plan and the Unclassified Retirement Plan. In addition to this review, establish a Bench List of approved target date fund managers to hire, if needed.

BACKGROUND: Target date funds provide a low maintenance investment option to participants. They offer a professionally managed, diversified portfolio, with a pre-determined asset allocation target based on the participants retirement date. Staff last completed a review of the Minnesota Target Retirement Fund option in fiscal year 2016. At that time, the recommendation was to continue with the current provider, State Street Global Advisors (SSGA), and customize the Minnesota Target Retirement Fund glide path to map to SSGA's five-year older vintage. The custom glide path is more conservative than SSGA's off the shelf glide path with the highest allocation in fixed income triggered at retirement compared to through retirement.

After further due diligence on potential target date firms, staff will consider whether it is appropriate to recommend a firm(s) to place on a Bench List as a possible hire(s). Historically, and consistent with industry practice, the target date fund option has been managed by a single investment manager. Reliance on a single manager, however, limits a plan sponsor's ability to quickly and efficiently replace the manager should conditions warrant a change. Staff believes the most effective way to shorten the replacement timeline is to establish a formal Bench List.

Record keeper gathering participant demographic data.	Jul.
Review of broader universe of target date funds glide path design and suitability, underlying fund structures, performance and fees.	Nov.
Conduct due diligence and establish a Bench List of potential Target Date Fund managers for the Executive Director to receive pre-authorization to hire, if needed.	Mar. 2022

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ATTACHMENT B

Administrative Budget
Fiscal Year 2022 & 2023 Budget Plan
Overview

The Fiscal Years 2022 and 2023 budget process is based on budget procedures instituted by Minnesota Management and Budget. The SBI receives a General Fund appropriation (currently \$139,000) to support the management of the General Fund portion of the Invested Treasurer's Cash (ITC) pool. The remaining budget revenues are generated from invoicing actual cost of services to plans that have funds under SBI management. In Fiscal Year 2021, the SBI invoices over 400 plans on a quarterly basis.

The Fiscal Year 2022 budget includes 35 Full Time Equivalent (FTE) positions. The 35 budgeted positions remains the same as the budget in Fiscal Year 2021. In Fiscal Year 2021, we will have filled 26 positions. The SBI has included a 3% projected salary increase in the budget for all staff in Fiscal Years 2022 and 2023. The investment staff salaries also include a 3% performance increase that requires approval from the Board. The actual salary increases for non-investment staff will be determined by legislative negotiated contracts per bargaining unit. The investment staff salary increases, if any, will be determined in accordance with the SBI Salary Plan.

In Fiscal Years 2022 and 2023, the SBI reduced operating expenses from the 2021 budget. The decrease is in Professional Technical Services, Supplies and the Equipment line items. The decrease in those line items is for no longer budgeting for the remodel/move of SBI office space. It may be necessary to call a special budget meeting to fund a remodel/move if offices return to pre-COVID space needs.

Administrative Budget
Fiscal Year 2022 & 2023 Budget Plan

	FY2021 Budget	FY2021 Projected	FY2022 Request	FY2023 Request
Personnel Services	$6,846,000	$5,079,100	$7,085,800	$7,263,800
Operating Expense	2,004,000	1,078,300	1,650,000	1,650,000
Total	$8,850,000	$6,157,400 0	$8,7350,80 0	$8,913,800

Personnel Services: Personnel Services are estimated to account for 81% of the requested Fiscal Year 2022 budget and 81% of the requested Fiscal Year 2023 budget.

Personnel Services include salaries, retirement, insurance, FICA and severance.

Operating Expenses: Operating Expenses are estimated to account for 19% of the requested Fiscal Year 2022 budget, and 19% of the requested Fiscal Year 2023 budget.

Operating Expenses include rents, leases, printing, data processing, communications, travel, employee development, miscellaneous fees, office equipment, furnishings and supplies.

Investment Support Services Budget
Fiscal Year 2022 & 2023 Budget Plan
Overview

The SBI currently has three Investment Support Services contracts that are funded from the Investment Support Services budget. The SBI is in the process of adding a Private Markets consultant.

	FY2021 Budget	**FY2021 Projected**	**FY2022 Request**	**FY2023 Request**
Investment Support	$5,000,000	$1,130,100	$4,000,000	$4,000,000
Total	$5,000,000	$1,130,100	$4,000,000	$4,000,000

Investment Support: The Investment Support Services budget will cover the following contracts for Fiscal Year 2021 and Fiscal Year 2022: Aon Investments USA Inc., Meketa Investment Group, LLC, Albourne America LLC, and Broadridge Financial Solutions, Inc.

STATE BOARD OF INVESTMENT
ADMINISTRATIVE BUDGET PLAN
FISCAL YEARS 2022 AND 2023

DESCRIPTION	FY2021 BUDGET	FY2021 PROJECTED	FY2022 PROPOSED	FY2023 PROPOSED
PERSONNEL SERVICES				
FULL TIME EMPLOYEES	$ 6,721,000	5,079,100	$ 6,735,800	$ 6,913,800
OTHER BENEFITS	125,000	-	350,000	350,000
SUBTOTAL	$ 6,846,000	5,079,100	$ 7,085,800	$ 7,263,800
STATE OPERATIONS				
RENTS & LEASES	285,000	280,700	285,000	285,000
PRINTING & BINDING	12,000	10,000	12,000	12,000
PROFESSIONAL/TECHNICAL SERVICES	360,000	135,000	250,000	250,000
COMPUTER SYSTEMS SERVICES	150,000	131,000	169,000	169,000
COMMUNICATIONS	25,000	15,700	25,000	25,000
TRAVEL, IN-STATE	3,000	-	3,000	3,000
TRAVEL, OUT-STATE	235,000	-	235,000	235,000
EMPLOYEE DEVELOPMENT	150,000	98,600	150,000	150,000
SUPPLIES	150,000	15,100	50,000	50,000
REPAIRS/ALTERATIONS/MAINTENANCE	21,000	2,700	21,000	21,000
INDIRECT COSTS	300,000	225,400	300,000	300,000
OTHER OPERATING COSTS	125,000	111,000	125,000	125,000
EQUIPMENT	188,000	53,100	25,000	25,000
SUBTOTAL	$ 2,004,000	$ 1,078,300	$ 1,650,000	$ 1,650,000
TOTAL MSBI OPERATING FUND	$ 8,850,000	$ 6,157,400	$ 8,735,800	$ 8,913,800
PERCENT INCREASE (DECREASE) OVER PRIOR YEAR BUDGET			-1.3%	2.0%

STATE BOARD OF INVESTMENT
INVESTMENT SUPPORT SERVICES BUDGET PLAN
FISCAL YEARS 2022 AND 2023

DESCRIPTION	FY2021 BUDGET	FY2021 PROJECTED	FY2022 PROPOSED	FY2023 PROPOSED
STATE OPERATIONS				
PROFESSIONAL/TECHNICAL SERVICES	4,500,000	800,000	3,500,000	3,500,000
COMPUTER SYSTEMS SERVICES	500,000	330,100	500,000	500,000
TOTAL	$ 5,000,000	$ 1,130,100	$ 4,000,000	$ 4,000,000
PERCENT INCREASE (DECREASE) OVER PRIOR YEAR BUDGET			-20.0%	0.0%

STATE BOARD OF INVESTMENT
DIRECTED COMMISSIONS
CALENDAR YEAR 2021

DESCRIPTION	CY2020 BUDGET	CY2020 ACTUAL	CY2021 PROPOSED
DIRECTED COMMISSIONS			
DIRECTED COMMISSIONS	1,302,700	$ 1,188,100	1,315,200
PERCENT INCREASE (DECREASE) OVER PRIOR YEAR BUDGET			0.96%

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ATTACHMENT C

CONTINUING FIDUCIARY EDUCATION PLAN

REQUIRED BY MS 356A.13

The State Board of Investment (SBI) undertakes the following activities related to fiduciary education. Taken as a group, these activities shall constitute the plan for continuing fiduciary education required by Minnesota Statutes 356A.13. In addition, pursuant to statutory requirements of qualification, the SBI Executive Director and many members of the Board's Investment Advisory Council (IAC) can be reasonably considered to be experts with respect to their duties as fiduciaries.

1. Briefing for New Board/IAC Members

Shortly after election to the Board or appointment to the IAC, each new member is briefed on SBI operations and policies. As part of the briefing, SBI's legal counsel will review the member's fiduciary obligations and responsibilities as specified in *Minnesota Statutes,* Chapters 11A and 356A.

2. Development and Review of Investment Policies

The SBI adopts comprehensive investment policies for each fund under its control. The policies cover investment objectives, asset allocation, management structure, and performance evaluation. Policy papers or reports on these topics are developed and written by SBI staff in conjunction with the IAC and consultants. Relevant research and analyses from the academic and professional investment fields are used to formulate these policy guidelines.

After the Board formally adopts them, these written policies guide the management of all assets under the SBI's control. The SBI intends to review its stated investment policies periodically. This review may occur within the framework of the SBI's regular quarterly meetings or may take place at special meetings or seminars specifically designated for this purpose.

3. Input from Board's Consultants

The SBI retains outside investment consultants to advise the Board members on a wide variety of investment management issues. As part of their contracts with the SBI, the consultants offer to meet with the Board members or their designees to discuss investment-related issues. These individual consultations occur throughout the year. In addition, the general consultant is available at each meeting of the Board and IAC. These meetings are supplemented by quarterly reports on investment performance prepared by the general consultant.

4. Roundtable Discussions

Roundtable discussions will be held periodically for Board members, Investment Advisory Council members, and other interested parties. The Roundtable Discussions will be presented primarily by SBI consultants, investment managers, and /or SBI Staff. The discussions will focus on investment or other relevant educational information which is pertinent to the management and / or oversight of the SBI Investment Programs.

5. Travel Allocation

The SBI allocates $10,000 annually to each Board member (or their designee) for costs associated with attendance at investment-related seminars and conferences. This allocation is used at the discretion of each Board member.

2020 Minnesota Statutes

356A.13 CONTINUING FIDUCIARY EDUCATION

Subdivision 1. **Obligation of fiduciaries**. A fiduciary of a covered pension plan shall make reasonable effort to obtain knowledge and skills sufficient to enable the fiduciary to perform fiduciary activities adequately. At a minimum, a fiduciary of a covered pension plan shall comply with the program established in accordance with subdivision 2.

Subd. 2. **Continuing fiduciary education program**. The governing boards covered pension plans shall each develop and periodically revise a program for the continuing education of any of their board members and any of their chief administrative officers who are not reasonably considered to be experts with respect to their activities as fiduciaries. The program must be designed to provide those persons with knowledge and skills sufficient to enable them to perform their fiduciary activities adequately.

TAB D

Private Markets Investment Program

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DATE: May 19, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Private Markets Commitments for Consideration

Staff has reviewed the following action agenda item:

A. Status of SBI Current Private Markets Commitments
B. Consideration of new commitments

Existing Managers:

Private Equity	Blackstone	BCP Asia II	$300 Million
Private Equity	KKR	KKR MN Partnership	$150 Million
Private Equity	TPG	TPG Growth V	$150 Million
Private Equity	TPG	TPG TTAD II	$150 Million
Real Estate	Carlyle	CRP IX	$300 Million
Real Estate	Brookfield	BSREP IV	$300 Million

SBI action is required on item B.

A. Status of SBI Current Private Markets Commitments

Minnesota State Board of Investment

Combined Funds
March 31, 2021

Combined Funds Market Value	$84,537,734,865
Amount Available for Investment	**$7,346,604,440**

	% of Combined Funds	Current Level	Target Level [1]	Difference
Market Value (MV)	16.3%	$13,787,829,277	$21,134,433,716	$7,346,604,440
Policy Target	*25%*			
Statutory Limit	*35%*			
MV +Unfunded	28.7%	$24,261,715,121	$38,041,980,689	$13,780,265,568
Policy Limit	*45.0%*			

Asset Class	% of Combined Funds	Market Value	Unfunded Commitment	Total
Private Equity	10.2%	$8,593,478,576	$6,270,559,430	$14,864,038,006
Private Credit	1.1%	$910,431,733	$1,214,071,357	$2,124,503,090
Real Assets	2.1%	$1,759,461,334	$717,311,658	$2,476,772,992
Real Estate	1.4%	$1,188,006,467	$1,136,216,567	$2,324,223,034
Distressed/Opportunistic	1.5%	$1,286,817,881	$1,135,726,832	$2,422,544,713
Other[2]		$49,633,286		
Total		$13,787,829,277	$10,473,885,844	$24,261,715,121

Cash Flows
March 31, 2021

Calendar Year	Capital Calls	Distributions	Net Invested
2021 (3 months)	$719,988,116	$687,326,335	$32,661,781
2020	$2,786,134,001	($2,318,825,278)	$467,308,723
2019	$2,543,614,503	($2,080,037,860)	$463,576,642
2018	$1,992,000,341	($2,049,733,815)	($57,733,474)
2017	$2,021,595,780	($2,383,863,711)	($362,267,931)

[1] There is no target level for MV + Unfunded. This amount represents the maximum allowed by policy

[2] Represents in-kind stock distributions from the liquidating portfolio managed by T.Rowe Price and cash accruals.

B. Consideration of New Investment Commitments

ACTION ITEMS:

1) **Investment with an existing private equity manager, The Blackstone Group ("Blackstone"), in Blackstone Capital Partners Asia II ("BCP Asia II").**

   Blackstone is forming Blackstone Capital Partners Asia II to make large scale control and control-oriented private equity investments in the Asia Pacific region, primarily India, China, Australia, Southeast Asia, Korea and Japan. Control-oriented transactions allow Blackstone to implement their operating intervention playbook, influence key relationships and management decisions and exercise exit optionality. Blackstone focuses heavily on sectors with understandable business models, free cash flow generation and healthy returns on invested capital. Technology, Consumer and Healthcare sectors have been the main focus of the BCP Asia I portfolio.

   In addition to reviewing the attractiveness of the Blackstone Capital Partners Asia II investment offering, staff conducted due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

   More information on Blackstone Capital Partners Asia II is included as **Attachment A beginning on page 9.**

   RECOMMENDATION:

   The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $300 million, or 20% of Blackstone Capital Partners Asia II, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Blackstone upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Blackstone or reduction or termination of the commitment.

2) **Investment with an existing private equity manager, KKR, in KKR MN Partnership ("The Partnership").**

   KKR and the SBI seek to establish KKR MN Partnership to co-invest in certain investments made by KKR funds in which the SBI is also a Limited Partner. Such a partnership would be invested consistent with guidelines around portfolio construction and discretion agreed upon by both KKR and the SBI, including the appropriate time horizon as well as sizing of individual investments. It is anticipated that co-investment opportunities may arise from corporate private equity transactions in North America, Europe and Asia, KKR's Global Infrastructure platform, or other KKR strategies that the SBI may approve in the future, and that such opportunities will be consistent with the investment approach and investment themes pursued by the relevant KKR Fund pursuing the transaction.

In addition to reviewing the attractiveness of the KKR MN Partnership investment offering, staff conducted due diligence, reference checks, a literature database search, and reviewed the relevant co-investment track record.

More information on KKR MN Partnership is included as **Attachment B beginning on page 13.**

RECOMMENDATION:

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $150 million to KKR MN Partnership, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by KKR upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on KKR or reduction or termination of the commitment.

3) Investment with an existing private equity manager, TPG, in TPG Growth V ("Fund V").

TPG is forming TPG Growth V to serve as the primary TPG investment vehicle for non-impact growth equity and control growth buyout investment opportunities requiring an equity investment of $200 million or less in companies whose principal business operations are in the United States, Canada or Europe and $100 million or less in companies whose principal business operations are in Asia, Australia or Latin America. Fund V is expected to generally make three types of investments: (i) growth equity investments; (ii) control growth buyout investments; and (iii) selectively-considered investments in later stage venture opportunities.

In addition to reviewing the attractiveness of the TPG Growth V investment offering, staff conducted due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on TPG Growth V is included as **Attachment C beginning on page 17.**

RECOMMENDATION:

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to

negotiate and execute a commitment of up to $150 million, or 20% of TPG Growth V, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by TPG upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on TPG or reduction or termination of the commitment.

4) **Investment with an existing private equity manager, TPG, in TPG Tech Adjacencies II ("TTAD II").**

TPG is seeking investors to invest primarily in companies within the internet, software, digital media and other similar technology sectors. TTAD II expects to pursue structured equity, common equity, and opportunistic investments (for example, preferred equity, public debt trading at a discount, direct debt purchases, PIPEs, and pre-IPO transactions). TPG believes TTAD II can provide a flexible source of capital to take advantage of the opportunities within the current technology market. TPG believes it's well positioned with a bench of portfolio company CEOs, founders and senior advisors that supplement their thematically integrated deal teams in sourcing investment opportunities and driving their historically strong returns across core sector themes in which they have demonstrated expertise.

In addition to reviewing the attractiveness of the TPG Tech Adjacencies II investment offering, staff conducted due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on TPG Tech Adjacencies II is included as **Attachment D beginning on page 21.**

RECOMMENDATION:

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $150 million, or 20% of TPG Tech Adjacencies II, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by TPG upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on TPG or reduction or termination of the commitment.

5) **Investment with an existing real estate manager, The Carlyle Group ("Carlyle"), in Carlyle Realty Partners IX ("CRP IX").**

Carlyle is establishing CRP IX to make opportunistic real estate investments in the United States. CRP IX seeks to provide investors attractive risk-adjusted returns from significant capital appreciation and current cash yields. The CRP team focuses primarily on real estate demand drivers, which are segmented between two primary factors: those more correlated with and driven, in part, by the economic cycle ("GDP-Driven Sectors"), and those less correlated with the economic cycle and driven, in part, by shifts in demographic cohorts ("Demographic-Driven Sectors"). Demographic-Driven Sectors include: senior living, active adult rental, multifamily residential, self-storage, manufactured housing, life sciences, student housing, and for-sale residential. GDP-driven sectors include office, retail, hotel, and industrial.

In addition to reviewing the attractiveness of the Carlyle Realty Partners IX investment offering, staff conducted due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Carlyle Realty Partners IX is included as **Attachment E beginning on page 25.**

RECOMMENDATION:

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $300 million, or 20% of Carlyle Realty Partners IX, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Carlyle upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Carlyle or reduction or termination of the commitment.

6) **Investment with an existing real estate manager, Brookfield Asset Management ("Brookfield"), in Brookfield Strategic Real Estate Partners IV ("BSREP IV").**

Brookfield is forming BSREP IV to continue Brookfield's history of making opportunistic real estate investments globally. Brookfield has a global reach with local on-the-ground presence in key markets. Brookfield will seek to generate opportunistic risk-adjusted returns by acquiring real estate companies, portfolios, distressed loans and securities, and standalone assets. Post-investment, Brookfield will employ an operations-oriented approach to create value through intensive asset management, proactive leasing, redevelopment or repositioning. BSREP IV is expected to invest approximately 45% of the Fund in the Americas, 30% in Europe and the Middle East, and 25% in Asia-Pacific.

In addition to reviewing the attractiveness of the Brookfield Strategic Real Estate Partners IV investment offering, staff conducted due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Brookfield Strategic Real Estate Partners IV is included as **Attachment F beginning on page 29.**

RECOMMENDATION:

The Investment Advisory Council concurs with Staff's recommendation that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to negotiate and execute a commitment of up to $300 million, or 20% of Brookfield Strategic Real Estate Partners IV, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and neither the State of Minnesota, the Investment Advisory Council, the State Board of Investment nor its Executive Director have any liability for reliance by Brookfield upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Brookfield or reduction or termination of the commitment.

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ATTACHMENT A

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Blackstone Capital Partners Asia II L.P.
Type of Fund:	Private Equity
Target Fund Size:	$6 Billion
Fund Manager:	The Blackstone Group Inc.
Manager Contact:	Candice Sorbera 345 Park Avenue New York, NY 10154

II. Organization and Staff

The Blackstone Group Inc. (together with its affiliates "Blackstone" or the "Firm") is sponsoring Blackstone Capital Partners Asia II L.P. ("BCP Asia II" or the "Fund"), a private investment fund that will make large scale control and control-oriented private equity investments in the Asia Pacific region.

Blackstone was founded in 1985 by Stephen A. Schwarzman and Peter G. Peterson and is headquartered in New York, NY. Blackstone's alternative asset management businesses include investment vehicles focused on private equity, real estate, hedge fund solutions, credit, secondary funds, tactical opportunities, life sciences, infrastructure and insurance solutions. Blackstone has a seasoned team of investment professionals across 8 offices in Asia (Beijing, Mumbai, Hong Kong, Seoul, Singapore, Shanghai, Sydney and Tokyo). BCP Asia II will be led by Joseph Baratta and a single global Investment Committee comprised of Stephen A. Schwarzman, Jonathan Gray, Hamilton E. James, Joseph Baratta, Prakash Melwani and BCP Asia's Senior Managing Directors. Prakash Melwani is Executive Chairman of BCP Asia, focused on the investment process and theme development. Amit Dixit and Ed Huang are the Co-heads of BCP Asia Acquisitions focused on deal origination and execution function of BCP in Asia. Amit, Ed and other Senior Managing Directors in Asia have an average tenure with the firm of 8 years and 20 years in the local markets. They lead a dedicated team of 63 investment and operating professionals spanning 5 private equity offices across the Asia Pacific region.

Environmental Social & Governance (ESG) Program

Blackstone believes that a comprehensive ESG program, aside from being the right thing to do, drives value and enhances returns for their investors. The Firm also believes that understanding ESG factors helps to understand trends and how they will shape demand and markets in years to come.

Blackstone encourages and implements appropriate governing structures and processes in each of their portfolio companies in order to ensure ongoing regulatory compliance by those companies. This allows Blackstone to identify on an ongoing basis material ESG risks and opportunities that arise. On an annual basis, Blackstone asks its portfolio companies to confirm the adequacy of their ESG policies and procedures. The Firm conducts an annual ESG survey which assesses companies' approach and management of ESG risks in addition to conducting quarterly ESG data collection to track performance on a range of material ESG topics including diversity, unity spend, average wages and community investment.

In addition, Blackstone looks to continually increase its efforts and commitment to diversity inside the firm and in the industry. This commitment takes several forms: internal networks to engage, retain and develop their existing diverse populations; targeted recruiting efforts designed to attract qualified, diverse talent to Blackstone; and partnerships with external diversity-focused organizations.

III. Investment Strategy

Blackstone Capital Partners Asia II will focus solely on investing in the Asia Pacific region, primarily India, China, Australia, Southeast Asia, Korea and Japan. Blackstone has invested or committed $7.4 billion in the Asia Pacific region through its global BCP funds since 2006. Investing in Asia is a long-term strategic priority, and today Blackstone is one of the largest alternative asset managers in the region.

BCP Asia II is primarily focused on control-oriented transactions which allows Blackstone to implement their operating intervention playbook, influence key relationships and management decisions and exercise exit optionality. In deploying BCP Asia I, Blackstone established themselves as the leader in control-oriented Growth Buyouts in Asia, becoming the most active buyout investor in India and executing two of the largest private equity transactions in Japan.

Blackstone's sector selection and cycle timing are crucial components of the investment process. They purposely target sectors which leverage their existing portfolio/BX platform and deep domain expertise. Technology, Consumer and Healthcare have been a main focus of the BCP Asia I portfolio. Additionally, Blackstone focuses heavily on sectors with understandable business models, free cash flow generation and healthy returns on invested capital. For the purposes of the Asia investment strategy this often means avoiding sectors heavily exposed to government regulation and/or spending.

A key way Blackstone sets itself apart from peers is by actively targeting companies in which significant equity value can be created through identifiable, executable strategic and operational change. The Firm's strategic/operational change initiatives might focus on areas such as leveraging data science for new sales leads, entry into new geographies, upgrading of existing management, pricing, cost reduction, lean process, acquisitions and/or deployment of capital to fund new businesses or product lines. Blackstone strives for each portfolio company to have a fit-for-purpose chairperson to work closely with the executive management teams of their companies to implement the “Operating Intervention Plan”. These chairpersons are recruited specifically for each portfolio company and possess relevant skills and domain expertise to help drive value creation in Blackstone companies. The chairpersons are not Blackstone employees but are engaged by their portfolio companies and are recruited from Blackstone’s vast network of operating executives established over many years.

Blackstone seeks to control risk in a number of ways that may include diversification across investment strategies, underlying investment structures, geography and the expected maturity or holding periods of positions; hedging of foreign exchange, interest rate and currency exposure; and operational controls. Blackstone regularly conducts risk analysis on its investment portfolio, including backward looking “audits’ of pre-investment underwriting; quarterly review of performance against underwriting assumptions; measurement of industry, asset class and geographic exposure; and scenario analysis.

Maintaining a robust process for evaluating exits is also a crucial part of risk management and optimizing returns. When contemplating a potential exit, the deal team will compose an exit memorandum that highlights the opportunity presented, the timing and operating risks if they postpone, the risk-adjusted reinvestment or “do nothing” rate of return and the distributed proceeds under various exit options. The investment team then discusses the exit scenario with the Investment Committee and makes an informed, probability weighted exit decision in the best interests of the Limited Partners and the overall fund return.

IV. Investment Performance

Previous fund performance as of December 31, 2020 for Blackstone and the SBI's investments with previous funds, where applicable, is shown below:

Fund	Vintage Year	Total Commitments	SBI Commitments	Net IRR*	Net MOIC*	Net DPI*
BCP Asia	2017	$2.29 billion	--	35%	1.5	0.12x

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Distributed to Paid in Capital (DPI) represents the amount that has been paid out to investors and is calculated by dividing cumulative distributions by paid in capital.

V. Investment Period and Term

The term of the fund is eleven years from the Effective Date, subject to two one-year extensions unless the L.P. Advisory Committee objects, and further additional one-year extensions subject to L.P. Advisory Committee approval. The Investment Period will last for a period of six years from the Effective Date of the Fund.

This document has been prepared by the Minnesota State Board of Investment (MSBI) and any views or opinions expressed herein are solely the views of MSBI and not Blackstone. Blackstone shall not be responsible for the contents of this document produced by MSBI. This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM and any supplemental thereto.

ATTACHMENT B

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	KKR MN Partnership
Type of Fund:	Private Equity
Target Fund Size:	$150 Million
Fund Manager:	KKR
Manager Contact:	Ari Barkan 30 Hudson Yards Suite 7500 New York, NY, 10001

II. Organization and Staff

Kohlberg Kravis Roberts & Co. ("KKR" or the "General Partner"), one of the world's oldest and most experienced private equity firms, is headquartered in New York, NY and has over twenty office locations globally. Founded in 1976 by Jerome Kohlberg, Henry R. Kravis and George R. Roberts, KKR seeks to provide its investors with long-term capital appreciation through multiple business platforms, including private equity, credit, infrastructure and real estate.

Today, KKR is a global firm with offices in 20 cities across four continents, and with over $234 billion of assets under management. The Firm has approximately 500 investment executives positioned across private equity, credit, infrastructure, real estate, growth equity and energy, working together with the operations-focused team of KKR Capstone; the Global Macro, Balance Sheet and Risk Team; KKR Capital Markets; the Public Affairs team; KKR Global Institute; and the Client and Partners group.

KKR believes that in order to deliver outstanding investment performance for the investors in its funds, it needs to become more diverse and inclusive than it is today. In 2014, KKR established its Inclusion and Diversity Council to pursue this goal. KKR also became a signatory of the UN-supported Principles for Responsible Investment in 2009 and over the past decade has established itself as a credible leader in driving and protecting value through thoughtful Environmental, Social and Governance ("ESG") management.

III. Investment Strategy

KKR ("The Firm") and the SBI seek to establish KKR MN Partnership ("The Partnership") to co-invest in certain investments made by KKR funds in which the SBI is also a Limited Partner. Such a partnership would be invested consistent with guidelines around portfolio construction and discretion agreed upon by both KKR and the SBI, including the appropriate time horizon as well as sizing of individual investments.

It is anticipated that co-investment opportunities may arise from corporate private equity transactions in North America, Europe and Asia, KKR's Global Infrastructure platform or other KKR strategies that MSBI may approve in the future, and that such opportunities will be consistent with the investment approach and investment themes pursued by the relevant KKR Fund pursuing the transaction. The Partnership will invest exclusively in transactions originating from KKR funds in which the SBI is a Limited Partner; as such, the SBI will have already performed due diligence on the relevant strategy, investment team and investment process prior to the Partnership participating in any investment.

All potential investments at KKR go through a rigorous due diligence process. As part of this process, in conversations with the respective KKR industry teams, cross-functional internal subject matter experts review prospective investments to identify material Environmental, Social or Governance ("ESG") factors, gather the appropriate information from the company in question, and make informed recommendations about potential risks and opportunities as potential investments move through the Investment Committee process.

ESG considerations are an integral part of the diligence phase and can affect investment decisions. ESG-related concerns are often intertwined with other business issues that make the business more, or less, attractive for investment. If an ESG issue is uncovered during diligence, KKR proactively looks for opportunities to address and fix the problem. In the rare case that KKR cannot adequately address the ESG-related issue, it will pass on the investment. Understanding ESG challenges and opportunities of individual investments helps KKR determine whether to invest in a company and, more importantly, the best strategy for working with a company in the future.

IV. *Investment Performance*

Performance of recent prior KKR Private Equity Funds as of December 31, 2020 is shown below**:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
Millennium Fund	2002	$6.0 Billion	$200 Million	16.1%	2.0x	2.0x
2006 Fund	2006	$17.6 Billion	$200 Million	9.4%	1.8x	1.6x
North America Fund XI	2012	$8.7 Billion	--	18.5%	1.9x	1.1x
Americas Fund XII	2017	$13.5 Billion	$150 Million	24.2%	1.5x	0.0x

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
Asian Fund	2007	$4.0 billion	--	13.7%	1.8x	1.8x
Asian Fund II	2013	$5.8 billion	--	9.5%	1.4x	0.6x
Asian Fund III	2017	$9.0 billion	$100 Million	30.1%	1.4x	0.2x
Asian Fund IV	2020	$15.0 billion	$150 Million	n/a	n/a	n/a

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
European Fund I	1999	$3.1 Billion	--	20.2%	2.3x	2.3x
European Fund II	2005	$5.8 Billion	--	4.5%	1.3x	1.3x
European Fund III	2008	$6.1 Billion	--	11.5%	1.7x	1.6x
European Fund IV	2015	$3.5 Billion	--	21.3%	1.7x	0.7x
European Fund V	2019	$6.6 billion	$100 Million	27.4%	1.2x	0.0x

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
Global Infrastructure Investors	2011	$1.1 Billion	--	15.5%	1.9x	1.9x
Global Infrastructure Investors II	2014	$3.1 Billion	--	17.0%	1.6x	0.8x
Global Infrastructure Investors III	2018	$7.3 Billion	$150 million	n/a	1.0x	0.1x

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Net MOIC provided by the manager.

** It is anticipated that KKR MN Partnership will composed of investments predominantly representing the above funds' strategies, and possibly other KKR strategies that may be approved by the MSBI in due course.

V. *Investment Period and Term*

The investment period for the Fund will run until December 31, 2025, subject to one one-year extension at the GP's discretion. The term of the fund will follow the underlying co-investments.

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ATTACHMENT C

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	TPG Growth V, L.P.
Type of Fund:	Private Equity – Growth
Target Fund Size:	$3.5 billion ($4 billion hard cap)
Fund Manager:	TPG
Manager Contact:	Joe Buss 345 California Street Suite 3300 San Francisco, CA 94104

II. Organization and Staff

TPG is one of the largest global alternative investment firms in the world, with total assets under management of approximately $91 billion (as of 12/31/20) and a platform of complementary investment funds that pursue opportunities in private equity, real estate and public equity. The Firm currently has 12 offices worldwide – San Francisco, Fort Worth, New York, London, Hong Kong, Beijing, Luxembourg, Melbourne, Mumbai, Seoul, Singapore and Washington D.C. – and approximately 1,000 employees and advisors, including approximately 500 investment and operations professionals. TPG Growth is able to leverage the broader TPG ecosystem of global professionals, along with a team of over 50 investment and business building professionals dedicated to TPG Growth.[1]

TPG (the "Firm") is forming TPG Growth V, L.P. (the "Fund" or "TPG Growth V") to serve as the primary TPG investment vehicle for non-impact growth equity and control growth buyout investment opportunities requiring an equity investment of $200 million or less in companies whose principal business operations are in the United States, Canada or Europe and $100 million or less in companies whose principal business operations are in Asia, Australia or Latin America. The management of the Fund will be led by senior TPG Growth Professionals (Matthew Hobart, Michael Stone, Ransom Langford and Scott Gilbertson) as well as TPG Senior Leadership (James Coulter, Jon Winkelried and Jonathan Coslet).

TPG's Sustainability and Environmental, Social, and Governance ("ESG") Program supports the Firm's long-standing commitment to strong ESG performance across its portfolio. Ensuring positive ESG outcomes is a central tenet of how and why TPG invests. Accordingly, all of the firm's senior investment professionals consider ESG impacts alongside financial returns throughout the investment process. TPG invests directly in companies where TPG has the ability to actively engage with companies on ESG-related risks and opportunities. As a part of TPG's standard engagement with portfolio companies,

[1] Note: Personnel and AUM as of December 31, 2020.

Y Analytics and other firm professionals may review a company's existing ESG-related policies and ethical business guidelines during the due diligence process or during the period of investment. To the extent any gaps or risks are identified, TPG will engage with the company's leadership team to address these and, whenever possible, introduce relevant risk-management, resilience-focused and value-add policies for the company. As a part of TPG's Sustainability and ESG Program, portfolio companies are asked to (i) establish ESG policies; (ii) participate in the TPG Sustainability/ESG Sustainability Leadership Council; (iii) complete an Annual ESG Performance Self-Assessment leading to a Framework Analysis and Workplan; and (iv) measure and report on the progress of their goals and action plans. To support these requests, TPG engages with the individual portfolio company sustainability leadership to assess current level of performance and identify specific initiatives that will reduce costs, mitigate risk and create value.

III. Investment Strategy

TPG Growth V will build upon the longstanding history of growth investing in TPG both in strategy and portfolio construction, and is expected to primarily source and invest globally across targeted sectors in which the TPG Growth Team has experienced historical success. The Fund intends to invest primarily in growth equity investments, in which the Fund will aim to negotiate stronger governance rights than would normally be accorded to holders of similar equity stakes, and control growth buyout investments, where the TPG Growth Team can utilize the resources of the broader TPG platform for operational value add and to pursue accretive M&A opportunities. This approach to portfolio construction allows us the flexibility to optimize for risk/reward outcomes.

TPG Growth employs an All Weather Growth approach in its investment strategy. TPG Growth constructs its differentiated portfolios with targeted sector diversification, providing broad market exposure across Growth Tech and Diversified Growth investments. The Fund intends to source and invest across sectors in which the TPG Growth Team has developed deep expertise: Business Services, Consumer, Healthcare, Internet, Digital Media & Communications ("IDMC") and Software & Enterprise Technology ("SET"). Across its targeted core sectors, TPG Growth does not have specific sector allocation targets; rather it addresses opportunities on an as-sourced basis through a proactive thematic sourcing approach. For each sector, TPG Growth has established a proactive thematic sourcing approach, a network of key industry executive contacts, and advisory and banking relationships.

TPG Growth is also thematically integrated across geographies, with a primarily focus on North America and India, and selectively in other geographies across its core sectors. TPG Growth V expects to pursue transactions of up to $200 million in companies in developed markets and up to $100 million in companies located in developing markets.

Complementing TPG Growth investment professionals is the TPG Growth Business Building Group. This team is tasked with driving shareholder value creation by engaging in the investment due diligence process and identifying and executing revenue growth, operational effectiveness and profit enhancement initiatives. The TPG Growth Business Building Group: (i) supports the due diligence process by providing insight that informs transaction underwriting and by identifying opportunities for operational improvement post-investment; (ii) guides human capital initiatives by enhancing management teams and boards; (iii) assists in driving the value creation planning process through active engagement with management teams; (iv) provides business performance oversight including close monitoring of KPIs; (v) supports the execution of value creation initiatives both directly and through the ecosystem of TPG resources; and (vi) serves as interim executives where necessary.

An important element of TPG Growth's investment strategy is to structure downside protection where possible, especially in growth equity and developing markets investments. TPG Growth intends to seek structured equity investments with more robust governance rights than would normally be provided to holders of similar equity stakes, such as ownership and management rights, preferred equity securities, downside protection ratchets, performance-based profit guarantees, contractual board representation rights, veto rights, redemption rights, other exit rights and other structured provisions that provide TPG Growth with enhanced governance and downside protection, even in minority ownership positions.

TPG's global footprint, expert resources and collaborative culture create an integrated investment platform that spans geographies, skill sets and sectors. TPG Growth draws upon the resources of TPG's platform to help generate high-volume and high-quality deal flow, to make disciplined investment decisions and to improve portfolio company performance after closing, with the goal of achieving attractive investment results. The TPG Senior Leadership has invested across multiple investment cycles and dislocations providing differentiated perspectives and investment insights, which they believe will complement the TPG Growth Team in navigating the current investment environment. TPG believes these advantages position TPG Growth as one of the largest "small check" investment firms in the world based on available resources.

IV. *Investment Performance*

Previous fund performance as of December 31, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
TPG STAR	2007	$1.3 billion	-	6%	1.3x	1.1x
TPG Growth II	2011	$2.0 billion	-	16%	1.9x	1.6x
TPG Growth III	2015	$3.1 billion	-	25%	1.9x	0.7x
TPG Growth IV	2017	$3.7 billion	-	10%	1.1x	0.0x

* Previous Fund investments may be relatively immature and returns may not be indicative of future results. Net MOIC is adjusted for returned principal that is eligible for reinvestment and other fund purposes. Unadjusted Net MOIC as of 4Q20 for TPG STAR, TPG Growth II, TPG Growth III and TPG Growth IV are 1.3x, 1.9x, 1.7x and 1.1x, respectively.

V. Investment Period and Term

The investment period is six years from the Effective Date, and the term of the fund extends 10 years from the initial closing date, with up to two additional one-year periods with the consent of the advisory committee.

This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM.

ATTACHMENT D

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. *Background Data*

Name of Fund:	TPG Tech Adjacencies II, L.P.
Type of Fund:	Private Equity – Growth, Buyout, Structured
Target Fund Size:	$3 billion
Fund Manager:	TPG
Manager Contact:	Joe Buss 345 California Street Suite 3300 San Francisco, CA 94104

II. *Organization and Staff*

TPG (or the "Firm") is one of the largest global alternative investment firms in the world, with total assets under management of approximately $91 billion (as of 12/31/20) and a platform of complementary investment funds that pursue opportunities in private equity, real estate and public equity. The Firm currently has 12 offices worldwide – San Francisco, Fort Worth, New York, London, Hong Kong, Beijing, Luxembourg, Melbourne, Mumbai, Seoul, Singapore and Washington D.C. – and approximately 1,000 employees and advisors, including approximately 500 investment and operations professionals.

TPG (the "Firm") is forming TPG Tech Adjacencies II, L.P. (the "Fund" or "TTAD II") to invest primarily in companies within the internet, software, digital media and other similar technology sectors. The Fund expects to pursue Structured, Common and Opportunistic investments. The management of the Fund will be led by senior TPG Technology Professionals and will have the benefit of an experienced IRC currently comprised of James Coulter (Co-CEO and Co-Founder), Jon Winkelried (Co-CEO) and Jonathan Coslet (CIO), David Trujillo (Co-Managing Partner of TPG Tech Adjacencies) and Nehal Raj (Co-Managing Partner of TPG Tech Adjacencies). The TPG Technology Investment Team is comprised of 45 investment professionals focused on TPG's Internet, Digital Media & Communications and Software & Enterprise Technology investing efforts.[1]

TPG's Sustainability and Environmental, Social, and Governance ("ESG") Program supports the Firm's long-standing commitment to strong ESG performance across its portfolio. Ensuring positive ESG outcomes is a central tenet of how and why TPG invests. Accordingly, all of the firm's senior investment professionals consider ESG impacts alongside financial returns throughout the investment process. TPG invests directly in companies where TPG has the ability to actively engage with companies on ESG-related risks and opportunities. As a part of TPG's standard engagement with portfolio companies,

[1] Note: Personnel and AUM as of December 31, 2020

Y Analytics and other firm professionals may review a company's existing ESG-related policies and ethical business guidelines during the due diligence process or during the period of investment. To the extent any gaps or risks are identified, TPG will engage with the company's leadership team to address these and, whenever possible, introduce relevant risk-management, resilience-focused and value-add policies for the company. As a part of TPG's Sustainability and ESG Program, portfolio companies are asked to (i) establish ESG policies; (ii) participate in the TPG Sustainability/ESG Sustainability Leadership Council; (iii) complete an Annual ESG Performance Self-Assessment leading to a Framework Analysis and Workplan; and (iv) measure and report on the progress of their goals and action plans. To support these requests, TPG engages with the individual portfolio company sustainability leadership to assess current level of performance and identify specific initiatives that will reduce costs, mitigate risk and create value.

III. Investment Strategy

TPG Tech Adjacencies II intends to invest primarily in companies within the internet, software, digital media and other similar technology sectors. Specifically, the Fund is expected to pursue investments that take advantage of the diverse investing skills of TPG's professionals, strategic relationships they have developed across their portfolio of technology companies, TPG's network of executives and advisors and TPG's thematically integrated investment approach.

TPG expects to pursue investments in companies operating in the internet, software, digital media and other similar technology sectors. TPG principally expects to pursue three primary types of investments: Structured, Common and Opportunistic investments.

- **Structured**: TPG Tech Adjacencies is focused on being a provider of solutions capital to otherwise healthy companies who require capital to continue to grow and execute their strategy. TPG would anticipate that these transactions would be principally structured as preferred equity or similar instruments, but may from time to time be structured as convertible notes, loans or similar debt instruments.
- **Common**: These types of investments can include buying shares directly from an early investor or participating in company arranged employee or shareholder tender offerings, primary rounds with limited-to-no structure or governance and as a minority investor in a recapitalization.
- **Opportunistic**: Given TPG Tech Adjacencies' flexible and solutions-oriented mandate, the Fund has the ability to capitalize on its unique access to this broad opportunity set, which includes transaction types such as standard preferred equity, public debt trading at a discount, direct debt purchases, PIPEs and pre-IPO transactions.

Across TPG Tech Adjacencies' three primary types of investments, the TPG Technology Team applies a sector-driven, thematic approach to sourcing and investing across the internet, digital media & communication and software & enterprise technology sectors. Within internet and digital media & communications, the TPG Technology Team begins by identifying long term tailwinds that support predictable economic and/or social trends and, based on these trends, identifying derivative investment themes which it believes creates unique investment opportunities. Within software & enterprise technology, TPG has had a long history of investing with extensive and differentiated experience across both application and cloud infrastructure software, data analytics and technology-enabled services. The team has diligenced hundreds of companies and through that process have developed familiarity with sub-sector trends, end market dynamics and secular drivers of change, allowing them to identify industry trends from their inception to invest in companies with positive secular growth tailwinds.

TPG believes TTAD II can provide a flexible source of capital to take advantage of the opportunities within the current technology market. TPG believes it's well positioned with a bench of portfolio company CEOs, founders and senior advisors that supplement their thematically integrated deal teams in sourcing promising investment opportunities and driving their historically strong returns across core sector themes in which they have demonstrated expertise. In addition, TPG believes it's a differentiated and sought-after partner due to its position in the market, substantial private equity resources, deep technology sector expertise and strong track record. Headquartered in the heart of San Francisco, TPG is at the center of the technology sector which they believe gives them unique insights in the technology market and the ability to better establish and maintain strong relationships with companies, founders, entrepreneurs and industry experts. Moreover, the TPG Technology Team has created a strong ecosystem of portfolio company relationships, senior advisors, company founders, and CEOs. These relationships assist the TPG Technology Professionals in everything from sourcing to value creation to exits.

IV. Investment Performance

Previous fund performance as of December 31, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
TTAD I	2018	$1.6 billion	-	63%	1.5x	0.0x

* Previous Fund investments may be relatively immature and returns may not be indicative of future results.

V. Investment Period and Term

The investment period is four years beginning on the Effective Date, and the term of the fund extends 10 years from the initial closing date, with up to two additional one-year periods with the consent of the advisory committee.

This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM.

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ATTACHMENT E

REAL ESTATE MANAGER SUMMARY PROFILE

I. *Background Data*

Name of Fund:	Carlyle Realty Partners IX, L.P.
Type of Fund:	Real Estate – Opportunistic
Target Fund Size:	$6.5 billion
Fund Manager:	The Carlyle Group
Manager Contact:	Chip Lippman The Carlyle Group 1001 Pennsylvania Ave. N.W. Washington, DC 20004

II. *Organization and Staff*

Carlyle Realty (the "Firm" or "Carlyle") is forming Carlyle Realty Partners IX, L.P. (the "Fund" or "CRP IX") to continue Carlyle's history over eight predecessor funds of making opportunistic real estate investments in the United States. The Partnership seeks to provide investors attractive risk-adjusted returns from significant capital appreciation and current cash yields.

Carlyle Realty is the dedicated real estate investment team within The Carlyle Group, and is led by Robert S. Stuckey (Head of U.S. Real Estate). The team is comprised of over 110 investment professionals in Washington, DC; New York, San Francisco, and Los Angeles. These Professionals work in the various areas of sourcing, transactions, and asset management for Carlyle's U.S. focused real estate funds. The nucleus of Carlyle Realty's senior management has been in place since 1998 and the group has experienced little turnover during that period of time. Carlyle Realty's senior investment professionals consist of 20 Managing Directors who have an average tenure at Carlyle of 17 years. The Firm expects the core group of investment professionals who were responsible for investing Carlyle Realty's eight prior opportunistic funds to be primarily responsible for sourcing, investing and managing CRP IX.

From an ESG perspective, instead of separating ESG and the investing process, Carlyle believes that key ESG principles align with how it designs business plans to maximize value. For example, a typical exit option for a development project is to the core real estate market. In today's investment environment, for an asset to be considered core, it generally requires high energy efficiency, water usage and other environmentally friendly characteristics. While building properties with those high standards is the right thing to do from a sustainability standpoint, Carlyle also believes it is part of its investment mandate to build properties that attract the largest pool of potential buyers and increase the value of the asset. Regarding the U.S. real estate team, 40% of the new hires in 2020 were female and 33%

were ethnically diverse. Moreover, 56% of the promotions in 2020 were to female and/or ethnically diverse professionals.

III. Investment Strategy

Carlyle Realty's investment philosophy is focused on evaluating the underlying supply and demand fundamentals of its targeted sectors and geographies. Furthermore, the Firm seeks to dynamically identify the areas that will offer investment opportunities whose fundamentals are underpriced. To this end, the team focuses primarily on real estate demand drivers, which are segmented between two primary factors: those more correlated with and driven, in part, by the economic cycle ("GDP-Driven Sectors"), and those less correlated with the economic cycle and driven, in part, by shifts in demographic cohorts ("Demographic-Driven Sectors"). Demographic-Driven Sectors include: active adult rental, multifamily residential, self-storage, life sciences and student housing. GDP-driven sectors include office, retail, hotel, and industrial. The team believes that Demographic-Driven sectors can produce demand for real estate simply out of necessity and with substantially less volatility than GDP-driven sectors. Accordingly, Fund IX is expected to be substantially weighted towards Demographic-Driven Sectors. This approach is consistent with Funds VI-VIII, of which approximately 73%, 81%, and 86% was invested in these sectors, respectively and the only GDP exposure in Fund VIII was the industrial sector as it has no office, retail and hotel exposure.

The team seeks to reduce concentration risk by diversifying its investment position and investing primarily in single-asset transactions. This approach moderates the impact that any single investment has on the overall portfolio's performance. In Fund VIII, to date, no single investment comprises more than 1% of that fund's capital commitments. The Firm also generally seeks to diversify across demand drivers, sectors and geographies as well as by capital structure and business plan. As a consequence of this strategy, the Fund will hold a large number of investment positions. The Firm believes this produces a variety of options for exiting investments, and increases the chance for follow-on investments which often exhibit attractive marginal returns with relatively low risk. Carlyle believes that the flexibility on exit strategy that stems from a larger pool of investments adds value to the Fund. The ability to sell single assets, portfolios of assets, or to form operating companies, creates optionality that allows the team to target the highest possible exit valuation possible in a particular market environment.

Active asset management is another piece of Carlyle Realty's strategy that seeks to add value in a thoughtful, risk-adjusted way. At acquisition, members of the asset management team collaborate with their sourcing and acquisition counterparts, drawing upon their experience in managing comparable assets to inform the underwriting process and development of the investment thesis and value-creation business plans for new acquisitions. During the hold period, the asset management team draws upon and manages to the milestones set forth in each asset-level business plan, and adapts and revises the business plan to adjust for changing market conditions and opportunities. Once target income levels are achieved, the asset management team develops and implements a disciplined exit strategy, giving careful consideration to both timing and manner of exit. Carlyle Realty believes that this active asset management approach is distinctive and is an important driver of investment performance.

Carlyle Realty seeks to insulate investments from capital markets fluctuations by using a moderate degree of leverage. In recent funds aggregate property level leverage has generally ranged between 45% and 55%. Additionally, different capital structures are established for each investment, which should enhance the ability to manage concentration risk. Carlyle focuses on opportunities that are capable of producing high profit margins, which allows the Firm to structure investments to potentially produce attractive equity multiples regardless of the level of leverage applied. For example, an investment with a 50% profit margin, the application of 50% leverage could produce a 2.0x multiple on invested capital, while an investment with 10-20% profit margins would require 80%-90% leverage to achieve the same multiple. By focusing primarily on high profit margins, and secondarily on leverage levels, the Firm believes they will be better positioned to produce attractive risk adjusted returns.

IV. Investment Performance

Previous fund performance as of December 31, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
CRP I	1997	$296 million	-	15%	1.5x	1.5x
CRP II	1999	$252million	-	10%	1.4x	1.4x
CRP III	2000	$571 million	-	30%	2.7x	2.7x
CRP IV	2005	$950 million	-	4%	1.3x	1.3x
CRP V	2006	$3.0 billion	-	9%	1.5x	1.3x
CRP VI	2011	$2.3 billion	-	18%	1.5x	1.4x
CRP VII	2014	$4.1 billion	-	12%	1.3x	0.9x
CRP VIII	2017	$5.5 billion	$150 million	9%	1.1x	0.3x

* Previous Fund investments may be relatively immature and returns may not be indicative of future results.

V. Investment Period and Term

The investment period is five years from the effective date, and the term of the fund extends 10 years from the effective date, with a potential one year extension at the discretion of the General Partner and further one-year periods with the consent of either the Investor Advisory Committee or a majority of interest of the Combined Limited Partners.

This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM.

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ATTACHMENT F

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Brookfield Strategic Real Estate Partners IV
Type of Fund:	Real Estate – Opportunistic
Target Fund Size:	\$17 billion
Fund Manager:	Brookfield Asset Management Inc.
Manager Contact:	Jeff Clarke 250 Vesey Street 15th Floor New York, NY 10281

II. Organization and Staff

Brookfield Asset Management Inc. (the "Firm" or "Brookfield") is forming Brookfield Strategic Real Estate Partners IV (the "Fund" or "BSREP IV") to continue Brookfield's history of making opportunistic real estate investments globally. BSREP IV is a continuation of the real estate opportunistic strategy that Brookfield has successfully executed since 2006, having invested over \$26 billion of capital of which \$23 billion has been realized to date (as of December 31, 2020).

Brookfield is a leading global alternative manager with approximately \$600 billion of AUM across real estate, infrastructure, private equity and credit (as of December 31, 2020). Brookfield has well established operations in more than 30 countries on five continents which enable Brookfield to readily invest wherever the most attractive opportunities emerge. The Fund will be managed by Brookfield Property Group ("BPG"), one of the world's largest leading real estate managers. BPG represents the Firm's largest business group, with over \$211 billion of real estate assets under management globally. The Investment Team comprises 160 experienced investment professionals globally, who possess a diverse and complementary skill set for real estate investing. Following transaction close, the Portfolio Management Team, comprised of approximately 80 experienced professionals, is responsible for the proactive management of value creation initiatives identified during underwriting and incorporated into the investment's business plans.

As an owner, operator and investor in real assets, Brookfield believes that ESG factors are an important part of the day-to-day management of its portfolio, and that value creation and sustainable development are complementary goals. During the initial due diligence phase, Brookfield utilizes its operating expertise to identify any material ESG risks and opportunities relevant to the potential investment. For each acquisition, the investment team and the portfolio management team create a tailored integration plan that, among other things, ensures that any ESG-related matters are prioritized. As long-term investors, motivated to drive value creation, Brookfield continually looks for opportunities to improve

ESG performance. A step to formalize their commitment to ESG principles and guidelines was becoming a signatory to the United Nations Principles for Responsible Investment ("PRI").

On September 30, 2019, Brookfield Asset Management Inc. ("Brookfield") and Oaktree Capital Group, LLC ("OCG") closed on its acquisition of approximately 61.2% of Oaktree Capital Management. Both Brookfield and Oaktree continue to operate their respective businesses independently, partnering to leverage their strengths, with each remaining under its prior brand and led by its prior management and investment teams.

III. Investment Strategy

Brookfield's disciplined real estate investment approach is focused on acquiring high-quality investments on a value basis and adding value through operational enhancements. The Firm concentrates on geographies, sectors, and transaction types where it believes that it has informational, operational, financial or other competitive advantages. Brookfield has a global reach with local on-the-ground presence in key markets. In these geographies, Brookfield's knowledge and expertise is expected to provide the Fund with a competitive advantage, enabling it to properly assess risk and implement plans to create value at the asset or capital structure level. BSREP IV is expected to invest approximately 45% of the Fund in the Americas, 30% in Europe and the Middle East, and 25% in Asia-Pacific.

The Fund will seek to generate opportunistic risk-adjusted returns by acquiring real estate companies, portfolios, distressed loans and securities, and standalone assets. Brookfield believes it has key competitive advantages in sourcing and structuring multi-faceted deals, including scenarios involving complex ownership structures, over-leveraged companies or properties, various situations of dislocation, or other dynamics whereby Brookfield is able to utilize its structuring capability and employ an operations-oriented approach to create value at the property level.

Post-investment, Brookfield will employ an operations-oriented approach to create value through intensive asset management, proactive leasing, redevelopment or repositioning. In doing so, the Fund will leverage Brookfield's deep operating capabilities to enhance value and to execute business plans with certainty. The Investment Team and the Portfolio Management Team will draw on Brookfield's real estate operating teams (collectively, the "Real Estate Operating Teams"), which have extensive experience creating value at the property level by improving underperforming assets that may have experienced operational mismanagement or capital constraints. Brookfield expects the Fund's investments to benefit from the Real Estate Operating Teams' expertise in capital planning and revenue management, leasing, redevelopment, development, construction, and property management.

Brookfield Property Group will employ Brookfield's disciplined approach to determining and executing exit strategies, with the objective of achieving attractive realized returns. Asset-level exit plans are created at acquisition and are periodically reviewed to determine whether a more beneficial exit or sale of the investment is available as part of the asset management process. Exit strategies may vary by investment, but possible exits include individual asset sales, partial or full portfolio sales to strategic buyers or private fund vehicles or public offerings. As with a new acquisition, Investment Committee approval is required for all fund-level dispositions and significant strategic transactions.

IV. Investment Performance

Previous fund performance as of December 31, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
BSREP I	2012	$4.4 billion	-	19.1%	2.1x	1.5x
BSREP II	2015	$9.0 billion	-	10.7%	1.3x	0.3x
BSREP III	2018	$15.0 billion	-	7.0%	1.1x	0.1x

* Previous Fund investments may be relatively immature and returns may not be indicative of future results.

V. Investment Period and Term

The investment period is four years from the final closing date, and the term of the fund extends 10 years from the final closing date, with two potential one-year extensions.

This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM.

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TAB E

Public Markets Investment Program

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DATE: May 19, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: SBI Public Markets Program Report

This report provides a brief performance review of the SBI Public Markets portfolio through the first quarter. Included in this section are a short market commentary, manager performance summaries and a report of any organizational updates for the public equity and fixed income managers in the SBI portfolio.

