MINNESOTA STATE BOARD OF INVESTMENT

MINNESOTA STATE BOARD
OF INVESTMENT
MEETING
February 24, 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

February 24, 2021

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AGENDA
STATE BOARD OF INVESTMENT
MEETING

Virtual Meeting
Wednesday, February 24, 2021
10:00 a.m.

		TAB
1.	Call to Order	
2.	Approval of Minutes of December 2, 2020	
3.	Performance Summary	A
4.	Executive Director's Administrative Report	B
5.	Private Markets Investment Program	C
	A. Status of SBI Current Private Markets Commitments	D
	B. Recommendation for New Private Markets Commitments	E
	C. Recommendation for a Private Markets Investment Consultant	F
6.	Public Markets Investment Program	G
	A. Review of Recent Changes to the Combined Funds Portfolio	H
	B. SBI Public Markets Program Report	I
7.	Participant Directed Investment Program and Non-Retirement Investment Program	J
	A. Recommendation to add Vanguard Total Stock Market Index Fund to the Minnesota Deferred Compensation Plan	K
	B. Recommendation to add TIAA-CREF Social Choice Equity Fund to the Minnesota 529 College Savings Plan	L
	C. Participant Directed Investment Program and Non-Retirement Investment Program Report	M
8	Report from the Proxy Committee	N
9.	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 December 2, 2020 Board Meeting Minutes

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Minutes
State Board of Investment Meeting
December 2, 2020

Notice of Meeting
The State Board of Investment (SBI) met at 12:03 p.m. Wednesday, December 2, 2020 via Teleconference. 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 August 26, 2020 SBI meeting were approved unanimously by roll call vote.

Executive Director's Report
Executive Director Mr. Perry referred members to the September 30, 2020 Performance Summary in Tab A of the meeting materials. Mr. Perry informed the Board that as of September 30, 2020 the SBI was responsible for $105.1 billion of assets under management and that the Combined Funds represented $75 billion of those assets. As of today, Mr. Perry reported that the Combined Funds assets have grown to $80 billion. Mr. Perry reported that the Combined Funds returned 6.2% for fiscal year to-date, which exceeded the Composite Index and that the Combined Funds has exceeded the Composite Index for all other time-periods listed. Mr. Perry reported that the Combined Funds had met its long-term objectives of outperforming its Composite Index over the ten-year period ending September 30, 2020 (Combined Funds 9.5% vs. Combined Fund Composite Index 9.2%) and providing a real rate of return above inflation over the latest 20 year time-period (Combined Funds 6.6% vs CPI-U 2.0%).

Mr. Perry noted that the Combined Funds asset mix is in line with the strategic asset allocation target approved by the Board at the May 29, 2020 meeting.

Mr. Perry stated that the Combined Funds Public Equity Program performance, primarily buoyed by domestic equity, was a positive contributor to performance during the quarter (Public Equity reported an 8.4% return and 11.3% return for the quarter and year, respectively). Mr. Perry continued that the Combined Funds Fixed Income Program also exceeded its benchmark for the quarter and the year ending September 30, 2020 (Fixed Income reported a 0.8% and 10.2% return for the quarter and year, respectively). Lastly, Mr. Perry stated that the Private Markets Program had a quarter-end return of 6.1% and a one-year return of 1.5%. The impact of the Russia-Saudi Arabia price conflict as well as less demand for oil and gas during the pandemic has had a negative impact on the Resources subgroup within Private Markets. Over the long-term, however, Mr. Perry noted that the Private Markets returns have been strong.

Mr. Perry noted that the Combined Funds is close to the category ranges in the Strategic Allocation Category Framework and continues to be ahead of the Volatility Equivalent Benchmark. Board members also reviewed the Trust Universe Comparison Service (TUCS) summary, which provides a comparison of the SBI's asset allocation and returns to public and corporate plans over $1 billion in assets. The Combined Funds September 30, 2020 return was above the median return for all time-periods listed. 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, where the Combined Funds ranked in the top quartile for the one, three, five and ten year time period ending September 30, 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. He provided an update on the SBI's legislative audit and the 2020 Fiscal Year Annual Report. Mr. Perry stated that over 95 percent of the strategic allocation changes to the Combined Funds have been implemented as the result of the resolution passed at the May 29, 2020, Board meeting. Mr. Perry noted the 2021 calendar year Investment Advisory Council and Board meeting dates were listed in the material in addition to the Iran and Sudan updates. Lastly, Mr. Perry stated that the SBI was not involved in any litigation.

Update on Investments Associated with Thermal Coal Production

Mr. Perry referred members to Tab C of the meeting materials to provide an update with reference to the resolution adopted at the May 29, 2020 meeting concerning the reduction of investments associated with Thermal Coal production. The resolution requires removal of any publicly traded company deriving more than 25% of its revenue from thermal coal production (exploration/mining). Mr. Perry also instructed staff to apply these restrictions to the SBI's Non-Retirement Portfolio. The Unauthorized Thermal Coal Holdings List consists of more than 40 publicly traded securities that derive more than 25% of their revenues from the production/exploration of thermal coal. The SBI held ten of the securities on the unauthorized holdings list. Staff notified investment managers that they could no longer purchase securities from the Unauthorized Thermal Coal Holdings List and were directed to remove any holdings from the portfolio by December 31, 2020.

Board members recognized the SBI staff for their job performance while working remotely. SBI's staff has produced results that have held up during unprecedented times and provided long-term results with top quartile performance compared to its peers.

Private Markets Commitments for Consideration

Mr. Martin, Chairperson of the Investment Advisory Council, delivered the Private Markets Commitments for Consideration Report and reviewed five private markets proposals listed in Tab D of the meeting materials. He stated that all the recommendations are with existing managers with whom the SBI has had a long relationship: Oaktree Real Estate Debt Fund III; Oaktree Real Estate Opportunities Fund VIII; Blackstone Growth; Blackstone Co-Investment Partnership; and Kohlberg Kravis Roberts (KKR) Core Investments Partnership. Attorney General Ellison moved approval of the five 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 an additional**

$100 million to Oaktree Real Estate Debt Fund III, such that the MSBI's total commitment will be up to $200 million in the aggregate, or 20% of the Fund in the aggregate, 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 Oaktree 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 Oaktree 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 an additional $100 million to Oaktree Real Estate Opportunities Fund VIII, such that the MSBI's total commitment will be up to $200 million in the aggregate, or 20% of the Fund in the aggregate, 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 Oaktree 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 Oaktree 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 $250 million, or 20% of Blackstone Growth, whichever is less, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Additionally, 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 $125 million in a co-investment partnership created for the SBI, plus an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing. Approval of these potential commitments 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 these commitments.

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 KKR Core Investments Partnership, 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 motion passed unanimously by roll call vote.

Reports
Mr. Perry referred members to Tab E and F that included the Public Markets Investment Program Report, the Participant Directed Investment Program and Non-Retirement Program Reports. Mr. Perry noted the material includes an updated SBI Environmental, Social, and Governance (ESG) Report, which is also available on the SBI's website. Lastly, he stated the Market Environment Report prepared by Aon and the Capital Markets Outlook & Risk Metrics Report prepared by Meketa gives a good sense of how the overall markets have performed in the prior quarter; and the Comprehensive Performance Report details the performance of all of the managers under the SBI's responsibility.

Public Testimony
Governor Walz recognized individuals of the public who requested to speak before the Board: Adam Rahim with Minnesota Break the Bonds Campaign and Minnesota BDS Community; Evan Jones with Park Place at Petworth Tenants Association (in Washington D.C.); and Eileen O'Grady with Private Equity Stakeholder Project (PESP).

Adjournment of Meeting
Secretary of State Simon moved approval to adjourn the meeting. The motion passed by roll call vote. The meeting adjourned at 12:37 p.m.

Respectfully submitted,

Mansco Perry III

Mansco Perry III
Executive Director and
Chief Investment Officer

TAB A

Quarterly Performance Summary

December 31, 2020

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Performance Summary

December 31, 2020

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

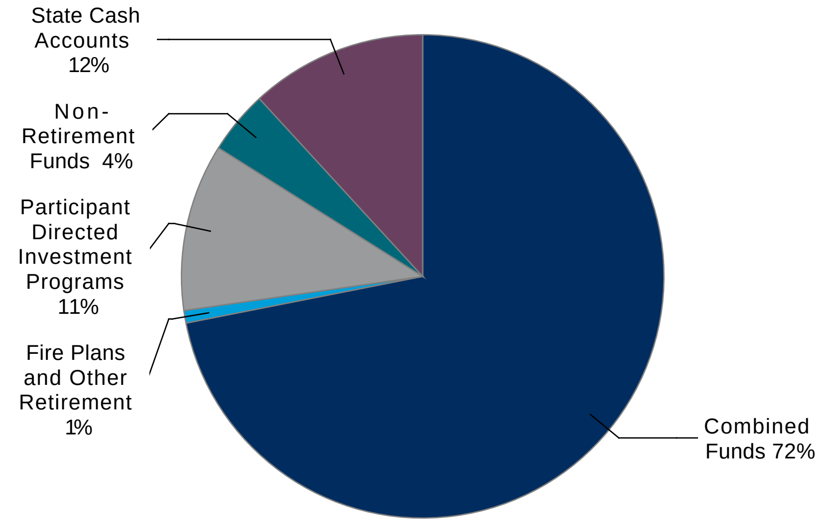
The Non-Retirement Funds are funds established by the State of Minnesota and other government entities for various purposes which include the benefit of public schools, the environment, other post-employment benefits, workers compensation insurance, and other purposes.

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	$82,140
FIRE PLANS + OTHER RETIREMENT	956
PARTICIPANT DIRECTED INVESTMENT PROGRAMS	12,782
State Deferred Compensation Plan	8,917
Health Care Savings Plan	1,486
Unclassified Employees Retirement Plan	373
Hennepin County Supplemental Retirement Plan	180
PERA Defined Contribution Plan	93
Minnesota College Savings Plan	1,717
Minnesota Achieve a Better Life Experience	17
NON-RETIREMENT FUNDS	4,834
Assigned Risk Plan	299
Permanent School Fund	1,814
Environmental Trust Fund	1,490
Closed Landfill Investment Fund	119
Miscellaneous Trust Funds	322
Other Postemployment Benefits Accounts	790
STATE CASH ACCOUNTS	13,655
Invested Treasurer's Cash	13,582
Other State Cash Accounts	74
TOTAL SBI AUM	114,237



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	9.9%
COMBINED FUNDS - COMPOSITE INDEX	9.6
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	7.3%
CPI-U	2.0
Excess	5.3

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.

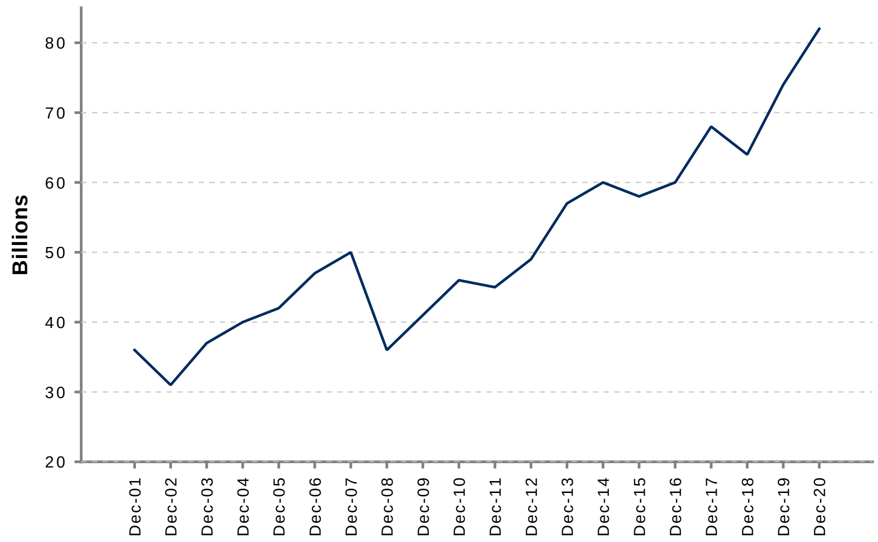
Combined Funds Summary

Combined Funds Change in Market Value ($Millions)

	One Quarter
COMBINED FUNDS	
Beginning Market Value	$74,762
Net Contributions	-611
Investment Return	7,990
Ending Market Value	82,140

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

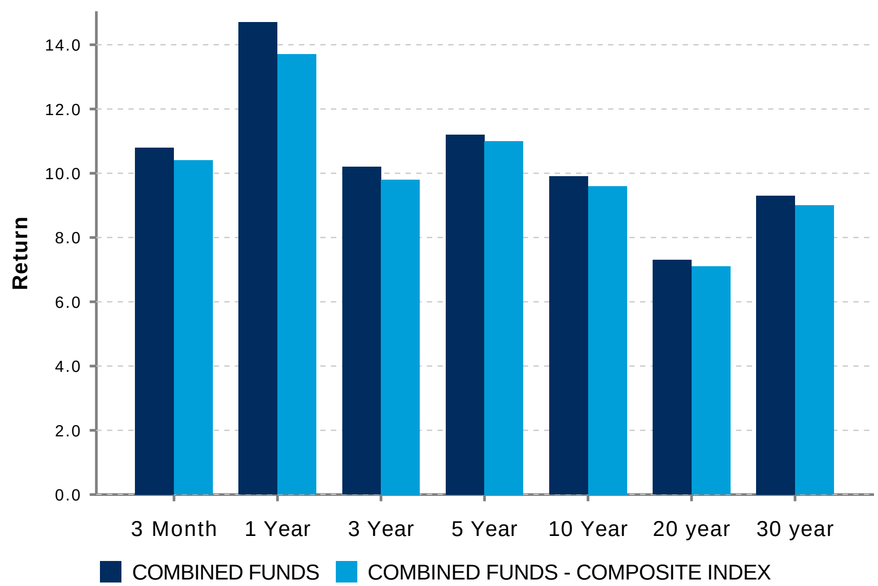
Asset Growth



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	10.8%	17.6%	14.7%	10.2%	11.2%	9.9%	7.3%	9.3%
COMBINED FUNDS - COMPOSITE INDEX	10.4	16.9	13.7	9.8	11.0	9.6	7.1	9.0
Excess	0.3	0.7	1.0	0.4	0.2	0.3	0.2	0.3

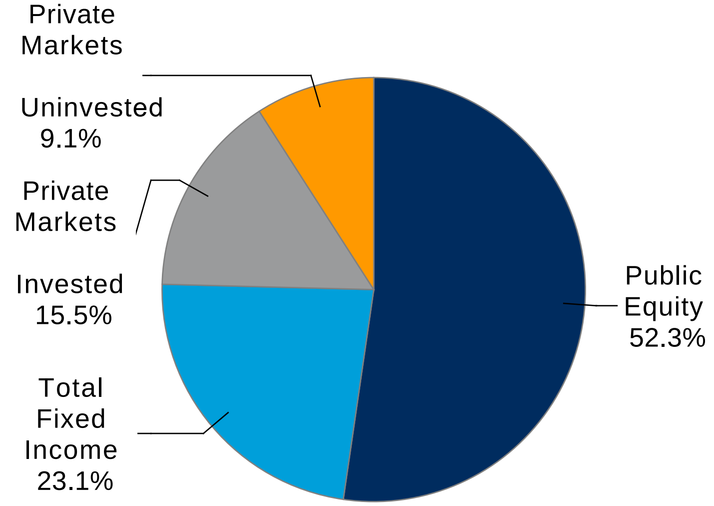


Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in Public Equity.

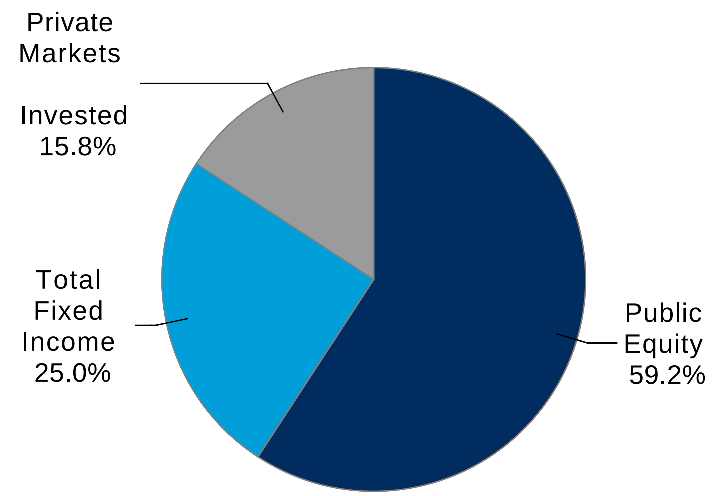
	(Millions)	Actual Mix	Policy Target
Public Equity	$42,990	52.3%	50.0%
Total Fixed Income	18,962	23.1	25.0
Private Markets - Total	20,187	24.6	25.0
Private Markets - Invested	12,737	15.5	
Private Markets - Uninvested	7,450	9.1	
TOTAL	82,140	100.0	



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	59.2%	Public Equity Benchmark
Total Fixed Income	25.0	Total Fixed Income Benchmark
Private Markets - Invested	15.8	Private Markets
Private Markets - Uninvested	0.0	S&P 500



Note:
On 12/1/2020 the composite index included a weighting to Private Markets - Uninvested of 9.2%. Prior to 12/1/2020 the uninvested portion of private markets was allocated to public equity.

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	$43.0	52.3%	50.0%	15.9%	25.6%	18.3%	11.5%	13.3%	11.5%	7.1%	10.0%
Public Equity Benchmark				15.8	25.1	17.4	11.2				
Excess				0.1	0.5	1.0	0.3				
Domestic Equity	28.0	34.1	33.5	15.4	26.0	21.7	14.6	15.3	13.8	7.7	10.6
Domestic Equity Benchmark				15.2	25.6	20.8	14.4	15.4	13.8	7.8	10.7
Excess				0.2	0.4	0.9	0.2	-0.1	0.0	-0.1	-0.1
International Equity	13.9	16.9	16.5	16.9	24.7	11.3	5.2	8.8	5.4	5.5	
International Equity Benchmark				17.1	24.2	10.5	4.8	8.9	4.9	5.2	
Excess				-0.1	0.6	0.8	0.4	-0.1	0.5	0.3	
Global Equity	1.1	1.3	0.0								
MSCI AC WORLD INDEX NET											
Excess											

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	$19.0	23.1%	25.0%	0.1%	0.8%	11.2%	7.1%	5.8%	4.8%	5.4%	6.4%
Total Fixed Income Benchmark				-0.5	-0.1	10.3					
Excess				0.5	0.9	1.0					
Core/Core Plus	4.2	5.1	5.0	1.9	3.2	9.7	6.4	5.4	4.6	5.3	6.3
Fixed Income Benchmark				0.7	1.3	7.5	5.3	4.4	3.8	4.8	5.9
Excess				1.2	1.9	2.2	1.0	0.9	0.7	0.5	0.5
Return Seeking Fixed Income	3.5	4.3	5.0								
BBG BARC Agg Bd											
Excess											
Treasury Protection	7.6	9.3	10.0	-1.7	-1.3	12.7	8.0				
BBG BARC 5Y + Us Tsy Idx				-1.9	-1.6	12.8	7.6				
Excess				0.2	0.3	-0.2	0.4				
Laddered Bond + Cash	3.6	4.4	5.0	0.0	0.1	0.6	1.6	1.3	0.8	1.8	3.4
ICE BofA US 3-Month Treasury Bill				0.0	0.1	0.7	1.6	1.2	0.6	1.5	2.7
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%	15.3%	7.7%	9.9%	11.1%	11.5%	11.4%	13.4%	12.2%
Private Markets - Uninvested (S&P 500)									
Private Equity	12.2%	21.0%	16.3%	15.7%	16.1%	15.1%	12.3%	15.5%	
Private Credit	1.8	5.8	1.4	7.7	10.6	11.6	11.3		
Resources	1.6	3.9	-16.3	-6.4	-3.0	1.4	11.6	12.6	
Real Estate	3.8	6.4	4.4	8.4	8.5	11.1	8.4	9.6	

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

	12/31/20 ($ millions)	12/31/20 Weights	Category Ranges	
Growth - Appreciation				
Public Equity	$ 50,451.02	61.4%		
Private Equity	$ 7,689.25	9.4%		
Non-Core Real Assets	$ 2,438.01	3.0%		
Distressed/Opportunistic	$ 1,204.68	1.5%		
	$ 61,782.95	**75.2%**	*50%*	*75%*
Growth - Income-oriented				
Core Fixed Income	$ 4,223.40	5.1%		
Private Credit	$ 855.57	1.0%		
Return-Seeking Fixed Income	$ 3,547.96	4.3%		
	$ 8,626.93	**10.5%**	*15%*	*30%*
Real Assets				
Core Real Estate		0.0%		
Real Assets	$ 429.00	0.5%		
	$ 429.00	**0.5%**	*0%*	*10%*
Inflation Protection				
TIPS		0.0%		
Commodities		0.0%		
		0.0%	*0%*	*10%*
Protection				
U.S. Treasuries	$ 7,595.63	9.2%		
	$ 7,595.63	**9.2%**	*5%*	*20%*
Liquidity				
Cash	$ 3,705.65	4.5%		
	$ 3,705.65	**4.5%**	*0%*	*5%*
Opportunity				
Opportunity		**0.0%**	*0%*	*10%*
Total	**$ 82,140.17**	**100.0%**		
Illiquid Asset Exposure	**$ 12,616.51**	**15.4%**	*0%*	*30%*

Volatility Equivalent Benchmark Comparison

Periods Ending 12/31/2020

As of (Date):	12/31/2020							
	1-year	*3-year*	*5-year*	*10-year*	*15-year*	*20-year*	*25-year*	*30-year*
SBI Combined Funds Return	**14.7%**	**10.2%**	**11.2%**	**9.9%**	**8.2%**	**7.3%**	**8.5%**	**9.3%**
Volatility Equivalent Benchmark Return			**9.6%**	**7.3%**	**6.4%**	**6.0%**	**6.7%**	**7.8%**
Value Added			**1.7%**	**2.6%**	**1.8%**	**1.4%**	**1.7%**	**1.5%**

Standard Deviation: Benchmark = Combined Funds			**9.4%**	**8.6%**	**9.7%**	**9.6%**	**9.8%**	**9.4%**
Benchmark Stock Weight			**62%**	**61%**	**59%**	**60%**	**62%**	**62%**
Benchmark Bond Weight			**38%**	**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

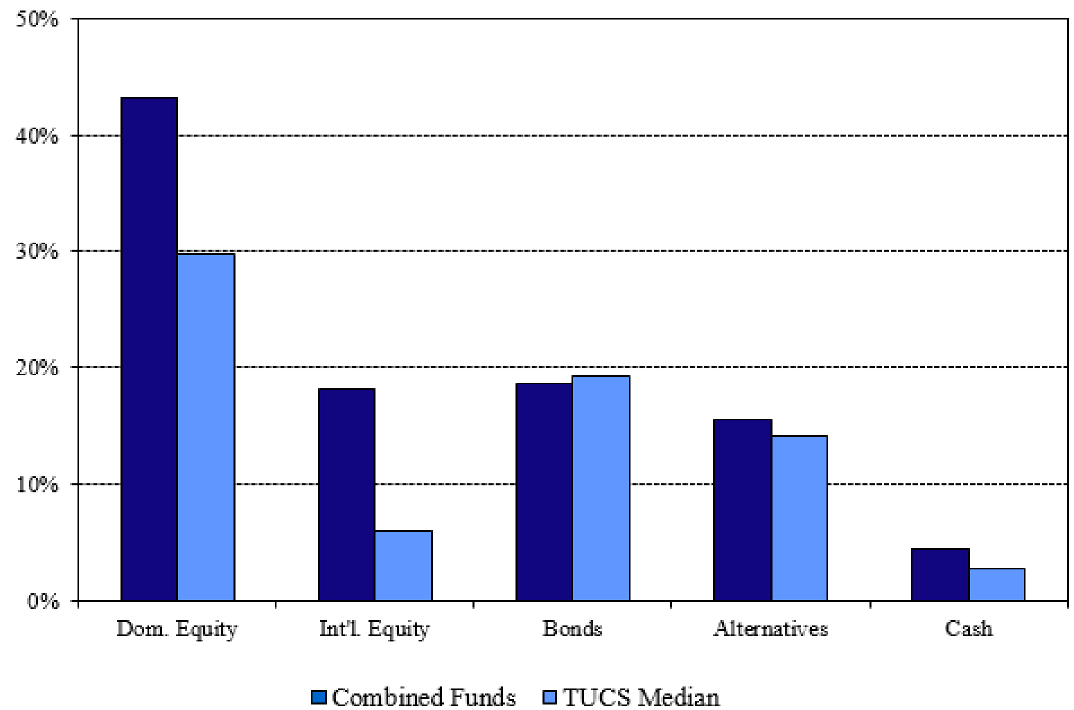
Asset Mix Compared to Other Pension Funds

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	42,990	52.3
Total Fixed Income	18,962	23.1
Private Markets - Invested	12,737	15.5
Private Markets - Uninvested	7,450	9.1
TOTAL	82,140	100.0



	Domestic Equity	International Equity	Bonds	Alternatives	Cash
Combined Funds	43.2%	18.2%	18.7%	15.5%	4.4%
Median in TUCS	29.8%	5.4%	19.2%	14.1%	3.2%

Combined Funds Summary

Performance Compared to Other Pension Funds

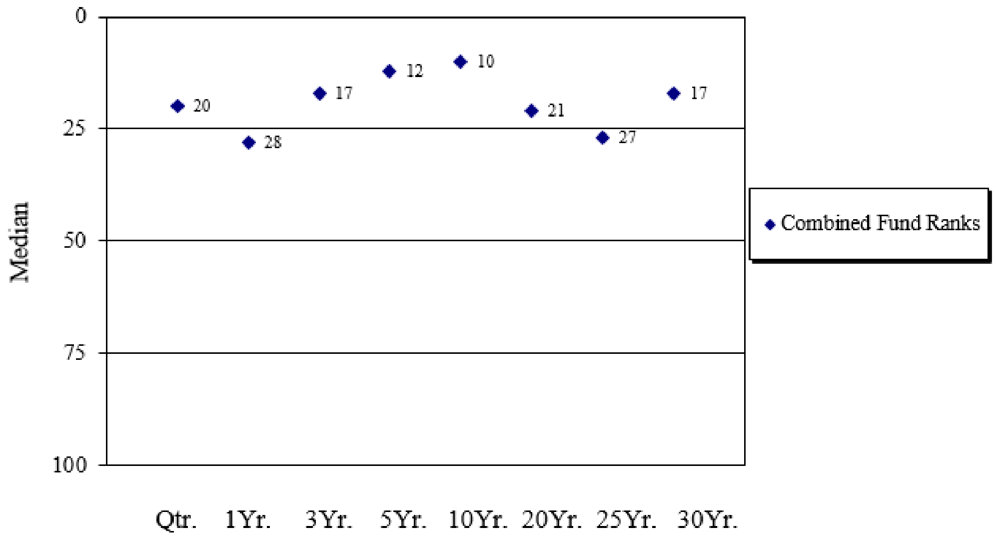
While the SBI is concerned with how its returns compare to other pension investors, universe comparisons should be used with great care. There are several reasons why such comparisons will provide an "apples to oranges" look at performance:

- 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.

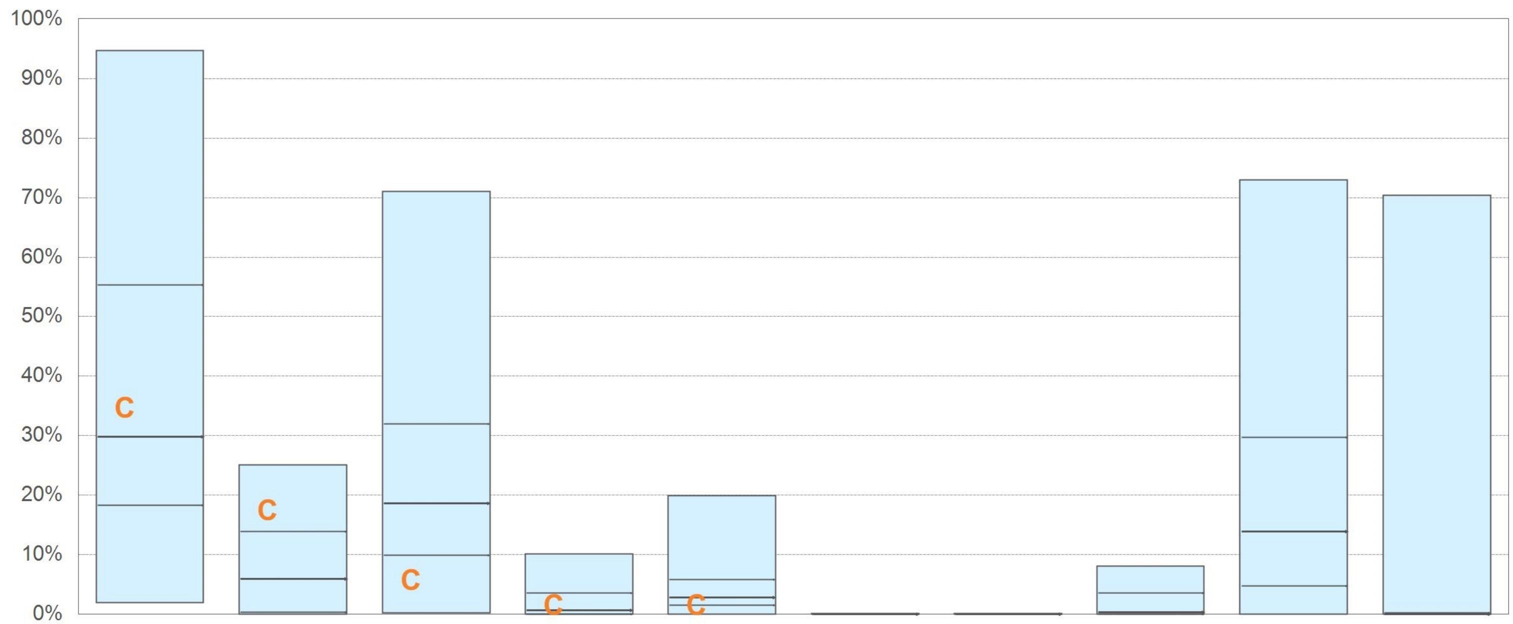
The SBI's returns are ranked against public and corporate plans with over $1 billion in assets. All funds in TUCS report their returns gross of fees.



Periods Ended 12/31/2020

	Qtr	1 Yr	3 Yrs	5 Yrs	10 Yrs	20 Yrs	25 Yrs	30 Yrs
Combined Funds Percentile Rank in TUCS	20th	28th	17th	12th	10th	21st	27th	17th

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Plans > $1 Billion
Quarter Ending December 31, 2020

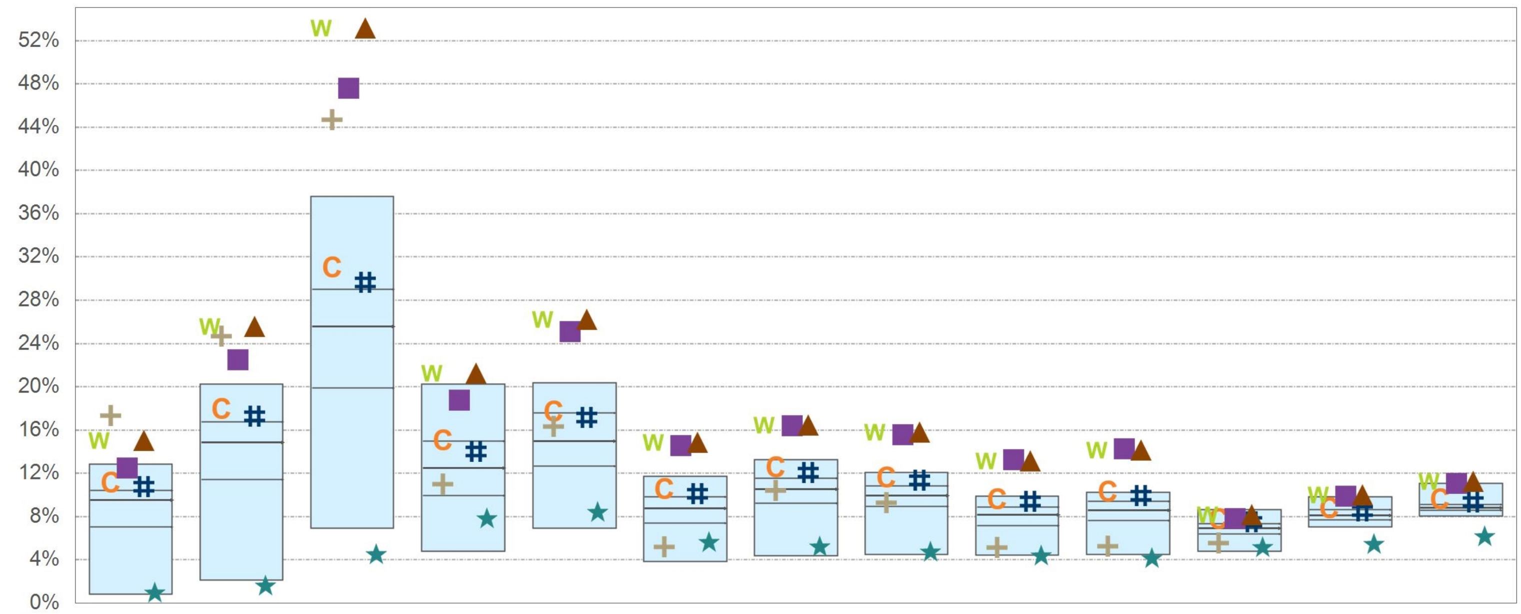


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	94.70	25.12	71.01	10.14	19.92	0.10	0.10	8.11	72.95	70.38
25th	55.33	13.85	31.92	3.52	5.77	0.01	0.00	3.60	29.68	0.22
50th	29.78	5.87	18.59	0.60	2.78	0.00	0.00	0.27	13.84	0.00
75th	18.35	0.30	9.85	0.00	1.47	0.00	0.00	0.00	4.79	0.00
95th	1.96	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C Combined Funds	34.11 (42)	16.94 (16)	5.14 (84)	0.00 (100)	1.01 (81)			1.38 (37)		2.11 (16)

Minnesota State Board of Investments
Performance Comparison

Total Returns of Master Trusts - Plans > $1 Billion

Cumulative Periods Ending : December 31, 2020

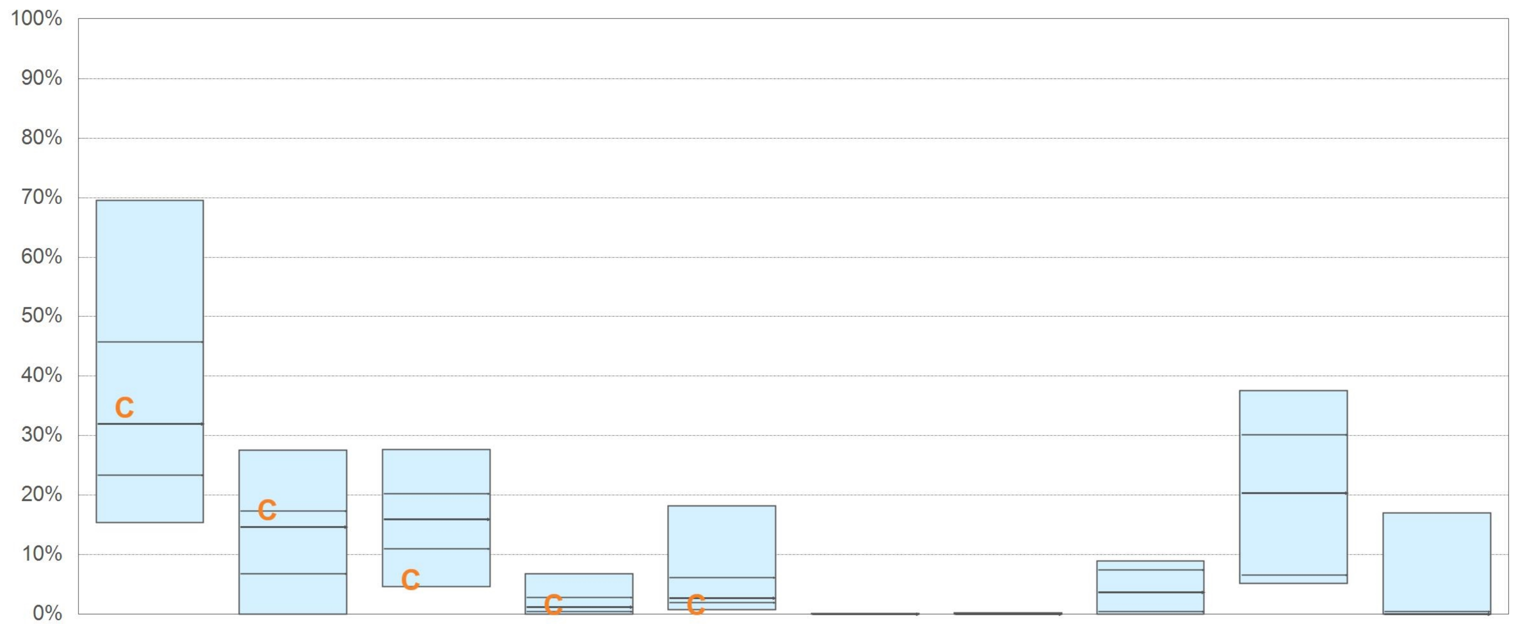


Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years	20 Years	25 Years	30 Years
5th	12.83	20.24	37.57	20.24	20.37	11.70	13.29	12.09	9.86	10.26	8.63	9.84	11.08
25th	10.40	16.76	28.99	14.99	17.58	9.80	11.52	10.83	8.88	9.44	7.36	8.62	9.11
50th	9.51	14.87	25.58	12.50	14.95	8.74	10.52	9.96	8.19	8.61	6.91	8.14	8.80
75th	7.03	11.42	19.92	9.95	12.68	7.43	9.22	8.95	7.19	7.65	6.39	7.72	8.57
95th	0.83	2.14	6.93	4.78	6.91	3.83	4.40	4.49	4.43	4.51	4.77	7.06	8.04
No. Of Obs	166	165	164	157	140	139	137	137	135	134	102	77	39

	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	10.81 (20)	17.66 (19)	30.73 (19)	14.76 (28)	17.43 (26)	10.25 (17)	12.24 (10)	11.33 (12)	9.29 (18)	10.00 (10)	7.48 (21)	8.47 (27)	9.32 (17)
# SBI Combined Funds Ind	10.44 (24)	16.91 (23)	29.29 (23)	13.69 (37)	16.79 (28)	9.78 (26)	11.73 (16)	11.04 (14)	9.07 (21)	9.62 (19)	7.14 (38)	8.18 (46)	9.02 (35)
W SBI Domestic Equity Ta	14.68 (2)	25.24 (1)	52.83 (1)	20.89 (4)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.79 (1)	7.82 (12)	9.67 (7)	10.92 (5)
★ SBI Fixed Income Targe	0.67 (95)	1.29 (95)	4.23 (95)	7.51 (90)	8.11 (93)	5.34 (93)	4.89 (94)	4.44 (95)	4.09 (95)	3.84 (95)	4.83 (94)	5.16 (100)	5.86 (100)
■ S&P 500	12.15 (7)	22.16 (3)	47.26 (1)	18.40 (9)	24.77 (1)	14.18 (2)	16.05 (1)	15.22 (1)	12.92 (1)	13.89 (1)	7.47 (21)	9.56 (7)	10.70 (5)
+ MSCI World Ex US (N)	17.01 (1)	24.33 (3)	44.37 (1)	10.65 (68)	15.96 (36)	4.88 (93)	10.06 (59)	8.92 (76)	4.82 (93)	4.92 (94)	5.23 (94)		
▲ Russell 3000	14.68 (2)	25.24 (1)	52.83 (1)	20.89 (4)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.80 (1)	7.82 (12)	9.67 (7)	10.92 (5)

Wilshire

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $10 Billion
Quarter Ending December 31, 2020

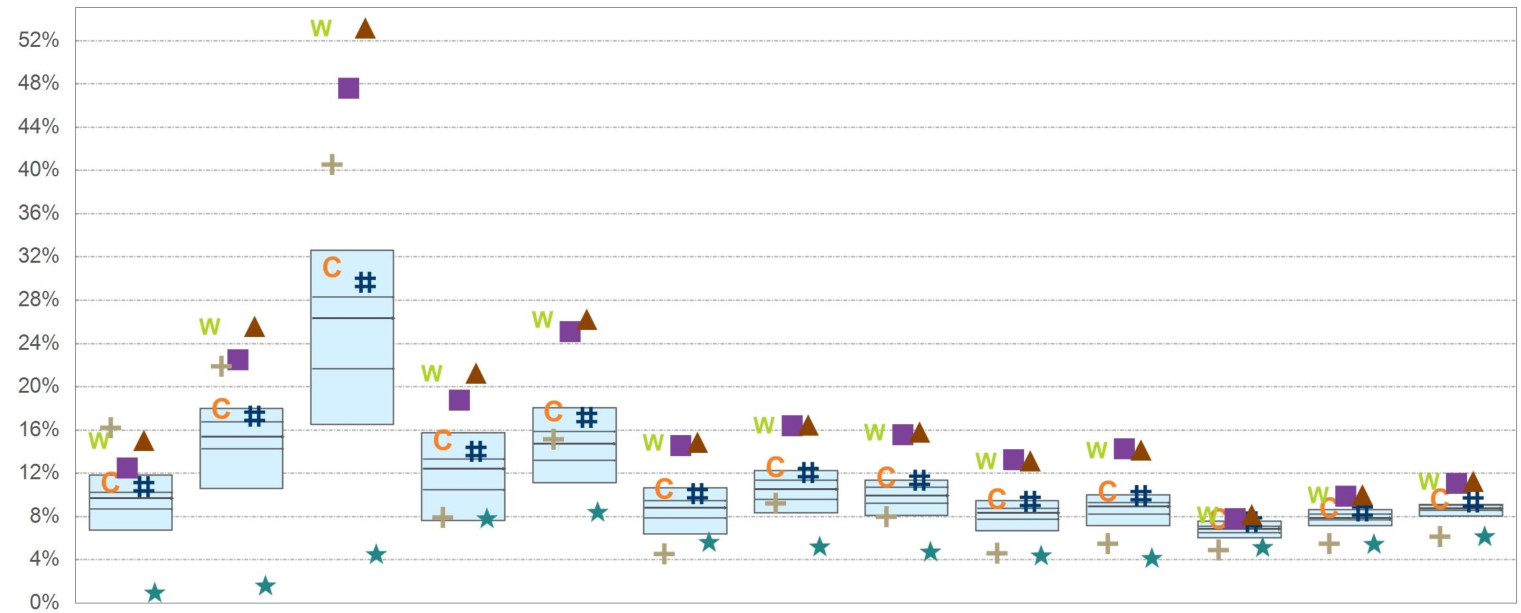


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	69.54	27.54	27.68	6.78	18.17	0.07	0.17	8.93	37.56	16.98
25th	45.80	17.34	20.24	2.79	6.12	0.02	0.00	7.42	30.11	0.40
50th	31.97	14.60	15.91	1.15	2.71	0.00	0.00	3.63	20.32	0.00
75th	23.31	6.82	11.02	0.47	1.91	0.00	0.00	0.40	6.52	0.00
95th	15.42	0.00	4.67	0.00	0.70	0.00	0.00	0.00	5.17	0.00
C Combined Funds	34.11 (39)	16.94 (35)	5.14 (91)	0.00 (100)	1.01 (92)			1.38 (57)		2.11 (12)

Minnesota State Board of Investments
Performance Comparison

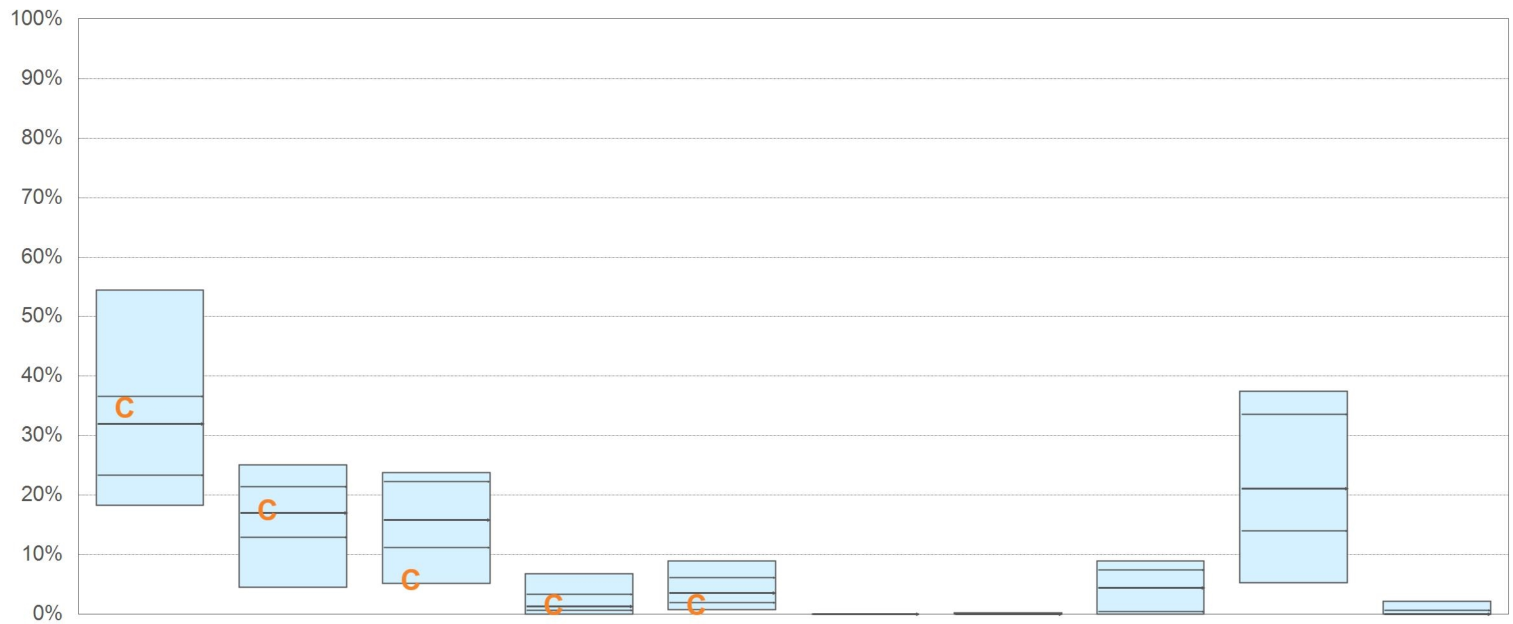
Total Returns of Master Trusts - Public : Plans > $10 Billion

Cumulative Periods Ending : December 31, 2020



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	11.84	17.99	32.65	15.72	18.03	10.63	12.24	11.37	9.46	10.00	7.55	8.66	9.13
25th	10.26	16.73	28.30	13.30	15.85	9.49	11.34	10.74	8.79	9.27	7.13	8.21	9.07
50th	9.73	15.39	26.34	12.45	14.76	8.80	10.54	9.92	8.33	8.93	6.87	7.90	8.76
75th	8.71	14.24	21.67	10.46	13.21	7.87	9.62	9.21	7.76	8.22	6.54	7.67	8.56
95th	6.76	10.57	16.50	7.63	11.11	6.40	8.36	8.10	6.68	7.18	6.01	7.19	8.04
No. Of Obs	45	45	45	45	42	42	42	42	42	42	38	33	23
C Combined Funds	10.81 (17)	17.66 (9)	30.73 (9)	14.76 (15)	17.43 (10)	10.25 (8)	12.24 (5)	11.33 (8)	9.29 (10)	10.00 (5)	7.48 (8)	8.47 (11)	9.32 (1)
# SBI Combined Index	10.44 (21)	16.91 (19)	29.29 (11)	13.69 (23)	16.79 (10)	9.78 (14)	11.73 (10)	11.04 (8)	9.07 (14)	9.62 (14)	7.14 (20)	8.18 (28)	9.02 (29)
W SBI DE Target	14.68 (1)	25.24 (1)	52.83 (1)	20.89 (1)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.79 (1)	7.82 (1)	9.67 (1)	10.92 (1)
C SBI Fixed Income Ta	0.67 (99)	1.29 (99)	4.23 (99)	7.51 (96)	8.11 (99)	5.34 (99)	4.89 (99)	4.44 (100)	4.09 (100)	3.84 (100)	4.83 (100)	5.16 (100)	5.86 (100)
# S&P 500	12.15 (1)	22.16 (1)	47.26 (1)	18.40 (1)	24.77 (1)	14.18 (1)	16.05 (1)	15.22 (1)	12.92 (1)	13.89 (1)	7.47 (8)	9.56 (1)	10.70 (1)
W MSCI Wld Ex US	15.85 (1)	21.55 (1)	40.20 (1)	7.59 (96)	14.80 (47)	4.22 (99)	8.89 (89)	7.64 (99)	4.27 (100)	5.18 (100)	4.58 (100)	5.16 (100)	5.83 (100)
★ Russell 3000	14.68 (1)	25.24 (1)	52.83 (1)	20.89 (1)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.80 (1)	7.82 (1)	9.67 (1)	10.92 (1)

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $20 Billion
Quarter Ending December 31, 2020

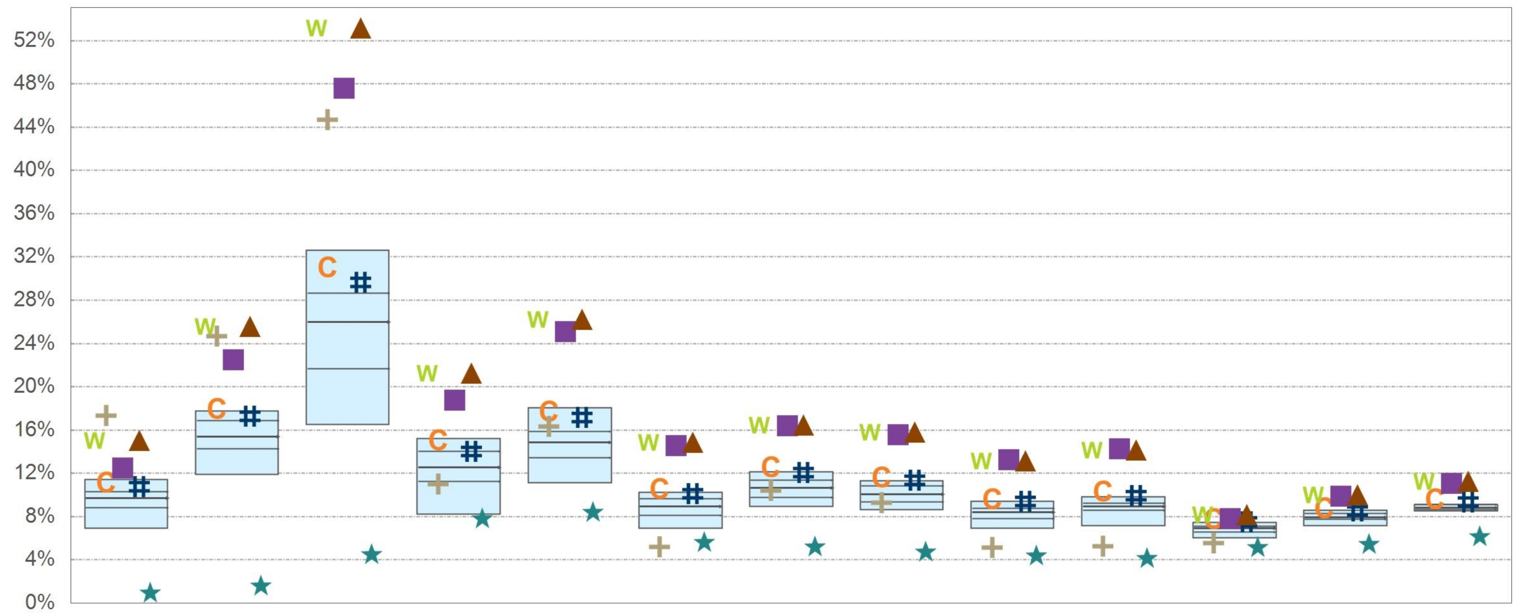


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	54.46	25.12	23.80	6.78	8.94	0.02	0.17	8.93	37.50	2.11
25th	36.63	21.45	22.29	3.36	6.12	0.00	0.00	7.42	33.54	0.66
50th	31.97	17.02	15.78	1.32	3.59	0.00	0.00	4.36	21.07	0.00
75th	23.31	12.90	11.19	0.69	1.96	0.00	0.00	0.45	14.03	0.00
95th	18.35	4.53	5.14	0.00	0.70	0.00	0.00	0.02	5.32	0.00
C Combined Funds	34.11 (31)	16.94 (56)	5.14 (99)	0.00 (100)	1.01 (93)			1.38 (62)		2.11 (5)

Minnesota State Board of Investments
Performance Comparison

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

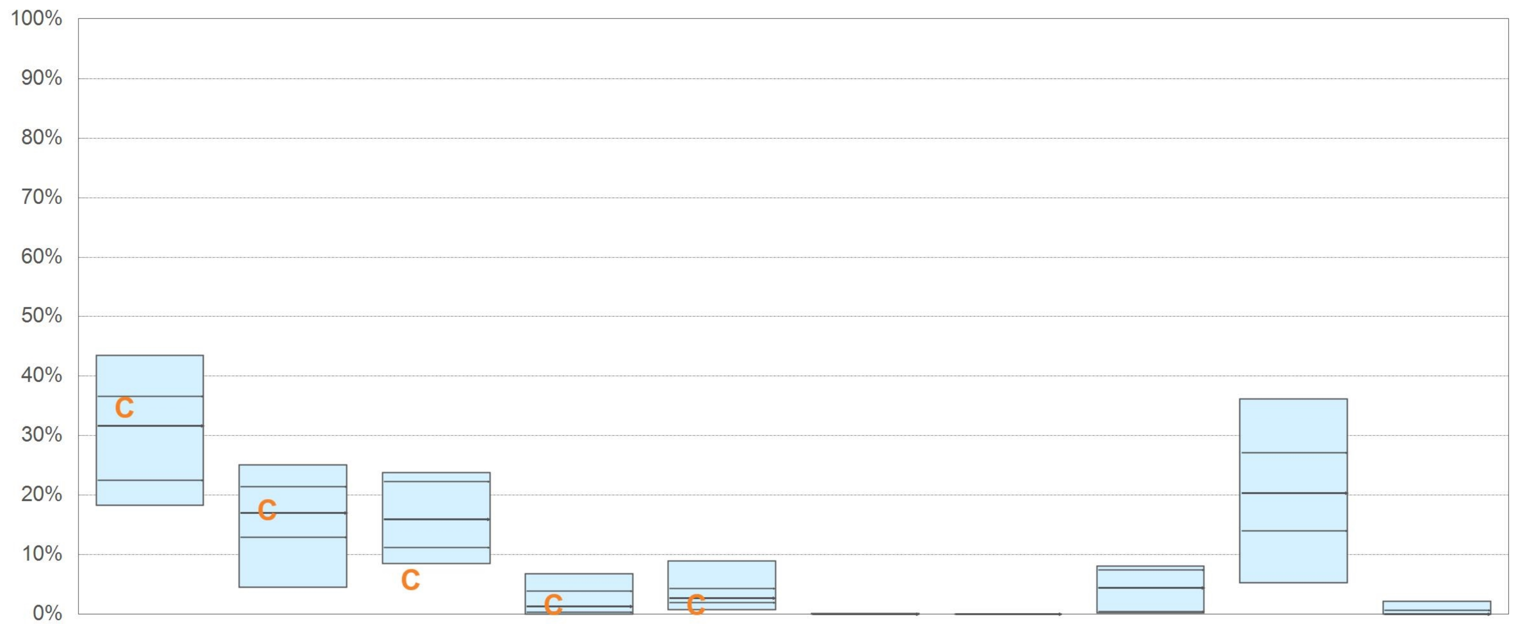
Cumulative Periods Ending : December 31, 2020



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	11.43	17.74	32.65	15.20	18.03	10.25	12.12	11.33	9.40	9.82	7.48	8.61	9.13
25th	10.33	16.88	28.68	14.01	15.85	9.65	11.34	10.82	8.79	9.26	7.13	8.26	9.11
50th	9.70	15.39	25.97	12.54	14.85	8.93	10.64	10.05	8.40	8.93	6.93	7.95	8.82
75th	8.84	14.24	21.67	11.24	13.41	8.09	9.75	9.35	7.80	8.60	6.57	7.76	8.65
95th	6.94	11.91	16.50	8.20	11.11	6.91	8.92	8.67	6.95	7.18	6.03	7.19	8.50
No. Of Obs	31	31	31	31	30	30	30	30	30	30	27	23	16
C Combined Funds	10.81 (15)	17.66 (9)	30.73 (9)	14.76 (18)	17.43 (9)	10.25 (5)	12.24 (1)	11.33 (5)	9.29 (9)	10.00 (1)	7.48 (5)	8.47 (10)	9.32 (1)
# SBI Combined Index	10.44 (21)	16.91 (21)	29.29 (9)	13.69 (28)	16.79 (9)	9.78 (15)	11.73 (9)	11.04 (5)	9.07 (15)	9.62 (15)	7.14 (21)	8.18 (33)	9.02 (37)
W SBI DE Target	14.68 (1)	25.24 (1)	52.83 (1)	20.89 (1)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.79 (1)	7.82 (1)	9.67 (1)	10.92 (1)
C SBI Fixed Income Ta	0.67 (99)	1.29 (99)	4.23 (99)	7.51 (95)	8.11 (99)	5.34 (99)	4.89 (99)	4.44 (100)	4.09 (100)	3.84 (100)	4.83 (100)	5.16 (100)	5.86 (100)
# S&P 500	12.15 (1)	22.16 (1)	47.26 (1)	18.40 (1)	24.77 (1)	14.18 (1)	16.05 (1)	15.22 (1)	12.92 (1)	13.89 (1)	7.47 (5)	9.56 (1)	10.70 (1)
W MSCI World Ex US	17.01 (1)	24.33 (1)	44.37 (1)	10.65 (78)	15.96 (18)	4.88 (99)	10.06 (67)	8.92 (88)	4.82 (99)	4.92 (100)	5.23 (100)		
★ Russell 3000	14.68 (1)	25.24 (1)	52.83 (1)	20.89 (1)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.80 (1)	7.82 (1)	9.67 (1)	10.92 (1)

Wilshire

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $50 Billion
Quarter Ending December 31, 2020

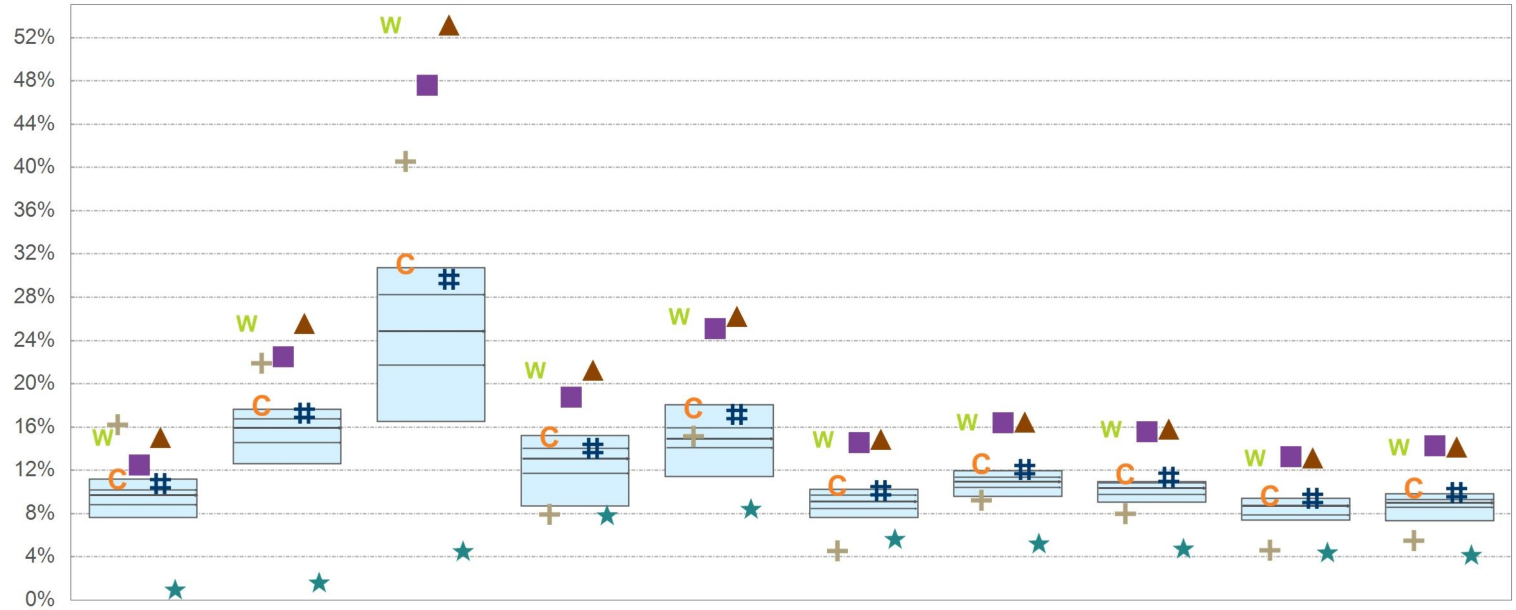


Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	43.47	25.12	23.80	6.78	8.94	0.09	-	8.11	36.12	2.11
25th	36.63	21.45	22.29	3.88	4.32	0.00	-	7.42	27.11	0.66
50th	31.69	17.02	15.95	1.32	2.71	0.00	-	4.36	20.32	0.00
75th	22.50	12.88	11.19	0.32	1.96	0.00	-	0.45	14.03	0.00
95th	18.35	4.53	8.46	0.00	0.70	0.00	-	0.25	5.32	0.00
C Combined Funds	34.11 (33)	16.94 (58)	5.14 (100)	0.00 (100)	1.01 (91)			1.38 (58)		2.11 (5)

Minnesota State Board of Investments
Performance Comparison

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

Cumulative Periods Ending : December 31, 2020



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	11.18	17.66	30.73	15.20	18.03	10.25	11.94	10.94	9.40	9.82
25th	10.18	16.76	28.26	14.01	15.90	9.72	11.34	10.82	8.79	9.29
50th	9.70	15.93	24.89	13.08	14.90	9.14	10.96	10.37	8.68	8.99
75th	8.85	14.59	21.74	11.74	14.07	8.44	10.43	9.74	7.90	8.61
95th	7.65	12.62	16.50	8.73	11.42	7.61	9.59	9.03	7.41	7.34
No. Of Obs	21	21	21	21	21	21	21	21	21	21
C Combined Funds	10.81 (10)	17.66 (5)	30.73 (5)	14.76 (15)	17.43 (10)	10.25 (5)	12.24 (1)	11.33 (1)	9.29 (10)	10.00 (1)
# SBI Combined Funds Ind	10.44 (15)	16.91 (15)	29.29 (5)	13.69 (30)	16.79 (10)	9.78 (15)	11.73 (5)	11.04 (1)	9.07 (15)	9.62 (15)
W SBI Domestic Equity Ta	14.68 (1)	25.24 (1)	52.83 (1)	20.89 (1)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.79 (1)
★ SBI Fixed Income Targe	0.67 (100)	1.29 (100)	4.23 (100)	7.51 (100)	8.11 (100)	5.34 (100)	4.89 (100)	4.44 (100)	4.09 (100)	3.84 (100)
■ S&P 500	12.15 (1)	22.16 (1)	47.26 (1)	18.40 (1)	24.77 (1)	14.18 (1)	16.05 (1)	15.22 (1)	12.92 (1)	13.89 (1)
+ MSCI Wld Ex US (Net)	15.85 (1)	21.55 (1)	40.20 (1)	7.59 (100)	14.80 (55)	4.22 (100)	8.89 (100)	7.64 (100)	4.27 (100)	5.18 (100)
▲ Russell 3000	14.68 (1)	25.24 (1)	52.83 (1)	20.89 (1)	25.85 (1)	14.49 (1)	16.12 (1)	15.43 (1)	12.76 (1)	13.80 (1)

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TAB B

Executive Director's Administrative Report

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DATE: February 17, 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 December 31, 2020, is included as **Attachment A**.

