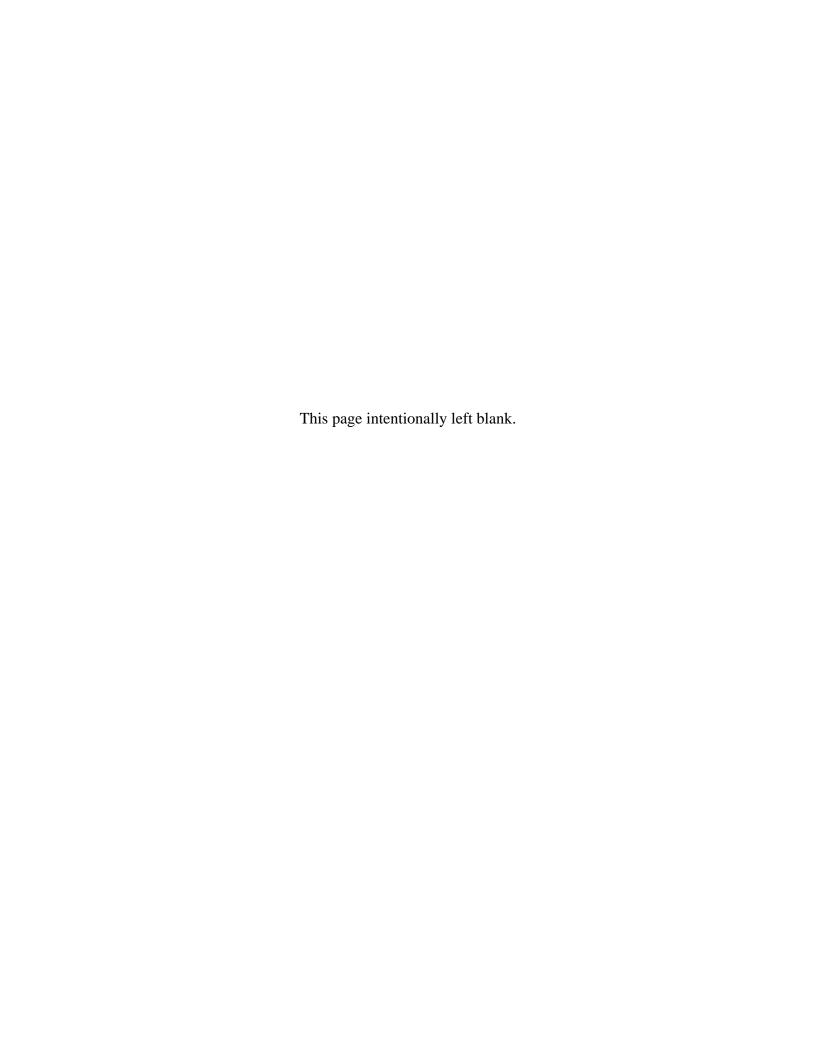
AGENDA INVESTMENT ADVISORY COUNCIL MEETING

Monday, August 14, 2017 12:00 P.M.

State Board of Investment Retirement Systems Building Room 106 – Main Floor 60 Empire Drive, St. Paul, MN

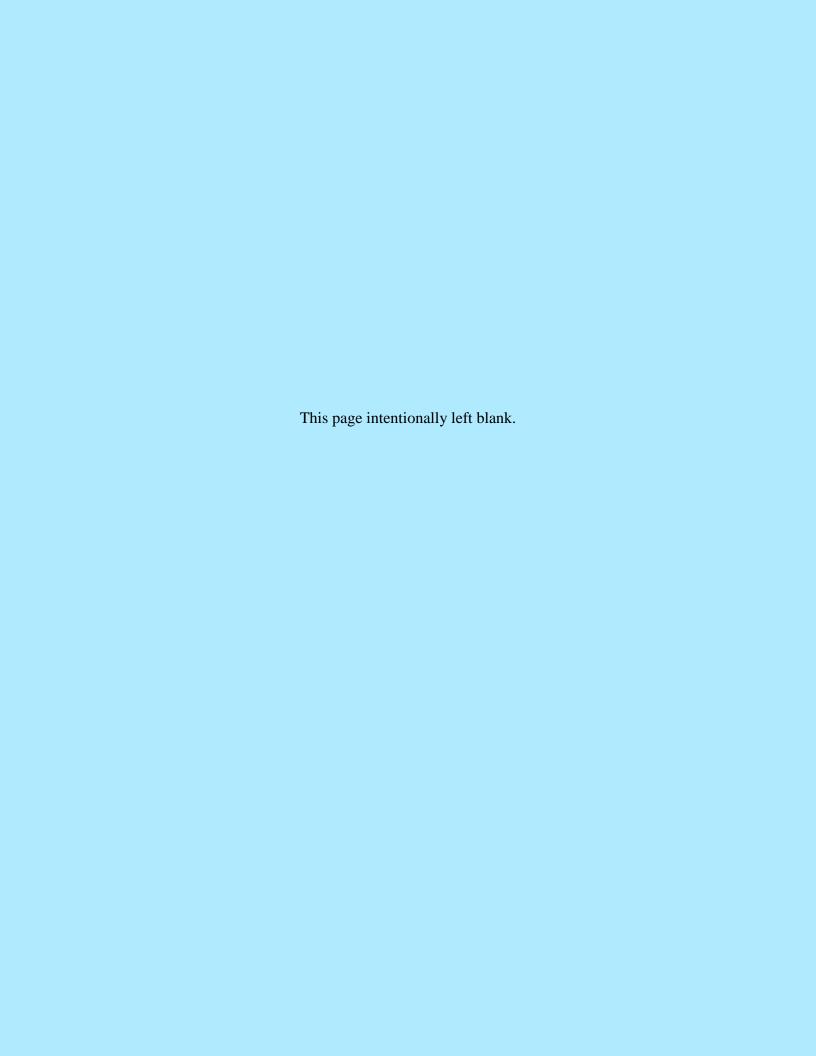
1.	Approval of Minutes of May 15, 2017	TAB
2.	Report from the Executive Director	
	A. Quarterly Performance Summary (April 1, 2017 – June 30, 2017)	A
	 B. Administrative Report 1. Reports on Budget and Travel 2. Sudan Update 3. Iran Update 4. Litigation Update 	В
	C. Investment Manager Update	C
3.	Private Markets Report and New Commitment Proposals	D
	 A. Review of current strategy B. Market Review C. Status of SBI Current Private Markets Commitments D. Consideration of Investment Commitments 	
4.	Executive Director's Response to the Consultant Combined Fund Portfolio Review	E
5.	Proposed Statement of Investment Beliefs for the SBI	\mathbf{F}
6.	Public Markets Report	G
7.	Comprehensive Performance Report	Н
8.	Other Items	



INVESTMENT ADVISORY COUNCIL

MINUTES

August 14, 2017



Minutes Investment Advisory Council May 15, 2017

The Investment Advisory Council (IAC) met at 12:00 P.M. on Monday, May 15, 2017 in Room 106 – Main Floor, 60 Empire Drive, St. Paul, Minnesota.

MEMBERS PRESENT: Denise Anderson, Dennis Duerst, Kim Faust, Susanna Gibbons,

Laurie Hacking, Jennifer Hassemer (for Myron Frans), Peggy Ingison, Erin Leonard, Gary Martin, Malcolm McDonald, Carol

Peterfeso and Shawn Wischmeier.

MEMBERS ABSENT: Doug Anderson, Kerry Brick, Morris Goodwin Jr.

SBI STAFF: Mansco Perry, LeaAnn Stagg, Paul Anderson, Nate Blumenshine,

Cassie Boll, Tammy Brusehaver, Stephanie Gleeson, Aaron Griga, Andrew Krech, Mike Menssen, John Mulé, Jonathan Stacy,

Charlene Olson and Melissa Mader.

OTHERS ATTENDING: Kristen Doyle and Chris Tucek, Aon Hewitt Investment Consulting,

Inc.; Neil Rue, Pension Consulting Alliance; Bert Black, Secretary of State's Office; Christie Eller and Jeff Weber, Attorney General's Office; Sumee Lee, Office of the Governor; Ramona Advani, State Auditor's Office; Edgar Hernandez, SEIU; Rick Baert, Pensions &

Investments; and Marc Dietrich, Morgan Stanley.

Mr. McDonald, Vice Chair of the IAC, called the meeting to order and promptly nominated Gary Martin and Kim Faust for IAC Chair and IAC Vice Chair, respectively. Ms. Gibbons seconded. The motion passed unanimously.

Mr. Martin introduced the minutes as the first order of business. The minutes of the February 13, 2017 meeting were approved.

Mr. Perry introduced the SBI's new consultants. He reminded the Committee that in December 2016, the Board retained Aon Hewitt Investment Consulting Inc. (AON) as the Board's general investment consultant and Pension Consulting Alliance (PCA) as the Board's special projects consultant. Kristen Doyle, Aon Hewitt Investment Consulting Inc., introduced herself as the head of AON's public funds practice and the lead consultant of some of AON's largest public fund clients. She noted her twelve years of experience with the firm. Chris Tucek introduced himself, highlighting his twenty years of consulting experience with both public and corporate clients. Ms. Doyle stated that Steve Cummings, head of AON's North American business, was unable to attend this meeting but looked forward to attending the IAC meeting next quarter.

Ms. Doyle presented background of the firm which has about two trillion in assets under advisement. She emphasized that seventy percent of AON's assets under advisement are with forty public funds, the majority of which are defined benefit plans. She also noted that AON has

a global presence, with investment manager research teams located in Chicago, New York and London. She indicated that the first project AON will be working on with the SBI is a high-level review of the asset allocation and structure of SBI's Combined Funds. AON will draw on the resources of both their investment policy and global asset teams during this review.

Neil Rue, Managing Director at PCA, introduced himself stating that he has thirty years of experience in the consulting business, twenty-five of them at PCA. He indicated that PCA has had a 30 year relationship with the SBI. He also noted that either he, Allan Emkin, founder of PCA, or John Burns, Managing Director at PCA, will be attending the IAC quarterly meetings going forward and that they appreciate the expanded relationship with the SBI.

Executive Director's Report

Mr. Perry referred members to Tab B 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 6.3% vs. Composite 6.1%) and had provided a real rate of return of 5.5 percentage points above inflation over the latest 20 year period (Combined Funds 7.6% vs. CPI 2.1%).

Mr. Perry stated that assets increased over the quarter (Combined Funds ending value of \$62.4 versus a beginning value of \$59.9 billion). The Combined Funds matched the benchmark for the quarter (Combined Funds 5.0% vs. Composite 5.0%) and were 10 bps ahead of the benchmark for the year (Combined Funds 12.5% vs. Composite 12.4%). The Combined Funds underperformed over the three-year period but outperformed in all other time periods reported.

Mr. Perry reported that the combined public equity performance matched the benchmark during the quarter (Public Equity 6.4% vs. Composite 6.4%). Breaking it down between domestic and international equities, Mr. Perry said that the domestic stock manager group outperformed its benchmark for the quarter (Domestic Stocks 5.9% vs. Domestic Equity Asset Class Target 5.7%) and matched the benchmark for the year (Domestic Stocks 18.1% vs. Domestic Equity Asset Class Target 18.1%). He stated that the international stock manager group underperformed its target for the quarter (International Stocks 7.5% vs. International Equity Asset Class Target 7.9%) and for the year (International Stocks 11.9% vs. International Equity Asset Class Target 13.1%). Mr. Perry indicated that the bond segment outperformed its benchmark for the quarter (Bonds 1.0% vs. Fixed Income Asset Class Target 0.8%) and the year (Bonds 1.6% vs. Fixed Income Asset Class Target 0.4%), 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 5.3% and 13.8%, respectively). Mr. Perry concluded his report noting that, as of March 31, 2017, the SBI was responsible for managing over \$85.3 billion of assets.

Mr. Perry referred members to Tab C of the meeting materials for the Administrative Report. He reported that, inclusive of travel, the SBI finished ahead of the budget for the quarter. Mr. Perry noted that cities and counties in Minnesota have sought legislative approval to allow them to invest in the SBI's non-retirement equity funds. He also noted that several legislative items, including Payments in Lieu of Taxes (PILTs), a Rural Policy Development Investment Fund, and a change to the SBI's Information Technology Services exemption, seemed unlikely to pass. Ms. Hacking, Executive Director of Teachers Retirement Association (TRA), added that the Omnibus pension bill was in a state of flux and it was unclear if any pension bill would be passed this session.

Mr. Perry informed members that Tab C contained updated information for Sudan and Iran restricted stocks. Finally, Mr. Perry noted that there was currently no litigation involving the SBI.

In Tab D, Mr. Perry provided members with what he expects will be the final update on the transition of the Combined Funds to the new asset allocation policy. He stated that as of the beginning of the third quarter of the fiscal year, the SBI completed the transition to the new asset allocation targets as well as the transition to the new two-thirds, one-third allocation between U.S. and Non-U.S. public equities. Mr. Perry added that the fund has continued to increase its exposure to passive investment management (75% of U.S. equities and 55% of Non-U.S. equities). As part of this transition, several large cap growth, large cap value, and semi-passive investment managers were defunded. Mr. Perry asked the IAC members to endorse his recommendation that the Board terminate INTECH Investment Management (U.S. equity large cap growth and semi-passive mandates), Systematic Financial (U.S. equity large cap value), Next Century Growth (U.S. equity small cap growth), and Jacobs Levy Equity Management (U.S. equity large cap growth). He also requested that the IAC endorse his recommendation that the Board give him the authority to terminate investment manager contracts in order to settle outstanding issues with a defunded manager. Mr. McDonald moved approval of the recommendations and Ms. Gibbons seconded the motion. After a brief discussion, the motion passed unanimously.

Mr. Perry referred members to Tab E of the meeting materials which included a recommendation to transfer the internally managed S&P 500 equity index fund and the internal bond fund to external investment managers. These funds have been used to invest non-retirement assets under the SBI's control. While staff has had a good track record, Mr. Perry indicated that for risk management purposes, such as staff turnover and minimal systems back-up, as well as the fact that internal asset management is not a core business of the SBI staff, he recommends the assets be managed externally. Mr. Perry recommended the S&P 500 equity index fund be managed by Mellon Capital Management and the bond fund be managed by Prudential Global Investment Management. Ms. Stagg presented summary information about both firms. After some discussion, Ms. Faust moved approval of the recommendation and Ms. Peterfeso seconded the motion. The motion passed unanimously. Mr. Perry then asked the IAC to endorse his recommendation to the Board to authorize staff to develop a balanced fund to be made available for the non-retirement entities. After some discussion, Ms. Hacking moved approval of the recommendation and Ms. Faust seconded the motion. The motion passed unanimously.

Mr. Perry referred members to Tab F of the meeting materials, a summary of the Administrative Committee meeting held on April 28, 2017. The committee met to review the SBI Executive Director's Proposed Work Plan for FY18, the Budget Plan for FY18 and FY19, the Continuing Fiduciary Education Plan, the Executive Director's Evaluation Process, and an update of the Business Continuity Plan. Mr. Perry indicated that the Administrative Committee Report would go directly from that committee to the Board, with an endorsement from the IAC. He reviewed several of his upcoming work plans with the committee members, and answered various questions. Mr. Perry also reviewed the Budget Plan for FY18 and FY19, the Continuing Fiduciary Education Plan and the Executive Director's Evaluation Process and requested the IAC's endorsement. Mr. McDonald moved approval of all items and Ms. Gibbons seconded the motion. The motion passed unanimously.

Mr. Perry referred members to Tab G of the meeting materials, the Private Markets Report. He reminded the IAC that, going forward, the private markets presentation will be more succinct and

that committee members will no longer receive, except upon request, the private placement memorandum (PPM) for each proposed investment due to the non-public nature of the information. Mr. Krech listed the proposed private investments, the first four of which are with existing investment managers: Lexington Partners CIP IV (Private Equity), KKR Lending Partners KKRLP III (Private Credit), Avenue Energy Opportunities Fund II (Private Credit), Nordic Capital Fund IX (Private Equity), Asia Alternatives AACP V (Private Equity), BlackRock GRP II (Resource), and Lubert-Adler Fund VII-B (Real Estate). Mr. Krech, Mr. Stacy and Ms. Boll responded to questions from committee members. After discussion, Mr. McDonald moved approval of the seven recommendations and Ms. Peterfeso seconded the motion. The motion passed unanimously.

Mr. Perry referred members to Tab H of the meeting materials and the report regarding public markets. Mr. Blumenshine presented a sample of the new reporting format to committee members and explained that the new format of performance reports will be introduced next quarter.

Mr. Perry referred members to Tab I of the meeting materials, for a report from PCA regarding the upcoming SBI Statement of Investment Beliefs Project. Mr. Rue described the purpose and scope of the project, which has become a focus for many investment organizations post financial crisis. Mr. Rue envisions the end result as a ten-point statement of the SBI Investment Beliefs that will help define and document the SBI's investment policies and provide a foundation for its portfolio implementation.

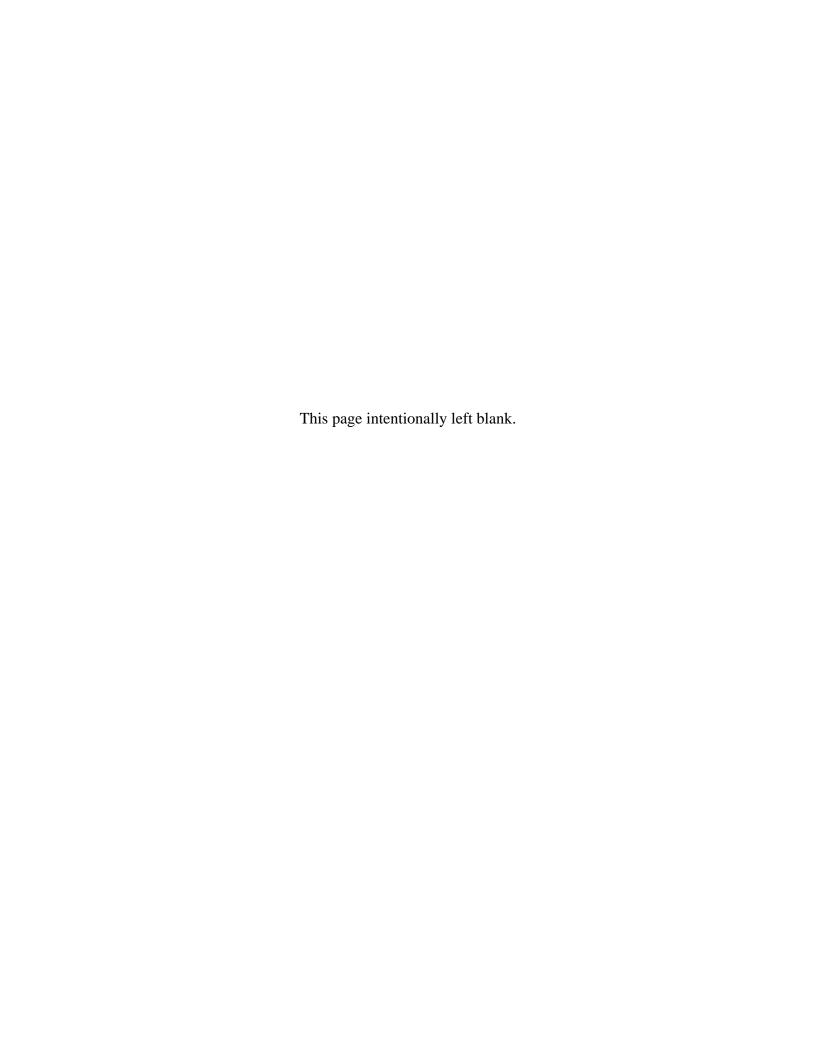
The meeting adjourned at 2:22 p.m.

Respectfully submitted,

Mansco Perry III

Executive Director and Chief Investment Officer

TAB A





Performance Summary June 30, 2017



Match or Exceed Composite Index (10 yr.)



Combined Funds Long Term Objectives

	10 Year
	6.2%

Comparison to Objective

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.

COMBINED FUNDS	6.2%
COMBINED FUNDS - COMPOSITE INDEX	6.0
Excess	0.2

		20 Year
Provide Real Return (20 yr.)	COMBINED FUNDS	7.2%
	CPI-U	2.1
Provide returns that are 3-5 percentage points greater than inflation over the latest 20 year period.	Excess	5.1

Note:

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





Combined Funds Summary

Combined Funds Change in Market Value (\$Millions)

•	One Quarter
COMBINED FUNDS	
Beginning Market Value	\$62,351
Net Contributions	-561
Investment Return	2,326
Ending Market Value	64,116

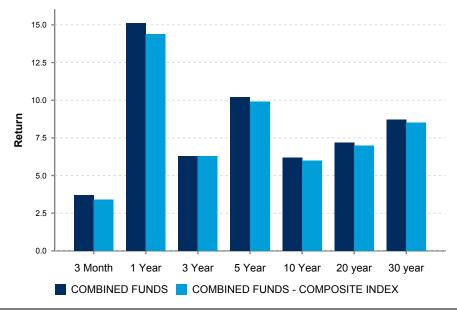
The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.

Performance (Net of Fees)

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

	<u>Qtr</u>	FYTD	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>20 Yr</u>	<u>30 Yr</u>
COMBINED FUNDS	3.7%	15.1%	15.1%	6.3%	10.2%	6.2%	7.2%	8.7%
COMBINED FUNDS - COMPOSITE INDEX	3.4	14.4	14.4	6.3	9.9	6.0	7.0	8.5
Excess	0.3	0.8	0.8	-0.1	0.3	0.2	0.2	0.2







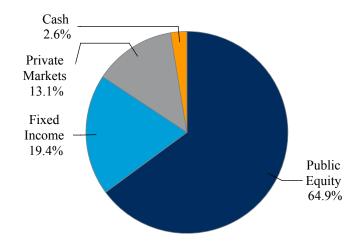
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Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in Public Equity. The current Strategic Asset Allocation Policy Target became effective on 7/1/2016.

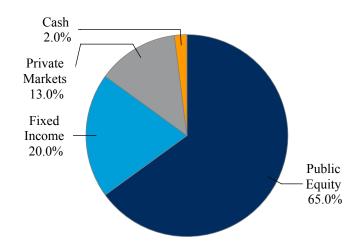
	(Millions)	Actual Mix	Policy Target
Public Equity	\$41,607	64.9%	58.0%
Fixed Income	12,425	19.4	20.0
Private Markets	8,409	13.1	20.0
Cash	1,675	2.6	2.0
TOTAL	64,116	100.0	



Composite Index Comparison

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target with the uninvested portion of Private Markets allocated to Public Equity. Asset class weights for Public Equity and Private Markets are reset at the start of each month. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

	Target Weight	Market Index
Public Equity	65.0%	69% Russell 3000/31% MSCI ACWI ex US
Fixed Income	20.0	BB Barclays U.S. Aggregate
Private Markets	13.0	Private Markets
Cash	2.0	3 Month T-Bills







Combined Funds Asset Class Performance Summary

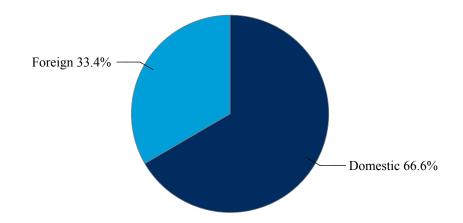
Public Equity

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

The Public Equity benchmark is 67% Russell 3000 and 33% MSCI ACWI ex USA.

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

The Morgan Stanley Capital International All Country World Index ex U.S. (net) is a free float-adjusted market capitalization index that is designed to measure equity market performance in developed and emerging markets other than the United States.



	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Public Equity	4.2%	19.9%	19.9%	7.0%	13.0%	5.9%	6.7%
Public Equity Benchmark	3.9	19.2	19.2				
Excess	0.4	0.6	0.6				
Domestic Equity	3.1	19.4	19.4	8.7	14.5	7.1	7.1
Domestic Equity Benchmark	3.0	18.5	18.5	9.1	14.6	7.3	7.2
Excess	0.1	0.9	0.9	-0.4	-0.0	-0.1	-0.1
International Equity	6.6	20.2	20.2	1.5	8.0	1.6	4.9
International Equity Benchmark	5.8	20.5	20.5	0.8	7.2	1.2	4.5
Excess	0.8	-0.2	-0.2	0.7	0.8	0.4	0.4

Note:

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





Combined Funds Asset Class Performance Summary

Fixed Income

The Combined Funds Fixed Income performance is shown here.

The Fixed Income benchmark is the Bloomberg Barclays U.S. Aggregate Index. This index 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.

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Fixed Income	1.6%	0.9%	0.9%	2.9%	2.9%	4.9%	5.6%
BBG BARC Agg Bd	1.4	-0.3	-0.3	2.5	2.2	4.5	5.2
Excess	0.2	1.2	1.2	0.5	0.7	0.4	0.3

Cash

The Combined Funds Cash performance is shown here. Cash is held by the Combined Funds to meet the liquidity needs of the retirement systems to pay benefits.

