AGENDA
INVESTMENT ADVISORY COUNCIL MEETING
Monday, May 15, 2017
12:00 P.M.
State Board of Investment
Retirement Systems Building
Room 106 – Main Floor
60 Empire Drive, St. Paul, MN

		TAB
1.	**Election of Chair and Vice Chair**	
2.	**Approval of Minutes of February 13, 2017**	
3.	**Introduction of Consultants**	**A**
	A. AON Hewitt Investment Consulting B. Pension Consulting Alliance	
4.	**Report from the Executive Director**	
	A. Quarterly Investment Review (January 1, 2017 – March 31, 2017)	**B**
	B. Administrative Report 1. Reports on Budget and Travel 2. Legislative Update 3. Sudan Update 4. Iran Update 5. Litigation Update	**C**
	C. Asset Allocation Transition Update	**D**
	D. Non-Retirement Equity and Fixed Income	**E**
5.	**Report from the SBI Administrative Committee**	**F**
	A. Review of Executive Director’s Proposed Workplan FY18 B. Review of Budget Plan for FY18 and FY19 C. Review of Continuing Fiduciary Education Plan D. Review of Executive Director’s Evaluation E. Update of Business Continuity Plan	

Continued

6. Private Markets Report **G**

A. Review of current strategy

B. Consideration of investment commitments with two existing credit managers; two existing private equity managers; one new real estate manager; one new private equity manager and one new resource manager

7. Public Markets Report **H**

A. First Quarter Performance

8. Investment Beliefs – Project Introduction **I**

9. Other items

INVESTMENT ADVISORY COUNCIL

MINUTES

May 15, 2017

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Minutes
Investment Advisory Council
February 13, 2017

The Investment Advisory Council (IAC) met at 12:00 P.M. on Monday, February 13, 2017 in the Board Room – First Floor, 60 Empire Drive, St. Paul, Minnesota.

MEMBERS PRESENT: Denise Anderson, Doug Anderson, Jeff Bailey, Dennis Duerst, Kim Faust, Susanna Gibbons, Laurie Hacking, Peggy Ingison, Erin Leonard, Malcolm McDonald, Carol Peterfeso, Elaine Voss and Shawn Wischmeier.

MEMBERS ABSENT: Kerry Brick, Morris Goodwin Jr., Jennifer Hassemer (for Myron Frans), and Gary Martin.

SBI STAFF: Mansco Perry, LeaAnn Stagg, Patricia Ammann, Paul Anderson, Nate Blumenshine, Cassie Boll, Tammy Brusehaver, Aaron Griga, Andrew Krech, Steve Kuettel, Mike Menssen, John Mulé, Jonathan Stacy, Charlene Olson and Melissa Mader.

OTHERS ATTENDING: Ann O'Bradovich, Callan Associates Inc.; Bert Black, Secretary of State's Office; Christie Eller and Jeff Weber, Attorney General's Office; Kim Holmes, Office of the Governor; Jim Baker, UNITE HERE; and Gordon Voss, private citizen.

The minutes of the November 15, 2016 meeting were approved.

Executive Director's Report
Mr. Perry referred members to Tab A of the meeting materials, and he reported that the Combined Funds had outperformed its Composite Index over the ten year period ending December 31, 2016, (Combined Funds 6.1% vs. Composite 5.9%), and had provided a real rate of return of 5.3% above inflation over the latest 20 year period (Combined Funds 7.4% vs. CPI 2.1%).

Mr. Perry stated that assets increased over the quarter (Combined Funds ending value of $59.9 versus a beginning value of $59.5 billion). The Combined Funds matched the benchmark for the quarter (Combined Funds 1.5% vs. Composite 1.5%) and was 70 bps below the benchmark for the year (Combined Funds 7.6% vs. Composite 8.3%). The underperformance extended into the three year period but the Combined Funds outperformed its benchmark over longer time periods.

Mr. Perry reported that beginning this quarter and going forward, the combined public equity performance is being reported versus a target benchmark. Mr. Perry then added that the domestic stock manager group outperformed its benchmark for the quarter (Domestic Stocks 4.3% vs. Domestic Equity Asset Class Target 4.2%) and underperformed for the year (Domestic Stocks 11.5% vs. Domestic Equity Asset Class Target 12.7%). He stated that the international stock manager group underperformed its target for the quarter (International Stocks -1.7% vs.

International Equity Asset Class Target -1.3%) and for the year (International Stocks 2.6% vs. International Equity Asset Class Target 4.5%). Mr. Perry then stated that the bond segment outperformed its benchmark for the quarter (Bonds -2.6% vs. Fixed Income Asset Class Target -3.0%) and the year (Bonds 3.6% vs. Fixed Income Asset Class Target 2.6%), and in all other time periods reported. He stated that the alternative investments contributed to performance for the quarter and the year (total return of 3.0% and 7.6%, respectively). Mr. Perry concluded his report noting that, as of December 31, 2016, the State Board of Investment (SBI) was responsible for managing over $82.7 billion of assets.

Mr. Perry referred members to Tab B of the meeting materials for the Administrative Report. He reported that for fiscal year-to-date, the SBI is coming in under budget. Mr. Perry stated that the SBI had received a clean opinion following the audit by the Legislative Auditor, and that each IAC member should have received a copy of the SBI's Fiscal Year 2016 Annual Report published in January 2017. Mr. Perry informed the Committee that the SBI was not pursuing legislation this session but noted that there were two bills that could potentially involve the SBI. He reminded Committee members that the pension funds have legislation they are working on with the Pension Commission. Mr. Perry informed members that Tab B contained updated information for Sudan and Iran restricted stocks. Finally, he noted that there is currently no litigation involving the SBI.

Mr. Perry referred members to Tab C and provided them with an update on the transition of the fund to the new asset allocation policy. He stated that at the beginning of calendar year 2017, the fund achieved the 20% target in fixed income. With respect to the transition within public equities from the 75% U.S./25% Non-U.S. split to the 67% U.S./30% Non-U.S. split, Mr. Perry stated that the SBI is in the process of funding the six emerging markets managers that the Board approved last quarter. He mentioned that all of the emerging markets managers would be funded once the emerging markets were opened with the custodian. He noted that these managers would be funded by taking money away from some large cap U.S. equity managers and at least one small cap U.S. equity manager. This, in turn, would move the fund closer to its new U.S./Non-U.S. equity policy weights. Finally, Mr. Perry stated that he anticipated moving a few more dollars from the active or semi-passive large cap U.S. equity managers to passive U.S. large cap equity management.

Mr. Blumenshine provided a brief overview of the current alternative investment program in Tab D. Staff identified and reviewed four funds for the committee to consider for new investment. Mr. Blumenshine described Adams Street Partners Global Secondary Fund 6 (Private Equity); Mr. Stacy described KKR Asia Fund III (Private Equity) and Silver Lake Partners V (Private Equity); and Mr. Krech described Vestar Capital Partners VII (Private Equity). After discussion, Mr. McDonald moved approval of the four recommendations and Ms. Voss seconded the motion. The motion passed.

Mr. Perry referred members to Tab E of the meeting materials, and a recommendation regarding the investment management of the domestic equity portfolio portion of the Assigned Risk Plan (ARP). He briefly described the fund, the SBI's responsibility with respect to the ARP, the history of external fund management of both the fixed income and equity portions of the ARP, the recent acquisition of GE Asset Management (the legacy external investment manager of the equity portion of the ARP) by State Street Global Advisors (SSgA), the equity portfolio's underperformance overtime, and SSgA's intention to restructure the portfolio. Mr. Perry requested that the IAC concur with Staff's recommendation to terminate the relationship with SSgA as the U.S. equity portfolio manager of the ARP and to manage these assets in the SBI's Internal Stock Pool. After a very brief discussion, Mr. McDonald moved approval of the recommendation and Ms. Faust seconded the motion. The motion passed.

Mr. Bailey, the Chairman of the IAC, announced his retirement from the IAC due to his upcoming retirement from Target Corporation. He shared his history with the IAC, starting with his hiring as an SBI Staff member in 1979, to his joining the IAC as a Committee member in 2006. He commented on the fact that he feels the governance process is different in Minnesota, that it has had really strong checks and balances, and that he hopes that current IAC members will keep the governance process strong by continuing to ask questions. He concluded by wishing everyone the best of luck going forward. On behalf of the entire IAC, Mr. McDonald made a declaration of appreciation for Mr. Bailey's leadership, time, efforts, insights and service.

The meeting adjourned at 1:00 p.m.

Respectfully submitted,

Mansco Perry TJ

Mansco Perry III
Executive Director and
Chief Investment Officer

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TAB

A

DATE: May 8, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: Introduction of Consultants

At the December 2016 SBI meeting, the Board decided to hire AON Hewitt Investment Consulting (AHIC) as the Board's General Investment Consultant. Pension Consulting Alliance (PCA) was retained as the organizations Special Projects Consultant with an expanded mandate. Each organization has a long history and strong reputation for providing investment advisory services to institutional investors. Their respective clientele includes some of the most prominent public retirement systems in the country. We are fortunate that the consultant teams designated to assist the State Board of Investment include some of the industry's most accomplished practioners.

AON Hewitt Investment Consulting is a division of the AON Company. The firm is headquartered in Chicago, IL. AHIC was formerly known as Hewitt Ennis Knupp and the firm's origin dates back to 1981. AHIC's sole line of business is investment consulting. They are a full service investment consulting firm that services a diverse client base, including public retirement system sponsors, corporate pension funds, defined contribution plans, endowments and foundations. The firm serves 493 clients in the U.S., representing $1.8 trillion. AHIC consults to 43 public pension plan clients representing $1.3 trillion. Their organization consists of a team of 208 investment consultants and has dedicated teams which focus on investment manager research, asset allocation, fiduciary services and trust services.

The AON project team assigned to the SBI's account would be:

- Steve Cummings, Senior Partner and President (lead)
- Kristen Doyle, Partner (lead)
- Chris Tucek, Partner (lead)
- Suzanne Bernard, Partner (backup)

Pension Consulting Alliance was founded in 1988. The firm is headquartered in Portland, OR and has an office in New York City. PCA is an independent boutique pension consulting firm with 34 employees and contracts with specialized firms in several disciplines to provide technical research and databases. PCA focuses on consulting for large public plans. The firm has more than 30 clients, who utilize PCA for work as a general consultant, asset class specialists, and on a variety of special assignments. PCA advises to over $1.2 trillion in clients assets. PCA has worked with the SBI as both an international equity consultant and as a special projects consultant.

The PCA project team assigned to the SBI's account would be:

- Allan Emkin, Founder and Managing Director
- Neil Rue, Managing Director
- John Burns, Managing Director

Biographies of each organization's team members are included in the pages that follow.

AON HEWITT INVESTMENT CONSULTING

Stephen (Steve) Cummings, CFA
Senior Partner and President, Lead Consultant

Steve Cummings is the President of AHIC. He leads nearly 200 investment consulting professionals with over 490 clients. After the acquisitions of EnnisKnupp by Hewitt and Hewitt by Aon, Steve led the three way integration of Aon Investment Consulting, Hewitt Investment Group, and EnnisKnupp and is ultimately responsible for the success of the U.S. investment consulting practice going forward. Steve also serves on the Aon Hewitt's Global Practice Committee, the group responsible for setting the strategic direction of the global investment consulting practice and coordinating consulting efforts around the world.

Steve has worked with numerous public fund clients in establishing customized investment policies, completing asset-liability studies to inform asset allocation decision making, identifying appropriate portfolio structures, monitoring the investment programs, and navigating challenges presented by statutory requirements or difficult market environments. Steve is well versed in the nuances of public pension fund management, having worked with the boards and investment committees of public retirement systems across the country. He currently works with New York State Teachers, State of Michigan, CenterPoint Energy, and Public School Employee Retirement System of Pennsylvania.

Steve also has ultimate responsibility for AHIC's U.S. Investment Committee, tasked with developing and vetting the firm's investment beliefs before they are rendered as advice to our clients. Steve is responsible for thought leadership within the firm and serves in an advisory capacity on research efforts such as those related to derivatives, private equity, and emerging investment opportunities. He is a sought after industry expert and frequently speaks before industry groups on a broad range of topics including soft dollars, public fund oversight, portfolio construction, and the evolution of the consulting industry.

Steve joined EnnisKnupp (the predecessor firm to AHIC) in 1989 as a consultant and later rejoined in 2000 as the president and Chief Executive Officer. Prior to rejoining EnnisKnupp, Steve was the president of Marquette Associates from 1997-2000. He holds a B.S. degree from the University of Texas and an M.B.A. degree from the University of Chicago. He is a CFA charterholder and is a member of the CFA Institute and Investment Analyst Society of Chicago (IASC).

Kristen Doyle, CFA
Partner, Lead Consultant

Kristen is a Partner within AHIC, leads the firm's public fund business, and is a member of the firm's client advisory group. She is located in Chicago, IL. As the head of public funds, Kristen is responsible for new business development and ensuring that AHIC has the right resources, research, and expertise necessary to properly service public sector clients. She assists with client projects that require her expertise. She currently works with eight retainer consulting clients, where she is either the lead or co-lead. These clients range from $200 million to $400 billion in assets under management and are primarily public plans. She is responsible for assisting these plans with asset allocation advice, risk budgeting, asset-liability reviews, investment policy development, benchmarking, manager selection and structure, and asset class structure.

Kristen also has experience conducting research and working with clients in the areas of custody, securities lending, and transition management. Kristen previously served as the global head of transition management, responsible for managing the transition management research and implementation team in the U.S., UK, and Canada. In this role, she was responsible for overseeing the quality of advice AHIC provides to clients when assisting in the implementation of a transition event as well as the global research conducted on transition managers.

Kristen has worked with almost every AHIC public fund client (in addition to her own public fund clients) and is therefore intimately familiar with the needs, circumstances, political challenges, and governance environment within which these entities operate. She is part of the public fund interest group at AHIC, which is a subset of consultants who specialize in issues facing public funds. Kristen currently provides investment consulting services to eight clients including Florida State Board of Administration, Puerto Rico Teachers' Retirement System, New Jersey Division of Investment, Employees Retirement System of Texas, Inter-Local Pension Fund, Paso del Norte Health Foundation, and Montgomery County Public Schools. The eighth client is confidential and cannot be disclosed.

Prior to joining the firm in 2005, Kristen worked at Northern Trust in the custodial operations group for more than two years. She has a Bachelor of Arts in economics from Denison University. She is a CFA charterholder and member of CFA Institute and the CFA Society of Chicago.

Christopher (Chris) R. Tucek, FSA, EA, CFA
Partner, Co-Lead

Chris Tucek is a Partner in the Chicago office of Aon Hewitt Investment Consulting ("AHIC") with nearly 20 years of consulting experience. Chris provides advice to institutional investors on all aspects of investments, including strategy, asset allocation, portfolio construction, manager selection and performance monitoring.

Notable recent activities include the:

- Introduction of diversifying asset classes such as real estate, hedge funds and alternative credit into client portfolios to enhance portfolio efficiency and returns
- Restructuring of defined contribution plan investment offerings to improve plan participants' financial well-being and retirement readiness
- Implementation and monitoring of custom liability driven investing (LDI) and dynamic glide path strategies to reduce surplus volatility and contribution risk

Chris currently works with two clients, Selective Insurance and one confidential client. He also just recently began working as a co-lead with the New Jersey Division of Investment. Prior to joining AHIC, Chris was in a similar role at Towers Watson Investment Services and sat on the U.S. Defined Benefit Plan Steering Committee there. Chris has a B.A. from Indiana University, M.S. from the University of Georgia and M.B.A. from the Kellogg School of Management at Northwestern University. He is a Chartered Financial Analyst, e Society of Actuaries and an Enrolled Actuary under ERISA.

Suzanne M. Bernard, CFA, CAIA
Partner, Dedicated Backup Lead Consultant

Suzanne is a Partner in our Chicago, Illinois office. She serves as the lead consultant to a select number of AHIC clients, focusing on those with complex alternatives programs. Additionally, Suzanne serves as AHIC Client Practice Lead (CPL) for Endowments, Foundations and Not-For-Profit Funds. In this role she is responsible for thought leadership and coordination of client service for all of our work with this client sector. Prior to this she served as the CPL for Alternative Investments, which included real estate, hedge funds, and private equity. Suzanne currently serves as the primary consultant for 7 client relationships totaling approximately $70 billion in assets including the following: Retirement System of South Carolina, Casey Family Programs, National Merit Scholarship Committee, Ohio Public Employees Retirement System, and one confidential client. She is the lead alternatives consultant for Massachusetts Mutual and one confidential client.

Suzanne has written research papers on issues facing institutional investors, such as using hedge fund strategies in investment programs, the role of real estate, benchmarking and defined contribution plan issues. She also served on the Board of Directors of Ennis, Knupp & Associates for several years prior to its merger.

Suzanne earned an M.B.A. degree in finance from The University of Chicago Booth School of Business and her B.S. in Finance from the University of Illinois, Champaign-Urbana. She is a Chartered Financial Analyst, a member of the CFA Society of Chicago, and a Chartered Alternatives Investment Analyst (CAIA). Additionally she serves as a Board member for the Children's Home and Aid Society of Illinois. Ms. Bernard joined the firm in 1988.

PENSION CONSULTING ALLIANCE

Allan Emkin
Founder and Managing Director

Allan Emkin founded Pension Consulting Alliance, LLC in 1988, with offices in New York City, and Portland, Oregon.

Long-time member of the consulting community, Mr. Emkin has 32 years of general consulting experience, emphasizing public plan administration and investment policy as well as international, global and real estate investments.

Mr. Emkin was a Vice President at Wilshire Associates before forming PCA in 1988. Prior to his work in the consulting field, Mr. Emkin worked in the California Governor's office in the Pension Investment Unit. Before joining the Brown administration, he was a registered lobbyist for 10 years, specializing in affordable housing and other matters affecting low-income families.

Mr. Emkin is a frequent speaker at various conferences and educational seminars and has long standing relationships with Liberty Hill Foundation in Santa Monica, California as well as The Labor and Worklife Program at Harvard University.

Mr. Emkin's current clients include: California Public Employees' Retirement System, California State Teachers' Retirement System, Kansas Public Employees' Retirement System, Directors Guild of America - PPHP, Oregon Investment Council, and Rhode Island State Investment Commission.

Neil Rue, CFA
Managing Director

Mr. Rue joined PCA in 1991. Mr. Rue, based in Portland, has 29 years' experience as an investment consultant for various institutions. Currently, Mr. Rue is the lead consultant to several large state and municipal funds and assists in consulting to several of the largest state pension funds in the United States. Prior to joining PCA, Mr. Rue spent seven years at the Frank Russell Company (now Russell Investments) in several product development and research-oriented capacities.

Mr. Rue has been a speaker at several industry conferences and panels, including Pensions & Investments, the CFA Institute, NASRA, NAST and SACRS. The Money Management Letter recognized Mr. Rue as Consultant of the Year for Public Funds in both 2005 and 2011. Mr. Rue is the first consultant to be recognized two times.

Mr. Rue, a Chartered Financial Analyst, received his Bachelors and MBA degrees from the University of Washington.

Mr. Rue's current clients include: State of Hawaii Employee's Retirement System, Hawaii Employer-Union Health Benefits Trust Fund, Washington State Investment Board, and Virginia Retirement System.

John Burns, CFA
Managing Director

Mr. Burns joined PCA in 2008 as a Managing Director. He is a general consultant with Public Fund and Taft-Hartley Defined Benefit Plan clients.

Mr. Burns began his career with the New York City Retirement Systems. During his 24 year tenure, he was responsible for overseeing the $85 billion publicly traded Equity and Fixed Income portfolios. In addition, he developed and recommended asset allocation strategy and investment policies for the five NYC Pension Funds and four Variable Supplements Funds.

Prior to joining PCA, Mr. Burns was the Director of Public Equity for the North Carolina Retirement Systems in Raleigh, NC. In that capacity he was responsible for equity portfolio structure, investment manager monitoring, due diligence and equity portfolio transitions.

Mr. Burns, a Chartered Financial Analyst, received his BS in Business Administration from Manhattan College and his MBA from Pace University's Graduate School of Business Administration.

Mr. Burns' current clients include: Rhode Island State Investment Commission, Pacific Maritime Association, and Kansas Public Employees' Retirement System.

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TAB

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LONG TERM OBJECTIVES
Period Ending 3/31/17

COMBINED FUNDS: $62.4 Billion	Result	Compared to Objective (2)
Match or Exceed Composite Index (10 Yr.)	6.3% (1)	0.2 percentage point above the target
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.		
Provide Real Return (20 Yr.)	7.6%	5.5 percentage points above CPI
Provide returns that are 3-5 percentage points greater than inflation over the latest 20 year period.		

(1) Performance is calculated net of fees.
(2) Differential from composite may occur due to rounding.

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EXECUTIVE SUMMARY

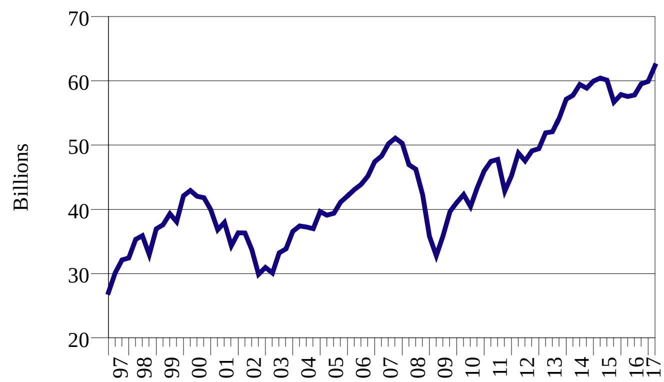
Combined Funds (Net of Fees)

Asset Growth

The market value of the Combined Funds increased 4.0% during the first quarter of 2017. The negative net contributions were outweighed by positive investment returns during the quarter.

	Asset Growth During First Quarter 2017 (Millions)
Beginning Value	$59,940
Net Contributions	-582
Investment Return	2,994
Ending Value	$62,351

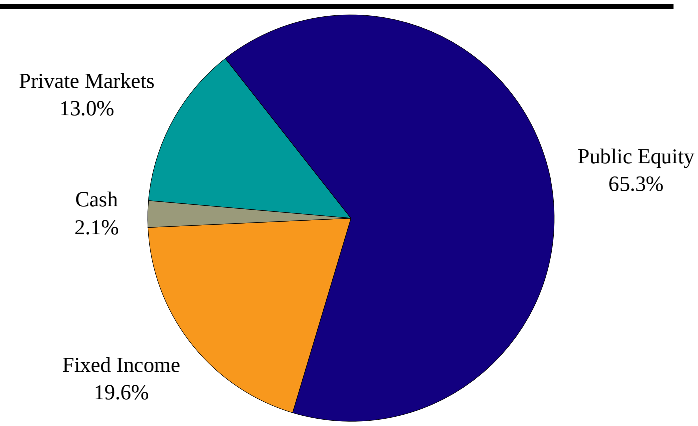
Combined Funds Market Value



Asset Mix

On July 1, 2016 the Combined Funds policy target changed as reflected below. Through March 31, 2017, assets were gradually transitioned from Bonds to Public Equity to reflect the new policy of holding uninvested Private Markets assets in the Public Equity portfolio.

	Actual Policy Targets	Actual Mix 3/31/17	Market Value (Millions)
Public Equity	58.0%	65.3%	$40,690
Bonds	20.0%	19.6%	12,228
Private Markets*	20.0%	13.0%	8,104
Cash	2.0%	2.1%	1,330
	100.0%	100.0%	$62,351

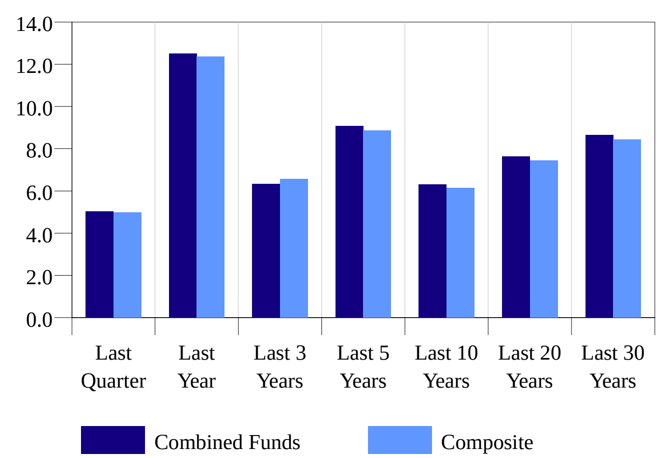


* Any uninvested allocation is held in public equity.

Fund Performance (Net of Fees)

The Combined Funds matched its benchmark for the quarter and outperformed its benchmark for the year.

	Periods Ended 3/31/17						
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years	Last 30 Years
Combined Funds	**5.0%**	**12.5%**	**6.3%**	**9.1%**	**6.3%**	**7.6%**	**8.6%**
Composite	5.0%	12.4%	6.6%	8.9%	6.1%	7.4%	8.4%



Note: All periods over one year are annualized.
Column sums throughout this report may not add due to rounding.

EXECUTIVE SUMMARY

Stock and Bond Manager Performance
(Net of Fees)

Public Equity

The public equity manager group (active, semi-passive and passive combined) matched its target for the quarter.

Public Equity Target: Effective 7/1/2016 the Public Equity Target is 75% Russell 3000/ 25% MSCI ACWI Ex-US. This target will transition over time to 67% Russell 3000/ 33% MSCI ACWI Ex-US.

	Periods Ended 3/31/17				
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Public Equity	6.4%	16.6%	7.1%	11.1%	6.1%
Public Equity Target	**6.4%**	--	--	--	--

Domestic Stocks

The domestic stock manager group (active, semi-passive and passive combined) outperformed its target for the quarter and matched its target for the year.

Russell 3000: The Russell 3000 measures the performance of the 3000 largest U.S. companies based on total market capitalization.

	Periods Ended 3/31/17				
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Dom. Stocks	**5.9%**	**18.1%**	**9.2%**	**13.0%**	**7.4%**
Asset Class Target*	5.7%	18.1%	9.8%	13.2%	7.5%

* The Domestic Equity Asset Class Target is the Russell 3000 effective 10/1/03. From 7/1/99 to 9/30/03, it was the Wilshire 5000 Investable Index.

International Stocks

The international stock manager group (active, semi-passive and passive combined) underperformed its target for the quarter and the year.

MSCI ACWI Free ex USA (net): The Morgan Stanley Capital International All Country World Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets. There are 45 countries included in this index. It does not include the United States.

	Periods Ended 3/31/17				
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Int'l Stocks	**7.5%**	**11.9%**	**0.9%**	**5.1%**	**1.8%**
Asset Class Target*	7.9%	13.1%	0.6%	4.4%	1.4%

* Since 6/1/08 the International Equity Asset Class Target is the Standard MSCI ACWI ex U.S. (net). From 10/1/07 to 5/31/08 the benchmark was the Provisional Standard MSCI ACWI ex USA (net). From 10/1/03 to 9/30/07 the target was MSCI ACWI ex USA (net).

Bonds

The bond manager group (active and semi-passive combined) outperformed its target for the quarter and the year.

BB Barclays U.S. Agg.: The Bloomberg Barclays U.S. Aggregate reflects the performance of the broad bond market for investment grade (Baa or higher) bonds, U.S. treasury and agency securities, and mortgage obligations with maturities greater than one year.

	Periods Ended 3/31/17				
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Bonds	**1.0%**	**1.6%**	**3.1%**	**3.0%**	**4.6%**
Asset Class Target	0.8%	0.4%	2.7%	2.3%	4.3%

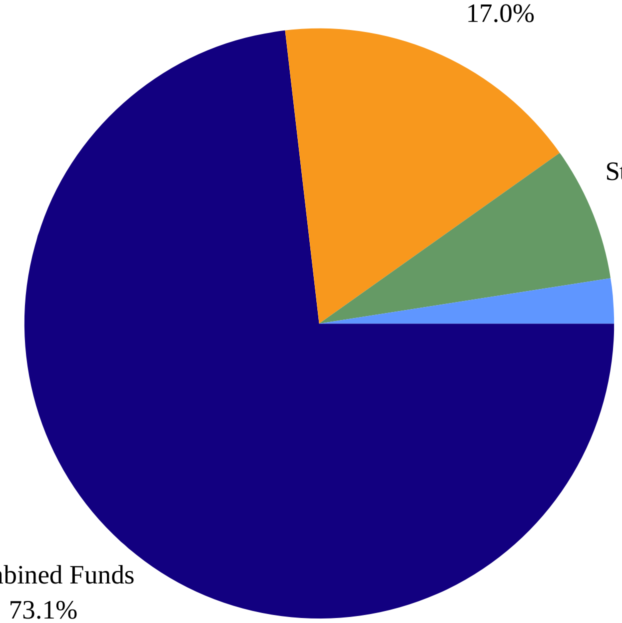
Private Markets

	Periods Ended 3/31/17				
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Private Markets	**5.3%**	**13.8%**	**8.8%**	**11.3%**	**9.3%**

Note: All periods over one year are annualized.

EXECUTIVE SUMMARY

Funds Under Management



	3/31/17 Market Value (Billions)
Retirement Funds	
Combined Funds	$62.4
Supplemental Investment Fund	2.1
(Excluding Deferred Compensation Plan Assets)	
State Deferred Compensation Plan	6.3
Non-Retirement Funds	
Assigned Risk Plan	0.3
Permanent School Fund	1.3
Environmental Trust Fund	1.0
Closed Landfill Investment Fund	0.1
Miscellaneous Trust Accounts	0.2
Other Post Employment Benefits Accounts	0.6
State Cash Accounts	9.8
Minnesota College Savings Plan	1.3
Total	**$85.3**

Note: Amounts and percentages may not add due to rounding.

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MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REPORT

First Quarter 2017

(January 1, 2017 - March 31, 2017)

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VARIOUS CAPITAL MARKET INDICES

	Periods Ended March 31, 2017					
	Last Quarter	**Last Year**	**Last 3 Years**	**Last 5 Years**	**Last 10 Years**	**Last 20 Years**
Domestic Equity						
Russell 3000 (broad market)	5.7%	18.1%	9.8%	13.2%	7.5%	8.1%
Russell 1000 (large cap)	6.0	17.4	10.0	13.3	7.6	8.1
Russell 2000 (small cap)	2.5	26.2	7.2	12.4	7.1	8.7
Dow Jones Wilshire Composite	5.8	18.1	9.7	13.1	7.6	8.2
Dow Jones Industrials	5.2	19.9	10.6	12.2	8.1	8.3
S&P 500	6.1	17.2	10.4	13.3	7.5	7.9
Domestic Fixed Income						
BB Barclays U.S. Agg. (1)	0.8	0.4	2.7	2.3	4.3	5.4
BB Barclays Gov't/Credit	1.0	0.5	2.7	2.5	4.3	5.4
3 month U.S. Treasury Bills	0.1	0.4	0.2	0.1	0.7	2.2
International						
MSCI Emerging Markets Free Index (2)	11.4	17.2	1.2	0.8	2.7	5.6
MSCI ACWI ex USA (3)	7.9	13.1	0.6	4.4	1.4	--
MSCI EAFE (4)	7.2	11.7	0.5	5.8	1.1	4.6
MSCI World ex USA (5)	6.8	11.9	0.4	5.4	1.1	4.8
Salomon Non U.S. Gov't Bond	2.0	-4.8	-2.6	-1.5	2.6	4.0
Inflation Measure						
Consumer Price Index CPI-U (6)	1.0	2.4	1.0	1.2	1.7	2.1
Consumer Price Index CPI-W (7)	1.0	2.3	0.7	1.0	1.7	2.1

(1) Bloomberg Barclays U.S. Aggregate. Includes governments, corporates and mortgages.

(2) Morgan Stanley Capital International Emerging Markets Free Index (Net index).

(3) Morgan Stanley Capital International All Country World Index ex USA (Net index).

(4) Morgan Stanley Capital International Index of Europe, Australasia and the Far East (EAFE) (Net index).

(5) Morgan Stanley Capital International World ex USA Index (Developed Markets) (Net index).

(6) Consumer Price Index (CPI) for all urban consumers, also known as CPI-U.

(7) Consumer Price Index (CPI) for all wage earners, also known as CPI-W.

Note: All periods over one year are annualized.

FINANCIAL MARKETS REVIEW

DOMESTIC STOCKS

The U.S. stock market, as measured by the Russell 3000 index, posted a 5.7% return for the first quarter of 2017. The stock market continued rallying in the new year before paring gains in March, when legislators failed to compromise on health care legislation. Employment data remained a stalwart indicator of the economic cycle's sustainability in its ninth year of expansion. Within the Russell 3000, Technology was the best performing sector with a 12.7% return while Energy was the weakest sector with -6.8% return for the quarter. Growth stocks outperformed value stocks during the quarter.

Performance for the Russell Style Indices for the quarter is shown below:

Large Growth	Russell 1000 Growth	8.9%
Large Value	Russell 1000 Value	3.3%
Small Growth	Russell 2000 Growth	5.3%
Small Value	Russell 2000 Value	-0.1%

The Russell 3000 index returned 18.1% for the year ending March 31, 2017.

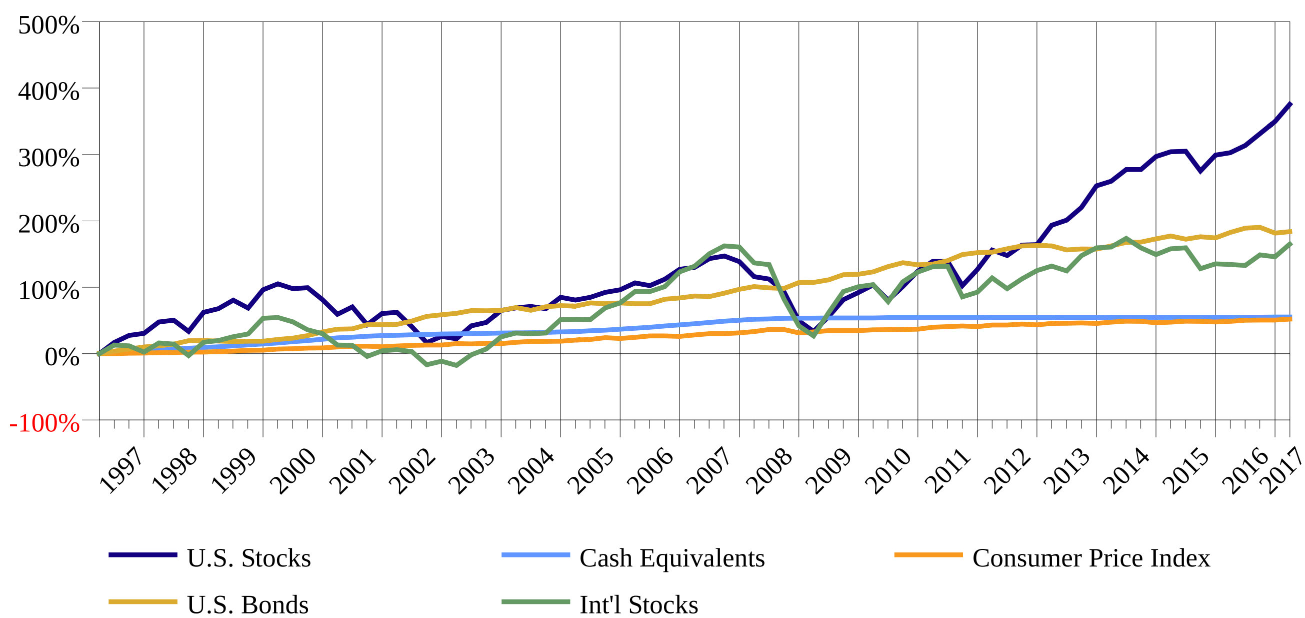
DOMESTIC BONDS

The U.S. bond market, as measured by the Bloomberg Barclays Capital U.S. Aggregate Bond Index, produced a total return of 0.8% for the quarter. Bond yield increases were isolated in the very short end of the curve in response to March FOMC tightening. The 2-year U.S. Treasury yield ended the quarter higher by 7 basis points at 1.3%, the 5-year decreased by 1 basis point to 1.9%, the 10-year decreased by 7 basis points to 2.4%, and the 30-year decreased by 6 basis points to 3.0%. Relative to other sectors, corporate securities delivered the strongest performance, followed by agency debentures and commercial mortgage backed securities.

The major sector returns for the Bloomberg Barclays Captol U.S. Aggregate Bond Index for the quarter were:

U.S. Treasury	0.7%
Agency	1.1%
Corporates	1.2%
Agency MBS	0.5%
Commercial Mortgages	0.9%
Asset-Backed	0.5%

PERFORMANCE OF CAPITAL MARKETS
Cumulative Returns



FINANCIAL MARKETS REVIEW

DEVELOPED INTERNATIONAL MARKETS

In aggregate, developed international stock markets (as measured by MSCI World ex USA index net) provided a return of 6.8% for the quarter. Developed market stocks rallied amid strong corporate earnings growth, improving economic data in Europe, Japan and the U.S., and the expectation that newly elected President Trump would deliver business-friendly policies, including tax cuts and regulatory restrictions. The top performing sectors were Information Technology, Industrials, and Consumer Staples. The worst performing sectors were Energy, Telecommunication Services and Consumer Discretionary.

The quarterly performance of the six largest stock markets, which comprise about 73% of the MSCI World ex USA index, is shown below:

Japan	4.5%
United Kingdom	5.0%
France	7.3%
Canada	2.5%
Germany	8.4%
Switzerland	8.3%

The MSCI World ex USA index returned 11.9% during the last year.

EMERGING INTERNATIONAL MARKETS

Emerging markets (as measured by MSCI Emerging Market index net) provided a return of 11.5% for the quarter. Developing countries posted their best quarterly increases in five years. Reassuring data from China, higher prices for industrial metals and a weaker U.S. dollar all contributed to gains. The top performing sectors were Information Technology, Industrials, and Consumer Discretionary. The worst performing sectors were Energy, Healthcare, and Consumer Staples.

The quarterly performance of the six largest stock markets, which comprise about 76% of the MSCI Emerging Markets index, is shown below:

China	12.9%
Korea	16.9%
Taiwan	11.8%
India	17.1%
Brazil	10.4%
South Africa	4.4%

The Emerging Markets Free index returned 17.2% during the last year.

REAL ESTATE

During the first quarter of 2017, private real estate achieved its 29th consecutive quarter of positive returns with the NCREIF Property Index posting a return of 1.6%. Real Estate markets have seen a healthy recovery since the 2008-2009 crash, but the pace appears to be slowing. An aggregate $16bn in private real estate funds was raised in the first quarter, the lowest amount in 18 quarters. Also, 48% of funds closed in the quarter did not reach their targeted amount. However, investors still appear to be bullish on the asset class as interim closes held by multi-billion dollar funds currently in the market total approximately $70bn. (Sources: NCREIF, Preqin)

PRIVATE EQUITY

Private equity general partners raised $89bn across 175 funds in the first quarter. Capital continues to be committed to the deep and liquid markets of North America and Europe. Buyout funds topped the list of aggregate capital raised globally with $54bn across 44 funds, followed by Private Equity Secondaries raising $13bn across 5 funds. Secondaries was led by the $7.5bn final close of Blackstone Strategic Partners' Fund VII. Heading into 2Q17, there is a record $842bn of dry powder, a modest increase from the previous quarter. (Source: Preqin)

Analyzing a few metrics appears to indicate the private equity market is expensive and slowing down. M&A transaction multiples (Valuation/EBITDA) are the highest they've been in six years. Aggregate exit value was the lowest it's been in over 21 quarters. The median fund size raised in the first quarter was the highest since 2008. However, despite these factors, we maintain a disciplined pacing approach because we can't time the market and, even if markets pull back, the Global Buyout & Growth Equity Index has outperformed the MSCI ACWI by over 550 bps on a rolling 5-, 10-, 15-, and 20-year timeframe. (Sources: Preqin, PitchBook, J.P. Morgan Asset Management)

RESOURCE FUNDS

During the first quarter of 2017, crude oil traded between a range of $47/bbl and $54/bbl. The average price for the quarter was $52/bbl, which was $3 above the average price from the fourth quarter. Economists believe near-record levels of oil inventories in America continue to weigh on crude prices despite OPEC's pledge to cut production. (Sources: Bloomberg, The Economist)

COMBINED FUNDS

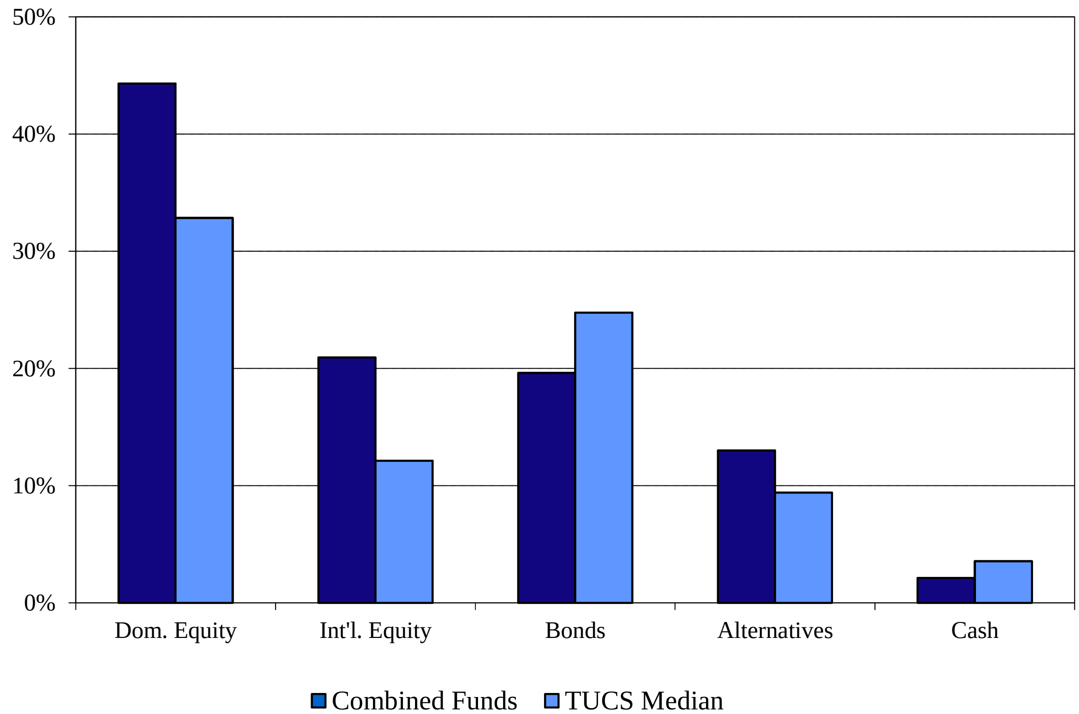
The comparison universe used by the SBI is the Trust Universe Comparison Service (TUCS). Only funds with assets over $1 billion are included in the comparisons shown in this section.

Asset Mix Compared to Other Pension Funds

On 3/31/17, the asset mix of the Combined Funds was:

	$ Million	%
Public Equity	$40,690	65.3%
Bonds	12,228	19.6%
Private Markets*	8,104	13.0%
Cash	1,330	2.1%
Total	62,351	100.0%

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:



	Domestic Equity	Int'l Equity	Bonds	Alternatives	Cash
Combined Funds	44.3%	20.9%	19.6%	13.0%	2.1%
Median Allocation in TUCS*	32.8%	12.1%	24.8%	9.4%**	3.5%

* Public and corporate plans over $1 billion.
** May include assets other than alternatives.

COMBINED FUNDS

Performance Compared to Other Pension Funds

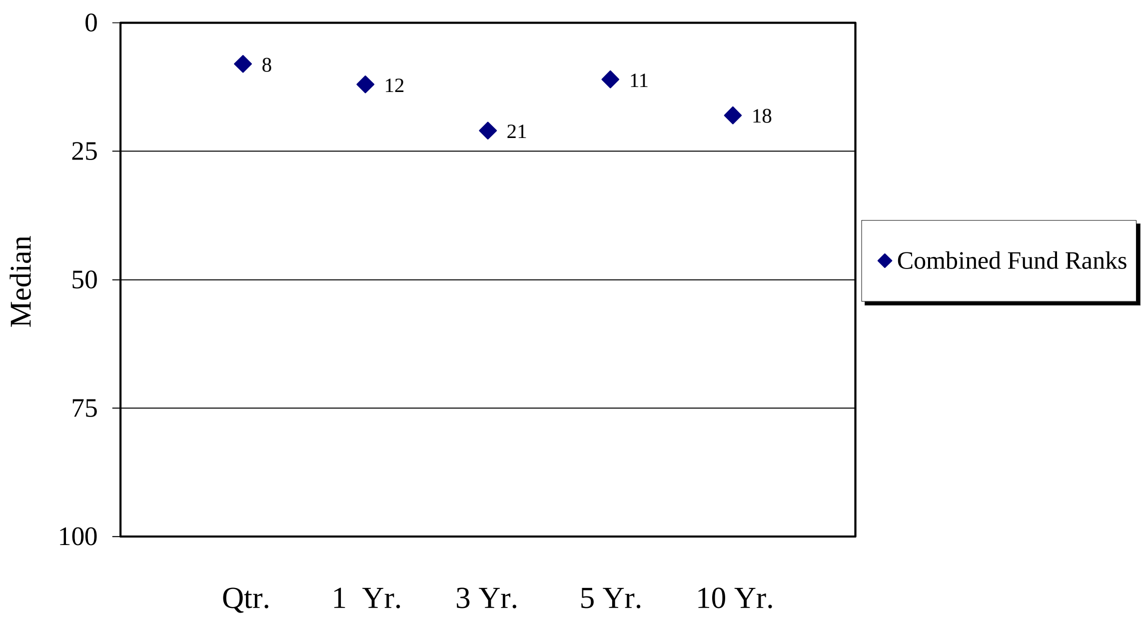
While the SBI is concerned with how its returns compare to other pension investors, universe comparisons should be used with great care. There are several reasons why such comparisons will provide an "apples to oranges" look at performance:

- **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 3/31/17

	Quarter	1 Year	3 Years	5 Years	10 Years
Combined Funds Percentile Rank in TUCS*	8th	12th	21st	11th	18th

* Compared to public and corporate plans greater than $1 billion, gross of fees.

Note: All periods over one year are annualized.

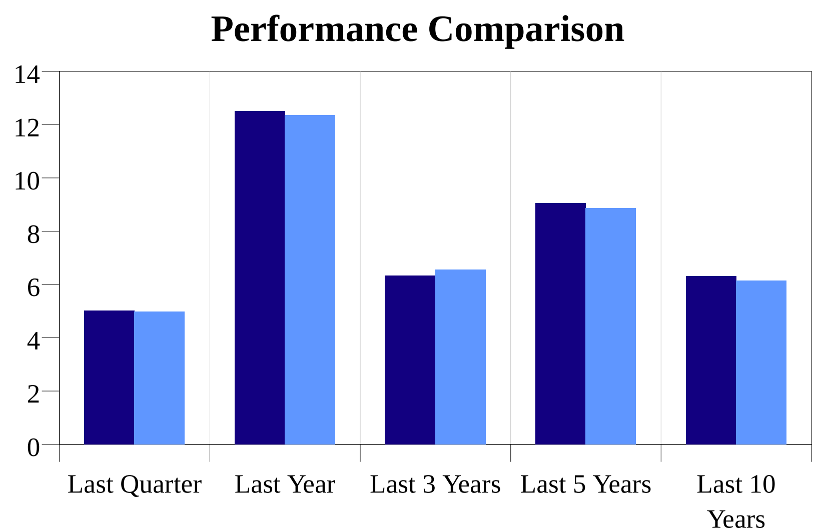
COMBINED FUNDS

Performance Compared to Composite Index

The Combined Funds' performance is evaluated relative to a composite of market indices. The composite is weighted in a manner that reflects the asset allocation of the Combined Funds. As of January 1, 2017, the Combined Funds Composite composition was set at the current target allocation with the uninvested portion of Private Markets allocated to Public Equity:

	Market Index	Combined Funds Composite 1Q17
Public Equity	71% Russell 3000/29% MSCI ACWI ex US	64.8%*
Bonds	BB Barclays U.S. Aggregate	20.0%
Private Markets	Private Markets	13.2%*
Unallocated Cash	3 Month T-Bills	2.0%
		100.0%

*During the quarter, asset class weights for Public Equity and Private Markets are reset at the start of each month. The above Combined Funds Composite weighting was as of the beginning of the quarter.