2. FY20 Audit Report

The Legislative Auditor letter to the financial audit of the State Board of Investment financial operations for Fiscal Year 2020 is included as **Attachment B**. The Office of the Legislative Auditor (OLA) had no written findings or recommendations for the SBI.

3. FY20 Annual Report

The Fiscal Year 2020 Annual Report was distributed January 2021.

4. 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 fourth quarter, there was twelve restricted companies on the SBI divestment list, and 274,000 shares were sold due to the restriction.

On December 24, 2020, 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.

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

On December 24, 2020, 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.

6. 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 DECEMBER 31, 2020

ITEM	FISCAL YEAR 2021 BUDGET	FISCAL YEAR 2021 12/31/2021
PERSONNEL SERVICES		
FULL TIME EMPLOYEES	$ 6,721,000	$ 2,384,138
PART TIME EMPLOYEES	0	0
MISCELLANEOUS PAYROLL	125,000	0
SUBTOTAL	**$ 6,846,000**	**$ 2,384,138**
STATE OPERATIONS		
RENTS & LEASES	285,000	163,562
REPAIRS/ALTERATIONS/MAINTENANCE	21,000	1,202
PRINTING & BINDING	12,000	1,950
PROFESSIONAL/TECHNICAL SERVICES	360,000	54,080
COMPUTER SYSTEMS SERVICES	150,000	109,003
COMMUNICATIONS	25,000	6,941
TRAVEL, IN-STATE	3,000	0
TRAVEL, OUT-STATE	235,000	0
SUPPLIES	150,000	7,479
EQUIPMENT	188,000	1,402
EMPLOYEE DEVELOPMENT	150,000	79,401
OTHER OPERATING COSTS	125,000	55,878
INDIRECT COSTS	300,000	109,880
SUBTOTAL	**$ 2,004,000**	**$ 590,778**
TOTAL ADMINISTRATIVE BUDGET	**$ 8,850,000**	**$ 2,974,916**

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OLA **OFFICE OF THE LEGISLATIVE AUDITOR**
STATE OF MINNESOTA • James Nobles, Legislative Auditor

January 11, 2021

Mr. Mansco Perry III, Executive Director and Chief Investment Officer
Minnesota State Board of Investment
60 Empire Drive, Suite 355
Saint Paul, MN 55103

Dear Mr. Perry:

The Office of the Legislative Auditor has completed its audit of certain financial activities at the Minnesota State Board of Investment. This work supports our audit of the State of Minnesota's financial statements for the year ended June 30, 2020. The primary objective of the audit is to render an opinion on the State of Minnesota's financial statements, which will be included in the *Comprehensive Annual Financial Report,* prepared by the Department of Management and Budget. The work in your department also supports our audit opinions on the financial statements of the three state retirement systems: Minnesota State Retirement System, Public Employees Retirement Association, and Teachers Retirement Association. This is not a comprehensive audit of the Minnesota State Board of Investment.

In planning and performing this audit, we considered SBI's internal control system to determine the audit procedures that are appropriate. We gained an understanding, but did not test SBI's internal controls. As part of this audit, we also reviewed certain investment related financial activity presented in the financial statements and notes to the financial statements for the State of Minnesota and the three state retirement systems. This activity includes, but is not limited to, investment balances, investment fees, and securities lending.

On December 15, 2020, we issued an unqualified (clean) opinion on the State of Minnesota's *Comprehensive Annual Financial Report* for the fiscal year ended June 30, 2020. In addition, we issued an unqualified (clean) opinion on the financial statements of each of the three state retirement systems. We also provided the state and three state retirement systems with a report on the Internal Control over Financial Reporting. For the fiscal year ending June 30, 2020, we had no written findings or recommendations directed toward the Minnesota State Board of Investment.

We appreciate the cooperation and assistance provided by the staff and administration of the State Board of Investment throughout our audit process.

Sincerely,

Tracy Gebhard

Tracy Gebhard, CPA
Audit Director

Cc: Paul Anderson, Director Financial Services & Operations

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TAB C

Private Markets Investment Program

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Private Markets Investment Program

This report provides information and action items pertaining to the Private Markets Investment Program. Items B and C are action items for the Investment Advisory Council's consideration.

	TAB
A. Status of SBI Current Private Markets Commitments	D
B. Recommendation for New Private Markets Commitments	E
C. Recommendation for a Private Markets Investment Consultant	F

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TAB D

Status of
SBI Current
Private Markets
Commitments

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A. Status of SBI Current Private Markets Commitments

Minnesota State Board of Investment

Combined Funds
December 31, 2020

Combined Funds Market Value	$82,140,167,778
Amount Available for Investment	**$7,797,959,376**

	% of Combined Funds	Current Level	Target Level [1]	Difference
Market Value (MV)	15.5%	$12,737,082,568	$20,535,041,945	$7,797,959,376
Policy Target	*25%*			
Statutory Limit	*35%*			
MV +Unfunded	28.6%	$23,457,411,434	$36,963,075,500	$13,505,664,066
Policy Limit	*45.0%*			

Asset Class	% of Combined Funds	Market Value	Unfunded Commitment	Total
Private Equity	9.4%	$7,689,249,774	$6,556,319,327	$14,245,569,101
Private Credit	1.0%	$855,568,720	$1,146,447,121	$2,002,015,841
Real Assets	2.1%	$1,734,154,284	$735,390,723	$2,469,545,008
Real Estate	1.4%	$1,132,858,689	$1,091,249,781	$2,224,108,470
Distressed/Opportunist	1.5%	$1,204,677,303	$1,190,921,914	$2,395,599,217
Other [2]		$120,573,797		
Total		$12,737,082,568	$10,720,328,866	$23,457,411,434

Cash Flows
December 31, 2020

Calendar Year	Capital Calls	Distributions	Net Invested
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)
2016	$1,874,320,138	($1,728,367,357)	$145,952,781

[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 accrual

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TAB E

Recommendation for New Private Markets Commitments

DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Recommendation for New Private Markets Commitments

Staff is recommending the following items for new private markets commitments.

Existing Managers:

Private Credit	Brookfield	Brookfield RE Finance VI	$200 Million
Private Equity	Adams Street	Global Secondaries 7	$300 Million
Private Equity	Hellman & Friedman	HFCP Fund X	$300 Million
Private Equity	KKR	Americas Fund XIII	$300 Million
Private Equity	PPC Mgmt	PPC	$200 Million
Private Equity	Thomas H. Lee	THL Fund IX	$150 Million
Real Estate	Lubert-Adler	Recovery and Capital Enhancement Fund	$100 Million

ACTION ITEMS:

1) **Investment in a new private credit strategy with an existing manager, Brookfield Asset Management ("Brookfield"), in Brookfield Real Estate Finance Fund VI ("BREF VI").**

   Brookfield is forming Brookfield Real Estate Finance Fund VI to invest in commercial real estate mezzanine debt. BREF VI will seek to create mezzanine debt positions by: (i) originating a whole loan, selling the first mortgage and retaining the mezzanine exposure; (ii) providing capital to recapitalization transactions; or (iii) purchasing debt secured by real estate. BREF VI's lending activities will be focused principally on high-quality real estate assets in strategic locations in the U.S. and selectively in the U.K. and Europe. The Fund will focus on high-quality property collateral that produces stable cash flow following the completion of an anticipated lease-up and/or renovation period.

   In addition to reviewing the attractiveness of the Real Estate Finance Fund VI investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

   More information on Real Estate Finance Fund VI is included as **Attachment A beginning on page 7.**

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 $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.

2) **Investment with an existing private equity manager, Adams Street Partners ("Adams Street"), in Adams Street Global Secondary Fund 7 ("Fund 7").**

Adams Street is establishing Fund 7 to continue its long history of investing in the private equity secondaries market. Fund 7 will have a bias toward buyout and growth equity funds given Adams Street's view of having more predictable outcomes relative to other subclasses. Adams Street's approach is focused on specific transaction and fund attributes, therefore it is expected that there will be an emphasis on targeted transactions either through single manager/GP family purchases, targeted portfolios, or GP-led transactions. In general, the team will focus on transactions with a growth orientation and attractive entry valuations where a high quality private market fund manager has significant influence to create value. The Fund does not have specific geographic exposure targets; however, given the global nature of the firm's fund manager relationships, the Fund is expected to be primarily invested across North American, European and Asian exposures.

In addition to reviewing the attractiveness of the Adams Street Global Secondary Fund 7 investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Adams Street Global Secondary Fund 7 is included as **Attachment B beginning on page 11.**

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 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.

3) **Investment with an existing private equity manager, Hellman & Friedman LLC ("H&F"), in Hellman & Friedman Capital Partners X ("Fund X").**

Hellman & Friedman is seeking investors for its tenth fund focused on making equity-related investments mainly in the $400 million - $4 billion equity check range, primarily in the U.S. and developed countries outside the U.S. The Firm targets investments in mid to large-cap companies, depending on where it believes it can find the most compelling opportunities. H&F specifically targets high quality growth businesses where it believes deep sector expertise and bespoke value creation plans can make a significant difference to the trajectory of the company. Once H&F acquires a business, the Firm works to add value as a knowledgeable working business partner actively assisting portfolio company management with major strategic and financial initiatives.

In addition to reviewing the attractiveness of the Hellman & Friedman Capital Partners X investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Hellman & Friedman Capital Partners X is included as **Attachment C beginning on page 15.**

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 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.

4) **Investment with an existing private equity manager, KKR, in KKR North America Fund XIII ("Fund XIII").**

KKR is forming Fund XIII to engage primarily in leveraged buyouts and build-ups, other investments with a view to control or significant influence, and growth equity investments, primarily in the United States and Canada. The Fund will seek to make approximately 25-30 investments in upper-middle market transactions, and expect the majority of investments to be in the $500 million to $3 billion transaction value range. Fund XIII will pursue a variety of investments, including high-quality companies with significant potential for operational improvements and global growth, both organically and through accretive mergers & acquisitions; investments in complex conglomerate divestitures; and investments in leading companies with defensible market conditions that have been impacted by market dislocations.

In addition to reviewing the attractiveness of the KKR North America Fund XIII investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on KKR North America Fund XIII is included as **Attachment D beginning on page 19.**

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 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.

5) **Investment with an existing private equity manager, PPC Enterprises LLC ("PPC"), in Public Pension Capital (the "Fund").**

Public Pension Capital was established in 2014 as an open-ended fund in order to maximize alignment of interest between limited partner investors and the Fund's general partner. The Fund focuses on making investments in conservatively priced businesses with sustainable competitive advantages and favorable industry dynamics in the lower middle market. It is desirable that the investments are in stable, profitable, well-managed companies with positive cash flow and defensible strategic niches. The Fund will deploy capital for buyouts, control equity positions, expansion, and minority equity with acceptable Board representation and governance rights. The Fund seeks opportunities where the investment team can provide strategic, operational, and financial support directly to portfolio companies to enhance value and guide them towards successful exit opportunities.
In addition to reviewing the attractiveness of the Public Pension Capital investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Public Pension Capital is included as **Attachment E beginning on page 23.**

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 $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.

6) Investment with an existing private equity manager, Thomas H. Lee Equity Partners ("THL"), in Thomas H. Lee Equity Fund IX ("Fund IX").

THL is raising Fund IX to continue their strategy of acquiring middle-market, North American growth-oriented businesses and increasing value organically and through acquisitions. THL focuses their efforts on companies with enterprise values between $250 million and $2.5 billion as they believe this will have a greater ability to source transactions, accelerate growth, and improve operations for companies of this size. By using their domain expertise and the internal operating capabilities of their Strategic Resource Group ("SRG"), they seek to create deal sourcing advantages, and to accelerate growth and improve operations in portfolio companies in partnership with management teams. Once THL acquires a portfolio company, they are active, hands-on investors, with an operationally-intensive approach to building value. Their integrated teams of investment and SRG professionals partner with portfolio company management teams to identify high priority growth, operating, and organizational initiatives.

In addition to reviewing the attractiveness of the Thomas H. Lee Equity Fund IX investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Thomas H. Lee Equity Fund IX is included as **Attachment F beginning on page 27.**

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 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.

7) **Investment with an existing real estate manager, Lubert-Adler Partners ("Lubert-Adler"), in Lubert-Adler Recovery and Enhancement Capital Fund (the "Fund").**

Lubert-Adler is seeking investors with the goal of creating a diversified portfolio of middle-market rental assets that generate an attractive yield at a favorable cost basis. The Firm seeks to take advantage of market dislocation with respect to preferred equity, mezzanine loans, loan defaults, senior loans, and other distressed debt opportunities. The Fund will seek to acquire assets at a discounted basis and to stabilize assets over 24 months in order to own an asset that is cash flowing in a potentially deflationary time. The Fund will seek assets in markets with high barriers to entry, such as those in the "emerging" submarkets of gateway cities and primary submarkets of next-tier locations, with significant emphasis on the respective submarket's supply and demand conditions and trends. The Fund will seek a margin of safety through a property's competitive cost advantage as well as further downside protection through diversification and a substantial portion of the overall return generated from cash flow.
In addition to reviewing the attractiveness of the Lubert-Adler Recovery and Enhancement Capital Fund investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Lubert-Adler Recovery and Enhancement Capital Fund is included as **Attachment G beginning on page 31.**

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 $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.

ATTACHMENT A

PRIVATE CREDIT MANAGER SUMMARY PROFILE

I. *Background Data*

Name of Fund:	Brookfield Real Estate Finance Fund VI (“BREF VI” or the “Fund”)
Type of Fund:	Private Credit
Target Fund Size:	$3 Billion
Fund Manager:	Brookfield Asset Management
Manager Contact:	Jeff Clarke 250 Vesey Street 15th floor New York, NY 10281

II. *Organization and Staff*

Brookfield Asset Management Inc. is establishing Brookfield Real Estate Finance Fund VI (“BREF VI”), L.P. to invest in commercial real estate mezzanine debt. BREF VI is a continuation of the real estate finance strategy that Brookfield has successfully executed over the past 17 years, having invested more than $7.6 billion of equity in over 160 transactions.

Brookfield is a leading global alternative manager with approximately $575 billion of AUM across real estate, infrastructure, private equity and credit. 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. Brookfield Property Group (“BPG”), one of the world’s largest leading real estate managers, represents the Firm’s largest business group, with over $208 billion of real estate assets under management globally. BPG comprises a deep pool of talented and experienced investment and asset management professionals and is supported by operating employees in Brookfield’s real estate operating businesses.

The day-to-day operations of BREF VI will be conducted by Brookfield’s Real Estate Finance team, a core group of 25 investment professionals, who possess a diverse and complementary skill set in real estate and finance. BREF and the Fund will be led by Andrea Balkan, Managing Partner, who has been leading Brookfield’s real estate finance offerings since their inception in 2002. Senior members of BREF have on average nearly 25 years of experience in commercial real estate investing, financing and capital markets, including extensive experience originating real estate debt throughout a variety of credit cycles and market conditions. In addition to the Investment Team, BREF VI will have access to the expertise of BPG and the Firm’s broader resources.

Brookfield’s ESG approach reflects the Firm’s experience as an owner and operator of real assets. Throughout the Firm’s history, they have recognized that acting responsibly toward the environment and their stakeholders is fundamental to operating productive, profitable business over the long run. Brookfield's ESG principles are embedded across the Firm's operations and help ensure that their business model will be sustainable well into the future. As a lender, it is not anticipated that the Fund will focus on influencing the ESG policies implemented at the underlying properties. However, as part of the initial due diligence process and prior to the origination of every debt position, the Investment Team requires that an environmental site assessment be conducted by a third-party consultant on every commercial property that serves as collateral for financing.

On March 13, 2019, Brookfield Asset Management Inc. ("Brookfield") and Oaktree Capital Group, LLC ("OCG") announced that they had entered into an agreement to which Brookfield would acquire a majority interest in Oaktree's business. 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

BREF VI will seek to create mezzanine debt positions by: (i) originating a whole loan, selling the first mortgage and retaining the mezzanine exposure; (ii) providing capital to recapitalization transactions; and (iii) purchasing debt secured by real estate. Investments are generally expected to include mezzanine loans (secured by pledged of equity), subordinated interests in B-Notes, first mortgage loans and participations in each of these types of debt instruments.

BREF VI's lending activities will be focused principally on high-quality real estate assets in strategic locations in the U.S. and selectively in the U.K. and Europe. In particular, the Fund will seek to finance commercial properties in markets and sectors in which Brookfield has significant experience and operating platforms. The quality of underlying real estate collateral, as well as the experience and reputation of the borrower, will be critical drivers of investment decisions.

BREF VI is targeting a gross IRR of 11% to 13% (net 8% to 10%). Brookfield anticipates that the return on investments targeted by the Fund will be derived predominantly from interest income collected during the term of an investment.

Investment Principles

- BREF VI will focus on high-quality property collateral that produces stable cash flow following the completion of an anticipated lease-up and/or renovation period. The target properties will be competitive in their markets; and will be owned and managed by experienced property owners and managers.

- The Fund will target debt investments generally within the 60%-80% LTV tranche of a property financing. Brookfield believes this position in the capital structure provides for meaningful current income to the lender during the term of financing a debt exposure level that is below what Brookfield believes to be the long-term intrinsic value of the underlying property collateral.

- BREF VI generally will seek to control negotiations of loan documents and the underwriting process in order to provide the Fund with the ability to control major decisions regarding the underlying property collateral, as well as the ability to control any and all rights and remedies available to the lender under the loan documentation.

- The strategy seeks to maximize returns by utilizing combinations of real estate and finance expertise to identify dislocations or inefficiency in the real estate finance markets. The investment team will seek to pursue investments with a debt exposure that it believes to be below intrinsic value of the underlying property collateral.

- BREF will apply a comprehensive and systematic credit assessment and due diligence process to each potential transaction. Regardless of the type of transaction, investment success requires an in-depth understanding of the underlying real estate on a case-by-case, market specific basis. BREF will apply its expertise in the credit analysis and underwriting of potential investments, as well as the broader resources of Brookfield and appropriate third parties. BREF's conservative financing strategy is a crucial management tool. They avoid using cross-collateralized, recourse and mark-to-market financing in the format of repurchase agreements.

- BREF's active asset management helps identify potential issues and mitigate them before they become problems. BREF considers asset management and surveillance of investments to be as important as due diligence, Investment Committee and closing processes. During the lifecycle of an investment, the Investment Team will work closely with borrowers, servicers and trustees to monitor the performance of underlying collateral properties and other significant factors relevant to the financing. On a quarterly basis, the Investment Team will prepare a review of each asset under management, including a detailed financial analysis of collateral property operations and tenant occupancy.

- The Fund's affiliation with Brookfield, a major owner and operator of real estate with experience and relationships in real estate and capital markets in the U.S., U.K. and Europe, provides BREF with real-time market leasing and sales data in addition to expertise in property operations. Brookfield believes this access to real-time market data provides BREF VI with an additional advantage in evaluating potential investment opportunities and accessing the lowest cost of capital for our investments. Further, if necessary, BREF may bring to bear the resources of Brookfield to actively manage nonperforming investments with the aim of proactively recovering capital rather than pursing an early liquidation.

The investment team is vertically integrated, with origination, underwriting, closing, asset management and financial reporting functions. Responsibility for a deal is viewed as a team effort with collaboration from all members of the Investment Team and others within the Brookfield platform. The investment team is not segmented by industry; however, several members of the Investment Team have specific responsibilities, including sourcing and execution of loan originations and acquisitions.

IV. *Investment Performance*

Previous fund performance as of September 30, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
Brookfield Real Estate Finance I	2004	$600 Million	--	5.8%	1.6x	1.2x
Brookfield Real Estate Finance II	2007	$727 Million	--	5.3%	1.2x	1.2x
Brookfield Real Estate Finance III	2011	$422 Million	--	7.5%	1.1x	1.2x
Brookfield Real Estate Finance IV	2014	$1.375 Billion	--	8.8%	1.2x	1.1x
Brookfield Real Estate Finance V	2016	$2.949 Billion	--	8.3%	1.1x	0.4x

* 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.

V. *Investment Period and Term*

The Investment Period is 4 years from initial closing with a Fund Term of 10 years. The Fund Term is subject to extension at the discretion of the General Partners for one-year period and with the consent of the Advisory Committee for an additional one-year period.

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 B

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Adams Street Global Secondary Fund 7 LP
Type of Fund:	Private Equity – Secondaries
Target Fund Size:	$1.5 billion
Fund Manager:	Adams Street Partners
Manager Contact:	Scott Hazen, CFA Adams Street Partners One North Wacker Drive Suite 2200 Chicago, IL 60606-2823

II. Organization and Staff

Adams Street Partners is a leading private equity investment firm, providing primary, secondary, co-investment, private credit, and venture capital investment management services to institutional clients. Together with its predecessor organizations, the firm began investing in private equity partnerships in 1979 and has been an active direct investor in private equity since 1972. Adams Street was formed on January 1, 2001 and was comprised of the members of Brinson Partners' Private Equity Group. Adams Street is an independent, 100% employee owned organization. In 2020, Adams Street had over 75 investment professionals managing $42 billion of institutional capital across all of its strategies.

Adams Street was a pioneer in the private equity secondaries market, first investing in secondaries in 1986. Since that time, the firm has closed over 225 secondary transactions and now has over $7 billion of secondary assets under management. Throughout this history, Adams Street has maintained a focused approach on investing in high quality funds. The Venture Partnership Acquisition Fund and the Venture Partnership Acquisition Fund II (“VPAF II”) were formed in 1988 and 1990, respectively, for the purpose of acquiring private equity limited partner interests in the secondary market. These funds were among the first dedicated funds in the industry formed to purchase secondaries. Following the investment of VPAF II, Adams Street continued making secondary investments via its fund of funds programs. In 2004, Adams Street began raising secondaries funds again for the purpose of investing in interests that exceeded the Adams Street Partners’ managed entities allocations to secondary investments. Today Adams Street secondary funds are managed in accordance with a well-conceived and implemented investment allocation policy. The Secondary Investments team is led by Jeff Akers and includes 13 investment professionals.

In 2010, Adams Street became a signatory of the United Nations-supported Principles for Responsible Investment. Since then the firm has formed an ESG committee, adopted an ESG policy, provided firm-wide ESG training and developed a process for integrating ESG considerations into investment decisions. Adams Street also believes that diversity strengthens their business and is committed to increasing diversity in the financial industry. A majority of the firm's employees and equity owners are women and/or from diverse backgrounds. Close to half of the firm's senior investment professionals are women and/or from diverse backgrounds.

III. Investment Strategy

Adams Street views the secondary landscape through several different lenses: macroeconomic trends, sub-class exposure, supply and demand, and manager / investor related issues driven by fundraising or market sentiment. Because the secondary market has become more active, transparent and efficient, the Secondary Investment Team's success is driven by understanding where the best secondary investments can be found in a broader landscape. Adams Street believes that outperformance can be achieved through a selective, disciplined and integrated process. Adams Street intends to capitalize on the experience of its Secondary Investment Team, its substantial expertise in transactions, its proprietary database of information, its extensive global sourcing and its existing General Partner relationships. Across its Secondary, Primary, Venture, Credit and Co-Investment funds, Adams Street is an investor in over 1,050 funds and sits on over 510 advisory boards. Adams Street believes that this coverage provides them with an information advantage when choosing investments and positions them as a preferred buyer of private market fund interests from both the GP and LP perspective.

The Fund will have a bias toward buyout and growth equity funds given Adams Street's view of having more predictable outcomes relative to other subclasses. The Fund will also opportunistically pursue transactions in venture capital or other subclasses where the firm can utilize its relationships to identify attractive risk/return propositions. The Fund does not have specific geographic exposure targets; however, given the global nature of the firm's fund manager relationships, the Fund is expected to be primarily invested across North American, European and Asian exposures. Adams Street's approach is focused on specific transaction and fund attributes, therefore it is expected that there will be an emphasis on targeted transactions either through single manager/GP family purchases, targeted portfolios, or GP-led transactions.

In general, the team will focus on transactions with a growth orientation and attractive entry valuations where a high quality private market fund manager has significant influence to create value. Portfolio construction is a key part of its investment process as well. Adams Street utilizes a thematic approach to target specific funds and exposures that it believes present the best risk/return characteristics for the fund portfolio. It is a process that is active, systematic and ongoing. Early due diligence is more focused on understanding the broader outlook of the portfolio, while the final due diligence involves a more granular analysis of the underlying company investments and exit assumptions. Once an investment has been made, Adams Street continues to actively monitor investments to ensure that profit allocations, distributions, clawbacks and amendments are made to the benefit of investors.

Adams Street believes that the Investment Period for Fund 7 will overlap with a market environment conducive to the firm's long-term strategy. Given the Fund's anticipated focus on private market fund interests that are 3-8 years old, the record levels of primary commitments made between 2013 and 2018 should provide ample amounts of deal flow. In addition, the recent and expected increase in volatility will likely decrease the ability of competing Secondary buyers to use leverage to purchase large portfolios at high prices. This will likely result in more sales being broken up into smaller portfolios or single deals, which are a key part of Adams Street's strategy. Adams Street does not intend to use leverage as part of its underwriting process but plans to use a credit facility of up to 30% of aggregate commitments in Fund 7.

IV. *Investment Performance*

Previous fund performance as of September 30, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI**
VPAF	1988	$47 million	$3.8 million	12.1%	1.9	1.9
VPAF II	1990	$111 million	$20 million	25.3%	2.0	2.0
ASGOS	2004	$211 million	-	11.3%	1.7	1.6
ASGOS II	2009	$738 million	-	14.2%	1.7	1.5
ASGSF V	2012	$1.1 billion	$100 million	5.3%	1.2	0.6
ASGSF VI	2017	$1.0 billion	$100 million	30.3%	1.3	0.0

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

V. *Investment Period and Term*

The Investment Period ends five years after the Initial Investment Date. The term of the Fund is 10 years from the Initial Investment Date with three, one-year extensions at the discretion of the GP.

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 C

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. *Background Data*

Name of Fund:	Hellman & Friedman Capital Partners X, L.P.
Type of Fund:	Private Equity – Buyout
Target Fund Size:	$20 billion
Fund Manager:	Hellman & Friedman LP
Manager Contact:	Suzanne Kim 415 Mission Street, Suite 5700 San Francisco, CA 94105

II. *Organization and Staff*

Hellman & Friedman LLC, a subadvisor to Hellman & Friedman LP (collectively with Hellman & Friedman LP, the "Firm" or "H&F") is raising Hellman & Friedman Capital Partners X, L.P. (collectively with any of its parallel funds, "HFCP X" or the "Fund") to continue H&F's history of making large-scale private equity investments in high quality, growing businesses in the developed markets. Since inception, H&F has raised over $50 billion of committed capital and have invested in over 100 companies.

Hellman & Friedman was founded in 1984 by Warren Hellman and Tully Friedman. Since the firm's inception, H&F has been exclusively focused on private equity through a single private equity strategy. The firm has over 70 investment professionals and approximately 140 employees in total across three offices – San Francisco, New York, and London.

III. *Investment Strategy*

H&F's strategy is to focus its resources on the private equity market. The firm concentrates its people in small teams on what it believes are the best companies and industries that meet the Firm's investment criteria. The Firm believes its disciplined investment philosophy and process give it a competitive advantage. H&F's well-articulated and analytical investment philosophy is applied rigorously and embraced by its investment professionals.

In Fund X, H&F is focused on making equity-related investments mainly in the $400 million - $4 billion equity check range, and primarily in the U.S. and developed countries outside the U.S. The Firm targets investments in mid to large-cap companies, depending on where it believes it can find the most compelling opportunities. The Firm operates in the following sectors: Software, Internet & Media, Financial Services (including Insurance and Insurance Services), Consumer and Retail, Healthcare, Business and Information Services, and Energy and Industrials. H&F generally prefers to make fewer, larger investments to concentrate resources on the Firm's best ideas.

H&F specifically targets high quality growth businesses where it believes deep sector expertise and bespoke value creation plans can make a significant difference to the trajectory of the company. These businesses typically have leading and defensible competitive market positions resulting typically from one or more of the following attributes: strong brand names; long-standing customer relationships; high market share; structural low-cost position; barriers to entry; and/or superior distribution systems. Further, H&F typically seeks to identify businesses with strong economic profiles which may include predictable recurring or re-occurring revenues and the ability to generate high levels of free cash flow or attractive returns on invested capital.

Once H&F acquires a business, the Firm works to add value as a knowledgeable working business partner actively assisting portfolio company management with major strategic and financial initiatives. The Firm has developed expertise in sponsoring and leading growth initiatives at its portfolio companies across a range of areas, including marketing and customer acquisition, customer retention, new product development, expansion in go-to-market resources, digital transformation, and strategic acquisitions. The H&F investment team also leverages the in-house Operating Group, which are people with deep industry, private equity, and value creation expertise, and the in-house Specialists, which have expertise in the areas of legal, tax, and capital markets.

H&F believes ESG considerations are ingrained in H&F's culture. Importantly, H&F does not view ESG considerations as being separate or additional to its core analysis - the Firm believes that ESG factors are a fundamental component of any company's long-term sustainability. Topics like climate change, energy efficiency, board alignment, DEI (Diversity, Equity and Inclusion), cybersecurity and data privacy, and corporate accountability are interwoven into its evaluation of potential investments. H&F adopted its own internal Responsible Investment Policy in 2011 to formally integrate ESG into its investment process and has adopted the American Investment Council's Guidelines for Responsible Investment. Regarding the H&F team, the Firm's Diversity Equity, and Inclusion initiatives are overseen by the DEI Task Force. The Task Force is comprised of an H&F Partner, the Director of Talent, and the HR Manager. The ESG Program Leaders are responsible for developing H&F's ESG strategy, managing the process of ESG integration, monitoring ESG progress, and providing guidance on ESG topics across the Firm and portfolio companies. The ESG Program Leaders are a Partner and Operating Group Senior Project Manager.

IV. *Investment Performance*

Previous fund performance as of September 30, 2020 for the prior H&F Capital Partners (HFCP) funds is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	DPI*
HFCP	1987	$327 million	--	12%	2.1x	2.1x
HFCP II	1991	$877 million	--	22%	2.7x	2.7x
HFCP III	1995	$1.5 billion	$40 million	34%	2.3x	2.3x
HFCP IV	2000	$2.2 billion	$150 million	34%	2.8x	2.8x
HFCP V	2004	$3.5 billion	$160 million	28%	2.7x	2.7x
HFCP VI	2006	$8.4 billion	$175 million	13%	1.9x	1.8x
HFCP VII	2011	$8.9 billion	$50 million	25%	3.2x	1.7x
HFCP VIII	2016	$11.1 billion	--	19%	1.5x	0.1x
HFCP IX	2019	$16.5 billion	$175 million	24%	1.1x	0.0x

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

V. *Investment Period and Term*

Fund IX had a six year investment period and a ten year term, subject to a two year extension with the approval of a majority in interest of the Limited Partners or the advisory board of HFCP X. Any additional extensions of the term will require the approval of a majority in interest of the Limited Partners.

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ATTACHMENT D

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	KKR North America Fund XIII SCSp
Type of Fund:	Private Equity
Target Fund Size:	$12.5 Billion
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.

Since 1976, KKR has raised 12 "flagship" funds focused on North American private equity, which have invested over $56 billion of equity in 212 private equity investments. The firm has taken publicly-listed companies private, acquired divisional assets through corporate divestiture transactions, partnered with family-owned businesses and strategic buyers, structured meaningful minority investments, and acquired and grown businesses through industry consolidation strategies.

The KKR North American private equity team, led by co-heads Pete Stavros and Nate Taylor, comprises 68 dedicated investment professionals, including 10 Partners and five Managing Directors. The team operates across five distinct industry verticals, including Industrials; Health Care; Technology, Media & Telecommunications ("TMT"); Consumer; and Financial Services. The team is further supported by additional resources, including more than 35 North America-dedicated Capstone operating executives, a further 30 executives as part of KKR Capital Markets, and approximately 30 North America-focused Senior and Industry advisors.

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") is establishing KKR North America Fund XIII, SCSp ("The Fund") to engage primarily in leveraged buyouts and build-ups, other investments with a view to control or significant influence, and growth equity investments, primarily in the United States and Canada. The Fund will seek to make approximately 25-30 investments in upper-middle market transactions, and expect the majority of investments to be in the $500 million to $3 billion transaction value range.

The broad parameters of KKR's private equity investment strategy in North America are first defined by industry sectors of focus. The Firm believes five sector teams (Industrials, TMT, Consumer, Health Care, and Financial Services) give a broad and deep coverage of some of the most attractive areas of the U.S. economy and private equity deal flow. Within these sectors KKR pursues long-term themes, but endeavors to retain the flexibility to adapt when periods of dislocation arise, such as the COVID-19 pandemic.

KKR anticipates that the Fund's investments via industry verticals will primarily take the following forms:

- Investments in high-quality companies with significant potential for operational improvements and global growth, both organically and through accretive mergers and acquisitions
- Investments in complex conglomerate divestitures, where corporates sell businesses that are outside their core competencies and where there are opportunities to more efficiently manage those businesses
- Leading companies with defensible market conditions that have been impacted by market dislocations
- Companies with attractive growth potential, where KKR can partner with strong leadership
- Opportunities to invest in platforms for industry consolidation
- Take-private transactions
- Opportunistic public toehold investments in high-quality businesses that KKR would like to own

Leveraging the support of the full suite of KKR resource capabilities is of particular importance to the strategy. These resources include: the over 35 North-America dedicated operating executives at Capstone, as well as dedicated professionals in the areas of macro-economic analysis, global asset allocation, public affairs, and capital markets. The Firm believes that this breadth and depth of resources allows its investment teams to make better decisions, and focus substantially all of their time on investing. KKR views this a key point of differentiation in an increasingly complex investing environment.

KKR's Global Macro and Asset Allocation, Balance Sheet and Markets Risk and Analytics Team (collectively the "GBR Team") consists of 25 dedicated executives across the globe, and is led by Henry McVey, who has over 20 years of experience evaluating macroeconomic trends and asset allocation topics. In his role as head of the GBR Team, Mr. McVey serves as the Chief Investment Officer of the Firm's balance sheet and oversees firm-wide market risk and analytics. The GBR Team works with the North American Private Equity Team throughout the course of the due diligence process to help ensure "top-down" considerations and inputs have been appropriately considered by the Investment Committee. The GBR Team's approach to portfolio construction at the fund-level is designed with the ultimate goal of building portfolios that are balanced across multiple dimensions and can perform well throughout economic cycles.

KKR Capstone is responsible for significant value creation at portfolio companies. While the Firm does not formally require companies to engage Capstone, in many cases they find that Capstone can be an additive resource to management teams. In the predecessor fund KKR Americas Fund XII, Capstone has been involved in approximately 90% of investments to-date. Capstone's involvement typically begins during the diligence process, working with industry teams to identify operational value creation opportunities. Post-investment, Capstone works to support boards and management teams to develop 100-day value creation plans. Once the operational priorities are set, the Capstone Team works in partnership with company management to support major transformational changes within portfolio companies. Over time, the focus of the Capstone team has expanded from purely portfolio company-level projects to full integration with investment teams and end-to-end deal lifecycle involvement. Capstone has also grown its team to include dedicated functional expertise across procurement, supply chain, technology/IT & digital, ESG, insurance, and risk management.

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 discovered in the diligence phase can affect investment decisions; however, a decision to invest or not is rarely due exclusively to ESG issues. ESG-related concerns are often intertwined with other business issues that make the business more, or less, attractive for investment. In rare cases, KKR may find an ESG issue poses such a risk to an investment that the investment does not occur. However, in most instances the Firm looks to determine that a company has significant opportunities because of the way it addresses ESG issues or could have such opportunities if it were to address them in a proactive manner. 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 prior KKR North America Private Equity Funds as of September 30, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI
1976 Fund	1976	$31 Million	--	35.5%	9.3x	9.3x
1980 Fund	1980	$357 Million	--	25.8%	4.4x	4.4x
1982 Fund	1982	$328 Million	--	39.2%	3.3x	3.3x
1984 Fund	1984	$1 Billion	$25 Million	28.9%	4.8x	4.8x
1986 Fund	1986	$672 Million	$18.4 Million	28.9%	10.2x	10.2x
1987 Fund	1987	$6.2 Billion	$145 Million	8.9%	2.0x	2.0x
1993 Fund	1993	$1.9 Billion	$150 Million	16.8%	1.8x	1.8x
1996 Fund	1996	$6.0 Billion	$200 Million	13.3%	1.8x	1.8x
Millennium Fund	2002	$6.0 Billion	$200 Million	16.1%	2.0x	2.0x
2006 Fund	2006	$17.3 Billion	$200 Million	9.2%	1.8x	1.8x
North America Fund XI	2012	$8.7 Billion	--	18.3%	1.9x	1.1x
Americas Fund XII	2017	$13.5 Billion	$150 Million	21.6%	1.9x	0.03x

* 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.

V. *Investment Period and Term*

The investment period for the Fund will run 6 years from the first investment. The term of the Fund will be 11 years from the first investment, subject to two one-year extensions with Limited Partner consent.

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 E

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Public Pension Capital, LLC
Type of Fund:	Private Equity – Buyout
Target Fund Size:	$916 Million
Fund Manager:	PPC Enterprises LLC
Administrative Contact:	Perry Golkin 500 Park Avenue, 4th Floor New York, NY 10022

II. Organization and Staff

PPC Enterprises LLC (together with its affiliates, "PPC" or the "Manager") established Public Pension Capital, LLC (the "Fund") in 2014 to pursue investment opportunities through a unique organizational structure which maximizes alignment of interest between limited partner investors and the Fund's general partner. The intent of this open-ended fund model is to maximize the time investment executives spend on sourcing and creating value in portfolio company investments and minimizing the time utilized for fundraising, regulatory compliance and other administrative functions. Since 2014, PPC has raised an aggregate total of $916 million in capital and intends to continue to accept commitments from select sophisticated public pension fund investors and other long-term investors.

A unique feature of this Fund is that the limited partners annually need to approve the budget, management fee, size of the Fund and the admittance of any new limited partner commitments. The goal is to create a level of interaction and cooperation that has not been typical of previous relationships between limited partners and fund managers. The annual fees and expenses of the Fund and General Partner's profit participation in successful investments (not more than 10%) is less than those payable by most other private equity fund managers. The General Partner believes this structure will create enhanced alignment between the investors and the General Partner with improved economics to the Fund limited partners. An additional feature of the Fund which the Manager believes is attractive to limited partners is the ability for any investor to unilaterally reduce their undrawn and unreserved commitments each year.

In 2020, PPC has 22 employees, 18 of whom are investment professionals, with offices located in New York and Chicago. The Fund's Investment Committee is comprised of Perry Golkin, Michael T. Tokarz and Jim Fisher. Co-Founders, Messrs. Golkin and Tokarz were employed by Kohlberg Kravis Roberts & Co. ("KKR") for 25 and 17 years, respectively. They worked there together both when they were associates and later as partners, overlapping for 16 years.

III. *Investment Strategy*

PPC believes there are significant opportunities to provide capital and operational expertise to companies in the lower and middle market. The Fund focuses on making investments in conservatively priced businesses with sustainable competitive advantages and favorable industry dynamics in the lower middle market. It is desirable that the investments are in stable, profitable, well-managed companies with positive cash flow and defensible strategic niches. The Fund will deploy capital for buyouts, control equity positions, expansion and minority equity with acceptable Board representation and governance rights.

The Investment Team relies upon and implements a disciplined investment process consistent with its prior experience generating proprietary deal flow, executing transactions, partnering with management teams to increase revenue growth and profitability and opportunistically exiting businesses. The Investment Team evaluates each investment opportunity in order to understand the market forces, business drivers, and in conjunction with management, create a well-documented investment thesis. Finally, proposed investments face a rigorous investment review and approval process led by the Investment Committee. The Fund will not make investment decisions without Investment Committee approval. PPC has averaged less than two investments per year, demonstrating its rigorous process and careful selectivity.

The Investment Team is organized by industry groups. PPC believes that deep industry knowledge is required for successful investing. The Investment Team focuses its efforts in areas where its investment professionals have extensive experience. The current investment professionals have extensive experience in the following industries: business and financial services; industrial services and healthcare services. PPC believes the advantage of having a multiple industry strategy is to potentially find high return investments in all environments. A common characteristic of the industries in which the Fund seeks opportunities is that they are all complex. The complexity can derive from a variety of factors such as unique accounting and financial statement rules, litigation, extensive regulation and the need for technical expertise. This limits the number of potential competitors for investment opportunities in these areas.

PPC believes that its direct origination effort, combined with the Investment Team's vast network of relationships, will significantly enhance the Fund's ability to identify investment opportunities at attractive valuations. The Investment Team has an expansive professional network that is expected to continue to yield a strong pipeline of proprietary deal flow to the Fund. Each industry group is responsible for originating investment opportunities and they each have their own independent set of industry contacts and private equity relationships from which to source opportunities. As a result, a majority of PPC's investments to date have been sourced on a proprietary basis or via a limited auction.

PPC targets management teams and owners looking for partners to transform the underlying business. PPC seeks to provide more than just capital. The Investment Team has significant experience working with large and world class corporations and believes they will be able to introduce operational levers and best practices to the portfolio companies with the intent of enhancing value creation and returns. The Fund seeks opportunities where the Investment Team can provide strategic, operational and financial support directly to portfolio companies to enhance value and guide them towards successful exit opportunities.

PPC adopted a policy in 2017 that outlines how PPC integrates ESG related risks and value into their investment due diligence and ownership practices when such issues have the potential to impact the economic value of the investment. All members of the Investment Team are responsible for implementing the ESG policy pre-investment, and when appropriate, external subject matter experts are also involved. During ownership, PPC encourages management teams to identify, report on and address material ESG issues.

IV. Investment Performance

Previous fund performance as of September 30, 2020.

Fund	Vintage Year	Total Commitments	SBI Investment*	Net IRR*	Net MOIC*	Net DPI*
PPC	2014	$916 million	$175 million	31%	1.9	0.6

* Investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Net MOIC are provided by PPC. SBI Investment amount is less than 20% of the total value of the fund and can increase as the size of the fund as increases up to the current $200 million approved commitment.

V. Investment Period and Term

The Fund does not have a fixed term, provided that PPC will use its commercially reasonable efforts to dispose of all investments in a portfolio company within ten years from the date of a Series' initial investment in such portfolio company (subject to three one-year extensions with Board consent).

The Fund will not have a set Commitment Period and instead, any investor can reduce its unfunded and unreserved capital commitments each year, if desired.

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ATTACHMENT F

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. *Background Data*

Name of Fund:	Thomas H. Lee Equity Fund IX, L.P.
Type of Fund:	Private Equity Limited Partnership
Total Fund Size:	$4.25 billion
Fund Manager:	Thomas H. Lee Partners, L.P.
Manager Contact:	Tyler Griffith 100 Federal Street Boston, MA 02110

II. *Organization and Staff*

Thomas H. Lee Partners, L.P. ("THL" or the "Firm") is sponsoring Thomas H. Lee Equity Fund IX, L.P. (the "Fund" and, together with its parallel funds, "Fund IX"), a private investment fund that will acquire middle market growth-oriented businesses, headquartered in North America, in three industry groups: Financial Services, Healthcare, and Technology & Business Solutions. THL intends to partner with portfolio company management to identify and implement organizational, operational, and strategic improvements and to accelerate sustainable revenue and profit growth, both organically and through acquisitions.

THL was founded in 1974 by Thomas Lee and is located in one office in Boston, MA. The Firm has approximately 100 professionals, 15 Executive Advisors, and an extensive network of executive relationships and corporate partnerships. The Firm is firm is led by the Management Committee, which includes Co-CEOs Scott Sperling and Todd Abbrecht, Chairman Tony DiNovi, and Tom Hagerty. Each member of the Committee has worked at THL for over 25 years. The Investment Committee is comprised of the four Management Committee members plus one senior Managing Director who serves on a rotating basis.

III. *Investment Strategy*

THL is raising Fund IX to continue their strategy of acquiring middle-market, North American growth-oriented businesses and increasing value organically and through acquisitions. THL focuses their efforts on companies with enterprise values between $250 million and $2.5 billion as they believe this will have a greater ability to source transactions, accelerate growth, and improve operations for companies of this size. Since its founding in 1974, THL has raised over $25 billion, acquired over 150 portfolio companies, and completed over 400 add-on acquisitions. By using their domain expertise and the internal operating capabilities of their Strategic Resource Group ("SRG"), they seek to create deal sourcing advantages, and to accelerate growth and improve operations in portfolio companies in partnership with management teams.

Based in one office in Boston, MA, investment professionals are organized into Industry Groups, which THL believes facilitates thought leadership and crisp decision making within their three industries of focus. Investment teams are purposefully senior heavy, with 32 Partners who average 22 years of relevant experience. This level of seniority, experience, and continuity enhances the team's investment judgment and network of relationships. To complement THL investment professionals, the Firm established the SRG in 2006 as an internal (paid by THL), operationally-focused resource to partner with THL portfolio companies to accelerate growth, drive operating improvements, and address challenges. Led by Dan Jones, who has been with THL for 13 years, the SRG currently consists of 14 seasoned professionals with operating and consulting backgrounds who are typically fully integrated with THL investment professionals on deal teams from due diligence through exit.

In order to develop deeper domain expertise, improve sourcing, and to recruit highly specialized human capital resources, the Firm developed the "Identified Sector Opportunities" ("ISO") approach. The ISO process finds attractive secular themes, identifies and constructs investment theses for ISOs that benefit from these themes and trends, ideas are presented to the Investment Committee, and, if approved, a resource plan is developed to pursue that particular ISO. Approved ISOs are regularly reviewed to ensure ongoing alignment with the Investment Committee and the allocation of resources to the most attractive segments.

Once THL acquires a portfolio company, they are active, hands-on investors, with an operationally-intensive approach to building value. Their integrated teams of investment and SRG professionals partner with portfolio company management teams to identify high priority growth, operating, and organizational initiatives. SRG is implementation-oriented, typically operating on-site at portfolio companies three to five days per week to help drive key initiatives alongside portfolio company executives. SRG works many layers deep in portfolio companies alongside dedicated personnel to catalyze and embed change in the organization. The Firm's value creation strategy is a cross-functional effort led by SRG, which organizes its capabilities around five key value creation levers:

- Go-to-market: accelerating revenue growth through various salesforce and product initiatives
- M&A: systematic execution and integration to build scale and enhance growth
- Scalability: investing in infrastructure and improving margins
- Human Capital: right people, right structure, right incentives
- Technology: digitizing services and products, platform readiness, cybersecurity

THL's Environmental, Social, & Governance ("ESG") policy guides the investment team throughout the diligence and ownership phases. The Firm's policy follows the guidelines for responsible investing set forth by the American Investment Council. THL seeks to improve companies with long-term sustainability in mind and to benefit multiple stakeholders. In addition, the Firm is focused on improving diversity, equity, and inclusion ("DEI") within THL by forming partnerships with groups that will increase the number of diverse candidates. THL's DEI committee is comprised of senior leaders who are devising a multi-year, action-oriented plan that will be rolled out in 2021.

IV. *Investment Performance*

Previous fund performance as of September 30, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI commitment	Net IRR*	Net MOIC*	DPI*
Fund I	1984	$66 million	--	50%	2.6x	2.6x
Fund II	1989	$568 million	--	54%	3.4x	3.4x
Fund III	1995	$1.4 billion	--	32%	1.9x	1.9x
Fund IV	1998	$3.5 billion	--	(3%)	0.9x	0.9x
Fund V	2000	$6.1 billion	--	14%	1.7x	1.7x
Fund VI	2006	$8.1 billion	--	8%	1.6x	1.6x
Fund VII	2016	$2.6 billion	$100 million	24%	1.7x	0.5x
Fund VIII	2019	$3.6 billion	$150 million	77%	1.4x	0.2x

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Multiple of Invested Capital (MOIC) are provided by Thomas H. Lee.

V. *Investment Period and Term*

The Fund will have a five-year investment period and a ten-year term. The Fund may be extended by the General Partner with the consent of the Advisory Committee, for up to three additional one-year periods.

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ATTACHMENT G

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Lubert-Adler Recovery and Enhancement Capital Fund, L.P.
Type of Fund:	Real Estate – Value Add
Target Fund Size:	$750 target ($1 billion hard cap)
Fund Manager:	Lubert-Adler Partners
Manager Contact:	Gerry Ronon 2400 Market Street Philadelphia, PA 19103

II. Organization and Staff

Lubert-Adler Partners (the "Firm" or "Lubert-Adler" or "L-A") is forming Lubert-Adler Recovery and Enhancement Capital Fund ("Fund") to continue Lubert-Adler's history of investing in commercial real estate in the U.S. Lubert-Adler commenced a series of value-add opportunity funds in 1997 and also has formed and manages other real estate investment funds. To date, they have raised over $8 billion of equity and invested approximately $8 billion in assets with a cost basis of over $18 billion.

Lubert-Adler is a real estate investment management company co-founded by Ira M. Lubert and Dean S. Adler in March 1997. Messrs. Lubert and Adler collectively have over 70 years of experience in underwriting, acquiring, repositioning, refinancing and exiting real estate assets. The Lubert-Adler investment team now consists of 17 experienced professionals with strong backgrounds in real estate acquisition, asset management, distressed restructurings and capital markets. On average, team members have 20 years of hands-on real estate experience.

The Firm is led by CEO and Co-Founder Dean Adler, Chairman and Co-Founder Ira Lubert, Vice Chairman Leonard Klehr, Managing Partner and President Gerald Ronon, and Managing Partners Vinod Paidipalli, Michael Trachtenberg, and Rob Morgan. Lubert-Adler has offices in Philadelphia and Atlanta.

III. Investment Strategy

Lubert-Adler is raising the Recovery and Enhancement Capital Fund with the goal of creating a diversified portfolio of middle-market rental assets that generate an attractive yield at a favorable cost basis. The Firm seeks to take advantage of market dislocation with respect to preferred equity, mezzanine loans, loan defaults, senior loans, and other distressed debt opportunities. This fits well with the Firms history of distinguishing itself through the combination of opportunistic acquisition philosophies, coupled with value enhancement programs, designed to create high-quality assets that seek to generate current yield at a favorable cost basis. Central to Lubert-Adler's investment philosophy is leveraging its team of experienced, hands-on real estate professionals with its network of over 70 real estate operators ("operating partners") who possess the specialized skills and local knowledge required to execute business plans that are unique to each property.

With the Fund, Lubert-Adler intends to take advantage of market dislocation with respect to preferred equity recaps / liquidity shortfalls, loan defaults, discounted asset / insolvencies, and other distressed debt opportunities last seen in the previous recessionary cycle from 2009-2012. The common themes to these opportunity sets is to acquire assets at a discounted basis and to stabilize assets over 24 months in order to own an asset that is cash flowing in a potentially deflationary time. The Firm and its operating partners will seek off-market transactions with asset owners that have insufficient liquidity and reserves. However, if attractive distressed opportunities are not available, the Firm will utilize its deep history in value-add "rental asset" transactions, which include the following property types: multifamily, retail, hospitality, and office/industrial. Examples of non-rental assets, which the Fund will avoid, include raw land, residential resort and large scale land assemblage developments.

Lubert-Adler has demonstrated a consistency of sourcing and acquiring value-add rental assets. The specific and overriding focus is to specialize in acquiring mid-size rental assets, whose yields can be enhanced through value-add renovations, repositionings and redevelopments. Lubert-Adler earmarks select markets, asset classes, and operating partners, to pursue this investment approach. The Fund will seek assets in markets with high barriers to entry, such as those in the "emerging" submarkets of gateway cities and primary submarkets of the next-tier locations, with significant emphasis on the respective submarket's supply and demand conditions and trends. The Fund will seek a margin of safety through a property's competitive cost advantage as well as further downside protection through diversification and a substantial portion of the overall return generated from cash flow.

An important element of the Fund's strategy is L-A's operating partners. Lubert-Adler has an operating partner network of over 70 local real estate developers/operators. Each operating partner has unique, in-depth knowledge of their local market and asset class and is an expert in executing value-added redevelopments and repositionings. The operating partners' experience, knowledge, and local contacts allow the Lubert-Adler Funds to access "below-the-radar" opportunities.

Environmental, Social, and Governance principles are integrated in Lubert-Adler's investment process. When performing due diligence on a potential property, ESG principles, such as a review for potential environmental issues, are included. After acquisition when the value creation phase begins, the Firm and its operating partners are seeking improvements that benefit both the environment and the expected future sales price. One example is seeking energy efficient solutions for older properties.

IV. *Investment Performance*

Previous fund performance as of September 30, 2020 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	DPI*
Fund I	1997	$117 million	-	18%	2.0	2.0
Fund II	1998	$287 million	-	9%	1.5	1.5
Fund III	2001	$850 million	-	16%	1.5	1.5
Fund IV	2004	$1,060 million	-	(8%)	0.6	0.5
Fund V	2006	$1,725 million	-	(5%)	0.5	0.3
Fund VI	2007	$2,055 million	-	1%	1.1	0.9
Fund VI-A	2009	$149 million	-	23%	2.2	1.9
Fund VI-B	2010	$400 million	-	20%	2.0	1.7
Fund VII	2013	$575 million	-	8%	1.5	0.4
L-A Saturn	2014	$202 million	-	24%	4.2	1.0
Urban Neighborhood Fund	2015	$438 million	-	13%**	2.1**	0.1
Fund VII-B	2016	$385 million	$74.1 million	15%	1.6	0.2

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

** The manager provided gross performance for this fund as it's still in the investment period and meaningful net performance could not be calculated without extensive assumptions.

V. *Investment Period and Term*

The Fund will have a three year investment period and a ten year term, subject to one two-year extension and a further one-year extension, each subject to Executive Board (LPAC) approval.

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 F

Recommendation for a Private Markets Investment Consultant

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Recommendation for a Private Markets Investment Consultant

The State Board of Investment (SBI) retains third party service providers to offer advice and additional resources to SBI staff on a variety of issues related to the management and operations of the assets under the SBI's control. Such third party relationships are selected through a periodic Request for Proposal (RFP) process after a review and recommendation by SBI investment staff and Board approval.

At the February 12, 2018 Investment Advisory Council (IAC) meeting, the Executive Director initiated a discussion with IAC members to consider the need to hire a Private Markets Consultant to assist SBI Staff in management and oversight of the program. The IAC agreed with the Executive Director's perspective and made a recommendation to the Board that the Executive Director issue an RFP for one or more private markets consultant(s). The Board approved the recommendation at the February 20, 2018 Board meeting.

SBI Staff has been very adept at sourcing, accessing and performing investment due diligence for the program since the SBI began investing in private markets. However, the program has grown significantly, the investment environment has evolved, and the investment opportunities have become increasingly more complex.

Most public funds and other plan sponsors have utilized private market investment consultants to assist in the management and operation of their private markets programs for quite some time. Doing so is considered a best practice for institutional investors of the size and complexity of the SBI. The SBI will benefit from additional assistance in the following areas:

- Post investment monitoring
- Operational due diligence
- ESG review and diligence
- Benchmarking
- Performance Analytics
- Ability to perform background checks
- Technology diligence
- Fee reconciliation
- Cash Flow and liquidity analysis
- Non-U.S. investment monitoring

The Executive Director will also rely on the consultant to assist in strategic planning, research, and portfolio construction activities. The services and responsibilities sought in hiring a private markets consultant are beyond the services for which our general and special projects consultant were hired to perform. The Executive Director envisions that private markets consultants will primarily be an extension to staff and will enable the Executive Director to ensure the SBI maintains adequate coverage and backup of private markets investment activities.

The SBI issued the RFP on April 13, 2020 and received responses from the following 10 consulting firms:

Albourne Partners
Aon Hewitt Investment Consulting, Inc.
Callan Associates Inc.
Cambridge Associates
CEPRES Corp.
Hamilton Lane
Meketa Investment Group
Mercer Investment Consulting
RCLCO Fund Advisors
StepStone Group

The SBI Executive Director and Staff evaluated the RFP responses and presentations from the firms, and conducted interviews via videoconferences with three finalists.

Finalist Recommendation
The SBI Executive Director is requesting the ability to negotiate a contract with Albourne Partners to provide Private Markets Consultant services to the SBI. Staff believes that Albourne has the necessary expertise and capabilities to assist staff in all of the aforementioned and other areas. Albourne also demonstrated relative strength in the following areas:

- Operational due diligence Capabilities
- Breadth of Coverage of non-US Investment Opportunities
- Initial indication of fees required
- Independence and lack of potential conflicts
- Ability to provide the SBI with additional back- and middle-office resources

RECOMMENDATION:

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.

TAB G

Public Markets Investment Program

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Public Markets Investment Program

This section of the report provides information pertaining to the Public Markets Investment Program.

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TAB H

Review of Recent Changes to the Combined Funds Portfolio

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Review of Recent Changes to the Combined Funds Portfolio

This memo provides a chronological summary of the actions taken by SBI Staff over the second half of calendar year 2020 to implement the policy and portfolio changes endorsed by the Investment Advisory Council (IAC) and approved by the Minnesota State Board of Investment (the "Board") related to the Board's adoption of a Resolution Concerning Management of Combined Funds Asset Allocation and Liquidity (the "Resolution") at the May 29, 2020 meeting of the Board.

Following the Board's adoption of the Resolution on May 29, 2020, Staff made the following updates to the asset allocation policy weightings of the Combined Funds. The changes were made effective July 1, 2020:

- Lowered the policy target weighting to Public Equities to 50% from 53% and raised the policy target to Fixed Income + Cash to 25% from 22%.

- Updated the policy benchmark for the Fixed Income + Cash portfolio to reflect new policy sub-category weightings of 40% Core/Core Plus and Return Seeking Bonds, 40% Treasury Protection and 20% Laddered Bonds + Cash.

At the August IAC meeting, Staff presented an implementation plan outlining a series of proposed portfolio changes in response to the Board Resolution. The implementation plan outlined recommendations to:

- Implement the Short Duration Treasury Ladder portfolio using existing managers within the fixed income portfolio
- Take steps to separate the Uninvested Portion of the Private Markets allocation out of the Public Equity portfolio into a separate portfolio with its own policy benchmark
- Update the Public Equity policy benchmark to reestablish a market-capitalization weighted allocation within domestic equities between large caps vs. small caps and within international equities between developed markets and emerging markets
- Hire six (6) new fixed income managers for the Return Seeking Bonds portfolio
- Hire three (3) new global equity managers
- Hire one (1) Currency Overlay manager to manage a currency hedging program
- Hire one (1) Cash Overlay manager to manage a cash overlay program to equitize liquidity held in the Uninvested Portion of the Private Markets Allocation
- Make changes to current managers' contracts, guidelines and benchmarks as deemed necessary by the Executive Director in order to implement the Resolution and to align with changes to manager strategy assignments

The implementation plan was endorsed by the IAC and approved by the Board at its August 26, 2020 meeting. Following contract negotiations, guideline updates and operational set-up, Staff implemented the following portfolio changes during the fourth quarter of 2020:

October 2020

Fixed Income Portfolio

- Funded Goldman Sachs and Neuberger Berman Treasury Ladder Portfolios
- Migrated Goldman Sachs and Neuberger Berman Semi-Passive portfolios to Core Plus
- Migrated Western Asset Core portfolio to Core Plus
- Migrated BlackRock Semi-Passive Portfolio to Core

Currency Overlay

- Launched the Currency Overlay currency hedging program at 0-50% hedge ratio range covering five major currency exposures in the Passive Developed International Equity portfolio

November 2020

Fixed Income Portfolio

- Migrated PIMCO and Columbia Core portfolios to Return Seeking Bond Strategy (Credit Plus)
- Funded BlackRock Return Seeking Bond strategy (Opportunistic Fixed Income) from existing Semi-Passive portfolio

December 2020

Public Equity Portfolio

- Executed a transition event with Citigroup as transition manager across 22 public equity portfolios impacting over $9 billion in assets to migrate the uninvested portion of the private markets allocation from public equities into its own dedicated allocation, as well as to fund new global equity and return-seeking bond managers
- Funded 3 Global Equity portfolios (Baillie Gifford, Martin Currie, Ariel Investments)
- Migrated Earnest Partners Large Cap Value portfolio to International Equity (Developed Markets + Emerging Markets)
- Migrated Earnest Partners Emerging Markets Equity portfolio to China QFII A-share strategy
- Updated Zevenbergen benchmark to All Cap Growth from Large Cap Growth (Effective January 2021)

Uninvested Portion of Private Markets Allocation

- Funded the Passive S&P 500 Index portfolio managed by BlackRock
- Funded the NISA Cash Overlay portfolio

Fixed Income Portfolio

- Funded five (5) Return Seeking Bond portfolios (High Yield – KKR and Oaktree; Emerging Markets Debt – Ashmore; Multi-Asset Credit – Prudential Global Investment Management (PGIM) and Payden & Rygel) from Cash and Core bonds

Asset Allocation Policy Updates

Concurrent with the transition event and changes to the Public Equity portfolio, Staff made the following updates to the asset allocation policy weightings of the Combined Funds. The changes were made effective December 1, 2020:

- Updated the policy benchmark to reflect the segregation of the Uninvested Portion of Private Markets from Public Equities into its own dedicated portfolio within the overall target allocation to Private Markets.