The Combined Funds Cash benchmark is the 90-Day U.S. Treasury Bill.

	Last Qtr	FYTD	<u>1 Year</u>	3 Year	<u>5 Year</u>	10 Year	20 Year
Cash	0.3%	0.8%	0.8%	0.5%	0.4%	1.0%	2.7%
90 DAY T-BILL	0.2	0.5	0.5	0.2	0.2	0.6	2.2
Excess	0.1	0.3	0.3	0.2	0.2	0.4	0.5

Note:

For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.





Combined Funds Asset Class Performance Summary

Private Markets							
	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Total Private Markets	4.9%	19.7%	19.7%	8.9%	11.3%	9.0%	13.3%
Private Equity	5.4	18.7	18.7	12.6	14.1	10.9	14.0
Private Credit	5.2	20.0	20.0	14.4	14.6	11.1	13.2
Resources	3.9	27.3	27.3	-4.7	1.7	6.9	15.1
Real Estate	3.5	7.8	7.8	11.8	12.3	4.7	10.0

Private Markets

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

Private Equity Investments

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

Private Credit Investments

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

Resource Investments

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

Real Estate Investments

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

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



Combined Funds Summary



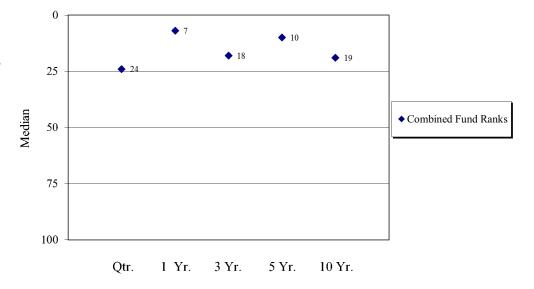
Performance Compared to Other Pension Funds

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

- Differing Allocations. Asset allocation will have a dominant effect on return. The allocation to stocks among the funds in TUCS typically ranges from 20-90%, a very wide range for meaningful comparison. In addition, it appears that many funds do not include alternative asset holdings in their reports to TUCS. This further distorts comparisons among funds.
- Differing Goals/Liabilities. Each pension fund structures its portfolio to meet its own liabilities and risk tolerance. This will result in different asset mix choices. Since asset mix will largely determine investment results, a universe ranking is not relevant to a discussion of how well a plan sponsor is meeting its long-term liabilities.

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

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



		Periods Ende	d 3/31/17			
	Quarter	1 Year	3 Years	5 Years	10 Years	
Combined Funds	24th	7th	18th	10th	19th	
Percentile Rank in TUCS						





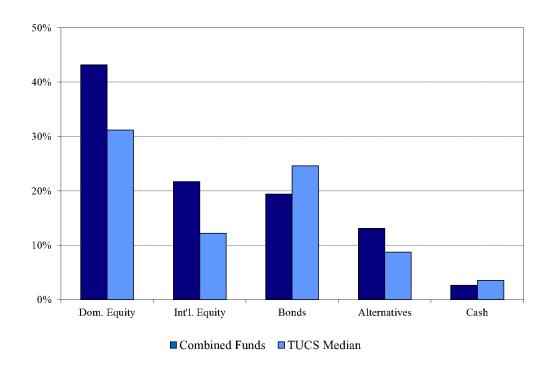
Combined Funds Summary

Asset Mix Compared to Other Pension Funds

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

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

Combined Funds Asset Mix				
	(\$Millions)	Actual Mix		
Public Equity	41,607	64.9		
Fixed Income	12,425	19.4		
Private Markets	8,409	13.1		
Cash	1,675	2.6		
TOTAL	64,116	100.0		



	Domestic Equity	International Equity	Bonds	Alternatives	<u>Cash</u>
Combined Funds	43.2%	21.7%	19.4%	13.1%	2.6%
Median in TUCS	31.2%	12.2%	24.6%	8.7%	3.5%



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Description of SBI Investment Programs

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

Combined Funds

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

Participant Directed Investment Program

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

Non-Retirement

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

State Cash

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

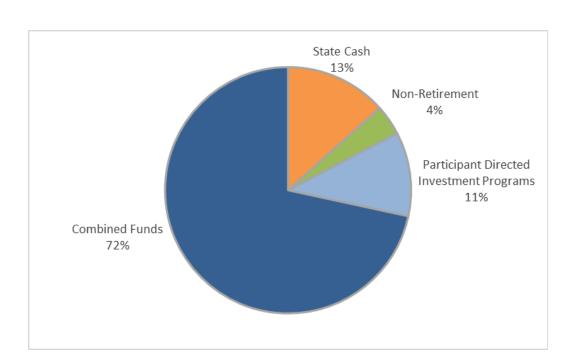


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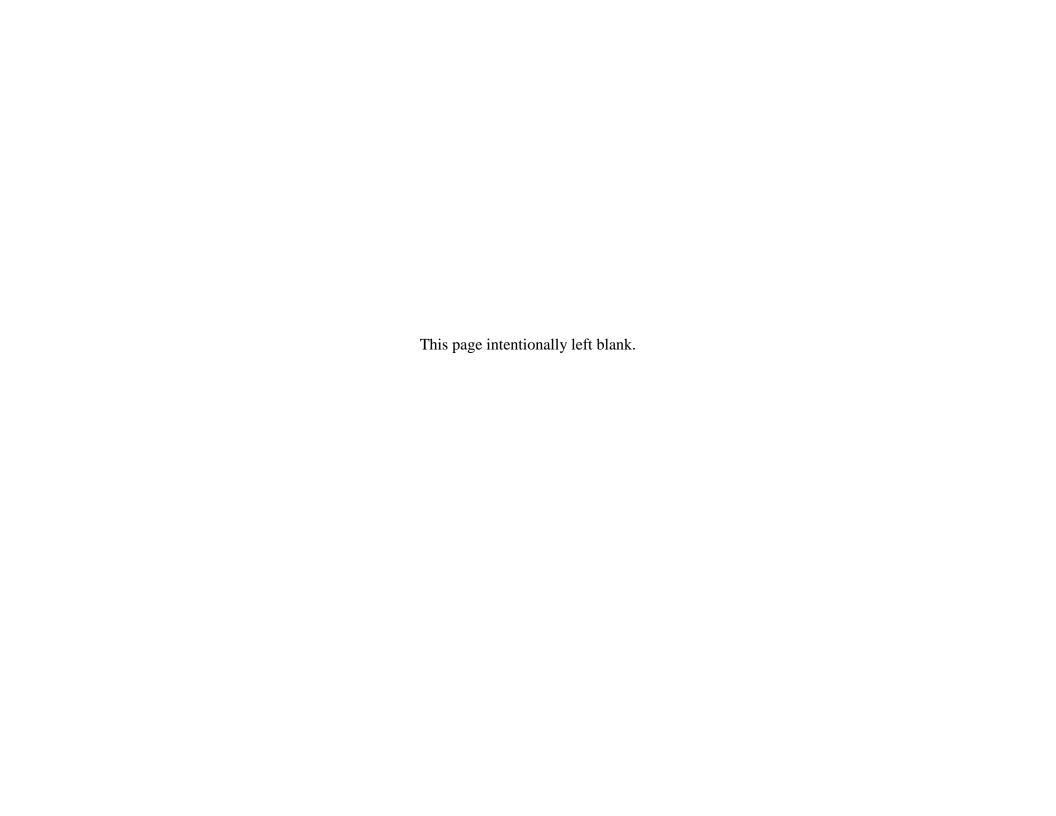
Funds Under Management

\$ Billions COMBINED FUNDS \$64.1 Combined Funds PARTICIPANT DIRECTED INVESTMENT PROGRAMS 2.1 Supplemental Investment Fund* 6.4 State Deferred Compensation Plan 1.3 Minnesota College Savings Plan 0.0 Achieve a Better Life Experience NON-RETIREMENT FUNDS 0.3 Assigned Risk Plan 1.3 Permanent School Fund 1.0 **Envrionmental Trust Fund** 0.1 Closed Landfill Investment Fund 0.2 Miscellaneous Trust Accounts 0.6 Other Post Employment Benefits Accounts STATE CASH ACCOUNTS 11.8 Invested Treasurer's Cash 0.1 Other State Cash Accounts 89.5 **TOTAL**

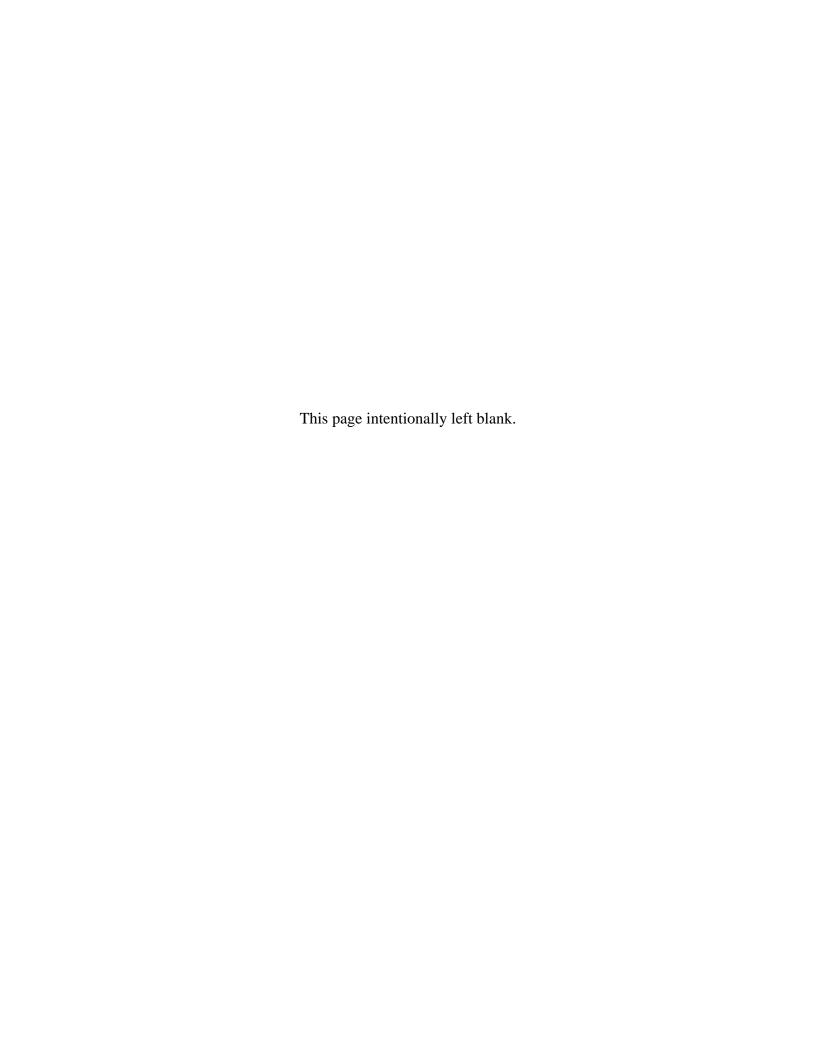
Note: Differentials within column amounts may occur due to rounding



^{*} Includes assets of smaller retirement funds which are invested with the SBI but are not included in the Combined Funds



TAB B



EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

DATE: August 7, 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 June 30, 2017 is included as **Attachment A.**

A report on travel for the period from April 1, 2017 – June 30, 2017 is included as **Attachment B**.

2. 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 second quarter, SBI managers sold 230,683 shares in one company on the divestment list.

Attachment C is a copy of the June 29, 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.

3. 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 second quarter, SBI managers sold 325,655 shares in two companies on the divestment list.

Attachment D is a copy of the June 29, 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.

4. 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 JUNE 30, 2017

	FISCAL YEAR	FISCAL YEAR	
Y000 /	2017	2017	
ITEM SERVICES	BUDGET	6/30/2017	
PERSONNEL SERVICES	A 4 0 2 0 7 0 0	h 2054 522	
FULL TIME EMPLOYEES	\$ 4,838,700	\$ 3,864,632	
PART TIME EMPLOYEES	0	0	
MISCELLANEOUS PAYROLL	100,000	10,993	
SUBTOTAL	\$ 4,938,700	\$ 3,875,624	
STATE OPERATIONS			
RENTS & LEASES	300,000	279,946	
REPAIRS/ALTERATIONS/MAINTENANCE	15,000	19,749	
PRINTING & BINDING	8,000	6,174	
PROFESSIONAL/TECHNICAL SERVICES	150,000	45,165	
COMPUTER SYSTEMS SERVICES	20,000	21,951	
COMMUNICATIONS	36,000	29,736	
TRAVEL, IN-STATE	1,000	218	
TRAVEL, OUT-STATE	119,000	69,650	
SUPPLIES	27,000	26,397	
EQUIPMENT	25,000	29,206	
EMPLOYEE DEVELOPMENT	35,000	53,467	
OTHER OPERATING COSTS	140,000	111,826	
INDIRECT COSTS	250,000	152,555	
SUBTOTAL	\$ 1,126,000	\$ 846,039	
TOTAL ADMINISTRATIVE BUDGET	\$ 6,064,700	\$ 4,721,663	

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ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date SBI Travel April 1, 2017 - June 30, 2017

Purpose	Name(s)	Destination and Date	Total Cost
Manager Monitoring Alternative Investment Managers: Lexington Partners; Nordic Capital; Oaktree Capital	A. Krech	New York, NY 4/4-4/6	\$ 1,488.37
Manager Monitorting Alternative Investment Manager: Lexington Partners Manager Search Alternative Investment Managers: Bridgepoint; Dune Real Estate Partners	J. Stacy	New York, NY 4/4-4/6	1,526.70
Manager Monitorting Alternative Investment Manager: Merit Energy Annual Partner Meeting	C. Boll	Dallas, TX 4/18-4/19	902.44
Manager Monitoring Consultant: Pension Consulting Alliance (PCA)	M. Perry	Portland, OR 4/18-4/19	1,009.48
Manager Monitoring Alternative Investment Managers: Brookfield; Warburg Pincus; Welsh, Carson & Anderson; Paine & Partners Annual Meeting	P. Ammann	New York, NY 4/24-4/26	1,342.90

STATE BOARD OF INVESTMENT

Travel Summary by Date SBI Travel April 1, 2017 - June 30, 2017

Purpose	Name(s)	Destination and Date	Total Cost
Conference: National Association of State Investment Professionals (NASIP)	M. Menssen	Columbus, OH 4/24-4/27	\$ 1,816.06
Conference: National Association of State Investment Professionals (NASIP)	A. Krech	Columbus, OH 4/24-4/26	1,970.30
Manager Monitoring Alternative Investment Managers: GTCR; Merit Capital Partners; Madison Dearborn Partners	J. Stacy	Chicago, IL 4/25-4/26	656.81
Conference: Institutional Investors Services (IIS) Client Advisory Council Meeting sponsored by State Street	L. Stagg	Boston, MA 4/25-4/27	908.85
Manager Monitoring Domestic Equity Manager: LSV Asset Management	T. Brusehaver	Chicago, IL 5/2	371.04
Manager Monitoring Alternative Investment Managers: Rockpoint; Summit Partners; Thomas H. Lee Partners	J. Stacy	Boston, MA 5/16-5/18	1,497.93
Conference: Government Finance Officers Association (GFOA)	I. Shafir	Denver, CO 5/20-5/24	2,655.94

STATE BOARD OF INVESTMENT

Travel Summary by Date SBI Travel April 1, 2017 - June 30, 2017

Purpose	Name(s)	Destination and Date	Total Cost
Conference: Institutional Limited Partners Association (ILPA)	J. Stacy	Boston, MA 5/31-6/2	\$ 1,956.44
Conference: Institutional Limited Partners Association (ILPA)	A. Krech	Boston, MA 5/31-6/2	1,865.50
Manager Monitoring Domestic Equity Manager: Goldman Sachs; Martingale; Sands; Wellington	T. Brusehaver	Arlington, VA New York, NY Boston, MA 6/4-6/7	1,905.81
Conference: KKR's 2017 Americas Investors' Meeting	A. Krech	Los Angeles, CA 6/26-6/28	1,420.21
Conference: National Association of Public Pension Attorneys (NAPPA)	J. Mulé	Monterey, CA 6/27-6/30	2,522.53
Conference: National Association of Public Pension Attorneys (NAPPA)	J. Weber	Monterey, CA 6/27-6/30	1,741.89

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ATTACHMENT C

Letter to SBI Domestic and International Equity Managers

June 29, 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 <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 Sudan Companies that was attached to the March 28, 2017 letter you received. **This new list is effective June 30, 2017.**

Changes to **Attachment 1**:

The following companies have been **added** to the Restricted List:

Siemens AG
 China Petrochemical Corp
 China

Attachment 2 is the List of Sudan Stocks 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.

Changes to **Attachment 2**:

• No recent addition(s) to the Divestment list.

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,

LeaAnn M. Stagg Assistant Executive Director/COO

Enclosures

cc: Michael J. Menssen, Director, Debt Management Tammy Brusehaver, Investment Officer, Public Equity Stephanie Gleeson, Investment Officer, Public Equity

ATTACHMENT 1

Restricted Sudan Stocks

Company Name	Country
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
China Petrochemical 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
Siemens 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

Restricted Sudan Stocks

Company Name	Country
Malaysia International Shipping Company AKA MISC Berhad	Malaysia
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

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

Source: EIRIS Conflict Risk Network

Effective Date: June 30, 2017

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



Security Identifiers for "Scrutinized" Stocks

The following security identifiers correlate with the Second Quarter 2017 Sudan Company Report and are current as of May 10, 2017.

ALL DATA IS FROM BLOOMBERG LP UNLESS OTHERWISE NOTED.