The report includes the following sections:

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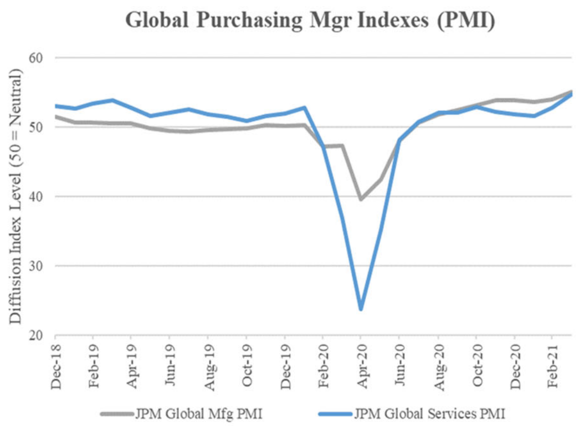
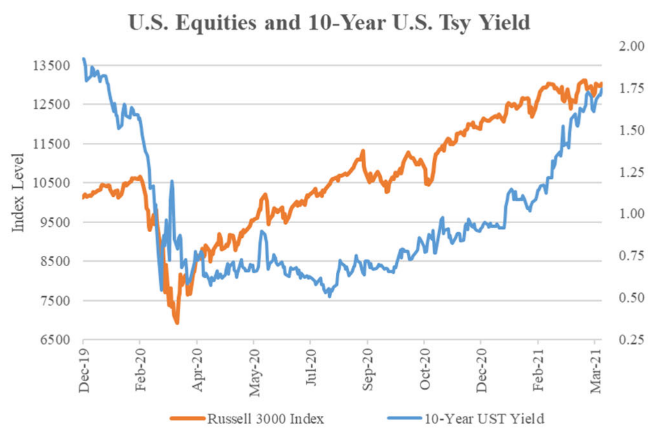
Review of SBI Public Markets Program
First Quarter 2021





Source: JPMorgan, Russell, Bloomberg

Market Summary

Overall, global equities and other risk assets gained during the first quarter of 2021 as the global economy continued to emerge from the sharp recession of 2020 brought on by the COVID-19 pandemic. Markets reacted favorably to the news of a faster than expected vaccine rollout in the U.S. and the U.K. and further progress, albeit uneven, across Europe and Asia. The IMF raised its forecast for 2021 global GDP growth to +6.0% in April (vs. +5.5% in January), driven by a significant upward revision to growth prospects for developed economies.

In the U.S., the already improving growth outlook combined with an additional $1.9 trillion boost from the second coronavirus relief package enacted during the quarter sparked concerns of a growth overshoot and raised the specter of an unwanted sharp rise in future inflation. Interest rates moved sharply higher during the quarter as investors priced in the risks of faster growth and inflation. In addition, with a better line of sight to a full economic recovery, investors rotated into cyclicals and value stocks expected to benefit most from a fully reopened economy while rotating away from the quality growth stocks which performed well during the lockdown.

Also during the quarter, U.S. equity trading volumes and intraday volatility experienced massive spikes caused by a series of coordinated short squeezes in GameStop and other so-called meme stocks. The increased volatility was also due to the forced liquidation of hedge fund Archegos Capital, which had made ill-timed, highly leveraged long bets on a narrow basket of specific stocks.

Commodities rose nearly 7% during the quarter, led by oil which advanced nearly 22% to end the quarter at over $59/bbl. The U.S. dollar rallied nearly 3% on a trade-weighted basis during the quarter, snapping a period of recent weakness. The dollar gained support from factors including higher nominal interest rates, and expectations of faster growth relative to the rest of the world, at least over the near-term.

Overall Combined Funds Portfolio - Quarter and Year Performance
In the first quarter, the overall Combined Funds portfolio exceeded the composite benchmark return by +0.45%, or 45 basis points (+3.8% Combined Funds versus +3.4% Composite Benchmark). Portfolio outperformance was supported by strong relative performance within both the public equity portfolio (+5.6% Portfolio versus +5.4% Benchmark) and the fixed income portfolio (-4.4% Portfolio versus -4.9% Benchmark) as well as an overweight allocation to equities and a corresponding underweight to fixed income.

Within the fixed income portfolio, the return seeking bond strategies contributed positively to the overall portfolio's outperformance over the quarter (-1.5% Portfolio versus -3.4% Benchmark) as an emphasis on high yield credit and shorter maturity bonds shielded the portfolio from rising interest rates. The core/core plus portfolio also outperformed the Bloomberg Barclays U.S. Aggregate Index return for the quarter (-3.1% Portfolio versus -3.4% Benchmark), helped by the continued positive environment for credit. The Treasury protection portfolio outperformed the Bloomberg Barclays Treasury 5+ Year Index during the quarter (-8.5% Portfolio versus -8.7% Benchmark), while the portfolio's laddered bond + cash portfolio matched the return on the ICE BofA U.S. 3-Month Treasury Bill Index over the quarter (+0.0% Portfolio versus +0.0% Benchmark). The private markets invested portfolio returned +8.7% for the quarter, led by the private equity portfolio which gained +11.5%.

For the year ending March 31, 2021, the Combined Funds portfolio outperformed the composite benchmark return by +2.0%, or 200 basis points (+35.7% Combined Funds versus +33.6% Composite Benchmark), aided by both strong underlying performance at the asset class level as well as a modest overweight to equities maintained for most of the period. Overall, the public equity portfolio posted strong results, led by the outperformance in both the domestic equity portfolio (+64.8% Portfolio versus +63.2% Benchmark) and the international equity portfolio (+51.8% Portfolio versus +49.2% Benchmark). Within the fixed income portfolio, the core/core plus portfolio strongly outperformed the Bloomberg Barclays U.S. Aggregate Index return (+5.4% Portfolio versus +0.7% Benchmark), the Treasury protection portfolio outperformed the Bloomberg Barclays Treasury 5+ Year Index (Portfolio -9.4% vs Benchmark -9.7%) and the new return seeking bond strategies were also modestly accretive to overall performance. The private markets invested portfolio returned +14.1% for the year, led by the private equity portfolio which gained +25.1%.

Domestic Equity
The Russell 3000 Index gained +6.3% during the first quarter, led by strong performance from cyclical sectors including Energy (+28.5%), Financials (+16.1%) and Materials (+11.9%) as investors rotated into stocks better positioned to benefit more from a fully opened economy. While cyclical and value stocks jumped, growth stocks sputtered. Healthcare (+2.1%) and Technology (+3.2) were among the worst performing sectors during the quarter, while the interest rate-sensitive Utilities sector (+3.0%) also lagged. Overall, the massive rotation into value handed growth stocks their worst quarter relative to value (-1,070 bps relative return) since 2001. The market performance differential across company size was also dramatic during the quarter, with small cap stocks outperforming large caps by nearly 680 basis points (+12.7% small caps vs +5.9 large caps) as investors sought out the leverage to economic growth provided by smaller companies. Notably, the one-year period ended March 31st reflects a remarkable recovery in equity valuations from the depths of the pandemic lows back to the new highs set during the quarter. Overall the Russell

3000 Index gained over +62.5% during the past 12 months, while the Russell 2000 Value Index returned a whopping +97%.

Within the Combined Funds domestic equity portfolio, the portfolio's large cap growth managers, Sands and Winslow, both trailed the R1000 Growth benchmark (-1.3% Portfolio vs. +0.9% Benchmark). Overall, security selection within the Health Care and Communications Services was a drag on relative performance. Zevenbergen, which transitioned to the R3000 Growth benchmark at the beginning of the quarter, underperformed as core overweights in names like Trade Desk, RingCentral, Okta, and MercadoLibre hurt relative performance (-8.2% Portfolio vs. +1.2% Benchmark).

The portfolio's large cap value managers outperformed the Russell 1000 Value benchmark for the quarter (+15.5 Portfolio vs. +11.3% Benchmark). Both stock selection and sector allocation helped performance.

The portfolio's small cap growth managers exceeded their benchmark, the Russell 2000 Growth Index, over the quarter (+6.7% Portfolio vs. +4.9% Benchmark). Overall sector allocation was positive from overweights to Industrials and Consumer Discretionary and an underweight to Healthcare. Negative security selection within Health Care was partially offset by selection in Technology, Materials and Financials. For the quarter, ArrowMark, Hood River and Rice Hall outperformed, while Wellington trailed the benchmark.

The portfolio's small cap value managers lagged the Russell 2000 Value benchmark for the quarter (+19.8% Portfolio vs. +21.2% Benchmark). Stock selection detracted from performance, led by names in the Consumer Discretionary sector. Hotchkis and Martingale outperformed for the quarter, while Goldman and Peregrine underperformed. Notably, none of the portfolio's SCV managers owned or traded so-called "meme stock" Gamestop during the quarter, whose +907% rise contributed +75 bps to the index's quarterly return and made it the second largest stock in the index as of quarter-end.

The portfolio's semi-passive large cap core managers in aggregate outperformed the Russell 1000 Index by +0.6% for the quarter (+6.5% Portfolio vs. +5.9% Russell 1000). Stock selection helped performance. The passive Russell 3000, Russell 1000 and Russell 2000 Index mandates all tracked their respective indices within guideline ranges for the quarter.

Global Equity

In the first quarter of reported performance, the global equity managers underperformed the MSCI ACWI Index by -4.2% (Global Equity +0.3% vs. Index +4.6%) during the first quarter of 2021. All three global managers share a bottom-up, stock driven approach, with concentrated portfolios and a high degree of active share, or differentiation from benchmark. For the quarter, the managers' overweights to growth-oriented sectors such as Technology and Healthcare were detractors to performance during a quarter in which value style tended to outperform. Baillie Gifford's long-term growth oriented strategy underperformed most (-2.1% Portfolio vs. +4.6 Benchmark), as core holdings in Pinduoduo, Peloton, and Amazon and Spotify lagged. Ariel Investments was the strongest performer in the group, returning +4.0% vs. the benchmark return of +4.6%. Core positions in Baidu, Microsoft, Gilead Sciences and Michelin all aided performance, while an overweight to Healthcare and underweights to Financials, Energy and Industrials detracted from performance.

Developed International Equity

International developed markets equities rallied alongside domestic equities in the first quarter, with MSCI World ex USA Index (net) returning +4.0% during the period. Battered sectors that stood the most to gain from economic strength in a post-COVID economy fared the best, including the Energy, Financials and Industrials. While most other sectors posted positive returns, the Consumer Staples and Healthcare sectors lagged. Value and small cap stocks generally outperformed, while growth-oriented and defensive names lagged. In a reversal of the prior quarter, the U.S. dollar rose against most major currencies following strong economic data and a sharp rise in U.S. interest rates. The strengthening dollar fueled weaker returns in international stocks for dollar-based investors. While the dollar was strong against a range of developed currencies, the greatest gains were observed versus the yen (+7.1%), Swiss franc (+6.4%) and the Swedish krona (+6.8%).

Active managers endured a difficult quarter in global markets. A return of volatility was driven by factor rotations, retail- and sentiment-driven price swings, and a rapid deleveraging event in March fueled by the liquidation of hedge fund Archegos Capital that affected certain broadly-held stocks. Active developed markets managers had mixed Q1 performance, but in aggregate, they outperformed the MSCI World Ex USA Index (net) modestly (+4.3% active developed managers versus +4.0% benchmark index). Marathon (+6.0%) outpaced the index (+4.0%) in part due to thematic changes made to the European book in Q4 2020, which included profit-taking in stay-at-home, COVID-supported stocks, and a rotation into COVID recovery themes, such as Energy, Financials, and travel-related stocks. Quantitative, value-focused manager AQR outperformed the MSCI World ex USA Index (net) for the quarter, returning +6.5% versus the benchmark return of +4.0%, somewhat retracing losses from the previous quarter. JPMorgan (+1.5% versus the benchmark of +4.0%) and McKinley Capital (+1.8% vs the benchmark of +4.0%) both underperformed the benchmark during the quarter as their quality growth style struggled amidst the rotation to value.

The passive developed markets portfolio tracked the MSCI World ex USA index (net) within guideline tolerance for the quarter, posting a return of +4.1% versus the benchmark return of +4.0%. The currency hedging program initiated in the fourth quarter of 2020 had a net positive impact during the quarter, adding +0.9% to the performance of the passive developed markets portfolio relative to a fully unhedged benchmark. The dynamic hedging process employed by Record Currency captured dollar strength, partially offsetting currency losses in the underlying passive developed markets portfolio, by systematically increasing the portfolio's hedge ratio as the dollar's rally gained steam. Hedge performance was particularly beneficial vs. Japanese yen, Swiss franc and Swedish krona. Overall, the program's hedge ratio relative to the total value of the passive developed markets portfolio stood at 45% at the end of March.

Emerging Markets Equity

Emerging market equities, as measured by MSCI Emerging Markets Index (net), gained +2.3% during the quarter, generally underperforming their developed markets counterparts. While emerging markets stocks also benefited from optimism regarding a post-COVID economy, albeit to a lesser extent, EM underperformance relative to developed markets was driven by softness in China and Brazil. Overall, export-driven and cyclical sectors fared the best during the quarter, with Materials, Information Technology, and Real Estate sectors faring best. The stronger U.S. dollar fueled weaker returns in EM stocks for dollar-based investors during the quarter.

Overall, Chinese markets were stymied by relatively tighter monetary policy than the rest of the world. While China benefited from strength in Energy, Materials, and Financials sectors, it also suffered weakness in Technology and Consumer Staples/Discretionary sectors due to concerns over tighter regulations of internet-related businesses. The broad MSCI China Index (net) returned -0.4% during the quarter while the onshore business focused MSCI China A Index (net) fell -4.2% for the quarter.

The active emerging markets managers returned +3.7% for the quarter, outperforming the MSCI Emerging Markets Index (net) return of +2.3% for the period. A style bias towards value stocks in Pzena's portfolio (+12.0% versus +2.3% for the benchmark) was the largest source of outperformance for the active managers. Other managers were mixed; Morgan Stanley posted the lowest returns of the active EM cohort (+1.8% versus +2.3% for the benchmark) mostly due to poor security selection in Brazil, Poland, and China, while rest of the EM managers were flat to modestly positive versus their respective benchmarks.

Earnest Partners' dedicated active China A-share strategy fell -6.4% during the quarter while the strategy's benchmark index, the MSCI China A Index (net), declined -4.2%. Sector selection drove much of the underperformance, including the portfolio's lack of exposure to the outperforming Energy and Utilities sectors and an overweight to the lagging Consumer Staples sector.

The passive emerging markets portfolio experienced slight positive tracking error relative to the Emerging Markets Index (net) for the quarter, gaining +2.4% versus the benchmark return of +2.3%. Performance is within guideline tolerance for both the quarter and longer time periods.

Core/Core Plus and Return Seeking Bonds

Fixed income markets posted negative returns during the first quarter as a sharp rise in Treasury yields across intermediate- and long-term maturities weighed on returns. Treasury yields moved sharply higher during the quarter in response to stronger than expected economic growth, solid employment numbers and a pickup in inflation. The dramatic move in yields was enough to produce the worst quarterly returns for long-term Treasury bonds since 1981; the Bloomberg Barclays Aggregate Index returned -3.4% while the U.S. Treasury Bellwether 30-year Bond Index dropped nearly -16%.

Reflecting market expectations for higher inflation, Treasury Inflation Protected Securities (TIPS) outperformed during the quarter, with the so-called "breakeven" rate of inflation priced into 10-year TIPS continuing to trend higher, rising from 1.99% at year-end to 2.37% at the end of March.

The credit-sensitive sectors of the market benefitted from rising expectations for a rebound in economic growth as the success of the vaccine rollout and additional fiscal stimulus passed by Congress were seen as providing a near-term boost to growth. Within credit, investors reached for yield and also sought out debt of companies most leveraged to a rebound in economic growth, including lower-rated high yield corporate bonds and bank loans as well as lower-rated securitized debt. Also, as interest rates rose during the quarter, floating rate bank loans and other floating-rate assets outpaced fixed-rate securities as investors sought refuge from duration risk.

Fixed Income Sectors Spread Performance				
	Spread to Treasuries (bps)			Tot Retn
Sector	3/31/21	12/31/20	Change	3 Month
Barc US Inv. Grade Credit	94	95	-1	-4.6%
Barc US CMBS	76	82	-6	-2.3%
Barc US ABS	38	33	5	-0.2%
Barc US Agency MBS	85	98	-13	-1.1%
ICE BofA High Yield	331	387	-56	0.8%
CS Leveraged Loans	356	357	-1	2.0%
JPM EMBI Global Div (EM Sovereign)	353	380	-27	-4.5%
US TIPS (10 Yr Break Even)	237	199	+39	0.1%

The portfolio's core/core plus bond managers outperformed the Bloomberg Barclays Aggregate benchmark during the quarter (-3.1% vs -3.4% Benchmark). Core plus managers' high yield credit exposure (approx. 8.3% as of 3/31) contributed to returns, while this was partially offset by other managers' positioning which combined cyclical investment grade credit exposure with a longer-than-benchmark duration positioning, which weighed on performance.

The first full quarter of performance for the return seeking bond segment was positive relative to the Barclays Aggregate Index. The program, which includes yield-oriented sectors such as high yield credit, bank loans, securitized assets and emerging market debt, outperformed the policy benchmark (-1.5% Portfolio vs. -3.4% Bloomberg Barclays Aggregate Index). Portfolio outperformance was the result of both manager alpha vs. underlying benchmarks as well as outperformance of the segment's blended benchmark relative to the Bloomberg Barclays Aggregate policy benchmark.

Overall, the return seeking managers' allocations to high yield credit, bank loans and securitized credit all benefitted performance. The allocation to emerging markets debt was a modest detractor as the sector's longer duration profile hurt performance as rates rose and country-specific macro and political factors weighed on returns in markets like Brazil and Turkey.

Treasury Protection Portfolio

The long-end of the U.S. Treasury market came under pressure during the quarter as Treasury yields leapt higher on positive economic news, higher-than-expected inflation data and the prospect for further fiscal and monetary stimulus. The yield on the 30-year Treasury Bond rose 76 basis points to end the quarter at 2.41%, producing a quarterly return of -15.8%, while the yield on the 10-year Treasury Note rose 83 basis points to end the quarter at 1.74%, producing a quarterly return of -7.0%. Yields across the front-end of the yield curve, meanwhile, were little changed on the quarter as the Fed kept its policy rate firmly anchored near zero.

An uptick in realized inflation (both headline and core, excluding food and energy prices) off of the pandemic lows combined with expectations of continued aggressive fiscal and monetary stimulus buoyed longer-term inflation expectations. The market-implied breakeven level of inflation priced into 30-year U.S. Treasury Inflation Protected Securities rose 31 basis points to end the quarter at 2.31%.

For the three months ending in March, the Treasury Protection portfolio modestly outperformed the Bloomberg Barclays Treasury 5+ Year Index (-8.5% Portfolio versus -8.7% Benchmark). The portfolio was positioned slightly short duration versus the benchmark, resulting in positive performance as long end yields rose. The program guidelines also allow a modest allocation to TIPS and US Agency securities, both of which sectors performed well during the quarter, providing an additional performance tailwind.

Laddered Bonds + Cash Portfolio

The Federal Reserve's extraordinary monetary policy support for the economy during the coronavirus pandemic continued to exert downward pressure on short-term yields during the first quarter of 2021. Investor balances in money market funds nudged higher and bank reserves swelled to $3.9 trillion by quarter-end vs. $3.1 trillion at the end of 2020. Despite a sharp selloff in intermediate- and long-term U.S. Treasury yields during the quarter, the yields on front-end of the yield curve actually fell as money supply growth – and hence demand for short-term investments – far outstripped supply. The yield on one-month U.S. Treasury Bills fell to less than one basis point (0.01%) and yields on overnight repurchase agreements, a staple of money market funds and other institutional short term portfolios, traded at negative yields for brief periods during the quarter.

For the quarter ending March 31, 2021, the combined Treasury Ladder + Cash portfolio returned +0.035%, slightly outperforming the benchmark return of +0.03% (ICE BofA US 3 Month Treasury Bill). The Treasury Ladder portfolio returned +0.04% during the quarter, and benefitted from holdings of non-Treasury sectors during the quarter, particularly high quality corporate and asset-backed securities. Positive sector and issue selection was partly offset by the incremental rise in yields in the 1-2 year segment of the yield curve. As of the end of the quarter, the yield advantage of the Ladder Portfolio relative to 3-Month Treasury Bills stood at +0.23%, or 23 basis points, positioning it well for continued modest outperformance relative to cash going forward.

Public Markets Managers' Organizational Update

First Quarter 2021

Columbia (Fixed Income)
With the previously announced retirement of Colin Lundgren, Global Head of Fixed Income, and promotion of Gene Tannuzzo effective March 1, 2021, Mr. Lundgren is no longer a PM on the MSBI account. Mr. Tannuzzo and Jason Callan remain as assigned PM's and Alexandre (Alex) Christiansen was promoted from associate portfolio manager to portfolio manager. Also, Roman Gaiser was promoted to Head of Fixed Income – EMEA, supporting the region while continuing to lead the EMEA High Yield team.

Goldman Sachs (Domestic Equity)
Effective January 1, 2021, Goldman merged their Merchant Banking and Asset Management businesses in a unified Asset Management Division. Eric Lane, Co-Head of the Asset Management Division, announced on March 1st that he will be retiring from the firm. Julian Salisbury, Co-Head of the Asset Management Division, will become Global Head of Asset Management upon Eric's retirement.

Adam Agress, vice president and research analyst on the GSAM Small Cap Value Team, left the firm in the first quarter of 2021 to pursue another opportunity. Rob Crystal, managing director and co-lead portfolio manager, has assumed Adam's energy coverage responsibilities.

Hood River (Domestic Equity)
Scott Kintz, Research Analyst, has resigned from Hood River to pursue an opportunity with his previous colleague.

JPMorgan (International Equity)
In fourth quarter of 2020, James Sutton was added as a named portfolio manager on the EAFE Plus strategy. James has been part of the International Equity Group since 2010. There is no change to Tom and Shane's roles as portfolio managers.

Marathon (International Equity)
Justin Hill joined Marathon on January 4th as a Portfolio Manager and is responsible for 50% of the Pacific ex-Japan portion of the portfolio. David Cull will continue to manage the remaining 50% allocation, and each Portfolio Manager is able to make independent decisions. Michael Godfrey, who previously managed Pacific ex-Japan and emerging markets exposures, will focus solely on emerging markets going forward.

McKinley (International Equity)
Effective March 31, 2021, McKinley Capital is a wholly-owned subsidiary of McKinley Management, LLC which is wholly-owned by McKinley Management, Inc. This was a legal name change with no organizational or staff changes.

Morgan Stanley (International Equity)
Leon Sun joined the Global Emerging Markets ("GEM") team in March 2021 as a Managing Director and lead investor for China and Hong Kong. While Leon will not be a named portfolio manager on the GEM strategy, his recommendations and insights will be invaluable to the team and the GEM portfolio.

PIMCO (Fixed Income)
The firm's executive committee received a letter in January signed by 21 current and former employees, urging them to rectify gaps in pay and promotion and alleged a pattern of discriminatory behavior towards woman. There is also pending litigation alleging gender or racial discrimination. Staff discussed the issue with PIMCO, who appeared to take the matter seriously, and SBI does not recommend any action at this time.

Pzena (International Equity)
In March 2021, the Firm added an additional, dedicated ESG Research Analyst, Luke Longinotti, to its investment team to enhance its ESG practices and initiatives.

Sands (Domestic Equity)
Franks Sands, Sr., Sands founder and former CEO and CIO passed away in March. Frank Sr. founded Sands Capital in 1992 and served as the firm's first CEO and CIO until his retirement in 2008. At the time of his death, Frank Sr. controlled vehicles that indirectly owned approximately 31% of the economic interests in Sands Capital. Following his death, control over those vehicles has passed to his son, Frank M. Sands, Sands Capital's current CEO and CIO.

State Street Global Advisors (International Equity)
In March of 2021, Rick Lacaille, Global Chief Investment Officer, transitioned to a new role at State Street as State Street's Senior Investment Advisor. Lori Heinel, Deputy Global Chief Investment Officer, was promoted to Global Chief Investment Officer.

Western Asset (Fixed Income)
Harris Trifton, Co-Head of Mortgage and Consumer Credit in the Pasadena, CA office left the firm. Greg Handler, Co-Head of the structured products team, who has been with Western since 2002, will assume sole responsibility for the team.

2021 Manager Meetings

As a result of the ongoing COVID-19 pandemic and continued restrictions on business travel on the part of managers' and MSBI Staff policies, there were no in-person meetings conducted with Public Markets managers during the first quarter of 2021.

Throughout the quarter, however, Staff utilized teleconference and videoconference technologies to remain in communication with managers as needed. During the quarter, Staff held 21 manager strategy review calls via teleconference or videoconference.

Investment Manager	Asset Class
AQR Capital Management, LLC	Developed Markets Equity
Baillie Gifford Overseas Limited	Global Equity
Barrow, Hanley, Mewhinney & Strauss, LLC	Domestic Equity
Columbia Threadneedle Investments	Developed Markets Equity
Goldman Sachs Asset Management, L.P.	Domestic Equity Fixed Income
Hotchkis and Wiley Capital Management, LLC	Domestic Equity
LSV Asset Management	Domestic Equity
Macquarie Investment Management Advisers	Emerging Markets Equity
Martingale Asset Management, L.P.	Domestic Equity
Neuberger Berman Investment Advisers LLC	Fixed Income
Peregrine Capital Management	Domestic Equity
Prudential Global Investment Management (PGIM)	Fixed Income
Pacific Investment Management Company LLC (PIMCO)	Fixed Income
Pzena Investment Management, LLC	Emerging Markets Equity
Record Currency Management Limited	Currency Overlay
Rice Hall James & Associates, LLC	Domestic Equity
Sands Capital Management, LLC	Domestic Equity
The Rock Creek Group, LP	Emerging Markets Equity
Western Asset Management Company	Fixed Income
Winslow Capital Management, LLC	Domestic Equity

TAB F

Participant Directed Investment Program and Non-Retirement Investment Program Report

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DATE: May 19, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Participant Directed Investment Program and Non-Retirement Program

This section of the report provides commentary on the Participant Directed Investment Program (PDIP) investment options and Non-Retirement Program managers along with the list of due diligence meetings staff conducted during the first quarter.

The report includes the following sections:

Participant Directed Investment Program Fund Commentaries
First Quarter 2021

Domestic Equities

Vanguard Total Stock Market Index Institutional Plus

The Fund employs an indexing approach designed to track the performance of the CRSP U.S. Total Market Index, which represents approximately 100% of the investable U.S. stock market and includes large-, mid-, small-, and micro-cap stocks. The Fund matched its benchmark return with a +6.4% return for the quarter and slightly outperformed with a +63.0% return for the one-year time-period compared to the benchmark return of +62.8%. The largest impact to return for the quarter was positive stock returns boosted by sector allocation in the Financial Services and Industrials sectors. The largest contributor to the one-year return was from positive stock return and sector allocation in the Information Technology and Consumer Discretionary sectors.

On July 2, 2021, the Vanguard Total Stock Market Index Institutional Plus fund will be available to all plans that use the Mutual Fund platform.

Vanguard Institutional Index Plus

The Fund attempts to employ a full replication indexing approach designed to track the S&P 500 Index. Performance for the Fund matched the S&P 500 Index return for the quarter with a +6.2% return and for the year with a +56.4% return. For the quarter, positive stock returns and sector weights in the Financial Services and Industrials sectors had the largest impact to return. For the year, the Information Technology sector was the largest contributor to total return. *This option is only available to the Minnesota Deferred Compensation Plan (MNDCP).*

Vanguard Dividend Growth Fund

The Fund is actively managed by Wellington Management and invests in large- and mid- cap equity holdings with an emphasis on high-quality companies with a history of paying stable or increasing dividends. Performance for the fund lagged the benchmark for the quarter with a +4.3% return compared to a +4.4% return for the NASDAQ US Dividend Achievers Select Index. Stock selection in the Consumer Discretionary and Health Care sectors were a drag on the quarterly return. For the year, the Fund reported a +41.2% return compared to a +45.0% return for the benchmark. Sector allocation drove the relative underperformance, primarily from an underweight in the Information Technology and Communication Services sectors. The Fund does not consider its benchmark sector positioning when constructing the portfolio; weightings result from stock selection.

Vanguard Mid-Cap Index

The Fund attempts to employ a full replication indexing approach designed to track the performance of a broadly diversified pool of medium-size U.S. stocks. The Fund returned +7.2% for the quarter and +70.6% for the year, matching the CRSP US Mid Cap Index return for the quarter and slightly underperforming for the year. For the quarter and the year, Energy was the best performing sector with a +28.4% return and a +125.1% return, respectively. Although a positive contribution to return, the Energy sector had less of an impact compared to other sectors because of its small allocation.

T. Rowe Price Institutional Small-Cap Stock Fund
The Fund's investment process emphasizes fundamental research and active, bottom-up stock selection. The Fund underperformed the Russell 2000 for the quarter with a +8.5% return compared to the benchmark return of +12.7% and underperformed for the year with a +83.9% return compared to the benchmark return of +94.8%. For the quarter and the year, stock selection and an underweight position in the Consumer Discretionary sector hindered relative returns. Negative stock selection in the Healthcare and Information Technology sectors also detracted for the quarter. For the year, negative stock selection in the Industrials, Materials and Healthcare sectors detracted from relative returns.

International Equities

Fidelity Diversified International Equity Fund
The Fund's approach is based on actively selecting companies based on fundamental analysis, management quality, and attractive valuations over a long time horizon. The Fund returned +0.1% for the quarter underperforming the MSCI EAFE benchmark return of +3.5%. Relative return lagged during the quarter primarily from stock selection, most notable in the Financials and Consumer Discretionary sectors. Not having a position in some of the more economically sensitive banks hurt relative performance during the quarter. By region, holdings in Europe ex U.K., Japan and the U.K. also detracted from quarter end returns. For the year, the Fund returned +48.4%, outperforming the benchmark return of +44.8%. The Fund's outperformance for the year was primarily from positive stock selection and an overweight in the Information Technology sector.

Vanguard Total International Stock Index
The Fund attempts to employ an indexing approach designed to track the FTSE Global All Cap ex US Index, a market-cap weighted pool designed to measure performance of developed and emerging market companies. The Fund slightly outperformed with a +4.0% return compared a +3.8% benchmark return for the quarter. Positive stock returns and sector allocation in the Financials and Industrial sectors were the primary contributors to total return for the quarter. The Fund also outperformed for the one year with a +52.8% return compared to the benchmark return of +51.7%. For the year, positive stock returns and sector allocation in the Financials, Information Technology, and Consumer Discretionary sectors were the main contributors to total return.

Fixed Income

Dodge & Cox Income Fund
The Fund invests in a diversified portfolio that consist primarily of investment-grade debt securities with a larger allocation to corporate and securitized debt relative to the benchmark. The fixed income fund reported positive relative returns compared to the Bloomberg Barclays U.S. Aggregate Index for the quarter and the year. The fund earned -2.5% compared to the benchmark return of -3.4% for the quarter and for the year returned +7.4% compared to the benchmark return of +0.7%. Relative performance during the quarter benefited from the Fund's below-benchmark duration position as Treasury yields rose. Positive asset allocation with an underweight to U.S. Treasuries and an overweight to Agency Mortgage Backed-Securities in addition to positive security section within credit were all contributors to positive relative return for the quarter. For the year, an overweight to corporate securities and underweight to U.S. Treasuries significantly

contributed to relative returns. Security selection was also positive as several credit issuers outperformed.

Vanguard Total Bond Market Index
The Fund employs a sampling process to its index investment approach to track the performance of the Bloomberg Barclays U.S. Aggregate Index. The Fund slightly underperformed its benchmark return for the quarter with a -3.5% and matched the benchmark return for the year with a +0.7% return. For the quarter and the year, the primary driver of total returns were increasing treasury yields on the longer end of the curve. Sector allocation, credit quality, and duration position in the Fund are consistent with that of the index.

Balanced and Conservative Options

Vanguard Balanced
The Balanced Fund seeks capital appreciation, current income, and long-term growth of income. The Fund allocation tracks the investment performance of an index with 60% CRSP US Total Stock Market Index and 40% Bloomberg Barclays U.S. Aggregate Float Adjusted Index. The Balanced Fund slightly underperformed the benchmark for the quarter and for the year with a +2.3% return and a +34.7% return, respectively. Underperformance for the year was primarily due to the portfolio's deviation from the target during a volatile market and using a benchmark that is rebalanced daily.

Stable Value Fund
Galliard Asset Management manages the stable value portfolio in a separate account and invests in investment contracts issued by high quality financial institutions and in a diversified, high quality fixed income portfolio. The portfolio returned +0.5% for the quarter compared to a +0.2% return by its benchmark, the 3-Year Constant Maturity Treasury +45 basis points. For the quarter, an overweight to the spread sectors added to overall returns, as they generally outpaced U.S. Treasuries with similar durations. For the year, the portfolio returned +2.4% compared to the benchmark return of +0.7%. A general overweight to the spread sectors continued to drive returns for the year as credit spreads consistently tightened over the period.

In February 2021, Wells Fargo announced the sale of Wells Fargo Asset Management (WFAM) to two private equity funds, Reverence Capital Partners and GTCR. This sale, which includes Galliard Asset Management, is expected to close during the second half of 2021. Galliard will remain a registered investment advisor and separate legal entity. Staff will continue to montitor this mandate for any impact to the investment process, team or services provided.

Money Market Fund
State Street Global Advisors manages the money market fund in a commingled pool. The SBI uses the ICE BofA U.S. 3 Month T-Bill as the benchmark. The Fund matched its benchmark return for the quarter with a +0.0% return and outperformed for the year with a +0.3% return compared to a +0.1% return for the benchmark. Money market instruments are highly affected by the Fed's decision to maintain the federal funds target range of 0.0% to 0.25% in order to support economic growth and employment. In recent comments, the Fed has indicated its intent to maintain accommodative policy until realized inflation averages 2% over time.

Non-Retirement Fund Commentaries
First Quarter 2021

Assigned Risk Plan Fixed Income Manager
RBC Global Asset Management actively manages the fixed income portfolio for the Assigned Risk Plan to the Bloomberg Barclays U.S. Governmental Intermediate benchmark with a focus on security selection and secondarily on sector analysis. The portfolio outperformed the benchmark return for the quarter with a -1.5% return compared to a benchmark return of -1.7% and outperformed for the year with a -0.7% return compared to a benchmark return of -1.2%. On a relative basis, the portfolio generally maintains a neutral duration position relative to the index, but the modestly shorter duration helped minimize the negative impact of higher rates during the quarter. Additionally, the benefit of declining spreads, particularly in municipals, combined with yield income helped the portfolio outperform the index. For the one year, relative return benefited from slightly lower duration, however the primary driver of outperformance was the portfolio's overweight to spread sectors.

Non-Retirement Program Fixed Income Manager
Prudential Global Investment Management (PGIM) actively manages the Non-Retirement Fixed Income portfolio to the Bloomberg Barclays U.S. Aggregate in a separately managed portfolio. The fixed income portfolio slightly underperformed for the quarter with a -3.5% return compared to the benchmark return of -3.4%. The account was positioned slightly longer duration vs. benchmark, with an expectation that the curve would flatten. Thus, when long end rates rose and the curve steepened, both duration positioning and yield curve positioning contributed to the underperformance for the quarter. These effects were partially offset by positive sector allocation in structured products and investment grade corporates. For the year, the portfolio outperformed with a +4.1% return compared to the benchmark return of +0.7%.

Non-Retirement Program Domestic Equity Manager
Mellon Investments Corporation passively manages the Non-Retirement Domestic Equity portfolio to the S&P 500 Index in a separately managed portfolio. The portfolio matched the benchmark return for the quarter and the year with a +6.2% return and a +29.7% return, respectively.

Non-Retirement Program Money Market Manager
State Street Global Advisors manages the Non-Retirement Money Market Fund against the iMoneyNet All Taxable Money Fund Average. The fund matched the benchmark for the quarter with a +0.0% return and slightly outperformed the benchmark for the year with a +0.1% return.

2021 Manager Meetings

As a result of the ongoing COVID-19 pandemic and continued restrictions on business travel on the part of managers' and MSBI Staff policies, there were no in-person meetings conducted during first quarter 2021.

Throughout the quarter, however, Staff utilized teleconference and videoconference technologies to remain in communication with managers as needed. During the first quarter, staff met with the investment funds noted below.

Investment Manager	Management Style/Asset Class	Investment Program
• Ascensus	Multi-Asset Class Platform	PDIP (ABLE Plan)
• Dodge & Cox	Active, Fixed Income	PDIP
• Fidelity	Active, International Equities	PDIP
• Prudential	Active, Fixed Income Bond Fund Manager	Non-Retirement Program
• RBC Global Asset Manager	Active, Fixed Income Assigned Risk Bond Mgr.	Non-Retirement Program
• State Street Global Advisors	Target Date Fund	PDIP
• TIAA-CREF	Multi-Asset Class Platform	PDIP (MN 529 Plan)
• T. Rowe Price	Active, Small Cap Equities Stable Value Fund	PDIP Bench List
• Vanguard	Passive, Fixed Income Passive, Domestic Equities Passive, International Equities Passive, Balanced Fund Active, U.S. Large Cap Equity	PDIP PDIP PDIP PDIP PDIP

REPORT

SBI Environmental, Social, and Governance (ESG) Report

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MINNESOTA STATE BOARD OF INVESTMENT

ENVIRONMENTAL, SOCIAL, GOVERNANCE REPORT

2021 Proxy Voting

The proxy voting season is in full swing!

At a recent meeting, the SBI Proxy Committee established a precedent to vote for shareholder proposals requesting that a company conduct a Racial Equity Audit to analyze a company's impact of its products, services and practices on nonwhite stakeholders and communities of color. Failure to address issues of racial injustice resulting from company activities could result in significant reputational risks and harm to shareholder interests, especially for consumer-facing companies. Controversies related to racial injustice at a company can result in customer and employee attrition, negative press, significant fines and regulatory inquiries.

While every proposal is unique, the SBI continues to vote for a significant number of proposals geared towards improving environmental sustainability and diversity.

The SBI also continues to vote against a significant number of proposals related to unsatisfactory executive compensation proposals.

Coalition Highlight

<u>Council of Institutional Investors (CII)</u>

In March 2021, the SBI's Executive Director and CIO, Mansco Perry III, was elected Treasurer of the Board of Directors for the CII.

CII promotes policies that enhance long-term value for U.S. institutional asset owners and their beneficiaries. CII believes the involvement of defined benefit plans, particularly state and local government and union pension systems, in corporate governance issues has benefited investors at large in the U.S. capital markets and contributed to the vitality of the U.S. economy and U.S. corporations.

Pension fund advocacy has resulted in regulatory and legislative reforms to strengthen rights for shareowners, improved corporate governance standards for U.S. companies and boards, increased accountability of corporate directors and executives and enhanced transparency of governance activities and financial accounting.

As a highly respected leader among institutional investors, Mr. Perry is contributing to this important governance work by volunteering to serve on the CII Board of Directors as Treasurer.

Coalition Highlight

United Nations Principles for Responsible Investment (PRI)

Reporting on ESG Investment Risks

In May 2021 the SBI will be submitting its PRI report; and by August 2021, most of the SBI's responses will be available on the PRI website and linked from the SBI's website. The SBI will also receive an assessment based on its responses. Much of the report is focused on ESG incorporation into the investment process and the stewardship activities of asset owners.

PRI defines ESG incorporation as having three parts: **Integration**, **Screening** and **Thematic**.

- **Integration** is systematically including ESG issues in investment decisions to manage risks and improve returns.
- **Screening** is not investing in something for ethical reasons.
- **Thematic** is seeking investments that combine attractive risk return profiles with social outcomes.

PRI defines stewardship as having two parts: **Engagement** and **Voting**.

- **Engagement** is interactions between investors and managers/companies in order to improve practices on an ESG issue.
- **Voting** is primarily proxy voting.

Because all of the SBI's Combined Funds assets are externally managed, the SBI primarily relies on its external investment managers to make decisions about ESG incorporation at the investment level. By having discussions with managers on issues such as diversity and voting proxy ballots with respect to U.S. companies, the SBI is directly involved in stewardship activities on a regular basis.

More details on the SBI's responses to the PRI reporting will be provided in future ESG reports.

MINNESOTA STATE BOARD OF INVESTMENT

Contact

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REPORT

AON Market Environment Report

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Market Environment

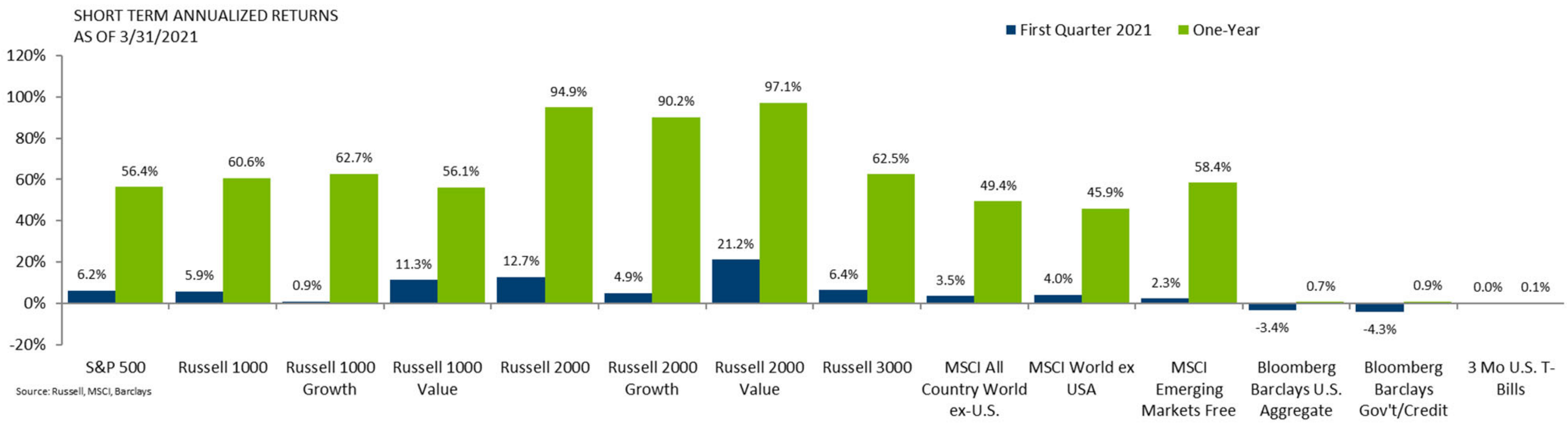
First Quarter 2021

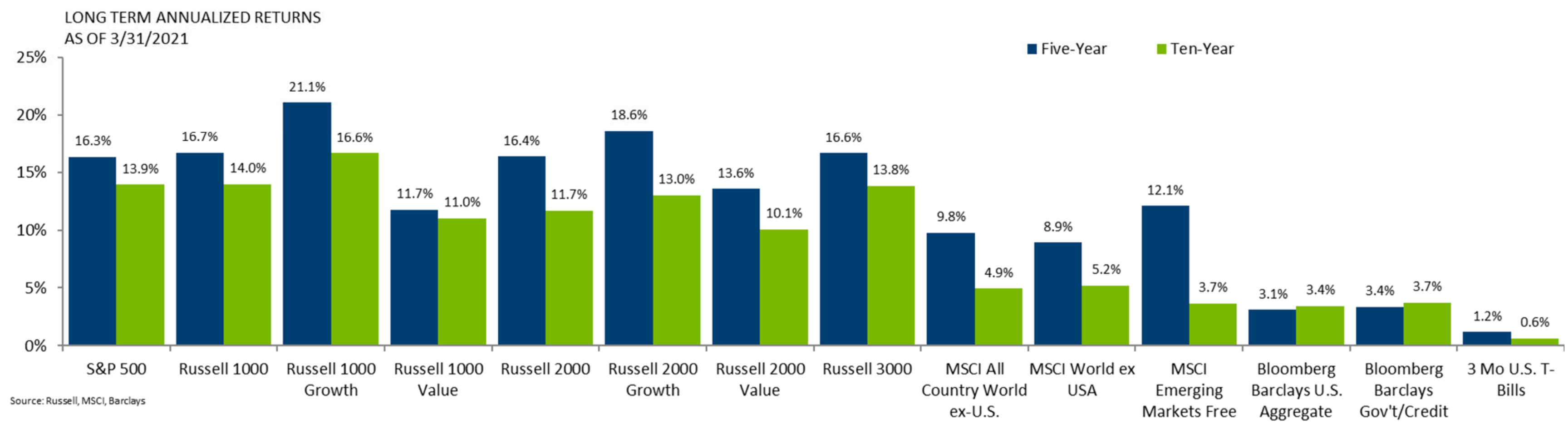
Aon

Investment advice and consulting services provided by Aon Investments USA Inc., an Aon Company.

AON
Empower Results®

Market Highlights





Market Highlights

Returns of the Major Capital Markets

Periods Ending 3/31/2021

	First Quarter	1-Year	3-Year[1]	5-Year[1]	10-Year[1]
Domestic Equity					
S&P 500	6.2%	56.4%	16.8%	16.3%	13.9%
Russell 1000	5.9%	60.6%	17.3%	16.7%	14.0%
Russell 1000 Growth	0.9%	62.7%	22.8%	21.1%	16.6%
Russell 1000 Value	11.3%	56.1%	11.0%	11.7%	11.0%
Russell 2000	12.7%	94.9%	14.8%	16.4%	11.7%
Russell 2000 Growth	4.9%	90.2%	17.2%	18.6%	13.0%
Russell 2000 Value	21.2%	97.1%	11.6%	13.6%	10.1%
Russell 3000	6.4%	62.5%	17.1%	16.6%	13.8%
International Equity					
MSCI All Country World ex-U.S.	3.5%	49.4%	6.5%	9.8%	4.9%
MSCI World ex USA	4.0%	45.9%	6.3%	8.9%	5.2%
MSCI Emerging Markets Free	2.3%	58.4%	6.5%	12.1%	3.7%
Fixed Income					
Bloomberg Barclays U.S. Aggregate	-3.4%	0.7%	4.7%	3.1%	3.4%
Bloomberg Barclays Gov't/Credit	-4.3%	0.9%	5.0%	3.4%	3.7%
3 Mo U.S. T-Bills	0.0%	0.1%	1.5%	1.2%	0.6%
Inflation					
CPI-U	1.2%	2.6%	2.0%	2.2%	1.7%

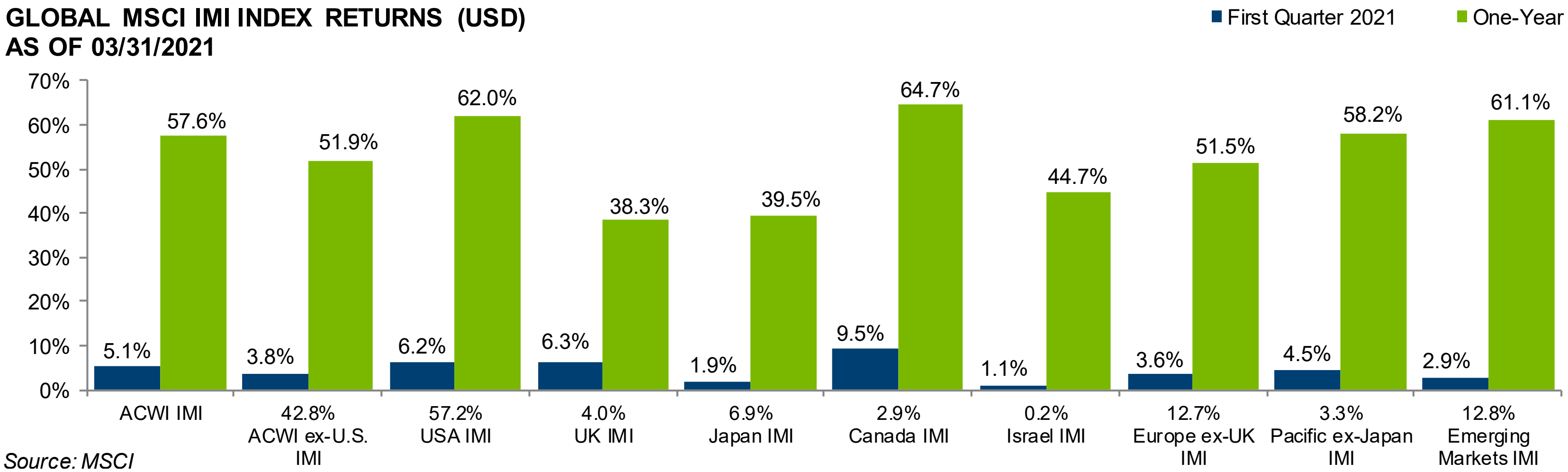
MSCI Indices show net returns.

All other indices show total returns.

[1] Periods are annualized.

Global Equity Markets

GLOBAL MSCI IMI INDEX RETURNS (USD)
AS OF 03/31/2021



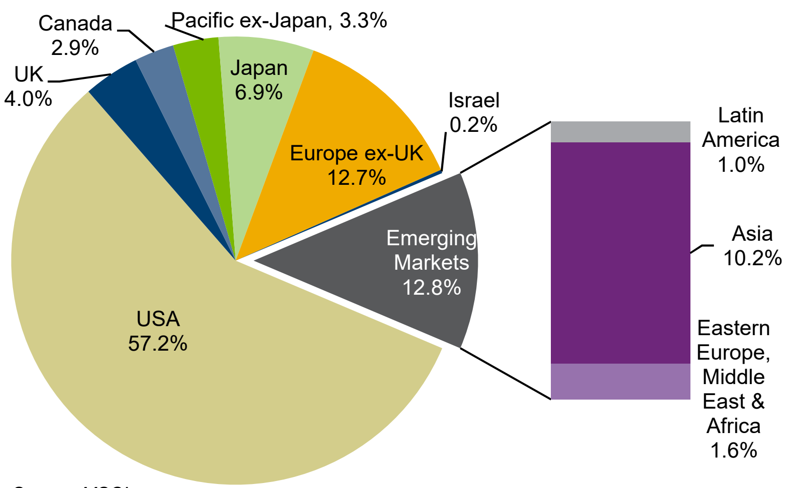
Source: MSCI

- Global equities ended the quarter higher, backed by further stimulus and positive vaccine developments. The MSCI All Country World Investable Market Index (ACWI IMI) returned 5.1% for the quarter.
- Non-U.S. equities generated positive returns over the quarter but trailed the U.S., with the ACWI ex-U.S. IMI up 3.8% compared to a 6.2% return in the U.S.
- Canadian equities were the strongest region for the quarter, as the Canada IMI returned 9.5%. The index was led higher by its two largest sectors, Financials and Energy, which benefited from rising rates and oil prices.
- The UK also fared well despite facing a rise in COVID-19 cases that prompted stricter lockdowns. Higher global inflation expectations buoyed the index given its large allocation to cyclical sectors such as Financials and Industrials.

Global Equity Markets

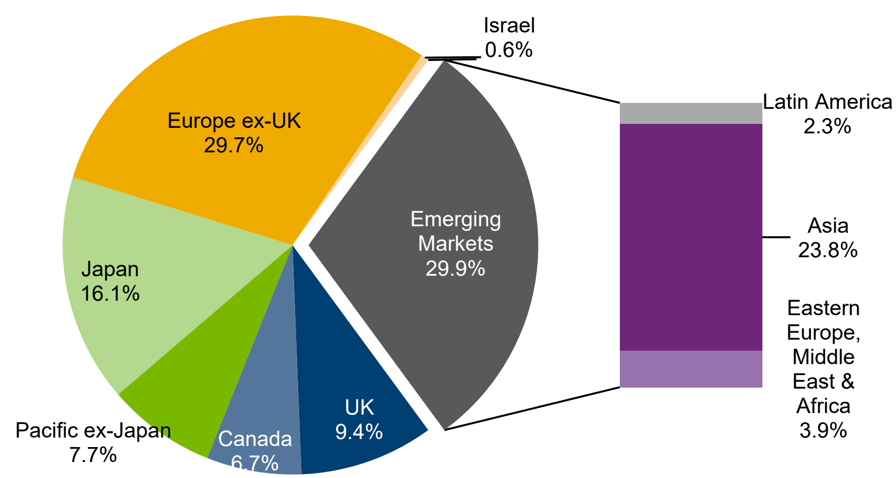
Below is the country/region breakdown of the global and international equity markets as measured by the MSCI All Country World IMI Index and the MSCI All Country World ex-U.S. IMI Index, respectively.

MSCI ALL COUNTRY WORLD IMI INDEX
GEOGRAPHIC ALLOCATION AS OF 03/31/2021



Source: MSCI

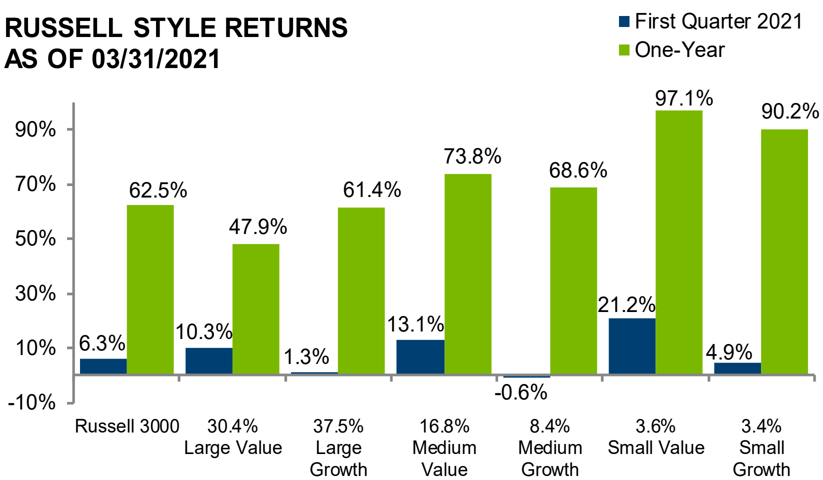
MSCI ALL COUNTRY WORLD EX-U.S. IMI INDEX
GEOGRAPHIC ALLOCATION AS OF 03/31/2021



Source: MSCI

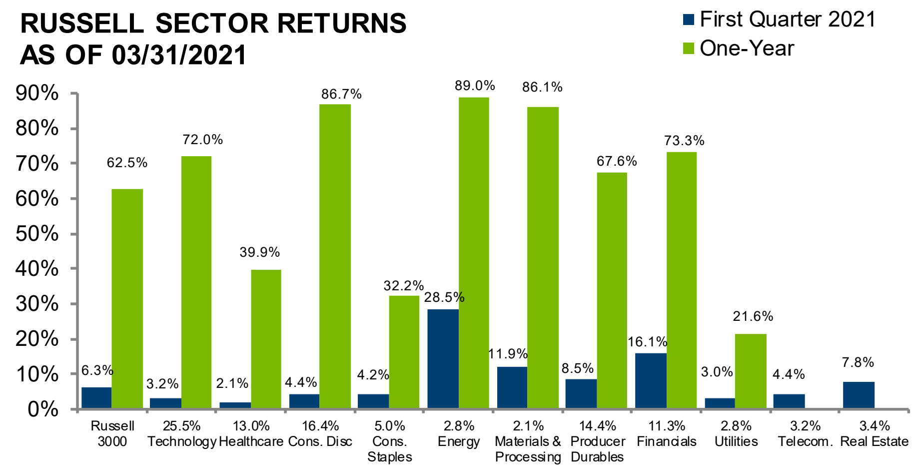
U.S. Equity Markets

RUSSELL STYLE RETURNS
AS OF 03/31/2021



Source: Russell Indexes

RUSSELL SECTOR RETURNS
AS OF 03/31/2021

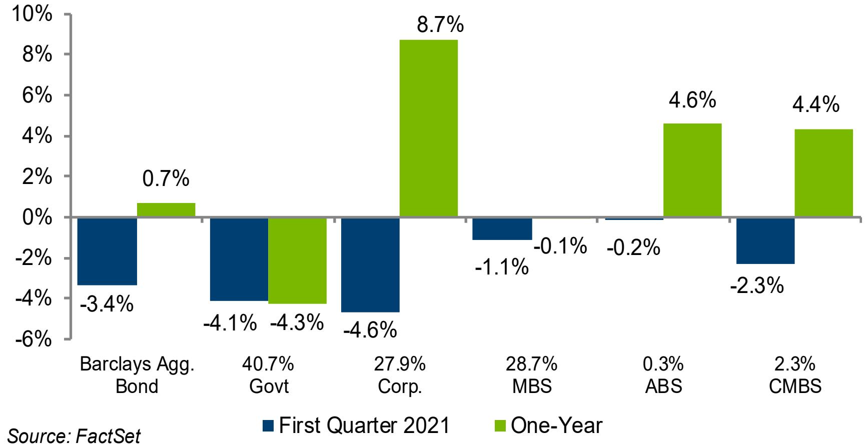


Source: Russell Indexes(New sectors like Telecommunication and Real Estate One-Year chart excluded due to lack of historical data)

- U.S. equities were generally positive for the quarter, boosted by additional fiscal stimulus and strong vaccination rollouts. President Joe Biden signed a $1.9tn stimulus package providing more direct payments to Americans and extending the federal emergency unemployment benefits program shortly after being sworn into office. At the end of the quarter, his administration also announced plans for over $2trn in infrastructure spending. Meanwhile, U.S. GDP rose 4.0% in Q4 (annualized quarter-over-quarter) a lockdowns eased but remained down 2.5% year-over-year.
- The Russell 3000 Index returned 6.3% during the first quarter and 62.5% over the one-year period. All sectors generated positive returns over the quarter. Performance was bolstered by strong quarterly returns from the Energy and Financials sectors, which returned 28.% and 16.1% respectively. Healthcare was the largest laggard with a return of 2.1%. Over the one-year period, the Energy sector lead with a return 89.0%. While facing the near-term pressure due to higher interest rates, the Technology sector, the index's largest weight, was still up 72.0%.
- Small cap stocks outperformed both large and medium cap stocks over the quarter, almost doubling over the year. Value stocks outperformed growth across all market capitalizations for the first quarter of 2021; mid and small cap value have outpaced their growth counterparts over the trailing one-year period as well.