- Adopted the policy benchmark for the Public Equity portfolio to 67% Russell 3000 Index and 33% MSCI AC World ex US Index (net) to re-establish a market-capitalization weighted allocation between large cap and small cap stocks within domestic equities and between developed and emerging markets within international equities.

Ongoing Implementation Items for 2021

Looking ahead into 2021, Staff plans to continue work on the following outstanding aspects of the implementation plan:

- Fund additional return-seeking bond managers (securitized credit, emerging markets debt)
- Further evaluation and implementation of Phase Two of Cash Overlay strategy to allow more efficient portfolio asset allocation rebalancing using synthetic rebalancing strategies.
- Further evaluation/implementation of Phase Two of the Currency Overlay program to expand the program to include hedging the portfolio's emerging markets currency exposure and as well as all or a portion of the program's active developed markets and active emerging markets portfolios.
- Further evaluation/implementation of Phase Three of the Currency Overlay program to introduce the potential for cross-hedging strategies and enable the manager to express active total return views on currency.
- Continue evaluation and conduct discussion with IAC regarding a menu of policy benchmark concepts and evaluation parameters intended to increase focus on longer-term performance results for the Combined Funds' portfolio and to better assess performance relative to the portfolio's strategic goals.

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TAB I

SBI Public Markets Program Report

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DATE: February 17, 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 fourth 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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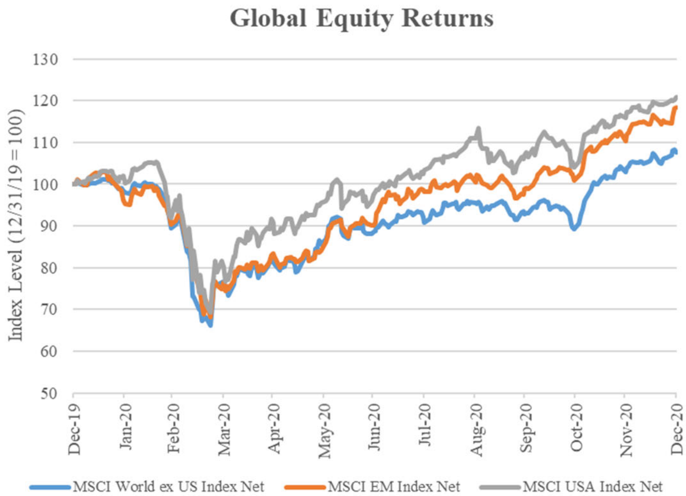
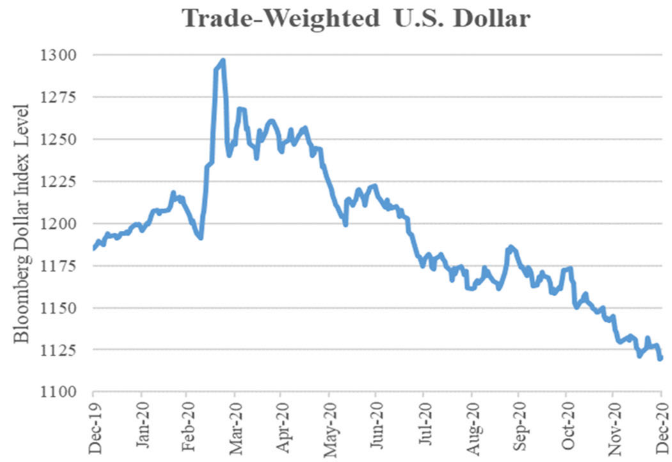
Review of SBI Public Markets Program
Fourth Quarter 2020





Market Summary

In the fourth quarter of 2020, capital markets benefited from a sense of optimism related to recovery from the COVID pandemic earlier in the year, supported by continued fiscal and monetary responses to the crisis. There was good news on the vaccine front, as several drug companies won regulatory approval for their vaccine formulations, and the national conversation turned to vaccine distribution to the public, leading to expectations for broader economic recovery. Markets also reacted positively to the results of the Presidential election in the U.S. as well as the potential for a fully-Democratic controlled Congress to enact more sweeping stimulus measures to support the economy by providing more support to Americans hit hard by the pandemic.

Across the globe, equity markets rallied strongly on the prospect of an end to the pandemic and an economic rebound fueled by pent-up demand for goods and services. At long last, U.K. and E.U. negotiators reached a broad agreement governing the United Kingdom's new trading relationship with the European Union, removing a significant source of Brexit-related uncertainty that had been weighing on U.K. markets and the British pound.

Longer-term interest rates rose in the U.S. as investors revised their outlook for growth and the potential for inflation to reach or exceed the Fed's targets faster than previously anticipated. The dollar fell sharply during the quarter, falling over 4% on a trade-weighted basis and falling over 2% versus the Japanese yen. Factors contributing to recent dollar weakness include the prospect of greater debt-financed stimulus spending under the new Administration, the recent spike in COVID-19 caseloads in the U.S. relative to the rest of the world, and a continued unwind of excess investor demand for the safety of U.S. assets initially seen in response to the pandemic and global recession.

Overall Combined Funds Portfolio - Quarter and Year Performance
In the fourth quarter, the overall Combined Funds portfolio exceeded the composite benchmark return by +0.35%, or 35 basis points (+10.8% Combined Funds versus +10.4% Composite Benchmark). Portfolio outperformance was supported by strong absolute performance within both the domestic equity portfolio (+15.4% Portfolio versus +15.2% Benchmark) and the fixed income portfolio (+0.1% Portfolio versus -0.5% Benchmark) as well as an overweight allocation to equities and a corresponding underweight to fixed income. During early December, SBI Staff successfully executed a transition event impacting over $9 billion in assets across 22 existing equity mandates in order to migrate the uninvested private markets allocation from public equities to its own dedicated allocation benchmarked to the S&P 500 Index. At the same time, Staff also funded three new global equity mandates, migrated two existing equity mandates to new strategies and funded several return seeking bond strategies. Within the fixed income portfolio, the core/core plus portfolio outperformed the Bloomberg Barclays U.S. Aggregate Index return for the quarter (+1.9% Portfolio versus +0.7% Benchmark), helped by the continued positive environment for credit. The newly funded return seeking bond strategies also contributed positively to the overall portfolio's return during December (+0.9% Portfolio versus +0.6% Benchmark). The Treasury protection portfolio modestly outperformed the Bloomberg Barclays Treasury 5+ Year Index during the quarter (-1.7% Portfolio versus -1.9% Benchmark), while the portfolio's laddered bond + cash portfolio also slightly bested the return on the ICE BofA US 3-Month Treasury Bill Index over the quarter. (+0.1% Portfolio versus +0.0% Benchmark). The private markets portfolio returned 8.7% for the quarter, led by the private equity portfolio which gained 12.2%.

For the year ending December 31, 2020, the Combined Funds portfolio outperformed the composite benchmark return by +1.0%, or 100 basis points (+14.7% Combined Funds versus +13.7% 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 solid results, led by the outperformance in both the domestic equity portfolio (+21.7% Portfolio versus +20.8% Benchmark) and the international equity portfolio (+11.3% Portfolio versus +10.5% Benchmark). Within the fixed income portfolio, the core/core plus portfolio strongly outperformed the Bloomberg Barclays U.S. Aggregate Index return (+9.7% Portfolio versus +7.5% Benchmark), while the Treasury protection portfolio, despite generating strong positive absolute returns, modestly underperformed the Bloomberg Barclays Treasury 5+ Year Index (Portfolio +12.7% vs Benchmark +12.8%). The private markets portfolio returned +7.7% for the year, led by the private equity portfolio which gained 16.3%.

Domestic Equity
During the fourth quarter, the Russell 3000 Index rose +14.7% as markets continued their resilient rebound from the beginning of the year. The outcome of the U.S. elections, which investors took to boost the odds of more aggressive fiscal stimulus spending, and good news on the COVID-19 vaccine front all added fuel to the rally. The Russell 3000 Index finished the year with a gain of +20.9%, reflecting a rebound of nearly +80% from the lows set in March in the midst of the COVID-19 sell-off. The Russell 2000 Index of small cap stocks, meanwhile, more than doubled from its March low to finish up +20.0% for the full year.

Every major industry group within the Russell 3000 Index posted positive returns over the quarter. Energy, Financials and Basic Materials outperformed the broader market, boosted by investors seeking to rotate into cyclicals that could benefit from a possible economic rebound in 2021. Meanwhile, Utilities, Consumer Staples and Real Estate all lagged the broader market. Small cap companies outpaced large caps during the quarter by a wide margin (R2000 +31.4% vs R1000 +13.7%) and value jumped ahead of growth (R3000V +17.2% vs. R3000G +12.4%).

Within the Combined Funds domestic equity portfolio, the portfolio's large cap growth managers continued to generate robust outperformance, aided by strong stock selection. Zevenbergen and Sands exceeded the benchmark, while Winslow trailed for the quarter. The portfolio's large cap value managers also exceeded the Russell 1000 Value benchmark for the quarter. Overall stock selection and sector allocation helped performance. Barrow Hanley and LSV outperformed. Earnest Partners' large cap value mandate was liquidated in early December as part of the broader transition of the equity program.

The portfolio's small cap growth managers trailed the Russell 2000 Growth Index for the quarter. Stock selection in Healthcare was the biggest detractor. ArrowMark, Hood River and Wellington outperformed for the quarter, while Rice Hall trailed the index by a wide margin. The portfolio's small cap value managers matched the Russell 2000 Value benchmark for the quarter. Within the portfolio, modestly positive stock selection was offset by negative sector allocation. Peregrine and Hotchkis outperformed for the quarter, while Goldman and Martingale lagged the benchmark.

The portfolio's semi-passive large cap core managers in aggregate trailed the Russell 1000 Index by -0.7% for the quarter (+13.0% Portfolio vs. +13.7% Russell 1000). Stock selection negatively impacted performance. The passive Russell 3000, Russell 1000 and Russell 2000 Index mandates all tracked their respective indices within guideline ranges for the quarter.

Developed International Equity

International developed markets equities rallied during the fourth quarter, with the MSCI World ex USA Index (net) posting a gain of +15.8% on the quarter. Markets were supported by the approval of multiple COVID-19 vaccines, continued government stimulus support and the prospect for bolder fiscal measures in the U.S. under the Biden administration and a long-awaited Brexit deal. However, overall market gains were tempered by rising COVID-19 infection rates and new travel and mobility restrictions in some countries, including the U.S. and across Europe. With respect to Brexit, facing a December 31st deadline, negotiators reached a broad agreement governing the United Kingdom's new trading relationship with the European Union. The announcement sent the British pound soaring in relief that a so-called "no-deal" Brexit was avoided, which would have resulted in a reversion to less favorable trading terms under the World Trade Organization agreements.

All sectors in the index generated positive returns for the quarter. The Energy, Financials and Materials all outperformed as investors rotated into more cyclical names on the prospect of an economic rebound in 2021. Consumer Staples and Healthcare companies lagged the overall market as the cyclical sectors took center stage and investors took stock of stretched valuations in sectors which had benefitted most from the lockdown economy. Value names staged a comeback versus growth names and small cap stocks continued to outperformed large cap stocks. The U.S. dollar fell sharply against most major currencies as investors priced-in expectations for bolder government spending with Democrats in control of the White House and both houses of Congress. The dollar's decline fueled stronger returns in international stocks for dollar-based investors.

The active developed markets managers underperformed the MSCI World ex USA Index (net) during the quarter (+15.1% active developed markets managers versus +15.8% benchmark index). Underweight positions in Financials and Energy, the top performing sectors, detracted from returns as did holdings in cash. Stock selection in the Communications Services and Consumer Discretionary sectors as well as in Spain, Canada and Germany was also negative.

AQR, the semi-passive developed markets equity manager, underperformed the MSCI World ex USA Index (net) for the quarter, returning +14.9% versus the benchmark return of +15.8%. Stock selection and underweight positions in the Financials and Energy sectors contributed negatively to performance. Additionally, stock selection in the Industrials and Healthcare sectors as well as in Japan, Spain and France was negative.

The passive developed markets portfolio tracked the MSCI World ex USA index (net) within guideline tolerance for the quarter, posting a return of +16.0% versus the benchmark return of +15.8%.

Emerging Markets Equity

Emerging market equities, as measured by MSCI Emerging Markets Index (net), rallied +19.7% during the quarter to post their strongest quarterly returns in more than a decade. The approval of multiple COVID-19 vaccines and the imminent launch of immunization programs, provided the catalyst for an upgrade of global growth expectations. Markets were lifted by the prospect of a broad-based recovery and China's continued economic health, which, in turn, led commodity prices higher and boosted the majority of emerging markets currencies versus the U.S. dollar. Cyclical stocks rallied, led by the Materials, Financials and Industrials sectors. The recovery in cyclicals did not come at the expense of the year's earlier winners as the Information Technology sector posted the quarter's strongest return. The news of the vaccines allowed markets other than China, Taiwan, and Korea to recover some of the ground lost to these North Asian markets during the year. Latin America led the resurgence, on the strength of commodity-related and financial names in Brazil and Mexico. Eastern European markets also performed strongly, led by Hungary and the Czech Republic. As in the developed markets, value names staged a comeback versus growth names and small cap stocks continued to outperformed large cap stocks.

The active emerging markets managers returned +20.5 for the quarter, outperforming the MSCI Emerging Markets Index (net) return of +19.7% for the period. Key sources of positive active return included stock selection in Taiwan, Malaysia, and Indonesia, stock selection in the Financials and Consumer Staples sectors, and underweight positions in the Communication Services and Real Estate sectors.

The passive emerging markets portfolio experienced slight negative tracking error relative to the Emerging Markets Index (net) for the quarter, gaining +19.3% versus the benchmark return of +19.7%; however, the results were within guideline tolerance for both the quarter and longer time periods.

Core/Core Plus and Return Seeking Bonds

Fixed income markets posted positive returns during the fourth quarter as the continuing strong performance of credit-sensitive assets and structured securities offset the negative impact of a steady rise in Treasury yields over the period. Within credit, lower quality high yield bonds and loans benefitted most from the risk-on rally as investors welcomed news of the approval of multiple vaccines to battle the COVID-19 pandemic and the prospect of additional bold stimulus measures from a Democrat-controlled White House and Congress.

While risk-free yields at the front-end of the yield curve remain anchored near zero by Federal Reserve policy, longer-term Treasury yields continued their gradual migration higher during the quarter. The yield on the 10-year U.S. Treasury bond rose 23 basis points, or 0.23%, to end the quarter at 0.91%, while the yield on the 30-year Treasury Bond rose 19 basis points to end the period at 1.65%. In a sign that the market hasn't completely forgotten about the possibility of higher inflation over time, Treasury Inflation Protected Securities (TIPS) rallied during the quarter, with the so-called "breakeven" rate of inflation priced into 10-year TIPS rising from a low of 0.55% in March to end the year at 1.99%.

Fixed Income Sectors Spread Performance					
	Spread to Treasuries (bps)				
Sector	12/31/19	9/30/20	12/31/20	Q4 Chg	YTD Chg
US Inv. Grade Credit	90	136	95	-41	+5
US High Yield	360	517	387	-130	+27
US CMBS	72	106	82	-24	+10
US ABS	44	41	33	-8	-11
US Agency MBS	88	108	98	-10	+10
US TIPS (10 Yr Break Even)	179	163	199	+36	+20

The portfolio's core/core plus bond managers outperformed the Bloomberg Barclays Aggregate benchmark during the quarter (+1.9% vs +0.7% Benchmark). For the quarter, the portfolio's overweight to risk assets such as corporate bonds and TIPS boosted relative performance, while underperformance driven by poor issue selection within CMBS detracted somewhat. Notably, all managers met or exceeded benchmark performance for the quarter and trailing one-year periods.

The implementation of changes to the composition of the Combined Funds' fixed income program approved by the Board at its May 29, 2020 meeting continued in the fourth quarter of 2020. During the quarter, Staff migrated several existing active core and semi-passive core managers to core plus or to new spread sector-focused strategies within the new return seeking bond portfolio. In addition, Staff completed the hiring and onboarding of managers for several new return seeking bond mandates, including dedicated high yield bonds, emerging market debt as well as more opportunistic, multi-sector strategies. Staff implemented these portfolio changes in stages throughout the quarter. The new return seeking bonds portfolio will report its first full quarter of performance at the end of the first quarter of 2021.

Treasury Protection Portfolio

The long-end of the U.S. Treasury market experienced modest underperformance during the quarter as Treasury yields gravitated higher on positive economic news and prospects for a bolder stimulus package with Democrats controlling the White House and both houses of Congress. The yield on the 30-year Treasury Bond rose 19 basis points to end the quarter at 1.65%, producing a quarterly return of -4.18%, while the yield on the 10-year Treasury Note rose 23 basis points to end the quarter at 0.91%, producing a quarterly return of -1.91%. Yields across the front end of the yield curve, meanwhile, were little changed for the quarter.

A gradual 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 23 basis points to end the quarter at 2.0%.

For the three months ending in December, the Treasury protection portfolio modestly outperformed the Bloomberg Barclays Treasury 5+ Year Index (-1.7% Portfolio versus -1.9% Benchmark). The portfolio was positioned relatively 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 economic impact of the COVID-19 pandemic continues to affect the front-end of the yield curve. Investor demand for liquidity and safety remains elevated, as measured by the stockpile of assets held in government money market funds. In turn, the elevated demand for high-quality money market eligible assets has caused the front end of the yield curve to flatten considerably.

Yields on the U.S. Treasury bill curve remain flat with only a 3 basis point differential between the one-month and one-year Treasury bill. In addition, the Treasury bill curve shifted lower by 2 basis points over the quarter.

For the two months ending December 31, 2020, the Treasury Ladder portfolio returned +0.05%, or 5 basis points, slightly ahead of the benchmark return of +0.03% (ICE BofA US 3 Month Treasury Bill). The portfolio, which was funded during October, benefitted from the ability to purchase non-Treasury securities and to extend the maturity of its holdings beyond three months while creating a ladder of maturities ranging from one-month to up to 18-months.

Public Markets Managers' Organizational Update

Fourth Quarter 2020

Barrow Hanley (Domestic Equity)
During the quarter, Barrow Hanley announced that the planned sale of the firm between BrightSphere Investment Group and Australian financial firm Perpetual Limited had been completed. Barrow retains its 25% equity ownership in the firm and continues to operate independently with no change to its investment teams and philosophy.

Dodge & Cox (Fixed Income)
Charles Pohl, Chairman and Chief Investment Officer, will begin to gradually transition his responsibilities as Chairman to Dana Emery, CEO and President ahead of his planned retirement in 2022. David Hoeft, Senior VP and Associate CIO will assume the role of CIO over the same timeframe. In addition, Bryan Cameron, Senior VP and Director of Research, will retire at the end of 2021, to be replaced by Steven Voorhis, VP and Associate Director of Research.

Marathon (International Equity)
Justin Hill will join Marathon at the start of 2021 to manage a portion of the Asia Pacific ex-Japan sleeve of the portfolio. David Cull will continue to manage fifty percent of the Asia Pacific ex Japan assets alongside Justin. Michael Godfrey is passing his Asia Pacific ex Japan sleeve to Justin in order to focus on global emerging markets.

Morgan Stanley (International Equity)
May Yu, co-lead portfolio manager for the greater China portion of the emerging markets portfolio, retired at the end of December due to health reasons. Her responsibilities were assumed by the remaining co-lead portfolio manager, Amay Hattangadi. The Chinese market is covered by four of Morgan Stanley's eight-member Asia regional team.

2020 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 fourth quarter 2020.

Throughout the quarter, however, Staff utilized teleconference and videoconference technologies to remain in communication with managers as needed. During the quarter, Staff held 19 manager strategy review calls via teleconference or videoconference.

Investment Manager	Asset Class
• Barrow, Hanley, Mewhinney & Strauss, LLC	Domestic Equity
• BlackRock Institutional Trust Company, N.A.	Domestic Equity
• Columbia Management Investment Advisers, LLC	International Equity
• Earnest Partners, LLC	International Equity
• Fidelity Institutional Asset Management LLC	International Equity
• Goldman Sachs Asset Management, L.P.	Domestic Equity Fixed Income
• Hood River Capital Management, LLC	Domestic Equity
• J.P. Morgan Investment Management Inc.	International Equity
• Marathon Asset Management	International Equity
• Martin Currie Inc.	International Equity
• Martingale Asset Management, L.P.	Domestic Equity
• Morgan Stanley Investment Management Inc.	International Equity
• PGIM Fixed Income (Prudential)	Fixed Income
• Rice Hall James & Associates, LLC	Domestic Equity
• Sands Capital Management, LLC	Domestic Equity
• The Rock Creek Group, LP	International Equity
• Wellington Management Company LLP	Domestic Equity
• Western Asset Management Company	Fixed Income

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TAB J

Participant Directed Investment Program and Non-Retirement Investment Program

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Participant Directed Investment Program and Non-Retirement Investment Program

This section of the report provides information pertaining to the Participant Directed Investment Program and Non-Retirement Investment Program.

	TAB
A. Recommendation to add Vanguard Total Stock Market Index Fund to the Minnesota Deferred Compensation Plan	K
B. Recommendation to add TIAA-CREF Social Choice Equity Fund to the Minnesota 529 College Savings Plan	L
C. Participant Directed Investment Program and Non-Retirement Investment Program Report	M

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TAB K

Recommendation to add Vanguard Total Stock Market Index Fund to the Minnesota Deferred Compensation Plan

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Recommendation to add Vanguard Total Stock Market Index Fund to the Minnesota Deferred Compensation Plan

The State Board of Investment (SBI) and Minnesota State Retirement System (MSRS) Staff work closely to provide a well-balanced investment menu for participants in the Minnesota Deferred Compensation Plan (MNDCP), Unclassified Retirement Plan, Health Care Savings Plan (HCSP), and the Hennepin County Supplemental Retirement Plan. The SBI is responsible for selecting the investment options and investment managers for these plans and MSRS administers the plans.

On July 1, 2019, the Unclassified Retirement Plan, HCSP, and Hennepin County Supplemental Retirement Plan transitioned from the Supplemental Investment Fund (SIF) platform to the Mutual Fund platform used by the MNDCP. At the same time, the Vanguard Total Stock Market Index Fund was added as the passively managed domestic equity broad market option for the three incoming plans. The MNDCP continues to use the Vanguard Institutional Index Fund, an S&P 500 Index Fund, as a passively managed domestic equity mandate. A table outlining the investment options for all of the Plans that use the Mutual Fund platform is included as **Attachment A** of this memo.

SBI and MSRS Staff believe that the Vanguard Total Stock Market Index Fund should be added to the MNDCP investment menu so that participants have the ability to invest in a low cost, well-managed, all cap domestic equity mandate. If SBI and MSRS Staff receive all required approvals, the Vanguard Total Stock Market Fund would be available to MNDCP participants on July 1, 2021.

Minnesota Deferred Compensation Plan (MNDCP)

The MNDCP is a tax sheltered IRC 457(b) retirement savings plan that was first established in 1971 for state employees and became available to all Minnesota public employees in 1975. The Plan is voluntary and as of December 31, 2020 had over 94,000 participants with a total balance of just under $9 billion in assets.

Vanguard Total Stock Market Index Fund

Firm/Fund

The Vanguard Total Stock Market Index Fund, launched in 1992, provides participants access to the entire U.S. equity market, covering small-cap, midcap, and large-cap growth and value domestic equities. The Fund is benchmarked to the CRSP U.S. Total Market Index. As of December 31, 2020, the Vanguard Total Stock Market Index Fund has over $1 trillion in assets, of which, the SBI assets represents over $604 million. The SBI invests in the Institutional Plus Share Class, which has a total expense ratio of 0.02%.

People

The Fund is managed by the Vanguard Equity Investment Group's Gerard C. O'Reilly and Walter Nejman. Rodney Comegys is the Global Head of Equity Investment Group, who reports to Greg Davis, Chief Investment Officer.

Performance

As of December 31, 2020, the annualized returns for the Fund and its benchmark, the CRSP U.S. Total Market Index are the following:

	Qtr	**1Yr.**	**3Yr.**	**5Yr.**
Total Stock Market Index Fund	14.69	21.02	14.51	15.45
CRSP U.S. Total Market Index	14.70	20.99	14.50	15.44

ESG

Vanguard became a signatory of the Principles for Responsible Investment (PRI) in 2014 and has long considered ESG factors as an element of prudent analysis when evaluating the risks of investment and when engaging with portfolio companies and issuers.

Global Diversity Policy

Vanguard is committed to a Diversity and Inclusion (D&I) culture. Vanguard believes that a critical aspect of doing the right thing requires building diverse, inclusive, and highly effective teams of individuals who are as unique as the clients they serve. Vanguard has a strong commitment to building a diverse workforce and has the following diversity and inclusion aspirations:

- To have a workforce and leadership team that reflects available talent in the marketplace.
- To be a best-in-class financial services firm in terms of diverse representation of their workforce.

Vanguard regularly measures themselves against these aspirations; ultimately reporting these up to their board of directors.

RECOMMENDATION:

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.

ATTACHMENT A

<table>
<tr><th></th><th colspan="4">Plans Sponsors</th></tr>
<tr><th>Asset Category</th><th>MNDCP</th><th>Unclassified Plan</th><th>HCSP</th><th>Hennepin County Retirement Plan</th></tr>
<tr><td>Balanced Fund</td><td colspan="4">Vanguard Balanced Index Fund</td></tr>
<tr><td>Target Date Fund</td><td colspan="2">MN Target Retirement Funds (CIT)</td><td colspan="2"></td></tr>
<tr><td>Small-Cap Domestic Equity</td><td colspan="4">T. Rowe Price Small Cap Fund</td></tr>
<tr><td>Mid-Cap Domestic Equity</td><td colspan="4">Vanguard Mid Cap Index Fund</td></tr>
<tr><td rowspan="2">Large-Cap Domestic Equity</td><td>Vanguard Institutional Stock Index Fund</td><td colspan="3"></td></tr>
<tr><td colspan="4">Vanguard Dividend Growth Fund</td></tr>
<tr><td>All-Cap Domestic Equity</td><td></td><td colspan="3">Vanguard Total Stock Market Index- Institutional</td></tr>
<tr><td rowspan="2">International Equity</td><td>Fidelity Diversified International Equity (CIT)</td><td colspan="3"></td></tr>
<tr><td colspan="4">Vanguard Total International Stock Index</td></tr>
<tr><td rowspan="2">Fixed Income</td><td colspan="4">Dodge & Cox Income Fund</td></tr>
<tr><td colspan="4">Vanguard Total Bond Market Index Fund</td></tr>
<tr><td>Stable Value</td><td colspan="3">Stable Value Fund</td><td></td></tr>
<tr><td>Money Market</td><td colspan="4">Money Market Fund</td></tr>
</table>

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TAB L

Recommendation to add TIAA-CREF Social Choice Equity Fund to the Minnesota 529 College Savings Plan

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Member, Investment Advisory Council and SBI Staff

SUBJECT: Recommendation to add TIAA-CREF Social Choice Equity Fund to the Minnesota 529 College Savings Plan

Background

The Minnesota 529 College Savings Plan (the Plan), has grown from $127 million in 2003 to $1.7 billion as of December 31, 2020. The State Board of Investment (SBI) is responsible for monitoring and selecting investment options in the Plan and the Office of Higher Education (OHE) administers the Plan. Together, SBI and OHE have contracted with TIAA-CREF Tuition Financing, Inc. (TFI), an affiliate of TIAA, as the Plan Manager to provide marketing, communication, recordkeeping, reporting and investment management services for the Plan.

TFI Asset Allocation Review Recommendation

On an annual basis, TFI conducts an Asset Allocation Review with SBI and OHE Staff to evaluate fund performance and overall investment strategy in addition to taking a fresh look at the investment menu. At the most recent Asset Allocation Review, TFI recommended adding a new option to the menu that would include Environmental, Social, and Governance (ESG) considerations. The TIAA-CREF Social Choice Equity Institutional Fund was recommended as the single fund broad market equity ESG investment option. SBI and OHE Staff concur with TFI's recommendation and drew the following observations:

- Over 37% of MN 529 Plan account owners responded in a recent survey that socially responsible investment options are either very or extremely important in a 529 Plan;
- The inclusion of an ESG option can make the plan menu more diverse in response to shifts in target markets and demographics;
- Interest in ESG options has garnered more assets across Endowments, Foundations, and other plans sponsors: there are currently seventeen 529 Plans with at least one ESG option available to participants; and
- The TIAA-CREF Social Choice Equity Institutional Fund is a viable addition to the investment menu. TIAA has long-term experience of managing investment portfolios using ESG criteria, has a dedicated ESG team, and is a competitively priced fund with low tracking error to the benchmark.

If approved, the TIAA-CREF Social Choice Equity Institutional Fund would be available to Minnesota 529 Plan participants in September of 2021.

TIAA-CREF Social Choice Equity Institutional Fund

Firm/Fund

The Fund was established in July of 1999 to seek favorable long-term total return that reflects the investment performance of the overall U.S. stock market while considering certain ESG criteria. The fund's evaluation process favors companies with leadership in ESG performance relative to their peers. Nuveen, a TIAA Company, is the investment manager of TIAA Funds and has over $1.1 trillion in assets under management. As of December 31, 2020, the TIAA-CREF Social Choice Equity Fund invested over $6.5 billion in assets and has a total expense ratio of 0.17%.

People

Jim Campagna, Equity Index Strategies and Lei Liao, an Equity Index Portfolio Manager are responsible for management of the Fund. Amy O'Brien, Global Head of Responsible Investing, leads a team of 20 plus members who are integrated across all of the fund's asset groups, except real estate, which has its own dedicated ESG team. Ms. O'Brien is responsible for creating a holistic responsible investing vision and unified framework across Nuveen and TIAA.

Performance

As of December 31, 2020, the annualized returns for the Fund and its benchmark, the Russell 3000 are the following:

	Qtr	**1Yr.**	**3Yrs.**	**5Yrs.**	**10Yrs.**
TIAA-CREF Social Choice Equity Fund	14.1	20.3	14.3	15.5	13.1
Russell 3000	14.7	20.9	14.5	15.4	13.8

Process

The investment process starts with an investable universe of companies that meet defined ESG performance criteria. The process incorporates a company's exposure to ESG-related issues and involvement in certain controversial business activities. Approximately half of the companies evaluated make it to the ESG Eligible Universe. The portfolio is constructed using industry optimization techniques to match the risk characteristics of the Russell 3000, ultimately resulting in a Fund with significantly higher ESG performance quality than the conventional benchmark.

UNPRI Signatory

Although TIAA has been a signatory since 2009, Nuveen's firm-wide signatory status, which encompasses TIAA Investments, is as of 2018.

RECOMMENDATION:

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.

TAB M

Participant Directed Investment Program and Non-Retirement Investment Program Report

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Members, Investment Advisory Council and SBI Staff

SUBJECT: Participant Directed Investment Program and Non-Retirement Program Investment Report

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

The report includes the following sections:

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Participant Directed Investment Program Fund Commentaries
Fourth Quarter 2020

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 for the quarter with a +14.7% return and outperformed for the year with a +21.2% return. Technology is the largest sector in the portfolio with a 26% allocation.

Staff is recommending that this Fund become available to all plan sponsors that use the mutual fund platform. Currently, the Minnesota State Deferred Compensation Plan (MNDCP) is the only plan sponsor that does not have access to this Fund.

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 outperformed the S&P 500 Index return for the quarter with a +12.2% return and matched for the year with a +18.4% return. Sector allocation in the fund is consistent with the S&P 500 Index. *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 +8.9% return compared to a +10.3% return for the NASDAQ US Dividend Achievers Select Index. For the year, the Fund reported a +12.0% return compared to a +15.6% return for the benchmark. Underperformance for the quarter was driven mostly by unfavorable sector allocation, specifically an underweight in Communication Services and Information Technology and an overweight in the Real Estate sector. Poor sector selection also had a negative impact on the one-year return, primarily from the underweight to Information Technology and an overweight to Financials and Energy.

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 matched the CRSP US Mid Cap Index return for the quarter and the year earning a +18.0% return and a +18.3% return, respectively.

T. Rowe Price Institutional Small-Cap Stock Fund

The Fund’s investment process emphasizes fundamental research and active, bottom-up stock selection. The small cap equity fund underperformed the Russell 2000 for the quarter and outperformed for the year. The fund earned a +24.8% return compared to the benchmark return of +31.4% for the quarter and returned +25.0% compared to the benchmark return of +20.0% for the year. Outperformance for the year is attributed to strong stock selection, primarily in Information Technology, Financials, Health Care and Energy.

International Equities

Fidelity Diversified International

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 international equity fund returned +11.8% for the quarter underperforming the MSCI EAFE benchmark return of +16.0%. For the year, the fund returned +19.8%, outperforming the benchmark return of +7.8%. The Fund's underperformance relative to the benchmark for the quarter was primarily due to stock selection, specifically in Europe and the U.K. Out-of-benchmark positions in the U.S. also hurt relative results, as did stock choices in Canada.

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 underperformed for the quarter and outperformed for the year. The international equity fund earned a +16.9% return compared to the benchmark return of +17.2% for the quarter and for the year, returned +11.3% compared to the benchmark return of +11.1%.

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 +0.7% for the quarter and for the year returned +9.5% compared to +7.5% for the benchmark. Performance during the quarter benefited mostly from security selection within credit then secondly to sector allocation with an underweight to U.S. Treasuries and an overweight to corporate bonds contributed to relative returns. To a lesser extent, the Fund's below-benchmark duration position benefited relative returns for the quarter as Treasury yields rose. For the year, sector allocation had the largest influence on positive relative returns. The substantial increase to the Fund's corporate sector weighting amid the market volatility in March and April benefited returns as credit subsequently 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 matched the benchmark return for the quarter and slightly outperformed for the year with a +0.7% return and a +7.7% return, respectively. Both the Fund's large allocation to U.S. Government-backed securities and its duration position 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 outperformed the benchmark for the quarter and underperformed for the year with a +9.0% return and a +16.4% 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 +0.6% for the quarter compared to a +0.2% return for the benchmark, the 3-Year Constant Maturity Treasury +45 basis points. For the year, the portfolio returned +2.5% compared to the benchmark return of +0.9%. Similar to last quarter, a general overweight to the spread sectors within the underlying fixed income portfolio drove returns for the quarter and the year. An overweight to taxable municipals was particularly beneficial, while allocations to corporates, consumer ABS, CMBS, Agency MBS, SBA securitizations and Agency CMBS also added to performance for the quarter. The one-year relative return benefited from a general overweight to the spread sectors.

Money Market Fund

State Street Global Advisors manages the money market fund in a commingled pool. For the quarter and the year the fund performed in line with its benchmark, the ICE BofA U.S. 3 Month T-Bill, with a +0.0% return and a +0.7% return, respectively. Money market instruments continue to be anchored 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, which has been hit hard by the COVID-19 pandemic.

Non-Retirement Fund Commentaries
Fourth Quarter 2020

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 and the year with a -0.1% return compared to a -0.2% return for the quarter and a +6.0% return compared to a +5.7% benchmark return for the year. Similar to last quarter, the positive impact from declining spreads of non-Treasury sectors relative to Treasuries and yield income was enough to offset negative returns from increasing treasury yields on the longer end of the curve. For the year, the portfolio's overweight to U.S. Agencies and Agency Securitized bonds continue to drive relative return, primarily due to the yield advantage that these sectors have over Treasuries. RBC took advantage of the market volatility in March and April to reposition the portfolio by reducing the nominal U.S. Treasuries allocation and increasing the U.S. Agency allocation.

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 earned a +1.5% return for the quarter compared to the benchmark return of +0.7%. For the year, the portfolio outperformed with a +8.2% return compared to the benchmark return of +7.5%. Sector allocation was the primary driver of outperformance, with overweights to CMBS, High Yield, Investment Grade Corporates, and Municipals combined with security selection in upstream energy issuers benefited results.

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 +12.1% return and a +18.4% 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 outperformed the benchmark for the year with a +0.5% return compared to +0.3% return for the benchmark.

2020 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 fourth quarter 2020.

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

Investment Manager	Management Style/Asset Class	Investment Platform
• Ascensus	Multi-Asset Class Platform	PDIP (ABLE Plan)
• Dodge & Cox	Active, Fixed Income	PDIP
• Fidelity	Active, International Equities	PDIP
• Invesco	Stable Value Fund	Bench List
• Mellon	Passive, Equity Manager	Non-Retirement Program
• 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 Glide Path Enhancement Review	PDIP
• TIAA-CREF	Multi-Asset Class Platform Asset Allocation Review	PDIP (MN 529 Plan)
• T. Rowe Price	Active, Small Cap Equities	PDIP
• Vanguard	Passive, Fixed Income Passive, Domestic Equities Passive, International Equities	PDIP PDIP PDIP

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TAB N

Report from the Proxy Committee

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DATE: February 17, 2021

TO: Members, State Board of Investment

FROM: Proxy Committee

1. Reauthorization of the Proxy Committee

In March 1982, the Board established the Proxy Committee to carry out the SBI's voting responsibilities. 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. Each Board member has one designee on the Committee. The current membership is:

Karl Procaccini	Governor's designee
Ramona Advani	State Auditor's designee
Bibi Black	Secretary of State's designee
Luz Frias	Attorney General's designee

According to statute, committees of this nature must be re-authorized every two years. The last authorization was in February 2019. A resolution to accomplish this is **Attachment A on page 3**.

RECOMMENDATION:

The Executive Director recommends that the SBI adopt the resolution which reauthorizes the Proxy Committee and delegates proxy voting responsibilities according to established guidelines.

2. Proxy Voting Guidelines

The Proxy Committee votes the Board's proxies according to the Proxy Voting Guidelines approved by the Board. The Committee recommends that the Board approve the Proxy Voting Guidelines as shown in **Attachment B beginning on page 5**. **Attachment C beginning on page 11** shows the changes from the previous version of the Proxy Voting Guidelines.

RECOMMENDATION:

The Proxy Committee and the Executive Director recommend that the Board approve the revised Proxy Voting Guidelines.

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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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Proxy Voting Guidelines

The Minnesota State Board of Investment (SBI) has formulated proxy voting guidelines by which it casts votes on a wide range of corporate governance and social responsibility issues. As a shareholder, the Board is entitled to participate in corporate annual meetings by casting its votes by proxy or through direct attendance at the meetings. The SBI has standing rights as a shareholder and has the ability, as a shareholder, to influence corporate and governmental entities to act responsibly through constructive engagement. This includes (but is not limited to) shareholder proposals, shareholder sign-on letters, and supporting policy initiatives for transparency.

One of the SBI's Investment Beliefs states: "Utilizing engagement initiatives to address environmental, social and governance-related ('ESG') issues can lead to positive portfolio and governance outcomes. In addition to specific engagement strategies the SBI might apply, proxy rights that are attached to shareholder interests in public companies are 'plan assets' of the SBI and represent a key mechanism for expressing SBI's positions relating to specific ESG issues. By taking a leadership role in promoting responsible corporate governance through the proxy voting process, the SBI can contribute significantly to implementing ESG best practices which should, in turn, add long-term value to SBI's investments."

The SBI supports and prefers the use of constructive engagement to further ESG goals where possible, and has adopted Proxy Voting Guidelines for this purpose. The following guidelines constitute an effort by the SBI to manage and control its proxy voting and engagement.

Overview of the SBI

By the Minnesota Constitution, the Board is composed of the Governor, the State Auditor, the Secretary of State, and the Attorney General. The Board employs a professional staff to carry out its policies. The Board and staff are assisted by a seventeen member Investment Advisory Council.

The SBI invests the pension assets of the three statewide public employee retirement systems:

- Minnesota State Retirement System (MSRS)
- Public Employees Retirement Association (PERA)
- Teachers Retirement Association (TRA)

The SBI also invests state government funds and assets of several trust funds.

Statutory Purpose

According to statute, state assets are to be responsibly invested by the SBI to maximize the total rate of return without incurring undue risk.[1] Only a small portion of the SBI's equity holdings are in non-pension accounts. The focus, therefore, of the SBI's proxy voting activities is the extensive domestic and international equity holdings within the pension asset portfolios.

Fiduciary Responsibility

As fiduciaries of pension assets, members of the Board and the executive director owe a fiduciary duty to the members of the plans, to the taxpayers of the state and political subdivisions who help to finance the plans, and to the State of Minnesota.[2]

In addition to the general standard of fiduciary conduct, members of the Board, the executive director, the members of the Investment Advisory Council, staff, and members of Board committees must carry out their duties in accordance with the prudent person standard as articulated in statute.[3]

Voting Process

The Board recognizes its fiduciary responsibility to cast votes on proxy issues. The Board delegates proxy voting responsibilities to its Proxy Committee. Each Board member appoints one member to the Proxy Committee. The four member Committee meets only if it has a quorum and casts votes on proxy issues based on a majority vote of those present. In the unusual event that it reaches a tie vote or a quorum is not present, the Committee will cast a vote to abstain.

The Committee has formulated guidelines by which it casts votes and may engage with public corporations on a wide range of corporate governance, environmental, and social responsibility issues. These guidelines encompass both domestic and international proxy issues. Each year the Committee reviews existing guidelines and determines which issues it will review on a case-by-case basis. The Proxy Committee also may review certain corporate governance issues pertaining to companies headquartered in Minnesota.

Domestic voting: The SBI directly votes shares held in all domestic equity manager portfolios.

International voting: The SBI delegates to international equity managers the voting of shares held in the managers' portfolios following the Proxy Voting Guidelines, where feasible. The SBI believes that several factors affecting the voting of international proxies, including time constraints and lack of company specific information, support the conclusion that the SBI's international equity managers can more efficiently and effectively vote the proxies in their portfolios.

Corporate Governance Issues

Routine Matters

In general, the SBI **supports** management on routine matters of corporate governance. These issues include:

- uncontested election of directors.
- selection of auditors and approval of financial statements.
- management proposals on non-executive compensation issues including savings plans and stock options.
- limits on director and officer liability or increases in director and officer indemnification permitted under the laws of the state of incorporation.

The SBI directs the Proxy Committee, at its discretion, to review the positions taken by directors and withhold votes from or vote against some or all of the directors standing for election if they have taken positions on issues which are potentially not in the best interests of shareholders.

Shareholder Rights

In general, the SBI **opposes** proposals that would restrict shareholder ability to effect change. Such proposals include:

- instituting supermajority requirements to ratify certain events.
- creating classified boards.
- barring shareholders from participating in the determination of the rules governing the board's actions, such as quorum requirements and the duties of directors.
- prohibiting or limiting shareholder action by written consent.
- granting certain stockholders superior voting rights over other stockholders.

In general, the SBI **supports** proposals that preserve shareholder rights to effect change. Such proposals include:

- having boards of directors comprised of a majority of independent directors.
- having compensation committees comprised entirely of independent directors.
- requiring shareholder approval of poison pill plans.
- repealing classified boards.
- adopting secret ballot of proxy votes.
- reinstating cumulative voting.
- adopting anti-greenmail provisions.

Executive Compensation In general, the SBI **supports** efforts to have executive compensation linked to a company's long-term performance and to encourage full disclosure of compensation packages for principal executives. Accordingly, the SBI evaluates compensation packages on a case-by-case basis, including compensation agreements that are contingent upon corporate change in control.

Buyouts In general, the SBI **supports** friendly takeovers and management buyouts.

Special Cases The SBI evaluates the following proposals on a case-by-case basis:

- hostile takeovers.
- recapitalization plans.
- contested election of directors.

Environmental and Social Responsibility Issues

In general, the SBI **supports** proposals that require a company to report or disclose to shareholders company efforts concerning a variety of social responsibility issues. The SBI supports proposals addressing environmental, social, and workforce issues if they seek to further responsible corporate citizenship while at the same time preserving and enhancing long-term shareholder value. The SBI typically supports proposals that ask for disclosure reporting of information not available outside the company that is not proprietary in nature. In the past, these reporting proposals have included issues such as affirmative action programs, animal testing procedures, and nuclear plan safety procedures. Such reporting is most vital when it appears that a company has not adequately addressed shareholder concerns regarding social, workplace, environmental and/or other issues, and when such information is deemed material to the business. The Committee considers whether the request is relevant to the company’s core business and in-line with industry practice on a case-by-case basis. The proponent of the proposal must make the case that the benefits of additional disclosure outweigh the costs of producing the report.

In general, the SBI **opposes** proposals that require a company to institute a specific business action. This is because the SBI generally defers to company management and board of directors expertise regarding such proposals. Proposals requesting that the company cease certain actions that the proponent believes are harmful to society or some segment of society will be evaluated on a case-by-case basis. Special attention will be directed to the company’s legal and ethical obligations, its ability to remain profitable, and potential negative publicity. A high standard will need to be met by proponents requesting specific action such as divesture of a business line or operation, legal remuneration, or withdrawal from certain high-risk markets.

The following sections provide managers with guidance on specific proposals that may occur. Environmental and social shareholder-sponsored proposals continue to evolve. Issues that are not specifically addressed in the following guidelines should be evaluated using the framework delineated above.

Tobacco

The SBI **supports** shareholder proposals that call for a company to reduce its involvement in tobacco production, product marketing and other related lines of business in order to diversify its business in a manner that will reduce or eliminate potential liability to legal claims associated with tobacco that may negatively impact the value of the SBI's holdings.

In furtherance of this policy, the SBI has sponsored and co-sponsored shareholder proposals to reduce youth access to tobacco products, to request companies to voluntarily comply with FDA regulations, to eliminate smoking in restaurants, and other tobacco related issues.

Northern Ireland

The SBI **supports** proposals that call for the adoption of the MacBride Principles as a means to encourage equal employment opportunities in Northern Ireland.

The SBI **supports** proposals that request companies to submit reports to shareholders concerning their labor practices or their sub-contractors' labor practices in Northern Ireland.

In addition to casting proxy votes, the SBI has sponsored and co-sponsored Northern Ireland proposals as required by *Minnesota Statutes*, Section 11A.241.

Environmental Protection/ Awareness And Climate Change

In general, the SBI **supports** proposals that require a corporation to report or disclose to shareholders company efforts in the environmental arena, seek to improve a company's environmental practices to protect the world's natural resources, or address climate change. Proposals that request the adoption of various environmental policies are evaluated on a case-by-case basis.

Sudan

Minnesota Statutes, Section 11A.243 requires the SBI to make its best efforts to identify all "scrutinized companies" with active or inactive business operations in Sudan in which the SBI has direct or indirect holdings or could possibly have holdings in the future. The SBI will engage with each scrutinized company. The legislation calls for the SBI to: encourage companies with inactive business operations to continue to refrain from initiating active operations; and to notify companies with active business operations that it may be subject to divestment by the State Board of Investment. In general, the SBI **supports** proposals consistent with this legislation.

Iran

Minnesota Statutes, Section 11A.244 requires the SBI to make its best efforts to identify all "scrutinized companies" with operations in Iran in which the SBI has direct holdings The SBI will engage with each scrutinized company. The legislation calls for the SBI to notify companies with scrutinized business operations that it may be subject to divestment by the State Board of Investment. In general, the SBI **supports** proposals consistent with this legislation.

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1 *Minnesota Statutes*, Section 11A.01.
2 *Minnesota Statutes*, Section 356A.04, subdivision 1.
3 *Minnesota Statutes*, Section 11A.09, and Section 356A.04, subdivision 2.

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Proxy Voting Guidelines (Draft with Edits)

The Minnesota State Board of Investment (SBI) has formulated proxy voting guidelines by which it casts votes on a wide range of corporate governance and social responsibility issues. As a shareholder, the Board is entitled to participate in corporate annual meetings by casting its votes by proxy or through direct attendance at the meetings. The SBI has standing rights as a shareholder and has the ability, as a shareholder, to influence corporate and governmental entities to act responsibly through constructive engagement. This includes (but is not limited to) shareholder proposals, shareholder sign-on letters, and supporting policy initiatives for transparency.

One of the SBI's Investment Beliefs states: "Utilizing engagement initiatives to address environmental, social and governance-related ('ESG') issues can lead to positive portfolio and governance outcomes. In addition to specific engagement strategies the SBI might apply, proxy rights that are attached to shareholder interests in public companies are 'plan assets' of the SBI and represent a key mechanism for expressing SBI's positions relating to specific ESG issues. By taking a leadership role in promoting responsible corporate governance through the proxy voting process, the SBI can contribute significantly to implementing ESG best practices which should, in turn, add long-term value to SBI's investments."

The SBI supports and prefers the use of constructive engagement to further ESG goals where possible, and has adopted Proxy Voting ~~Policies~~ Guidelines for this purpose. The following guidelines constitute an effort by the SBI to manage and control its proxy voting and engagement.

Overview of the SBI

By the Minnesota Constitution, the Board is composed of the Governor, the State Auditor, the Secretary of State, and the Attorney General. The Board employs a professional staff to carry out its policies. The Board and staff are assisted by a seventeen member Investment Advisory Council.

The SBI invests the pension assets of the three statewide public employee retirement systems:

- Minnesota State Retirement System (MSRS)
- Public Employees Retirement Association (PERA)
- Teachers Retirement Association (TRA)

The SBI also invests state government funds and assets of several trust funds.

Statutory Purpose

According to statute, state assets are to be responsibly invested by the SBI to maximize the total rate of return without incurring undue risk.[1] Only a small portion of the SBI's equity holdings are in non-pension accounts. The focus, therefore, of the SBI's proxy voting activities is the extensive domestic and international equity holdings within the pension asset portfolios.

Fiduciary Responsibility

As fiduciaries of pension assets, members of the Board and the executive director owe a fiduciary duty to the members of the plans, to the taxpayers of the state and political subdivisions who help to finance the plans, and to the State of Minnesota.[2]

In addition to the general standard of fiduciary conduct, members of the Board, the executive director, the members of the Investment Advisory Council, staff, and members of Board committees must carry out their duties in accordance with the prudent person standard as articulated in statute.[3]

Voting Process

The Board recognizes its fiduciary responsibility to cast votes on proxy issues. The Board delegates proxy voting responsibilities to its Proxy Committee. Each Board member appoints one member to the Proxy Committee. The four member Committee meets only if it has a quorum and casts votes on proxy issues based on a majority vote of those present. In the unusual event that it reaches a tie vote or a quorum is not present, the Committee will cast a vote to abstain.

The Committee has formulated guidelines by which it casts votes and may engage with public corporations on a wide range of corporate governance, environmental, and social responsibility issues. These guidelines encompass both domestic and international proxy issues. Each year the Committee reviews existing guidelines and determines which issues it will review on a case-by-case basis. The Proxy Committee also may review certain corporate governance issues pertaining to companies headquartered in Minnesota.

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2 *Minnesota Statutes*, Section 356A.04, subdivision 1.
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REPORT

SBI Environmental, Social, and Governance (ESG) Report

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MINNESOTA STATE BOARD OF INVESTMENT

ENVIRONMENTAL, SOCIAL, GOVERNANCE REPORT

2021 Proxy Season Begins

Proxy season will begin heating up over the coming months and the SBI will receive increasing numbers of proxy ballots from publicly traded companies. The number of voting ballots (and corresponding annual meetings) peak between April and June 2021. SBI Staff will vote the majority of proxy ballots in accordance with the SBI's established Proxy Voting Guidelines and Precedents.

The Board delegates proxy voting responsibilities to its Proxy Committee. The SBI Proxy Committee is composed of a representative selected by each member of the SBI and chaired by the designee of the Governor. The Committee meets on an as-needed basis to review and vote on proxy ballot items not covered by existing precedent and establish new precedents. Traditionally, the Board has re-authorized the Proxy Committee every two years, and will consider reauthorization at its first quarter meeting.

Glass Lewis, the SBI's proxy advisory service, will provide much of the information the SBI Proxy Committee and Staff will evaluate in determining how to vote on a ballot item. Glass Lewis compiles large amounts of disparate data to make researching ballot items more efficient. Proxy advisory services are integral to the SBI's ability to conduct due diligence on companies and proxy ballot items.

Remember to visit the ESG and Stewardship section of the SBI website for updates throughout the proxy season.

BOARD RESOLUTIONS

Update on Implementing SBI Resolution on Thermal Coal

At the direction of the Executive Director, the SBI Staff have fully implemented investment restrictions that remove as authorized investments publicly traded securities of any company deriving 25% or more of its revenue from thermal coal production, in accordance with the Board's May 29, 2020 resolution.

As of December 31, 2020, the Combined Pension Funds, Non-Retirement program, and State Cash Accounts no longer hold these securities. Staff provided the SBI's external investment managers with a list of restricted investments, which Staff will update on an annual basis.

Coalition Highlight

MSBI Begins PRI Reporting Process

As a committed member of the United Nations backed Principles for Responsible Investment (PRI), in 2021 the SBI will begin annual reporting on the SBI's progress towards evaluating and confronting sustainability related investment risk.

During the reporting process the SBI will compile various data on activities related to ESG risk activities, including various ESG related policies and procedures. Once completed, the SBI will submit a report on the information to the PRI's public reporting database and the report will be made available to the public.

The PRI will produce an assessment report highlighting some of SBI's strengths and areas for improvements in the context of ESG incorporation, stewardship activities, ESG considerations of selecting, appointing and monitoring external managers as well approaches to sustainability outcomes and internal data confidence building measures. PRI will also use the reported data to assess whether MSBI meets the PRI's minimum requirements and will work with all signatories who do not meet them.

For more information on PRI and the reporting process, please visit PRI's website.

Minnesota State Board of Investment

Contact

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Website: http://mn.gov/sbi/

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REPORT

AON Market Environment Report

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Market Environment

Fourth Quarter 2020

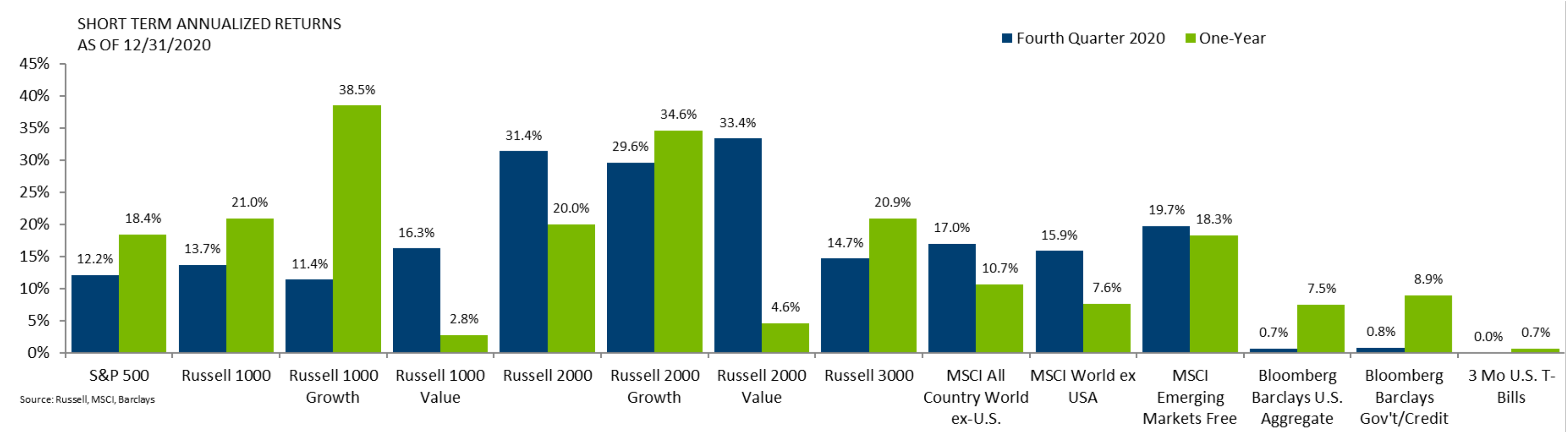
Aon

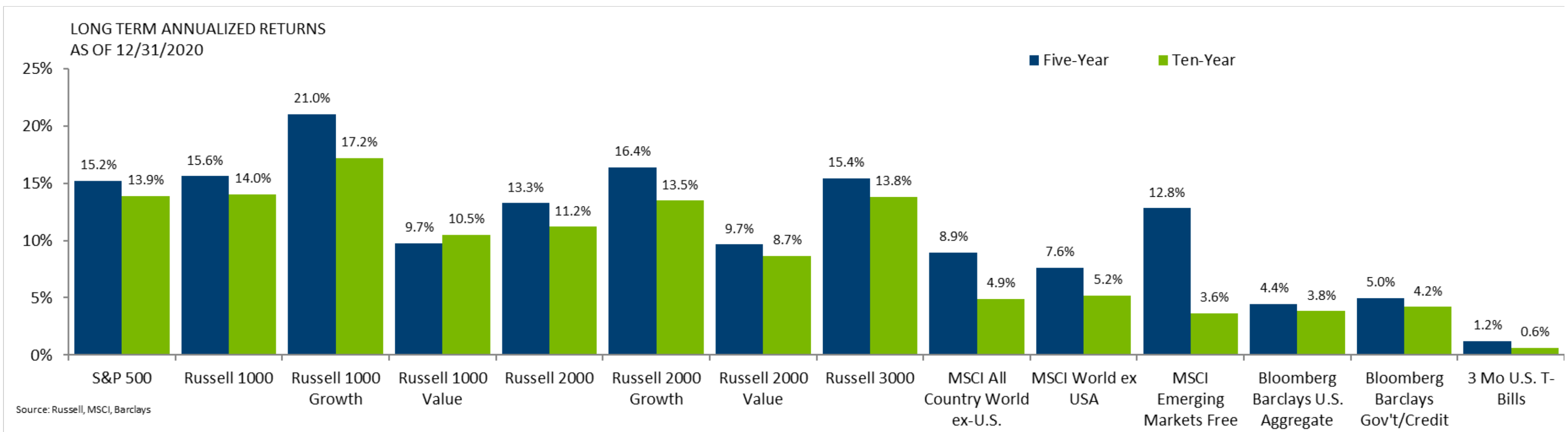
Investment advice and consulting services provided by Aon Investments USA Inc., an Aon Company.

Aon

Empower Results®

Market Highlights



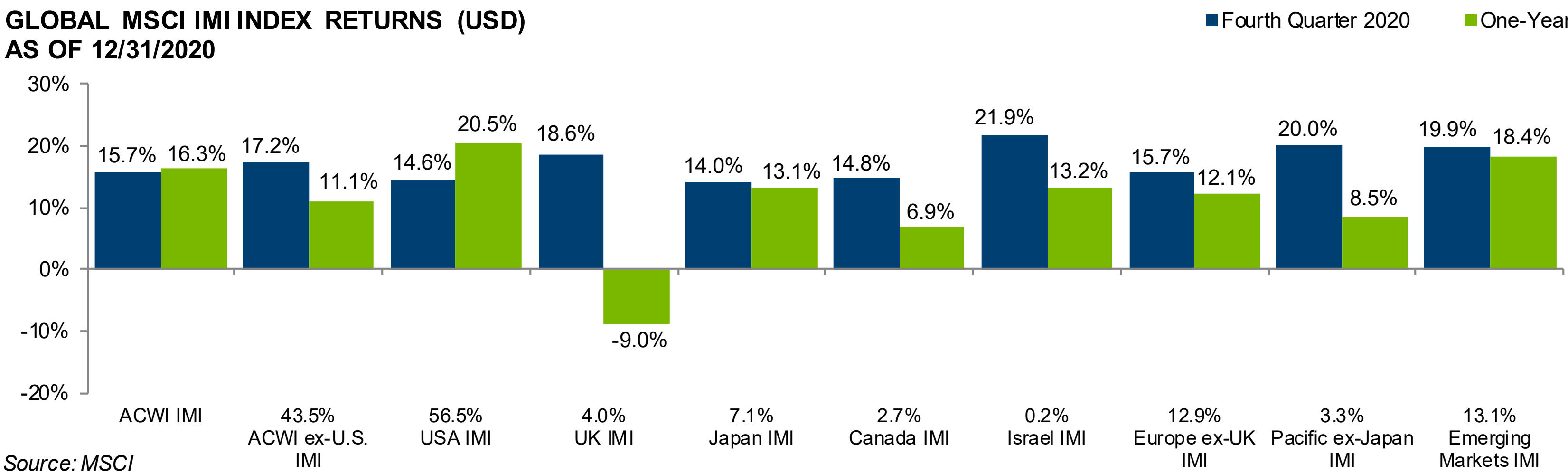


Market Highlights

Returns of the Major Capital Markets					
					Periods Ending 12/31/2020
	Fourth Quarter	1-Year	3-Year[1]	5-Year[1]	10-Year[1]
Domestic Equity					
S&P 500	12.2%	18.4%	14.2%	15.2%	13.9%
Russell 1000	13.7%	21.0%	14.8%	15.6%	14.0%
Russell 1000 Growth	11.4%	38.5%	23.0%	21.0%	17.2%
Russell 1000 Value	16.3%	2.8%	6.1%	9.7%	10.5%
Russell 2000	31.4%	20.0%	10.3%	13.3%	11.2%
Russell 2000 Growth	29.6%	34.6%	16.2%	16.4%	13.5%
Russell 2000 Value	33.4%	4.6%	3.7%	9.7%	8.7%
Russell 3000	14.7%	20.9%	14.5%	15.4%	13.8%
International Equity					
MSCI All Country World ex-U.S.	17.0%	10.7%	4.9%	8.9%	4.9%
MSCI World ex USA	15.9%	7.6%	4.2%	7.6%	5.2%
MSCI Emerging Markets Free	19.7%	18.3%	6.2%	12.8%	3.6%
Fixed Income					
Bloomberg Barclays U.S. Aggregate	0.7%	7.5%	5.3%	4.4%	3.8%
Bloomberg Barclays Gov't/Credit	0.8%	8.9%	6.0%	5.0%	4.2%
3 Mo U.S. T-Bills	0.0%	0.7%	1.6%	1.2%	0.6%
Inflation					
CPI-U	0.6%	1.3%	1.8%	1.9%	1.7%

MSCI Indices show net returns.
All other indices show total returns.
[1] Periods are annualized.