STOCKS ADDED SINCE LAST REPORT ARE HIGHLIGHTED

STOCKS ADDED SINCE LAST REPORT ARE HIGHLIGHTED	Deline Community (ACCIDED	Fushana	Consults Ton	Canada Nama	71-1	M/DIC Norm	SEROI -	CHOID	61	ICIN	COMMON	CINC
Company ANDRITZ AG	Primary Company (Affiliate/Parent) ANDRITZ GROUP	Exchange Vienna (WBAH)	Security Type Common Stock	Security Name ANDRITZ AG	Ticker	WPK Number 632305	SEDOL B1WVF68 AT	CUSIP	Sicovam	ISIN AT0000730007	13042748	CINS
ANDRITZ AG	ANDRITZ GROUP	BATS Europe (BATE)	Common Stock	ANDRITZ AG	ANDR EB	632305	B1WVF68 AT			AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	Chi-X Europe (CHIX) Turquoise (TRQX)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDR IX ANDR TQ	632305 632305	B1WVF68 AT B1WVF68 AT			AT0000730007 AT0000730007	13042748 13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	Xetra (XETR)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDR TQ AZ2 GB	632305	B1W VF68 A1 B1X9FH2 DF			AT0000730007 AT0000730007	13042748	
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GD	632305	B1X9FH2 DE			AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	Xetra (XETR) Xetra (XETR)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	AZ2 GF AZ2 GH	632305 632305	B1X9FH2 DE B1X9FH2 DE			AT0000730007 AT0000730007	13042748 13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG ANDRITZ AG	AZ2 GH AZ2 GM	632305	B1X9FH2 DE B1X9FH2 DE			AT0000730007 AT0000730007	13042748	
ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR)	Common Stock	ANDRITZ AG	AZ2 GR	632305	B1X9FH2 DE			AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP	Xetra (XETR) Xetra (XETR)	Common Stock	ANDRITZ AG ANDRITZ AG	AZ2 GS AZ2 GY	632305 632305	B1X9FH2 DE			AT0000730007	13042748 13042748	
ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	Gettex (MUND)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	AZ2 GY AZ2 GZ	632305	B1X9FH2 DE			AT0000730007 AT0000730007	13042748	
ANDRITZ AG	ANDRITZ GROUP	Quotrix Exch (XQTX)	Common Stock	ANDRITZ AG	AZ2 QT	632305	B1X9FH2 DE			AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP	Tradegate (XGAT) OTC US (OOTC)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	AZ2 TH ADRZF US	632305 632305	B1X9FH2 DE B1XBL36			AT0000730007 AT0000730007	13042748 13042748	A11123105
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	OTC US (OOTC)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ADRZF US ADRZF UV	632305	B1XBL36 B1XBL36			AT0000730007 AT0000730007	13042748	A11123105 A11123105
ANDRITZ AG	ANDRITZ GROUP	Euro Comp (XLON)	Common Stock	ANDRITZ AG	ANDR EU	632305	B28F3F6 GB			AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	LSE EuropeQS (XLON)	Common Stock	ANDRITZ AG ANDRITZ AG	ANDR LI ANDR I O	632305 632305	B28F3F6 GB B28F3F6 GB			AT0000730007 AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP	LSE EuropeQS (XLON) Euro OTC (XLON)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDR LO ANDR XA	632305	B28F3F6 GB B28F3F6 GB			AT0000730007 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 AG	ANDRITZ GROUP ANDRITZ GROUP	Euro OTC (XLON) Euro OTC (XLON)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDR XE ANDR XL	632305 632305	B28F3F6 GB B28F3F6 GB			AT0000730007 AT0000730007	13042748 13042748	
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XV	632305	B28F3F6 GB			AT0000730007 AT0000730007	13042748	
ANDRITZ AG	ANDRITZ GROUP	BX Worldcaps (XBRN)	Common Stock	ANDRITZ AG	ANDR BW	632305	BHZL8M4 CH			AT0000730007	13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP	SIX Swiss Ex (XSWX)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDR SE ANDR SW	632305 632305	BHZL8M4 CH BHZL8M4 CH			AT0000730007 AT0000730007	13042748 13042748	
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	BX Worldcaps (XBRN) Euro OTC (XLON)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDR SW ANDR XS	632305 632305	BHZL8M4 CH			AT0000730007 AT0000730007	13042748 13042748	
ANDRITZ AG	ANDRITZ GROUP	Euro OTC (XLON)	Common Stock	ANDRITZ AG	ANDR XO	632305				AT0000730007	13042748	
ANDRITZ AG	ANDRITZ GROUP	Euro Comp (XLON)	Common Stock	ANDRITZ AG	ANDRCHF EU	632305				AT0000730007	13042748	A11123105
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	Blockmatch (BLOX) Liquidnet (LIQU)	Common Stock Common Stock	ANDRITZ AG ANDRITZ AG	ANDRV B3 ANDRV L3	632305 632305				AT0000730007 AT0000730007		
ANDRITZ AG	ANDRITZ GROUP	ITG Posit (XPOS)	Common Stock	ANDRITZ AG	ANDRV ES	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 ADR	ANDRITZ AG-UNSPON ADR	ADRZY PQ		B3DY4P2 US	034522102		US0345221024		
ANDRITZ AG ANDRITZ AG	ANDRITZ GROUP ANDRITZ GROUP	OTC US (OOTC) OTC US (OOTC)	ADR	ANDRITZ AG-UNSPON ADR ANDRITZ AG-UNSPON ADR	ADRZY US ADRZY UV	A1W8D1	B3DY4P2 US B3DY4P2 US	034522102 034522102		US0345221024 US0345221024	96194871	
ATLAS COPCO AB	ATLAS COPCO AB	BATS Europe (BATE)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA EB	A14S17	BXC8BS7	OU TOLE TOL	907483	SE0006886750	00104071	
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	ATLAS COPCO AB ATLAS COPCO AB	Stockholm (XSTO) Euro OTC (XLON)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATCOA SS ATCOA XL	A14S17 A14S17	BXC8BS7		907483	SE0006886750 SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA XS	A14S17				SE0006886750	123361946	
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	ATLAS COPCO AB ATLAS COPCO AB	Chi-X Europe (CHIX) Liquidnet (LIQU)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATCOAS IX ATCOAS L3	A14S17 A14S17	BXC8BS7			SE0006886750 SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	Turquoise (TRQX)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS TQ	A14S17	BXC8BS7		907483	SE0006886750	123301940	
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	ATLAS COPCO AB ATLAS COPCO AB	OTC US (OOTC) BX Worldcaps (XBRN)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATLKF UV ATCOA BW	A14S17 A14S17	BXDZJP0 BXV1GV5		907483 907483	SE0006886750 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	ATLAS COPCO AB ATLAS COPCO AB	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ACOF GD ACOF GF	A14S17 A14S17	BXV1GX7 BXV1GX7		907483 907483	SE0006886750 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	ATLAS COPCO AB ATLAS COPCO AB	Frankfurt (XFRA) Gettex (MUND)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ACOF GS ACOF GZ	A14S17 A14S17	BXV1GX7		907483 907483	SE0006886750 SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	Quotrix Exch (XQTX)	Common Stock	ATLAS COPCO AB-A SHS	ACOF QT	A14S17 A14S17	BXV1GX7		907483	SE0006886750	123361946	
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	ATLAS COPCO AB	Mexico (XMEX)	Common Stock Common Stock	ATLAS COPCO AB-A SHS	ACOFN MM ATCOA LI	A14S17 A14S17	BXVKS49 BXVMB02		907483	SE0006886750 SE0006886750		
ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	LSE Europe QS (XLON) LSE Europe QS (XLON)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATCOA LI	A14S17 A14S17	BXVMB02 BXVMB02		907483	SE0006886750		
ATLAS COPCO AB	ATLAS COPCO AB	Euro Comp (XLON)	Common Stock	ATLAS COPCO AB-A SHS	ATCOA EU	A14S17	DATE INDOC			SE0006886750		
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATCOA XB ATCOA XF	A14S17 A14S17				SE0006886750 SE0006886750		
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	Euro OTC (XLON) Euro OTC (XLON)	Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATCOA XE ATCOA XO	A14S17 A14S17				SE0006886750 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	10000101	
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	Euro OTC (XLON) Blockmatch (BLOX)	Common Stock Common Stock	ATLAS COPCO AB-A SHS ATLAS COPCO AB-A SHS	ATCOAEUR XS ATCOAS B3	A14S17 A14S17				SE0006886750 SE0006886750	123361946	
ATLAS COPCO AB	ATLAS COPCO AB	ITG Posit (XPOS)	Common Stock	ATLAS COPCO AB-A SHS	ATCOAS B3	A14S17 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	ATLAS COPCO AB ATLAS COPCO AB	Quotrix Exch (XQTX) Berlin (XBER)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ACOB QT ACOG GB	A14S18 A14S18	B1XHM19 BWX45D0		907485 907485	SE0006886768 SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB	Berlin (XBER)	Common Stock	ATLAS COPCO AB-B SHS	ACOG GB	A14S18	BW X45D0		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 ATLAS COPCO AB-B SHS	ACOG GM ACOG GR	A14S18 A14S18	BW X45D0 BW X45D0		907485	SE0006886768 SE0006886768		
ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	Berlin (XBER) Berlin (XBER)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ACOG GR ACOG GS	A14S18 A14S18	BW X45D0 BW X45D0		907485 907485	SE0006886768 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	ATLAS COPCO AB ATLAS COPCO AB	Aquis Exchq (AQXE) Stockholm (XSTO)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOB QX ATCOB SS	A14S18 A14S18	BXC8BW1 BXC8BW1		907485 907485	SE0006886768 SE0006886768		
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	Equiduct (XEQT)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOB SS ATCOBS BQ	A14S18 A14S18	BXC8BW1 BXC8BW1		0U1400	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	ATLAS COPCO AB ATLAS COPCO AB	BX Worldcaps (XBRN) LSE EuropeQS (XLON)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOB SW ATCOB LI	A14S18 A14S18	BXV1FG3 BXVM9X1		907485 907485	SE0006886768 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		1
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	Euro OTC (XLON) Euro OTC (XLON)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOB XE ATCOB XO	A14S18 A14S18				SE0006886768 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	ATLAS COPCO AB ATLAS COPCO AB	Euro Comp (XLON) Blockmatch (BLOX)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOBEUR EU ATCOBS B3	A14S18 A14S18				SE0006886768 SE0006886768		
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	ITG Posit (XPOS) UBS MTF (XUBS)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOBS PO ATCOBS S2	A14S18 A14S18				SE0006886768 SE0006886768		
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	ATLAS COPCO AB ATLAS COPCO AB	Euro OTC (XLON) Euro OTC (XLON)	Common Stock Common Stock	ATLAS COPCO AB-B SHS ATLAS COPCO AB-B SHS	ATCOA XD ATCOB XW	A14S17 A14S18				SE0006886750 SE0006886768	123361946 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	ATLAS COPCO AB ATLAS COPCO AB	OTC US (OOTC) OTC US (OOTC)	ADR ADR	ATLAS COPCO AB-SPONS ADR A ATLAS COPCO AB-SPONS ADR A	ATLKY US ATLKY UV	920783 920783	2061997 2061997			US0492557063 US0492557063		
ATLAS COPCO AB ATLAS COPCO AB	ATLAS COPCO AB ATLAS COPCO AB	OTC US (OOTC)	ADR ADR	ATLAS COPCO AB-SPON ADR B SH ATLAS COPCO AB-SPON ADR B SH	ATLCY PQ ATLCY US	920784 920784	2062019 2062019			US0492558053 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	BHARAT ELECTRONICS LIMITED BHARAT ELECTRONICS LIMITED	Natl India (XNSE) Natl India (XNSE)	Common Stock Common Stock	BHARAT ELECTRONICS LIMITED BHARAT ELECTRONICS LIMITED	BHE IB BHE IN	120304 120304	6139715 IN 6139715 IN			INE263A01016 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	BHARAT HEAVY ELECTRICALS LIMITED BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE) Natl India (XNSE)	Common Stock Common Stock	BHARAT HEAVY ELECTRICALS BHARAT HEAVY ELECTRICALS	BHEL IB BHEL IN	A1JLKM A1JLKM	B6SNRV2 IN B6SNRV2 IN			INE257A01026 INE257A01026		
BHARAT HEAVY ELECTRICALS BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE) Natl India (XNSE)	Common Stock Sec Lending	BHARAT HEAVY ELECTRICALS BHARAT HEAVY ELECTRICALS-SLB	BHEL IS BHEL/S IN	A1JLKM	B6SNRV2 IN			INE257A01026		
BHARAT HEAVY ELECTRICALS	BHARAT HEAVY ELECTRICALS LIMITED	Natl India (XNSE)	Sec Lending	BHARAT HEAVY ELECTRICALS-SLB	BHEL/S IS							
CHINA GEZHOUBA GROUP COMPANY LTD CHINA GEZHOUBA GROUP COMPANY LTD	CHINA GEZHOUBA GROUP COMPANY LTD CHINA GEZHOUBA GROUP COMPANY LTD	Shanghai (XSHG) Shanghai (XSHG)	Common Stock Common Stock	CHINA GEZHOUBA GROUP CO LT-A CHINA GEZHOUBA GROUP CO LT-A	600068 CG 600068 CH	A0M31Z A0M31Z	6377214 CN 6377214 CN			CNE000000QF1 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 DAQING HUAKE GROUP CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Shenzhen (XSHE) Shenzhen (XSHE)	Common Stock Common Stock	DAQING HUAKE GROUP CO-A DAQING HUAKE GROUP CO-A	000985 CH 000985 CS	A0M4C2 A0M4C2	6277949 CN 6277949 CN			CNE000001402 CNE000001402		1
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CTJ1 GB CTJ1 GD	A1CV3E A1CV3E	5387753 DE 5387753 DE		952131 952131	BMG5320C1082 BMG5320C1082	50092003 50092003	1
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	1
KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CTJ1 GM CTJ1 GR	A1CV3E A1CV3E	5387753 DE 5387753 DE		952131 952131	BMG5320C1082 BMG5320C1082	50092003 50092003	1
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 KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Gettex (MUND) Tradegate (XGAT)	Common Stock Common Stock	KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CTJ1 GZ CTJ1 TH	A1CV3E	5387753 DE		952131 952131	BMG5320C1082 BMG5320C1082	50092003 50092003	
KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Hong Kong (XHKG) OTC Exchange (OOTC)	Common Stock Common Stock	KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	135 HK KUNUF PQ	A1CV3E A1CV3E	6340078 HK B01DDZ3 US		952131 952131	BMG5320C1082 BMG5320C1082	50092003 50092003	1
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	1
KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC) Sth SSE-SEHK (SHSC)	Common Stock Common Stock	KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	KUNUF UV 135 H1	A1CV3E A1CV3E	B01DDZ3 US BP3RW39 HK		952131 952131	BMG5320C1082 BMG5320C1082	50092003 50092003	
KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Sth SSE-SEHK (SHSC)	Common Stock	KUNLUN ENERGY CO LTD	135 H2 135EUR EU	A1CV3E A1CV3E	BD8NCG1 HK		952131	BMG5320C1082 BMG5320C1082	50092003 50092003	
KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Euro Comp (XLON) OTC Exchange (OOTC)	Common Stock ADR	KUNLUN ENERGY CO LTD CNPC HONG KONG LTD-UNSP ADR	KLYCY PQ	A1J7V7	B3L2812 US	50126A101		US50126A1016	50092003	
KUNLUN ENERGY CO LTD KUNLUN ENERGY CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC Exchange (OOTC) OTC Exchange (OOTC)	ADR ADR	CNPC HONG KONG LTD-UNSP ADR CNPC HONG KONG LTD-UNSP ADR	KLYCY US KLYCY UV	A1J7V7 A1J7V7	B3L2812 US B3L2812 US	50126A101 50126A101		US50126A1016 US50126A1016		
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GB	A0M4YQ	5939507 DE	001201101		CNE1000003W8	11014674	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-H	PC6 GD PC6 GF	A0M4YQ A0M4YQ	5939507 DE 5939507 DE			CNE1000003W8 CNE1000003W8	11014674 11014674	
PETROCHINA COLTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-H	PC6 GH PC6 GM	A0M4YQ A0M4YQ	5939507 DE 5939507 DE			CNE1000003W8 CNE1000003W8	11014674 11014674	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA)	Common Stock	PETROCHINA CO LTD-H	PC6 GR	A0M4YQ	5939507 DE			CNE1000003W8	11014674	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-H	PC6 GS PC6 GY	A0M4YQ A0M4YQ	5939507 DE 5939507 DE			CNE1000003W8 CNE1000003W8	11014674 11014674	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Gettex (MUND)	Common Stock	PETROCHINA CO LTD-H	PC6 GZ	A0M4YQ				CNE1000003W8	11014674	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Quotrix Exch (XQTX) Frankfurt (XFRA)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-H	PC6 QT PC6 TH	A0M4YQ A0M4YQ	5939507 DE 5939507 DE			CNE1000003W8 CNE1000003W8	11014674 11014674	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Hong Kong (XHKG) OTC US (OOTC)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-H	857 HK PCCYF PQ	A0M4YQ A0M4YQ	6226576 HK B01DNL9			CNE1000003W8 CNE1000003W8	11014674 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 PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	OTC US (OOTC) Sth SSE-SEHK (SHSC)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-H	PCCYF UV 857 H1	A0M4YQ A0M4YQ	B01DNL9 US BP3RWW8 HK			CNE1000003W8 CNE1000003W8	11014674 11014674	Y6883Q104
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Sth SZ-SEHK (SZSC) Shanghai (XSHG)	Common Stock Common Stock	PETROCHINA CO LTD-H PETROCHINA CO LTD-A	857 H2 601857 CG	A0M4YQ A0NANC	BD8NGP8 HK B28SLD9 CN			CNE1000003W8 CNE1000007Q1	11014674 33421664	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	Shanghai (XSHG)	Common Stock	PETROCHINA CO LTD-A	601857 CH	AONANC	B28SLD9 CN			CNE1000007Q1	33421664	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Nth SSE-SEHK (XSSC) New York (XNYS)	Common Stock ADR	PETROCHINA CO LTD-A PETROCHINA CO LTD -ADR	601857 C1 PTR VF	A0NANC 936983	BP3R206 CN 2568841	71646E100		CNE1000007Q1 US71646E1001	33421664 11511449	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS) New York (XNYS)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PTR UB PTR UD	936983	2568841 US 2568841 US	74646E100 74646E100		US71646E1001 US71646E1001	11511449 11511449	
PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS)	ADR	PETROCHINA CO LTD -ADR	PTR UF	936983 936983	2568841 US	74646E100		US71646E1001	11511449	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS) New York (XNYS)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PTR UN PTR UP	936983 936983	2568841 US 2568841 US	74646E100 74646E100		US71646E1001 US71646E1001	11511449 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 PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS) New York (XNYS)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PTR UT PTR UX	936983 936983	2568841 US 2568841 US	74646E100 74646E100		US71646E1001 US71646E1001	11511449 11511449	
PETROCHINA CO LTD PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	New York (XNYS) New York (XNYS)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PTR VJ PTR VK	936983 936983	2568841 US 2568841 US	74646E100 74646E100		US71646E1001 US71646E1001	11511449 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 PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PC6A GB PC6A GF	936983 936983	4633327 DE 4633327 DE	71646E100 71646E100		US71646E1001 US71646E1001	11511449 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 PETROCHINA CO LTD	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PC6A GR PC6A GS	936983 936983	4633327 DE 4633327 DE	71646E100 71646E100		US71646E1001 US71646E1001	11511449 11511449	
PETROCHINA COLITO	CHINA NATIONAL PETROLEUM CORP aka CNPC CHINA NATIONAL PETROLEUM CORP aka CNPC	Frankfurt (XFRA) Mexico (XMEX)	ADR ADR	PETROCHINA CO LTD -ADR PETROCHINA CO LTD -ADR	PC6A GY PTRN MM	936983 936983	4633327 DE B569834	71646E100 71646E100		US71646E1001	11511449 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. NORINCO INTERNATIONAL COOPERATION LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION CHINA NORTH INDUSTRIES GROUP CORPORATION	Shenzhen (XSHE) Shenzhen (XSHE)	Common Stock Common Stock	NORINCO INTL COOPERATION -A NORINCO INTL COOPERATION -A	000065 CH 000065 CS	A0M35W A0M35W	6112125 CN 6112125 CN			CNE000000VZ9 CNE000000VZ9		
NORINCO INTERNATIONAL COOPERATION LTD. NORTH HUAJIN CHEMICAL INDUSTRIES CO LTD	CHINA NORTH INDUSTRIES GROUP CORPORATION CHINA NORTH INDUSTRIES GROUP CORPORATION	Nth SZ-SEHK (XSEC) Shenzhen (XSHE)	Common Stock Common Stock	NORINCO INTL COOPERATION -A NORTH HUAJIN CHEMICAL INDU-A	000065 C2 000059 CH	A0M35W A0M30T	BD5LTR8 CN 6796143 CN			CNE000000VZ9 CNE000000NY9		Y7742G105
NORTH HUAJIN CHEMICAL INDUSTRIES CO LTD	CHINA NORTH INDUSTRIES GROUP CORPORATION	Shenzhen (XSHE)	Common Stock	NORTH HUAJIN CHEMICAL INDU-A	000059 CS	A0M30T	6796143 CN			CNE000000NY9		177420100
NORTH HUAJIN CHEMICAL INDUSTRIES CO LTD NORTH NAVIGATION CONTROL TECHNOLOGY CO. LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION CHINA NORTH INDUSTRIES GROUP CORPORATION	Nth SZ-SEHK (XSEC) Shenzhen (XSHE)	Common Stock Common Stock	NORTH HUAJIN CHEMICAL INDU-A NORTH NAVIGATION CONTROL T-A	000059 C2 600435 CG	A0M30T A0M4L5	BD5M1S6 6649946 CN			CNE000000NY9 CNE000001F88		
NORTH NAVIGATION CONTROL TECHNOLOGY CO. LTD.	CHINA NORTH INDUSTRIES GROUP CORPORATION	Shenzhen (XSHE)	Common Stock	NORTH NAVIGATION CONTROL T-A	600435 CH	A0M4L5	6649946 CN			CNE000001F88		
NORTH NAVIGATION CONTROL TECHNOLOGY CO. LTD. CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA NORTH INDUSTRIES GROUP CORPORATION CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Nth SSE-SEHK (XSSC) Shanghai (XSHG)	Common Stock Common Stock	NORTH NAVIGATION CONTROL T-A CHINA PETROLEUM & CHEMICAL-A	600435 C1 600028 CH	A0M4L5 A0M4G4	BP3RB54 CN 6373728 CN			CNE000001F88 CNE0000018G1		
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Hong Kong (XHKG) Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL-H CHINA PETROLEUM & CHEMICAL -H	386 HK CHU GB	A0M4XN A0M4XN	6291819 HK 7027756 DE			CNE1000002Q2 CNE1000002Q2	12150504 12150504	l
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA)	Common Stock Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GD	A0M4XN	7027756 DE			CNE1000002Q2	12150504	l
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	CHINA PETROLEUM & CHEMICAL -H CHINA PETROLEUM & CHEMICAL -H	CHU GF CHU GH	A0M4XN A0M4XN	7027756 DE 7027756 DE			CNE1000002Q2 CNE1000002Q2	12150504 12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock	CHINA PETROLEUM & CHEMICAL -H	CHU GM	A0M4XN	7027756 DE			CNE1000002Q2	12150504	l
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA)	Common Stock Common Stock	CHINA PETROLEUM & CHEMICAL -H CHINA PETROLEUM & CHEMICAL -H	CHU GR CHU GS	A0M4XN A0M4XN	7027756 DE 7027756 DE			CNE1000002Q2 CNE1000002Q2	12150504 12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Gettex (MUND) OTC US (OOTC)	Common Stock Common Stock	CHINA PETROLEUM & CHEMICAL-H CHINA PETROLEUM & CHEMICAL-H	CHU GZ SNPMF PO	A0M4XN A0M4XN	B01XKR4 US			CNE1000002Q2 CNE1000002Q2	12150504 12150504	Y15010104
CHINA PETROLEUM & CHEMICAL CORP AKA SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	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 PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Sth SSE-SEHK (SHSC)	Common Stock Common Stock	CHINA PETROLEUM & CHEMICAL-H CHINA PETROLEUM & CHEMICAL-H	386 H1 386 H2	A0M4XN A0M4XN	BP3RSM0 HK BD8NDW4 HK			CNE1000002Q2 CNE1000002Q2	12150504 12150504	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Shanghai (XSHG)	Common Stock	CHINA PETROLEUM & CHEMICAL-A	600028 CG	A0M4G4	6373728 CN			CNE1000018G1	12130304	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Nth SSE-SEHK (XSSC)	Common Stock ADR	CHINA PETROLEUM & CHEMICAL-A	600028 C1 SNP UB	A0M4G4 578971	BP3R240 CN 2639189 US	16941R108		CNE1000018G1	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR CHINA PETROLEUM & CHEMICAL-ADR	SNP UB SNP UD	578971	2639189 US	16941R108		US16941R1086 US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UF	578971	2639189 US	16941R108		US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) New York (XNYS)	ADR ADR	CHINA PETROLEUM & CHEMICAL-ADR CHINA PETROLEUM & CHEMICAL-ADR	SNP UN SNP UP	578971 578971	2639189 US 2639189 US	16941R108 16941R108		US16941R1086 US16941R1086	11899374 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	1694 IK 108		US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	SNP UT	578971	2639189 US	16941R108		US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) New York (XNYS)	ADR ADR	CHINA PETROLEUM & CHEMICAL-ADR CHINA PETROLEUM & CHEMICAL-ADR	SNP UX SNP V.I	578971 578971	2639189 US 2639189 US	16941R108 16941R108		US16941R1086 US16941R1086	11899374 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 PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	London Intl (XLON) Munich (XMUN)	ADR ADR	CHINA PETROLEUM & CHEM-ADR CHINA PETROLEUM & CHEMICAL-ADR	SNP LI CHUA GB	578971 578971	2654375 GB B0RSW00 DE	16941R108 16941R108		US16941R1086 US16941R1086	11899374 11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GF	578971	B0RSW00 DE	16941R108		US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Munich (XMUN) Munich (XMUN)	ADR ADR	CHINA PETROLEUM & CHEMICAL-ADR CHINA PETROLEUM & CHEMICAL-ADR	CHUA GM CHUA GR	578971 578971	B0RSW00 DE B0RSW00 DE	16941R108 16941R108		US16941R1086 US16941R1086	11899374 11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Munich (XMUN)	ADR	CHINA PETROLEUM & CHEMICAL-ADR	CHUA GS	578971	BORSWOO DE	16941R108		US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Mexico (XMEX)	ADR ADR	CHINA PETROLEUM & CHEM-ADR	SNPN MM SNPUSD XS	578971	B4QSP22 MX	16941R108 16941R108		US16941R1086 US16941R1086	11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Euro OTC (XLON) Tradegate (XGAT)	ADR	CHINA PETROLEUM & CHEM-ADR CHINA PETROLEUM & CHEM-ADR	CHUA TH	578971 578971		16941R108		US16941R1086 US16941R1086	11899374 11899374	
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS)	ADR	CHINA PETROLEUM & CHEM-ADR	SNP UM	578972	2639189 US					
CHINA PETROLEUM & CHEMICAL CORP aka SINOPEC CORP SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) Sth SSE-SEHK (SHSC)	ADR Common Stock	CHINA PETROLEUM & CHEM-ADR SINOPEC ENGINEERING GROUP-H	SNP VF 2386 H1	578973 A1T97T	2639189 US B92NYC9	16941R108		CNE100001NV2	93502256	
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Sth SSE-SEHK (SHSC)	Common Stock	SINOPEC ENGINEERING GROUP-H	2386 H2	A1T97T	BD8NLP3 HK			CNE100001NV2	93502256	
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Hong Kong (XHKG)	Common Stock	SINOPEC ENGINEERING GROUP-H	2386 HK	A1T97T	B92NYC9			CNE100001NV2	93502256	
SINOPEC ENGINEERING GROUP CO LTD SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Munich (XMUN) Munich (XMUN)	Common Stock Common Stock	SINOPEC ENGINEERING GROUP-H SINOPEC ENGINEERING GROUP-H	1NS GF 1NS GM	A1T97T A1T97T	B96WKB3 B96WKB3			CNE100001NV2 CNE100001NV2		
SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Munich (XMUN)	Common Stock	SINOPEC ENGINEERING GROUP-H	1NS GR	A1T97T	B96WKB3			CNE100001NV2		
SINOPEC ENGINEERING GROUP CO LTD SINOPEC ENGINEERING GROUP CO LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Munich (XMUN) Euro Comp (XLON)	Common Stock Common Stock	SINOPEC ENGINEERING GROUP-H SINOPEC ENGINEERING GROUP-H	1NS GS 2386EUR EU	A1T97T A1T97T	B96WKB3			CNE100001NV2 CNE100001NV2	93502256	Y80359105
SINOPEC ENGINEERING GROUP COLITO SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Frankfurt (XFRA)	Common Stock	SINOPEC ENGINEERING GROUP-H SINOPEC KANTONS HOLDINGS	SAK GB	923923	4601197 DE			BMG8165U1009	11563384	100339105
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA)	Common Stock	SINOPEC KANTONS HOLDINGS	SAK GF	923923	4601197 DE			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	SINOPEC KANTONS HOLDINGS SINOPEC KANTONS HOLDINGS	SAK GR SAK GS	923923 923923	4601197 DE 4601197 DE			BMG8165U1009 BMG8165U1009	11563384 11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Hong Kong (XHKG)	Common Stock	SINOPEC KANTONS HOLDINGS	934 HK	923923	6162692 HK			BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Hong Kong (XHKG) Sth SZ-SEHK (SZSC)	Common Stock Common Stock	SINOPEC KANTONS HOLDINGS SINOPEC KANTONS HOLDINGS	934 H1 934 H2	923923 923923	BP3RXQ9 HK BD8NH33 HK			BMG8165U1009 BMG8165U1009	11563384	
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	OTC US (OOTC)	ADR	SINOPEC KANTONS HOLDINGS SINOPEC KANTONS-UNSPON ADR	934 H2 SPKOY PQ	923923	BJ8NH33 HK B3KRT60 US	82934W207		US82934W2070		
SINOPEC KANTON HOLDINGS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	OTC US (OOTC)	ADR	SINOPEC KANTONS-UNSPON ADR	SPKOY US		B3KRT60 US	82934W 207		US82934W2070		
SINOPEC OILFIELD EQUIPMENT SINOPEC OILFIELD EQUIPMENT	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Shenzhen (XSHE) Shenzhen (XSHE)	Common Stock Common Stock	SINOPEC OILFIELD EQUIPMENT-A SINOPEC OILFIELD EQUIPMENT-A	000852 CH 000852 CS	A0M37A A0M37A	6136385 6136385			CNE000000XK7 CNE000000XK7		Y4446M108 Y4446M108
SINOPEC OILFIELD EQUIPMENT	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Nth SZ-SEHK (XSEC)	Common Stock	SINOPEC OILFIELD EQUIPMENT-A	000052 C3	A0M37A	BD5LXZ4			CNE000000XK7		1444001100
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 SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Shanghai (XSHG) Nth SSE-SEHK (XSSC)	Common Stock Common Stock	SINOPEC OILFIELD SERVICE C-A SINOPEC OILFIELD SERVICE C-A	600871 CH 600871 C1	A0M3V6 A0M3V6	6986740 CN BWT5TJ1 CN			CNE000000HS3 CNE000000HS3		
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Hong Kong (XHKG)	Common Stock	SINOPEC OILFIELD SERVICE -H	1033 HK	A0M4Y6	6984669 HK		917709	CNE1000004D6	008069662	
SINOPEC OILFIELD SERVICE CORP SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Sth SSE-SEHK (SHSC) Sth SSE-SEHK (SHSC)	Common Stock Common Stock	SINOPEC OILFIELD SERVICE -H SINOPEC OILFIELD SERVICE -H	1033 H1 1033 H2	A0M4Y6 A0M4Y6	BP3RXS1 HK BD8NHJ9 HK		917709 917709	CNE1000004D6 CNE1000004D6	008069662 008069662	
SINOPEC OILFIELD SERVICE CORP	CHINA PETROCHEMICAL CORP aka SINOPEC GROUP	Shanghai (XSHG)	Common Stock	SINOPEC SHANGHAI PETROCHE-A	600688 CG	A0M3RA	6802794		917709	CNE0000004D6	000009002	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Shanghai (XSHG)	Common Stock	SINOPEC SHANGHAI PETROCHE-A	600688 CH	A0M3RA	6802794			CNE000000BB2		
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Nth SSE-SEHK (XSSC) Frankfurt (XFRA)	Common Stock Common Stock	SINOPEC SHANGHAI PETROCHE-A SINOPEC SHANGHAI PETROCHEM-H	600688 C1 SGJH GB	A0M3RA A0M4Y5	BP3R596 CN 5888632 DE		908303	CNE000000BB2 CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GD	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	SINOPEC SHANGHAI PETROCHEM-H SINOPEC SHANGHAI PETROCHEM-H	SGJH GF SGJH GH	A0M4Y5 A0M4Y5	5888632 DE 5888632 DE		908303 908303	CNE1000004C8 CNE1000004C8	005096162 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 GROUF	Frankfurt (XFRA)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GR	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA) Hong Kong (XHKG)	Common Stock Common Stock	SINOPEC SHANGHAI PETROCHEM-H SINOPEC SHANGHAI PETROCHEM-H	SGJH GS 338 HK	A0M4Y5 A0M4Y5	5888632 DE 6797458 HK		908303 908303	CNE1000004C8 CNE1000004C8	005096162 005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Sth SSE-SEHK (SHSC)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	338 H1	A0M4Y5	BP3RXR0 HK		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Euro Comp (XLON) Sth SZ-SEHK (SZSC)	Common Stock Common Stock	SINOPEC SHANGHAI PETROCHEM-H SINOPEC SHANGHAI PETROCHEM-H	338EUR EU 338 H2	A0M4Y5 A0M4Y5	BD8NDN5 HK		908303	CNE1000004C8 CNE1000004C8	005096162 005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Gettex (MUND)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH GZ	A0M4Y5	BD8NDN5 HK		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Tradegate (XGAT)	Common Stock	SINOPEC SHANGHAI PETROCHEM-H	SGJH TH	A0M4Y5	5888632 DE		908303	CNE1000004C8	005096162	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) New York (XNYS)	ADR ADR	SINOPEC SHANGHAI-SPONS ADR SINOPEC SHANGHAI-SPONS ADR	SHI UX SHI UB	887169 887169	2800059 US 2800059 US		908289 908289	US82935M1099 US82935M1099	12248750 12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	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) New York (XNYS)	ADR ADR	SINOPEC SHANGHAI-SPONS ADR SINOPEC SHANGHAI-SPONS ADR	SHI UF SHI UN	887169 887169	2800059 US 2800059 US		908289 908289	US82935M1099 US82935M1099	12248750 12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	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 GROUF	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI UT	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) New York (XNYS)	ADR ADR	SINOPEC SHANGHAI-SPONS ADR SINOPEC SHANGHAI-SPONS ADR	SHI VF SHI VJ	887169 887169	2800059 US 2800059 US	82935M109	908289 908289	US82935M1099 US82935M1099	12248750 12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI VK	887169	2800059 US		908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS) Frankfurt (XFRA)	ADR ADR	SINOPEC SHANGHAI-SPONS ADR SINOPEC SHANGHAI-SPONS ADR	SHI VY SHI GB	887169 887169	2800059 US 5734638 DE	82935M109	908289 908289	US82935M1099 US82935M1099	12248750 12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	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 SHANGHAL SPONS ADR	SHI GM	887169	5734638 DE	82935M109	908289	US82935M1099	12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	SINOPEC SHANGHAI-SPONS ADR SINOPEC SHANGHAI-SPONS ADR	SHI GR SHI GS	887169 887169	5734638 DE 5734638 DE	82935M109 82935M109	908289 908289	US82935M1099 US82935M1099	12248750 12248750	
SINOPEC SHANGHAI PETROCHEMICALS LTD	CHINA PETROCHEMICAL CORP aka SINOPEC GROUF	New York (XNYS)	ADR	SINOPEC SHANGHAI-SPONS ADR	SHI US	887169	2800059 US		908289	US82935M1099	12248750	
POLY PROPERTY GROUP CO LTD POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION CHINA POLY GROUP CORPORATION	Hong Kong (XHKG) Frankfurt (XFRA)	Common Stock Common Stock	POLY PROPERTY GROUP CO LTD POLY PROPERTY GROUP CO LTD	119 HK CMJ GB	885546 885546	6220987 HK B1HJJS7 DE			HK0119000674 HK0119000674	004580702 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 CHINA POLY GROUP CORPORATION	Frankfurt (XFRA)	Common Stock	POLY PROPERTY GROUP COLLTD	CMJ GR	885546	B1HJJS7 DE			HK0119000674	004580702	
POLY PROPERTY GROUP CO LTD POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION CHINA POLY GROUP CORPORATION	Frankfurt (XFRA) OTC US (OOTC)	Common Stock Common Stock	POLY PROPERTY GROUP CO LTD POLY PROPERTY GROUP CO LTD	CMJ GS PHKIF US	885546 885546	B1HJJS7 DE B23CST1 US			HK0119000674 HK0119000674	004580702 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 POLY PROPERTY GROUP CO LTD	CHINA POLY GROUP CORPORATION CHINA POLY GROUP CORPORATION	Sth SZ-SEHK (SZSC) OTC US (OOTC)	Common Stock Receipt	POLY PROPERTY GROUP CO LTD POLY PROPERTY GROUP CO-ADR	119 H2 PHKIY PQ	885546	BD8NCD8 HK BJTXRN4 US	731654109		HK0119000674 US7316541090	004580702	
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 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	DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	Hong Kong (XHKG) Frankfurt (XFRA)	Common Stock Common Stock	DONGFENG MOTOR GRP CO LTD-H DONGFENG MOTOR GRP CO LTD-H	489 HK D4D GB	A0M4XY A0M4XY	B0PH5N3 HK B0TBB66 DE			CNE100000312 CNE100000312	23857456 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	DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	DONGFENG MOTOR GRP CO LTD-H DONGFENG MOTOR GRP CO LTD-H	D4D GM D4D GR	A0M4XY A0M4XY	B0TBB66 DE B0TBB66 DE			CNE100000312 CNE100000312	23857456 23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock	DONGFENG MOTOR GRP CO LTD-H DONGFENG MOTOR GRP CO LTD-H	D4D GR D4D GS	AUM4XY A0M4XY	BOTBB66 DE			CNE100000312 CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	Gettex (MUND)	Common Stock	DONGFENG MOTOR GRP CO LTD-H	D4D GZ	A0M4XY				CNE100000312	23857456	
DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	Quotrix Exch (XQTX) OTC US (OOTC)	Common Stock Common Stock	DONGFENG MOTOR GRP CO LTD-H DONGFENG MOTOR GRP CO LTD-H	D4D QT DNFGF US	A0M4XY A0M4XY	B0TBB66 DE B0XZY65 US			CNE100000312 CNE100000312	23857456 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	.2.042100
DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED DONGFENG MOTOR GROUP COMPANY LIMITED	Sth SZ-SEHK (SZSC) OTC US (OOTC)	Common Stock ADR	DONGFENG MOTOR GRP CO LTD-H DONGFENG MOTOR GRP-H-UNS ADR	489 H2 DNFGY PQ	A0M4XY A1W2SX	BD8NF73 HK B3SQPT4 US	257738203		CNE100000312 US2577382037	23857456	
				SOLIO LING ING LOR GRE-H-UNG ADK	DINI OTFU	ALVIZOA	DUUWF I # UO	201100203		002011302031		,