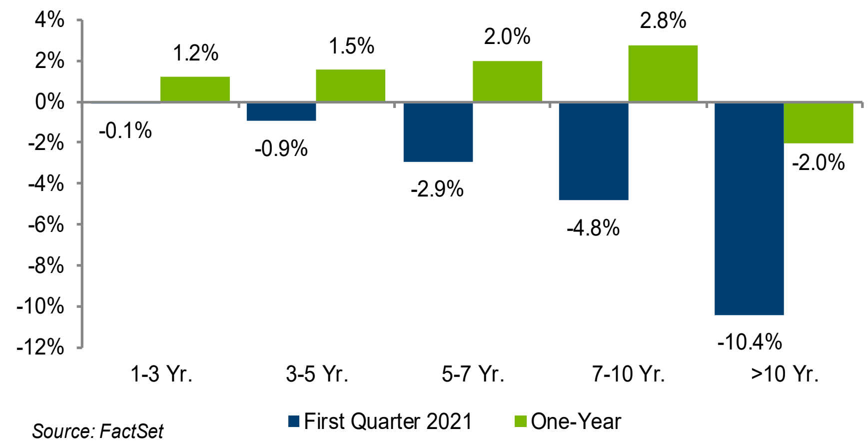
U.S. Fixed Income Markets

BLOOMBERG BARCLAYS AGGREGATE RETURNS BY SECTOR AS OF 03/31/2021



Source: FactSet

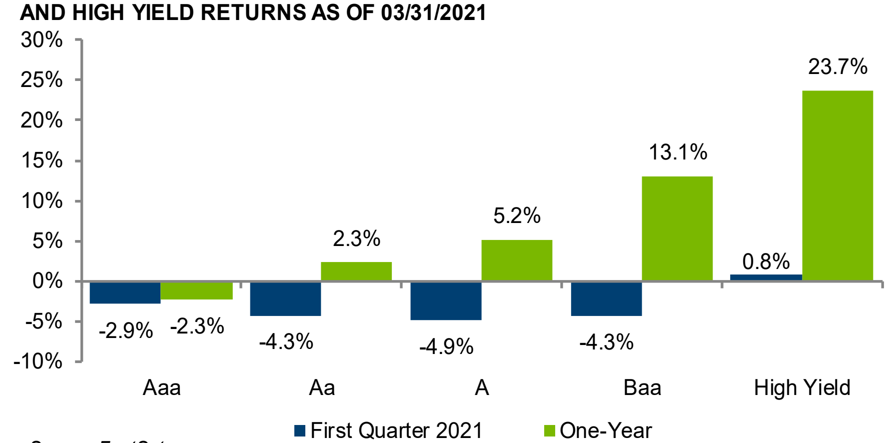
BLOOMBERG BARCLAYS AGGREGATE RETURNS BY MATURITY AS OF 03/31/2021



Source: FactSet

- The Bloomberg Barclays U.S. Aggregate Bond Index fell by 3.4% over the quarter.
- Corporate bonds fared the worst, down 4.6% by quarter-end, followed by Government bonds which fell by 4.1%.
- Longer duration bonds (10+ year maturities) fell the most at -10.4%.
- High yield bonds rose by 0.8%, outperforming investment grade credit. Within investment grade bonds, A bonds were the worst performer with a return of -4.9%.

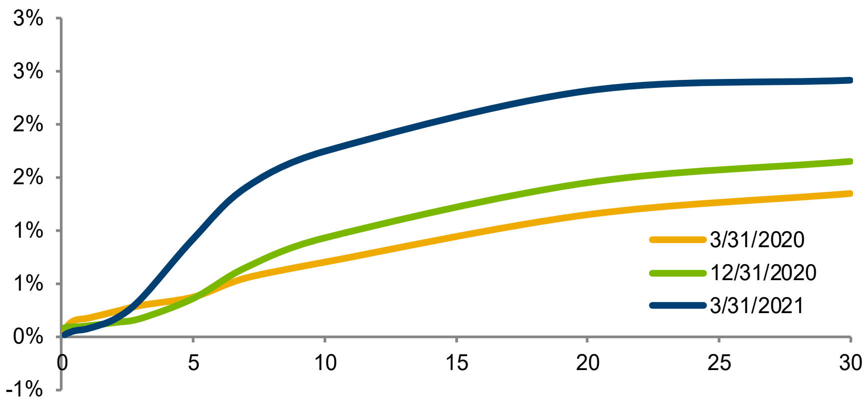
BLOOMBERG BARCLAYS AGGREGATE RETURNS BY QUALITY AND HIGH YIELD RETURNS AS OF 03/31/2021



Source: FactSet

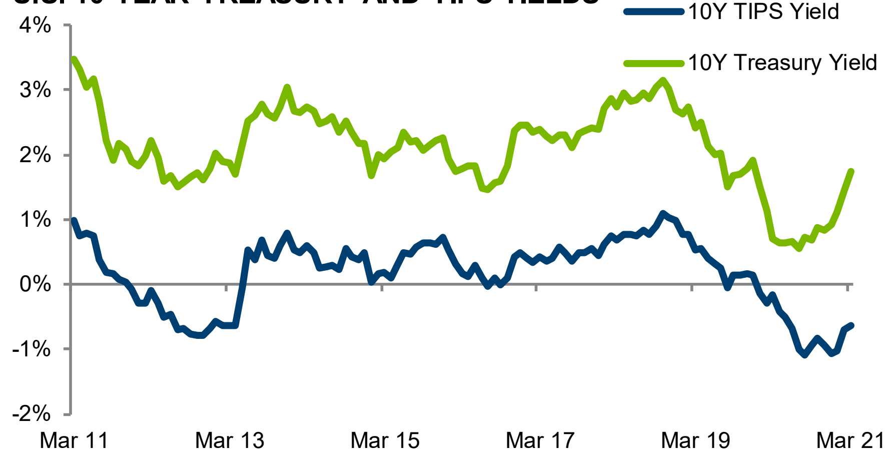
U.S. Fixed Income Markets

U.S. TREASURY YIELD CURVE



Source: U.S. Department of Treasury

U.S. 10-YEAR TREASURY AND TIPS YIELDS



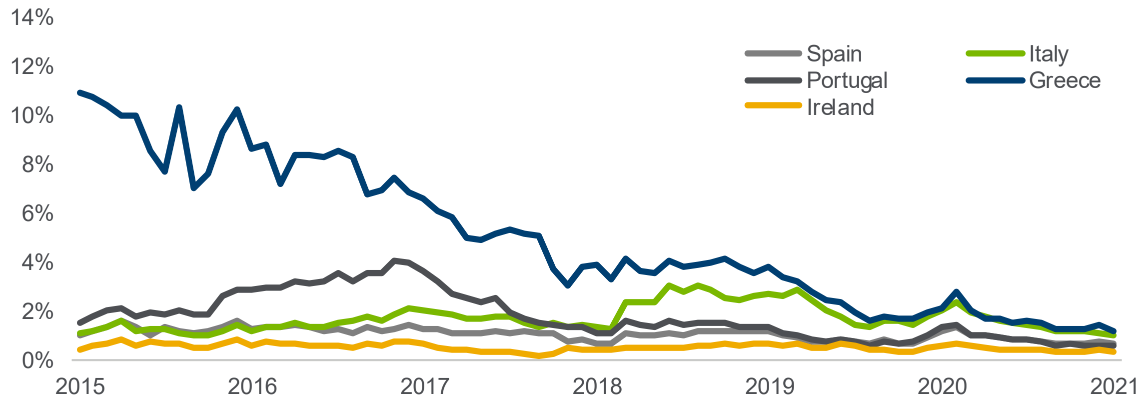
Source: U.S. Department of Treasury

- The U.S. nominal yield curve steepened over the quarter with yields rising sharply across medium to longer maturities. Long-dated yields saw the largest quarterly increase due to higher inflation expectations. Short-term maturities were largely unchanged as the US Federal Reserve (Fed) signalled that it would keep its policy rate near zero until at least 2024.
- The 10-year U.S. treasury yield ended the quarter 81bps higher at 1.74% and the 30-year yield increased by 76bps to 2.41%.
- The 10-year TIPS yield rose by 43bps over the quarter to -0.63%.

Empower Results®

European Fixed Income Markets

EUROZONE PERIPHERAL BOND SPREADS (10-YEAR SPREADS OVER GERMAN BUNDS)



Source: FactSet

- European government bond spreads over 10-year German bunds generally narrowed across the Euro Area. The European Central Bank (ECB) pledged to speed up its bond-buying program under its €1.9tn pandemic emergency purchase program (PEPP) citing rising concerns over the surge in eurozone bond yields. Elsewhere, the ECB raised the eurozone growth forecast for 2021 to 4.0% from 3.9%.
- German government bund yields rose by 28bps to -0.30% over the quarter. Economic growth in the Eurozone moderated as GDP contracted by 0.7% in Q4 2020 and fell by 6.8% over the year. Germany's economy grew by 0.1% in Q4 2020 while France contracted by 1.3% over the same period.
- Italian government bond yields rose by 12bps to 0.66%. Following the failure of negotiations to rebuild a coalition government led by Giuseppe Conte, the former president of the European Central Bank, Mario Draghi, was sworn in as the 30th prime minister after forming a national unity government in Italy supported by most major political parties in Italy's parliament.

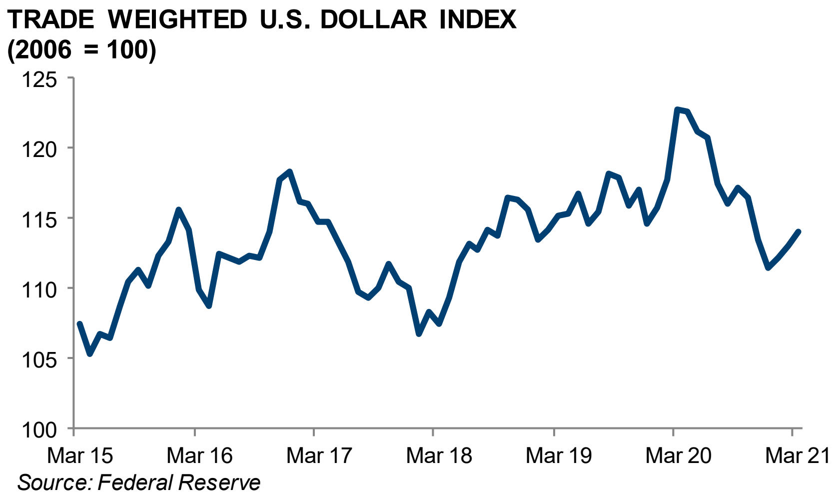
Credit Spreads

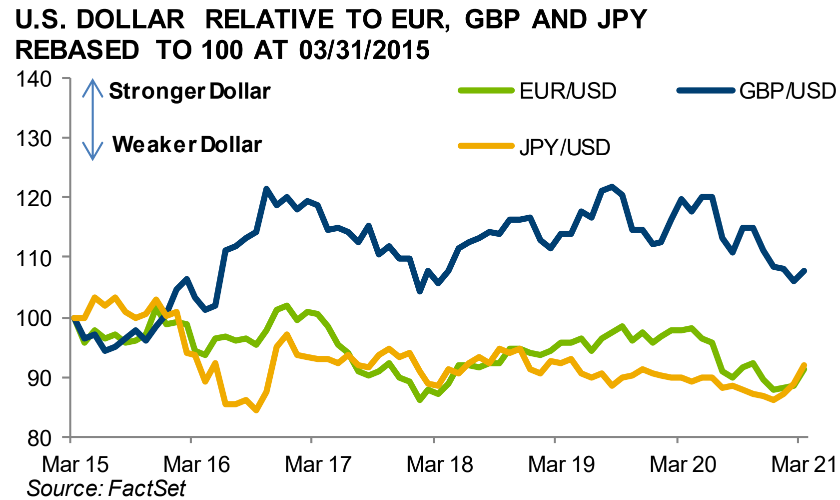
Spread (bps)	3/31/2021	12/31/2020	3/31/2020	Quarterly Change (bps)	1-Year Change (bps)
U.S. Aggregate	31	42	95	-11	-64
Gov't	0	0	3	0	-3
Credit	86	92	255	-6	-169
Gov't/Credit	38	42	105	-4	-67
MBS	12	39	60	-27	-48
CMBS	71	81	188	-10	-117
ABS	35	33	213	2	-178
Corporate	91	96	272	-5	-181
High Yield	310	360	880	-50	-570
Global Emerging Markets	267	268	619	-1	-352

Source: Barclays Live

- Credit spreads continued to tighten but more moderately than previous quarter. Credit spreads over U.S. treasuries generally narrowed over the quarter.
- High Yield credit spreads and MBS spreads narrowed the most in Q1 2021, decreasing by 50bps and 27bps over the quarter.

Currency

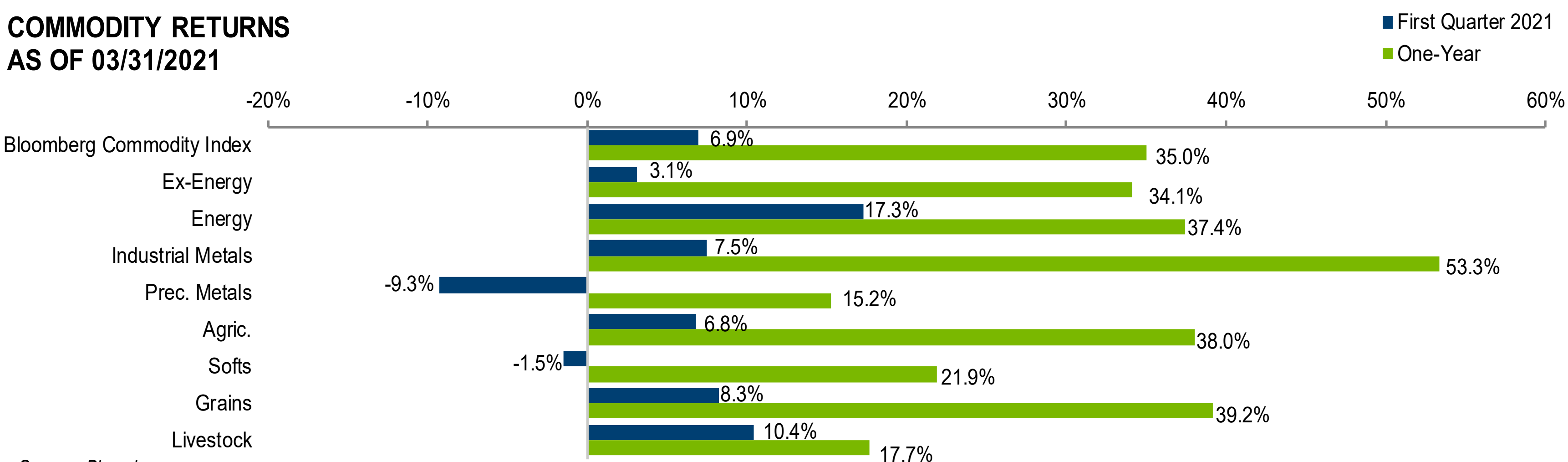




- The U.S. Dollar appreciated against the Euro and Yen but depreciated against the Sterling. The U.S. dollar rose 2.3% on a trade-weighted basis.
- The Sterling rose by 4.1% on a trade-weighted basis over the quarter. The Bank of England kept the interest rate unchanged at a historic low of 0.1% and downgraded its growth forecasts for 2021 to 5.00% from 7.25%. The Monetary Policy Committee also expects the economy to contract by 4.0% in Q1 2021 and recover rapidly in the second half of the year on the back of vaccination progress, failing which, it may impose negative interest rates. The Sterling appreciated by 0.9% against the U.S. dollar.
- The Bank of Japan (BOJ) continues to target a zero percent 10-year bond yield but widened its tolerance band to plus/minus 0.25% from 0.20%. The BOJ also removed its pledge to buy Exchange-traded funds (ETFs) linked to Topix and Nikkei at an annual pace of approximately ¥6tn.
- The U.S. dollar appreciated by 4.1% and 7.0% against the Euro and Yen, respectively.

Commodities

COMMODITY RETURNS
AS OF 03/31/2021



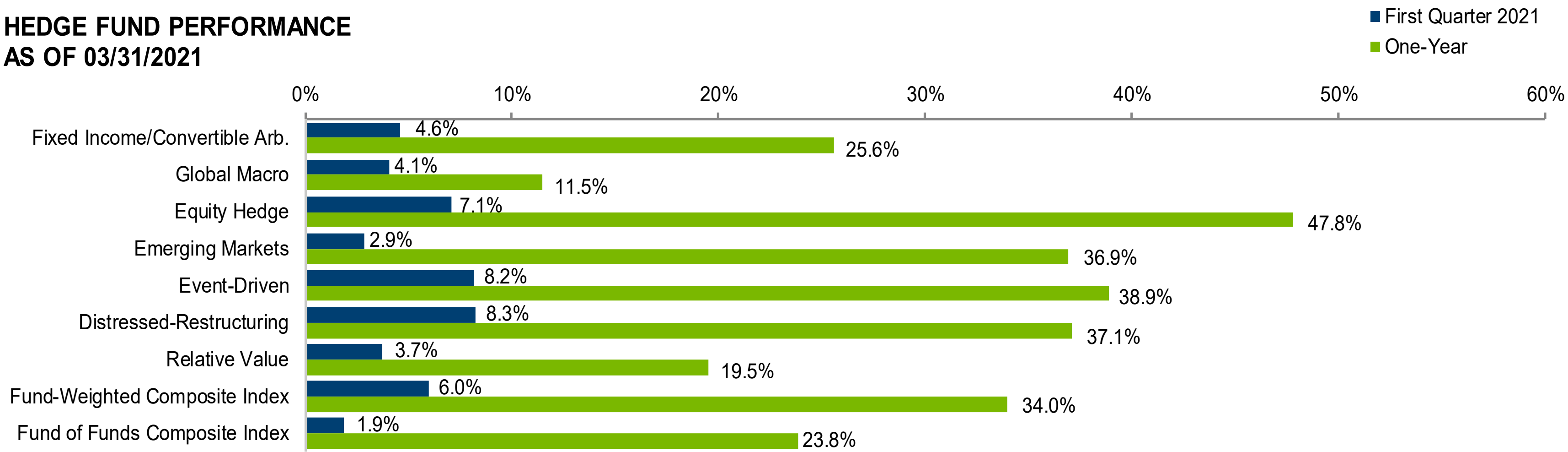
Source: Bloomberg
Note: Softs and Grains are part of the wider Agriculture sector

- Commodities had a strong quarter as the Bloomberg Commodity Index returned 6.9%. Energy and Industrial Metals were the main beneficiaries of the reflation trade.
- The Energy sector was the best performing sector as it rose by 17.3% over the quarter and 37.4% over the trailing one-year period. Crude oil prices rose sharply on positive vaccine developments and easing lockdowns. OPEC+ decided to maintain a production rate at 7mb/d, slightly down from the previous quarter's 7.2 mb/d.
- The price of Brent crude oil rose by 22.7% to $64/bbl. while WTI crude oil spot prices rose by 21.9% to $59/bbl.

Empower Results®

Hedge Fund Markets Overview

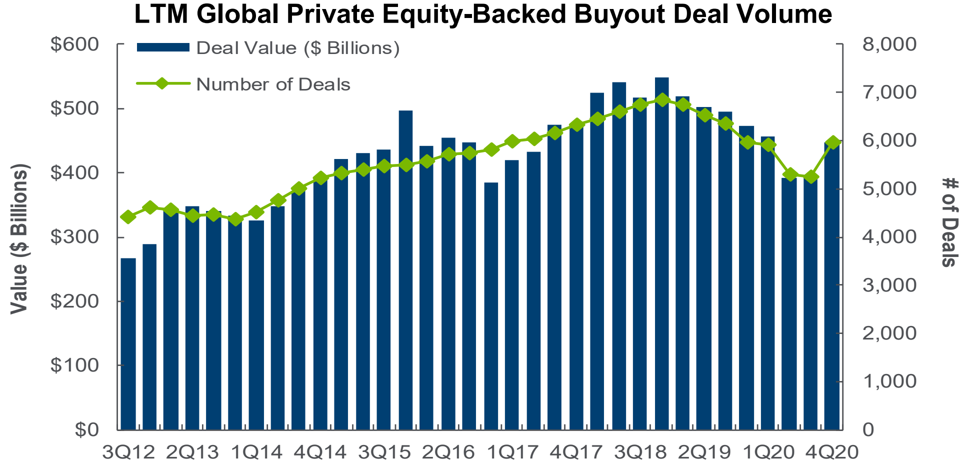
HEDGE FUND PERFORMANCE
AS OF 03/31/2021



Note: Latest 5 months of HFR data are estimated by HFR and may change in the future.
Source: HFR

- Hedge fund performance was positive across all strategies in the first quarter.
- HFRI Fund-Weighted Composite Index and the HFRI Fund of Funds Composite Index produced returns of 6.0% and 1.9% respectively.
- Over the quarter, Distressed-Restructuring and Event-Driven strategies were the best performers, returning 8.3% and 8.2% respectively.

Private Equity Market Overview – 4Q 2020

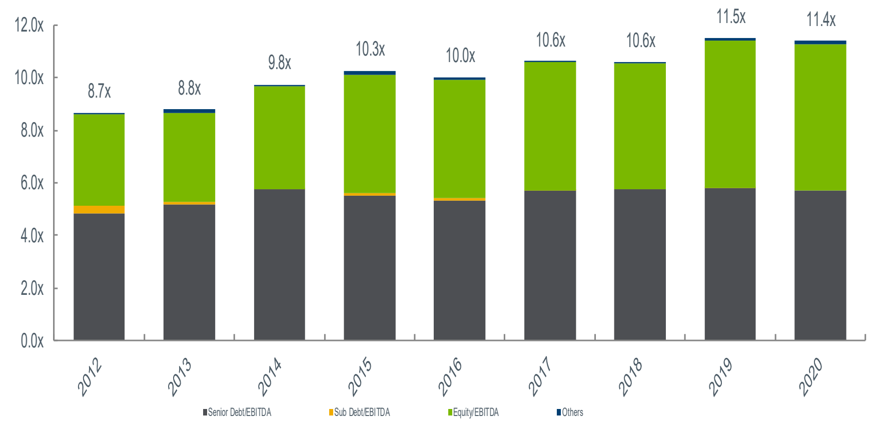


Source: Preqin

- **Fundraising:** In 2020, $839.8 billion was raised by 1,954 funds, which was a decrease of 8.4% on a capital basis and a decrease of 15.7% by number of funds from the prior year. Dry powder stood at $2.0 trillion at the end of the year, an increase of 9.4% and 23.4% compared to year-end 2019 and the five-year average, respectively.[1]
- **Buyout:** Global private equity-backed buyout deals totaled $447.9 billion in 2020, which was down 5.4% and 3.9% from 2019 and the five-year average, respectively.[1] At the end of 2020, the average purchase price multiple for all U.S. LBOs was 11.4x EBITDA, down slightly from year-end 2019's average of 11.5x and up from the five-year average (10.8x).[2] Large cap purchase price multiples stood at 11.3x, down compared to the full-year 2019 level of 11.4x.[2] The average purchase price multiple across European transactions greater than €1B averaged 13.1x EBITDA for year-end 2020, up significantly from the 11.2x multiple seen at year-end 2019. Purchase prices for transactions of €500M million or more increased from 11.1x in 2019 to 11.6x in 2020. Globally, exit value totaled $497.5 billion on 1,900 deals during the year, higher than the $465.9 billion in exits from 2,161 deals during 2019.
- **Venture:** During the year, 6,022 venture-backed transactions totaling $129.7 billion were completed, which was an increase on a capital basis over the prior year's total of $113.4 billion across 6,599 deals. This was 26.2% higher than the five-year average of $102.7 billion and marked a new annual record.[3] Total U.S. venture-backed exit activity totaled approximately $290.1 billion across 928 completed transactions in 2020, up from $257.4 billion across 1,121 exits in 2019.[4]
- **Mezzanine:** 41 funds closed on $27.6 billion during the year. This was a significant increase from the prior year's total of $9.0 billion raised by 37 funds and represented an increase of 25.2% from the five-year average of $22.0 billion. Estimated dry powder was $51.8 billion at the end of 2020, down by $52.9 billion from the prior year.

Private Equity Market Overview – 4Q 2020

U.S. LBO Purchase Price Multiples – All Transactions Sizes



Source: S&P

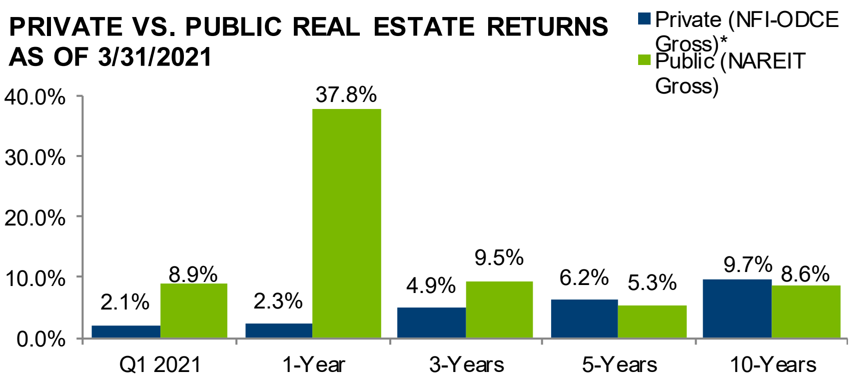
- **Distressed Debt:** The LTM U.S. high-yield default rate was 5.2% as of December 2020, which was up from December 2019's LTM rate of 3.3%.[5] The high-yield default rate is projected to trend lower through 2021. During the year, $58.4 billion was raised by 70 funds, higher than the $50.8 billion raised by 89 funds during 2019.[1] Dry powder was estimated at $135.1 billion at the end of 2020, which was up 12.5% from year-end 2019. This remained above the five-year annual average level of $115.0 billion.[1]
- **Secondaries:** 57 funds raised $87.8 billion during the year, up significantly from the $25.6 billion raised by 34 funds in 2019. This was the most raised during a one-year period by secondaries funds in history.[1] The average discount rate for all private equity sectors finished the year at 11.8%, greater than the 8.1% discount at the end of 2019.[6]
- **Infrastructure:** $97.9 billion of capital was raised by 122 funds in 2020 compared to $112.0 billion of capital raised by 136 partnerships in 2019. At the end of the year, dry powder stood at $233.8 billion, up from last year's record of $224.9 billion. Infrastructure managers completed 2,226 deals for an aggregate deal value of $282.3 billion in 2020 compared to 2,710 deals totaling $508.6 billion in 2019.[1]
- **Natural Resources:** During 2020, 21 funds closed on $8.6 billion compared to 37 funds totaling $13.7 billion in 2019. Energy and utilities industry managers completed 157 deals totaling $16.3 billion in 2020, compared to $17.0 billion across 156 deals in 2019.[1]

Sources: [1] Preqin [2] Standard & Poor's [3] PwC/CB Insights MoneyTree Report [4] PitchBook/NVCA Venture Monitor [5] Fitch Ratings [6] Thomson Reuters [7] UBS

Notes: FY=Fiscal year ended 12/31; YTD=Year to date; LTM=Last 12 months (aka trailing 12 months); PPM=Purchase Price Multiples: Total Purchase Price ÷ EBITDA.

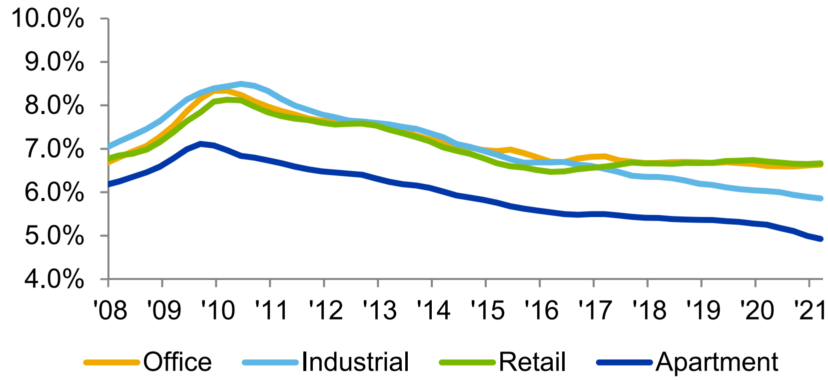
U.S. Commercial Real Estate Markets

PRIVATE VS. PUBLIC REAL ESTATE RETURNS AS OF 3/31/2021



First quarter returns are preliminary
Sources: NCREIF, FactSet

CAP RATES BY SECTOR



Sources: RCA, AON 12/31/2018

- U.S. Core Real Estate returned 2.1%* in the first quarter, equating to a 2.3% total gross return year-over-year, including a 3.8% income return. Shelter in place orders and social distancing practices have most severely impacted operating cash flows in the retail and hotel property sectors. Property valuations have begun to price in the loss of cash flow as a result of COVID-19, but price discovery continues to be impaired. Through February 2021, transaction volume contracted -40% YoY, with the hotel, retail, and office property sectors experiencing the largest decline in transactions.
- Global property markets, as measured by the FTSE EPRA/NAREIT Developed Real Estate Index, returned 6.1% (USD) in aggregate during the first quarter and experienced a cumulative increase of 35.9% over the trailing 1-year period. REIT market performance was driven by Asia Pacific (6.3% USD), North America (9.7% USD), and Europe (1.5% USD). The U.S. REIT markets (FTSE NAREIT Equity REITs Index) returned 8.9% in the first quarter. The U.S. 10-year treasury bond yields increased 81 bps to 1.74% during the quarter.
- The coronavirus fueled market volatility in the stock and bond markets has created a situation of uncertainty for private real estate pricing. Amid exceptional uncertainty, the global economy is projected to grow 5.5% in 2021 and 4.2% in 2022, reflecting expectations of a strong rebound fueled by an accelerated vaccine roll out and fiscal and monetary stimulus. The strength of the recovery is projected to vary significantly across countries, depending on access to medical interventions, effectiveness of policy support, exposure to cross-country spillovers, and structural characteristics entering the crisis.
- We are proactively evolving our investment strategy. COVID-19 forced everyone to adapt due to acute circumstances, and measures to moderate the spread of the disease were fairly consistent on a global basis. Looking forward, investors need to assess what changes to our routines/habits will stick, what regions will be most impacted, and how those impact property sector specific demand drivers.
- Blind pool funds offer a potential to have capital readily available when the new opportunity set presents itself. Those strategies need careful review in light of the changing market dynamics. Strategies that worked previously in a growth-oriented market may not be appropriate for more opportunistic style investing. Regions, countries, and property types all need to be re-evaluated.

*Indicates preliminary NFI-ODCE data gross of fees

Notes

1. Preqin
2. Standard & Poors
3. PriceWaterhouseCoopers/CB Insights MoneyTree Report
4. PitchBook/National Venture Capital Association Venture Monitor
5. Fitch Ratings
6. UBS

Notes:

FY: Fiscal year ended 12/31
YTD: Year to date
YE: Year end
LTM: Last twelve months (aka trailing twelve months or TTM)
PPM: Purchase Price Multiples: Total Purchase Price / EBITDA
/bbl: Price per barrel
MMBtu: Price per million British thermal units

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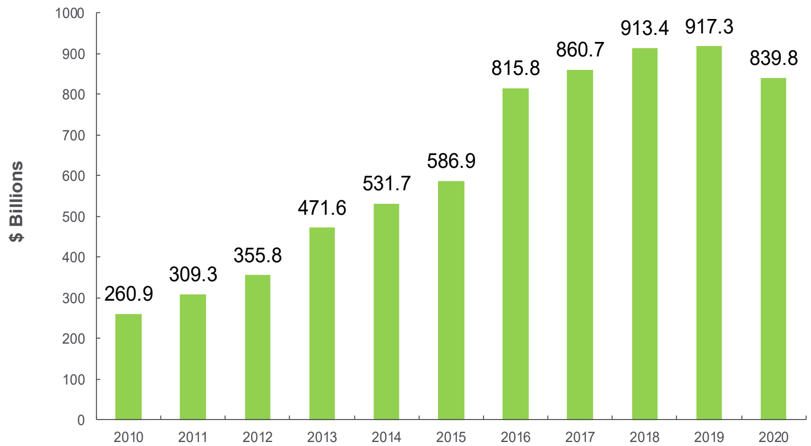
Appendix A:

Global Private Equity Market Overview

4Q 2020

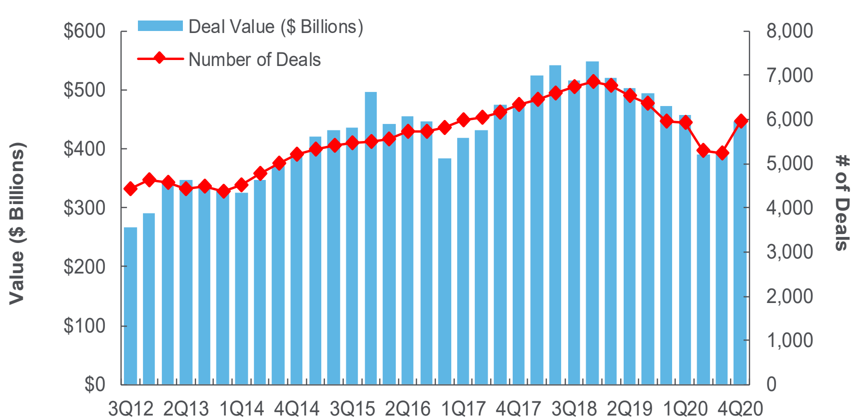
Private Equity Overview

Total Funds Raised



Source: Preqin

LTM Global Private Equity-Backed Buyout Deal Volume



Source: Preqin

Fundraising

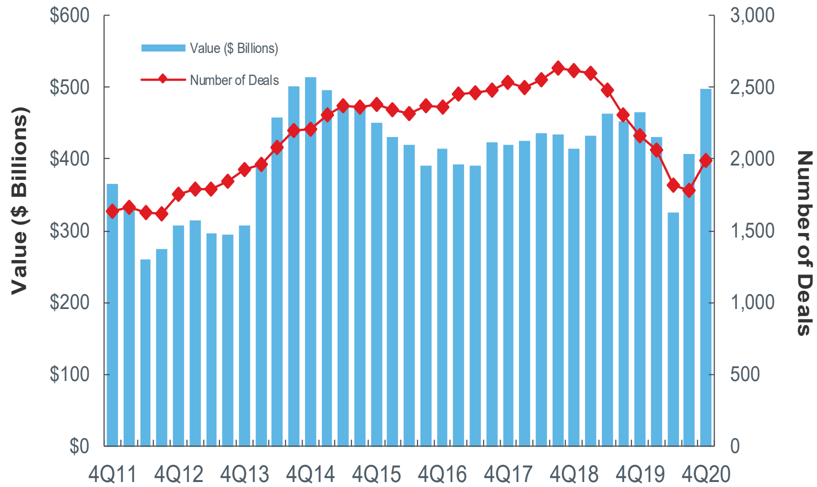
- In 2020, $839.8 billion was raised by 1,954 funds, which was a decrease of 8.4% on a capital basis and 15.7% by number of funds from the prior year.[1]
  - 2020 fundraising was 3.4% lower, on a capital basis, than the five-year average, and 26.0% lower by number of funds raised.
  - The majority of 2020 capital was raised by funds with target geographies in North America, comprising 60.2% of the annual total. Capital targeted for Europe made up 25.1% of the total funds raised during the year, while the remainder was attributable to managers targeting Asia and other parts of the world.
- Dry powder stood at $2.0 trillion at the end of the year, an increase of 9.4% and 23.4% compared to year-end 2019 and the five-year average, respectively.[1]

Activity

- In 2020, 5,972 buyout deals were completed for an aggregate deal value of $447.9 billion as compared to 5,971 transactions totaling $473.3 billion in 2019.[1]
  - This was 3.9% lower than the five-year average deal volume of $465.9 billion.
  - Average deal size was $78.8 million in Q4 2020. This was down 3.8% compared to Q4 2019, but up 2.5% relative to the five-year quarterly average.
- European LBO transaction volume totaled €49.0 billion in 2020, up by 7.7% compared to 2019's total of €45.5 billion. 2020's total was down compared to the five-year average level of €55.0 billion.[3]
- At the end of 2020, the average purchase price multiple for all U.S. LBOs was 11.4x EBITDA, down from year-end 2019 (11.5x) and up from the five-year average (10.8x). Large-cap purchase price multiples stood at 11.3x, down slightly from the 11.4x observed at year-end 2019.[3]
  - This was 0.6x and 1.3x turns (multiple of EBITDA) above the five and ten-year average levels, respectively.
- The average purchase price multiple across European transactions greater than €1B averaged 13.1x EBITDA for year-end 2020, up significantly from the 11.2x multiple seen at year-end 2019. Purchase prices for transactions of €500M million or more increased from 11.1x in 2019 to 11.6x in 2020.[3]
- Debt remained broadly available in the U.S.
  - U.S. average leverage level in 2020 was 5.7x compared to the five and ten-year averages of 5.7x and 5.5x, respectively.[3]
  - The amount of debt issued supporting new transactions decreased compared to 2019 from 72.2% to 62.4%, and is lower than the five-year average of 64.3%.[3]
- In Europe, average senior debt/EBITDA in 2020 was 5.9x, up from the 5.6x observed in 2019. This was also up over the five-year average of 5.5x and ten-year average level of 5.1x.

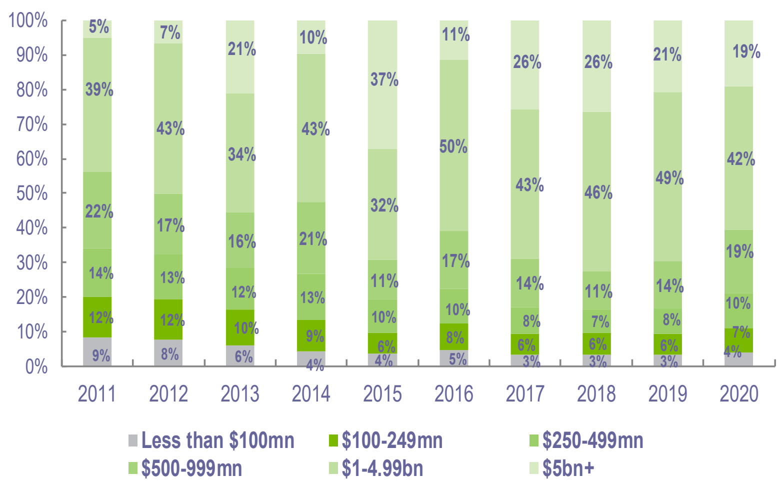
Buyouts / Corporate Finance

LTM PE Exit Volume and Value



Source: Preqin

M&A Deal Value by Deal Size



Source: Preqin

Fundraising

- $357.0 billion was closed on by 520 buyout and growth funds in 2020, compared to $514.1 billion raised by 587 funds the year before.[1]
  - This was higher than the five-year average of $329.8 billion by 704 funds.
  - CVC Capital Partners Fund VIII was the largest fund raised during the year, closing on €21.3 billion.[1] Silver Lake Partners VI was not far behind, having raised $20.0 billion in commitments.[1]
- Buyout and growth equity dry powder was estimated at $1.1 trillion, which surpassed the $1.0 trillion observed at the end of 2019 and was substantially higher than the five-year average level of $886.9 billion.[1]
  - Mega, mid-cap, and small funds increased in dry powder year-over-year by 0.6%, 16.2% and 45.8%, respectively. Small cap dry powder exhibited the largest increase during the year, setting a new record of $180.9 billion. Mega funds ended 2020 with $383.0 billion in dry powder, while mid-cap ended at $128.4 billion. Large market buyout dry powder finished the year down 1.3% from 2019.[1]
  - An estimated 60.7% of buyout dry powder was targeted for North America, while European dry powder comprised 25.5% of the total.[1]

Activity

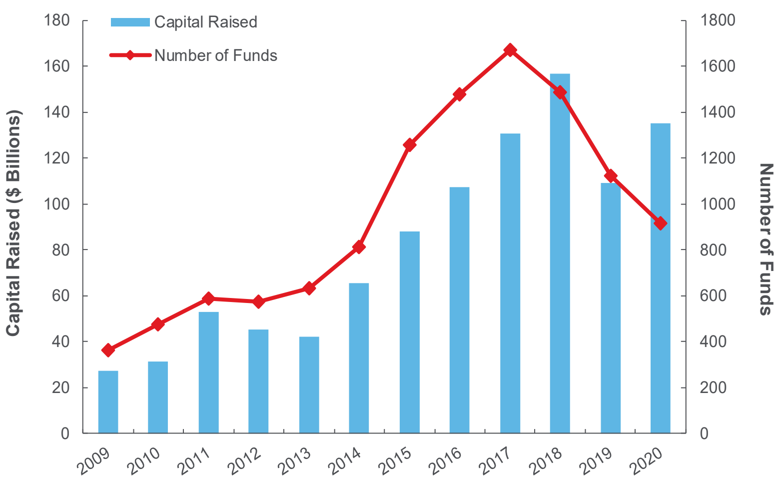
- Global private equity-backed buyout deals totaled $447.9 billion in 2020, which was a decrease of 5.4% and 3.9% from 2019 and the five-year average, respectively.[1]
  - $162.4 billion in deal value was completed during Q4 2020, which was up 43.3% from 3Q 2020 and up 39.5% compared to the five-year quarterly average.
  - In 2020, deals valued at $5.0 billion or greater accounted for an estimated 18.9% of total deal value during the year compared to 20.9% in 2019 and 26.3% in 2018.[1] Deals valued between $1.0 billion to $4.99 billion represented 41.5% of total deal value during the year.
- Entry purchase price multiples for all transaction sizes in 2020 stood at 11.4x EBITDA, down slightly from 2019's level (11.5x).[3]
  - Large-cap purchase price multiples stood at 11.3x, down compared to 11.4x in 2019.[3]
  - The average purchase price multiple across European transactions greater than €1B averaged 13.1x EBITDA for year-end 2020, up significantly from the 11.2x multiple seen at year-end 2019. Purchase prices for transactions of €500M million or more increased from 11.1x in 2019 to 11.6x in 2020.[3]
  - The portion of average purchase prices financed by equity for all deals was 48.8% in 2020, up from 48.6% in 2019. This remained above the five and ten-year average levels of 45.7% and 43.6%, respectively.[3]
- Globally, exit value totaled $497.5 billion across 1,990 deals in 2020 compared to $466.0 billion across 2,161 deals in the prior year.[1]

Opportunity[4]

- Managers targeting the middle and large markets with expertise across business cycles.

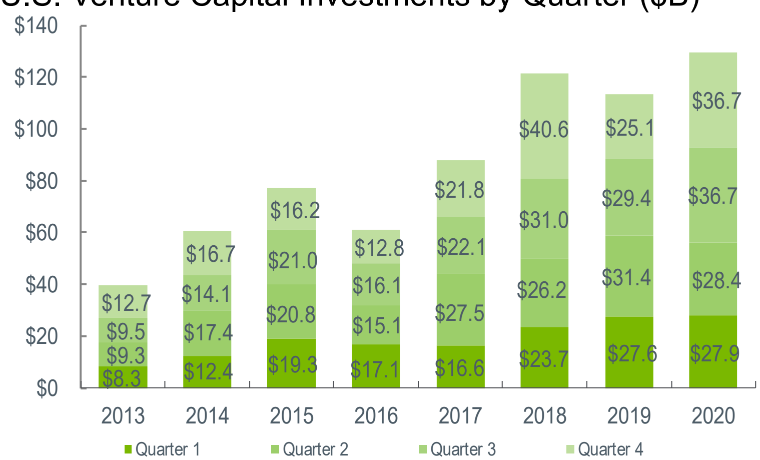
Venture Capital

Venture Capital Fundraising



Source: Preqin

U.S. Venture Capital Investments by Quarter ($B)



Source: PwC/CB Insights Report

Fundraising

- $135.0 billion of capital was raised by 914 funds in 2020, up from the prior year's total of $108.9 billion raised by 1,124 managers. This was still lower than the $156.5 billion raised by 1,485 funds in 2018.[1]
  - 2020 fundraising was up by 5.8% on a capital basis compared to the five-year average of $127.6 billion.
  - Blackstone Life Sciences V was the largest fund raised during the year, closing on $4.6 billion.
- Continuing the trend seen in previous quarters, a smaller number of funds continue to raise larger pools of capital, raising the average fund size to $162.0 million. This represented an increase compared to 2019's average of $113.0 million and increased the spread between the five-year average fund size of $115.6 million.
- At the end of 2020, there were an estimated 2,516 funds in market targeting $210.3 billion.[1]
  - Softbank Latin America Ventures was the largest venture fund in market, targeting an estimated $5.0 billion.
  - The majority of funds in market are seeking commitments of $200.0 million or less.
- Dry powder was estimated at $331.5 billion at the end of 2020, which was up from 2019's total of $270.8 billion. This was 41.8% higher than the five-year average.[1]

Activity

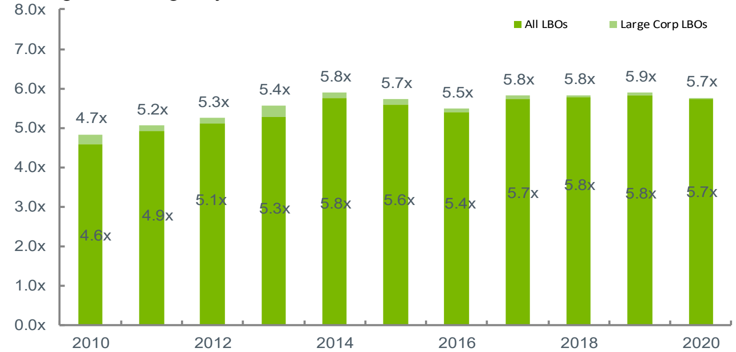
- During the year, 6,022 venture-backed transactions totaling $129.7 billion were completed, which was an increase on a capital basis over the prior year's total of $113.4 billion across 6,599 deals. However, this was 26.2% higher than the five-year average of $102.7 billion.[7]
  - In 2020, there were 223 U.S.-based deals involving unicorn companies, representing roughly $50.0 billion in deal value. This was up substantially by number compared to 2019, which saw 167 unicorn deals closed, and higher on a deal value basis. 2020 marked a new record in regards to total deal value, which was an increase from the $48.8 billion in deal value during 2018.[8]
- At the end of 2020, median pre-money valuations increased across most transaction stages, except for Seed and Series B. Compared to year-end 2019, Series A, Series C and Series D+ transactions increased by 42.8%, 23.7%, and 94.8%, respectively, during 2020. Seed and Series B median pre-money valuations decreased by 4.5% and 15.3%, respectively, during 2020.[9]
- Total U.S. venture-backed exit activity totaled approximately $290.1 billion across an estimated 1,101 completed transactions in 2020, up significantly from $257.4 billion across 1,121 exits in 2019. 2020 exit volume was the highest on record, with Q3 and Q4 producing strong deal value.[8]
  - The number of U.S. venture-backed initial public offerings increased over 2019, with 102 IPOs completed in 2020. On a value basis, 2020 IPOs surpassed the prior year by roughly $25.0 billion.[8]

Opportunity[4]

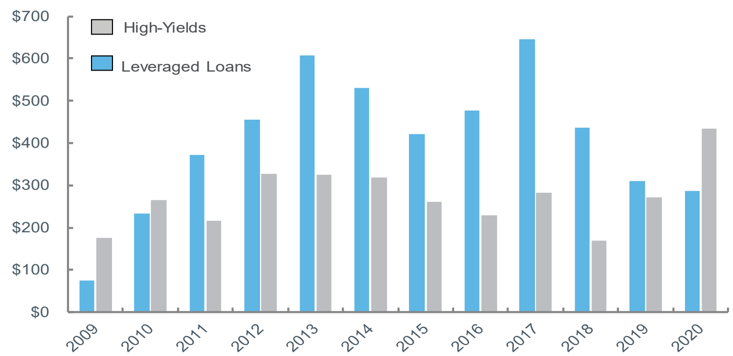
- Early stage continues to be attractive, although we are monitoring valuation increases
- Smaller end of growth equity
- Technology sector

Leveraged Loans & Mezzanine

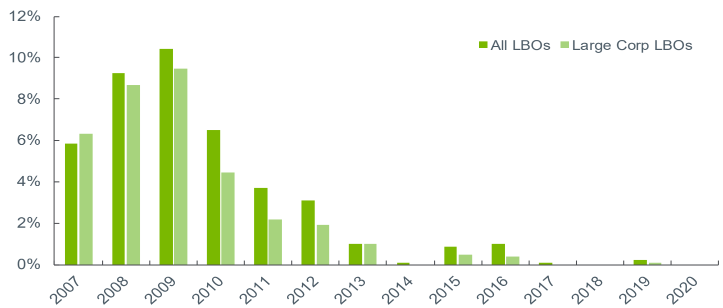
Average Leverage by Deal Size



Debt Issuance ($ Billions)



Mezzanine % of Purchase Price Multiple



Sources from top to bottom: S&P, UBS, & S&P

Leveraged Loans

Fundraising

- New CLO issuance totaled $68.1 billion in 2020, down from the $118.3 billion seen in 2019.[2]
- High-yield debt issuance totaled $435.0 billion in 2020, up significantly from $272.6 billion in 2019.[2]
- Leveraged loan mutual fund net flows ended 2020 with a net outflow of $20.4 billion, compared to a net outflow of $29.5 billion in 2019.[2]

Activity

- Leverage for all LBO transactions ended the year at 5.7x, down slightly from 2019's level. Leverage continues to be comprised almost entirely of senior debt. The average leverage level for large cap LBOs was 5.7x during the year, down slightly from the 5.9x witnessed in 2019.[3]
- Institutional new leveraged loan issuances totaled $287.7 in 2020, down from 2019's total of $309.6 billion.[2]
- 62.4% of new leveraged loans were used to support M&A and growth activity in 2020, down from 72.2% in 2019. This was also below the five-year average of 64.3%.[3]
- European leveraged loan issuance increased by 7.7% year-over-year to €49.0 billion.[3]
  - This was below the five-year average level of €55.0 billion and slightly below the ten-year average level of and €49.7 billion.
- TMT and Industrials made up the largest share of new leveraged loan issue volume, together totaling 58% of 2020's loan volume.[2]

Opportunity

- Funds with the ability to source deals directly and the capacity to scale for large transactions (both sponsored and non-sponsored)
- Funds with an extensive track record, experience through prior credit cycles, and staff with workout experience

Mezzanine

Fundraising

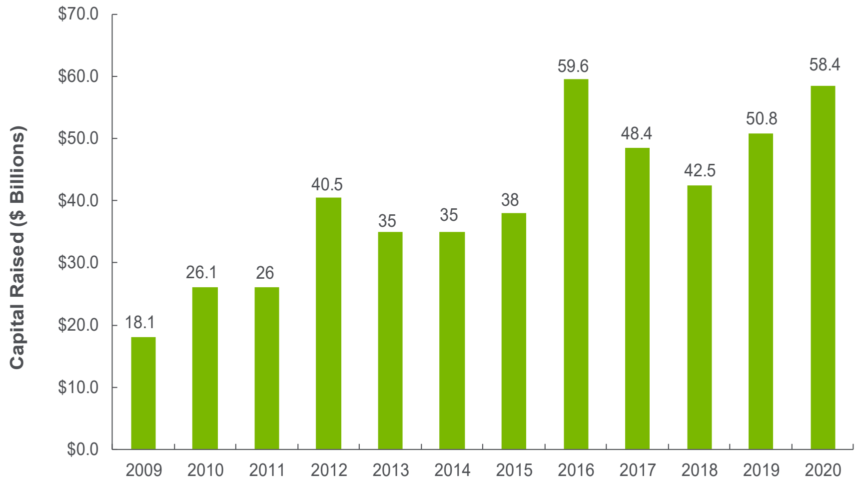
- 41 funds closed on $27.6 billion during the year. This was a significant increase from the prior year's total of $9.0 billion raised by 37 funds and represented an increase of 25.2% from the five-year average of $22.0 billion.[1]
- Estimated dry powder was $51.8 billion at the end of 2020, down from year-end 2019's total of $52.9 billion.[1]
- Fundraising activity has slowed compared to the prior year. with an estimated 77 funds in market targeting $28.6 billion of commitments, compared to 81 funds in market at the end of 2019 targeting $32.1 billion of commitments. GSO Capital Opportunities Fund IV is the largest fund in market, targeting commitments of $7.5 billion.[1]

Opportunity[4]

- Funds with the capacity to scale for large sponsored deals

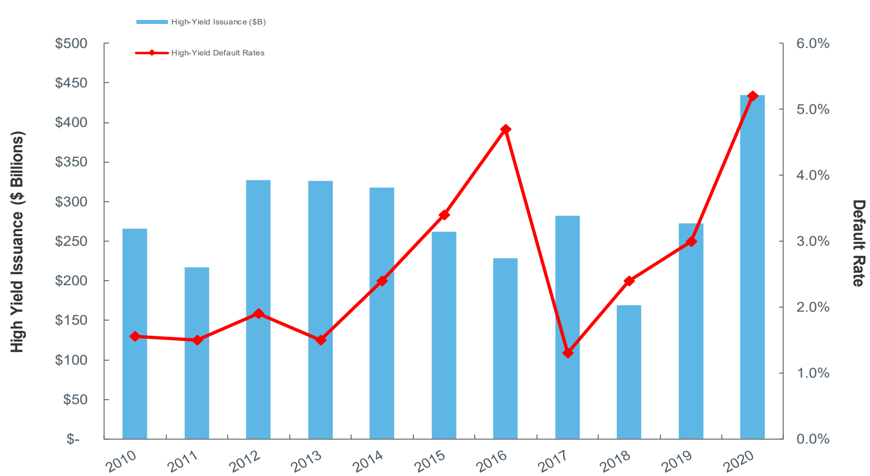
Distressed Private Markets

Distressed Debt, Turnaround, & Special Situations Fundraising



Source: Preqin

High-Yield Bond Volume vs Default Rates



Source: UBS & Fitch Ratings

Fundraising

- During the year, $58.4 billion was raised by 70 funds compared to $50.8 billion raised by 89 funds in 2019.[1]
  - 2020 fundraising was 12.4% higher than the prior five-year average.
  - West Street Strategic Solutions I was the largest partnership raised during the year, closing on $13.8 billion.
- Dry powder was estimated at $135.1 billion at the end 2020. This was up compared to year-end 2019 ($120.1 billion), and above the five-year average level of $115.0 billion.[1]
- Roughly 154 funds were in the market at the end of 2020, seeking $102.2 billion in capital commitments.[1]
  - Distressed debt managers were targeting the most capital, seeking an aggregate $64.0 billion, followed by special situation managers ($35.9 billion).
  - Oaktree Opportunities Fund XI was the largest fund in market with a target fund size of $15.0 billion.