Periods Ended 3/31/17					
Combined Funds **	5.0%	12.5%	6.3%	9.1%	6.3%
Composite	5.0%	12.4%	6.6%	8.9%	6.1%

** Actual returns are reported net of fees.

Note: All periods over one year are annualized.

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STOCK AND BOND MANAGERS

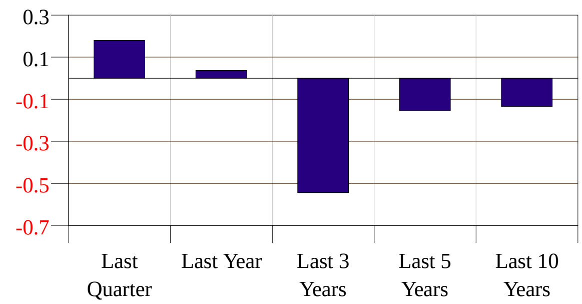
Performance of Asset Pools

(Net of Fees)

Domestic Stocks

Target: Russell 3000

Value Added to Domestic Equity Target (1)



Periods Ended 3/31/17

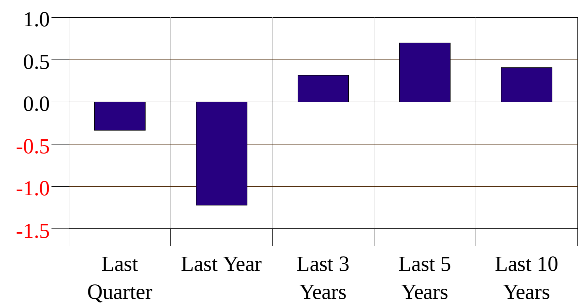
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Stocks	**5.9%**	**18.1%**	**9.2%**	**13.0%**	**7.4%**
Asset Class Target*	5.7%	18.1%	9.8%	13.2%	7.5%

* The Domestic Equity Asset Class Target is the Russell 3000 effective 10/1/03. From 7/1/99 to 9/30/03, it was the Wilshire 5000 Investable Index.

International Stocks

Target: Standard MSCI ACWI Free ex U.S. (net)

Value Added to International Equity Target (1)



Periods Ended 3/31/17

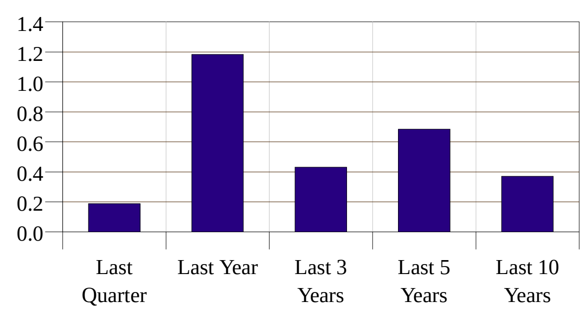
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Int'l Stocks	**7.5%**	**11.9%**	**0.9%**	**5.1%**	**1.8%**
Asset Class Target*	7.9%	13.1%	0.6%	4.4%	1.4%

* The Int'l Equity Asset Class Target is MSCI ACWI Free ex U.S. (net) effective 10/1/03.

Bonds

Target: Bloomberg Barclays U.S. Aggregate

Value Added to Fixed Income Target (1)



Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Bonds	**1.0%**	**1.6%**	**3.1%**	**3.0%**	**4.6%**
Asset Class Target	0.8%	0.4%	2.7%	2.3%	4.3%

Note: All periods over one year are annualized.
(1) Graph data is based on actual return and may not match table due to rounding.

Private Markets

Performance of Asset Categories

(Net of Fees)

Private Markets

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Periods Ended 3/31/17				
Private Markets	5.3%	13.8%	8.8%	11.3%	9.3%
Inflation	1.0%	2.4%	1.0%	1.2%	1.7%

Real Estate Investments (Equity emphasis)

The SBI began its real estate program in the mid-1980's and periodically makes new investments. Some of the existing investments are relatively immature and returns may not be indicative of future results.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Periods Ended 3/31/17				
Real Estate	0.9%	6.8%	13.1%	12.2%	5.0%

Private Equity Investments (Equity emphasis)

The SBI began its private equity program in the mid-1980's and periodically makes new investments. Some of the existing investments are relatively immature and returns may not be indicative of future results.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Periods Ended 3/31/17				
Private Equity	4.8%	14.1%	12.4%	14.2%	11.2%

Resource Investments (Equity emphasis)

The SBI began its resource program in the mid-1980's and periodically makes new investments. Some of the existing investments are relatively immature and returns may not be indicative of future results.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Periods Ended 3/31/17				
Resource	7.4%	11.4%	-3.3%	1.5%	5.4%

Yield Oriented Investments (Debt emphasis)

The SBI began its yield oriented program in 1994. Some of the existing investments are relatively immature and returns may not be indicative of future results.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Periods Ended 3/31/17				
Yield Oriented	8.0%	18.9%	5.8%	10.7%	10.9%

Note: All periods over one year are annualized.

SUPPLEMENTAL INVESTMENT FUND

The Minnesota Supplemental Investment Fund (SIF) is a multi-purpose investment program that offers a range of investment options to state and local public employees.

The SIF provides some or all of the investment options to the Unclassified Employees Retirement Plan, Minnesota Deferred Compensation Plan, Public Employees Defined Contribution Plan, Hennepin County Supplemental Retirement Plan, Health Care Savings Plan, local police and firefighter retirement plans and the Voluntary 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.

On March 31, 2017 the market value of the entire Fund was $2.1 billion.

Investment Options

	3/31/17 Market Value (In Millions)
Balanced Fund - a balanced portfolio utilizing both common stocks and bonds.	$398
U.S. Stock Actively Managed Fund - an actively managed, all common stock portfolio.	$225
U.S. Stock Index Fund- a passively managed, all common stock portfolio designed to broadly track the performance of the U.S. stock market.	$547
Broad International Stock Fund- a portfolio of non U.S. stocks that incorporates both active and passive management.	$171
Bond Fund - an actively managed, all bond portfolio.	$149
Money Market Fund - a portfolio utilizing short-term, liquid debt securities.	$309
Stable Value Fund - a portfolio of stable value instruments, including security backed contracts and insurance company and bank investment contracts.	$221
Volunteer Firefighter Account - a balanced portfolio only used by the Voluntary Statewide Volunteer Firefighter Plan.	$74

SUPPLEMENTAL INVESTMENT FUND ACCOUNTS

BALANCED FUND

Investment Objective

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.

Asset Mix

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.

	Target	Actual
Stocks	60.0%	60.5%
Bonds	35.0%	34.9%
Cash	5.0%	4.6%
	100.0%	100.0%

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**3.8%**	**11.4%**	**7.0%**	**9.1%**	**6.7%**
Benchmark*	3.7%	10.8%	6.9%	8.8%	6.2%

* 60% Russell 3000/35% Barclays Aggregate Bond Index/5% T-Bills Composite.

U.S. STOCK ACTIVELY MANAGED FUND

Investment Objective

The U.S. Stock Actively Managed Fund's investment objective is to generate above-average returns from capital appreciation on common stocks.

Asset Mix

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**6.4%**	**18.2%**	**8.9%**	**12.9%**	**7.3%**
Benchmark*	5.7%	18.1%	9.8%	13.2%	7.5%

* Russell 3000.

U.S. STOCK INDEX FUND

Investment Objective and Asset Mix

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**5.7%**	**18.1%**	**9.8%**	**13.2%**	**7.6%**
Benchmark*	5.7%	18.1%	9.8%	13.2%	7.5%

* Russell 3000.

Note: All periods over one year are annualized.

SUPPLEMENTAL INVESTMENT FUND ACCOUNTS

BROAD INTERNATIONAL STOCK FUND

Investment Objective and Asset Mix

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. At least 25% of the Fund is passively managed and no more than 33% of the Fund is semi-passively managed. These portions of the Fund are designed to track and modestly outperform, respectively, the return of 22 developed markets included in the MSCI World ex USA Index. The remainder 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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**7.5%**	**11.9%**	**0.9%**	**5.1%**	**1.8%**
Benchmark*	7.9%	13.1%	0.6%	4.4%	1.4%

* The Int'l Equity Asset Class Target is MSCI ACWI ex USA (net).

BOND FUND

Investment Objective

The investment objective of the Bond Fund is to exceed the return of the broad domestic bond market by investing in fixed income securities.

Asset Mix

The Bond Fund invests primarily in high-quality, government and corporate bonds that have intermediate to long-term maturities, usually 3 to 20 years.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**1.0%**	**1.6%**	**3.1%**	**3.0%**	**4.7%**
BB Barc Agg	0.8%	0.4%	2.7%	2.3%	4.3%

MONEY MARKET FUND

Investment Objective

The investment objective of the Money Market Fund is to protect principal by investing in short-term, liquid U.S. Government securities.

Asset Mix

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**0.2%**	**0.6%**	**0.3%**	**0.3%**	**0.9%**
3 month T-Bills	0.1%	0.4%	0.2%	0.1%	0.7%

Note: All periods over one year are annualized.

SUPPLEMENTAL INVESTMENT FUND ACCOUNTS

STABLE VALUE FUND

Investment Objective

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.

Asset Mix

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**0.5%**	**2.1%**	**2.0%**	**2.1%**	**3.2%**
Benchmark*	0.6%	1.7%	1.5%	1.3%	1.7%

* The Stable Value Fund Benchmark is the 3-year Constant Maturity Treasury Bill +45 basis points.

VOLUNTEER FIREFIGHTER ACCOUNT

The investment objective of the Volunteer Firefighter Account is to maximize long-term returns while limiting short-term portfolio return volitility.

The Account is invested in a balanced portfolio:

	Target	Actual
Domestic Stocks	35.0%	35.4%
International Stocks	15.0%	15.0%
Bonds	45.0%	45.0%
Cash	5.0%	4.6%
	100.0%	100.0%

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Account	**3.6%**	**9.1%**	**5.1%**	**6.9%**	**--**
Benchmark*	3.5%	8.3%	4.8%	6.4%	--

* 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.

Note: All periods over one year are annualized.

DEFERRED COMPENSATION PLAN ACCOUNTS

The Deferred Compensation Plan provides public employees with a tax-sheltered retirement savings plan that is supplemental to their primary retirement plan. (In most cases, the primary plan is a defined benefit plan administered by TRA, PERA, or MSRS.)

Participants choose from 4 actively managed stock and bond funds, 5 passively managed stock and bond funds and 10 target retirement fund options.

The SBI also offers a money market option and a stable value option. All provide for daily pricing needs of the plan administrator. Participants may also choose from hundreds of funds in a mutual fund window. The current plan structure became effective July 1, 2011. The investment options and objectives are outlined below.

In the third quarter of 2016, the Janus Large-Cap Fund was replaced by the Vanguard Dividend Growth Large-Cap Fund.

On March 31, 2017, the market value of the entire Fund was $6.3 billion.

Investment Options

		3/31/17 Market Value (In Millions)
Vanguard Index Institutional Plus Shares (passive)		$1,118.7
Vanguard Dividend Growth (active)		$547.5
Vanguard Mid Cap Index Institutional Shares (passive)		$489.1
T. Rowe Price Small-Cap Stock (active)		$650.0
Fidelity Diversified International (active)		$264.2
Vanguard Total International Stock Index Institutional Plus (passive)		$166.0
Vanguard Balanced Index Institutional Shares (passive)		$733.7
Dodge & Cox Income Fund (active)		$221.8
Vanguard Total Bond Market Index Institutional Shares (passive)		$203.4
SIF Money Market Fund		$70.7
SIF Stable Value Fund		$1,360.2
State Street Global Advisors MN Target Retirement Funds		$451.1
Income Fund	$74.6	
2020 Fund	$100.1	
2025 Fund	$86.2	
2030 Fund	$57.1	
2035 Fund	$44.3	
2040 Fund	$30.6	
2045 Fund	$24.7	
2050 Fund	$17.3	
2055 Fund	$8.9	
2060 Fund	$7.3	

DEFERRED COMPENSATION PLAN ACCOUNTS

LARGE CAP EQUITY

Vanguard Index Institutional Plus (passive)
A passive domestic stock portfolio that tracks the S&P 500.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**6.1%**	**17.2%**	**10.4%**	**13.3%**
S&P 500	6.1%	17.2%	10.4%	13.3%

Vanguard Dividend Growth (active)
A fund of large cap stocks which is expected to outperform the Nasdaq US Dividend Achievers Select Index, over time**.**

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**5.9%**	**10.7%**	**8.6%**	**12.0%**
Nasdaq US Div	6.2%	13.1%	8.5%	11.4%

MID CAP EQUITY

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

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**6.2%**	**16.7%**	**8.7%**	**12.9%**
CRSP U.S. Mid Cap	6.2%	16.8%	8.7%	13.0%

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**3.6%**	**23.5%**	**7.9%**	**13.3%**
Russell 2000	2.5%	26.2%	7.2%	12.4%

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**8.0%**	**7.1%**	**1.5%**	**6.6%**
MSCI EAFE	7.2%	11.7%	0.5%	5.8%

Vanguard Total International Stock Index (passive)
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.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**8.5%**	**13.7%**	**1.1%**	**4.9%**
FTSE Global ex US	8.0%	13.7%	1.5%	5.1%

Note: All periods over one year are annualized.

DEFERRED COMPENSATION PLAN ACCOUNTS

BALANCED

Vanguard Balanced Index (passive)

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**3.8%**	**10.7%**	**7.0%**	**8.8%**
Benchmark	3.8%	10.8%	7.0%	8.9%

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**1.2%**	**4.4%**	**3.1%**	**3.4%**
BB Barc Agg	0.8%	0.4%	2.7%	2.3%

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.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**0.9%**	**0.4%**	**2.6%**	**2.3%**
BB Barc Agg	0.8%	0.4%	2.7%	2.3%

SIF Money Market Fund

A fund that invests in short-term debt instruments which is expected to outperform the return on 3-month U.S. Treasury Bills.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**0.2%**	**0.6%**	**0.3%**	**0.3%**
3-Mo. Treas.	0.1%	0.4%	0.2%	0.1%

SIF STABLE VALUE FUND

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	**0.5%**	**2.1%**	**2.0%**	**2.1%**
Benchmark	0.6%	1.7%	1.5%	1.3%

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.

See the "Performance Summaries" section of the Public Markets, Non-Retirement, and Defined Contribution Report.

Note: All periods over one year are annualized.

MN COLLEGE SAVINGS PLAN ACCOUNTS

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.

On March 31, 2017, the market value of the entire Fund was $1.3 billion.

Investment Options

	3/31/17 Market Value (In Millions)
Age Based Managed Allocation	
Age Band 0-4 Years	$26.9
Age Band 5-8 Years	$70.2
Age Band 9-10 Years	$70.6
Age Band 11-12 Years	$102.2
Age Band 13-14 Years	$138.5
Age Band 15 Years	$71.1
Age Band 16 Years	$69.6
Age Band 17 Years	$64.6
Age Band 18 Years and over	$161.2
Risk Based Managed Allocations	
Aggressive	$13.0
Moderate	$58.1
Conservative	$6.4
Static Options:	
U.S. Large Cap Equity	$14.5
International Equity	$2.8
U.S. and International Equity	$285.7
Equity and Interest Accumulation	$1.9
100% Fixed Income	$12.8
Money Market	$9.2
Principal Plus Interest	$110.2

MN COLLEGE SAVINGS PLAN ACCOUNTS

AGE-BASED MANAGED ALLOCATIONS

The Age-Based Managed Allocation Option seeks to align the investment objective and level of risk, which will become more conservative as the beneficiary ages and moves closer to entering an eligible educational institution.

See the "Performance Summaries" section of the Public Markets, Non-Retirement, and Defined Contribution Report.

RISK BASED ALLOCATIONS

The Risk Based Allocation Option offers three separate allocation investment options: Aggressive, Moderate and Conservative, which have a fixed risk level and does not change as the Beneficiary ages.

See the "Performance Summaries" section of the Public Markets, Non-Retirement, and Defined Contribution Report.

U.S. LARGE CAP EQUITY INDEX

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

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	6.0%	16.9%	--	--
S&P 500	6.1%	17.2%	--	--

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	8.6%	13.0%	0.6%	--
Benchmark	8.1%	12.9%	0.6%	--

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	6.1%	14.7%	6.9%	10.2%
Benchmark	6.1%	15.3%	7.2%	10.5%

Note: All periods over one year are annualized.

MN COLLEGE SAVINGS PLAN ACCOUNTS

EQUITY AND INTEREST ACCUMULATION

A fund that passively invests half of the portfolio in equities across all capitalization ranges and the other half in a funding agreement. The fund is expected to track a weighted benchmark of 50% Russell 3000 and 50% 3-month T-Bill.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	3.1%	9.4%	--	--
Benchmark	2.9%	8.9%	--	--

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	1.0%	1.6%	2.4%	1.7%
Benchmark	1.0%	1.9%	2.8%	2.1%

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	0.1%	0.2%	0.1%	0.0%
iMoney Net Average All Taxable	0.1%	0.1%	0.1%	0.0%

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.

Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Fund	0.3%	1.4%	1.3%	1.3%
3-Month T-Bill	0.1%	0.3%	0.1%	0.1%

Note: All periods over one year are annualized.

ASSIGNED RISK PLAN

Investment Objectives

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.

Asset Mix

The Assigned Risk Plan is invested in a portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream.

	3/31/17 Target	3/31/17 Actual
Stocks	20.0%	20.0%
Bonds	80.0%	80.0%
Total	100.0%	100.0%

Investment Management

RBC Global Asset Management (US) manages the bond segment of the Fund. SBI Staff currently manages the equity segment.

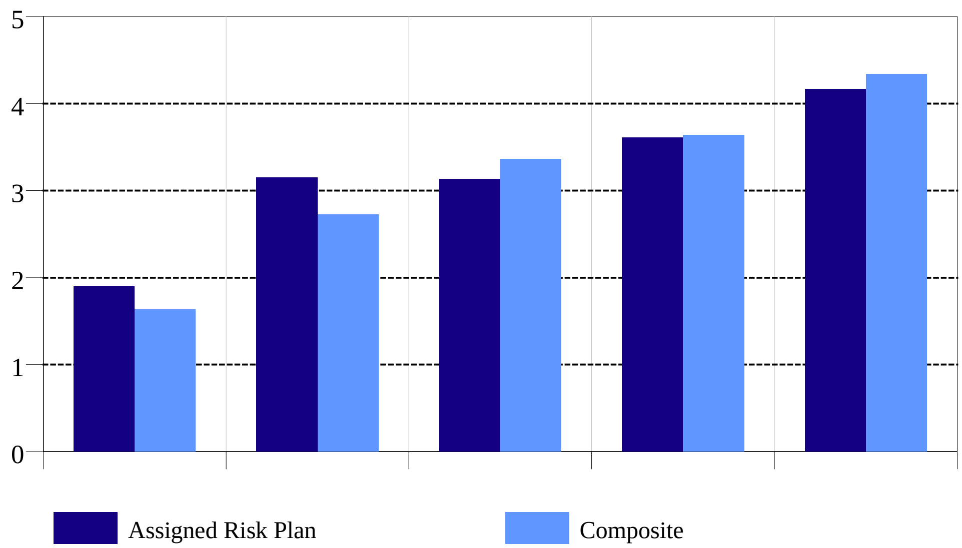
Performance Benchmarks

Since July 1, 2011, the fixed income benchmark has been the Bloomberg Barclays Intermediate Government Index. Since July 1, 1994, the equity benchmark has been the S&P 500 index. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets.

Market Value

On March 31, 2017 the market value of the Assigned Risk Plan was $319 million.

Performance Comparison



Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Fund*	**1.9%**	**3.2%**	**3.1%**	**3.6%**	**4.2%**
Composite	1.6%	2.7%	3.4%	3.6%	4.3%
Equity Segment*	**6.8%**	**18.6%**	**8.7%**	**12.5%**	**7.5%**
S&P 500	6.1%	17.2%	10.4%	13.3%	7.5%
Bond Segment*	**0.6%**	**-0.6%**	**1.6%**	**1.2%**	**3.1%**
BB Barclays Int Gov	0.5%	-0.7%	1.6%	1.2%	3.3%

* Actual returns are calculated net of fees.

Note: All periods over one year are annualized.

PERMANENT SCHOOL FUND

Investment Objectives

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.

Asset Mix

Effective with FY98, 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.

	3/31/17 Target	3/31/17 Actual
Stocks	50.0%	50.9%
Bonds	48.0%	47.2%
Cash	2.0%	2.0%
Total	100.0%	100.0%

Prior to FY98, the Fund was invested entirely in fixed income securities in order to maximize current income. It was understood that the change in asset mix would reduce portfolio income in the short term, but enhance the value of the fund, over time.

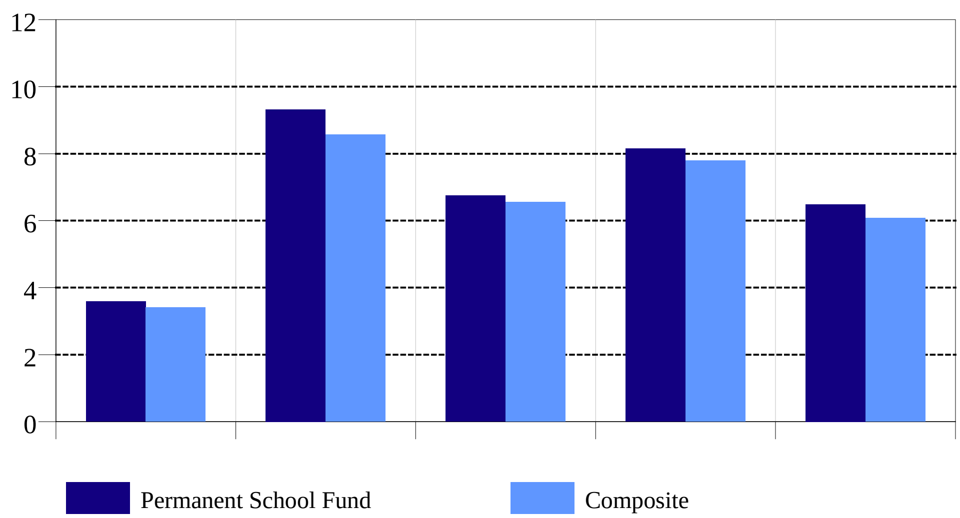
Investment Management

SBI staff manages all assets of the Permanent School Fund. 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.

Market Value

On March 31, 2017 the market value of the Permanent School Fund was $1.3 billion**.**

Performance Comparison



Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Fund*	**3.6%**	**9.3%**	**6.7%**	**8.2%**	**6.5%**
Composite	3.4%	8.6%	6.6%	7.8%	6.1%
Equity Segment*	**6.1%**	**17.2%**	**10.4%**	**13.3%**	**7.5%**
S&P 500	6.1%	17.2%	10.4%	13.3%	7.5%
Bond Segment*	**1.1%**	**1.6%**	**3.1%**	**3.1%**	**4.9%**
BB Barclays Agg	0.8%	0.4%	2.7%	2.3%	4.3%

* Actual returns are calculated net of fees.

Note: All periods over one year are annualized.

ENVIRONMENTAL TRUST FUND

Investment Objectives

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.

Asset Mix

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. As of July 1, 1999, the asset allocation changed from 50% stocks/50% fixed income to 70% stocks/30% fixed income.

	3/31/17 Target	3/31/17 Actual
Stocks	70.0%	71.1%
Bonds	28.0%	27.1%
Cash	2.0%	1.8%
Total	100.0%	100.0%

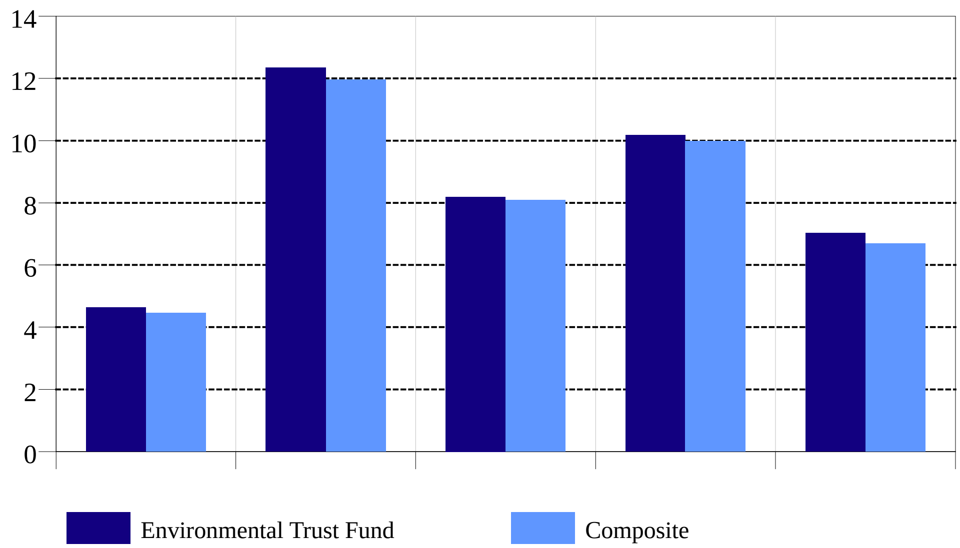
Investment Management

SBI staff manages all assets of the Environmental Trust Fund. 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.

Market Value

On March 31, 2017 the market value of the Environmental Trust Fund was $1.0 billion.

Performance Comparison



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
	Periods Ended 3/31/17				
Total Fund*	**4.6%**	**12.4%**	**8.2%**	**10.2%**	**7.0%**
Composite	4.5%	12.0%	8.1%	10.0%	6.7%
Equity Segment*	**6.1%**	**17.2%**	**10.4%**	**13.3%**	**7.6%**
S&P 500	6.1%	17.2%	10.4%	13.3%	7.5%
Bond Segment*	**1.1%**	**1.6%**	**3.1%**	**3.1%**	**4.9%**
BB Barclays Agg	0.8%	0.4%	2.7%	2.3%	4.3%

* Actual returns are calculated net of fees.

Note: All periods over one year are annualized.

CLOSED LANDFILL INVESTMENT FUND

Investment Objectives

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.

Asset Mix

From July 1999 to September 2014 the Fund's target allocation was 100% domestic equities. The SBI changed the Fund allocation in 2014 to a more balanced allocation of 70% a domestic equities and 30% bonds.

	3/31/17 Target	3/31/17 Actual
Stocks	70.0%	70.1%
Bonds	30.0%	29.9%
Total	100.0%	100.0%

Investment Management

SBI staff manage all assets of the Closed Landfill Investment Fund. 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.

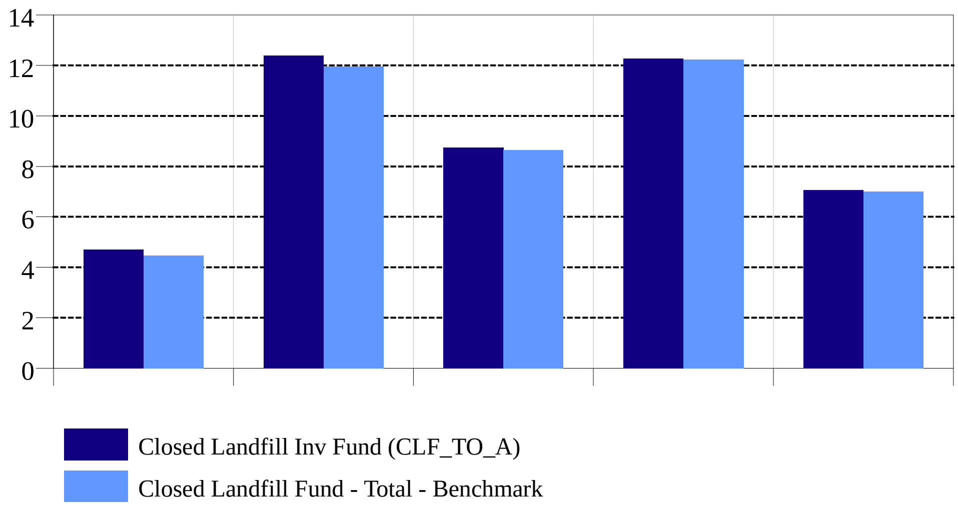
Legislation

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..

Market Value

On March 31, 2017, the market value of the Closed Landfill Investment Fund was $79 million.

Performance Comparison



Periods Ended 3/31/17

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Fund (1)	**4.7%**	**12.4%**	**8.8%**	**12.3%**	**7.1%**
Composite (3)	4.5%	12.0%	8.7%	12.2%	7.0%
Equity Segment (1)	**6.1%**	**17.2%**	**10.4%**	**13.3%**	**7.6%**
S&P 500	6.1%	17.2%	10.4%	13.3%	7.5%
Bond Segment (1,2)	**1.1%**	**1.6%**	**--**	**--**	**--**
BB Barclays Agg	0.8%	0.4%	--	--	--

(1) Actual returns are calculated net of fees.
(2) Bond Segment admission date 9/10/14.
(3) The benchmark of the fund is the S&P 500 from mid July 1999 to 9/9/14. As of 9/10/14 the benchmark consist of S&P 500 (70%) and Bloomberg Barclays U.S. Aggregate (30%).

Note: All periods over one year are annualized.

STATE CASH ACCOUNTS

Description
State Cash Accounts represent the balances in more than 400 separate accounts that flow through the Minnesota State Treasury. These accounts vary greatly in size.

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.

In addition, each State of Minnesota bond sale requires two additional pools, one for bond proceeds and one for debt reserve transfer.

Because of special legal restrictions, a small number of cash accounts cannot be commingled. These accounts are invested separately.

Investment Objectives
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.

Asset Mix
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.

Investment Management
All state cash accounts are managed by SBI investment staff. As noted above, most of the assets of the cash accounts are invested through the large commingled investment pool.

Period Ending 3/31/17

	Market Value (Millions)	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Treasurer's Cash Pool*	**$9,636**	**0.3%**	**0.8%**	**0.6%**	**0.6%**	**1.4%**
Custom Benchmark**		0.1%	0.2%	0.1%	0.1%	0.6%
3 month T-Bills		0.1%	0.4%	0.2%	0.1%	0.7%

* Actual returns are calculated net of fees.
** Beginning in January 2003, the Treasurer's Cash Pool is measured against the iMoneyNet, All Taxable Money Fund Report Average.

MINNESOTA STATE BOARD OF INVESTMENT
Composition of State Investment Portfolios By Type of Investment
Market Value March 31, 2017 (in Thousands)

	Cash & ST	Bonds Int	Bonds Ext	Stock Int	Stock Ext	Ext Intl	Alternative	Total
COMBINED RETIREMENT FUNDS								
Teachers Retirement Fund	497,314	0	4,045,771	0	9,143,458	4,319,664	2,681,192	20,687,399
	2.41%		19.56%		44.20%	20.88%	12.96%	100%
Public Employees Retirement Fund	368,971	0	3,673,890	0	8,303,005	3,922,607	2,434,741	18,703,214
	1.97%		19.64%		44.39%	20.97%	13.02%	100%
State Employees Retirement Fund	248,412	0	2,372,377	0	5,361,582	2,532,984	1,572,209	12,087,564
	2.06%		19.62%		44.36%	20.96%	13.01%	100%
Public Employees Police & Fire	148,229	0	1,509,419	0	3,411,293	1,611,605	1,000,314	7,680,860
	1.93%		19.65%		44.41%	20.98%	13.02%	100%
Highway Patrol Retirement Fund	14,328	0	132,013	0	298,351	140,950	87,487	673,129
	2.13%		19.61%		44.32%	20.94%	13.00%	100%
Judges Retirement Fund	4,726	0	35,110	0	79,348	37,486	23,268	179,938
	2.63%		19.51%		44.10%	20.83%	12.94%	100%
Correctional Employees Retirement	22,655	0	193,245	0	436,734	206,327	128,066	987,027
	2.30%		19.58%		44.25%	20.90%	12.97%	100%
Public Employees Correctional	11,846	0	113,113	0	255,636	120,771	74,962	576,328
	2.06%		19.63%		44.36%	20.96%	13.01%	100%
PERA Minneapolis Retirement	13,240	0	152,814	0	345,361	163,160	101,272	775,847
	1.71%		19.70%		44.51%	21.03%	13.05%	100%
TOTAL COMBINED FUNDS	1,329,721	0	12,227,752	0	27,634,768	13,055,554	8,103,511	62,351,306
	2.13%		19.61%		44.32%	20.93%	13.00%	100%

	Cash & ST	Bonds Int	Bonds Ext	Stock Int	Stock Ext	Ext Intl	Alternative	Total
MINNESOTA SUPPLEMENTAL FUNDS								
Balanced Fund	18,357	139,012	0	0	240,547	0	0	397,916
	4.61%	34.94%			60.45%			100%
U.S. Stock Actively Managed Fund	0	0	0	0	225,471	0	0	225,471
					100.00%			100%
Money Market Fund	308,771	0	0	0	0	0	0	308,771
	100.00%							100%
U.S. Stock Index Fund	0	0	0	0	546,773	0	0	546,773
					100.00%			100%
Bond Fund	0	0	149,375	0	0	0	0	149,375
			100.00%					100%
Broad International Stock Fund	0	0	0	0	0	170,723	0	170,723
						100.00%		100%
Stable Value Fund	0	0	221,426	0	0	0	0	221,426
			100.00%					100%
Volunteer Firefighters Account	3,435	0	33,293	0	26,139	11,080	0	73,947
	4.65%		45.02%		35.35%	14.98%		100%
TOTAL SUPPLEMENTAL FUNDS	330,563	139,012	404,094	0	1,038,930	181,803	0	2,094,402
	15.78%	6.64%	19.29%		49.61%	8.68%		100%
MN DEFERRED COMP PLAN	78,892	0	2,261,959	0	3,413,680	521,968	0	6,276,499
	1.26%		36.04%		54.39%	8.32%		100%
TOTAL RETIREMENT FUNDS	1,739,176	139,012	14,893,805	0	32,087,378	13,759,325	8,103,511	70,722,207
	2.46%	0.20%	21.06%		45.37%	19.46%	11.46%	100%

	Cash & ST	Bonds Int	Bonds Ext	Stock Int	Stock Ext	Ext Intl	Alternative	Total
ASSIGNED RISK PLAN	493 0.16%	0	254,873 79.81%	0	63,964 20.03%	0	0	319,330 100%
ENVIRONMENTAL FUND	17,842 1.78%	272,396 27.11%	0	714,697 71.12%	0	0	0	1,004,935 100%
PERMANENT SCHOOL FUND	25,156 1.96%	607,911 47.15%	0	656,252 50.90%	0	0	0	1,289,319 100%
CLOSED LANDFILL FUND	0	23,678 29.93%	0	55,438 70.07%	0	0	0	79,116 100%
Metropolitan Landfill Contingency Action Trust	0	2,374 27.13%	0	6,376 72.87%	0	0	0	8,750 100%
MISCELLANEOUS TRUST FUND	523 0.29%	70,320 39.33%	0	107,948 60.38%	0	0	0	178,791 100%
Other Post Employment Funds (OPEB's)	16,668 2.86%	110,855 19.05%	0	454,402 78.09%	0	0	0	581,925 100%
TREASURERS CASH	9,635,658 100.00%	0	0	0	0	0	0	9,635,658 100%
MISCELLANEOUS STATE ACCOUNTS	0	141,362 100.00%	0	0	0	0	0	141,362 100%
MN COLLEGE SAVINGS PLAN	9,191 0.71%	0	613,121 47.55%	0	477,324 37.02%	189,838 14.72%	0	1,289,474 100%
TOTAL CASH AND NON-RETIREMENT	9,705,531 66.80%	1,228,896 8.46%	867,994 5.97%	1,995,113 13.73%	541,288 3.73%	189,838 1.31%	0	14,528,660 100%
GRAND TOTAL	**11,444,707 13.42%**	**1,367,908 1.60%**	**15,761,799 18.49%**	**1,995,113 2.34%**	**32,628,666 38.27%**	**13,949,163 16.36%**	**8,103,511 9.51%**	**85,250,867 100%**

TAB

C

EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

DATE: May 8, 2017

TO: Members, State Board of Investment

FROM: Mansco Perry III

1. Reports on Budget and Travel

A report on the SBI's administrative budget for the fiscal year to date through March 31, 2017 is included as **Attachment A.**

A report on travel for the period from January 1, 2017 – March 31, 2017 is included as **Attachment B**.

2. Legislative Update

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

3. Sudan Update

Each quarter, staff provides a report to the Board on steps taken to implement *Minnesota Statutes*, section 11A.243 that requires SBI actions concerning companies with operations in Sudan. Staff receives periodic reports from the Empowering Responsible Investment 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 Task Force list; and

- 100% shall be sold within fifteen months after the company appeared on the list.

In the first quarter, no shares have been sold as a result of divestment.

Attachment D is a copy of the March 28, 2017 letter sent to each international equity manager and domestic equity manager containing the most recent restricted list and the list of stocks to be divested.

4. Iran Update

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

SBI receives information on companies with Iran operations from IW Financial, through Glass Lewis. Staff receives monthly reports from the SBI's custodian bank concerning SBI holdings of companies on the restricted list and writes letters as required by the law.

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

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

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

In the first quarter, SBI managers sold 23,123 shares in two companies on the divestment list.

Attachment E is a copy of the March 28, 2017 letter sent to each international equity manager and domestic equity manager and fixed income manager containing the end of quarter restricted list and the list of companies to be divested.

5. Litigation Update

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

ATTACHMENT A

STATE BOARD OF INVESTMENT
FISCAL YEAR 2017 ADMINISTRATIVE BUDGET REPORT
FISCAL YEAR TO DATE THROUGH MARCH 31, 2017

ITEM	FISCAL YEAR 2017 BUDGET	FISCAL YEAR 2017 3/31/2017
PERSONNEL SERVICES		
FULL TIME EMPLOYEES	$ 4,838,700	$ 2,886,710
PART TIME EMPLOYEES	$ 0	0
MISCELLANEOUS PAYROLL	100,000	10,993
SUBTOTAL	**$ 4,938,700**	**$ 2,897,703**
STATE OPERATIONS		
RENTS & LEASES	300,000	209,550
REPAIRS/ALTERATIONS/MAINTENANCE	15,000	17,746
PRINTING & BINDING	8,000	6,176
PROFESSIONAL/TECHNICAL SERVICES	150,000	17,216
COMPUTER SYSTEMS SERVICES	20,000	16,785
COMMUNICATIONS	36,000	20,936
TRAVEL, IN-STATE	1,000	140
TRAVEL, OUT-STATE	119,000	44,102
SUPPLIES	27,000	21,110
EQUIPMENT	25,000	10,031
EMPLOYEE DEVELOPMENT	35,000	32,944
OTHER OPERATING COSTS	140,000	81,659
INDIRECT COSTS	250,000	102,603
SUBTOTAL	**$ 1,126,000**	**$ 580,998**
TOTAL ADMINISTRATIVE BUDGET	**$ 6,064,700**	**$ 3,478,701**

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ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date
SBI Travel January 1, 2017 - March 31, 2017

Purpose	Name(s)	Destination and Date	Total Cost
Conference: Emerging Markets Forum sponsored by Elkind Economics, Inc.	M. Perry	Dallas, TX 1/11-1/12	$ 798.44
Manager Monitoring Alternative Investment Managers: KKR; Silver Lake; Vestar	P. Ammann	New York, NY 1/11-1/13	940.76
Manager Monitoring Alternative Investment Managers: KKR; Silver Lake; Vestar	J. Stacy	New York, NY 1/11-1/13	1,026.61
Manager Monitoring Consultant: Aon Hewitt Investment Consulting, Inc.	M. Perry	Chicago, IL 1/23	439.78
Manager Monitoring Alternative Investment Manager: Adams Street Partners	P. Ammann	Chicago, IL 2/7	264.05
Manager Monitoring Alternative Investment Manager: Adams Street Partners	N. Blumenshine	Chicago, IL 2/7	231.89
Conference: Council of Institutional Investor Winter Conference 2017	M. Perry	Washington, DC 2/27-3/1	1,499.74

STATE BOARD OF INVESTMENT

Travel Summary by Date
SBI Travel January 1, 2017 - March 31, 2017

Purpose	Name(s)	Destination and Date	Total Cost
Conference: Council of Institutional Investor Winter Conference 2017	J. Mulé	Washington, DC 2/27-3/1	$ 1,489.14
Conference: General Partners-Limited Partners Private Equity Roundtable sponsored by Institutional Limited Partners Association (ILPA)	A. Krech	New York, NY 3/8-3/9	1,008.40
Manager Monitoring Alternative Investment Managers: TA Realty; Windjammer **Manager Search Alternative Investment Manager:** Landmark Partners	J. Stacy	Boston, MA 3/13-3/15	1,223.73
Manager Monitoring Alternative Investment Managers: PPC; Strategic Partners Annual Meeting	P. Ammann	New York, NY 3/20-3/21	1,120.01
Conference: Government Investment Officers Association (GIOA)	S. Kuettel	Las Vegas, NV 3/21-3/24	1,121.58

STATE BOARD OF INVESTMENT

Travel Summary by Date
SBI Travel January 1, 2017 - March 31, 2017

Purpose	Name(s)	Destination and Date	Total Cost
Manager Monitoring Alternative Investment Managers: Rockwood Capital **Manager Search Alternative Investment Managers:** Francisco Partners; Hellman & Friedman	J. Stacy	San Francisco, CA Santa Monica, CA 3/26-3/29	$ 1,488.27

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BILLS OF INTEREST TO THE MINNESOTA STATE BOARD OF INVESTMENT

Bill No.	Author	Name of Bill	Current Status	Notes
SF480 HF409 **Omnibus** SF605 HF691	Senjem Albright	Additional Long-Term Equity Investment Authority	05/02: SF605: The provision was adopted by the conference committee into the current version of the omnibus government finance bill.	The bill grants qualifying cities and counties, along with certain self-insurance pools, the authority to invest a portion of assets in equity markets. To qualify, a city or county must have a population over 100,000, or have achieved the highest bond rating for its most GO bond issuance. The money may be invested through SBI or through certain indexed mutual funds. For cities and counties, the amount that may be invested is capped at 15% of the sum of the qualifying government's unassigned cash, cash equivalents, deposits, and investments. For insurance pools, the cap is 15% of the sum of the items above or 25% of the pool's net position.
HF586 SF1005 **Omnibus** HF4 SF2255	Drazkowski	Relating to state lands; establishing funds to make annual payments for certain state-purchased land using dedicated revenues; modifying payment in lieu of taxes requirements; appropriating money; etc.	05/01: HF4: The provision was not adopted by the conference committee in the current version of the omnibus tax bill.	The bill establishes an outdoor heritage trust account to be invested through the SBI. The trust is funded by one-time payment of 30 times the property taxes payable in the year prior to the year the state acquires land using funds from the environment and natural resources trust fund and the outdoor heritage fund. The Commissioner of the Department of Revenue acts as agent for the counties in depositing funds into the account. The funds are used to compensate for lost tax revenue into perpetuity. The bill provides for annual withdrawals at a maximum of 5.5% of the value of the fund for distribution to the counties.
Omnibus SF605 HF691	 Kiffmeyer Anderson, S.	Omnibus State Government Finance Bill—eliminating SBI exemption from mandatory coverage by MN.IT.	05/02: SF605: The provision was not adopted by the conference committee in the current version of the omnibus government finance bill.	The deletes a provision exempting SBI, MSRS, PERA, and TRA (among others) from mandatory integration of information technology systems into MN.IT. Currently law exempts the SBI and pension plans from full integration; instead, the SBI and pension systems use MN.IT for certain services (i.e. internet, and email), but maintain to varying degrees internal staff, infrastructure, and vendor contracts for IT products and services. The bill does not address existing contracts or staff, the impact of the legislation on the SBI and pension system's fiduciary duties or the exclusive benefit rule, or whether the pension systems will receive appropriations for MN.IT integration or will be required to fund technology expenses out of plan assets.

Omnibus SF1937 HF2209	Miller Garofalo	Omnibus State Jobs, Commerce, Energy, Labor and Industry, and Employment and Economic Development—establishing rural development fund invested through the SBI	05/01: SF1937: The provision was adopted by the conference committee into the current version of the jobs bill.	The bill creates a rural policy and development center fund. The Center for Rural Policy Development is authorized to accept gifts of cash and real property for investment in the fund. The Center's board must dispose of real property gifts and deposit the proceeds in the fund. The SBI is required to invest the assets of the fund.
HF722 SF930 HF1288 SF1064 HF1090 SF1066 HF2405 SF2146	Murphy, M. Rosen O'Driscoll Rosen O'Driscoll Rosen O'Driscoll Rosen	TRA Solvency MSRS Solvency PERA Solvency MSRS, PERA, and TRA Solvency (Gov. Dayton)	The Legislative Commission on Pensions and Retirement is currently considering potential sustainability packages for the omnibus pension bill. As of this update, the Commission has not released an omnibus bill.	The various pension bills contain financial solvency measures for plans administered by MSRS, PERA, and TRA (among other plans). The financial solvency measures reduce the assumed rate of return to 7.5% for the MSRS and PERA General Plans and TRA (note that HF722/SF930 reduces TRA's rate to 7.5% temporarily and returns to 8% in five years).
HF2085 SF2085	Thissen Pappas	State Board of Investment to report on impact of climate change on current fossil fuel investments requirement	03/20: HF2085 referred to the Government Operations and Elections Policy Committee 03/13: SF2085 referred to Committee on State Government Finance and Policy and Elections	The bill requires the SBI to conduct a study on the potential effects of fossil fuel investments on the combined funds and other retirement assets under SBI management. The study must address numerous factors including, but not limited to identifying the impact of carbon exposure on investments and increased costs of investments in fossil fuels; approaches and metrics available to assess the impact of carbon exposure on individual companies; and identifying improvements to the SBI's proxy voting guidelines that encourage engagement on climate change initiatives. The study must be completed by February 1, 2018.

HF2570 SF2303	Becker-Finn Pappas	Minnesota Secure Choice Program	03/20: HF2570 referred to the Government Operations and Elections Policy Committee 03/13: SF2303 referred to Jobs and Economic Growth Finance and Policy Committee	The bill creates two state-sponsored retirement plans for private employers. Employers may enter into an agreement with the secure choice board for a multi-employer defined contribution plan which would allow for employer and employee contributions. If an employer does not enter the DC plan, the employer must automatically enroll each eligible employee in an individual retirement account plan. Employees would receive notice of enrollment in the IRAP and have the ability to opt out of the plan. The board would oversee the administration of the plans, which would include choosing investment options made available by the SBI under the same statutory authorization as the Unclassified and Deferred Compensation Plans. The SBI executive director (or designee) would serve on the board. SBI would potentially have fiduciary duties under Minn. Stat. Ch. 356A and sections 404 and 408 of ERISA.
HF400 SF247	Kresha Limmer	Relating to state contracts; requiring that the vendor not engage in discrimination against Israel	05/03: The bill was passed and signed into law by the Governor.	The law prohibits state agencies from contracting with vendors that engage in discrimination against the State of Israel. State contracts must certify compliance with the law. Discrimination includes (but is not limited to) refusals to deal, terminating business activities, or other actions intended to limit commercial relations with Israel, or other persons or entities doing business in Israel, if the actions are taken in compliance with calls for discrimination or boycotts against Israel, or in a manner that discriminates on the basis of nationality or national origin. The law contains an exception to the requirement if the Commissioner of Administration determines that compliance is not practicable or in the best interest of the state.

NOTE: The pension plans have also proposed administrative bills along with other bills addressing unique circumstances of various plans. SBI staff will monitor the bills as they are considered by the Pension Commission.

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ATTACHMENT D

Letter to SBI Domestic and International Equity Managers

March 28, 2017

Regarding: Sudan Companies

Dear Manager:

The Minnesota State Board of Investment (SBI) sent you prior communication concerning holdings in companies doing business in Sudan. **This new communication applies to all SBI equity portfolios managed by your organization and replaces all prior communications. This communication also applies to all depository receipts or ADR's of any of the listed companies.**

Minnesota Statutes, section 11A.243 requires the SBI to implement a Sudan restriction.