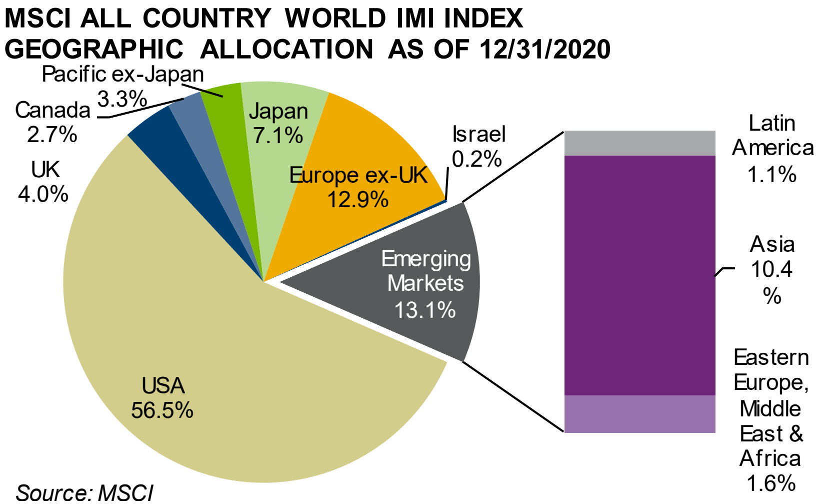
Global Equity Markets

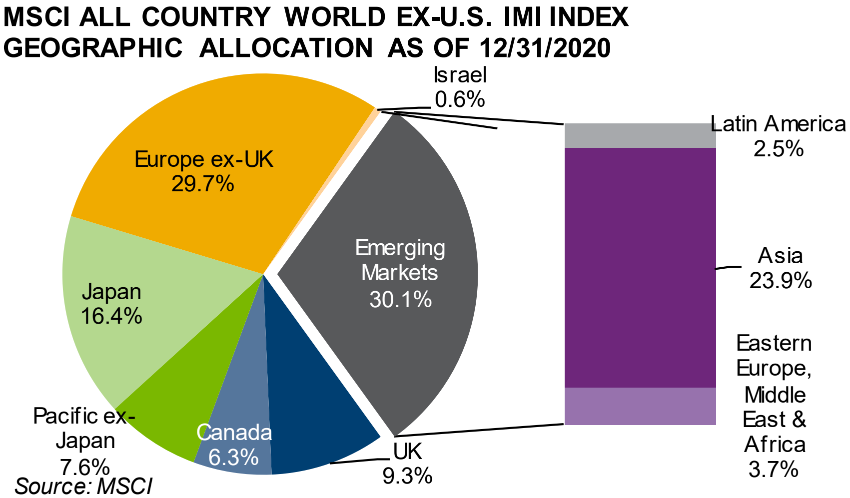


Source: MSCI

- Global equity markets continued to rise for the third consecutive quarter, ending the calendar year above their pre-pandemic levels. Supportive monetary and fiscal policy, dwindling uncertainties regarding the U.S. elections, and the news of vaccines receiving approval outweighed the continued surge of COVID-19 cases globally. The MSCI AC World's Investable Market Index returned 13.8% in local currency terms in Q4 2020. Depreciation of the U.S. dollar further pushed up the returns to 15.7% in USD terms.
- Pacific ex Japan IMI was the best performing equity market region with a return of 20.0% over the quarter, supported by strong returns from the index-heavyweights Financials and Materials sectors. In USD terms, Australian and Hong Kong equities rose sharply over the quarter. In Australia, the Reserve Bank of Australia cut its interest rate to a record low of 0.1% from 0.25% and it also announced bond-buying program with maturities of around 5-10 years worth A$100 billion.
- Emerging Markets (EM) IMI returned 19.9% over the fourth quarter, supported by strong returns from the index-heavyweights Information Technology and Financials sectors. In USD terms, Korean and Brazilian equities were the best performers among the EM countries while Chinese equities returned the least.

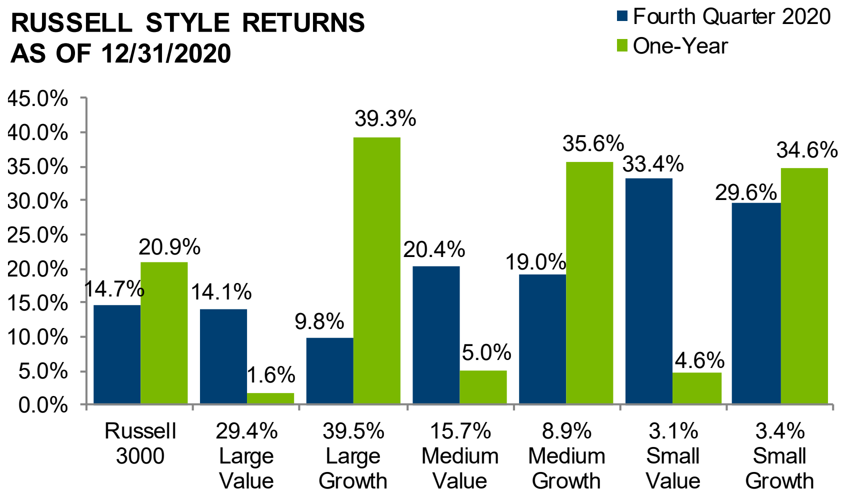
Global Equity Markets



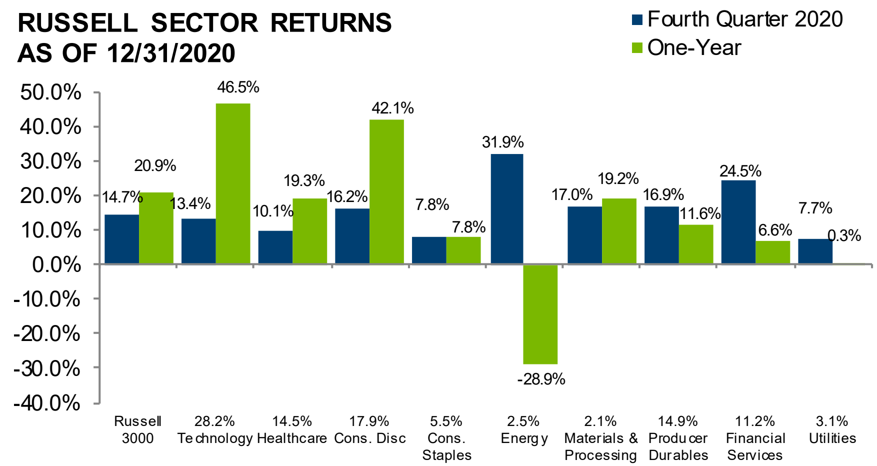


- The two exhibits on this slide illustrate the percentage that each country/region represents of the global and international equity markets as measured by the MSCI All Country World IMI Index and the MSCI All Country World ex-U.S. IMI Index, respectively.

U.S. Equity Markets



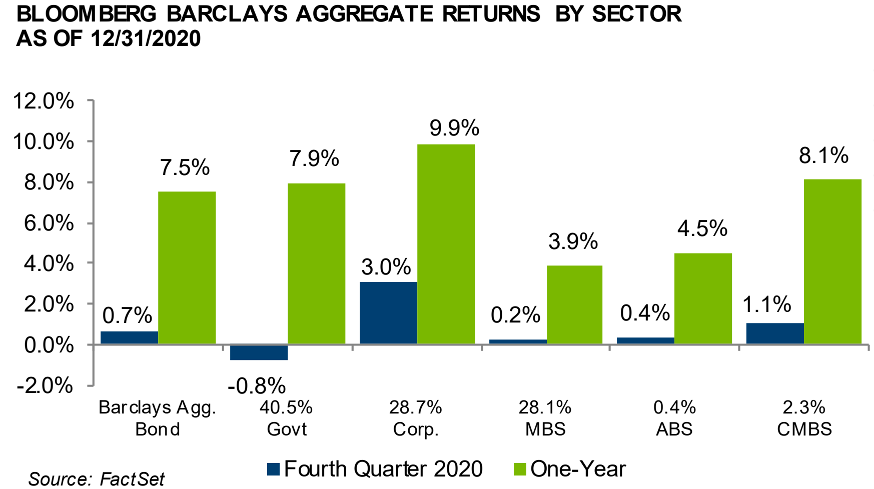
Source: Russell Indexes

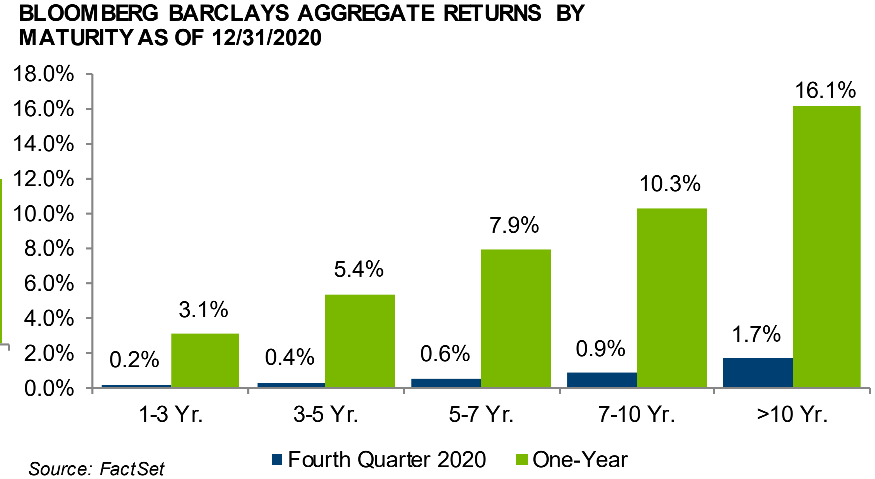


Source: Russell Indexes(New sectors like Telecommunication and Real Estate excluded due to lack of historical data)

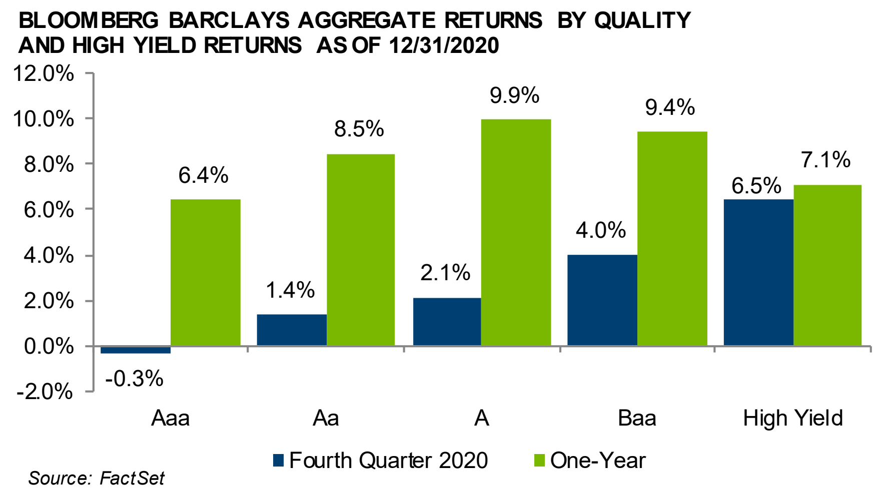
- U.S. equities delivered double digit returns in Q4 2020. Over the quarter, new fiscal stimulus packages were approved as U.S. lawmakers passed a $900bn coronavirus relief bill whilst Democrat Joe Biden won the U.S. Presidential election and is set to become the 46th President. Economic data rebounded sharply as U.S. GDP grew at an annualized rate of 33.1% in the third quarter, compared to a 31.4% contraction during the second quarter. The Russell 3000 Index rose 14.7% during the fourth quarter and 20.9% over the one-year period.
- The CBOE Volatility Index (VIX), Wall Street's "fear gauge", declined from 26.4 to 22.8 over the quarter, having averaged 28.9 over the previous 12 months.
- All sectors generated positive returns over the quarter. Energy sector was the best performing sector with a return of 31.9% while Utilities sector returned the least at 7.7%.
- Small cap stocks outperformed both large and medium cap stocks over the quarter, whilst Value stocks outperformed their Growth counterparts in Q4 2020.

U.S. Fixed Income Markets





- The Bloomberg Barclays U.S. Aggregate Bond Index rose by 0.7% over the quarter.
- Corporate bonds were the best performer with a return of 3.0%, followed by CMBS bonds which rose by 1.1%.
- Bonds with 10+ year maturities performed the best with a return of 1.7%.
- High yield bonds rose by 6.5%. Within investment grade bonds, Baa bonds outperformed with a return of 4.0%.



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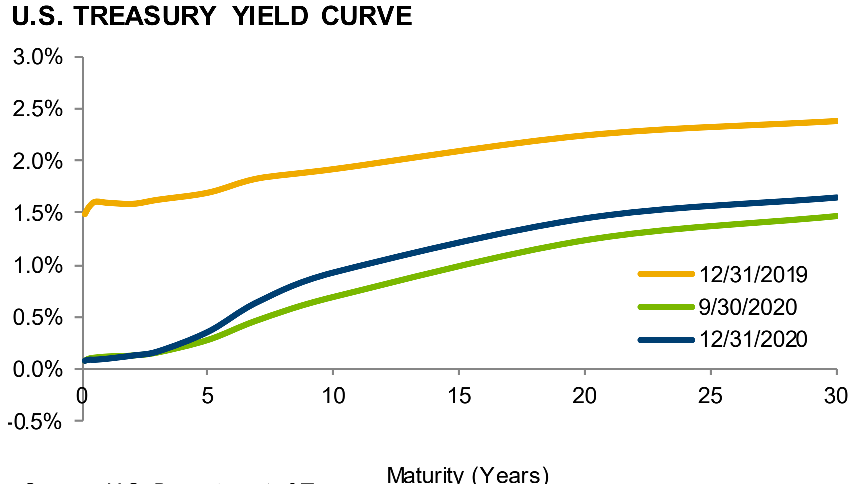
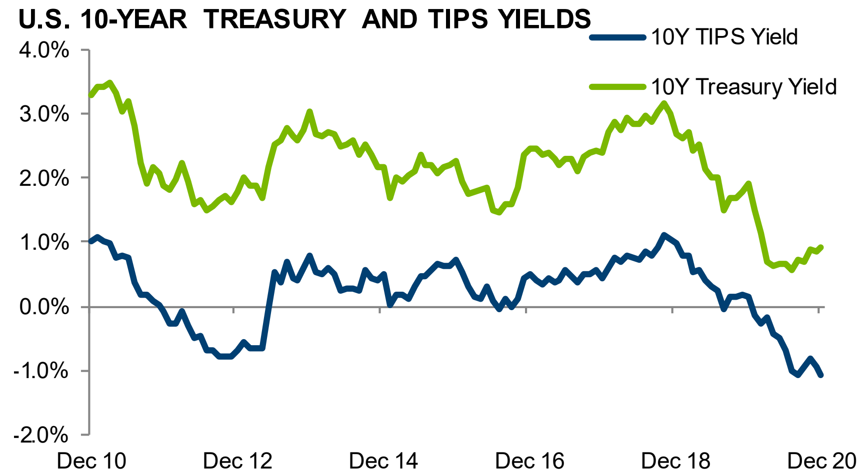


Source: U.S. Department of Treasury

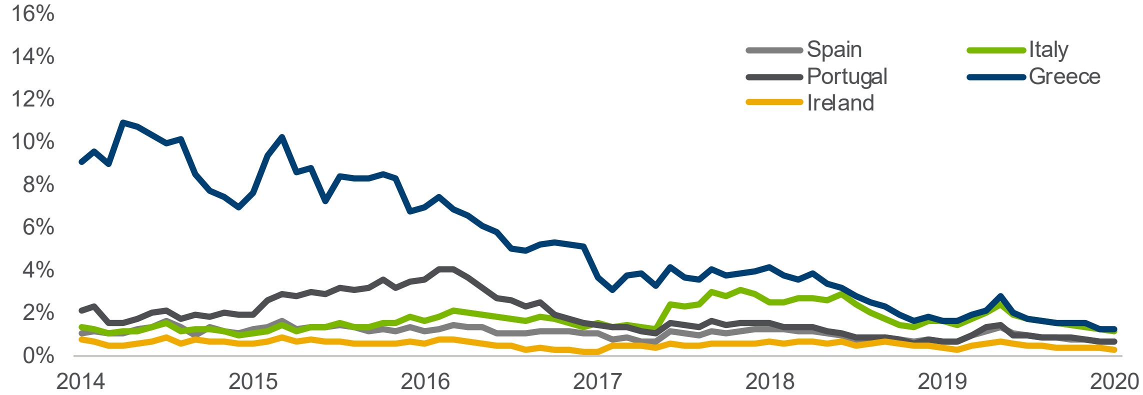


Source: U.S. Department of Treasury

- The U.S. nominal yield curve steepened over the quarter with yields at the short end of the curve remaining virtually unchanged while yields at the longer end rose. The U.S. Federal Reserve (Fed) kept its interest rate unchanged and will continue to buy $120bn of debt per month until “substantial further progress has been made” towards its employment and inflation targets. The Fed also upgraded its September projections to an economic growth rate of -2.4% in 2020 (up from -3.7%) followed by a rebound of 4.2% in 2021 (up from 4.0%).
- The 10-year U.S. treasury yield ended the quarter 24bps higher at 0.93% and the 30-year yield increased by 19bps to 1.65%.
- The 10-year TIPS yield fell by 12bps over the quarter to -1.06%. Breakeven inflation rose across the curve during the quarter as the Fed’s “average inflation targeting” approach, under which the Fed would allow inflation to rise above their 2% target for a period of time, and the new fiscal stimulus package pushed inflation expectations higher.

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 narrowed across the Euro Area. The EU passed the bloc's €1.8tn budget and recovery package after Hungary and Poland reversed their vetoes. Originally both countries had objected to rules linking stimulus disbursement to the commitment of European values. However, they backed down after EU officials stated that refusal to accept the package would ''backfire''. The European Central Bank increased the size of its Pandemic Emergency Purchase Programme from €1.35tn to €1.85tn and extended the program until March 2022.
- German government bund yields fell by 5bps to -0.58% over the quarter. The Eurozone economy rebounded by growing 12.7% in Q3 2020 on a quarter-on-quarter basis, the fastest rate on record. The German and French economies grew by 8.2% and 18.2% over this period whilst the Italian and Spanish economies grew by 16.1% and 16.7% respectively.
- Greek government bond yields fell the most at 38bps to 0.64%, whereas Italian and Portuguese government bond yields fell by 33bps and 23bps to 0.54% and 0.03% respectively.

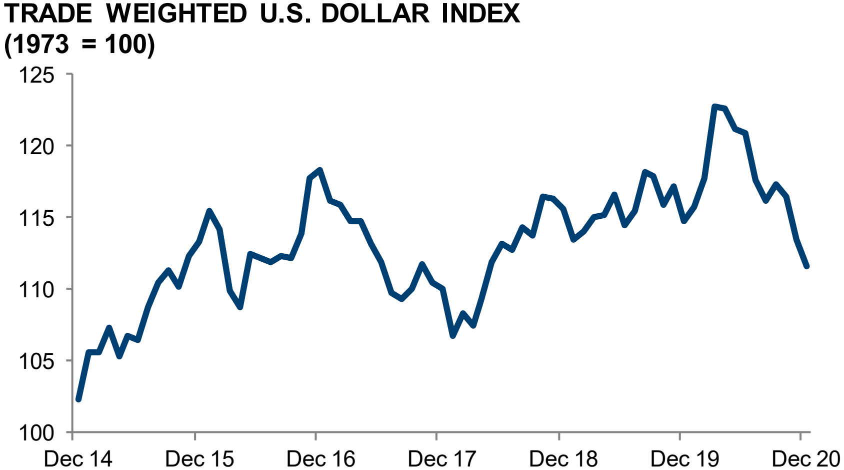
Credit Spreads

Spread (bps)	12/31/2020	9/30/2020	12/31/2019	Quarterly Change (bps)	1-Year Change (bps)
U.S. Aggregate	42	60	39	-18	3
Gov't	0	0	0	0	0
Credit	92	128	90	-36	2
Gov't/Credit	42	58	38	-16	4
MBS	39	61	39	-22	0
CMBS	81	106	72	-25	9
ABS	33	41	44	-8	-11
Corporate	96	136	93	-40	3
High Yield	360	517	336	-157	24
Global Emerging Markets	268	334	287	-66	-19

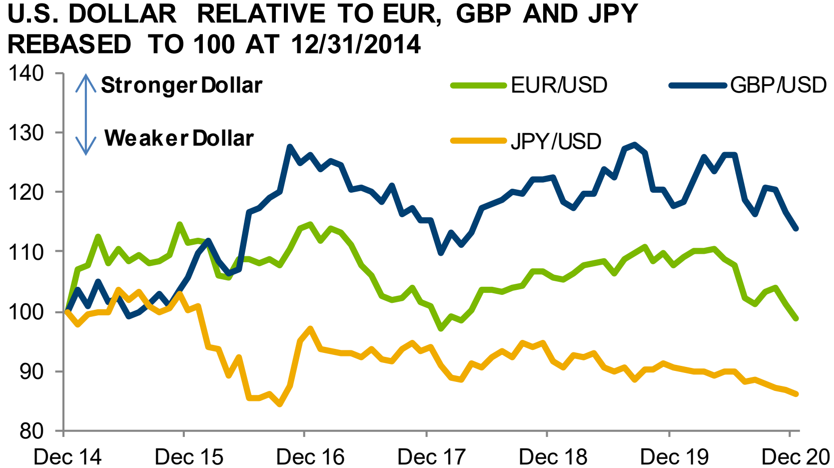
Source: Barclays Live

- Credit markets had another solid quarter as spreads continued to fall. Spreads tightened again during the quarter, especially in the riskier credit areas, as the positive vaccine news improved hopes of a strong economic recovery. Overall, Credit spreads over U.S. treasuries narrowed over the quarter.
- Riskier areas of credit, such as U.S. high yield bonds and emerging market debt performed well. High Yield credit spreads narrowed significantly in Q4 2020, decreasing by 157bps and Global Emerging Markets narrowed by 66bps over the quarter.
- However, there are still reasons to be concerned as the global high yield default rate for the twelve months to November was 7%, over twice as high as the pre-pandemic levels and the total number of investment grade bond downgrades for 2020 have outnumbered upgrades by 3 to 1 (upgrades outnumbered downgrades by 3 to 2 in 2019).

Currency



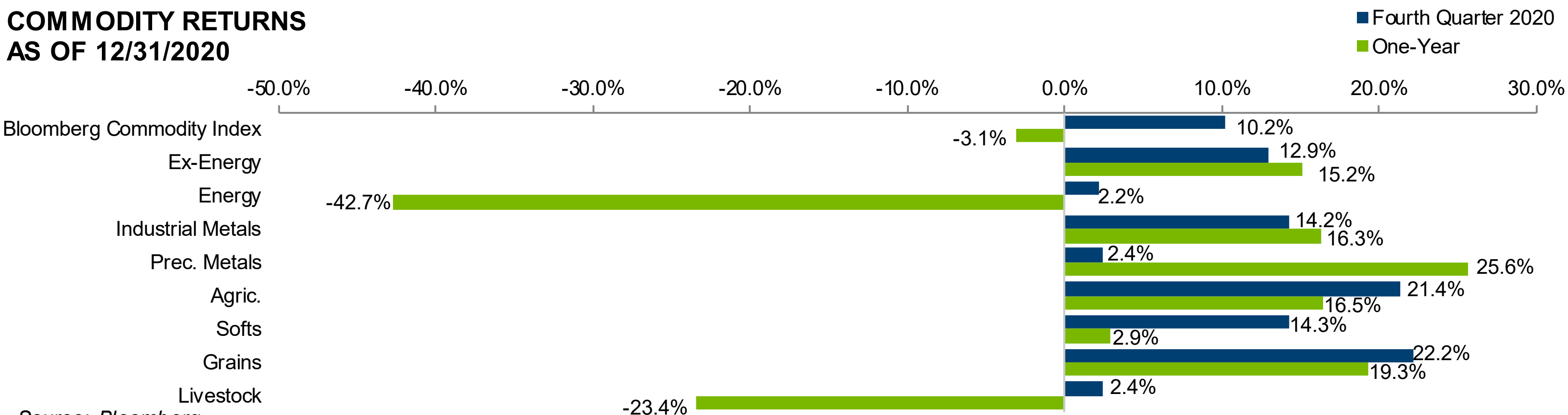
Source: Federal Reserve



Source: FactSet

- The U.S. dollar weakened against major currencies over the quarter as renewed risk appetite from investors and consistent ultra-low interest rates dragged on the Dollar. The U.S. dollar fell 4.9% on a trade-weighted basis. The U.S. Federal Reserve is not expected to implement any rate hikes until the end of 2023.
- The Sterling rose by 1.8% on a trade-weighted basis over the quarter in which the UK and the European Union (EU) reached a historic Brexit trade deal after years of negotiations. The Bank of England unanimously decided to increase its quantitative easing amount to £895bn from £745bn over the course of 2021. Sterling appreciated by 5.4% against the U.S. dollar.
- The U.S. dollar depreciated by 4.2% and 2.2% against the euro and yen respectively.

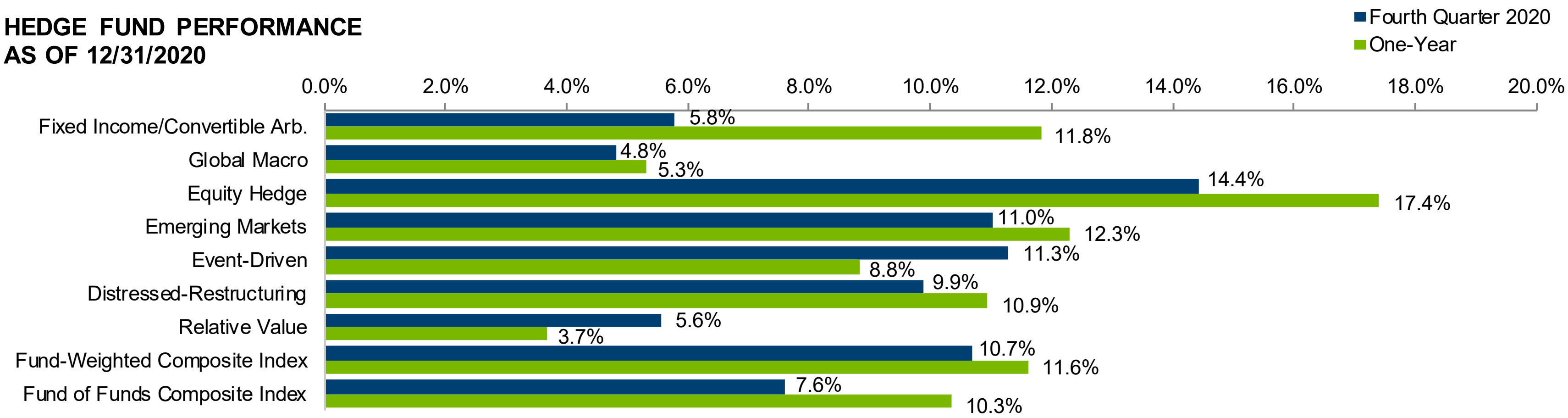
Commodities



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

- Commodities fell in tandem with equity markets in October before rebounding sharply in November and maintaining the momentum in December. Overall, the Bloomberg Commodity Index returned 10.2% for the quarter.
- The Energy sector rose by 2.2% over the quarter. Oil prices rallied in November and December due to optimism over vaccines approval and starting of vaccination process to fight Covid-19. Elsewhere, OPEC and Russia agreed to increase oil production by 500,000 b/d from January 2021, thus, bringing down the production cut from existing 7.7 mb/d to 7.2 mb/d. OPEC cut its forecast for 2021 growth in oil demand by 350,000 bpd to 5.9 mb/d citing uncertainty over the impact of Covid-19 and labor market.
- The price of Brent crude oil rose by 26.5% to $52/bbl. while WTI crude oil spot prices rose by 20.6% to $49/bbl. On a one-year basis, the Energy sector is down by 42.7%.
- Agriculture was the best performing sector, rising by 21.4% in Q4 2020.

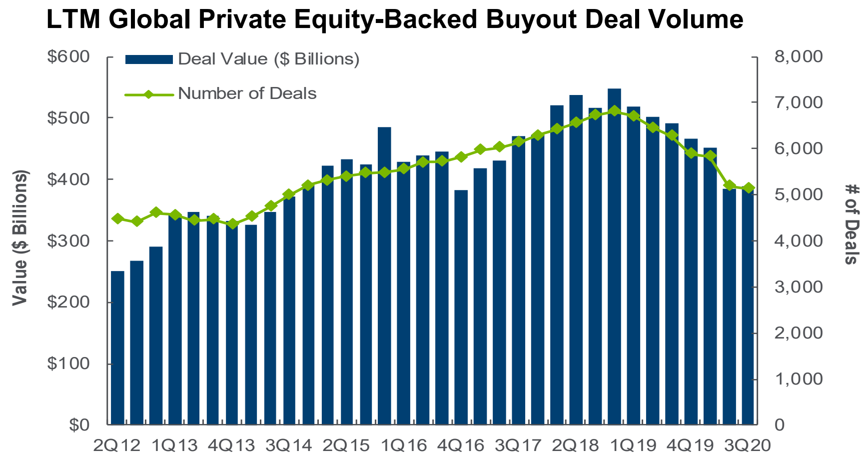
Hedge Fund Markets Overview



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

- Hedge fund performance was positive across all strategies in the fourth quarter.
- Over the quarter, Equity Hedge and Event-Driven strategies were the best performers, returning 14.4% and 11.3% respectively.
- HFRI Fund-Weighted Composite Index and the HFRI Fund of Funds Composite Index produced returns of 10.7% and 7.6% respectively.

Private Equity Market Overview – 3Q 2020

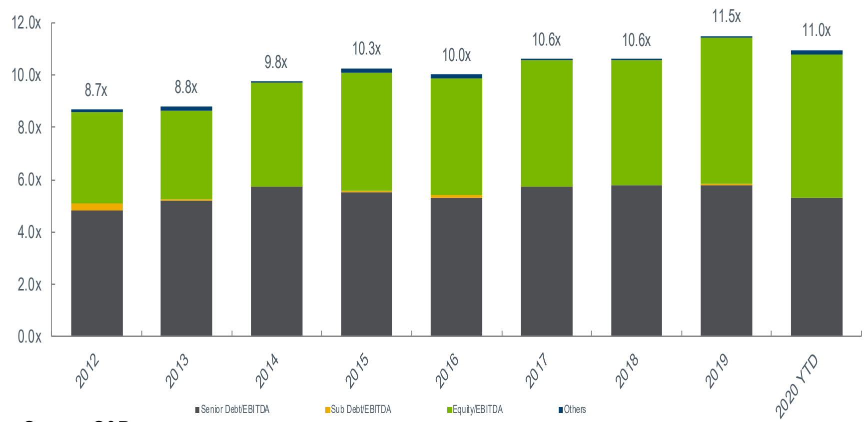


Source: Preqin

- **Fundraising:** In 3Q 2020, $157.8 billion was raised by 361 funds, which was a decrease of 5.1% on a capital basis and 5.4% by number of funds over the prior quarter. Dry powder stood at nearly $2.0 trillion at the end of the quarter, an increase compared to year-end 2019's total of $1.9 trillion.[1]
- **Buyout:** Global private equity-backed buyout deals totaled $111.0 billion in 3Q 2020, which was up 70.7% on a capital basis and up 39.9% by number of deals from 2Q 2020.[1] Through 3Q 2020, the average purchase price multiple for all U.S. LBOs was 11.0x EBITDA, a decrease of 0.5x over 2019's average but higher than the five-year average (10.6x).[2] Large cap purchase price multiples stood at 10.8x through 3Q 2020, down compared to 2019's level of 11.4x.[2] In Europe, the average purchase price multiple across European transactions of greater than €500M averaged 12.1x EBITDA on an LTM basis as of 3Q 2020, up from the 11.1x multiple seen at the end of 4Q 2019. Purchase prices for transactions of greater than €1.0 billion increased to 12.4x on an LTM basis, a jump from the 11.2x seen at the end of 2019. Globally, exit value totaled $188.1 billion from 481 deals during the third quarter, up meaningfully from the $41.1 billion in exits from 323 deals during 2Q 2020.[1]
- **Venture:** During the third quarter, 1,461 venture-backed transactions totaling $36.5 billion were completed in the U.S., which was an increase on a capital basis over the prior quarter's total of $28.1 billion across 1,440 deals. This was 53.2% higher than the five-year quarterly average of $23.8 billion and marked the second strongest quarter on record.[3] Total U.S. venture-backed exit activity totaled approximately $103.9 billion across 246 completed transactions in 3Q 2020, up substantially on a capital basis from the $26.5 billion across 203 exits in 2Q 2020. Through 3Q 2020, U.S. exit activity represented only 56.4% of 2019's total.[4]
- **Mezzanine:** Nine funds closed on $3.3 billion during the third quarter. This was up from the prior quarter's total of $2.6 billion raised by six funds. Through 3Q, mezzanine funds have raised 102.3% of 2019's total of $8.7 billion. Estimated dry powder was $48.0 billion at the end of 3Q 2020, down slightly from the $48.6 billion seen at the end of 2Q 2020.[1]

Private Equity Market Overview – 3Q 2020

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



Source: S&P

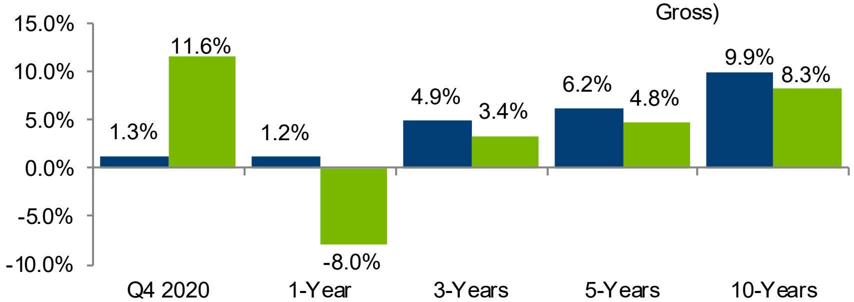
- **Distressed Debt:** The TTM U.S. high-yield default rate was 5.6% at September 2020 and was expected to decrease slightly during the coming months.[5] During the quarter, $1.8 billion was raised by 10 funds, a significant drop from the $22.6 billion raised by 21 funds in 2Q 2020. Distressed funds have raised 59.6% of 2019's total through 3Q 2020.[1] Dry powder was estimated at $136.3 billion at the end of 3Q 2020, which was up from the $127.3 billion seen at the end of 2Q 2020. This remained above the five-year annual average level of $108.8 billion.[1]
- **Secondaries:** Nine funds raised $4.4 billion during the quarter, down significantly from the $23.4 billion raised by 13 funds in 2Q 2020. Secondary funds have raised 194.5% of 2019's total through 3Q 2020 and are expected to raise significant capital prior to year-end.[1] At the end of 3Q 2020, there were an estimated 84 secondary and direct secondary funds in market targeting roughly $67.8 billion.[1] The average discount rate for all private equity sectors finished the quarter at 12.7%, a strong rebound from the 20.8% discount at the end of 2Q 2020.[6]
- **Infrastructure:** $23.4 billion of capital was raised by 22 funds in 3Q 2020 compared to $15.1 billion of capital raised by 29 partnerships in 2Q 2020. At the end of the quarter, dry powder stood at an estimated $216.0 billion, down slightly from 2Q 2020's total of $219.7 billion. Infrastructure managers completed 518 deals with an estimated aggregate deal value of $90.5 billion in 3Q 2020 compared to 426 deals totaling $76.0 billion a quarter ago.[1]
- **Natural Resources:** During 3Q 2020, three funds closed on $2.1 billion compared to two funds totaling $0.3 billion in 2Q 2020. Energy and utilities industry managers completed approximately 112 deals totaling an estimated $13.4 billion through 3Q 2020, which represented 79.0% of energy and utilities deal value during all of 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.

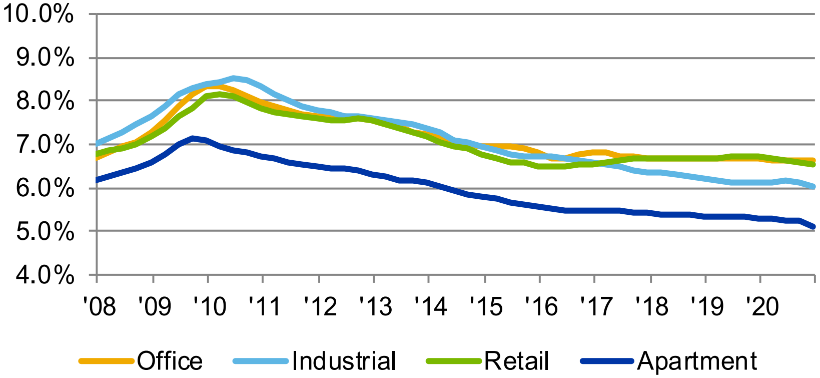
U.S. Commercial Real Estate Markets

PRIVATE VS. PUBLIC REAL ESTATE RETURNS AS OF 12/31/2020



**Fourth quarter returns are preliminary*
Sources: NCREIF, FactSet

CAP RATES BY SECTOR



Sources: RCA, AON 12/31/2018

- U.S. Core Real Estate returned 1.3%* over the fourth quarter, equating to a 1.2% total gross return year-over-year, including a 3.9% income return. Shelter in place orders and social distancing practices have most severely impacted the retail and hotel property sectors. Property valuations have begun to price in the loss of cash flow as a result of COVID-19. Transaction volume contracted -32% YoY in 2020, and price discovery continues to be limited.
- Global property markets, as measured by the FTSE EPRA/NAREIT Developed Real Estate Index, returned 13.5% (USD) in aggregate during the fourth quarter and experienced a cumulative decline of -8.2% over the trailing 1-year period. REIT market performance was driven by Asia Pacific (11.2% USD), North America (13.2% USD) and Europe (22.6% USD). The U.S. REIT markets (FTSE NAREIT Equity REITs Index) returned 11.6% in the fourth quarter. The U.S. 10-year treasury bond yields increased 24 bps to 0.93% 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. The COVID-19 pandemic shut down economies and disrupted daily routines. While the pandemic has solidified the mission critical status of technology and software within the global economy, it has drawn into question the necessity and role of a number of commercial real estate property sectors. Prior crises have generated similar levels of uncertainty across property sectors in the past, and history has shown that such moments typically provide attractive entry points for medium to long-term investors.
- We are proactively evolving our investment strategy. In the post-coronavirus world, supply chains may move back to North America which will require corresponding real estate infrastructure. Demand for last mile logistics, already a key investment theme, will accelerate. Live and work preference changes will create opportunities. Interest rates are likely to remain lower for even longer, making real estate a very compelling alternative to fixed income investments.
- Blind pool funds offer a potential to have capital 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 what may be more opportunistic style investing. Regions, countries and property types all need to be reevaluated.

*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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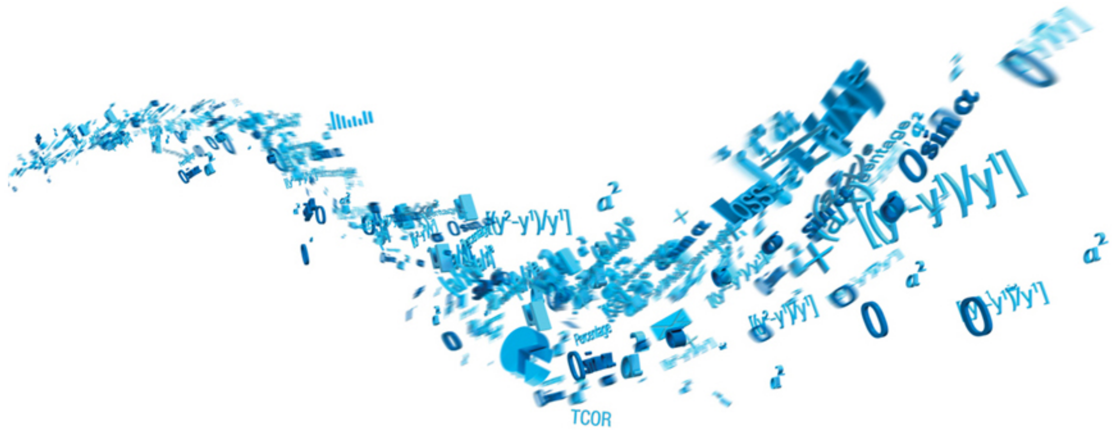
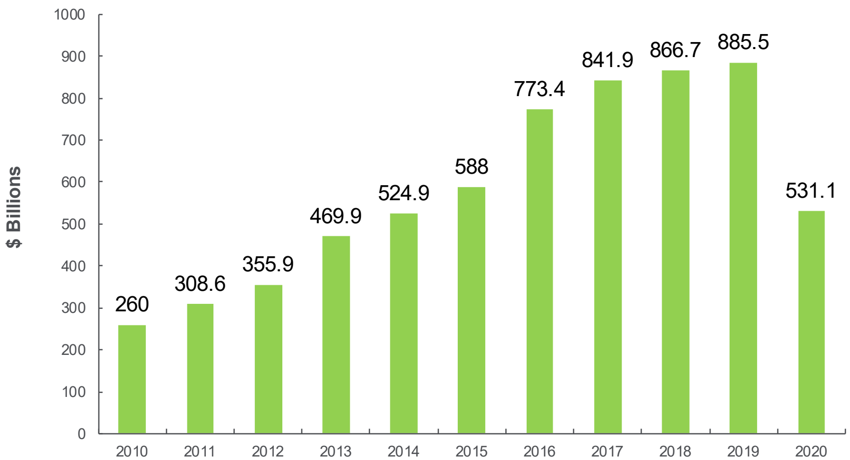


Appendix A:

Global Private Equity Market Overview
3Q 2020

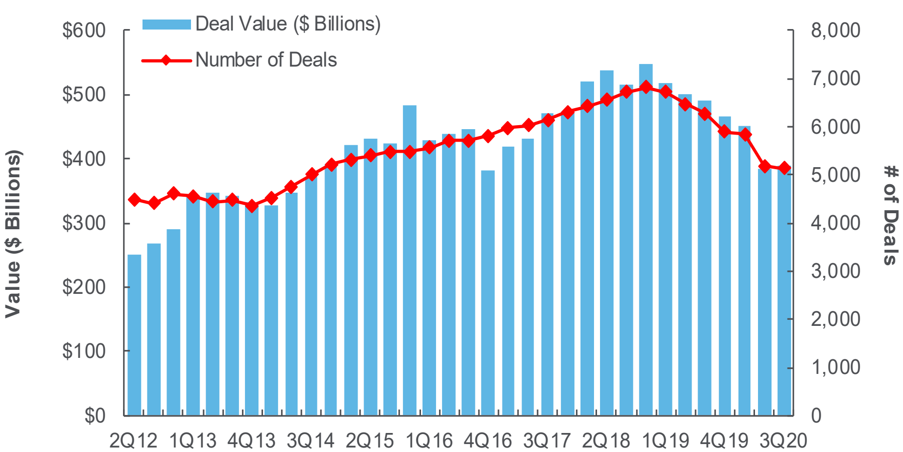
Private Equity Overview

Total Funds Raised



Source: Preqin

LTM Global Private Equity-Backed Buyout Deal Volume



Source: Preqin

Fundraising

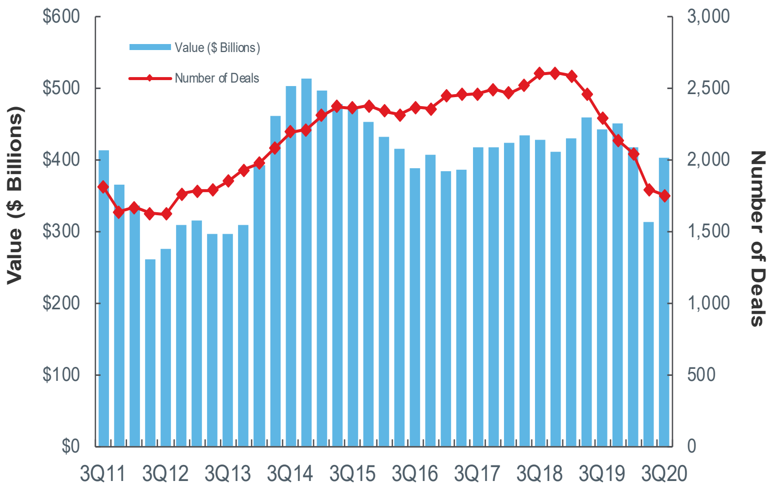
- In 3Q 2020, $157.8 billion was raised by 361 funds, which was a decrease of 5.1% on a capital basis and 5.4% by number of funds over the prior quarter. Capital raised through Q3 2020 represented 60.0% of capital raised in all of 2019.[1]
  - Q3 2020 fundraising was 25.1% lower, on a capital basis, than the three-year quarterly average, and 40.0% lower by number of funds raised.
  - The majority of capital was raised by funds with target geographies in North America, comprising 44.8% of the quarter's total. This was down from 56.6% in Q2 2020. Capital targeted for Europe made up 41.0% of the total funds raised during the quarter, an increase from 29.4% in Q2 2020. The remainder was attributable to managers targeting Asia and other parts of the world.
- Dry powder stood at nearly $2.0 trillion at the end of the quarter, an increase compared to year-end 2019's total of $1.9 trillion.[1]

Activity

- Global private equity-backed buyout deals totaled $111.0 billion in 3Q 2020, which was up 70.7% on a capital basis and up 39.9% by number of deals from 2Q 2020.[1]
  - This was 3.3% lower than the five-year quarterly average deal volume of $114.8 billion.
  - Average deal size was $79.3 million in Q3 2020. This was up 7.5% compared to Q2 2020 and up 3.8% relative to the five-year quarterly average.
- European sponsored loan volume totaled €8.9 billion in Q3 2020, up by 48.3% compared to Q2 2020's total of €6.0 billion. This was 41.1% lower than the five-year quarterly average level of €15.1 billion.[3]
- Through 3Q 2020, the average purchase price multiple for all U.S. LBOs was 11.0x EBITDA, a decrease of 0.5x over 2019's average but higher than the five-year average (10.6x).[2] Large cap purchase price multiples stood at 10.8x through 3Q 2020, down compared to 2019's level of 11.4x.[3]
  - This was 1.4x and 0.5x turns (multiple of EBITDA) below the five and ten-year average levels, respectively.
- In Europe, the average purchase price multiple across European transactions of greater than €500M averaged 12.1x EBITDA on an LTM basis as of 3Q 2020, up from the 11.1x multiple seen at the end of 4Q 2019. Purchase prices for transactions of greater than €1.0 billion increased to 12.4x on an LTM basis, a jump from the 11.2x seen at the end of 2019.[3]
- Debt remained broadly available in the U.S.
  - The average leverage for U.S. deals in Q3 2020 was 5.3x compared to the five and ten-year averages of 5.7x and 5.4x, respectively.[3]
  - The amount of debt issued supporting new transactions decreased compared to the prior quarter, moving from 67.6% to 59.6%, and was lower than the five-year average of 64.7%.[3]
- In Europe, the average senior debt/EBITDA on an LTM basis ended Q3 2020 was 5.7x, up slightly from the 5.6x observed in Q4 2019.

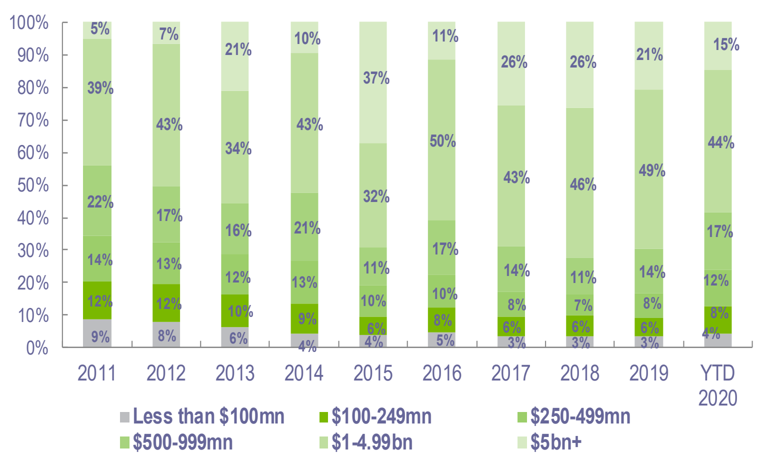
Buyouts / Corporate Finance

LTM PE Exit Volume and Value



Source: Preqin

M&A Deal Value by Deal Size



Source: Preqin

Fundraising

- $87.0 billion was closed on by 104 buyout and growth funds in Q3 2020, compared to $64.5 billion raised by 91 funds in Q2 2020. This was substantially lower than the $131.6 billion raised by 132 funds in Q3 2019.[1]
  - This was below the three-year quarterly average of $98.7 billion and 151 funds.
  - CVC Capital Partners Fund VIII was the largest fund raised during the quarter, closing on €21.3 billion of commitments.[1]
- Buyout and growth equity dry powder was estimated at $1.1 trillion, up 4.8% from Q4 2019.[1]
- Mega, large, and mid cap buyout funds increased in dry powder compared to Q2 2020 by 18.4%, 9.1% and 3.0%, respectively. Mega cap buyout funds were sitting on $424.1 billion in dry powder at the end of the quarter. Small cap dry powder exhibited the only decrease during the quarter, decreasing to $84.7 billion or a decrease of 1.3% over the prior quarter.[1]
  - An estimated 59.1% of buyout dry powder was targeted for North America, while European dry powder comprised 26.7% and Asia/Rest of World accounted for the remainder.[1]

Activity

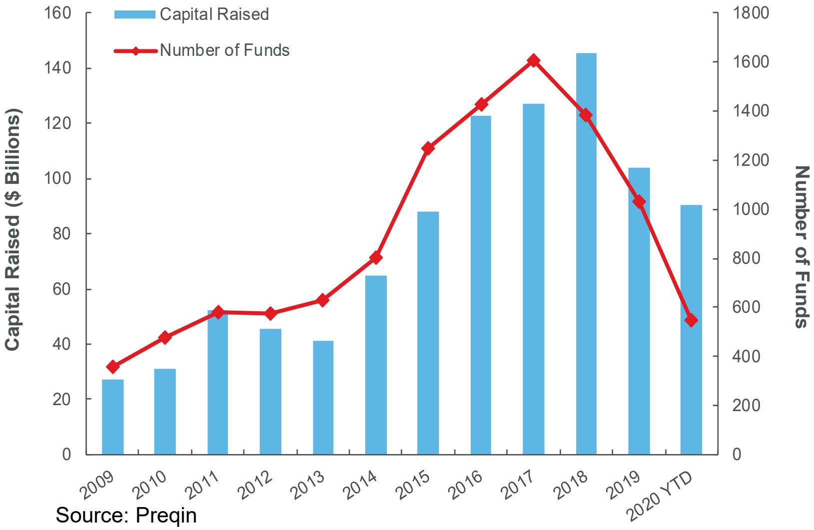
- Global private equity-backed buyout deals totaled $111.0 billion in Q3 2020, which was an increase of 70.7% compared to Q2 2020, but 3.3% below the five-year quarterly average.[1]
- Through Q3 2020, deal level accounted for 60.6% of 2019's total buyout activity and only 78.6% over the same period in 2019.
  - Through Q3 2020, deals valued at $5.0 billion or greater accounted for an estimated 14.6% of total deal value compared to 25.5% through Q2 2020 and 20.9% in 2019.[1] Deals valued between $1.0 billion to $4.99 billion represented 43.8% of total deal value through the third quarter.
  - By geography, North American deals accounted for the largest percentage of total deal value at an estimated 53.4% through Q3 2020, while Information Technology deals accounted for the largest percentage by industry at 27.4% of total deal value.
- U.S. Entry multiples for all transaction sizes in Q3 2020 stood at 11.0x EBITDA, up significantly from Q2 2020's level (9.2x).[3]
  - Large cap purchase price multiples stood at 10.8x through Q3 2020, down compared to 9.2x through Q2 2020.[3]
  - In Europe, the average purchase price multiple across European transactions greater than €500M averaged 12.1x EBITDA on an LTM basis as of 3Q 2020, up from the 11.1x seen at the end of 4Q 2019. Purchase prices for transactions greater than €1.0 billion increased to 12.4x on an LTM basis, a jump from the 11.2x seen at the end of 2019.[3]
  - The portion of average purchase prices financed by equity for all deals was 50.1% through Q3 2020, up from 46.7% in Q2 2020. This remained above the five and ten-year average levels of 45.6% and 43.4%, respectively.[3]
- Globally, exit value totaled $188.1 billion from 481 deals during the third quarter, up meaningfully from the $41.1 billion in exits from 323 deals during 2Q 2020.[1]

Opportunity

- Value-focused strategies
- Managers with expertise across business cycles

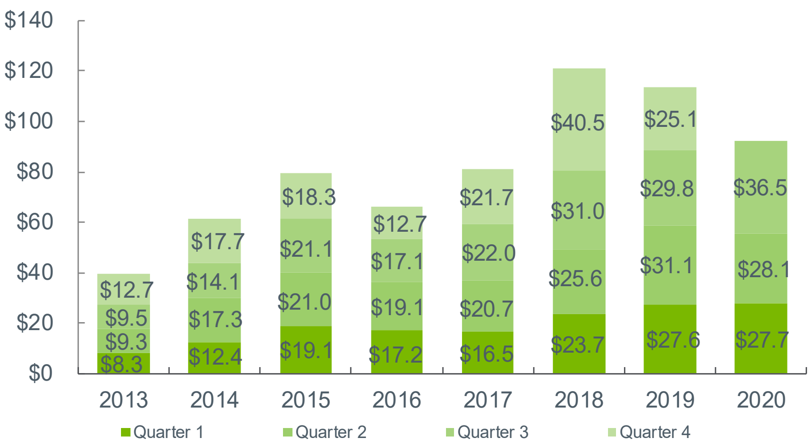
Venture Capital

Venture Capital Fundraising



Source: Preqin

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



Source: PwC/CB Insights Report

Fundraising

- $22.2 billion of capital was raised by 163 funds in Q3 2020, down from the prior quarter's total of $25.8 billion raised by 178 managers. Although the average fund size dropped to $148.0 million, this was above the three-year quarterly average of $128.6 million.[1]
  - Q3 2020 fundraising was 30.9% lower on a capital basis compared to the three-year quarterly average of $32.1 billion.
  - Blackstone Life Sciences V was the largest fund raised during the quarter, closing on $4.6 billion. The fund will also make investments in later-stage deals and thus is not solely a venture capital fund.
  - The average fund size raised during the quarter was approximately $148.0 million. This represented a decrease compared to 2Q 2020's average of $159.0 million.
- At the end of Q3 2020, there were an estimated 2,267 funds in market targeting $197.9 billion.[1]
  - Softbank Vision Fund – Latin America 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 $318.6 billion at the end of 3Q 2020, up from Q4 2019's total of $281.0 billion and 60.3% higher than the five-year average.[1]

Activity

- During the third quarter, 1,461 venture-backed transactions totaling $36.5 billion were completed in the U.S., which was an increase on a capital basis over the prior quarter's total of $28.1 billion across 1,440 deals. This was 53.2% higher than the five-year quarterly average of $23.8 billion and marked the second strongest quarter on record.[7]
  - In Q3 2020, there were 54 U.S.-based deals involving unicorn companies, representing roughly $12.1 billion in deal value. This was down by number and value compared to Q2 2020, which saw 57 unicorn-related deals close at a deal value of $16.9 billion. Q4 2018 continues to be the quarter in which deal value by U.S. unicorns was the highest, with 48 deals raising $24.0 billion in value.[8]
- At the end of Q3 2020, median pre-money valuations increased across series except Series C. Compared to Q2 2020, Seed transactions increased to a median pre-money valuation of $11.3 million from $9.0 million, Series A transactions increased from $28.8 million to $44.0 million, Series B increased from $105.0 million to $152.5 million, and Series D+ increased from $475.0 million to $1.7 billion. Series C median pre-money valuations decreased from $292.0 million to $250.0 million during the quarter.[9]
- Total U.S. venture-backed exit activity totaled approximately $103.9 billion across 246 completed transactions in 3Q 2020, up substantially on a capital basis from the $26.5 billion across 203 exits in 2Q 2020. Through 3Q 2020, U.S. exit activity represented only 56.4% of 2019's total.[8]
  - The number of U.S. venture-backed initial public offerings increased over 2Q 2020, with 37 IPOs completed in 3Q 2020. 110 exits occurred by acquisition, the lowest by number in over 10 years, and accounted for only $7.1 billion in exit value. IPOs accounted for $96.4 billion in value compared to $14.8 billion in the prior quarter.[8]

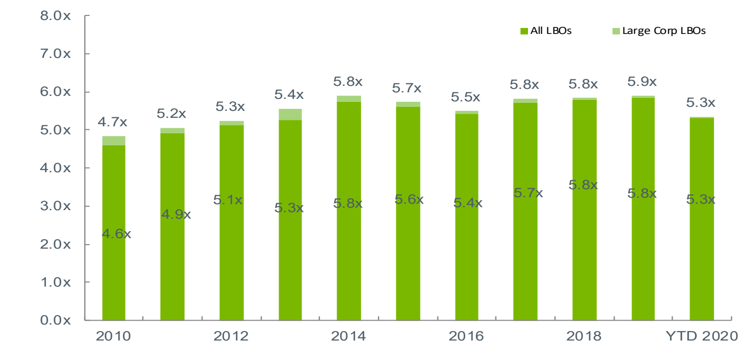
Opportunity

- Early stage continues to be attractive, although we continue to monitor valuations
- Smaller end of growth equity
- Technology sector

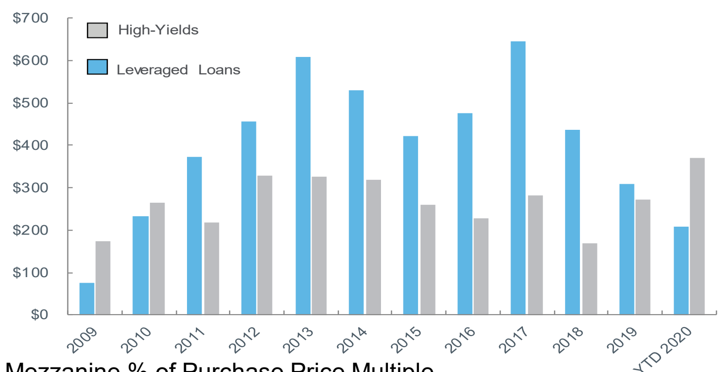
Empower Results®

Leveraged Loans & Mezzanine

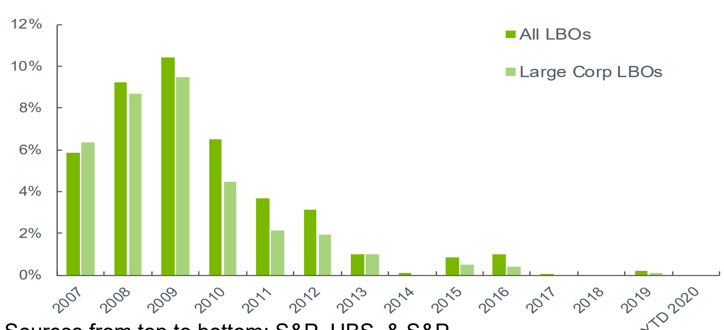
Average Leverage by Deal Size



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 $48.7 billion through Q3 2020 compared to $118.3 billion in full-year 2019.[2]
- High-yield debt issuance totaled $135.6 billion in 3Q 2020. 2020's YTD total is already 85.0% greater than 2019's total of $200.6 billion issued in the same period.[2]
- Through 3Q 2020, leveraged loan mutual fund net flows ended with a net outflow of $20.2 billion.[2]

Activity

- Leverage for all U.S. LBO transactions through Q3 was 5.3x, down from Q4 2019's leverage of 5.8x. Leverage continues to be comprised almost entirely of senior debt. The average leverage level for large cap LBOs was 5.3x through the quarter, down from the 5.9x witnessed in 2019.[3]
- Q3 2020 institutional leveraged loan issuances totaled $74.8 billion compared to Q2 2020's total of $44.0 billion.[2]
- 59.6% of new leveraged loans were used to support M&A and growth activity through Q3 2020, down from 72.2% in Q4 2019. This was also below the five-year average of 64.7%.[3]
- European sponsored loan issuance decreased substantially to €8.9 during the second quarter compared to €6.0 during Q2 2020. This was 41.1% lower than the five-year quarterly average level of €15.1 billion.[3]

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

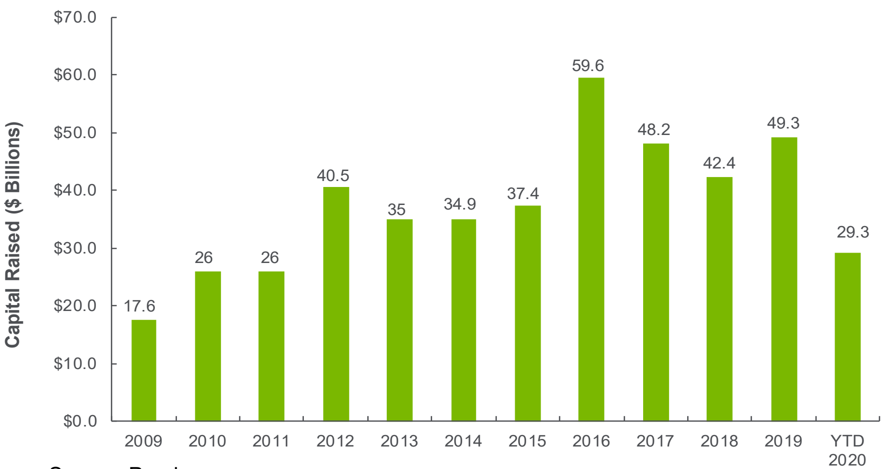
- Nine funds closed on $3.3 billion during the quarter. This was an increase from the prior quarter's total of $2.6 billion raised by six funds. Through 3Q, mezzanine funds have raised 102.3% of 2019's total of $8.7 billion.[1]
- Estimated dry powder was $48.0 billion at the end of Q2 2020, which was down 13.8% from year-end 2019's total of $55.7 billion.[1]
- An estimated 67 funds are in market targeting $39.6 billion of commitments. HPS Mezzanine Partners 2019 is the largest fund in market targeting commitments of $8.5 billion.[1]

Opportunity

- Funds with the capacity to scale for large sponsored deals

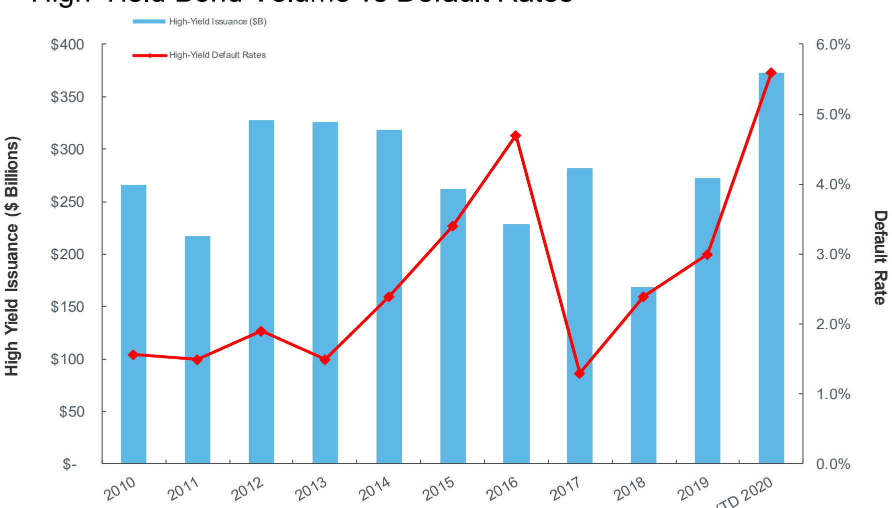
Distressed Private Markets

Distressed Debt, Turnaround, & Special Situations Fundraising



Source: Preqin

High-Yield Bond Volume vs Default Rates



Source: UBS & Fitch Ratings

Fundraising

- During the quarter, $1.8 billion was raised by 10 funds, down significantly compared to the $22.6 billion raised by 21 funds in Q2 2020.[1]
  - Q3 2020's fundraising was 85.2% less than the three-year quarterly average. Capital raised through the quarter represented only 59.6% of 2019's total.
  - MSD Special Investments Fund was the largest fund closed during the quarter, closing on $825.0 million.
- Dry powder was estimated at $136.3 billion at the end of the quarter, up from year-end 2019's mark of $121.8 billion. This was also up compared to year-end 2018 ($118.2 billion) and remained above the five-year average level of $108.8 billion.[1]
- Roughly 156 funds were in the market at the end of 3Q 2020, seeking $107.4 billion in capital commitments.[1]
  - Distressed debt managers were targeting the most capital, seeking an aggregate $74.6 billion, followed by special situation managers at $30.3 billion.
  - Oaktree Opportunities Fund XI was the largest fund in market with a target fund size of $15.0 billion.