Activity

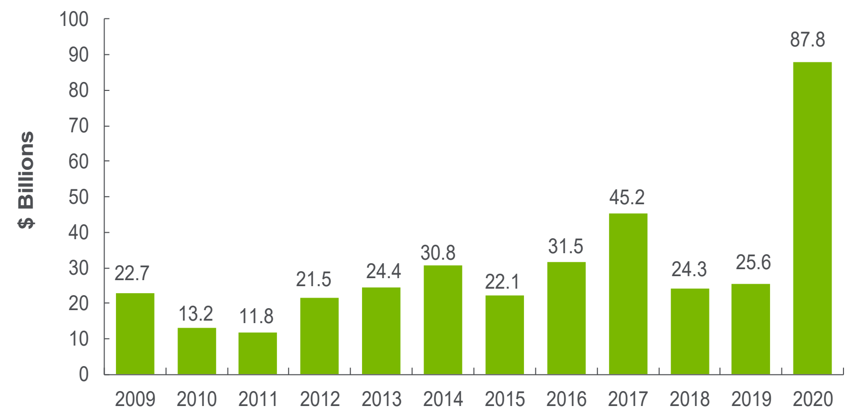
- The LTM U.S. high-yield default rate was 5.2% as of year-end 2020, which was up from year-end 2019's rate of 3.0%.[6]
- High purchase prices and continued elevated levels of leverage may result in an increase in distressed opportunities looking out over the next two to three years, or sooner if there is a stall in the economy.

Opportunity [4]

- Funds capable of performing operational turnarounds
- Funds with the flexibility to invest globally

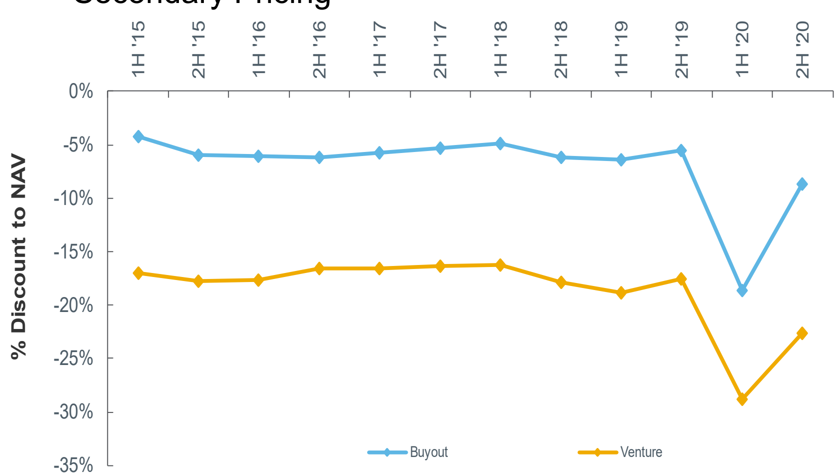
Secondaries

Secondary Fundraising



Source: Preqin

Secondary Pricing



Source: UBS

Fundraising

- 57 funds raised $87.8 billion during the year, up significantly from the $25.6 billion by 34 funds in 2019.[1]
  - Ardian's ASF VIII was the largest fund raised during the year, closing with capital commitments of $19.0 billion.
- As of year-end 2020, dry powder was estimated to be at $102.0 billion, which was higher than 4Q 2019's level of $91.0 billion.[2] The top 24 secondary buyers are estimated to command more than 85.0% of the market's capital reserves. Of the top 20 buyers, 11 are currently in market or are in some stage of fundraising.[2]
- Through 4Q 2020, there were an estimated 87 secondary and direct secondary funds in market, targeting approximately $57.7 billion. The majority of secondary funds are targeting North American investments.
  - As of year-end 2020, Coller International Partners VIII and Landmark Equity Partners XVII were the largest funds in market, seeking aggregate commitments of $9.0 billion and $6.0 billion, respectively.[1]

Activity

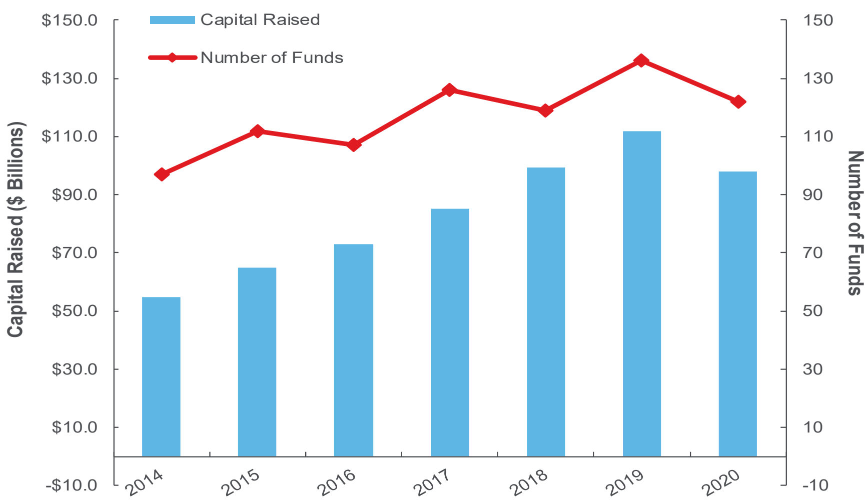
- The market continues to have strong participation from both buyers and sellers, with opportunistic selling activity from public and private pensions, financial institutions and insurance companies.
  - Secondary funds were the most active buyers in 2020, accounting for 82.7% of total purchases, followed by fund of funds, which accounted for 14.3% of purchases.[13]
  - General Partners and Pensions (that are not fund of funds or secondaries funds) sold the most positions in 2019, accounting for 27.3% and 26.7% of volume, respectively.[13]
- In 2020, the private equity market transaction volume totaled $61.8 billion, representing decrease of 27.7% from the level observed in 2019. 52.5% of deal volume was direct secondaries positions and the remainder was fund secondaries transactions.[13]
  - Leveraged buyout funds continued to be the most purchased private equity funds during 2020, representing 77.0% of deal flow on a capital basis, followed by venture capital at 14.0% of deal flow.[13]
- Transaction fund leverage and deferred payment structures continue to be prevalent and are used as a means to improve pricing and deal returns in an increasingly competitive environment.[2]
- The average discount rate for all private equity sectors finished the year at 11.8%, greater that the 8.1% discount at the end of 2019. The average buyout pricing discount ended the year at 8.7%, while the average venture discount increased to 22.6%.[2]
- Pricing is expected to be attractive for sellers given lower targeted return thresholds, the large amount of dry powder, and the robust competitive dynamics seen in the sector.[2]
- GP-led transactions continue to take a greater share of transaction volume and activity, accounting for 48% of volume in 2020. [2]

Opportunity [4]

- Funds that are able to execute complex and structured transactions
- Niche strategies

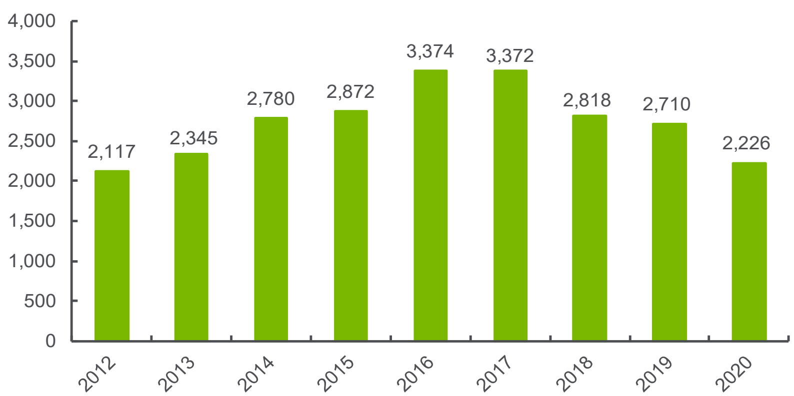
Infrastructure

Global Infrastructure Fundraising



Source: Preqin

Number of Deals Completed



Source: Preqin

Fundraising

- $97.9 billion of capital was raised by 122 funds in 2020 compared to $112.0 billion of capital raised by 136 partnerships in 2019.[1]
  - Brookfield Infrastructure Fund IV was the largest fund raised during the year, closing on $20.0 billion.[1]
- As of the end of 2020, there were an estimated 265 funds in the market seeking roughly $200.7 billion.[1]
  - EQT Infrastructure V was the largest fund in market and was seeking commitments of €12.5 billion.
- At the end of the year, dry powder stood at $233.8 billion, up from the year-end 2019's record total of $224.9 billion.[1]
- Concerns surrounding the relative availability and pricing of assets remain. Fundraising continues to be very competitive given the number of funds and aggregate target level of funds in market. Investor appetite for the asset class persists despite the record levels of dry powder and increased investment activity from strategic and corporate buyers as well as institutional investors.

Activity

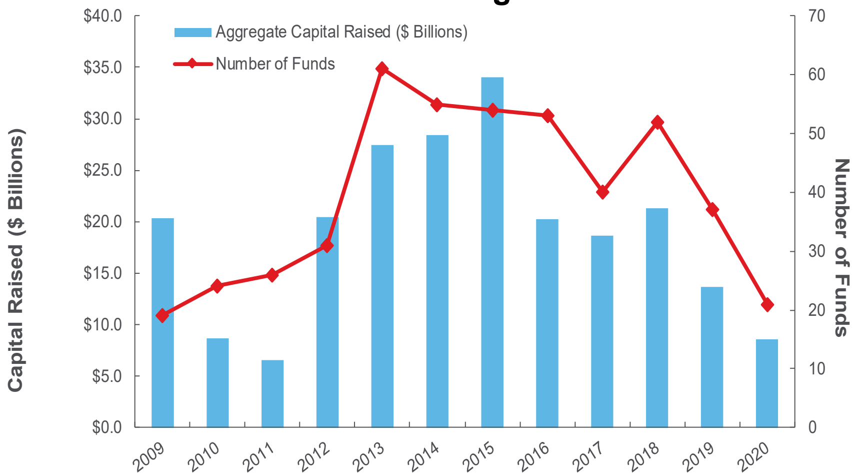
- Infrastructure managers completed 2,226 deals for an aggregate deal value of $282.3 billion in 2020 compared to 2,710 deals totaling $508.6 billion in 2019.[1]
  - By region, Europe saw the highest number of deals completed, with 40.2% of deals being invested in the region, followed by North America at 30.0%. Asia amassed 12.1% of activity during the year.
  - By value, conventional energy was the dominant industry during the year with 27.6% of value, followed by the telecoms sector, which accounted for 26.5% of 2020's value. Renewable energy accounted for 23.0% of value during 2020.[1]

Opportunity [4]

- Mid-market core+ and value-add infrastructure as well as a platform investing approach continue to offer the best relative value
- Access funds with pre-specified assets with caution due to possible lag in and uncertainty around valuation impact
- Blind-pool funds may be better positioned to take advantage of the market dislocation in certain sub-sectors, however careful review of such strategies is required
- Build-to-core greenfield strategies particularly in the social / PPP infrastructure space offer a premium for investors willing to take on construction / development risk

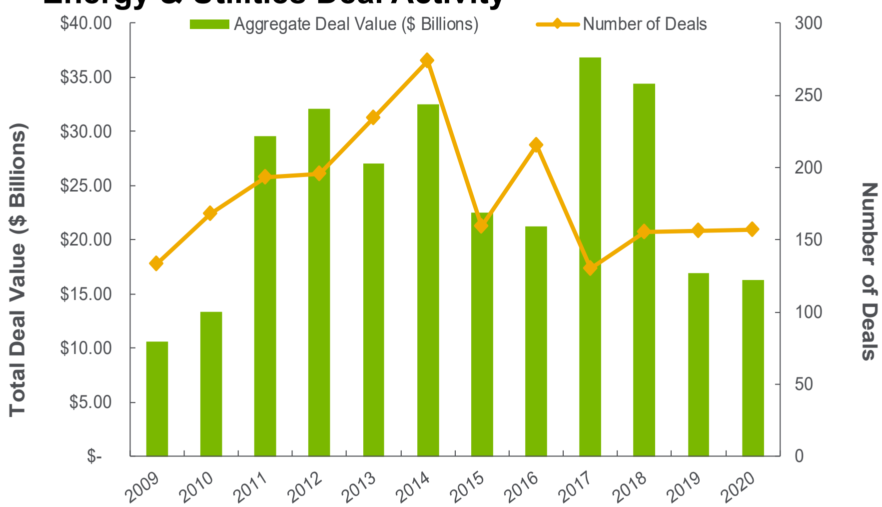
Natural Resources

Natural Resources Fundraising



Source: Preqin

Energy & Utilities Deal Activity



Source: Preqin

Fundraising

- During 2020, 21 funds closed on $8.6 billion compared to 37 funds totaling $13.7 billion in 2019. This represented the lowest amount raised since 2011.[1]
  - Kayne Private Energy Income Fund II was the largest fund raised during the year, securing commitments of $1.7 billion.
- At the end of 2020, there were roughly 116 funds in the market targeting an estimated $43.8 billion in capital, compared to 100 funds seeking an estimated $42.5 billion in 4Q 2019.[1]
  - Quantum Energy Partners VIII was seeking the most capital with a target fund size of $5.5 billion.
- Dry powder stood at $41.6 billion at the end of 2020, which was down 7.6% from 4Q 2019's level of $45.0 billion and down from the five-year average level by 18.5%.[1]

Activity

- Energy and utilities industry managers completed 157 deals totaling $16.3 billion in 2020, compared to $17.0 billion across 156 deals in 2019.[1]
- Crude oil prices decreased during the year.
  - WTI crude oil prices decreased 21.5% during the year to $47.02 per bbl. However, this was an increase of 184.1% over April 2020's low of $16.55 per bbl.[11]
  - Brent crude oil prices ended the quarter at $49.99/bbl, down 25.7% from 4Q 2019, but up 172.0% from April 2020.[11]
- Natural gas prices (Henry Hub) finished 2020 at $2.59 per MMBtu, which was up 16.7% from 4Q 2019 but down 35.9% from 4Q 2018.[11]
- A total of 351 crude oil and natural gas rotary rigs were in operation in the U.S. at the end of 2020. This was up by 34.3% from the prior quarter but down 55.9% year-over-year.[15]
  - Crude oil rigs represented 76.0% of the total rigs in operation. 65.5% of the 267 active oil rigs were in the Permian basin.
  - 51.8% and 31.3% of natural gas rigs at the end of 2020 were operating in the Haynesville and Marcellus basins, respectively.
- The price of iron ore (Tianjin Port) ended the year at $155.42 per dry metric ton, up from $92.65 at year-end 2019.[12]

Opportunity[4]

- Acquire and exploit existing oil and gas strategies preferred over early-stage exploration in core U.S. and Canadian basins
- Select midstream opportunities and renewable energy production and technologies

Notes

1. Preqin
2. UBS
3. Standard & Poor's
4. Aon Investments USA Inc.
5. Moody's
6. Fitch Ratings
7. PriceWaterhouseCoopers/National Venture Capital Association MoneyTree Report
8. PitchBook/National Venture Capital Association Venture Monitor
9. Cooley Venture Financing Report
10. U.S. Energy Information Administration
11. Bloomberg
12. Setter Capital Volume Report: Secondary Market FY 2020
13. KPMG and CB Insights
14. Baker Hughes

Notes:
FY: Fiscal year ended 12/31
YTD: Year to date
YE: Year end
LTM: Last twelve months (aka trailing twelve months or TTM)
PPM: Purchase Price Multiples: Total Purchase Price / EBITDA
/bbl: Price per barrel
MMBtu: Price per million British thermal units

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Appendix B:

Real Estate Market Update
4Q 2020

United States Real Estate Market Update (4Q20)

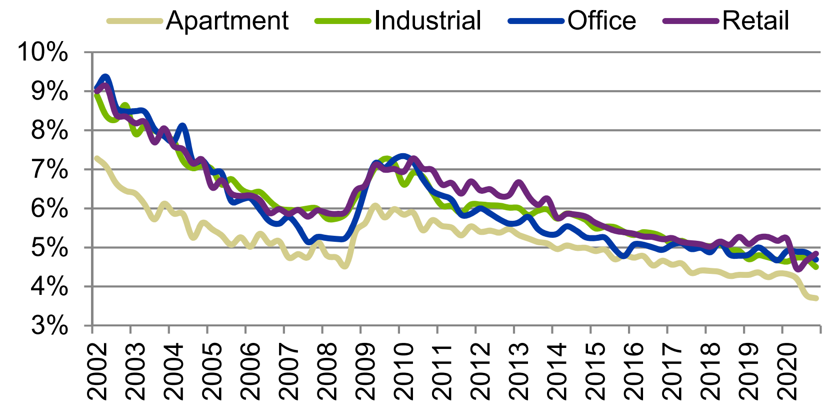
General

- On March 13, 2020, President Trump declared a national emergency. National, state, and local governments across the world implemented stay-at-home orders, which caused a near complete halt of the world economy. Governments have dramatically expanded expenditures in order to protect people and businesses from large-scale disruption. In 4Q20, equity markets continued to bounce back from the March rout and even exceeded prior highs, and the S&P 500 produced a gross total return of 12.1%. The MSCI US REIT index continued to rebound and produced a return of 11.5% but remains down -7.5% YTD.
- The U.S. entered a recession in February 2020; GDP contracted at an annualized rate of -31.4% in the 2nd quarter 2020 but rebounded and grew at annualized rate 33.1% in the 3rd quarter. In the 4th quarter, GDP grew at an annualized rate of 4.0% and was hindered by a second wave of COVID-19. The unemployment rate peaked in April at 14.7% and has since declined to 6.7% at quarter end 4Q20. The Federal Reserve has acted aggressively via quantitative easing and rate cuts, thus far financial markets have stabilized. The CARES Act provided $1.5 trillion of stimulus to the economy. The Bloomberg average forecast has projected that the world economy will shrink by -3.9% in 2020.

Commercial Real Estate

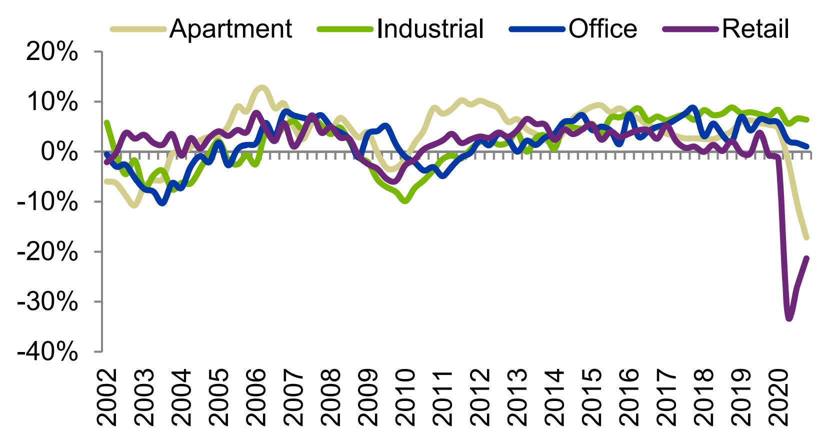
- Shelter in place orders and social distancing have restricted the ability to complete due diligence and acquire assets. Through January 2021, transaction volume was down by 58% YoY. Transactions have primarily occurred in the apartment and industrial sectors.
- Transaction cap rates (5.5%) expanded +60 bps during the quarter. Current valuation cap rates declined for apartments (-8 bps), office (-18 bps), and industrial (-21 bps). A lack of transactions continues to limit evidence to revalue real estate.
- NOI growth has substantially diverged between property sectors due to the impacts of COVID-19. Retail NOI has contracted substantially (-21%) YoY as rent collections declined and retailers were shutdown. Apartment NOI contracted (-17%), primarily driven by declines in effective market rents and a nearly 2% increase in vacancy rates YoY. Public market signals have been divergent by property type.
- In the fourth quarter of 2020, $39 bn of aggregate capital was raised by real estate funds. There continues to be substantial dry powder,~$353 billion, seeking exposure to private real estate.
- 10-year treasury bond yields remained rose 20 bps to 0.9% during the quarter.

Current Value Cap Rates by Property Type



Source: NCREIF

4 Quarter Rolling NOI Growth



Source: NCREIF

Sources: Bureau of Economic Analysis, U.S. Census Bureau, St. Louis Fed, NCREIF, Real Capital Analytics, Bloomberg LP., Preqin

United States Property Matrix (4Q20)

TOWNSEND® GROUP
an Aon company

INDUSTRIAL

- In 4Q20, industrial properties were the highest returning sector at 4.7% and outperformed the NPI by 355 bps.
- Transaction volumes increased to $40.2 billion in the fourth quarter of the year, resulting in a 9.0% increase year-over-year. Individual asset sales increased 28.0% year-over-year, while portfolio purchases turned in a year-over-year volume decrease of 14.0%. At slightly over $40 billion, the industrial sector turned in it's second highest quarterly transaction volume value to date and increased a significant $23.3 billion quarter-over-quarter.
- The industrial sector turned in NOI growth of 6.4% over the past year, a decrease from the prior periods TTM growth of 6.6% in 3Q20. Market rent growth is expected to decelerate compared to its recent pace but remains strong.
- Vacancy increased by 10 bps year-over-year to 3.4%, remaining close to all-time historic lows. E-commerce continues to drive demand.
- Industrial cap rates compressed approximately 20 bps from a year ago, to 4.5%. Industrial overall fundamentals still top all property sectors.

MULTIFAMILY

- The apartment sector delivered a 1.0% return during the quarter, underperforming the NPI by 15 bps.
- Transaction volume in the fourth quarter of 2020 rose to $60.3 billion, resulting in an increase of 7.0% year-over-year. This volume continues to make multifamily the most actively traded sector for the fourteenth straight quarter.
- Cap rates decreased to 3.7%, compressing 65 bps year-over-year. Multifamily cap rates continue falling to their lowest in years, driven by continued decrease in NOI and increases in valuation.
- The multifamily sector has seen increasing vacancy rates due to the pandemic but continues to hold steady relatively speaking, vacancy has increased 185 bps from a year ago. Various rent concessions have helped managers to maintain tenants through out the pandemic, these concessions will have various impacts on NOI over the next few quarters. The aging millennials have begun shifting their desires to suburban living, but continued home price appreciation has deterred the full effect of this migratory trend.

OFFICE

- The office sector returned 0.5% in 4Q20, 65 bps below the NPI return over the period.
- Transaction volumes decreased by 29.0% year-over-year in the fourth quarter. Transaction volume equaled $30.0 billion for the quarter, an increase of $15.4 billion quarter-over-quarter. Single asset transactions accounted for 71.0% of volume.
- Office sector vacancy rates have expanded since the beginning of the pandemic due to work from home orders and uncertainty revolving around the future of office space. Office continues to be the highest vacancy property type at close to 11.2%.
- NOI growth continued to fall for the office sector to 1.0% in the last year, a decrease of 75 bps and 125 bps from 3Q20 and 2Q20, respectively. Due to work from home orders and rent deferrals/relief, NOI growth is expected to continue being compressed.
- Office cap rates expanded from a year ago to approximately 4.7%, an expansion of just 2 bps. Office-using job growth has been stunted significantly in 2020 due to many work from home orders.

Sources: Real Capital Analytics, Green Street, NCREIF

RETAIL

- As of 4Q20, the retail sector delivered a quarterly return of -1.2%, performing 240 bps below the NPI.
- Transaction volumes totaled $13.7 billion in the fourth quarter, falling 34% year-over-year. Single asset transactions accounted for just over 68.8% of all sales volume for the quarter.
- Cap rates have compressed approximately 35 bps within the sector over the last year, to 4.8%. The current valuation cap rate did expand quarter-over-quarter by 20 bps due to downward valuation adjustments made across the sector in general.
- NOI growth slightly increased though still significantly negative, -21.3% over the last year. This is a 5.8% increase from last quarter. Retail is expected to continue to suffer from the shift towards e-commerce and hesitance of the consumer.
- Retail vacancy rates increased 185 bps over the past year to 9.0%. Many big box stores have closed as the need for retail space shrinks, translating to a negative outlook for rent growth. Paired with the global economic crisis that has had a significant negative impact on this sector.

Global Real Estate Market Update (4Q20)

- Global investment activity during the fourth quarter of 2020 was up significantly relative to 3Q20 but was down by 20% over the year compared to 2019. During 4Q20, Transaction volumes recovered significantly in the US and APAC regions while the EU continued to experience significant depression.

- Despite resurgence in COVID cases in certain regions, globally COVID case declines and increased availability of the vaccine have driven an uptick in investor appetite. Interest has been concentrated primarily on industrial, logistics and data center assets with heighted attention given to multifamily properties in certain regions.

Global Total Commercial Real Estate Volume - 2019 - 2020

$ US Billions	Q4 2020	Q4 2019	% Change Q4 20 - Q4 19	2020	2019	% Change Full Year
Americas	141	166	-15%	367	540	-32%
EMEA	89	145	-39%	285	380	-25%
Asia Pacific	227	216	5%	770	855	-10%
Total	457	528	-13%	1422	1775	-20%

Source: Real Capital Analytics, Inc., Q4' 20

- Investment activity in the Americas witnessed a sharp decline and fell by 32% year-over-year. Despite a continued rise in COVID cases, the roll out of the vaccine helped spur investment. Transaction volume in the US increased 97% relative to 3Q20.

- In the Asia Pacific region, volumes were down year-over-year, but transaction activity continued to recover rising 41% relative to 3Q20. Japan and Hong Kong saw improvement in the Q420 due to the execution of several large office deals. Mainland China and Australia investment improved but remained significantly depressed over the year. Korea investment remained strong driven by active domestic real estate funds.

- Although investment activity dropped in the EMEA region, it dropped less than the Americas, with a 25% year-over-year decline. Germany, the largest market, witnessed only a 5% decline.

- In the office sector, global leasing activity declined by over 43% year-over-year and vacancy rates increased by 80 bps to 12.9%. The declines represent an uncertainty about future office space needs. The US witnessed a 90 bps increase in vacancy reaching 15% in Q420. Across the main European markets, rents decreased by 378 bps y-o-y hitting -1.7% in Q420. In the APAC region, despite improvement, net absorption remained depressed.

- Despite a recovery in sales, the retail sector continued to suffer globally as the shutdowns and social distancing measures of the COVID-19 outbreak posed challengers for operators. The bifurcation between property types (necessity-based vs malls/street retail) and markets (urban vs suburban) has significantly widen.

- Despite the multifamily market recording a significant decrease in investments globally, the sector remains the most liquid in commercial real estate highlighting its attractiveness. In the U.S., absorption beat expectations posting an increase in vacancy of only 10 bps to 4.5%, with suburban assets performing above average. However, in Europe investment was up 7% year-over-year. In the APAC, a resurgence of demand occurred as lock-downs ebbed resulting in a 26% y-o-y increase in transaction volumes.

- Industrial yields continued to compress due to strong market fundamentals and heightened demand. US investment volumes recovered in Q420 but still fell by 1.3% compared to 4Q19. EMEA investment volumes performed better than expectations with 4Q20 outpacing 3Q19 by 11%. In the Asia Pacific, rent remained flat y-o-y but values increased slightly by 1.8%.

Global Outlook - GDP (Real) Growth % pa, 2020-2022

	2020	2021	2022
Global	**-3.5**	**5.4**	**4.2**
Asia Pacific	**0.3**	**5.1**	**5.0**
Australia	-2.8	3.8	3.3
China	2.3	8.4	5.5
India	-7.5	10.0	6.0
Japan	-4.8	2.7	2.1
North America	**-3.7**	**4.9**	**3.6**
US	-3.5	4.9	3.7
Middle East	**-3.6**	**3.1**	**3.7**
European Union	**-6.4**	**4.3**	**4.2**
France	-8.1	5.8	4.0
Germany	-4.9	3.4	3.9
UK	-10.2	4.6	5.5

Source: Bloomberg

Sources: Jones Lang LaSalle Research, Real Capital Analytics, Inc., CBRE

REPORT

Meketa Capital Markets Outlook & Risk Metrics

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MEKETA

Capital Markets Outlook & Risk Metrics

As of March 31, 2021

Capital Markets Outlook

Takeaways

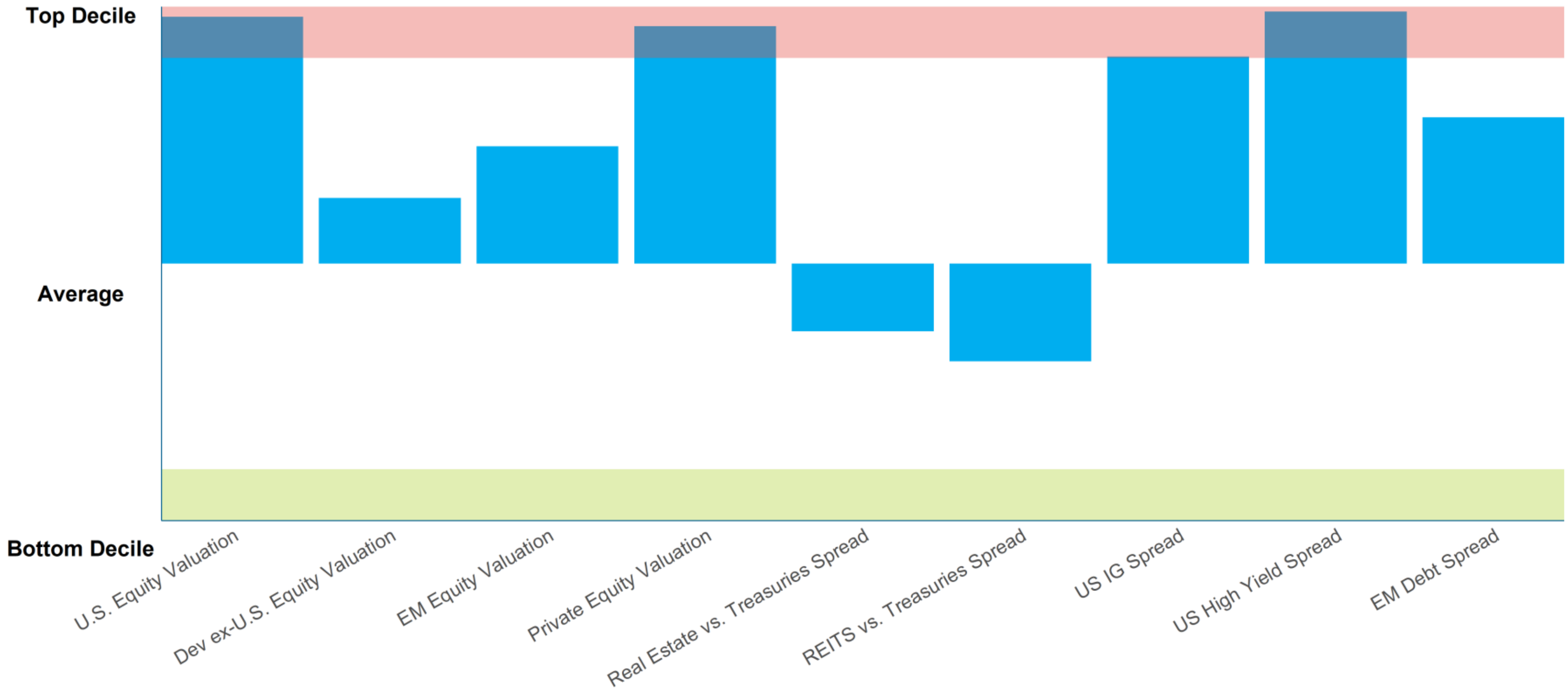
- The advent of ambitious global vaccination campaigns has begun to shift market focus to repricing of cyclical stocks, commodities, and real assets that may benefit from economic growth.
- The rotation to value and cyclical stocks continued in March as the Russell 1000 Value Index outperformed the Russell 1000 Growth Index.
- Developed markets outside of the US outperformed emerging market equities, and like US markets, value outperformed growth.
- The MSCI China index continued its underperformance with a -6.3% return in March. The negative performance of China was a drag on the MSCI Emerging Market Index, which posted -1.5% return.
- Fixed income markets generally experienced negative returns as the yield curve steepened rapidly to reflect higher inflation expectations.
- The Barclays TIPS index returned -0.2% in March, but the Barclays 1-3 Year TIPS Index posted a 0.5% gain, reflecting a rise in near-term inflation expectations.
- While the Bloomberg Commodities index finished March in negative territory, the S&P Global Natural Resources Index returned 2.2%.
- Global infrastructure posted strong monthly returns, with the DJ Brookfield Global Infrastructure gaining 7.4% and the S&P Infrastructure index returning 4.4%.

Capital Markets Outlook

Takeaways

- Global REITs have continued to recover from steep 2020 losses, with the MSCI US REITS and FTSE NAREIT Equity Index returning 4.4% and 4.6% respectively in March.
- The US vaccination efforts combined with the American Recovery Act have lifted 2021 GDP forecasts for the US to 6.5%, while COVID-related setbacks in Europe have muted growth expectations there for 2021.
- According to the World Health Organization, global COVID cases have been falling since January. While the efficacy of many of the vaccines is promising, governments are closely monitoring new COVID variants as these may prove less susceptible to currently available vaccines.
- While the markets appear as though they are looking past COVID, the next few months are projected to be challenging as widespread distribution of the vaccine continues. Returning to pre-COVID levels of economic activity is not expected to occur until mid-2021 at the earliest.
- As the new administration in the US implements its policy agenda, investors will continue to examine its actions as it relates to monetary and fiscal policy, with a particular focus on economic stimulus, taxation, and broad infrastructure spending.

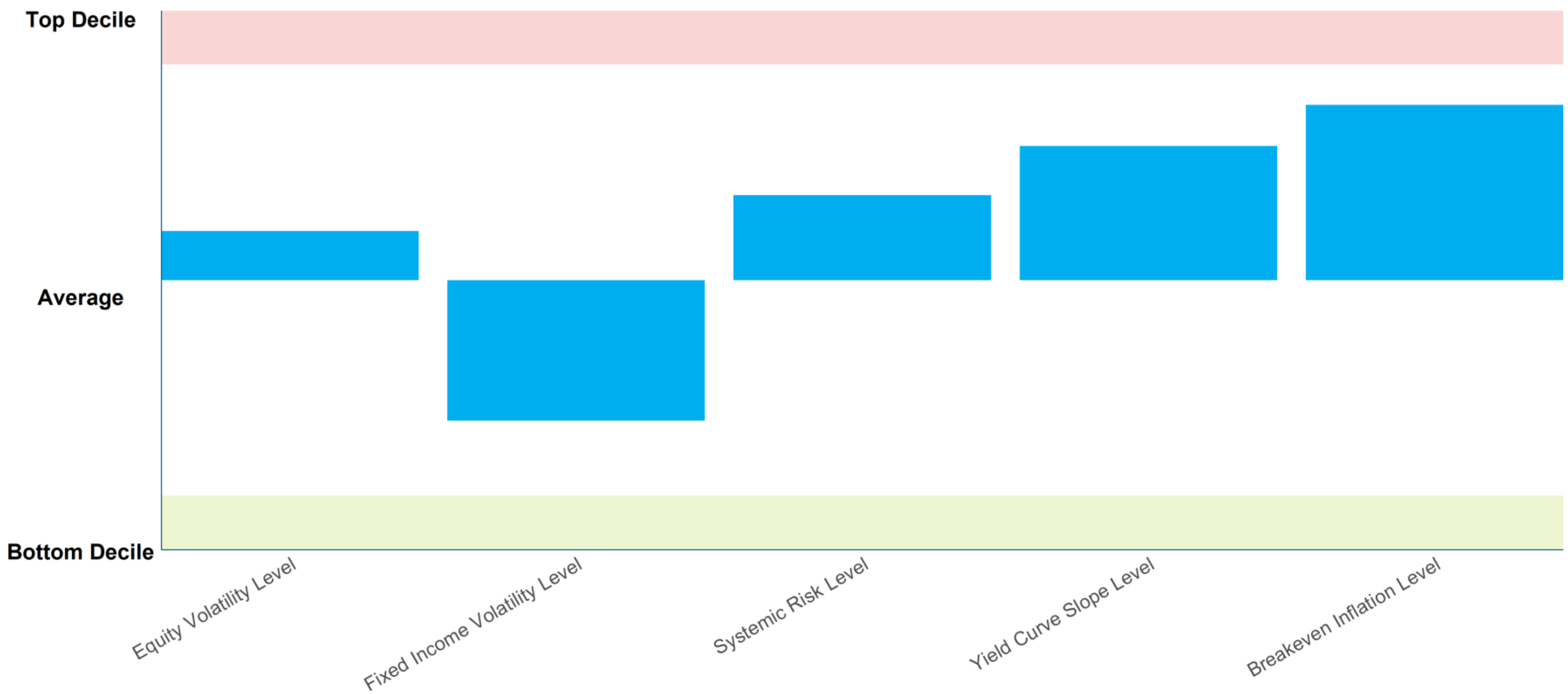
Risk Overview/Dashboard (1)
(As of March 31, 2021)[1]



- Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

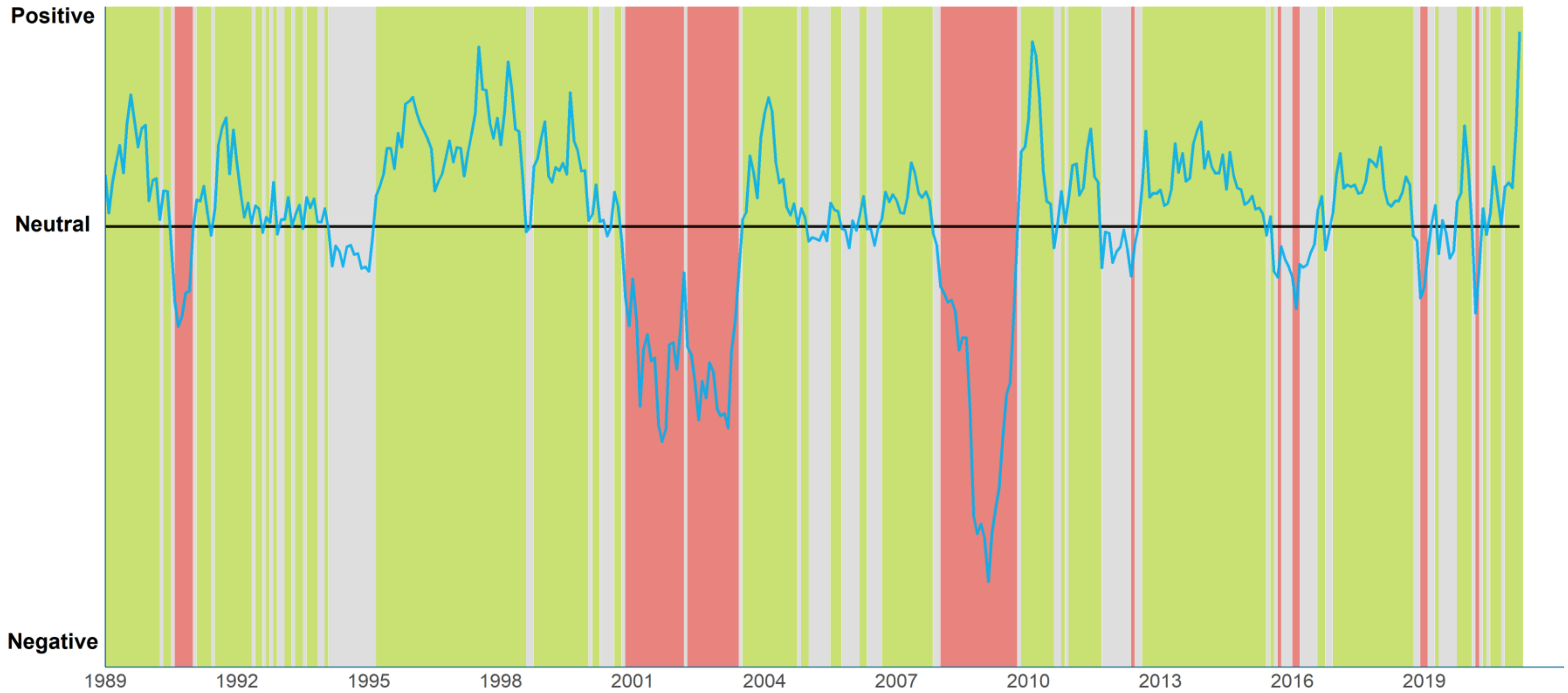
[1] With the exception of Private Equity Valuation, that is YTD as of December 31, 2020.

Risk Overview/Dashboard (2)
(As of March 31, 2021)

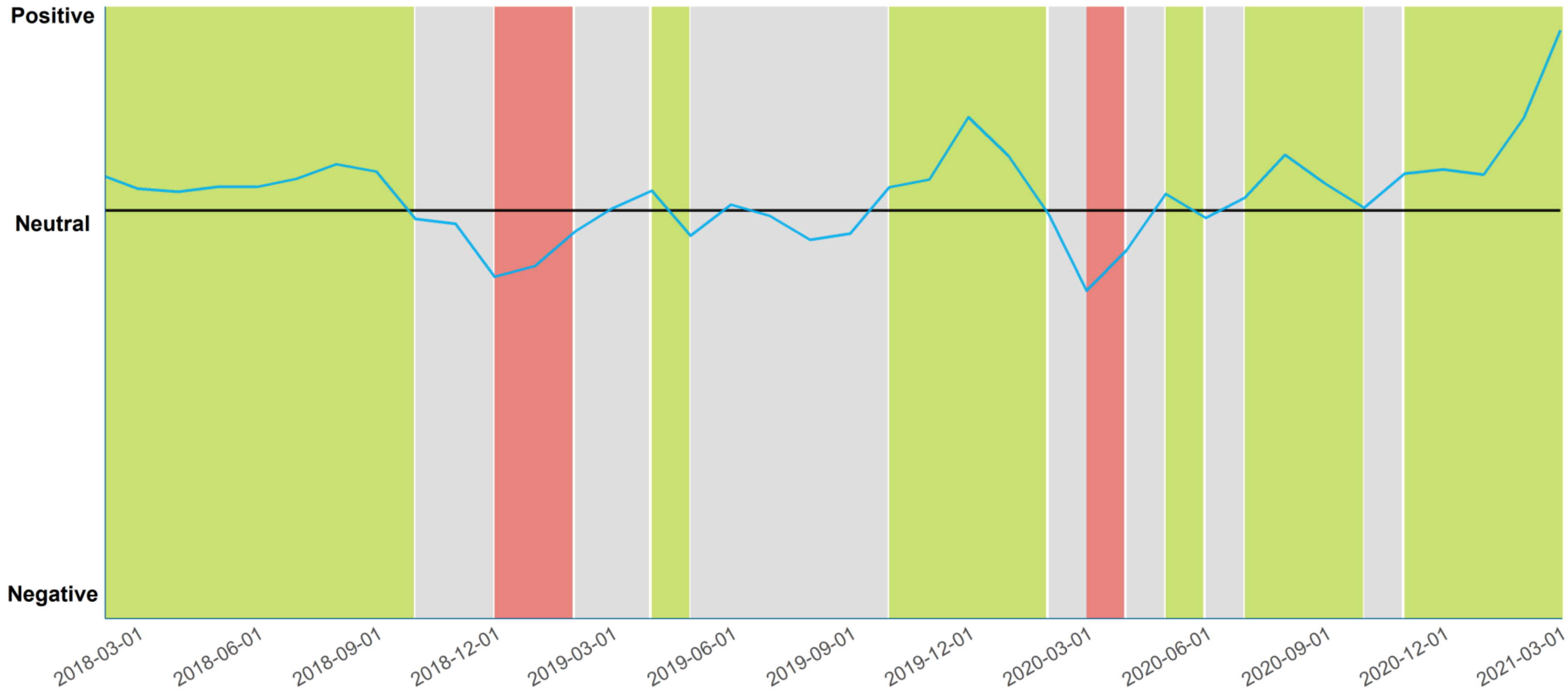


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

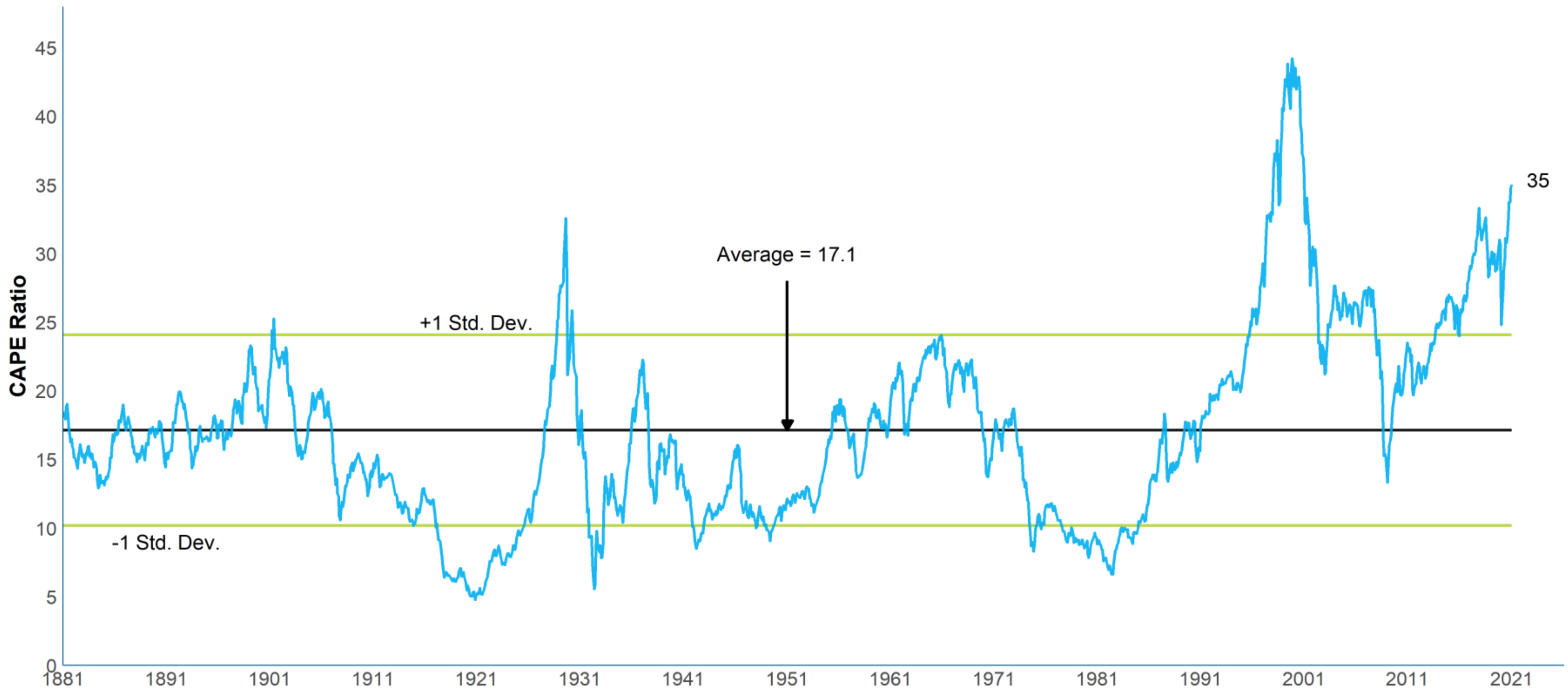
Market Sentiment Indicator (All History)
(As of March 31, 2021)



Market Sentiment Indicator (Last Three Years)
(As of March 31, 2021)



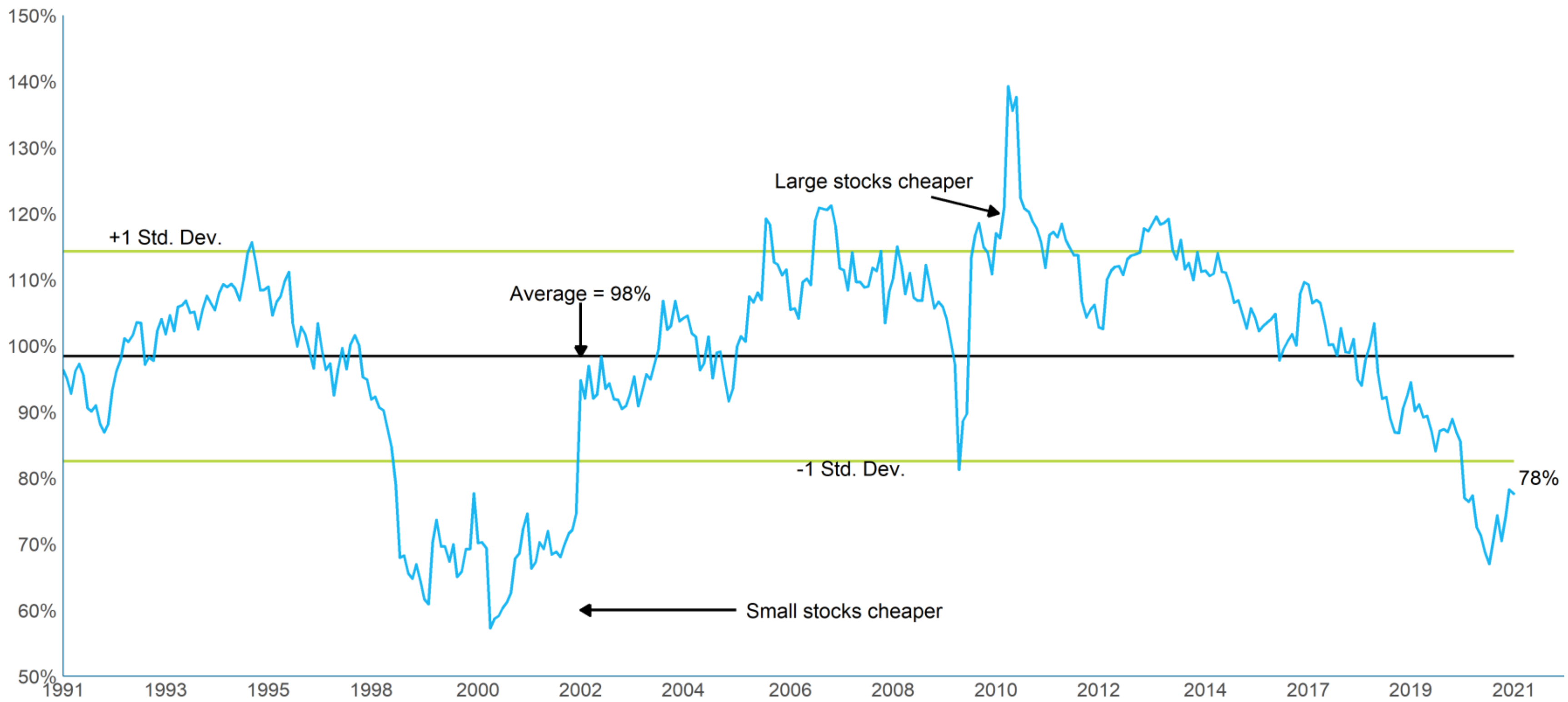
US Equity Cyclically Adjusted P/E[1]
(As of March 31, 2021)



- This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

Small Cap P/E vs. Large Cap P/E[1]
(As of March 31, 2021)



- This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

[1] Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]
(As of March 31, 2021)

- This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

[1] Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

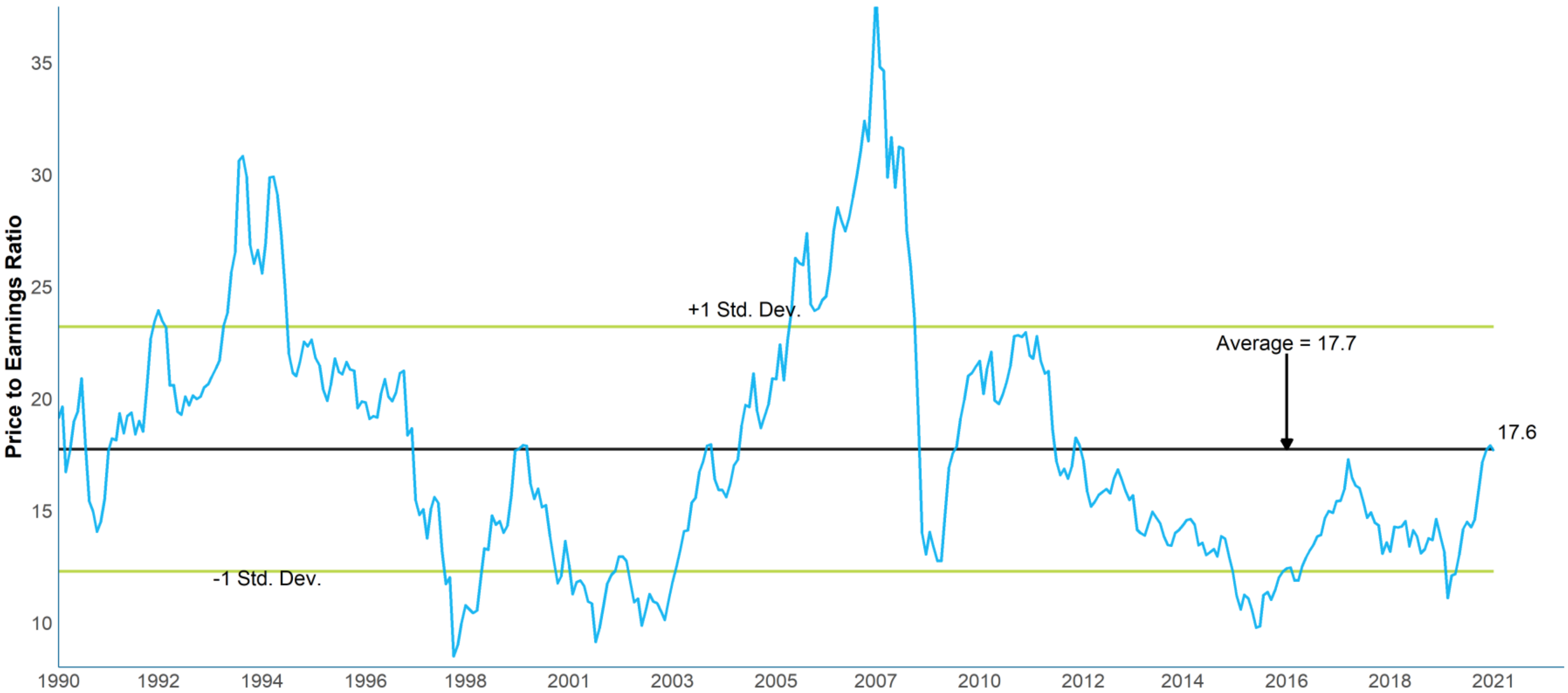
Developed International Equity Cyclically Adjusted P/E[1]

(As of March 31, 2021)

- This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Developed International Equity (MSCI EAFE Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

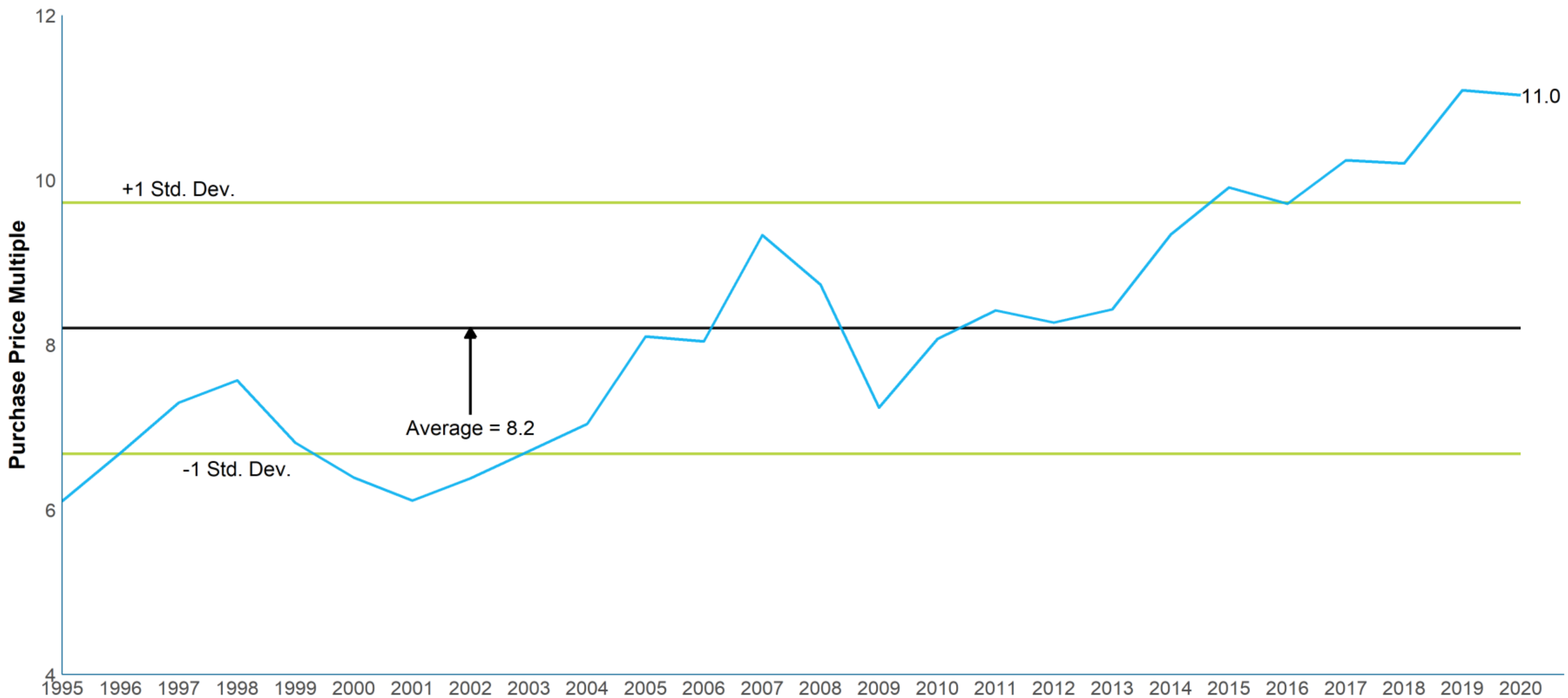
Emerging Market Equity Cyclically Adjusted P/E[1]
(As of March 31, 2021)



- This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

Private Equity Multiples[1]
(As of February 28, 2021)[2]

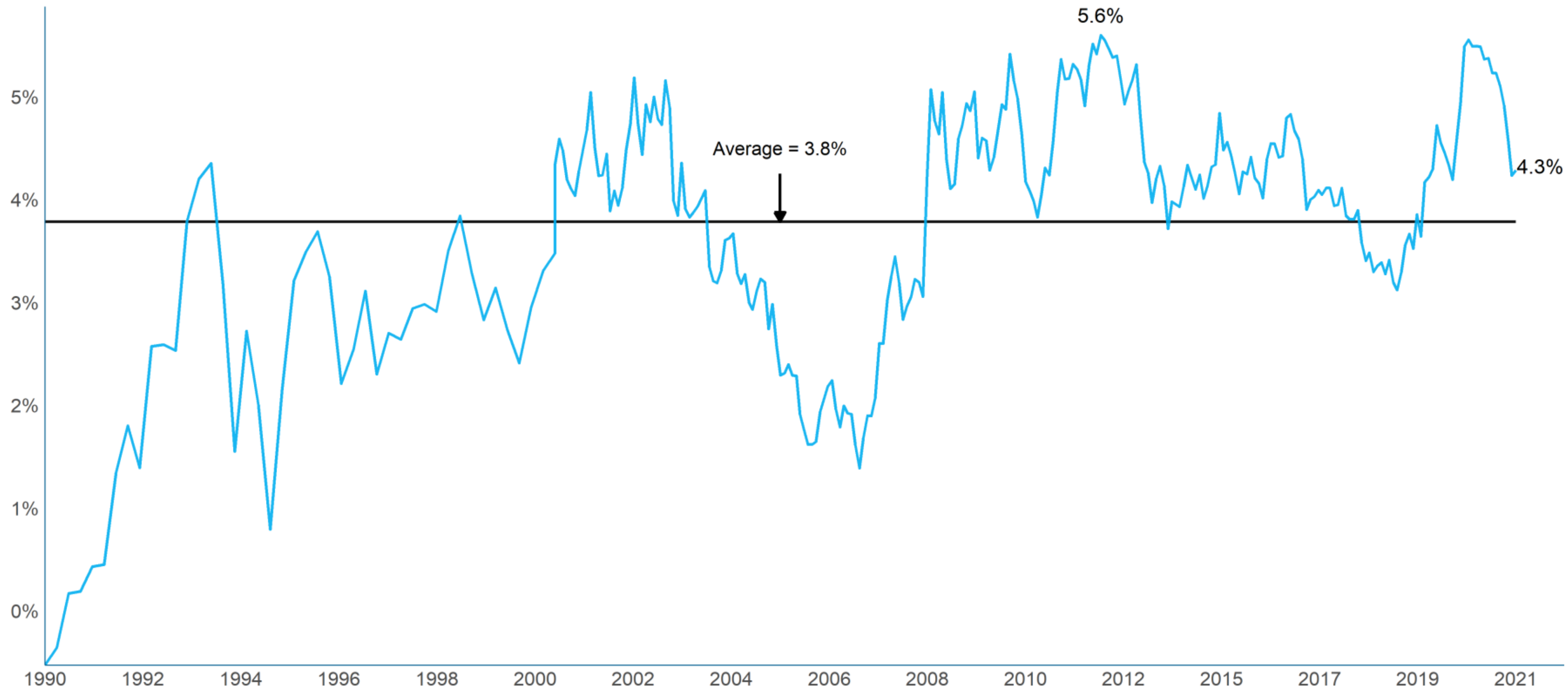


- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

[2] Annual Data, as of December 31, 2020

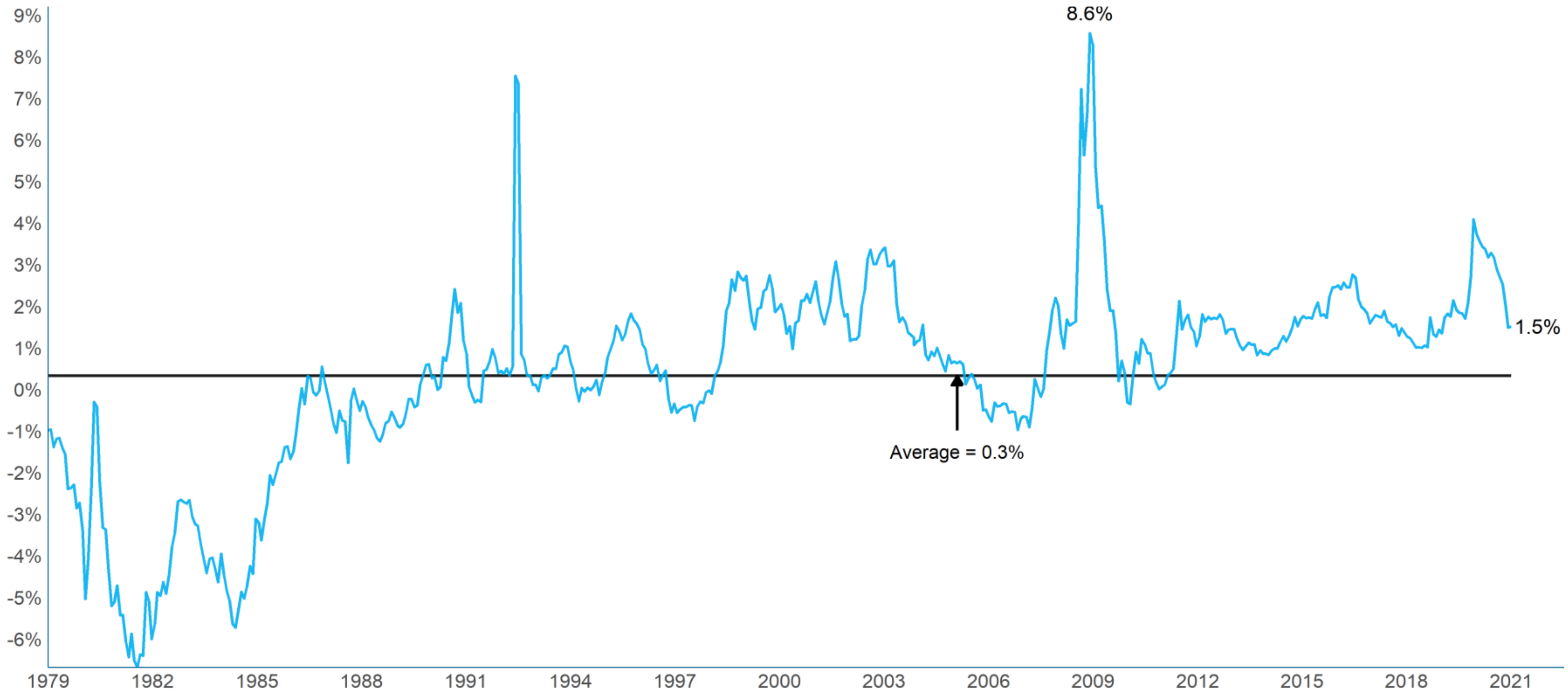
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of March 31, 2021)



- This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.