Attachment 1 is the List of Restricted Sudan Stocks. These securities **may not be purchased** for the SBI portfolio that your organization manages. If you own securities of companies on the Restricted List **and** the companies are **not** on the divestment list, then you do not need to sell your holdings. Please note that the attached list makes changes to the List of Restricted Sudan Companies that was attached to the December 20, 2016 letter you received. **This new list is effective March 31, 2017.**

Changes to **Attachment 1**:

The following companies have been **removed** from the Restricted List:

- **ASEC Company for Mining (ASCOM) Egypt**

Attachment 2 is the List of Sudan Stocks Requiring Divestment. If you own securities of companies on this list then you must **divest** those holdings according to the schedule provided in the attachment:

- At least 50 percent of a company's holdings must be sold by the date indicated, and

- At least 100 percent of a company's holdings must be sold by the date indicated.

Changes to **Attachment 2**:

The following company has been **added** to the Divestment list:

- **Atlas Copco AB Sweden**

Attachment 3 is a list of security identifiers for the companies on the List of Restricted Sudan Stocks (Attachment 1) that your organization may use. The SBI does not represent that this is a complete list of identifiers. The manager is responsible for identifying all listings. Please note that the list of security identifiers may have information on companies not on the restricted list.

If you have any questions about this matter, please contact your assigned SBI Investment Officer.

Sincerely,

Mansco Perry III
Executive Director and Chief Investment Officer

Enclosures

cc: Michael J. Menssen, Director, Debt Management
Tammy Brusehaver, Investment Officer, Public Equity
Stephanie Gleeson, Investment Officer, Public Equity
LeaAnn M. Stagg, Chief Operating Officer

ATTACHMENT 1

Restricted Sudan Stocks

Company Name	Country of Origin
Andritz AG	Austria
Orca Gold Inc.	Canada
China Gezhouba Group Company Limited	China
China North Industries Group Corporation AKA CNGC/NORINCO	China
China Petroleum and Chemical Corporation AKA Sinopec Corp.	China
China Poly Group Corporation	China
Daqing Huake Group Company Limited	China
Dongfeng Motor Group Company Limited	China
Harbin Electric Company Ltd.	China
Jiangxi Hongdu Aviation	China
NORINCO International Cooperation Ltd	China
North Huajin Chemical Industries Co.	China
North Navigation Control Technology Co. Ltd	China
Petrochina Co. Ltd AKA China National Petroleum Corporation (CNPC)	China
Poly Property Group Co. Ltd.	China
Power Construction Corporation of China Ltd.	China
Power Construction Corporation of China (PowerChina)	China
Shanghai Electric Group Co. Ltd.	China
Sinopec Engineering Group Co. Ltd.	China
Sinopec Shanghai Petrochemicals Ltd	China
Sinopec Oilfield Service Corp	China
Egypt Kuwait Holding Company	Egypt
ENGIE	France
Parisienne Chauffage Urbain	France
MAN SE	Germany
Renk AG	Germany
Volkswagen AG	Germany
Kunlun Energy Co. Ltd	Hong Kong
Sinopec Kanton Holdings Limited	Hong Kong
Bharat Electronics Limited	India
Bharat Heavy Electricals Limited	India
Chennai Petroleum Corporation Ltd. AKA CPCL	India
Indian Oil Corporation Ltd.	India
Lanka IOC Limited	India
Mangalore Refinery and Petrochemicals Limited	India
Oil & Natural Gas Corp. Ltd.	India
Oil India Limited	India
Energy House Holding Co KSCC, The	Kuwait
Kuwait Finance House	Kuwait
Engen Botswana Ltd. AKA Engen	Malaysia
KLCCP Stapled Group AKA KLCC Property Holdings	Malaysia
Malaysia International Shipping Company AKA MISC Berhad	Malaysia

ATTACHMENT 1

Restricted Sudan Stocks	
Company Name	**Country of Origin**
Malaysia Marine and Heavy Engineering Holdings Bhd	Malaysia
Petroliam Nasional Berhad AKA Petronas	Malaysia
Petronas Chemicals Group Berhad	Malaysia
Petronas Dagangan Berhad	Malaysia
Petronas Gas Berhad	Malaysia
Managem	Morocco
Societe Metallurgique D'imiter	Morocco
GAZ Group	Russia
GAZ PJSC	Russia
Kamaz PJSC	Russia
Neftekamsky Avtozavod (aka NEFAZ)	Russia
Pavlovo Bus PJSC	Russia
LS Industrial Systems	South Korea
Atlas Copco AB	Sweden

Note: List contains parent companies and subsidiaries publicly traded.
AKA means "Also Known As"

Source: EIRIS Conflict Risk Network

Effective Date: March 31, 2017

ATTACHMENT 2

SUDAN STOCKS REQUIRING DIVESTMENT

Company Name	Country of Origin	Divest 50 Percent By this Date	Divest 100 Percent By this date
ENGIE	France	June 30, 2017	December 31, 2017
Atlas Copco AB	Sweden	September 30, 2017	March 31, 2018

Effective Date: March 31, 2017

COMPLETED/HISTORICAL DIVESTMENT

Company Name	Country of Origin	Divest 50 Percent By this Date	Divest 100 Percent By this date
Shanghai Electric Group Co. Ltd.	China	March 31, 2016	September 30, 2016
Volkswagen AG	Germany	June 30, 2015	December 31, 2015
Poly Property Group	China	March 31, 2015	September 30, 2015
MAN SE	Germany	December 31, 2014	June 30, 2015
Bharat Heavy Electricals	India	September 30, 2014	March 31, 2015
Bharat Electronics Limited	India	September 30, 2014	March 31, 2015
Andritz AG	Austria	September 30, 2014	March 31, 2015
Dongfeng Motor Group Company Limited	China	March 31, 2011	September 30, 2011
China Petroleum and Chemical Corporation AKA Sinopec Corp	China	April 30, 2008	October 31, 2008
PetroChina Company	China	April 30, 2008	October 31, 2008
Oil and Natural Gas Corp AKA ONGC	India	April 30, 2008	October 31, 2008
Malaysia International Shipping Company AKA MISC Berhad	Malaysia	April 30, 2008	October 31, 2008

EIRIS CONFLICT RISK NETWORK
Empowering Responsible Investment

ATTACHMENT 3

Security Identifiers for "Scrutinized" Stocks

The following security identifiers correlate with the First Quarter 2017 Sudan Company Report and are current as of February 8, 2017

ALL DATA IS FROM BLOOMBERG LP UNLESS OTHERWISE NOTED.

STOCKS ADDED SINCE LAST REPORT ARE HIGHLIGHTED

Company	Primary Company (Affiliate/Parent)	Exchange	Security Type	Security Name	Ticker	WPK Number	SEDOL	CUSIP	Sicovam	ISIN	COMMON	CINS	Fondscode
ANDRITZ AG	ANDRITZ GROUP	Vienna (WBAH)	Common Stock	ANDRITZ AG	ANDR AV	632305	B1WVF68 AT			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	BATS Europe (BATE)	Common Stock	ANDRITZ AG	ANDR EB	632305	B1WVF68 AT			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Chi-X Europe (CHIX)	Common Stock	ANDRITZ AG	ANDR IX	632305	B1WVF68 AT			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Turquoise (TRQX)	Common Stock	ANDRITZ AG	ANDR TQ	632305	B1WVF68 AT			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GB	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GD	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GF	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GH	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GM	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GR	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GS	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GY	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Quotrix Exch (XQTX)	Common Stock	ANDRITZ AG	AZ2 QT	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Tradegate (XGAT)	Common Stock	ANDRITZ AG	AZ2 TH	632305	B1X9FH2 DE			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	OTC US (OOTC)	Common Stock	ANDRITZ AG	ADRZF US	632305	B1XBL36			AT0000730007	13042748	A11123105	
ANDRITZ AG	ANDRITZ GROUP	OTC US (OOTC)	Common Stock	ANDRITZ AG	ADRZF UV	632305	B1XBL36			AT0000730007	13042748	A11123105	
ANDRITZ AG	ANDRITZ GROUP	Euro Comp (XLON)	Common Stock	ANDRITZ AG	ANDR EU	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	LSE EuropeQS (XLON)	Common Stock	ANDRITZ AG	ANDR LI	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	LSE EuropeQS (XLON)	Common Stock	ANDRITZ AG	ANDR LO	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XA	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XB	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XD	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XE	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XL	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XV	632305	B28F3F6 GB			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	BX Worldcaps (XBRN)	Common Stock	ANDRITZ AG	ANDR BW	632305	BHZL8M4 CH			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	SIX Swiss Ex (XSWX)	Common Stock	ANDRITZ AG	ANDR SE	632305	BHZL8M4 CH			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	BX Worldcaps (XBRN)	Common Stock	ANDRITZ AG	ANDR SW	632305	BHZL8M4 CH			AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XS	632305				AT0000730007	13042748		
ANDRITZ AG	ANDRITZ GROUP	Euro Comp (XLON)	Common Stock	ANDRITZ AG	ANDRCHF EU	632305				AT0000730007	13042748	A11123105	
ANDRITZ AG	ANDRITZ GROUP	Blockmatch (BLOX)	Common Stock	ANDRITZ AG	ANDRV B3	632305				AT0000730007			
ANDRITZ AG	ANDRITZ GROUP	Liquidnet (LIQU)	Common Stock	ANDRITZ AG	ANDRV L3	632305				AT0000730007			
ANDRITZ AG	ANDRITZ GROUP	ITG Posit (XPOS)	Common Stock	ANDRITZ AG	ANDRV PO	632305				AT0000730007	13042748	A11123105	
ANDRITZ AG	ANDRITZ GROUP	UBS MTF (XUBS)	Common Stock	ANDRITZ AG	ANDRV S2	632305				AT0000730007			
ANDRITZ AG	ANDRITZ GROUP	OTC US (OOTC)	ADR	ANDRITZ AG-UNSPON ADR	ADRZY PQ		B3DY4P2 US	034522102		US0345221024			
ANDRITZ AG	ANDRITZ GROUP	OTC US (OOTC)	ADR	ANDRITZ AG-UNSPON ADR	ADRZY US		B3DY4P2 US	034522102		US0345221024			
ANDRITZ AG	ANDRITZ GROUP	OTC US (OOTC)	ADR	ANDRITZ AG-UNSPON ADR	ADRZY UV	A1W8D1	B3DY4P2 US	034522102		US0345221024	96194871		
ATLAS COPCO AB	ATLAS COPCO AB	BATS Europe (BATE)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA EB	A14S17	BXC8BS7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Aquis Exchg (AQXE)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA QX	A14S17	BXC8BS7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Stockholm (XSTO)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA SS	A14S17	BXC8BS7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Equiduct (XEQT)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS BQ	A14S17	BXC8BS7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Chi-X Europe (CHIX)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS IX	A14S17	BXC8BS7			SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Turquoise (TRQX)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS TQ	A14S17	BXC8BS7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	Common Stock	ATLAS COPCO AB-A SHS	ATLKF PQ	A14S17	BXDZJP0		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	Common Stock	ATLAS COPCO AB-A SHS	ATLKF US	A14S17	BXDZJP0		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	Common Stock	ATLAS COPCO AB-A SHS	ATLKF UV	A14S17	BXDZJP0		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	BX Worldcaps (XBRN)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA BW	A14S17	BXV1GV5		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	BX Worldcaps (XBRN)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA SW	A14S17	BXV1GV5		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Frankfurt (XFRA)	Common Stock	ATLAS COPCO AB-A SHS	ACOF GB	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Frankfurt (XFRA)	Common Stock	ATLAS COPCO AB-A SHS	ACOF GD	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Frankfurt (XFRA)	Common Stock	ATLAS COPCO AB-A SHS	ACOF GF	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Frankfurt (XFRA)	Common Stock	ATLAS COPCO AB-A SHS	ACOF GI	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Frankfurt (XFRA)	Common Stock	ATLAS COPCO AB-A SHS	ACOF GR	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Frankfurt (XFRA)	Common Stock	ATLAS COPCO AB-A SHS	ACOF GS	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Tradegate (XGAT)	Common Stock	ATLAS COPCO AB-A SHS	ACOF TH	A14S17	BXV1GX7		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Mexico (XMEX)	Common Stock	ATLAS COPCO AB-A SHS	ACOFN MM	A14S17	BXVKS49			SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	LSE Europe QS (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA LI	A14S17	BXVMB02		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	LSE Europe QS (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA LO	A14S17	BXVMB02		907483	SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Euro Comp (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA EU	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA XB	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA XE	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA XO	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA XV	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Euro Comp (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAEUR EU	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	Blockmatch (BLOX)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS B3	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	ITG Posit (XPOS)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS PO	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	UBS MTF (XUBS)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS S2	A14S17				SE0006886750			
ATLAS COPCO AB	ATLAS COPCO AB	EURO OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBEUR XS	A14S18				SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Liquidnet (LIQU)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBS L3	A14S18				SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Quotrix Exch (XQTX)	Common Stock	ATLAS COPCO AB-B SHS	ACOB QT	A14S18	B1XHM19		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GB	A14S18	BWX45D0		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GD	A14S18	BWX45D0		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GF	A14S18	BWX45D0		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GM	A14S18	BWX45D0			SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GR	A14S18	BWX45D0		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GS	A14S18	BWX45D0		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Chi-X Europe (CHIX)	Common Stock	ATLAS COPCO AB-B SHS	ATCB IX	A14S18	BXC8BW1		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	BATS Europe (BATE)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB EB	A14S18	BXC8BW1		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Aquis Exchg (AQXE)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB QX	A14S18	BXC8BW1		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Stockholm (XSTO)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB SS	A14S18	BXC8BW1		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Equiduct (XEQT)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBS BQ	A14S18	BXC8BW1			SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	Turquoise (TRQX)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBS TQ	A14S18	BXC8BW1			SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	BX Worldcaps (XBRN)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB BW	A14S18	BXV1FG3			SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	BX Worldcaps (XBRN)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB SW	A14S18	BXV1FG3		907485	SE0006886768			
ATLAS COPCO AB	ATLAS COPCO AB	LSE EuropeQS (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB LI	A14S18	BXVM9X1		907485	SE0006886768			

ATLAS COPCO AB	ATLAS COPCO AB	LSE EuropeQS (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB LO	A14S18	BXVM9X1		907485	SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro Comp (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB EU	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XB	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XE	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XO	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XV	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro Comp (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBEUR EU	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Blockmatch (BLOX)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBS B3	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	ITG Posit (XPOS)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBS PO	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	UBS MTF (XUBS)	Common Stock	ATLAS COPCO AB-B SHS	ATCOBS S2	A14S18				SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOA XW	A14S17				SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCPA XS	A14S17				SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XS	A14S18				SE0006886768	123363159	
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XL	A14S18				SE0006886768	123363159	
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOA XD	A14S17				SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-B SHS	ATCOB XD	A14S18				SE0006886768	123363159	
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	ADR	ATLAS COPCO AB-SPONS ADR A	ATLKY PQ	920783	2061997			US0492557063		
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	ADR	ATLAS COPCO AB-SPONS ADR A	ATLKY US	920783	2061997			US0492557063		
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	ADR	ATLAS COPCO AB-SPONS ADR A	ATLKY UV	920783	2061997			US0492557063		
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	ADR	ATLAS COPCO AB-SPON ADR B SH	ATLCY PQ	920784	2062019			US0492558053		
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	ADR	ATLAS COPCO AB-SPON ADR B SH	ATLCY US	920784	2062019			US0492558053		
ATLAS COPCO AB	ATLAS COPCO AB	OTC US (OOTC)	ADR	ATLAS COPCO AB-SPON ADR B SH	ATLCY UV	920784	2062019			US0492558053		
BHARAT ELECTRONICS LIMITED	BHARAT ELECTRONICS LIMITED	Natl India (XNSE)	Common Stock	BHARAT ELECTRONICS LIMITED	BHE IB	120304	6139715 IN			INE263A01016		
BHARAT ELECTRONICS LIMITED	BHARAT ELECTRONICS LIMITED	Natl India (XNSE)	Common Stock	BHARAT ELECTRONICS LIMITED	BHE IN	120304	6139715 IN			INE263A01016		
BHARAT ELECTRONICS LIMITED	BHARAT ELECTRONICS LIMITED	Natl India (XNSE)	Common Stock	BHARAT ELECTRONICS LIMITED	BHE IS	120304	6139715 IN			INE263A01016		
BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE)	Common Stock	BHARAT HEAVY ELECTRICALS	BHEL IB	A1JLKM	B6SNRV2 IN			INE257A01026		
BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE)	Common Stock	BHARAT HEAVY ELECTRICALS	BHEL IN	A1JLKM	B6SNRV2 IN			INE257A01026		
BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE)	Common Stock	BHARAT HEAVY ELECTRICALS	BHEL IS	A1JLKM	B6SNRV2 IN			INE257A01026		
BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE)	Second Lending	BHARAT HEAVY ELECTRICALS-SLB	BHEL/S IN							
BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE)	Second Lending	BHARAT HEAVY ELECTRICALS-SLB	BHEL/S IS							
CHINA GEZHOUBA GROUP COMPANY LTD	CHINA GEZHOUBA GROUP COMPANY LTD	Shanghai (XSHG)	Common Stock	CHINA GEZHOUBA GROUP CO LT-A	600068 CG	A0M31Z	6377214 CN			CNE000000QF1		
CHINA GEZHOUBA GROUP COMPANY LTD	CHINA GEZHOUBA GROUP COMPANY LTD	Shanghai (XSHG)	Common Stock	CHINA GEZHOUBA GROUP CO LT-A	600068 CH	A0M31Z	6377214 CN			CNE000000QF1		
CHINA GEZHOUBA GROUP COMPANY LTD	CHINA GEZHOUBA GROUP COMPANY LTD	Nth SSE-SEHK (XSSC)	Common Stock	CHINA GEZHOUBA GROUP CO LT-A	600068 C1	A0M31Z	BP3R693 CN			CNE000000QF1		
DAQING HUAKE GROUP CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Shenzhen (XSHE)	Common Stock	DAQING HUAKE GROUP CO-A	000985 CH	A0M4C2	6277949 CN			CNE000001402		
DAQING HUAKE GROUP CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Shenzhen (XSHE)	Common Stock	DAQING HUAKE GROUP CO-A	000985 CS	A0M4C2	6277949 CN			CNE000001402		
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 GB	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 GD	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 GF	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 GM	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 GR	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 GS	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Quotrix Exch (XQTX)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 QT	A1CV3E	5387753 DE			BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Tradegate (XGAT)	Common Stock	KUNLUN ENERGY CO LTD	CTJ1 TH	A1CV3E	5387753 DE		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Hong Kong (XHKG)	Common Stock	KUNLUN ENERGY CO LTD	135 HK	A1CV3E	6340078 HK		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC)	Common Stock	KUNLUN ENERGY CO LTD	KUNUF PQ	A1CV3E	B01DDZ3 US		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC)	Common Stock	KUNLUN ENERGY CO LTD	KUNUF US	A1CV3E	B01DDZ3 US		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC)	Common Stock	KUNLUN ENERGY CO LTD	KUNUF UV	A1CV3E	B01DDZ3 US		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Sth SSE-SEHK (SHSC)	Common Stock	KUNLUN ENERGY CO LTD	135 H1	A1CV3E	BP3RW39 HK		952131	BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Euro Comp (XLON)	Common Stock	KUNLUN ENERGY CO LTD	135EUR EU	A1CV3E				BMG5320C1082	50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC)	ADR	CNPC HONG KONG LTD-UNSP ADR	KLYCY PQ	A1J7V7	B3L2812 US	50126A101		US50126A1016		
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC)	ADR	CNPC HONG KONG LTD-UNSP ADR	KLYCY US	A1J7V7	B3L2812 US	50126A101		US50126A1016		
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC)	ADR	CNPC HONG KONG LTD-UNSP ADR	KLYCY UV	A1J7V7	B3L2812 US	50126A101		US50126A1016		
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GB	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GD	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GF	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GH	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GM	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GR	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GS	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GY	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Quotrix Exch (XQTX)	Common Stock	PETROCHINA CO LTD-H	PC6 QT	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 TH	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Hong Kong (XHKG)	Common Stock	PETROCHINA CO LTD-H	857 HK	A0M4YQ	6226576 HK			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC US (OOTC)	Common Stock	PETROCHINA CO LTD-H	PCCYF PQ	A0M4YQ	B01DNL9			CNE1000003W8	11014674	Y6883Q104
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC US (OOTC)	Common Stock	PETROCHINA CO LTD-H	PCCYF US	A0M4YQ	B01DNL9 US			CNE1000003W8	11014674	Y6883Q104
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC US (OOTC)	Common Stock	PETROCHINA CO LTD-H	PCCYF UV	A0M4YQ	B01DNL9 US			CNE1000003W8	11014674	Y6883Q104
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Sth SSE-SEHK (SHSC)	Common Stock	PETROCHINA CO LTD-H	857 H1	A0M4YQ	BP3RWW8 HK			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Sth SZ-SEHK (SZSC)	Common Stock	PETROCHINA CO LTD-H	857 H2	A0M4YQ	BD8NGP8 HK			CNE1000003W8	11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Shanghai (XSHG)	Common Stock	PETROCHINA CO LTD-A	601857 CG	A0NANC	B28SLD9 CN			CNE1000007Q1	33421664	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Shanghai (XSHG)	Common Stock	PETROCHINA CO LTD-A	601857 CH	A0NANC	B28SLD9 CN			CNE1000007Q1	33421664	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Nth SSE-SEHK (XSSC)	Common Stock	PETROCHINA CO LTD-A	601857 C1	A0NANC	BP3R206 CN			CNE1000007Q1	33421664	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR VF	936983	2568841	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UB	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UD	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UF	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UN	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UP	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR US	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UT	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UX	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR VJ	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR VK	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR VY	936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	ADR	PETROCHINA CO LTD -ADR	PC6A GB	936983	4633327 DE	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	ADR	PETROCHINA CO LTD -ADR	PC6A GF	936983	4633327 DE	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	ADR	PETROCHINA CO LTD -ADR	PC6A GM	936983	4633327 DE	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	ADR	PETROCHINA CO LTD -ADR	PC6A GR	936983	4633327 DE	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	ADR	PETROCHINA CO LTD -ADR	PC6A GS	936983	4633327 DE	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	ADR	PETROCHINA CO LTD -ADR	PC6A GY	936983	4633327 DE	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Singapore (XSES)	ADR	PETROCHINA CO LTD -ADR	PTR SP	936983	B3KTK63 SG			US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Mexico (XMEX)	ADR	PETROCHINA CO LTD -ADR	PTRN MM	936983	B569834	71646E100		US71646E1001	11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Tradegate (XGAT)	ADR	PETROCHINA CO LTD -ADR	PC6A TH	936983		74646E100		US71646E1001	11511449	
NORINCO INTERNATIONAL COOPERATION LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Shenzhen (XSHE)	Common Stock	NORINCO INTL COOPERATION -A	000065 CH	A0M35W	6112125 CN			CNE000000VZ9		
NORINCO INTERNATIONAL COOPERATION LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Shenzhen (XSHE)	Common Stock	NORINCO INTL COOPERATION -A	000065 CS	A0M35W	6112125 CN			CNE000000VZ9		
NORINCO INTERNATIONAL COOPERATION LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Nth SZ-SEHK (XSEC)	Common Stock	NORINCO INTL COOPERATION -A	000065 C2	A0M35W	BD5LTR8 CN			CNE000000VZ9		

NORTH HUAJIN CHEMICAL INDUSTRIES CO LTD	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Shenzhen (XSHE)	Common Stock	NORTH HUAJIN CHEMICAL INDU-A	000059 CH	A0M30T	6796143 CN		CNE000000NY9		Y7742G105
NORTH HUAJIN CHEMICAL INDUSTRIES CO LTD	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Shenzhen (XSHE)	Common Stock	NORTH HUAJIN CHEMICAL INDU-A	000059 CS	A0M30T	6796143 CN		CNE000000NY9		
NORTH HUAJIN CHEMICAL INDUSTRIES CO LTD	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Nth SZ-SEHK (XSEC)	Common Stock	NORTH HUAJIN CHEMICAL INDU-A	000059 C2	A0M30T	BD5M1S6		CNE000000NY9		
NORTH NAVIGATION CONTROL TECHNOLOGY CO. LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Shenzhen (XSHE)	Common Stock	NORTH NAVIGATION CONTROL T-A	600435 CG	A0M4L5	6649946 CN		CNE000001F88		
NORTH NAVIGATION CONTROL TECHNOLOGY CO. LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Shenzhen (XSHE)	Common Stock	NORTH NAVIGATION CONTROL T-A	600435 CH	A0M4L5	6649946 CN		CNE000001F88		
NORTH NAVIGATION CONTROL TECHNOLOGY CO. LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION (CNGC/NORINCO)	Nth SSE-SEHK (XSSC)	Common Stock	NORTH NAVIGATION CONTROL T-A	600435 C1	A0M4L5	BP3RB54 CN		CNE000001F88		
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	CHINA PETROLEUM & CHEMICAL-A	600028 CH	A0M4G4	6373728 CN		CNE0000018G1		
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Hong Kong (XHKG)	Common Stock	CHINA PETROLEUM & CHEMICAL-H	386 HK	A0M4XN	6291819 HK		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GB	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GD	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GF	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GH	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GM	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GR	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GS	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Quotrix Exch (XQTX)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU QT	A0M4XN	7027756 DE		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	Common Stock	CHINA PETROLEUM & CHEMICAL-H	SNPMF PQ	A0M4XN	B01XKR4 US		CNE1000002Q2	12150504	Y15010104
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	Common Stock	CHINA PETROLEUM & CHEMICAL-H	SNPMF US	A0M4XN	B01XKR4 US		CNE1000002Q2	12150504	Y15010104
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	Common Stock	CHINA PETROLEUM & CHEMICAL-H	SNPMF UV	A0M4XN	B01XKR4 US		CNE1000002Q2	12150504	Y15010104
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SSE-SEHK (SHSC)	Common Stock	CHINA PETROLEUM & CHEMICAL-H	386 H1	A0M4XN	BP3RSM0 HK		CNE1000002Q2	12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	CHINA PETROLEUM & CHEMICAL-A	600028 CG	A0M4G4	6373728 CN		CNE1000018G1		
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Nth SSE-SEHK (XSSC)	Common Stock	CHINA PETROLEUM & CHEMICAL-A	600028 C1	A0M4G4	BP3R240 CN		CNE1000018G1		
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UB	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UD	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UF	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UN	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UP	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP US	578971	2639189 US		US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UT	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UX	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP VJ	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP VK	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP VY	578971	2639189 US	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	London Intl (XLON)	ADR	CHINA PETROLEUM & CHEM-ADR	SNP LI	578971	2654375 GB	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GB	578971	B0RSW00 DE	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GF	578971	B0RSW00 DE	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GM	578971	B0RSW00 DE	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GR	578971	B0RSW00 DE	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GS	578971	B0RSW00 DE	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Mexico (XMEX)	ADR	CHINA PETROLEUM & CHEM-ADR	SNPN MM	578971	B4QSP22 MX	16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Tradegate (XGAT)	ADR	CHINA PETROLEUM & CHEM-ADR	CHUA TH	578971		16941R108	US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEM-ADR	SNP UM	578972	2639189 US				
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	CHINA PETROLEUM & CHEM-ADR	SNP VF	578973	2639189 US	16941R108			
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SSE-SEHK (SHSC)	Common Stock	SINOPEC ENGINEERING GROUP-H	2386 H1	A1T97T	B92NYC9		CNE100001NV2	93502256	
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Hong Kong (XHKG)	Common Stock	SINOPEC ENGINEERING GROUP-H	2386 HK	A1T97T	B92NYC9		CNE100001NV2	93502256	
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	Common Stock	SINOPEC ENGINEERING GROUP-H	1NS GF	A1T97T	B96WKB3		CNE100001NV2		
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	Common Stock	SINOPEC ENGINEERING GROUP-H	1NS GM	A1T97T	B96WKB3		CNE100001NV2		
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	Common Stock	SINOPEC ENGINEERING GROUP-H	1NS GR	A1T97T	B96WKB3		CNE100001NV2		
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	Common Stock	SINOPEC ENGINEERING GROUP-H	1NS GS	A1T97T	B96WKB3		CNE100001NV2		

SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Quotrix Exch (XQTX)	Common Stock	SINOPEC ENGINEERING GROUP-H	1NS QT	A1T97T	B96WKB3 DE			CNE100001NV2		
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Euro Comp (XLON)	Common Stock	SINOPEC ENGINEERING GROUP-H	2386EUR EU	A1T97T				CNE100001NV2	93502256	Y80359105
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC KANTONS HOLDINGS	SAK GB	923923	4601197 DE			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC KANTONS HOLDINGS	SAK GF	923923	4601197 DE			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC KANTONS HOLDINGS	SAK GR	923923	4601197 DE			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC KANTONS HOLDINGS	SAK GS	923923	4601197 DE			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Hong Kong (XHKG)	Common Stock	SINOPEC KANTONS HOLDINGS	934 HK	923923	6162692 HK			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Hong Kong (XHKG)	Common Stock	SINOPEC KANTONS HOLDINGS	934 H1	923923	BP3RXQ9 HK			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SZ-SEHK (SZSC)	Common Stock	SINOPEC KANTONS HOLDINGS	934 H2	923923	BD8NH33 HK			BMG8165U1009		
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	ADR	SINOPEC KANTONS-UNSPON ADR	SPKOY PQ		B3KRT60 US	82934W207		US82934W2070		
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	ADR	SINOPEC KANTONS-UNSPON ADR	SPKOY US		B3KRT60 US	82934W207		US82934W2070		
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	ADR	SINOPEC KANTONS-UNSPON ADR	SPKOY UV		B3KRT60 US	82934W207		US82934W2070		
SINOPEC OILFIELD EQUIPMENT	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shenzhen (XSHE)	Common Stock	SINOPEC OILFIELD EQUIPMENT-A	000852 CH	A0M37A	6136385			CNE000000XK7		Y4446M108
SINOPEC OILFIELD EQUIPMENT	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shenzhen (XSHE)	Common Stock	SINOPEC OILFIELD EQUIPMENT-A	000852 CS	A0M37A	6136385			CNE000000XK7		Y4446M108
SINOPEC OILFIELD EQUIPMENT	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Nth SZ-SEHK (XSEC)	Common Stock	SINOPEC OILFIELD EQUIPMENT-A	000852 C2	A0M37A	BD5LXZ4			CNE000000XK7		
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	SINOPEC OILFIELD SERVICE C-A	600871 CG	A0M3V6	6986740 CN			CNE000000HS3		
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	SINOPEC OILFIELD SERVICE C-A	600871 CH	A0M3V6	6986740 CN			CNE000000HS3		
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Nth SSE-SEHK (XSSC)	Common Stock	SINOPEC OILFIELD SERVICE C-A	600871 C1	A0M3V6	BWT5TJ1 CN			CNE000000HS3		
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Hong Kong (XHKG)	Common Stock	SINOPEC OILFIELD SERVICE -H	1033 HK	A0M4Y6	6984669 HK		917709	CNE1000004D6	008069662	
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SSE-SEHK (SHSC)	Common Stock	SINOPEC OILFIELD SERVICE -H	1033 H1	A0M4Y6	BP3RXS1 HK		917709	CNE1000004D6	008069662	
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SSE-SEHK (SHSC)	Common Stock	SINOPEC OILFIELD SERVICE -H	1033 H2	A0M4Y6	BD8NHJ9 HK		917709	CNE1000004D6	008069662	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	SINOPEC SHANGHAI PETROCHE-A	600688 CG	A0M3RA	6802794			CNE000000BB2		
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	SINOPEC SHANGHAI PETROCHE-A	600688 CH	A0M3RA	6802794			CNE000000BB2		
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Nth SSE-SEHK (XSSC)	Common Stock	SINOPEC SHANGHAI PETROCHE-A	600688 C1	A0M3RA	BP3R596 CN			CNE000000BB2		
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GB	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GD	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GF	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GH	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GM	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GR	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GS	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Hong Kong (XHKG)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	338 HK	A0M4Y5	6797458 HK		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SPTJF US	A0M4Y5	B01XTG6 US			CNE1000004C8	005096162	Y80373106
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	OTC US (OOTC)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SPTJF UV	A0M4Y5	B01XTG6 US			CNE1000004C8	005096162	Y80373106
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SSE-SEHK (SHSC)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	338 H1	A0M4Y5	BP3RXR0 HK		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Euro Comp (XLON)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	338EUR EU	A0M4Y5				CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Sth SZ-SEHK (SZSC)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	338 H2	A0M4Y5	BD8NDN5 HK		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Tradegate (XGAT)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH TH	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UX	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UB	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UD	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UF	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UN	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UP	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UT	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI VF	887169	2800059 US	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI VJ	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI VK	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI VY	887169	2800059 US		908289	US82935M1099	12248750	

SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI GB	887169	5734638 DE	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI GF	887169	5734638 DE	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI GM	887169	5734638 DE	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI GR	887169	5734638 DE	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI GS	887169	5734638 DE	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Singapore (XSES)	ADR	SINOPEC SHANGHAI -SPONS ADR	SHI SP	887169	B3MNGN2	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI US	887169	2800059 US		908289	US82935M1099	12248750	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Hong Kong (XHKG)	Common Stock	POLY PROPERTY GROUP CO LTD	119 HK	885546	6220987 HK			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Frankfurt (XFRA)	Common Stock	POLY PROPERTY GROUP CO LTD	CMJ GB	885546	B1HJJS7 DE			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Frankfurt (XFRA)	Common Stock	POLY PROPERTY GROUP CO LTD	CMJ GF	885546	B1HJJS7 DE			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Frankfurt (XFRA)	Common Stock	POLY PROPERTY GROUP CO LTD	CMJ GR	885546	B1HJJS7 DE			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Frankfurt (XFRA)	Common Stock	POLY PROPERTY GROUP CO LTD	CMJ GS	885546	B1HJJS7 DE			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	OTC US (OOTC)	Common Stock	POLY PROPERTY GROUP CO LTD	PHKIF US	885546	B23CST1 US			HK0119000674	004580702	Y7064G105
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Sth SSE-SEHK (SHSC)	Common Stock	POLY PROPERTY GROUP CO LTD	119 H1	885546	BP3RQJ3 HK			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	Sth SZ-SEHK (SZSC)	Common Stock	POLY PROPERTY GROUP CO LTD	119 H2	885546	BD8NCD8 HK			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	OTC US (OOTC)	Receipt	POLY PROPERTY GROUP CO-ADR	PHKIY PQ		BJTXRN4 US	731654109		US7316541090		
POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION	OTC US (OOTC)	Receipt	POLY PROPERTY GROUP CO-ADR	PHKIY US		BJTXRN4 US	731654109		US7316541090		
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	DNFGF PQ	A0M4XY	B0XZY65 US			CNE 100000312	23857456	Y21042109
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Hong Kong (XHKG)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	489 HK	A0M4XY	B0PH5N3 HK			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D GB	A0M4XY	B0TBB66 DE			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D GF	A0M4XY	B0TBB66 DE			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D GM	A0M4XY	B0TBB66 DE			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D GR	A0M4XY	B0TBB66 DE			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D GS	A0M4XY	B0TBB66 DE			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Quotrix Exch (XQTX)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D QT	A0M4XY	B0TBB66 DE			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	DNFGF UV	A0M4XY	B0XZY65			CNE100000312	23857456	Y21042109
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	DNFGF US	A0M4XY	B0XZY65 US			CNE100000312	23857456	Y21042109
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Hong Kong (XHKG)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	489 H1	A0M4XY	BP3RTP0 HK			CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	ADR	DONGFENG MOTOR GRP-H-UNS ADR	DNFGY PQ	A1W2SX	B3SQPT4 US	257738203		US2577382037		
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	ADR	DONGFENG MOTOR GRP-H-UNS ADR	DNFGY US	A1W2SX	B3SQPT4 US	257738203		US2577382037		
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	ADR	DONGFENG MOTOR GRP-H-UNS ADR	DNFGY UV	A1W2SX	B3SQPT4 US	257738203		US2577382037		
EGYPT KUWAIT HOLDING CO	EGYPT KUWAIT HOLDING CO	Kuwait (XKUW)	Common Stock	EGYPT KUWAIT HOLDING CO SAE	EKHOLDIN KK	A0H1G7	B0S8H15 KW			EG69082C013		
EGYPT KUWAIT HOLDING CO	EGYPT KUWAIT HOLDING CO	EGX (XCAI)	Common Stock	EGYPT KUWAIT HOLDING CO SAE	EKHO EC	A0H1G7	B0QMD00 EG			EGS69082C013		
EGYPT KUWAIT HOLDING CO	EGYPT KUWAIT HOLDING CO	EGX (XCAI)	Common Stock	EGYPT KUWAIT HOLDING CO SAE	EKHO EY	A0H1G7	B0QMD00 EG			EGS69082C013		
ENERGY HOUSE HOLDING CO KSCC/THE	ENERGY HOUSE HOLDING CO KSCC/THE	Kuwait (XKUW)	Common Stock	ENERGY HOLDING CO KSCC/THE	ENERGYH KK	A0KD4C	B13BW99 KW			KW0EQ0601801		
KUWAIT FINANCE HOUSE	ENERGY HOUSE HOLDING CO KSCC/THE	Kuwait (XKUW)	Common Stock	KUWAIT FINANCE HOUSE	KFIN KK	A0JC70	6503138 KW			KW0EQ0100085		
ENGIE	ENGIE	EN Paris (XPAR)	Common Stock	Engie SA	ENGI FP	A0ER6Q	B0C2CQ3			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Equiduct (XEQT)	Common Stock	Engie SA	ENGIP BQ	A0ER6Q	B0C2CQ3			FR0010208488	22341499	F42768105
ENGIE	ENGIE	BATS Europe (BATE)	Common Stock	Engie SA	ENGIP EB	A0ER6Q	B0C2CQ3			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Chi-X Europe (CHIX)	Common Stock	Engie SA	ENGIP IX	A0ER6Q	B0C2CQ3			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Aquis Exchg (AQXE)	Common Stock	Engie SA	ENGIP QX	A0ER6Q	B0C2CQ3			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Turquoise (TRQX)	Common Stock	Engie SA	ENGIP TQ	A0ER6Q	B0C2CQ3			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Sigma X MTF (SGMX)	Common Stock	Engie SA	GSZ S1	A0ER6Q	B0C2CQ3			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GB	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GD	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GE	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GF	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GH	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GI	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GM	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GR	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GS	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engie SA	GZF GY	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Quotrix Exch (XQTX)	Common Stock	Engie SA	GZF QT	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	Tradegate (XGAT)	Common Stock	Engie SA	GZF TH	A0ER6Q	B0CYN33			FR0010208488	22341499	
ENGIE	ENGIE	OTC US (OOTC)	Common Stock	Engie SA	ENGQF PQ	A0ER6Q	B0Z11C6			FR0010208488	22341499	F7629A107
ENGIE	ENGIE	OTC US (OOTC)	Common Stock	Engie SA	ENGQF US	A0ER6Q	B0Z11C6			FR0010208488	22341499	F7629A107
ENGIE	ENGIE	OTC US (OOTC)	Common Stock	Engie SA	ENGQF UV	A0ER6Q	B0Z11C6			FR0010208488	22341499	F7629A107
ENGIE	ENGIE	LSE Europe QS (XLON)	Common Stock	Engie SA	GSZ LI	A0ER6Q	B28HB14			FR0010208488	22341499	
ENGIE	ENGIE	LSE Europe QS (XLON)	Common Stock	Engie SA	GSZ LO	A0ER6Q	B28HB14			FR0010208488	22341499	
ENGIE	ENGIE	Brsaltaliana (MTAA)	Common Stock	Engie SA	ENGI IF	A0ER6Q	B3BQVC6			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Brsaltaliana (MTAA)	Common Stock	Engie SA	ENGI IM	A0ER6Q	B3BQVC6			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Euro TLX (ETLX)	Common Stock	Engie SA	GSZ TE	A0ER6Q	B3BQVC6			FR0010208488	22341499	
ENGIE	ENGIE	Luxembourg (XLUX)	Common Stock	Engie SA	GSZ LX	A0ER6Q	B3BVQW6			FR0010208488	22341499	
ENGIE	ENGIE	SIX Swiss Ex (XSWX)	Common Stock	Engie SA	ENGI SE	A0ER6Q	BRTM7D7			FR0010208488	22341499	F42768105
ENGIE	ENGIE	SIX Swiss Ex (XSWX)	Common Stock	Engie SA	ENGI SW	A0ER6Q	BRTM7D7			FR0010208488	22341499	F42768105
ENGIE	ENGIE	Euro Comp (XLON)	Common Stock	Engie SA	ENGI1EUR EU	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XB	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XD	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XE	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XL	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XO	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XS	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XV	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	Euro Comp (XLON)	Common Stock	Engie SA	ENGICHF EU	A0ER6Q				FR0010208488	22341499	F42768105
ENGIE	ENGIE	ITG Posit (XPOS)	Common Stock	Engie SA	ENGIP PO	A0ER6Q				FR0010208488	22341499	
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XW	A0ER6Q				FR0010208488	22341499	
ENGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engie SA	ENGI1EUR XA	A0ER6Q				FR0010208488	22341499	

ENGIE	ENGIE	UBS MTF (XUBS)	Common Stock	Engie SA	ENGIP S2	A0ER6Q			FR0010208488		
ENGIE	ENGIE	Mexico (XMEX)	Common Stock	Engie SA	ENGIN MM	A0ER6Q			FR0010208488	22341499	
ENGIE	ENGIE	Berlin (XBER)	ADR	Engie SA	GZFB GB	A14XKC	BYX0167		US29286D1054	126845286	
ENGIE	ENGIE	Berlin (XBER)	ADR	Engie SA	GZFB GF	A14XKC	BYX0167		US29286D1054	126845286	
ENGIE	ENGIE	Berlin (XBER)	ADR	Engie SA	GZFB GR	A14XKC	BYX0167		US29286D1054	126845286	
ENGIE	ENGIE	Berlin (XBER)	ADR	Engie SA	GZFB GS	A14XKC	BYX0167		US29286D1054	126845286	
ENGIE	ENGIE	OTC US (OOTC)	ADR	Engie SA	ENGIY PQ	A14XKC	BYY9W15		US29286D1054	126845286	
ENGIE	ENGIE	OTC US (OOTC)	ADR	Engie SA	ENGIY US	A14XKC	BYY9W15		US29286D1054	126845286	
ENGIE	ENGIE	OTC US (OOTC)	ADR	Engie SA	ENGIY UV	A14XKC	BYY9W15		US29286D1054	126845286	
PARISIENNE CHAUFFAGE URBAIN	ENGIE	BATS Europe (BATE)	Common Stock	PARISIENNE CHAUFFAGE URBAIN	CHAU EB	919453	4189165		FR0000052896	11389066	
PARISIENNE CHAUFFAGE URBAIN	ENGIE	EN Paris (XPAR)	Common Stock	PARISIENNE CHAUFFAGE URBAIN	CHAU FP	919453	4189165		FR0000052896	11389066	
PARISIENNE CHAUFFAGE URBAIN	ENGIE	Chi-X Europe (CHIX)	Common Stock	PARISIENNE CHAUFFAGE URBAIN	CHAU IX	919453	4189165		FR0000052896	11389066	
PARISIENNE CHAUFFAGE URBAIN	ENGIE	Euro Comp (XLON)	Common Stock	PARISIENNE CHAUFFAGE URBAIN	CHAU EU	919453			FR0000052896	11389066	
GAZ PJSC	GAZ GROUP	MICEX Main (MISX)	Common Stock	GAZ PJSC	GAZA RM	903426	B5BKBJ9 RU	950579	RU0009034268	34991693	
GAZ PJSC	GAZ GROUP	MICEX Main (MISX)	Common Stock	GAZ PJSC	GAZA RX	903426	B5BKBJ9 RU	950579	RU0009034268	34991693	
GAZ PJSC	GAZ GROUP	MICEX Main (MISX)	Preference	GAZ OJSC	GAZAP RM	910283	B5BKC29 RU		RU0009102834		
GAZ PJSC	GAZ GROUP	MICEX Main (MISX)	Preference	GAZ OJSC	GAZAP RX	910283	B5BKC29 RU		RU0009102834		
PAVLOVO BUS PJSC	GAZ GROUP	MICEX Main (MISX)	Common Stock	PAVLOVO BUS PJSC	PAZA RM	908324	B57MPG4 RU		RU0009083240		
PAVLOVO BUS PJSC	GAZ GROUP	MICEX Main (MISX)	Common Stock	PAVLOVO BUS PJSC	PAZA RX	908324	B57MPG4 RU		RU0009083240		
HARBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	Hong Kong (XHKG)	Common Stock	HARBIN ELECTRIC CO LTD-H	1133 HK	A0M4X8	6422761 HK	930709	CNE10000003C0	11043780	
HARBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	Frankfurt (XFRA)	Common Stock	HARBIN ELECTRIC CO LTD-H	HP6H GB	A0M4X8	B1HJDX0 DE	930709	CNE10000003C0	11043780	
HARBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	Frankfurt (XFRA)	Common Stock	HARBIN ELECTRIC CO LTD-H	HP6H GF	A0M4X8	B1HJDX0 DE	930709	CNE10000003C0	11043780	
HARBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	Frankfurt (XFRA)	Common Stock	HARBIN ELECTRIC CO LTD-H	HP6H GR	A0M4X8	B1HJDX0 DE	930709	CNE10000003C0	11043780	
HARBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	OTC US (OOTC)	Common Stock	HARBIN ELECTRIC CO LTD-H	HBPWF UV	A0M4X8	B3BHKK0 US	930709	CNE10000003C0	11043780	
HARBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	OTC US (OOTC)	Common Stock	HARBIN ELECTRIC CO LTD-H	HBPWF US	A0M4X8	B3BHKK0 US	930709	CNE10000003C0	11043780	
CHENNAI PETROLEUM CORPORATION LIMITED	INDIAN OIL CORP LTD aka IOCL	Mumbai (XBOM)	Common Stock	CHENNAI PETROLEUM CORP LTD	MRL IB	A0B968	6121563 IN		INE178A01016		
CHENNAI PETROLEUM CORPORATION LIMITED	INDIAN OIL CORP LTD aka IOCL	Mumbai (XBOM)	Common Stock	CHENNAI PETROLEUM CORP LTD	MRL IN	A0B968	6121563 IN		INE178A01016		
CHENNAI PETROLEUM CORPORATION LIMITED	INDIAN OIL CORP LTD aka IOCL	Mumbai (XBOM)	Common Stock	CHENNAI PETROLEUM CORP LTD	MRL IS	A0B968	6121563 IN		INE178A01016		
INDIAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Common Stock	INDIAN OIL CORPORATION LTD	IOCL IB	A0B9FM	6253767 IN		INE242A01010		
INDIAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Common Stock	INDIAN OIL CORPORATION LTD	IOCL IN	A0B9FM	6253767 IN		INE242A01010		
INDIAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Common Stock	INDIAN OIL CORPORATION LTD	IOCL IS	A0B9FM	6253767 IN		INE242A01010		
INDIAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Sec Lending	INDIAN OIL CORP LTD-SLB	IOCL/S IN						
INDIAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Sec Lending	INDIAN OIL CORP LTD-SLB	IOCL/S IS						
LANKA IOC PLC	INDIAN OIL CORP LTD aka IOCL	Colombo (XCOL)	Common Stock	LANKA IOC PLC	LIOC SL	A0D83L	B0591G4 LK		LK0345N00005		
JIANGXI HONGDU AVIATION INDUSTRY CO LTD	JIANGXI HONGDU AVIATION INDUSTRY CO LTD	Shanghai (XSHG)	Common Stock	JIANGXI HONGDU AVIATION-A	600316 CG	A0M4EK	6304375 CN		CNE0000015N3		
JIANGXI HONGDU AVIATION INDUSTRY CO LTD	JIANGXI HONGDU AVIATION INDUSTRY CO LTD	Shanghai (XSHG)	Common Stock	JIANGXI HONGDU AVIATION-A	600316 CH	A0M4EK	6304375 CN		CNE0000015N3		
JIANGXI HONGDU AVIATION INDUSTRY CO LTD	JIANGXI HONGDU AVIATION INDUSTRY CO LTD	Nth SSE-SEHK (XSSC)	Common Stock	JIANGXI HONGDU AVIATION-A	600316 C1	A0M4EK	BP3R8J7 CN		CNE0000015N3		
KAMAZ PJSC	KAMAZ PJSC	MICEX Main (XMIC)	Common Stock	KAMAZ PJSC	KMAZ RM	895958	B55XCQ8 RU		RU0008959580	6692125	
KAMAZ PJSC	KAMAZ PJSC	MICEX Main (XMIC)	Common Stock	KAMAZ PJSC	KMAZ RP	895958	B55XCQ8 RU		RU0008959580	6692125	
KAMAZ PJSC	KAMAZ PJSC	MICEX Main (XMIC)	Common Stock	KAMAZ PJSC	KMAZ RX	895958	B55XCQ8 RU		RU0008959580	6692125	
NEFTEKAMSKY AVTOZAVOD aka NEFAZ	KAMAZ PJSC	MICEX Main (XMIC)	Common Stock	NEFAZ PJSC	NFAZ RM		B5637D9 RU		RU0009115604		
NEFTEKAMSKY AVTOZAVOD aka NEFAZ	KAMAZ PJSC	MICEX Main (XMIC)	Common Stock	NEFAZ PJSC	NFAZ RX		B5637D9 RU		RU0009115604		
LS INDUSTRIAL SYSTEMS CO. LTD	LS INDUSTRIAL SYSTEMS CO. LTD	Korea (XKRX)	Common Stock	LS INDUSTRIAL SYSTEMS	010120 KP	895497	6378217 KR		KR7010120004		
LS INDUSTRIAL SYSTEMS CO. LTD	LS INDUSTRIAL SYSTEMS CO. LTD	Korea (XKRX)	Common Stock	LS INDUSTRIAL SYSTEMS	010120 KS	895497	6378217 KR		KR7010120004		
MAN SE	MAN SE	Equiduct (XEQT)	Common Stock	MAN SE	MAN BQ	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	BX Worldcaps (XBRN)	Common Stock	MAN SE	MAN BW	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	BATS Europe (BATE)	Common Stock	MAN SE	MAN EB	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GB	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GD	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GF	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GH	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GI	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GM	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GR	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GS	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GY	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Quotrix Exch (XQTX)	Common Stock	MAN SE	MAN QT	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Sigma X MTF (SGMX)	Common Stock	MAN SE	MAN S1	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	BX Worldcaps (XBRN)	Common Stock	MAN SE	MAN SW	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Tradegate (XGAT)	Common Stock	MAN SE	MAN TH	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Turquoise (TRQX)	Common Stock	MAN SE	MAN TQ	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Aquis Exchg (AQXE)	Common Stock	MAN SE	MAND QX	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	Chi-X Europe (CHIX)	Common Stock	MAN SE	MANG IX	593700	5563520 DE	944020	DE0005937007	1117254	
MAN SE	MAN SE	SIX Swiss Ex (XSWX)	Common Stock	MAN SE	MAN SE	593700	5628883 CH	944020	DE0005937007	1117254	
MAN SE	MAN SE	Euro Comp (XLON)	Common Stock	MAN SE	MAN EU	593700	B10LRX1 GB		DE0005937007	1117254	
MAN SE	MAN SE	LSE EuropeQS (XLON)	Common Stock	MAN SE	MAN LI	593700	B10LRX1 GB	944020	DE0005937007	1117254	
MAN SE	MAN SE	LSE EuropeQS (XLON)	Common Stock	MAN SE	MAN LO	593700	B10LRX1 GB	944020	DE0005937007	1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XB	593700	B10LRX1 GB		DE0005937007	1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XE	593700	B10LRX1 GB		DE0005937007	1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XS	593700	B10LRX1 GB		DE0005937007	1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XV	593700	B10LRX1 GB		DE0005937007	1117254	
MAN SE	MAN SE	Euro TLX (ETLX)	Common Stock	MAN SE	MAN TE	593700	B88FOL3 IT	944020	DE0005937007	1117254	
MAN SE	MAN SE	Euro Comp (XLON)	Common Stock	MAN SE	MANCHF EU	593700			DE0005937007	1117254	D51716104
MAN SE	MAN SE	Blockmatch (BLOX)	Common Stock	MAN SE	MAND B3	593700			DE0005937007	1117254	
MAN SE	MAN SE	ITG Posit (XPOS)	Common Stock	MAN SE	MAND PO	593700			DE0005937007	1117254	D51716104
MAN SE	MAN SE	UBS MTF (XUBS)	Common Stock	MAN SE	MAND S2	593700			DE0005937007	1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XO	593700			DE0005937007	1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XL	593700			DE0005937007	1117254	
MAN SE	MAN SE	BATS Europe (BATE)	Preference	MAN SE-PFD	MAN3D EB	593703	5563531		DE0005937031	1114816	D51716112
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GB	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GD	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GF	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GH	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GI	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GM	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GR	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GS	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GY	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Quotrix Exch (XQTX)	Preference	MAN SE-PFD	MAN3 QT	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Turquoise (TRQX)	Preference	MAN SE-PFD	MAN3 TQ	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Chi-X Europe (CHIX)	Preference	MAN SE-PFD	MAN3D IX	593703	5563531 DE	944021	DE0005937031	1114816	
MAN SE	MAN SE	Euro Comp (XLON)	Preference	MAN SE-PFD	MAN3 EU	593703	B28K2R6 GB		DE0005937031	1114816	
MAN SE	MAN SE	Euro OTC (XLON)	Preference	MAN SE-PFD	MAN3 XS	593703	B28K2R6 GB		DE0005937031	1114816	