Activity

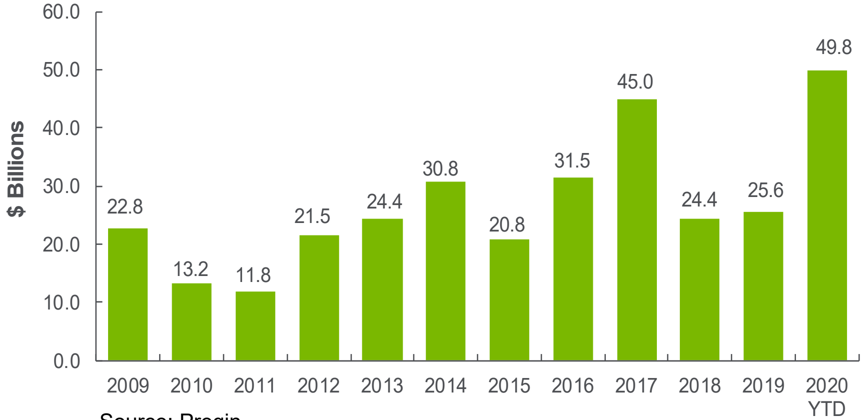
- The TTM U.S. high-yield default rate was 5.6% at September 2020 and was expected to decrease slightly during the coming months. September's default rate was up from 5.1% seen in June 2020 and 3.0% at year-end 2019.[6]
- The market dislocation caused by COVID-19 is expected to supply an abundance of distressed opportunities in the next several months.

Opportunity

- Funds capable of performing operational turnarounds
- Funds with the flexibility to invest globally
- Increased focus on distressed and turnaround opportunities during current downturn

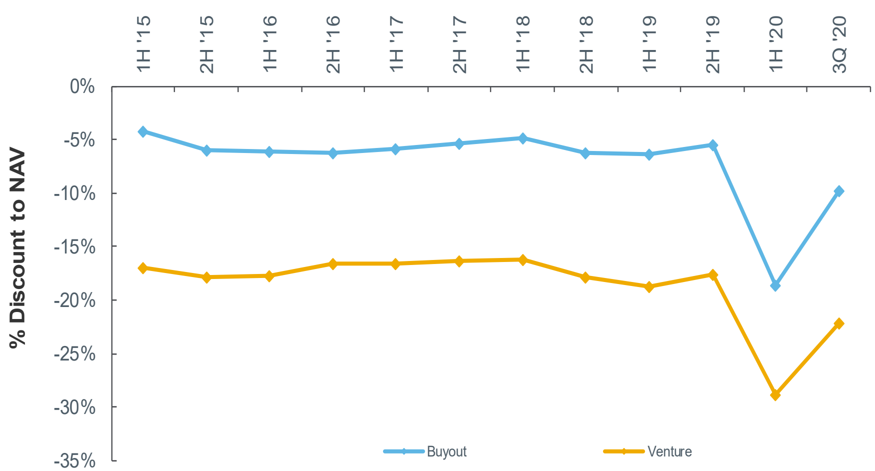
Secondaries

Secondary Fundraising



Source: Preqin

Secondary Pricing



Source: UBS

Fundraising

- Nine funds raised $4.4 billion during the quarter, down from the $23.4 billion by 13 funds in 2Q 2020.Capital raised through Q3 2020 represented 194.5% of 2019's total capital raised.[1]
  - Pantheon Global Secondary Fund VI was the largest fund raised during the quarter, closing on $2.2 billion.
- Through 3Q 2020, there were an estimated 84 secondary funds in market, targeting approximately $67.8 billion. The majority of secondary funds are targeting North American investments.
  - Four funds are currently in market targeting greater than $5.0 billion in capital commitments. Together, these four funds account for $29.8 billion of the $67.8 billion of capital being raised.
  - Coller International Partners VIII is the largest fund being raised, seeking $9.0 billion in commitments.[1]

Activity

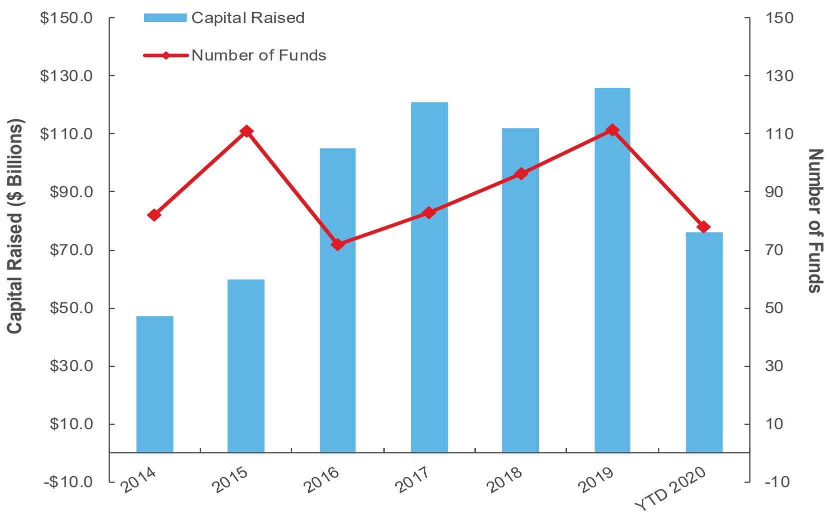
- The market continues to have participation from a broad base of buyers and sellers with opportunistic selling activity from public and private pensions, financial institutions and insurance companies.
- The average discount rate for all private equity sectors finished Q3 2020 at 12.7%, up from 20.2% at the end of Q2 2020. The average buyout pricing discount rebounded to 9.8%, while venture ended at a discount of 22.1%. The average buyout pricing discount for Q3 was up from Q2 2020's 18.6% discount, while the venture discount was up from 28.8%.[2]
- Per UBS, buyers will face a continued focus on financial and operating performance of portfolio companies during Q4 2020, as buyers face pressure to deploy capital, challenges of information asymmetry, and the possibility of a second wave of lockdowns as governments continue to cope with Covid-19. [2]
- Pricing is expected to strengthen as buyers become more comfortable with the stability of the NAVs used in secondary transactions. Steep discounts may continue for assets of less experienced GPs or for assets in sectors that were more severely impacted by Covid-19.[2]

Opportunity

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

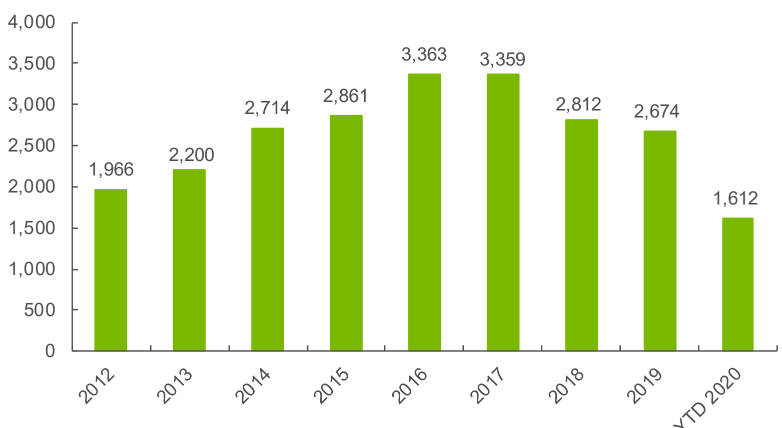
Infrastructure

Global Infrastructure Fundraising



Source: Preqin

Number of Deals Completed



Source: Preqin

Fundraising

- $23.4 billion of capital was raised by 22 funds in 3Q 2020 compared to $15.1 billion of capital raised by 29 partnerships in 2Q 2020.Through Q3 2020, infrastructure funds have raised 69.9% of 2019's total.[1]
  - Antin Infrastructure Partners IV was the largest fund raised during the quarter, closing on €6.5 billion.[1]
- As of the end of 3Q 2020, there were an estimated 250 funds in the market seeking roughly $202.7 billion.[1]
  - EQT Infrastructure V was the largest fund in market and was seeking commitments of €12.5 billion.
- At the end of the quarter, dry powder stood at $216.0 billion, slightly lower than the amount seen at the end of Q2 2020 ($219.1 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

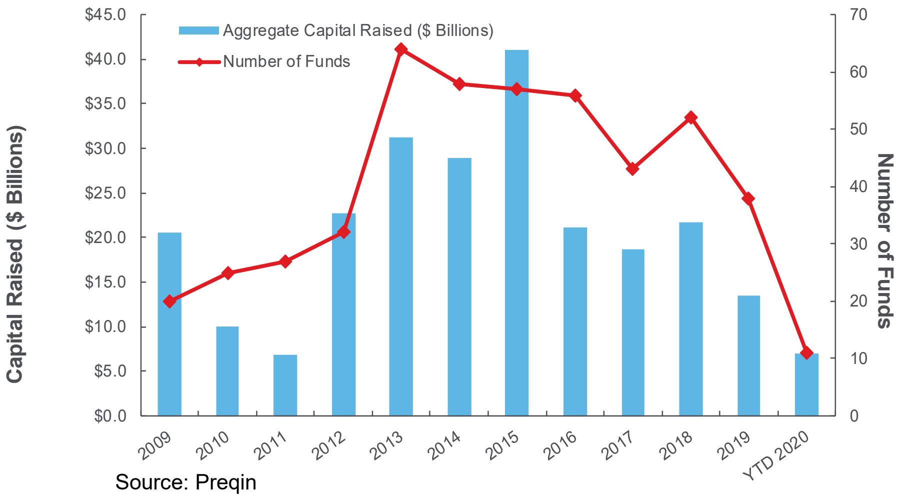
- Infrastructure managers completed 518 deals for an aggregate deal value of $90.5 billion in Q3 2020 compared to 426 deals totaling $76.0 billion in Q2 2020.[1]
  - By region, Europe saw the largest number of deals completed, with 34.8% of deals being invested in the region, followed by North America at 33.7%. Asia amassed 14.7% of activity during the quarter.
  - Renewable energy was the dominant industry during the quarter with 62.7% of transactions, followed by the telecommunication and transport sectors, which each accounted for 8.5% of deals. Utilities accounted for 7.3% of deals during the third quarter.[1]

Opportunity

- Avoid funds with pre-specified assets due to lag in and uncertainty around valuation impact
- Blind-pool funds may be better positioned to take advantage of the market dislocation across core and core+ infrastructure, however careful review of such strategies is required
- Greenfield social / PPP infrastructure will likely continue to be less competitive and offer a premium for managers willing to take on construction risk

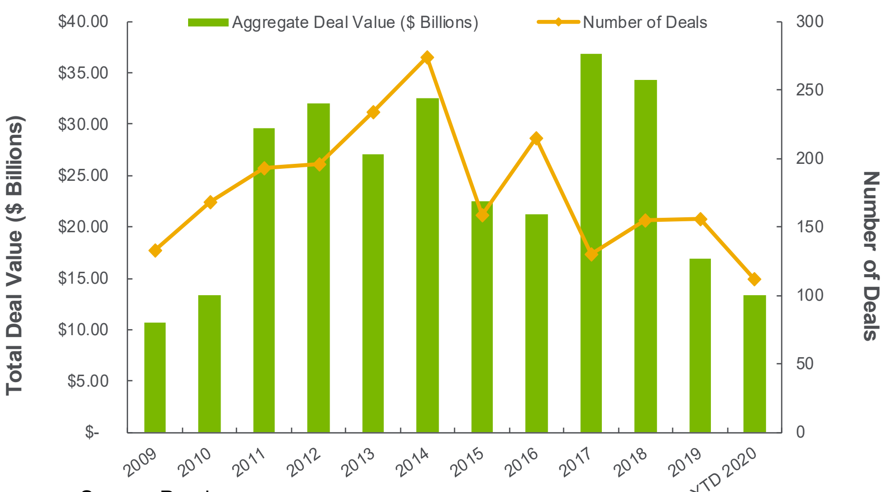
Natural Resources

Natural Resources Fundraising



Source: Preqin

Energy & Utilities Deal Activity



Source: Preqin

Fundraising

- During Q3 2020, three funds closed on $2.1 billion compared to two funds totaling $0.3 billion in Q2 2020.[1] Through Q3 2020, 51.9% of 2019's total has been raised.
  - Taurus Mining Finance Fund II was the largest fund raised during the quarter, securing commitments of $1.6 billion.
- At the end of the third quarter, there were roughly 113 funds in the market targeting an estimated $47.0 billion in capital.[1]
  - Quantum Energy Partners VIII was the largest fund raising capital with a target fund size of $5.5 billion.
- Dry powder stood at $49.0 billion at the end of 3Q 2020, which was 12.0% lower than 2Q 2020's level of $55.7 billion and down from the five-year average level by 21.9%.[1]

Activity

- Energy and utilities industry managers completed approximately 112 deals totaling an estimated $13.4 billion through 3Q 2020, which represented 79.0% of energy and utilities deal value during all of 2019.[1]
- Crude oil prices increased during the quarter.
  - WTI crude oil prices increased 3.4% during the quarter to $39.63 per bbl. However, this was still a decrease of 33.8% compared to year-end 2019.[11]
  - Brent crude oil prices ended the quarter at $40.91/bbl, up 1.6% compared to the prior quarter, but down 39.2% from 4Q 2019.[11]
- Natural gas prices (Henry Hub) finished Q3 2020 at $1.92 per MMBtu, which was up 17.8% from 2Q 2020 but down 13.5% from 4Q 2019.[11]
- A total of 266 crude oil and natural gas rotary rigs were in operation in the U.S. at the end of the quarter. This was up by 1.1% from the prior quarter but down 66.6% over Q4 2019.[15]
  - Crude oil rigs represented 71.1% of the total rigs in operation. 67.7% of the 189 active oil rigs were in the Permian basin.
  - 48.6% and 35.1% of natural gas rigs at the end of Q3 2020 were operating in the Haynesville and Marcellus basins, respectively.
- The price of iron ore (Tianjin Port) ended the quarter at $123.75 per dry metric ton, up from $103.30 at the end of Q2 2020.[12]

Opportunity

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

Notes

1. Preqin
2. UBS
3. Standard & Poor's
4. Aon Hewitt Investment Consulting
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 1H 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

3Q 2020

United States Real Estate Market Update (3Q20)

General

- On March 13th, 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 the 3rd quarter, equity markets continued to bounce back from the March rout, and the S&P 500 produced a gross total return of 8.9%. The MSCI US REIT index continued to rebound and produced a return of 1.6% but remains down -17.1% YTD.

- The U.S. entered a recession in February; GDP contracted at an annualized rate of -31.4% in the 2nd quarter but rebounded and grew at annualized rate 33.1% in the 3rd quarter. The unemployment rate peaked in April at 14.7% and has since declined to 8.8% at quarter end. 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 Q3 2020, transaction volume has declined by 52% YoY. Transactions have primarily occurred in the apartment and industrial sectors.

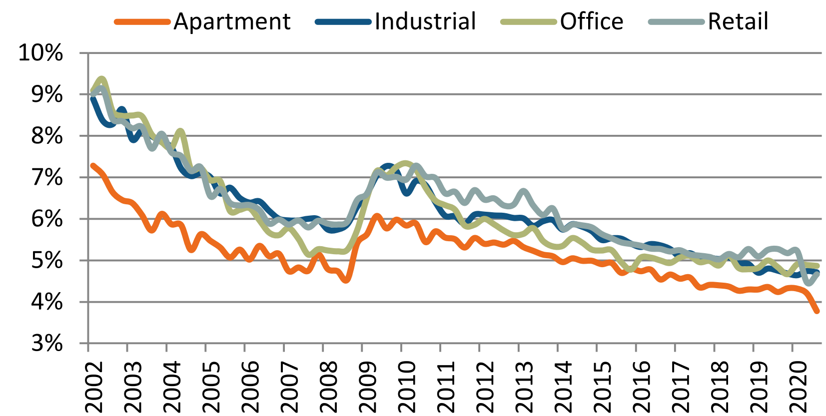
- Transaction cap rates (4.9%) contracted -76 bps during the quarter. Current valuation cap rates declined for apartments (-42 bps), office (-2 bps), and industrial (-3 bps). A lack of transactions continues to limit evidence to revalue real estate.

- NOI growth has substantially diverged between property sectors due to the impacts of COVID-19. Retail NOI contracted substantially (-27%) as rent collections declined and retailers were shutdown. Apartment NOI contracted (-10%), 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 third quarter of 2020, $26 bn of aggregate capital was raised by real estate funds. There continues to be substantial dry powder,~$342 billion, seeking exposure to private real estate.

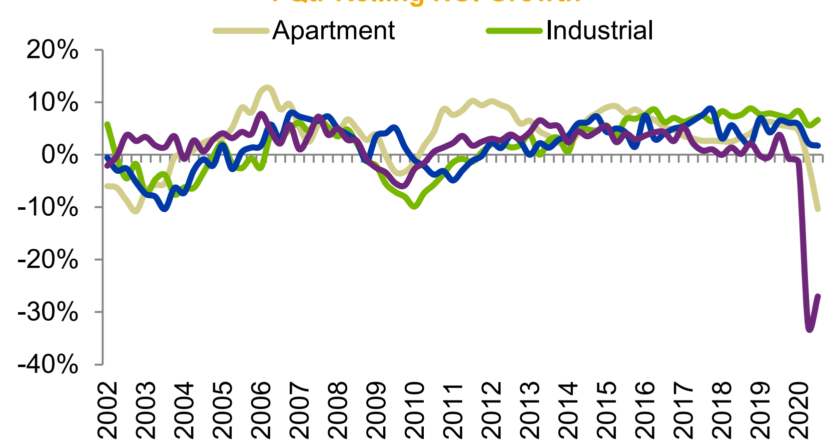
- 10-year treasury bond yields remained approximately flat 0.7% during the quarter.

Current Value Cap Rates by Property Type



Source: NCREIF

4 Qtr 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 (3Q20)

INDUSTRIAL

- In 3Q20, industrial properties were the highest returning sector at 3.0% and outperformed the NPI by 230 bps.
- Transaction volumes increased to $16.5 billion in the third quarter of the year, still resulting in a 61.0% year-over-year decrease. Individual asset sales were down 21.1% year-over-year, while portfolio purchases turned in a year-over-year volume decrease of 85.7%. The portfolio transaction volume fell to slightly below mean quarterly transaction volume; the large year-over-year decrease is due to abnormally large transaction volume in the second half of 2019.
- The industrial sector turned in NOI growth of 6.6% over the past year, an increase from the prior periods TTM growth of 5.6% in 2Q20. Market rent growth is expected to decelerate compared to its recent pace but remains strong.
- Vacancy increased by 10 bps year-over-year to 3.5%, remaining close to all-time historic lows. E-commerce continues to drive demand.
- Industrial cap rates compressed approximately 4 bps from a year ago, to 4.71%. Industrial fundamentals still top all property sectors.

MULTIFAMILY

- The apartment sector delivered a 0.5% return during the quarter, underperforming the NPI by 20 bps.
- Transaction volume in the third quarter of 2020 rose to $25.9 billion, still resulting in a decrease of 47.0% year-over-year. This volume continues to make multifamily the most actively traded sector for the thirteenth straight quarter.
- Cap rates decreased to 3.78%, compressing 46 bps year-over-year. Multifamily cap rates continue falling to their lowest in years, driven by continued decrease in NOI.
- The multifamily sector has seen increasing vacancy rates due to the pandemic but continues to hold steady relatively speaking, vacancy has increased 210 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 0.3% in 3Q20, 40 bps below the NPI return over the period.
- Transaction volumes decreased by 60% year-over-year in Q3. Annual sales volumes equaled $14.3 billion for the quarter. Single asset transactions accounted for 79% of volume.
- Occupancy growth within the office sector has slowed, decreasing by 118 bps year-over-year. Office continues to be the highest vacancy property type at close to 10.8%.
- NOI growth continued to fall for the office sector to 1.7% in the last year, a decrease of 50 bps and 400 bps from 2Q20 and 1Q20, 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 4.87% in the third quarter, an expansion of just 3 bps. Office-using job growth has been stunted significantly in 2020 due to many work from home orders.

RETAIL

- As of 3Q20, the retail sector delivered a quarterly return of -0.5%, performing 120 bps below the NPI.
- Transaction volumes totaled $7.0 billion in the third quarter, falling 56% year-over-year. Single asset transactions accounted for just over 90% of all sales volume.
- Cap rates have compressed approximately 61 bps within the sector over the last year, to 4.66%. 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, -27.0% over the last year. This is a 5.7% increase from last quarter. Retail is expected to continue to suffer from the shift towards e-commerce, hesitance of the consumer, and the re-emerging shelter in place orders.
- Retail vacancy rates increased 130 bps over the past year to 8.3%. 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.

Sources: Real Capital Analytics, Green Street, NCREIF

Global Real Estate Market Update (3Q20)

TOWNSEND® GROUP

- Global investment activity during the third quarter of 2020 was down significantly relative to the same period in 2019, but on par with 2Q20. Although transaction volumes were flat during 3Q20, the sale of development sites increased 42%.
- Rising COVID cases across the world caused lockdowns across major economies resulting in a short but deep recession and affecting all sectors of the real estate industry. Uncertainty about the state of the economy threw some doubts on the future needs for certain property types.

Global Total Commercial Real Estate Volume - 2019 - 2020

$ US Billions	Q3 2020	Q3 2019	% Change Q3 20 - Q3 19	YTD 2020	Q1-Q3 2019	% Change YTD 2020/Q1-Q3 2019
Americas	59	144	-59%	222	370	-40%
EMEA	51	85	-40%	188	232	-19%
Asia Pacific	188	179	5%	533	642	-17%
Total	298	408	-27%	943	1244	-24%

Source: Real Capital Analytics, Inc., Q3' 20

- Investment activity in the Americas witnessed a sharp decline and fell by 42% year-over-year. COVID cases continued to increase in the US, putting plans of fully reopening the economy on hold. However, transaction volume in the US increased 43% relative to 2Q20.
- In the Asia Pacific region, volumes increased year-over-year, but transaction activity was mixed across the region. Chin, Japan, Hong Kong and Australia saw large drops in volume, while South Korea was flat at 0% year over year growth, likely due to superior efforts in the country to combat COVID-19.
- Although investment activity dropped in the EMEA region, it dropped substantially less than the Americas, with a 19% year-over-year decline. Germany, the largest market, witnessed only a 7% decline.
- All sectors were impacted by the spread of the pandemic, but the hotel and retail sectors were affected the most, and apartment and industrial the least.
- In the office sector, global leasing activity declined by over 50% year-over-year and vacancy rates begun to increase in all regions. The declines represent an uncertainty about future office space needs. The US witnessed a 48% decline in leasing activity. Across the main European markets, demand for office space is down 20-30%. In the APAC region, volume decreased 38%.
- The retail sector continued to suffer globally as the shutdowns and social distancing measures of the COVID-19 outbreak posed challengers for operators. Vacancy rates increased as rents and NOI continued to compress. Retailers that were able to adapt their strategy to the digital world witnessed a recovery in sales.
- 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., rents fell more significantly in urban areas (upwards of 10% in some regions), but much less in suburban areas. However, in Europe effective rent rates were stable. In APAC, a resurgence of demand occurred as lock-downs ebbed.
- While the industrial market was affected by short-term headwinds from the recession as transaction volume decreased, valuations have strengthened, with a 20 bps increase in the U.S., and similar increases in Europe. The sector remains resilient despite the slowdown in the construction of industrial properties at the beginning of the year, new development resumed during the second quarter.

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

	2020	2021	2022
Global	**-3.9**	**5.2**	**3.6**
Asia Pacific	**-0.6**	**4.7**	**4.7**
Australia	-3.6	3.0	3.2
China	2.0	8.0	5.4
India	-9.0	8.6	
Japan	-5.4	2.5	1.7
North America	**-4.0**	**3.8**	**2.9**
US	-3.6	3.8	2.9
Middle East	**-4.0**	**3.2**	**3.5**
European Union	**-7.7**	**4.7**	**3.3**
France	-9.4	6.2	3.1
Germany	-5.7	3.9	3.0
UK	-11.0	5.2	4.0

Source: Bloomberg

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

REPORT

Meketa Capital Markets Outlook & Risk Metrics

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Capital Markets Outlook & Risk Metrics

As of December 31, 2020

Capital Markets Outlook

Takeaways

- December capped off one of the most unusual periods in modern history. Despite a global pandemic and widespread economic shutdowns, 2020 proved to be rewarding for nearly all risk-seeking investors. With monthly gains of roughly 3-9% for most equity markets, the full calendar year saw equity returns generally in the 10-40% range (with considerable variation based on market cap, style, and region).
- With unprecedented monetary stimulus, traditional safe haven assets (e.g., US Treasury bonds) also produced strong returns during 2020, although their performance during December and Q4 were generally flat to marginally negative.
- Despite some catch-up over the quarter, there continues to be a high degree of divergence among equity regions/styles/capitalizations, and this is exemplified at the extremes with US large cap growth stocks outperforming US small cap value stocks by over 33% in 2020.
- The US Treasury yield curve saw longer-term yields tick up over the month, with the 10-year yield approaching 1.0% for the first time since March 2020 (it has since increased above 1.10%). As a reminder, with yields at historically low levels, even marginal moves can cause noteworthy changes to bond prices.
- Real yields in the US declined during December. Shorter-term TIPS saw yields decline by roughly 20-30 basis points whereas longer-term yields (e.g., 10+ years) experienced more modest declines of approximately 2-15 basis points. The entire real yield curve continues to remain in negative territory.

Capital Markets Outlook

Takeaways

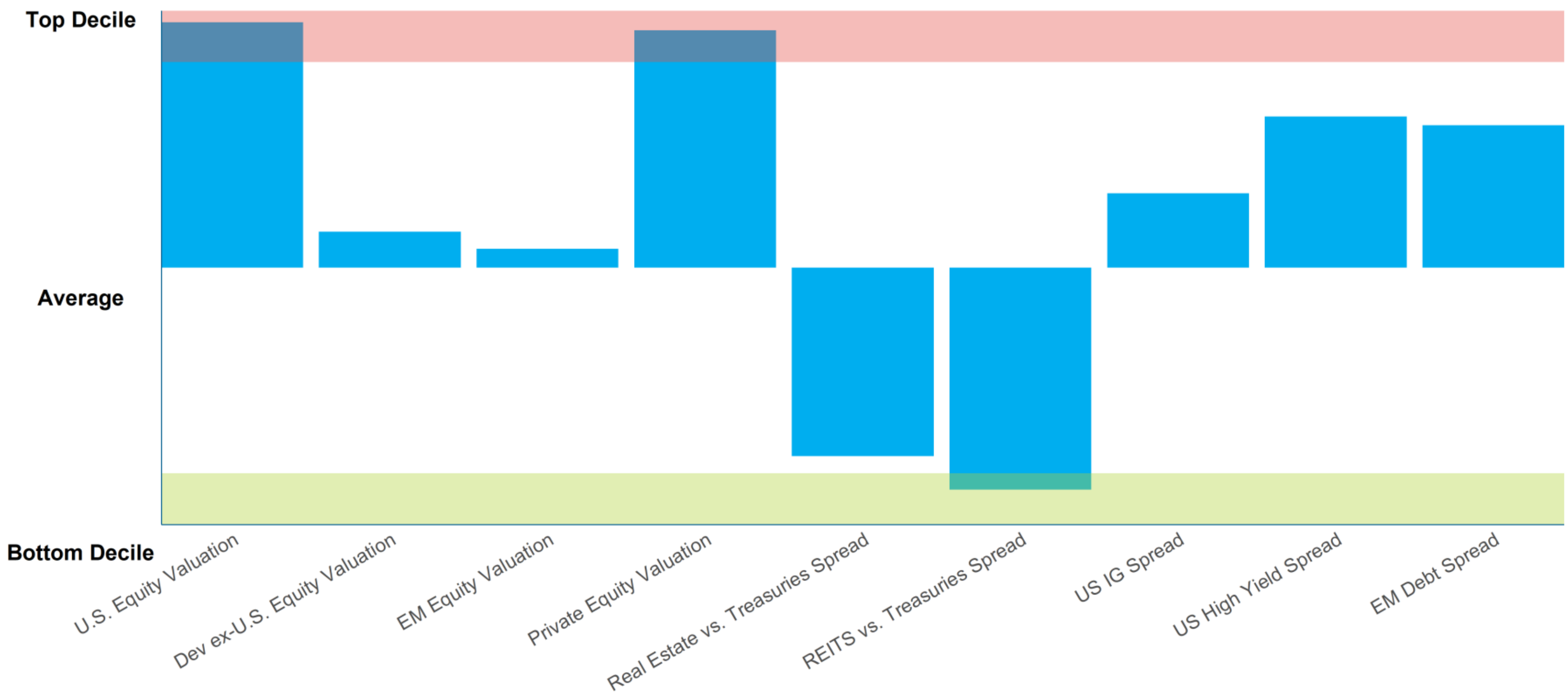
- Q3 GDP and other economic data indicated that an economic recovery was well underway. However, recent increases in COVID-related cases/deaths, recent payroll/unemployment data, and increased shutdowns across the globe represent headwinds to the recovery.
- While the markets do appear as though they are looking past COVID (largely due to successful vaccine development), the next several months are projected to be challenging from an economic standpoint as cases are expected to increase and the widespread distribution of the vaccine will not be immediate. Returning to pre-COVID levels of economic activity is not expected to occur until mid-2021 at the earliest.
- As the US government prepares to enter a new administration, investors will be examining guidance and action as it relates to monetary and fiscal policy, with a particular focus on individual stimulus, taxation, and broad infrastructure spending.
- Implied equity market volatility[1] was relatively stable throughout December as it hovered just above the long-term historical average (~20) for the entire month. While our Systemic Risk measure declined during the month, implied fixed income volatility[2] did increase.
- With strong price appreciation for nearly all risk-oriented asset classes in 2020, coupled with imperfect information regarding corporate earnings and solvencies, investors should remain cautious as they examine traditional valuation metrics across the global capital markets.
- The Market Sentiment Indicator[3] remained green (i.e., positive) at month-end.

[1] As measured by VIX Index.

[2] As measured by MOVE Index.

[3] See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

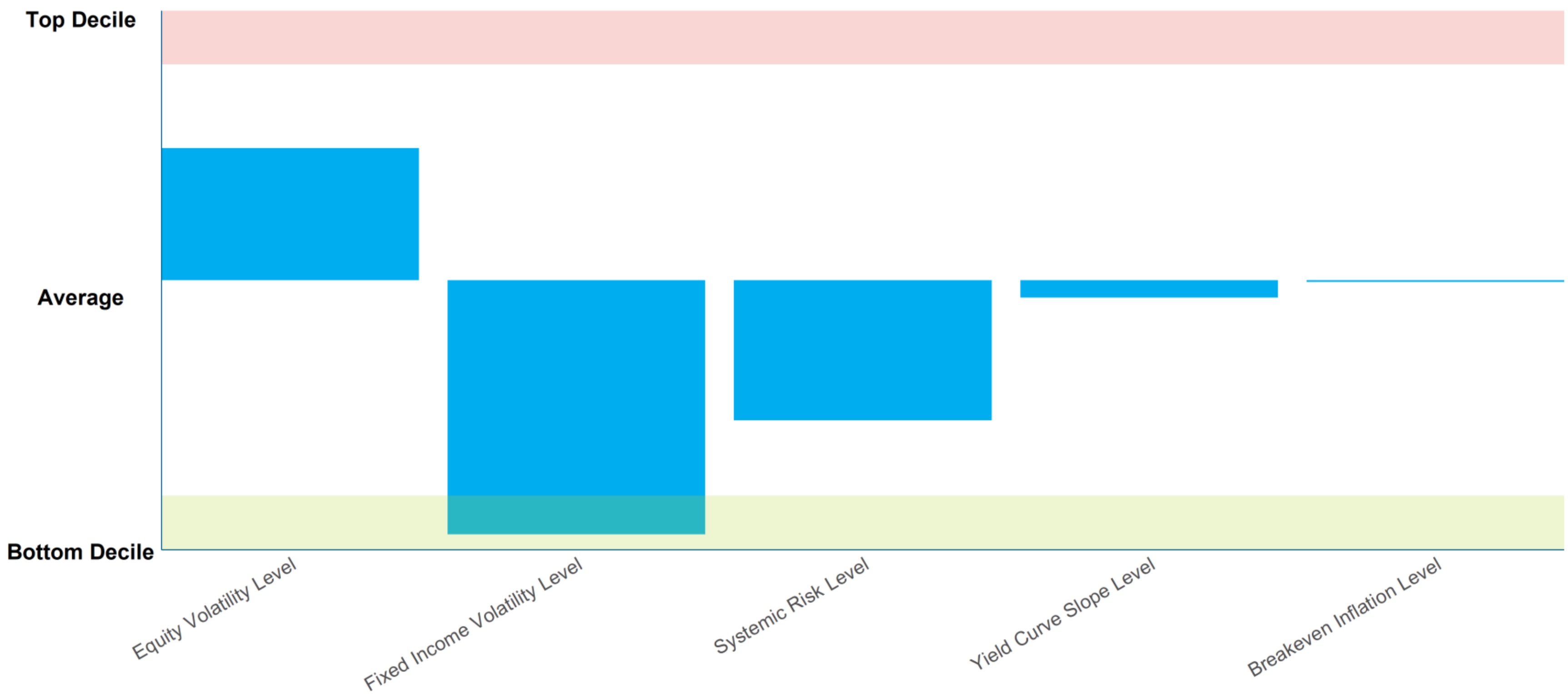
Risk Overview/Dashboard (1)
(As of December 31, 2020)[1]



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

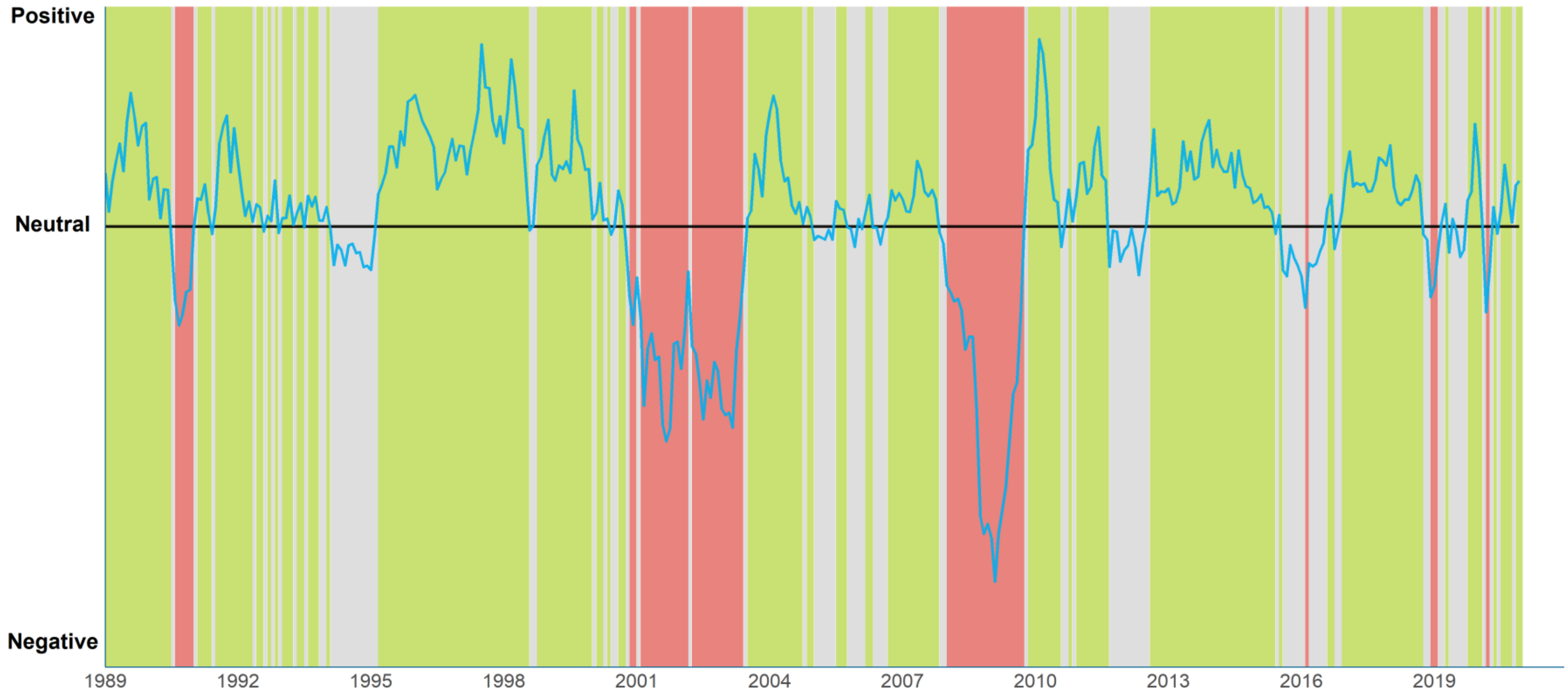
[1] With the exception of Private Equity Valuation, that is YTD as of December 31, 2019.

Risk Overview/Dashboard (2)
(As of December 31, 2020)

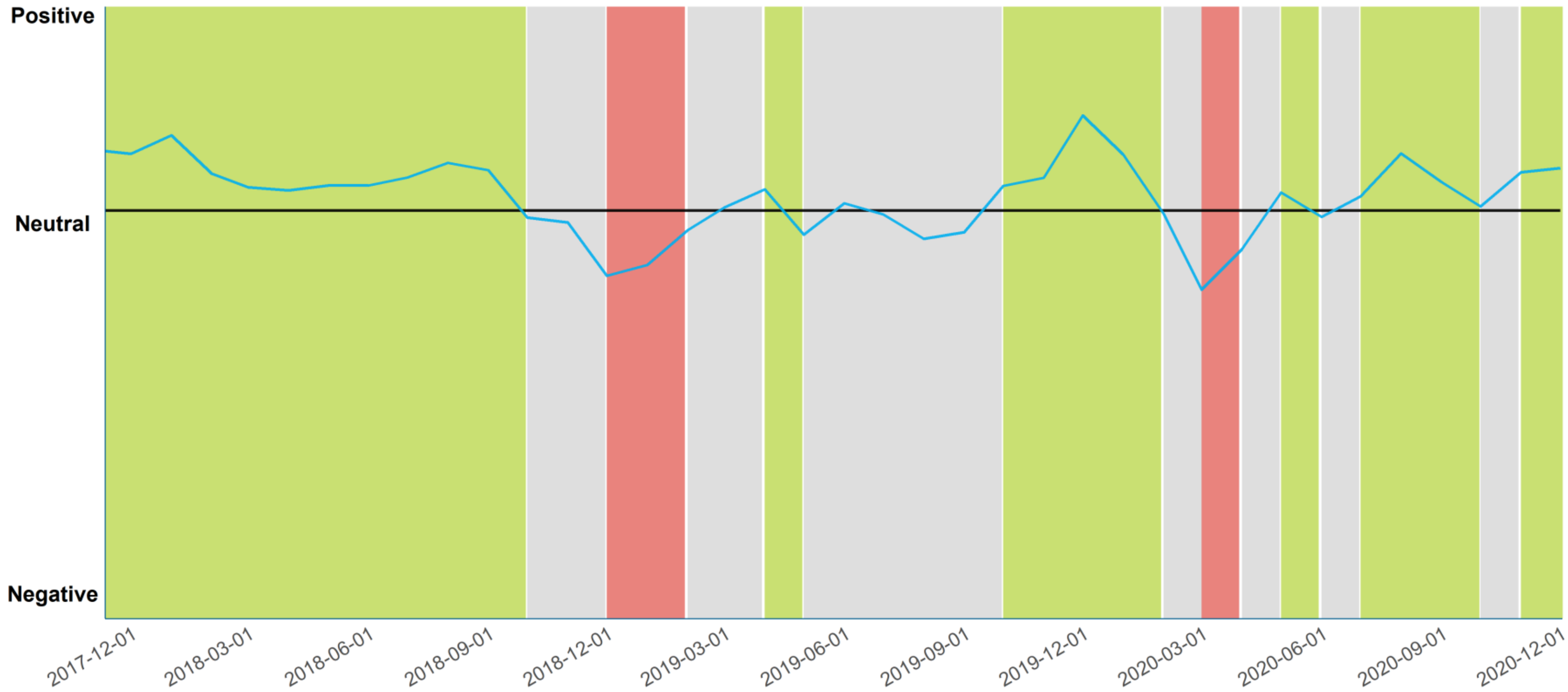


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

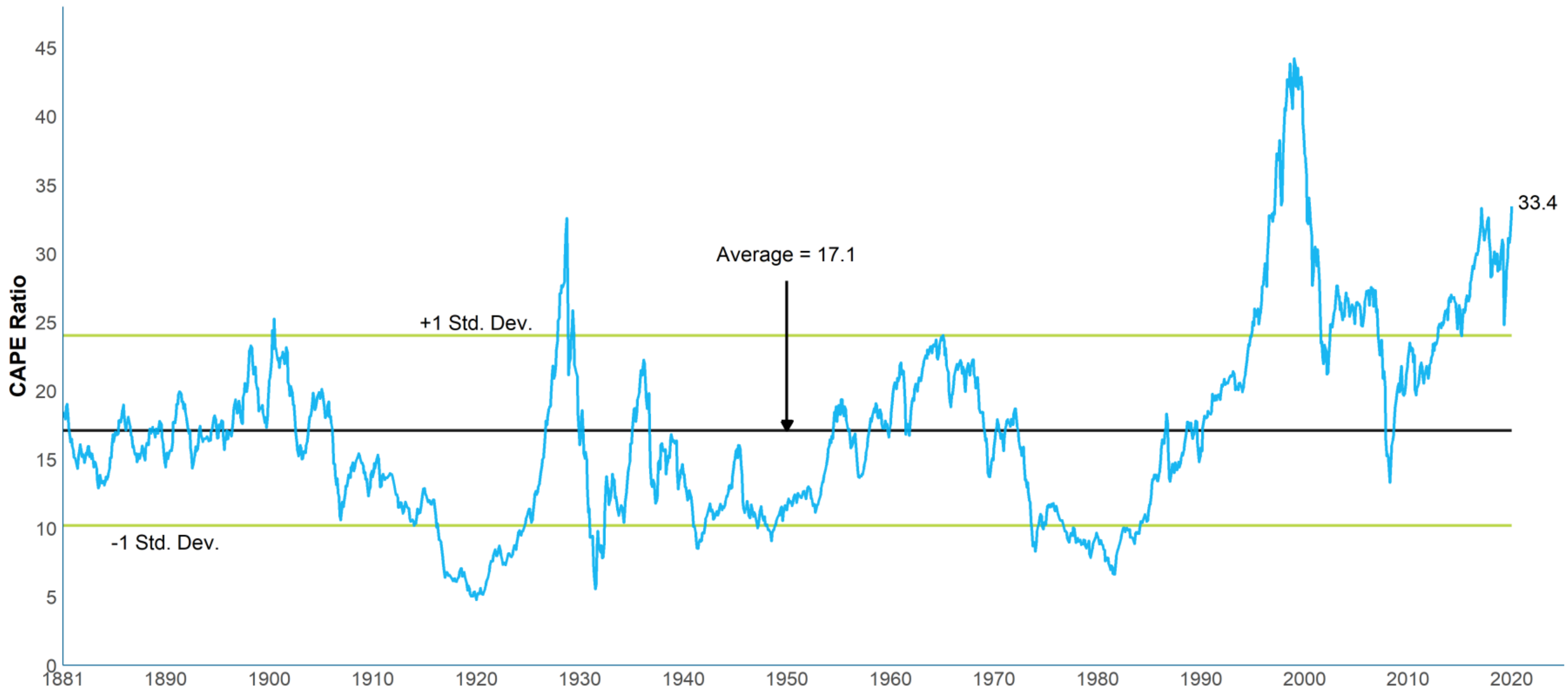
Market Sentiment Indicator (All History)
(As of December 31, 2020)



Market Sentiment Indicator (Last Three Years)
(As of December 31, 2020)



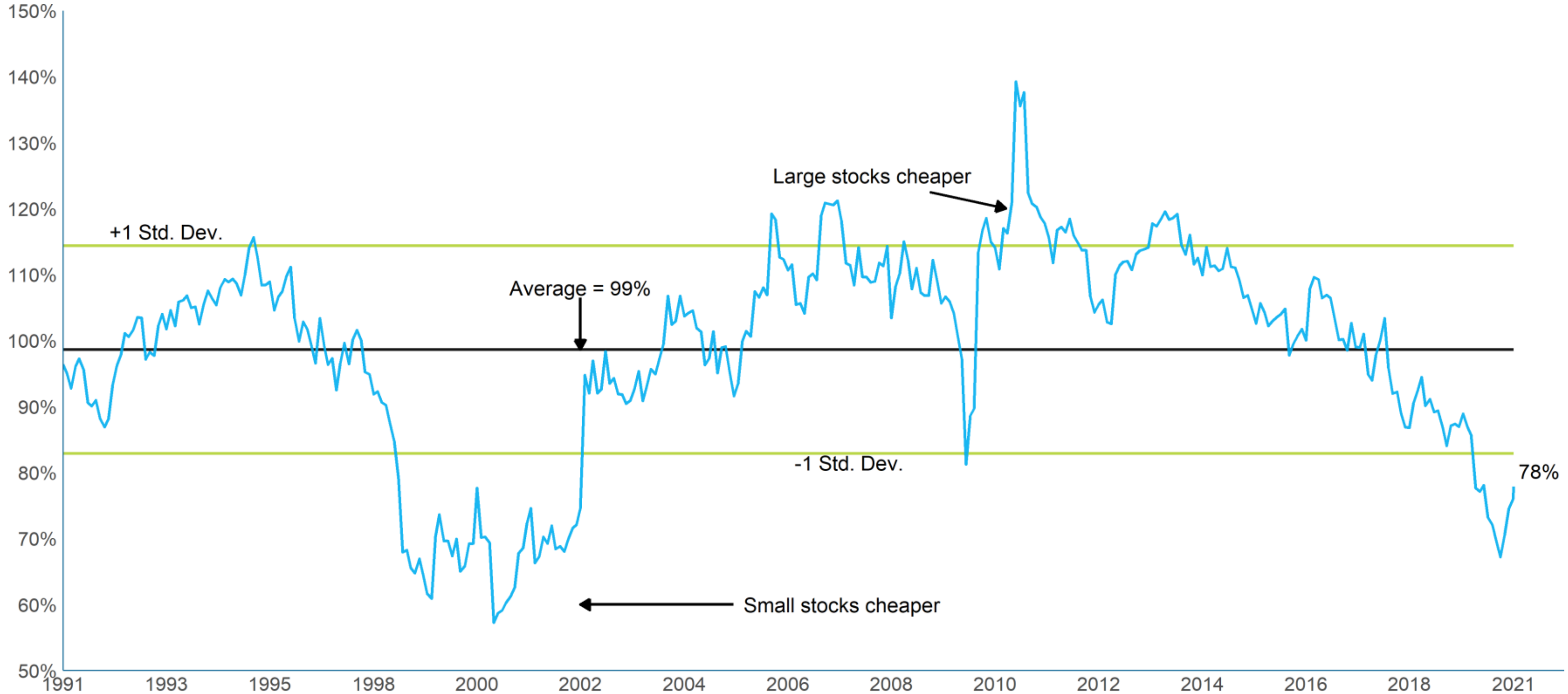
US Equity Cyclically Adjusted P/E[1]
(As of December 31, 2020)



- 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 December 31, 2020)



- 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.

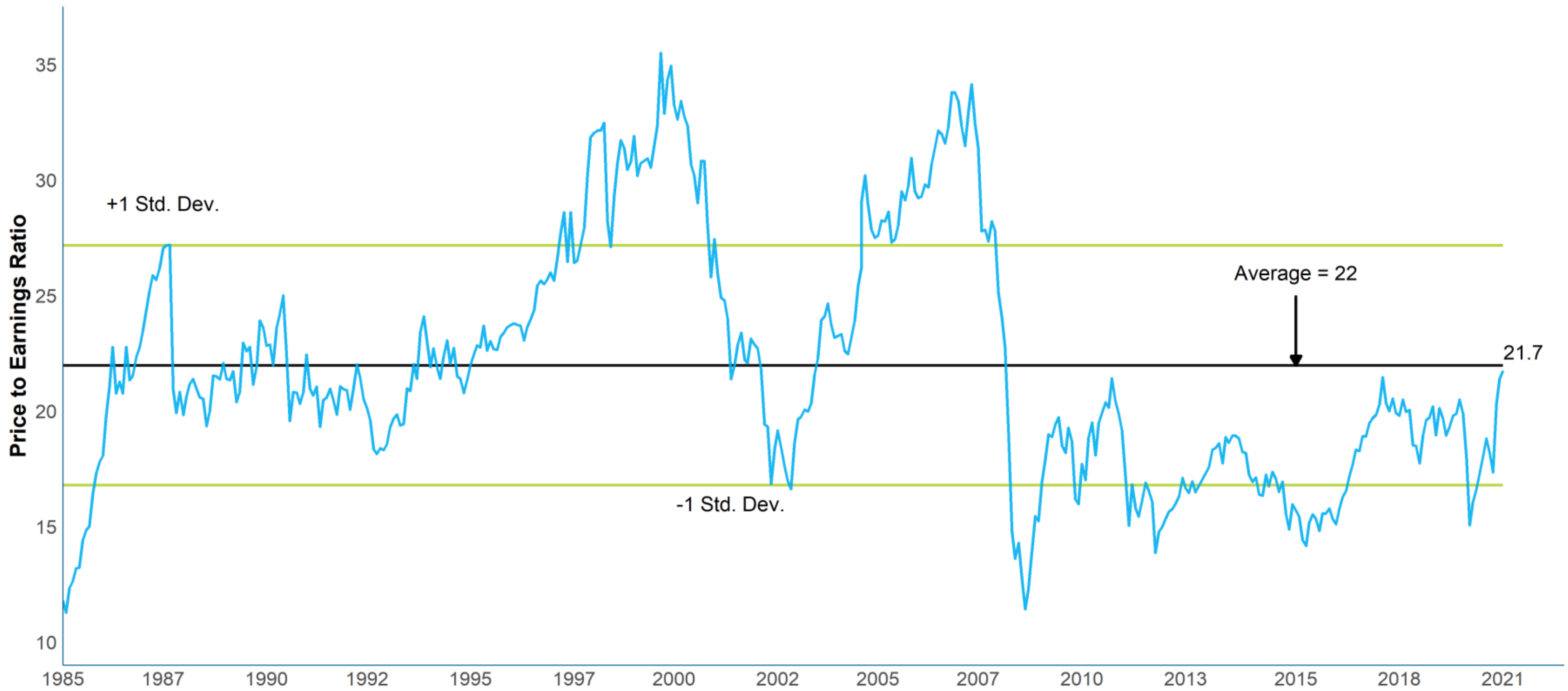
[1] Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]
(As of December 31, 2020)

- 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.

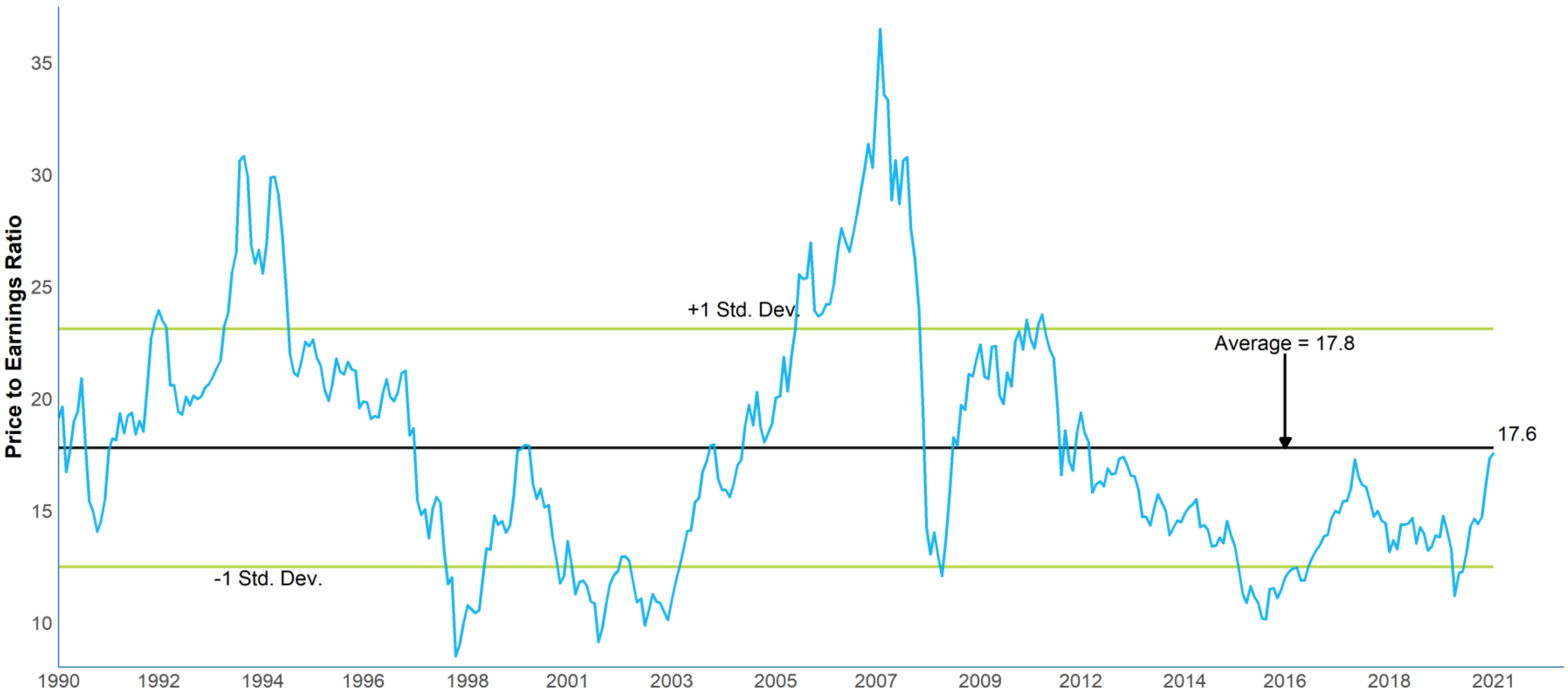
Developed International Equity Cyclically Adjusted P/E[1]
(As of December 31, 2020)



- 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 ex Japan Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

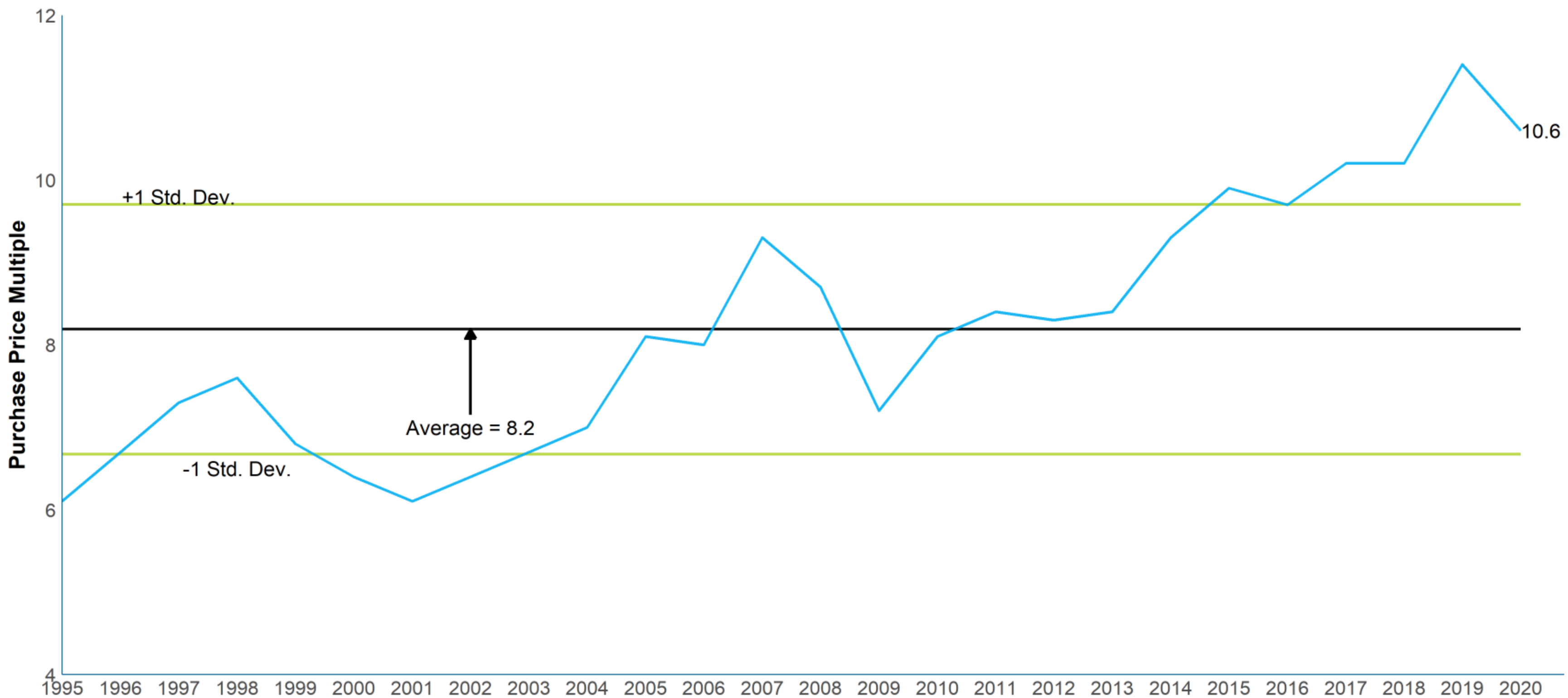
Emerging Market Equity Cyclically Adjusted P/E[1]
(As of December 31, 2020)



- 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.