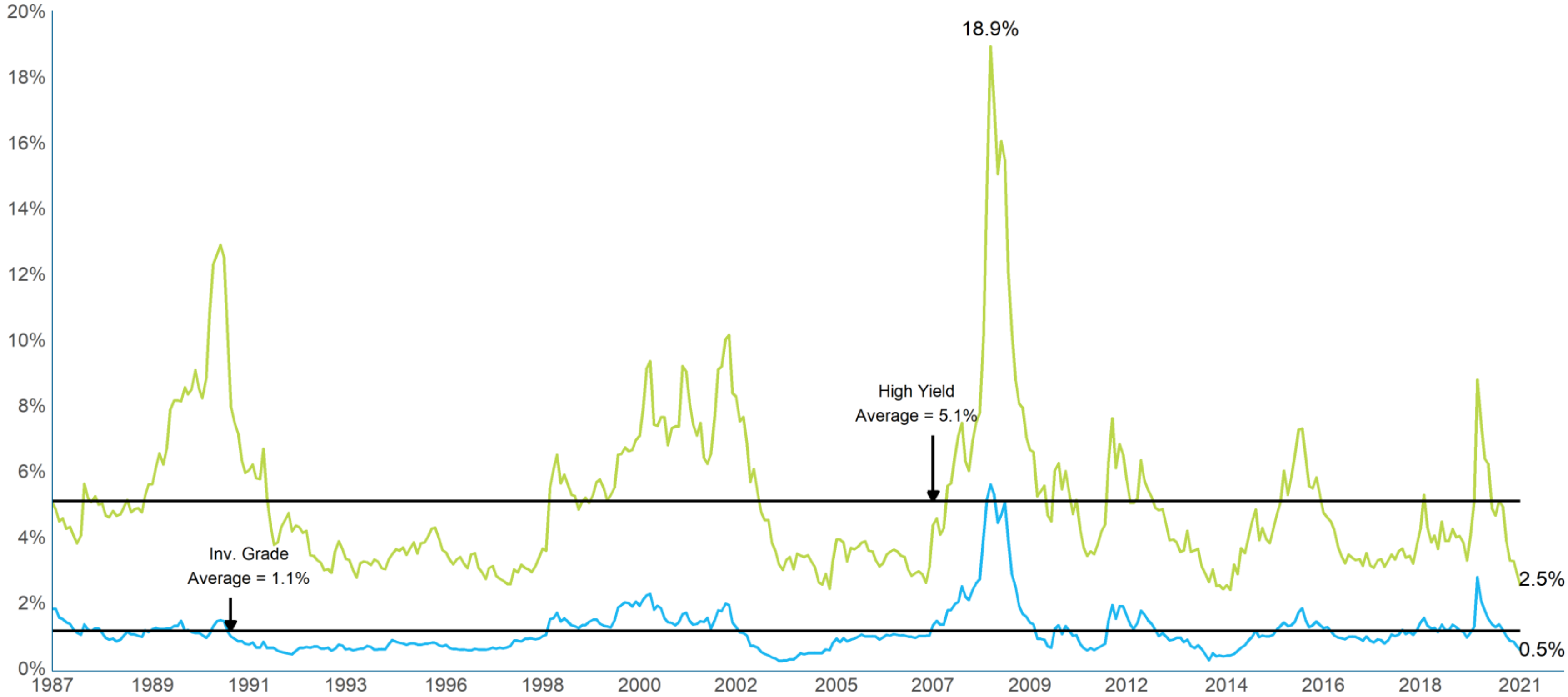
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]
(As of March 31, 2021)



- This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.

Credit Spreads[1]
(As of March 31, 2021)



- This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

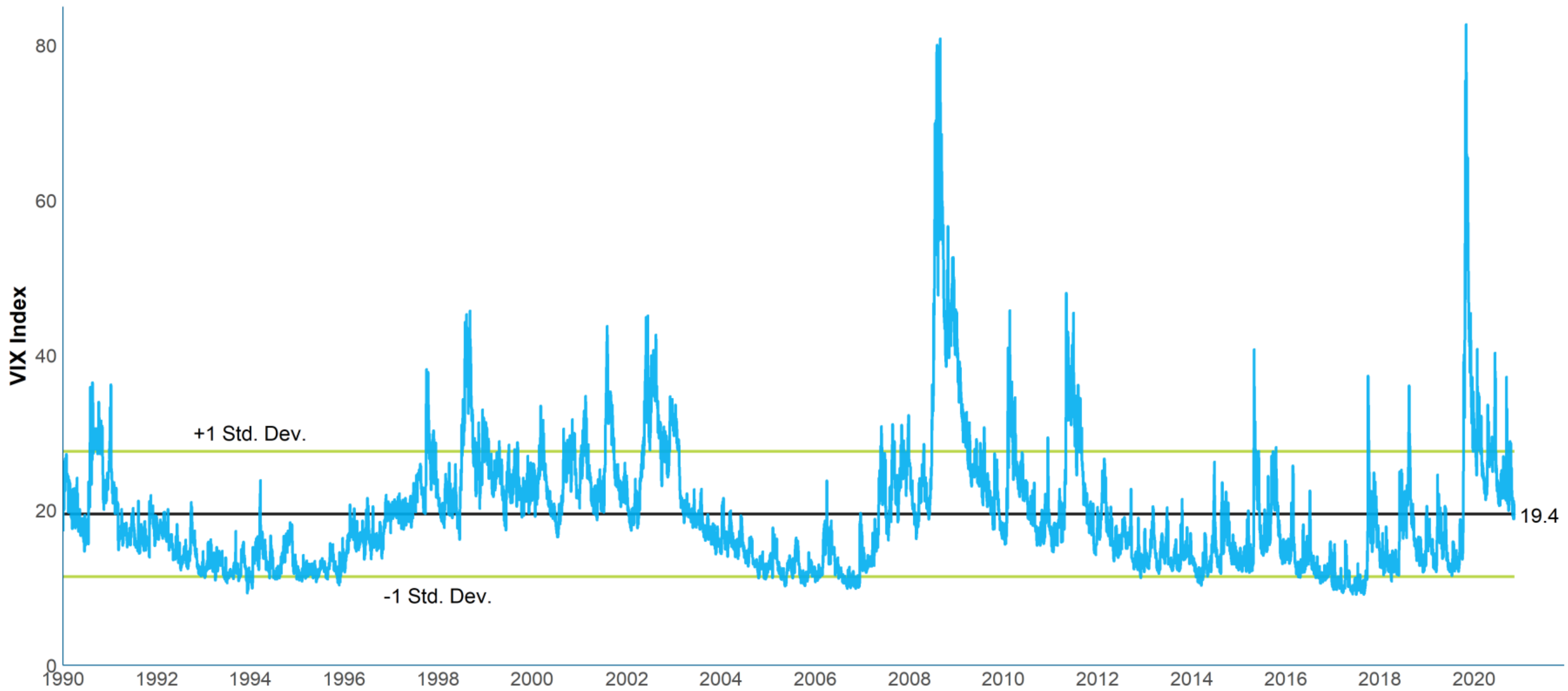
[1] Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

Emerging Market Debt Spreads[1]
(As of March 31, 2021)

- This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg Barclays EM USD Aggregate Index.

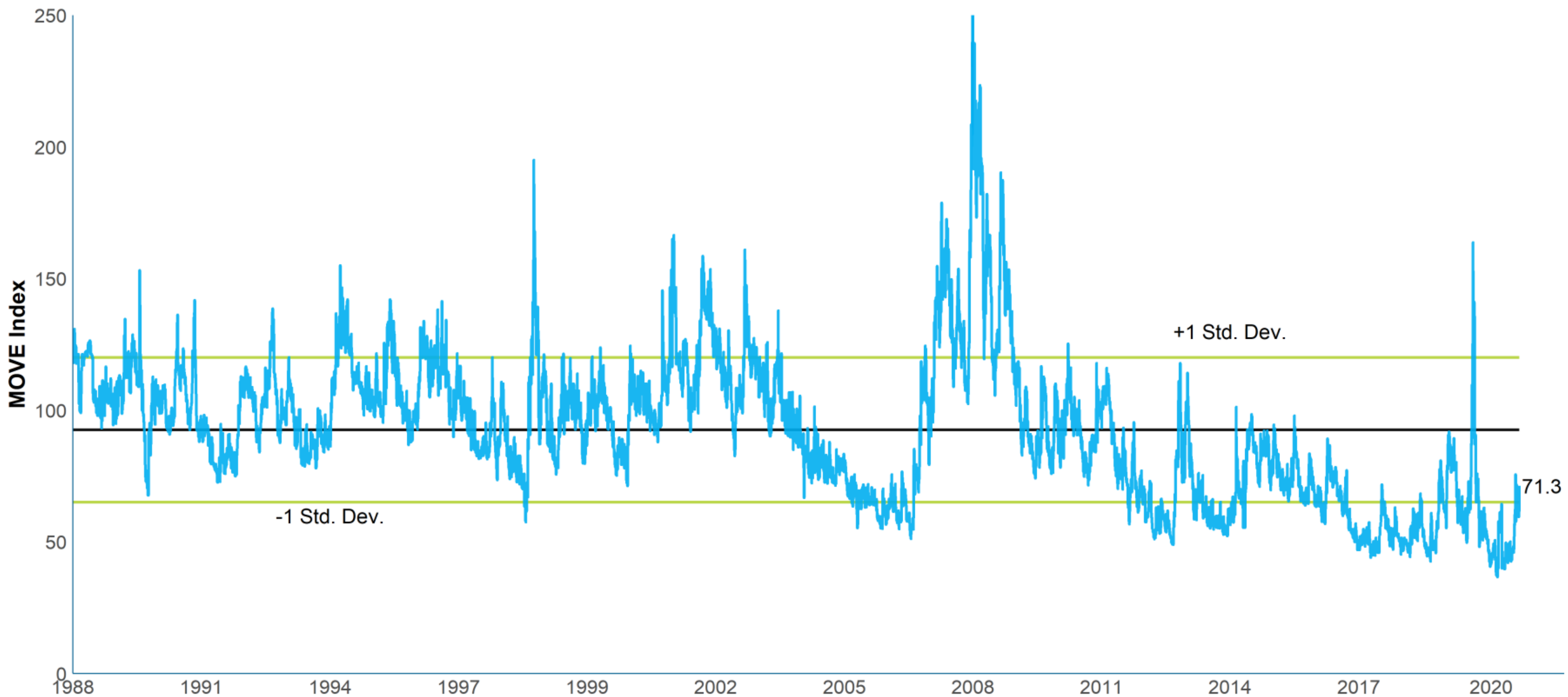
Equity Volatility[1]
(As of March 31, 2021)



- This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

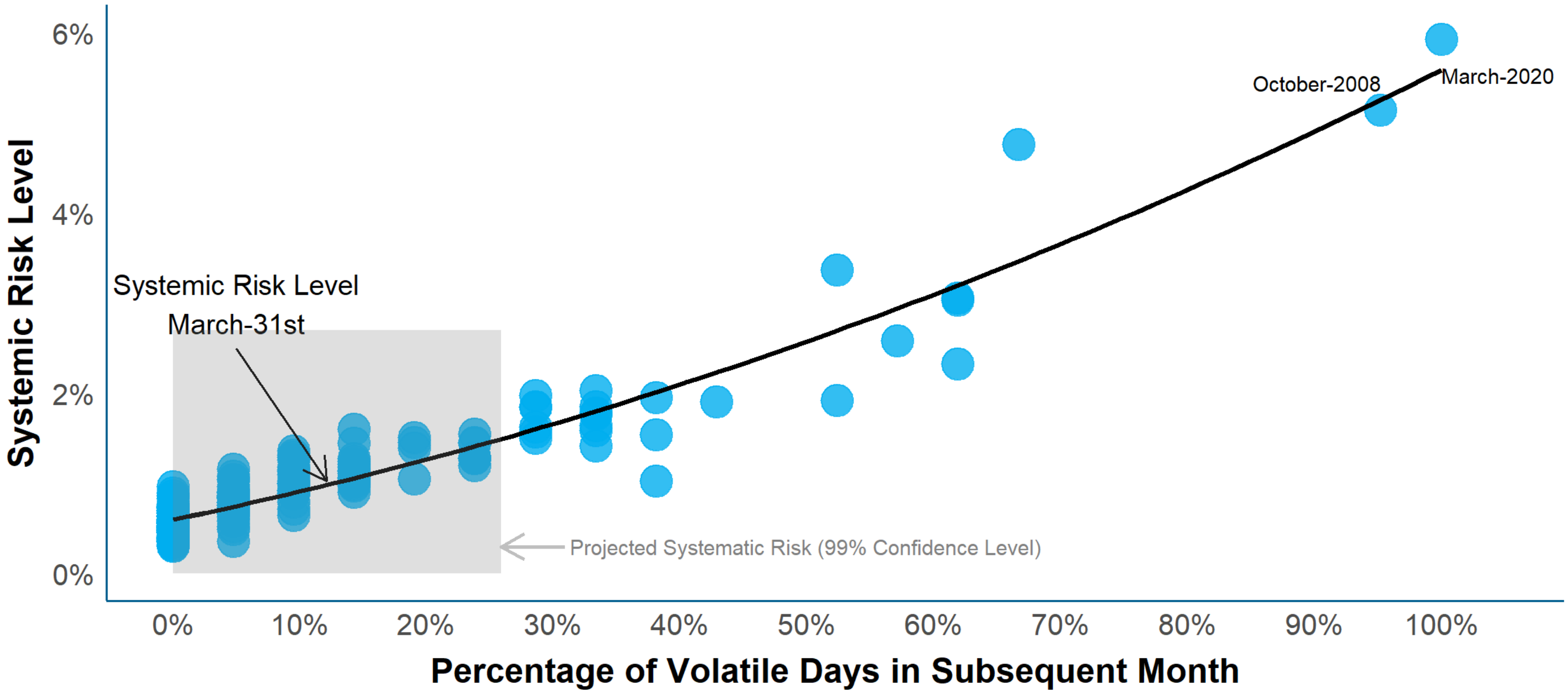
Fixed Income Volatility[1]
(As of March 31, 2021)



- This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

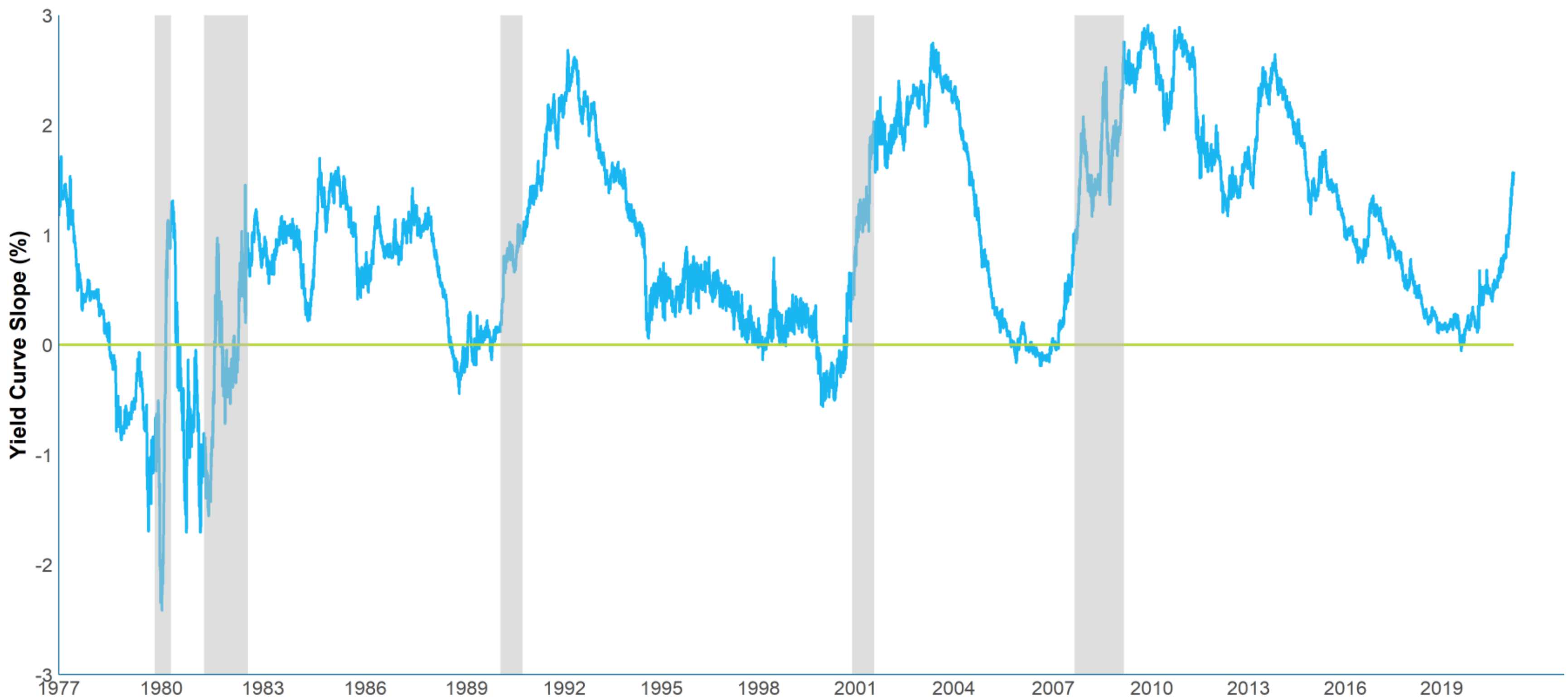
Systemic Risk and Volatile Market Days[1]
(As of March 31, 2021)



- Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

[1] Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

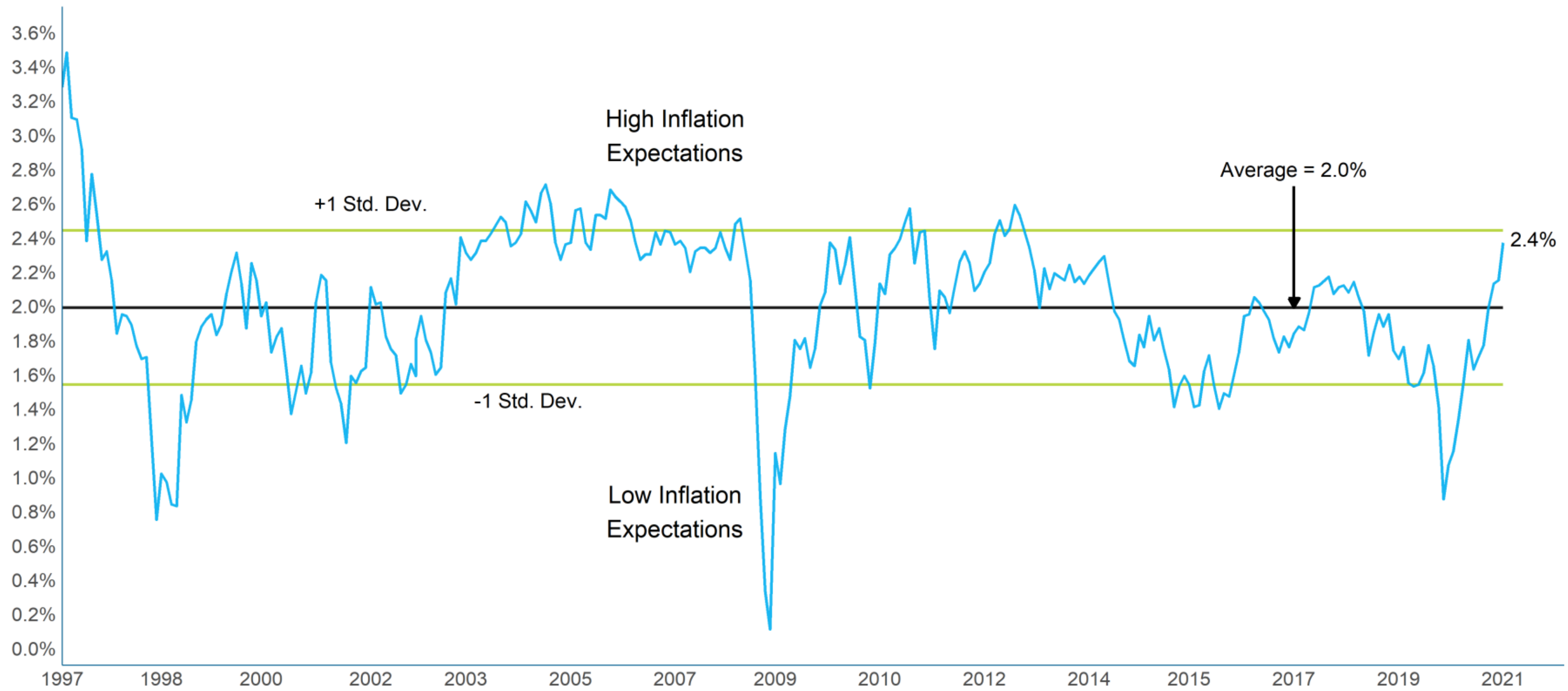
Yield Curve Slope (Ten Minus Two)[1]
(As of March 31, 2021)



- This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

[1] Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

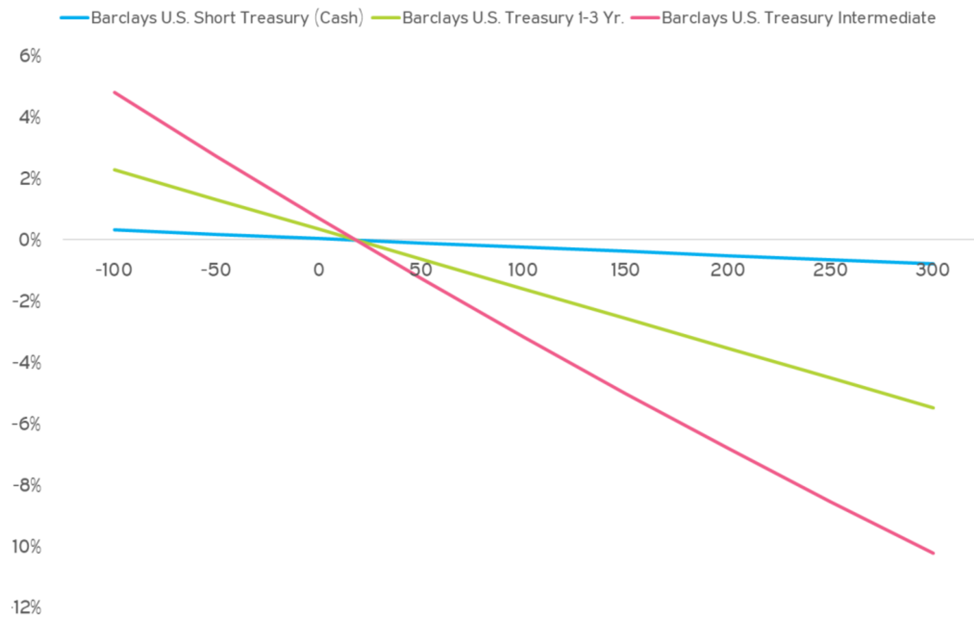
Ten-Year Breakeven Inflation[1]
(As of March 31, 2021)



- This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

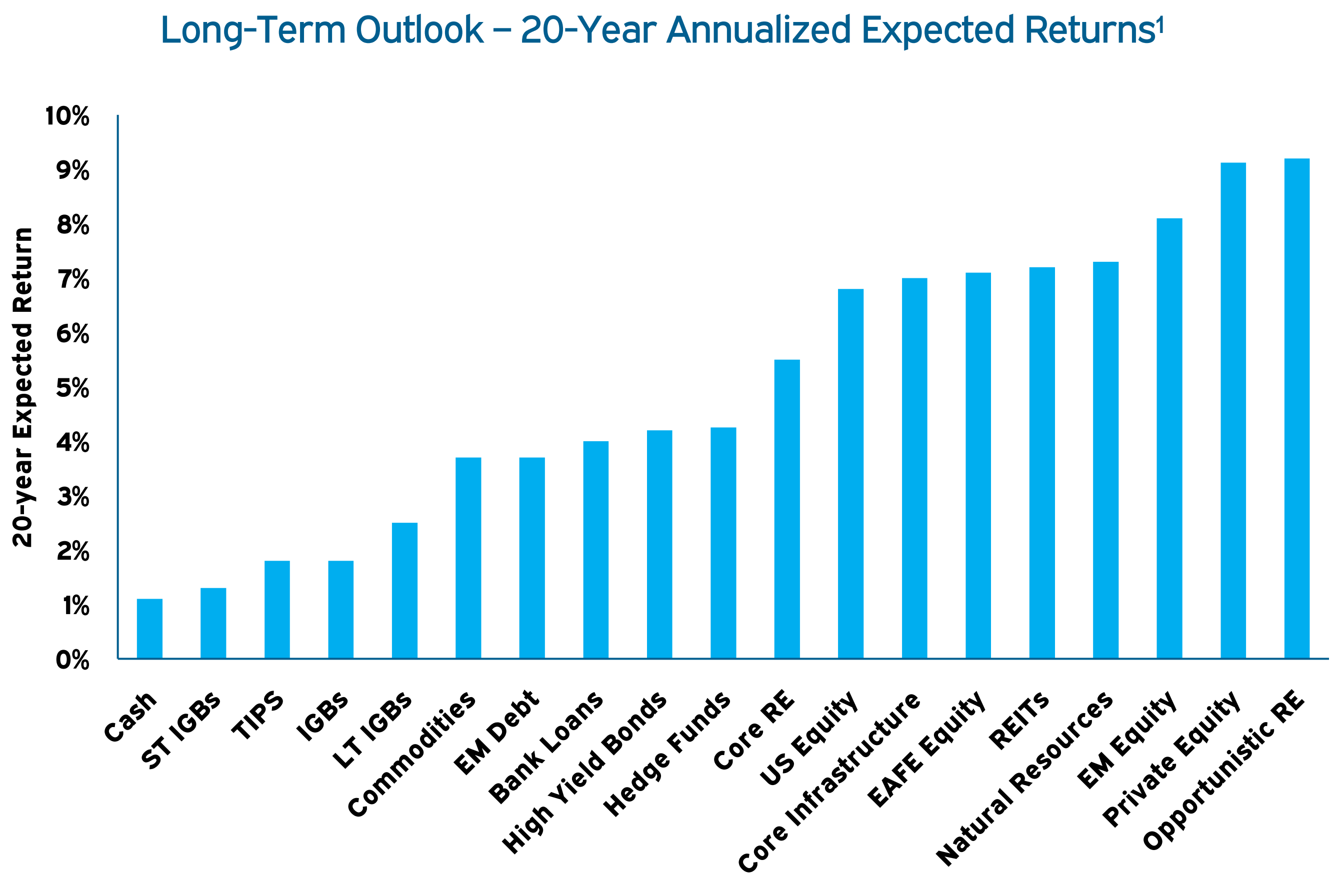
[1] Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

Total Return Given Changes in Interest Rates (bps)[1]
(As of March 31, 2021)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.3%	0.2%	0.0%	-0.1%	-0.3%	-0.4%	-0.5%	-0.7%	-0.8%	0.28	0.02%
Barclays US Treasury 1-3 Yr.	2.3%	1.3%	0.3%	-0.7%	-1.6%	-2.6%	-3.6%	-4.5%	-5.5%	1.94	0.32%
Barclays US Treasury Intermediate	4.8%	2.7%	0.7%	-1.3%	-3.2%	-5.0%	-6.8%	-8.6%	-10.2%	3.99	0.68%
Barclays US Treasury Long	23.1%	12.2%	2.3%	-6.4%	-14.1%	-20.7%	-26.3%	-30.7%	-34.1%	18.62	2.34%

[1] Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.



- This chart details Meketa's long-term forward-looking expectations for total returns across asset classes.

[1] Source: Meketa Investment Group's 2021 Annual Asset Study.

Appendix

Data Sources and Explanations[1]

- US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.
- Developed International Equity (MSCI EAFE) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.

[1] All Data as of March 31, 2021 unless otherwise noted.

Appendix

Data Sources and Explanations[1]

- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.
- Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index.
  - Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.
- EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg Barclays EM USD Aggregate Index.
- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
- Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.
- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.

[1] All Data as of March 31, 2021 unless otherwise noted.

Appendix

Data Sources and Explanations[1]

- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

[1] All Data as of March 31, 2021 unless otherwise noted.

Meketa Market Sentiment Indicator

Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa's Risk Metrics.

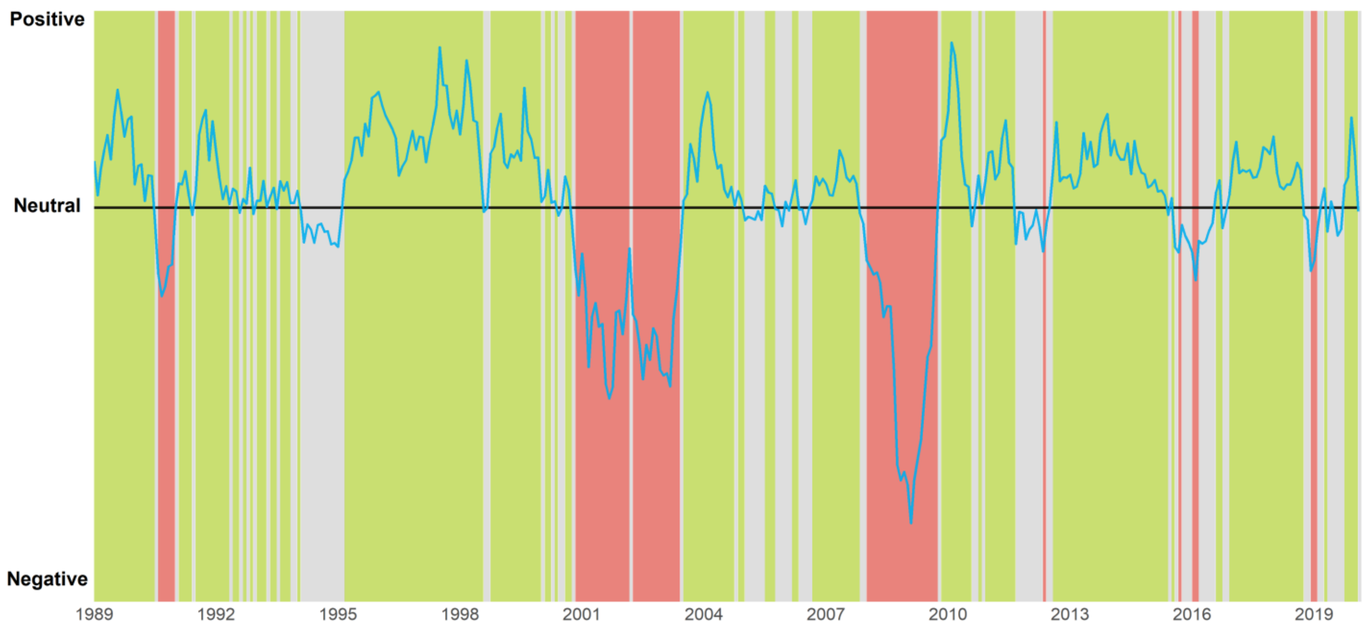
- Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market corrections take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

What is the Meketa Market Sentiment Indicator (MIG-MSI)?

- The MIG-MSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

- Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.
- Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

- The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:
  - Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months).
  - Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
  - Both measures are converted to Z-scores and then combined to get an "apples to apples" comparison without the need of re-scaling.
- The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure[1]. The color reading on the graph is determined as follows:
  - If both stock return momentum and bond spread momentum are positive = GREEN (positive).
  - If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive).
  - If both stock return momentum and bond spread momentum are negative = RED (negative).

[1] Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.
"Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010. *http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf*

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

- There is strong evidence that time series momentum is significant and persistent. In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

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REPORT

SBI Comprehensive Performance Report

March 31, 2021

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Comprehensive Performance Report

March 31, 2021

Description of SBI Investment Programs

The Minnesota State Board of Investment is responsible for the investment management of various retirement funds, trust funds and cash accounts.

Combined Funds

The Combined Funds represent the assets for both the active and retired public employees in the statewide retirement systems, the biggest of which are the Public Employees Retirement Association (PERA), the Teachers Retirement Association (TRA), and the Minnesota State Retirement System (MSRS). The SBI commingles the assets of these plans into the Combined Funds to capture investment efficiencies. All assets in the Combined Funds are managed externally by investment management firms retained by contract.

Fire Plans + Other Retirement Plans

Fire Plans and Other Retirement Plans include assets from volunteer fire relief plans and other public retirement plans with authority to invest with the SBI, if they so choose. Fire Plans that are not eligible to be consolidated with Public Employees Retirement Association (PERA) or elect not to be administered by PERA may invest their assets with the SBI using the same asset pools as the Combined Funds. The Statewide Volunteer Firefighter Retirement Plan is administered by PERA and has its own investment vehicle called the Volunteer Firefighter Account.

Participant Directed Investment Program

The Participant Directed Investment Program (PDIP) provides investment vehicles for a variety of retirement or other tax-advantaged savings plans. Investment goals among the PDIP's many participants are varied. In order to meet the variety of goals, participants may allocate their investments among one or more accounts that are appropriate for their needs within statutory requirements and rules established by the participating organizations.

Non-Retirement

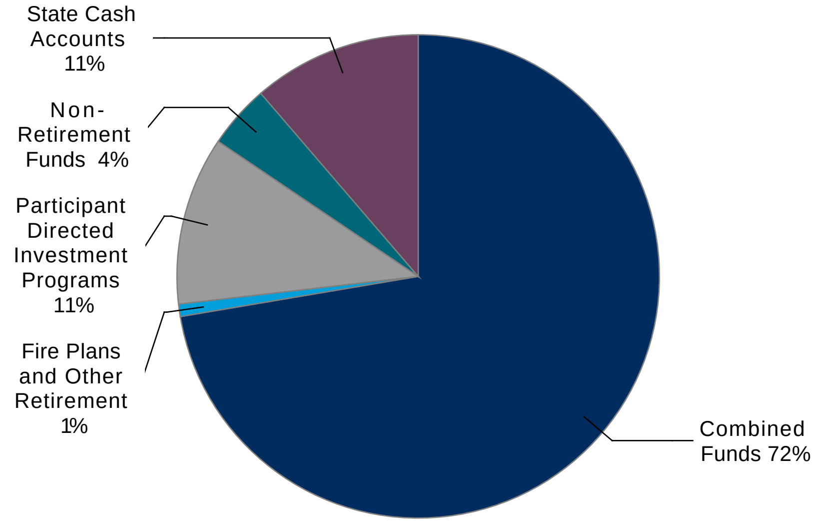
The Non-Retirement Funds are funds established by the State of Minnesota and other government entities for various purposes which include the benefit of public schools, the environment, other post-employment benefits, workers compensation insurance, and other purposes.

State Cash

The State Cash accounts are cash balances of state government funds including the State General Fund. Most accounts are invested by SBI staff through a short-term pooled fund referred to as the Treasurer's Cash Pool. It contains the cash balances of special or dedicated accounts necessary for the operation of certain State agencies and non-dedicated cash in the State Treasury. Because of special legal restrictions, a small number of cash accounts cannot be commingled.

Funds Under Management

	$ Millions
COMBINED FUNDS	$84,538
FIRE PLANS + OTHER RETIREMENT	971
PARTICIPANT DIRECTED INVESTMENT PROGRAMS	13,171
State Deferred Compensation Plan	9,185
Health Care Savings Plan	1,551
Unclassified Employees Retirement Plan	382
Hennepin County Supplemental Retirement Plan	182
PERA Defined Contribution Plan	93
Minnesota College Savings Plan	1,759
Minnesota Achieve a Better Life Experience	19
NON-RETIREMENT FUNDS	4,957
Assigned Risk Plan	299
Permanent School Fund	1,837
Environmental Trust Fund	1,543
Closed Landfill Investment Fund	123
Miscellaneous Trust Funds	332
Other Postemployment Benefits Accounts	823
STATE CASH ACCOUNTS	13,226
Invested Treasurer's Cash	13,151
Other State Cash Accounts	75
TOTAL SBI AUM	116,863



Note: Differentials within column amounts may occur due to rounding

Quarterly Report

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Performance Reporting Legend

Manager Level Data

Aggregate Level Data

Sub-Asset Class Level Data

Asset Class Level Data

Note:

Throughout this report performance is calculated net of investment management fees, aggregates include terminated managers, and returns for all periods greater than one year are annualized. Inception Date and Since Inception Returns refer to the date of retention by the SBI. FYTD refers to the return generated by an account since July 1 of the most recent year. For historical benchmark details, please refer to the addendum of this report. Inception to date return information is included for manager accounts and total asset class but not other aggregates becuase of portfolio management decisions to group managers in different aggregates over time.

Combined Funds

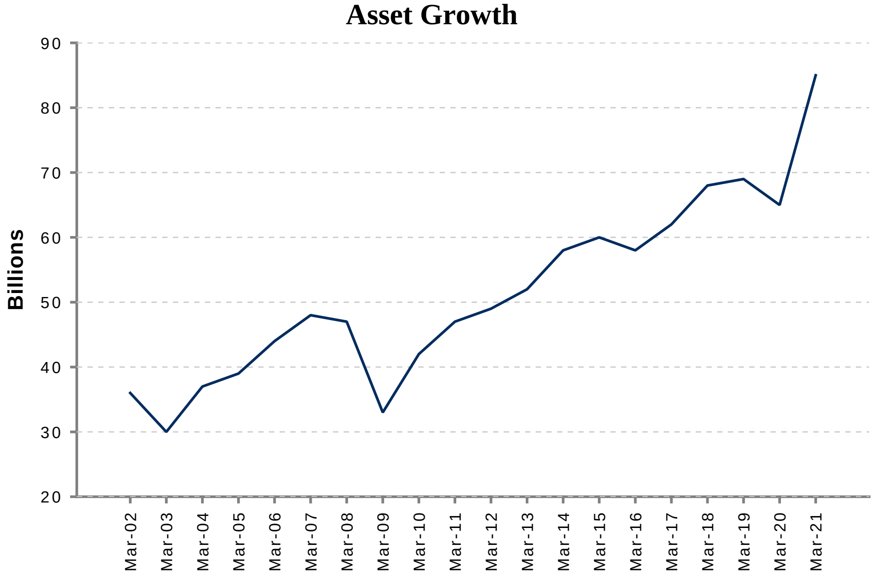
March 31, 2021

Combined Funds Summary

Combined Funds Change in Market Value ($Millions)

	One Quarter
COMBINED FUNDS	
Beginning Market Value	$82,140
Net Contributions	-705
Investment Return	3,102
Ending Market Value	84,538

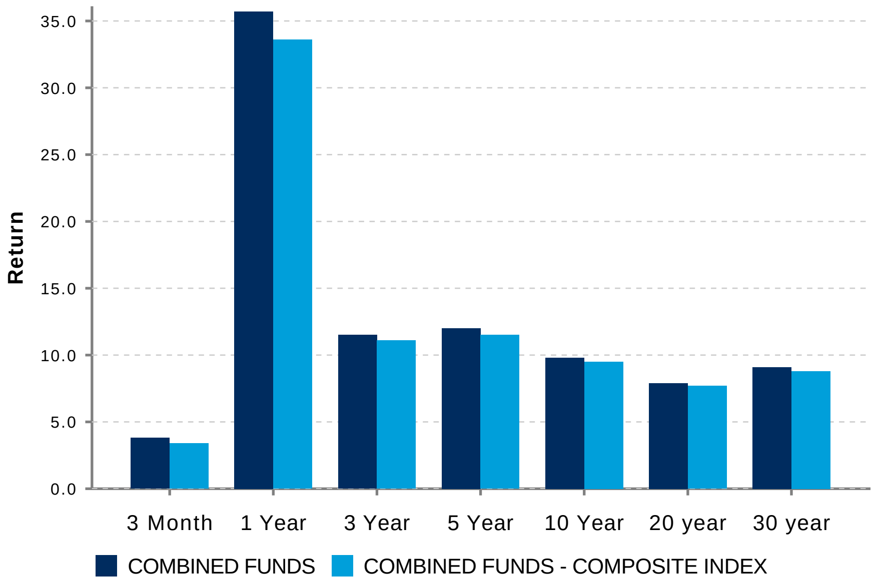
The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.



Performance (Net of Fees)

The Combined Funds' performance is evaluated relative to a composite of public market index and private market investment returns. The Composite performance is calculated by multiplying the beginning of month Composite weights and the monthly returns of the asset class benchmarks.

	Qtr	FYTD	1 Yr	3 Yr	5 Yr	10 Yr	20 Yr	30 Yr
COMBINED FUNDS	3.8%	22.1%	35.7%	11.5%	12.0%	9.8%	7.9%	9.1%
COMBINED FUNDS - COMPOSITE INDEX	3.4	20.8	33.6	11.1	11.5	9.5	7.7	8.8
Excess	0.5	1.3	2.0	0.4	0.4	0.3	0.2	0.3



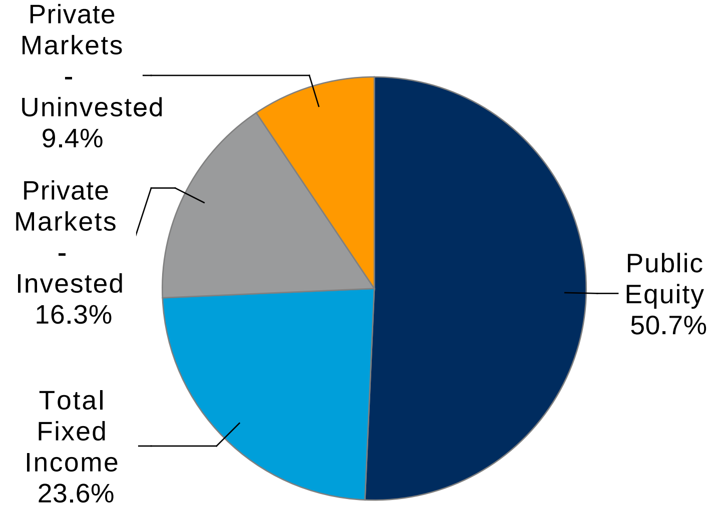
STATE STREET.

Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below.

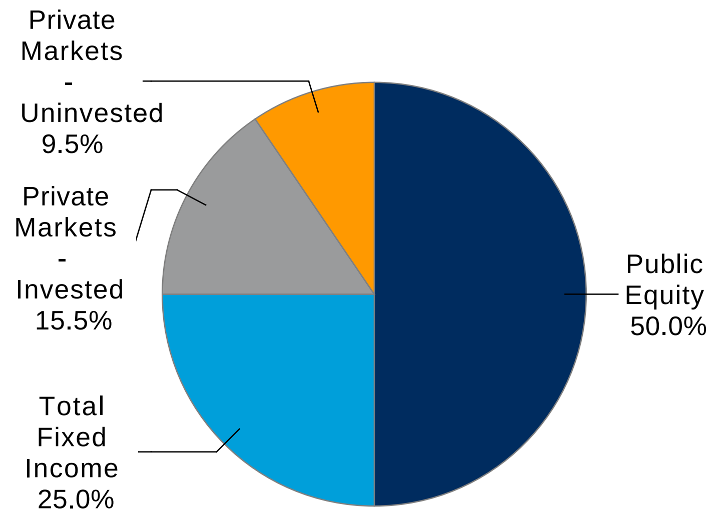
	(Millions)	Actual Mix	Policy Target
Public Equity	$42,865	50.7%	50.0%
Total Fixed Income	19,933	23.6	25.0
Private Markets - Total	21,740	25.7	25.0
Private Markets - Invested	13,788	16.3	
Private Markets - Uninvested	7,952	9.4	
TOTAL	84,538	100.0	



Composite Index Comparison

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target. Asset class weights for Private Markets - Invested and Private Markets - Uninvested are reset at the start of each month. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

	Policy Weight	Market Index
Public Equity	50.0%	Public Equity Benchmark
Total Fixed Income	25.0	Total Fixed Income Benchmark
Private Markets - Invested	15.5	Private Markets
Private Markets - Uninvested	9.5	S&P 500



STATE STREET.

Combined Funds Asset Class Performance Summary

Public Equity

The Combined Funds Public Equity includes Domestic Equity, International Equity and Global Equity.

The Public Equity benchmark is 67% Russell 3000 and 33% MSCI ACWI ex US (net).

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 year
Public Equity	$42.9	50.7%	50.0%	5.6%	32.7%	60.4%	13.8%	14.7%	11.5%	8.1%	9.6%
Public Equity Benchmark				5.4	31.9	58.5	13.5				
Excess				0.2	0.8	1.9	0.3				
Domestic Equity	28.0	33.1	33.5	6.5	34.2	64.8	17.2	16.8	13.8	8.8	10.3
Domestic Equity Benchmark				6.3	33.6	63.2	17.0	16.6	13.8	8.9	10.4
Excess				0.2	0.7	1.6	0.2	0.2	0.0	-0.1	-0.1
International Equity	13.8	16.4	16.5	4.2	30.0	51.8	7.1	10.0	5.5	6.5	
International Equity Benchmark				3.5	28.5	49.2	6.5	9.7	4.9	6.1	
Excess				0.8	1.5	2.6	0.6	0.3	0.6	0.4	
Global Equity	1.1	1.3	0.0	0.3							
MSCI AC WORLD INDEX NET				4.6							
Excess				-4.2							

Note:

Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a total Public Equity return. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

Combined Funds Asset Class Performance Summary

Total Fixed Income

The Combined Funds Fixed Income program includes Core/Core Plus, Return Seeking Fixed Income, Treasuries and Laddered Bond + Cash.

The Total Fixed Income benchmark is 40% Bloomberg Barclays U.S. Aggregate Index/ 40% Bloomberg Barclays Treasury 5+ Years Index/ 20% ICE BofA US 3-Month Treasury Bill.

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 year
Total Fixed Income	$19.9	23.6%	25.0%	-4.4%	-3.6%	-0.8%	5.9%	4.3%	4.2%	5.0%	6.1%
Total Fixed Income Benchmark				-4.9	-5.0	-3.3	5.4				
Excess				0.5	1.4	2.5	0.6				
Core/Core Plus	4.4	5.2	5.0	-3.1	-0.0	5.4	5.7	4.1	4.2	5.0	6.1
Core Bonds Benchmark				-3.4	-2.1	0.7	4.7	3.1	3.4	4.5	5.7
Excess				0.2	2.1	4.7	1.1	1.0	0.7	0.5	0.4
Return Seeking Fixed Income	3.5	4.1	5.0	-1.5							
BBG BARC Agg Bd				-3.4							
Excess				1.9							
Treasury Protection	7.5	8.8	10.0	-8.5	-9.7	-9.4	5.2				
BBG BARC 5Y + Us Tsy Idx				-8.7	-10.2	-9.7	5.2				
Excess				0.3	0.6	0.3	-0.0				
Laddered Bond + Cash	4.6	5.4	5.0	0.0	0.1	0.2	1.5	1.3	0.8	1.7	3.3
ICE BofA US 3-Month Treasury Bill				0.0	0.1	0.1	1.5	1.2	0.6	1.4	2.6
Excess				0.0	0.0	0.1	-0.0	0.1	0.2	0.3	0.7

Note: Since 12/1/2020 the Total Fixed Income includes allocations to Core/Core Plus Bonds, Return Seeking Bonds, Treasuries and Laddered Bond + Cash. From 7/1/2020 to 11/30/2020 Total Fixed Income was Core Bonds, Treasuries and Cash. From 2/1/2018-6/30/20 Total Fixed Income was Core Bonds and Treasuries. Prior to 2/1/2018, Total Fixed Income was Core Bonds. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

Combined Funds Asset Class Performance Summary

Private Markets

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 year	30 year
Private Markets - Invested	8.7%	25.4%	14.1%	11.4%	13.1%	12.0%	12.0%	13.6%	12.6%
Private Markets - Uninvested (S&P 500)	6.1								
Private Equity	11.5%	34.9%	25.1%	17.9%	18.1%	15.4%	13.2%	15.6%	
Private Credit	3.7	9.7	2.1	8.3	11.3	12.0	11.6	12.2	
Resources	2.8	6.9	-14.0	-6.8	-0.5	1.8	11.4	12.7	
Real Estate	2.7	9.3	5.0	8.2	8.8	11.2	8.4	9.7	

Private Markets

The time-weighted rates of return for the Private Markets portfolio are shown here. Private Markets included Private Equity, Private Credit, Resources, and Real Estate. Some of the existing investments are relatively immature and returns may not be indicative of future results.

Private Equity Investments

The objectives of the Private Equity portfolio, which may include leveraged buyouts, growth equity, venture capital and special situations, are to achieve attractive returns and to provide overall portfolio diversification to the total plan.

Private Credit Investments

The objectives of the Private Credit portfolio, which may include mezzanine debt, direct lending, and other forms of non-investment grade fixed income instruments, are to achieve a high total return over a full market cycle and to provide some degree of downside protection and typically provide current income in the form of a coupon. In certain situations, investments in the Private Credit portfolio also provide an equity component of return in the form of warrants or re-organized equity.