MAN SE	MAN SE	Tradegate (XGAT)	Preference	MAN SE-PFD	MAN3 TH	593703			944021	DE0005937031	1114816	
MAN SE	MAN SE	OTC US (OOTC)	ADR	MAN SE-ADR	MAGOY PQ	A0YF6N	B3DY656 US	561641101		US5616411014	54361637	
MAN SE	MAN SE	OTC US (OOTC)	ADR	MAN SE-ADR	MAGOY US	A0YF6N	B3DY656 US	561641101		US5616411014	54361637	
MAN SE	MAN SE	OTC US (OOTC)	ADR	MAN SE-ADR	MAGOY UV	A0YF6N	B3DY656 US	561641101		US5616411014	54361637	
MAN SE	MAN SE	Frankfurt (XFRA)	ADR	MAN SE-ADR	MANC GF	A0YF6N	B5900P0 DE	561641101		US5616411014	54361637	
MAN SE	MAN SE	Frankfurt (XFRA)	ADR	MAN SE-ADR	MANC GR	A0YF6N	B5900P0 DE	561641101		US5616411014	54361637	
MAN SE	MAN SE	Frankfurt (XFRA)	ADR	MAN SE-ADR	MANC GS	A0YF6N	B5900P0 DE	561641101		US5616411014	54361637	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GB	785000	5555969 DE		916291	DE0007850000	1121936	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GF	785000	5555969 DE		916291	DE0007850000	1121936	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GM	785000	5555969 DE		916291	DE0007850000	1121936	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GR	785000	5555969 DE		916291	DE0007850000	1121936	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GS	785000	5555969 DE		916291	DE0007850000	1121936	
RENK AG	MAN SE	Euro Comp (XLON)	Common Stock	RENK AG	ZAR EU	785000	B28LK31 GB			DE0007850000	1121936	
RENK AG	MAN SE	EURO OTC (XLON)	Common Stock	RENK AG	ZAR XO	785000				DE0007850000	1121936	
VOLKSWAGEN AG	MAN SE	Chi-X Europe (CHIX)	Common Stock	VOLKSWAGEN AG	VW IX	766400	5496994			DE0007664005	1115308	D94523145
VOLKSWAGEN AG	MAN SE	LSE EuropeQS (XLON)	Common Stock	VOLKSWAGEN AG	VOW LI	766400	0308908 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	LSE EuropeQS (XLON)	Common Stock	VOLKSWAGEN AG	VOW LO	766400	0308908 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XE	766400	0308908 GB			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XL	766400	0308908 GB			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XO	766400	0308908 GB			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XS	766400	0308908 GB			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XV	766400	0308908 GB			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Common Stock	VOLKSWAGEN AG	VOW BW	766400	5496994 CH			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Common Stock	VOLKSWAGEN AG	VOW SE	766400	5496994 CH			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Common Stock	VOLKSWAGEN AG	VOW SW	766400	5496994 CH			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	BATS Europe (BATE)	Common Stock	VOLKSWAGEN AG	VW EB	766400	5496994 CH		996800	DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EN Amsterdam (XAMS)	Common Stock	VOLKSWAGEN AG	VWA NA	766400	5497016 NL			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Luxembourg (XLUX)	Common Stock	VOLKSWAGEN AG	VOW LX	766400	5497061 LU			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Equiduct (XEQT)	Common Stock	VOLKSWAGEN AG	VOW BQ	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	BATS Europe (BATE)	Common Stock	VOLKSWAGEN AG	VOW EB	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GB	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GD	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GF	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GH	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GI	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GM	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GR	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GS	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW GY	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Quotrix Exch (XQTX)	Common Stock	VOLKSWAGEN AG	VOW QT	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Tradegate (XGAT)	Common Stock	VOLKSWAGEN AG	VOW TH	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Turquoise (TRQX)	Common Stock	VOLKSWAGEN AG	VOW TQ	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Chi-X Europe (CHIX)	Common Stock	VOLKSWAGEN AG	VOWG IX	766400	5497102 DE			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Sigma X MTF (SGMX)	Common Stock	VOLKSWAGEN AG	VOW S1	766400	5497102DE		996800	DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	Common Stock	VOLKSWAGEN AG	VLKAF PQ	766400	B01DRL7 US			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	Common Stock	VOLKSWAGEN AG	VLKAF US	766400	B01DRL7 US			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	Common Stock	VOLKSWAGEN AG	VLKAF UV	766400	B01DRL7 US			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	EuroTLX (ETLX)	Common Stock	VOLKSWAGEN AG	VOW TE	766400	B7N7B69 IT			DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Euro Comp (XLON)	Common Stock	VOLKSWAGEN AG	VOW EU	766400				DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Euro OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XB	766400				DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Euro Comp (XLON)	Common Stock	VOLKSWAGEN AG	VOWCHF EU	766400				DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Blockmatch (BLOX)	Common Stock	VOLKSWAGEN AG	VOWD B3	766400				DE0007664005		
VOLKSWAGEN AG	MAN SE	ITG Posit (XPOS)	Common Stock	VOLKSWAGEN AG	VOWD PO	766400				DE0007664005	1115308	D94523145
VOLKSWAGEN AG	MAN SE	Aquis Exchg (AQXE)	Common Stock	VOLKSWAGEN AG	VOWD QX	766400			996800	DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	UBS MTF (XUBS)	Common Stock	VOLKSWAGEN AG	VOWD S2	766400				DE0007664005		
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XA	766400				DE0007664005	1115308	
VOLKSWAGEN AG	MAN SE	Liquidnet (LIQU)	Common Stock	VOLKSWAGEN AG	VOWD L3	766400				DE0007664005		
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XA	766403				DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	LSE EuropeQS (XLON)	Preference	VOLKSWAGEN AG-PREF	50IT LI	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	LSE EuropeQS (XLON)	Preference	VOLKSWAGEN AG-PREF	50IT LO	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XB	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XD	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XE	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XL	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XO	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XS	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 XV	766403	0309291 GB			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Preference	VOLKSWAGEN AG-PREF	VW/V BW	766403	5497146 CH			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Preference	VOLKSWAGEN AG-PREF	VW/V SE	766403	5497146 CH			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Preference	VOLKSWAGEN AG-PREF	VW/V SW	766403	5497146 CH			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	BATS Europe (BATE)	Preference	VOLKSWAGEN AG-PREF	VWV EB	766403	5497146 CH			DE0007664039	1117432	D94523103
VOLKSWAGEN AG	MAN SE	Chi-X Europe (CHIX)	Preference	VOLKSWAGEN AG-PREF	VWV IX	766403	5497146 CH			DE0007664039	1117432	D94523103
VOLKSWAGEN AG	MAN SE	Equiduct (XEQT)	Preference	VOLKSWAGEN AG-PREF	VOW3 BQ	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	BATS Europe (BATE)	Preference	VOLKSWAGEN AG-PREF	VOW3 EB	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GB	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GD	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GF	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GH	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GI	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GM	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GR	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GS	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GY	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Chi-X Europe (CHIX)	Preference	VOLKSWAGEN AG-PREF	VOW3 IX	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Quotrix Exch (XQTX)	Preference	VOLKSWAGEN AG-PREF	VOW3 QT	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Aquis Exchg (AQXE)	Preference	VOLKSWAGEN AG-PREF	VOW3 QX	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Sigma X MTF (SGMX)	Preference	VOLKSWAGEN AG-PREF	VOW3 S1	766403	5497168 DE		909007	DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Tradegate (XGAT)	Preference	VOLKSWAGEN AG-PREF	VOW3 TH	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Turquoise (TRQX)	Preference	VOLKSWAGEN AG-PREF	VOW3 TQ	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Luxembourg (XLUX)	Preference	VOLKSWAGEN AG-PREF	VOWP LX	766403	5497221 LU			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	Preference	VOLKSWAGEN AG-PREF	VLKPF PQ	766403	B1GXSC7 US			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	Preference	VOLKSWAGEN AG-PREF	VLKPF US	766403	B1GXSC7 US			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	Preference	VOLKSWAGEN AG-PREF	VLKPF UV	766403	B1GXSC7 US			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Brsaltaliana (MTAA)	Preference	VOLKSWAGEN AG-PREF	VOW3 IF	766403	BD3VRN2 IT			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Brsaltaliana (MTAA)	Preference	VOLKSWAGEN AG-PREF	VOW3 IM	766403	BD3VRN2 IT			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Mexico (XMEX)	Preference	VOLKSWAGEN AG-PREF	VOW3N MM	766403	BYQT730			DE0007664039	1117432	D94523103
VOLKSWAGEN AG	MAN SE	Euro Comp (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 EU	766403				DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Euro Comp (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3CHF EU	766403				DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Blockmatch (BLOX)	Preference	VOLKSWAGEN AG-PREF	VOW3D B3	766403				DE0007664039		

VOLKSWAGEN AG	MAN SE	Liquidnet (LIQU)	Preference	VOLKSWAGEN AG-PREF	VOW3D L3	766403				DE0007664039		
VOLKSWAGEN AG	MAN SE	ITG Posit (XPOS)	Preference	VOLKSWAGEN AG-PREF	VOW3D PO	766403				DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	UBS MTF (XUBS)	Preference	VOLKSWAGEN AG-PREF	VOW3D S2	766403				DE0007664039		
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR	VLKAY PQ	879511	2930484 US	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR	VLKAY US	879511	2930484 US	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR	VLKAY UV	879511	2930484 US	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR	VOW4 GB	879511	B62V8T7	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR	VOW4 GM	879511	B62V8T7	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR	VOW4 GF	879511	B62V8T7 DE	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR	VOW4 GR	879511	B62V8T7 DE	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR	VOW4 GY	879511	B62V8T7 DE	928662303		US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VLKPY PQ	A0DPR2	2265960 US	928662402		US9286624021	42872202	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VLKPY US	A0DPR2	2265960 US	928662402		US9286624021	42872202	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VLKPY UV	A0DPR2	2265960 US	928662402		US9286624021	42872202	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GB	A0DPR2	B603118 DE	928662402		US9286624021	42872202	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GF	A0DPR2	B603118 DE	928662402		US9286624021	42872202	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GR	A0DPR2	B603118 DE	928662402		US9286624021	42872202	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GY	A0DPR2	B603118 DE	928662402		US9286624021	42872202	
MANAGEM	MANAGEM	Casablanca (XCAS)	Common Stock	MANAGEM	MNG MC	165414	6287454 MA			MA0000011058		
SOCIETE METALLURGIQUE D'IMITER	MANAGEM	Casablanca (XCAS)	Common Stock	SMI	SMI MC	256307	6007759 MA			MA0000010068		
MANGALORE REFINERY & PETROCHEMICALS LIMITED	OIL & NATURAL GAS CORP	Mumbai (XBOM)	Common Stock	MANGALORE REFINERY & PETRO	MRPL IB	A0NANW	6121530 IN			INE103A01014		
MANGALORE REFINERY & PETROCHEMICALS LIMITED	OIL & NATURAL GAS CORP	Mumbai (XBOM)	Common Stock	MANGALORE REFINERY & PETRO	MRPL IN	A0NANW	6121530 IN			INE103A01014		
MANGALORE REFINERY & PETROCHEMICALS LIMITED	OIL & NATURAL GAS CORP	Mumbai (XBOM)	Common Stock	MANGALORE REFINERY & PETRO	MRPL IS	A0NANW	6121530 IN			INE103A01014		
OIL & NATURAL GAS CORP LTD	OIL & NATURAL GAS CORP	Natl India (XNSE)	Common Stock	OIL & NATURAL GAS CORP LTD	ONGC IN	A1H6P4	6139362 IN			INE213A01029		
OIL & NATURAL GAS CORP LTD	OIL & NATURAL GAS CORP	Natl India (XNSE)	Common Stock	OIL & NATURAL GAS CORP LTD	ONGC IB	A1H6P4	6139362 IS			INE213A01029		
OIL & NATURAL GAS CORP LTD	OIL & NATURAL GAS CORP	Natl India (XNSE)	Common Stock	OIL & NATURAL GAS CORP LTD	ONGC IS	A1H6P4	6139362 IS			INE213A01029		
OIL & NATURAL GAS CORP LTD	OIL & NATURAL GAS CORP	Natl India (XNSE)	Sec Lending	OIL & NATURAL GAS CORP-SLB	ONGC/S IN							
OIL & NATURAL GAS CORP LTD	OIL & NATURAL GAS CORP	Natl India (XNSE)	Sec Lending	OIL & NATURAL GAS CORP-SLB	ONGC/S IS							
OIL INDIA LTD	OIL INDIA LTD	Natl India (XNSE)	Common Stock	OIL INDIA LTD	OINL IB	A0X9PF	B409HQ9 IN			INE274J01014		
OIL INDIA LTD	OIL INDIA LTD	Natl India (XNSE)	Common Stock	OIL INDIA LTD	OINL IN	A0X9PF	B409HQ9 IN			INE274J01014		
OIL INDIA LTD	OIL INDIA LTD	Natl India (XNSE)	Sec Lending	OIL INDIA LTD-SLB	OINL/S IS							
OIL INDIA LTD	OIL INDIA LTD	Natl India (XNSE)	Sec Lending	OIL INDIA LTD-SLB	OINL/S IN							
OIL INDIA LTD	OIL INDIA LTD	Natl India (XNSE)	Common Stock	OIL INDIA LTD	OINL IS	A0X9PF	B409HQ9 IN			INE274J01014		
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG DS	A1T8LS	B84J7Q3	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG CJ	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG CN	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG CV	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG DG	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG DV	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG QF	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG QH	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG TG	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG TN	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG TV	A1T8LS	B84J7Q3 CA	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	OTC US (OOTC)	Common Stock	ORCA GOLD INC	CANWF PQ	A1T8LS	B8JYMF7 US	68558N104		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	OTC US (OOTC)	Common Stock	ORCA GOLD INC	CANWF US	A1T8LS	B8JYMF7 US	68558N103		CA68558N1024	91768225	
ORCA GOLD INC	ORCA GOLD INC	OTC US (OOTC)	Common Stock	ORCA GOLD INC	CANWF UV	A1T8LS	B8JYMF7 US	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	HJ6A GB	A1T8LS	B9L55S9 DE	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	HJ6A GF	A1T8LS	B9L55S9 DE	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	HJ6A GR	A1T8LS	B9L55S9 DE	68558N102		CA68558N1024	91768224	
ORCA GOLD INC	ORCA GOLD INC	Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	HJ6A GS	A1T8LS	B9L55S9 DE	68558N102		CA68558N1024	91768224	
ENGEN BOTSWANA LTD	PETROLIAM NASIONAL BERHAD aka PETRONAS	Gaborone (XBOT)	Common Stock	ENGEN	ENGN BG	546632	B063G04			BW0000000058		
KLCCP STAPLED GROUP	PETROLIAM NASIONAL BERHAD aka PETRONAS	Bursa Malaysia (XKLS)	Common Stock	KLCCP STAPLED GROUP	KLCCSS MK	A1T91X	B92NSW7 MY			MYL5235SS008		
MALAYSIA INTERNATIONAL SHIPPING COMPANY aka MISC BHD	PETROLIAM NASIONAL BERHAD aka PETRONAS	Bursa Malaysia (XKLS)	Common Stock	MISC BHD	MISC MK	880504	6557997 MY		905279	MYL3816OO005	3527883	
MALAYSIA MARINE AND HEAVY ENGINEERING HOLDINGS BHD	PETROLIAM NASIONAL BERHAD aka PETRONAS	Bursa Malaysia (XKLS)	Common Stock	MALAYSIA MARINE AND HEAVY EN	MMHE MK	A1C7U6	B3W5NN7			MYL5186OO001	55049394	
PETRONAS CHEMICALS GROUP BHD	PETROLIAM NASIONAL BERHAD aka PETRONAS	Bursa Malaysia (XKLS)	Common Stock	PETRONAS CHEMICALS GROUP BHD	PCHEM MK	A1C891	B5KQGT3 MY			MYL5183OO008	55800235	
PETRONAS DAGANGAN BHD	PETROLIAM NASIONAL BERHAD aka PETRONAS	Bursa Malaysia (XKLS)	Common Stock	PETRONAS DAGANGAN BHD	PETD MK	895131	6695938 MY			MYL5681OO001		
PETRONAS GAS BHD	PETROLIAM NASIONAL BERHAD aka PETRONAS	Bursa Malaysia (XKLS)	Common Stock	PETRONAS GAS BHD	PTG MK	896633	6703972 MY			MYL6033OO004	7076959	
POWER CONSTRUCTION CORP OF CHINA	POWER CONSTRUCTION CORPORATION OF CHINA (POWERCHINA)	Shanghai (XSHG)	Common Stock	POWER CONSTRUCTION CORP OF-A	601669 CG	A1JNL6	B4TH690 CN			CNE1000017G1		
POWER CONSTRUCTION CORP OF CHINA	POWER CONSTRUCTION CORPORATION OF CHINA (POWERCHINA)	Shanghai (XSHG)	Common Stock	POWER CONSTRUCTION CORP OF-A	601669 CH	A1JNL6	B4TH690 CN			CNE1000017G1		
POWER CONSTRUCTION CORP OF CHINA	POWER CONSTRUCTION CORPORATION OF CHINA (POWERCHINA)	Nth SSE-SEHK (XSSC)	Common Stock	POWER CONSTRUCTION CORP OF-A	601669 C1	A1JNL6	BP3R4M2 CN			CNE1000017G1		
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Hong Kong (XHKG)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	2727 HK	A0M4YX	B07J656 HK			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Frankfurt (XFRA)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	USR GB	A0M4YX	B07ZG10 DE			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Frankfurt (XFRA)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	USR GF	A0M4YX	B07ZG10 DE			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Frankfurt (XFRA)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	USR GM	A0M4YX	B07ZG10 DE			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Frankfurt (XFRA)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	USR GR	A0M4YX	B07ZG10 DE			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Frankfurt (XFRA)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	USR GS	A0M4YX	B07ZG10 DE			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Sth SSE-SEHK (SHSC)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	2727 H1	A0M4YX	BP3RX69 HK			CNE100000437	21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Euro Comp (XLON)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	2727EUR EU	A0M4YX				CNE100000437	21854387	Y76824104
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	OTC US (OOTC)	ADR	SHANGHAI ELECTRIC-UNSP ADR	SIELY PQ	A1H9PU	B3L2823 US	81943J108		US81943J1088		
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	OTC US (OOTC)	ADR	SHANGHAI ELECTRIC-UNSP ADR	SIELY US	A1H9PU	B3L2823 US	81943J108		US81943J1088		
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	OTC US (OOTC)	ADR	SHANGHAI ELECTRIC-UNSP ADR	SIELY UV	A1H9PU	B3L2823 US	81943J108		US81943J1088		
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Tradegate (XGAT)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	USR TH	A0M4YX	B07ZG10 DE				21854387	
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	OTC US (OOTC)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	SIELF UV	A0M4YX	BOXNVSO US			CNE100000437		
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	OTC US (OOTC)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	SIELF US	A0M4YX	BOXNVSO US			CNE100000437		
SHANGHAI ELECTRIC GROUP CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Sth SZ-SEHK (SZSC)	Common Stock	SHANGHAI ELECTRIC GRP CO L-H	2727 H2	A0M4YX	BD8NLZ3 HK			CNE100000437		
SHANGHAI MECHANICAL AND ELECTRICAL INDUSTRY CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Shanghai (XSHG)	Common Stock	SHANGHAI MECHANICAL AND EL-A	600835 CG	A0M654	6785851 CN			CNE000000B91		
SHANGHAI MECHANICAL AND ELECTRICAL INDUSTRY CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Shanghai (XSHG)	Common Stock	SHANGHAI MECHANICAL AND EL-A	600835 CH	A0M654	6785851 CN			CNE000000B91		
SHANGHAI MECHANICAL AND ELECTRICAL INDUSTRY CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Nth SSE-SEHK (XSSC)	Common Stock	SHANGHAI MECHANICAL AND EL-A	600835 C1	A0M654	BP3R7Q7 CN			CNE000000B91		
SHANGHAI MECHANICAL AND ELECTRICAL INDUSTRY CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Shanghai (XSHG)	Common Stock	SHANGHAI MECHANICAL AND EL-B	900925 CG	A0M3UQ	6797436 CN		916599	CNE000000G39	32099050	
SHANGHAI MECHANICAL AND ELECTRICAL INDUSTRY CO LTD	SHANGHAI ELECTRIC GROUP CO LTD	Shanghai (XSHG)	Common Stock	SHANGHAI MECHANICAL AND EL-B	900925 CH	A0M3UQ	6797436 CN		916599	CNE000000G39	32099050	

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ATTACHMENT E

Letter to SBI Domestic and International Equity Managers

March 28, 2017

Regarding: Iran Companies

Dear Manager:

The Minnesota State Board of Investment (SBI) sent you prior communication concerning holdings in companies doing business in Iran. **This new communication applies to all SBI equity portfolios managed by your organization and replaces all prior communications. This communication also applies to all depository receipts or ADR's of any of the listed companies.**

Minnesota Statutes, section 11A.244, requires the Minnesota State Board of Investment (SBI) to implement an Iran restriction.

Attachment 1 is the List of Restricted Iran Companies. **These securities may not be purchased for the SBI portfolio that your organization manages.** If you own securities of companies on the Restricted List **and** the companies are **not** on the divestment list, then you do not need to sell your holdings. Please note that the attached list makes changes to the List of Restricted Iran Companies that was attached to the December 20, 2016 letter you received. **This new list is effective March 31, 2017.**

Changes to **Attachment 1**:

The following company was **added** to the Restricted List:

- **Daewoo Engineering & Construction South Korea**

Attachment 2 is the List of Iran Companies Requiring Divestment. If you own securities of companies on this list then you must **divest** those holdings according to the schedule provided in the attachment:

- At least 50 percent of a company's holdings must be sold by the date indicated, and

- At least 100 percent of a company's holdings must be sold by the date indicated.

There were no changes to **Attachment 2** on the Divestment List.

Attachment 3 is a list of security identifiers for the companies on the List of Restricted Iran Companies (Attachment 1) that your organization may use. The SBI does not represent that this is a complete list of identifiers. The manager is responsible for identifying all listings.

If you have any questions about this matter, please contact your assigned SBI Investment Officer.

Sincerely,

Mansco Perry III
Executive Director and Chief Investment Officer

Enclosures

cc: Michael J. Menssen, Director, Debt Management
Tammy Brusehaver, Investment Officer, Public Equity
Stephanie Gleeson, Investment Officer, Public Equity
LeaAnn M. Stagg, Chief Operating Officer

ATTACHMENT 1
RESTRICTED IRAN COMPANIES
SECURITIES OF COMPANIES MAY NOT BE PURCHASED FOR PORTFOLIO

COMPANY NAME	COUNTRY
Bharat Petroleum Corporation Ltd.	India
China Petroleum & Chemical Corp	China
Daelim Industrial	South Korea
Daewoo Engineering & Construction	South Korea
Eni Spa	Italy
Gazprom OAO	Russia
GS Engineering & Construction Corp	South Korea
Gubre Fabrikalari T.A.S.	Turkey
Indian Oil Corporation Ltd.	India
L G International	South Korea
Linde AG	Germany
Lukoil Oil Co.	Russia
Maire Tecnimont S.p.A	Italy
Mitsui & Co. Ltd	Japan
Oil & Natural Gas Corporation Ltd.	India
PetroChina Co. Ltd.	China
Toyo Engineering Corporation	Japan
Toyota Tsusho Corporation	Japan

Effective Date: March 31, 2017

ATTACHMENT 2

LIST OF IRAN COMPANIES REQUIRING DIVESTMENT

Company Name	Country of Origin	Divest 50 Percent By this Date	Divest 100 Percent By this Date
Daelim Industrial	South Korea	December 31, 2016	June 30, 2017
Linde AG	Germany	March 31, 2017	September 30, 2017
Eni Spa	Italy	June 30, 2017	December 31, 2017

Effective Date: March 31, 2017

COMPLETED/HISTORICAL DIVESTMENTS

Company Name	Country of Origin	Divest 50 Percent By this Date	Divest 100 Percent By this Date
GS Engineering & Construction Corp	South Korea	June 30, 2016	December 31, 2016
Lukoil Oil Co.	Russia	March 31, 2016	September 30, 2016
Gazprom OAO	Russia	December 31, 2015	June 30, 2016
Mitsui & Company, Ltd.	Japan	September 30, 2012	March 31, 2013
Toyota Tsusho	Japan	September 30, 2012	March 31, 2013

ATTACHMENT 3
IRAN RESTRICTED COMPANIES
Security Identifiers

ISIN	Company	SYMBOL	CUSIP	COUNTRY
INE029A01011	Bharat Petroleum Corporation Ltd.	500547		India
US16941R1086	China Petroleum & Chemical Corp	386	16941R108	China
CNE1000002Q2	China Petroleum & Chemical Corp	386	16941R108	China
CNE0000018G1	China Petroleum & Chemical Corp	386	16941R108	China
ARDEUT114071	China Petroleum & Chemical Corp	386	16941R108	China
KR7000211003	Daelim Industrial	210		Korea South
KR7000210005	Daelim Industrial	210		Korea South
KR7047040001	Daewoo Engineering & Construction	A047040		Korea South
US26874R1086	Eni Spa	ENI	26874R108	Italy
IT0003132476	Eni Spa	ENI	26874R108	Italy
ARDEUT112612	Eni Spa	ENI	26874R108	Italy
US3682872078	Gazprom OAO	GAZP	368287207	Russia
US3682871088	Gazprom OAO	GAZP	368287207	Russia
RU0007661625	Gazprom OAO	GAZP	368287207	Russia
ARDEUT114261	Gazprom OAO	GAZP	368287207	Russia
KR7006360002	GS Engineering & Construction Corp	6360		Korea South
TRAGUBRF91E2	Gubre Fabrikalari T.A.S.	GUBRF		Turkey
INE242A01010	Indian Oil Corporation Ltd.	530965		India
KR7001120005	L G International	1120		Korea South
US5352232004	Linde AG	LIN	535223200	Germany
DE0006483001	Linde AG	LIN	535223200	Germany
US56064T1016	Maire Tecnimont S.p.A.	MT	56064T101	Italy
IT0004931058	Maire Tecnimont S.p.A.	MT	56064T101	Italy
US6068272029	Mitsui & Co. Ltd	8031	606827202	Japan
JP3893600001	Mitsui & Co. Ltd	8031	606827202	Japan
INE213A01029	Oil & Natural Gas Corporation Ltd.	500312		India
US71646E1001	PetroChina Co. Ltd.	857	71646E100	China
CNE1000007Q1	PetroChina Co. Ltd.	857	71646E100	China
CNE1000003W8	PetroChina Co. Ltd.	857	71646E100	China
ARDEUT113958	PetroChina Co. Ltd.	857	71646E100	China
US69343P2048	PJSC Lukoil	LKOH	677862104	Russia
US69343P1057	PJSC Lukoil	LKOH	677862104	Russia
US5498741058	PJSC Lukoil	LKOH	677862104	Russia
RU0009024277	PJSC Lukoil	LKOH	677862104	Russia
ARDEUT114253	PJSC Lukoil	LKOH	677862104	Russia
JP3607800004	Toyo Engineering Corporation	6330		Japan
JP3635000007	Toyota Tsusho Corporation	8015		Japan

Please note that the SBI does not represent that this is a complete list of identifiers. The manager is responsible for identifying all listings.

Source: IW Financial

Effective Date: March 31, 2017

Letter to SBI Fixed Income Managers

March 28, 2017

Regarding: Iran Companies

Dear Manager:

The Minnesota State Board of Investment (SBI) sent you prior communication concerning holdings in companies doing business in Iran. **This communication applies to the SBI fixed income portfolio managed by your organization.**

Minnesota Statutes, section 11A.244, requires the Minnesota State Board of Investment (SBI) to implement an Iran restriction.

Attachment 1 is the List of Restricted Iran Companies. **These securities <u>may not be purchased</u> for the SBI portfolio that your organization manages.** If you own securities of companies on the Restricted List **<u>and</u>** the companies are **<u>not</u>** on the divestment list, then you do not need to sell your holdings. Please note that the attached list makes changes to the List of Restricted Iran Companies that was attached to the December 20, 2016 letter you received. **This new list is effective March 31, 2017.**

Changes to **Attachment 1**:

The following company has been **<u>added</u>** from the Restricted List:

- **Daewoo Engineering & Construction** **South Korea**

Attachment 2 is the List of Iran Companies Requiring Divestment. If you own securities of companies on this list then you must **<u>divest</u>** those holdings according to the schedule provided in the attachment:

- At least 50 percent of a company's holdings must be sold by the date indicated, and

- At least 100 percent of a company's holdings must be sold by the date indicated.

There were no changes to **Attachment 2** on the Divestment List.

If you have any questions about this matter, please contact your assigned SBI Investment Officer.

Sincerely,

Mansco Perry III
Executive Director and Chief Investment Officer

Enclosures

cc: Michael J. Menssen, Director, Debt Management
Aaron Griga, Investment Officer, Fixed Income
Cassandra Boll, Investment Officer, Fixed Income
Steve Kuettel, Investment Officer, Cash Mgmt. Services
LeaAnn M. Stagg, Chief Operating Officer

ATTACHMENT 1
RESTRICTED IRAN COMPANIES
SECURITIES OF COMPANIES MAY NOT BE PURCHASED FOR PORTFOLIO

COMPANY NAME	**COUNTRY**
Bharat Petroleum Corporation Ltd.	India
China Petroleum & Chemical Corp	China
Daelim Industrial	South Korea
Daewoo Engineering & Construction	South Korea
Eni Spa	Italy
Gazprom OAO	Russia
GS Engineering & Construction Corp	South Korea
Gubre Fabrikalari T.A.S.	Turkey
Indian Oil Corporation Ltd.	India
L G International	South Korea
Linde AG	Germany
Lukoil Oil Co.	Russia
Maire Tecnimont S.p.A	Italy
Mitsui & Co. Ltd	Japan
Oil & Natural Gas Corporation Ltd.	India
PetroChina Co. Ltd.	China
Toyo Engineering Corporation	Japan
Toyota Tsusho Corporation	Japan

Effective Date: March 31, 2017

ATTACHMENT 2

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Mitsui & Company, Ltd.	Japan	September 30, 2012	March 31, 2013
Toyota Tsusho	Japan	September 30, 2012	March 31, 2013

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DATE: May 8, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: Asset Allocation Transition Update

Following is a brief update on the progress of transitioning the Combined Funds portfolio to the new asset allocation targets, and increased passive management in Public Equities. We are pleased to report that the transition to the new asset allocation policy targets has been completed. Three charts indicating the progression since the beginning of the fiscal year are included.

Transition to new Asset Allocation Policy

The first chart reflects how the asset allocation has moved to the new target. At the beginning of the third quarter of Fiscal Year 2017 (January 1, 2017), the Combined Funds portfolio reached the Adjusted Policy Target. This occurred primarily as a result of market movements. The Adjusted Policy Target is the basis for the Combined Funds Composite Index and reflects that the uninvested Private Markets allocation will be invested in Public Equities. The allocation to bonds declined to the 20% target level which signifies that the transition has been completed.

Public Equity Transition

The second chart tracks the change in the components of the allocation target for Public Equities.

The target has changed from a 75% U.S./25% Non-U.S. split to a 67% U.S./33% Non-U.S. split. In addition to transitioning to the Adjusted Policy Target, Staff has completed the transition to the new U.S./Non-U.S. Public Equity allocation targets. During the third quarter of the fiscal year, Staff funded six recently hired Emerging Markets Managers approved by the Board. In addition, $1.2 billion was also transferred to the passively managed developed international markets portfolio to complete the transition to the revised U.S./Non-U.S. public equity split.

Increase Passive Management in Public Equities

The transition to increased passive public equity management which began during October 2016 has continued. While there is no specific target, total Public Equity has approached 70% with Domestic Equity at 75% and International Equity is at 55%. At this time, there are no additional active to passive management transitions planned. However, an increased exposure to passive public equity is probable.

As the Asset Allocation Policy and Public Equity transitions have been successfully completed, it is anticipated that this will be the final update detailing asset movements for the aforementioned transitions.

Manager Termination

As a result of the transition to the Asset Allocation Targets approved at the June 2016 SBI meeting and the increase in Public Equity exposure to passive index management, several U.S. Equity managers were defunded. These managers have no assets remaining in their portfolios. The Executive Director is requesting that the Board authorize Staff to terminate the contracts of the managers who have been defunded and to settle the accounts.

Following is a listing of the managers who have been affected:

- INTECH Investment Management, LLC (Domestic Large Cap Growth)
- INTECH Investment Management, LLC (Domestic Semi-Passive)
- Systematic Financial Management, L.P. (Domestic Large Cap Value)
- Next Century Growth Investors, LLC (Domestic Small Cap Growth)
- Jacobs Levy Equity Management, Inc. (Domestic Large Cap Growth)

The Executive Director is authorized to defund equity and fixed income manager portfolios if he determines doing so is in the best interest of the SBI. He is requesting that the Board also authorize the Executive Director to terminate the contract of any manager that is defunded and to report any termination to the Board.

RECOMMENDATION:

The Executive Director requests that the IAC endorse the recommendation to the SBI Board that he be authorized to terminate the contract of any manager that is defunded and report any such termination to the IAC and the Board.

Minnesota State Board of Investment

Combined Funds Asset Allocation Transition

	Previous Target	Current Target	1-Jul-16	1-Oct-16	1-Jan-17	1-Apr-17	Adjusted Target* April 1, 2017
Public Equity	60.0%	58.0%	60.4%	61.7%	63.5%	65.3%	65.0%
Bonds	18.0%	20.0%	24.7%	24.2%	20.1%	19.6%	20.0%
Private Markets	20.0%	20.0%	12.8%	12.9%	13.2%	13.0%	13.0%
Cash	2.0%	2.0%	2.1%	1.2%	3.2%	2.1%	2.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Domestic and International Allocation Transition

	Previous Target	Current Target	1-Jul-16	1-Oct-16	1-Jan-17	1-Apr-17
Domestic	75.0%	67.0%	76.7%	76.5%	74.0%	68.0%
International	25.0%	33.0%	23.3%	23.5%	26.0%	32.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* "Adjusted Target" reflects current target allocation plus un-invested alternative allocated to Public Equity.

Active and Passive Allocation Transition

Public Equity

	1-Jul-16
Active	64.5%
Passive	35.5%

	1-Apr-17
Active	31.6%
Passive	68.4%

Domestic Equity

	1-Jul-16
Active	66.7%
Passive	33.3%

	1-Apr-17
Active	25.4%
Passive	74.6%

International Equity

	1-Jul-16
Active	57.3%
Passive	42.7%

	1-Apr-17
Active	44.9%
Passive	55.1%

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DATE: May 8, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: Non-Retirement Equity and Fixed Income

Currently, the State Board of Investment (SBI) internally manages assets for numerous non-retirement entities in the State of Minnesota. Among the non-retirement entities investing in these funds are primarily Trust Funds including the Permanent School Fund, the Environmental Trust Fund, the Closed Landfill Investment Fund as well as Other Post Employment Benefit (OPEB) accounts of various local government units. Based on pending legislation, there is the potential that there may be additional entities with the authority to invest in the SBI's non-retirement funds. Staff has the responsibility of managing $2.0 billion in the S&P 500 index account and $1.0 billion in a conservatively managed core fixed income account benchmark to the Bloomberg Barclays U.S. Bond Aggregate Index.

The current portfolios are managed by Staff members who have other responsibilities in addition to their duties with the internal portfolios. Senior members of Staff have oversight responsibilities with regard to these employees. While Staff has done an admirable job over the years in the management of these assets, internal management of stocks and bonds is not a core function of the SBI Investment Staff. The Executive Director is requesting authority from the Board to assign these assets to external managers if he deems necessary to discontinue internal management.

The replacement managers would be selected from managers that have been vetted by SBI Staff. For the equity portfolios, a replacement would be a manager with capabilities of managing an equity index portfolio. Staff will provide a recommendation at the upcoming IAC meeting.

Staff recommends that the bond portfolio be placed with a manager with the capability of managing a conservative core bond portfolio utilizing guidelines comparable to the current internally managed portfolio. Staff has a short list of prospective managers from which a manager would be chosen. These are managers that the Staff knows well and meet with periodically. Staff will provide a recommendation at the upcoming IAC meeting.

The portfolios would be renamed the Non-Retirement Equity Fund and the Non-Retirement Fixed Income Fund. There is also a Non-Retirement Cash Fund.

In addition to recommending the transfer of the two portfolios to external management, the Executive Director is also requesting authority to offer a Non-Retirement Balanced Fund made up of the Equity, Fixed Income, and Cash Funds. The Balanced Fund would be constructed with an appropriate asset allocation with an equity allocation of 70% or less and an allocation of 5% cash. A proposed asset allocation and analysis for a Balanced Fund will be presented to the IAC for review, with a recommendation brought to the Board for approval at the August/September meetings. After the proposed changes have occurred, Staff will develop a prospectus for all current and prospective users of the non-retirement funds.

RECOMMENDATION:

The Executive Director is requesting that the IAC endorse the recommendation to the SBI Board:

- **to authorize the Executive Director to assign the SBI internally managed Non-Retirement S&P 500 equity index and core fixed income portfolios to external managers, and, with assistance from SBI's legal counsel, to negotiate fees and execute a contract with a manager to manage the fixed income portfolio and a manager to manage the S&P 500 equity index portfolio; and**

- **to authorize the Staff to develop a Balanced Fund to be made available for the Non-Retirement entities.**

TAB

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DATE: May 8, 2017

TO: Members, State Board of Investment

FROM: SBI Administrative Committee

The Administrative Committee met on April 28, 2017 to consider the following agenda items:

- Review of Executive Director's Proposed Work Plan for FY18
- Review of Budget Plan for FY18 and FY19
- Review of Continuing Fiduciary Education Plan
- Review of Executive Director's Evaluation Process
- Update of Business Continuity Plan

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

1. Review of Executive Director's Proposed Work Plan for FY18.

The Executive Director's Proposed Work Plan for FY18 was presented. As in previous work plans, the FY18 plan follows the same category order found in the Executive Director's position description. The plan is a compilation of on-going responsibilities as well as the new initiatives the Executive Director will undertake during the next fiscal year.

A summary of the proposed plan is shown in **Attachment A** on **page 5** of this Tab. The Executive Director will review the work plan summary. He will highlight selective work plan items which begin on **page 9**. Supporting information was sent to each Board member in April 2017 as part of the FY18 Management and Budget Plan document.

RECOMMENDATION:

The Committee recommends that the SBI approve the FY18 Executive Director's Work Plan. Further, the Committee recommends that the Work Plan serve as the basis for the Executive Director's performance evaluation for FY18.

2. **Review of Budget Plan for FY18 and FY19.**

The SBI's Administrative budget is set annually by the Board with direct charge-back to entities that invest with the SBI. The Legislature also provides an appropriation from the general fund to support management of general fund assets.

An overview of the budget is shown in **Attachment B** on **page 17** of this Tab. Supporting information was sent to each Board member in April 2017 as part of the FY18 Management and Budget Plan.

RECOMMENDATION:

The Committee recommends that the SBI approve the FY18, and FY19 Administrative Budget Plan, as presented to the Committee, and that the Executive Director have the flexibility to reallocate funds between budget categories if the Executive Director deems necessary.

3. **Review of Continuing Fiduciary Education Plan.**

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

RECOMMENDATION:

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

4. **Review of Executive Director's Evaluation and Salary Process.**

The Committee discussed the process that will be used by the Board to evaluate the Executive Director for FY17. The Committee members agreed that the performance reviews should be completed prior to the September 2017 meeting of the SBI and should follow the process as discussed.

RECOMMENDATION:

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

- **The evaluation will be completed by October 1.**

- **The evaluation will be based on the results of the Executive Director's work plan for the fiscal year ending the previous June 30.**

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

- **As Chair of the Board, the Governor (or his representative) will coordinate distribution of the evaluation forms. Board members will forward completed evaluations to the Executive Director with a copy of the cover sheet sent to the Governor or the Governor's designee and are encouraged to meet individually with the Executive Director to review their own evaluation.**

- **Upon satisfactory performance evaluations from a majority of responding Board Members, the Executive Director's annual salary adjustment will be any Cost-of-Living Adjustment (COLA)/Across the Board (ATB)/General Salary Increase contained in the Managerial Plan for a Fiscal Year as approved by the Legislature to the extent that it is within the Executive Director's salary range. The adjustment shall be effective January 1 of the next calendar year.**

5. Update of Business Continuity Plan

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

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ATTACHMENT A

STATE BOARD OF INVESTMENT
Executive Director's Proposed Work Plan

FY18
(Categories A, B, C, D, E correspond to the position description)

A. DEVELOPMENT OF INVESTMENT POLICIES	**Projected Time Frame**
1. Statement of Investment Beliefs	FY 2018
2. Comprehensive Combined Funds Review	May – Sep.
3. Enhanced Non-Retirement Investment Program	Jun. – Nov.
4. Determine Platform for Participant Driven Investment Programs (PDIP)	May – Oct.
5. Review and Revise SBI Investment Policies	Jun. – May
6. Continued Development of Environmental, Social and Governance Policy	May – Dec.

B. IMPLEMENTATION OF INVESTMENT POLICIES APPROVED BY THE SBI	
1. Implement Changes to Accounting System	Apr. – Dec.
2. Internal Cash Management RFP for Major Revenue Banking Services and Custodial Services for State Cash Accounts	Mar. – Dec.
3. Enhanced Private Markets Fee Reporting	Ongoing
4. Meet or Exceed the Performance Objectives	Ongoing
5. Investments with New and Existing Alternative Asset Managers	Ongoing
6. Manager Search Process	Ongoing
7. Conduct Investment Manager Portfolio and Compliance Review of Guidelines and Contracts	Ongoing
8. Implement State Law Concerning Iran	Ongoing
9. Implement State Law Concerning Sudan	Ongoing

Shaded items represent new or intermittent work plans.

C. REVIEW AND CONTROL OF INVESTMENT POLICIES	Projected Time Frame
1. Monitor and Evaluate Investment Manager Performance	Ongoing
2. Manager Guidelines	May – Sep.
3. Provide Staff Support to Proxy Committee	Jul. – Jun.
4. Monitor Implementation of Northern Ireland Mandate	Oct. – Mar.
5. Provide Staff Support for Corporate Actions and Miscellaneous Legal Issues	Jul. – Jun.