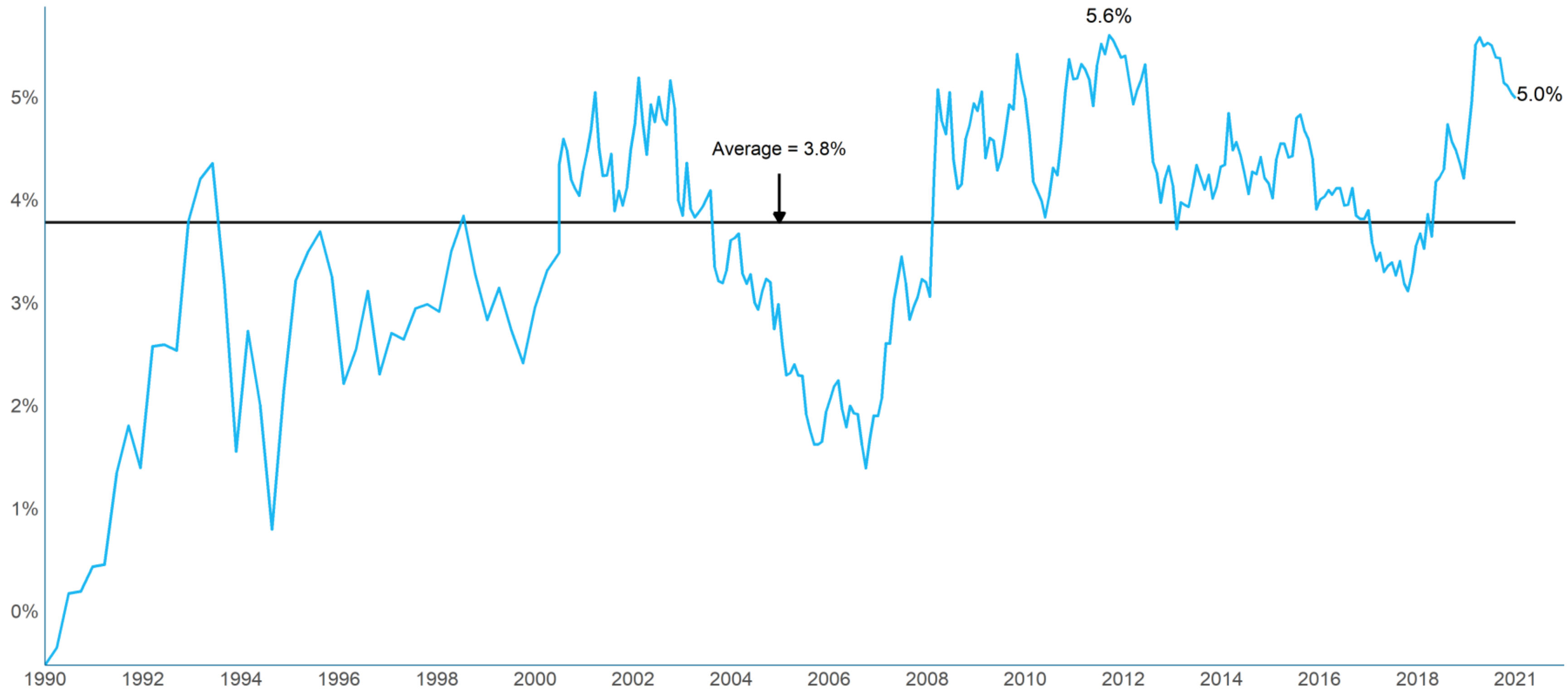
Private Equity Multiples[1]
(As of February 29, 2020)[2]



- 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 figures, except for 2020 (YTD).

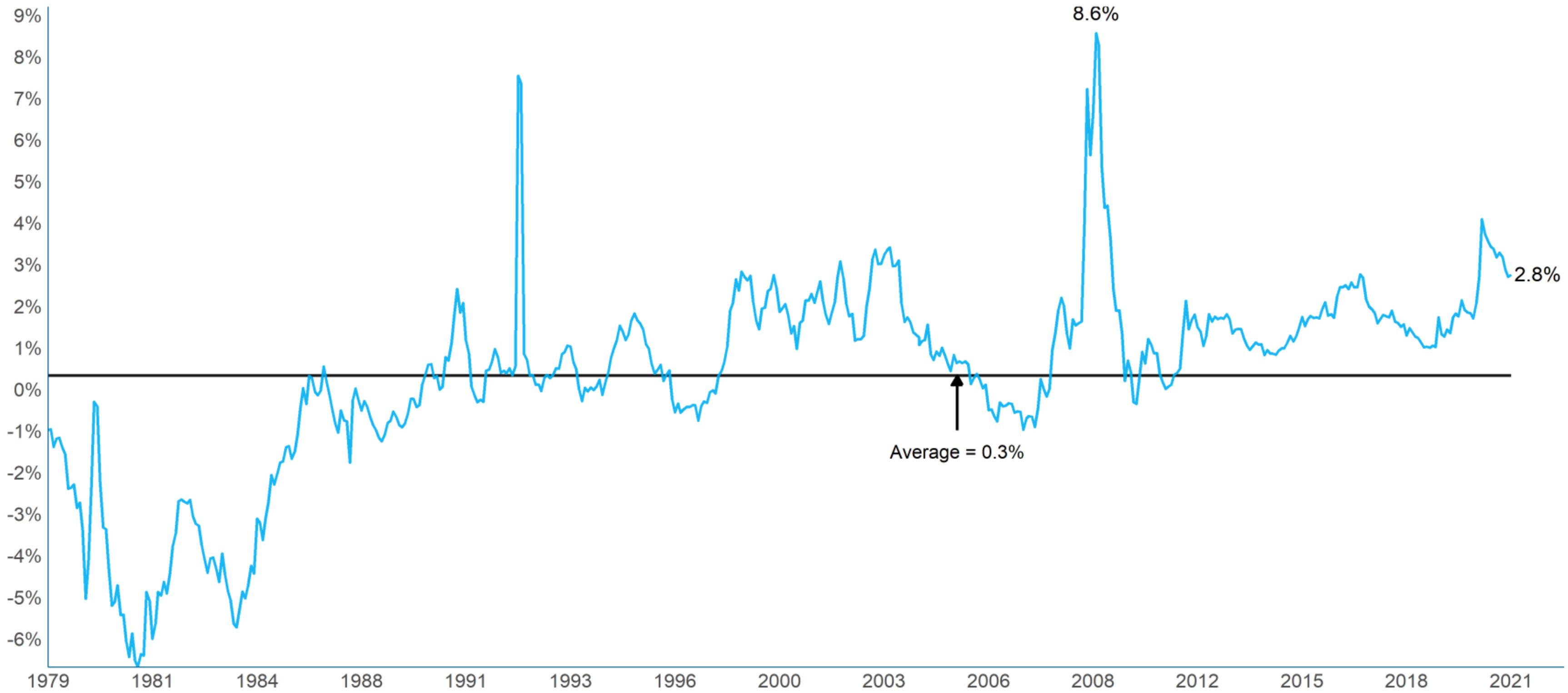
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of December 31, 2020)



- 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.

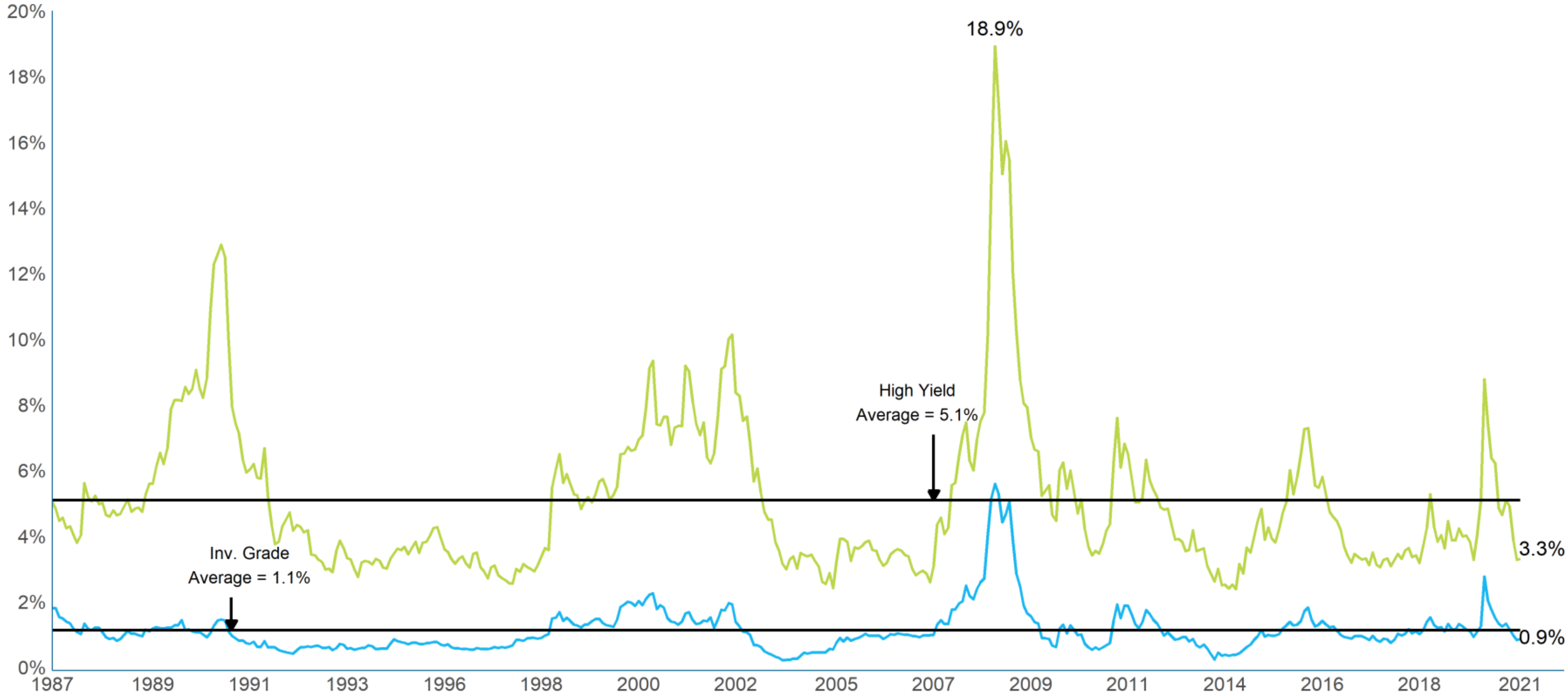
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]
(As of December 31, 2020)



- 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 December 31, 2020)



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

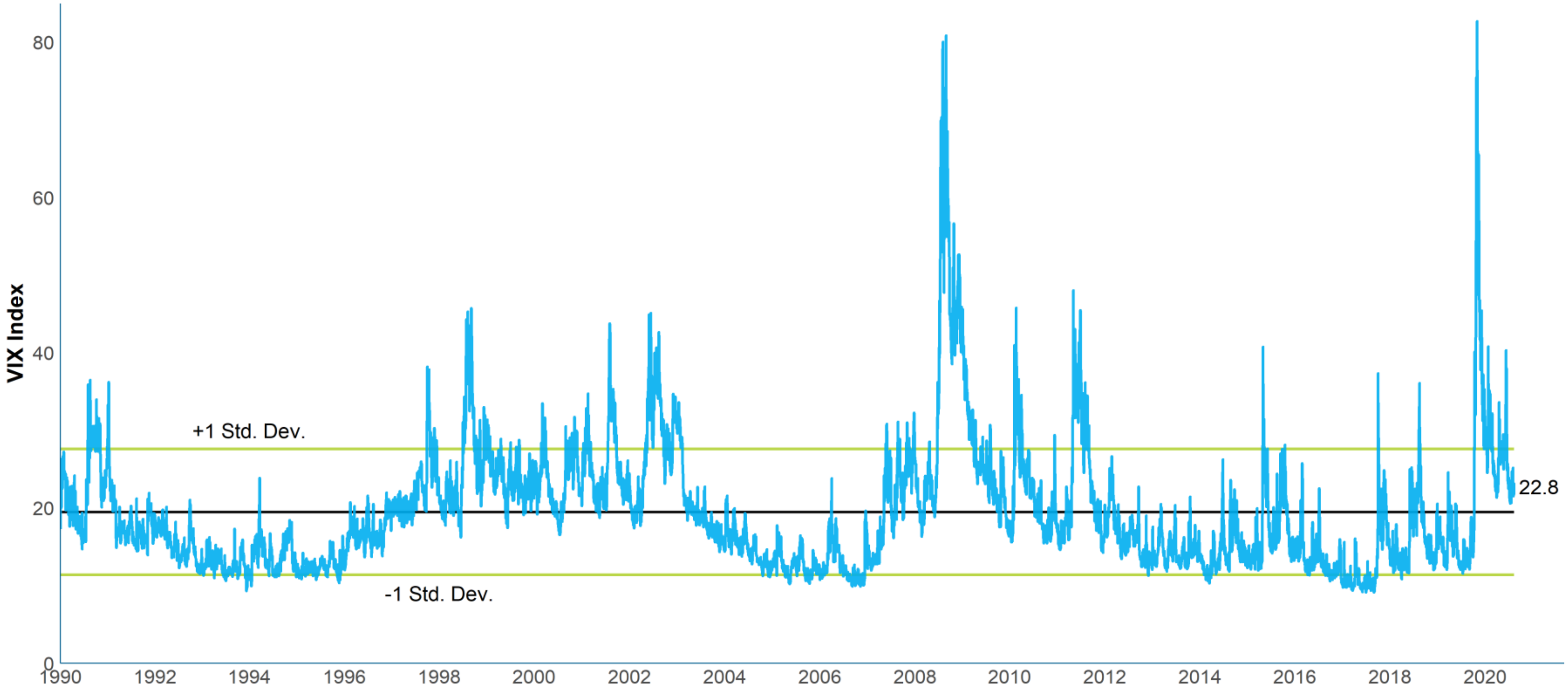
[1] Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year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

Emerging Market Debt Spreads[1]
(As of December 31, 2020)

- 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.

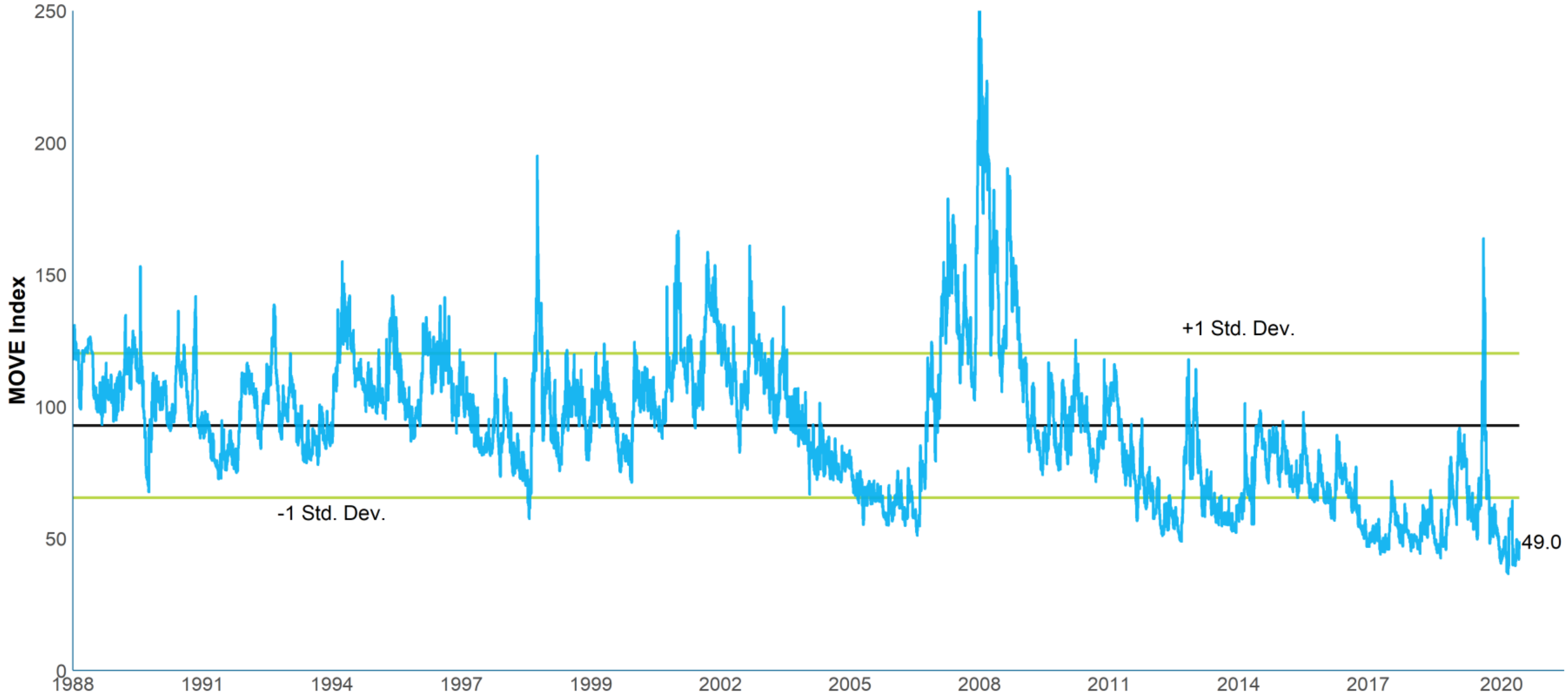
Equity Volatility[1]
(As of December 31, 2020)



- 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.

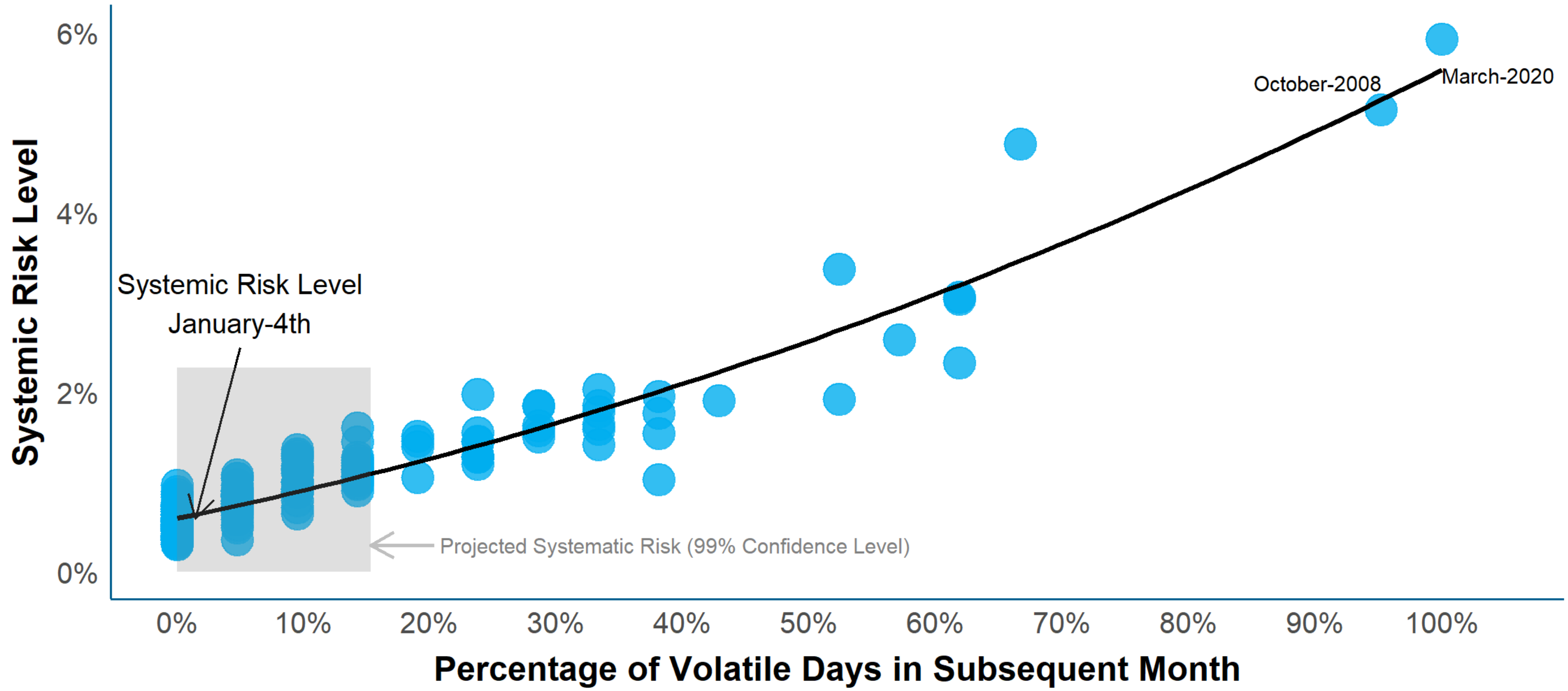
Fixed Income Volatility[1]
(As of December 31, 2020)



- 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.

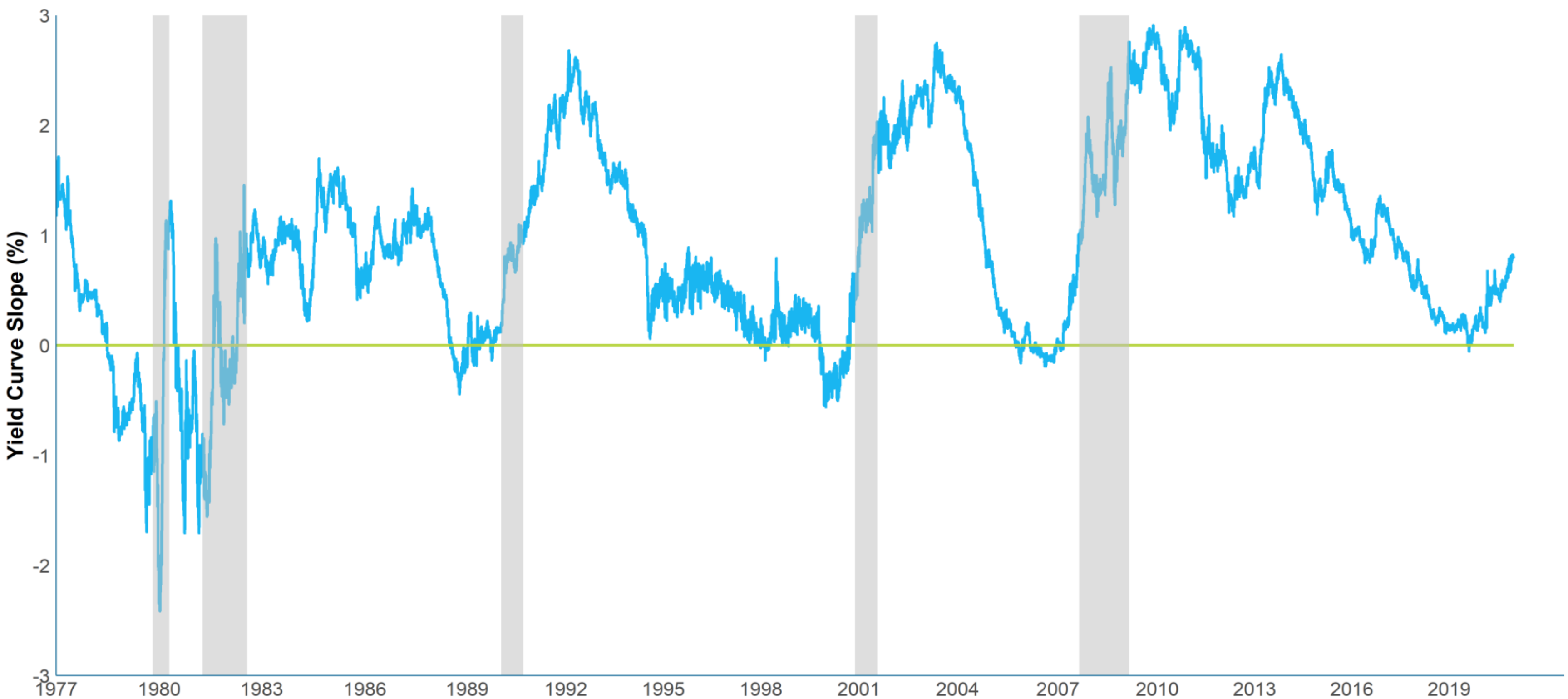
Systemic Risk and Volatile Market Days[1]
(As of December 31, 2020)



- 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.

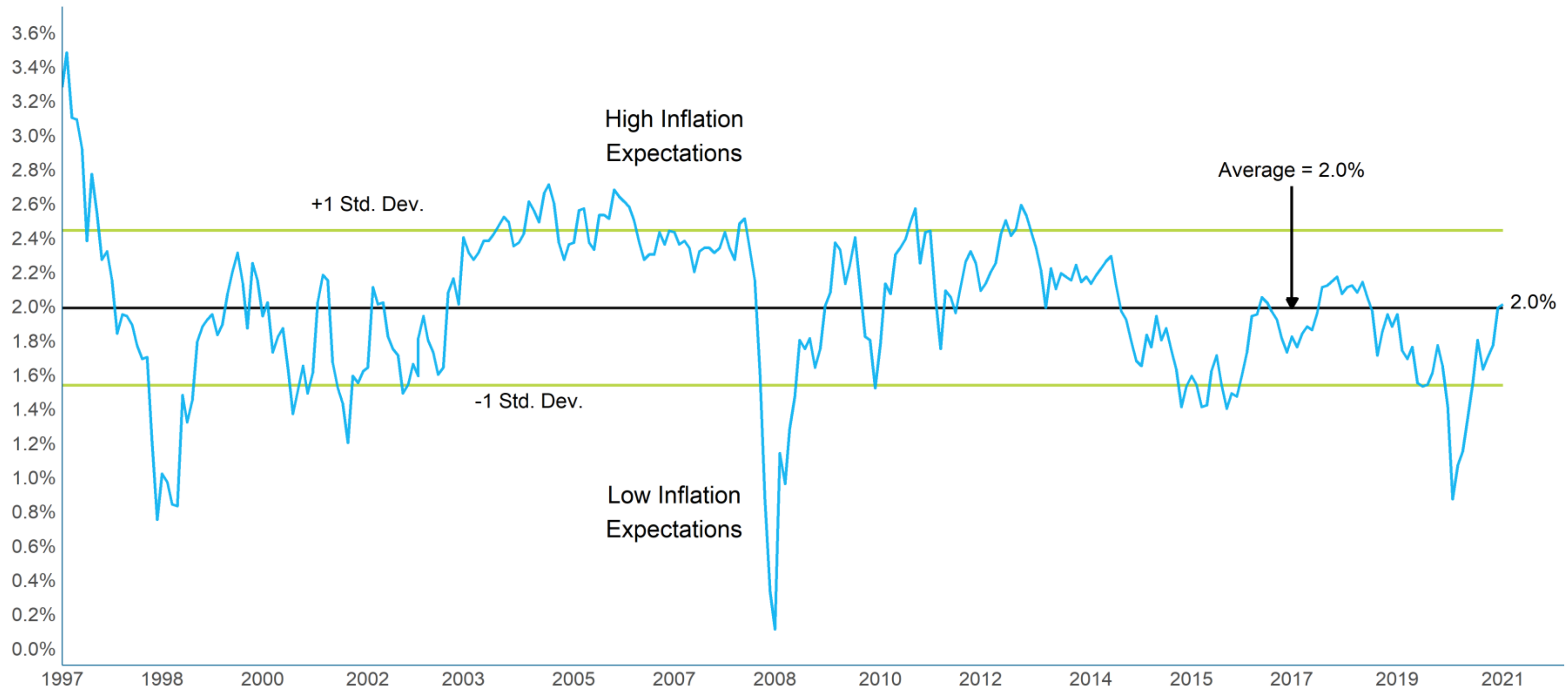
Yield Curve Slope (Ten Minus Two)[1]
(As of December 31, 2020)



- 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.

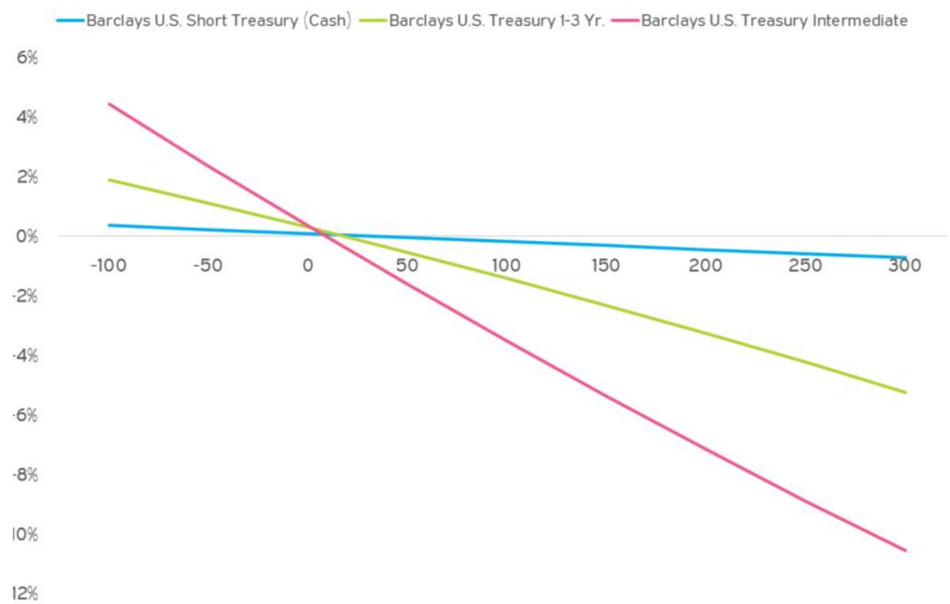
Ten-Year Breakeven Inflation[1]
(As of December 31, 2020)



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

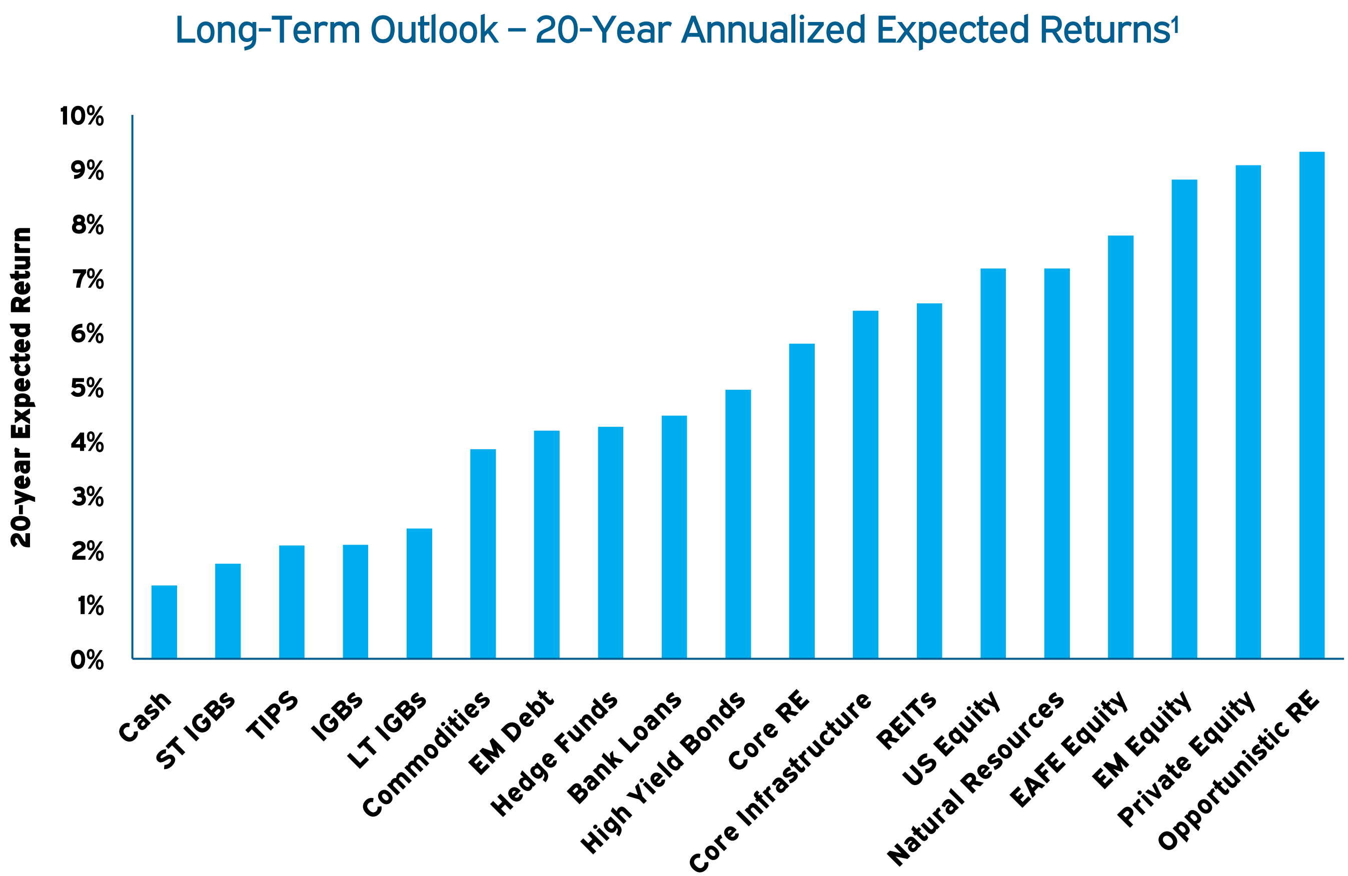
[1] Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

Total Return Given Changes in Interest Rates (bps)[1]
(As of November 30, 2020)



	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%	0.1%	-0.1%	-0.2%	-0.3%	-0.5%	-0.6%	-0.7%	0.27	0.07%
Barclays US Treasury 1-3 Yr.	1.9%	1.1%	0.3%	-0.6%	-1.4%	-2.3%	-3.3%	-4.3%	-5.3%	1.65	0.28%
Barclays US Treasury Intermediate	4.4%	2.3%	0.3%	-1.6%	-3.5%	-5.4%	-7.2%	-8.9%	-10.6%	3.98	0.32%
Barclays US Treasury Long	23.0%	11.7%	1.5%	-7.5%	-15.5%	-22.3%	-27.9%	-32.4%	-35.8%	19.24	1.51%

[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 2020 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 ex Japan 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 (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 December 31, 2020 unless otherwise noted.

Appendix

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- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.
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  - 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 December 31, 2020 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 December 31, 2020 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.

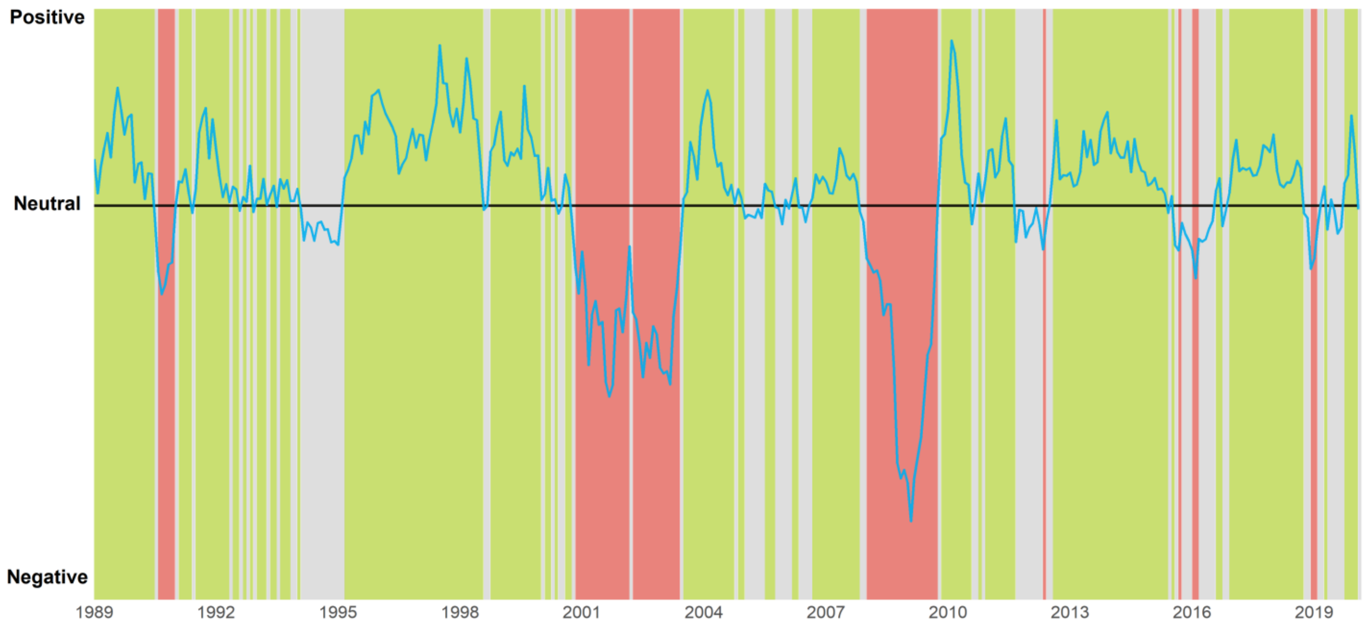
- Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk 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.

Disclaimer Information

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REPORT

SBI Comprehensive Performance Report

December 31, 2020

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Comprehensive Performance Report

December 31, 2020

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

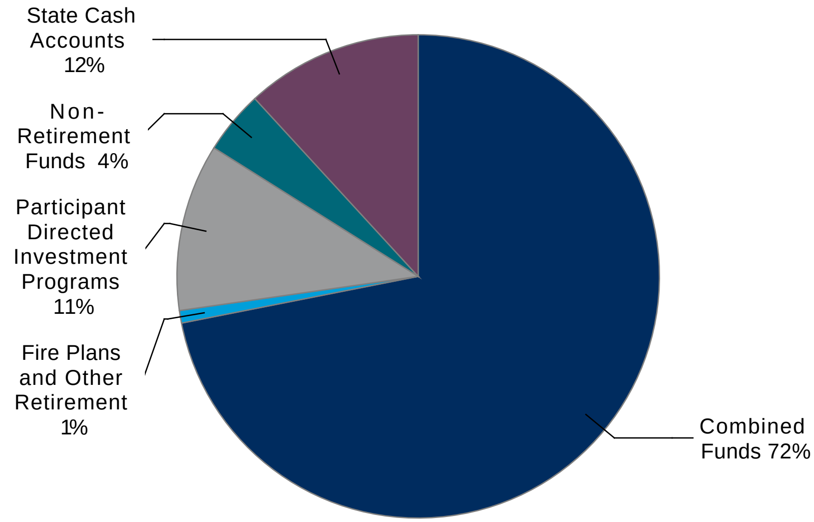
The Non-Retirement Funds are funds established by the State of Minnesota and other government entities for various purposes which include the benefit of public schools, the environment, other post-employment benefits, workers compensation insurance, and other purposes.

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	$82,140
FIRE PLANS + OTHER RETIREMENT	956
PARTICIPANT DIRECTED INVESTMENT PROGRAMS	12,782
State Deferred Compensation Plan	8,917
Health Care Savings Plan	1,486
Unclassified Employees Retirement Plan	373
Hennepin County Supplemental Retirement Plan	180
PERA Defined Contribution Plan	93
Minnesota College Savings Plan	1,717
Minnesota Achieve a Better Life Experience	17
NON-RETIREMENT FUNDS	4,834
Assigned Risk Plan	299
Permanent School Fund	1,814
Environmental Trust Fund	1,490
Closed Landfill Investment Fund	119
Miscellaneous Trust Funds	322
Other Postemployment Benefits Accounts	790
STATE CASH ACCOUNTS	13,655
Invested Treasurer's Cash	13,582
Other State Cash Accounts	74
TOTAL SBI AUM	114,367



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

December 31, 2020

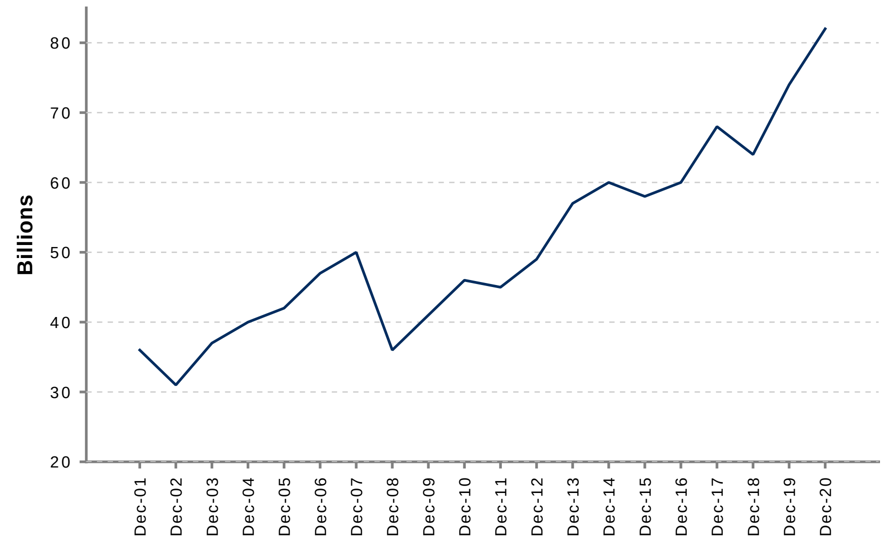
Combined Funds Summary

Combined Funds Change in Market Value ($Millions)

	One Quarter
COMBINED FUNDS	
Beginning Market Value	$74,762
Net Contributions	-611
Investment Return	7,990
Ending Market Value	82,140

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

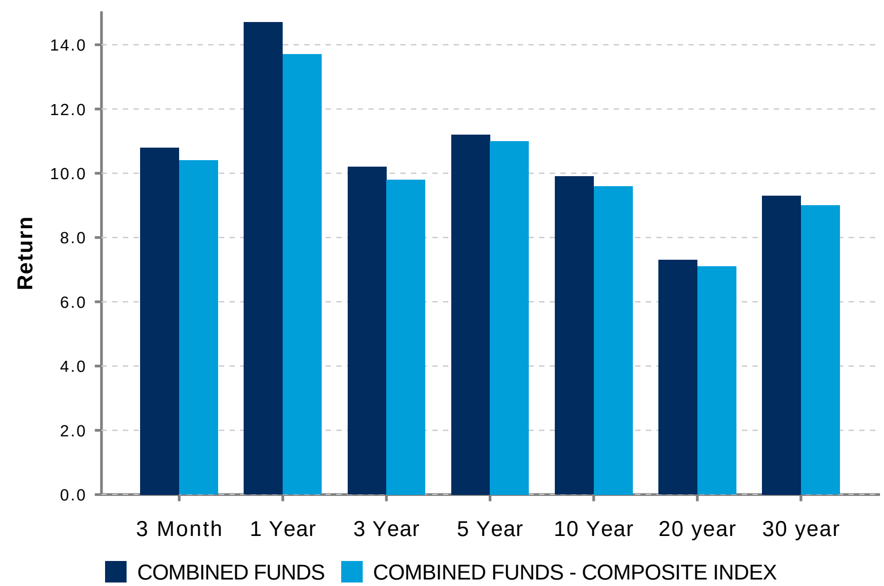
Asset Growth



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	10.8%	17.6%	14.7%	10.2%	11.2%	9.9%	7.3%	9.3%
COMBINED FUNDS - COMPOSITE INDEX	10.4	16.9	13.7	9.8	11.0	9.6	7.1	9.0
Excess	0.3	0.7	1.0	0.4	0.2	0.3	0.2	0.3



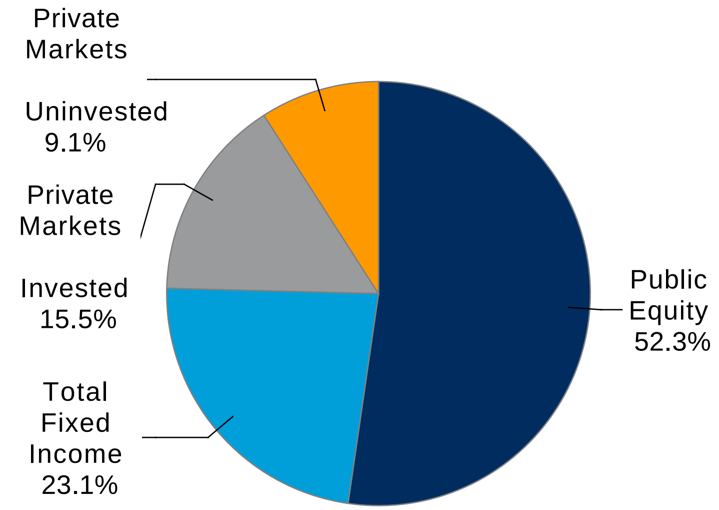
STATE STREET

Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in Public Equity.

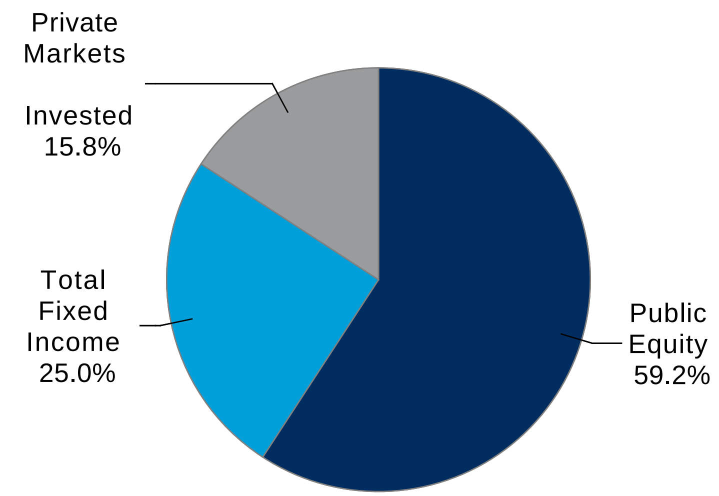
	(Millions)	Actual Mix	Policy Target
Public Equity	$42,990	52.3%	50.0%
Total Fixed Income	18,962	23.1	25.0
Private Markets - Total	20,187	24.6	25.0
Private Markets - Invested	12,737	15.5	
Private Markets - Uninvested	7,450	9.1	
TOTAL	82,140	100.0	



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	59.2%	Public Equity Benchmark
Total Fixed Income	25.0	Total Fixed Income Benchmark
Private Markets - Invested	15.8	Private Markets
Private Markets - Uninvested	0.0	S&P 500



Note:
On 12/1/2020 the composite index included a weighting to Private Markets - Uninvested of 9.2%. Prior to 12/1/2020 the uninvested portion of private markets was allocated to public equity.

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	$43.0	52.3%	50.0%	15.9%	25.6%	18.3%	11.5%	13.3%	11.5%	7.1%	10.0%
Public Equity Benchmark				15.8	25.1	17.4	11.2				
Excess				0.1	0.5	1.0	0.3				
Domestic Equity	28.0	34.1	33.5	15.4	26.0	21.7	14.6	15.3	13.8	7.7	10.6
Domestic Equity Benchmark				15.2	25.6	20.8	14.4	15.4	13.8	7.8	10.7
Excess				0.2	0.4	0.9	0.2	-0.1	0.0	-0.1	-0.1
International Equity	13.9	16.9	16.5	16.9	24.7	11.3	5.2	8.8	5.4	5.5	
International Equity Benchmark				17.1	24.2	10.5	4.8	8.9	4.9	5.2	
Excess				-0.1	0.6	0.8	0.4	-0.1	0.5	0.3	
Global Equity	1.1	1.3	0.0								
MSCI AC WORLD INDEX NET											
Excess											

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	$19.0	23.1%	25.0%	0.1%	0.8%	11.2%	7.1%	5.8%	4.8%	5.4%	6.4%
Total Fixed Income Benchmark				-0.5	-0.1	10.3					
Excess				0.5	0.9	1.0					
Core/Core Plus	4.2	5.1	5.0	1.9	3.2	9.7	6.4	5.4	4.6	5.3	6.3
Fixed Income Benchmark				0.7	1.3	7.5	5.3	4.4	3.8	4.8	5.9
Excess				1.2	1.9	2.2	1.0	0.9	0.7	0.5	0.5
Return Seeking Fixed Income	3.5	4.3	5.0								
BBG BARC Agg Bd											
Excess											
Treasury Protection	7.6	9.3	10.0	-1.7	-1.3	12.7	8.0				
BBG BARC 5Y + Us Tsy Idx				-1.9	-1.6	12.8	7.6				
Excess				0.2	0.3	-0.2	0.4				
Laddered Bond + Cash	3.6	4.4	5.0	0.0	0.1	0.6	1.6	1.3	0.8	1.8	3.4
ICE BofA US 3-Month Treasury Bill				0.0	0.1	0.7	1.6	1.2	0.6	1.5	2.7
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.

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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%	15.3%	7.7%	9.9%	11.1%	11.5%	11.4%	13.4%	12.2%
Private Markets - Uninvested (S&P 500)									
Private Equity	12.2%	21.0%	16.3%	15.7%	16.1%	15.1%	12.3%	15.5%	
Private Credit	1.8	5.8	1.4	7.7	10.6	11.6	11.3		
Resources	1.6	3.9	-16.3	-6.4	-3.0	1.4	11.6	12.6	
Real Estate	3.8	6.4	4.4	8.4	8.5	11.1	8.4	9.6	

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.

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Asset Class & Manager Performance
December 31, 2020

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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Public Equity - Domestic

December 31, 2020

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Domestic Equity										
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	**$4,151,773,056**	**14.5%**	**24.9%**	**35.1%**	**27.3%**	**14.9%**	**15.2%**	**13.3%**		
Active Domestic Equity Benchmark			22.8	31.6	19.8	12.2	14.1	12.8		
Excess			2.2	3.5	7.5	2.7	1.1	0.5		
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**3,026,841,988**	**10.6**	**13.0**	**23.6**	**21.0**	**14.6**	**15.4**	**14.2**		
Semi Passive Domestic Equity Benchmark			13.7	24.5	21.0	14.8	15.6	14.0		
Excess			-0.7	-0.8	0.0	-0.2	-0.2	0.2		
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	**21,494,553,038**	**75.0**	**14.0**	**24.7**	**20.8**	**14.6**	**15.5**	**13.8**		
Passive Domestic Equity Benchmark			14.0	24.7	20.8	14.6	15.5	13.8		
Excess			0.0	0.0	0.0	-0.0	-0.0	-0.0		
TRANSITION AGGREGATE DOMESTIC EQUITY (4)	659,656	0.0								
TOTAL DOMESTIC EQUITY (5)	**28,673,827,739**	**100.0**	**15.4**	**26.0**	**21.7**	**14.7**	**15.3**	**13.8**	**10.8**	**01/1984**
Domestic Equity Benchmark			15.2	25.6	20.8	14.4	15.4	13.8	11.0	01/1984
Excess			0.2	0.4	0.9	0.2	-0.1	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 contains Domestic Equity securities that are being transitioned to a different manager.
(5) Since 12/1/20 the 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.

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Total Domestic Equity					
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	**27.6%**	**-6.5%**	**20.6%**	**10.9%**	**-0.4%**
Active Domestic Equity Benchmark	28.2	-8.0	18.3	15.7	-0.6
Excess	-0.6	1.4	2.3	-4.8	0.3
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**30.9**	**-4.9**	**22.5**	**11.1**	**0.5**
Semi Passive Domestic Equity Benchmark	31.4	-4.8	21.7	12.1	0.9
Excess	-0.5	-0.1	0.8	-1.0	-0.4
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	**31.3**	**-5.0**	**21.3**	**12.6**	**0.5**
Passive Domestic Equity Benchmark	31.3	-5.0	21.5	12.5	0.5
Excess	0.0	-0.0	-0.2	0.1	0.0
TRANSITION AGGREGATE DOMESTIC EQUITY (4)					
TOTAL DOMESTIC EQUITY (5)	**30.7%**	**-5.3%**	**21.4%**	**11.5**	**0.3**
Domestic Equity Benchmark	30.8%	-5.2%	21.1%	12.7	0.5
Excess	-0.1%	-0.0%	0.2%	-1.3	-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 contains Domestic Equity securities that are being transitioned to a different manager.

(5) Since 12/1/20 the 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	**$387,182,115**	**1.4%**	**18.2%**	**36.3%**	**71.0%**	**34.7%**	**25.2%**	**20.2%**	**14.6%**	**01/2005**
Russell 1000 Growth			11.4	26.1	38.5	23.0	21.0	17.2	12.1	01/2005
Excess			6.8	10.2	32.5	11.7	4.2	3.0	2.5	
WINSLOW	**226,558,666**	**0.8**	**9.6**	**22.8**	**37.6**	**24.4**	**20.2**	**16.6**	**12.7**	**01/2005**
Russell 1000 Growth			11.4	26.1	38.5	23.0	21.0	17.2	12.1	01/2005
Excess			-1.8	-3.4	-0.9	1.4	-0.8	-0.6	0.6	
ZEVENBERGEN	**484,324,349**	**1.7**	**23.0**	**49.1**	**126.2**	**49.0**	**34.2**	**22.3**	**14.2**	**04/1994**
Russell 1000 Growth			11.4	26.1	38.5	23.0	21.0	17.2	11.1	04/1994
Excess			11.6	22.9	87.7	26.0	13.2	5.1	3.1	
RUSSELL 1000 GROWTH AGGREGATE	**1,098,065,131**	**3.8**	**18.3**	**38.3**	**81.3**	**37.6**	**28.6**	**20.7**		
Russell 1000 Growth			11.4	26.1	38.5	23.0	21.0	17.2		
Excess			6.9	12.1	42.8	14.6	7.6	3.5		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Active Large Cap Growth					
SANDS	**33.5%**	**7.0%**	**35.3%**	**-6.9%**	**2.9%**
Russell 1000 Growth	36.4	-1.5	30.2	7.1	5.7
Excess	-2.8	8.6	5.1	-13.9	-2.8
WINSLOW	**34.2**	**4.2**	**33.2**	**-1.9**	**6.7**
Russell 1000 Growth	36.4	-1.5	30.2	7.1	5.7
Excess	-2.2	5.7	3.0	-9.0	1.0
ZEVENBERGEN	**43.0**	**2.3**	**35.1**	**-2.8**	**6.4**
Russell 1000 Growth	36.4	-1.5	30.2	7.1	5.7
Excess	6.7	3.8	4.9	-9.9	0.7
RUSSELL 1000 GROWTH AGGREGATE	**37.3%**	**4.7%**	**33.4%**	**1.0**	**4.6**
Russell 1000 Growth	36.4%	-1.5%	30.2%	7.1	5.7
Excess	0.9%	6.2%	3.2%	-6.1	-1.1

Active Large Cap Value

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
BARROW HANLEY	**$359,790,154**	**1.3%**	**17.6%**	**24.3%**	**2.4%**	**6.9%**	**9.6%**	**10.8%**	**8.1%**	**04/2004**
Russell 1000 Value			16.3	22.8	2.8	6.1	9.7	10.5	7.8	04/2004
Excess			1.3	1.5	-0.4	0.9	-0.1	0.3	0.3	
EARNEST PARTNERS	**659,656**	**0.0**	**21.2**	**27.5**	**9.0**	**8.8**	**12.4**	**10.7**	**7.5**	**07/2000**
Russell 1000 Value			16.3	22.8	2.8	6.1	9.7	10.5	7.2	07/2000
Excess			5.0	4.7	6.2	2.8	2.7	0.2	0.2	
LSV	**423,597,709**	**1.5**	**19.9**	**25.4**	**-1.3**	**3.4**	**8.9**	**11.2**	**8.5**	**04/2004**
Russell 1000 Value			16.3	22.8	2.8	6.1	9.7	10.5	7.8	04/2004
Excess			3.6	2.6	-4.1	-2.7	-0.8	0.7	0.7	
RUSSELL 1000 VALUE AGGREGATE	**783,387,863**	**2.7**	**18.1**	**24.2**	**1.6**	**5.7**	**9.8**	**10.6**		
Russell 1000 Value			16.3	22.8	2.8	6.1	9.7	10.5		
Excess			1.9	1.4	-1.2	-0.3	0.1	0.1		

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	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Active Large Cap Value					
BARROW HANLEY	**26.9%**	**-5.9%**	**14.6%**	**12.8%**	**-2.1%**
Russell 1000 Value	26.5	-8.3	13.7	17.3	-3.8
Excess	0.4	2.4	0.9	-4.5	1.7
EARNEST PARTNERS	**28.1**	**-7.7**	**19.9**	**16.2**	**-2.7**
Russell 1000 Value	26.5	-8.3	13.7	17.3	-3.8
Excess	1.5	0.6	6.2	-1.1	1.1
LSV	**26.9**	**-11.8**	**18.6**	**17.0**	**-2.2**
Russell 1000 Value	26.5	-8.3	13.7	17.3	-3.8
Excess	0.4	-3.6	4.9	-0.4	1.6
RUSSELL 1000 VALUE AGGREGATE	**27.4%**	**-8.7%**	**17.3%**	**15.3**	**-3.2**
Russell 1000 Value	26.5%	-8.3%	13.7%	17.3	-3.8
Excess	0.9%	-0.4%	3.7%	-2.1	0.6

	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	**$1,526,564,074**	**5.3%**	**12.7%**	**23.1%**	**20.7%**	**14.7%**	**16.2%**	**14.7%**	**10.6%**	**01/1995**
Semi Passive Domestic Equity Benchmark			13.7	24.5	21.0	14.8	15.6	14.0	10.2	01/1995
Excess			-1.0	-1.4	-0.3	-0.1	0.6	0.7	0.4	
J.P. MORGAN	**1,500,277,914**	**5.2**	**13.2**	**24.2**	**21.2**	**14.6**	**15.5**	**14.3**	**10.5**	**01/1995**
Semi Passive Domestic Equity Benchmark			13.7	24.5	21.0	14.8	15.6	14.0	10.2	01/1995
Excess			-0.5	-0.3	0.3	-0.2	-0.1	0.3	0.3	
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	**3,026,841,988**	**10.6**	**13.0**	**23.6**	**21.0**	**14.6**	**15.4**	**14.2**		
Semi Passive Domestic Equity Benchmark			13.7	24.5	21.0	14.8	15.6	14.0		
Excess			-0.7	-0.8	0.0	-0.2	-0.2	0.2		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Semi-Passive Large Cap					
BLACKROCK	**30.4%**	**-4.1%**	**24.6%**	**12.5%**	**0.8%**
Semi Passive Domestic Equity Benchmark	31.4	-4.8	21.7	12.1	0.9
Excess	-1.0	0.7	2.9	0.5	-0.1
J.P. MORGAN	**31.3**	**-5.4**	**21.8**	**12.3**	**0.8**
Semi Passive Domestic Equity Benchmark	31.4	-4.8	21.7	12.1	0.9
Excess	-0.1	-0.6	0.1	0.2	-0.1
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	**30.9%**	**-4.9%**	**22.5%**	**11.1**	**0.5**
Semi Passive Domestic Equity Benchmark	31.4%	-4.8%	21.7%	12.1	0.9
Excess	-0.5%	-0.1%	0.8%	-1.0	-0.4

	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	**$220,160,722**	**0.8%**	**31.4%**	**37.6%**	**21.9%**	**13.9%**			**18.6%**	**11/2016**
Russell 2000 Growth			29.6	38.9	34.6	16.2			19.7	11/2016
Excess			1.8	-1.3	-12.8	-2.3			-1.2	
HOOD RIVER	**314,997,773**	**1.1**	**30.9**	**50.1**	**61.7**	**23.2**			**24.1**	**11/2016**
Russell 2000 Growth			29.6	38.9	34.6	16.2			19.7	11/2016
Excess			1.3	11.2	27.0	7.0			4.4	
RICE HALL JAMES	**222,700,218**	**0.8**	**20.9**	**27.5**	**23.8**	**10.8**			**17.4**	**11/2016**
Russell 2000 Growth			29.6	38.9	34.6	16.2			19.7	11/2016
Excess			-8.7	-11.4	-10.8	-5.4			-2.3	
WELLINGTON	**347,773,475**	**1.2**	**31.7**	**39.6**	**33.1**	**16.9**			**20.3**	**11/2016**
Russell 2000 Growth			29.6	38.9	34.6	16.2			19.7	11/2016
Excess			2.1	0.7	-1.5	0.7			0.6	
RUSSELL 2000 GROWTH AGGREGATE	**1,105,632,189**	**3.9**	**29.1**	**39.4**	**35.4**	**16.6**	**15.1**	**11.9**		
Russell 2000 Growth			29.6	38.9	34.6	16.2	16.4	13.5		
Excess			-0.5	0.5	0.8	0.4	-1.2	-1.6		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Active Small Cap Growth					
ARROWMARK	**20.1%**	**0.9%**	**26.2%**		
Russell 2000 Growth	28.5	-9.3	22.2		
Excess	-8.4	10.3	4.1		
HOOD RIVER	**24.3**	**-7.0**	**21.3**		
Russell 2000 Growth	28.5	-9.3	22.2		
Excess	-4.2	2.3	-0.9		
RICE HALL JAMES	**18.0**	**-6.9**	**27.9**		
Russell 2000 Growth	28.5	-9.3	22.2		
Excess	-10.5	2.4	5.8		
WELLINGTON	**35.6**	**-11.6**	**22.6**		
Russell 2000 Growth	28.5	-9.3	22.2		
Excess	7.1	-2.3	0.4		
RUSSELL 2000 GROWTH AGGREGATE	**24.6%**	**-6.2%**	**22.0%**	**4.7**	**1.0**
Russell 2000 Growth	28.5%	-9.3%	22.2%	11.3	-1.4
Excess	-3.9%	3.2%	-0.1%	-6.6	2.4

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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	**$415,492,645**	**1.4%**	**31.2%**	**35.3%**	**2.4%**	**3.0%**	**8.9%**	**9.9%**	**8.9%**	**01/2004**
Russell 2000 Value			33.4	36.8	4.6	3.7	9.7	8.7	7.6	01/2004
Excess			-2.1	-1.5	-2.3	-0.7	-0.7	1.2	1.3	
HOTCHKIS AND WILEY	**218,314,795**	**0.8**	**37.8**	**40.0**	**-0.2**	**0.8**	**5.8**	**8.3**	**7.4**	**01/2004**
Russell 2000 Value			33.4	36.8	4.6	3.7	9.7	8.7	7.6	01/2004
Excess			4.4	3.2	-4.8	-3.0	-3.9	-0.4	-0.2	
MARTINGALE	**195,486,404**	**0.7**	**27.9**	**28.7**	**-4.6**	**-0.6**	**7.1**	**8.8**	**6.9**	**01/2004**
Russell 2000 Value			33.4	36.8	4.6	3.7	9.7	8.7	7.6	01/2004
Excess			-5.5	-8.1	-9.2	-4.3	-2.5	0.2	-0.7	
PEREGRINE	**335,394,029**	**1.2**	**36.4**	**40.4**	**7.3**	**2.9**	**9.4**	**9.1**	**9.7**	**07/2000**
Russell 2000 Value			33.4	36.8	4.6	3.7	9.7	8.7	9.1	07/2000
Excess			3.0	3.7	2.7	-0.8	-0.3	0.4	0.6	
RUSSELL 2000 VALUE AGGREGATE	**1,164,687,873**	**4.1**	**33.4**	**36.4**	**1.5**	**1.7**	**7.9**	**9.0**		
Russell 2000 Value			33.4	36.8	4.6	3.7	9.7	8.7		
Excess			0.0	-0.4	-3.1	-2.1	-1.7	0.3		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Active Small Cap Value					
GOLDMAN SACHS	**23.2%**	**-13.3%**	**12.6%**	**24.6%**	**-5.2%**
Russell 2000 Value	22.4	-12.9	7.8	31.7	-7.5
Excess	0.8	-0.5	4.7	-7.1	2.3
HOTCHKIS AND WILEY	**19.7**	**-14.4**	**7.9**	**19.9**	**-8.5**
Russell 2000 Value	22.4	-12.9	7.8	31.7	-7.5
Excess	-2.7	-1.5	0.0	-11.8	-1.0
MARTINGALE	**21.1**	**-15.0**	**6.9**	**34.3**	**-5.2**
Russell 2000 Value	22.4	-12.9	7.8	31.7	-7.5
Excess	-1.3	-2.1	-0.9	2.5	2.3
PEREGRINE	**21.1**	**-16.1**	**12.5**	**27.8**	**-6.7**
Russell 2000 Value	22.4	-12.9	7.8	31.7	-7.5
Excess	-1.3	-3.3	4.7	-3.9	0.8
RUSSELL 2000 VALUE AGGREGATE	**21.3%**	**-14.7%**	**10.2%**	**26.5**	**-6.5**
Russell 2000 Value	22.4%	-12.9%	7.8%	31.7	-7.5
Excess	-1.1%	-1.8%	2.3%	-5.2	1.0

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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
Total Passive Domestic Equity										
BLACKROCK RUSSELL 1000	**$20,217,350,591**	**70.5%**	**13.7%**	**24.5%**	**20.9%**	**14.8%**			**17.4%**	**11/2016**
RUSSELL 1000 (DAILY)			13.7	24.5	21.0	14.8			17.4	11/2016
Excess			0.0	-0.0	-0.0	-0.0			-0.0	
BLACKROCK RUSSELL 2000	**151,215,378**	**0.5**	**31.4**	**37.6**	**20.8**				**15.2**	**11/2018**
RUSSELL 2000 (DAILY)			31.4	37.9	20.0				14.8	11/2018
Excess			0.0	-0.3	0.8				0.4	
BLACKROCK RUSSELL 3000 (1)	**1,125,987,069**	**3.9**	**14.8**	**25.3**	**21.2**	**14.6**	**15.5%**	**13.8%**	**10.0**	**07/1995**
Passive Manager Benchmark			14.7	25.2	20.9	14.5	15.4	13.8	9.9	07/1995
Excess			0.1	0.1	0.3	0.1	0.1	0.0	0.1	
PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**21,494,553,038**	**75.0**	**14.0**	**24.7**	**20.8**	**14.6**	**15.5**	**13.8**		
Passive Domestic Equity Benchmark			14.0	24.7	20.8	14.6	15.5	13.8		
Excess			0.0	0.0	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.