Resource Investments

The objectives of the Resources portfolio, which may include energy, infrastructure, and other hard assets, are to provide protection against the risks associated with inflation and to provide overall portfolio diversification to the total plan.

Real Estate Investments

The objectives of the Real Estate portfolio, which may include core and non-core real estate investments, are to achieve attractive returns, preserve capital, provide protection against risks associated with inflation, and provide overall portfolio diversification to the total plan.

The SBI also monitors Private Markets performance using money-weighted return metrics such as Internal Rate of Return and Multiple of Invested Capital. For money-weighted return metrics please refer to the Combined Funds Performance Report.

Asset Class & Manager Performance

March 31, 2021

The assets of the Combined Funds are allocated to public equity, fixed income, private markets, and cash. Each asset class may be further differentiated by geography, management style, and/or strategy. Managers are hired to manage the assets accordingly. This diversification is intended to reduce wide fluctuations in investment returns on a year-to-year basis and enhances the Funds' ability to meet or exceed the actuarial return target over the long-term.

The Combined Funds consist of the assets of active employees and retired members of the statewide retirement plans. The SBI commingles the assets of these plans into the Combined Funds to capture investment efficiencies. This sharing is accomplished by grouping managers by asset class, geography, and management style, into several Investment Pools. The individual funds participate in the Investment Pools by purchasing units which function much like the shares of a mutual fund.

While the vast majority of the units of these pools are owned by the Combined Funds, the Supplemental Investment Fund also owns units of these pools. The Supplemental Investment Funds are mutual fund-like investment vehicles which are used by investors in the Participant Directed Investment Program. Please refer to the Participant Directed Investment Program report for more information.

The performance information presented on the following pages for Public Equity and Fixed Income includes both the Combined Funds and Supplemental Investment Fund. The Private Markets is Combined Funds only. All assets in the Combined Funds are managed externally by investment management firms retained by contract.

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Domestic Equity
March 31, 2021

Total Domestic Equity

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	**$4,079,464,287**	**14.2%**	**9.0%**	**47.3%**	**89.1%**	**17.5%**	**17.8%**	**13.4%**		
Active Domestic Equity Benchmark			9.5	44.0	77.1	15.9	16.0	13.1		
Excess			-0.4	3.3	12.0	1.6	1.8	0.3		
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**3,019,283,521**	**10.5**	**6.5**	**31.7**	**61.0**	**17.3**	**16.7**	**14.2**		
Semi Passive Domestic Equity Benchmark			5.9	31.8	60.6	17.3	16.7	14.0		
Excess			0.6	-0.1	0.4	-0.0	0.0	0.3		
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	**21,540,927,122**	**75.2**	**6.0**	**32.2**	**61.1**	**17.2**	**16.7**	**13.8**		
Passive Domestic Equity Benchmark			6.0	32.1	61.1	17.1	16.7	13.8		
Excess			0.0	0.1	0.0	0.0	-0.0	-0.0		
TRANSITION AGGREGATE DOMESTIC EQUITY (4)	38,296	0.0								
TOTAL DOMESTIC EQUITY (5)	**28,639,713,225**	**100.0**	**6.5**	**34.2**	**64.8**	**17.2**	**16.8**	**13.8**	**11.0**	**01/1984**
Domestic Equity Benchmark			6.3	33.6	63.2	17.0	16.6	13.8	11.1	01/1984
Excess			0.2	0.7	1.6	0.2	0.2	0.0	-0.2	

(1) The Active Domestic Equity Benchmark is a weighted composite each of the individual active domestic equity manager's benchmarks.
(2) The current Semi-Passive Domestic Equity Benchmark is the Russell 1000 index.
(3) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.
(4) The Transition Domestic Equity Aggregate will periodically have residual Domestic Equity securities from transitions.
(5) The current Domestic Equity Benchmark is the Russell 3000.
Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Total Domestic Equity					
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	**27.3%**	**27.6%**	**-6.5%**	**20.6%**	**10.9%**
Active Domestic Equity Benchmark	19.8	28.2	-8.0	18.3	15.7
Excess	7.5	-0.6	1.4	2.3	-4.8
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**21.0**	**30.9**	**-4.9**	**22.5**	**11.1**
Semi Passive Domestic Equity Benchmark	21.0	31.4	-4.8	21.7	12.1
Excess	0.0	-0.5	-0.1	0.8	-1.0
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	**20.8**	**31.3**	**-5.0**	**21.3**	**12.6**
Passive Domestic Equity Benchmark	20.8	31.3	-5.0	21.5	12.5
Excess	0.0	0.0	-0.0	-0.2	0.1
TRANSITION AGGREGATE DOMESTIC EQUITY (4)					
TOTAL DOMESTIC EQUITY (5)	**21.7%**	**30.7%**	**-5.3%**	**21.4%**	**11.5**
Domestic Equity Benchmark	20.8%	30.8%	-5.2%	21.1%	12.7
Excess	0.9%	-0.1%	-0.0%	0.2%	-1.3

(1) The Active Domestic Equity Benchmark is a weighted composite each of the individual active domestic equity manager's benchmarks.

(2) The current Semi-Passive Domestic Equity Benchmark is the Russell 1000 index.

(3) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.

(4) The Transition Domestic Equity Aggregate will periodically have residual Domestic Equity securities from transitions.

(5) The current Domestic Equity Benchmark is the Russell 3000.

Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Large Cap Growth										
SANDS	**$339,106,031**	**1.2%**	**-2.5%**	**32.9%**	**83.3%**	**29.5%**	**27.1%**	**19.3%**	**14.1%**	**01/2005**
Russell 1000 Growth			0.9	27.3	62.7	22.8	21.0	16.6	11.9	01/2005
Excess			-3.4	5.6	20.6	6.8	6.1	2.7	2.2	
WINSLOW	**213,539,434**	**0.7**	**0.8**	**23.7**	**58.1**	**22.2**	**21.8**	**15.9**	**12.5**	**01/2005**
Russell 1000 Growth			0.9	27.3	62.7	22.8	21.0	16.6	11.9	01/2005
Excess			-0.2	-3.6	-4.6	-0.6	0.8	-0.8	0.6	
RUSSELL 1000 GROWTH AGGREGATE (1)	**552,645,465**	**1.9**	**-1.3**	**36.5**	**93.0**	**33.2**	**29.4**	**19.7**		
Russell 1000 Growth			0.9	27.3	62.7	22.8	21.0	16.6		
Excess			-2.2	9.2	30.3	10.4	8.4	3.1		

(1) Prior to 1/1/2021 the Russell 1000 Growth Aggregate included returns from Zevenbergen, which moved to the Russell 3000 Growth benchmark and is now reported separately.

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active Large Cap Growth					
SANDS	**71.0%**	**33.5%**	**7.0%**	**35.3%**	**-6.9%**
Russell 1000 Growth	38.5	36.4	-1.5	30.2	7.1
Excess	32.5	-2.8	8.6	5.1	-13.9
WINSLOW	**37.6**	**34.2**	**4.2**	**33.2**	**-1.9**
Russell 1000 Growth	38.5	36.4	-1.5	30.2	7.1
Excess	-0.9	-2.2	5.7	3.0	-9.0
RUSSELL 1000 GROWTH AGGREGATE (1)	**81.3%**	**37.3%**	**4.7%**	**33.4%**	**1.0**
Russell 1000 Growth	38.5%	36.4%	-1.5%	30.2%	7.1
Excess	42.8%	0.9%	6.2%	3.2%	-6.1

(1) Prior to 1/1/2021 the Russell 1000 Growth Aggregate included returns from Zevenbergen, which moved to the Russell 3000 Growth benchmark and is now reported separately.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Semi-Passive Large Cap										
BLACKROCK	**$1,521,112,358**	**5.3%**	**6.4%**	**30.9%**	**60.0%**	**16.9%**	**17.4%**	**14.8%**	**10.8%**	**01/1995**
Semi Passive Domestic Equity Benchmark			5.9	31.8	60.6	17.3	16.7	14.0	10.4	01/1995
Excess			0.5	-0.9	-0.6	-0.4	0.7	0.8	0.4	
J.P. MORGAN	**1,498,171,163**	**5.2**	**6.7**	**32.5**	**62.0**	**17.6**	**16.9**	**14.3**	**10.7**	**01/1995**
Semi Passive Domestic Equity Benchmark			5.9	31.8	60.6	17.3	16.7	14.0	10.4	01/1995
Excess			0.8	0.7	1.4	0.3	0.2	0.4	0.3	
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	**3,019,283,521**	**10.5**	**6.5**	**31.7**	**61.0**	**17.3**	**16.7**	**14.2**		
Semi Passive Domestic Equity Benchmark			5.9	31.8	60.6	17.3	16.7	14.0		
Excess			0.6	-0.1	0.4	-0.0	0.0	0.3		

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Semi-Passive Large Cap					
BLACKROCK	**20.7%**	**30.4%**	**-4.1%**	**24.6%**	**12.5%**
Semi Passive Domestic Equity Benchmark	21.0	31.4	-4.8	21.7	12.1
Excess	-0.3	-1.0	0.7	2.9	0.5
J.P. MORGAN	**21.2**	**31.3**	**-5.4**	**21.8**	**12.3**
Semi Passive Domestic Equity Benchmark	21.0	31.4	-4.8	21.7	12.1
Excess	0.3	-0.1	-0.6	0.1	0.2
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	**21.0%**	**30.9%**	**-4.9%**	**22.5%**	**11.1**
Semi Passive Domestic Equity Benchmark	21.0%	31.4%	-4.8%	21.7%	12.1
Excess	0.0%	-0.5%	-0.1%	0.8%	-1.0

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Large Cap Value										
BARROW HANLEY	**$407,062,313**	**1.4%**	**13.1%**	**40.6%**	**67.7%**	**12.6%**	**12.4%**	**11.4%**	**8.7%**	**04/2004**
Russell 1000 Value			11.3	36.6	56.1	11.0	11.7	11.0	8.3	04/2004
Excess			1.9	4.0	11.6	1.6	0.6	0.4	0.4	
LSV	**420,641,290**	**1.5**	**17.7**	**47.5**	**72.3**	**9.7**	**12.5**	**12.1**	**9.4**	**04/2004**
Russell 1000 Value			11.3	36.6	56.1	11.0	11.7	11.0	8.3	04/2004
Excess			6.4	10.9	16.3	-1.3	0.8	1.1	1.1	
RUSSELL 1000 VALUE AGGREGATE	**827,703,604**	**2.9**	**15.5**	**43.5**	**69.6**	**11.7**	**13.3**	**11.4**		
Russell 1000 Value			11.3	36.6	56.1	11.0	11.7	11.0		
Excess			4.3	6.9	13.5	0.8	1.5	0.4		

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active Large Cap Value					
BARROW HANLEY	**2.4%**	**26.9%**	**-5.9%**	**14.6%**	**12.8%**
Russell 1000 Value	2.8	26.5	-8.3	13.7	17.3
Excess	-0.4	0.4	2.4	0.9	-4.5
LSV	**-1.3**	**26.9**	**-11.8**	**18.6**	**17.0**
Russell 1000 Value	2.8	26.5	-8.3	13.7	17.3
Excess	-4.1	0.4	-3.6	4.9	-0.4
RUSSELL 1000 VALUE AGGREGATE	**1.6%**	**27.4%**	**-8.7%**	**17.3%**	**15.3**
Russell 1000 Value	2.8%	26.5%	-8.3%	13.7%	17.3
Excess	-1.2%	0.9%	-0.4%	3.7%	-2.1

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Small Cap Growth										
ARROWMARK	**$232,888,302**	**0.8%**	**5.8%**	**45.6%**	**89.9%**	**14.9%**			**18.9%**	**11/2016**
Russell 2000 Growth			4.9	45.7	90.2	17.2			19.8	11/2016
Excess			0.9	-0.1	-0.3	-2.2			-0.9	
HOOD RIVER	**282,228,764**	**1.0**	**11.3**	**67.1**	**132.5**	**27.0**			**25.6**	**11/2016**
Russell 2000 Growth			4.9	45.7	90.2	17.2			19.8	11/2016
Excess			6.5	21.5	42.3	9.8			5.8	
RICE HALL JAMES	**240,935,811**	**0.8**	**8.2**	**37.9**	**89.3**	**11.2**			**18.4**	**11/2016**
Russell 2000 Growth			4.9	45.7	90.2	17.2			19.8	11/2016
Excess			3.3	-7.7	-0.9	-6.0			-1.4	
WELLINGTON	**301,912,036**	**1.1**	**1.9**	**42.3**	**84.4**	**16.6**			**19.6**	**11/2016**
Russell 2000 Growth			4.9	45.7	90.2	17.2			19.8	11/2016
Excess			-2.9	-3.3	-5.8	-0.6			-0.2	
RUSSELL 2000 GROWTH AGGREGATE	**1,057,964,914**	**3.7**	**6.7**	**48.7**	**99.1**	**17.7**	**18.0**	**11.4**		
Russell 2000 Growth			4.9	45.7	90.2	17.2	18.6	13.0		
Excess			1.8	3.0	8.9	0.5	-0.6	-1.6		

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	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active Small Cap Growth					
ARROWMARK	**21.9%**	**20.1%**	**0.9%**	**26.2%**	
Russell 2000 Growth	34.6	28.5	-9.3	22.2	
Excess	-12.8	-8.4	10.3	4.1	
HOOD RIVER	**61.7**	**24.3**	**-7.0**	**21.3**	
Russell 2000 Growth	34.6	28.5	-9.3	22.2	
Excess	27.0	-4.2	2.3	-0.9	
RICE HALL JAMES	**23.8**	**18.0**	**-6.9**	**27.9**	
Russell 2000 Growth	34.6	28.5	-9.3	22.2	
Excess	-10.8	-10.5	2.4	5.8	
WELLINGTON	**33.1**	**35.6**	**-11.6**	**22.6**	
Russell 2000 Growth	34.6	28.5	-9.3	22.2	
Excess	-1.5	7.1	-2.3	0.4	
RUSSELL 2000 GROWTH AGGREGATE	**35.4%**	**24.6%**	**-6.2%**	**22.0%**	**4.7**
Russell 2000 Growth	34.6%	28.5%	-9.3%	22.2%	11.3
Excess	0.8%	-3.9%	3.2%	-0.1%	-6.6

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	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Small Cap Value										
GOLDMAN SACHS	**$404,790,943**	**1.4%**	**16.8%**	**58.1%**	**86.0%**	**9.2%**	**12.3%**	**10.8%**	**9.7%**	**01/2004**
Russell 2000 Value			21.2	65.7	97.1	11.6	13.6	10.1	8.7	01/2004
Excess			-4.3	-7.7	-11.1	-2.4	-1.3	0.7	1.0	
HOTCHKIS AND WILEY	**247,904,121**	**0.9**	**22.5**	**71.4**	**109.4**	**9.0**	**10.8**	**9.7**	**8.6**	**01/2004**
Russell 2000 Value			21.2	65.7	97.1	11.6	13.6	10.1	8.7	01/2004
Excess			1.3	5.7	12.4	-2.6	-2.8	-0.4	-0.1	
MARTINGALE	**242,334,073**	**0.8**	**24.0**	**59.5**	**93.1**	**7.5**	**11.1**	**10.4**	**8.2**	**01/2004**
Russell 2000 Value			21.2	65.7	97.1	11.6	13.6	10.1	8.7	01/2004
Excess			2.8	-6.2	-3.9	-4.1	-2.4	0.4	-0.6	
PEREGRINE	**358,536,311**	**1.3**	**19.2**	**67.4**	**106.8**	**9.6**	**13.0**	**10.1**	**10.5**	**07/2000**
Russell 2000 Value			21.2	65.7	97.1	11.6	13.6	10.1	10.0	07/2000
Excess			-2.0	1.6	9.8	-2.0	-0.6	0.0	0.5	
RUSSELL 2000 VALUE AGGREGATE	**1,253,565,447**	**4.4**	**19.8**	**63.4**	**97.6**	**8.7**	**11.8**	**10.1**		
Russell 2000 Value			21.2	65.7	97.1	11.6	13.6	10.1		
Excess			-1.4	-2.3	0.6	-2.9	-1.8	0.1		

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active Small Cap Value					
GOLDMAN SACHS	**2.4%**	**23.2%**	**-13.3%**	**12.6%**	**24.6%**
Russell 2000 Value	4.6	22.4	-12.9	7.8	31.7
Excess	-2.3	0.8	-0.5	4.7	-7.1
HOTCHKIS AND WILEY	**-0.2**	**19.7**	**-14.4**	**7.9**	**19.9**
Russell 2000 Value	4.6	22.4	-12.9	7.8	31.7
Excess	-4.8	-2.7	-1.5	0.0	-11.8
MARTINGALE	**-4.6**	**21.1**	**-15.0**	**6.9**	**34.3**
Russell 2000 Value	4.6	22.4	-12.9	7.8	31.7
Excess	-9.2	-1.3	-2.1	-0.9	2.5
PEREGRINE	**7.3**	**21.1**	**-16.1**	**12.5**	**27.8**
Russell 2000 Value	4.6	22.4	-12.9	7.8	31.7
Excess	2.7	-1.3	-3.3	4.7	-3.9
RUSSELL 2000 VALUE AGGREGATE	**1.5%**	**21.3%**	**-14.7%**	**10.2%**	**26.5**
Russell 2000 Value	4.6%	22.4%	-12.9%	7.8%	31.7
Excess	-3.1%	-1.1%	-1.8%	2.3%	-5.2

Minnesota State Board of Investment
Quarter Ending March 31, 2021
Domestic Equity Managers

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active All Cap										
ZEVENBERGEN (1)	**$387,584,858**	**1.4%**	**-8.2%**	**36.9%**	**110.7%**	**40.8%**	**34.6%**	**20.2%**	**13.7%**	**04/1994**
Zevenbergen Benchmark			1.2	27.6	63.1	22.9	21.1	16.7	11.0	04/1994
Excess			-9.4	9.2	47.5	17.9	13.5	3.5	2.7	
ACTIVE RUSSELL 3000 GROWTH (2)	**$387,584,858**		**-8.2**							
RUSSELL 3000 Growth			1.2							
Excess			-9.4							

(1) Effective January 1, 2021 the SBI changed the Zevenbergen Benchmark to the Russell 3000 Growth. Prior to this date it was the Russell 1000 Growth.
(2) Prior to 1/1/2021 Zevenbergen returns were reported as part of the Russell 1000 Growth Aggregate.

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active All Cap					
ZEVENBERGEN (1)	**126.2%**	**43.0%**	**2.3%**	**35.1%**	**-2.8%**
Zevenbergen Benchmark	38.5	36.4	-1.5	30.2	7.1
Excess	87.7	6.7	3.8	4.9	-9.9

ACTIVE RUSSELL 3000 GROWTH (2)					
RUSSELL 3000 Growth					
Excess					

(1) Effective January 1, 2021 the SBI changed the Zevenbergen Benchmark to the Russell 3000 Growth. Prior to this date it was the Russell 1000 Growth.
(2) Prior to 1/1/2021 Zevenbergen returns were reported as part of the Russell 1000 Growth Aggregate.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Passive Domestic Equity										
BLACKROCK RUSSELL 1000	**$20,236,527,832**	**70.7%**	**5.9%**	**31.9%**	**60.5%**	**17.3%**			**17.8%**	**11/2016**
RUSSELL 1000 (DAILY)			5.9	31.8	60.6	17.3			17.9	11/2016
Excess			0.0	0.0	-0.0	-0.0			-0.0	
BLACKROCK RUSSELL 2000	**137,458,636**	**0.5**	**13.1**	**55.6**	**95.4**				**19.4**	**11/2018**
RUSSELL 2000 (DAILY)			12.7	55.4	94.8				18.9	11/2018
Excess			0.4	0.2	0.6				0.5	
BLACKROCK RUSSELL 3000 (1)	**1,166,940,653**	**4.1**	**6.4**	**33.4**	**62.9**	**17.3**	**16.7%**	**13.8%**	**10.2**	**07/1995**
Passive Manager Benchmark			6.3	33.2	62.5	17.1	16.6	13.8	10.1	07/1995
Excess			0.1	0.2	0.3	0.1	0.1	0.0	0.1	
PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**21,540,927,122**	**75.2**	**6.0**	**32.2**	**61.1**	**17.2**	**16.7**	**13.8**		
Passive Domestic Equity Benchmark			6.0	32.1	61.1	17.1	16.7	13.8		
Excess			0.0	0.1	0.0	0.0	-0.0	-0.0		

(1) The current Passive Manager Benchmark is the Russell 3000. For historical benchmark details please refer to the addendum of this report.

(2) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.

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	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Total Passive Domestic Equity					
BLACKROCK RUSSELL 1000	**20.9%**	**31.4%**	**-4.8%**	**21.7%**	
RUSSELL 1000 (DAILY)	21.0	31.4	-4.8	21.7	
Excess	-0.0	0.0	-0.0	-0.0	
BLACKROCK RUSSELL 2000	**20.8**	**25.2**			
RUSSELL 2000 (DAILY)	20.0	25.5			
Excess	0.8	-0.3			
BLACKROCK RUSSELL 3000 (1)	**21.2**	**31.1**	**-5.2**	**21.1**	**12.7%**
Passive Manager Benchmark	20.9	31.0	-5.2	21.1	12.7
Excess	0.3	0.0	-0.0	0.0	0.0
PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**20.8%**	**31.3%**	**-5.0%**	**21.3%**	**12.6**
Passive Domestic Equity Benchmark	20.8%	31.3%	-5.0%	21.5%	12.5
Excess	0.0%	0.0%	-0.0%	-0.2%	0.1

(1) The current Passive Manager Benchmark is the Russell 3000. For historical benchmark details please refer to the addendum of this report.
(2) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.

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International Equity
March 31, 2021

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total International Equity										
DEVELOPED MARKETS (1)	**$9,414,421,114**	**67.2%**	**4.1%**	**27.4%**	**47.7%**	**7.0%**	**9.3%**	**6.0%**		
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2		
Excess			0.1	0.9	1.9	0.7	0.4	0.8		
EMERGING MARKETS (2)(5)	**3,953,679,723**	**28.2**	**3.3**	**36.6**	**62.5**	**7.1**	**12.0**	**3.7**		
BENCHMARK EM			2.3	34.1	58.4	6.5	12.1	3.7		
Excess			1.0	2.4	4.1	0.6	-0.1	0.0		
ACWI EX-US AGGREGATE	**394,104,635**	**2.8**	**3.9**							
MSCI AC WORLD ex US (NET) - DAILY			3.5							
Excess			0.4							
CHINA ONLY AGGREGATE	**196,516,065**	**1.4**	**-6.4**							
MSCI China A			-4.2							
Excess			-2.2							
TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)	996,819	0.0								
TOTAL INTERNATIONAL EQUITY (4)(5)	**13,999,783,849**	**100.0**	**4.2**	**30.0**	**51.8**	**7.1**	**10.0**	**5.5**	**6.8**	**10/1992**
International Equity Benchmark			3.5	28.5	49.2	6.5	9.7	4.9	6.3	10/1992
Excess			0.7	1.5	2.6	0.6	0.3	0.6	0.5	

(1) The current benchmak for Developed Markets, Benchmark DM, is the Standard (large + mid) MSCI World ex USA (net).

(2) The current benchmark for Emerging Markets, Benchmark EM, is the Standard (large + mid) MSCI Emerging Markets Free (net).

(3) The Transition Aggregate International Equity contains International Equity securities that are being transitioned to a different manager.

(4) The current International Equity Benchmark is the MSCI ACWI ex USA (net). Does not includes impact of currency overlay on the passive EAFE portfolio from 12/1/95-10/31/00. This impact is included in the return for the Combined Funds portion of the International Equity portfolio.

(5) See page 40 for details on a 4Q2020 performance revision.

Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

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	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Total International Equity					
DEVELOPED MARKETS (1)	**9.1%**	**23.3%**	**-14.2%**	**24.9%**	**1.3%**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	1.5	0.8	-0.1	0.7	-1.5
EMERGING MARKETS (2)(5)	**17.9**	**20.3**	**-15.4**	**37.7**	**7.5**
BENCHMARK EM	18.3	18.4	-14.6	37.3	11.2
Excess	-0.4	1.9	-0.8	0.4	-3.7
ACWI EX-US AGGREGATE					
MSCI AC WORLD ex US (NET) - DAILY					
Excess					
CHINA ONLY AGGREGATE					
MSCI China A					
TOTAL INTERNATIONAL EQUITY (4)(5)	**11.4%**	**22.4%**	**-14.5%**	**27.6%**	**2.6**
International Equity Benchmark	10.5%	21.5%	-14.2%	27.2%	4.5
Excess	0.8%	0.9%	-0.3%	0.4%	-1.8

(1) The current benchmak for Developed Markets, Benchmark DM, is the Standard (large + mid) MSCI World ex USA (net).

(2) The current benchmark for Emerging Markets, Benchmark EM, is the Standard (large + mid) MSCI Emerging Markets Free (net).

(3) The Transition Aggregate International Equity contains International Equity securities that are being transitioned to a different manager.

(4) The current International Equity Benchmark is the MSCI ACWI ex USA (net). Does not includes impact of currency overlay on the passive EAFE portfolio from 12/1/95-10/31/00. This impact is included in the return for the Combined Funds portion of the International Equity portfolio.

(5) See page 40 for details on a 4Q2020 performance revision.

Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

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	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Developed Markets										
ACADIAN	**$372,583,446**	**2.7%**	**5.7%**	**29.2%**	**52.0%**	**6.9%**	**12.5%**	**8.6%**	**7.2%**	**07/2005**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	5.5	07/2005
Excess			1.7	2.7	6.2	0.5	3.5	3.4	1.7	
COLUMBIA	**414,602,344**	**3.0**	**3.8**	**30.3**	**50.8**	**9.7**	**11.5**	**7.5**	**4.0**	**03/2000**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	4.0	03/2000
Excess			-0.3	3.8	4.9	3.3	2.6	2.3	0.1	
FIDELITY	**389,628,290**	**2.8**	**3.8**	**29.1**	**53.6**	**9.9**	**11.3**	**7.4**	**7.4**	**07/2005**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	5.5	07/2005
Excess			-0.2	2.6	7.7	3.5	2.3	2.2	1.9	
JP MORGAN	**338,740,301**	**2.4**	**1.5**	**25.7**	**47.9**	**8.0**	**11.2**	**6.1**	**6.0**	**07/2005**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	5.5	07/2005
Excess			-2.6	-0.8	2.1	1.7	2.3	0.9	0.5	
MARATHON	**393,398,598**	**2.8**	**6.0**	**33.2**	**52.4**	**7.5**	**8.9**	**7.3**	**8.2**	**11/1993**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	5.4	11/1993
Excess			2.0	6.7	6.5	1.2	0.0	2.1	2.9	
MCKINLEY	**280,359,090**	**2.0**	**1.8**	**25.8**	**53.5**	**8.0**	**9.8**	**6.4**	**5.7**	**07/2005**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	5.5	07/2005
Excess			-2.2	-0.7	7.7	1.7	0.8	1.2	0.2	
AQR CAPITAL MANAGEMENT	**392,901,254**	**2.8**	**6.5**	**30.4**	**52.8**	**4.4**	**7.7**	**5.4**	**5.7**	**07/2005**
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2	5.5	07/2005
Excess			2.4	4.0	7.0	-2.0	-1.2	0.2	0.2	

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active Developed Markets					
ACADIAN	**11.7%**	**19.1%**	**-13.5%**	**37.0%**	**8.1%**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	4.2	-3.4	0.6	12.8	5.4
COLUMBIA	**15.0**	**28.9**	**-14.9**	**32.7**	**-5.6**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	7.4	6.4	-0.8	8.5	-8.3
FIDELITY	**15.4**	**27.1**	**-14.6**	**25.9**	**1.2**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	7.8	4.6	-0.5	1.7	-1.5
JP MORGAN	**14.2**	**28.5**	**-17.3**	**28.3**	**4.0**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	6.6	6.0	-3.3	4.1	1.2
MARATHON	**7.6**	**23.5**	**-13.4**	**23.1**	**-1.1**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	0.1	1.0	0.7	-1.1	-3.8
MCKINLEY	**16.4**	**25.6**	**-15.9**	**28.5**	**-7.5**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	8.8	3.1	-1.9	4.3	-10.2
AQR CAPITAL MANAGEMENT	**6.5**	**20.8**	**-18.2**	**25.1**	**0.8**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	-1.1	-1.7	-4.1	0.9	-2.0

Minnesota State Board of Investment
Quarter Ending March 31, 2021
International Equity Managers

Total Developed Markets

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
ACTIVE DEVELOPED MARKETS AGGREGATE (1)	**$2,582,213,323**		**4.3%**	**29.3%**	**52.0%**	**7.9%**	**10.1%**	**6.7%**		
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2		
Excess			0.3	2.8	6.1	1.5	1.2	1.5		
SSgA DEVELOPED MARKETS PASSIVE	**$6,832,207,791**	**48.8%**	**4.1%**	**26.7%**	**46.5%**	**6.8%**	**9.3%**	**5.6%**	**6.5%**	**10/1992**
BENCHMARK DM			4.0%	26.5%	45.9%	6.3%	8.9%	5.2%	6.1%	10/1992
Excess			0.1%	0.3%	0.6%	0.4%	0.4%	0.4%	0.3%	
RECORD CURRENCY (2)	**$40,065,493**	**0.3%**	**0.9%**						**0.6%**	**10/2020**
DM PASSIVE EQUITY WITH CURRENCY MGMT	**$6,872,273,284**	**49.1%**	**5.0%**	**27.5%**	**47.4%**	**7.0%**	**9.3%**	**5.6%**		**10/1992**
BENCHMARK DM			4.0%	26.5%	45.9%	6.3%	8.9%	5.2%		10/1992
Excess			0.9%	1.1%	1.6%	0.7%	0.4%	0.4%		
DEVELOPED MARKETS TOTAL	**9,414,421,114**	**67.2**	**4.1**	**27.4**	**47.7**	**7.0**	**9.3**	**6.0**		
BENCHMARK DM			4.0	26.5	45.9	6.3	8.9	5.2		
Excess			0.1	0.9	1.9	0.7	0.4	0.8		

(1) Includes the historical returns of AQR and terminated managers previously classified as "Semi-Passive Developed Markets"
(2) Return for Record Currency is provided by the Manager

STATE STREET.

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Total Developed Markets					
ACTIVE DEVELOPED MARKETS AGGREGATE (1)	**12.2%**	**24.4%**	**-15.1%**	**26.8%**	**-0.3%**
BENCHMARK DM	7.6	22.5	-14.1	24.2	2.7
Excess	4.6	1.9	-1.0	2.6	-3.0
SSgA DEVELOPED MARKETS PASSIVE	**8.2%**	**23.0%**	**-13.9%**	**24.7%**	**3.2**
BENCHMARK DM	7.6%	22.5%	-14.1%	24.2%	2.7
Excess	0.6%	0.5%	0.2%	0.5%	0.4
DM PASSIVE EQUITY WITH CURRENCY MGMT	**8.0%**	**23.0%**	**-13.9%**	**23.8%**	**3.3**
BENCHMARK DM	7.6%	22.5%	-14.1%	24.2%	2.7
Excess	0.4%	0.5%	0.2%	-0.4%	0.5
DEVELOPED MARKETS TOTAL	**9.1%**	**23.3%**	**-14.2%**	**24.9%**	**1.3**
BENCHMARK DM	7.6%	22.5%	-14.1%	24.2%	2.7
Excess	1.5%	0.8%	-0.1%	0.7%	-1.5

(1) Includes the historical returns of AQR and terminated managers previously classified as "Semi-Passive Developed Markets"

Active Emerging Markets

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
MARTIN CURRIE	**507,685,684**	**3.6**	**2.3**	**40.5**	**66.6**	**10.6**			**15.8**	**04/2017**
BENCHMARK EM			2.3	34.1	58.4	6.5			10.8	04/2017
Excess			-0.0	6.3	8.2	4.2			5.0	
MACQUARIE	**469,644,584**	**3.4**	**3.2**	**35.9**	**70.6**	**10.8**			**13.9**	**04/2017**
BENCHMARK EM			2.3	34.1	58.4	6.5			10.8	04/2017
Excess			0.9	1.8	12.3	4.3			3.1	
MORGAN STANLEY	**554,325,299**	**4.0**	**1.8**	**33.6**	**59.1**	**5.3**	**10.7%**	**4.4%**	**9.8**	**01/2001**
BENCHMARK EM			2.3	34.1	58.4	6.5	12.1	3.7	9.6	01/2001
Excess			-0.5	-0.6	0.7	-1.2	-1.4	0.8	0.1	
NEUBERGER BERMAN	**438,622,758**	**3.1**	**2.7**	**30.0**	**52.4**	**4.8**			**10.1**	**04/2017**
BENCHMARK EM			2.3	34.1	58.4	6.5			10.8	04/2017
Excess			0.5	-4.2	-6.0	-1.6			-0.7	
PZENA	**379,020,805**	**2.7**	**12.0**	**50.7**	**76.1**	**6.7**			**9.0**	**04/2017**
BENCHMARK EM			2.3	34.1	58.4	6.5			10.8	04/2017
Excess			9.7	16.5	17.7	0.2			-1.8	
ROCK CREEK	**464,509,207**	**3.3**	**2.9**	**36.3**	**64.9**	**7.8**			**10.8**	**04/2017**
BENCHMARK EM			2.3	34.1	58.4	6.5			10.8	04/2017
Excess			0.6	2.2	6.5	1.3			0.0	

Active Emerging Markets

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
MARTIN CURRIE	**26.5**	**27.3**	**-16.6**		
BENCHMARK EM	18.3	18.4	-14.6		
Excess	8.2	8.8	-2.0		
MACQUARIE	**24.2**	**23.2**	**-13.3**		
BENCHMARK EM	18.3	18.4	-14.6		
Excess	5.9	4.7	1.3		
MORGAN STANLEY	**15.7**	**20.4**	**-16.7**	**37.9%**	**6.1%**
BENCHMARK EM	18.3	18.4	-14.6	37.3	11.2
Excess	-2.6	1.9	-2.2	0.6	-5.1
NEUBERGER BERMAN	**14.2**	**19.7**	**-17.1**		
BENCHMARK EM	18.3	18.4	-14.6		
Excess	-4.1	1.3	-2.6		
PZENA	**7.7**	**13.4**	**-10.8**		
BENCHMARK EM	18.3	18.4	-14.6		
Excess	-10.6	-5.1	3.8		
ROCK CREEK	**22.0**	**22.3**	**-17.6**		
BENCHMARK EM	18.3	18.4	-14.6		
Excess	3.7	3.9	-3.1		

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Emerging Markets										
ACTIVE EMERGING MARKETS AGGREGATE(1)	**$2,813,808,338**	**20.1%**	**3.7%**	**37.8%**	**64.5%**	**7.3%**	**11.7%**	**3.5%**		
BENCHMARK EM			2.3	34.1	58.4	6.5	12.1	3.7		
Excess			1.4	3.7	6.1	0.9	-0.4	-0.1		
SSGA EMERGING MARKETS PASSIVE	**1,139,871,385**	**8.1**	**2.4**	**33.6**	**58.0**	**6.4**	**12.0**		**6.6**	**01/2012**
BENCHMARK EM			2.3	34.1	58.4	6.5	12.1		6.5	01/2012
Excess			0.1	-0.5	-0.4	-0.0	-0.1		0.1	
EMERGING MARKETS TOTAL(1)	**3,953,679,723**	**28.2**	**3.3**	**36.6**	**62.5**	**7.1**	**12.0**	**3.7**		
BENCHMARK EM			2.3	34.1	58.4	6.5	12.1	3.7		
Excess			1.0	2.4	4.1	0.6	-0.1	-0.0		

(1) Earnest Partners EM transitioned its portfolio benchmark to the MSCI China A Index (Gross) during December 2020. Post publication of the 12-31-2020 Comprehensive Performance Report, an error was discovered in the performance reported in that period for Earnest Partners EM as it transitioned from the Emerging Markets Total to the China Only Aggregate. The 3-31-2021 returns reflect the following performance that should have been reported for the period ending 12-31-2020:
Earnest Partners EM 4Q20: 26.3, FYTD: 35.1, 1 Year: 9.6, 3 Year: 5.0, Since Inception: 9.7, Ending Market Value: $209,952,131
Active Emerging Markets 4Q20: 20.8, FYTD: 32.9, 1 Year: 17.6, 3 Year: 6.4, 5 Year: 11.7, 10 year: 3.2, Ending Market Value: $3,086,121,450
Emerging Markets Total 4Q20: 20.4, FYTD: 32.2, 1 Year: 17.9, 3 Year: 6.3, 5 Year: 12.2, 10 year: 3.4, Ending Market Value: $4,270,411,993
Total International Equity 4Q20: 17.0, 1 Year: 11.4, Ending Market Value: $14,085,885,523

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Total Emerging Markets					
ACTIVE EMERGING MARKETS AGGREGATE (1)	**17.6%**	**21.4%**	**-15.6%**	**37.2%**	**5.3%**
BENCHMARK EM	18.3	18.4	-14.6	37.3	11.2
Excess	-0.7	3.0	-1.0	-0.1	-5.9
SSGA EMERGING MARKETS PASSIVE	**18.3%**	**18.1%**	**-14.7%**	**37.4%**	**11.1**
BENCHMARK EM	18.3%	18.4%	-14.6%	37.3%	11.2
Excess	0.0%	-0.3%	-0.1%	0.1%	-0.1
EMERGING MARKETS TOTAL (1)	**17.9%**	**20.3%**	**-15.4%**	**37.7%**	**7.5**
BENCHMARK EM	18.3%	18.4%	-14.6%	37.3%	11.2
Excess	-0.4%	1.9%	-0.8%	0.4%	-3.7

(1) Earnest Partners EM transitioned its portfolio benchmark to the MSCI China A Index (Gross) during December 2020. Post publication of the 12-31-2020 Comprehensive Performance Report, an error was discovered in the performance reported in that period for Earnest Partners EM as it transitioned from the Emerging Markets Total to the China Only Aggregate. The 3-31-2021 returns reflect the following performance that should have been reported for the period ending 12-31-2020:
Earnest Partners EM 4Q20: 26.3, FYTD: 35.1, 1 Year: 9.6, 3 Year: 5.0, Since Inception: 9.7, Ending Market Value: $209,952,131
Active Emerging Markets 4Q20: 20.8, FYTD: 32.9, 1 Year: 17.6, 3 Year: 6.4, 5 Year: 11.7, 10 year: 3.2, Ending Market Value: $3,086,121,450
Emerging Markets Total 4Q20: 20.4, FYTD: 32.2, 1 Year: 17.9, 3 Year: 6.3, 5 Year: 12.2, 10 year: 3.4, Ending Market Value: $4,270,411,993
Total International Equity 4Q20: 17.0, 1 Year: 11.4, Ending Market Value: $14,085,885,523

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active ACWI ex-US										
EARNEST PARTNERS ACWI EX US	**$394,104,635**	**2.8%**	**3.9%**						**3.9%**	**1/2021**
MSCI AC WORLD ex US (NET) - DAILY			3.5						3.5	1/2021
Excess			0.4						0.4	
TOTAL ACWI EX-US AGGREGATE	**394,104,635**	**2.8**	**3.9**						**3.9**	**1/2021**
MSCI AC WORLD ex US (NET) - DAILY			3.5						3.5	1/2021
Excess			0.4						0.4	

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active ACWI ex-US					
EARNEST PARTNERS ACWI EX US					
MSCI AC WORLD ex US (NET) - DAILY					
Excess					
TOTAL ACWI EX-US AGGREGATE					
MSCI AC WORLD ex US (NET) - DAILY					
Excess					

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
China Only Managers										
EARNEST PARTNERS	**$196,516,065**	**1.4%**	**-6.4%**						**-6.4%**	**01/2021**
MSCI China A			-4.2						-4.2	01/2021
Excess			-2.2						-2.2	
CHINA ONLY AGGREGATE	**196,516,065**	**1.4%**	**-6.4%**							
MSCI China A			-4.2%							
Excess			-2.2%							

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	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
China Only Managers					
EARNEST PARTNERS					
MSCI China A					
Excess					
CHINA ONLY AGGREGATE					
MSCI China A					
Excess					

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Global Equity

March 31, 2021

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Global Equity Managers										
ARIEL INVESTMENTS	**$358,206,324**	**33.9%**	**4.0%**						**4.0%**	**01/2021**
MSCI AC WORLD NET USD DAILY			4.6						4.6	01/2021
Excess			-0.5						-0.5	
BAILLIE GIFFORD	**309,273,142**	**29.3**	**-2.1**						**-2.1**	**01/2021**
MSCI AC WORLD NET USD DAILY			4.6						4.6	01/2021
Excess			-6.7						-6.7	
MARTIN CURRIE INVESTMENTS - GLOBAL EQ	**389,692,243**	**36.9**	**-0.9**						**-0.9**	**01/2021**
MSCI AC WORLD NET USD DAILY			4.6						4.6	01/2021
Excess			-5.5						-5.5	
GLOBAL EQUITY	**1,057,171,709**	**100.0**	**0.3**						**0.3**	**01/2021**
MSCI AC WORLD NET USD DAILY			4.6						4.6	01/2021
Excess			-4.2						-4.2	

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Global Equity Managers					
ARIEL INVESTMENTS					
MSCI AC WORLD NET USD DAILY					
Excess					
BAILLIE GIFFORD					
MSCI AC WORLD NET USD DAILY					
Excess					
MARTIN CURRIE INVESTMENTS - GLOBAL EQ					
MSCI AC WORLD NET USD DAILY					
Excess					
GLOBAL EQUITY					
MSCI AC WORLD NET USD DAILY					
Excess					

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Core/Core Plus Bonds

March 31, 2021

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Bonds										
CORE (1)	**$1,970,311,290**	**42.9%**	**-2.9%**							
BBG BARC Agg (Dly)			-3.4							
Excess			0.4							
CORE PLUS (1)	**2,617,223,151**	**57.1**	**-3.3**							
BBG BARC Agg (Dly)			-3.4							
Excess			0.1							
TRANSITION AGGREGATE CORE BONDS (2)	19,080	0.0								
TOTAL CORE/CORE PLUS BONDS (3)	**4,587,553,521**	**100.0**	**-3.1**	**-0.0**	**5.4**	**5.7**	**4.1**	**4.2**	**7.4**	**07/1984**
Core Bonds Benchmark			-3.4	-2.1	0.7	4.7	3.1	3.4	7.0	07/1984
Excess			0.2	2.1	4.7	1.0	1.0	0.7	0.4	

(1) Prior to 12/1/2020 the Core and Core Plus managers were categorized as Active or Semi-Passive. For historical performance of each manager, see the following pages in this report. For information on the historical performance of the previous groupings refer to the 9/30/2020 Comprehensive Performance Report.

(2) The Transition Aggregate Core Bonds includes core bonds securities that are being transition to a different manager.

(3) The current Core Bonds Benchmark is the Bloomberg Barclays U.S. Aggregate calculated daily: BBG BARC Agg (Dly). For historical benchmark details please refer to the addendum of this report.

Note: All aggregates include the performance of terminated managers. Inception refers to the date of retention by the SBI.

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Bonds					
CORE (1)					
BBG BARC Agg (Dly)					
Excess					
CORE PLUS (1)					
BBG BARC Agg (Dly)					
Excess					
TRANSITION AGGREGATE CORE BONDS (2)					
TOTAL CORE/CORE PLUS BONDS (3)	**9.7%**	**9.7%**	**-0.0%**	**4.2%**	**3.6**
Core Bonds Benchmark	7.5%	8.7%	0.0%	3.5%	2.6
Excess	2.2%	1.0%	-0.1%	0.7%	0.9

(1) Prior to 12/1/2020 the Core and Core Plus managers were categorized as Active or Semi-Passive. For historical performance of each manager, see the following pages in this report. For information on the historical performance of the previous groupings refer to the 9/30/2020 Comprehensive Performance Report.

(2) The Transition Aggregate Core Bonds includes core bonds securities that are being transition to a different manager.

(3) The current Core Bonds Benchmark is the Bloomberg Barclays U.S. Aggregate calculated daily: BBG BARC Agg (Dly). For historical benchmark details please refer to the addendum of this report.

Note: All aggregates include the performance of terminated managers. Inception refers to the date of retention by the SBI.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Core										
DODGE & COX	**$1,044,308,968**	**22.8%**	**-2.6%**	**1.1%**	**6.7%**	**5.6%**	**4.5%**	**4.4%**	**6.0%**	**02/2000**
BBG BARC Agg (Dly)			-3.4	-2.1	0.7	4.7	3.1	3.4	5.0	02/2000
Excess			0.8	3.2	6.0	0.9	1.4	1.0	1.0	
BLACKROCK	**926,002,322**	**20.2**	**-3.3**	**-1.7**	**2.3**	**5.0**	**3.4**	**3.7**	**5.2**	**04/1996**
BBG BARC Agg (Dly)			-3.4	-2.1	0.7	4.7	3.1	3.4	5.1	04/1996
Excess			0.0	0.4	1.6	0.4	0.3	0.3	0.1	
CORE	**1,970,311,290**	**42.9**	**-2.9**							
BBG BARC Agg (Dly)			-3.4							
Excess			0.4							

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Active Core					
DODGE & COX	**9.4%**	**9.6%**	**-0.0%**	**4.2%**	**4.8%**
BBG BARC Agg (Dly)	7.5	8.7	0.0	3.5	2.6
Excess	1.8	0.9	-0.1	0.7	2.2
BLACKROCK	**8.3**	**9.3**	**-0.1**	**3.7**	**2.8**
BBG BARC Agg (Dly)	7.5	8.7	0.0	3.5	2.6
Excess	0.8	0.6	-0.2	0.1	0.1
CORE					
BBG BARC Agg (Dly)					
Excess					

Core Plus Bonds

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
GOLDMAN SACHS	**$780,389,716**	**17.0%**	**-3.9%**	**-1.7%**	**3.1%**	**5.2%**	**3.6%**	**3.9%**	**5.5%**	**07/1993**
BBG BARC Agg (Dly)			-3.4	-2.1	0.7	4.7	3.1	3.4	5.1	07/1993
Excess			-0.6	0.4	2.4	0.5	0.5	0.4	0.3	
NEUBERGER	**845,786,225**	**18.4**	**-2.7**	**-0.0**	**3.9**	**5.7**	**3.7**	**3.9**	**6.3**	**07/1988**
BBG BARC Agg (Dly)			-3.4	-2.1	0.7	4.7	3.1	3.4	6.1	07/1988
Excess			0.6	2.1	3.2	1.1	0.6	0.5	0.3	
WESTERN	**991,047,210**	**21.6**	**-3.2**	**1.2**	**8.7**	**6.4**	**5.0**	**4.8**	**8.2**	**07/1984**
BBG BARC Agg (Dly)			-3.4	-2.1	0.7	4.7	3.1	3.4	7.0	07/1984
Excess			0.1	3.3	8.0	1.7	1.9	1.4	1.2	
CORE PLUS	**2,617,223,151**	**57.1**	**-3.3**							
BBG BARC Agg (Dly)			-3.4							
Excess			0.1							

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Core Plus Bonds					
GOLDMAN SACHS	**9.0%**	**9.6%**	**-0.0%**	**3.9%**	**3.0%**
BBG BARC Agg (Dly)	7.5	8.7	0.0	3.5	2.6
Excess	1.5	0.9	-0.0	0.4	0.3
NEUBERGER	**9.9**	**9.0**	**-0.1**	**3.6**	**2.7**
BBG BARC Agg (Dly)	7.5	8.7	0.0	3.5	2.6
Excess	2.4	0.3	-0.1	0.0	0.1
WESTERN ASSET MANAGEMENT	**10.9**	**11.1**	**-0.2**	**5.6**	**4.9**
BBG BARC Agg (Dly)	7.5	8.7	0.0	3.5	2.6
Excess	3.4	2.4	-0.3	2.1	2.2
CORE PLUS					
BBG BARC Agg (Dly)					
Excess					

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Return Seeking Bonds
March 31, 2021

Return Seeking Bonds Managers	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
COLUMBIA	**$914,638,742**	**26.2%**	**-1.2%**						**-0.2%**	**12/2020**
Credit Plus Benchmark			-2.6						-2.5	12/2020
Excess			1.4						2.4	
PIMCO	**792,905,523**	**22.7**	**-2.2**						**-1.4**	**12/2020**
Credit Plus Benchmark			-2.6						-2.5	12/2020
Excess			0.4						1.1	
CREDIT PLUS	**1,707,544,265**	**48.9**	**-1.7**						**-0.7**	**12/2020**
Credit Plus Benchmark			-2.6						-2.5	12/2020
Excess			0.9						1.8	
BLACKROCK	**500,508,522**	**14.3**	**-0.7**						**-0.0**	**12/2020**
ICE BofA US 3-Month Treasury Bill			0.0						0.0	12/2020
Excess			-0.7						-0.0	
OPPORTUNISTIC FIXED INCOME	**500,508,522**	**14.3**	**-0.7**						**-0.0**	**12/2020**
ICE BofA US 3-Month Treasury Bill			0.0						0.0	12/2020
Excess			-0.7						-0.0	
ASHMORE	**236,818,662**	**6.8**	**-5.9**						**-5.9**	**01/2021**
JPM JEMB Sovereign-only 50-50			-5.6						-5.6	01/2021
Excess			-0.3						-0.3	
EMERGING MARKET DEBT	**236,818,662**	**6.8**	**-5.9**						**-5.9**	**01/2021**
JPM JEMB Sovereign-only 50-50			-5.6						-5.6	01/2021
Excess			-0.3						-0.3	

Return Seeking Bonds Managers	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
PAYDEN RYGEL	**$249,110,542**	**7.1%**	**-0.8%**						**-0.8%**	**01/2021**
Multi-Asset Credit Benchmark			-0.8						-0.8	01/2021
Excess			0.0						0.0	
PGIM	**246,722,083**	**7.1**	**-1.7**						**-1.7**	**01/2021**
Multi-Asset Credit Benchmark			-0.8						-0.8	012021
Excess			-1.0						-1.0	
MULTI-ASSET CREDIT	**495,832,626**	**14.2**	**-1.3**						**-1.3**	**01/2021**
Multi-Asset Credit Benchmark			-0.8						-0.8	01/2021
Excess			-0.5						-0.5	
KKR	**301,772,579**	**8.6**	**0.2**						**0.2**	**01/2021**
ICE BofA US Cash Pay HY Constrained			0.8						0.8	01/2021
Excess			-0.6						-0.6	
OAKTREE	**252,315,826**	**7.2**	**0.2**						**0.2**	**01/2021**
ICE BofA US Cash Pay HY Constrained			0.8						0.8	01/2021
Excess			-0.6						-0.6	
HIGH YIELD	**554,088,405**	**15.9**	**0.2**						**0.2**	**01/2021**
ICE BofA US Cash Pay HY Constrained			0.8						0.8	01/2021
Excess			-0.6						-0.6	

Return Seeking Bonds Managers	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
CREDIT PLUS	**$1,707,544,265**	**48.9%**	**-1.7%**						**-0.7%**	**12/2020**
Credit Plus Benchmark			-2.6						-2.5	12/2020
Excess			0.9						1.8	
OPPORTUNISTIC FIXED INCOME	**500,508,522**	**14.3**	**-0.7**						**-0.0**	**12/2020**
ICE BofA US 3-Month Treasury Bill			0.0						0.0	12/2020
Excess			-0.7						-0.0	
EMERGING MARKET DEBT	**236,818,662**	**6.8**	**-5.9**						**-5.9**	**01/2021**
JPM JEMB Sovereign-only 50-50			-5.6						-5.6	01/2021
Excess			-0.3						-0.3	
MULTI-ASSET CREDIT	**495,832,626**	**14.2**	**-1.3**						**-1.3**	**01/2021**
Multi-Asset Credit Benchmark			-0.8						-0.8	01/2021
Excess			-0.5						-0.5	
HIGH YIELD	**554,088,405**	**15.9**	**0.2**						**0.2**	**01/2021**
ICE BofA US Cash Pay HY Constrained			0.8						0.8	01/2021
Excess			-0.6						-0.6	
RETURN SEEKING FIXED INCOME (1)	**3,494,792,480**	**100.0**	**-1.5**						**-0.6**	**12/2020**
Return Seeking Benchmark			-1.7						-1.1	12/2020
Excess			0.2						0.5	

(1)The current Return Seeking Benchmark is a weighted composite each of the individual return seeking bonds manager's benchmarks.

STATE STREET.

Treasuries
March 31, 2021

Minnesota State Board of Investment
Quarter Ending March 31, 2021
Treasuries Managers

Treasuries Managers

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
BLACKROCK	**$2,361,520,883**	**31.6%**	**-8.7%**	**-10.1%**	**-9.9%**	**5.0%**			**4.8%**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-8.7	-10.2	-9.7	5.2			5.0	02/2018
Excess			0.0	0.1	-0.2	-0.1			-0.1	
GOLDMAN SACHS	**2,547,783,681**	**34.1**	**-8.5**	**-9.7**	**-9.4**	**5.2**			**5.0**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-8.7	-10.2	-9.7	5.2			5.0	02/2018
Excess			0.2	0.5	0.3	0.0			0.0	
NEUBERGER	**2,568,762,613**	**34.4**	**-8.2**	**-9.2**	**-8.9**	**5.3**			**5.1**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-8.7	-10.2	-9.7	5.2			5.0	02/2018
Excess			0.6	1.0	0.8	0.2			0.1	
TREASURIES TRANSITION ACCOUNT	0	0.0								
TOTAL TREASURIES	**7,478,067,178**	**100.0**	**-8.5**	**-9.7**	**-9.4**	**5.2**			**5.0%**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-8.7	-10.2	-9.7	5.2			5.0%	02/2018
Excess			0.3	0.6	0.3	0.1			0.0%	

STATE STREET.

	2020 Calendar Return	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return
Treasuries Managers					
BLACKROCK	**12.5%**	**10.4%**			
BBG BARC 5Y + Us Tsy Idx	12.8	10.4			
Excess	-0.3	-0.1			
GOLDMAN SACHS	**12.7**	**10.6**			
BBG BARC 5Y + Us Tsy Idx	12.8	10.4			
Excess	-0.1	0.1			
NEUBERGER	**12.8**	**10.4**			
BBG BARC 5Y + Us Tsy Idx	12.8	10.4			
Excess	-0.1	-0.0			
TOTAL TREASURIES	**12.7%**	**10.4%**			
BBG BARC 5Y + Us Tsy Idx	12.8%	10.4%			
Excess	-0.2%	0.0%			

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Laddered Bonds + Cash

March 31, 2021

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Laddered Bond and Cash Managers										
Neuberger Berman Ladder Bond	**$1,646,532,722**	**35.9%**	**0.0%**						**0.1%**	**11/2020**
ICE BofA US 3-Month Treasury Bill			0.0						0.0	11/2020
Excess			0.0						0.1	
Goldman Sachs Ladder Bond	**1,646,086,745**	**35.9**	**0.0**						**0.1**	**11/2020**
ICE BofA US 3-Month Treasury Bill			0.0						0.0	11/2020
Excess			0.0						0.0	
Treasury Ladder Aggregate	**3,292,619,468**	**71.9**	**0.0**						**0.1**	**11/2020**
ICE BofA US 3-Month Treasury Bill			0.0						0.0	11/2020
Excess			0.0						0.0	
COMBINED PLAN CASH ACCOUNT(1)	**1,256,793,834**	**27.4**	**0.0**							
iMoneyNet Money Fund Average-All Taxable			0.0							
Excess			0.0							
TEACHERS RETIREMENT CD REPO(1)	**32,325,512**	**0.7**	**0.0**							
iMoneyNet Money Fund Average-All Taxable			0.0							
Excess			0.0							
Laddered Bond + Cash	**4,581,738,813**	**100.0**	**0.0**							
ICE BofA US 3-Month Treasury Bill			0.0							
Excess			0.0							

(1) Prior to 10/1/2020 the returns for the cash accounts was not reported in this format.

Uninvested Private Markets

March 31, 2021

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Uninvested Private Markets Managers										
NISA PRIVATE MKT UNINV OVERLAY	**$2,330,673,386**	**29.3%**	**5.9%**						**5.9%**	**01/2021**
S&P 500 INDEX (DAILY)			6.2						6.2	01/2021
Excess			-0.3						-0.3	
BLACKROCK SP INDEX	**5,621,123,960**	**70.7**	**6.2**						**6.2**	**01/2021**
S&P 500 INDEX (DAILY)			6.2						6.2	01/2021
Excess			0.0						0.0	
UNINVESTED PRIVATE PMARKETS	**7,951,797,346**	**100.0**	**6.1**						**6.1**	**01/2021**
S&P 500 INDEX (DAILY)			6.2						6.2	01/2021
Excess			-0.1						-0.1	

STATE STREET.