D. ADMINISTRATION AND MANAGEMENT

1. Consultant Transition	May
2. RFP for Custodial Services	Feb. – Sep.
3. RFP for Foreign Tax Advisory Services	May – Feb.
4. RFP for Data Management System	Jun. – Dec.
5. Coordinate Financial Audit by Legislative Auditor	Jul. – Dec.
6. Prepare 2018 Legislative Package	Jul. – May
7. Prepare Fiscal Year 2019 Management and Budget Plan	Mar. – Jun.
8. Annual Update of Business Continuity Plan	Apr. – Jun.
9. Prepare Annual SIF Investment Options Prospectus and Information Booklet for the Voluntary Statewide Volunteer Firefighter Plan (VSVFP)	May – Sep.
10. Contract Management	Ongoing
11. Respond to Minnesota Government Data Practices Act Requests	Ongoing

E. COMMUNICATION AND REPORTING	Projected Time Frame
1. Prepare reports on investment results	Ongoing
2. Prepare Status Reports	As requested
3. Meet with SBI and IAC	Ongoing
4. Meet with Board's designees	Ongoing
5. Prepare Fiscal Year 2017 Annual Report	Jul. – Jan.
6. Coordinate Public Pension Plan Performance Reporting Disclosure	Ongoing
7. Conduct Manager Roundtables	Periodic

F. OTHER ITEMS

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

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STATE BOARD OF INVESTMENT

Project Summary
FY18

DEVELOPMENT OF INVESTMENT POLICIES
Statement of Investment Beliefs

GOAL: Develop a Statement of Beliefs for the State Board of Investment.

BACKGROUND: Over the course of the past decade, many institutional investor organizations, similar to the SBI, have undertaken a process of developing a Statement of Investment Beliefs. Investment Beliefs are (explicit or implicit) principles held by an organization that inform decisions which can be an effective tool for decision making and clarifying roles and responsibilities. The general categories of Investment Beliefs focus on:

- investment objectives and strategies
- capital markets
- the investment decision process
- governance

The Executive Director has engaged the SBI's Special Projects Consultant, Pension Consulting Alliance (PCA), to assist the organization in the development of the Statement of Investment Beliefs. PCA has significant experience in assisting large public pension funds to develop Investment Beliefs for their organizations. It is contemplated that a cross-section of SBI stakeholders (Board members/designees, Investment Advisory Council members, Staff members) will be asked to participate in this process.

The Executive Director and PCA have begun discussions to determine the process which will be used to perform the project. It is anticipated that the project will occur during Fiscal Year 2018 and be presented to the Board for adoption.

Develop process and engage SBI stakeholders.

Develop draft statement for review.

Presentation and discussion with Investment Advisory Council.

Seek Board approval and adoption.

STATE BOARD OF INVESTMENT

Project Summary
FY18

DEVELOPMENT OF INVESTMENT POLICIES
Comprehensive Combined Funds Review

GOAL: Review of the Combined Funds Investment Program for the State Board of Investment.

BACKGROUND: The State Board of Investment has engaged a new general investment consultant and has enhanced the mandate of the SBI's special projects consultant. The previous investment consultant had a long tenure at the SBI for which the organization was well served. With the introduction of new consultants to aid the SBI, the Executive Director has requested that each of the organizations perform a comprehensive review of the Combined Funds investment program. The consultants have been asked to provide an assessment of the asset allocation, manager structure, and risk profile of the Combined Funds. While each consultant organization has been asked to perform an independent assessment, it is the Executive Director's intent to meet with the consultants jointly and develop recommendations, if any, for IAC and/or Board consideration.

Review and assess Combined Funds investment program.	May – Jun.
Joint development of recommendations with Executive Director.	Jun. – Aug.
Presentation and discussion with IAC.	Aug.
Potential recommendations to Board.	Sep.

STATE BOARD OF INVESTMENT

Project Summary
FY18

DEVELOPMENT OF INVESTMENT POLICIES
Enhanced Non-Retirement Investment Program

GOAL: Review and enhance the Non-Retirement Investment Program.

BACKGROUND: At the May 2017 SBI meeting, the Executive Director will be requesting Board approval to transfer the management of the internal equity index and the internal fixed income funds to external management. Additionally, the funds would be renamed the Non-Retirement Equity Fund and the Non-Retirement Fixed Income Fund.

Due to the extensive use of these investment options, the Executive Director will be developing a prospectus and improved reporting for these options. There will also be the exploration of the development of a Balanced Fund option, and a review of certain current non-retirement funds (Permanent School Fund, Environmental Trust Fund, etc.) to determine their suitability for a new Balanced Fund option, if developed.

If approved, transfer funds to external managers.	Jun. – Aug.
Develop Non-Retirement Investment Prospectus.	Jun. – Nov.
Develop a Balanced Fund Option and determine if suitable for certain current non-retirement funds.	Jun. – Nov.

STATE BOARD OF INVESTMENT

Project Summary
FY18

DEVELOPMENT OF INVESTMENT POLICIES
Determine Platform for Participant Driven Investment Programs

GOAL: Determine the feasibility of migrating Participant Driven Investment Programs (PDIP) to one investment management platform approach.

BACKGROUND: The SBI has oversight responsibility for a variety of retirement related plans which are participant driven. The largest of these are the deferred compensation, or 457 plan, which utilizes mutual fund options. The SBI also manages a variety of participant driven plans that are similar to the deferred compensation plan. However, these funds utilize the Supplemental Investment Fund options which are investments whose primary purpose is to construct the investment program for the Combined Funds (i.e. pension funds). The plans utilizing these options are:

- Unclassified Retirement Plan
- Health Care Savings Plan
- Hennepin County
- PERA-Defined Contribution Plan

As a result of changes in the management of the Combined Funds, there have been minor impacts to the SIF investment options. It is possible that further changes to the Combined Funds could lead to more significant impacts on the SIF options such as the need to eliminate one or more SIF options.

The potential impacts the Combined Funds may have on the SIF options could ultimately result in fiduciary conflicts between different beneficiaries. By migrating the participant directed plans to a platform separate from the Combined Funds, there is the opportunity to avoid fiduciary conflicts, create operational efficiencies from an accounting and record keeping standpoint, and also facilitate and provide for potential enhancements in communications with individual participants regarding their chosen investments.

The SBI Staff will be working with MSRS and PERA to determine the feasibility of any migration to a uniform platform. If we conclude that this approach is feasible and has the capability of providing the potential improvements, the Executive Director will present a proposed implementation plan to the Board.

Review legal authority of each plan to determine issues which may need to be resolved. If any, develop action to address any issues.	May – Jul.
Review whether each plan can access mutual funds options provided by current providers.	May – Jul.
Present potential proposal to SBI and impacted retirement plan to boards for approval.	Aug. – Sep.
If approved by all boards, determine implementation plan.	Oct.

STATE BOARD OF INVESTMENT

Project Summary
FY18

DEVELOPMENT OF INVESTMENT POLICIES
Review and Revise SBI Investment Policies

GOAL: Review SBI Investment Policies.

BACKGROUND: The SBI has a compilation of Investment Policies and Management Practices which have been developed over the past three-plus decades. In the past several years, there have been a variety of changes in the various investment program managed by the SBI. As outlined in the current Management and Budget Plan, there is a continuation of modifications to SBI investment policies.

The Executive Director is planning to prepare an update of the SBI Investment Policies including a revised format which will be more economical and developed with the recognition that future policies may be revised on a more frequent basis with the need to reflect changes in a timely manner. It is contemplated that the revision will be developed in the format of a manual. The projected timetable is one year, but may take longer to complete.

In conjunction with the revised Policy Manual, the Executive Director has given the Staff an internal work plan project to produce procedures which reflect how the investment program is managed and policies are implemented.

Commencement of Revised Investment Policy Manual. Jun. – May

STATE BOARD OF INVESTMENT

Project Summary
FY18

DEVELOPMENT OF INVESTMENT POLICIES
Continued Development of Environmental, Social and Governance Policy

GOAL: Following Staff's initial review of ESG issues noted below, Staff will continue to review updates to ESG topics and will develop a manager questionnaire. Staff will work with SBI's special projects consultant to develop an ESG policy statement.

BACKGROUND: Public Pension Plans have increasingly recognized that environmental, social and governance issues represent potential risks which plan fiduciaries may need to address as part of their oversight regarding fund investment activities.

Staff reviewed information from other public plans including Environmental, Social and Governance (ESG) studies, criteria, and policy statements, along with research compiled from other sources, After this initial review, the Staff developed a summary of ESG definitions and held discussions to outline how ESG factors impact each asset class as well as the interactions Staff had with managers on ESG issues. Based on these meetings, staff compiled a short synopsis on ESG as it relates to the SBI. The Executive Director has requested that the SBI's Special Projects Consultant work with staff to develop a proposed ESG policy statement.

Conduct Investment Manager Survey.	May – Jun.
Define and analyze risks posed to SBI investment program.	May. – Aug.
Develop policy approaches to address ESG related risks.	Jun. – Oct.
Report findings and conclusions to SBI Proxy Committee, IAC, and Board.	Nov. – Dec.

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ATTACHMENT B

Administrative Budget
Fiscal Year 2018 & 2019 Budget Plan
Overview

The Fiscal Years 2018 and 2019 budget process is based on budget procedures instituted by Minnesota Management and Budget. The SBI receives a General Fund appropriation (currently $139,000) to manage the General Fund portion of the Invested Treasurer's Cash (ITC) pool. The remaining budget revenues are generated from invoicing actual cost of services to plans that have funds under SBI management.

The Fiscal Year 2018 budget includes 30 Full Time Equivalent (FTE) positions. No new FTE's were added from the Fiscal Year 2017 budget request. The SBI has included a 3% projected salary increase in the budget for all staff in Fiscal Years 2018 and 2019. The 3% salary increase extends to the Executive Director in order to accommodate a salary increase that may be approved by the Board in the Executive Director annual evaluation process. The actual salary increases for non-investment staff will be determined by legislative negotiated contracts per bargaining unit. The investment staff salary increase, if any, will be determined in accordance with the SBI Salary Plan.

In Fiscal Years 2018 and 2019, the SBI anticipates an increase in the operating expense portion of the budget for computer system services. This increase is for investment computer services like Moody's ratings, Bloomberg terminals and other investment computer services. Historically, these services have been paid for by directed commissions generated from active managers. As the movement away from active management the SBI's directed commissions will be reduced.

There is a potential unknown in the SBI budget with the cost of the SBI's Information Technology (IT) budget. Legislation is currently being heard that will have the SBI Information Technology Services fall under the confines of the State's IT division (MNIT). The SBI is anticipating that if the legislation passes the SBI will see additional costs to our IT budget.

	FY2017 Budget	FY2017 Projected	FY2018 Request	FY2019 Request
Personnel Services	$4,938,700	$3,945,600	$4,927,900	$5,074,700
Operating Expense	1,126,000	828,800	1,276,000	1,698,000
Total	$6,064,700	$4,774,400	$6,203,900	$6,772,700

Personnel Services: Personnel Services are estimated to account for 79% of the requested Fiscal Year 2018 budget and 75% of the requested Fiscal Year 2019 budget.

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

Operating Expenses: Operating Expenses are estimated to account for 21% of the requested Fiscal Year 2018 budget, and 25% of the requested Fiscal Year 2019 budget.

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

STATE BOARD OF INVESTMENT
FISCAL YEARS 2018 AND 2019 BUDGET PLAN
MSBI OPERATING FUND SUMMARY

DESCRIPTION	FY2017 BUDGET	FY2017 PROJECTED	FY2018** PROPOSED	FY2019 PROPOSED
PERSONNEL SERVICES				
FULL TIME EMPLOYEES	$ 4,838,700	$ 3,934,600	$ 4,827,900	$ 4,974,700
OTHER BENEFITS	100,000	11,000	100,000	100,000
SUBTOTAL	$ 4,938,700	$ 3,945,600	$ 4,927,900	$ 5,074,700
STATE OPERATIONS				
RENTS & LEASES	300,000	285,000	285,000	290,000
REPAIRS/ALTERATIONS/MAINTENANCE	15,000	11,800	14,000	14,000
PRINTING & BINDING	8,000	8,000	9,000	10,000
PROFESSIONAL/TECHNICAL SERVICES	150,000	39,700	175,000	175,000
COMPUTER SYSTEMS SERVICES	20,000	22,500	83,000 *	483,000 *
COMMUNICATIONS	36,000	24,600	36,000	36,000
TRAVEL, IN-STATE	1,000	200	1,000	1,000
TRAVEL, OUT-STATE	119,000	75,000	125,000	130,000
SUPPLIES	27,000	28,000	28,000	29,000
EQUIPMENT	25,000	25,000	25,000	35,000
EMPLOYEE DEVELOPMENT	35,000	34,000	105,000 *	105,000 *
OTHER OPERATING COSTS	140,000	120,000	140,000	140,000
INDIRECT COSTS	250,000	155,000	250,000	250,000
SUBTOTAL	$ 1,126,000	$ 828,800	$ 1,276,000	$ 1,698,000
TOTAL MSBI OPERATING FUND	$ 6,064,700	$ 4,774,400	$ 6,203,900	$ 6,772,700
PERCENT INCREASE (DECREASE) OVER PRIOR YEAR BUDGET			2.3%	9.2%

* Beginning in Fiscal Year 2018, SBI is moving expenditures from the directed commission budget to our internal budget due to the reduction of directed commission from active management. In Fiscal Year 2018 SBI is adding $50,000 for subscription services and $70,000 for membership fees. In Fiscal Year 2019, we will be moving an additional $400,000 in subscription services to the internal budget.

** There is a potential cost increase to our IT (information technology) budget due to the possibility that SBI may fall under the confines of the State's IT division (MNIT) with some proposed legislative language.

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ATTACHMENT C

CONTINUING FIDUCIARY EDUCATION PLAN

REQUIRED BY MS 356A.13

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

1. Briefing for New Board/IAC Members

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

2. Development and Review of Investment Policies

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

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

3. Input from Board's Consultants

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

4. Manager Roundtables

The SBI intends to convene small groups of its external money managers to discuss issues related to investment management and the financial markets. These roundtable discussions will be held periodically throughout the year and will be open to Board members and their designees, IAC members and other interested parties.

5. Travel Allocation

The SBI allocates $5,000 annually to each Board member (or their designee) for costs associated with attendance at investment-related seminars and conferences. This allocation is used at the discretion of each Board member.

2016 Minnesota Statutes

356A.13. CONTINUING FIDUCIARY EDUCATION.

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

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

TAB

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DATE: May 8, 2017

TO: Members, Investment Advisory Council

FROM: SBI Staff

Staff has reviewed the following information and action agenda items:

- Review of current strategy.
- Consideration of new commitments.

Existing Managers:			
Private Equity	Lexington Partners	CIP IV	$200 Million
Private Credit	KKR Lending Partners	KKRLP III	$200 Million
Private Credit	Avenue Energy Opportunities	Fund II	$100 Million
Private Equity	Nordic Capital	Fund IX	€150 Million
New Managers:			
Private Equity	Asia Alternatives	AACP V	$100 Million
Resource	BlackRock	GRP II	$100 Million
Real Estate	Lubert-Adler	Fund VII-B	$75 Million

IAC action is required on the second item.

INFORMATION ITEM:

1) Review of Current Strategy.

To increase overall portfolio diversification, 20% of the Combined Funds is allocated to Private Markets investments. Private Markets investments include real estate, private equity, resource, and yield-oriented investments in which Minnesota State Board of Investment (SBI) participation is limited to commingled funds or other pooled vehicles. Charts summarizing the Board's current commitments are attached (see **Attachments A and B**).

a. The real estate investment strategy is to establish and maintain a broadly diversified real estate portfolio comprised of investments that provide overall diversification by property type and location. The main component of this portfolio consists of investments in diversified Real Estate Investment Trusts (REITs) and closed-end commingled funds. The remaining portion of the portfolio can include investments in less diversified, more focused (specialty) commingled funds and REITs.

b. The private equity investment strategy, which includes leveraged buyouts and venture capital, is to establish and maintain a broadly diversified private equity portfolio comprised of investments that provide diversification by industry type, stage of corporate development and location.

c. The strategy for resource investments is to establish and maintain a portfolio of resource investment vehicles that provide an inflation hedge and additional diversification. Resource investments will include oil and gas investments, energy service industry investments and other investments that are diversified geographically and by type.

d. The strategy for yield-oriented investments is to target funds that typically provide a current return and may have an equity component such as subordinated debt or mezzanine investments. Yield-oriented investments will provide diversification by including investments in the private equity, resource and real estate categories.

ACTION ITEMS:

1) Investment with an existing private equity manager, Lexington Partners ("Lexington"), in Lexington Co-Investment Partners IV ("CIP IV").

Lexington Partners is seeking investors for a new $2 billion private equity co-investment fund to continue Lexington's history of successfully making equity co-investments in transactions alongside leading buyout sponsors in U.S. and European companies. The Partnership is being formed to continue Lexington's successful, 19-year co-investment strategy and will selectively add new limited partners to the Firm's established global co-investment program (there will be a maximum of 12 limited partners).

CIP IV seeks to make passive, minority co-investments alongside lead transaction sponsors. As a result, the CIP team does not have the same degree of day-to-day portfolio company management responsibilities as the control sponsor. This allows the CIP team to assemble a more diversified portfolio of investments than traditional primary funds which, the General Partner believes, reduces portfolio risk. As in prior CIP funds, CIP IV will seek to assemble a diversified portfolio of co-investments including by sponsor, company, company size, geography, industry, and vintage, and therefore anticipates achieving broad industry exposure.

In addition to reviewing the attractiveness of the Lexington Co-Investment Partners IV 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 Lexington Co-Investment Partners IV is included as **Attachment C**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to $200 million, or 20% of Lexington Co-Investment Partners IV, whichever is less. 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 Lexington 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 Lexington Partners or reduction or termination of the commitment.

2) **Investment with an existing private credit manager, Kohlberg Kravis Roberts & Co. ("KKR"), in KKR Lending Partners III ("KKRLP III").**

KKR is seeking investors for a new $2 billion fund to invest in a concentrated portfolio of direct lending investments. KKRLP III will target primarily middle market companies that have EBITDA of $25 million or greater. KKR Credit was established in 2004 to take advantage of the differentiated networks of capabilities within KKR in order to find and invest in the most attractive risk-adjusted ideas across below-investment grade credit. Beginning in 2008, KKR Credit began to accept additional institutional mandates that sought to take advantage of the financial crisis and resulting credit market dislocations. In 2011, KKR Credit started forming commingled funds across direct lending, mezzanine, and distressed/special situations investing to allow greater access by investors.

KKRLP III will focus on originated transactions into both sponsored and non-sponsored companies. KKR anticipates that the majority of the investments in the Fund will be made at the top of a company's capital structure. The Fund will seek to provide private financing which will be highly negotiated and customized for each lending opportunity. Many deals are generated from a combination of sources (i.e., sponsors, company relationships, and advisors).

In addition to reviewing the attractiveness of the KKRLP III 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 KKRLP III is included as **Attachment D**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to $200 million, or 20% of KKR Lending Partners III, whichever is less. 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 Kohlberg Kravis Roberts & Co. upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on KKR or reduction or termination of the commitment.

3) **Investment with an existing private credit manager, Avenue Capital Group ("Avenue"), in Avenue Energy Opportunities Fund II, L.P. ("Fund II").**

Avenue is seeking investors for a new $1 billion yield-oriented fund, Avenue Energy Opportunities Fund II. This will be the Firm's second fund focusing exclusively on the energy and utilities sectors, but it has invested in these sectors in its previous six Special Situations Funds. Avenue Energy Opportunities Partners will make investments primarily in debt, select equity securities, or other obligations of North American energy and utility companies in financial stress or distress.

Investments in Fund II are generally expected to be made in senior secured debt or other instruments that are structurally senior to other portions of the capital structure. Avenue believes that by focusing on companies with hard assets, and investing in the senior part of the capital structure, the portfolio will exhibit substantial downside protection and moderate volatility. Avenue seeks to identify stressed and distressed investments in companies with a focus on over-levered companies with quality assets and identifiable, non-commodity driven catalysts. Avenue intends to focus on three categories of investment: reorganizations, market exits/refinancing, and asset sales/liquidations.

In addition to reviewing the attractiveness of the Avenue Energy Opportunities Fund II 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 Avenue Energy Opportunities Fund II is included as **Attachment E**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to $100 million, or 20% of Avenue Energy Opportunities Fund II, whichever is less. 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 Avenue Capital Group 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 Avenue or reduction or termination of the commitment.

4) **Investment with an existing private equity manager, Nordic Capital ("Nordic"), in Nordic Capital Fund IX ("Fund IX").**

Nordic Capital is establishing Nordic Capital Fund IX, a targeted €4 billion fund, to make pure-play generalist control buy-outs primarily in the Nordic region (Sweden, Finland, Denmark, and Norway) and DACH region (Germany, Switzerland, and Austria), as well as Healthcare control buy-outs across Europe and North America. Nordic Capital is one of the oldest Nordic region mid-market private equity investors and is supported by strong local presence and long-standing industry relationships in the Nordic region.

Nordic Capital Fund IX is a continuation of Nordic Capital's strategy of focusing on upper middle-market companies. Which they define as companies with an enterprise value of €200 million – €800 million. Nordic Capital targets opportunities in five core sectors: Healthcare, Technology & Payments, Financial Services, Industrial Goods & Services, and Consumer & Retail. Nordic is focused on generating strong and repeatable absolute returns in its five core sectors through alpha-focused target selection. A typical target company is positioned to realize accelerated earnings growth and facilitate value creation from company specific improvements, while exhibiting limited dependency on external market factors. Nordic Capital expects to pursue companies in selected sub-sectors where specific structural growth trends, transformational dynamics or disruptive market developments have been identified.

In addition to reviewing the attractiveness of the Nordic Capital 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 Nordic Capital Fund IX is included as **Attachment F**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to €150 million, or 20% of Nordic Capital Fund IX, whichever is less. 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 Nordic Capital 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 Nordic Capital or reduction or termination of the commitment.

5) Investment with a new private equity manager, Asia Alternatives Management ("Asia Alternatives"), in Asia Alternatives Capital Partners V ("AACP V").

Asia Alternatives is forming Asia Alternatives Capital Partners V, a targeted $1.3 billion fund, to pursue investment opportunities with top-performing private equity managers and will hold a diversified portfolio of Asian private equity funds. Like prior funds, Fund V will invest primarily in Mainland China, Taiwan, Hong Kong and Macau (together, "Greater China"), Japan, South Korea, India, Southeast Asia, and Australia. The Fund intends to be diversified across buyout, growth and expansion, venture capital and special situations (defined as distressed debt, real estate, corporate restructuring, and/or structured transactions).

Asia Alternatives will seek to invest the Fund across approximately 20 fund managers, who will form the core fund manager relationships for the Firm. The Asia Alternatives investment team is organized by "buckets" of a combination of geography and sub-sector – for example China small-mid growth or Japan mid-large buyouts. The team produces investment reports which are the basis for making a recommendation of risk premium for the bucket. The investment team sets hurdles for (i) geographic risk, (ii) illiquidity risk and (iii) manager risk. The portfolio is constructed based on which buckets the investment team analyzes and deems have the highest probability to deliver the risk premium hurdles set. Once the investment team has picked which buckets to concentrate capital in, it screens managers "bottom up" and ranks managers for each bucket. The goal is to invest in the top 3-5 managers, as appropriate, for each of the most attractive buckets.

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

More information on Asia Alternatives Capital Partners V is included as **Attachment G**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to $100 million, or 20% of Asia Alternatives Capital Partners V, whichever is less. 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 Asia Alternatives Management 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 Asia Alternatives or reduction or termination of the commitment.

6) Investment with a new resource manager, BlackRock Financial Management ("BlackRock"), in BlackRock Global Renewable Power Fund II ("GRP II").

BlackRock is forming BlackRock Global Renewable Power Fund II, a targeted $1.5 billion fund, to invest in a diversified portfolio of renewable power generation projects. BlackRock's Global Renewable Power Group ("GRPG") is part of BlackRock's Infrastructure platform. The Infrastructure platform is comprised of 104 infrastructure investment professionals and $10 billion in committed capital. The GRPG currently manages $2.8 billion of committed capital.

The investment objective of GRP II is to provide a long-term total return in the form of capital growth and income. The Fund aims to achieve this objective by gaining exposure to a diversified portfolio of renewable power generation projects in OECD countries, primarily focusing on wind and solar projects in North America and the European Union. GRP II expects to invest in construction-ready, under construction, or operating projects and take either a controlling or minority ownership position. In addition, up to 15% of the Fund may be invested in pre-construction projects or platforms that will be expected to facilitate follow-on project equity investments, and up to 10% may be invested in non-OECD countries or in technologies other than wind and solar.

In addition to reviewing the attractiveness of the Global Renewable Power Fund II investment offering, staff conducted team due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on BlackRock Global Renewable Power Fund II is included as **Attachment H**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to $100 million, or 20% of Global Renewable Power Fund II, whichever is less. 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 BlackRock Financial Management 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 BlackRock or reduction or termination of the commitment.

7) Investment with a new private real estate manager, Lubert-Adler Partners ("Lubert-Adler"), in Lubert-Adler Real Estate Fund VII-B ("Fund VII-B").

Lubert-Adler is forming Lubert-Adler Real Estate Fund VII-B, a targeted $250 million 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 $7.6 billion in assets with a cost basis of over $18 billion.

Fund VII-B 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. Fund VII-B will pursue diversification by region, property type, operating partner, and the number of investments. The Fund will continue the strategy shift Lubert-Adler adopted in 2010 of acquiring "rental assets", which include the following property types: multifamily, retail, hospitality, and office/industrial.

In addition to reviewing the attractiveness of the Lubert-Adler Real Estate Fund VII-B investment offering, staff conducted team due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund.

More information on Lubert-Adler Real Estate Fund VII-B is included as **Attachment I**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to $75 million, or 20% of Lubert-Adler Real Estate Fund VII-B, whichever is less. 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 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 Lubert-Adler or reduction or termination of the commitment.

ATTACHMENT A

Minnesota State Board of Investment

Pooled Alternative Investments

Combined Funds

March 31, 2017

Combined Funds Market Value	$62,351,305,227
Amount Available for Investment	**$4,476,020,077**

	Current Level	Target Level	Difference
Market Value (MV)	$7,994,240,968	$12,470,261,045	$4,476,020,077
MV +Unfunded	$13,908,462,707	$21,822,956,829.45	$7,914,494,122

Asset Class	Market Value	Unfunded Commitment	Total
Private Equity	$4,824,363,938	$3,814,516,138	$8,638,880,076
Real Estate	$597,507,619	$525,331,959	$1,122,839,578
Resource	$1,507,610,226	$764,812,998	$2,272,423,224
Yield-Oriented	$1,064,759,185	$809,560,644	$1,874,319,829
Total	$7,994,240,968	$5,914,221,739	$13,908,462,707

Cash Flows

March 31, 2017

Calendar Year	Capital Calls	Distributions	Net Invested
2017 (thru 3/31)	353,815,684	(538,458,188)	(184,642,504)
2016	$1,874,320,138	($1,728,367,357)	$145,952,781
2015	$1,541,161,769	($2,128,301,645)	($587,139,876)
2014	$1,378,984,263	($2,133,698,037)	($754,713,774)
2013	$1,257,559,066	($2,522,817,494)	($1,265,258,428)

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ATTACHMENT B

Minnesota State Board of Investment

- Alternative Investments -

As of March 31, 2017

Investment	Total Commitment	Funded Commitment	MarketValue	Distributions	Unfunded Commitment	IRR %	MOIC*	Period Years
I. REAL ESTATE								
Angelo, Gordon & Co.								
AG Realty Fund IX	100,000,000	45,750,000	48,331,940	0	54,250,000	8.93	1.06	1.04
AG Asia Realty Fund III	50,000,000	20,870,683	18,916,933	2,875,000	29,129,317	-0.64	1.04	0.50
Blackstone								
Blackstone Real Estate Partners V	100,000,000	97,030,342	37,251,195	166,497,394	4,174,052	10.91	2.10	10.68
Blackstone Real Estate Partners VI	100,000,000	99,320,387	22,549,511	184,244,461	4,907,906	12.51	2.08	9.75
Blackstone Real Estate Partners VII	100,000,000	93,764,060	90,317,522	72,746,217	16,720,187	17.87	1.74	5.09
Blackstone Real Estate Partners VIII	150,000,000	65,443,891	59,901,498	18,667,101	99,711,037	14.47	1.20	1.77
Blackstone Strategic Partners (CSFB)								
Strategic Partners III RE	25,000,000	25,752,810	4,547,986	10,555,940	9,006	-7.08	0.59	11.50
Strategic Partners IV RE	50,000,000	50,557,714	11,304,619	37,875,538	1,412,534	-0.67	0.97	8.54
Colony Capital								
Colony Investors III	100,000,000	100,000,000	5,195,600	172,642,105	0	14.56	1.78	19.00
Rockpoint								
Rockpoint Real Estate Fund V	100,000,000	27,308,526	29,297,006	269,051	72,960,525	-1.96	1.08	1.02
Rockwood								
Rockwood Capital RE Partners X	100,000,000	20,797,420	20,362,130	0	79,202,580	-2.62	0.98	0.71
Silverpeak Real Estate Partners								
Silverpeak Legacy Pension Partners II	75,000,000	78,596,974	6,752,949	87,875,725	7,819,119	4.66	1.20	11.50
Silverpeak Legacy Pension Partners III	150,000,000	69,964,304	17,071,084	9,390,827	80,035,696	-12.53	0.38	8.61
T.A. Associates Realty								
Realty Associates Fund VII	75,000,000	75,000,000	0	76,765,896	0	0.33	1.02	12.12
Realty Associates Fund VIII	100,000,000	100,000,000	49,135,687	46,204,429	0	-0.58	0.95	10.50
Realty Associates Fund IX	100,000,000	100,000,000	66,080,033	94,802,804	0	10.68	1.61	8.35
Realty Associates Fund X	100,000,000	100,000,000	85,883,102	50,465,427	0	11.77	1.36	4.83
Realty Associates Fund XI	100,000,000	25,000,000	24,608,825	81,681	75,000,000	-1.24	0.99	1.50
Real Estate Total	**1,675,000,000**	**1,195,157,110**	**597,507,619**	**1,031,959,595**	**525,331,959**		**1.36**	
II. RESOURCE								
Apache Corp.								
1986 Net Profits Interest	30,000,000	30,000,000	375,150	59,472,103	0	12.14	1.99	30.00
EIG Global Energy Partners								
EIG Energy Fund XIV	100,000,000	113,013,074	11,387,111	92,181,918	2,761,129	-3.46	0.92	9.70
EIG Energy Fund XV	150,000,000	145,074,733	92,194,238	81,388,252	6,322,679	5.41	1.20	6.57
EIG Energy Fund XVI	200,000,000	124,880,546	120,177,370	15,471,118	81,730,852	4.99	1.09	3.30
EnCap Energy								
EnCap Energy Capital Fund VII	100,000,000	96,692,592	10,661,594	131,480,159	3,860,151	15.57	1.47	9.50
EnCap Energy Capital Fund VIII	100,000,000	90,972,198	44,723,584	39,563,268	10,194,755	-2.75	0.93	6.25
Encap Energy Fund IX	100,000,000	94,474,529	74,283,733	55,562,109	21,859,085	20.41	1.37	4.06
EnCap Energy Capital Fund X	100,000,000	39,725,369	31,856,624	14,309,778	67,892,939	21.89	1.16	1.82
EnerVest Energy								
EnerVest Energy Institutional Fund XIV	100,000,000	83,714,273	75,922,249	4,901,516	18,040,521	-3.85	0.97	1.69
Energy & Minerals Group								
NGP Midstream & Resources	100,000,000	100,090,315	78,353,037	120,455,815	230,871	16.22	1.99	9.75
The Energy & Minerals Group Fund II	100,000,000	94,281,168	123,295,754	29,075,130	5,993,843	15.52	1.62	5.27
The Energy & Minerals Group Fund III	200,000,000	174,257,942	133,459,059	4,392,731	27,471,516	-10.37	0.79	2.82
The Energy & Minerals Group Fund IV	150,000,000	86,695,531	93,642,903	3,398,902	65,776,742	10.51	1.12	1.42
Energy Capital Partners								
Energy Capital Partners II	100,000,000	80,529,511	56,179,117	74,904,183	30,099,613	13.51	1.63	6.45
Energy Capital Partners III	200,000,000	79,259,091	84,297,658	8,889,828	120,740,909	9.97	1.18	3.03
First Reserve								
First Reserve Fund X	100,000,000	100,000,000	432,044	182,429,002	0	31.06	1.83	12.16
First Reserve Fund XI	150,000,000	150,292,121	16,383,996	88,156,288	0	-8.05	0.70	10.02
First Reserve Fund XII	150,000,000	159,970,989	44,572,327	71,186,004	3,612,483	-8.55	0.72	8.17
First Reserve Fund XIII	200,000,000	55,634,709	63,931,365	2,345,408	144,365,291	11.23	1.19	3.16
NGP								
Natural Gas Partners IX	150,000,000	161,527,431	15,494,374	228,898,078	1,649,068	11.93	1.51	9.19
NGP Natural Resources X	150,000,000	137,871,291	67,756,204	88,915,038	12,128,709	4.97	1.14	5.23
Natural Gas Capital Resources XI	150,000,000	81,730,164	77,976,304	12,930,102	74,431,842	16.45	1.11	2.06
Sheridan								
Sheridan Production Partners I	100,000,000	116,550,000	67,203,006	82,750,000	0	6.33	1.29	9.75
Sheridan Production Partners II	100,000,000	100,000,000	71,048,030	7,000,000	0	-6.06	0.78	6.25
Sheridan Production Partners III-B	100,000,000	34,350,000	42,860,012	1,000,000	65,650,000	35.37	1.28	2.06
T. Rowe Price	18,513,566	18,513,566	9,143,384	5,953,538	0	-25.78	0.82	
Resource Total	**3,198,513,566**	**2,550,101,143**	**1,507,610,226**	**1,507,010,267**	**764,812,998**		**1.18**	
III. YIELD-ORIENTED								

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Audax Group								
Audax Mezzanine Fund III	100,000,000	89,724,591	50,967,491	60,595,620	18,783,405	9.45	1.24	6.74
Audax Mezzanine Fund IV	100,000,000	11,546,510	11,006,318	805,907	88,453,490	7.09	1.02	1.73
Avenue Capital Partners								
Avenue Energy Opportunities Fund	100,000,000	100,000,000	120,383,820	934,495	0	14.26	1.21	1.77
Citicorp Mezzanine								
CM Liquidating Partnership	100,000,000	88,029,296	7,631,875	149,642,633	0	16.71	1.79	17.16
Crescent Capital Group								
TCW/Crescent Mezzanine Partners III	75,000,000	68,835,269	2,390,845	156,868,939	29,733,852	35.88	2.31	15.75
Gold Hill Venture Lending								
Gold Hill Venture Lending	40,000,000	40,000,000	1,124,006	63,913,250	0	10.65	1.63	12.26
Gold Hill 2008	25,852,584	25,852,584	8,778,830	32,238,919	0	12.03	1.59	8.50
GS Mezzanine Partners								
GS Mezzanine Partners 2006	100,000,000	74,999,888	3,407,636	131,284,920	9,858,563	4.89	1.80	10.73
GS Mezzanine Partners V	150,000,000	112,057,963	13,630,223	165,434,372	38,044,131	9.29	1.60	9.19
Kohlberg Kravis Roberts								
KKR Lending Partners II	75,000,000	60,842,778	50,761,070	21,269,744	26,318,694	16.22	1.18	1.83
LBC Credit Partners								
LBC Credit Partners IV	84,123,090	17,564,916	17,529,891	0	66,558,174	-0.42	1.00	0.92
Merit Capital Partners								
William Blair Mezzan. Cap. Fd. III	60,000,000	57,243,241	620,620	112,755,951	2,756,759	15.51	1.98	17.00
Merit Mezzanine Fund IV	75,000,000	70,178,571	24,410,356	98,072,087	4,821,429	10.36	1.75	12.04
Merit Mezzanine Fund V	75,000,000	70,420,408	59,353,501	35,081,442	4,579,592	9.50	1.34	7.03
Merit Mezzanine Fund VI	55,578,125	7,636,817	8,142,489	0	47,941,308	7.07	1.07	1.02
Merit Energy Partners								
Merit Energy Partners B	24,000,000	24,000,000	10,225,460	181,774,852	0	24.32	8.00	20.50
Merit Energy Partners C	50,000,000	50,000,000	18,668,994	495,462,547	0	30.97	10.28	18.18
Merit Energy Partners D	88,000,000	70,938,303	35,229,708	308,307,178	0	22.79	4.84	15.60
Merit Energy Partners E	100,000,000	39,983,197	26,049,011	69,331,006	0	12.80	2.39	12.21
Merit Energy Partners F	100,000,000	59,522,861	24,964,326	27,251,921	0	-2.29	0.88	10.77
Merit Energy Partners H	100,000,000	100,000,000	74,637,538	18,410,723	0	-2.43	0.93	5.91
Merit Energy Partners I	169,721,518	125,099,999	160,277,869	4,296,319	44,621,519	38.27	1.32	2.21
Oaktree Capital Management								
Oaktree Opportunities Fund X	50,000,000	17,500,000	16,373,275	5,619,660	37,500,000	29.35	1.26	1.83
Oaktree Opportunities Fund Xb	100,000,000	0	0	0	100,000,000	0.00	0.00	1.83
Pimco Bravo**								
Pimco Bravo Fund OnShore Feeder I	3,958,027	3,958,027	410,750	3,651,709	2,021,147	2.88	1.03	2.01
Pimco Bravo Fund OnShore Feeder II	5,243,670	5,243,670	6,067,765	0	0	6.97	1.16	2.01
Portfolio Advisors								
DLJ Investment Partners II	27,375,168	23,164,217	82,798	34,829,566	0	10.37	1.51	17.00
DLJ Investment Partners III	100,000,000	72,260,040	5,936,220	88,389,198	29,739,249	7.43	1.31	10.53
Prudential Capital Partners								
Prudential Capital Partners I	100,000,000	99,713,348	0	155,231,567	286,652	11.06	1.56	15.70
Prudential Capital Partners II	100,000,000	97,079,158	4,948,310	135,600,498	3,053,595	8.87	1.45	11.50
Prudential Capital Partners III	100,000,000	96,084,157	35,901,393	121,921,174	7,358,237	13.26	1.64	7.71
Prudential Capital Partners IV	100,000,000	93,717,951	80,087,900	34,399,989	6,848,164	12.37	1.22	4.95
Prudential Capital Partners V	150,000,000	0	0	0	150,000,000	0.00	0.00	0.62
Summit Partners								
Summit Subordinated Debt Fund III	45,000,000	42,750,000	8,642,206	55,057,070	2,250,000	9.09	1.49	12.87
Summit Subordinated Debt Fund IV	50,000,000	55,108,996	21,325,456	49,884,743	15,810,306	9.48	1.29	8.76
TCW Asset Management								
TCW Direct Lending	100,000,000	84,912,960	68,844,197	18,388,725	23,838,067	3.26	1.03	1.96
Windjammer Capital Investors								
Windjammer Mezzanine & Equity Fund II	66,708,861	56,569,498	68,519	84,779,639	10,139,363	8.93	1.50	16.75
Windjammer Senior Equity Fund III	75,000,000	61,619,620	18,467,764	126,471,359	13,380,380	18.91	2.35	10.99
Windjammer Senior Equity Fund IV	100,000,000	77,677,681	67,410,757	6,572,993	24,864,570	-2.65	0.95	4.85
Yield-Oriented Total	**3,120,561,043**	**2,251,836,515**	**1,064,759,185**	**3,054,530,717**	**809,560,644**		**1.82**	
IV. PRIVATE EQUITY								
Adams Street Partners								
Adams Street Global Secondary Fund 5	100,000,000	71,129,750	56,203,471	18,625,419	28,870,250	2.92	1.05	4.54
Advent International								
Advent International GPE VI	50,000,000	49,000,005	29,049,667	74,535,575	999,995	17.61	2.11	8.75
Advent International GPE VII	90,000,000	78,930,000	77,959,023	33,480,083	11,070,000	14.50	1.41	4.29
Advent International GPE VIII	100,000,000	23,400,000	22,279,163	0	76,600,000	-25.29	0.95	1.15

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Affinity Ventures								
Affinity Ventures IV	4,000,000	4,000,000	1,770,701	1,541,970	0	-3.37	0.83	12.50
Affinity Ventures V	5,000,000	5,000,000	3,025,824	1,585,611	0	-1.83	0.92	8.49
APAX Partners								
Apax VIII - USD	200,000,000	204,727,016	221,012,588	29,107,647	18,017,529	11.62	1.22	3.82
Apax IX - USD	150,000,000	0	0	0	150,000,000	0.00	0.00	0.75
Banc Fund								
Banc Fund VII	45,000,000	45,000,000	54,552,749	7,616,725	0	3.25	1.38	11.75
Banc Fund VIII	98,250,000	98,250,000	164,576,083	37,529,973	0	15.75	2.06	8.68
Banc Fund IX	107,205,932	77,188,271	94,661,071	1,407,814	30,017,661	20.22	1.24	2.56
BlackRock**								
BlackRock Tempus Fund	1,774,870	1,774,870	760,793	1,284,242	0	14.27	1.15	1.56
Blackstone								
Blackstone Capital Partners IV	70,000,000	72,292,722	9,328,751	189,755,695	1,978,586	37.07	2.75	14.47
Blackstone Capital Partners V	140,000,000	130,994,409	17,077,204	219,171,649	8,522,239	7.72	1.80	10.91
Blackstone Capital Partners VI	100,000,000	88,714,261	85,399,415	37,029,124	16,614,312	9.88	1.38	8.43
Blackstone Capital Partners VII	130,000,000	11,370,145	11,379,355	17,119	118,629,855	-33.24	1.00	1.50
Blackstone Strategic Partners (CSFB/ DLJ)								
Strategic Partners II-B	100,000,000	86,154,714	580,355	161,889,320	4,692,847	35.07	1.89	13.46
Strategic Partners III-B	100,000,000	78,066,047	21,560,493	96,872,122	15,092,801	6.55	1.52	11.58
Strategic Partners III VC	25,000,000	24,784,342	6,356,999	27,597,048	1,172,875	6.32	1.37	11.58
Strategic Partners IV-B	100,000,000	91,923,385	24,041,406	126,323,995	18,496,755	12.55	1.64	8.77
Strategic Partners IV VC	40,500,000	39,754,807	14,550,663	45,861,590	3,259,709	9.63	1.52	8.54
Strategic Partners V	100,000,000	77,576,323	38,645,224	87,498,598	41,641,159	20.65	1.63	5.37
Strategic Partners VI	150,000,000	79,951,596	86,050,038	27,569,513	72,946,625	23.68	1.42	2.71
Strategic Partners VII	150,000,000	8,298,586	9,916,115	507,882	141,701,414	42.90	1.26	1.13
BLUM Capital Partners								
Blum Strategic Partners II	50,000,000	40,185,889	122,788	89,708,870	2,127,584	22.42	2.24	15.45
Blum Strategic Partners III	75,000,000	78,121,020	0	83,524,046	471,064	0.26	1.07	11.58
Blum Strategic Partners IV	150,000,000	170,916,780	0	167,939,991	5,896,033	-0.75	0.98	9.12
Brookfield Asset Management Inc.								
Brookfield Capital Partners Fund IV	100,000,000	32,373,929	37,628,279	3,763,032	68,878,870	16.97	1.28	1.53
CVC Capital Partners								
CVC European Equity Partners V	133,692,530	129,528,618	52,688,743	178,325,290	4,263,763	13.78	1.78	8.77
CVC Capital Partners VI	247,087,422	139,313,187	148,176,565	966,922	108,702,874	5.64	1.07	3.48
Carval Investors								
CVI Global Value Fund	200,000,000	190,000,000	31,111,592	288,632,865	10,000,000	9.70	1.68	9.97
CVI Credit Value Fund I	100,000,000	95,000,000	45,893,072	162,714,859	5,000,000	19.20	2.20	6.25
CVI Credit Value Fund A II	150,000,000	142,500,000	135,170,054	53,087,066	7,500,000	8.21	1.32	4.17
CVI Credit Value Fund A III	150,000,000	75,000,000	88,459,125	0	75,000,000	14.35	1.18	1.58
Cardinal Partners								
DSV Partners IV	10,000,000	10,000,000	31,177	39,196,082	0	10.61	3.92	31.72
Carlyle Group								
Carlyle Strategic Partners IV	100,000,000	8,983,289	9,059,827	44,790	91,061,501	2.53	1.01	1.00
Chicago Growth Partners (William Blair)								
William Blair Capital Partners VII	50,000,000	48,150,000	0	67,985,017	1,650,000	8.25	1.41	15.82
Chicago Growth Partners I	50,000,000	52,441,998	5,359,664	53,058,188	300,000	2.50	1.11	11.43
Chicago Growth Partners II	60,000,000	58,095,626	21,464,961	94,583,860	1,652,374	18.90	2.00	8.81
Court Square Capital Partners								
Court Square Capital Partners	100,000,000	80,827,220	104,698	182,160,766	1,920,943	28.91	2.26	15.05
Court Square Capital Partners II	175,000,000	158,503,096	49,478,140	255,085,071	17,544,102	13.27	1.92	10.32
Court Square Capital Partners III	175,000,000	88,482,159	41,242,568	63,877,629	94,181,930	7.67	1.19	4.58
Crescendo								
Crescendo IV	101,500,000	101,500,000	14,439,709	37,386,052	0	-6.09	0.51	16.81
Diamond Castle Partners								
Diamond Castle Partners IV	92,487,949	91,151,326	0	94,068,606	1,377,108	0.40	1.03	10.31
Elevation Partners								
Elevation Partners	75,000,000	69,311,710	623,481	113,091,463	799,634	11.83	1.64	11.62
Fox Paine & Company								
Fox Paine Capital Fund II	50,000,000	46,299,626	4,040,282	86,859,891	11,953,212	18.92	1.96	16.50
GHJM Marathon Fund								
GHJM Marathon Fund V	50,000,000	50,093,425	59,658	95,838,392	46,502	12.10	1.91	12.25
TrailHead Fund	20,000,000	14,914,187	18,247,575	2,406,955	5,085,813	10.37	1.38	4.85
Glouston Capital Partners (fka Permal)**								
Glouston Private Equity Opportunities Fund IV	5,337,098	4,247,098	2,210,703	2,385,487	1,090,000	4.50	1.08	2.01