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Total Passive Domestic Equity					
BLACKROCK RUSSELL 1000	**31.4%**	**-4.8%**	**21.7%**		
RUSSELL 1000 (DAILY)	31.4	-4.8	21.7		
Excess	0.0	-0.0	-0.0		
BLACKROCK RUSSELL 2000	**25.2**				
RUSSELL 2000 (DAILY)	25.5				
Excess	-0.3				
BLACKROCK RUSSELL 3000 (1)	**31.1**	**-5.2**	**21.1**	**12.7%**	**0.5%**
Passive Manager Benchmark	31.0	-5.2	21.1	12.7	0.5
Excess	0.0	-0.0	0.0	0.0	0.0
PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**31.3%**	**-5.0%**	**21.3%**	**12.6**	**0.5**
Passive Domestic Equity Benchmark	31.3%	-5.0%	21.5%	12.5	0.5
Excess	0.0%	-0.0%	-0.2%	0.1	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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Public Equity - International

December 31, 2020

Total International Equity

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
DEVELOPED MARKETS (1)	**$9,453,049,443**	**67.1%**	**15.8%**	**22.3%**	**9.1%**	**4.9%**	**7.9%**	**5.9%**		
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2		
Excess			-0.1	0.7	1.5	0.7	0.2	0.7		
EMERGING MARKETS (2)	**4,262,687,920**	**30.3**	**20.2**	**31.9**	**17.7**	**6.2**	**12.2**	**3.3**		
BENCHMARK EM			19.7	31.1	18.3	6.2	12.8	3.6		
Excess			0.5	0.8	-0.6	0.1	-0.7	-0.3		
ACWI EX-US AGGREGATE	**379,242,942**	**2.7**								
MSCI AC WORLD ex US (NET) - DAILY										
Excess										
TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)	971,351	0.0								
TOTAL INTERNATIONAL EQUITY (4)	**14,078,161,450**	**100.0**	**16.9**	**24.8**	**11.3**	**5.2**	**8.8**	**5.4**	**6.7**	**10/1992**
International Equity Benchmark			17.1	24.2	10.5	4.8	8.9	4.9	6.3	10/1992
Excess			-0.1	0.6	0.8	0.4	-0.1	0.5	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) On 12/1/20 the International Equity Benchmark changed to the MSCI ACWI ex USA (net) from a blend of 75% MSCI World ex USA (net) and 25% MSCI Emerging Markets Free (net).

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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	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Total International Equity					
DEVELOPED MARKETS (1)	**23.3%**	**-14.2%**	**24.9%**	**1.3%**	**-0.3%**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	0.8	-0.1	0.7	-1.5	2.8
EMERGING MARKETS (2)	**20.3**	**-15.4**	**37.7**	**7.5**	**-13.1**
BENCHMARK EM	18.4	-14.6	37.3	11.2	-14.9
Excess	1.9	-0.8	0.4	-3.7	1.9
ACWI EX-US AGGREGATE					
MSCI AC WORLD ex US (NET) - DAILY					
Excess					
TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)					
TOTAL INTERNATIONAL EQUITY (4)	**22.4%**	**-14.5%**	**27.6%**	**2.6**	**-2.9**
International Equity Benchmark	21.5%	-14.2%	27.2%	4.5	-5.7
Excess	0.9%	-0.3%	0.4%	-1.8	2.8

(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) On 12/1/20 the International Equity Benchmark changed to the MSCI ACWI ex USA (net) from a blend of 75% MSCI World ex USA (net) and 25% MSCI Emerging Markets Free (net).

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 Developed Markets										
ACADIAN	**$352,402,638**	**2.5%**	**13.6%**	**22.2%**	**11.7%**	**4.8%**	**11.3%**	**8.3%**	**6.9%**	**07/2005**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	5.3	07/2005
Excess			-2.3	0.6	4.2	0.6	3.6	3.1	1.6	
COLUMBIA	**399,526,775**	**2.8**	**15.6**	**25.5**	**15.0**	**8.0**	**9.6**	**7.5**	**3.9**	**03/2000**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	3.8	03/2000
Excess			-0.2	4.0	7.4	3.8	2.0	2.3	0.1	
FIDELITY	**375,331,310**	**2.7**	**15.4**	**24.3**	**15.4**	**7.8**	**9.8**	**7.3**	**7.2**	**07/2005**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	5.3	07/2005
Excess			-0.5	2.8	7.8	3.6	2.2	2.1	1.9	
JP MORGAN	**333,871,351**	**2.4**	**15.8**	**23.9**	**14.2**	**6.6**	**10.1**	**6.4**	**6.0**	**07/2005**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	5.3	07/2005
Excess			-0.0	2.3	6.6	2.4	2.5	1.2	0.7	
MARATHON	**394,310,147**	**2.8**	**17.1**	**25.6**	**7.6**	**4.8**	**7.0**	**7.0**	**8.1**	**11/1993**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	5.3	11/1993
Excess			1.3	4.1	0.1	0.6	-0.7	1.9	2.8	
MCKINLEY	**275,400,354**	**2.0**	**12.6**	**23.6**	**16.4**	**7.1**	**7.9**	**6.4**	**5.6**	**07/2005**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	5.3	07/2005
Excess			-3.2	2.0	8.8	2.9	0.2	1.2	0.4	
ACTIVE DEVELOPED MARKETS AGGREGATE	**2,130,842,574**	**15.1**	**15.1**	**24.2**	**13.1**	**6.5**	**9.1**	**7.2**		
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2		
Excess			-0.8	2.7	5.6	2.3	1.5	2.0		

Active Developed Markets

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
ACADIAN	**19.1%**	**-13.5%**	**37.0%**	**8.1%**	**2.4%**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	-3.4	0.6	12.8	5.4	5.4
COLUMBIA	**28.9**	**-14.9**	**32.7**	**-5.6**	**6.4**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	6.4	-0.8	8.5	-8.3	9.4
FIDELITY	**27.1**	**-14.6**	**25.9**	**1.2**	**0.1**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	4.6	-0.5	1.7	-1.5	3.2
JP MORGAN	**28.5**	**-17.3**	**28.3**	**4.0**	**-4.7**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	6.0	-3.3	4.1	1.2	-1.6
MARATHON	**23.5**	**-13.4**	**23.1**	**-1.1**	**6.7**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	1.0	0.7	-1.1	-3.8	9.7
MCKINLEY	**25.6**	**-15.9**	**28.5**	**-7.5**	**3.1**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	3.1	-1.9	4.3	-10.2	6.2
ACTIVE DEVELOPED MARKETS AGGREGATE	**25.0%**	**-14.5%**	**28.4%**	**-0.2**	**3.2**
BENCHMARK DM	22.5%	-14.1%	24.2%	2.7	-3.0
Excess	2.5%	-0.4%	4.2%	-3.0	6.2

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Semi-Passive Developed Markets										
AQR	**$388,256,439**	**2.8%**	**14.9%**	**22.5%**	**6.5%**	**1.7%**	**5.8%**	**5.1%**	**5.3%**	**07/2005**
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2	5.3	07/2005
Excess			-0.9	0.9	-1.1	-2.5	-1.8	-0.0	0.0	
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	**388,256,439**	**2.8**	**14.9**	**22.5**	**6.5**	**1.5**	**5.2**	**4.6**		
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2		
Excess			-0.9	0.9	-1.1	-2.7	-2.5	-0.6		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Semi-Passive Developed Markets					
AQR	**20.8%**	**-18.2%**	**25.1%**	**0.8%**	**0.9%**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	-1.7	-4.1	0.9	-2.0	3.9

SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	**20.8%**	**-18.7%**	**23.3%**	**-0.4**	**-0.3**
BENCHMARK DM	22.5%	-14.1%	24.2%	2.7	-3.0
Excess	-1.7%	-4.6%	-0.9%	-3.1	2.7

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Developed Markets										
ACTIVE DEVELOPED MARKETS AGGREGATE	**$2,130,842,574**	**15.1%**	**15.1%**	**24.2%**	**13.1%**	**6.5%**	**9.1%**	**7.2%**		
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2		
Excess			-0.8	2.7	5.6	2.3	1.5	2.0		
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	**388,256,439**	**2.8**	**14.9**	**22.5**	**6.5**	**1.5**	**5.2**	**4.6**		
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2		
Excess			-0.9	0.9	-1.1	-2.7	-2.5	-0.6		
SSgA DEVELOPED MARKETS PASSIVE	**$6,933,950,430**	**49.3%**	**16.0%**	**21.8%**	**8.2%**	**4.6%**	**8.1%**	**5.6%**	**6.4%**	**10/1992**
BENCHMARK DM			15.8%	21.5%	7.6%	4.2%	7.6%	5.2%	6.0%	10/1992
Excess			0.1%	0.2%	0.6%	0.4%	0.4%	0.4%	0.3%	
RECORD CURRENCY	**-$17,790,207**	**-0.1%**								**10/2020**
DM PASSIVE EQUITY WITH CURRENCY MGMT	**$6,916,160,224**	**49.1%**	**15.7%**	**21.5%**	**8.0%**	**4.6%**	**7.9%**	**5.5%**		**10/1992**
BENCHMARK DM			15.8%	21.5%	7.6%	4.2%	7.6%	5.2%		10/1992
Excess			-0.1%	-0.0%	0.4%	0.3%	0.2%	0.3%		
DEVELOPED MARKETS TOTAL	**9,453,049,443**	**67.1**	**15.8**	**22.3**	**9.1**	**4.9**	**7.9**	**5.9**		
BENCHMARK DM			15.8	21.5	7.6	4.2	7.6	5.2		
Excess			-0.1	0.7	1.5	0.7	0.2	0.7		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Total Developed Markets					
ACTIVE DEVELOPED MARKETS AGGREGATE	**25.0%**	**-14.5%**	**28.4%**	**-0.2%**	**3.2%**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	2.5	-0.4	4.2	-3.0	6.2
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	**20.8**	**-18.7**	**23.3**	**-0.4**	**-0.3**
BENCHMARK DM	22.5	-14.1	24.2	2.7	-3.0
Excess	-1.7	-4.6	-0.9	-3.1	2.7
SSgA DEVELOPED MARKETS PASSIVE	**23.0%**	**-13.9%**	**24.7%**	**3.2**	**-2.6**
BENCHMARK DM	22.5%	-14.1%	24.2%	2.7	-3.0
Excess	0.5%	0.2%	0.5%	0.4	0.5
DM PASSIVE EQUITY WITH CURRENCY MGMT	**23.0%**	**-13.9%**	**23.8%**	**3.3**	**-2.6**
BENCHMARK DM	22.5%	-14.1%	24.2%	2.7	-3.0
Excess	0.5%	0.2%	-0.4%	0.5	0.5
DEVELOPED MARKETS TOTAL	**23.3%**	**-14.2%**	**24.9%**	**1.3**	**-0.3**
BENCHMARK DM	22.5%	-14.1%	24.2%	2.7	-3.0
Excess	0.8%	-0.1%	0.7%	-1.5	2.8

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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 Emerging Markets										
EARNEST PARTNERS	**$202,228,059**	**1.4%**	**21.6%**	**30.1%**	**5.6%**	**3.7%**			**8.6%**	**04/2017**
MSCI EMERGING MARKETS (1)			19.7	31.1	18.3	6.2			10.9	04/2017
Excess			1.9	-1.0	-12.7	-2.5			-2.3	
MARTIN CURRIE	**519,788,435**	**3.7**	**21.5**	**37.4**	**26.5**	**10.3**			**16.3**	**04/2017**
BENCHMARK EM			19.7	31.1	18.3	6.2			10.9	04/2017
Excess			1.8	6.2	8.2	4.2			5.4	
MACQUARIE	**502,188,860**	**3.6**	**16.7**	**31.8**	**24.2**	**9.9**			**14.0**	**04/2017**
BENCHMARK EM			19.7	31.1	18.3	6.2			10.9	04/2017
Excess			-3.0	0.6	5.9	3.7			3.1	
MORGAN STANLEY	**614,403,486**	**4.4**	**18.2**	**31.2**	**15.7**	**5.1**	**11.2%**	**4.1%**	**9.8**	**01/2001**
BENCHMARK EM			19.7	31.1	18.3	6.2	12.8	3.6	9.6	01/2001
Excess			-1.5	0.1	-2.6	-1.1	-1.7	0.5	0.2	
NEUBERGER BERMAN	**426,939,659**	**3.0**	**17.4**	**26.5**	**14.2**	**4.2**			**10.0**	**04/2017**
BENCHMARK EM			19.7	31.1	18.3	6.2			10.9	04/2017
Excess			-2.3	-4.6	-4.1	-1.9			-0.9	
PZENA	**338,361,628**	**2.4**	**28.5**	**34.5**	**7.7**	**2.9**			**6.4**	**04/2017**
BENCHMARK EM			19.7	31.1	18.3	6.2			10.9	04/2017
Excess			8.9	3.4	-10.6	-3.3			-4.5	
ROCK CREEK	**474,487,251**	**3.4**	**20.1**	**32.5**	**22.0**	**7.1**			**10.7**	**04/2017**
BENCHMARK EM			19.7	31.1	18.3	6.2			10.9	04/2017
Excess			0.4	1.4	3.7	0.9			-0.2	

(1) Earnest Partners transitioned its portfolio benchmark to the MSCI China A Index (Gross) by the end of December 2020. For aggregation purposes Earnest Partners is benchmarked against MSCI Emerging Markets (net) and included in the Active Emerging Markets Aggregate until 12/31/2020.

Active Emerging Markets

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
EARNEST PARTNERS	**24.7%**	**-15.4%**			
MSCI EMERGING MARKETS	18.4	-14.6			
Excess	6.3	-0.8			
MARTIN CURRIE	**27.3**	**-16.6**			
BENCHMARK EM	18.4	-14.6			
Excess	8.8	-2.0			
MACQUARIE	**23.2**	**-13.3**			
BENCHMARK EM	18.4	-14.6			
Excess	4.7	1.3			
MORGAN STANLEY	**20.4**	**-16.7**	**37.9%**	**6.1%**	**-9.4%**
BENCHMARK EM	18.4	-14.6	37.3	11.2	-14.9
Excess	1.9	-2.2	0.6	-5.1	5.5
NEUBERGER BERMAN	**19.7**	**-17.1**			
BENCHMARK EM	18.4	-14.6			
Excess	1.3	-2.6			
PZENA	**13.4**	**-10.8**			
BENCHMARK EM	18.4	-14.6			
Excess	-5.1	3.8			
ROCK CREEK	**22.3**	**-17.6**			
BENCHMARK EM	18.4	-14.6			
Excess	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	**$3,078,397,377**	**21.9%**	**20.5%**	**32.6%**	**17.3%**	**6.3%**	**11.7%**	**3.1%**		
BENCHMARK EM			19.7	31.1	18.3	6.2	12.8	3.6		
Excess			0.8	1.4	-1.0	0.2	-1.1	-0.5		
SSGA EMERGING MARKETS PASSIVE	**1,184,290,543**	**8.4**	**19.3**	**30.5**	**18.3**	**6.0**	**12.7**		**6.5**	**01/2012**
BENCHMARK EM			19.7	31.1	18.3	6.2	12.8		6.4	01/2012
Excess			-0.4	-0.6	0.0	-0.1	-0.1		0.0	
EMERGING MARKETS TOTAL	**4,262,687,920**	**30.3**	**20.2**	**31.9**	**17.7**	**6.2**	**12.2**	**3.3**		
BENCHMARK EM			19.7	31.1	18.3	6.2	12.8	3.6		
Excess			0.5	0.8	-0.6	0.1	-0.7	-0.3		

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Total Emerging Markets					
ACTIVE EMERGING MARKETS AGGREGATE	**21.4%**	**-15.6%**	**37.2%**	**5.3%**	**-12.7%**
BENCHMARK EM	18.4	-14.6	37.3	11.2	-14.9
Excess	3.0	-1.0	-0.1	-5.9	2.2
SSGA EMERGING MARKETS PASSIVE	**18.1%**	**-14.7%**	**37.4%**	**11.1**	**-14.6**
BENCHMARK EM	18.4%	-14.6%	37.3%	11.2	-14.9
Excess	-0.3%	-0.1%	0.1%	-0.1	0.3
EMERGING MARKETS TOTAL	**20.3%**	**-15.4%**	**37.7%**	**7.5**	**-13.1**
BENCHMARK EM	18.4%	-14.6%	37.3%	11.2	-14.9
Excess	1.9%	-0.8%	0.4%	-3.7	1.9

	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	**$379,242,942**	**2.7%**								
MSCI AC WORLD ex US (NET) - DAILY										
Excess										
TOTAL ACWI EX-US AGGREGATE	**379,242,942**	**2.7**								
MSCI AC WORLD ex US (NET) - DAILY										
Excess										

Note: Earnest Partners ACWI ex US was funded mid-December 2020 and will have its reporting period start on 1/1/21.

Public Equity - Global

December 31, 2020

	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	**$344,354,910**	**32.7%**								
MSCI AC WORLD NET USD DAILY										
Excess										
BAILLIE GIFFORD	**316,036,250**	**30.0**								
MSCI AC WORLD NET USD DAILY										
Excess										
MARTIN CURRIE INVESTMENTS - GLOBAL EQ	**393,271,033**	**37.3**								
MSCI AC WORLD NET USD DAILY										
Excess										
GLOBAL EQUITY	**1,053,662,193**	**100.0**								
MSCI AC WORLD NET USD DAILY										
Excess										

Note: The Global Equity managers were funded mid-December 2020 and will have a reporting period start of 1/1/21.

Fixed Income - Core/Core Plus

December 31, 2020

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Core/Core Plus Bonds										
CORE (1)	**$1,727,491,482**	**39.0%**								
BBG BARC Agg (Dly)										
Excess										
CORE PLUS (1)	**2,706,238,489**	**61.0**								
BBG BARC Agg (Dly)										
Excess										
TRANSITION AGGREGATE CORE BONDS (2)	19,032	0.0								
TOTAL CORE/CORE PLUS BONDS (3)	**4,433,749,003**	**100.0**	**1.9**	**3.2**	**9.7**	**6.4**	**5.4**	**4.6**	**7.6**	**07/1984**
Fixed Income Benchmark			0.7	1.3	7.5	5.3	4.4	3.8	7.1	07/1984
Excess			1.2	1.9	2.2	1.0	0.9	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/Core Plus 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.

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Core/Core Plus 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%**	**-0.0%**	**4.2%**	**3.6**	**0.7**
Fixed Income Benchmark	8.7%	0.0%	3.5%	2.6	0.5
Excess	1.0%	-0.1%	0.7%	0.9	0.1

(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/Core Plus 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 Bonds										
DODGE & COX	**$1,072,119,823**	**24.2%**	**2.4%**	**3.7%**	**9.4%**	**6.2%**	**5.5%**	**4.8%**	**6.2%**	**02/2000**
BBG BARC Agg (Dly)			0.7	1.3	7.5	5.3	4.4	3.8	5.2	02/2000
Excess			1.7	2.5	1.8	0.9	1.1	1.0	1.0	
BLACKROCK	**655,371,659**	**14.8**	**0.8**	**1.7**	**8.3**	**5.7**	**4.7**	**4.1**	**5.4**	**04/1996**
BBG BARC Agg (Dly)			0.7	1.3	7.5	5.3	4.4	3.8	5.3	04/1996
Excess			0.1	0.4	0.8	0.4	0.3	0.3	0.1	
CORE	**1,727,491,482**	**39.0**								
BBG BARC Agg (Dly)										
Excess										

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Active Core Bonds					
DODGE & COX	**9.6%**	**-0.0%**	**4.2%**	**4.8%**	**0.3%**
BBG BARC Agg (Dly)	8.7	0.0	3.5	2.6	0.5
Excess	0.9	-0.1	0.7	2.2	-0.3
BLACKROCK	**9.3**	**-0.1**	**3.7**	**2.8**	**0.9**
BBG BARC Agg (Dly)	8.7	0.0	3.5	2.6	0.5
Excess	0.6	-0.2	0.1	0.1	0.3
CORE					
BBG BARC Agg (Dly)					
Excess					

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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
Core Plus Bonds										
GOLDMAN SACHS	**$812,275,907**	**18.3%**	**1.3%**	**2.3%**	**9.0%**	**6.1%**	**5.0%**	**4.4%**	**5.7%**	**07/1993**
BBG BARC Agg (Dly)			0.7	1.3	7.5	5.3	4.4	3.8	5.3	07/1993
Excess			0.6	1.0	1.5	0.8	0.6	0.5	0.4	
NEUBERGER	**869,632,516**	**19.6**	**2.2**	**2.8**	**9.9**	**6.2**	**5.0**	**4.2**	**6.5**	**07/1988**
BBG BARC Agg (Dly)			0.7	1.3	7.5	5.3	4.4	3.8	6.2	07/1988
Excess			1.5	1.5	2.4	0.9	0.5	0.4	0.3	
WESTERN	**1,024,330,067**	**23.1**	**2.7**	**4.6**	**10.9**	**7.1**	**6.4**	**5.3**	**8.4**	**07/1984**
BBG BARC Agg (Dly)			0.7	1.3	7.5	5.3	4.4	3.8	7.2	07/1984
Excess			2.0	3.3	3.4	1.8	1.9	1.4	1.2	
CORE PLUS	**2,706,238,489**	**61.0**								
BBG BARC Agg (Dly)										
Excess										

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Core Plus Bonds					
GOLDMAN SACHS	**9.6%**	**-0.0%**	**3.9%**	**3.0%**	**0.8%**
BBG BARC Agg (Dly)	8.7	0.0	3.5	2.6	0.5
Excess	0.9	-0.0	0.4	0.3	0.2
NEUBERGER	**9.0**	**-0.1**	**3.6**	**2.7**	**0.7**
BBG BARC Agg (Dly)	8.7	0.0	3.5	2.6	0.5
Excess	0.3	-0.1	0.0	0.1	0.2
WESTERN ASSET MANAGEMENT	**11.1**	**-0.2**	**5.6**	**4.9**	**0.7**
BBG BARC Agg (Dly)	8.7	0.0	3.5	2.6	0.5
Excess	2.4	-0.3	2.1	2.2	0.1
CORE PLUS					
BBG BARC Agg (Dly)					
Excess					

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Fixed Income - Return Seeking

December 31, 2020

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Return Seeking Bonds Managers										
COLUMBIA	**$925,827,845**	**26.1%**							**1.1%**	**12/2020**
Credit Plus Benchmark									0.7	12/2020
Excess									0.3	
PIMCO	**810,810,706**	**22.9**							**0.8**	**12/2020**
Credit Plus Benchmark									0.7	12/2020
Excess									0.1	
CREDIT PLUS	**1,736,638,550**	**48.9**							**1.0**	**12/2020**
Credit Plus Benchmark									0.7	12/2020
Excess									0.2	
BLACKROCK	**504,519,551**	**14.2**							**0.7**	**12/2020**
ICE BofA US 3-Month Treasury Bill									0.0	12/2020
Excess									0.7	
OPPORTUNISTIC FIXED INCOME	**504,519,551**	**14.2**							**0.7**	**12/2020**
ICE BofA US 3-Month Treasury Bill									0.0	12/2020
Excess									0.7	
ASHMORE	**251,702,992**	**7.1**								
JPM JEMB Sovereign-only 50-50										
Excess										
EMERGING MARKET DEBT	**251,702,992**	**7.1**								
Emerging Market Debt Benchmark										
Excess										

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Return Seeking Bonds Managers										
PAYDEN RYGEL	**$251,067,597**	**7.1%**								
Multi-Asset Credit Benchmark										
Excess										
PGIM	**251,106,037**	**7.1**								
Multi-Asset Credit Benchmark										
Excess										
Multi-Asset Credit	**502,173,633**	**14.2**								
Multi-Asset Credit Benchmark										
Excess										
KKR	**301,223,503**	**8.5**								
ICE BofA US Cash Pay HY Constrained										
Excess										
OAKTREE	**251,717,122**	**7.1**								
ICE BofA US Cash Pay HY Constrained										
Excess										
High Yield	**552,940,625**	**15.6**								
ICE BofA US Cash Pay HY Constrained										
Excess										
RETURN SEEKING FIXED INCOME	**3,547,975,353**	**100.0**							**0.9**	**12/2020**
Return Seeking BM									0.6	12/2020
Excess									0.3	

Note: All Return Seeking Bonds Managers are included in the ending market value but only Columbia, Pimco and BlackRock are included in the return calculation. The other managers were funded mid-December 2020 and will have a reporting period start on 1/1/21.

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Fixed Income - Treasuries
December 31, 2020

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Treasuries Managers										
BLACKROCK	**$2,423,240,907**	**31.9%**	**-1.8%**	**-1.5%**	**12.5%**				**8.6%**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-1.9	-1.6	12.8				8.7	02/2018
Excess			0.0	0.1	-0.3				-0.2	
GOLDMAN SACHS	**2,580,200,662**	**34.0**	**-1.7**	**-1.3**	**12.7**				**8.7**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-1.9	-1.6	12.8				8.7	02/2018
Excess			0.2	0.4	-0.1				-0.0	
NEUBERGER	**2,592,186,589**	**34.1**	**-1.6**	**-1.1**	**12.8**				**8.6**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-1.9	-1.6	12.8				8.7	02/2018
Excess			0.2	0.5	-0.1				-0.1	
TREASURIES TRANSITION ACCOUNT	0	0.0								
TOTAL TREASURIES	**7,595,628,157**	**100.0**	**-1.7**	**-1.3**	**12.7**				**8.6%**	**02/2018**
BBG BARC 5Y + Us Tsy Idx			-1.9	-1.6	12.8				8.7%	02/2018
Excess			0.2	0.3	-0.2				-0.1%	

	2019 Calendar Return	2018 Calendar Return	2017 Calendar Return	2016 Calendar Return	2015 Calendar Return
Treasuries Managers					
BLACKROCK	**10.4%**				
BBG BARC 5Y + Us Tsy Idx	10.4				
Excess	-0.1				
GOLDMAN SACHS	**10.6**				
BBG BARC 5Y + Us Tsy Idx	10.4				
Excess	0.1				
NEUBERGER	**10.4**				
BBG BARC 5Y + Us Tsy Idx	10.4				
Excess	-0.0				
TOTAL TREASURIES	**10.4%**				
BBG BARC 5Y + Us Tsy Idx	10.4%				
Excess	0.0%				

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Fixed Income - Laddered Bonds + Cash

December 31, 2020

Minnesota State Board of Investment
Quarter Ending December 31, 2020
Laddered Bond + Cash Managers

	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	**$1,360,955,839**	**37.9%**							**0.1%**	**11/2020**
ICE BofA US 3-Month Treasury Bill									0.0	11/2020
Excess									0.0	
Goldman Sachs Ladder Bond	**1,360,610,956**	**37.8**							**0.0**	**11/2020**
ICE BofA US 3-Month Treasury Bill									0.0	11/2020
Excess									0.0	
Treasury Ladder Aggregate	2,721,566,795	**75.7**							0.0	11/2020
ICE BofA US 3-Month Treasury Bill									0.0	11/2020
Excess									0.0	
COMBINED PLAN CASH ACCOUNT (1)	**828,624,116**	**23.0**	**0.2%**							10/2020
iMoneyNet Money Fund Average-All Taxable			0.0							10/2020
Excess			0.2							
TEACHERS RETIREMENT CD REPO (1)	**45,146,946**	**1.3**	**0.0**							10/2020
iMoneyNet Money Fund Average-All Taxable			0.0							10/2020
Excess			0.0							
Laddered Bond + Cash	**3,595,337,857**	**100.0**	**0.1**							
ICE BofA US 3-Month Treasury Bill			0.0							
Excess			0.1							

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

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Private Markets - Uninvested

December 31, 2020

	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	**$2,156,999,215**	**29.0%**								
S&P 500 INDEX (DAILY)										
Excess										
BLACKROCK SP INDEX	**5,293,158,075**	**71.0**								
S&P 500 INDEX (DAILY)										
Excess										
UNINVESTED PRIVATE PMARKETS	**7,450,157,290**	**100.0**								
S&P 500 INDEX (DAILY)										
Excess										

Private Markets - Invested

December 31, 2020

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%	15.3%	7.7%	9.9%	11.1%	11.5%	11.4%	13.4%	12.2%
Private Markets - Uninvested (S&P 500)									
Private Equity	12.2%	21.0%	16.3%	15.7%	16.1%	15.1%	12.3%	15.5%	
Private Credit	1.8	5.8	1.4	7.7	10.6	11.6	11.3		
Resources	1.6	3.9	-16.3	-6.4	-3.0	1.4	11.6	12.6	
Real Estate	3.8	6.4	4.4	8.4	8.5	11.1	8.4	9.6	

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	**16,970,973,939.34**	**11,438,172,333.68**	**10,374,067,579.99**	**6,556,319,326.72**	**7,689,249,774.39**	**1.58**	**12.72**	
Adams Street Partners, LLC	200,000,000.00	123,314,692.00	55,101,639.00	76,685,308.00	95,538,658.92	1.22	7.00	
Adams Street Global Secondary Fund 5 LP	100,000,000.00	77,114,692.00	48,900,493.00	22,885,308.00	45,033,450.50	1.22	5.13	2012
Adams Street Global Secondary Fund 6	100,000,000.00	46,200,000.00	6,201,146.00	53,800,000.00	50,505,208.42	1.23	23.35	2017
Advent International Group	355,000,000.00	274,846,106.00	199,468,558.00	83,237,848.00	261,370,449.10	1.68	16.11	
Advent International GPE IX	115,000,000.00	42,262,150.00	0.00	72,737,850.00	50,822,348.48	1.20	26.36	2019
Advent International GPE VI-A, L.P.	50,000,000.00	52,993,313.00	101,973,095.00	0.00	6,122,729.27	2.04	16.65	2008
Advent International GPE VII, L.P.	90,000,000.00	84,690,641.00	97,495,463.00	5,400,000.00	58,053,696.07	1.84	14.64	2012
Advent International GPE VIII-B	100,000,000.00	94,900,002.00	0.00	5,099,998.00	146,371,675.28	1.54	17.14	2016
Affinity Ventures	9,000,000.00	9,000,000.00	3,248,214.55	0.00	1,240,459.61	0.50	-12.61	
Affinity Ventures IV, L.P.	4,000,000.00	4,000,000.00	1,541,969.68	0.00	3,278.67	0.39	-41.00	2004
Affinity Ventures V, L.P.	5,000,000.00	5,000,000.00	1,706,244.87	0.00	1,237,180.94	0.59	-8.98	2008
Apax Partners	500,000,000.00	383,094,267.88	322,479,436.59	172,311,750.02	329,873,490.12	1.70	17.73	
Apax IX USD L.P.	150,000,000.00	147,859,962.69	10,228,177.24	12,368,214.55	221,265,709.67	1.57	23.00	2016
APAX VIII - USD	200,000,000.00	233,434,305.19	312,251,259.35	11,743,535.47	106,053,697.83	1.79	16.46	2013
Apax X USD L.P.	150,000,000.00	1,800,000.00	0.00	148,200,000.00	2,554,082.62	1.42	41.89	2019
Arsenal Capital Partners	75,000,000.00	45,246,688.00	2,219,877.00	31,876,652.00	45,320,756.12	1.05	5.24	
Arsenal Capital Partners V, L.P.	75,000,000.00	45,246,688.00	2,219,877.00	31,876,652.00	45,320,756.12	1.05	5.24	2019
Asia Alternatives	299,000,000.00	55,633,461.00	2,837,699.00	244,350,891.00	54,264,090.01	1.03	2.47	
Asia Alternatives Capital Partners V	99,000,000.00	55,633,461.00	2,837,699.00	44,350,891.00	54,264,090.01	1.03	2.47	2017
MN Asia Investors	200,000,000.00	0.00	0.00	200,000,000.00	0.00	0.00		2020
Banc Fund	276,801,386.55	264,844,295.64	209,219,835.10	11,957,090.91	142,581,382.47	1.33	7.36	
Banc Fund IX, L.P.	107,205,932.00	107,205,932.00	19,549,737.35	0.00	86,242,026.41	0.99	-0.33	2014
Banc Fund VIII, L.P.	98,250,000.00	98,250,000.00	189,670,097.75	0.00	9,014,431.95	2.02	12.04	2008
Banc Fund X, L.P.	71,345,454.55	59,388,363.64	0.00	11,957,090.91	47,324,924.11	0.80	-17.28	2018
BlackRock	250,000,000.00	106,555,839.96	2,660,744.66	143,444,160.04	122,154,016.59	1.17	11.00	
BlackRock Long Term Capital, SCSP	250,000,000.00	106,555,839.96	2,660,744.66	143,444,160.04	122,154,016.59	1.17	11.00	2019
Blackstone Group L.P.	840,000,000.00	477,742,607.55	568,152,647.94	430,738,923.08	208,942,127.00	1.63	15.39	
Blackstone Capital Partners IV, L.P.	70,000,000.00	84,459,883.57	200,025,997.73	1,832,302.08	1,542,414.10	2.39	37.02	2002
Blackstone Capital Partners V L.P.	140,000,000.00	152,334,232.28	239,185,175.57	7,027,560.42	4,281,867.69	1.60	7.90	2006
Blackstone Capital Partners VI, L.P.	100,000,000.00	106,152,089.86	113,824,807.01	11,175,309.23	58,814,291.16	1.63	11.81	2008
Blackstone Capital Partners VII	130,000,000.00	134,796,401.84	15,116,667.63	10,703,751.35	144,303,554.05	1.18	9.81	2015
Blackstone Capital Partners VIII LP	150,000,000.00	0.00	0.00	150,000,000.00	0.00	0.00		2019
Blackstone Growth	250,000,000.00	0.00	0.00	250,000,000.00	0.00	0.00		2020
Blackstone Strategic Partners	815,500,000.00	570,526,171.79	644,840,541.91	309,362,654.43	181,295,360.23	1.45	10.21	
Strategic Partners III VC, L.P.	25,000,000.00	25,056,898.97	33,788,877.46	1,010,804.31	376,102.55	1.36	5.99	2004
Strategic Partners III-B, L.P.	100,000,000.00	79,581,947.61	118,286,610.74	14,851,675.77	394,388.02	1.49	6.35	2004
Strategic Partners IV VC, L.P.	40,500,000.00	42,113,513.60	60,558,526.94	2,309,316.11	3,011,181.07	1.51	9.05	2008
Strategic Partners IV-B	100,000,000.00	99,291,020.64	147,370,440.18	17,529,308.03	6,896,983.18	1.55	12.12	2008
Strategic Partners V, LP	100,000,000.00	86,835,512.53	124,947,624.04	35,262,293.30	14,262,821.38	1.60	18.51	2011
Strategic Partners VI, L.P.	150,000,000.00	100,778,759.69	106,055,253.08	55,567,937.43	36,198,736.72	1.41	13.71	2014
Strategic Partners VII, L.P.	150,000,000.00	102,822,746.65	48,958,209.47	62,072,495.77	80,343,332.11	1.26	11.04	2016
Strategic Partners VIII	150,000,000.00	34,045,772.10	4,875,000.00	120,758,823.71	39,811,815.20	1.31	26.97	2018
Bridgepoint	177,498,634.41	69,134,009.80	13,311,036.26	108,364,624.61	70,751,147.68	1.22	25.75	

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Bridgepoint Europe VI L.P.	177,498,634.41	69,134,009.80	13,311,036.26	108,364,624.61	70,751,147.68	1.22	25.75	2018
Brookfield Asset Management Inc.	350,000,000.00	194,810,049.11	133,817,792.76	175,591,517.91	201,311,213.93	1.72	44.92	
Brookfield Capital Partners Fund IV	100,000,000.00	98,968,057.54	133,817,792.76	21,433,509.48	102,468,026.24	2.39	51.31	2015
Brookfield Capital Partners V L.P.	250,000,000.00	95,841,991.57	0.00	154,158,008.43	98,843,187.69	1.03	3.54	2018
CVC Capital Partners	395,126,603.61	424,349,522.89	426,578,895.11	41,088,404.17	284,603,009.09	1.68	15.73	
CVC Capital Partners VI	261,062,820.02	270,536,477.61	134,136,811.22	39,340,882.47	277,286,681.77	1.52	13.95	2013
CVC European Equity Partners V, L.P.	134,063,783.59	153,813,045.28	292,442,083.89	1,747,521.70	7,316,327.32	1.95	16.83	2008
Cardinal Partners	10,000,000.00	10,000,000.00	39,196,082.23	0.00	30,659.00	3.92	10.61	
DSV Partners IV	10,000,000.00	10,000,000.00	39,196,082.23	0.00	30,659.00	3.92	10.61	1985
Carlyle Group	150,000,000.00	73,607,469.00	4,013,081.00	80,405,612.00	65,538,291.92	0.94	-5.35	
Carlyle Partners VII, L.P.	150,000,000.00	73,607,469.00	4,013,081.00	80,405,612.00	65,538,291.92	0.94	-5.35	2017
Chicago Growth Partners	110,000,000.00	106,497,626.00	193,069,552.29	3,302,374.00	1,047,707.95	1.82	12.48	
Chicago Growth Partners II, L.P.	60,000,000.00	58,347,626.00	123,371,040.00	1,652,374.00	542,481.50	2.12	19.55	2008
William Blair Capital Partners VII, L.P.	50,000,000.00	48,150,000.00	69,698,512.29	1,650,000.00	505,226.45	1.46	8.58	2001
Court Square	500,000,000.00	394,122,863.00	435,664,827.00	142,635,939.00	216,647,001.94	1.66	13.69	
Court Square Capital Partners II, L.P.	175,000,000.00	170,245,186.00	295,260,304.00	16,396,790.00	9,744,281.12	1.79	12.56	2006
Court Square Capital Partners III, L.P.	175,000,000.00	184,101,141.00	136,401,588.00	12,081,239.00	163,093,838.88	1.63	16.95	2012
Court Square Capital Partners IV, L.P.	150,000,000.00	39,776,536.00	4,002,935.00	114,157,910.00	43,808,881.94	1.20	22.27	2018
Crescendo	101,500,000.00	103,101,226.00	57,982,653.94	0.00	274,403.70	0.57	-4.61	
Crescendo Ventures IV	101,500,000.00	103,101,226.00	57,982,653.94	0.00	274,403.70	0.57	-4.61	2000
GTCR	210,000,000.00	209,762,417.00	365,405,587.30	15,514,972.00	113,363,465.55	2.28	24.96	
GTCR Fund X	100,000,000.00	104,934,096.00	202,619,633.30	6,751,396.00	6,163,671.52	1.99	21.11	2010
GTCR XI	110,000,000.00	104,828,321.00	162,785,954.00	8,763,576.00	107,199,794.03	2.58	32.90	2013
Goldman, Sachs & Co.	549,800,000.00	396,047,630.81	383,894,381.02	184,956,023.37	189,353,126.70	1.45	13.56	
GS Capital Partners V, L.P.	100,000,000.00	74,319,006.00	191,435,136.00	1,041,099.00	1,097,949.00	2.59	18.25	2005
GS Capital Partners VI, L.P.	100,000,000.00	110,258,192.00	134,253,920.00	2,551,356.00	9,701,265.75	1.31	7.09	2007
GS China-US Cooperation Fund	99,800,000.00	15,144,445.00	0.00	84,830,000.00	11,154,730.83	0.74	-18.50	2018
GS Vintage VII	100,000,000.00	79,866,512.81	27,865,036.02	48,118,662.37	72,541,149.94	1.26	12.34	2016
West Street Capital Partners VII, L.P.	150,000,000.00	116,459,475.00	30,340,289.00	48,414,906.00	94,858,031.18	1.08	4.78	2016
Goldner Hawn Johnson & Morrison	77,755,137.50	28,476,830.35	12,806,955.48	49,450,274.41	37,919,378.61	1.78	14.44	
GHJM TrailHead Fund	20,000,000.00	16,070,803.36	12,806,955.48	3,935,812.65	25,464,111.58	2.38	15.15	2012
Goldner Hawn Fund VII, L.P.	57,755,137.50	12,406,026.99	0.00	45,514,461.76	12,455,267.03	1.00	0.43	2018
Green Equity Investors	325,000,000.00	236,546,461.57	165,677,228.52	124,997,330.35	237,926,288.25	1.71	14.25	
Green Equity Investors VI, L.P.	200,000,000.00	220,093,989.57	165,677,228.52	16,449,802.35	221,600,072.52	1.76	14.26	2012
Green Equity Investors VIII	125,000,000.00	16,452,472.00	0.00	108,547,528.00	16,326,215.73	0.99	-2.79	2020
HarbourVest*	21,683,349.30	20,931,185.31	21,298,740.75	838,305.24	8,152,838.46	1.41	11.51	
Dover Street VII Cayman Fund L.P.	2,198,112.00	2,073,906.00	1,662,612.00	132,416.00	202,972.85	0.90	-4.72	2014
HarbourVest Intl PE Partners V-Cayman US	3,536,372.85	3,345,451.64	4,099,860.80	195,767.99	447,692.31	1.36	14.06	2014
Harbourvest Intl PE Partners VI-Cayman	4,251,255.44	4,039,119.67	3,545,249.95	214,121.24	3,550,355.36	1.76	15.75	2014
HarbourVest Partners VIII Cayman Buyout	4,506,711.00	4,387,189.00	5,055,020.00	156,000.00	924,562.25	1.36	12.87	2014
HarbourVest Partners VIII-Cayman Venture	7,190,898.00	7,085,519.00	6,935,998.00	140,000.00	3,027,255.69	1.41	10.06	2014
Hellman & Friedman	400,000,000.00	300,965,118.00	438,758,078.35	99,518,164.00	117,974,414.51	1.85	14.68	
Hellman & Friedman Capital Partners VI, L.P.	175,000,000.00	171,037,755.00	315,233,005.35	5,084,864.00	3,067,573.73	1.86	12.91	2007
Hellman & Friedman Capital Partners VII, L.P.	50,000,000.00	49,856,571.00	123,525,073.00	2,245,784.00	31,191,946.97	3.10	24.73	2009
Hellman & Friedman Investors IX, L.P.	175,000,000.00	80,070,792.00	0.00	92,187,516.00	83,714,893.81	1.05	9.67	2018
IK Limited	516,750,102.77	354,856,585.80	317,599,131.81	169,498,502.39	223,581,633.73	1.53	13.37	

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
IK Fund IX	164,956,434.88	4,917,603.41	0.00	160,038,455.05	2,316,342.00	0.47	-98.05	2019
IK Fund VII	180,988,230.50	178,082,352.52	215,835,488.36	9,279,735.90	93,700,954.15	1.74	13.50	2013
IK Fund VIII	170,805,437.39	171,856,629.87	101,763,643.45	180,311.44	127,564,337.58	1.33	13.58	2016
Kohlberg, Kravis, Roberts & Co.	900,000,000.00	634,038,843.00	783,693,890.00	307,845,122.00	294,996,360.03	1.70	12.98	
KKR 2006 Fund L.P.	200,000,000.00	218,952,993.00	341,385,674.00	3,300,979.00	43,620,489.53	1.76	9.01	2006
KKR Americas Fund XII L.P.	150,000,000.00	96,440,792.00	4,217,501.00	60,699,138.00	127,706,549.11	1.37	18.94	2016
KKR Asian Fund III	100,000,000.00	72,152,965.00	13,144,687.00	35,169,528.00	78,878,193.22	1.28	19.65	2017
KKR Asian Fund IV	150,000,000.00	0.00	0.00	150,000,000.00	0.00	0.00		2020
KKR Europe V	100,000,000.00	41,324,523.00	0.00	58,675,477.00	44,629,203.78	1.08	14.73	2018
KKR Millennium Fund	200,000,000.00	205,167,570.00	424,946,028.00	0.00	161,924.39	2.07	16.37	2002
Lexington Partners	1,200,000,000.00	680,502,231.00	523,694,084.00	568,266,574.82	427,435,596.67	1.40	11.90	
Lexington Capital Partners IX, L.P.	150,000,000.00	37,724,234.00	7,877,184.00	117,713,253.00	40,238,404.42	1.28	79.24	2018
Lexington Capital Partners VI-B, L.P.	100,000,000.00	98,374,022.00	140,507,375.01	1,634,703.00	5,329,391.71	1.48	7.88	2005
Lexington Capital Partners VII, L.P.	200,000,000.00	172,466,709.00	237,182,550.99	38,059,995.00	37,026,651.45	1.59	14.15	2009
Lexington Capital Partners VIII, L.P.	150,000,000.00	134,716,285.00	87,554,133.00	33,785,551.99	95,100,996.13	1.36	14.40	2014
Lexington Co-Investment Partners IV	200,000,000.00	196,831,669.00	45,469,492.00	17,462,383.83	212,270,366.47	1.31	16.19	2017
Lexington Co-Investment Partners V	300,000,000.00	0.00	0.00	300,000,000.00	0.00	0.00		2020
Lexington Middle Market Investors IV	100,000,000.00	40,389,312.00	5,103,349.00	59,610,688.00	37,469,786.49	1.05	6.99	2016
Madison Dearborn Capital Partners LLC	200,000,000.00	104,244,870.00	12,709,639.00	108,428,022.00	115,705,644.42	1.23	10.01	
Madison Dearborn Capital Partners VII, L.P.	100,000,000.00	92,241,775.00	12,709,639.00	20,431,117.00	102,583,955.90	1.25	9.64	2015
Madison Dearborn Capital Partners VIII-A, L.P	100,000,000.00	12,003,095.00	0.00	87,996,905.00	13,121,688.52	1.09	9.32	2019
Neuberger Berman LLC	625,000,000.00	277,426,781.79	168,899,617.94	480,152,166.48	190,512,821.52	1.31	23.41	
Dyal Capital Partners III	175,000,000.00	189,172,342.80	154,887,797.83	104,759,374.14	108,933,161.75	1.39	24.32	2015
Dyal Capital Partners IV	250,000,000.00	77,254,438.99	14,011,820.11	186,392,792.34	70,579,659.77	1.09	16.06	2018
Dyal Capital Partners V	200,000,000.00	11,000,000.00	0.00	189,000,000.00	11,000,000.00	1.00		2020
Nordic Capital	517,487,489.97	334,687,344.13	178,775,916.84	255,195,924.79	317,975,681.69	1.48	16.16	
Nordic Capital Fund VIII	178,614,166.48	209,887,520.06	174,001,905.16	41,122,425.37	143,917,382.67	1.51	13.16	2013
Nordic Capital Fund X	165,179,244.60	0.00	0.00	165,179,244.60	0.00	0.00		2020
Nordic Capital IX Beta, L.P.	173,694,078.89	124,799,824.07	4,774,011.68	48,894,254.82	174,058,299.02	1.43	47.96	2017
North Sky Capital*	2,454,339.00	1,998,089.00	2,260,406.13	456,250.00	476,649.74	1.37	12.32	
North Sky Capital LBO Fund III, LP	1,070,259.00	720,259.00	890,943.41	350,000.00	172,431.97	1.48	14.16	2014
North Sky Capital Venture Fund III, LP	1,384,080.00	1,277,830.00	1,369,462.72	106,250.00	304,217.77	1.31	11.10	2014
Oak Hill Capital Management, Inc.	250,000,000.00	156,831,197.95	104,755,534.23	114,965,237.55	100,311,584.10	1.31	21.85	
Oak Hill Capital Partners IV Onshore LP	150,000,000.00	145,591,858.70	104,755,534.23	26,204,576.80	93,584,434.94	1.36	23.68	2016
Oak Hill Capital Partners V	100,000,000.00	11,239,339.25	0.00	88,760,660.75	6,727,149.16	0.60	-40.15	2018
Paine & Partners, LLC	225,000,000.00	87,876,776.00	35,529,483.00	138,747,516.97	69,667,966.98	1.20	7.43	
Paine Schwartz Food Chain Fund IV	75,000,000.00	63,736,766.00	34,978,344.00	12,336,387.97	48,628,874.98	1.31	8.83	2014
Paine Schwartz Food Chain Fund V, L.P.	150,000,000.00	24,140,010.00	551,139.00	126,411,129.00	21,039,092.00	0.89	-17.08	2018
Permal PE*	5,337,098.00	4,386,677.43	3,831,251.28	1,090,000.00	818,416.83	1.06	2.30	
Glouston Private Equity Opportunities IV	5,337,098.00	4,386,677.43	3,831,251.28	1,090,000.00	818,416.83	1.06	2.30	2014
Permira	467,570,937.23	357,481,668.21	266,860,124.68	148,373,152.44	465,605,373.87	2.05	23.49	
Permira V, L.P.	179,113,420.33	181,290,272.30	238,732,308.98	19,807,035.80	236,418,986.70	2.62	23.51	2013
Permira VI, L.P.	139,536,556.17	122,910,380.82	28,127,815.70	32,926,171.00	169,003,933.92	1.60	23.19	2016
Permira VII L.P.1	148,920,960.73	53,281,015.09	0.00	95,639,945.64	60,182,453.25	1.13	23.84	2019
Public Pension Capital Management	175,000,000.00	87,768,185.84	78,311,483.10	100,062,710.24	80,767,806.67	1.81	23.25	
Public Pension Capital, LLC	175,000,000.00	87,768,185.84	78,311,483.10	100,062,710.24	80,767,806.67	1.81	23.25	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Silver Lake Partners	435,000,000.00	406,867,451.93	457,880,840.15	37,610,175.11	338,696,780.01	1.96	15.57	
Silver Lake Partners II, L.P.	100,000,000.00	90,200,746.70	171,694,975.15	11,771,953.34	85,376.00	1.90	11.02	2004
Silver Lake Partners III, L.P.	100,000,000.00	93,699,368.23	187,575,747.00	9,422,179.77	23,375,328.15	2.25	18.46	2007
Silver Lake Partners IV	100,000,000.00	113,099,700.00	97,461,894.00	4,168,036.00	147,635,795.87	2.17	25.37	2012
Silver Lake Partners V, L.P.	135,000,000.00	109,867,637.00	1,148,224.00	12,248,006.00	167,600,279.99	1.54	32.39	2017
Split Rock	110,000,000.00	107,055,906.00	121,560,810.00	2,944,094.00	24,808,996.02	1.37	4.67	
Split Rock Partners II, LP	60,000,000.00	59,165,000.00	62,766,618.00	835,000.00	20,395,327.36	1.41	6.47	2008
Split Rock Partners LP	50,000,000.00	47,890,906.00	58,794,192.00	2,109,094.00	4,413,668.66	1.32	3.38	2005
Summit Partners	350,000,000.00	300,551,297.27	244,620,901.27	127,793,880.00	273,742,933.65	1.72	27.36	
Summit Partners Growth Equity Fund IX	100,000,000.00	114,794,107.00	38,572,398.00	23,778,291.00	139,055,704.12	1.55	28.84	2015
Summit Partners Growth Equity Fund VIII	100,000,000.00	116,727,192.27	206,048,503.27	23,045,587.00	60,375,539.29	2.28	26.86	2011
Summit Partners Growth Equity Fund X-A	150,000,000.00	69,029,998.00	0.00	80,970,002.00	74,311,690.24	1.08	41.85	2019
TPG Capital	250,000,000.00	119,326,788.00	53,528,411.20	139,963,287.00	103,297,876.05	1.31	12.24	
TPG Partners VII, L.P.	100,000,000.00	96,934,941.00	51,829,854.20	10,656,577.00	88,586,498.15	1.45	14.48	2015
TPG Partners VIII	150,000,000.00	22,391,847.00	1,698,557.00	129,306,710.00	14,711,377.90	0.73	-37.75	2018
Thoma Bravo LLC	425,000,000.00	249,556,852.00	204,013,131.80	240,449,292.00	242,878,472.99	1.79	24.40	
Thoma Bravo Fund XII, L.P.	75,000,000.00	77,206,077.00	19,709,712.00	17,574,870.00	107,609,789.32	1.65	17.88	2016
Thoma Bravo Fund XIII, L.P.	150,000,000.00	122,350,775.00	77,245,480.00	72,874,422.00	134,815,358.76	1.73	62.48	2018
Thoma Bravo Fund XIV	150,000,000.00	0.00	0.00	150,000,000.00	0.00	0.00		2020
Thoma Cressey Fund VII, L.P.	50,000,000.00	50,000,000.00	107,057,939.80	0.00	453,324.91	2.15	23.58	2000
Thomas H. Lee Partners	250,000,000.00	173,278,191.00	111,229,162.00	96,232,087.00	195,050,316.22	1.77	32.31	
Thomas H. Lee Equity Fund VII, LP.	100,000,000.00	98,994,098.00	100,139,732.00	11,168,059.00	101,583,244.59	2.04	29.95	2015
Thomas H. Lee Equity Fund VIII, L.P.	150,000,000.00	74,284,093.00	11,089,430.00	85,064,028.00	93,467,071.63	1.41	52.75	2018
Thomas, McNerney & Partners	80,000,000.00	78,125,000.00	122,735,180.44	1,875,000.00	6,615,941.82	1.66	8.46	
Thomas, McNerney & Partners I, L.P.	30,000,000.00	30,000,000.00	15,087,143.17	0.00	2,740,257.19	0.59	-7.93	2002
Thomas, McNerney & Partners II, L.P.	50,000,000.00	48,125,000.00	107,648,037.27	1,875,000.00	3,875,684.63	2.32	16.55	2006
Vestar Capital Partners	380,000,000.00	277,322,318.73	350,993,601.52	111,711,788.47	93,588,184.55	1.60	11.30	
Vestar Capital Partners IV, L.P.	55,000,000.00	55,652,023.63	102,293,320.28	57,313.00	372,620.04	1.84	14.63	1999
Vestar Capital Partners V, L.P.	75,000,000.00	76,772,265.14	98,507,989.57	0.00	3,058,646.69	1.32	3.96	2005
Vestar Capital Partners VI, LP	100,000,000.00	106,516,978.20	150,071,483.32	35,527.23	46,378,590.24	1.84	24.45	2011
Vestar Capital Partners VII, L.P.	150,000,000.00	38,381,051.76	120,808.35	111,618,948.24	43,778,327.58	1.14	7.86	2017
Vista Equity Partners	200,000,000.00	69,166,924.00	0.00	132,045,979.00	67,074,152.34	0.97	-3.03	
Vista Equity Partners	200,000,000.00	69,166,924.00	0.00	132,045,979.00	67,074,152.34	0.97	-3.03	2020
Warburg Pincus	1,216,000,000.00	1,017,485,506.90	1,068,937,606.95	204,998,500.00	537,907,734.47	1.58	11.25	
Warburg Pincus China-Southeast Asia II	50,000,000.00	8,700,000.00	960,000.00	41,300,000.00	7,982,083.98	1.03	5.32	2019
Warburg Pincus China, L.P.	45,000,000.00	44,460,000.00	9,340,200.00	2,475,000.00	57,965,063.44	1.51	19.16	2016
Warburg Pincus Financial Sector	90,000,000.00	71,860,808.22	4,590,000.00	22,455,000.00	79,121,019.73	1.16	11.49	2017
Warburg Pincus Global Growth, L.P.	250,000,000.00	112,522,089.05	0.00	137,000,000.00	112,108,317.00	1.00	-0.58	2018
Warburg Pincus Private Equity IX, L.P.	100,000,000.00	100,000,000.00	169,104,300.71	0.00	3,286,437.00	1.72	9.63	2005
Warburg Pincus Private Equity VIII, LP	100,000,000.00	100,368,657.25	229,106,755.46	0.00	11,011.21	2.28	14.74	2002
Warburg Pincus Private Equity X, LP	150,000,000.00	150,000,000.00	249,536,237.55	0.00	15,059,378.66	1.76	9.35	2007
Warburg Pincus Private Equity XI, LP	200,000,000.00	200,342,452.38	216,017,747.60	0.00	110,495,533.24	1.63	12.15	2012
Warburg Pincus Private Equity XII, LP	131,000,000.00	129,231,500.00	26,740,113.00	1,768,500.00	151,485,163.98	1.38	12.61	2015
Warburg, Pincus Equity Partners, L.P.	100,000,000.00	100,000,000.00	163,542,252.63	0.00	393,726.23	1.64	10.03	1998
Wellspring Capital Partners	125,000,000.00	60,275,817.00	0.00	64,724,183.00	61,517,559.11	1.02	1.64	
Wellspring Capital Partners VI, L.P.	125,000,000.00	60,275,817.00	0.00	64,724,183.00	61,517,559.11	1.02	1.64	2016