Private Markets
March 31, 2021

Combined Funds Asset Class Performance Summary

Private Markets

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 year	30 year
Private Markets - Invested	8.7%	25.4%	14.1%	11.4%	13.1%	12.0%	12.0%	13.6%	12.6%
Private Markets - Uninvested (S&P 500)	6.1								
Private Equity	11.5%	34.9%	25.1%	17.9%	18.1%	15.4%	13.2%	15.6%	
Private Credit	3.7	9.7	2.1	8.3	11.3	12.0	11.6	12.2	
Resources	2.8	6.9	-14.0	-6.8	-0.5	1.8	11.4	12.7	
Real Estate	2.7	9.3	5.0	8.2	8.8	11.2	8.4	9.7	

Private Markets

The time-weighted rates of return for the Private Markets portfolio are shown here. Private Markets included Private Equity, Private Credit, Resources, and Real Estate. Some of the existing investments are relatively immature and returns may not be indicative of future results.

Private Equity Investments

The objectives of the Private Equity portfolio, which may include leveraged buyouts, growth equity, venture capital and special situations, are to achieve attractive returns and to provide overall portfolio diversification to the total plan.

Private Credit Investments

The objectives of the Private Credit portfolio, which may include mezzanine debt, direct lending, and other forms of non-investment grade fixed income instruments, are to achieve a high total return over a full market cycle and to provide some degree of downside protection and typically provide current income in the form of a coupon. In certain situations, investments in the Private Credit portfolio also provide an equity component of return in the form of warrants or re-organized equity.

Resource Investments

The objectives of the Resources portfolio, which may include energy, infrastructure, and other hard assets, are to provide protection against the risks associated with inflation and to provide overall portfolio diversification to the total plan.

Real Estate Investments

The objectives of the Real Estate portfolio, which may include core and non-core real estate investments, are to achieve attractive returns, preserve capital, provide protection against risks associated with inflation, and provide overall portfolio diversification to the total plan.

The SBI also monitors Private Markets performance using money-weighted return metrics such as Internal Rate of Return and Multiple of Invested Capital. For money-weighted return metrics please refer to the Combined Funds Performance Report.

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Private Equity	**17,084,768,476**	**11,924,103,883**	**10,883,975,252**	**6,270,559,430**	**8,593,478,576**	**1.63**	**13.25**	
Adams Street Partners, LLC	200,000,000	135,814,692	62,638,088	64,185,308	117,911,493	1.33	9.96	
Adams Street Global Secondary Fund 5 LP	100,000,000	77,114,692	48,900,493	22,885,308	50,382,482	1.29	6.30	2012
Adams Street Global Secondary Fund 6	100,000,000	58,700,000	13,737,595	41,300,000	67,529,011	1.38	38.19	2017
Advent International Group	355,000,000	281,185,339	237,831,058	80,574,023	283,443,354	1.85	17.99	
Advent International GPE IX	115,000,000	48,601,383	3,675,408	70,074,025	63,348,983	1.38	41.71	2019
Advent International GPE VI-A, L.P.	50,000,000	52,993,313	101,973,095	0	6,389,789	2.04	16.65	2008
Advent International GPE VII, L.P.	90,000,000	84,690,641	101,501,690	5,400,000	59,646,774	1.90	15.08	2012
Advent International GPE VIII-B	100,000,000	94,900,002	30,680,865	5,099,998	154,057,809	1.95	24.88	2016
Affinity Ventures	9,000,000	9,000,000	3,248,215	0	1,241,214	0.50	-12.34	
Affinity Ventures IV, L.P.	4,000,000	4,000,000	1,541,970	0	3,279	0.39	-40.37	2004
Affinity Ventures V, L.P.	5,000,000	5,000,000	1,706,245	0	1,237,936	0.59	-8.77	2008
Apax Partners	500,000,000	398,205,838	370,405,398	162,277,487	342,867,965	1.79	19.06	
Apax IX USD L.P.	150,000,000	149,445,866	48,084,795	16,028,951	225,038,615	1.83	28.68	2016
APAX VIII - USD	200,000,000	233,434,305	322,489,935	11,743,535	97,925,522	1.80	16.36	2013
Apax X USD L.P.	150,000,000	15,325,667	(169,333)	134,505,000	19,903,828	1.29	117.77	2019
Arsenal Capital Partners	75,000,000	52,537,813	2,474,447	24,823,725	52,370,524	1.04	4.22	
Arsenal Capital Partners V, L.P.	75,000,000	52,537,813	2,474,447	24,823,725	52,370,524	1.04	4.22	2019
Asia Alternatives	299,000,000	68,420,823	4,210,604	231,844,539	65,680,569	1.02	1.98	
Asia Alternatives Capital Partners V	99,000,000	66,103,650	4,210,604	34,161,712	63,363,396	1.02	1.99	2017
MN Asia Investors	200,000,000	2,317,173	0	197,682,827	2,317,173	1.00	0.00	2020
Banc Fund	276,801,387	274,474,841	209,219,835	2,326,545	194,498,197	1.47	9.58	
Banc Fund IX, L.P.	107,205,932	107,205,932	19,549,737	0	109,174,019	1.20	4.34	2014
Banc Fund VIII, L.P.	98,250,000	98,250,000	189,670,098	0	15,095,782	2.08	12.41	2008
Banc Fund X, L.P.	71,345,455	69,018,909	0	2,326,545	70,228,396	1.02	1.34	2018
BlackRock	250,000,000	186,632,097	2,660,745	67,985,426	227,367,692	1.23	20.19	
BlackRock Long Term Capital, SCSP	250,000,000	186,632,097	2,660,745	67,985,426	227,367,692	1.23	20.19	2019
Blackstone Group L.P.	840,000,000	522,938,112	587,658,001	394,042,539	261,859,537	1.62	15.70	
Blackstone Capital Partners IV, L.P.	70,000,000	84,459,884	200,025,998	1,832,302	1,500,166	2.39	37.02	2002
Blackstone Capital Partners V L.P.	140,000,000	152,334,321	242,056,247	7,027,560	1,660,256	1.60	7.91	2006
Blackstone Capital Partners VI, L.P.	100,000,000	106,255,338	116,304,239	11,175,309	61,478,964	1.67	12.20	2008
Blackstone Capital Partners VII	130,000,000	134,974,709	21,711,149	10,977,430	150,182,904	1.27	12.63	2015
Blackstone Capital Partners VIII LP	150,000,000	16,156,954	0	133,906,713	15,013,427	0.93	-7.08	2019
Blackstone Growth	250,000,000	28,756,906	7,560,367	229,123,224	32,023,820	1.38	49.80	2020
Blackstone Strategic Partners	815,500,000	584,902,053	659,870,112	273,096,208	210,402,787	1.49	10.70	
Strategic Partners III VC, L.P.	25,000,000	25,056,899	33,788,877	1,010,804	376,103	1.36	5.99	2004
Strategic Partners III-B, L.P.	100,000,000	79,581,948	118,286,611	12,351,861	394,388	1.49	6.35	2004
Strategic Partners IV VC, L.P.	40,500,000	42,125,703	60,782,583	2,297,212	2,799,229	1.51	9.04	2008
Strategic Partners IV-B	100,000,000	99,294,982	148,115,680	11,729,144	6,821,906	1.56	12.16	2008
Strategic Partners V, LP	100,000,000	86,904,989	126,519,245	21,354,151	13,544,166	1.61	18.53	2011

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Strategic Partners VI, L.P.	150,000,000	101,397,696	108,814,912	54,949,001	37,032,547	1.44	14.10	2014
Strategic Partners VII, L.P.	150,000,000	104,914,230	58,312,204	59,958,516	91,647,832	1.43	16.32	2016
Strategic Partners VIII	150,000,000	45,625,606	5,250,000	109,445,519	57,786,616	1.38	35.21	2018
Bridgepoint	173,225,288	69,134,010	13,311,036	104,091,278	64,427,088	1.12	11.94	
Bridgepoint Europe VI L.P.	173,225,288	69,134,010	13,311,036	104,091,278	64,427,088	1.12	11.94	2018
Brookfield Asset Management Inc.	350,000,000	202,941,774	156,329,332	178,834,002	202,350,596	1.77	44.40	
Brookfield Capital Partners Fund IV	100,000,000	99,282,747	144,955,123	21,118,820	95,050,338	2.42	50.25	2015
Brookfield Capital Partners V L.P.	250,000,000	103,659,027	11,374,209	157,715,182	107,300,258	1.14	13.64	2018
CVC Capital Partners	393,506,287	424,349,523	428,345,713	39,468,088	311,987,290	1.74	16.24	
CVC Capital Partners VI	259,511,417	270,536,478	135,903,629	37,789,479	306,058,149	1.63	15.44	2013
CVC European Equity Partners V, L.P.	133,994,870	153,813,045	292,442,084	1,678,608	5,929,142	1.94	16.76	2008
Cardinal Partners	10,000,000	10,000,000	39,196,082	0	30,625	3.92	10.61	
DSV Partners IV	10,000,000	10,000,000	39,196,082	0	30,625	3.92	10.61	1985
Carlyle Group	150,000,000	77,425,450	4,181,489	76,756,039	74,203,791	1.01	1.01	
Carlyle Partners VII, L.P.	150,000,000	77,425,450	4,181,489	76,756,039	74,203,791	1.01	1.01	2017
Chicago Growth Partners	110,000,000	106,497,626	193,069,552	3,302,374	1,076,451	1.82	12.48	
Chicago Growth Partners II, L.P.	60,000,000	58,347,626	123,371,040	1,652,374	571,224	2.12	19.55	2008
William Blair Capital Partners VII, L.P.	50,000,000	48,150,000	69,698,512	1,650,000	505,226	1.46	8.58	2001
Court Square	500,000,000	410,582,288	452,127,879	126,321,485	223,149,632	1.64	13.68	
Court Square Capital Partners II, L.P.	175,000,000	170,245,229	295,667,586	16,541,716	9,336,991	1.79	12.55	2006
Court Square Capital Partners III, L.P.	175,000,000	184,380,035	152,457,358	11,802,347	153,823,276	1.66	16.96	2012
Court Square Capital Partners IV, L.P.	150,000,000	55,957,024	4,002,935	97,977,422	59,989,365	1.14	16.94	2018
Crescendo	101,500,000	103,101,226	57,982,654	0	216,465	0.56	-4.62	
Crescendo Ventures IV	101,500,000	103,101,226	57,982,654	0	216,465	0.56	-4.62	2000
GTCR	210,000,000	209,767,876	373,244,188	15,509,513	211,166,634	2.79	28.14	
GTCR Fund X	100,000,000	104,934,096	202,619,633	6,751,396	7,614,400	2.00	21.19	2010
GTCR XI	110,000,000	104,833,780	170,624,555	8,758,117	203,552,235	3.57	41.06	2013
Goldman, Sachs & Co.	549,800,000	402,770,218	385,127,102	178,781,023	200,789,554	1.45	13.56	
GS Capital Partners V, L.P.	100,000,000	74,319,006	191,435,136	1,041,099	1,095,365	2.59	18.25	2005
GS Capital Partners VI, L.P.	100,000,000	110,258,192	134,939,054	2,551,356	9,474,919	1.31	7.13	2007
GS China-US Cooperation Fund	99,800,000	15,144,445	0	84,830,000	11,154,731	0.74	-16.06	2018
GS Vintage VII	100,000,000	79,914,100	28,412,623	48,618,662	77,531,507	1.33	13.96	2016
West Street Capital Partners VII, L.P.	150,000,000	123,134,475	30,340,289	41,739,906	101,533,032	1.07	4.25	2016
Goldner Hawn Johnson & Morrison	77,755,138	29,155,440	29,444,283	48,771,665	30,032,696	2.04	17.00	
GHJM TrailHead Fund	20,000,000	16,652,130	29,444,283	3,354,486	17,480,144	2.82	17.88	2012
Goldner Hawn Fund VII, L.P.	57,755,138	12,503,309	0	45,417,179	12,552,552	1.00	0.34	2018
Green Equity Investors	325,000,000	237,480,683	166,501,812	124,064,948	256,424,773	1.78	14.81	
Green Equity Investors VI, L.P.	200,000,000	220,617,366	166,501,812	15,928,265	240,119,109	1.84	14.87	2012
Green Equity Investors VIII	125,000,000	16,863,317	0	108,136,683	16,305,664	0.97	-4.87	2020
HarbourVest*	21,667,185	20,931,185	21,750,040	822,141	7,543,262	1.40	11.15	
Dover Street VII Cayman Fund L.P.	2,198,112	2,073,906	1,662,612	132,416	202,973	0.90	-4.66	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
HarbourVest Intl PE Partners V-Cayman US	3,528,653	3,345,452	4,146,340	188,048	383,425	1.35	13.83	2014
Harbourvest Intl PE Partners VI-Cayman	4,242,812	4,039,120	3,715,058	205,677	3,240,054	1.72	14.82	2014
HarbourVest Partners VIII Cayman Buyout	4,506,711	4,387,189	5,055,020	156,000	924,562	1.36	12.72	2014
HarbourVest Partners VIII-Cayman Venture	7,190,898	7,085,519	7,171,009	140,000	2,792,248	1.41	9.89	2014
Hellman & Friedman	400,000,000	343,473,648	448,669,105	57,371,715	155,830,171	1.76	14.69	
Hellman & Friedman Capital Partners VI, L.P.	175,000,000	171,037,755	315,233,005	5,084,864	3,136,850	1.86	12.91	2007
Hellman & Friedman Capital Partners VII, L.P.	50,000,000	49,868,708	133,073,278	2,232,906	22,911,433	3.13	24.70	2009
Hellman & Friedman Investors IX, L.P.	175,000,000	122,567,185	362,822	50,053,945	129,781,889	1.06	11.88	2018
IK Limited	510,251,838	361,969,676	338,969,443	156,412,060	237,757,221	1.59	14.42	
IK Fund IX	158,831,226	11,505,782	0	147,325,068	7,881,749	0.69	-80.73	2019
IK Fund VII	180,622,285	178,607,264	237,205,800	8,913,791	78,753,468	1.77	13.71	2013
IK Fund VIII	170,798,327	171,856,630	101,763,643	173,201	151,122,005	1.47	17.13	2016
Kohlberg, Kravis, Roberts & Co.	997,000,000	664,853,895	793,661,130	376,077,558	348,061,221	1.72	13.20	
KKR 2006 Fund L.P.	200,000,000	218,934,618	343,350,543	3,300,979	48,642,394	1.79	9.17	2006
KKR Americas Fund XII L.P.	150,000,000	96,685,976	10,570,503	61,950,228	134,005,370	1.50	21.70	2016
KKR Asian Fund III	100,000,000	73,811,569	13,144,687	33,532,546	92,124,535	1.43	25.46	2017
KKR Asian Fund IV	150,000,000	0	0	150,000,000	0	0.00		2020
KKR Core Investments Partnership	97,000,000	28,929,639	0	68,618,328	28,381,672	0.98	-1.89	2021
KKR Europe V	100,000,000	41,324,523	1,649,369	58,675,477	44,745,326	1.12	15.91	2018
KKR Millennium Fund	200,000,000	205,167,570	424,946,028	0	161,924	2.07	16.37	2002
Lexington Partners	1,245,000,000	704,524,647	541,994,645	592,727,308	454,833,972	1.41	12.12	
Lexington Capital Partners IX, L.P.	150,000,000	52,399,402	10,459,142	104,542,055	57,551,586	1.30	71.38	2018
Lexington Capital Partners VI-B, L.P.	100,000,000	98,374,022	140,974,427	1,634,703	5,181,016	1.49	7.90	2005
Lexington Capital Partners VII, L.P.	200,000,000	172,466,709	239,641,927	38,059,995	37,657,512	1.61	14.27	2009
Lexington Capital Partners VIII, L.P.	150,000,000	136,386,669	95,500,196	32,663,555	97,814,424	1.42	15.65	2014
Lexington Co-Investment Partners IV	200,000,000	197,734,406	46,184,888	17,990,439	211,742,285	1.30	14.34	2017
Lexington Co-Investment Partners V	300,000,000	0	0	300,000,000	0	0.00		2020
Lexington Co-Investment Partners V Overage	45,000,000	1,881,000	0	43,119,000	1,881,000	1.00	0.00	2021
Lexington Middle Market Investors IV	100,000,000	45,282,439	9,234,065	54,717,561	43,006,150	1.15	16.77	2016
Madison Dearborn Capital Partners LLC	200,000,000	106,745,512	20,769,344	107,821,905	123,698,669	1.35	13.47	
Madison Dearborn Capital Partners VII, L.P.	100,000,000	94,367,417	20,769,344	20,200,000	107,953,557	1.36	12.59	2015
Madison Dearborn Capital Partners VIII-A, L.P	100,000,000	12,378,095	0	87,621,905	15,745,111	1.27	27.52	2019
Neuberger Berman LLC	625,000,000	289,413,256	209,994,958	508,476,187	231,589,791	1.53	33.77	
Dyal Capital Partners III	175,000,000	191,137,715	159,319,479	106,482,937	136,000,723	1.55	29.18	2015
Dyal Capital Partners IV	250,000,000	87,275,541	50,633,381	212,993,250	84,589,067	1.55	64.00	2018
Dyal Capital Partners V	200,000,000	11,000,000	42,098	189,000,000	11,000,000	1.00	0.39	2020
Nordic Capital	507,327,908	336,738,713	203,500,754	247,351,711	338,454,670	1.61	18.12	
Nordic Capital Fund VIII	177,024,756	211,938,889	194,360,005	37,481,646	145,175,091	1.60	14.40	2013
Nordic Capital Fund X	158,665,420	0	0	158,665,420	0	0.00		2020
Nordic Capital IX Beta, L.P.	171,637,732	124,799,824	9,140,749	51,204,645	193,279,579	1.62	51.80	2017

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
North Sky Capital*	2,454,339	1,998,089	2,407,407	456,250	329,649	1.37	12.19	
North Sky Capital LBO Fund III, LP	1,070,259	720,259	942,598	350,000	120,777	1.48	14.01	2014
North Sky Capital Venture Fund III, LP	1,384,080	1,277,830	1,464,808	106,250	208,872	1.31	10.98	2014
Oak Hill Capital Management, Inc.	250,000,000	155,540,952	107,688,995	118,803,341	118,625,641	1.46	27.76	
Oak Hill Capital Partners IV Onshore LP	150,000,000	145,591,859	107,653,952	28,752,434	110,459,246	1.50	28.60	2016
Oak Hill Capital Partners V	100,000,000	9,949,093	35,043	90,050,907	8,166,395	0.82	-16.32	2018
Paine & Partners, LLC	225,000,000	111,847,415	35,885,510	114,776,878	94,669,989	1.17	7.45	
Paine Schwartz Food Chain Fund IV	75,000,000	64,036,939	35,334,371	12,036,215	50,080,804	1.33	9.00	2014
Paine Schwartz Food Chain Fund V, L.P.	150,000,000	47,810,476	551,139	102,740,663	44,589,184	0.94	-12.85	2018
Permal PE*	5,337,098	4,388,647	3,903,251	1,090,000	746,417	1.06	2.25	
Glouston Private Equity Opportunities IV	5,337,098	4,388,647	3,903,251	1,090,000	746,417	1.06	2.25	2014
Permira	461,933,147	367,020,443	321,466,053	134,862,346	498,567,412	2.23	25.37	
Permira V, L.P.	178,332,332	181,541,371	285,418,270	19,025,948	236,778,613	2.88	25.00	2013
Permira VI, L.P.	138,238,116	124,325,040	36,047,783	31,627,731	196,319,865	1.87	28.60	2016
Permira VII L.P.1	145,362,698	61,154,032	0	84,208,667	65,468,934	1.07	10.47	2019
Public Pension Capital Management	175,000,000	100,382,733	78,974,067	87,990,755	92,839,778	1.71	22.27	
Public Pension Capital, LLC	175,000,000	100,382,733	78,974,067	87,990,755	92,839,778	1.71	22.27	2014
Silver Lake Partners	435,000,000	419,271,610	482,262,507	35,293,547	361,164,911	2.01	15.87	
Silver Lake Partners II, L.P.	100,000,000	90,200,747	171,694,975	11,771,953	84,601	1.90	11.02	2004
Silver Lake Partners III, L.P.	100,000,000	93,713,939	188,115,154	9,422,180	29,302,638	2.32	18.71	2007
Silver Lake Partners IV	100,000,000	113,304,540	100,619,932	4,168,036	169,844,968	2.39	27.10	2012
Silver Lake Partners V, L.P.	135,000,000	122,052,384	21,832,446	9,931,378	161,932,703	1.51	28.74	2017
Split Rock	110,000,000	107,055,906	125,392,564	2,944,094	23,284,486	1.39	4.85	
Split Rock Partners II, LP	60,000,000	59,165,000	66,598,372	835,000	19,496,761	1.46	6.98	2008
Split Rock Partners LP	50,000,000	47,890,906	58,794,192	2,109,094	3,787,724	1.31	3.26	2005
Summit Partners	350,000,000	288,250,255	251,474,672	140,937,121	277,280,784	1.83	27.72	
Summit Partners Growth Equity Fund IX	100,000,000	115,093,065	39,330,864	24,237,799	158,238,942	1.72	32.22	2015
Summit Partners Growth Equity Fund VIII	100,000,000	116,727,192	212,143,808	23,129,320	53,049,555	2.27	26.51	2011
Summit Partners Growth Equity Fund X-A	150,000,000	56,429,998	0	93,570,002	65,992,287	1.17	39.02	2019
TPG Capital	250,000,000	125,820,847	54,258,623	133,901,100	122,562,065	1.41	14.82	
TPG Partners VII, L.P.	100,000,000	97,538,980	52,128,194	10,052,538	97,335,339	1.53	15.84	2015
TPG Partners VIII	150,000,000	28,281,867	2,130,429	123,848,562	25,226,725	0.97	-4.36	2018
Thoma Bravo LLC	425,000,000	279,873,466	204,101,716	210,221,262	287,833,661	1.76	24.42	
Thoma Bravo Fund XII, L.P.	75,000,000	81,653,101	19,798,296	13,216,430	116,114,917	1.66	17.80	2016
Thoma Bravo Fund XIII, L.P.	150,000,000	148,220,365	77,245,480	47,004,832	171,269,473	1.68	59.19	2018
Thoma Bravo Fund XIV	150,000,000	0	0	150,000,000	0	0.00		2020
Thoma Cressey Fund VII, L.P.	50,000,000	50,000,000	107,057,940	0	449,271	2.15	23.58	2000
Thomas H. Lee Partners	250,000,000	185,060,373	133,311,503	84,449,905	194,700,541	1.77	31.70	
Thomas H. Lee Equity Fund VII, LP.	100,000,000	99,043,447	122,222,073	11,118,710	89,500,634	2.14	30.59	2015
Thomas H. Lee Equity Fund VIII, L.P.	150,000,000	86,016,926	11,089,430	73,331,195	105,199,906	1.35	39.57	2018

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Thomas, McNerney & Partners	80,000,000	78,125,000	122,735,180	1,875,000	7,635,851	1.67	8.53	
Thomas, McNerney & Partners I, L.P.	30,000,000	30,000,000	15,087,143	0	3,234,752	0.61	-7.24	2002
Thomas, McNerney & Partners II, L.P.	50,000,000	48,125,000	107,648,037	1,875,000	4,401,098	2.33	16.58	2006
Vestar Capital Partners	380,000,000	278,857,319	351,018,794	110,201,981	95,123,225	1.60	11.23	
Vestar Capital Partners IV, L.P.	55,000,000	55,652,024	102,293,320	57,313	372,620	1.84	14.63	1999
Vestar Capital Partners V, L.P.	75,000,000	76,797,458	98,533,182	0	3,083,849	1.32	3.96	2005
Vestar Capital Partners VI, LP	100,000,000	106,516,978	150,071,483	35,527	46,378,590	1.84	24.13	2011
Vestar Capital Partners VII, L.P.	150,000,000	39,890,859	120,808	110,109,141	45,288,166	1.14	6.88	2017
Vista Equity Partners	200,000,000	69,302,944	0	131,909,959	67,210,181	0.97	-2.89	
Vista Equity Partners	200,000,000	69,302,944	0	131,909,959	67,210,181	0.97	-2.89	2020
Warburg Pincus	1,216,000,000	1,027,776,892	1,102,927,687	194,623,500	562,691,014	1.62	11.48	
Warburg Pincus China-Southeast Asia II	50,000,000	8,700,000	960,000	41,300,000	8,557,785	1.09	12.55	2019
Warburg Pincus China, L.P.	45,000,000	44,460,000	11,972,700	2,475,000	59,574,557	1.61	20.21	2016
Warburg Pincus Financial Sector	90,000,000	71,838,308	4,590,000	22,455,000	83,532,976	1.23	13.23	2017
Warburg Pincus Global Growth, L.P.	250,000,000	122,835,974	1,812,500	126,625,000	126,323,009	1.04	5.27	2018
Warburg Pincus Private Equity IX, L.P.	100,000,000	100,000,000	169,104,301	0	3,300,344	1.72	9.63	2005
Warburg Pincus Private Equity VIII, LP	100,000,000	100,368,657	229,106,755	0	0	2.28	14.74	2002
Warburg Pincus Private Equity X, LP	150,000,000	150,000,000	253,954,638	0	12,744,931	1.78	9.43	2007
Warburg Pincus Private Equity XI, LP	200,000,000	200,342,452	227,352,748	0	115,594,992	1.71	12.98	2012
Warburg Pincus Private Equity XII, LP	131,000,000	129,231,500	40,531,793	1,768,500	152,669,285	1.49	14.69	2015
Warburg, Pincus Equity Partners, L.P.	100,000,000	100,000,000	163,542,253	0	393,136	1.64	10.03	1998
Wellspring Capital Partners	125,000,000	73,886,750	0	51,113,250	82,301,416	1.11	8.85	
Wellspring Capital Partners VI, L.P.	125,000,000	73,886,750	0	51,113,250	82,301,416	1.11	8.85	2016
Welsh, Carson, Anderson & Stowe	500,000,000	301,611,678	264,495,760	198,388,322	250,093,274	1.71	16.68	
Welsh, Carson, Anderson & Stowe XI, L.P.	100,000,000	100,000,000	137,471,465	0	26,889,458	1.64	11.62	2008
Welsh, Carson, Anderson & Stowe XII, L.P.	150,000,000	143,501,728	127,024,295	6,498,272	161,484,773	2.01	27.04	2014
Welsh, Carson, Anderson & Stowe XIII, L.P.	250,000,000	58,109,950	0	191,890,050	61,719,043	1.06	8.76	2018
Whitehorse Capital	200,000,000	113,484,284	43,807,459	112,199,579	94,026,034	1.21	28.06	
Whitehorse Liquidity Partners III	100,000,000	77,838,323	35,117,365	39,543,617	56,949,898	1.18	18.90	2019
Whitehorse Liquidity Partners IV	100,000,000	35,645,961	8,690,094	72,655,962	37,076,137	1.28	31.55	2020
Wind Point Partners	100,000,000	25,125,131	0	74,879,472	25,235,178	1.00	0.58	
Wind Point Partners IX	100,000,000	25,125,131	0	74,879,472	25,235,178	1.00	0.58	2019
Windjammer Capital Investors	266,708,861	183,454,896	179,476,459	85,524,968	105,289,164	1.55	10.12	
Windjammer Mezzanine & Equity Fund II	66,708,861	55,215,684	84,876,800	1,013,936	63,278	1.54	8.94	2000
Windjammer Senior Equity Fund IV, L.P.	100,000,000	94,740,728	93,392,762	16,802,619	75,005,320	1.78	13.11	2012
Windjammer Senior Equity Fund V, L.P.	100,000,000	33,498,484	1,206,897	67,708,413	30,220,566	0.94	-4.82	2017
Private Credit	**3,080,672,584**	**2,085,457,179**	**1,789,523,960**	**1,214,071,357**	**910,431,733**	**1.29**	**9.57**	
Audax Group	300,000,000	175,234,721	156,460,803	137,609,127	59,359,312	1.23	9.40	
Audax Mezzanine Fund III, L.P.	100,000,000	100,391,948	117,877,230	1,246,175	13,221,050	1.31	9.43	2010
Audax Mezzanine Fund IV-A, L.P.	100,000,000	74,842,773	38,583,573	36,362,952	46,138,262	1.13	9.29	2015

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Audax Mezzanine Fund V	100,000,000	0	0	100,000,000	0	0.00		2020
BlackRock	97,500,000	69,802,405	6,057,160	27,697,595	70,658,043	1.10	6.01	
BlackRock Middle Market Senior Fund	97,500,000	69,802,405	6,057,160	27,697,595	70,658,043	1.10	6.01	2018
Brookfield Asset Management Inc.	200,000,000	0	0	200,000,000	0	0.00		
Brookfield Real Estate Finance Fund VI	200,000,000	0	0	200,000,000	0	0.00		2021
Energy Capital Partners	28,087,500	14,022,144	4,029,385	18,094,741	9,531,118	0.97	-5.65	
Energy Capital Credit Solutions II-A	28,087,500	14,022,144	4,029,385	18,094,741	9,531,118	0.97	-5.65	2018
Gold Hill	65,852,584	65,852,584	112,080,756	0	4,652,581	1.77	11.85	
Gold Hill 2008	25,852,584	25,852,584	46,819,154	0	4,507,170	1.99	14.66	2008
Gold Hill Venture Lending	40,000,000	40,000,000	65,261,602	0	145,411	1.64	10.68	2004
Goldman, Sachs & Co.	250,000,000	261,172,810	315,503,895	47,422,591	1,689,878	1.21	6.80	
GS Mezzanine Partners 2006 Institutional	100,000,000	113,454,150	134,861,849	9,858,563	806,039	1.20	5.00	2006
GS Mezzanine Partners V, L.P.	150,000,000	147,718,660	180,642,046	37,564,028	883,839	1.23	9.09	2007
HPS Investment Partners	100,000,000	52,125,221	8,571,542	55,041,967	49,379,026	1.11	17.65	
HPS Mezzanine Partners 2019, L.P.	100,000,000	52,125,221	8,571,542	55,041,967	49,379,026	1.11	17.65	2019
Kohlberg, Kravis, Roberts & Co.	274,000,000	242,500,133	130,787,954	76,172,483	148,209,240	1.15	8.92	
KKR Lending Partner II L.P.	75,000,000	86,658,994	79,747,153	8,802,924	12,114,553	1.06	3.06	2015
KKR Lending Partners III L.P.	199,000,000	155,841,139	51,040,801	67,369,559	136,094,687	1.20	14.50	2017
LBC Credit Partners	200,000,000	109,527,073	49,031,809	114,274,378	82,896,304	1.20	10.83	
LBC Credit Partners IV, L.P.	100,000,000	89,627,247	47,175,152	34,274,378	60,905,804	1.21	9.41	2016
LBC Credit Partners V, L.P.	100,000,000	19,899,826	1,856,657	80,000,000	21,990,500	1.20	60.37	2019
Marathon	100,000,000	42,570,563	858,534	58,451,444	49,180,236	1.18	12.81	
Marathon Secured Private Strategies Fund II	100,000,000	42,570,563	858,534	58,451,444	49,180,236	1.18	12.81	2019
Merit Capital Partners	320,232,500	226,693,050	243,160,305	93,472,650	114,138,208	1.58	11.02	
Merit Mezzanine Fund IV, L.P.	75,000,000	70,178,571	139,120,463	4,821,429	697,406	1.99	11.58	2004
Merit Mezzanine Fund V, LP	75,000,000	71,044,898	78,853,274	3,955,102	31,451,242	1.55	9.60	2009
Merit Mezzanine Fund VI	100,000,000	85,469,581	25,186,567	14,463,619	81,989,560	1.25	11.52	2016
Merit Mezzanine Fund VII	70,232,500	0	0	70,232,500	0	0.00		2020
Oaktree Capital Management, LLC	200,000,000	42,600,000	1,878,198	157,400,000	45,614,248	1.11	19.14	
Oaktree Real Estate Debt III	200,000,000	42,600,000	1,878,198	157,400,000	45,614,248	1.11	19.14	2020
Portfolio Advisors LLC	100,000,000	80,867,108	96,478,980	936,315	450,103	1.20	7.50	
IP III Mezzanine Partners, L.P.	100,000,000	80,867,108	96,478,980	936,315	450,103	1.20	7.50	2006
Prudential Global Investment Mgmt	550,000,000	440,054,516	439,652,859	152,439,521	169,868,051	1.39	10.20	
PGIM Capital Partners VI, L.P.	100,000,000	0	0	100,000,000	0	0.00		2020
Prudential Capital Partners II, L.P.	100,000,000	97,418,748	136,427,860	11,049,052	3,899,223	1.44	8.62	2005
Prudential Capital Partners III, L.P.	100,000,000	102,414,320	173,348,677	13,828,229	2,645,385	1.72	14.09	2009
Prudential Capital Partners IV	100,000,000	111,887,809	95,197,155	2,136,397	47,841,958	1.28	8.04	2012
Prudential Capital Partners V, L.P.	150,000,000	128,333,639	34,679,166	25,425,844	115,481,484	1.17	8.03	2016
Summit Partners	95,000,000	100,002,497	133,679,035	22,177,023	6,871,741	1.41	9.30	
Summit Subordinated Debt Fund III, L.P.	45,000,000	44,088,494	60,443,093	2,250,000	3,862,224	1.46	8.86	2004
Summit Subordinated Debt Fund IV, L.P.	50,000,000	55,914,003	73,235,942	19,927,023	3,009,517	1.36	10.01	2008

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
TCW	200,000,000	162,432,352	91,292,747	52,881,522	97,933,645	1.16	7.67	
TCW Direct Lending LLC	100,000,000	83,599,652	72,991,861	25,329,409	28,223,693	1.21	7.25	2014
TCW Direct Lending VII	100,000,000	78,832,700	18,300,886	27,552,113	69,709,951	1.12	8.81	2018
Real Assets	**4,147,571,518**	**3,692,020,455**	**2,161,251,895**	**717,311,658**	**1,759,461,334**	**1.06**	**1.80**	
BlackRock	198,500,000	106,990,776	23,819,605	98,472,368	88,642,959	1.05	2.45	
BlackRock Global Renewable Power Fund II	98,500,000	94,413,824	23,779,794	11,049,320	76,949,815	1.07	2.88	2017
BlackRock Global Renewable Power Infra III	100,000,000	12,576,952	39,811	87,423,048	11,693,144	0.93	-9.11	2019
EIG Global Energy Partners	450,000,000	461,771,019	334,676,001	82,090,869	144,032,515	1.04	1.01	
EIG Energy Fund XIV	100,000,000	113,459,470	95,309,310	2,761,129	4,680,265	0.88	-4.68	2007
EIG Energy Fund XV	150,000,000	159,823,964	139,398,552	22,871,323	27,406,255	1.04	1.10	2010
EIG Energy Fund XVI	200,000,000	188,487,585	99,968,139	56,458,417	111,945,996	1.12	3.61	2013
Encap Energy	400,000,000	419,856,645	311,888,508	15,180,316	126,111,590	1.04	1.79	
EnCap Energy Capital Fund VII, L.P.	100,000,000	105,388,244	135,600,209	0	2,845,008	1.31	14.19	2007
EnCap Energy Capital Fund VIII, L.P.	100,000,000	103,335,766	54,781,243	470,044	22,143,997	0.74	-8.25	2010
EnCap Energy Capital Fund X, L.P.	100,000,000	98,119,369	33,342,494	10,111,570	69,226,815	1.05	1.56	2015
Encap Energy Fund IX	100,000,000	113,013,265	88,164,562	4,598,702	31,895,769	1.06	2.37	2012
Energy & Minerals Group	680,000,000	660,007,351	360,415,063	58,212,792	438,127,013	1.21	5.38	
NGP Midstream & Resources, L.P.	100,000,000	103,565,615	179,560,149	17,857	4,744,870	1.78	13.30	2007
The Energy & Minerals Group Fund II, L.P.	100,000,000	106,674,084	104,295,500	170,365	89,492,448	1.82	12.56	2011
The Energy & Minerals Group Fund III, L.P.	200,000,000	201,327,783	22,410,545	1,284,543	95,069,897	0.58	-9.91	2014
The Energy & Minerals Group Fund IV, LP	150,000,000	154,847,719	52,874,472	18,530,797	141,986,234	1.26	7.65	2015
The Energy & Minerals Group Fund V	112,500,000	79,270,469	1,115,700	34,782,014	89,806,309	1.15	9.34	2019
The Energy & Minerals Group Fund V Accordion, LP	17,500,000	14,321,681	158,697	3,427,216	17,027,255	1.20	12.73	2019
Energy Capital Partners	450,000,000	373,688,853	272,296,730	162,854,807	219,325,401	1.32	9.33	
Energy Capital Partners II-A	100,000,000	85,722,480	112,434,332	29,749,110	5,987,278	1.38	9.14	2010
Energy Capital Partners III, L.P.	200,000,000	230,177,453	140,892,028	28,474,141	155,978,345	1.29	8.65	2013
Energy Capital Partners IV-A, LP	150,000,000	57,788,920	18,970,370	104,631,556	57,359,778	1.32	14.92	2017
Enervest Management Partners	100,000,000	98,041,120	47,874,936	10,052,578	46,893,136	0.97	-1.01	
EnerVest Energy Institutional Fund XIV-A, L.P.	100,000,000	98,041,120	47,874,936	10,052,578	46,893,136	0.97	-1.01	2015
First Reserve	500,000,000	531,264,896	253,256,899	14,747,144	132,810,934	0.73	-8.87	
First Reserve Fund XI, L.P.	150,000,000	150,292,121	98,378,656	0	150,375	0.66	-9.45	2006
First Reserve Fund XII, L.P.	150,000,000	165,617,044	83,516,783	0	10,502,047	0.57	-13.18	2008
First Reserve Fund XIII, L.P.	200,000,000	215,355,731	71,361,460	14,747,144	122,158,512	0.90	-5.09	2013
Kohlberg, Kravis, Roberts & Co.	149,850,000	74,674,108	5,280,832	83,219,287	68,919,881	0.99	-0.51	
KKR Global Infrastructure Investors III	149,850,000	74,674,108	5,280,832	83,219,287	68,919,881	0.99	-0.51	2018
Merit Energy Partners	519,721,518	375,497,783	116,244,407	103,746,596	268,928,524	1.03	0.54	
Merit Energy Partners F-II, L.P.	100,000,000	59,522,861	31,422,724	0	5,786,810	0.63	-7.53	2006
Merit Energy Partners H	100,000,000	100,000,000	29,668,582	0	45,065,426	0.75	-5.07	2011
Merit Energy Partners I, L.P.	169,721,518	169,721,518	53,039,059	0	160,436,504	1.26	6.15	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Merit Energy Partners K, L.P.	150,000,000	46,253,404	2,114,042	103,746,596	57,639,783	1.29	27.01	2019
NGP	599,500,000	555,874,899	413,373,915	75,234,901	203,392,377	1.11	4.19	
Natural Gas Partners IX, LP	150,000,000	173,921,032	245,366,339	605,481	4,288,156	1.44	12.07	2007
NGP Natural Resources X, L.P.	150,000,000	147,769,572	119,289,761	2,230,428	19,820,401	0.94	-1.85	2011
NGP Natural Resources XI, L.P.	150,000,000	149,883,995	48,462,120	7,539,767	99,185,096	0.99	-0.50	2014
NGP Natural Resources XII, L.P.	149,500,000	84,300,300	255,695	64,859,225	80,098,725	0.95	-2.31	2017
Sheridan	100,000,000	34,353,005	22,125,000	13,500,000	22,277,004	1.29	8.26	
Sheridan Production Partners III-B, L.P.	100,000,000	34,353,005	22,125,000	13,500,000	22,277,004	1.29	8.26	2014
Real Estate	**2,948,147,868**	**1,911,163,208**	**1,274,661,567**	**1,136,216,567**	**1,188,006,467**	**1.29**	**7.64**	
Angelo, Gordon & Co.	550,000,000	330,653,957	71,165,815	220,096,250	327,313,583	1.21	9.23	
AG Asia Realty Fund III, L.P.	50,000,000	47,587,261	42,875,000	6,196,250	23,038,610	1.39	13.97	2016
AG Asia Realty Fund IV, L.P.	100,000,000	40,610,956	0	57,500,000	45,537,560	1.12	9.41	2018
AG Europe Realty Fund II, L.P.	75,000,000	69,004,017	28,384	5,250,000	79,250,996	1.15	7.44	2018
AG Europe Realty Fund III	75,000,000	13,809,980	0	60,375,000	14,216,158	1.03	3.80	2020
AG Realty Fund IX	100,000,000	92,141,126	28,250,000	11,650,000	93,104,766	1.32	8.50	2014
AG Realty Fund X, L.P.	150,000,000	67,500,617	12,431	79,125,000	72,165,492	1.07	7.26	2018
Blackstone	824,500,000	654,678,470	700,458,614	277,654,041	325,252,571	1.57	12.29	
Blackstone Real Estate Partners Asia II	74,500,000	47,763,337	2,777,457	31,771,395	47,639,661	1.06	4.75	2017
Blackstone Real Estate Partners IX, L.P.	300,000,000	114,277,114	16,313,234	201,163,871	115,501,877	1.15	16.51	2018
Blackstone Real Estate Partners V	100,000,000	104,213,007	203,276,351	4,174,052	3,180,643	1.98	10.74	2006
Blackstone Real Estate Partners VI, L.P.	100,000,000	109,477,567	216,200,914	4,907,906	3,971,951	2.01	13.10	2007
Blackstone Real Estate Partners VII, LP	100,000,000	111,357,845	146,079,913	11,217,447	38,620,546	1.66	14.43	2011
Blackstone Real Estate VIII.TE.1 L.P.	150,000,000	167,589,600	115,810,745	24,419,370	116,337,893	1.39	13.23	2015
Blackstone Strategic Partners	75,000,000	77,535,615	65,089,715	1,019,101	1,970,373	0.86	-2.13	
Strategic Partners III RE, L.P.	25,000,000	25,987,864	15,252,523	9,006	97,393	0.59	-6.46	2005
Strategic Partners IV RE, L.P.	50,000,000	51,547,751	49,837,192	1,010,095	1,872,980	1.00	0.05	2008
Carlyle Group	150,000,000	64,827,430	18,054,472	103,315,341	53,156,837	1.10	8.08	
Carlyle Realty Partners VIII, L.P.	150,000,000	64,827,430	18,054,472	103,315,341	53,156,837	1.10	8.08	2017
Landmark Partners	149,500,000	71,519,488	28,140,174	83,806,773	52,014,010	1.12	8.81	
Landmark Real Estate Partners VIII, L.P.	149,500,000	71,519,488	28,140,174	83,806,773	52,014,010	1.12	8.81	2016
Lubert Adler	74,147,868	63,877,820	18,368,769	11,122,180	59,998,063	1.23	9.77	
Lubert-Adler Real Estate Fund VII-B, L.P.	74,147,868	63,877,820	18,368,769	11,122,180	59,998,063	1.23	9.77	2017
Oaktree Capital Management, LLC	200,000,000	19,000,000	19,000,000	200,000,000	6,263,527	1.33	153.36	
Oaktree Real Estate Opportunities Fund VIII	200,000,000	19,000,000	19,000,000	200,000,000	6,263,527	1.33	153.36	2020
Rockpoint	200,000,000	111,906,650	36,095,669	103,415,380	84,395,091	1.08	3.23	
Rockpoint Real Estate Fund V, L.P.	100,000,000	96,606,494	36,084,442	18,715,536	69,526,001	1.09	3.55	2014
Rockpoint Real Estate Fund VI, L.P.	100,000,000	15,300,156	11,227	84,699,844	14,869,089	0.97	-2.72	2019
Rockwood	200,000,000	123,406,616	22,734,600	78,257,780	109,206,731	1.07	3.56	
Rockwood Capital RE Partners X, L.P.	100,000,000	86,572,864	22,706,090	15,111,665	73,857,333	1.12	4.31	2015
Rockwood Capital RE Partners XI	100,000,000	36,833,751	28,511	63,146,116	35,349,398	0.96	-13.67	2019

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Silverpeak Real Estate Partners	225,000,000	143,757,163	105,887,112	7,529,720	8,677,265	0.80	-3.60	
Silverpeak Legacy Pension Partners II, L.P.	75,000,000	73,035,350	91,687,519	7,529,720	847,826	1.27	4.19	2005
Silverpeak Legacy Pension Partners III, L.P.	150,000,000	70,721,813	14,199,594	0	7,829,440	0.31	-11.96	2008
TA Associates Realty	300,000,000	250,000,000	189,666,626	50,000,000	159,758,415	1.40	11.38	
Realty Associates Fund X	100,000,000	100,000,000	150,369,810	0	10,536,089	1.61	12.61	2012
Realty Associates Fund XI	100,000,000	100,000,000	37,180,964	0	98,943,826	1.36	9.44	2015
Realty Associates Fund XII	100,000,000	50,000,000	2,115,852	50,000,000	50,278,500	1.05	8.61	2018
Distressed/Opportunistic	**3,639,714,067**	**2,583,270,508**	**2,270,677,779**	**1,135,726,832**	**1,286,817,881**	**1.38**	**9.56**	
Avenue Capital Partners	200,000,000	200,977,328	40,317,523	0	149,431,752	0.94	-1.48	
Avenue Energy Opportunities Fund II	100,000,000	100,000,000	417,420	0	90,654,900	0.91	-3.25	2017
Avenue Energy Opportunities Fund, L.P.	100,000,000	100,977,328	39,900,103	0	58,776,852	0.98	-0.47	2014
BlackRock	1,774,870	1,774,870	1,737,312	0	232,032	1.11	5.75	
BlackRock Tempus Fund	1,774,870	1,774,870	1,737,312	0	232,032	1.11	5.75	2015
Canyon Partners	125,000,000	71,250,000	8,750,000	62,500,000	71,150,396	1.12	15.73	
Canyon Distressed Opportunity Fund III	125,000,000	71,250,000	8,750,000	62,500,000	71,150,396	1.12	15.73	2020
CarVal Investors	900,000,000	720,203,333	861,737,458	180,000,000	228,642,640	1.51	10.68	
CarVal Credit Value Fund I	100,000,000	95,000,000	213,343,831	5,000,000	505,285	2.25	18.72	2010
CVI Credit Value Fund A II	150,000,000	142,500,000	199,242,174	7,500,000	1,678,065	1.41	8.12	2012
CVI Credit Value Fund A III	150,000,000	142,500,000	128,593,506	7,500,000	55,883,625	1.29	8.15	2015
CVI Credit Value Fund IV	150,000,000	135,203,333	60	15,000,000	155,285,235	1.15	7.15	2017
CVI Credit Value Fund V	150,000,000	15,000,000	0	135,000,000	15,000,000	1.00		2020
CVI Global Value Fund, L.P.	200,000,000	190,000,000	320,557,888	10,000,000	290,430	1.69	9.53	2007
Carlyle Group	100,000,000	65,659,958	28,156,618	62,444,726	35,787,704	0.97	-2.02	
Carlyle Strategic Partners IV, L.P.	100,000,000	65,659,958	28,156,618	62,444,726	35,787,704	0.97	-2.02	2016
MHR Institutional Partners	75,000,000	56,246,892	8,857,817	27,552,345	62,014,275	1.26	8.42	
MHR Institutional Partners IV LP	75,000,000	56,246,892	8,857,817	27,552,345	62,014,275	1.26	8.42	2014
Marathon	200,000,000	53,906,171	6,185,200	152,000,000	54,258,720	1.12	48.03	
Marathon Distressed Credit Fund	200,000,000	53,906,171	6,185,200	152,000,000	54,258,720	1.12	48.03	2020
Merced Capital	278,737,500	285,449,091	237,759,646	2,673,787	89,158,360	1.15	3.25	
Merced Partners III	100,000,000	103,878,468	131,176,445	0	4,050,238	1.30	5.56	2010
Merced Partners IV	125,000,000	124,968,390	101,222,539	0	39,137,249	1.12	2.64	2013
Merced Partners V	53,737,500	56,602,233	5,360,662	2,673,787	45,970,874	0.91	-2.83	2017
Oaktree Capital Management, LLC	650,000,000	260,113,680	46,905,111	419,489,598	269,367,545	1.22	9.92	
Oaktree Opportunities Fund X, L.P.	50,000,000	46,500,021	13,969,660	8,500,000	44,815,319	1.26	7.82	2015
Oaktree Opportunities Fund Xb, L.P.	100,000,000	60,000,000	0	40,000,000	67,026,300	1.12	9.19	2015
Oaktree Opportunities Fund XI	300,000,000	30,000,000	0	270,000,000	31,095,300	1.04	5.59	2020
Oaktree Special Situations Fund II, L.P.	100,000,000	26,691,187	12,600,000	85,748,304	25,411,230	1.42	70.98	2018
Oaktree Special Situations Fund, L.P.	100,000,000	96,922,472	20,335,451	15,241,294	101,019,396	1.25	8.36	2014
PIMCO BRAVO*	9,201,697	8,654,933	8,488,982	7,399,997	1,386,729	1.14	4.35	
PIMCO BRAVO Fund Onshore Feeder I	3,958,027	3,958,027	4,016,443	2,385,880	8,935	1.02	1.66	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
PIMCO Bravo Fund OnShore Feeder II	5,243,670	4,696,906	4,472,539	5,014,116	1,377,794	1.25	4.84	2014
TSSP	200,000,000	90,869,252	21,795,922	130,916,380	89,059,888	1.22	18.40	
TSSP Adjacent Opportunities GenPar, L.P	100,000,000	29,851,845	6,578,405	76,726,099	30,003,330	1.23	38.24	2018
TSSP Adjacent Opportunities Partners (B)	50,000,000	37,111,658	11,488,002	24,376,344	33,284,549	1.21	12.18	2018
TSSP Opportunities Partners IV (A), L.P.	50,000,000	23,905,749	3,729,515	29,813,937	25,772,010	1.23	21.48	2018
Varde Fund	600,000,000	525,000,000	633,688,381	75,000,000	209,583,626	1.61	10.26	
Varde Fund IX, L.P.	100,000,000	100,000,000	216,097,236	0	125,751	2.16	15.01	2008
Varde Fund X, LP	150,000,000	150,000,000	250,804,375	0	18,249,599	1.79	10.51	2010
Varde Fund XI, LP	200,000,000	200,000,000	166,766,732	0	102,994,251	1.35	5.24	2013
Varde Fund XIII, L.P.	150,000,000	75,000,000	20,038	75,000,000	88,214,025	1.18	15.28	2018
Wayzata Investment Partners	300,000,000	243,165,000	366,297,810	15,750,000	26,744,214	1.62	14.34	
Wayzata Opportunities Fund II, LLC	150,000,000	174,750,000	327,229,040	750,000	4,093,727	1.90	16.51	2007
Wayzata Opportunities Fund III	150,000,000	68,415,000	39,068,770	15,000,000	22,650,487	0.90	-2.71	2012
Total	**39,237,508,931**	**30,351,689,001**	**33,640,011,002**	**10,473,885,844**	**13,738,195,991**	**1.56**	**12.03**	
Difference*					49,633,286			
Private Markets Total with Difference					**13,787,829,277**			

Private Markets Portfolio Status	Managers	Funds
PRIVATE EQUITY	51	145
PRIVATE CREDIT	16	31
REAL ASSETS	11	32
REAL ESTATE	11	27
DISTRESSED / OPPORTUNISTIC	13	32
Total	**102**	**267**

Notes

None of the data presented herein has been reviewed or approved by either the general partner or investment manager. The performance and valuation data presented herein is not a guarantee or prediction of future results. Ultimately, the actual performance and value of any investment is not known until final liquidation. Because there is no industry-standardized method for valuation or reporting comparisons of performance and valuation data among different investments is difficult.

Data presented in this report is made public pursuant to Minn. Stat. Chs. 13 and 13D, and Minn. Stat. § 11A.24, subd. 6(c). Additional information on private markets investments may be classified as non-public and not subject to disclosure.

*Partnership interests transferred to the MSBI during 1Q2015. All data presented as of the transfer date.

** Difference is from an in-kind stock distribution liquidating account, cash transactions posted to next day and distributions received in foreign currency during the month.

Participant Directed Investment Program

March 31, 2021

Participant Directed Investment Program

The Participant Directed Investment Program (PDIP) provides investment vehicles for a variety of retirement or other tax-advantaged savings plans. The objective of the Plan is to be competitive in the marketplace by providing quality investment options with low fees to its participants. Investment goals among the PDIP's many participants are varied.

- The Supplemental Investment Fund (SIF) is an investment platform that provides participants with the option to invest in many of the same pools as the Combined Fund in addition to a Stable Value Fund and a Money Market Fund. The Volunteer Firefighter Account is an option in the SIF for local firefighter entities that join the Statewide Voluntary Firefighter Plan administered by PERA. The investment vehicles are structured much like a family of mutual funds where participating entities buy or sell units in each fund. Participants may allocate their investments among one or more funds that are appropriate for their needs and are within statutory requirements and rules established by the participating organizations.
- The Mutual Fund Line-up is an investment platform that offers participants three sets of investment options. The first is a set of actively and passively managed mutual funds, a Stable Value Fund and a Money Market Fund. The second is a set of target date funds called Minnesota Target Retirement Funds. The third is a self-directed brokerage account window which offers thousands of mutual funds. The SBI has no direct management responsibilities for funds within the self-directed brokerage account window. Participants may allocate their investments among one or more accounts that are appropriate for their needs within the statutory requirements and rules established by the participating organizations.
- The SBI is responsible for the investment options provided in the two State Sponsored Savings Plans established under provisions of the Internal Revenue Code 529, the Minnesota College Savings Plan and Minnesota Achieving a Better Life Experience Plan (ABLE). The Minnesota College Savings Plan is an educational savings plan designed to help families save for qualified nationwide college costs. The SBI is responsible for the investments and the Minnesota Office of Higher Education (OHE) is responsible for the overall administration of the Plan. The SBI and OHE have contracted jointly with TIAA-CREF Tuition Financing, Inc. to provide administrative, marketing, communication, recordkeeping and investment management services. The ABLE Plan is a savings plan designed to help individuals save for qualified disability expenses without losing eligibility for certain assistance programs. The plan is administered by the Department of Human Services (DHS). The SBI and DHS have jointly contracted with Ascensus to provide recordkeeping, administrative, and investment management services for the plan.

The investment returns shown in this report are calculated using a time-weighted rate of return formula. These returns are net of investment management fees and transaction costs. They do not, however, reflect administrative expenses that may be deducted by the retirement systems or other agencies to defray administrative costs.

Supplemental Investment Fund Summary

The Minnesota Supplemental Investment Fund (SIF) is a multi-purpose investment platform that offers a range of investment options to state and local public employees. This investment platform provides some or all of the investment options to the Public Employees Retirement Association (PERA) Defined Contribution Plan, local pension plans and the Statewide Volunteer Firefighter plan.

A wide diversity of investment goals exists among the Fund's participants. In order to meet those needs, the Fund has been structured much like a "family of mutual funds." Participants may allocate their investments among one or more accounts that are appropriate for their needs, within the statutory requirements and rules established by the participating organizations. Participation in the Fund is accomplished through the purchase or sale of shares in each account. All returns are net of investment management fees.

Investment Option Descriptions

- Balanced Fund - a balanced portfolio utilizing both common stocks and bonds
- U.S. Stock Actively Managed Fund - an actively managed, U.S. common stock portfolio.
- U.S. Stock Index Fund - a passively managed, common stock portfolio designed to broadly track the performance of the U.S. stock market.
- Broad International Stock Fund - a portfolio of non-U.S. stocks that incorporates both active and passive management.
- Bond Fund - an actively managed, bond portfolio.
- Money Market Fund - a portfolio utilizing short-term, liquid debt securities.
- Stable Value Fund - a portfolio of stable value instruments, including security backed contracts and insurance company and bank investment contracts.
- Volunteer Firefighter Account - a balanced portfolio only used by the Statewide Volunteer Firefighter Plan.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Option Since
BALANCED FUND	$108,616,268	2.9%	37.6%	12.9%	11.8%	10.0%	01/1980
U.S. ACTIVELY MANAGED FUND	89,984,870	6.0	70.2	18.9	18.3	14.4	07/1986
U.S. STOCK INDEX FUND	451,122,980	6.4	62.9	17.2	16.7	13.8	07/1986
BROAD INTERNATIONAL STOCK FUND	152,341,708	4.2	51.8	7.1	10.0	5.5	09/1994
BOND FUND	110,903,111	-3.1	5.4	5.7	4.1	4.2	07/1986
MONEY MARKET FUND	587,621,104	0.0	0.3	1.6	1.3	0.8	07/1986
STABLE VALUE FUND	1,706,992,829	0.5	2.4	2.5	2.4	2.4	11/1994
VOLUNTEER FIREFIGHTER ACCOUNT	140,051,897	1.5	29.9	10.2	9.6	7.8	01/2010

Note:
The Market Values for the Money Market Fund, the Stable Value Fund, and the Total Supplemental Investment Fund also include assets held through other plans.