ONGFENG MOTOR GROUP COMPANY LIMITED	DONGFENG MOTOR GROUP COMPANY LIMITED	OTC US (OOTC)	ADR	DONGFENG MOTOR GRP-H-LINS ADR	DNFGY US	A1W2SX	B3SOPT4 US	257738203	US2577382037		i
ONGFENG 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		
GYPT KUWAIT HOLDING CO GYPT KUWAIT HOLDING CO	EGYPT KUWAIT HOLDING CO EGYPT KUWAIT HOLDING CO	Kuwait (XKUW) EGX (XCAI)	Common Stock Common Stock	EGYPT KUWAIT HOLDING CO SAE EGYPT KUWAIT HOLDING CO SAE	EKHOLDIN KK EKHO EC	A0H1G7 A0H1G7	B0S8H15 KW B0QMD00 EG		EG69082C013 EGS69082C013		
GYPT KUWAIT HOLDING CO NERGY HOUSE HOLDING CO KSCC/THE	EGYPT KUWAIT HOLDING CO ENERGY HOUSE HOLDING CO KSCC/THE	EGX (XCAI) Kuwait (XKUW)	Common Stock Common Stock	EGYPT KUWAIT HOLDING CO SAE ENERGY HOLDING CO KSCC/THE	EKHO EY ENERGYH KK	A0H1G7 A0KD4C	B0QMD00 EG B13BW99 KW		EGS69082C013 KW0EQ0601801		
UWAIT FINANCE HOUSE	ENERGY HOUSE HOLDING CO KSCC/THE	Kuwait (XKUW)	Common Stock	KUWAIT FINANCE HOUSE	KFIN KK	A0JC70	6503138 KW		KW0EQ0100085		
NGIE NGIE	ENGIE ENGIE	EN Paris (XPAR) Equiduct (XEQT)	Common Stock Common Stock	Engle SA Engle SA	ENGI FP ENGIP BQ	A0ER6Q A0ER6Q	B0C2CQ3 B0C2CQ3		FR0010208488 FR0010208488	22341499 22341499	F42768105 F42768105
NGIE	ENGIE	BATS Europe (BATE)	Common Stock	Engle SA	ENGIP EB	A0ER6Q	B0C2CQ3		FR0010208488	22341499	F42768105
NGIE NGIE	ENGIE ENGIE	Chi-X Europe (CHIX) Aquis Exchg (AQXE)	Common Stock Common Stock	Engle SA Engle SA	ENGIP IX ENGIP QX	A0ER6Q A0ER6Q	B0C2CQ3 B0C2CQ3		FR0010208488 FR0010208488	22341499 22341499	F42768105 F42768105
NGIE	ENGIE	Turquoise (TRQX)	Common Stock	Engle SA	ENGIP TQ GZF GB	A0ER6Q A0ER6Q	B0C2CQ3 B0CYN33		FR0010208488	22341499 22341499	F42768105
NGIE NGIE	ENGIE ENGIE	Xtra EU Strs (XETR) Xtra EU Strs (XETR)	Common Stock Common Stock	Engle SA Engle SA	GZF GB GZF GD	A0ER6Q	B0CYN33		FR0010208488 FR0010208488	22341499	
NGIE NGIE	ENGIE ENGIE	Xtra EU Strs (XETR) Xtra EU Strs (XETR)	Common Stock Common Stock	Engle SA Engle SA	GZF GE GZF GF	A0ER6Q A0ER6Q	B0CYN33 B0CYN33		FR0010208488 FR0010208488	22341499 22341499	
IGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engle SA	GZF GH	A0ER6Q	B0CYN33		FR0010208488	22341499	
NGIE NGIE	ENGIE ENGIE	Xtra EU Strs (XETR) Xtra EU Strs (XETR)	Common Stock Common Stock	Engle SA Engle SA	GZF GI GZF GM	A0ER6Q A0ER6Q	B0CYN33 B0CYN33		FR0010208488 FR0010208488	22341499 22341499	
IGIE	ENGIE	Xtra EU Strs (XETR)	Common Stock	Engle SA	GZF GR	A0ER6Q	B0CYN33		FR0010208488	22341499	
IGIE IGIE	ENGIE ENGIE	Xtra EU Strs (XETR) Xtra EU Strs (XETR)	Common Stock Common Stock	Engle SA Engle SA	GZF GS GZF GY	A0ER6Q A0ER6Q	B0CYN33 B0CYN33		FR0010208488 FR0010208488	22341499 22341499	
GIE	ENGIE	Gettex (MUND)	Common Stock	Engle SA	GZF GZ	A0ER6Q			FR0010208488	22341499	
GIE GIE	ENGIE ENGIE	Quotrix Exch (XQTX) Tradegate (XGAT)	Common Stock Common Stock	Engle SA Engle SA	GZF QT GZF TH	A0ER6Q A0ER6Q	B0CYN33 B0CYN33		FR0010208488 FR0010208488	22341499 22341499	
GIE	ENGIE	OTC US (OOTC)	Common Stock Common Stock	Engle SA	ENGQF PQ	A0ER6Q	B0Z11C6		FR0010208488	22341499	F7629A107
GIE GIE	ENGIE ENGIE	OTC US (OOTC) OTC US (OOTC)	Common Stock	Engle SA Engle SA	ENGQF US ENGQF UV	A0ER6Q A0ER6Q	B0Z11C6 B0Z11C6		FR0010208488 FR0010208488	22341499 22341499	F7629A107 F7629A107
GIE GIE	ENGIE	LSE Europe QS (XLON)	Common Stock	Engle SA	GSZ LI	A0ER6Q	B28HB14		FR0010208488	22341499	l
GIE	ENGIE ENGIE	LSE Europe QS (XLON) Brsaltaliana (MTAA)	Common Stock Common Stock	Engle SA Engle SA	GSZ LO ENGI IF	A0ER6Q A0ER6Q	B28HB14 B3BQVC6		FR0010208488 FR0010208488	22341499 22341499	F42768105
GIE GIE	ENGIE ENGIE	Brsaltaliana (MTAA) Euro TLX (ETLX)	Common Stock Common Stock	Engle SA Engle SA	ENGI IM GSZ TE	A0ER6Q A0ER6Q	B3BQVC6 B3BQVC6		FR0010208488 FR0010208488	22341499 22341499	F42768105
GIE	ENGIE	Luxembourg (XLUX)	Common Stock	Engle SA	GSZ LX	A0ER6Q	B3BVQW6		FR0010208488	22341499	l
GIE GIE	ENGIE ENGIE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX)	Common Stock Common Stock	Engle SA Engle SA	ENGI SE ENGI SW	A0ER6Q A0ER6Q	BRTM7D7 BRTM7D7		FR0010208488 FR0010208488	22341499 22341499	F42768105 F42768105
GIE	ENGIE	Euro Comp (XLON)	Common Stock	Engle SA	ENGI1EUR EU	A0ER6Q	5.C.W/D/		FR0010208488	22341499	F42768105
GIE GIE	ENGIE ENGIE	EURO OTC (XLON) EURO OTC (XLON)	Common Stock Common Stock	Engle SA Engle SA	ENGI1EUR XB ENGI1EUR XD	A0ER6Q A0ER6Q			FR0010208488 FR0010208488	22341499 22341499	F42768105 F42768105
GIE	ENGIE	EURO OTC (XLON)	Common Stock	Engle SA	ENGI1EUR XE	A0ER6Q			FR0010208488	22341499	F42768105
GIE GIE	ENGIE ENGIE	EURO OTC (XLON) EURO OTC (XLON)	Common Stock Common Stock	Engle SA Engle SA	ENGI1EUR XL ENGI1EUR XO	A0ER6Q A0ER6Q			FR0010208488 FR0010208488	22341499 22341499	F42768105 F42768105
GIE GIE	ENGIE ENGIE	EURO OTC (XLON) EURO OTC (XLON)	Common Stock Common Stock	Engle SA Engle SA	ENGI1EUR XS ENGI1EUR XV	A0ER6Q A0ER6Q			FR0010208488 FR0010208488	22341499 22341499	F42768105 F42768105
GIE	ENGIE	Euro Comp (XLON)	Common Stock Common Stock	Engle SA Engle SA	ENGICHF EU	A0ER6Q			FR0010208488	22341499	F42768105 F42768105
GIE GIE	ENGIE ENGIE	ITG Posit (XPOS) Liquidnet (LIQU)	Common Stock Common Stock	Engle SA Engle SA	ENGIP PO ENGIP L3	A0ER6Q A0ER6Q			FR0010208488 FR0010208488	22341499	
IGIE	ENGIE	Sigma X MTF (SGMX)	Common Stock	Engle SA	GSZ S1						
GIE GIE	ENGIE ENGIE	EURO OTC (XLON) UBS MTF (XUBS)	Common Stock Common Stock	Engle SA Engle SA	ENGI1EUR XA ENGIP S2	A0ER6Q A0ER6Q			FR0010208488 FR0010208488	22341499	
IGIE	ENGIE	EURO OTC (XLON)	Common Stock	Engle SA	ENGICHF XW	A0ER6Q			FR0010208488	22341499	
IGIE IGIE	ENGIE ENGIE	Berlin (XBER) Berlin (XBER)	ADR ADR	Engle SA Engle SA	GZFB GB GZFB GF	A14XKC A14XKC	BYX0167 BYX0167		US29286D1054 US29286D1054	126845286 126845286	
IGIE	ENGIE	Berlin (XBER)	ADR	Engle SA	GZFB GR	A14XKC	BYX0167		US29286D1054	126845286	
IGIE IGIE	ENGIE ENGIE	Berlin (XBER) OTC US (OOTC)	ADR ADR	Engle SA Engle SA	GZFB GS ENGIY PQ	A14XKC A14XKC	BYX0167 BYY9W15		US29286D1054 US29286D1054	126845286 126845286	
IGIE	ENGIE	OTC US (OOTC)	ADR	Engle SA	ENGIY US	A14XKC	BYY9W15		US29286D1054	126845286	
NGIE ARISIENNE CHAUFFAGE URBAIN	ENGIE ENGIE	OTC US (OOTC) BATS Europe (BATE)	ADR Common Stock	Engie SA PARISIENNE CHAUFFAGE URBAIN	ENGIY UV CHAU EB	A14XKC 919453	BYY9W15 4189165		US29286D1054 FR0000052896	126845286 11389066	
ARISIENNE CHAUFFAGE URBAIN	ENGIE	EN Paris (XPAR)	Common Stock	PARISIENNE CHAUFFAGE URBAIN	CHAU FP	919453	4189165		FR0000052896	11389066	
RISIENNE CHAUFFAGE URBAIN RISIENNE CHAUFFAGE URBAIN	ENGIE ENGIE	Chi-X Europe (CHIX) Euro Comp (XLON)	Common Stock Common Stock	PARISIENNE CHAUFFAGE URBAIN PARISIENNE CHAUFFAGE URBAIN	CHAU IX CHAU EU	919453 919453	4189165		FR0000052896 FR0000052896	11389066 11389066	
AZ PJSC AZ PJSC	GAZ GROUP GAZ GROUP	MICEX Main (MISX) MICEX Main (MISX)	Common Stock Common Stock	GAZ PJSC GAZ PJSC	GAZA RM GAZA RX	903426 903426	B5BKBJ9 RU B5BKBJ9 RU	950579 950579	RU0009034268 RU0009034268	34991693 34991693	
Z PJSC	GAZ GROUP	MICEX Main (MISX)	Preference	GAZ OJSC	GAZAP RM	910283	B5BKC29 RU	330313	RU0009102834	34881083	
IZ PJSC VLOVO BUS PJSC	GAZ GROUP GAZ GROUP	MICEX Main (MISX) MICEX Main (MISX)	Preference Common Stock	GAZ OJSC PAVLOVO BUS PJSC	GAZAP RX PAZA RM	910283 908324	B5BKC29 RU B57MPG4 RU		RU0009102834 RU0009083240		
VLOVO BUS PJSC	GAZ GROUP	MICEX Main (MISX)	Common Stock	PAVLOVO BUS PJSC	PAZA RX	908324	B57MPG4 RU		RU0009083240		
RBIN ELECTRIC CO LTD RBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD HARBIN ELECTRIC CO LTD	Hong Kong (XHKG) Frankfurt (XFRA)	Common Stock Common Stock	HARBIN ELECTRIC CO LTD-H HARBIN ELECTRIC CO LTD-H	1133 HK HP6H GB	A0M4X8 A0M4X8	6422761 HK B1HJDX0 DE	930709 930709	CNE1000003C0 CNE1000003C0	11043780 11043780	
RBIN ELECTRIC CO LTD	HARBIN ELECTRIC CO LTD	Frankfurt (XFRA)	Common Stock	HARBIN ELECTRIC CO LTD-H	HP6H GF	A0M4X8	B1HJDX0 DE	930709	CNE10000003C0	11043780	l
RBIN ELECTRIC CO LTD ENNAI PETROLEUM CORPORATION LIMITED	HARBIN ELECTRIC CO LTD INDIAN OIL CORP LTD aka IOCL	Frankfurt (XFRA) Mumbai (XBOM)	Common Stock Common Stock	HARBIN ELECTRIC CO LTD-H CHENNAI PETROLEUM CORP LTD	HP6H GR MRL IB	A0M4X8 A0B968	B1HJDX0 DE 6121563 IN	930709	CNE10000003C0 INE178A01016	11043780	
ENNAI PETROLEUM CORPORATION LIMITED ENNAI PETROLEUM CORPORATION LIMITED	INDIAN OIL CORP LTD aka IOCL INDIAN OIL CORP LTD aka IOCL	Mumbai (XBOM) Mumbai (XBOM)	Common Stock Common Stock	CHENNAI PETROLEUM CORP LTD CHENNAI PETROLEUM CORP LTD	MRL IN MRL IS	A0B968 A0B968	6121563 IN 6121563 IN		INE178A01016		l
IAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Common Stock	INDIAN OIL CORPORATION LTD	IOCL IB	A0B9FM	6253767 IN		INE242A01010		
DIAN OIL CORP LTD DIAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE) Natl India (XNSE)	Common Stock Common Stock	INDIAN OIL CORPORATION LTD INDIAN OIL CORPORATION LTD	IOCL IN IOCL IS	A0B9FM A0B9FM	6253767 IN 6253767 IN		INE242A01010 INE242A01010		
IAN OIL CORP LTD	INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE)	Sec Lending	INDIAN OIL CORP LTD-SLB	IOCL/S IN	AUDSLIN	0203707 IIV		INEZ4ZAU IUTU		
NIAN OIL CORP LTD NKA IOC PLC	INDIAN OIL CORP LTD aka IOCL INDIAN OIL CORP LTD aka IOCL	Natl India (XNSE) Colombo (XCOL)	Sec Lending Common Stock	INDIAN OIL CORP LTD-SLB LANKA IOC PLC	IOCL/S IS LIOC SL	A0D83I	B0591G4 LK		LK0345N00005		l
NGXI 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		
NGXI HONGDU AVIATION INDUSTRY CO LTD NGXI HONGDU AVIATION INDUSTRY CO LTD	JIANGXI HONGDU AVIATION INDUSTRY CO LTD JIANGXI HONGDU AVIATION INDUSTRY CO LTD	Shanghai (XSHG) Nth SSE-SEHK (XSSC)	Common Stock Common Stock	JIANGXI HONGDU AVIATION-A JIANGXI HONGDU AVIATION-A	600316 CH 600316 C1	A0M4EK A0M4EK	6304375 CN BP3R8J7 CN		CNE0000015N3 CNE0000015N3		l
MAZ PJSC	KAMAZ PJSC	MICEX Main (XMIC)	Common Stock	KAMAZ PJSC	KMAZ RM	895958	B55XCQ8 RU		RU0008959580	6692125	
MAZ PJSC MAZ PJSC	KAMAZ PJSC KAMAZ PJSC	MICEX Main (XMIC) MICEX Main (XMIC)	Common Stock Common Stock	KAMAZ PJSC KAMAZ PJSC	KMAZ RP KMAZ RX	895958 895958	B55XCQ8 RU B55XCQ8 RU		RU0008959580 RU0008959580	6692125 6692125	l
FTEKAMSKY AVTOZAVOD aka NEFAZ FTEKAMSKY AVTOZAVOD aka NEFAZ	KAMAZ PJSC	MICEX Main (XMIC) MICEX Main (XMIC)	Common Stock	NEFAZ PJSC	NFAZ RM		B5637D9 RU		RU0009115604	-	l
FTEKAMSKY AVTOZAVOD aka NEFAZ INDUSTRIAL SYSTEMS CO. LTD	KAMAZ PJSC LS INDUSTRIAL SYSTEMS CO. LTD	MICEX Main (XMIC) Korea (XKRX)	Common Stock Common Stock	NEFAZ PJSC LS INDUSTRIAL SYSTEMS	NFAZ RX 010120 KP	895497	B5637D9 RU 6378217 KR		RU0009115604 KR7010120004		
INDUSTRIAL SYSTEMS CO. LTD N SE	LS INDUSTRIAL SYSTEMS CO. LTD MAN SE	Korea (XKRX) Equiduct (XEQT)	Common Stock Common Stock	LS INDUSTRIAL SYSTEMS MAN SE	010120 KS MAN BQ	895497 593700	6378217 KR 5563520 DE	944020	KR7010120004 DE0005937007	1117254	
N SE	MAN SE	BX Worldcaps (XBRN)	Common Stock	MAN SE	MAN BW	593700	5563520 DE	944020	DE0005937007	1117254	l
N SE N SE	MAN SE MAN SE	BATS Europe (BATE) Xetra (XETR)	Common Stock Common Stock	MAN SE MAN SE	MAN EB MAN GB	593700 593700	5563520 DE 5563520 DE	944020 944020	DE0005937007 DE0005937007	1117254 1117254	l
N SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GD	593700	5563520 DE	944020	DE0005937007	1117254	l
IN SE IN SE	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Common Stock Common Stock	MAN SE MAN SE	MAN GF MAN GH	593700 593700	5563520 DE 5563520 DE	944020 944020	DE0005937007 DE0005937007	1117254 1117254	l
IN SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GI	593700	5563520 DE	944020	DE0005937007	1117254	l
AN SE AN SE	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Common Stock Common Stock	MAN SE MAN SE	MAN GM MAN GR	593700 593700	5563520 DE 5563520 DE	944020 944020	DE0005937007 DE0005937007	1117254 1117254	l
N SE	MAN SE	Xetra (XETR)	Common Stock	MAN SE	MAN GS	593700	5563520 DE	944020	DE0005937007	1117254	l
IN SE	MAN SE MAN SE	Xetra (XETR) Gettex (MUND)	Common Stock Common Stock	MAN SE MAN SE	MAN GY MAN GZ	593700 593700	5563520 DE	944020 944020	DE0005937007 DE0005937007	1117254 1117254	
AN SE					MAN QT		5563520 DE	944020	DE0005937007	1117254	
AN SE AN SE	MAN SE	Quotrix Exch (XQTX)	Common Stock	MAN SE		593700					
IN SE	MAN SE MAN SE MAN SE	Quotrix Exch (XQTX) Sigma X MTF (SGMX) BX Worldcaps (XBRN)	Common Stock Common Stock Common Stock	MAN SE MAN SE MAN SE	MAN S1 MAN SW	593700 593700 593700	5563520 DE 5563520 DE 5563520 DE	944020 944020	DE0005937007	1117254 1117254	