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GTCR Golder Rauner								
GTCR VI	90,000,000	90,000,000	-	80,017,082	0	-3.78	0.89	18.50
GTCR IX	75,000,000	71,414,933	6,587,224	119,144,001	3,585,067	13.56	1.76	10.50
GTCR X	100,000,000	93,248,604	76,262,631	117,033,767	6,751,396	22.37	2.07	6.06
GTCR Fund XI	110,000,000	61,037,553	56,089,312	15,407,534	48,962,447	12.34	1.17	3.13
GS Capital Partners								
GS Capital Partners 2000	50,000,000	50,000,000	102,314	115,122,481	0	23.49	2.30	16.33
GS Capital Partners V	100,000,000	73,958,901	9,385,528	209,467,705	1,041,099	18.23	2.96	11.75
GS Capital Partners VI	100,000,000	80,215,619	25,398,979	102,704,346	15,039,971	6.26	1.60	9.91
West Street Capital Partners	150,000,000	13,500,000	13,500,000	0	136,500,000	0.00	1.00	0.28
GS Vintage VII	100,000,000	2,000,000	2,000,000	0	98,000,000	0.00	1.00	0.12
HarbourVest**								
Dover Street VII Cayman Fund	2,198,112	2,070,612	779,341	1,163,702	127,500	-4.81	0.94	2.01
HarbourVest Intl PE Partners V-Cayman US	3,507,649	3,293,739	1,646,852	2,238,820	213,910	11.98	1.18	2.01
Harbourvest Intl PE Partners VI-Cayman	4,199,801	3,713,156	3,458,126	1,077,874	486,645	13.58	1.22	2.01
HarbourVest Partners VIII Cayman Buyout	4,506,711	4,194,711	2,570,092	2,441,468	312,000	12.62	1.19	2.01
HarbourVest Partners VIII-Cayman Venture	7,190,898	7,050,898	5,273,583	2,580,548	140,000	6.28	1.11	2.01
Hellman & Friedman								
Hellman & Friedman Capital Partners V	160,000,000	146,165,961	3,758,985	414,854,231	8,070,303	27.91	2.86	12.08
Hellman & Friedman Capital Partners VI	175,000,000	170,967,947	33,890,929	309,869,166	5,154,672	12.88	2.01	9.75
Hellman & Friedman Capital Partners VII	50,000,000	47,293,134	52,031,893	21,018,764	2,706,866	16.05	1.54	7.70
IK Investment Partners								
IK Fund VII	179,630,786	169,629,300	173,348,398	9,140,544	10,001,487	3.54	1.08	3.30
IK Fund VIII	160,988,362	28,807,990	24,504,674	2,213,957	132,180,372	-12.11	0.93	0.70
Kohlberg Kravis Roberts								
KKR Millennium Fund	200,000,000	200,000,000	18,048,675	400,827,308	0	16.31	2.09	14.06
KKR 2006 Fund	200,000,000	211,063,288	95,921,884	253,436,470	3,360,223	8.43	1.66	10.26
KKR Americas Fund XII	150,000,000	0	0	0	150,000,000	0.00	0.00	1.08
Leonard Green & Partners								
Green Equity Investors VI	200,000,000	213,778,395	224,656,431	41,186,009	10,451,892	11.90	1.24	4.80
Lexington Capital Partners								
Lexington Capital Partners VI-B	100,000,000	98,365,297	24,085,078	118,203,853	1,634,703	7.85	1.45	11.02
Lexington Capital Partners VII	200,000,000	166,986,835	82,556,727	171,007,245	41,116,556	15.44	1.52	7.55
Lexington Capital Partners VIII	150,000,000	38,529,780	34,119,603	16,309,088	117,566,208	24.75	1.31	2.82
Lexington Middle Market Investors IV	100,000,000	0	0	0	100,000,000	0.00	0.00	0.27
MHR Institutional Partners								
MHR Institutional Partners IV	75,000,000	17,062,500	13,758,929	1,539,489	59,252,582	-8.67	0.90	1.71
Madison Dearborn Capital Partners								
Madison Dearborn Capital Partners VII	100,000,000	17,053,772	14,811,167	57,142	82,946,228	-16.20	0.87	1.28
Merced Capital								
Merced Partners II	75,000,000	63,768,881	5,220,986	124,662,721	0	23.96	2.04	9.75
Merced Partners III	100,000,000	100,000,000	58,345,456	73,497,107	0	6.62	1.32	6.65
Merced Partners IV	125,000,000	125,000,000	141,949,750	0	0	5.44	1.14	3.47
Neuberger Berman								
Dyal Capital Partners III	175,000,000	95,637,208	43,049,708	56,023,629	135,386,420	9.31	1.04	0.29
Nordic Capital								
Nordic Capital Fund VIII	173,775,736	107,007,866	118,002,930	49,418	66,767,871	4.83	1.10	3.30
North Sky Capital**								
North Sky Capital LBO Fund III	1,070,259	720,259	460,495	424,624	350,000	13.22	1.23	2.01
North Sky Capital Venture Fund III	1,384,080	1,277,830	521,253	820,646	106,250	3.37	1.05	2.01
Oak Hill Capital Management								
Oak Hill Capital Partners IV	150,000,000	0	0	0	150,000,000	0.00	0.00	0.31
Oaktree Capital Management								
Oaktree Principal Fund VI	100,000,000	23,438,727	16,854,562	10,743,624	86,906,037	20.17	1.18	2.01
Paine & Partners								
Paine & Partners Capital Fund IV	75,000,000	31,334,871	25,686,289	1,074,740	44,721,134	-13.88	0.85	2.05
PERMIRA								
Permira V	177,323,259	156,707,691	165,858,525	2,229,773	20,615,568	3.74	1.07	3.00
Permira VI	128,284,930	5,714,550	5,775,568	0	122,570,380	1.08	1.01	0.68
Public Pension Capital Management								
Public Pension Capital	100,000,000	41,690,945	42,237,515	214,861	58,309,055	-13.80	1.02	2.63
RWI Ventures								
RWI Ventures I	7,603,265	7,603,265	485,361	6,094,262	0	-4.33	0.87	10.50
Silver Lake Partners								
Silver Lake Partners II	100,000,000	90,142,191	17,844,732	156,317,295	11,771,953	11.33	1.93	12.50
Silver Lake Partners III	100,000,000	91,352,370	53,977,039	131,350,866	10,675,428	17.70	2.03	9.75
Silver Lake Partners IV	100,000,000	72,859,818	69,047,800	32,363,016	38,799,974	24.94	1.39	4.26

Minnesota State Board of Investment
- Alternative Investments -
As of March 31, 2017

Investment	Total Commitment	Funded Commitment	MarketValue	Distributions	Unfunded Commitment	IRR %	MOIC*	Period Years
Split Rock Partners								
Split Rock Partners	50,000,000	47,454,543	26,766,678	25,998,744	2,545,457	1.40	1.11	11.67
Split Rock Partners II	60,000,000	58,305,000	40,586,196	23,289,936	1,695,000	2.55	1.10	8.67
Summit Partners								
Summit Ventures V	25,000,000	24,125,000	104,838	33,358,461	875,000	8.12	1.39	18.75
Summit Partners Growth Equity Fund VIII	100,000,000	106,211,009	108,344,742	38,496,655	12,376,541	17.18	1.38	5.66
Summit Partners Growth Equity Fund IX	100,000,000	0	0	0	100,000,000	0.00	0.00	1.59
T. Rowe Price	40,714,575	40,714,575	14,478,525	34,395,718	0	17.43	1.20	
TPG Capital								
TPG Partners VII	100,000,000	27,677,358	25,405,681	1,183,712	73,480,358	-5.41	0.96	1.31
Thoma Cressey								
Thoma Cressey Fund VI	35,000,000	33,915,000	1,891	34,556,478	1,085,000	0.22	1.02	18.36
Thoma Cressey Fund VII	50,000,000	50,000,000	921,504	106,625,069	0	23.61	2.15	16.35
Thoma Cressey Fund VIII	70,000,000	68,932,574	1,525,997	233,860,926	770,000	18.27	2.93	10.67
Thoma Bravo								
Thoma Bravo Fund XII	75,000,000	27,599,096	26,382,749	0	47,400,904	-5.23	0.96	0.56
Thomas H. Lee Partners								
Thomas H. Lee Equity Fund VII	100,000,000	27,003,686	29,046,612	31,244	72,996,314	9.89	1.08	1.31
Thomas, McNerney & Partners								
Thomas, McNerney & Partners I	30,000,000	30,000,000	2,153,896	15,087,143	-	-9.94	0.57	14.15
Thomas, McNerney & Partners II	50,000,000	48,125,000	15,417,951	94,461,371	1,875,000	17.02	2.28	10.50
Varde Fund								
Varde Fund IX	100,000,000	100,000,000	14,879,541	198,226,439	0	14.93	2.13	8.52
Varde Fund X	150,000,000	150,000,000	114,655,728	160,251,710	0	12.02	1.83	6.70
Varde Fund XI	200,000,000	200,000,000	255,174,800	0	0	7.80	1.28	3.48
Vestar Capital Partners								
Vestar Capital Partners IV	55,000,000	53,635,969	979,626	101,917,140	57,313	14.66	1.92	17.04
Vestar Capital Partners V	75,000,000	74,936,812	18,563,129	82,019,219	63,188	4.17	1.34	11.03
Vestar Capital Partners VI	100,000,000	83,820,028	82,733,644	46,389,057	16,179,972	28.23	1.54	5.27
Warburg Pincus								
Warburg Pincus Equity Partners	100,000,000	100,000,000	390,972	163,222,253	0	10.02	1.64	18.51
Warburg Pincus Private Equity VIII	100,000,000	100,000,000	13,809,324	216,005,751	0	14.85	2.30	14.71
Warburg Pincus Private Equity IX	100,000,000	100,000,000	11,925,569	164,844,296	0	10.06	1.77	11.43
Warburg Pincus Private Equity X	150,000,000	150,000,000	73,729,638	145,038,887	0	7.60	1.46	9.19
Warburg Pincus Private Equity XI	200,000,000	178,800,000	193,511,782	41,509,400	21,200,000	11.61	1.31	4.03
Warburg Pincus Private Equity XII	131,000,000	31,309,000	29,204,816	0	99,691,000	-13.67	0.93	1.12
Warburg Pincus China	45,000,000	6,075,000	4,029,321	1,935,000	40,860,000	-4.17	0.98	0.30
Wayzata								
Wayzata Opportunities Fund	100,000,000	93,180,000	1,120,902	156,084,065	18,920,000	8.45	1.69	11.03
Wayzata Opportunities Fund II	150,000,000	57,450,000	19,171,266	180,995,178	30,000,000	16.09	3.48	9.19
Wayzata Opportunities Fund III	150,000,000	68,415,000	46,987,981	19,291,917	100,740,000	-1.61	0.97	4.54
Welsh, Carson, Anderson & Stowe								
Welsh, Carson, Anderson & Stowe VIII	100,000,000	100,000,000	0	128,816,862	0	3.12	1.29	18.44
Welsh, Carson, Anderson & Stowe IX	125,000,000	123,750,000	0	205,668,645	1,250,000	11.19	1.66	16.51
Welsh, Carson, Anderson & Stowe X	100,000,000	98,000,000	17,370,137	148,394,381	2,000,000	8.05	1.69	11.04
Welsh, Carson, Anderson & Stowe XI	100,000,000	99,245,264	66,677,508	87,591,319	754,736	12.85	1.55	8.44
Welsh, Carson, Anderson & Stowe XII	150,000,000	41,709,761	48,095,859	0	108,290,239	8.93	1.15	2.00
Private Equity Total	12,780,214,224	9,120,270,501	4,824,363,938	9,456,976,055	3,814,516,138		1.57	
Alternatives Total	20,774,288,833	15,117,365,271	7,994,240,969	15,050,476,634	5,914,221,739		1.52	

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.

* MOIC: Multiple of Invested Capital

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

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ATTACHMENT C

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Lexington Co-Investment Partners IV, L.P.
Type of Fund:	Private Equity – Co-Investment
Target Fund Size:	$2 billion ($2.5 billion hard cap)
Fund Manager:	Lexington Partners
Manager Contact:	Bart Osman Lexington Partners 660 Madison Avenue New York, NY 10065 (212) 754-0411

II. Organization and Staff

Lexington Partners L.P. (the "Firm" or "Lexington") is forming Lexington Co-Investment Partners IV, L.P. (the "Partnership" or "CIP IV"), to continue Lexington's history of successfully making equity co-investments in transactions alongside leading buyout sponsors in U.S. and European companies. The Partnership is being formed to continue Lexington's successful, 19-year co-investment strategy and will selectively add new limited partners to the Firm's established global co-investment program (there will be a maximum of 12 limited partners).

Lexington is the largest independent manager of co-investment and secondary acquisition funds with more than $33 billion in original committed capital. Lexington's funds pursue innovative strategies in two principal areas: (i) making equity co-investments alongside leading buyout and growth capital sponsors, and (ii) providing secondary liquidity solutions to owners of private equity and alternative investments. In addition, since 1998, Lexington's secondary funds have made select commitments to new private equity funds during their initial formation to complement Lexington's secondary acquisition strategy. Lexington has been at the forefront of private equity innovation since principals of Lexington helped pioneer the development of the secondary market for private equity interests 25 years ago and also created one of the first independent co-investment programs 19 years ago.

Lexington's co-investment strategy is led by Partners Bart Osman, John Loverro, David Outcalt, James Pitt, Brent Nicklas, Duncan Chapman, and Marshall Parke. The CIP team is located in New York City and London, complemented by Lexington offices in Menlo Park, Boston, Hong Kong, and Santiago.

III. Investment Strategy

Increasingly, limited partners are seeking co-investment opportunities to enhance their private equity programs. Co-investments offer limited partners the ability to obtain insights and gain additional exposure to attractive private equity investments, while benefiting from significantly lower economic costs including lower fees and carried interest as compared to traditional primary fund investing. The co-investment program ("CIP") will seek to generate superior returns by co-investing alongside high-quality buyout sponsors in attractive companies primarily in the United States and Europe. CIP IV will also co-invest opportunistically in companies in the growth markets of Asia and Latin America.

Lexington's co-investment program ("CIP") was created in 1998 specifically to allow the Florida State Board of Administration ("FSBA"), the fifth largest U.S. public pension fund, to harness the co-investment opportunities generated by the FSBA's and Lexington's combined private equity programs. Additional limited partners joined the program over the years to capitalize on the growth in co-investment opportunities from their respective large private equity fund portfolios. CIP's dedicated co-investment team thoroughly analyzes transactions and has the discretion and flexible investment process to respond to opportunities in a timely manner. Lexington's distinctive partnership model enables investors to aggregate their private equity commitments to provide increased access to deals that may not be available on an individual investor basis. Currently, the program's limited partners are five U.S. state plans and five foreign pension plans.

Lexington has been a consistent co-investor in private equity transactions since 1998, sourcing and analyzing over 1,700 co-investment opportunities from more than 300 private equity sponsors, and committing to invest $4.1 billion in 253 companies alongside 130 sponsors. Over the past 19 years, co-investment volume has increased considerably and is now estimated by published sources to account for more than 5% of global private equity volume. Lexington expects that co-investment volume will continue to increase due to the significant benefits for both limited partners and private equity sponsors.

CIP seeks to make passive, minority co-investments alongside lead transaction sponsors. As a result, CIP does not have the same degree of day-to-day portfolio company management responsibilities as the control sponsor. This allows CIP to assemble a more diversified portfolio of investments than traditional primary funds which, the General Partner believes, reduces portfolio risk. As in prior CIP funds, CIP IV will seek to assemble a diversified portfolio of co-investments including by sponsor, company, company size, geography, industry, and vintage, and therefore anticipates achieving broad industry exposure.

IV. Investment Performance

Previous fund performance as of December 31, 2016 is shown below. Historical CIP performance is provided here:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
CIP I	1998	$903 million	-	14.8%	1.9
CIP II	2005	$950 million	-	4.6%	1.3
CIP III	2012	$1,587 million	-	22.6%	1.5

Historical performance for Lexington's global secondary funds is provided here:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
LCP I	1996	$242 million	-	13.1%	1.3
LCP II	1998	$1,111 million	-	8.2%	1.3
LCP III	1999	$656 million	-	8.7%	1.3
LCP IV	2000	$606 million	-	19.3%	1.8
LCP V	2002	$2,004 million	-	19.0%	1.7
LCP VI	2006	$3,774 million	$100 million	7.9%	1.5
LCP VII	2010	$7,054 million	$200 million	15.4%	1.5
LCP VIII	2014	$10,119 million	$150 million	24.8%	1.3

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Net MOIC for LCP VI-VIII provided by State Street. Other fund returns provided by the manager. Values represent draft December 31, 2016 reporting as provided by the manager.

V. General Partner's Investment

The General Partner and its affiliates will commit a minimum of 2% of aggregate commitments to the Partnership.

VI. Fees

For limited partners with commitments of $200 million to less than $500 million, the management fee is 0.65% of commitments during the investment period. Thereafter, the fee is 0.65% of capital contributions to unrealized investments.

VII. Distributions

Distributions will be apportioned as follows:

(a) First, 100% to such Limited Partners until such Limited Partner has received distributions from realized portfolio investments equal to capital contributions for realized portfolio investments, fees, expenses, and Limited Partner's pro rata share of any net unrealized losses on write-downs;

(b) Second, 100% to such Limited Partner until such a time as the 8% Preferred Return Test is satisfied;

(c) Third, 100% to the General Partner until it receives a cumulative carried interest of 10%;

(d) Fourth, 90% to such Limited Partner and 10% to the General Partner until both (A) the Investment Period has expired and (B) the MOIC is equal to 1.6;

(e) Fifth, 100% to the General Partner until it receives a cumulative carried interest of 12.5%; and

(f) Thereafter, 87.5% to such Limited Partner and 12.5% to the General Partner.

VIII. Key Persons

If at any time at least three of Brent R. Nicklas, James D.C. Pitt, Bart D. Osman, and David B. Outcalt fail to devote, for a period of sixty consecutive days, substantially all of their business time and attention to the business and affairs of the CIP IV then a Majority in Interest of the Limited Partners may vote to cause an early termination of the Investment Period.

IX. Investment Period and Term

The investment period is five years from the later of final closing or first investment and the term is ten years from the later of final closing or first investment.

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

ATTACHMENT D

YIELD-ORIENTED MANAGER SUMMARY PROFILE

I. *Background Data*

Name of Fund:	KKR Lending Partners III, L.P.
Type of Fund:	Credit – Direct Lending
Target Fund Size:	$2 Billion
Fund Manager:	KKR Credit Advisors (US) LLC
Manager Contact:	Ari Barkan 9 West 57th Street New York, NY 10019 Phone: 212-271-9107

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 around the world. 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. During the first two decades, KKR focused on building a leading private equity business. Throughout the 1990s, they remained an active private equity investor, expanding into new industries and geographies.

In 2004, KKR Credit was established to take advantage of the differentiated networks of capabilities within KKR in order to find and invest in the most attractive risk-adjusted ideas across below-investment grade credit; their first middle-market direct lending investment was in May 2005. Beginning in 2008, KKR Credit began to accept additional institutional mandates that sought to take advantage of the financial crisis and resulting credit market dislocations. These mandates were generally broad in scope and flexible in approach. They enabled KKR Credit's portfolio managers to invest up and down a company's capital structure in a variety of facilities and securities, depending on where the team found attractive risk/reward through their diligence process.

Beginning in 2011, KKR Credit started forming commingled funds across direct lending, mezzanine, and distressed/special situations investing to allow greater access by investors.

As of December 31, 2016, KKR is comprised of over 1,000 people with over 240 private market investment professionals and over 120 public market investment professionals. The Direct Lending strategy is co-led by Daniel Pietrzak (located in London/New York office) and Chris Sheldon (located in San Francisco office). All direct lending investment decisions are approved by a five-member global private credit investment committee, and are re-underwritten on a quarterly basis by a ten-member Portfolio Management Committee Working Group. Idea generation for the Direct Lending strategy comes from KKR Credit's approximately 30 credit industry research analysts and over 35 dedicated private credit investment professionals. In addition, they have the ability to leverage the broader KKR platform, which contains hundreds of investment, capital markets, and client service professionals.

III. Investment Strategy

KKR Lending Partners III L.P. ("Fund or "KKRLP III") will seek to invest in a concentrated portfolio of direct lending investments, targeting primarily middle market companies that have EBITDA of $25 million or greater.

The Fund will focus on originated transactions into both sponsored- and non-sponsored companies. KKR anticipates that the majority of the investments in the Fund will be made at the top of a company's capital structure. The Fund will seek to provide private financing which will be highly negotiated and customized for each lending opportunity.

KKR believes that there are two elements to their investment philosophy and approach that make it particularly well suited to managing originated direct lending investments:

- Proprietary sourcing
- Underwriting & structuring

Proprietary Sourcing: KKR strives to understand the goals of borrowers and structure appropriate financing solutions that are tailored to meet their specific objectives. The breadth of credit and capital markets platforms is crucial to exploring and creating these opportunities, as it enables them to provide a "one-stop" solution for a company's entire capital structure. Many deals are generated from a combination of sources (i.e., sponsors, company relationships and advisors).

Underwriting & Structuring: The type of diligence and underwriting performed on each investment opportunity is evaluated on a case by case basis. Common forms of diligence include, but are not limited to, channel checks, meetings with management and/or a sponsor, the review of a company's historical financials, the review of a quality of earnings report and, if relevant, the review of engineering reports. KKR treats each new investment opportunity as a unique opportunity and tailor the diligence performed accordingly.

From an approval standpoint, all direct lending investments are subject to unanimous approval by the members of the Global Private Credit Investment Committee ("GPCIC"). The five members of the GPCIC include; Marc Ciancimino, Dev Gopalan, Dan Pietrzak, Chris Sheldon and Nathaniel Zilkha. The GPCIC meets twice a week (or as needed on an ad hoc basis) to discuss new investment opportunities and requires a detailed fundamental credit memorandum for each potential investment. Each GPCIC Memo includes a comprehensive stress test with a challenged downside scenario analysis. Once the GPCIC approves a direct lending investment, the relevant investment professionals will work closely with the company, the company's legal counsel and their internal legal team to begin structuring the investment.

IV. *Investment Performance*

Previous fund performance as of December 31, 2016 is shown below:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
KKR Lending Partners I	2011	$460 Million	-	6.9%	1.2x
KKR Lending Partners II	2014	$1.3 Billion	$75 million	16.2%	1.2x

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Net MOIC for KKRLP II provided by State Street. Other fund returns provided by the manager

V. *General Partner's Investment*

The General Partner (together with its affiliates) will commit to the Fund and any Parallel Funds in aggregate an amount equal to at least $50 million or, if lower, an amount equal to 6% of the aggregate capital commitments of limited partners of the Fund and any Parallel Funds.

VI. *Fees*

Through the completion of the dissolution, winding-up and termination of the Fund, the Limited Partners will make capital contributions to the Fund to enable the Fund to pay a quarterly management fee to the Advisor (or an affiliate thereof) in respect of each Limited Partner in an amount equal to 1.5% per annum of the weighted average of such Limited Partner's Invested Capital during the most recently ended calendar quarter.

VII. *Distributions*

Distributions of distributable proceeds allocable to a limited partner will be made in the following order and priority:

(a) First, 100% to the limited partner until the limited partner receives 100% of its capital contributions in the amount of its Adjusted Realized Capital;

(b) Second, 100% to the limited partner until the limited partner has received a 6% annual return on the Adjusted Realized Capital, compounded annually;

(c) Third, 100% to the General Partner until the General Partner has received an amount that is equal to 15% of the proceeds distributed with respect to such limited partner in excess of the limited partner's Adjusted Realized Capital; and

(d) Thereafter, 85% to the limited partner and 15% to the General Partner.

VIII. Key Persons

If (a) there are fewer than four Key Persons (defined below) devoting the Required Involvement (defined below) for any consecutive period of 90 days, unless resulting from a death or disability, in which case for any consecutive period of 180 days (a "Key Person Event"), or (b) there are fewer than two KKR Credit Executives (defined below) devoting the relevant Required Involvement for any consecutive period of 90 days, unless resulting from a death or disability, in which case for any consecutive period of 180 days (a "KKR Credit Executive Event"), then each Limited Partner will have 45 days (unless the General Partner has issued a capital call notice, in which case the Limited Partner will have 35 days) from the date it receives written notice from the Fund of the occurrence of such Key Person Event or KKR Credit Executive Event to provide written notice to the General Partners of such Limited Partner's election to reduce its unused Capital Commitment for new investments.

"Key Person" means each of Alan Burke, J. Marc Ciancimino, Daniel Pietrzak, John Reed, Christopher Sheldon, Jamie Weinstein and Nathaniel Zilkha and any other individual who is approved as a Key Person by the Advisory Committee (or, if approval is sought by the General Partner from the Limited Partners, a majority in interest of the Limited Partners).

"KKR Credit Executive" means each of Daniel Pietrzak, Christopher Sheldon and Nathaniel Zilkha and any other individual who is approved as a KKR Credit Executive by the Advisory Committee (or, if approval is sought by the General Partner from the Limited Partners, a majority in Interest of the limited partners).

IX. Investment Period and Term

The investment period for the Fund will commence on the first closing date and will continue until the earliest of (a) the date on which the aggregate Capital Commitments of the Limited Partners to the Fund have been invested, (b) the third anniversary of the Final Closing Date; provided that the Investment Period may be extended with the consent of the Advisory Committee or a majority in interest of the Limited Partners, (c) the election of all Limited Partners to reduce their respective Capital Commitments to the Fund to zero pursuant to a Key Peron Event and (d) the date on which the General Partner elects to terminate the Investment Period.

The Fund will be dissolved on the sixth anniversary of the Final Closing Date, subject to up to two one-year extensions by the General Partner in its sole discretion; provided that the term of the Fund may be extended beyond such date with the consent of the Advisory Committee or a majority in interest of Limited Partners.

Note: 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

YIELD-ORIENTED MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Avenue Energy Opportunities Fund II, L.P.
Type of Fund:	Distressed / Opportunistic
Target Fund Size:	$1 billion
Fund Manager:	Avenue Capital Management
Manager Contact:	Matthew Kimble 399 Park Avenue, 6th Floor New York, NY 10022 Phone: 212-878-3589

II. Organization and Staff

Avenue Capital Group was founded in 1995 by Marc Lasry and Sonia Gardner. Since its inception, Avenue Capital Group has invested over $54 billion in North American distressed debt and other securities across a variety of industries (including energy and utilities) through a series of private investment funds. Mr. Lasry and Ms. Gardner previously managed distressed debt investments for the Robert Bass Group, Inc., and in 1991, they founded Amroc Investments, LLC, a firm focused on bank debt and trade claims.

Today Avenue is a global alternative investment firm based in New York with approximately $10.3 billion under management primarily through a number of U.S., European and Asian private investment funds estimated as of March 31, 2017. The Firm has approximately 200 employees, including approximately 60 investment professionals, across nine offices around the world. Avenue's U.S. investment team is comprised of 17 investment professionals, six of whom are focused on North American energy and utility investments. Matthew Kimble, who has been at Avenue for 14 years, is the lead Portfolio Manager responsible for directing the investment activities of Avenue Energy Opportunities Fund. Additionally, Avenue will seek to leverage the investment expertise, operational capabilities and sourcing network of the Firm's global investment professionals and broader platform.

Avenue has been active in the U.S. energy and utility sectors since 1997, and across its U.S. funds has invested over $10 billion of total capital from over 140 energy-related stressed or distressed situations as of December 31, 2016.

III. Investment Strategy

Avenue Energy Opportunities Fund is being established by Avenue Capital Group to make investments primarily in debt, select equity securities or other obligations of North American energy and utility companies in financial stress or distress.

Investments are expected to focus primarily on individual corporate, distressed debt securities and other special situation investment opportunities of North American energy and utility companies and are generally expected to be made in senior secured debt or other instruments that are structurally senior to other portions of the capital structure. Avenue believes that by focusing on companies with hard assets, and investing in the senior part of the capital structure, the portfolio will exhibit substantial downside protection and moderate volatility. However, as market cycles evolve and/or the Investment Manager's investment thesis on a company progresses, the Fund may invest in more junior portions of the capital structure, including equities, depending on the risk/return profiles of an investment.

Avenue seeks to identify stressed and distressed investments in companies with a focus on over-levered companies with quality assets and identifiable, non-commodity driven catalysts. Avenue intends to focus on three categories of investment: reorganizations, market exits/refinancing and asset sales/liquidations. The percentages provided below are an estimation based on a current portfolio outlook; the Fund's actual portfolio may differ materially:

- **Reorganizations (50%).** Investments in which Avenue will ultimately expect to receive a combination of debt, cash and new equity in a less-levered company. These investments generally provide a lower current yield and provide a higher risk/return profile.
- **Market Exit/Refinancing (25%)**. Generally have a lower risk/return profile, a moderate current yield and are fairly liquid. Avenue expects to focus on the lower volatility, senior part of the capital structure. Avenue believes these are securities that are under-valued relative to non-distressed peers that should benefit from the capital appreciation that occurs upon re-adoption of the bonds and bank debt by the high-yield or near-par bank debt markets.
- **Asset Sales/Liquidations** (**25%**). Investments in unsecured bonds and under-secured bank debt. These investments generally rely on asset sales to provide a cash return. Avenue will seek to structure such investments around high-quality assets that are well-positioned to survive the downturn and benefit from fundamental market recoveries.

The Investment Manager expects to find opportunities across three core segments of the energy sector: Exploration and Production, Power and Services/Midstream. Avenue believes several factors have created significant opportunity for investing in companies in financial stress or decline. These factors include:

- The energy sector represents an estimated $174 billion of leveraged credit, up approximately 1.4x from June 2014 and the prices of energy debt have not recovered to the same extent as high yield;

- The excessive liquidity of the last several years has led to increasingly aggressive pricing and capital structures, resulting in a higher proportion of lower-quality debt issuances;

- Investor sentiment in the power sector is negative, as many companies have struggled due to low power prices driven by supply surpluses, low demand growth and depressed commodity prices;

- Latest U.S. Energy Information Administration projections for oil supply and demand illustrates that prices are trending higher and may cause an expansion in U.S. production that could potentially renew volatility in oil prices; and

- Onshore service companies cut capital expenditures and reduced costs to survive and realize the recovery that is on the horizon, while distressed offshore companies continue to work through a series of restructurings ahead of a longer-dated recovery.

Avenue expects to be an active participant on creditor's committees and steering committees and expects to influence the reorganization, bankruptcy or restructuring process. Avenue has helped lead over 20 restructuring negotiations across the energy sector over the last 14 years. In addition, Avenue may seek board seats on investee companies. However, Avenue typically does not seek as part of its initial investment thesis to gain operational control of portfolio companies.

IV. Investment Performance

Previous fund performance as of December 31, 2016 is shown below:

Fund	**Vintage Year**	**Total Committed Capital**	**SBI Investment**	**Net IRR***	**Net MOIC***
Avenue Energy Opp Fund I	2015	$1.3 Billion	$100 million	14.3%	1.2

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Net MOIC for Avenue Energy Opp Fund I provided by State Street.

V. General Partner's Investment

The General Partner, the Principals and various other investment professionals of the Investment Manager will collectively commit to invest in the Fund an amount equal to at least 2.5% of the aggregate Commitments of the Limited Partners.

VI. Fees

1.5% on drawn, but unreturned capital contributions during the investment period; thereafter, 1.25% on aggregate unreturned capital contributions; provided however, that if a limited partner was a limited partner of Avenue Energy Opportunities Fund I the management fee will be 1% per annum.

VII. Distributions

Unless otherwise specified, net proceeds received by the Fund that are attributable to interest or dividend income or to the disposition, in whole or in part, of investments generally will be apportioned among the Partners in proportion to their respective capital contributions to the Fund. The amount so apportioned to the General Partner will be distributed to the General

Partner and the amount so apportioned to each Limited Partner will be reapportioned between such Limited Partner and the General Partner as follows:

(a) First, 100% to all Limited Partners until they have received cumulative distributions in an amount equal to their aggregate capital contributions and preferred return of 8% on the unreturned portion of such Limited Partners' aggregate capital contributions;

(b) Second, 100% to the General Partner until the cumulative distributions made to the General Partner equal 20% of the distributed profits; and

(c) Thereafter, 80% to the Limited Partners and 20% to the General Partner.

However, if a Limited Partner was a limited partner of Avenue Energy Opportunities Fund, L.P., such Limited Partner's Carried Interest Percentage will be 10%.

VIII. Key Persons

If at any time during the Investment Period, any of Marc Lasry, Sonia Gardner or Matthew Kimble cease to devote (a) substantially all of his or her business time and attention to the affairs of the Fund, the General Partner, the Investment Manager and the Other Clients or (b) such time as is reasonably necessary for the management of the business of the Fund, the investment activities of the Fund will be automatically suspended. The General Partner will promptly (but no later than seven business days following such suspension) notify the Limited Partners of such suspension and the General Partner will have 120 days from the date of such suspension to present a plan for the future operation of the Fund to the Limited Partners for their approval. If such plan is approved by a vote of at least 66-2/3% in interest of the Limited Partners, the Investment Period will automatically resume.

IX. Investment Period and Term

Investments may be made by the Fund through the third anniversary of the date of the final closing of the Fund, unless terminated earlier.

The term of the Fund will end on the fifth anniversary of the date of the final closing, unless extended for up to two consecutive one-year periods at the sole discretion of the General Partner and up to two additional one-year periods if requested by the General Partner and agreed to by a majority in interest of the Limited Partners; provided, that the term of the Fund may be ended at any time upon the affirmative vote of at least 75% in interest of the Limited Partners.

Note: 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 F

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Nordic Capital Fund IX
Type of Fund:	Private Equity – Buyout
Target Fund Size:	€4 billion
Fund Manager:	Nordic Capital IX Limited
Manager Contact:	Ged Kelly Nordic Capital IX Limited 26 Esplanade St Helier Jersey JE2 3QA Tel: +44 1534 605100

II. Organization and Staff

Nordic Capital[1] (or the "Firm") is establishing Nordic Capital Fund IX to make pure-play generalist control buy-outs primarily in the Nordic region (Sweden, Finland, Denmark, and Norway) and DACH region (Germany, Switzerland, and Austria), as well as Healthcare control buy-outs across Europe and North America. Nordic Capital is one of the oldest Nordic region mid-market private equity investors and is supported by strong local presence and long-standing industry relationships in the Nordic region. Nordic Capital Fund I was established in 1989 and, since then, the predecessor Nordic Capital Funds to Nordic Capital Fund IX have invested over €10 billion in 91 portfolio companies and have completed more than 155 material add-on acquisitions.

Nordic Capital Fund IX will leverage the Firm's large and experienced Investment Team, which comprises a total of 51 investment professionals. The Advisers[2] are led by a senior management team of 14 Partners with an average tenure of 11 years at Nordic Capital and average 21 years of professional experience. Nordic Capital also utilizes the talent and focus of its Operating Chairmen and broad network of industrial advisors. Operating Chairmen are typically former industry executives who assume an active Chairman role within portfolio companies with close oversight of the CEO and deep involvement in strategy work and key value creation initiatives. Industrial advisors are typically leading former executives who assist Nordic Capital throughout the investment process.

Following a generational management transition in September 2010 and appointment of new Managing Partners, Nordic Capital has undergone an extensive improvement program with systematic institutionalization of the Firm (referred to as NC 3.0). As part of the NC 3.0

[1] "Nordic Capital" refers to all or any of the General Partner, Nordic Capital Fund IX, the Predecessor Funds, the general partners of the Predecessor Funds, the Advisers and Nordic Capital Limited.

[2] The "Advisers" are exclusive advisors to the Nordic Capital Funds and includes NC Advisory AB, NC Advisory A/S, NC Advisory AS, NC Advisory GmbH, NC Advisory Oy, NC Advisory (UK) LLP or Nordic Capital Operations Advisory AB.

institutionalization process, the Advisers streamlined its Review Committee from all partners in the Advisers jointly to six experienced partners in order to facilitate a more rigorous and sophisticated review process.

Nordic Capital has offices across Northern Europe, including Stockholm, Oslo, Copenhagen, Helsinki, Frankfurt, London, Jersey and Luxembourg. The Nordic Capital Funds' exclusive Advisers are led by Managing Partner Kristoffer Melinder, who has been with Nordic Capital since 1998.

III. *Investment Strategy*

Nordic Capital Fund IX is a continuation of Nordic Capital's strategy of focusing on upper middle-market companies (enterprise value of €200 million – €800 million) in the Nordic region and DACH region, as well as in Europe and North America for the Healthcare investments. Nordic Capital targets opportunities in five core sectors: Healthcare, Technology & Payments, Financial Services, Industrial Goods & Services, and Consumer & Retail. In its core sectors, Nordic Capital has a strong emphasis on pro-active deal sourcing through its strong local networks. More than 90% of platform investments under NC 3.0 have been completed outside of broad auction processes.

Nordic Capital is focused on generating strong and repeatable absolute returns in its five core sectors through alpha-focused target selection. A typical Nordic Capital target company is positioned to realize accelerated earnings growth and facilitate value creation from company specific improvements, while exhibiting limited dependency on external market factors. Nordic Capital expects to pursue companies in selected sub-sectors where specific structural growth trends, transformational dynamics or disruptive market developments have been identified. In these changing markets, Nordic Capital expects to target companies with capacity to emerge as winners through several alpha-based strategies, including organic growth acceleration, strategic repositioning, structural transformation and acquisition-driven growth. These strategies are expected to be implemented through active governance and tangible company specific strategic, commercial and operational improvements. Examples of alpha-based strategies are:

1) *Structural transformation*: Combinations to unlock synergistic value made visible through mergers;
2) *Operational improvement*: Identifying and realizing operational improvement opportunities such as cost and capital improvement or revenue enhancing initiatives;
3) *Buy-and-build*: Platform to realize a growth trajectory and realize synergies along a clearly defined acquisition growth path;
4) *Emerging market growth*: Exporting and/or adopting existing business concepts to emerging market environments;
5) *Strategic repositioning*: Changing business model and/or repositioning of a seemingly unattractive business into a more attractive one; and
6) *Organic growth acceleration*: Identify companies well positioned for accelerated growth in adjacent geographies or product markets.

As a result of applying these alpha-based strategies, approximately 70% of the value created by Nordic Capital's portfolio companies has been driven by underlying EBITDA growth.

The value creation potential in new investment opportunities is verified through a thorough analysis of the industry attractiveness, company position and the ability of Nordic Capital to contribute to accelerated earnings growth. This initial perspective is later refined and tested with the portfolio company management teams in order to produce a jointly shared value creation plan. Nordic Capital works closely with the management of each portfolio company to strike the right balance between providing appropriate support and maintaining management team accountability. To achieve this balance, a governance model is applied with broad, yet balanced, interaction, ranging from the weekly or even daily CEO/CFO dialogue to the more formal interaction taking place in annual meetings, boards and board committees.

As part of NC 3.0, the Firm has further institutionalized its approach to portfolio company value creation. Nordic Capital's Ownership Excellence framework is focused on ensuring that value creation plans are realized in a timely manner and that expert resources are pro-actively deployed to support portfolio companies, and is based on:

- *Portfolio Development Board* – structured and recurring review of progress of value creation work in each portfolio company, helping the General Partner challenge management teams to maximize performance and to detect underperformance early;

- *Operations Team* – in depth and hands-on support to portfolio companies in establishing value creation plans and in execution of key company specific improvement initiatives;

- *Strategic HR* – supporting portfolio companies and the Funds in relation to management assessments, senior executive recruitment, and board and governance reviews; and

- *Operating Chairmen* – seasoned executives with demonstrated value creation track record to ensure efficient governance and monitor progress of value creation work.

Nordic Capital also applies a structured approach to maintain an ongoing view of the preferred exit route and timing for each portfolio company. The potential exit routes are an important part of the original investment evaluation. To ensure exit planning and execution are conducted in line with best practice across the investment team, Nordic Capital established the Exit Office in 2015. Through a systematic process covering all portfolio companies, the Exit Office supports Nordic Capital in early identification and evaluation of attractive exit alternatives. The Exit Office also provides concrete advice in relation to positioning portfolio companies for specific exit avenues, selection of best-suited advisors in each situation and assessing optimal exit timing. Systematic management of exit processes has created significant value for Nordic Capital, as demonstrated by the diverse exit routes utilized since late 2014.

IV. Investment Performance

Previous fund performance as of December 31, 2016 are shown below:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
Fund I	1990	€55 million	-	69%	4.0x
Fund II	1993	€110 million	-	85%	4.6x
Fund III	1998	€350 million	-	31%	3.3x
Fund IV	2000	€760 million		24%	2.2x
Fund V	2003	€1,500 million	-	20%	2.7x
Fund VI	2006	€1,900 million	-	9%	1.7x
Fund VII	2008	€4,300 million	-	8%	1.5x
Fund VIII**	2013	€3,500 million	€150 million	5%	1.1x

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

** Net performance provided by Nordic Capital in local currency is 12% net IRR and 1.3x net MOIC.

V. General Partner's Investment

The General Partner and its affiliates will commit 3% of total commitments.

VI. Fees

During the investment period, 1.50% per annum of capital committed to the Fund. After the investment period, the management fee is 1.50% per annum of the aggregate amounts drawn down less amounts drawn down from Limited Partners to fund investments that have been realized or written off in full.

VII. Distributions

Distributions will be apportioned as follows:

(a) First, 100% to such Limited Partners until they have received an amount equal to all drawn-down commitments;

(b) Second, 100% to such Limited Partner until they have received preferred return of 8% per annum on the amount of its outstanding drawn-down commitments;

(c) Third, 100% to the General Partner until it receives a cumulative carried interest of 20%; and

(d) Thereafter, 80% to such Limited Partner and 20% to the General Partner.

Limited Partners may elect to participate in a cross-aggregated deal-by-deal waterfall as an alternative to the Standard Waterfall.

VIII. Key Persons

A temporary suspension period will occur if Key Persons having fewer than five Key Person Points (as defined below) spend substantially all of their working time in connection with advising the General Partner on matters relating to Nordic Capital Fund IX. The Key Persons are Kristoffer Melinder, Jonas Agnblad, Christian Frick, Robert Furuhjelm, Fredrik Näslund, Andreas Näsvik, and Raj Shah. The points assigned to the Key Persons (the "Key Person Points") are as follows:

a) Kristoffer Melinder, 2 points;

b) Each of Jonas Agnblad, Christian Frick, Robert Furuhjelm, Fredrik Näslund, Andreas Näsvik, and Raj Shah, 1 point; and

c) In respect of any additional or replacement Key Person, such number of points as may be proposed by the General Partner and approved by the Advisory Committee.

IX. Investment Period and Term

The investment period will end six years from the date that Nordic Capital Fund IX makes its first portfolio investment or, if earlier, the date that Nordic Capital Fund VIII's commitment period terminates. The term of Nordic Capital Fund IX is ten years from the later of the final closing and the start date, subject to extension.

Note: 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. Any capitalized terms used herein and not otherwise defined shall have the meaning attributed to them in the PPM.

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ATTACHMENT G

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Asia Alternatives Capital Partners V, L.P.
Type of Fund:	Private Equity – Non-U.S. Buyout, Growth & Venture
Target Fund Size:	$1.3 billion
Fund Manager:	Asia Alternatives Management, LLC
Administrative Contact:	Melissa Ma One Maritime Plaza, Suite 1000 San Francisco, CA 94111 (415) 723-8101

II. Organization and Staff

Asia Alternatives Management LLC ("Asia Alternatives" or the "Firm") is forming Asia Alternatives Capital Partners V ("AACP V" or the "Fund") to pursue investment opportunities with top-performing private equity managers and will hold a diversified portfolio of Asian private equity funds. Like AACP Funds I-IV, Fund V will invest primarily in Mainland China, Taiwan, Hong Kong and Macau (together, "Greater China"), Japan, South Korea, India, Southeast Asia and Australia. The Fund intends to be diversified across buyout, growth and expansion, venture capital and special situations (defined as distressed debt, real estate, corporate restructuring and/or structured transactions).

The Firm was founded in 2006 by Melissa Ma, Laure Wang and Rebecca Xu. Today Firm leadership is comprised of Ms. Ma and Ms. Xu, along with Principals William LaFayette and Akihiko Yasuda and Managing Directors Praneet Garg, Valerie Leung and Jin Gu, who collectively have over 100 years of on-the-ground experience in Asia and over 75 years collective experience investing in Asia private equity.

The Asia Alternatives Investment team is made up of 17 professionals with significant experience evaluating and investing in private equity funds and direct deals in Asia, including investment sourcing, due diligence, negotiation, research and monitoring, accounting and reporting, client service and risk management. The Investment Team is supported by an investment administration team of 28 people performing finance and accounting, investor relations and fund administration duties. The Firm's investment staff are largely based in offices in Hong Kong, Beijing and Shanghai, while the San Francisco office is focused primarily on client service, marketing and corporate financial reporting and governance.

III. Investment Strategy

Asia Alternatives will seek to invest the Fund across approximately 20 fund managers, who will form the core fund manager relationships for the Firm. Because the depth of proven private equity managers across Asia is relatively small, Asia Alternatives believes that concentrating the Fund's investments with proven, top-performing managers is necessary to help ensure overall attractive returns.

The Asia Alternatives Investment Team is organized by "buckets" of a combination of geography and sub-sector – for example China small-mid growth or Japan mid-large buyouts. The team produces "Bucket Reports" which are the basis for making a recommendation of risk premium for the bucket. The Bucket Reports are analyses that look at a series of macroeconomic updates (e.g. GDP, regulatory changes, currency, stock market, etc.) and private equity market specific factors (e.g., exits, leverage multiples, valuation levels, number of players, amount of money raised, etc.) as a basis for making risk premium recommendations. Every quarter the Investment Team re-underwrites its views and risk premiums based on recent developments.

The Investment team sets hurdles for (i) geographic risk, (ii) illiquidity risk and (iii) manager risk. The portfolio is constructed based on which buckets the Investment team analyzes and deems have the highest probability to deliver the risk premium hurdles set. Once the Investment team has picked which buckets to concentrate capital in, it screens managers "bottom up" and ranks managers for each bucket. The goal is to invest in the top 3-5 managers, as appropriate, for each of the most attractive buckets.

This investment process will result in a portfolio that has been thoughtfully constructed across three dimensions:

Strategy Type:
The Firm expects that approximately 70-85% of the capital of AACP V will be invested in limited partnership interests in Asia funds. These primary fund commitments will come from three sources:

- 55-60% of the capital is expected to be invested with "core managers," who as a team have invested two or more prior iterations together;

- 15-20% of the capital is expected to be invested with first time or emerging managers who have strong potential to generate the top-performing funds among their peer group. A number of these managers are expected to be structured primaries; and

- Finally, the Fund expects to invest approximately 15-25% in structured primaries. These are primary commitments in new firms where Asia Alternatives plays an anchor sponsor role and receives economic benefits for this sponsorship. The teams, however, are often experienced groups that have worked together for a prior employer.

To further enhance returns, the Fund will also allocate approximately 15-30% to pursue direct co-investments and secondary purchases of fund investments. These direct co-investments and secondaries will primarily be with the Fund's existing managers or those fund managers who have strong potential to provide future fund investments.

Geography:

Asia Alternative's allocations for the Fund are based on a rigorous and systematic top-down bucket analysis of the key private equity markets in Asia coupled with a bottom-up screening of the current Asia fund manager universe to identify the most suitable opportunities. The process is centered around assessing the various levels of risk in each market and selecting managers who have historically and/or the Firm believes have the future potential to generate sufficient return to more than justify the risk associated with their chosen investment market and strategy. Each quarter Asia Alternatives evaluates the attractiveness of each geographical region in Asia and each sub-asset class as a starting point of how to allocate capital within AACP V. The Investment Team evaluates (i) the economic and business fundamentals of the country's economy, using criteria such as size and growth of GDP, policy and regulatory environment, business fundamentals, public market depth, and corporate governance; and (ii) attractiveness of the private equity environment, considering factors such as the level of buyout, growth and expansion, venture and special situation opportunities, overall quality and depth of fund managers, ability to exit and get money out and fundraising momentum.

AACP V's projected geographic allocation is 45-60% Greater China, 20-40% Japan and Korea, 10-20% India, and 10-20% Southeast Asia. Given the growing and dynamic nature of the Asia private equity landscape, these allocations may fluctuate as much as +/-10% during the life of the Fund.

Sub-Asset Class:

To overlay the geographic assessment, the Investment Team performs a separate analysis on the private equity sub-asset classes in Asia, which are buyout, expansion and growth, venture and special situations. The criteria used to evaluate each sub-asset class include investment themes, source of deals, drivers of return, skills required, exit options and country focus. Systematically reviewing sub-asset class in Asia along this framework results in a AACP V portfolio that is expected to consist of 30-40% in expansion and growth, 30-40% domestic small to mid-market buyout opportunities, 15-20% venture investments, and 10-20% in special situations funds which could include distressed debt, real estate, corporate restructuring and/or structured transactions

IV. *Investment Performance*

Previous fund performance as of September 30, 2016 for Asia Alternatives funds are shown below:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC *
AACP I	2007	$515 million	--	13%	1.9
AACP II	2008	$950 million	--	22%	2.1
AACP III	2012	$908 million	--	15%	1.4
AACP IV	2015	$948 million	--	10%	1.1

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Performance provided Asia Alternatives Management.

V. *General Partner's Investment*

The General Partner and certain of its affiliates will make aggregate Capital Commitments equal to not less than 1.25% of the total Capital Commitments to the Fund.

VI. *Fees*

During the commitment period, the annual management fee is 1% of commitments. After the earlier of (i) the closing of a subsequent fund and (ii) the expiration of the Commitment Period, the Management Fee will be reduced to 0.5%. There is a third tier step down when an underlying investment has returned 85% of more of cost, no more management fee is charged on that investment.