Supplemental Investment Fund Performance

Balanced Fund

The primary investment objective of the Balanced Fund is to gain exposure to publicly traded U.S. equities, bond and cash in a diversified investment portfolio. The Fund seeks to maximize long-term real rates of return, while limiting short-run portfolio return volatility. The Balanced Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds act as a deflation hedge and provide portfolio diversification. The benchmark is a blend of 60% Russell 3000/35% Barclays Aggregate Bond Index/5% T-Bills Composite.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BALANCED FUND	**$108,616,268**	**2.9%**	**37.6%**	**12.9%**	**11.8%**	**10.0%**
SIF BALANCED FUND BENCHMARK		2.6	34.8	12.3	11.3	9.7
Excess		0.3	2.7	0.6	0.5	0.3

U.S. Actively Managed Fund

The U.S. Stock Actively Managed Fund's investment objective is to generate above-average returns from capital appreciation on common stocks. The U.S. Stock Actively Managed Fund is invested primarily in the common stocks of U.S. companies. The managers in the account also hold varying levels of cash.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
U.S. ACTIVELY MANAGED FUND	**89,984,870**	**6.0**	**70.2**	**18.9**	**18.3**	**14.4**
Russell 3000		6.3	62.5	17.1	16.6	13.8
Excess		-0.3	7.7	1.8	1.6	0.7

Supplemental Investment Fund Performance

U.S. Stock Index Fund

The investment objective of the U.S. Stock Index Fund is to generate returns that track those of the U.S. stock market as a whole. The Fund is designed to track the performance of the Russell 3000 Index, a broad-based equity market indicator. The Fund is invested 100% in common stock.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
U.S. STOCK INDEX FUND	**$451,122,980**	**6.4%**	**62.9%**	**17.2%**	**16.7%**	**13.8%**
Russell 3000		6.3	62.5	17.1	16.6	13.8
Excess		0.1	0.3	0.1	0.1	0.0

Broad International Stock Fund

The investment objective of the Broad International Stock Fund is to earn a high rate of return by investing in the stock of companies outside the U.S. Portions of the Fund are passively managed and semi-passively managed. These portions of the Fund are designed to track and modestly outperform, respectively, the return of developed markets included in the MSCI World ex USA Index. A portion of the Fund is "actively managed" by several international managers and emerging markets specialists who buy and sell stocks in an attempt to maximize market value. The International Equity Benchmark is currently the MSCI ACWI ex USA (net).

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BROAD INTERNATIONAL STOCK FUND	**152,341,708**	**4.2**	**51.8**	**7.1**	**10.0**	**5.5**
International Equity Benchmark		3.5	49.2	6.5	9.7	4.9
Excess		0.8	2.6	0.6	0.3	0.6

Supplemental Investment Fund Performance

Bond Fund

The investment objective of the Bond Fund is to exceed the return of the broad domestic bond market by investing in fixed income securities. The Bond Fund invests primarily in high-quality, government and corporate bonds that have intermediate to long-term maturities, usually 3 to 20 years. The Bond Fund benchmark is the Bloomberg Barclays U.S. Aggregate.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BOND FUND	**$110,903,111**	**-3.1%**	**5.4%**	**5.7%**	**4.1%**	**4.2%**
BBG BARC US Agg		-3.4	0.7	4.7	3.1	3.4
Excess		0.2	4.7	1.1	1.0	0.7

Money Market Fund

The investment objective of the Money Market Fund is to protect principal by investing in short-term, liquid U.S. Government securities. The Fund is invested entirely in high-quality, short-term U.S. Treasury and Agency securities. The average maturity of the portfolios is less than 90 days. Please note that the Market Value for the Money Market Fund reflects assets held through the Deferred Compensation Plan as well.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
MONEY MARKET FUND	**587,621,104**	**0.0**	**0.3**	**1.6**	**1.3**	**0.8**
ICE BofA US 3-Month Treasury Bill		0.0	0.1	1.5	1.2	0.6
Excess		0.0	0.2	0.1	0.1	0.1

Supplemental Investment Fund Performance

Stable Value Fund

The investment objectives of the Stable Value Fund are to protect investors from loss of their original investment and to provide competitive interest rates using somewhat longer-term investments than typically found in a money market fund. The Fund is invested in a well-diversified portfolio of high-quality fixed income securities with strong credit ratings. The Fund also invests in contracts issued by highly rated insurance companies and banks which are structured to provide principal protection for the Fund's diversified bond portfolios, regardless of daily market changes. The Stable Value Fund Benchmark is the 3-year Constant Maturity Treasury Bill +45 basis points. Please note that the Market Value for the Stable Value Fund reflects assets held through the Deferred Compensation Plan as well.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
STABLE VALUE FUND	**$1,706,992,829**	**0.5%**	**2.4%**	**2.5%**	**2.4%**	**2.4%**
Fixed Interest Blended Benchmark		0.2	0.7	1.9	1.9	1.5
Excess		0.3	1.7	0.6	0.5	0.8

Volunteer Firefighter Account

The Volunteer Firefighter Account is different than other SIF program options. It is available only to the local entities that participate in the Statewide Volunteer Firefighter Plan (administered by PERA) and have all of their assets invested in the Volunteer Firefighter Account. There are other volunteer firefighter plans that are not eligible to be consolidated that may invest their assets through other SIF program options. The investment objective of the Volunteer Firefighter Account is to maximize long-term returns while limiting short-term portfolio return volatility. The account is invested in a balanced portfolio of domestic equity, international equity, fixed income and cash. The benchmark for this account is 35% Russell 3000, 15% MSCI ACWI ex USA (net), 45% Bloomberg Barclays U.S. Aggregate, 5% 3 Month T-Bills.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
VOLUNTEER FIREFIGHTER ACCOUNT	**140,051,897**	**1.5**	**29.9**	**10.2**	**9.6**	**7.8**
SIF Volunteer Firefighter Account BM		1.2	26.9	9.5	8.9	7.4
Excess		0.3	2.9	0.7	0.7	0.4

Mutual Funds

The mutual fund investment line-up provides investment options to the Minnesota Deferred Compensation Plan (MNDCP), Unclassified Retirement Plan, Health Care Savings Plan, and the Hennepin Country Retirement Plan. The MNDCP is a tax-sheltered retirement savings plan that is supplemental to public employees primary retirement plan. (In most cases, the primary plan is a defined benefit plan administered by TRA, PERA, or MSRS.) Participants can choose from active and passively managed stock and bond funds, a Stable Value Fund, a Money Market Fund, a set of 10 target date retirement fund options, and a brokerage window where participants can choose from hundreds of mutual funds.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Option Since
VANGUARD TOTAL STOCK MARKET INSTITUTIONAL INDEX PLUS	$640,781,000	6.4%	63.0%				07/2019
VANGUARD INSTITUTIONAL INDEX PLUS	1,661,945,448	6.2	56.4	16.8%	16.3%	13.9%	07/1999
VANGUARD DIVIDEND GROWTH	851,946,494	4.3	41.2	15.7			10/2016
VANGUARD MID CAP INDEX	709,551,985	7.2	70.6	14.7	14.6	12.3	01/2004
T. ROWE PRICE SMALL-CAP STOCK	1,031,225,844	8.5	83.9	20.0	19.4	14.3	04/2000
FIDELITY DIVERSIFIED INTERNATIONAL	362,667,161	0.1	48.4	10.3	10.8	7.3	07/1999
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	357,668,302	4.0	52.8	6.6	10.0		07/2011
VANGUARD BALANCED INDEX	1,439,060,193	2.3	34.7	12.4	11.4	9.8	12/2003
DODGE & COX INCOME	328,089,038	-2.5	7.4	5.6	4.7	4.2	07/1999
VANGUARD TOTAL BOND MARKET INDEX	394,570,816	-3.5	0.7	4.7	3.1	3.4	12/2003
2025 FUND	224,168,452	1.8	26.8	8.5	8.5		07/2011
2030 FUND	174,441,209	1.9	33.7	10.2	10.3		07/2011
2035 FUND	138,560,171	1.9	38.4	11.2	11.3		07/2011
2040 FUND	109,771,917	2.3	42.5	11.7	12.0		07/2011
2045 FUND	98,322,091	2.8	46.4	12.1	12.5		07/2011
2050 FUND	76,964,058	3.2	50.3	12.4	13.0		07/2011
2055 FUND	50,295,519	3.5	52.4	12.7	13.2		07/2011
2060 FUND	41,126,326	3.5	52.4	12.7	13.2		07/2011
2065 FUND	2,360,532	3.5	58.0				04/2020
INCOME FUND	243,116,901	1.3	20.5	7.3	6.5		07/2011
TD Ameritrade SDB	89,597,494						
TD Ameritrade SDB Roth	2,278,754						

Mutual Funds

LARGE CAP EQUITY

Vanguard Total Stock Market Institutional Index Plus (passive)

A passive domestic stock portfolio of large and small companies that tracks the CRSP US Total Market Index.

Vanguard Index Institutional Plus (passive)

A passive domestic stock portfolio that tracks the S&P 500.

Vanguard Dividend Growth (active) (1)

A fund of large cap stocks which is expected to outperform the Nasdaq US Dividend Achievers Select Index, over time.

MID CAP EQUITY

Vanguard Mid Cap Index (passive) (2)

A fund that passively invests in companies with medium market capitalizations that tracks the CRSP US Mid-Cap Index.

SMALL CAP EQUITY

T Rowe Price Small Cap (active)

A fund that invests primarily in companies with small market capitalizations and is expected to outperform the Russell 2000 Index.

INTERNATIONAL EQUITY

Fidelity Diversified International (active)

A fund that invests primarily in stocks of companies located outside of the United States and is expected to outperform the MSCI index of Europe, Australasia and the Far East (EAFE), over time.

Vanguard Total International Stock Index (passive) (3)

A fund that seeks to track the investment performance of the FTSE Global All Cap ex US Index, an index designed to measure equity market performance in developed and emerging markets, excluding the United States.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Large Cap US Equity						
VANGUARD TOTAL STOCK MARKET INSTITUTIONAL INDEX PLUS	**$640,781,000**	**6.4%**	**63.0%**			**07/2019**
CRSP US Total Market Index		6.4	62.8			07/2019
Excess		0.0	0.2			
VANGUARD INSTITUTIONAL INDEX PLUS	**1,661,945,448**	**6.2**	**56.4**	**16.8%**	**16.3%**	**07/1999**
S&P 500		6.2	56.4	16.8	16.3	07/1999
Excess		0.0	0.0	-0.0	-0.0	
VANGUARD DIVIDEND GROWTH	**851,946,494**	**4.3**	**41.2**	**15.7**		**10/2016**
NASDAQ US Dividend Achievers Select		4.4	45.0	15.5		10/2016
Excess		-0.2	-3.8	0.2		
Mid Cap US Equity						
VANGUARD MID CAP INDEX	**709,551,985**	**7.2**	**70.6**	**14.7**	**14.6**	**01/2004**
CRSP US Mid Cap Index		7.2	70.7	14.7	14.6	01/2004
Excess		0.0	-0.0	0.0	-0.0	
Small Cap US Equity						
T. ROWE PRICE SMALL-CAP STOCK	**1,031,225,844**	**8.5**	**83.9**	**20.0**	**19.4**	**04/2000**
Russell 2000		12.7	94.8	14.8	16.4	04/2000
Excess		-4.2	-10.9	5.2	3.0	
International Equity						
FIDELITY DIVERSIFIED INTERNATIONAL	**362,667,161**	**0.1**	**48.4**	**10.3**	**10.8**	**07/1999**
MSCI EAFE FREE (NET)		3.5	44.6	6.0	8.8	07/1999
Excess		-3.4	3.8	4.2	1.9	
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	**357,668,302**	**4.0**	**52.8**	**6.6**	**10.0**	**07/2011**
FTSE Global All Cap ex US Index Net		3.8	51.7	6.5	9.8	07/2011
Excess		0.2	1.1	0.0	0.2	

STATE STREET.

Mutual Funds

BALANCED

Vanguard Balanced Index (passive) (4)

A fund that passively invests in a mix of domestic stocks and bonds. The fund is expected to track a weighted benchmark of 60% CRSP US Total Market Index/40% BB Barclays U.S. Aggregate.

FIXED INCOME

Dodge & Cox Income Fund (active)

A fund that invests primarily in investment grade securities in the U.S. bond market which is expected to outperform the BB Barclays U.S. Aggregate, over time.

Vanguard Total Bond Market Index (passive)

A fund that passively invests in a broad, market weighted bond index that is expected to track the BB Barclays U.S. Aggregate.

Money Market Fund (5)

A fund that invests in short-term debt instruments which is expected to outperform the return on 90-Day U.S. Treasury Bills.

STABLE VALUE

Stable Value Fund (5)

A portfolio composed of stable value instruments which are primarily investment contracts and security backed contracts. The fund is expected to outperform the return of the 3 year Constant Maturity Treasury +45 basis points, over time.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Balanced Funds						
VANGUARD BALANCED INDEX	**$1,439,060,193**	**2.3%**	**34.7%**	**12.4%**	**11.4%**	**12/2003**
Vanguard Balanced Fund Benchmark		2.4	35.0	12.5	11.4	12/2003
Excess		-0.0	-0.3	-0.1	-0.0	
Fixed Income						
DODGE & COX INCOME	**328,089,038**	**-2.5**	**7.4**	**5.6**	**4.7**	**07/1999**
BBG BARC Agg Bd		-3.4	0.7	4.7	3.1	07/1999
Excess		0.9	6.7	1.0	1.6	
VANGUARD TOTAL BOND MARKET INDEX	**394,570,816**	**-3.5**	**0.7**	**4.7**	**3.1**	**12/2003**
BBG BARC Agg Bd		-3.4	0.7	4.7	3.1	12/2003
Excess		-0.1	-0.0	0.0	-0.0	
MONEY MARKET FUND	**587,621,104**	**0.0**	**0.3**	**1.6**	**1.3**	**07/1986**
ICE BofA US 3-Month Treasury Bill		0.0	0.1	1.5	1.2	07/1986
Excess		0.0	0.2	0.1	0.1	
Stable Value						
STABLE VALUE FUND	**1,706,992,829**	**0.5**	**2.4**	**2.5**	**2.4**	**11/1994**
Fixed Interest Blended Benchmark		0.2	0.7	1.9	1.9	11/1994
Excess		0.3	1.7	0.6	0.5	

(1) Vanguard Dividend Growth replaced the Janus Twenty Fund in the third quarter of 2016.

(2) Prior to 02/01/2013 the benchmark was the MSCI US Mid-Cap 450 Index

(3) Prior to 06/01/2013 the benchmark was MSCI ACWI ex USA IMI.

(4) Prior to 01/01/2013 the benchmark was 60% MSCI US Broad Market Index and 40% Bloomberg Barclays U.S. Aggregate.

(5) Money Market and Stable Value are Supplemental Investment Fund options which are also offered to eligible plans that invest through other plans.

Mutual Funds

MN TARGET RETIREMENT ACCOUNTS

Target retirement funds offer a mix of investments that are adjusted over time to reduce risk and become more conservative as the target retirement date approaches. A participant only needs to make one investment decison by investing their assets in the fund that is closest to their anticipated retirement date.

Target Date Retirement Funds

SSgA

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
2025 FUND	**$224,168,452**	**1.8%**	**26.8%**	**8.5%**	**8.5%**	**07/2011**
2025 FUND BENCHMARK		1.8	26.6	8.4	8.5	07/2011
Excess		0.0	0.2	0.0	0.0	
2030 FUND	**174,441,209**	**1.9**	**33.7**	**10.2**	**10.3**	**07/2011**
2030 FUND BENCHMARK		1.9	33.5	10.2	10.3	07/2011
Excess		0.0	0.3	0.0	0.0	
2035 FUND	**138,560,171**	**1.9**	**38.4**	**11.2**	**11.3**	**07/2011**
2035 FUND BENCHMARK		1.9	38.1	11.2	11.3	07/2011
Excess		0.0	0.3	-0.0	-0.0	
2040 FUND	**109,771,917**	**2.3**	**42.5**	**11.7**	**12.0**	**07/2011**
2040 FUND BENCHMARK		2.3	42.2	11.7	12.0	07/2011
Excess		0.0	0.3	-0.0	0.0	
2045 FUND	**98,322,091**	**2.8**	**46.4**	**12.1**	**12.5**	**07/2011**
2045 FUND BENCHMARK		2.8	46.1	12.1	12.5	07/2011
Excess		0.0	0.3	-0.0	0.0	

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
2050 FUND	**$76,964,058**	**3.2%**	**50.3%**	**12.4%**	**13.0%**	**07/2011**
2050 FUND BENCHMARK		3.2	49.9	12.4	13.0	07/2011
Excess		0.0	0.4	-0.0	0.0	
2055 FUND	**50,295,519**	**3.5**	**52.4**	**12.7**	**13.2**	**07/2011**
2055 FUND BENCHMARK		3.5	52.0	12.7	13.2	07/2011
Excess		0.0	0.4	-0.0	-0.0	
2060 FUND	**41,126,326**	**3.5**	**52.4**	**12.7**	**13.2**	**07/2011**
2060 FUND BENCHMARK		3.5	52.0	12.7	13.2	07/2011
Excess		0.0	0.4	-0.1	-0.0	
2065 FUND	**2,360,532**	**3.5**	**58.0**			**04/2020**
2065 FUND BENCHMARK		3.5	52.0			04/2020
Excess		0.0	6.0			
INCOME FUND	**243,116,901**	**1.3**	**20.5**	**7.3**	**6.5**	**07/2011**
INCOME FUND BENCHMARK		1.3	20.3	7.3	6.5	07/2011
Excess		-0.0	0.1	0.0	0.0	

Note: Each SSgA Fund benchmark is the aggregate of the returns of the Fund's underlying index funds weighted by the Fund's asset allocation

MN College Savings Plan Options

The Minnesota College Savings Plan is an education savings plan designed to help families set aside funds for future college costs. The SBI is responsible for the investments and the Minnesota Office of Higher Education (OHE) is responsible for the overall administration of the Plan.

The SBI and OHE contract jointly with TIAA to provide administrative, marketing, communication, recordkeeping and investment management services. Please see the next page for the performance as reported by TIAA.

ENROLLMENT-BASED MANAGED ALLOCATIONS

The Enrollment Year Investment Option is a set of single fund options representing the date your future student needs their college savings. The asset allocation adjusts automatically to a more conservative investment objective and level of risk as the enrollement year approaches. The managed allocation changed from Age-Based to Enrollment-Based on October 28, 2019.

RISK BASED ALLOCATIONS

The Risk Based Allocation Option offers three separate allocation investment options - Aggressive, Moderate and Conservative, each of which has a fixed risk level that does not change as the Beneficiary ages.

ASSET CLASS BASED ALLOCATIONS

U.S. LARGE CAP EQUITY INDEX - A passive domestic stock portfolio that tracks the S&P 500.

INTERNATIONAL EQUITY INDEX - A fund that passively invests in a mix of developed and emerging market equities. The fund is expected to track a weighted benchmark of 80% MSCI ACWI World ex USA and 20% MSCI Emerging Markets Free Index.

U.S. AND INTERNATIONAL EQUITY INDEX - A fund that invests in a mix of equities, both U.S. and international, across all capitalization ranges and real estate-related securities. The fund is expected to track a weighted benchmark of 60% Russell 3000, 24% International, 6% Emerging Markets, and 10% Real Estate Securities Fund.

PRINCIPAL PLUS INTEREST OPTION - A passive fund where contributions are invested in a Funding Agreement issued by TIAA-CREF Life. The funding agreement provides for a return of principal plus a guaranteed rate of interest which is made by the insurance company to the policyholder, not the account owners. The account is expected to outperform the return of the 3-month T-Bill.

EQUITY AND INTEREST ACCUMULATION - A fund that passively invests half of the portfolio in U.S. equities across all capitalization ranges and the other half in the same Funding Agreement issued by TIAA-CREF Life as described above. The fund is expected to track a weighted benchmark of 50% Russell 3000 and 50% 3-month T-Bill.

100% FIXED INCOME - A fund that passively invests in fixed income holdings that tracks the Bloomberg Barclays U.S. Aggregate and two active funds that invest in inflation-linked bonds and high yield securities. The fund is expected to track a weighted benchmark of 70% BB Barclays Aggregate, 20% inflation-linked bond, and 10% high yield.

MONEY MARKET - An active fund that invests in high-quality, short-term money market instruments of both domestic and foreign issuers that tracks the iMoneyNet Average All Taxable benchmark.

MINNESOTA 529
COLLEGE SAVINGS PLAN

MINNESOTA COLLEGE SAVINGS PLAN
Performance Statistics for the Period Ending: March 31, 2021

Total = $1,759 Million

Fund Name	Ending Market	3 Months	1 Year	Annualized				Inception Date
				3 Years	5 Years	10 Years	Since Inception	
2036/2037 Enrollment Option	$36,415,302	3.93%	42.59%				16.33%	10/28/2019
2036-2037 Custom Benchmark		3.78%	42.64%				15.60%	
2034/2035 Enrollment Option	$36,592,567	3.71%	40.85%				15.61%	10/28/2019
2034-2035 Custom Benchmark		3.51%	40.94%				14.95%	
2032/2033 Enrollment Option	$43,184,885	3.29%	38.66%				15.08%	10/28/2019
2032-2033 Custom Benchmark		3.21%	38.77%				14.44%	
2030/2031 Enrollment Option	$54,825,101	2.81%	35.81%				13.97%	10/28/2019
2030-2031 Custom Benchmark		2.72%	35.74%				13.32%	
2028/2029 Enrollment Option	$72,080,512	2.16%	30.97%				12.25%	10/28/2019
2028-2029 Custom Benchmark		2.04%	30.86%				11.52%	
2026/2027 Enrollment Option	$102,972,193	1.49%	25.49%				10.71%	10/28/2019
2026-2027 Custom Benchmark		1.36%	25.33%				10.03%	
2024/2025 Enrollment Option	$146,325,003	0.89%	20.53%				9.11%	10/28/2019
2024-2025 Custom Benchmark		0.79%	20.15%				8.34%	
2022/2023 Enrollment Option	$177,569,710	0.55%	14.97%				6.74%	10/28/2019
2022-2023 Custom Benchmark		0.39%	14.29%				5.90%	
2020/2021 Enrollment Option	$188,191,855	0.37%	10.53%				5.59%	10/28/2019
2020-2021 Custom Benchmark		0.19%	9.73%				4.81%	
In School Option	$169,892,327	0.28%	9.18%				5.65%	10/28/2019
In School Custom Benchmark		0.15%	8.43%				4.49%	

MINNESOTA COLLEGE SAVINGS PLAN
Performance Statistics for the Period Ending: March 31, 2021

Fund Name	Ending Market	3 Months	1 Year	Annualized 3 Years	Annualized 5 Years	Annualized 10 Years	Annualized Since Inception	Inception Date
U.S. and International Equity Option	$312,010,861	5.71%	55.06%	13.14%	13.52%	10.81%	7.93%	10/ 1/2001
BB: U.S. and International Equity Option		5.83%	55.21%	12.96%	13.36%	10.87%	8.66%	
Moderate Allocation Option	$90,387,493	2.51%	32.39%	10.12%	9.68%	7.85%	6.25%	8/ 2/2007
BB: Moderate Allocation Option		2.58%	32.76%	10.06%	9.60%	8.11%	6.79%	
100% Fixed-Income Option	$21,972,523	-2.39%	3.28%	4.57%	3.21%	3.01%	3.67%	8/16/2007
BB: 100% Fixed-Income Option		-2.21%	4.08%	4.90%	3.56%	3.53%	4.29%	
International Equity Index Option	$7,988,967	3.54%	47.89%	5.86%	9.46%		6.04%	6/18/2013
BB: International Equity Index Option		3.27%	47.45%	6.20%	9.56%		6.25%	
Money Market Option	$14,951,601	0.00%	0.09%	1.24%	0.94%	0.46%	0.54%	11/ 1/2007
BB: Money Market Option		0.00%	0.03%	1.08%	0.80%	0.41%	0.48%	
Principal Plus Interest Option	$132,387,497	0.38%	1.72%	1.86%	1.72%	1.62%	2.44%	10/10/2001
Citigroup 3-Month U.S. Treasury Bill		0.02%	0.21%	1.45%	1.15%	0.60%	1.29%	
Aggressive Allocation Option	$56,054,364	4.13%	43.02%	11.52%	11.63%		9.19%	8/12/2014
BB: Aggressive Allocation Option		4.20%	43.63%	11.57%	11.51%		9.08%	
Conservative Allocation Option	$15,593,552	0.66%	16.38%	6.56%	6.05%		4.88%	8/18/2014
BB: Conservative Allocation Option		0.73%	16.65%	6.72%	6.03%		4.93%	
Equity and Interest Accumulation Option	$6,426,852	3.41%	28.79%	9.48%	9.08%		7.42%	8/18/2014
BB: Equity and Interest Accumulation Option		3.16%	28.35%	9.53%	8.97%		7.36%	
U.S. Large Cap Equity Option	$71,242,338	6.14%	56.06%	16.60%	16.08%		13.50%	8/12/2014
BB: U.S. Large Cap Equity Option		6.17%	56.35%	16.78%	16.29%		13.60%	
Matching Grant	$2,053,557	0.38%	1.72%	1.86%	1.72%	1.62%	2.44%	3/22/2002
Citigroup 3-Month U.S. Treasury Bill		0.02%	0.21%	1.45%	1.15%	0.60%	1.29%	

MINNESOTA ABLE plan
A member of The National ABLE Alliance

Performance as of
03/31/21

Total Market Value: $ **19,450,625**

Fund Name		Market Value	% of Plan	1 Month	3 Months	YTD	1 Year	3 Year	5 Year	10 Year	Inception	Inception Date
Aggressive Option	$	1,688,243	8.68%	2.04	5.56	5.56	55.21	12.37			12.42	12/15/16
ABLE Aggressive Custom Benchmark				1.97	5.45	5.45	56.59	12.96			13.04	
Variance				**0.07**	**0.11**	**0.11**	**(1.38)**	**(0.59)**			**(0.62)**	
Moderately Aggressive Option	$	1,864,473	9.59%	1.62	4.40	4.40	45.04	11.14			11.00	12/15/16
ABLE Moderately Aggressive Custom Benchmark				1.61	4.37	4.37	46.68	11.85			11.67	
Variance				**0.01**	**0.03**	**0.03**	**(1.64)**	**(0.71)**			**(0.67)**	
Growth Option	$	2,561,172	13.17%	1.23	3.29	3.29	35.54	9.83			9.49	12/15/16
ABLE Growth Custom Benchmark				1.25	3.29	3.29	37.21	10.58			10.20	
Variance				**(0.02)**	**(0.00)**	**(0.00)**	**(1.67)**	**(0.75)**			**(0.71)**	
Moderate Option	$	2,181,354	11.21%	0.87	2.20	2.20	26.80	8.43			7.99	12/15/16
ABLE Moderate Custom Benchmark				0.88	2.22	2.22	28.17	9.17			8.64	
Variance				**(0.01)**	**(0.02)**	**(0.02)**	**(1.37)**	**(0.74)**			**(0.65)**	
Moderately Conservative Option	$	2,304,133	11.85%	0.55	1.43	1.43	17.88	6.33			5.90	12/15/16
ABLE Moderately Conservative Custom Benchmark				0.57	1.40	1.40	18.61	6.93			6.43	
Variance				**(0.02)**	**0.03**	**0.03**	**(0.73)**	**(0.60)**			**(0.53)**	
Conservative Option	$	3,395,123	17.46%	0.18	0.35	0.35	6.45	3.38			3.06	12/15/16
ABLE Conservative Custom Benchmark				0.15	0.32	0.32	6.57	3.71			3.34	
Variance				**0.03**	**0.03**	**0.03**	**(0.12)**	**(0.33)**			**(0.28)**	
Checking Option	$	5,456,127	28.05%									03/30/17

MINNESOTA ACHIEVE A BETTER LIFE EXPERIENCE

The Minnesota Achieve a Better Life Experience Plan (ABLE) is a savings plan designed to help individuals save for qualified disability expenses without losing eligibility for certain assistance programs. The plan is administered by the Department of Human Services (DHS).

The SBI and DHS have jointly contracted with Ascensus to provide recordkeeping, administrative, and investment management services for the plan.

RISK BASED ALLOCATIONS

The plan offers seven different allocation investment options: Aggressive, Moderately Aggressive, Growth, Moderate, Moderately Conservative, Conservative, and Checking. Each allocation is based on a fixed risk level.

ascensus™ | college savings

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Non-Retirement

March 31, 2021

Non-Retirement Funds

The SBI manages funds for trusts and programs created by the Minnesota State Constitution and Legislature.

- The Permanent School Fund is a trust established for the benefit of Minnesota public schools.
- The Environmental Trust Fund is a trust established for the protection and enhancement of Minnesota's environment. It is funded with a portion of the proceeds from the state's lottery.
- The Minnesota Workers Compensation Assigned Risk Plan provides worker compensation insurance for companies unable to obtain coverage through private carriers.
- The Closed Landfill Investment Fund is a trust created by the Legislature to invest money to pay for the long-term costs of maintaining the integrity of landfills in Minnesota once they are closed.
- Other Post-Employment Benefits Accounts (OPEB) are the assets set aside by local units of government for the payment of retiree benefits trusteed by the Public Employees Retirement Association.
- Miscellanous Trust Accounts are other small funds managed by the SBI for a variety of purposes.

All equity, fixed income, and cash assets for these accounts are managed externally by investment management firms retained by the SBI.

Non-Retirement

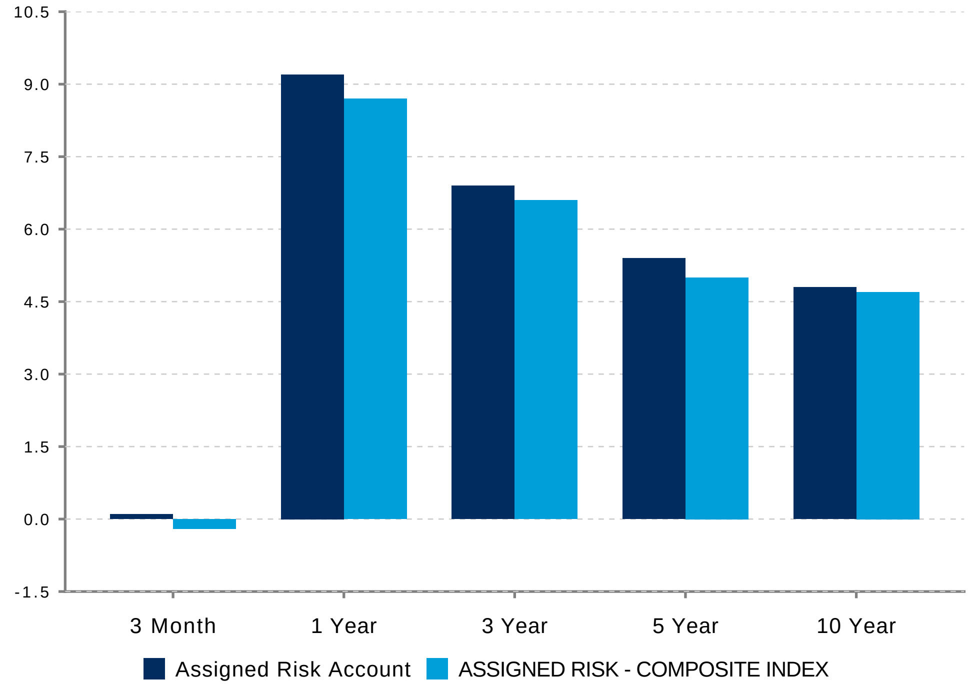
Assigned Risk Plan

The Assigned Risk plan has two investment objectives: to minimize the mismatch between assets and liabilities and to provide sufficient liquidity for the payment of ongoing claims and operating expenses.

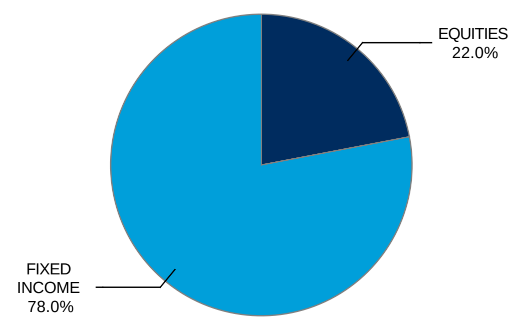
The Assigned Risk Plan is invested in a portfolio of common stocks and bonds

The equity segment is passively managed to track the performance of the S&P 500.

The fixed income benchmark is the Bloomberg Barclays Intermediate Government Index. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 80% equities and 20% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Assigned Risk Account	$298,788,311	0.1%	9.2%	6.9%	5.4%	4.8%
EQUITIES	65,678,270	6.2	56.3	16.8	16.6	13.2
FIXED INCOME	233,110,042	-1.5	-0.7	3.9	2.2	2.3
ASSIGNED RISK - COMPOSITE INDEX		-0.2	8.7	6.6	5.0	4.7
Excess		0.2	0.5	0.4	0.4	0.1
S&P 500		6.2	56.4	16.8	16.3	13.9
BBG BARC US Gov: Int		-1.7	-1.2	3.8	2.1	2.3



Note: Since 12/1/2017 the Assigned Risk equity segment has been managed by Mellon. From 1/17/2017-11/30/2017 it was managed internally by SBI staff. Prior to 1/17/2017 the equity segment was managed by SSgA (formerly GE Investment Mgmt.). RBC manages the fixed income segment of the Fund.

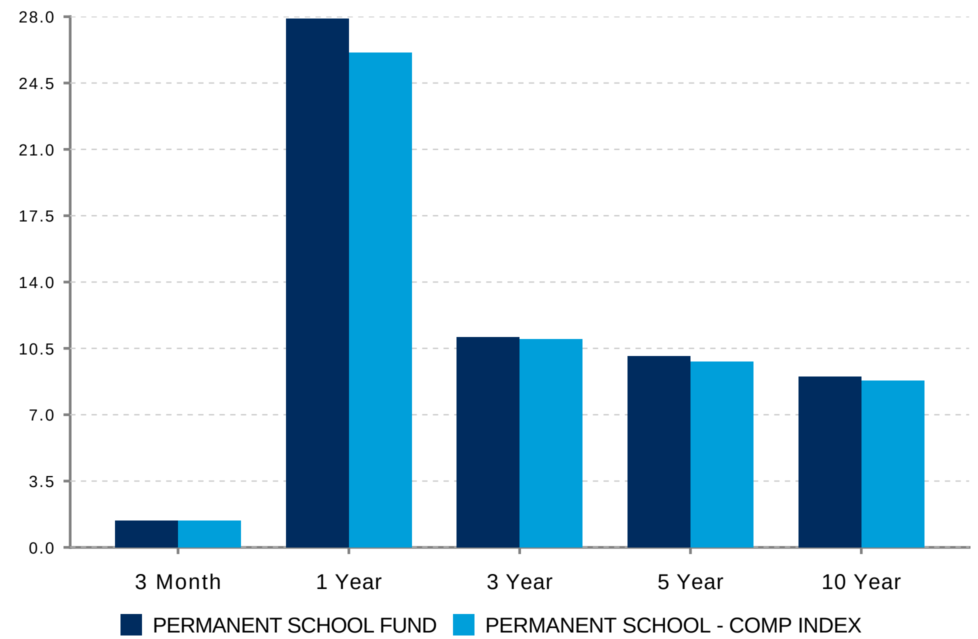
Non-Retirement

Permanent School Fund

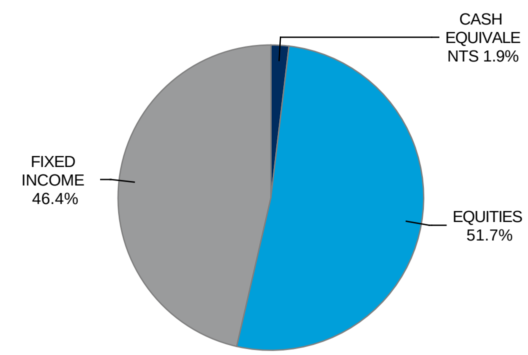
The investment objective of the Permanent School Fund is to produce a growing level of spendable income, within the constraints of maintaining adequate portfolio quality and liquidity. The income from the portfolio is transferred to the school endowment fund and distributed to Minnesota's public schools.

The Permanent School Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds provide portfolio diversification and a more stable stream of current income.

The stock segment is passively managed to track the performance of the S&P 500. The bond segment is actively managed to add incremental value through sector, security and yield curve decisions. The fixed income benchmark is the Bloomberg Barclays U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 2% cash, 50% equity, and 48% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
PERMANENT SCHOOL FUND	$1,837,342,444	1.4%	27.9%	11.1%	10.1%	9.0%
CASH EQUIVALENTS	34,317,655	0.0	0.2	1.5	1.2	0.7
EQUITIES	949,688,767	6.2	56.3	16.8	16.3	13.9
FIXED INCOME	853,336,021	-3.5	4.0	5.1	3.6	3.8
PERMANENT SCHOOL - COMP INDEX		1.4	26.1	11.0	9.8	8.8
Excess		0.0	1.8	0.1	0.3	0.2
S&P 500		6.2	56.4	16.8	16.3	13.9
BBG BARC US Agg		-3.4	0.7	4.7	3.1	3.4



Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. Prior to 7/1/97 the Fund allocation was 100% fixed income.

STATE STREET.

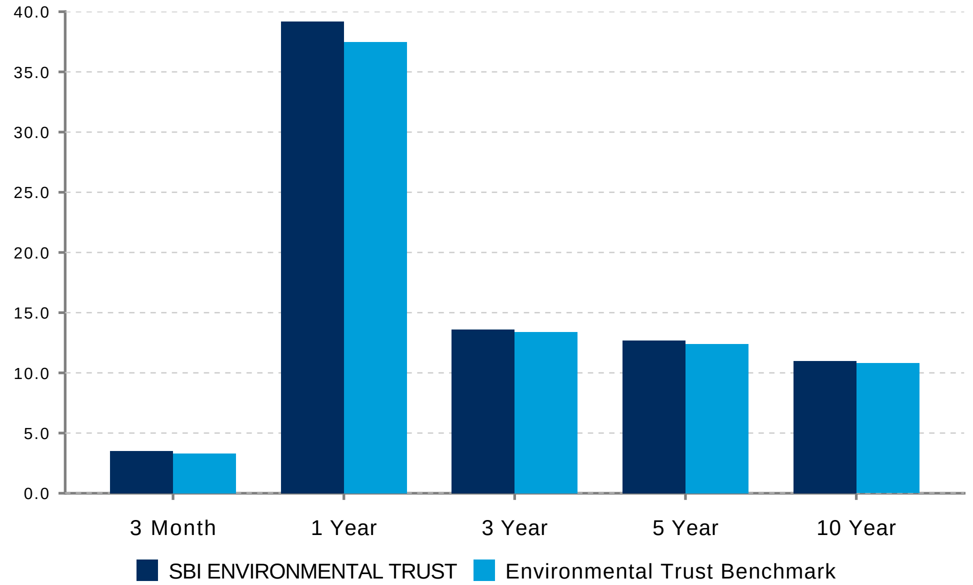
Non-Retirement

Environmental Trust Fund

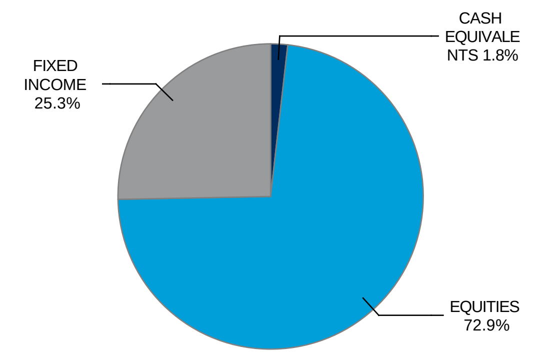
The objective of the Environmental Trust Fund is to increase the market value of the Fund over time in order to increase the annual amount made available for spending within the constraints of maintaining adequate portfolio quality and liquidity.

The Environmental Trust Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds act as a deflation hedge and provide portfolio diversification.

The bond segment is actively managed to add incremental value through sector, security and yield curve decisions. The stock segment is passively managed to track the performance of the S&P 500. The fixed income benchmark is the Bloomberg Barclays U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 2% cash, 70% equities, and 28% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
SBI ENVIRONMENTAL TRUST	$1,542,581,897	3.5%	39.2%	13.6%	12.7%	11.0%
CASH EQUIVALENTS	27,659,533	0.0	0.2	1.5	1.2	0.7
EQUITIES	1,125,137,827	6.2	56.3	16.8	16.3	13.9
FIXED INCOME	389,784,537	-3.5	4.0	5.1	3.6	3.8
Environmental Trust Benchmark		3.3	37.5	13.4	12.4	10.8
Excess		0.1	1.7	0.3	0.3	0.2
S&P 500		6.2	56.4	16.8	16.3	13.9
BBG BARC US Agg		-3.4	0.7	4.7	3.1	3.4



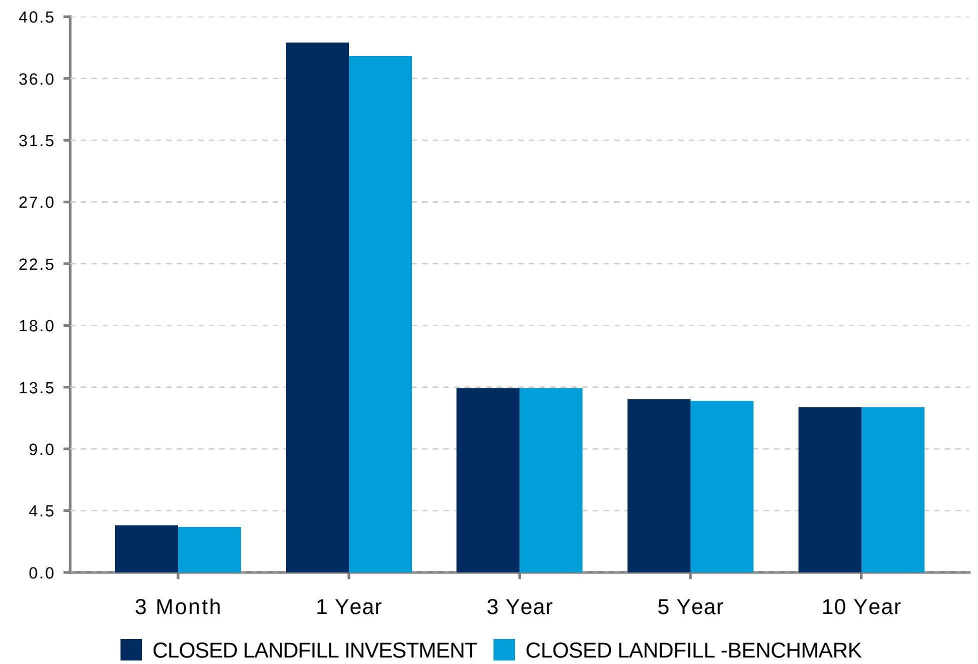
Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. From 7/1/94 to 7/1/99, the Fund's target allocation and benchmark was 50% fixed income and 50% stock. Prior to 7/1/94 the Fund was invested entirely in short-term instruments as part of the Invested Treasurer's Cash pool.

Non-Retirement

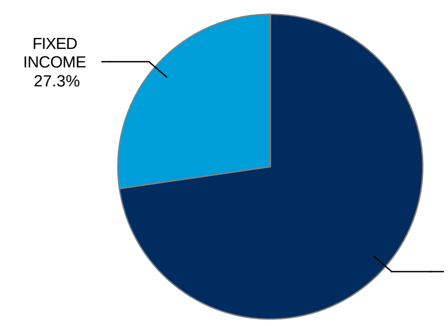
Closed Landfill Investment Fund

The investment objective of the Closed Landfill Investment Fund is to increase the market value of the Fund and to reduce volatility to meet future expenditures. By statute, the assets of the Fund are unavailable for expenditure until after the fiscal year 2020 to pay for long-term costs of maintaining the integrity of landfills in Minnesota once they are closed. In FY 2011, $48 million was transferred out of the general fund leaving a balance of $1 million in the account. Legislation was enacted in 2013 to replenish the principal and earnings back into the fund and in FY 2014 a repayment was made in the amount of $64.2 million. In 2015, legislation was passed which repealed any further repayments.

The bond segment is actively managed to add incremental value through sector, security and yield curve decisions. The stock segment is managed to passively track the performance of the S&P 500. The fixed income benchmark is the Bloomberg Barclays U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 70% equities and 30% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
CLOSED LANDFILL INVESTMENT	$123,282,262	3.4%	38.6%	13.4%	12.6%	12.0%
EQUITIES	89,687,406	6.2	56.3	16.8	16.3	13.9
FIXED INCOME	33,594,855	-3.5	4.0	5.1	3.6	
CLOSED LANDFILL -BENCHMARK		3.3	37.6	13.4	12.5	12.0
Excess		0.1	1.1	-0.0	0.1	0.0
S&P 500		6.2	56.4	16.8	16.3	13.9
BBG BARC US Agg		-3.4	0.7	4.7	3.1	3.4



Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. Prior to 9/10/14 the Fund's target allocation and benchmark was 100% domestic equity.

	Ending Market Value	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
NON RETIREMENT EQUITY INDEX - MELLON	**3,050,655,737**	**6.2**	**29.7**	**56.4**	**16.8**	**16.3**	**13.9**	**10.4**	**07/1993**
S&P 500 INDEX (DAILY)		6.2	29.7	56.4	16.8	16.3	13.9	10.3	07/1993
Excess		0.0	0.0	-0.0	0.0	-0.0	-0.0	0.1	
NON RETIREMENT FIXED INCOME - PRUDENTIAL	**1,465,566,763**	**-3.5**	**-0.8**	**4.1**	**5.1**	**3.6**	**3.8**	**5.9**	**07/1994**
BBG BARC Agg (Dly)		-3.4	-2.1	0.7	4.7	3.1	3.4	5.4	07/1994
Excess		-0.1	1.3	3.3	0.5	0.5	0.4	0.5	
RBC	**233,110,144**	**-1.5**	**-1.4**	**-0.7**	**3.9**	**2.2**	**2.3**	**4.8**	**07/1991**
RBC Custom Benchmark		-1.7	-1.7	-1.2	3.8	2.1	2.3	4.9	07/1991
Excess		0.2	0.4	0.5	0.1	0.1	0.1	-0.1	
MET COUNCIL OPEB BOND POOL	110,414,180	-0.6	-0.4	-0.1	3.0				02/2009
NON RETIREMENT CASH	**154,012,633**	**0.0**	**0.1**	**0.2**	**1.5**	**1.2**	**0.7**	**2.6**	
iMoneyNet Money Fund Average-All Taxable		0.0	0.0	0.1	1.1	0.9	0.4		
Excess		0.0	0.1	0.1	0.4	0.4	0.3		

Note:

RBC is the manager for the fixed income portion of the assigned risk account. RBC changed its name from Voyageur Asset Management on 1/1/2010. The current benchmark is the Bloomberg Barclays Intermediate Government Index. Prior to 7/1/11 the Voyageur Custom Index was 10% 90 day T-Bill, 25% Merrill 1-3 Government, 15% Merrill 3-5 Government, 25% Merrill 5-10 Government, 25% Merrill Mortgage Master.

Prior to 12/1/17 the Non Retirement Equity Index and Non Retirement Fixed Income accounts were managed internally by SBI staff.

In addition to the Non-Retirement Funds listed on the previous pages, the Non Retirement Equity Index and the Non Retirement Fixed Income accounts also include the assets of various smaller Miscellaneous Trust Accounts and Other Post Employment Benefits.

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State Cash

March 31, 2021

State Cash Accounts

Invested Treasurer's Cash

The Invested Treasurer's Cash Pool (ITC) represents the balances in more than 400 separate accounts that flow through the Minnesota State Treasury. These accounts vary greatly in size. The ITC contains the cash balances of certain State agencies and non-dedicated cash in the State Treasury.

The investment objectives of the ITC, in order of priority, are as follows:

- Safety of Principal. To preserve capital.
- Liquidity. To meet cash needs without the forced sale of securities at a loss.
- Competitive Rate of Return. To provide a level of current income consistent with the goal of preserving capital.

The SBI seeks to provide safety of principal by investing all cash accounts in high quality, liquid, short term investments. These include U.S. Treasury and Agency issues, repurchase agreements, bankers acceptances, commercial paper, and certificates of deposit.

Beginning in January 2003, the Treasurer's Cash Pool is measured against the iMoneyNet, All Taxable Money Fund Report Average.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Treasurer's Cash	13,151,218,921	0.0	0.6	1.7	1.4	1.0
iMoneyNet Money Fund Average-All Taxable		0.0	0.1	1.1	0.9	0.4

Other State Cash Accounts

Due to differing investment objectives, strategies, and time horizons, some State agencies' accounts are invested seperately. These agencies direct the investments or provide the SBI with investment guidelines and the SBI executes on their behalf. Consequently, returns are shown for informational purposes only and there are no benchmarks for these accounts.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Debt Service	73,140,756	-0.7	3.2	3.9	2.8	
Public Facilities Authority	2,114,012	1.1	2.3	2.1	1.9	

Addendum

Benchmark Definitions

Active Domestic Equity Benchmark:

A weighted composite each of the individual active domestic equity managers’ benchmarks. Effective 3/1/2017 the calculation uses the average weight of the manager relative to the total group of active managers during the month. Prior to 3/1/2017 the beginning of the month weight relative to the total group was used.

Benchmark DM:

Since 6/1/08 the developed markets managers' benchmark, "Benchmark DM," is the Standard (large + mid) MSCI World ex USA (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI World ex USA (net). From 10/1/03 to 9/30/07 the benchmark was the MSCI World ex USA (net). Prior to that date, it was the MSCI EAFE Free (net), including from 10/1/01 to 5/31/02 when it was the Provisional MSCI EAFE Free (net).

Benchmark EM:

Since 6/1/08 the emerging markets managers' benchmark, "Benchmark EM,"is the Standard (large + mid) MSCI Emerging Markets Free (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI Emerging Markets Free (net). From 1/1/01 to 9/30/07 the benchmark was the MSCI Emerging Markets Free (net), including from 10/1/01 to 5/31/02 when it was the Provisional MSCI Emerging Markets Free (net). Prior to 1/1/01, it was the MSCI Emerging Markets Free (gross).

Combined Funds Composite Index:

The Composite Index performance is calculated by multiplying the beginning of month Composite weights by the monthly returns of the asset class benchmarks. Asset class weights for Private Markets - Invested and Private Markets - Uninvested are reset at the start of each month. From 1/1/2018-2/28/2019 the Transitional Policy Target was used to reflect the addition of Treasuries to the Fixed Income portfolio. From 7/1/2016-12/31/2016 the composite weights were set to match actual allocation as the portfolio was brought into line with the new Strategic Asset Allocation Policy Target. 7/1/2016 to 12/1/2020 the uninvested portion of Private Markets allocated to Public Equity. Prior to 7/1/2016 the uninvested portion of the Private Markets was invested in Fixed Income and the Composite Index was adjusted accordingly. When the Strategic Asset Allocation Policy Target changes, so does the Composite Index.

Core Bonds Benchmark:

In 2016, the Barclays Agg was rebranded Bloomberg Barclays Agg to reflect an ownership change. Prior to 9/18/2008 this index was called the Lehman Brothers Aggregate Bond Index. From 7/1/84-6/30/94 the asset class benchmark was the Salomon Brothers Broad Investment Grade Index. The SBI name for this benchmark changed from Fixed Income to Core Bonds on March 31, 2020.

Credit Plus Benchmark:

40% Bloomberg Barclays US Corporate Bond Index, 30% Bloomberg Barclays US Mortgage Backed Index, 20% BofA ML US High Yield BB-B Cash Pay Constrained Index, and 10% JPM EMBI Global Diversified Index.

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Domestic Equity Benchmark:

Since 12/1/2020 the benchmark is the Russell 3000. From 1/1/2019-11/30/2020 the benchmark was 90% Russell 1000 and 10% Russell 2000. From 10/1/2003 to 12/31/2018 it was the Russell 3000. From 7/1/1999 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/1999, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Fixed Interest Blended Benchmark: Since 6/1/2002, equals 3 Year Constant Maturity Treasury Yield + 45 bps. Prior to this change it was the 3 Year Constant Maturity Treasury Yield + 30 bps.

International Equity Benchmark:

Since 12/1/2020 equals the MSCI ACWI ex-US(Net). From 1/1/2018 to 1/1/2019 it was 75% MSCI World ex USA Index (net) and 25% MSCI Emerging Markets Index (net). From 6/1/08 to 12/31/2018 the International Equity asset class target was the Standard (large + mid) MSCI ACWI ex U.S. (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI ACWI ex U.S. (net). From 10/1/03 to 9/30/07 the target was MSCI ACWI ex U.S. (net). From 1/1/01 to 9/30/03, the target was MSCI EAFE Free (net) plus Emerging Markets Free (net), and from 7/1/99 to 12/31/00 the target was MSCI EAFE Free (net) plus Emerging Markets Free (gross). From 7/1/99 to 9/30/03, the weighting of each index fluctuated with market capitalization. From 10/1/01 to 5/31/02 all international benchmarks being reported were the MSCI Provisional indices. From 12/31/96 to 6/30/99 the benchmark was fixed at 87% EAFE Free (net)/13% Emerging Markets Free (gross). On 5/1/96, the portfolio began transitioning from 100% EAFE Free (net) to the 12/31/96 fixed weights. Prior to 5/1/96 it was 100% the EAFE Free (net).

Multi-Asset Credit Benchmark:

33.33% ICE BofA High Yield, 33.33% S&P LSTA Leveraged Loan, and 33.33% JPM EMBI Global Diversified Index.

Passive Domestic Equity Benchmark:

A weighted average of the Russell 1000, Russell 2000 and Russell 3000 effective 11/1/2018. From 10/1/2016-11/1/2018 it was a weighted average of the Russell 1000 and Russell 3000. From 10/1/2003 to 10/1/2016 it was equal to the Russell 3000. From 7/1/2000 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/2000, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Passive Manager Benchmark:

Russell 3000 effective 10/1/2003. From 7/1/2000 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/2000, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

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Public Equity Benchmark:

Since 12/1/2020 it is 67% Russell 3000 and 33% MSCI ACWI ex-US(net). From 1/1/2019 to 12/1/2020 it was 60.3% Russell 1000, 6.7% Russell 2000, 24.75% MSCI World Ex US (net), and 8.25% MSCI EM (net). From 7/1/2017 thru 12/31/2018 it was 67% Russell 3000 and 33% MSCI ACWI ex USA. Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a total Public Equity return. From 6/30/16-6/30/17 the Public Equity benchmark adjusted by 2% each quarter from 75% Russell 3000 and 25% MSCI ACWI ex USA until it reached 67% and 33%.

Return Seeking BM:

A weighted composite of each individual return seeking fixed income managers' benchmarks. The calculation uses the average weight of the manager relative to the total group of active managers during the month.

Semi-Passive Domestic Equity Benchmark: Russell 1000 index effective 1/1/2004. Prior to 1/1/2004 it was the Completeness Fund benchmark.

Total Fixed Income Benchmark:

Since 7/1/2020 the Total Fixed Income benchmark is 40% Bloomberg Barclays U.S. Aggregate Index/ 40% Bloomberg Barclays Treasury 5+ Years Index/ 20% ICE BofA US 3-Month Treasury Bill. From 4/1/2019-6/30/2020 it was 50% Bloomberg Barclays Agg and 50% Bloomberg Barclays Treasury 5+ Years Index. From 2/1/2018-3/31/19 the weighting of this benchmark reflected the relative weights of the Core Bonds and Treasuries allocations in the Combined Funds Composite.

Zevenbergen Benchmark: Russell 3000 Growth index effective 1/1/2021. Prior to 1/1/2021 it was the Russell 1000 Growth Index.