MAN SE MAN SE	MAN SE MAN SE	Turquoise (TRQX) Euro OTC (XLON)	Common Stock Common Stock	MAN SE MAN SE	MAN TQ MAN XA	593700 593700	5563520 DE		944020	DE0005937007 DE0005937007	1117254 1117254	
MAN SE MAN SE	MAN SE MAN SE	Euro OTC (XLON) Euro OTC (XLON)	Common Stock Common Stock	MAN SE MAN SE	MAN XW MAN XD	593700 593700				DE0005937007 DE0005937007	1117254 1117254	
MAN SE	MAN SE	Aquis Exchg (AQXE)	Common Stock	MAN SE	MAND QX	593700	5563520 DE		944020	DE0005937007	1117254	
MAN SE MAN SE	MAN SE MAN SE	Chi-X Europe (CHIX) SIX Swiss Ex (XSWX)	Common Stock Common Stock	MAN SE MAN SE	MANG IX MAN SE	593700 593700	5563520 DE 5628883 CH		944020 944020	DE0005937007 DE0005937007	1117254 1117254	
MAN SE	MAN SE	Euro Comp (XLON)	Common Stock	MAN SE	MAN EU	593700	B10LRX1 GB			DE0005937007	1117254	
MAN SE MAN SE	MAN SE MAN SE	LSE EuropeQS (XLON) LSE EuropeQS (XLON)	Common Stock Common Stock	MAN SE MAN SE	MAN LI MAN LO	593700 593700	B10LRX1 GB B10LRX1 GB		944020 944020	DE0005937007 DE0005937007	1117254 1117254	
MAN SE	MAN SE	Euro OTC (XLON)	Common Stock	MAN SE	MAN XB	593700	B10LRX1 GB			DE0005937007	1117254	
MAN SE MAN SE	MAN SE MAN SE	Euro OTC (XLON) Euro OTC (XLON)	Common Stock Common Stock	MAN SE MAN SE	MAN XE MAN XS	593700 593700	B10LRX1 GB B10LRX1 GB			DE0005937007 DE0005937007	1117254 1117254	
MAN SE MAN SE	MAN SE MAN SE	Euro OTC (XLON) Euro TLX (ETLX)	Common Stock Common Stock	MAN SE MAN SE	MAN XV MAN TE	593700 593700	B10LRX1 GB B88FOL3 IT		944020	DE0005937007 DE0005937007	1117254 1117254	
MAN SE	MAN SE	Euro Comp (XLON)	Common Stock	MAN SE	MANCHF EU	593700	Boor OL3 II		344020	DE0005937007	1117254	D51716104
MAN SE MAN SE	MAN SE MAN SE	Blockmatch (BLOX) ITG Posit (XPOS)	Common Stock Common Stock	MAN SE MAN SE	MAND B3 MAND PO	593700 593700				DE0005937007 DE0005937007	1117254 1117254	D51716104
MAN SE	MAN SE	UBS MTF (XUBS)	Common Stock	MAN SE	MAND S2	593700				DE0005937007	1117254	201110104
MAN SE MAN SE	MAN SE MAN SE	Euro OTC (XLON) BATS Europe (BATE)	Common Stock Preference	MAN SE MAN SE-PFD	MAN XL MAN3D EB	593700 593703	5563531			DE0005937007 DE0005937031	1117254 1114816	D51716112
MAN SE	MAN SE	Blockmatch (BLOX)	Preference	MAN SE-PFD	MAN3D B3	593703				DE0005937031		501710112
MAN SE MAN SE	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Preference Preference	MAN SE-PFD MAN SE-PFD	MAN3 GB MAN3 GD	593703 593703	5563531 DE 5563531 DE		944021 944021	DE0005937031 DE0005937031	1114816 1114816	
MAN SE MAN SE	MAN SE MAN SE	Xetra (XETR)	Preference	MAN SE-PFD MAN SE-PFD	MAN3 GF MAN3 GH	593703	5563531 DE		944021	DE0005937031	1114816	
MAN SE	MAN SE	Xetra (XETR) Xetra (XETR)	Preference Preference	MAN SE-PFD	MAN3 GI	593703 593703	5563531 DE 5563531 DE		944021 944021	DE0005937031 DE0005937031	1114816 1114816	
MAN SE MAN SE	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Preference Preference	MAN SE-PFD MAN SE-PFD	MAN3 GM MAN3 GR	593703 593703	5563531 DE 5563531 DE		944021 944021	DE0005937031 DE0005937031	1114816 1114816	
MAN SE	MAN SE	Xetra (XETR)	Preference	MAN SE-PFD	MAN3 GS	593703	5563531 DE		944021	DE0005937031	1114816	
MAN SE MAN SE	MAN SE MAN SE	Xetra (XETR) Quotrix Exch (XQTX)	Preference Preference	MAN SE-PFD MAN SE-PFD	MAN3 GY MAN3 QT	593703 593703	5563531 DE 5563531 DE		944021 944021	DE0005937031 DE0005937031	1114816 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	MAN SE MAN SE	Euro Comp (XLON) Euro OTC (XLON)	Preference Preference	MAN SE-PFD MAN SE-PFD	MAN3 EU MAN3 XS	593703 593703	B28K2R6 GB B28K2R6 GB			DE0005937031 DE0005937031	1114816 1114816	
MAN SE	MAN SE	Tradegate (XGAT)	Preference	MAN SE-PFD	MAN3 TH	593703			944021	DE0005937031	1114816	
MAN SE MAN SE	MAN SE MAN SE	OTC US (OOTC) OTC US (OOTC)	ADR ADR	MAN SE-ADR MAN SE-ADR	MAGOY PQ MAGOY US	A0YF6N A0YF6N	B3DY656 US B3DY656 US	561641101 561641101		US5616411014 US5616411014	54361637 54361637	
MAN SE	MAN SE	OTC US (OOTC)	ADR	MAN SE-ADR	MAGOY UV	A0YF6N	B3DY656 US	561641101		US5616411014	54361637	
MAN SE MAN SE	MAN SE MAN SE	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	MAN SE-ADR MAN SE-ADR	MANC GF MANC GR	A0YF6N A0YF6N	B5900P0 DE B5900P0 DE	561641101 561641101		US5616411014 US5616411014	54361637 54361637	
MAN SE MAN SE	MAN SE MAN SE	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	MAN SE-ADR MAN SE-UNSPONSORED ADR	MANC GS MANC GY	A0YF6N A0YF6N	B5900P0 DE B5900P0 DE	561641101 561641101		US5616411014 US5616411014	54361637 54361637	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GB	785000	5555969 DE	561641101	916291	DE0007850000	1121936	
RENK AG RENK AG	MAN SE MAN SE	Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock Common Stock	RENK AG RENK AG	ZAR GF ZAR GM	785000 785000	5555969 DE 5555969 DE		916291 916291	DE0007850000 DE0007850000	1121936 1121936	
RENK AG	MAN SE	Frankfurt (XFRA)	Common Stock	RENK AG	ZAR GR	785000	5555969 DE		916291	DE0007850000	1121936	
RENK AG RENK AG	MAN SE MAN SE	Frankfurt (XFRA) Gettex (MUND)	Common Stock Common Stock	RENK AG RENK AG	ZAR GS ZAR GZ	785000 785000	5555969 DE		916291 916291	DE0007850000 DE0007850000	1121936 1121936	
RENK AG	MAN SE	Euro Comp (XLON)	Common Stock	RENK AG	ZAR EU	785000	B28LK31 GB		010201	DE0007850000	1121936	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	Chi-X Europe (CHIX) LSE EuropeQS (XLON)	Common Stock Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG	VW IX VOW LI	766400 766400	5496994 0308908 DE			DE0007664005 DE0007664005	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	LSE EuropeQS (XLON)	Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG	VOW LO	766400	0308908 DE			DE0007664005	1115308	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	EURO OTC (XLON) EURO OTC (XLON)	Common Stock Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG	VOW XE VOW XO	766400 766400	0308908 GB 0308908 GB			DE0007664005 DE0007664005	1115308 1115308	
VOLKSWAGEN AG	MAN SE	EURO OTC (XLON)	Common Stock	VOLKSWAGEN AG	VOW XS	766400	0308908 GB			DE0007664005	1115308	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	EURO OTC (XLON) SIX Swiss Ex (XSWX)	Common Stock Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG	VOW XV VOW BW	766400 766400	0308908 GB 5496994 CH			DE0007664005 DE0007664005	1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX)	Common Stock	VOLKSWAGEN AG	VOW SE	766400	5496994 CH			DE0007664005	1115308	
VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE)	Common Stock Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	VOW SE VOW SW VW EB	766400 766400 766400	5496994 CH 5496994 CH 5496994 CH		996800	DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308	
VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE MAN SE MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS)	Common Stock Common Stock Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA	766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL		996800	DE0007664005 DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308 1115308	
VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE MAN SE MAN SE MAN SE MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT)	Common Stock Common Stock Common Stock Common Stock Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ	766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497061 LU 5497102 DE		996800	DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE MAN SE MAN SE MAN SE MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX)	Common Stock	VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX	766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497061 LU		996800	DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEGT) BATS Europe (BATE) Xetra (XETR) Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW EB VOW GB VOW GD	766400 766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497061 LU 5497102 DE 5497102 DE 5497102 DE 5497102 DE		996800	DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEOT) BATS Europe (BATE) Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW EB VOW GB	766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497061 LU 5497102 DE 5497102 DE 5497102 DE		996800	DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GB VOW GF VOW GH VOW GH	766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497102 DE 5497102 DE 5497102 DE 5497102 DE 5497102 DE 5497102 DE 5497102 DE 5497102 DE		996800	DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005 DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEOT) BATS Europe (BATE) Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW EB VOW GB VOW GD VOW GF VOW GH	766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5497016 NL 5497016 1LU 5497102 DE 5497102 DE		996800	DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BB VOW GB VOW GF VOW GF VOW GH VOW GM VOW GM VOW GM	766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 LU 5497061 LU 5497102 DE 5497102 DE		996800	DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR)	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA BA VOW LX VOW BB VOW GB VOW GB VOW GF VOW GF VOW GH VOW GM VOW GM VOW GS VOW GS VOW GS VOW GS	766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497012 DE 5497102 DE		996800	DE0007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEOT) BATS Europe (BATE) Xetra (XETR) X	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB WA NA VOW LX VOW BQ VOW EB VOW GB VOW GF VOW GF VOW GH VOW GM VOW GW VOW GS VOW GY VOW GY VOW GZ VOW QT	766400 768400 768400 768400 768400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497010 DE 5497102 DE			DE0007684005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEOT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW VW EB WAN NA VOW LX VOW BQ VOW EB VOW GB VOW GF VOW GF VOW GF VOW GF VOW GW VOW GS VOW GY VOW GY VOW GY VOW GY VOW TH VOW TQ	765400 765400	5496994 CH 5496994 CH 5496994 CH 5497061 NL 549702 DE 5497102 DE			DE007664005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEOT) BATS Europe (BATE) Xetra (XETR) Xet	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GF VOW GF VOW GF VOW GF VOW GM VOW GF VOW GY VOW GZ VOW GT VOW TH	766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400 766400	5486994 CH 5486994 CH 5487016 NL 5487016 NL 548702 DE 5487102 DE			DE0007684005	1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) Xetra (XE	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BB VOW GB VOW GF VOW GF VOW GF VOW GF VOW GM VOW GW VOW GW VOW GW VOW GW VOW GW VOW GW VOW GY VOW GY VOW GZ VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 549702 DE 5497102 DE		996800	DE007764005	1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSWX) SIX Swiss Ex (XSWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) Xet	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GF VOW GF VOW GI VOW GR VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497016 NL 5497102 DE		996800	DE007764005 DE00776405	1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Average (ARTE) Translander (XSAT) Translander	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB WA NA VOW LX VOW BQ VOW EB VOW GB VOW GF VOW GF VOW GF VOW GF VOW GF VOW GT VOW GY VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497061 NL 5497061 NL 5497061 DE 5497102 DE		996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Arter (XETR) A	Common Stock	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BO VOW GB VOW GB VOW GF VOW GS VOW GS VOW GY VOW GZ VOW GT VOW TH VOW TA VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497016 NL 5497102 DE		996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GF VOW GH VOW GH VOW GW VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497018 NL 5497102 DE		996800	DE007764005 DE00776405	1115308 1115308	
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GF VOW GH VOW GH VOW GH VOW GW VOW GY VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497018 NL 5497102 DE		996800 996800	DE007764005 DE00776405	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GB VOW GF VOW GF VOW GH VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497018 NL 5497102 DE		996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GB VOW GF VOW GH VOW GE VOW GT VOW TH VOW TO VOW GE VOW GT VOW TH VOW TO VOW GE VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497018 NL 5497102 DE		996800 996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW EB VOW GB VOW GF VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497018 NL 5497102 DE		996800 996800	DE007764005 DE00776405	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEOT) BATS Europe (BATE) Xeria (XETR) X	Common Stock Commo	VOLKSWAGEN AG	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW EB VOW GB VOW GF VOW GF VOW GF VOW GF VOW GF VOW GR VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497061 NL 5497062 NL 5497162 NL		996800 996800	DE007764005 DE0077664005	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VO	VOW SE VOW SW W EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GF VOW GH VOW GE VOW GE VOW GZ VOW	766400 766400	5496994 CH 5496994 CH 5499016 NL 5497061 LU 5497102 DE 5497102 DE		996800 996800	DE007764005 DE0077664005 DE007766400	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GF VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 549702 DE 5497102 DE		996800 996800	DE007764005 DE0077664005 DE00	1115308 1115308	D94523145
VOLKSWAGEN AG	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Area (XETR) Control Cont	Common Stock Preference Preference Preference Preference	VOLKSWAGEN AG VO	VOW SE VOW SW W EB VWA NA VOW LX VOW BO VOW EB VOW GB VOW GF VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497012 DE 5497102 DE		996800 996800	DE007764005 DE0077664005 DE007766	1115308 1115308	D94523145
VOLKSWAGEN AG VO	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Ameterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VO	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GB VOW GB VOW GF VOW GH VOW GS VOW GY VOW GS VOW GY VOW GS VOW GY VOW GS VOW GY VOW GS VOW GZ VOW HI VOW TO VOW SI VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5496994 CH 5497061 LU 5497061 LU 54970710 DE 5497102 DE		996800 996800	DE007764005 DE0077664005 DE007766400	1115308 1115308	D94523145
VOLKSWAGEN AG VO	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VO	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GB VOW GF VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 549702 DE 5497102 DE		996800 996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	D94523145
VOLKSWAGEN AG VO	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VOLKSWAGEN AG-PREF	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GF VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497016 NL 5497012 DE 5497102 DE		996800 996800	DE007764005 DE00776405	1115308 111530	D94523145
VOLKSWAGEN AG VO	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VO	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GB VOW GF VOW GF VOW GF VOW GF VOW GF VOW GF VOW GS VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5496994 CH 5497061 LU 5497061 LU 54970710 DE 5497102 DE		996800 996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	D94523145
VOLKSWAGEN AG VO	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xetra (XETR) X	Common Stock Commo	VOLKSWAGEN AG VOLKSWAGEN AG-PREF	VOW SE VOW SW W EB VWA NA VOW LX VOW BB VOW GB VOW GB VOW GB VOW GF VOW GH VOW GM VOW TH VOW TO VOW TH VOW TO VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5497016 NL 5497016 NL 5497012 DE 5497102 DE		996800 996800	DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE007764005 DE00776405	1115308 1115308	D94523103
VOLKSWAGEN AG VO	MAN SE	SIX Swiss Ex (XSIWX) SIX Swiss Ex (XSIWX) BATS Europe (BATE) EN Amsterdam (XAMS) Luxembourg (XLUX) Equiduct (XEQT) BATS Europe (BATE) Xequiduct (XEQT) BATS Europe (BATE) Xequiduct (XETR) Xetra (XETR)	Common Stock Commo	VOLKSWAGEN AG VO	VOW SE VOW SW VW EB VWA NA VOW LX VOW BQ VOW GB VOW GB VOW GF VOW	766400 766400	5496994 CH 5496994 CH 5496994 CH 5496994 CH 5497061 NL 5497061 NL 5497061 DE 5497102 DE		996800 996800	DE007764005 DE0077	1115308 1115308	