VII. *Distributions*

Distributions will be apportioned to Limited Partners as follows:

(a) First, 100% to each Limited Partner until it has received total distributions equal to its capital contributions;

(b) Second, 100% to each Limited Partner until the proceeds equal an amount necessary to provide an internal rate of return of 8% per annum;

(c) Third, 100% of the proceeds to the General Partner until it receives cumulative proceeds equal to 9% of the profits distributed; and

(d) Thereafter, 91% to such Limited Partner and 9% to the General Partner.

VIII. Key Persons

A "Key Person Event" will have occurred if any two of Melissa Ma, Rebecca Xu, William LaFayette or Akihiko Yasuda cease to devote the time required to attend to the business of the Fund and its affiliated entities.

IX. Investment Period and Term

The investment period will be five years from the final close of the Fund. The term will be ten years from the final closing of the fund, subject to automatic extensions to the later of (i) the 7^{th} anniversary of the expiration of the investment period of the portfolio fund whose investment period is the last to expire, and (ii) the 7^{th} anniversary of the date, during the Investment Period, that the last direct private equity investment was made (limited to a maximum of four years).

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

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ATTACHMENT H

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	BlackRock Global Renewable Power Fund II
Type of Fund:	Resources - Infrastructure
Target Fund Size:	$1.5 billion
Fund Manager:	BlackRock Financial Management
Manager Contact:	Jeffrey Berman, CFA Park Avenue Plaza 55 East 52nd Street New York, NY 10055 P: (212)-810-5518

II. Organization and Staff

BlackRock Financial Management ("BlackRock") has formed BlackRock Global Renewable Power Fund II ("GRP II") to invest in a diversified portfolio of renewable power generation projects. GRP II seeks to generate returns in the form of capital growth and income by investing in construction-ready, under construction or operating wind and solar projects in countries within the Organization for Economic Cooperation and Development (OECD).

In February 2011, twelve professionals joined BlackRock from NTR plc, an Irish renewable and infrastructure company, thus establishing the Global Renewable Power Group ("GRPG") as the first element of BlackRock's Infrastructure platform. As of March 2017, the Infrastructure platform is now comprised of 142 infrastructure investment professionals and $15 billion in committed capital. The GRPG currently manages $3.4 billion of committed capital.

The GRPG team is made up of 24 experienced renewable power investment professionals that have spent the majority of their careers in the renewable power industry. They will continue to leverage the resources of the broader BlackRock platform for sourcing, evaluating, executing and managing investments. BlackRock is headquartered in New York and has over 70 offices in 30 countries. The GRPG team has offices in New York, Dublin, London, Seattle and Stockholm. The GRP II Investment Committee is chaired by Jim Barry and includes other GRPG team members Rory O'Connor, David Giordano and Teresa O'Flynn. In addition, the Investment Committee also includes Matthew Botein, Brian Stern, Kendrick Wilson, Sacha Bacro, and Alastair Bishop who are senior members from other divisions within BlackRock or advisors to the firm.

III. Investment Strategy

Fund II is expected to follow the same strategy as GRP I, which was closed in December 2013 with $611 million of capital commitments, and has invested or committed 94% of this capital into approximately 1.5GW of wind and solar projects globally. In 2014 the platform also raised £500 million in commitments in a UK targeted renewable strategy that is complementary to GRP I, and in February 2016 the Platform successfully achieved a first close of €275 million for a similar strategy targeting EU investors and investments.

Target Investments

The Investment Objective of GRP II is to provide a long-term total return in the form of capital growth and income. The Fund aims to achieve this objective by gaining exposure to a diversified portfolio of renewable power generation projects in OECD countries, primarily focusing on wind and solar projects in North America and the European Union. GRP II expects to invest in construction-ready, under construction, or operating projects and take either a controlling or minority ownership position. In order to mitigate risk, these projects will generally have a long-term power purchase agreement or other offtake agreement with a credit-worthy counterparty. In addition, up to 15% of the Fund may be invested into pre-construction projects or platforms that will be expected to facilitate follow-on project equity investments, and up to 10% may be invested into non-OECD countries or in technologies other than wind and solar.

Market Opportunity

Increasing levels of industrialization, population growth, and aging power infrastructure are driving the need for significant investment across the global power sector. OECD countries have the highest average age of power plants with 40% of all fossil fuel and 50% of the nuclear generation capacity over 30 years old. Demand for investment in these countries is expected to be driven primarily by the need to replace power generation facilities that are inefficient or non-compliant with environmental regulations and not cost effective to repair. In non-OECD economies investment is expected to be driven primarily by the need to meet current power supply shortfalls and forecasted growth in power demand.

Between 2012 and 2040 global power generation capacity is expected to almost double, and renewables will make up a significant part of this new capacity; renewables have accounted for over 40% of new installed global power generation annually since 2011. Commercial wind and solar technologies have evolved since their introduction in the 1980s, achieving significant increases in production efficiency and reductions in cost. Power offtakers such as utilities are choosing to source wind and solar based on the overall economic proposition including (i) increasing cost competitiveness with traditional generation (achieving and surpassing grid parity in several markets), (ii) diversification of existing portfolios, (iii) faster construction periods, (iv) no fuel cost volatility, and (v) reduction of carbon and emissions exposure.

Investment Process

The Investment Team utilizes its global relationship network of project sponsors, equipment manufacturers, advisors, financiers, and policy makers to gain broad access to opportunities in the market. The cornerstone of the Firm's origination strategy is to cultivate long-term partnerships with industry leading sponsors in order to access and transact on multiple investment opportunities. The team believes that the partnership approach coupled with in-house expertise and industry experience appeals to sponsors because it gives them confidence around BlackRock's ability to transact on short timelines, take a balanced and commercial approach to risk sharing, and add value in discussions with key counterparties. The Fund's ability to take majority or minority positions also facilitates engagement with the full spectrum of sponsors from small developers who prefer to sell outright to large utilities who want to retain a significant ownership stake.

The team's in-house suite of capabilities enables it to efficiently screen potential investments and dedicate resources to opportunities where it has a high degree of confidence in its ability to transact. Of the over 60 gigawatts of potential transactions originated for GRP I since 2011, approximately 5% were progressed into detailed due diligence, and approximately 2.5% were ultimately acquired.

Once a potential investment is identified for further due diligence the team evaluates several factors, including but not limited to:

- Wind and solar resource and reliability and variability risk
- Income security risk
- Operations & maintenance and technology risk
- Construction risk (where applicable)
- Counterparty credit risk
- Regulatory and market risk
- Sponsor track record
- Fund portfolio construction and strategic fit

Formal Investment Committee approval is required prior to entering into legally binding investment commitments. Once due diligence is mostly complete and if the Management Committee is unanimously in favor of making the potential investment it will be presented to the Investment Committee for approval.

After acquisition, the day–to-day activities of all investments are managed by experienced asset managers with input from the Platform's operations team formed of technical, finance and commercial team members. Investment team members provide ongoing support in relation to the original acquisition terms and manage any ongoing relationships with the sponsors and financing parties. The technical team monitors all aspects of construction and operations onsite and becomes very involved in significant events such as the declaration of construction completion and end-of-warranty inspections. The finance team manages timely and accurate financial reporting, annual budgeting and also assists with the quarterly asset valuation process.

The Investment Team will monitor developments across the global renewable power sector to determine the optimal time to exit its investments. The Team will evaluate all feasible exit strategies, including publicly listing the Fund or a portion of the portfolio through a public exit or selling individual assets/portfolios in a combination expected to maximize value for investors. It is expected that investor interest in the asset class will continue to strengthen and the potential buyer universe will expand further over time.

IV. Investment Performance

Previous fund performance as of September 30, 2016 is shown below:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
BlackRock Global Renewable Power I	2012	$611 M	-	5.7%	1.4

* 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. General Partner's Investment

BlackRock will contribute up to 3% of GRP II's aggregate Capital Commitments.

VI. Fees

For investments $50 million and above, management fees will be charged as follows:

a) During the Investment Period: 0.65% on aggregate Capital Commitment and 0.65% on Invested Capital; and

b) Thereafter, 1.3% on Invested Capital.

VII. Distributions

Distributions will be apportioned to Limited Partners as follows:

(a) First, 100% to such Limited Partner until it has received cumulative distributions equal to such Partner's aggregate Capital Contributions;

(b) Second, 100% to such Limited Partner until it has received an 8% preferred return on such Partner's unreturned Capital Contributions;

(c) Third, 20% to such Limited Partner and 80% to the General Partner until the General Partner has received until it has received cumulative distributions equal to 15% of all amounts returned to such Limited Partner in excess of Capital Contributions; and

(d) Thereafter, 85% to such Limited Partner and 15% to the General Partner.

VIII. Key Persons

If the majority of Key Persons at any time cease to be full time employees of BlackRock and the LP Advisory Committee does not consent to any Replacement Key Person within 90 days, the Investment Period shall automatically be suspended. The Key Persons of the Fund shall initially be Jim Barry, Rory O'Connor, David Giordano, Teresa O'Flynn, Matt Ptak and Peter Raftery.

IX. Investment Period and Term

The Investment Period will end 5 years after the first capital call. The Term will end 10 years after the first capital call, subject to two one-year extensions with the consent of the LP Advisory Committee.

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

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ATTACHMENT I

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Lubert-Adler Real Estate Fund VII-B, L.P.
Type of Fund:	Real Estate – Value Add
Target Fund Size:	$250 million ($375 million hard cap)
Fund Manager:	Lubert-Adler Partners
Manager Contact:	Gerry Ronon 2929 Arch Street Philadelphia, PA 19104 (215) 972-2220

II. Organization and Staff

Lubert-Adler Partners (the "Firm" or "Lubert-Adler") is forming Lubert-Adler Real Estate Fund VII-B ("Fund VII-B", the "Fund", or "L-A") 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 $7.6 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 60 years of experience in underwriting, acquiring, repositioning, refinancing and exiting real estate assets. The Lubert-Adler investment team now consists of 23 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 Co-Founders Dean Adler and Ira Lubert, Vice Chairman Leonard Klehr, President and COO Gerald Ronon, and Managing Principal Neill Faucett. Lubert-Adler has offices in Philadelphia and Atlanta.

III. Investment Strategy

Lubert-Adler has distinguished 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.

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. Fund VII-B 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.

Fund VII-B will pursue diversification by region, property type, operating partner and the number of investments. The Fund will continue the strategy shift Lubert-Adler adopted in 2010 of acquiring "rental asset", which include the following property types: multifamily, retail, hospitality, and office/industrial. Examples of non-rental assets, which Fund VII-B will avoid, include raw land, residential resort and large scale land assemblage developments.

Lubert-Adler has significant experience within the four main property types Fund VII-B will pursue. Within each property type, L-A will look to capitalize on a specific aspect of the market. With multifamily, the Fund is targeting urban adaptive re-use, suburban repositioning, workforce housing, and selective new development. Retail investments will combine elements of strong credit tenancy with prime locations that have significant barriers to entry. Strong credit tenancy will include pre-leased, long-term creditworthy income streams with retailers who are successfully integrating bricks and mortars with e-commerce. The Fund's hospitality strategy involves significant renovations, repositionings or adaptive re-use of predominately limited service and extended stay hospitality hotels. The office/industrial assets in Fund VII-B will most likely be underutilized and under-rented assets in key markets where employing a value-add strategy will increase demand for the asset and improve liquidity upon exit. Office/industrial assets will most likely comprise a small allocation in Fund VII-B given Lubert-Adler's perspective on the current market environment.

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.

IV. Investment Performance

Previous fund performance as of December 31, 2016 is shown below:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
Fund I	1997	$117 million	-	18%	2.0
Fund II	1998	$287 million	-	9%	1.5
Fund III	2001	$850 million	-	16%	1.5
Fund IV	2004	$1,060 million	-	(10%)	0.6
Fund V	2006	$1,725 million	-	(10%)	0.4
Fund VI	2007	$2,055 million	-	0%	1.0
Fund VI-A	2009	$149 million	-	24%	2.0
Fund VI-B	2010	$400 million	-	21%	1.8
Fund VII	2013	$575 million	-	3%	1.0
Student Housing	2014	$49 million	-	6%	1.1
L-A Saturn	2014	$202 million	-	58%	2.5
Urban Neighborhood Fund	2015	$438 million	-	n/a**	0.9

* 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 Urban Neighborhood Fund is early in its investment period.

V. General Partner's Investment

The General Partner and its affiliates have committed $10.5 million to the Partnership which is in excess of the minimum commitment of 2%.

VI. Fees

There will be no management fee during the 18-month initial commitment period. After the initial commitment period, the management fee will equal 1.0% of the aggregate equity invested in unsold assets, less permanent and unrecoverable write-downs.

VII. Distributions

Distributions will be apportioned as follows:

(a) First, to the Limited Partner until it has received a 9% cumulative annual return (compounded annually) on its unreturned capital contributions;

(b) Second, to the Limited Partner until its capital contributions have been fully returned;

(c) Third, 50% to the General Partner and 50% to the Limited Partner until such time as the General Partner has received its 20% carried interest; and

(d) Thereafter, 80% to the Limited Partner and 20% to the General Partner.

VIII. Key Persons

If Mr. Adler fails to spend substantially all of his business time on the management and operation of Fund VII-B, the Advisory Committee, by a vote of 60% of its members, may appoint a substitute key person for Mr. Adler.

IX. Investment Period and Term

The investment period will end 18 months from the later of (a) the Initial Closing and (b) the date on which Fund VII's total commitments are fully invested, returned, released, expended or reserved. However, the General Partner may elect to extend the investment period by 12 months. The term is seven years from the final closing, subject to extensions.

Note: 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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DATE: May 8, 2017

TO: Members, Investment Advisory Council

FROM: SBI Staff

SUBJECT: Public Markets, Non-Retirement, and Defined Contribution Report

This section of the report provides a brief overview of economic and capital market performance as it pertains to the SBI portfolio. Also, included in this section is a summary of investment manager activity and performance summaries of the equity and fixed income managers in the SBI portfolio.

Also, we have included commentary and performance for the non-retirement managers, deferred compensation plan mutual funds, and performance for options within the Minnesota College Savings Plan.

The report includes the following sections:

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Public Markets Economic and Market Overview
First Quarter 2017

Overview

Investors showed sustained enthusiasm regarding the state of the U.S. economy and the potential for Washington to deliver tax and regulation relief. As a result, consumer confidence continued to spike upward during the first quarter. Despite many investors voicing concerns about stretched valuations and overly optimistic policy expectations, the market hit a series of record-highs during the quarter. Risk-on sentiment ground to a halt in March after the Republicans' failure to repeal and replace the Affordable Care Act cast a cloud over the Trump administration's pro-growth agenda. During the quarter, Technology was the best performing sector in the Russell 3000 index, while Energy was the weakest. Overall the Russell 3000 Index returned 5.7% for the quarter.

U.S. Treasury 10 year yields started the quarter at roughly 2.4% and remained range-bound during January and mid-February. Yields began to climb in late February on positive economic data and the belief that an FOMC rate hike was imminent if upcoming data remained adequate. The March release of February’s 4.7% unemployment rate was enough for the Fed Funds implied rate to push the 2 year yield to its high of the quarter at 1.4%. Following a widely anticipated and fully priced rate hike, Treasuries subsequently rallied on dovish FOMC minutes and political uncertainty surrounding Congress’ lack of health care reform and the unwinding of the reflation trade. The Bloomberg Barclays Aggregate Index increased 0.8% for the quarter, with the late rally in U.S Treasuries complementing continued tightening in corporate and other spread sectors.

Developed markets rallied during the quarter, as represented by the 6.8% return of the MSCI World ex. U.S. index return amid signs of an improving outlook for the global economy. Stocks enjoyed significant gains despite increasing political risk as pivotal elections approached in France and as the United Kingdom officially launched the two year process to remove itself from the European Union (EU). British Prime Minister Theresa May triggered Article 50 of the Lisbon Treaty on March 29, 2017, signaling that the United Kingdom will move forward with Brexit negotiations and seek an end to its membership in the EU by March 2019. Meanwhile, campaign rhetoric picked up in France ahead of federal elections in April and May as some anti-establishment candidates gained support in the polls. Japanese equities were essentially flat as generally positive economic data and an improved global outlook offset political uncertainty overseas. The U.S. dollar weakened versus the major currencies, improving the return for dollar-based investors. Overall, the top performing sectors for the quarter in the developed markets were Information Technology, Industrials, and Consumer Staples. The worst performing sectors were Energy, Telecommunication Services, and Consumer Discretionary.

The MSCI Emerging Markets index had a return of 11.4% during the first quarter, posting its best quarterly increase in five years. Reassuring data from China, higher prices for industrial metals, and a weak U.S. Dollar, all contributed to returns. Gains were strong across Asian markets. Chinese stocks rose, fueled by both solid industrial production figures and continued strength in the property market. Indian equities had their best quarterly advance since 2012, overcoming a major currency recall late last year that disrupted businesses and consumer spending. The Indian central bank forecasts strong economic growth for the next twelve months. Russian equities fell after a strong 2016. Major energy stocks in that market slid as crude oil prices fell during the period. Overall, emerging market currencies strengthened against the dollar, improving the return for U.S. dollar-based investors. The top performing sectors for the quarter were Information Technology, Industrials, and Consumer Discretionary. The worst performing sectors were Energy, Telecommunication Services, and Consumer Staples.

SBI Portfolio

In the first quarter, the SBI's overall portfolio, the Combined Funds, exceeded the composite benchmark return 5.04% versus 4.98%. Domestic equities outperformed the Russell 3000 Index return 5.9% versus 5.7%, while international equities underperformed the MSCI ACWI ex US Index net return 7.5% versus 7.9%. Lastly, the fixed income portfolio outperformed the Bloomberg Barclays U.S. Aggregate Index return 1.0% versus 0.8%. At roughly 1/2 of the SBI's market value, the domestic equity asset class is the single largest contributor to the combined funds return. During first quarter 2017, domestic equity's weighted contribution to return was 2.9%, while international equity contributed 1.6% of the 5.04% net return. For the year ending March 31, 2017 domestic equity contributed 8% of the 12.5% net return.

Domestic Equity

The SBI's large cap growth managers exceeded the Russell 1000 Growth benchmark by 2.8% for the quarter and by 2.2% for the year. The quarterly return was helped by stock selection in the Consumer Discretionary and Health Care sectors. For the year, stock selection was positive across most sectors, led by Consumer Discretionary. On February 23, INTECH and Jacobs Levy's portfolios were liquidated to help fund the new emerging markets managers and to increase the passive allocation.

The large cap value managers trailed the Russell 1000 Value benchmark by 0.3% for the quarter and outperformed by 0.7% for the year. Stock selection in the Technology and Health Care sectors hurt the quarterly return while stock selection in Financial Services drove the outperformance for the year. On February 23, Systematic's portfolio was liquidated to help fund the emerging markets managers and increase the passive allocation.

The small cap growth managers outperformed the Russell 2000 Growth benchmark by 0.5% for the quarter but trailed by 5.4% for the year. On February 23, Next Century's portfolio was liquidated. This was the first quarterly performance for Arrowpoint, Hood River, Rice Hall James and Wellington, which were all funded on November 1, 2016. Hood River, Rice Hall James and Wellington outperformed the benchmark while Arrowpoint matched the benchmark for the quarter. Stock selection, led by Health Care, and sector allocation helped the quarterly performance. For the year, underperformance by McKinley was driven by negative stock selection in the Technology, Consumer Discretionary and Producer Durables sectors.

The small cap value managers outperformed the Russell 2000 Value benchmark by 0.4% for the quarter but lagged by 3.1% for the year. Both sector allocation and stock selection were positive for the quarter. For the year, negative stock selection, led by the Technology and Materials and Processing sectors, hurt performance. Goldman led the quarterly outperformance due to stock selection, which was positive across all sectors. All managers underperformed for the year.

For the quarter, the semi-passive managers in aggregate exceeded the Russell 1000 index return by 0.3 percentage point. Stock selection in the Technology, Consumer Discretionary, and Utility sectors contributed positively to returns. The passive Russell 3000 and Russell 1000 index managers matched their respective indices.

International Equity

Active developed market equity managers outperformed the MSCI World ex USA Index (net) by 0.4 percentage point for the quarter as stock selection and allocation added value. From a country point of view, stock selection was positive in France, Canada, Switzerland and Australia. From a sector point of view, selection was positive in Consumer Discretionary, Materials and Healthcare. An overweight to Information Technology and Industrials also contributed to performance. Semi-passive developed markets equity managers outperformed the MSCI World ex USA Index (net) by 0.3 percentage point for the quarter. Stock selection in Japan and Canada contributed positively as did the portfolio's underweight to both markets. With respect to sectors, stock selection was positive in the Consumer Discretionary, Information Technology and Health Care sectors. An underweight to Energy also contributed to performance. The passive developed markets manager's performance was within expectations.

Emerging Markets

The SBI's emerging markets equity manager outperformed the benchmark by 0.6 percentage point for the quarter as stock selection and allocation added value. From a country point of view, stock selection in Russia, India and South Africa overweight allocations to Argentina and Pakistan contributed to performance. From a sector point of view stock selection in the Financials, Consumer Discretionary, and Energy sectors and an underweight to the Energy sector contributed to performance. The passive emerging markets manager's performance was within expectations. The following six emerging market managers were funded on March 14, 2017: Delaware, Earnest Partners, Martin Currie, Neuberger Berman, Pzena, and Rock Creek. The funding for the new emerging market managers came from defunding large cap growth managers Jacobs Levy and INTECH, a large cap value manager Systematic Financial and Next Century, a small cap growth manager. Additional funding came from a partial reduction of Morgan Stanley's emerging market account. The quarterly performance for the six new emerging market managers will first be reflected in the next quarterly report.

Fixed Income

While the SBI's fixed income pool outperformed the Bloomberg Barclays Aggregate benchmark in total, relative performance of SBI's fixed income managers was mixed. Managers with an equal or overweight duration positioning and exposure to credit largely outperformed the benchmark, while managers with an underweight benchmark duration and less credit focus underperformed. Exposure to credit, both corporate investment grade and high yield, was beneficial, as spreads narrowed during the quarter.

Public Markets Manager Activity
First Quarter 2017

For the quarter, the majority of investment managers performed in-line with expectations. In addition to the manager hirings and terminations previously discussed, there were other noteworthy manager developments for the quarter.

Domestic Equity Managers

BlackRock
During the first quarter of 2017 BlackRock repositioned its equity investment platform, building on the changes they made last year to bring the fundamental and quantitative active equity teams closer together. BlackRock is taking these steps in order to maximize the productivity and strengths of both the fundamental and quantitative equity teams. The changes made during the current quarter include: reorient teams around a more focused product line-up, shifting resources and responsibilities within the team, enhancing data and research capabilities by investing in data science innovation, promoting more collaboration across research teams, and focusing product offerings into distinct product ranges. The above mentioned changes to the active equity platform do not impact the SBI's Semi-Passive equity portfolio. Staff has no concerns at this time.

J.P. Morgan
Nishesh Kumar, who has been a research analyst with J.P. Morgan for nineteen years, most recently covering the energy sector, has taken on a new role focused on ESG. His energy coverage has been assumed by existing team members Hunter Horgan and David Maccarrone. Daphne Karydas, who has covered pharma/biotech for the team over the past two years, will be leaving J.P. Morgan. Dr. Chuck Silberstein, a current research team member, will take over her coverage on an interim basis as a search for a replacement is underway. Finally, Helge Skibeli has been named Director of Global Developed Markets Research and will take on the additional role of Chief Investment Officer of Core Equity. Staff has no concerns at this time.

Mellon
In January 2017, Marie Mullen, Managing Director, Head of Portfolio Administration & Operations, resigned from Mellon Capital. On April 6, 2017 Mellon announced that Kristen Crawford, the portfolio manager of the SBI's domestic equity semi-passive portfolio, was leaving Mellon Capital effective the next day. Mike Kaminski, one of a nine-member portfolio management team and a back-up portfolio manager on the SBI's account with thirty years of investment experience, will be the lead portfolio manager going forward. Mellon's investment process is quantitative and they use a team approach so Staff has no concerns with this change.

International Equity Managers

McKinley Capital Management
Effective April 1, 2017, Robert A. Gillam ("Rob") has been appointed President of McKinley Capital, a role previously held by his father, Robert B. Gillam ("Bob") who remains Chairman of the Board and Chief Executive Officer. Staff has no concerns with this change.

Morgan Stanley Investment Management
Sam Rhee, the portfolio manager covering Korea and Taiwan, officially left the firm at the end of the first quarter. Coverage of Korea was transitioned to Jay Shin, who joined the team in February 2016. Shin has eight years of investment experience in the Korean market and has been working with Sam in managing the Korean portfolio. Coverage for Taiwan was transitioned to Gunawan Wijaya, who joined the team in 2017. Gunawan is a specialist in the technology sector and has more than a decade of experience. Staff has no concerns with this change.

State Street Global Advisors (SSgA)
In January 2017, it was announced that Olivia Engel, Head of Active Quantitative Equity (AQE) in the Asia Pacific region, had been appointed to the newly created role of Deputy Chief Investment Officer of the Global AQE team, reporting to Ted Gekas, CIO of Global AQE. Ted will leave SSgA and the industry at the end of the year. In February 2017, it was announced that Cyrus Taraporevala, Global Head of Product and Marketing, was appointed to an expanded role of head of a newly-created Global Institutions Group. Taraporevala will oversee all client and consultant relationships and marketing for institutional clients across the Americas, Emerging Europe/Middle East/Africa (EMEA) and Asia Pacific (APAC). Due to the continuing and on-going management changes, staff will continue to monitor the firm.

Fixed Income Managers

Columbia
Colin Lundgren, Head of U.S. Fixed Income, has assumed the role of Deputy Global Head of Fixed Income, and will direct their global Emerging Market Debt effort. Tom Murphy, leader of U.S. Investment Grade Credit, has assumed a broader role as Head of Investment Grade Credit. These changes will have no impact on SBI's portfolio assignments, although staff will be monitoring for any strategy changes with a renewed international focus.

PIMCO
During the quarter ending December 31, 2016, the net change in assets in the Total Return strategy was negative $12.2 billion, or down 7.07% quarter over quarter. From its peak of $293 billion in April 2013, the Total Return strategy has decreased to $73.6 billion as of March 31, 2017. These figures reflect retail as well as separate account assets, and the SBI will continue monitor large movements in AUM. The SBI will also monitor any organizational news or changes in strategic direction from new CEO Manny Roman.

2017 Manager Meetings

Staff continued with the SBI Stock and Bond Manager Annual Reviews. The first quarter manager reviews are noted below.

Investment Manager	Asset Class
• AQR Capital Management, LLC	International Equity
• Barrow, Hanley, Mewhinney & Strauss, LLC	Domestic Equity
• BlackRock Financial Management, Inc.	Fixed Income
• Columbia Management Investment Advisers LLC	Fixed Income
• Dodge & Cox	Fixed Income
• Goldman Sachs Asset Management, L.P.	Fixed Income
• LSV Asset Management	Domestic Equity
• Marathon Asset Management LLP	International Equity
• McKinley Capital Management, LLC	Domestic Equity
• Mellon Capital Management Corporation	Domestic Equity
• Pacific Investment Management Company LLC	Fixed Income
• State Street Global Advisors	International Equity
• Wellington Management Company LLP	Domestic Equity
• Winslow Capital Management, LLC	Domestic Equity

Non-Retirement Manager Update
First Quarter 2017

Domestic Equities

State Street Global Advisors (Legacy GE Asset Management)

In January 2017, staff transitioned the domestic equity portfolio from the U.S. Multi-Style Equity Strategy managed by SSGA to the Internal Stock Pool, a passively managed S&P 500 portfolio managed by SBI staff.

Internal Stock Pool

The performance in the domestic equity portfolio matched the S&P 500 for the quarter and the year.

Fixed Income

RBC Global Asset Management

The fixed income portfolio outperformed the benchmark, the Barclays Intermediate Government Index, for the quarter and for the year. For the quarter, the overweight to government related securities contributed to the outperformance. The portfolio's return benefited from excess yield from securitized and municipal securities during the quarter and the year.

Internal Stock Pool

The performance in the domestic equity portfolio matched the S&P 500 for the quarter and the year.

Deferred Compensation Managers
First Quarter 2017

Domestic Equities

Vanguard Dividend Growth Fund

The Fund lagged its benchmark, the NASDAQ US Dividend Achievers Select Index, for the quarter and for the year. The industrial, energy, and materials sectors were the biggest detractors from relative performance during the quarter. An overweight position in Energy and stock selection in Industrials dragged on returns. For the year, an underweight to Industrials and weak stock selection in both Industrials and Information Technology drove the underperformance

Vanguard Institutional Index Plus

The domestic equity portfolio tracked the return of the S&P 500 Index for the quarter and the year.

Vanguard Mid-Cap Index

The mid-cap equity portfolio tracked the benchmark, CRSP US Mid Cap Index, for the quarter and slightly lagged the benchmark for the year.

T. Rowe Price

The small cap equity portfolio outperformed the Russell 2000 for the quarter and underperformed for the year. Relative performance for the quarter benefited from stock selection in Financials and Industrials companies. For the year, stock selection in Consumer Discretionary, Materials, and Information Technology had a negative impact to relative performance.

International Equities

Fidelity Diversified International

The international equity portfolio outperformed the MSCI EAFE Free for the quarter and underperformed for the year. Both stock selection and sector allocation contributed to results versus the benchmark for the quarter. Stock selection in Consumer Discretionary and Financials added value as did an overweight in the Technology sector.

Vanguard Total International Stock Index

The portfolio outperformed its benchmark, the FTSE Global All Cap ex US Index, for the quarter and matched the benchmark for the year. In the short term, the international portfolio will have higher tracking error because of fair value pricing, which tends to smooth out over time.

Fixed Income

Dodge & Cox Income Fund

The fixed income portfolio outperformed the benchmark, the Bloomberg Barclays Aggregate, for the quarter and for the year. The quarterly performance benefited from security selection and an overweight within corporate bonds. The portfolio's nominal yield advantage also benefited returns.

Vanguard Total Bond Market Index

The fixed income portfolio outperformed the benchmark, the Bloomberg Barclays Aggregate Index, for the quarter and tracked the benchmark for the year.

Balanced and Conservative Options

Vanguard Balanced

The portfolio tracked the benchmark for the quarter and underperformed the return for the year. The benchmark is a combined return of 60% CRSP US total Market and 40% Bloomberg Barclays Aggregate Index.

Galliard Capital Management

The stable value portfolio slightly lagged the benchmark, the 3 Year Constant Maturity Treasury plus 0.45%, for the quarter but outperformed for the year. For the year, the main drivers of outperformance continued to be an overweight to the spread sectors, specifically allocations to CMBS, ABS, Other US Government Securitizations, Agency MBS, and Corporates.

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STATE BOARD
OF INVESTMENT

Domestic Equity Manager Performance Summaries

First Quarter 2017

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MINNESOTA
STATE BOARD
OF INVESTMENT

Domestic Equity

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COMBINED RETIREMENT FUNDS
ACTIVE DOMESTIC EQUITY MANAGERS

Periods Ended March 31, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Russell 1000 Growth Aggregate	11.7	18.0	8.7	12.5
Russell 1000 Growth Index	*8.9*	*15.8*	*11.3*	*13.3*
Russell 1000 Value Aggregate	3.0	19.9	8.0	13.0
Russell 1000 Value Index	*3.3*	*19.2*	*8.7*	*13.1*
Russell 2000 Growth Aggregate	5.8	17.6	3.0	9.4
Russell 2000 Growth Index	*5.3*	*23.0*	*6.7*	*12.1*
Russell 2000 Value Aggregate	0.3	26.3	7.8	13.5
Russell 2000 Value Index	*-0.1*	*29.4*	*7.6*	*12.5*
Active Manager Aggregate	5.4	20.1	7.8	12.4
Benchmark	*4.5*	*20.1*	*9.4*	*13.1*
Semi-Passive Aggregate	6.3	17.0	9.8	13.4
Benchmark	*6.0*	*17.4*	*10.0*	*13.3*
Passive Manager (R3000)	5.7	18.1	9.8	13.2
Russell 3000 Index	*5.7*	*18.1*	*9.8*	*13.2*
Passive Manager (R1000)	6.0			
Russell 1000 Index	*6.0*			
Total Aggregate	**5.9**	**18.1**	**9.2**	**13.0**
Russell 3000 Index	*5.7*	*18.1*	*9.8*	*13.2*

Calendar Years

	2016	2015	2014	2013	2012
Russell 1000 Growth Aggregate	1.0	4.6	9.6	42.0	15.5
Russell 1000 Growth Index	*7.1*	*5.7*	*13.0*	*33.5*	*15.3*
Russell 1000 Value Aggregate	15.3	-3.2	13.1	36.5	16.9
Russell 1000 Value Index	*17.3*	*-3.8*	*13.5*	*32.5*	*17.5*
Russell 2000 Growth Aggregate	4.7	1.0	-3.4	47.2	12.0
Russell 2000 Growth Index	*11.3*	*-1.4*	*5.6*	*43.3*	*14.6*
Russell 2000 Value Aggregate	26.5	-6.5	7.5	40.8	19.6
Russell 2000 Value Index	*31.7*	*-7.5*	*4.2*	*34.5*	*18.1*
Active Manager Aggregate	10.9	-0.4	9.3	40.2	15.4
Active Manager Benchmark	*15.7*	*-0.6*	*11.0*	*34.7*	*16.3*
Semi-Passive Aggregate	11.1	0.5	14.2	33.2	17.7
Benchmark	*12.1*	*0.9*	*13.2*	*33.1*	*16.4*
Passive Manager (BlackRock)	12.7	0.5	12.6	33.5	16.4
Russell 3000 Index	*12.7*	*0.5*	*12.6*	*33.6*	*16.4*
Total Aggregate	**11.5**	**0.3**	**12.3**	**35.1**	**16.6**
Russell 3000 Index	*12.7*	*0.5*	*12.6*	*33.6*	*16.4*

COMBINED RETIREMENT FUNDS
ACTIVE DOMESTIC EQUITY MANAGERS
Periods Ended March 2017

Performance versus Russell Style Benchmarks for All Periods

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception(1)
Russell 1000 Growth Index	**8.9**	**15.8**	**11.3**	**13.3**	
Sands Capital	13.9	17.2	5.8	11.1	9.5
Benchmark	*8.9*	*15.8*	*11.3*	*13.3*	*8.7*
Winslow-Large Cap	10.7	15.0	9.2	11.3	9.2
Benchmark	*8.9*	*15.8*	*11.3*	*13.3*	*8.7*
Zevenbergen Capital	12.9	21.6	6.4	12.2	9.9
Benchmark	*8.9*	*15.8*	*11.3*	*13.3*	*9.1*
Aggregate	**11.7**	**18.0**	**8.7**	**12.5**	
Russell 1000 Value Index	**3.3**	**19.2**	**8.7**	**13.1**	
Barrow, Hanley	3.1	16.5	7.5	12.7	7.9
Benchmark	*3.3*	*19.2*	*8.7*	*13.1*	*7.8*
Earnest Partners	3.5	21.2	9.4	11.7	6.6
Benchmark	*3.3*	*19.2*	*8.7*	*13.1*	*7.2*
LSV Asset Mgmt.	2.9	20.5	9.0	15.0	9.0
Benchmark	*3.3*	*19.2*	*8.7*	*13.1*	*7.8*
Aggregate	**3.0**	**19.9**	**8.0**	**13.0**	

(1) Since inception by the SBI. Inception dates as follows:

4/1/94: Zevenbergen Capital
7/1/00: Earnest Partners
4/1/04: Barrow Hanley, LSV Asset Mgmt.
1/1/05: Sands Capital, Winslow-Large Cap

Note: All aggregates include the performance of terminated managers

COMBINED RETIREMENT FUNDS
ACTIVE DOMESTIC EQUITY MANAGERS
Periods Ended March 2017

Performance versus Russell Style Benchmarks for All Periods

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
Small Cap					
Russell 2000 Growth Index	**5.3**	**23.0**	**6.7**	**12.1**	
Arrowpoint	5.3	--	--	--	14.7
Benchmark	**5.3**	**23.0**	**6.7**	**12.1**	
Hood River	6.4	--	--	--	15.5
Benchmark	**5.3**	**23.0**	**6.7**	**12.1**	
McKinley Capital	1.9	19.0	6.4	14.6	7.4
Benchmark	*5.3*	*23.0*	*6.7*	*12.1*	*8.6*
Rice Hall	**7.9**	**--**	**--**	**--**	**21.0**
Benchmark	**5.3**	**23.0**	**6.7**	**12.1**	
Wellington	5.5	--	--	--	16.6
Benchmark	**5.3**	**23.0**	**6.7**	**12.1**	
Aggregate	**5.8**	**17.6**	**3.0**	**9.4**	
Russell 2000 Value Index	**-0.1**	**29.4**	**7.6**	**12.5**	
Goldman Sachs	1.7	26.2	8.1	13.4	10.0
Benchmark	*-0.1*	*29.4*	*7.6*	*12.5*	*8.4*
Hotchkis & Wiley	1.1	24.9	6.9	14.5	8.9
Benchmark	*-0.1*	*29.4*	*7.6*	*12.5*	*8.4*
Martingale Asset Mgmt.	-2.2	27.4	9.3	15.3	8.4
Benchmark	*-0.1*	*29.4*	*7.6*	*12.5*	*8.4*
Peregrine Capital	0.4	26.5	7.2	11.9	10.6
Benchmark	*-0.1*	*29.4*	*7.6*	*12.5*	*10.0*
Aggregate	**0.3**	**26.3**	**7.8**	**13.5**	
Active Mgr. Aggregate (2)	**5.4**	**20.1**	**7.8**	**12.4**	

(1) Since inception by the SBI. Inception dates as follows:

7/1/00: Peregrine Capital
1/1/04: Goldman Sachs, Hotchkis & Wiley, Martingale Asset Mgmt., McKinley Capital
11/1/17: Arrowpoint, Hood River, Rice Hall, Wellington

(2) The Active Manager Aggregate Benchmark is the aggregate of the weighted average of the active manager benchmarks and is not the Russell 3000.

Note: All aggregates include the performance of terminated managers

COMBINED RETIREMENT FUNDS
DOMESTIC EQUITY MANAGERS
Periods Ended March 2017
Versus Manager Benchmarks

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception(1)
Semi-Passive Managers (2)					
BlackRock Institutional	6.8	19.0	10.7	13.8	9.7
Benchmark	*6.0*	*17.4*	*10.0*	*13.3*	*9.3*
JP Morgan	6.3	18.4	10.5	14.0	9.6
Benchmark	*6.0*	*17.4*	*10.0*	*13.3*	*9.3*
Mellon Capital	6.7	15.7	9.7	13.1	9.0
Benchmark	*6.0*	*17.4*	*10.0*	*13.3*	*9.3*
Semi-Passive Aggregate (R1000)	**6.3**	**17.0**	**9.8**	**13.4**	
Passive Manager					
BlackRock R3000 Passive	5.7	18.1	9.8	13.2	9.0
Benchmark	*5.7*	*18.1*	*9.8*	*13.2*	*9.0*
BlackRock R1000 Passive	6.0				
Benchmark	*6.0*				
Total Aggregate (3)	**5.9**	**18.1**	**9.2**	**13.0**	**10.4**
Benchmark (3,4)	5.7	18.1	9.8	13.2	10.5
Russell 3000 Index (3)	*5.7*	*18.1*	*9.8*	*13.2*	*10.8*
Russell 1000 Index (3)	*6.0*	*17.4*	*10.0*	*13.3*	*11.0*
Russell 2000 Index (3)	*2.5*	*26.2*	*7.2*	*12.4*	*9.5*

(1) Since retention by the SBI. Inception dates as follows:

1/1/95: BlackRock Institutional (semi-passive), J.P. Morgan, Mellon Capital
7/1/95: BlackRock R3000 Passive
11/1/16: BlackRock R1000 Passive

(2) Semi-Passive managers' benchmark is the Russell 1000 index beginning 1/1/04 and was the Completeness Fund benchmark prior to 1/1/04.
(3) Total Aggregate and Benchmarks Inception as of 1/1/84
(4) The Total Aggregate benchmark is the Russell 3000 effective 10/1/03. From 7/1/99 to 9/30/03, it was the Wilshire 5000 Investable Index. From 11/1/93 to 6/30/99, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/93, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Note: All aggregates include the performance of terminated managers.

COMBINED RETIREMENT FUNDS
DOMESTIC EQUITY MANAGERS

	March 31, 2017 Market Value	Percent	December 31, 2016 Market Value	Percent
Russell 1000 Growth Aggregate	**$970,294,268**	**3.4%**	**$1,794,412,724**	**6.1%**
INTECH	$7,791	0.0%	$321,081,296	1.1%
Jacobs Levy	$7,177	0.0%	$347,765,521	1.2%
Sands Capital	$414,926,276	1.4%	$452,132,439	1.5%
Winslow-Large Cap	$174,793,332	0.6%	$247,530,880	0.8%
Zevenbergen Capital	$380,559,692	1.3%	$425,902,588	1.5%
Russell 1000 Value Aggregate	**$948,881,248**	**3.3%**	**$1,984,233,866**	**6.8%**
Barrow Hanley	$343,822,845	1.2%	$573,784,717	2.0%
Earnest Partners	$235,936,284	0.8%	$419,304,818	1.4%
LSV Asset Mgmt.	$368,992,737	1.3%	$599,298,104	2.0%
Systematic Financial Mgmt.	$129,382	0.0%	$391,846,227	1.3%
Russell 2000 Growth Aggregate	**$1,017,841,762**	**3.5%**	**$1,116,398,549**	**3.8%**
Arrowpoint (1)	$172,735,966	0.6%	$164,117,429	0.6%
Hood River (1)	$202,458,244	0.7%	$190,190,987	0.7%
McKinley Capital	$256,221,245	0.9%	$251,423,306	0.9%
Next Century Growth	$1	0.0%	$148,245,816	0.5%
Rice Hall James (1)	$182,149,314	0.6%	$168,734,889	0.6%
Wellington (1)	$204,276,992	0.7%	$193,686,123	0.7%
Russell 2000 Value Aggregate	**$1,226,548,027**	**4.3%**	**$1,222,626,933**	**4.2%**
Goldman Sachs	$329,323,318	1.1%	$323,748,012	1.1%
Hotchkis & Wiley	$289,491,903	1.0%	$286,331,662	1.0%
Martingale Asset Mgmt.	$271,938,447	0.9%	$277,996,920	1.0%
Peregrine Capital	$335,794,359	1.2%	$334,550,340	1.1%
Semi-Passive Manager Aggregate	**$2,961,455,835**	**10.3%**	**$7,064,014,920**	**24.2%**
BlackRock Institutional	$877,224,762	3.1%	$1,768,296,782	6.0%
INTECH	$2,101,311	0.0%	$1,444,552,593	4.9%
JP Morgan	$1,313,133,223	4.6%	$2,185,100,954	7.5%
Mellon Capital	$768,996,539	2.7%	$1,666,064,591	5.7%
Passive Manager	**$21,548,676,401**	**75.2%**	**$16,060,355,207**	**54.9%**
BlackRock Russell 1000 (2)	$5,885,550,811	20.5%	$5,551,321,150	19.0%
Transition Account (3)	$4,550,658,904	15.9%	$59	0.0%
BlackRock Russell 3000	$11,112,466,686	38.8%	$10,509,033,999	35.9%
Total Portfolio	**$28,673,697,542**	**100.0%**	**$29,242,042,200**	**100.0%**

(1) Arrowpoint, Hood River, Rice Hall James, and Wellington were funded November 1, 2016.

(2) BlackRock Russell 1000 passive was funded October 2016.

(3) Transition Account assets were moved into BlackRock Russell 1000 in April 2017.

COMBINED RETIREMENT FUNDS
ACTIVE DOMESTIC EQUITY MANAGERS
Calendar Year Returns
Russell Style Manager Benchmarks

	2016	2015	2014	2013	2012
LARGE CAP					
Russell 1000 Growth Index	**7.1**	**5.7**	**13.0**	**33.5**	**15.3**
Sands Capital	-6.9	2.9	9.1	42.4	24.2
Winslow - Large Cap	-1.9	6.7	11.0	37.4	13.7
Zevenbergen Capital	-2.8	6.4	3.4	60.6	8.0
Aggregate	**1.0**	**4.6**	**9.6**	**42.0**	**15.5**
Russell 1000 Value Index	**17.3**	**-3.8**	**13.5**	**32.5**	**17.5**
Barrow, Hanley	12.8	-2.1	13.0	35.5	15.5
Earnest Partners	16.2	-2.7	14.0	32.0	10.7
LSV Asset Mgmt.	17.0	-2.2	14.0	41.2	20.4
Aggregate	**15.3**	**-3.2**	**13.1**	**36.5**	**16.9**
SMALL CAP					
Russell 2000 Growth Index	**11.3**	**-1.4**	**5.6**	**43.3**	**14.6**
McKinley Capital	12.9	3.6	2.0	51.6	23.2
Aggregate	**4.7**	**1.0**	**-3.4**	**47.2**	**12.0**
Russell 2000 Value Index	**31.7**	**-7.5**	**4.2**	**34.5**	**18.1**
Goldman Sachs	24.6	-5.2	7.4	39.3	16.6
Hotchkis & Wiley	19.9	-8.5	13.0	46.0	24.1
Martingale Asset Mgmt.	34.3	-5.2	7.3	43.1	20.1
Peregrine Capital	27.8	-6.7	4.1	37.3	18.8
Aggregate	**26.5**	**-6.5**	**7.5**	**40.8**	**19.6**
Active Mgr. Aggregate	**10.9**	**-0.4**	**9.3**	**40.2**	**15.4**
Active Mgr. Aggregate Benchmark (1)	*15.7*	*-0.6*	*11.0*	*34.7*	*16.3*

(1) The Active Manager Aggregate Benchmark is the aggregate of the weighted average of the active manager benchmarks and is not the Russell 3000.

Note: All aggregates include the performance of terminated managers. Returns shown are full-year returns only.
Performance of managers hired during a calendar year are reported beginning with the following calendar year.

COMBINED RETIREMENT FUNDS
DOMESTIC EQUITY MANAGERS
Calendar Year Returns
Versus Manager Benchmarks

	2016	2015	2014	2013	2012
Semi-Passive Managers					
Russell 1000 Index	**12.1**	**0.9**	**13.2**	**33.1**	**16.4**
BlackRock Institutional	12.5	0.8	14.2	33.3	19.0
JP Morgan	12.3	0.8	15.0	33.7	17.6
Mellon Capital	10.2	-0.2	15.9	32.6	17.3
Semi-Passive Aggregate (R1000)	**11.1**	**0.5**	**14.2**	**33.2**	**17.7**
Passive Managers					
Russell 3000 Index	**12.7**	**0.5**	**12.6**	**33.6**	**16.4**
BlackRock R3000 Passive	12.7	0.5	12.6	33.5	16.4
Total Aggregate	**11.5**	**0.3**	**12.3**	**35.1**	**16.6**
Russell 3000 Index	*12.7*	*0.5*	*12.6*	*33.6*	*16.4*
Russell 1000 Index	*12.1*	*0.9*	*13.2*	*33.1*	*16.4*
Russell 2000 Index	*21.3*	*-4.4*	*4.9*	*38.8*	*16.3*

Note: All aggregates include the performance of terminated managers. Returns shown are full year returns only. Performance of managers hired during a calendar year are reported beginning with the following calendar year.