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Welsh, Carson, Anderson & Stowe	500,000,000.00	299,894,250.00	253,233,983.36	200,105,750.00	244,279,719.87	1.66	16.42	
Welsh, Carson, Anderson & Stowe XI, L.P.	100,000,000.00	100,000,000.00	130,320,188.36	0.00	31,624,304.77	1.62	11.46	2008
Welsh, Carson, Anderson & Stowe XII, L.P.	150,000,000.00	141,784,300.00	122,913,795.00	8,215,700.00	153,150,361.42	1.95	26.84	2014
Welsh, Carson, Anderson & Stowe XIII, L.P.	250,000,000.00	58,109,950.00	0.00	191,890,050.00	59,505,053.68	1.02	5.19	2018
Whitehorse Capital	200,000,000.00	113,658,439.72	27,232,844.51	107,522,648.41	100,718,579.74	1.13	22.76	
Whitehorse Liquidity Partners III	100,000,000.00	77,838,323.17	21,701,195.03	37,834,838.35	66,423,701.48	1.13	16.97	2019
Whitehorse Liquidity Partners IV	100,000,000.00	35,820,116.55	5,531,649.48	69,687,810.06	34,294,878.26	1.11	17.86	2020
Wind Point Partners	100,000,000.00	20,269,197.00	0.00	79,735,406.00	17,826,378.31	0.88	-17.31	
Wind Point Partners IX	100,000,000.00	20,269,197.00	0.00	79,735,406.00	17,826,378.31	0.88	-17.31	2019
Windjammer Capital Investors	266,708,861.00	184,082,605.32	179,476,459.02	84,897,258.51	105,916,875.53	1.55	10.23	
Windjammer Mezzanine & Equity Fund II	66,708,861.00	55,215,683.94	84,876,799.79	1,013,935.66	63,278.13	1.54	8.94	2000
Windjammer Senior Equity Fund IV, L.P.	100,000,000.00	94,740,728.38	93,392,762.23	16,802,618.85	75,005,320.15	1.78	13.41	2012
Windjammer Senior Equity Fund V, L.P.	100,000,000.00	34,126,193.00	1,206,897.00	67,080,704.00	30,848,277.25	0.94	-5.92	2017
Private Credit	**3,005,177,583.79**	**2,020,355,246.50**	**1,750,884,138.88**	**1,146,447,121.46**	**855,568,719.63**	**1.29**	**9.50**	
Audax Group	300,000,000.00	170,374,110.25	151,517,331.19	142,300,020.48	60,475,772.30	1.24	9.78	
Audax Mezzanine Fund III, L.P.	100,000,000.00	100,311,771.85	117,649,068.38	1,326,350.82	15,347,260.91	1.33	9.88	2010
Audax Mezzanine Fund IV-A, L.P.	100,000,000.00	70,062,338.40	33,868,262.81	40,973,669.66	45,128,511.39	1.13	9.33	2015
Audax Mezzanine Fund V	100,000,000.00	0.00	0.00	100,000,000.00	0.00	0.00		2020
BlackRock	97,500,000.00	69,802,405.46	6,057,159.59	27,697,594.54	68,507,989.65	1.07	4.87	
BlackRock Middle Market Senior Fund	97,500,000.00	69,802,405.46	6,057,159.59	27,697,594.54	68,507,989.65	1.07	4.87	2018
Energy Capital Partners	100,000,000.00	11,315,653.00	2,020,283.00	90,704,630.00	8,548,335.09	0.93	-9.67	
Energy Capital Credit Solutions II-A	100,000,000.00	11,315,653.00	2,020,283.00	90,704,630.00	8,548,335.09	0.93	-9.67	2018
Gold Hill	65,852,583.79	65,852,583.79	112,080,755.77	0.00	4,655,640.15	1.77	11.86	
Gold Hill 2008	25,852,583.79	25,852,583.79	46,819,153.54	0.00	4,507,169.87	1.99	14.69	2008
Gold Hill Venture Lending	40,000,000.00	40,000,000.00	65,261,602.23	0.00	148,470.28	1.64	10.68	2004
Goldman, Sachs & Co.	250,000,000.00	261,164,272.00	315,121,215.00	47,422,591.00	1,960,682.00	1.21	6.80	
GS Mezzanine Partners 2006 Institutional	100,000,000.00	113,454,150.00	134,861,849.00	9,858,563.00	794,228.00	1.20	5.00	2006
GS Mezzanine Partners V, L.P.	150,000,000.00	147,710,122.00	180,259,366.00	37,564,028.00	1,166,454.00	1.23	9.08	2007
HPS Investment Partners	100,000,000.00	41,423,491.44	7,817,048.59	65,512,508.89	36,981,902.37	1.08	13.54	
HPS Mezzanine Partners 2019, L.P.	100,000,000.00	41,423,491.44	7,817,048.59	65,512,508.89	36,981,902.37	1.08	13.54	2019
Kohlberg, Kravis, Roberts & Co.	274,000,000.00	209,191,479.00	127,426,500.00	109,388,464.00	111,247,678.80	1.14	8.00	
KKR Lending Partner II L.P.	75,000,000.00	86,566,321.00	79,747,153.00	8,802,924.00	12,308,964.97	1.06	3.26	2015
KKR Lending Partners III L.P.	199,000,000.00	122,625,158.00	47,679,347.00	100,585,540.00	98,938,713.83	1.20	13.08	2017
LBC Credit Partners	200,000,000.00	103,100,360.13	45,417,945.72	120,774,378.02	74,470,563.50	1.16	9.08	
LBC Credit Partners IV, L.P.	100,000,000.00	89,658,387.41	44,901,945.98	34,274,378.02	60,183,419.00	1.17	8.57	2016
LBC Credit Partners V, L.P.	100,000,000.00	13,441,972.72	515,999.74	86,500,000.00	14,287,144.50	1.10	27.31	2019
Marathon	100,000,000.00	46,022,007.74	723,102.09	55,000,000.00	51,088,500.00	1.13	12.38	
Marathon Secured Private Strategies Fund II	100,000,000.00	46,022,007.74	723,102.09	55,000,000.00	51,088,500.00	1.13	12.38	2019
Merit Capital Partners	312,825,000.00	226,693,050.34	241,440,771.71	86,065,149.99	114,162,618.27	1.57	11.08	
Merit Mezzanine Fund IV, L.P.	75,000,000.00	70,178,571.42	139,120,463.35	4,821,428.58	696,972.30	1.99	11.58	2004
Merit Mezzanine Fund V, LP	75,000,000.00	71,044,897.97	78,439,711.39	3,955,102.03	31,476,085.63	1.55	9.65	2009
Merit Mezzanine Fund VI	100,000,000.00	85,469,580.95	23,880,596.97	14,463,619.38	81,989,560.34	1.24	11.97	2016
Merit Mezzanine Fund VII	62,825,000.00	0.00	0.00	62,825,000.00	0.00	0.00		2020
Oaktree Capital Management, LLC	200,000,000.00	39,712,500.00	1,142,539.00	160,287,500.00	40,971,699.65	1.06	14.39	

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Oaktree Real Estate Debt III	200,000,000.00	39,712,500.00	1,142,539.00	160,287,500.00	40,971,699.65	1.06	14.39	2020
Portfolio Advisors LLC	100,000,000.00	80,867,108.33	96,478,979.85	936,315.05	379,664.54	1.20	7.49	
IP III Mezzanine Partners, L.P.	100,000,000.00	80,867,108.33	96,478,979.85	936,315.05	379,664.54	1.20	7.49	2006
Prudential Global Investment Mgmt	550,000,000.00	435,648,493.31	422,189,408.46	156,129,198.02	179,522,975.72	1.38	10.23	
PGIM Capital Partners VI, L.P.	100,000,000.00	0.00	0.00	100,000,000.00	0.00	0.00		2020
Prudential Capital Partners II, L.P.	100,000,000.00	97,418,748.23	136,427,860.16	11,049,051.89	3,899,222.62	1.44	8.63	2005
Prudential Capital Partners III, L.P.	100,000,000.00	102,368,765.60	173,303,122.49	13,873,783.24	2,645,385.41	1.72	14.10	2009
Prudential Capital Partners IV	100,000,000.00	111,117,725.36	89,745,681.86	2,184,792.33	52,163,751.43	1.28	8.17	2012
Prudential Capital Partners V, L.P.	150,000,000.00	124,743,254.12	22,712,743.95	29,021,570.56	120,814,616.26	1.15	7.73	2016
Summit Partners	95,000,000.00	100,002,496.70	132,650,821.69	22,100,132.00	7,991,656.53	1.41	9.33	
Summit Subordinated Debt Fund III, L.P.	45,000,000.00	44,088,493.92	60,443,092.91	2,250,000.00	3,856,385.70	1.46	8.87	2004
Summit Subordinated Debt Fund IV, L.P.	50,000,000.00	55,914,002.78	72,207,728.78	19,850,132.00	4,135,270.83	1.37	10.06	2008
TCW	260,000,000.00	159,185,235.01	88,800,277.22	62,128,639.47	94,603,041.06	1.15	7.36	
TCW Direct Lending LLC	100,000,000.00	83,599,651.81	72,246,878.20	25,329,408.97	26,744,107.11	1.18	6.62	2014
TCW Direct Lending VII	100,000,000.00	69,585,583.20	16,553,399.02	36,799,230.50	61,857,967.95	1.13	9.81	2018
TCW TALF Opportunities Fund	60,000,000.00	6,000,000.00	0.00	0.00	6,000,966.00	1.00	0.02	2020
Real Assets	**4,147,571,518.00**	**3,670,517,014.06**	**2,115,115,666.84**	**735,390,723.32**	**1,734,154,284.46**	**1.05**	**1.48**	
BlackRock	198,500,000.00	102,565,717.96	20,469,747.94	102,897,426.00	87,567,768.70	1.05	2.70	
BlackRock Global Renewable Power Fund II	98,500,000.00	89,988,765.96	20,429,936.64	15,474,378.00	75,874,624.27	1.07	3.14	2017
BlackRock Global Renewable Power Infrastructure III	100,000,000.00	12,576,952.00	39,811.30	87,423,048.00	11,693,144.43	0.93	-12.10	2019
EIG Global Energy Partners	450,000,000.00	460,714,195.64	332,226,266.19	82,090,869.35	149,831,853.47	1.05	1.29	
EIG Energy Fund XIV	100,000,000.00	113,459,470.15	95,309,310.22	2,761,129.24	4,563,817.05	0.88	-4.77	2007
EIG Energy Fund XV	150,000,000.00	159,823,963.65	139,398,551.97	22,871,322.62	28,150,870.31	1.05	1.23	2010
EIG Energy Fund XVI	200,000,000.00	187,430,761.84	97,518,404.00	56,458,417.49	117,117,166.11	1.15	4.31	2013
Encap Energy	400,000,000.00	416,304,206.40	298,485,824.11	18,727,082.97	112,048,575.10	0.99	-0.65	
EnCap Energy Capital Fund VII, L.P.	100,000,000.00	105,388,243.96	135,600,208.68	0.00	2,420,369.73	1.31	14.15	2007
EnCap Energy Capital Fund VIII, L.P.	100,000,000.00	103,335,766.37	54,781,242.63	470,043.98	19,404,304.67	0.72	-9.82	2010
EnCap Energy Capital Fund X, L.P.	100,000,000.00	94,984,030.73	21,939,160.31	13,246,667.66	63,985,475.52	0.90	-3.66	2015
Encap Energy Fund IX	100,000,000.00	112,596,165.34	86,165,212.49	5,010,371.33	26,238,425.18	1.00	-0.07	2012
Energy & Minerals Group	680,000,000.00	659,593,985.00	359,375,714.00	58,169,661.00	438,170,111.34	1.21	5.55	
NGP Midstream & Resources, L.P.	100,000,000.00	103,565,615.00	179,560,149.00	17,857.00	4,744,870.21	1.78	13.31	2007
The Energy & Minerals Group Fund II, L.P.	100,000,000.00	106,674,084.00	104,295,500.00	170,365.00	89,492,447.83	1.82	12.80	2011
The Energy & Minerals Group Fund III, L.P.	200,000,000.00	201,327,783.00	22,410,545.00	1,284,543.00	95,069,897.12	0.58	-10.31	2014
The Energy & Minerals Group Fund IV, LP	150,000,000.00	154,434,353.00	51,835,123.00	18,487,666.00	142,029,331.51	1.26	8.00	2015
The Energy & Minerals Group Fund V	112,500,000.00	79,270,469.00	1,115,700.00	34,782,014.00	89,806,309.23	1.15	11.20	2019
The Energy & Minerals Group Fund V Accordion, LP	17,500,000.00	14,321,681.00	158,697.00	3,427,216.00	17,027,255.44	1.20	15.33	2019
Energy Capital Partners	450,000,000.00	369,377,250.00	267,672,773.00	166,017,458.00	202,470,361.29	1.27	8.55	
Energy Capital Partners II-A	100,000,000.00	85,722,480.00	112,434,332.00	29,749,110.00	4,676,149.98	1.37	8.94	2010
Energy Capital Partners III, L.P.	200,000,000.00	229,544,583.00	137,856,688.00	28,474,141.00	149,547,041.44	1.25	7.99	2013
Energy Capital Partners IV-A, LP	150,000,000.00	54,110,187.00	17,381,753.00	107,794,207.00	48,247,169.87	1.21	10.69	2017
Enervest Management Partners	100,000,000.00	97,898,144.00	41,386,634.00	10,195,554.00	53,238,442.27	0.97	-1.06	
EnerVest Energy Institutional Fund XIV-A, L.P.	100,000,000.00	97,898,144.00	41,386,634.00	10,195,554.00	53,238,442.27	0.97	-1.06	2015
First Reserve	500,000,000.00	530,978,253.00	253,080,853.10	14,687,234.00	132,873,283.07	0.73	-9.18	
First Reserve Fund XI, L.P.	150,000,000.00	150,292,121.00	98,378,656.10	0.00	150,375.15	0.66	-9.45	2006

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
First Reserve Fund XII, L.P.	150,000,000.00	165,617,044.00	83,516,783.00	0.00	10,502,046.79	0.57	-13.35	2008
First Reserve Fund XIII, L.P.	200,000,000.00	215,069,088.00	71,185,414.00	14,687,234.00	122,220,861.13	0.90	-5.48	2013
Kohlberg, Kravis, Roberts & Co.	149,850,000.00	74,017,840.00	4,870,953.00	83,465,676.00	71,301,735.44	1.03	2.81	
KKR Global Infrastructure Investors III	149,850,000.00	74,017,840.00	4,870,953.00	83,465,676.00	71,301,735.44	1.03	2.81	2018
Merit Energy Partners	519,721,518.00	368,950,674.00	105,118,787.00	110,293,705.00	265,935,257.73	1.01	0.12	
Merit Energy Partners F-II, L.P.	100,000,000.00	59,522,861.00	31,422,724.00	0.00	5,483,414.18	0.62	-7.78	2006
Merit Energy Partners H	100,000,000.00	100,000,000.00	29,668,582.00	0.00	46,464,842.71	0.76	-4.87	2011
Merit Energy Partners I, L.P.	169,721,518.00	169,721,518.00	43,839,059.00	0.00	163,211,908.47	1.22	5.61	2014
Merit Energy Partners K, L.P.	150,000,000.00	39,706,295.00	188,422.00	110,293,705.00	50,775,092.37	1.28	29.89	2019
NGP	599,500,000.00	555,763,743.06	411,303,114.50	75,346,057.00	198,454,891.18	1.10	3.90	
Natural Gas Partners IX, LP	150,000,000.00	173,921,032.06	245,366,338.51	605,481.00	2,641,745.53	1.43	11.97	2007
NGP Natural Resources X, L.P.	150,000,000.00	147,769,572.00	117,841,415.00	2,230,428.00	23,556,356.69	0.96	-1.34	2011
NGP Natural Resources XI, L.P.	150,000,000.00	149,772,839.00	47,839,666.00	7,650,923.00	97,035,244.53	0.97	-1.17	2014
NGP Natural Resources XII, L.P.	149,500,000.00	84,300,300.00	255,695.00	64,859,225.00	75,221,544.43	0.90	-6.00	2017
Sheridan	100,000,000.00	34,353,005.00	21,125,000.00	13,500,000.00	22,262,004.87	1.26	7.84	
Sheridan Production Partners III-B, L.P.	100,000,000.00	34,353,005.00	21,125,000.00	13,500,000.00	22,262,004.87	1.26	7.84	2014
Real Estate	**2,948,147,868.10**	**1,944,397,248.97**	**1,409,215,449.21**	**1,091,249,780.75**	**1,132,858,689.33**	**1.31**	**8.80**	
Angelo, Gordon & Co.	550,000,000.00	309,178,121.00	61,290,815.00	242,846,250.00	311,912,349.54	1.21	9.63	
AG Asia Realty Fund III, L.P.	50,000,000.00	47,587,261.00	37,750,000.00	6,196,250.00	27,394,865.27	1.37	14.00	2016
AG Asia Realty Fund IV, L.P.	100,000,000.00	35,446,684.00	0.00	63,000,000.00	40,037,589.00	1.13	10.83	2018
AG Europe Realty Fund II, L.P.	75,000,000.00	69,004,017.00	28,384.00	5,250,000.00	79,250,996.25	1.15	8.56	2018
AG Europe Realty Fund III	75,000,000.00	10,273,727.00	0.00	64,500,000.00	10,091,161.50	0.98	-1.75	2020
AG Realty Fund IX	100,000,000.00	92,141,126.00	23,500,000.00	11,650,000.00	96,097,256.02	1.30	8.54	2014
AG Realty Fund X, L.P.	150,000,000.00	54,725,306.00	12,431.00	92,250,000.00	59,040,481.50	1.08	8.58	2018
Blackstone	824,500,000.00	630,935,942.55	692,940,157.87	298,457,032.50	291,541,313.58	1.56	12.15	
Blackstone Real Estate Partners Asia II	74,500,000.00	37,016,379.92	2,396,798.80	41,884,834.65	34,904,668.49	1.01	0.63	2017
Blackstone Real Estate Partners IX, L.P.	300,000,000.00	103,846,766.25	14,257,501.42	209,839,518.10	98,923,900.42	1.09	11.42	2018
Blackstone Real Estate Partners V	100,000,000.00	104,213,007.00	203,205,561.41	4,174,052.00	2,786,722.90	1.98	10.73	2006
Blackstone Real Estate Partners VI, L.P.	100,000,000.00	109,477,567.00	215,885,212.79	4,907,906.00	4,371,983.53	2.01	13.10	2007
Blackstone Real Estate Partners VII, LP	100,000,000.00	111,234,027.89	145,263,185.02	11,217,447.36	39,498,167.50	1.66	14.59	2011
Blackstone Real Estate VIII.TE.1 L.P.	150,000,000.00	165,148,194.49	111,931,898.43	26,433,274.39	111,055,870.74	1.35	12.66	2015
Blackstone Strategic Partners	75,000,000.00	77,524,676.84	65,033,699.64	1,030,039.36	2,015,450.49	0.86	-2.14	
Strategic Partners III RE, L.P.	25,000,000.00	25,987,863.91	15,252,522.71	9,006.00	97,393.33	0.59	-6.46	2005
Strategic Partners IV RE, L.P.	50,000,000.00	51,536,812.93	49,781,176.93	1,021,033.36	1,918,057.16	1.00	0.05	2008
Carlyle Group	150,000,000.00	64,827,430.00	18,054,472.00	103,315,341.00	51,954,065.80	1.08	7.80	
Carlyle Realty Partners VIII, L.P.	150,000,000.00	64,827,430.00	18,054,472.00	103,315,341.00	51,954,065.80	1.08	7.80	2017
Colony Capital LLC	100,000,000.00	99,660,860.00	173,802,105.00	0.00	2,363,100.00	1.77	14.49	
Colony Investors III	100,000,000.00	99,660,860.00	173,802,105.00	0.00	2,363,100.00	1.77	14.49	1997
Landmark Partners	149,500,000.00	71,519,488.13	26,465,744.86	83,806,772.87	53,340,342.73	1.12	9.63	
Landmark Real Estate Partners VIII, L.P.	149,500,000.00	71,519,488.13	26,465,744.86	83,806,772.87	53,340,342.73	1.12	9.63	2016
Lubert Adler	74,147,868.10	63,877,819.78	16,445,337.96	11,122,180.21	60,496,282.96	1.20	9.74	
Lubert-Adler Real Estate Fund VII-B, L.P.	74,147,868.10	63,877,819.78	16,445,337.96	11,122,180.21	60,496,282.96	1.20	9.74	2017
Oaktree Capital Management, LLC	100,000,000.00	9,500,000.00	9,500,000.00	100,000,000.00	8,324,253.00	1.88	150.68	
Oaktree Real Estate Opportunities Fund VIII	100,000,000.00	9,500,000.00	9,500,000.00	100,000,000.00	8,324,253.00	1.88	150.68	2020

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Rockpoint	200,000,000.00	111,678,417.00	36,095,669.00	103,415,380.00	84,395,090.68	1.08	3.58	
Rockpoint Real Estate Fund V, L.P.	100,000,000.00	96,378,261.00	36,084,442.00	18,715,536.00	69,526,001.28	1.10	3.88	2014
Rockpoint Real Estate Fund VI, L.P.	100,000,000.00	15,300,156.00	11,227.00	84,699,844.00	14,869,089.40	0.97	-2.71	2019
Rockwood	200,000,000.00	111,937,331.08	22,706,089.62	89,727,064.71	96,841,948.93	1.07	3.53	
Rockwood Capital RE Partners X, L.P.	100,000,000.00	85,209,227.82	22,706,089.62	16,475,301.06	71,428,904.29	1.10	4.17	2015
Rockwood Capital RE Partners XI	100,000,000.00	26,728,103.26	0.00	73,251,763.65	25,413,044.64	0.95	-33.62	2019
Silverpeak Real Estate Partners	225,000,000.00	143,757,162.59	105,887,112.47	7,529,720.10	8,647,850.44	0.80	-3.62	
Silverpeak Legacy Pension Partners II, L.P.	75,000,000.00	73,035,349.59	91,687,518.60	7,529,720.10	545,307.87	1.26	4.15	2005
Silverpeak Legacy Pension Partners III, L.P.	150,000,000.00	70,721,813.00	14,199,593.87	0.00	8,102,542.57	0.32	-11.95	2008
TA Associates Realty	300,000,000.00	250,000,000.00	180,994,245.79	50,000,000.00	161,026,641.18	1.37	11.11	
Realty Associates Fund X	100,000,000.00	100,000,000.00	150,369,809.73	0.00	10,506,343.11	1.61	12.65	2012
Realty Associates Fund XI	100,000,000.00	100,000,000.00	29,781,015.06	0.00	100,540,748.07	1.30	8.57	2015
Realty Associates Fund XII	100,000,000.00	50,000,000.00	843,421.00	50,000,000.00	49,979,550.00	1.02	3.91	2018
Distressed/Opportunistic	**3,639,714,067.00**	**2,508,246,132.81**	**2,225,979,061.23**	**1,190,921,913.67**	**1,204,677,303.02**	**1.37**	**9.42**	
Avenue Capital Partners	200,000,000.00	200,977,328.00	31,589,518.00	0.00	158,159,785.83	0.94	-1.56	
Avenue Energy Opportunities Fund II	100,000,000.00	100,000,000.00	417,420.00	0.00	90,654,900.00	0.91	-3.55	2017
Avenue Energy Opportunities Fund, L.P.	100,000,000.00	100,977,328.00	31,172,098.00	0.00	67,504,885.83	0.98	-0.48	2014
BlackRock*	1,774,870.00	1,774,870.00	1,737,311.95	0.00	232,166.94	1.11	5.83	
BlackRock Tempus Fund	1,774,870.00	1,774,870.00	1,737,311.95	0.00	232,166.94	1.11	5.83	2015
Canyon Partners	125,000,000.00	58,750,000.00	8,750,000.00	75,000,000.00	58,750,000.00	1.15	15.41	
Canyon Distressed Opportunity Fund III	125,000,000.00	58,750,000.00	8,750,000.00	75,000,000.00	58,750,000.00	1.15	15.41	2020
CarVal Investors	900,000,000.00	730,703,333.00	852,547,275.09	169,500,000.00	235,887,847.41	1.49	10.58	
CarVal Credit Value Fund I	100,000,000.00	95,000,000.00	212,205,835.74	5,000,000.00	1,634,057.53	2.25	18.72	2010
CVI Credit Value Fund A II	150,000,000.00	142,500,000.00	199,242,173.52	7,500,000.00	1,274,714.96	1.41	8.08	2012
CVI Credit Value Fund A III	150,000,000.00	142,500,000.00	120,541,318.35	7,500,000.00	61,885,363.42	1.28	8.00	2015
CVI Credit Value Fund IV	150,000,000.00	145,703,333.00	59.76	4,500,000.00	155,861,055.00	1.07	4.23	2017
CVI Credit Value Fund V	150,000,000.00	15,000,000.00	0.00	135,000,000.00	15,000,000.00	1.00	0.00	2020
CVI Global Value Fund, L.P.	200,000,000.00	190,000,000.00	320,557,887.72	10,000,000.00	232,656.50	1.69	9.53	2007
Carlyle Group	100,000,000.00	65,659,957.93	28,156,617.93	62,444,725.60	35,787,703.85	0.97	-2.26	
Carlyle Strategic Partners IV, L.P.	100,000,000.00	65,659,957.93	28,156,617.93	62,444,725.60	35,787,703.85	0.97	-2.26	2016
MHR Institutional Partners	75,000,000.00	55,684,392.00	7,941,856.00	27,198,884.00	60,427,254.98	1.23	8.02	
MHR Institutional Partners IV LP	75,000,000.00	55,684,392.00	7,941,856.00	27,198,884.00	60,427,254.98	1.23	8.02	2014
Marathon	200,000,000.00	10,000,000.00	3,613,524.73	193,485,193.23	8,557,570.04	1.22	24.81	
Marathon Distressed Credit Fund	200,000,000.00	10,000,000.00	3,613,524.73	193,485,193.23	8,557,570.04	1.22	24.81	2020
Merced Capital	278,737,500.00	285,449,091.35	233,759,646.00	2,673,787.00	92,838,000.94	1.14	3.28	
Merced Partners III	100,000,000.00	103,878,467.92	129,676,445.00	0.00	9,811,056.43	1.34	6.11	2010
Merced Partners IV	125,000,000.00	124,968,390.43	98,722,539.00	0.00	39,823,570.98	1.11	2.39	2013
Merced Partners V	53,737,500.00	56,602,233.00	5,360,662.00	2,673,787.00	43,203,373.53	0.86	-4.71	2017
Oaktree Capital Management, LLC	650,000,000.00	240,214,689.00	36,605,837.85	431,889,598.00	237,717,608.62	1.14	7.01	
Oaktree Opportunities Fund X, L.P.	50,000,000.00	46,500,021.00	13,969,659.74	8,500,000.00	42,768,737.70	1.22	7.06	2015
Oaktree Opportunities Fund Xb, L.P.	100,000,000.00	55,000,000.00	0.00	45,000,000.00	58,396,140.00	1.06	5.62	2015
Oaktree Opportunities Fund XI	300,000,000.00	15,000,000.00	0.00	285,000,000.00	15,000,000.00	1.00		2020
Oaktree Special Situations Fund II, L.P.	100,000,000.00	26,731,187.00	5,000,000.00	78,148,304.00	26,144,614.64	1.17	38.84	2018
Oaktree Special Situations Fund, L.P.	100,000,000.00	96,983,481.00	17,636,178.11	15,241,294.00	95,408,116.28	1.17	6.17	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
PIMCO BRAVO*	9,201,697.00	8,654,932.53	8,289,636.15	7,200,650.84	1,438,074.38	1.12	3.93	
PIMCO BRAVO Fund Onshore Feeder I	3,958,027.00	3,958,027.00	3,989,987.10	2,359,424.78	33,382.59	1.02	1.62	2014
PIMCO Bravo Fund OnShore Feeder II	5,243,670.00	4,696,905.53	4,299,649.05	4,841,226.06	1,404,691.79	1.21	4.36	2014
TSSP	200,000,000.00	82,212,539.00	13,001,647.00	130,779,075.00	78,484,553.97	1.11	10.75	
TSSP Adjacent Opportunities GenPar, L.P	100,000,000.00	26,080,450.00	1,410,173.00	75,329,519.00	26,455,735.69	1.07	15.53	2018
TSSP Adjacent Opportunities Partners (B)	50,000,000.00	36,488,479.00	8,946,867.00	22,458,388.00	33,130,163.50	1.15	10.29	2018
TSSP Opportunities Partners IV (A), L.P.	50,000,000.00	19,643,610.00	2,644,607.00	32,991,168.00	18,898,654.78	1.10	9.40	2018
Varde Fund	600,000,000.00	525,000,000.00	633,688,381.00	75,000,000.00	207,598,998.62	1.60	10.32	
Varde Fund IX, L.P.	100,000,000.00	100,000,000.00	216,097,236.00	0.00	338,297.74	2.16	15.02	2008
Varde Fund X, LP	150,000,000.00	150,000,000.00	250,804,375.00	0.00	19,601,407.84	1.80	10.60	2010
Varde Fund XI, LP	200,000,000.00	200,000,000.00	166,766,732.00	0.00	102,614,993.04	1.35	5.30	2013
Varde Fund XIII, L.P.	150,000,000.00	75,000,000.00	20,038.00	75,000,000.00	85,044,300.00	1.13	15.09	2018
Wayzata Investment Partners	300,000,000.00	243,165,000.00	366,297,809.53	15,750,000.00	28,797,737.44	1.62	14.44	
Wayzata Opportunities Fund II, LLC	150,000,000.00	174,750,000.00	327,229,039.53	750,000.00	2,888,567.00	1.89	16.48	2007
Wayzata Opportunities Fund III	150,000,000.00	68,415,000.00	39,068,770.00	15,000,000.00	25,909,170.44	0.95	-1.37	2012
Total	**30,711,584,976.22**	**21,581,687,976.02**	**17,875,261,896.15**	**10,720,328,865.91**	**12,616,508,770.83**	**1.41**	**10.50**	

Difference	120,573,797.34
Private Markets Total with Difference	12,737,082,568.17

Private Markets Portfolio Status	Managers	Funds
PRIVATE EQUITY	51	143
PRIVATE CREDIT	15	31
REAL ASSETS	11	32
REAL ESTATE	12	28
DISTRESSED/ OPPORTUNISTIC	13	32
Total	102	266

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

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Participant Directed Investment Program

December 31, 2020

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	$106,140,025	9.5%	17.3%	11.5%	11.5%	10.2%	01/1980
U.S. ACTIVELY MANAGED FUND	85,588,200	16.0	27.6	17.0	16.8	14.5	07/1986
U.S. STOCK INDEX FUND	453,307,129	14.8	21.2	14.6	15.5	13.8	07/1986
BROAD INTERNATIONAL STOCK FUND	139,624,904	16.9	11.3	5.2	8.8	5.4	09/1994
BOND FUND	113,711,846	1.9	9.7	6.4	5.4	4.6	07/1986
MONEY MARKET FUND	586,268,005	0.0	0.7	1.7	1.4	0.8	07/1986
STABLE VALUE FUND	1,707,086,592	0.6	2.5	2.5	2.4	2.4	11/1994
VOLUNTEER FIREFIGHTER ACCOUNT	138,585,275	8.4	14.7	9.3	9.6	8.0	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	**$106,140,025**	**9.5%**	**17.3%**	**11.5%**	**11.5%**	**10.2%**
SIF BALANCED FUND BENCHMARK		9.0	15.9	11.1	11.1	9.8
Excess		0.5	1.4	0.5	0.4	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	**85,588,200**	**16.0**	**27.6**	**17.0**	**16.8**	**14.5**
Russell 3000		14.7	20.9	14.5	15.4	13.8
Excess		1.4	6.7	2.5	1.3	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	**$453,307,129**	**14.8%**	**21.2%**	**14.6%**	**15.5%**	**13.8%**
Russell 3000		14.7	20.9	14.5	15.4	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	**139,624,904**	**16.9**	**11.3**	**5.2**	**8.8**	**5.4**
International Equity Benchmark		17.1	10.5	4.8	8.9	4.9
Excess		-0.1	0.8	0.4	-0.1	0.5

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	**$113,711,846**	**1.9%**	**9.7%**	**6.4%**	**5.4%**	**4.6%**
BBG BARC US Agg		0.7	7.5	5.3	4.4	3.8
Excess		1.2	2.2	1.0	0.9	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	**586,268,005**	**0.0**	**0.7**	**1.7**	**1.4**	**0.8**
ICE BofA US 3-Month Treasury Bill		0.0	0.7	1.6	1.2	0.6
Excess		0.0	0.0	0.1	0.2	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	**$1,707,086,592**	**0.6%**	**2.5%**	**2.5%**	**2.4%**	**2.4%**
Fixed Interest Blended Benchmark		0.2	0.9	2.1	1.9	1.5
Excess		0.4	1.6	0.4	0.4	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	**138,585,275**	**8.4**	**14.7**	**9.3**	**9.6**	**8.0**
SIF Volunteer Firefighter Account BM		7.9	13.1	8.7	9.1	7.5
Excess		0.5	1.6	0.6	0.5	0.4

STATE STREET.

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	$604,899,234	14.7%	21.2%				07/2019
VANGUARD INSTITUTIONAL INDEX PLUS	1,591,129,964	12.2	18.4	14.2%	15.2%	13.9%	07/1999
VANGUARD DIVIDEND GROWTH	819,625,682	8.9	12.0	13.7			10/2016
VANGUARD MID CAP INDEX	661,880,286	18.0	18.3	12.1	13.3	12.4	01/2004
T. ROWE PRICE SMALL-CAP STOCK	951,083,527	24.8	25.0	17.5	17.4	14.4	04/2000
FIDELITY DIVERSIFIED INTERNATIONAL	367,451,483	11.8	19.8	9.6	10.2	7.6	07/1999
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	341,559,151	16.9	11.3	5.0	9.1		07/2011
VANGUARD BALANCED INDEX	1,413,712,845	9.0	16.4	11.3	11.3	10.0	12/2003
DODGE & COX INCOME	329,651,740	2.5	9.5	6.2	5.7	4.6	07/1999
VANGUARD TOTAL BOND MARKET INDEX	417,067,732	0.7	7.7	5.4	4.5	3.8	12/2003
2025 FUND	210,841,744	7.6	11.1	7.4	8.6		07/2011
2030 FUND	162,847,496	9.6	15.1	9.1	10.3		07/2011
2035 FUND	129,436,328	11.1	17.5	10.1	11.3		07/2011
2040 FUND	103,651,537	12.2	18.4	10.5	11.8		07/2011
2045 FUND	93,204,211	13.3	19.0	10.7	12.2		07/2011
2050 FUND	70,438,993	14.3	19.5	10.9	12.6		07/2011
2055 FUND	46,004,739	14.9	19.9	11.1	12.7		07/2011
2060 FUND	38,097,616	14.9	19.9	11.0	12.7		07/2011
2065 FUND	1,807,656	14.9					04/2020
INCOME FUND	240,206,616	6.0	9.7	6.5	6.7		07/2011
TD Ameritrade SDB	87,931,809						08/2017
TD Ameritrade SDB Roth	2,028,308						08/2017

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	**$604,899,234**	**14.7%**	**21.2%**			**07/2019**
CRSP US Total Market Index		14.7	21.0			07/2019
Excess		-0.0	0.2			
VANGUARD INSTITUTIONAL INDEX PLUS	**1,591,129,964**	**12.2**	**18.4**	**14.2%**	**15.2%**	**07/1999**
S&P 500		12.1	18.4	14.2	15.2	07/1999
Excess		0.0	0.0	-0.0	-0.0	
VANGUARD DIVIDEND GROWTH	**819,625,682**	**8.9**	**12.0**	**13.7**		**10/2016**
NASDAQ US Dividend Achievers Select		10.3	15.6	13.7		10/2016
Excess		-1.4	-3.6	-0.0		
Mid Cap US Equity						
VANGUARD MID CAP INDEX	**661,880,286**	**18.0**	**18.3**	**12.1**	**13.3**	**01/2004**
CRSP US Mid Cap Index		18.0	18.2	12.1	13.3	01/2004
Excess		-0.0	0.0	0.0	-0.0	
Small Cap US Equity						
T. ROWE PRICE SMALL-CAP STOCK	**951,083,527**	**24.8**	**25.0**	**17.5**	**17.4**	**04/2000**
Russell 2000		31.4	20.0	10.2	13.3	04/2000
Excess		-6.6	5.0	7.3	4.1	
International Equity						
FIDELITY DIVERSIFIED INTERNATIONAL	**367,451,483**	**11.8**	**19.8**	**9.6**	**10.2**	**07/1999**
MSCI EAFE FREE (NET)		16.0	7.8	4.3	7.4	07/1999
Excess		-4.2	12.0	5.4	2.7	
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	**341,559,151**	**16.9**	**11.3**	**5.0**	**9.1**	**07/2011**
FTSE Global All Cap ex US Index Net		17.2	11.1	4.8	8.9	07/2011
Excess		-0.3	0.2	0.2	0.2	

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	**$1,413,712,845**	**9.0%**	**16.4%**	**11.3%**	**11.3%**	**12/2003**
Vanguard Balanced Fund Benchmark		9.0	17.3	11.6	11.5	12/2003
Excess		0.0	-0.9	-0.3	-0.2	
Fixed Income						
DODGE & COX INCOME	**329,651,740**	**2.5**	**9.5**	**6.2**	**5.7**	**07/1999**
BBG BARC Agg Bd		0.7	7.5	5.3	4.4	07/1999
Excess		1.8	1.9	0.8	1.3	
VANGUARD TOTAL BOND MARKET INDEX	**417,067,732**	**0.7**	**7.7**	**5.4**	**4.5**	**12/2003**
BBG BARC Agg Bd		0.7	7.5	5.3	4.4	12/2003
Excess		0.0	0.2	0.0	0.0	
MONEY MARKET FUND	**586,268,005**	**0.0**	**0.7**	**1.7**	**1.4**	**07/1986**
ICE BofA US 3-Month Treasury Bill		0.0	0.7	1.6	1.2	07/1986
Excess		0.0	0.0	0.1	0.2	
Stable Value						
STABLE VALUE FUND	**1,707,086,592**	**0.6**	**2.5**	**2.5**	**2.4**	**11/1994**
Fixed Interest Blended Benchmark		0.2	0.9	2.1	1.9	11/1994
Excess		0.4	1.6	0.4	0.4	

(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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
SSgA						
2025 FUND	**$210,841,744**	**7.6%**	**11.1%**	**7.4%**	**8.6%**	**07/2011**
2025 FUND BENCHMARK		7.7	11.1	7.4	8.5	07/2011
Excess		-0.0	0.1	0.0	0.0	
2030 FUND	**162,847,496**	**9.6**	**15.1**	**9.1**	**10.3**	**07/2011**
2030 FUND BENCHMARK		9.7	15.0	9.1	10.3	07/2011
Excess		-0.1	0.1	0.0	0.0	
2035 FUND	**129,436,328**	**11.1**	**17.5**	**10.1**	**11.3**	**07/2011**
2035 FUND BENCHMARK		11.2	17.5	10.1	11.3	07/2011
Excess		-0.1	0.1	0.0	0.0	
2040 FUND	**103,651,537**	**12.2**	**18.4**	**10.5**	**11.8**	**07/2011**
2040 FUND BENCHMARK		12.3	18.4	10.5	11.8	07/2011
Excess		-0.1	0.1	0.0	0.0	
2045 FUND	**93,204,211**	**13.3**	**19.0**	**10.7**	**12.2**	**07/2011**
2045 FUND BENCHMARK		13.4	18.9	10.7	12.2	07/2011
Excess		-0.1	0.0	-0.0	0.0	

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
2050 FUND	**$70,438,993**	**14.3%**	**19.5%**	**10.9%**	**12.6%**	**07/2011**
2050 FUND BENCHMARK		14.4	19.5	10.9	12.6	07/2011
Excess		-0.1	0.0	-0.0	0.0	
2055 FUND	**46,004,739**	**14.9**	**19.9**	**11.1**	**12.7**	**07/2011**
2055 FUND BENCHMARK		15.0	19.9	11.1	12.7	07/2011
Excess		-0.1	-0.1	-0.0	0.0	
2060 FUND	**38,097,616**	**14.9**	**19.9**	**11.0**	**12.7**	**07/2011**
2060 FUND BENCHMARK		15.0	19.9	11.1	12.7	07/2011
Excess		-0.1	-0.1	-0.0	0.0	
2065 FUND	**1,807,656**	**14.9**				**04/2020**
2065 FUND BENCHMARK		15.0				04/2020
Excess		-0.1				
INCOME FUND	**240,206,616**	**6.0**	**9.7**	**6.5**	**6.7**	**07/2011**
INCOME FUND BENCHMARK		6.0	9.6	6.5	6.7	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: December 31, 2020

Total = $1,717 Million

Fund Name	Ending Market	3 Months	1 Year	Annualized 3 Years	5 Years	10 Years	Since Inception	Inception Date
2036/2037 Enrollment Option	$28,322,395	11.58%	14.03%				16.25%	10/28/2019
2036-2037 Custom Benchmark		12.11%	13.12%				15.46%	
2034/2035 Enrollment Option	$32,941,668	11.04%	13.37%				15.60%	10/28/2019
2034-2035 Custom Benchmark		11.66%	12.62%				14.94%	
2032/2033 Enrollment Option	$39,246,810	10.55%	13.30%				15.35%	10/28/2019
2032-2033 Custom Benchmark		11.11%	12.45%				14.60%	
2030/2031 Enrollment Option	$50,789,116	9.83%	12.46%				14.44%	10/28/2019
2030-2031 Custom Benchmark		10.30%	11.63%				13.70%	
2028/2029 Enrollment Option	$68,469,917	8.45%	11.16%				12.96%	10/28/2019
2028-2029 Custom Benchmark		8.95%	10.21%				12.15%	
2026/2027 Enrollment Option	$98,109,125	7.04%	10.36%				11.71%	10/28/2019
2026-2027 Custom Benchmark		7.46%	9.44%				10.96%	
2024/2025 Enrollment Option	$140,658,923	5.64%	9.24%				10.30%	10/28/2019
2024-2025 Custom Benchmark		5.99%	8.20%				9.43%	
2022/2023 Enrollment Option	$173,446,950	4.00%	6.85%				7.72%	10/28/2019
2022-2023 Custom Benchmark		4.18%	5.71%				6.82%	
2020/2021 Enrollment Option	$192,000,924	2.87%	6.11%				4.70%	10/28/2019
2020-2021 Custom Benchmark		2.96%	5.05%				3.67%	
In School Option	$186,107,047	2.66%	6.52%				6.64%	10/28/2019
In School Custom Benchmark		2.66%	4.91%				5.31%	

mnsaves
MINNESOTA 529
COLLEGE SAVINGS PLAN

TIAA

MINNESOTA COLLEGE SAVINGS PLAN
Performance Statistics for the Period Ending: December 31, 2020

Fund Name	Ending Market	3 Months	1 Year	Annualized				Inception Date
				3 Years	5 Years	10 Years	Since Inception	
U.S. and International Equity Option	$302,062,128	14.43%	14.65%	10.68%	12.43%	10.82%	7.73%	10/ 1/2001
BB: U.S. and International Equity Option		15.02%	13.94%	10.31%	12.26%	10.86%	8.46%	
Moderate Allocation Option	$86,748,938	9.14%	12.61%	8.78%	9.49%	8.00%	6.17%	8/ 2/2007
BB: Moderate Allocation Option		9.54%	11.97%	8.66%	9.45%	8.24%	6.71%	
100% Fixed-Income Option	$23,784,858	1.15%	6.96%	4.93%	4.35%	3.35%	3.93%	8/16/2007
BB: 100% Fixed-Income Option		1.39%	7.24%	5.25%	4.68%	3.84%	4.54%	
International Equity Index Option	$6,821,443	16.07%	9.48%	4.59%	8.43%		5.75%	6/18/2013
BB: International Equity Index Option		16.84%	10.00%	4.74%	8.58%		6.01%	
Money Market Option	$15,806,606	0.00%	0.37%	1.34%	0.94%	0.46%	0.55%	11/ 1/2007
BB: Money Market Option		0.00%	0.28%	1.16%	0.80%	0.41%	0.49%	
Principal Plus Interest Option	$136,330,985	0.38%	1.85%	1.89%	1.72%	1.65%	2.45%	10/10/2001
Citigroup 3-Month U.S. Treasury Bill		0.02%	0.58%	1.56%	1.16%	0.60%	1.31%	
Aggressive Allocation Option	$49,364,884	11.68%	13.60%	9.69%	11.01%		8.88%	8/12/2014
BB: Aggressive Allocation Option		12.28%	13.08%	9.55%	10.89%		8.75%	
Conservative Allocation Option	$15,683,606	4.85%	8.53%	6.11%	6.27%		4.97%	8/18/2014
BB: Conservative Allocation Option		5.11%	8.17%	6.16%	6.24%		5.01%	
Equity and Interest Accumulation Option	$5,856,160	7.25%	11.57%	8.20%	8.50%		7.16%	8/18/2014
BB: Equity and Interest Accumulation Option		7.31%	11.28%	8.37%	8.43%		7.13%	
U.S. Large Cap Equity Option	$62,092,248	12.07%	18.20%	13.97%	15.00%		13.00%	8/12/2014
BB: U.S. Large Cap Equity Option		12.15%	18.40%	14.18%	15.22%		13.10%	
Matching Grant	$2,126,317	0.38%	1.85%	1.89%	1.72%	1.65%	2.45%	3/22/2002
Citigroup 3-Month U.S. Treasury Bill		0.02%	0.58%	1.56%	1.16%	0.60%	1.31%	

MINNESOTABLE plan
A member of The National ABLE Alliance

Performance as of
12/31/20

Total Market Value: $ **16,577,035**

Fund Name		Market Value	% of Plan	1 Month	3 Months	YTD	1 Year	3 Year	5 Year	10 Year	Inception	Inception Date
Aggressive Option	$	1,371,111	8.27%	4.61	15.32	15.57	15.57	10.05			11.73	12/15/16
ABLE Aggressive Custom Benchmark				4.75	15.83	16.56	16.56	10.59			12.40	
Variance				**(0.14)**	**(0.51)**	**(0.99)**	**(0.99)**	**(0.54)**			**(0.67)**	
Moderately Aggressive Option	$	1,609,898	9.71%	3.95	12.88	14.51	14.51	9.27			10.53	12/15/16
ABLE Moderately Aggressive Custom Benchmark				4.09	13.35	15.65	15.65	9.92			11.24	
Variance				**(0.14)**	**(0.47)**	**(1.14)**	**(1.14)**	**(0.65)**			**(0.71)**	
Growth Option	$	2,176,814	13.13%	3.25	10.43	13.05	13.05	8.40			9.23	12/15/16
ABLE Growth Custom Benchmark				3.42	10.86	14.36	14.36	9.09			9.97	
Variance				**(0.17)**	**(0.43)**	**(1.31)**	**(1.31)**	**(0.69)**			**(0.74)**	
Moderate Option	$	1,877,117	11.32%	2.56	8.02	11.56	11.56	7.42			7.92	12/15/16
ABLE Moderate Custom Benchmark				2.72	8.38	12.72	12.72	8.11			8.60	
Variance				**(0.16)**	**(0.36)**	**(1.16)**	**(1.16)**	**(0.69)**			**(0.68)**	
Moderately Conservative Option	$	1,872,930	11.30%	1.78	5.43	8.43	8.43	5.69			5.90	12/15/16
ABLE Moderately Conservative Custom Benchmark				1.89	5.67	9.36	9.36	6.28			6.47	
Variance				**(0.11)**	**(0.24)**	**(0.93)**	**(0.93)**	**(0.59)**			**(0.57)**	
Conservative Option	$	2,910,989	17.56%	0.71	1.98	4.13	4.13	3.26			3.16	12/15/16
ABLE Conservative Custom Benchmark				0.72	2.04	4.38	4.38	3.59			3.47	
Variance				**(0.01)**	**(0.06)**	**(0.25)**	**(0.25)**	**(0.33)**			**(0.31)**	
Checking Option	$	4,758,176	28.70%									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.

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Non-Retirement

December 31, 2020

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

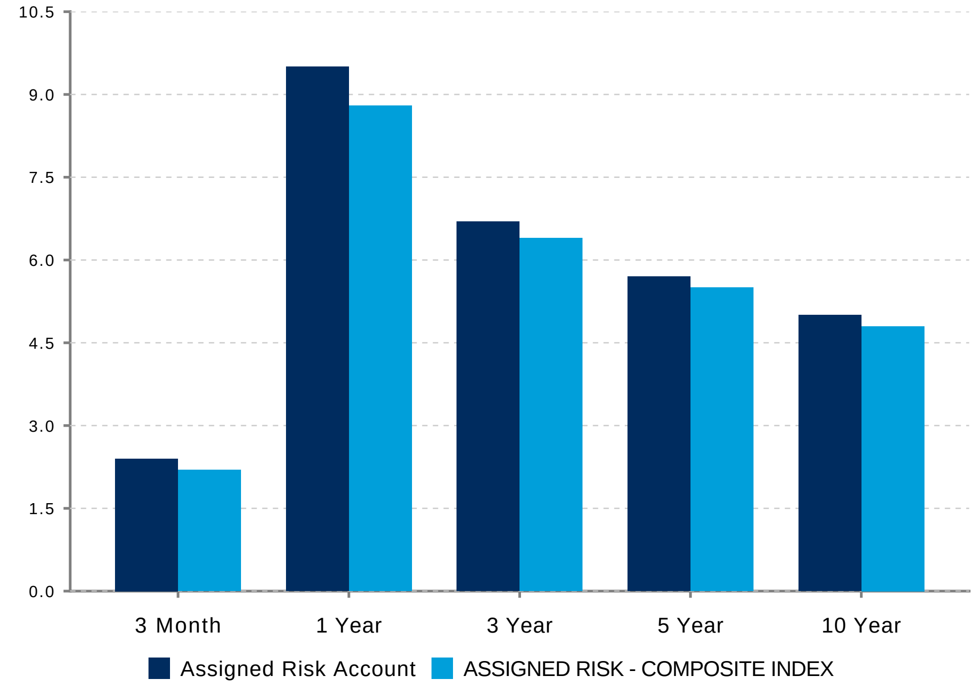
Assigned Risk Plan

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.

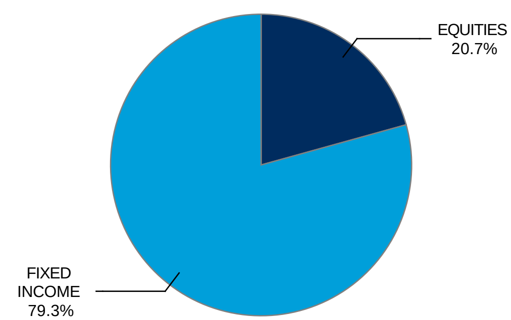
The Assigned Risk Plan is invested in a portfolio of common stocks and bonds

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	$298,572,286	2.4%	9.5%	6.7%	5.7%	5.0%
EQUITIES	61,851,175	12.1	18.4	14.2	15.0	13.2
FIXED INCOME	236,721,111	-0.1	6.0	4.2	3.0	2.6
ASSIGNED RISK - COMPOSITE INDEX		2.2	8.8	6.4	5.5	4.8
Excess		0.2	0.7	0.3	0.2	0.2
S&P 500		12.1	18.4	14.2	15.2	13.9
BBG BARC US Gov: Int		-0.2	5.7	4.1	2.9	2.5



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.

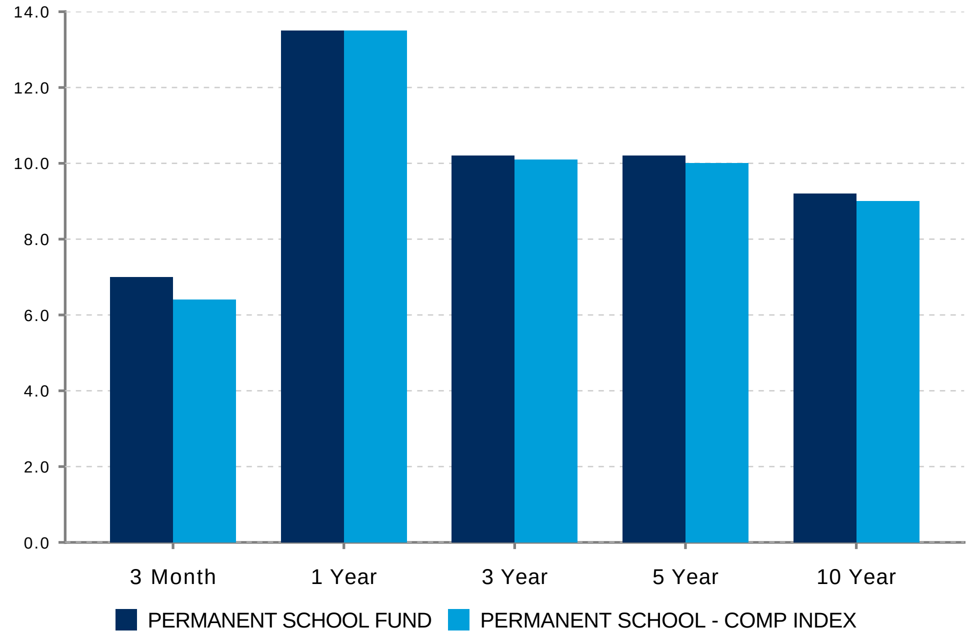
Non-Retirement

Permanent School Fund

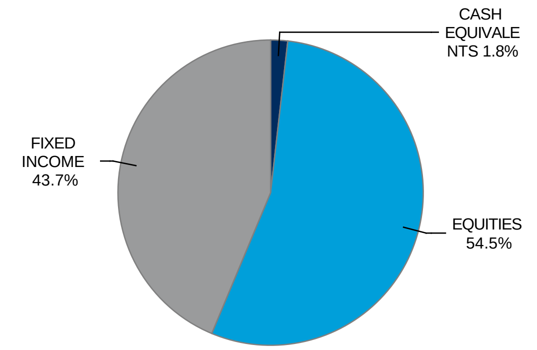
The investment objective of the Permanent School Fund is to produce a growing level of spendable income, within the constraints of maintaining adequate portfolio quality and liquidity. The income from the portfolio is transferred to the school endowment fund and distributed to Minnesota's public schools.

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	$1,813,672,883	7.0%	13.5%	10.2%	10.2%	9.2%
CASH EQUIVALENTS	33,344,719	0.0	0.6	1.6	1.2	0.7
EQUITIES	988,146,512	12.1	18.4	14.2	15.2	13.9
FIXED INCOME	792,181,652	1.5	8.2	5.9	5.0	4.3
PERMANENT SCHOOL - COMP INDEX		6.4	13.5	10.1	10.0	9.0
Excess		0.6	-0.0	0.1	0.2	0.2
S&P 500		12.1	18.4	14.2	15.2	13.9
BBG BARC US Agg		0.7	7.5	5.3	4.4	3.8



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.

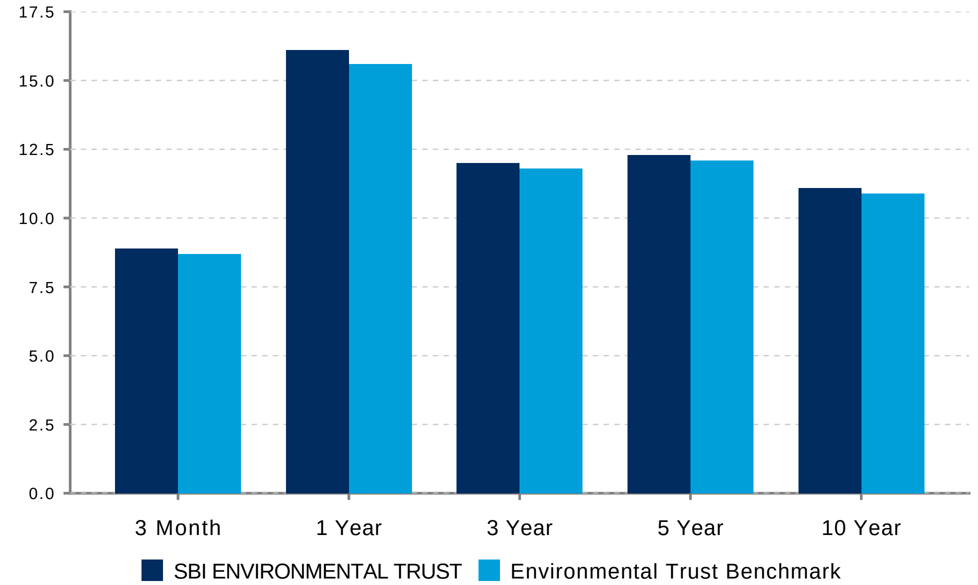
Non-Retirement

Environmental Trust Fund

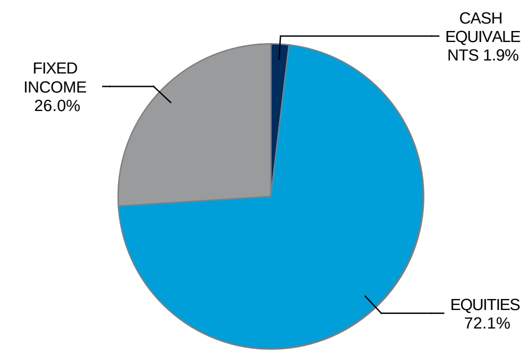
The objective of the Environmental Trust Fund is to increase the market value of the Fund over time in order to increase the annual amount made available for spending within the constraints of maintaining adequate portfolio quality and liquidity.

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	$1,490,135,199	8.9%	16.1%	12.0%	12.3%	11.1%
CASH EQUIVALENTS	27,673,511	0.0	0.6	1.6	1.2	0.7
EQUITIES	1,074,906,737	12.1	18.4	14.2	15.2	13.9
FIXED INCOME	387,554,951	1.5	8.2	5.9	5.0	4.3
Environmental Trust Benchmark		8.7	15.6	11.8	12.1	10.9
Excess		0.2	0.5	0.2	0.2	0.2
S&P 500		12.1	18.4	14.2	15.2	13.9
BBG BARC US Agg		0.7	7.5	5.3	4.4	3.8



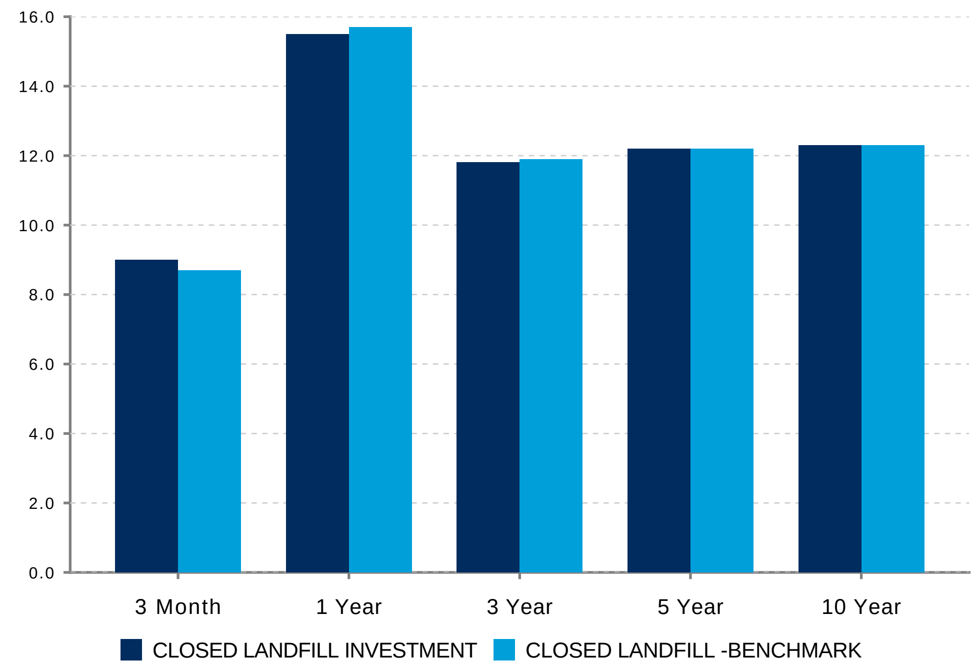
Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. From 7/1/94 to 7/1/99, the Fund's target allocation and benchmark was 50% fixed income and 50% stock. Prior to 7/1/94 the Fund was invested entirely in short-term instruments as part of the Invested Treasurer's Cash pool.

Non-Retirement

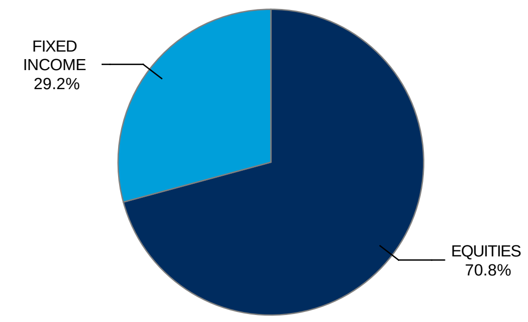
Closed Landfill Investment Fund

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	$119,278,487	9.0%	15.5%	11.8%	12.2%	12.3%
EQUITIES	84,461,724	12.1	18.4	14.2	15.2	13.9
FIXED INCOME	34,816,763	1.5	8.2	5.9	5.0	
CLOSED LANDFILL -BENCHMARK		8.7	15.7	11.9	12.2	12.3
Excess		0.4	-0.3	-0.0	0.1	0.0
S&P 500		12.1	18.4	14.2	15.2	13.9
BBG BARC US Agg		0.7	7.5	5.3	4.4	3.8



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.

STATE STREET

	Ending Market Value	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
NON RETIREMENT EQUITY INDEX - MELLON	**3,035,226,124**	**12.1**	**22.2**	**18.4**	**14.2**	**15.2**	**13.9**	**10.2**	**07/1993**
S&P 500 INDEX (DAILY)		12.1	22.2	18.4	14.2	15.2	13.9	10.2	07/1993
Excess		-0.0	-0.0	0.0	0.0	-0.0	-0.0	0.1	
NON RETIREMENT FIXED INCOME - PRUDENTIAL	**1,407,566,508**	**1.5**	**2.8**	**8.2**	**5.9**	**5.0**	**4.3**	**6.1**	**07/1994**
BBG BARC Agg (Dly)		0.7	1.3	7.5	5.3	4.4	3.8	5.6	07/1994
Excess		0.8	1.5	0.7	0.5	0.5	0.4	0.5	
RBC	**236,721,010**	**-0.1**	**0.2**	**6.0**	**4.2**	**3.0**	**2.6**	**4.9**	**07/1991**
RBC Custom Benchmark									07/1991
Excess									
MET COUNCIL OPEB BOND POOL	56,018,378	0.0	0.2	3.0					
NON RETIREMENT CASH	**167,762,833**	**0.0**	**0.1**	**0.5**	**1.6**	**1.2**	**0.7**	**2.6**	
iMoneyNet Money Fund Average-All Taxable		0.0	0.0	0.3	1.2	0.9	0.4		
Excess		0.0	0.1	0.2	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

December 31, 2020

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	13,581,583,120	0.1	1.0	1.9	1.5	1.0
iMoneyNet Money Fund Average-All Taxable		0.0	0.3	1.2	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	70,445,999	0.8	4.8	3.8	3.2	
Public Facilities Authority	3,393,922	0.2	0.9	1.6	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.

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.

Addendum

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-US9Net). 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).

Passive Domestic Equity Benchmark:

A weighted average of the Russell 1000 and Russell 3000 effective 10/1/2016. 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.

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%.

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.

STATE STREET.