VOLKSWAGEN AG	MAN SE	BATS Europe (BATE)	Preference	VOLKSWAGEN AG-PREF	VOW3 EB	766403	5497168 DE			DE0007664039	1117432	1
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW3 GB VOW3 GD	766403 766403	5497168 DE 5497168 DE			DE0007664039 DE0007664039	1117432 1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GF	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW3 GH VOW3 GI	766403 766403	5497168 DE 5497168 DE			DE0007664039 DE0007664039	1117432 1117432	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GM	766403	5497168 DE 5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG	MAN SE	Xetra (XETR)	Preference	VOLKSWAGEN AG-PREF	VOW3 GR	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	Xetra (XETR) Xetra (XETR)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW3 GS VOW3 GY	766403 766403	5497168 DE 5497168 DE			DE0007664039 DE0007664039	1117432 1117432	
VOLKSWAGEN AG	MAN SE	Chi-X Europe (CHIX)	Preference	VOLKSWAGEN AG-PREF	VOW3 IX	766403	5497168 DE			DE0007664039	1117432	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	Quotrix Exch (XQTX) Aguis Exchg (AQXE)	Preference Preference	VOLKSWAGEN AG-PREF	VOW3 QT VOW3 QX	766403 766403	5497168 DE 5497168 DE			DE0007664039 DE0007664039	1117432 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 MAN SE	Tradegate (XGAT) Turquoise (TRQX)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW3 TH VOW3 TQ	766403 766403	5497168 DE 5497168 DE			DE0007664039 DE0007664039	1117432 1117432	
VOLKSWAGEN AG	MAN SE	Luxembourg (XLUX)	Preference	VOLKSWAGEN AG-PREF	VOWPLX	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 VOLKSWAGEN AG	MAN SE MAN SE	OTC US (OOTC) OTC US (OOTC)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VLKPF US VLKPF UV	766403 766403	B1GXSC7 US B1GXSC7 US			DE0007664039 DE0007664039	1117432 1117432	
VOLKSWAGEN AG	MAN SE	Brsaltaliana (MTAA)	Preference	VOLKSWAGEN AG-PREF	VOW3 IF	766403	BD3VRN2 IT			DE0007664039	1117432	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	Brsaltaliana (MTAA) Mexico (XMEX)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW3 IM VOW3N MM	766403 766403	BD3VRN2 IT BYQT730			DE0007664039 DE0007664039	1117432 1117432	D94523103
VOLKSWAGEN AG	MAN SE	Euro Comp (XLON)	Preference	VOLKSWAGEN AG-PREF	VOW3 EU	766403	5141100			DE0007664039	1117432	201020100
VOLKSWAGEN AG	MAN SE MAN SE	Euro Comp (XLON) Blockmatch (BLOX)	Preference Preference	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-PREF	VOW3CHF EU VOW3D B3	766403 766403				DE0007664039 DE0007664039	1117432	
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 VOLKSWAGEN AG	MAN SE MAN SE	UBS MTF (XUBS) OTC US (OOTC)	Preference ADR	VOLKSWAGEN AG-PREF VOLKSWAGEN AG-SPONS ADR	VOW3D S2 VLKAY PQ	766403 879511	2930484 US	928662303		DE0007664039 US9286623031	11526233	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR	VLKAY US	879511	2930484 US	928662303		US9286623031	11526233	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	OTC US (OOTC) Frankfurt (XFRA)	ADR ADR	VOLKSWAGEN AG-SPONS ADR VOLKSWAGEN AG-SPONS ADR	VLKAY UV VOW4 GB	879511 879511	2930484 US B62V8T7	928662303 928662303		US9286623031 US9286623031	11526233 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 VOLKSWAGEN AG	MAN SE MAN SE	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	VOLKSWAGEN AG-SPONS ADR VOLKSWAGEN AG-SPONS ADR	VOW4 GR VOW4 GY	879511 879511	B62V8T7 DE B62V8T7 DE	928662303 928662303		US9286623031 US9286623031	11526233 11526233	
VOLKSWAGEN AG	MAN SE	OTC US (OOTC)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VLKPY PQ	A0DPR2	2265960 US	928662402		US9286624021	42872202	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	OTC US (OOTC) OTC US (OOTC)	ADR ADR	VOLKSWAGEN AG-SPONS ADR PREF	VLKPY US VLKPY UV	A0DPR2 A0DPR2	2265960 US 2265960 US	928662402 928662402		US9286624021 US9286624021	42872202 42872202	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GB	A0DPR2	B603118 DE	928662402		US9286624021	42872202	
VOLKSWAGEN AG VOLKSWAGEN AG	MAN SE MAN SE	Frankfurt (XFRA) Frankfurt (XFRA)	ADR ADR	VOLKSWAGEN AG-SPONS ADR PREF VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GF VOW5 GR	A0DPR2 A0DPR2	B603118 DE B603118 DE	928662402 928662402		US9286624021 US9286624021	42872202 42872202	
VOLKSWAGEN AG	MAN SE	Frankfurt (XFRA)	ADR	VOLKSWAGEN AG-SPONS ADR PREF	VOW5 GY	A0DPR2	B603118 DE	928662402		US9286624021	42872202	
MANAGEM SOCIETE METALLURGIQUE D'IMITER	MANAGEM MANAGEM	Casablanca (XCAS) Casablanca (XCAS)	Common Stock	MANAGEM	MNG MC SMI MC	165414 256307	6287454 MA 6007759 MA			MA0000011058 MA0000010068		
MANGALORE REFINERY & PETROCHEMICALS LIMITED	OIL & NATURAL GAS CORP	Mumbai (XBOM)	Common Stock Common Stock	MANGALORE REFINERY & PETRO	MRPL IB	AONANW	6121530 IN			INE103A01014		
MANGALORE REFINERY & PETROCHEMICALS LIMITED	OIL & NATURAL GAS CORP	Mumbai (XBOM)	Common Stock	MANGALORE REFINERY & PETRO	MRPL IN	AONANW	6121530 IN			INE103A01014		
MANGALORE REFINERY & PETROCHEMICALS LIMITED OIL & NATURAL GAS CORP LTD	OIL & NATURAL GAS CORP	Mumbai (XBOM) Natl India (XNSE)	Common Stock Common Stock	MANGALORE REFINERY & PETRO OIL & NATURAL GAS CORP LTD	MRPL IS ONGC IN	A0NANW A1H6P4	6121530 IN 6139362 IN			INE103A01014 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 INDIA LTD	OIL & NATURAL GAS CORP	Natl India (XNSE) Natl India (XNSE)	Common Stock Common Stock	OIL & NATURAL GAS CORP LTD	ONGC IS OINLIB	A1H6P4 A0X9PF	6139362 IS B409HQ9 IN			INE213A01029 INE274.I01014		
OIL INDIA LTD	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 OIL INDIA LTD	Natl India (XNSE) Natl India (XNSE)	Sec Lending	OIL INDIA LTD-SLB OIL INDIA LTD-SLB	OINL/S IS OINL/S IN							
OIL INDIA LTD	OIL INDIA LTD	Nati India (XNSE)	Sec Lending Common Stock	OIL INDIA LTD-SLB	OINL'S IN	A0X9PF	B409HQ9 IN			INE274J01014		
ORCA GOLD INC	ODOA COLD ING											
	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 ORCA GOLD INC	ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC	Venture (XTSX) Venture (XTSX) Venture (XTSX)	Common Stock Common Stock Common Stock	ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC	ORG CJ ORG CN ORG CV	A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102		CA68558N1024 CA68558N1024 CA68558N1024	91768224 91768224 91768224	
ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC	ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC	Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX)	Common Stock Common Stock Common Stock Common Stock	ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC	ORG CJ ORG CN ORG CV ORG DG	A1T8LS A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102 68558N102		CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024	91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX)	Common Stock Common Stock Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CV ORG DG ORG DV ORG QF	A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CV ORG DG ORG DV ORG QF ORG QH	A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX) Venture (XTSX)	Common Stock Common Stock Common Stock Common Stock Common Stock Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CV ORG DG ORG DV ORG QF	A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CV ORG DG ORG DV ORG QF ORG QH ORG TG ORG TN ORG TV	A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX)	Common Stock	ORGA GOLD INC	ORG CJ ORG CN ORG CV ORG DG ORG DV ORG QF ORG QH ORG TG ORG TN	A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS A1T8LS	B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA B84J7Q3 CA	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC)	Common Stock	ORGA GOLD INC	ORG CJ ORG CN ORG CV ORG DG ORG DV ORG OF ORG GF ORG TG ORG TG ORG TV CANWF PQ CANWF US CANWF UV	ATTBLS	B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B8JYMF7 US B8JYMF7 US B8JYMF7 US	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N103 68558N104 68558N104		CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CV ORG DV ORG DV ORG GF ORG GH ORG TG ORG TT ORG TV CANWF PQ CANWF US CANWF US HJBA GB	ATTBLS	B84J703 CA B84J703 CA B8JYMF7 US B8JYMF7 US B8JYMF7 US B8JYMF7 US	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N104 68558N104		CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024 CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) Frankfurt (XFRA) Frankfurt (XFRA) Frankfurt (XFRA) Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CN ORG DV ORG DV ORG GF ORG GH ORG TG ORG TN ORG TV CANWF PQ CANWF US CANWF UV HJBA GB HJBA GR	ATTBLS	B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J707 CA B8JYMF7 US B8JYMF7 US B8JYMF7 US B8J5SS9 DE B9L5SS9 DE B9L5SS9 DE	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) For (XTSX) For (XTSX) For (XTSX) Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DG ORG GT ORG GT ORG TN ORG TN CANWF US HJBA GF HJBA GS	ATTBLS	B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J7WF7 US B8JYMF7 US B8JYMF7 US B8JYMF7 US B8JSSS9 DE B9JSSS9 DE B9JSSS9 DE	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N103 68558N104 68558N104 68558N104 68558N104 68558N102 68558N102		CARBSSBN 1024 CARBSSBN 1024 CARBSBN	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225	
ORCA GOLD INC	ORCA GOLD INC	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) Frankfurt (XFRA) Frankfurt (XFRA) Frankfurt (XFRA) Frankfurt (XFRA) Frankfurt (XFRA)	Common Stock	ORCA GOLD INC	ORG CJ ORG CN ORG CN ORG DV ORG DV ORG GF ORG GH ORG TG ORG TN ORG TV CANWF PQ CANWF US CANWF UV HJBA GB HJBA GR	ATTBLS	B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J703 CA B84J707 CA B8JYMF7 US B8JYMF7 US B8JYMF7 US B8J5SS9 DE B9L5SS9 DE B9L5SS9 DE	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102		CA68558N1024	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC	ORCA GOLD INC OR	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) Frankfurt (XFRA)	Common Stock	ORCA GOLD INC ENCEN	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DY ORG DG ORG DF ORG GF ORG TG ORG TN ORG TV CANWF PO CANWF US CANWF US CANG BH HAG GB HAG GF HAG GR KLCSS MK	ATTRLS AT	B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B84J7/33 CA B8JYMF7 US B8JYMF7 US B	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	915270	CARSESEN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC OR	ORCA GOLD INC OR	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) Frankfurt (XFRA) Frankfurt	Common Stock	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DY ORG DF ORG DF ORG DF ORG TG ORG TN ORG TV CANWF PO CANWF US CANWF US CANWF US CANWF US CANWF US CANWF US MAG GB HJBA GF HJBA GS HJBA GR HJBA GS MK MISC MK MMHE MK	ATTRLS AT	B84J7/33 CA B8JYMF7 US B8JYMF7 U	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSIN 1124 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC OR	ORCA GOLD INC OR	Venture (XTSX) Finaldur (XFRA) Finald	Common Stock	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DG ORG DF ORG DF ORG DF ORG TG OR	ATTRLS AT	B84J7/33 CA B84J7/35 CA B84J7/	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC OR	ORCA GOLD INC OR	Venture (XTSX) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) OTC US (OOTC) Frankfurt (XFRA) Frankfurt	Common Stock	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DY ORG DF ORG DF ORG DF ORG TG ORG TN ORG TV CANWF PO CANWF US CANWF US CANWF US CANWF US CANWF US CANWF US MAG GB HJBA GF HJBA GS HJBA GR HJBA GS MK MISC MK MMHE MK	ATTRLS AT	B84J7/33 CA B8JYMF7 US B8JYMF7 U	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSIN 1124 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC OR	ORCA GOLD INC OR	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC ENGEN KLCCP STAPLED GROUP MISC BHD MALAYSIA MARINE AND HEAVY EN PETRONAS CHEMICALS GROUP BHD PETRONAS DAGANAGA BHD PETRONAS GAS BHD POWER CONSTRUCTION CORP OF-A	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DY ORG DG ORG DF ORG DF ORG DF ORG TG ORG TN ORG TV CANWF PC CANWF US CA	ATTRLS AT	B84J7/03 CA B84J7/	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSIN 1124 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC OR	ORCA GOLD INC ORCA ORCA ORCA ORCA ORCA ORCA ORCA ORC	Venture (XTSX) Ventur	Common Stock	ORCA GOLD INC ENSEN KLCCP STAPLED GROUP BHO MALAYSIA MARINE AND HEAVY EN PETRONAS CHEMICALS GROUP BHO PETRONAS OLAGANGAN BHO PETRONAS CHEMICALS GROUP BHO PETRONAS CHEMICALS GROUP BHO PETRONAS OLAGANGAN BHO PETRONAS GORS BHD POWER CONSTRUCTION CORP OF-A	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DG ORG DF ORG DF ORG DF ORG TG ORG TG ORG TO CANWIF EV CANWIF EV CANWIF EV ENGRE GB HAGA GB HAG	ATTRLS AT	B84J7/33 CA B84J7/	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	
ORCA GOLD INC OR	ORCA GOLD INC OR	Venture (XTSX) OTC US (OOTC) O	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG ORG TG ORG TO CANWIF DC CANWIF DC CANWIF US CA	ATTRLS AT	B84J7/33 CA B84J7/	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSIN 1024 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768224 91768225 91768224 91768225 91768224	
ORCA GOLD INC OR	ORCA GOLD INC ORCA ORCA ORCA ORCA ORCA ORCA ORCA ORC	Venture (XTSX) Frandurt (XFRA) Fra	Common Stock	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/37 CB BBJYMF7 US BB	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768225 91768225 91768225 91768226 91768227 9176827 917687 9176827	
ORCA GOLD INC PRICE ORCA GOLD INC ENGEN BOTSWANA LTD LLCCP STAPLED GROUP MALAYSIA INTERNATIONAL SHIPPING COMPANY #WA MISC BHD MALAYSIA MARINE AND HEAVY ENSINEERING HOLDINGS BHD PETRONAS DAGANCAN BHD PETRONAS DAGANCAN BHD PETRONAS CAS BHD PETRONAS ORS BHD PETRONAS OR SHOP ORCE CONSTRUCTION CORP OF CHINA POWER CONSTRUCTION CORP OF CHINA SHANGHAI ELECTRIC GROUP CO LTD SHANGHAI ELECTRIC GROUP CO LTD SHANGHAI ELECTRIC GROUP CO LTD	ORCA GOLD INC PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD BERTERONAS PETROLIAM SOSIONAL BERHAD BERTERONAS PETROLIAM SOSIONAL BERHAD BERTERONAS PETROLIAM SOSIONAL BERTERO BERTERONAS PETROLIAM BERTERO BERTERONAS PETROLIAM BERTERO BERTERONAS PETROLIAM BERTERO BER	Venture (XTSX) Frandfurt (XFRA) Bursa Malaysia (XMLS) Frandfurt (XFRA)	Common Stock	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DF ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/35 CA BB7/35 CA BB7/	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSSESNI 1024 CARSSE	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768225 91768225 91768226 91768227 9176827 917	
ORCA GOLD INC ORCA GOLD	ORCA GOLD INC ORCA ORCA ORCA ORCA ORCA ORCA ORCA ORC	Venture (XTSX) OTC US (OOTC) O	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG ORG TG ORG TN ORG TV CANWIF PO CANWIF US CANWI	ATTRLS AT	B84J7/33 CA B84J7/35 CA B84J7/	68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102 68558N102	905279	CARSESSIN 1024 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768227 91768227 91768224	
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ORCA GOLD INC ORCA GOLD	ORCA GOLD INC ORCA GOLD	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG DG ORG DV ORG OF ORG OF ORG OF ORG TG ORG TO ORG TO CANWF EV CANWF EV CANWF EV CANWF US	ATTRLS ATRLS ATR	B84J7/33 CA B84J7/34 CA B84J7/35 DE B94J5559 DE B94J5559 DE B94J5559 DE B94J5559 DE B94J5559 DE B94J559 DE B94J559 DE B94J59 DE B94J59 CA B94J76 CA B9	68558N102 68558N102	905279	CARSESSIN 1024 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768225 91768225 91768226 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 91768227 9176827	Y76824104
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ORCA GOLD INC PRESENT OR GOLD INC ORCA GOLD INC ORCA GOLD INC ORCA GOLD INC DRES BOTSWANA LTD KLCCP STAPLED GROUP MALAYSIA INTERNATIONAL SHIPPING COMPANY aka MISC BHD MALAYSIA MARINE AND HEAVY ENGINEERING HOLDINGS BHD PETRONAS DAGANGAN BHD PETRONAS DAGANGAN BHD PETRONAS GAS BHD POWER CONSTRUCTION CORP OF CHINA POWER CONSTRUCTION CORP OF COLD SHANGHAI ELECTRIC GROUP CO LTD SHANGHAI ELECTRIC GROUP CO LT	ORCA GOLD INC PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD BERHAD SEPTRONAS PETROLIAM NASIONAL BERHAD BERHAD SENDAS PETROLIAM NASIONAL BERHAD BERHAD SEPTRONAS PETROLIAM NASIONAL BERHAD BERHAD SEPTRONAS PETROLIAM SOSIONAL BERHAD SEPTRONAS PETROLIAM	Venture (XTSX) Ventur	Common Stock ADR	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG TR OR	ATTRLS AT	B84J7/33 CA B84J7/	68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768225 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224	Y76824104
ORCA GOLD INC PORCA GOLD INC ORCA GOLD INC O	ORCA GOLD INC ORCA GOLD ORCA GOLD ORCA GOLD ORCA ORCA GOLD ORCA ORCA ORCA ORCA ORCA OR	Venture (XTSX) Ventur	Common Stock ADR ADR ADR	ORCA GOLD INC ENCEN ENCEN MISC BHD MALAYSIA MARINE AND HEAVY EN PETRONAS DAGANGAN BHID PETRONAS DAGANGAN BHID PETRONAS DAGANGAN BHID PETRONAS CHEMICALS GROUP BHID PETRONAS OR CHEMICALS GROUP BHID PETRONAS OR GOLD INC ORCE ORCE SHANGHA ELECTRIC GORP COL-H SHANGHA ELECTRIC GRP COL-H	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/	68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768226 91768226 91768227 91768226 91768227 91768227 91768227 91768227 91768224	Y76824104
ORCA GOLD INC ENGEN BOTSWANA LTD KLCCP STAPLED GROUP MALAYSIA INTERNATIONAL SHIPPING COMPANY aka MISC BHD MALAYSIA MARINE AND HEAVY ENGINEERING HOLDINGS BHD PETROMAS CHEMICALS GROUP BHD PETROMAS CHEMICALS GROUP BHD PETROMAS GORS HOLD PETROMAS HOLD PETROMAS GORS HOLD PETROMAS HOLD PETROMAS GORS HOLD PETROMAS HOL	ORCA GOLD INC PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD BAS PETRONAS PETROLIAM BASIONAL BERHAD BAS PETRONAS PETROLIAM DASIONAL BERHAD BAS	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS ATRLS	BB4J7/33 CA BB4J7/35 CA BB4J7/35 CA BB4J7/37 CA BB4J7/	68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768226 91768226 91768227 91768227 91768226 91768227 9176827 91	Y76824104
ORCA GOLD INC OR	ORCA GOLD INC ORCA ORCA ORCA ORCA ORCA ORCA ORCA ORC	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/	68558N102 68558N102	905279	CARSESSN11024 CA	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768226 91768226 91768227 91768227 91768226 91768227 9176827 91	Y76824104
ORCA GOLD INC OR	ORCA GOLD INC PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD BA BETRONAS PETROLIAM BASIONAL BERHAD BAB PETRONAS PETROLIAM BASIONAL BERHAD BAB BETRONAS PETROLIAM BASIONAL BERHAD BABA	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/	68558N102 68558N102		CARSESSIN 1024 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768227 91768224 91768224 91768224 91768224 91768224	Y76824104
ORCA GOLD INC ENGEN BOTSWAMA LTD KLCCP STAPLED GROUP MALAYSIA INTERNATIONAL SHIPPING COMPANY 3kg MISC BHD MALAYSIA MARINE AND HEAVY ENGINEERING HOLDINGS BHD PETRONAS DAGANGAN BHD PETRONAS DAGANGAN BHD PETRONAS GORS BHD PETRONAS GORS BHD PETRONAS GORS BHD PETRONAS GORS BHD POWER CONSTRUCTION CORP OF CHINA POWER CONSTRUCTION CORP OF CHINA SHANGHAI ELECTRIC GROUP CO LTD SHANGHAI ELECTRIC GROUP CO	ORCA GOLD INC PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD BKA PETRONAS PETROLIAM BKASIONAL	Venture (XTSX) Frandrut (XTRA) Frandrut	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/34 CA BB4J7/35 CA BB7/35 CA BB7/37 C	68558N102 68558N102	916599	CARSESSN1 (122 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768223 91768224 91768224 91768224 91768224 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768225 91768226 91768226 91768226 91768226 91768226 91768226 91768226 91768226 9176826	Y76824104
ORCA GOLD INC OR	ORCA GOLD INC PETROLIAM NASIONAL BERHAD aka PETRONAS PETROLIAM NASIONAL BERHAD BA BETRONAS PETROLIAM BASIONAL BERHAD BAB PETRONAS PETROLIAM BASIONAL BERHAD BAB BETRONAS PETROLIAM BASIONAL BERHAD BABA	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/	68558N102 68558N102		CARSESSIN 1024 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768227 91768224 91768224 91768224 91768224 91768224	Y76824104
ORCA GOLD INC ORCA GOLD ORCA G	ORCA GOLD INC DREATH AD INC DRETTONAS PETROLIAM NASIONAL BERHAD INC DETROLAM DETROLAM NASIONAL BERHAD INC DETROLAM DETRO	Venture (XTSX) Ventur	Common Stock Commo	ORCA GOLD INC OR	ORG CJ ORG CN ORG CN ORG CN ORG CN ORG CN ORG DG ORG DG ORG DG ORG DF ORG DF ORG TG OR	ATTRLS AT	BB4J7/33 CA BB4J7/	68558N102 68558N102	916599	CARSESSIN 1024 CARSES	91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768224 91768225 91768225 91768227 91768224 91768224 91768224 91768224 91768224 91768224 91768224	Y76824104

SIEMENS AG	SIEMENS AG	Euro Comp (XLON)	Common Stock	SIEMENS AG-REG	SIE EU	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Tradegate (XGAT)	Common Stock	SIEMENS AG-REG	SIE TH	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GF	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Quotrix Exch (XQTX)	Common Stock	SIEMENS AG-REG	SIE QT	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GS	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Gettex (MUND)	Common Stock	SIEMENS AG-REG	SIE GZ	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Aquis Exchq (AQXE)	Common Stock	SIEMENS AG-REG	SIE QX	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XV	723610	#N/A N/A		DE0007236101	009974687
SIEMENS AG SIEMENS AG	SIEMENS AG SIEMENS AG	Brsaltaliana (MTAA)	Common Stock	SIEMENS AG-REG SIEMENS AG-REG	SIE IM SIE EB	723610 723610	B19GK05 5727973		DE0007236101 DE0007236101	009974687
SIEMENS AG	SIEMENS AG SIEMENS AG	BATS Europe (BATE) EURO OTC (XLON)	Common Stock Common Stock	SIEMENS AG-REG	SIE XB	723610	5/2/9/3		DE0007236101	009974687 009974687
SIEMENS AG	SIEMENS AG	Equiduct (XEQT)	Common Stock	SIEMENS AG-REG	SIE AB	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GH	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GM	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GB	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Turquoise (TRQX)	Common Stock	SIEMENS AG-REG	SIE TQ	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XS	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GI	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	Common Stock	SIEMENS AG-REG	SIE GD	723610	5727973		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Brsaltaliana (MTAA)	Common Stock	SIEMENS AG-REG	SIE IF	723610	B19GK05		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Bucharest (XBSE)	Common Stock	SIEMENS AG-REG	SIE RE	723610	B87F0H0		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Bucharest (XBSE)	Common Stock	SIEMENS AG-REG	SIE RO	723610	B87F0H0		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EuroTLX (ETLX)	Common Stock	SIEMENS AG-REG	SIE TE	723610	B19GK05		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XA	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XD	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XE	723610			DE0007236101	009974687
SIEMENS AG SIEMENS AG	SIEMENS AG SIEMENS AG	EURO OTC (XLON) EURO OTC (XLON)	Common Stock Common Stock	SIEMENS AG-REG SIEMENS AG-REG	SIE XI SIE XL	723610 723610			DE0007236101 DE0007236101	009974687 009974687
SIEMENS AG	SIEMENS AG SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XC	723610			DE0007236101 DE0007236101	009974687
SIEMENS AG	SIEMENS AG	EURO OTC (XLON)	Common Stock	SIEMENS AG-REG	SIE XW	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	LSE EuropeQS (XLON)	Common Stock	SIEMENS AG-REG	SIE1 LI	723610	798725		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	LSE EuropeQS (XLON)	Common Stock	SIEMENS AG-REG	SIE1 LO	723610	798725		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Xetra (XETR)	ADR	SIEMENS AG-ADR	SIEB GY	632748	B1C58Q1	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	Xetra (XETR)	ADR	SIEMENS AG-ADR	SIEB GR	632748	B1C58Q1	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	Xetra (XETR)	ADR	SIEMENS AG-ADR	SIEB GD	632748	B1C58Q1	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	Xetra (XETR)	ADR	SIEMENS AG-ADR	SIEB GF	632748	B1C58Q1	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	Xetra (XETR)	ADR	SIEMENS AG-ADR	SIEB GS	632748	B1C58Q1	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	Euro Comp (XLON)	Common Stock	SIEMENS AG-REG	SIECHF EU	723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Chi-X Europe (CHIX)	Common Stock	SIEMENS AG-REG	SIED IX	723610	5727973		DE0007236101	009974687
SIEMENS AG SIEMENS AG	SIEMENS AG	ITG Posit (XPOS)	Common Stock	SIEMENS AG-REG	SIED PO SIED B3	723610 723610			DE0007236101	009974687
SIEMENS AG	SIEMENS AG SIEMENS AG	Blockmatch (BLOX) Liquidnet (LIQU)	Common Stock Common Stock	SIEMENS AG-REG SIEMENS AG-REG	SIED B3	723610			DE0007236101 DE0007236101	
SIEMENS AG	SIEMENS AG SIEMENS AG	UBS MTF (XUBS)	Common Stock	SIEMENS AG-REG	SIED L3	723610			DE0007236101	
SIEMENS AG	SIEMENS AG	OTC US (OOTC)	ADR	SIEMENS AG-ADR	SIEGY US	632748	2742689	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	OTC US (OOTC)	ADR	SIEMENS AG-ADR	SIEGY UV	632748	2742689	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	OTC US (OOTC)	ADR	SIEMENS AG-ADR	SIEGY PQ	632748	2742689	826197501	US8261975010	012654812
SIEMENS AG	SIEMENS AG	Budapest (XBUD)	Common Stock	SIEMENS AG-REG	SIEMENS HB	723610	B5NMZR9		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	Mexico (XMEX)	Common Stock	SIEMENS AG-REG	SIEN MM	723610	BN7ZCD5		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	SIX Swiss Ex (XSWX)	Common Stock	SIEMENS AG-REG	SIN SE	723610	5735233		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	SIX Swiss Ex (XSWX)	Common Stock	SIEMENS AG-REG	SIN SW	723610	5735233		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	SIX Swiss Ex (XSWX)	Common Stock	SIEMENS AG-REG	SIN BW	723610	5735233		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	SIX Swiss Ex (XSWX)	Common Stock	SIEMENS AG-REG	SINEUR SW	723610	BYL6SL1		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	SIX Swiss Ex (XSWX)	Common Stock	SIEMENS AG-REG	SINEUR SE	723610	BYL6SL1		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	OTC US (OOTC)	Common Stock	SIEMENS AG-REG	SMAWF US	723610	B0395G4		DE0007236101	009974687
SIEMENS AG	SIEMENS AG	OTC US (OOTC)	Common Stock	SIEMENS AG-REG	SMAWF UV	723610	B0395G4		DE0007236101	009974687
SIEMENS AG SIEMENS LTD	SIEMENS AG SIEMENS AG	OTC US (OOTC) Natl India (XNSE)	Common Stock Common Stock	SIEMENS AG-REG Siemens Ltd	SMAWF PQ SIEM IN	723610 A0J3F4	B0395G4 B15T569		DE0007236101 INE003A01024	009974687
SIEMENS LTD	SIEMENS AG SIEMENS AG	Nati India (XNSE) Nati India (XNSE)	Common Stock	Siemens Ltd Siemens Ltd	SIEM IN SIEM IS	A0J3F4 A0J3F4	B151569 B15T569		INE003A01024 INE003A01024	
SIEMENS LTD	SIEMENS AG SIEMENS AG	Nati India (XNSE)	Common Stock	Siemens Ltd Siemens Ltd	SIEM IS	A0J3F4 A0J3F4	B15T569		INE003A01024	
SIEMENS LTD	SIEMENS AG	Natl India (XNSE)	Sec Lending	Siemens Ltd	SIEM/S IN	A0001 4	D131303		114E000A01024	
SIEMENS LTD	SIEMENS AG	Natl India (XNSE)	Sec Lending	Siemens Ltd	SIEM/S IS					
SIEMENS PAKISTAN ENGINEERING CO LTD	SIEMENS AG	Pakistan (XKAR)	Common Stock	SIEMENS PAKISTAN ENGIN CO	SIEM PA	A1W5U3	6807539		PK0022701012	
SIEMENS PAKISTAN ENGINEERING CO LTD	SIEMENS AG	Pakistan (XKAR)	Common Stock	SIEMENS PAKISTAN ENGIN CO	SIEM PK	A1W5U3	6807539		PK0022701012	

Letter to SBI Domestic and International Equity Managers

June 29, 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 <u>may not</u> <u>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 may differ from the List of Restricted Iran Companies that was attached to the March 28, 2017 letter you received. This new list is effective June 30, 2017.

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.