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STATE BOARD
OF INVESTMENT

International Manager Performance Summaries

First Quarter 2017

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MINNESOTA
STATE BOARD
OF INVESTMENT

International Managers

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COMBINED RETIREMENT FUNDS
INTERNATIONAL MANAGERS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
Active Developed Markets (2)					
Acadian	10.5	19.2	5.2	10.0	6.0
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
Columbia	6.5	5.7	1.5	5.7	2.0
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*3.0*
Fidelity	6.2	10.6	1.0	6.7	6.0
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
J.P. Morgan	7.4	15.9	0.7	5.1	4.6
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
Marathon Asset Management	6.4	8.6	2.1	7.9	8.1
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.9*
McKinley	6.9	5.9	-0.5	6.0	4.0
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
Aggregate	**7.2**	**10.6**	**1.9**	**7.1**	
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	
Active Emerging Markets (3)					
Morgan Stanley	12.0	14.2	1.8	2.5	10.0
Benchmark	*11.4*	*17.2*	*1.2*	*0.8*	*9.3*
Aggregate	**11.2**	**12.7**	**-0.2**	**0.5**	
Benchmark	*11.4*	*17.2*	*1.2*	*0.8*	
Semi-Passive Developed Markets (2)					
AQR	7.7	11.2	1.1	7.2	5.3
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
Fidelity	6.7	8.7	0.0	5.7	5.2
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
SSgA	7.0	12.9	-0.2	6.0	4.2
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*4.6*
Aggregate	**7.1**	**10.5**	**0.2**	**6.2**	
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	

(1) Since inception by the SBI. Inception dates as follows:
10/1/92: State Street (semi-passive developed markets)
10/1/93: Marathon Asset Management (active developed markets)
1/1/00: Columbia (active developed markets)
1/1/01: Capital International, Morgan Stanley (active emerging markets)
7/1/05: Acadian, J.P. Morgan, McKinley (active developed markets) AQR, Fidelity (semi-passive developed markets)

(2) Pyramis changed its name to Fidelity in October 2015.

(3) Since 6/1/08 the developed markets manager's benchmark 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 MSCI World ex USA (net). Prior to that date, it was MSCI EAFE Free (net). From 10/1/01 to 5/31/02 the benchmark was the Provisional MSCI EAFE Free (net).

(4) Since 6/1/08 the emerging markets manager's benchmark 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 MSCI Emerging Markets Free (net). Prior to that date, it was MSCI Emerging Markets Free (gross). From 10/1/01 to 5/31/02 the benchmarkwas the Provisional MSCI Emerging Markets Free (net).

COMBINED RETIREMENT FUNDS
INTERNATIONAL MANAGERS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
Passive Developed Markets (2)					
SSgA	7.0	12.4	0.8	5.8	6.1
Benchmark	*6.8*	*11.9*	*0.4*	*5.4*	*5.8*
Passive Emerging Markets (3)					
SSgA	11.2	16.8	1.4	1.0	3.4
Benchmark	*11.4*	*17.2*	*1.2*	*0.8*	*3.3*
Equity Only (4)	7.5	11.9	0.9	5.1	6.4
Benchmark (5)	*7.9*	*13.1*	*0.6*	*4.4*	*5.9*
Total Program (5,9)	**7.5**	**11.9**	**0.9**	**5.1**	**6.6**
Benchmark (6,9)	*7.9*	*13.1*	*0.6*	*4.4*	*5.9*
SBI Int'l Equity Target (6,9)	*7.9*	*13.1*	*0.6*	*4.4*	*5.9*
MSCI ACWI Free ex USA (7,9)	*7.9*	*13.1*	*0.6*	*4.4*	*6.2*
MSCI World ex USA (net) (9)	*6.8*	*11.9*	*0.4*	*5.4*	*5.9*
MSCI EAFE Free (net) (9)	*7.2*	*11.7*	*0.5*	*5.8*	*5.7*
MSCI Emerging Markets Free (8,9)	*11.4*	*17.2*	*1.2*	*0.8*	*7.3*

(1) Since retention by the SBI. Inception dates as follows:

10/1/92: State Street (passive developed markets)
1/1/12: State Street (passive emerging markets)

(2) Since 6/1/08 the developed markets managers' benchmark is the Standard (large + mid) MSCI World ex U.S. (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI World ex U.S. (net). From 10/1/03 to 9/30/07 the benchmark was MSCI World ex U.S. (net). Prior to that date, it was MSCI EAFE Free (net). From 10/1/01 to 5/31/02 the benchmark was the Provisional MSCI EAFE Free (net).

(3) Since 6/1/08 the emerging markets manager's benchmark 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 MSCI Emerging Markets Free (net). Prior to that date, it was MSCI Emerging Markets Free (gross). From 10/1/01 to 5/31/02 the benchmark was the Provisional MSCI Emerging Markets Free (net).

(4) Equity managers only. Includes impact of terminated managers.

(5) Includes impact of currency overlay on the passive EAFE portfolio from 12/1/95-10/31/00.

(6) Since 6/1/08 the International Equity asset class target is 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. 100% EAFE Free (net) prior to 5/1/96.

(7) MSCI ACWI Free ex U.S. (gross) through 12/31/00. MSCI ACWI Free ex U.S. (net) thereafter.

(8) MSCI Emerging Markets Free (gross) through 12/31/00. MSCI Emerging Markets Free (net) thereafter.
(9) Total Program and Benchmarks Inception as of 10/1/92

COMBINED RETIREMENT FUNDS
INTERNATIONAL STOCK MANAGERS
Periods Ended March 2017

	March 31, 2017 Market Value	Percent	December 31, 2016 Market Value	Percent
Active Developed Markets	**$2,597,617,532**	**22.3%**	**$2,422,276,505**	**23.9%**
Acadian	$442,779,559	3.8%	$400,687,288	3.9%
Columbia	$361,504,095	3.1%	$339,402,902	3.3%
Fidelity	$369,156,376	3.2%	$347,549,790	3.4%
J.P. Morgan	$309,522,775	2.7%	$288,115,277	2.8%
Marathon	$811,313,488	7.0%	$762,727,117	7.5%
McKinley	$303,341,239	2.6%	$283,794,130	2.8%
Active Emerging Markets	**$534,988,194**	**4.6%**	**$1,382,149,330**	**13.6%**
Capital International (1)	$225,146	0.0%	$632,712,957	6.2%
Morgan Stanley	$534,763,049	4.6%	$749,436,373	7.4%
Semi-Passive Developed Markets	**$1,209,593,739**	**10.4%**	**$1,129,727,026**	**11.1%**
AQR	$366,071,663	3.1%	$339,888,645	3.4%
Fidelity	$521,618,513	4.5%	$488,966,331	4.8%
State Street	$321,903,563	2.8%	$300,872,050	3.0%
Passive Developed Markets	**$6,266,116,437**	**53.9%**	**$4,933,081,598**	**48.6%**
State Street	$6,248,116,966	53.7%	$4,928,130,492	48.6%
Intl Transition Account	$17,999,470	0.2%	$4,951,105	0.0%
Passive Emerging Markets	**$1,016,434,967**	**8.7%**	**$278,408,882**	**2.7%**
State Street	$1,016,434,967	8.7%	$278,408,882	2.7%
Total Portfolio	**$11,624,750,869**	**100.0%**	**$10,145,643,340**	**100.0%**

(1) Capital International's portfolio was transitioned to a passive emerging markets portfolio in October 2016.

COMBINED RETIREMENT FUNDS
INTERNATIONAL STOCK MANAGERS
Calendar Year Returns

	2016	2015	2014	2013	2012
Active Developed Markets (1)					
Acadian	8.1	2.4	-1.7	26.1	17.6
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Columbia	-5.6	6.4	-5.6	23.9	19.0
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Fidelity	1.2	0.1	-5.6	26.7	20.3
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
J.P. Morgan	4.0	-4.7	-5.1	19.5	18.4
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Marathon	-1.1	6.7	-4.0	28.5	17.9
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
McKinley	-7.5	3.1	-2.7	28.0	16.9
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Aggregate	**-0.2**	**3.2**	**-4.1**	**25.4**	**17.9**
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Active Emerging Markets (2)					
Morgan Stanley	6.1	-9.4	-2.4	0.5	21.1
Benchmark	*11.2*	*-14.9*	*-2.2*	*-2.6*	*18.2*
Aggregate	**5.3**	**-12.7**	**-4.1**	**0.6**	**17.5**
Benchmark	11.2	-14.9	-2.2	-2.6	18.2
Semi-Passive Developed Markets (1)					
AQR	0.8	0.9	-4.4	24.1	20.8
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Fidelity	-1.7	-0.7	-4.0	23.2	19.4
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
SSgA	0.6	-0.9	-5.1	25.3	17.3
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Aggregate	**-0.4**	**-0.3**	**-4.4**	**24.0**	**19.2**
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*

(1) Since 6/1/08 the developed markets manager's benchmark 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).

(2) Since 6/1/08 the emerging markets manager's benchmark 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 MSCI Emerging Markets Free (net).

(3) Equity managers only. Includes impact of terminated managers.

(4) Since 6/1/08 the International Equity asset class target is the Standard (large + mid) MSCI ACWI ex USA (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI ACWI ex USA (net). From 10/1/03 to 9/30/07 the target was MSCI ACWI ex USA (net).

COMBINED RETIREMENT FUNDS
INTERNATIONAL STOCK MANAGERS
Calendar Year Returns

	2016	**2015**	**2014**	**2013**	**2012**
Passive Developed Markets (1)					
SSgA	3.2	-2.6	-3.9	21.4	16.7
Benchmark	*2.7*	*-3.0*	*-4.3*	*21.0*	*16.4*
Passive Emerging Markets (2)					
SSgA	11.1	-14.6	-2.1	-2.5	18.5
Benchmark	*11.2*	*-14.9*	*-2.2*	*-2.6*	*18.2*
Equity Only (3) (4)	2.6	-2.9	-4.0	17.8	17.6
Benchmark	*4.5*	*-5.7*	*-3.9*	*15.3*	*16.8*
Total Program (4)	**2.6**	**-2.9**	**-4.0**	**17.8**	**17.6**
Benchmark	*4.5*	*-5.7*	*-3.9*	*15.3*	*16.8*
SBI Int'l Equity Target (5)	*4.5*	*-5.7*	*-3.9*	*15.3*	*16.8*
MSCI ACWI Free ex USA (net)	*4.5*	*-5.7*	*-3.9*	*15.3*	*16.8*
MSCI World ex USA (net)	2.7	-3.0	-4.3	21.0	16.4
MSCI EAFE Free (net)	1.0	-0.8	-4.9	22.8	17.3
MSCI Emerging Markets Free (net)	*11.2*	*-14.9*	*-2.2*	*-2.6*	*18.2*

(1) Since 6/1/08 the developed markets manager's benchmark 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).

(2) Since 6/1/08 the emerging markets manager's benchmark 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 MSCI Emerging Markets Free (net).

(3) Equity managers only. Includes impact of terminated managers.

(4) Since 6/1/08 the International Equity asset class target is the Standard (large + mid) MSCI ACWI ex USA (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI ACWI ex USA (net). From 10/1/03 to 9/30/07 the target was MSCI ACWI ex USA (net).

STATE BOARD
OF INVESTMENT

Bond Manager
Performance Summaries

First Quarter 2017

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MINNESOTA
STATE BOARD
OF INVESTMENT

Bond Managers

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COMBINED RETIREMENT FUNDS
BOND MANAGERS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception(1)
Active Managers					
Bloomberg Barclays U.S. Aggregate	**0.8**	**0.4**	**2.7**	**2.3**	
Columbia	1.1	3.0	3.4	3.3	5.5
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*5.4*
Dodge & Cox	1.0	3.2	3.2	3.6	6.3
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*5.2*
PIMCO	1.2	1.4	3.0	3.1	5.9
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*4.3*
Western	1.4	3.2	3.8	3.7	8.6
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*7.4*
Active Mgr. Aggregate	**1.2**	**2.7**	**3.4**	**3.4**	
Semi-Passive Managers					
BlackRock	0.9	0.7	2.9	2.6	5.4
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*5.3*
Goldman	1.0	0.9	2.9	2.7	5.7
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*5.4*
Neuberger	0.8	0.4	2.8	2.5	6.6
Benchmark	*0.8*	*0.4*	*2.7*	*2.3*	*6.4*
Semi-Passive Mgr. Aggregate	**0.9**	**0.7**	**2.9**	**2.6**	
Historical Aggregate (2,3)	**1.0**	**1.6**	**3.1**	**3.0**	**7.7**
Benchmark (3,4)	*0.8*	*0.4*	*2.7*	*2.3*	*7.5*
BB Barclays U.S. Agg. (3,4)	0.8	0.4	2.7	2.3	7.5

(1) Since inception by the SBI. Inception dates as follows:

7/1/84: Western
7/1/88: Neuberger
7/1/93: Columbia, Goldman
4/1/96: BlackRock
1/1/00: Dodge & Cox
10/1/08: PIMCO

(2) Includes performance of terminated managers.
(3) Historical Aggregate and benchmarks inception date: 7/1/84
(4) Prior to July 1994, this index reflects the Solomon BIG.

COMBINED RETIREMENT FUNDS
BOND MANAGERS
Periods Ending March 2017

	March 31, 2017 Market Value	Percent	December 31, 2016 Market Value	Percent
Semi-Passive	**$6,683,265,807**	**53.3%**	**$6,624,979,509**	**53.3%**
BlackRock	$2,036,696,036	16.2%	$2,018,527,751	16.2%
Goldman	$2,448,992,362	19.5%	$2,425,487,936	19.5%
Neuberger	$2,197,577,409	17.5%	$2,180,963,822	17.6%
Active Managers	**$5,866,096,072**	**46.7%**	**$5,799,255,659**	**46.7%**
Aberdeen*	$1,185	0.0%	$1,922	0.0%
Columbia	$1,140,244,685	9.1%	$1,128,275,981	9.1%
Dodge & Cox	$1,622,085,437	12.9%	$1,606,145,483	12.9%
PIMCO	$1,550,257,300	12.4%	$1,532,034,703	12.3%
Western	$1,553,507,465	12.4%	$1,532,797,570	12.3%
Total Portfolio	**$12,549,361,879**	**100.0%**	**$12,424,235,168**	**100.0%**

* In November 2016, SBI terminated its relationship with Aberdeen fixed income and transitioned assets to a combination of cash for benefit payments and additional passive developed markets exposure, per SBI's asset allocation policy.

COMBINED RETIREMENT FUNDS
BOND MANAGERS
Calendar Year Returns

	2016	2015	2014	2013	2012
Active Managers					
Columbia (RiverSource)	5.2	0.2	5.8	-1.0	6.9
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Dodge & Cox	4.8	0.3	6.0	0.9	8.5
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
PIMCO	2.8	1.0	5.5	-1.3	9.3
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Western	4.9	0.7	7.0	-1.4	7.8
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Active Mgr. Aggregate	**4.4**	**0.6**	**6.2**	**-0.8**	**8.1**
Semi-Passive Managers					
BlackRock	2.8	0.9	6.0	-1.8	5.0
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Goldman	3.0	0.8	6.1	-1.7	5.4
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Neuberger	2.7	0.7	6.1	-2.0	5.4
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Semi-Passive Mgr. Aggregate	**2.8**	**0.8**	**6.1**	**-1.8**	**5.3**
Historical Aggregate	**3.6**	**0.7**	**6.1**	**-1.3**	**6.7**
Benchmark	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
BB Barclays U.S. Agg.	2.6	0.5	6.0	-2.0	4.2

The benchmark for the Fixed Income Asset Class is the Bloomberg Barclays U.S. Aggregate.

STATE BOARD
OF INVESTMENT

Non-Retirement Manager
Performance Summaries

First Quarter 2017

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MINNESOTA
STATE BOARD
OF INVESTMENT

Non-Retirement Managers

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NON-RETIREMENT MANAGERS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
RBC Global Asset Management (2)	0.6	-0.6	1.6	1.2	5.1
BB Barclays Int Gov	*0.5*	*-0.7*	*1.6*	*1.2*	*5.2*
Internal Stock Pool	6.1	17.2	10.4	13.3	9.4
S&P 500 Index	*6.1*	*17.2*	*10.4*	*13.3*	*9.4*
Internal Bond Pool - Trust	1.1	1.6	3.1	3.1	6.2
BB Barclays U.S. Agg.	0.8	0.4	2.7	2.3	5.7

(1) Since retention by the SBI. Inception dates as follows:
7/1/91: RBC Global Asset Management
7/1/93: Internal Stock Pool
7/1/94: Internal Bond Pool - Trust

(2) Prior to July 2011, a blended benchmark consisting of 25% Merrill Lynch (ML) Mortgage Master, 25% ML 1-3 Yr Gov't, 25% ML 5-10 Year Treasury/Ag, 15% ML 3-5 Year Treasury/Ag, and 10% ML 91-day T-Bill was utilized.

NON-RETIREMENT MANAGERS
Periods Ended March 2017

	March 31, 2017 Market Value	Percent	December 31, 2016 Market Value	Percent
GE Asset Management	$16	0.0%	$65,957,739	2.0%
RBC Global Asset Management	$255,366,196	7.6%	$247,445,363	7.6%
Internal Stock Pool	$2,055,912,016	61.0%	$1,901,520,126	58.6%
Internal Bond Pool - Trust	$1,060,399,589	31.5%	$1,032,062,460	31.8%
Total Portfolio	**$3,371,677,817**	**100.0%**	**$3,246,985,688**	**100.0%**

NON-RETIREMENT MANAGERS
Calendar Year Returns

	2016	2015	2014	2013	2012
RBC Global Asset Management (1)	1.1	1.3	2.5	-1.3	1.8
BB Barclays Int Gov	*1.1*	*1.2*	*2.5*	*-1.2*	*1.7*
Internal Stock Pool	11.8	1.5	13.7	32.2	16.0
S&P 500 Index	*12.0*	*1.4*	*13.7*	*32.4*	*16.0*
Internal Bond Pool - Trust	3.3	0.8	6.0	0.0	5.8
BB Barclays U.S. Agg.	2.6	0.5	6.0	-2.0	4.2

(1) Prior to July 2011, a blended benchmark consisting of 25% Merrill Lynch (ML) Mortgage Master, 25% ML 1-3 Year Gov't, 25% ML 5-10 Year Treasury/Ag, 15% ML 3-5 Year Treasury/Ag, and 10% ML 91-day T-Bill was utilized.

STATE BOARD
OF INVESTMENT

Deferred Compensation Plan
Minnesota College Savings Plan
Performance Summaries

First Quarter 2017

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MINNESOTA
STATE BOARD
OF INVESTMENT

Deferred Compensation Plan
and
Minnesota College Savings Plan

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MN STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception(1)
Large Cap Equity					
Vanguard Dividend Growth (6)	5.9	10.7	8.6	12.0	8.3
NASDAQ US Dividend Achievers	*6.2*	*13.1*	*8.5*	*11.4*	--
Vanguard Institutional Index Plus	6.1	17.2	10.4	13.3	5.1
S&P 500	*6.1*	*17.2*	*10.4*	*13.3*	*5.1*
Mid Cap Equity					
Vanguard Mid-Cap Index	6.2	16.7	8.7	12.9	9.9
CRSP US Mid Cap (2)	*6.2*	*16.8*	*8.7*	*13.0*	*9.9*
Small Cap Equity					
T. Rowe Price Small-Cap Stock	3.6	23.5	7.9	13.3	10.0
Russell 2000	*2.5*	*26.2*	*7.2*	*12.4*	*7.1*
International					
Fidelity Diversified International	8.0	7.1	1.5	6.6	6.3
MSCI EAFE Free	*7.2*	*11.7*	*0.5*	*5.8*	*3.7*
Vanguard Total International Stock Index	8.5	13.7	1.1	4.9	2.8
FTSE Global All Cap ex US (3)	*8.0*	*13.7*	*1.5*	*5.1*	*3.0*
Balanced					
Vanguard Balanced Index Inst. Fund	3.8	10.7	7.0	8.8	7.2
60% CRSP US Tot Mkt, 40% Barclays Agg (4)	*3.8*	*10.8*	*7.0*	*8.9*	*7.2*
Fixed Income					
Dodge & Cox Income Fund	1.2	4.4	3.1	3.4	5.7
BB Barclays U.S. Agg.	*0.8*	*0.4*	*2.7*	*2.3*	*5.1*
Vanguard Total Bond Market Index Inst.	0.9	0.4	2.6	2.3	4.2
BB Barclays U.S. Agg.	0.8	0.4	2.7	2.3	4.2
SIF Money Market (5)	0.2	0.6	0.3	0.3	2.1
3 Month T-Bills	0.1	0.4	0.2	0.1	1.8
SIF Fixed Interest (5)					
Galliard Capital Management	0.5	2.1	2.0	2.1	4.6
3-Year Constant Maturity Treasury +45bp	*0.6*	*1.7*	*1.5*	*1.3*	*3.5*

Benchmarks for the Funds are noted in italics below the Fund names.

(1) Since retention by the SBI. Time periods varies for each manager.

(2) Benchmark is the CRSP US Mid-Cap Index beginning February 2013. Prior to that date it was the MSCI US Mid-Cap 450 Index.

(3) Benchmark is the FTSE Global All Cap ex US Index beginning June 2013; MSCI ACWI ex USA IMI beginning December 2010; MSCI EAFE and Emerging Markets Index beginning August 2006. Prior to that date it was the total International Composite Index, which is the MSCI EAFE Index and the Select Emerging Markets Free Index.

(4) Benchmark is 60% CRSP US Total Market Index and 40% Bloomberg Barclays U.S. Aggregate beginning January 2013. Prior to that date it was 60% MSCI US Broad Market Index and 40% Bloomberg Barclays U.S. Aggregate.

(5) SIF Money Market Account and SIF Fixed Interest Accounts are Supplemental Investment Fund options (SIF), which are also offered under the Deferred Compensation Plan.

(6) Vanguard Dividend Growth replaced the Janus Twenty Fund in the third quarter of 2016. Historical returns reflect Vanguard Dividend Growth mutual fund returns.

MN STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS
Periods Ended March 2017

MN Target Retirement Funds	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
SSgA					
Income Fund	2.4	6.1	2.9	4.0	4.4
Income Fund Benchmark	2.4	6.1	2.9	4.1	4.5
2020 Fund	2.9	7.3	3.5	5.6	6.4
2020 Fund Benchmark	2.9	7.4	3.6	5.7	6.5
2025 Fund	3.7	9.2	4.2	6.8	7.4
2025 Fund Benchmark	3.8	9.2	4.3	6.9	7.5
2030 Fund	4.5	11.0	4.8	7.6	8.0
2030 Fund Benchmark	4.5	11.0	4.9	7.7	8.1
2035 Fund	4.9	11.8	5.0	8.1	8.3
2035 Fund Benchmark	4.9	11.8	5.1	8.2	8.4
2040 Fund	5.3	12.6	5.2	8.4	8.4
2040 Fund Benchmark	5.3	12.7	5.2	8.5	8.4
2045 Fund	5.5	13.5	5.3	8.7	8.5
2045 Fund Benchmark	5.6	13.5	5.3	8.8	8.5
2050 Fund	5.8	14.2	5.4	8.8	8.5
2050 Fund Benchmark	5.8	14.2	5.5	8.9	8.6
2055 Fund	5.8	14.2	5.4	8.8	8.5
2055 Fund Benchmark	5.8	14.2	5.5	8.9	8.6
2060 Fund	5.8	14.2	5.4	8.8	8.5
2060 Fund Benchmark	5.8	14.2	5.5	8.9	8.6

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. The underlying index funds are listed below.

(1) Since retention by the SBI. Time period varies for each manager.

MN STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS
Periods Ended March 2017

SSgA Index Funds	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
S&P 500 Index Fund	6.1	17.2	10.4	13.3	13.1
S&P 500	*6.1*	*17.2*	*10.4*	*13.3*	*13.1*
DJ-UBS Roll Select Commodity Index Fund	-0.8	11.9	-11.5	--	-7.4
DJ-UBS Roll Select Commodity Index	*-0.8*	*11.8*	*-11.5*	--	*-7.3*
Russell Small/Mid Cap Index Fund	4.3	22.5	7.2	--	14.5
Russell Small Cap Completeness Index	*4.4*	*22.6*	*7.2*	--	*14.5*
Global All-Cap Equity ex-US Index Fund	8.1	13.4	1.1	5.0	2.9
MSCI ACWI ex USA IMI	*8.0*	*13.0*	*0.8*	*4.7*	*2.6*
Global Real Estate Securities Index Fund	2.1	0.4	5.6	7.5	6.6
FTSE EPRA/NAREIT Dev Liquid	*1.9*	*-0.4*	*4.8*	*6.7*	*5.8*
Long Government Bond Index Fund	1.5	-4.8	5.8	4.0	6.7
BB Barclays Long Government	*1.5*	*-4.8*	*5.8*	*4.0*	*6.7*
Bond Index Fund	0.8	0.4	2.7	2.3	2.9
BB Barclays U.S. Agg.	*0.8*	*0.4*	*2.7*	*2.3*	*2.9*
Inflation Protected Bond Index Fund	1.2	1.4	2.0	0.9	2.2
BB Barclays U.S. TIPS	*1.3*	*1.5*	*2.0*	*1.0*	*2.2*
High Yield Bond Index Fund	2.4	15.4	3.8	6.1	6.4
BB Barclays U.S. High Yield Very Liquid	*2.4*	*15.3*	*3.9*	*6.2*	*6.5*
U.S. Short-Term Gov/Credit Index Fund	0.4	0.6	0.9	0.9	1.4
BB Barclays 1-3 Yr Govt/Credit	*0.4*	*0.7*	*1.0*	*0.9*	*1.0*

Benchmarks for the SSgA Funds are noted in italics below the Fund names.

(1) Minnesota Target Retirement Funds inception date is July 2011.

MN STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS
Calendar Year Returns

	2016	2015	2014	2013	2012
Large Cap Equity					
Vanguard Dividend Growth (5)	7.5	2.6	11.8	31.5	10.4
NASDAQ US Dividend Achievers	*11.8*	*-1.9*	*10.1*	*29.0*	*11.7*
Vanguard Institutional Index Plus	12.0	1.4	13.7	32.4	16.0
S&P 500	*12.0*	*1.4*	*13.7*	*32.4*	*16.0*
Mid Cap Equity					
Vanguard Mid-Cap Index	11.2	-1.3	13.8	35.2	16.0
CRSP US Mid Cap (1)	*11.2*	*-1.3*	*13.8*	*35.4*	*16.0*
Small Cap Equity					
T. Rowe Price Small-Cap Stock	19.0	-3.1	7.4	39.6	18.7
Russell 2000	*21.3*	*-4.4*	*4.9*	*38.8*	*16.3*
International					
Fidelity Diversified International	-3.7	3.1	-3.2	25.2	19.4
MSCI EAFE Free	*1.0*	*-0.8*	*-4.9*	*22.8*	*17.3*
Vanguard Total International Stock Index	4.7	-4.2	-4.1	15.2	18.3
FTSE Global All Cap ex US (2)	*5.0*	*-4.0*	*-3.1*	*15.9*	*17.0*
Balanced					
Vanguard Balanced Index Inst. Fund	8.8	0.5	10.0	18.1	11.5
60% CRSP US Tot Mkt, 40% Barclays Agg (3)	*8.8*	*0.7*	*10.0*	*18.2*	*11.6*
Fixed Income					
Dodge & Cox Income Fund	5.6	-0.6	5.5	0.6	7.9
BB Barclays U.S. Agg.	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Vanguard Total Bond Market Index Inst.	2.6	0.4	5.9	-2.1	4.2
BB Barclays U.S. Agg.	2.6	0.5	6.0	-2.0	4.2
SIF Money Market (4)	0.6	0.2	0.1	0.2	0.3
3 Month T-Bills	0.3	0.1	0.0	0.1	0.1
SIF Fixed Interest (4)					
Galliard Capital Management	2.1	2.0	1.8	2.2	2.8
3-Year Constant Maturity Treasury +45bp	*1.4*	*1.5*	*1.3*	*1.0*	*0.8*

Benchmarks for the Funds are noted in italics below the Fund names.

(1) Benchmark is the CRSP US Mid-Cap Index beginning February 2013. Prior to that date it was the MSCI US Mid-Cap 450 Index.

(2) Benchmark is the FTSE Global All Cap ex US Index beginning June 2013; MSCI ACWI ex USA IMI beginning December 2010; MSCI EAFE and Emerging Markets Index beginning August 2006. Prior to that date it was the total International Composite Index, which is the MSCI EAFE Index and the Select Emerging Markets Free Index.

(3) Benchmark is 60% CRSP US Total Market Index and 40% Bloomberg Barclays U.S. Aggregate beginning January 2013. Prior to that date it was 60% MSCI US Broad Market Index and 40% Bloomberg Barclays U.S. Aggregate.

(4) SIF Money Market Account and SIF Fixed Interest Accounts are Supplemental Investment Fund options (SIF), which are also offered under the Deferred Compensation Plan accounts.

(5) Vanguard Dividend Growth replaced Janus Twenty Fund in the third quarter of 2016. Historical returns reflect the Vanguard Dividend Growth mutual fund returns.

MN STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS
Calendar Year Returns

MN Target Retirement Funds	2016	2015	2014	2013	2012
SSgA					
Income Fund	5.8	-1.4	3.6	5.1	9.7
Income Fund Benchmark	5.8	-1.3	3.8	5.3	9.8
2020 Fund	6.6	-1.6	5.3	8.8	12.5
2020 Fund Benchmark	6.6	-1.6	5.5	9.1	12.5
2025 Fund	7.6	-1.9	5.9	13.2	13.7
2025 Fund Benchmark	7.5	-1.9	6.2	13.5	13.7
2030 Fund	8.3	-2.0	6.3	16.0	14.3
2030 Fund Benchmark	8.2	-2.0	6.6	16.3	14.1
2035 Fund	8.4	-2.0	6.4	18.1	14.9
2035 Fund Benchmark	8.3	-2.0	6.7	18.5	14.7
2040 Fund	8.7	-2.2	6.4	19.7	15.5
2040 Fund Benchmark	8.5	-2.1	6.6	20.0	15.3
2045 Fund	9.1	-2.4	6.2	21.3	16.0
2045 Fund Benchmark	8.9	-2.3	6.5	21.6	15.8
2050 Fund	9.5	-2.5	6.2	21.4	15.9
2050 Fund Benchmark	9.3	-2.4	6.5	21.7	15.8
2055 Fund	9.4	-2.5	6.2	21.4	15.9
2055 Fund Benchmark	9.3	-2.4	6.5	21.7	15.8
2060 Fund	9.4	-2.5	6.2	21.4	16.0
2060 Fund Benchmark	9.3	-2.4	6.5	21.7	15.8

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 STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS
Calendar Year Returns

SSgA Index Funds	**2016**	**2015**	**2014**	**2013**	**2012**
S&P 500 Index Fund	12.0	1.4	13.7	32.4	16.0
S&P 500	*12.0*	*1.4*	*13.7*	*32.4*	*16.0*
DJ-UBS Roll Select Commodity Index Fund	14.7	-23.4	-15.3	-9.3	--
DJ-UBS Roll Select Commodity Index	14.6	-23.4	-15.2	-9.1	--
Russell Small/Mid Cap Index Fund	16.6	-3.5	7.5	38.4	--
Russell Small Cap Completeness Index	*16.6*	*-3.4*	*7.4*	*38.5*	--
Global All-Cap Equity ex-US Index Fund	5.3	-4.4	-4.2	15.4	18.2
MSCI ACWI ex USA IMI	*4.4*	*-4.6*	*-3.9*	*15.8*	*17.0*
Global Real Estate Securities Index Fund	3.5	0.2	15.5	2.7	28.9
FTSE EPRA/NAREIT Dev Liquid	*2.4*	*-0.5*	*15.0*	*2.5*	*27.5*
Long Government Bond Index Fund	1.4	-1.1	24.6	-12.5	3.8
BB Barclays Long Government	*1.4*	*-1.2*	*24.7*	*-12.5*	*3.8*
Bond Index Fund	2.6	0.6	6.0	-2.1	4.2
BB Barclays U.S. Agg.	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
Inflation Protected Bond Index Fund	4.6	-1.4	3.6	-8.6	6.9
BB Barclays U.S. TIPS	*4.7*	*-1.4*	*3.6*	*-8.6*	*7.0*
High Yield Bond Index Fund	16.5	-5.2	2.1	6.6	14.8
BB Barclays U.S. High Yield Very Liquid	*16.6*	*-5.3*	*2.1*	*6.6*	*15.4*
U.S. Short-Term Gov/Credit Index Fund	1.2	0.6	0.7	0.6	3.9
BB Barclays 1-3 Yr Govt/Credit	*1.3*	*0.7*	*0.8*	*0.6*	*1.3*

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.

Benchmarks for the Funds are noted in italics below the Fund names.

MN STATE 457 DEFERRED COMPENSATION PLAN
FUND OPTIONS

	March 31, 2017 Market Value	Percent	December 31, 2016 Market Value	Percent
Fixed Income	**$495,933,161**	**7.9%**	**$492,328,818**	**8.1%**
Dodge & Cox Income Fund	$221,834,617	3.5%	$215,942,973	3.6%
Vanguard Total Bond Market Index Inst.	$203,400,633	3.2%	$208,511,852	3.4%
Money Market	$70,697,911	1.1%	$67,873,993	1.1%
Stable Value	**$1,360,236,289**	**21.7%**	**$1,356,788,939**	**22.4%**
Galliard Stable Value Composite	$1,360,236,289	21.7%	$1,356,788,939	22.4%
Large Cap Equity	**$1,666,216,790**	**26.5%**	**$1,584,914,728**	**26.2%**
Vanguard Dividend Growth	$547,480,678	8.7%	$523,011,275	8.6%
Vanguard Institutional Index Plus	$1,118,736,111	17.8%	$1,061,903,454	17.6%
Mid Cap Equity	**$489,108,898**	**7.8%**	**$458,325,491**	**7.6%**
Vanguard Mid-Cap Index	$489,108,898	7.8%	$458,325,491	7.6%
Small Cap Equity	**$649,967,188**	**10.4%**	**$633,134,281**	**10.5%**
T. Rowe Price Small-Cap Stock	$649,967,188	10.4%	$633,134,281	10.5%
Balanced	**$733,741,758**	**11.7%**	**$711,414,371**	**11.8%**
Vanguard Balanced Index Inst. Fund	$733,741,758	11.7%	$711,414,371	11.8%
International	**$430,204,585**	**6.9%**	**$404,769,454**	**6.7%**
Fidelity Diversified International	$264,165,420	4.2%	$254,421,266	4.2%
Vanguard Total International Stock Index	$166,039,165	2.6%	$150,348,188	2.5%
Target Retirement Funds (1)	**$451,093,636**	**7.2%**	**$405,597,466**	**6.7%**
Income Fund	$74,558,237	1.2%	$71,433,140	1.2%
2020 Fund	$100,071,504	1.6%	$91,541,248	1.5%
2025 Fund	$86,247,632	1.4%	$76,792,957	1.3%
2030 Fund	$57,074,360	0.9%	$50,984,179	0.8%
2035 Fund	$44,260,990	0.7%	$38,927,981	0.6%
2040 Fund	$30,649,319	0.5%	$25,879,551	0.4%
2045 Fund	$24,722,507	0.4%	$21,236,662	0.4%
2050 Fund	$17,256,830	0.3%	$15,033,723	0.2%
2055 Fund	$8,918,657	0.1%	$7,524,215	0.1%
2060 Fund	$7,333,600	0.1%	$6,243,808	0.1%

(1) Target Retirement Funds is a deferred comp option also offered in the Unclassified Plan. The Target Date Funds were first offered in the Unclassified Plan as of July 1, 2015.

MINNESOTA COLLEGE SAVINGS PLAN
STATIC OPTIONS (1)
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception (1)
Equity					
MNCSP US Intl Equity Allocation	6.1	14.7	6.9	10.2	6.6
MNCSP US Intl Equity Allocation Bnmk	6.1	15.3	7.2	10.5	7.6
MNCSP Equity Interest Allocation	3.1	9.4	--	--	5.0
MNCSP Equity Interest Allocation Bnmk	2.9	8.9	--	--	4.6
MNCSP Intl Eq Index Allocation	8.6	13.0	0.6	--	3.4
MNCSP Intl Eq Index Allocation Bnmk	8.1	12.9	0.6	--	3.6
MNCSP US LC Equity Allocation	6.0	16.9	--	--	9.9
MNCSP US LC Equity Allocation Bnmk	6.1	17.2	--	--	10.1
Fixed Income					
MNCSP Fixed Income Allocation	1.0	1.6	2.4	1.7	3.7
MNCSP Fixed Income Allocation Bnmk	1.0	1.9	2.8	2.1	4.4
MNCSP Principal Interest Allocation	0.3	1.4	1.3	1.3	2.6
MNCSP Principal Interest Allocation Bnmk	0.1	0.3	0.1	0.1	1.3
MNCSP Money Market Allocation	0.1	0.2	0.1	0.0	0.3
MNCSP Money Market Allocation Bnmk	0.1	0.1	0.1	0.0	0.3

(1) Since retention by the SBI. Time periods varies for each option

MINNESOTA COLLEGE SAVINGS PLAN
ALLOCATION OPTIONS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception(1)
Allocation Options					
MNCSP Aggressive Allocation	5.3	12.2	--	--	5.7
MNCSP Aggressive Allocation Bnmk	5.1	12.5	--	--	6.0
MNCSP Moderate Allocation	4.2	9.6	5.2	6.9	4.9
MNCSP Moderate Allocation Bnmk	4.1	9.8	5.5	7.2	5.6
MNCSP Conservative Allocation	2.4	5.4	--	--	2.8
MNCSP Conservative Allocation Bnmk	2.3	5.4	--	--	2.8
Managed Allocation Options					
MNCSP Managed 0-4 Yrs	5.2	12.1	--	--	5.8
MNCSP Managed 0-4 Yrs Bnmk	5.1	12.5	--	--	6.0
MNCSP Managed 5-8 Yrs	4.7	10.8	--	--	5.3
MNCSP Managed 5-8 Yrs Bnmk	4.6	11.2	--	--	5.5
MNCSP Managed 9-10 Yrs	4.1	9.6	--	--	4.8
MNCSP Managed 9-10 Yrs Bnmk	4.1	9.8	--	--	5.1
MNCSP Managed 11-12 Yrs	3.6	8.3	--	--	4.3
MNCSP Managed 11-12 Yrs Bnmk	3.5	8.4	--	--	4.5
MNCSP Managed 13-14 Yrs	3.0	6.9	--	--	3.7
MNCSP Managed 13-14 Yrs Bnmk	3.0	7.0	--	--	3.9
MNCSP Managed 15 Yrs	2.5	5.5	--	--	3.2
MNCSP Managed 15 Yrs Bnmk	2.3	5.4	--	--	3.1
MNCSP Managed 16 Yrs	2.1	4.8	--	--	2.8
MNCSP Managed 16 Yrs Bnmk	2.0	4.6	--	--	2.7
MNCSP Managed 17 Yrs	1.8	4.1	--	--	2.5
MNCSP Managed 17 Yrs Bnmk	1.6	3.8	--	--	2.2
MNCSP Managed 18+ Yrs	1.4	3.4	--	--	2.2
MNCSP Managed 18+ Yrs Bnmk	1.3	3.0	--	--	1.8

(1) Since retention by the SBI. Time period varies for each option.

MINNESOTA COLLEGE SAVINGS PLAN
ALLOCATION OPTIONS UNDERLYING FUNDS
Periods Ended March 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
TIAA-CREF:Bond Indx;Inst	0.9	0.1	2.6	2.2	--
BB Barclays U.S. Agg.	0.8	0.4	2.7	2.3	4.3
TIAA-CREF:EM Eq Idx;Inst	12.1	17.5	1.2	0.6	--
MSCI:EM Gross	11.5	17.7	1.5	1.2	3.0
TIAA-CREF:Eq Idx;Inst	5.7	18.0	9.7	13.1	7.5
Russell 3000 Index	5.7	18.1	9.8	13.2	7.5
TIAA-CREF:Hi-Yld;Inst	1.7	15.2	4.3	6.3	7.1
ML:1-3 BB US HY CP	1.0	7.2	3.8	5.3	6.5
TIAA-CREF:Infl Bond;Inst	1.0	1.1	1.5	0.6	3.8
BB Barclays U.S. TIPS Index	1.3	1.5	2.0	1.0	4.2
TIAA-CREF:Itl Eq Ix;Inst	7.8	12.2	0.6	6.0	1.2
MSCI:EAFE	7.2	11.7	0.5	5.8	1.1
TIAA-CREF:Money Mkt;Inst	0.1	0.3	0.1	0.1	0.8
MFR Avg All-Taxble	0.2	0.5	0.3	0.2	0.7
TIAA-CREF:Real Est;Inst	2.7	2.8	10.0	9.3	4.2
FTSE:NAREIT All Eq Index	2.5	5.3	10.6	10.3	5.0
TIAA-CREF:S&P500 Idx;Ins	6.0	17.1	10.3	13.2	7.4
S&P 500 Index	6.1	17.2	10.4	13.3	7.5

MINNESOTA COLLEGE SAVINGS PLAN
FUND OPTIONS

	March 31, 2017 Market Value	Percent	December 31, 2016 Market Value	Percent
Fixed Income	**$132,203,445**	**10.3%**	**$130,316,283**	**10.5%**
MNCSP Fixed Income Allocation	$12,785,856	1.0%	$12,271,093	1.0%
MNCSP Principal Interest Allocation	$110,226,233	8.5%	$109,396,676	8.8%
MNCSP Money Market Allocation	$9,191,356	0.7%	$8,648,514	0.7%
Equity	**$304,843,635**	**23.6%**	**$288,340,613**	**23.2%**
MNCSP US Intl Equity Allocation	$285,703,729	22.2%	$272,671,257	22.0%
MNCSP Equity Interest Allocation	$1,913,123	0.1%	$1,417,668	0.1%
MNCSP Intl Eq Index Allocation	$2,766,476	0.2%	$2,455,939	0.2%
MNCSP US LC Equity Allocation	$14,460,307	1.1%	$11,795,749	0.9%
Allocation Options	**$77,524,345**	**6.0%**	**$71,647,359**	**5.8%**
MNCSP Aggressive Allocation	$13,027,991	1.0%	$11,225,108	0.9%
MNCSP Moderate Allocation	$58,144,499	4.5%	$55,428,045	4.5%
MNCSP Conservative Allocation	$6,351,855	0.5%	$4,994,206	0.4%
Managed Allocation Options	**$774,902,503**	**60.1%**	**$751,419,330**	**60.5%**
MNCSP Managed 0-4 Yrs	$26,930,098	2.1%	$24,886,008	2.0%
MNCSP Managed 5-8 Yrs	$70,175,887	5.4%	$69,433,908	5.6%
MNCSP Managed 9-10 Yrs	$70,565,490	5.5%	$69,723,531	5.6%
MNCSP Managed 11-12 Yrs	$102,152,138	7.9%	$100,836,932	8.1%
MNCSP Managed 13-14 Yrs	$138,456,567	10.7%	$134,059,123	10.8%
MNCSP Managed 15 Yrs	$71,096,858	5.5%	$68,853,652	5.5%
MNCSP Managed 16 Yrs	$69,631,376	5.4%	$65,870,851	5.3%
MNCSP Managed 17 Yrs	$64,644,689	5.0%	$62,665,569	5.0%
MNCSP Managed 18+ Yrs	$161,249,400	12.5%	$155,089,756	12.5%

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DATE: May 8, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: SBI Statement of Investment Beliefs Project

Over the course of the past decade, many institutional investor organizations, similar to the State Board of Investment (SBI), have undertaken a process of developing a Statement of Investment Beliefs. Investment Beliefs are (explicit or implicit) principles held by an organization that inform decisions which can be an effective tool for decision-making and clarifying roles and responsibilities. The general categories of Investment Beliefs focus on:

- investment objectives and strategies
- capital markets
- the investment decision process
- governance

The Executive Director has engaged the SBI's Special Projects Consultant, Pension Consulting Alliance (PCA), to assist the organization in the development of the Statement of Investment Beliefs. PCA has significant experience in assisting large public pension funds to develop Investment Beliefs for their organizations. It is contemplated that a cross-section of SBI stakeholders (Board members/designees, Investment Advisory Council (IAC) members, Staff members) will be asked to participate in this process.

The Executive Director and PCA have begun discussions to determine the process which will be used to perform the project. It is anticipated that the project will occur early in Fiscal Year 2018. Current plans are to engage selected stakeholders in June and July, with a presentation given to the IAC in August, and a final recommendation be presented to the Board for adoption at its September 2017 SBI meeting.

PCA will give a brief introductory presentation at the IAC meeting to address the project. Attached is a copy of their presentation.

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INVESTMENT BELIEFS PROJECT INTRODUCTION

Minnesota State Board of Investment

May 2017

PCA
PENSION
CONSULTING
ALLIANCE

Agenda

1. Investment beliefs defined

2. Importance of well-designed investment beliefs

3. Why now?

4. Implications

5. Next steps

PENSION CONSULTING ALLIANCE

What are Investment Beliefs of an Organization?

Definition: Explicit or implicit principles held by an organization that inform decisions

- Pension Funds can formulate investment beliefs as an effective tool[1]:
  - for decision making
  - for clarifying roles and responsibilities

- Four general categories of investment beliefs[2]:
  1. Beliefs about investment objectives and strategy (e.g., risk profile / long-term expectations)
  2. Beliefs about capital markets (e.g., risk premia, efficiency, diversification)
  3. Beliefs about investment decision process (e.g., insourcing versus outsourcing, costs)
  4. Beliefs about corporate governance, sustainability, etc.

[1] Clark and Urwin, 2007; Laboul and Yermo, 2006.
[2] Koedijk and Slager, "Do Institutional Investors Have Sensible Investment Beliefs?" pages 12-20, Rotman International Journal of Pension Management (spring 2009, volume 2, issue 1).

Importance of Well-Defined Investment Beliefs

Investment beliefs impact everything:

1. Dictate the look and behavior of the portfolio
2. Provide clarity in assessing the investment policy options available
3. Answer resource allocation trade-off questions
4. Are the prism through which portfolio performance is evaluated
5. Prepare the decision makers against potential future criticism

Therefore, investment beliefs should:

- Be based on sound theory, supported by empirical evidence
- Provide a clear basis for assessment and eventual action
- Be implementable given the organizational structure / constraints

Why Address the Investment Beliefs of the SBI Now?

- Forum for Staff and the SBI/IAC to consider policy revisions and/or new strategic initiatives
- Best practices in light of increased economic and market volatilities
- Helps bring consistency to existing governance documents

Why Address the Investment Beliefs of the SBI Now?

Forum for Staff and SBI/IAC to consider policy revisions and/or new strategic initiatives:

- CIO/Staff can present vision, philosophy, capital market investment views
- IAC can/may provide feedback
- Guide asset-liability analysis:
  1. Asset-liability analyses require a basis for decision making
  2. The basis for decision making should be consistent with beliefs
  3. Beliefs should precede asset-liability analysis

Why Address the Investment Beliefs of the SBI Now?

Best practices in light of increased economic and market volatilities:

- World's most sophisticated plan sponsors now on second and third generations of codified investment beliefs

- Investment beliefs impact:
  1. Significant changes in strategic asset allocation
  2. Incorporate governance issues in investment policy
  3. Inform cost-benefit decision making
  4. Frame and clarify the big picture

Why Address the Investment Beliefs of the SBI Now?

Helps bring consistency to existing governance documents:

- Existing documents contain elements of investment beliefs, but may exhibit inconsistencies

- The process of clarifying and documenting investment beliefs:
  1. Does not replace these documents, they will still be necessary
  2. Beliefs will provide insight into <u>where</u> and <u>how</u> to invest the Fund
  3. Should drive <u>what</u> Staff proposes to do and how you evaluate it
  4. May certainly alter the <u>who</u> and the <u>what</u> detailed in these documents

- Beliefs set a foundation for current governance practices

PCA PENSION CONSULTING ALLIANCE

Potential Implications of this Belief Clarification Process

1. Provide a policy basis for investment decision making
2. Potentially impact the asset liability analysis
3. Potentially impact policy asset allocation (might look very different)
4. Potentially alter policy targets and ranges
5. Reporting should incorporate investment beliefs
6. Align staff / organizational structure to reflect investment beliefs
7. Change and/or confirm priority of projects

PENSION CONSULTING ALLIANCE

Summary - Investment Beliefs Drive Implementation / Policy

Order of determination

- Investment beliefs
    - Where you invest, how you organize, decision criteria
        - Metrics, benchmarks, protocol, policies and procedures, constraints

Next Steps

May – August, 2017:

- Work closely with SBI Staff to develop draft set of investment beliefs
- Survey/poll selected decision-makers to provide comment on beliefs

August 2017:

- Present final draft of investment belief statements
- SBI approves set of investment belief statements

PCA PENSION CONSULTING ALLIANCE