The following company has been <u>added</u> to the Divestment List:

• Daewoo Engineering & Construction South Korea

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,

LeaAnn M. Stagg Assistant Executive Director/COO

Enclosures

cc: Michael J. Menssen, Director, Debt Management Tammy Brusehaver, Investment Officer, Public Equity Stephanie Gleeson, Investment Officer, Public Equity Aaron Griga, Investment Officer, Fixed Income

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 Maire Tecnimont S.p.A. Italy Mitsui & Co. Ltd Japan Oil & Natural Gas Corporation Ltd. India PetroChina Co. Ltd. China PJSC Lukoil Russia **Toyo Engineering Corporation** Japan Toyota Tsusho Corporation Japan

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
Daewoo Engineering & Construction	South Korea	December 31, 2017	June 30, 2018

IRAN RESTRICTED COMPANIES Security Identifiers

ISIN	COMPANY NAME	SYMBOL	COUNTRY	CUSIP
INE029A01011	Bharat Petroleum Corporation Ltd.	500547	India	
US16941R1086	China Petroleum & Chemical Corp	386	China	16941R108
CNE1000002Q2	China Petroleum & Chemical Corp	386	China	16941R108
CNE0000018G1	China Petroleum & Chemical Corp	386	China	16941R108
ARDEUT114071	China Petroleum & Chemical Corp	386	China	16941R108
KR7000211003	Daelim Industrial	210	Korea South	
KR7000210005	Daelim Industrial	210	Korea South	
KR7047040001	Daewoo Engineering & Construction	A047040	Korea South	
US26874R1086	Eni Spa	ENI	Italy	26874R108
IT0003132476	Eni Spa	ENI	Italy	26874R108
ARDEUT112612	Eni Spa	ENI	Italy	26874R108
US3682872078	Gazprom OAO	GAZP	Russia	368287207
US3682871088	Gazprom OAO	GAZP	Russia	368287207
RU0007661625	Gazprom OAO	GAZP	Russia	368287207
ARDEUT114261	Gazprom OAO	GAZP	Russia	368287207
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	Germany	535223200
DE0006483001	Linde AG	LIN	Germany	535223200
US56064T1016	Maire Tecnimont S.p.A.	MT	Italy	56064T101
IT0004931058	Maire Tecnimont S.p.A.	MT	Italy	56064T101
US6068272029	Mitsui & Co. Ltd	8031	Japan	606827202
JP3893600001	Mitsui & Co. Ltd	8031	Japan	606827202
INE213A01029	Oil & Natural Gas Corporation Ltd.	500312	India	
US71646E1001	PetroChina Co. Ltd.	857	China	71646E100
CNE1000007Q1	PetroChina Co. Ltd.	857	China	71646E100
CNE1000003W8	PetroChina Co. Ltd.	857	China	71646E100
ARDEUT113958	PetroChina Co. Ltd.	857	China	71646E100
US69343P2048	PJSC Lukoil	LKOH	Russia	677862104
US69343P1057	PJSC Lukoil	LKOH	Russia	677862104
US5498741058	PJSC Lukoil	LKOH	Russia	677862104
RU0009024277	PJSC Lukoil	LKOH	Russia	677862104
ARDEUT114253	PJSC Lukoil	LKOH	Russia	677862104
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

Letter to SBI Fixed Income Managers

June 29, 2017

Regarding: Iran Companies

Dear Manager:

The Minnesota State Board of Investment (SBI) has 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</u> <u>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 could differ from List of Restricted Iran Companies that was attached to the March 28, 2017 letter you received. This new list is effective June 30, 2017.

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.

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

• Daewoo Engineering & Construction South Korea

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

Sincerely,

LeaAnn M. Stagg Assistant Executive Director and Chief Operating Officer

Enclosures

cc: Michael J. Menssen, Director, Debt Management
Aaron Griga, Investment Officer, Fixed Income
Cassandra Boll, Investment Officer, Private Markets
Steve Kuettel, Investment Officer, Cash Mgmt. Services
Patricia Ammann, Investment Office, DC & Private Markets

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 Maire Tecnimont S.p.A. Italy Mitsui & Co. Ltd Japan Oil & Natural Gas Corporation Ltd. India PetroChina Co. Ltd. China PJSC Lukoil Russia **Toyo Engineering Corporation** Japan

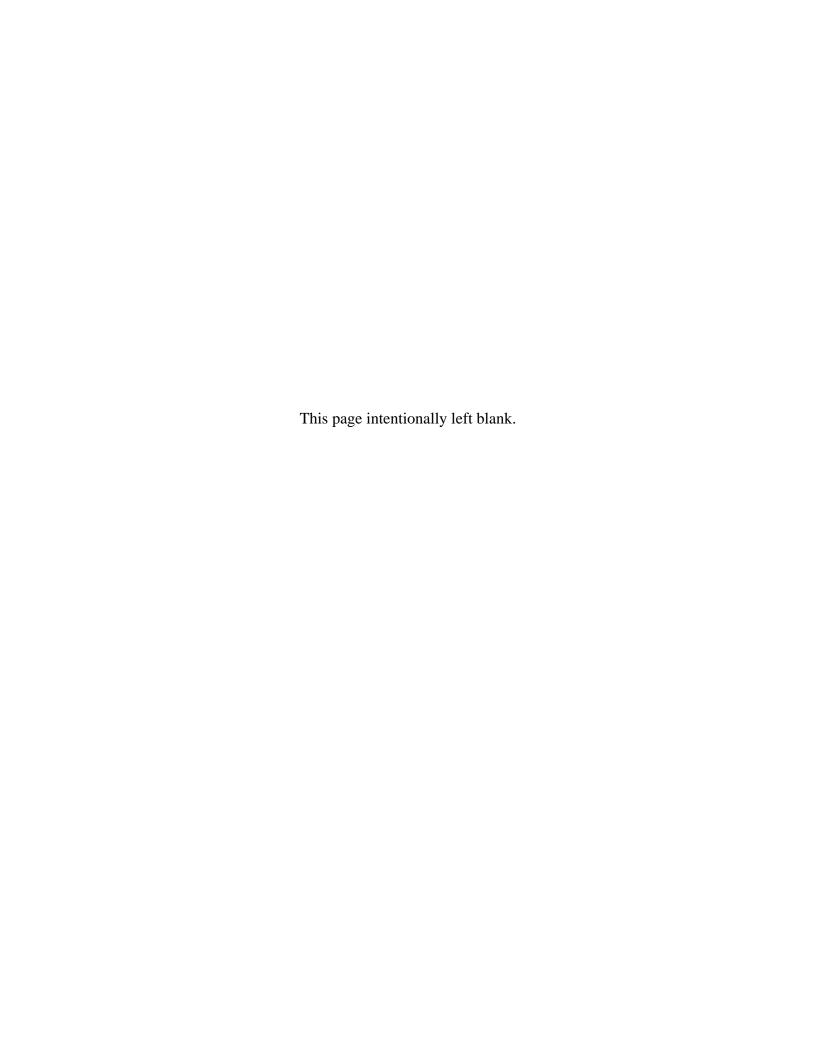
Toyota Tsusho Corporation

Effective Date: June 30, 2017

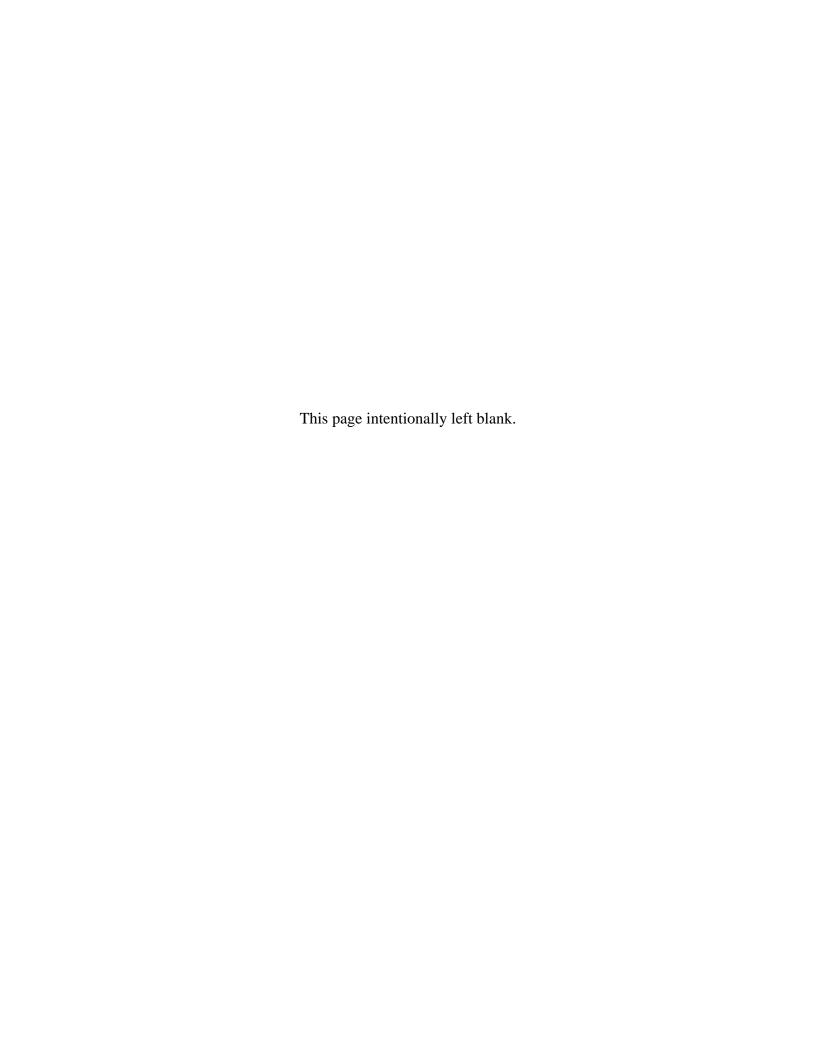
Japan

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
Daewoo Engineering & Construction	South Korea	December 31, 2017	June 30, 2018



TAB



DATE: August 7, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: Investment Manager Update

Combined Funds – Domestic Equity

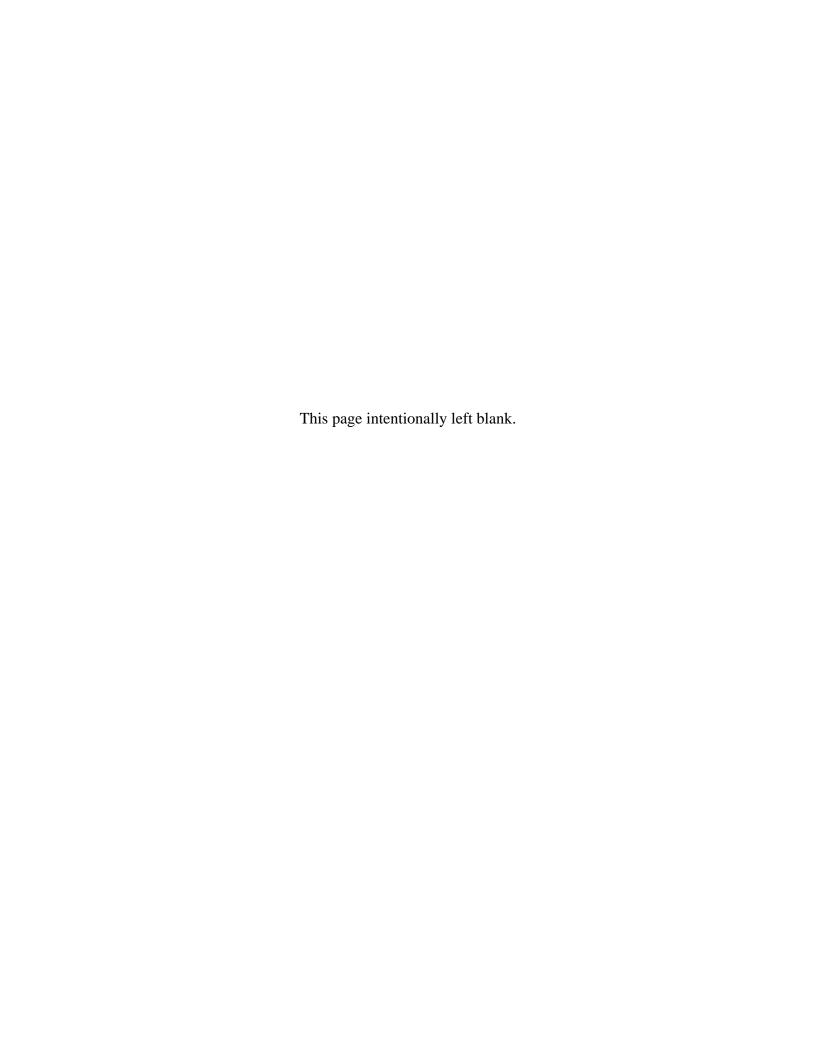
The domestic equity semi-passive mandate managed by Mellon Capital Management Corporation was defunded and terminated in June 2017. Approximately \$770 million was transitioned to BlackRock Financial Management to be passively managed in the Russell 1000 index fund.

Combined Funds – Private Markets

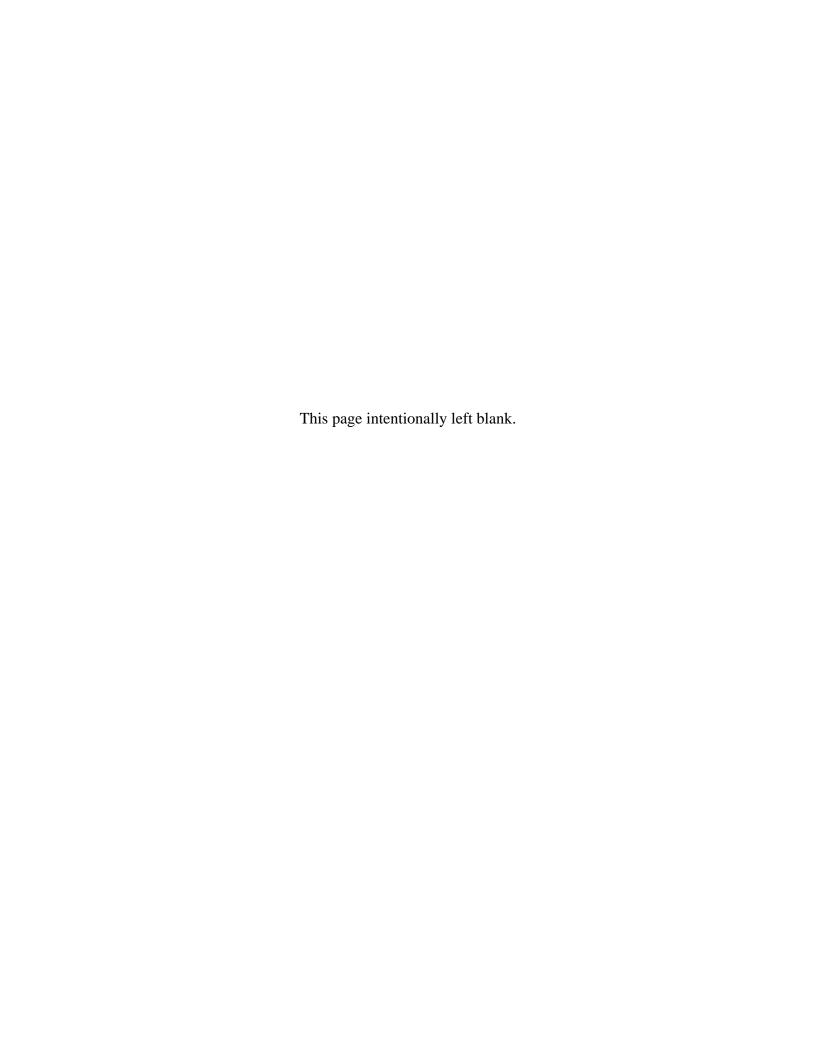
Contracts for all outstanding private market commitments have been negotiated and executed except for Asia Alternatives V. Asia Alternatives V is being negotiated and we expect to close in September 2017.

Non-Retirement

The SBI Executive Director has been authorized to negotiate and execute contracts and assign the assets of the internally managed S&P 500 equity index and internal fixed income portfolios to external managers. Contracts with Mellon Capital Management to manage the equity portfolio and Prudential Global Investment Management to manage the fixed income portfolio are pending.



TAB D



DATE: August 7, 2017

TO: Members, Investment Advisory Council

FROM: SBI Staff

SUBJECT: Private Markets Report

Staff has reviewed the following information and action agenda items:

• Review of current strategy

- Market Review
- Status of SBI Current Private Markets Commitments
- Consideration of new commitments

Existing Managers:

Private Real Estate Private Real Estate	Blackstone Partners Angelo, Gordon & Co.	BREP Asia II AG Europe Realty Fund II	\$75 Million \$75 Million
New Managers:			
Private Real Estate	Carlyle Realty Partners	Realty Fund VIII	\$150 Million
Private Real Estate	Landmark Partners	LREF VIII	\$150 Million
Private Equity	Wellspring Capital	WCP VI	\$125 Million

IAC action is required on the fourth item.

INFORMATION ITEM:

A. 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 private credit investments in which Minnesota State Board of Investment (SBI) participation is limited to commingled funds or other pooled vehicles.

- 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 private credit investments is to target funds that typically provide a current return and may have an equity component such as subordinated debt or mezzanine investments. Private credit investments will provide diversification to the private markets portfolio.

B. Market Review

Real Estate

During the second quarter of 2017, private real estate achieved its 30th consecutive quarter of positive returns with the NCREIF Property Index posting a return of 1.75%. Second quarter real estate data provided a mixed view. The amount of capital raised in private real estate funds increased by 33% since last quarter to \$29bn. However, the number of funds that closed declined for the second consecutive quarter, implying that large players are increasingly dominating the marketplace. Europe-focused funds represented 53% of the real estate market capital raised during the second quarter at \$15.6bn across 16 funds. The increase in capital raised for Europe-focused funds is primarily from the €7.8bn Blackstone Real Estate Partners Europe V that was secured during the second quarter. (Sources: NCREIF, Preqin)

Private Equity

Private equity General Partners raised \$121bn across 206 funds in the second quarter. This marks the third consecutive quarter of raising over \$100bn in capital commitments. Globally, buyout deals continue to top the list at \$88.5bn in aggregate capital raised across 61 funds. More than half of these funds targeted investment opportunities in North America. Going into 3Q17 there is a record 1,998 private equity funds currently in the market and a new industry record in dry powder available as capital for investment have increased to \$906bn. (Source: Preqin)

Private equity firms continue to deploy capital despite high multiples and aggressive pricing of assets. M&A transaction multiples (Valuation/EBITDA) has regressed a little to 10.5x for the first half of 2017 from the post-crisis high of 10.7x in 2016. Private equity exits continue its downward trend that began in 2015. Fundraising in the U.S. continues to trend towards the private equity middle market. (Sources: Preqin, PitchBook)

Resource

During the second quarter of 2017, crude oil traded between a range of \$42/bbl and \$53/bbl. The average price for the quarter was \$48/bbl, which was \$4 below the average price from the first quarter. Oil prices declined after news of a renewed agreement between OPEC and 10 other crude-oil producing nations to keep production at about 1.8 million barrels a day lower than late 2016's levels. According to the Wall Street Journal, investors had been expecting deeper cuts. (Sources: Bloomberg, The Wall Street Journal)

C. Status of SBI Current Private Markets Commitments

Minnesota State Board of Investment

Combined Funds June 30, 2017

Combined Funds Market Value

\$64,115,868,805

Amount Available for Investment

\$4,464,632,346

	Current Level	Target Level	Difference
Market Value (MV)	\$8,358,541,415	\$12,823,173,761	\$4,464,632,346
MV +Unfunded	\$14,332,805,976	\$22,440,554,081.89	\$8,107,748,106

		Unfunded		
Asset Class	Market Value	Commitment	Total	
Private Equity	\$5,099,876,179	\$4,019,961,425	\$9,119,837,604	
Real Estate	\$575,688,618	\$484,054,389	\$1,059,743,007	
Resource	\$1,948,382,782	\$720,509,262	\$2,668,892,044	
Private Credit	\$734,593,836	\$749,739,485	\$1,484,333,321	
Total	\$8,358,541,415	\$5,974,264,561	\$14,332,805,976	

Cash Flows June 30, 2017

Calendar Year	Capital Calls	Distributions	Net Invested	
2017 (thru 6/30)	823,129,720	(1,022,734,686)	(199,604,966)	
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)	

The status report detailing individual fund performance appears in the Comprehensive Performance Report in Tab H.

ACTION ITEMS:

D. Consideration of New Investment Commitments

1) Investment with an existing private real estate manager, Blackstone Partners ("Blackstone"), in Blackstone Real Estate Partners Asia II ("BREP Asia II").

Blackstone is seeking investors for a new \$6 billion real estate fund that will focus solely on Asia Pacific real estate investments, Blackstone Real Estate Partners Asia II. BREP Asia II will invest in distressed and/or undermanaged properties at below market prices, improve the properties through hands-on management and targeted investments, and thereby create assets that can be sold to core and other real estate owners at higher values. BREP Asia II will invest alongside the flagship BREP funds in transactions in Asia. The SBI has invested in the four most recent BREP funds.

In addition to reviewing the attractiveness of the BREP Asia II investment offering, staff has conducted on-site due diligence, reference checks, a literature database search and reviewed the potential investor base for the fund.

More information on BREP Asia II is included as **Attachment A.**

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to \$75 million, or 20% of Blackstone Real Estate Partners Asia 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 Blackstone upon this approval. Until the Executive Director on behalf of the SBI executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Blackstone or reduction or termination of the commitment.

2) Investment with an existing private equity real estate manager, Angelo, Gordon & Co. ("Angelo, Gordon"), in Angelo, Gordon Europe Realty Fund II, L.P. ("AG Europe Realty Fund II").

Angelo, Gordon & Co. is seeking investors for a new \$750 million private European real estate fund, AG Europe Realty Fund II. The Fund will invest alongside Angelo, Gordon's flagship AG Realty funds in European transactions. The SBI is an investor in AG Realty IX and AG Asia Realty Fund III.

The Fund's strategy emphasizes the purchase of sub-performing and troubled real estate assets and non-performing loans from owners who lack the capital, patience, or expertise

to improve cash flow and value. The assets are often attractively priced due to an inefficiency of the sale process, unique attributes of the asset, or the seller's need for near-term liquidity.

In addition to reviewing the attractiveness of the AG Europe Realty 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 AG Europe Realty Fund II, L.P. is included as Attachment B.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to \$75 million, or 20% of Angelo, Gordon Europe Realty 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 Angelo, Gordon 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 Angelo, Gordon or reduction or termination of the commitment.

3) Investment with a new private real estate manager, Carlyle Group ("Carlyle"), in Carlyle Realty Partners VIII, L.P. ("Realty Fund VIII").

Carlyle is seeking investors for a \$5 billion private equity real estate fund, Carlyle Realty Partners VIII. The Partnership seeks to provide investors attractive risk-adjusted returns from significant capital appreciation and current cash yields. The SBI is an investor in Carlyle's most recent private equity fund (CSP IV).

Carlyle Realty's investment philosophy is focused on evaluating the underlying supply and demand fundamentals of targeted sectors and geographies. The team focuses primarily on real estate demand drivers categorized as Demographic-Driven Sectors and GDP-Driven Sectors to identify the areas that will offer investment opportunities whose fundamentals are underpriced.

In addition to reviewing the attractiveness of the Carlyle Realty Fund VIII 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 Carlyle Realty Partners VIII is included as **Attachment C.**

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to \$150 million, or 20% of Carlyle Realty Partners VIII, L.P. 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 Carlyle 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 Carlyle Group or reduction or termination of the commitment.

4) Investment with a new private equity real estate manager, Landmark Partners ("Landmark"), in Landmark Real Estate Partners VIII, L.P. ("LREF VIII").

Landmark Partners is seeking investors for a new \$2 billion real estate secondary fund, Landmark Real Estate Partners VIII. This fund is established to provide investors access to a diversified private equity portfolio of real estate related investments, primarily through secondary market transactions.

In addition to reviewing the attractiveness of the Landmark Real Estate Partners VIII investment offering, staff conducted on-site due diligence, reference checks, a literature database search, and reviewed the potential investor base for the fund. Since 1996, Landmark has established itself as a leading supplier of liquidity to institutional real estate investors, having participated in over 100 transactions, establishing relationships as an investor with over 125 different managers and acquiring over 350 partnership interests. Landmark has established a record of efficient negotiation and execution of purchase and sale contracts, while maintaining strict confidentiality throughout the process.

More information on Landmark Real Estate Partners VIII is included as **Attachment D**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to \$150 million, or 20% of Landmark Real Estate Partners Fund VIII, 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 Landmark 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 Landmark or reduction or termination of the commitment.

5) Investment with a new private equity manager, Wellspring Capital Partners ("Wellspring"), in Wellspring Capital Partners VI ("WCP VI").

Wellspring is seeking capital commitments of \$1.2 billion for a private equity fund, Wellspring Capital Partners VI. WCP VI will focus on value-oriented, control investments in middle-market companies based primarily in North America. The Fund will target attractive risk-adjusted returns through a disciplined and value-added investment approach that has proven successful over Wellspring's 21 year history.

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

More information on Wellspring Capital Partners VI is included as **Attachment E**.

RECOMMENDATION:

Staff is requesting that the Investment Advisory Council concur with Staff's recommendation to commit up to \$125 million, or 20% of Wellspring Capital Partners VI, 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 Wellspring 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 Wellspring or reduction or termination of the commitment.

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REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Blackstone Real Estate Partners Asia II ("BREP Asia II")		
Type of Fund:	Real Estate Limited Partnership		
Total Fund Size:	\$6 billion target		
Fund Manager:	Blackstone Real Estate Advisors, L.P.		
Manager Contact:	Allie Sweeney		
	345 Park Avenue		
	New York, NY 10154		
	Phone (212) 583-5081		

II. Organization and Staff

The Blackstone Group L.P. was founded in 1985 and became a public company in 2007. Within Blackstone Group, Blackstone's Real Estate Group was established in 1991 and is the largest private equity real estate investment manager in the world with \$104 billion assets under management across three strategies: opportunistic, core-plus and debt. BREP Asia II is Blackstone Real Estate Group's second global real estate fund pursuing an opportunistic strategy in Asia, and will invest alongside Blackstone's flagship BREP funds in transactions in Asia. The SBI has invested in the four most recent BREP funds.

Jon Gray is the Global Head of Real Estate for Blackstone. Ken Caplan is the Global Chief Investment Officer, Chris Heady is Head of Asia, Kathleen McCarthy is the Global Chief Operating Officer and Bill Stein and Gio Cutaia are Global Co-Heads of Asset Management. As of June 30, 2017 Blackstone had 451 professionals in the Real Estate Group (277 located in the Americas, 92 located in Europe and 82 located in Asia).

Blackstone Real Estate opened its first office in Asia in 2006 and has grown to a platform of 82 professionals located across six regional offices – Hong Kong, Singapore, Mumbai, Tokyo, Sydney and Shanghai. The team has deployed over \$7 billion of capital across the region to date.

All significant investment and disposition decisions of BREP Asia II will be reviewed and approved by the Investment Committee utilizing a consensus-based approach. Discussions are led by Jon Gray and Ken Caplan. The committee includes all Senior Managing Directors in the Real Estate group, Stephen Schwarzman, Chairman, CEO and Co-Founder of Blackstone and Hamilton ("Tony") James, President and COO of Blackstone.

III. Investment Strategy

Blackstone Real Estate believes that the Asia Pacific Region presents an opportunity to obtain attractive risk-adjusted returns by taking advantage of macroeconomic and demographic tailwinds coupled with capital markets inefficiencies. The Asia Pacific market comprises some of the world's highest GDP growth rates for the past few years and has grown to become the second largest contributor to global GDP growth. For example, the GDP of India and China have each grown at approximately 7% per year since 2014. ¹

Blackstone's Real Estate believes its competitive advantages of speed, scale, flexible investment mandate, and ability to navigate complexity are more pronounced in Asia than anywhere in the world. Blackstone is the only manager of its scale with a dedicated Asia Pacific real estate fund that actively invests across all major real estate sectors and geographies in Asia today.

- Seasoned regional team. Blackstone Real Estate's platform in Asia totals 82 professionals located across six regional offices. Blackstone believes the team's knowledge of local markets and relationships, languages, legal and regulatory frameworks, and business approaches provides a distinct competitive edge in sourcing, executing, managing, and ultimately exiting investments.
- Large fund size with flexible mandate to navigate complexity. BREP Asia I is the only large, dedicated Asia Pacific real estate fund actively investing across all major real estate sectors and geographies in Asia today. With \$5.0 billion of capital commitments, BREP Asia I is over two times as large as its nearest pan-Asian competitor. Blackstone Real Estate has extensive experience acquiring debt and equity in non-traditional, complex situations, including acquisitions of real estate through public companies, corporate restructurings and joint venture partnerships. Its portfolios include hotels, office, retail, industrial, and residential investments.
- Strong operational partnerships. Over the past decade, Blackstone Real Estate has formed relationships with best-in-class developers and operators throughout the Asia Pacific region. BREP Asia I has strategically partnered up with sizeable, well-established and sophisticated partners that are well-versed in the regulatory, legal and cultural nuances of the given country and have contributed to the success of many of BREP Asia I's investments.
- Aggressive asset management. Blackstone Real Estate's experienced asset management team seeks to unlock value through aggressive asset management. Blackstone hires experienced professionals to control costs, execute capital projects and maximize performance of assets.

Note: Past performance is not necessarily indicative of future results. There can be no assurance that any Blackstone fund or investment will achieve its objectives or avoid substantial losses. See "Important Disclosure Information."

¹ IHS, March 2, 2017.

Preqin February 2017. Competitor set includes pan-Asian, multi-sector, non-core, currently investing real estate funds.

• *Proven ability to exit in scale*. BREP Asia I has returned 66% of invested equity. For example, BREP Asia I has already sold the majority of its 29 asset China retail portfolio resulting in \$300 million of profit.

IV. Investment Performance

The historical investment performance of Blackstone Real Estate (BREP) Asia I as of June 30, 2017 is presented below:

Fund	Vintage Year	Total Committed Capital	SBI Investment	Net IRR*	Net MOIC*
BREP Asia I	2013	\$3.3 billion	\$0	17%	1.4x
BREP V	2006	\$5.8 billion	\$100	11%	2.1
BREP VI	2007	\$11 billion	\$100	13%	2.2
BREP VII	2011	\$14.8 billion	\$100	18%	1.8
BREP VIII	2015	\$15.8 billion	\$150	15%	1.2

^{*} Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR and Multiple of Invested Capital (MOIC) for BREP Asia I were provided by BREP. Net IRR and MOIC for BREP V-VIII were provided by State Street.

V. General Partner's Investment

Blackstone's investment will be at least \$50 million, plus up to an additional 10% in each Investment on a side-by-side basis (based on an annual election).

VI. Fees

BREP Asia II management fees are 1.5% per annum if such Limited Partner has aggregate Capital Commitments of less than \$300 million, 1.25% per annum if such Limited Partner has aggregate Capital Commitments equal to or greater than \$300 million.

Management Fees will be generally reduced by an amount equal to the sum of 80% of any Additional Fees and 100% of acquisition fees.

VII. Distributions

Upon disposition of an Investment (calculated separately for each Limited Partner with respect to its *pro rata* share):

- (a) First, 100% to the Limited Partner until it receives a return of contributions for the Investment that has been disposed of, Allocated Fees and Expenses that have not been recouped on all Investments that have been disposed of, unrecouped losses on Investments previously disposed of, aggregate net losses on writedowns from Investments not disposed of, and an 8% compound annual return on (i) contributions with respect to all Investments that have been disposed of, plus (ii) Allocated Fees and Expenses thereto;
- (b) Second, 80% to the General Partner and 20% to the Limited Partner until the General Partner receives its 20% carried interest with respect to Investments that have been disposed of; and
- (c) Thereafter, 80% to the Limited Partner and 20% to the General Partner.

Current Income is generally distributed as described above, except that distributions are made on an Investment-by-Investment basis and will not take into account a return of capital contributions or any aggregate net losses on writedowns, but will take into account actual unrecouped losses from prior dispositions.

VIII. Key Persons

If both (a) Jonathan Gray ceases to devote the required involvement and (b) there is not at least three out of five people (Kenneth Caplan, Christopher Heady, Tuhin Parikh, Alan Miyasaki and Daisuke Kitta) devoting the required involvement, then the General Partner will give each Limited Partner written notice of the Key Person Event within five business days thereof. Within sixty days of the Key Person Event, a majority in interest of combined limited partners may vote to cause a termination of the investment period.

IX. Investment Period and Term

The Investment Period will be five years from the Last Equalization Date (as defined in the Limited Partnership Agreement). The Term will end on the sixth anniversary of the last day of the Investment Period, with an option of the General Partner to extend the term of the Partnership for up to two additional one-year periods.

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

ATTACHMENT B

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	AG Europe Realty Fund II, L.P.	
Type of Fund:	Private Real Estate	
Target Fund Size:	\$750 million	
Fund Manager:	Angelo, Gordon & Co., L.P.	
Manager Contact:	Brigid Flanagan	
	245 Park Avenue	
	New York, NY, 10167	
	(212) 692-8240	

II. Organization and Staff

Angelo, Gordon & Co., L.P. ("Angelo, Gordon" or the "Firm") formed AG Europe Realty Fund II, L.P. ("Fund II" or the "Fund") to make investments in commercial real estate in Europe. Angelo, Gordon has been actively investing in European real estate since 2009 and currently has offices and staff in London, Amsterdam, Frankfurt and Milan. Additionally, the Firm has had a significant presence in Europe since 2000 as an active investor in distressed debt. The Fund will invest alongside Angelo, Gordon's flagship AG Realty funds in European transactions. The SBI is invested in AG Realty Fund IX and AG Asia Realty Fund III.

Angelo, Gordon was founded in 1988 by John Angelo and Michael Gordon. Headquartered in New York City, the Firm is 100% owned by its founders, their related parties and certain senior employees, and has roughly 400 employees working across its three core disciplines – credit, real estate, and private equity. There are 12 investment professionals on the Europe Real Estate team led by Adam Schwartz and co-portfolio manager Anuj Mittal. As of July 2017, the Firm manages approximately \$28 billion in assets.

Over the past 23 years, Angelo, Gordon has acquired over \$24 billion of real estate assets in over 460 transactions, representing over \$10 billion of equity in a series of opportunistic, core plus and value-added real estate funds. Angelo, Gordon began making opportunistic investments in 1993 and has been an active investor in distressed real estate debt since 1990.

III. Investment Strategy

The Fund's strategy will emphasize the purchase of sub-performing real estate assets across a range of geographies and product types, including office buildings, hotels, retail properties, industrial properties and apartment buildings. The Fund will focus on major western European markets, including the United Kingdom, Germany, France, Spain, Italy, Benelux and other western European countries. Angelo, Gordon believes that the Fund will benefit

from a value-added strategy in a region that has experienced significant price declines and a shortage of liquidity, with prices well below peak prices as it lags the recovery seen in the United States.

Angelo, Gordon's approach to opportunistic real estate investing centers on value creation and capital preservation. The Firm typically purchases assets from owners who lack the capital, patience, or expertise to improve cash flow and value. The assets are often attractively priced due to the lack of current cash flow, difficulty in obtaining debt financing, complexity of analysis, or inefficiency of the sale process.

The Fund will seek to invest in a portfolio of assets that, after stabilization, will be highly sought after by traditional institutional real estate investors and will continue to appreciate even after underperformance has been corrected. Angelo, Gordon will, therefore, seek opportunities to purchase assets with all or some of the following fundamental strengths:

- Clearly identifiable reasons for underperformance and a well-defined and achievable plan for turnaround,
- Purchase price and forecasted stabilized value that are at discounts to replacement costs,
- Favorable long-term demand growth in the local market, and
- Barriers to new supply in the local market due to restrictions on land availability, zoning, or entitlement.

The Angelo, Gordon real estate team has particular experience and expertise in purchasing and repositioning sub-performing properties representing virtually every product type and most geographical regions of Europe. Over the past 15 years, Angelo, Gordon has established an excellent network of both deal sources and operating partner relationships in Europe. Since 2009, Angelo, Gordon has purchased approximately \$1.7 billion of real estate in Europe, realized eight transactions and exchanged binding sales contracts on two assets in the United Kingdom, Ireland and Germany. Rather than employing a large internal property management group, Angelo, Gordon actively manages a network of third-party operating partners that it believes significantly improves its alignment with other investors. The real estate team will seek to leverage its internal capabilities through the Firm's extensive and well-developed network of external alliances and has created a broad network of deal sources with local real estate firms, brokers, direct sellers and distressed debt players. The Firm has approximately 40 real estate operating partners in Europe and is often shown transactions on an exclusive basis.

IV. Investment Performance

Previous fund performance as of March 31, 2017 for Angelo, Gordon Europe Value-Add Portfolio is shown below:

	Vintage	Total Committed	SBI	Net	Net
Fund	Year	Capital	Investment	IRR*	MOIC*
AG Europe Realty Fund	2014	\$570.2 million		17%	1.2
AG Realty Fund IX	2015	\$1,328.6 million	\$100 million	11%	1.1
AG Asia Realty Fund III	2015	\$847 million	\$50 million	19%	1.2

^{*} Previous Fund investments may be relatively immature and therefore, returns may not be indicative of future results. Net IRR and MOIC based on liquidation at NAV as of March 31 2017 and provided by Angelo, Gordon & Co.

V. General Partner's Investment

Angelo, Gordon or its affiliates (including the Firm's employees), will make a capital commitment equal to at least 3% of total capital commitments, up to a maximum of \$15 million.

VI. Takedown Schedule

Capital will be called as needed with a minimum of ten days' prior written notice.

VII. Fees

Management fees will be payable quarterly in advance based on the following:

During the investment period, the annual management fee, payable quarterly in advance, is equal to 1.50% of aggregate commitments. For each Limited Partner with a capital commitment equal to or greater than \$75 million, the portion of the management fee based on undrawn capital commitments will be reduced to an annual rate of 1.25%.

VIII. Distributions

Amounts apportioned to each Limited Partner will be divided between and distributed to each Limited Partner and the General Partner in the following amounts and order of priority:

(a) First, 100% to such Limited Partner to the extent of such Limited Partner's Unrecovered Capital Balance;

- (b) Second, 100% to such Limited Partner to the extent of such Limited Partner's Undistributed Preferred Balance;
- (c) Third, (a) 50% to such Limited Partner and (b) 50% to the General Partner, until the General Partner has received 20% of the aggregate distributions made pursuant to clause (2) and this clause (3); and
- (d) Thereafter, (a) 80% to such Limited Partner, and (b) 20% to the General Partner.

IX. Key Persons

If at any time during the Commitment Period both of Adam Schwartz and Anuj Mittal (or any replacement to either of their positions approved by the Advisory Committee) cease to be actively involved with the General Partner or Angelo, Gordon in the management of the Partnership, the Commitment Period will be automatically suspended.

X. Investment Period and Term

The term of the Partnership shall continue until the close of Partnership business on the eight anniversary of the Final Admission Date, unless extended at the discretion of the General Partner for up to two additional one-year periods.

^{*} 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 C

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Carlyle Realty Partners VIII, L.P.	
Type of Fund:	Real Estate – Opportunistic	
Target Fund Size:	\$5 billion	
Fund Manager:	The Carlyle Group	
Manager Contact:	Chip Lippman	
	The Carlyle Group	
	1001 Pennsylvania Ave. N.W.	
	Washington, DC 20004	
	202-729-5626	

II. Organization and Staff

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

Carlyle Realty is the dedicated real estate investment team within The Carlyle Group, and is led by Robert S. Stuckey (Head of U.S. Real Estate). The team is made up of approximately 90 Investment Professionals in Washington, DC; New York; San Francisco; and Los Angeles. These Professionals work in the various areas of sourcing, transactions, and asset management for Carlyle's U.S. focused real estate funds. The nucleus of Carlyle Realty's senior management has been in place since 1998 and the group has experienced little turnover during that period of time. Carlyle Realty's senior investment professionals consist of 14 Managing Directors who have an average tenure at Carlyle of 15 years. The Firm expects the core group of investment professionals who were responsible for investing Carlyle Realty's seven prior opportunistic funds to be primarily responsible for sourcing, investing and managing CRP VIII.

III. Investment Strategy

Sector Selection

Carlyle Realty's investment philosophy is focused on evaluating the underlying supply and demand fundamentals of its targeted sectors and geographies. Furthermore, the Firm seeks to dynamically identify the areas that will offer investment opportunities whose fundamentals are underpriced. To this end, the team focuses primarily on real estate demand drivers, which are segmented between two primary factors: those more correlated with and driven, in part, by

the economic cycle ("GDP-Driven Sectors"), and those less correlated with the economic cycle and driven, in part, by shifts in demographic cohorts ("Demographic-Driven Sectors").

Demographic-Driven Sectors include:

- Senior Living
- Active Adult Rental
- Multifamily Residential
- Self-Storage
- Manufactured Housing
- Life Sciences
- Student Housing
- For-Sale Residential

GDP-driven sectors would include:

- Office
- Industrial
- Retail
- Hotel

The team believes that Demographic-Driven sectors have demonstrated superior returns with substantially less volatility than GDP-driven sectors. Accordingly, Fund VIII is expected to be substantially weighted towards Demographic-Driven Sectors. This approach is consistent with Fund VII, of which over 80% was invested in these sectors.

Concentration/Diversification

Carlyle Realty seeks to reduce concentration risk by diversifying its investment position and investing primarily in single-asset transactions. This approach moderates the impact that any single investment has on the overall portfolio's performance. In Fund VII, no single investment comprises more than 2% of that fund's commitments. The Firm also generally seeks to diversify across demand drivers, sectors and geographies as well as by capital structure and business plan.

As a consequence of this strategy, the Fund will hold a large number of investment positions. The Firm believes this produces a variety of options for exiting investments, and increases the chance for follow-on investments which often exhibit attractive marginal returns with relatively low risk. Carlyle believes that the flexibility on exit strategy that stems from a larger pool of investments adds value to the Fund. The ability to sell single assets, portfolios of assets, or to form operating companies, creates optionality that allows the team to target the highest possible exit valuation possible in a particular market environment.

Leverage

Carlyle Realty seeks to insulate investments from capital markets fluctuations by using a moderate degree of leverage. In recent funds aggregate property level leverage has generally ranged between 45% and 55%. Additionally, different capital structures are established for each investment, which should enhance the ability to manage concentration risk. Carlyle focuses on opportunities that are capable of producing high profit margins, which allows the Firm to structure investments to produce attractive equity multiples regardless of the level of leverage applied. For example, an investment with a 50% profit margin, the application of

50% leverage could produce a 2.0x multiple on invested capital, while an investment with 10-20% profit margins would require 80%-90% leverage to achieve the same multiple. By focusing primarily on high profit margins, and secondarily on leverage levels, the Firm believes they will be better positioned to produce attractive risk adjusted returns.

IV. Investment Performance

Previous fund performance as of March 31, 2017 is shown below:

	Vintage	Total Committed	SBI	Net	Net
Fund	Year	Capital	Investment	IRR*	MOIC*
CRP I	1997	\$296 million		18%	1.6
CRP II	1999	\$252 million		10%	1.4
CRP III	2000	\$571 million		34%	2.9
CRP IV	2005	\$950 million		5%	1.4
CRP V	2006	\$3 billion		11%	1.5
CRP VI	2011	\$2.3 billion		24%	1.7
CRP VII	2014	\$4.1 billion		17%	1.6

^{*} 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

Carlyle will commit at least 3% of capital commitments to the Fund, not to exceed \$150 million (subject to increase by Carlyle in its sole discretion).

VI. Fees

Management fees for a commitment of \$150 million will be 1.1% per annum of invested capital and 1.0% of undrawn commitments during the investment period. Thereafter, the fees are 1.1% per annum of invested capital.

VII. Distributions

Distributions will be apportioned as follows:

- (a) First, 100% to Limited Partners until they have received their realized capital and costs;
- (b) Second, 100% to Limited Partners until a 9% cumulative, compounded annual return has been earned;
- (c) Third, 80% to the General Partner and 20% to the Limited Partners until the General Partner receives a 20% carried interest; and
- (d) Thereafter, 80% to Limited Partners and 20% to the General Partner.

VIII. Key Persons

A Key Person Event will have occurred if at any time prior to the end of the investment period either (i) Robert G. Stuckey and Christopher S. Lippman or (ii) Robert G. Stuckey and any two of Paul B. Brady, David B. Daniel, Mark J. Schoenfeld and Barbara A. Murphy, cease to devote substantially all of his or her business time to the activities of the Fund and its related entities.

IX. Investment Period and Term

The investment period is five years from the initial closing date, and the term of the fund extends 10 years from the initial closing date.

^{*} 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

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Landmark Real Estate Partners VIII, L.P.	
Type of Fund:	Real Estate – Secondaries	
Target Fund Size:	\$2 billion	
Fund Manager:	Landmark Partners	
Manager Contact:	Geoff Mullen	
	Landmark Partners	
	681 Fifth Avenue – 14 th Floor	
	New York, NY 10022	
	(212) 468-5660	

II. Organization and Staff

Landmark Partners (the "Firm" or "Landmark") is forming Landmark Real Estate Partners VIII, L.P. (the "Partnership" or LREF VIII") to continue Landmark's history of making secondary investments in various types of real estate and real estate related entities. The Partnership seeks to provide investors attractive returns with lower levels of risk compared with direct primary investments in real estate vehicles.

Since 1996, Landmark has established itself as a leading supplier of liquidity to institutional real estate investors, having participated in over 100 transactions, establishing relationships as an investor with over 125 different managers and acquiring over 350 partnership interests. Landmark has established a record of efficient negotiation and execution of purchase and sale contracts, while maintaining strict confidentiality throughout the process. Landmark's secondary funds have aggregate committed capital of \$13.2 billion, of which \$9.5 billion has been invested as of March 31, 2016. The Partnership will be Landmark's seventh fund dedicated to real estate secondary investments. Landmark believes that, as this market continues to evolve, the growth and maturation of private real estate investments, including real estate private equity funds, will provide particularly attractive sources of secondary investment opportunities.

Landmark employs a total of 97 professionals, of which 65 professionals support the Firm's secondary real estate investing activities. LREF VIII will be led by Francisco Borges, Timothy Haviland, Chad Alfeld, Paul Mehlman, Robert Dombi, and James Sunday. Landmark is headquartered in Simsbury, Connecticut, with offices in Boston, New York City, and London.

III. Investment Strategy

Since 1990, increasing levels of investor capital have flowed into real estate, much of it in passive ownership forms that allow investors to own partial interests in real estate managed by professional operating partners or investment sponsors. Landmark's experience indicates that some investors will decide to liquidate their interests through secondary transactions rather than continuing to hold their interests through full investment maturity. Recent annual turnover of private equity real estate portfolios has been in the range of 1.0% to 1.7%, which implies a potential range of \$15 to \$25 billion in secondary market buying opportunities from real estate funds over the next three years. Seller motivations range from portfolio management reasons (asset allocation, liquidity planning, sponsor concentrations, etc.) to administrative efficiencies (manager reduction, change in investment staff, consolidation of core strategies, etc.)

Landmark typically generates deal flow through an extensive network in the investment and real estate communities and its experience in completing customized transactions. Landmark believes it is known within the industry as a reliable source for secondary market liquidity. Landmark endeavors to leverage relationships with investors, advisors, consultants, and other parties to identify assets that may be for sale. Landmark has utilized numerous proactive tactics to access investment opportunities, including ongoing contact with pension funds, endowments, investment bankers, other general partner sponsors, and other owners of private real estate interests to discuss their real estate holdings.

Landmark's due diligence process is designed to independently review and assess a fund manager's business plan by constructing property level valuations through a combination of desktop analysis and leveraging Landmark's network of local market resources. In order to value diversified global property portfolios, Landmark has assembled an underwriting team comprised of investment professionals with prior real estate investment and capital markets expertise. Landmark typically prepares a cash flow model that projects the IRR to the relevant fund's limited partners over the life of the investment being acquired. Upon completion of the due diligence process, the Investment Committee, which is comprised of six Landmark partners and generally has been closely involved in the review process since the deal was brought to the attention of the Real Estate Investment Team, votes to approve or reject the deal.

As with previous Landmark funds, LREF VIII is expected to provide its limited partners with diversification across vintage years, properties, geographies, managers, and investment strategies. The fund may also acquire secondary investments in special situations that involve interests in vehicles not commonly labeled as "funds." An example is the privatization of real estate investments owned by publicly traded REIT, or the acquisition or interests in real estate operating companies dedicated to niche products or strategies. The majority of the fund, however, will be in diversified investment portfolios where Landmark had the advantaged opportunity to analyze an identifiable portfolio of assets and to underwrite the portfolio and price it based upon the value and return potential uncovered.

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*
LREF I	1996	\$210 million		45.0%	2.1x
LREF II	1997	\$335 million		16.6%	1.5x
LREF IV	2001	\$119 million		19.4%	1.6x
LREF V	2005	\$368 million		-4.9%	0.8x
LREF VI	2010	\$718 million		21.0%	1.5x
LREF VII	2014	\$1,616 million		28.6%	1.2x

^{*} 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

The General Partner and its affiliates will commit an amount equal to 1% of aggregate commitments.

VI. Fees

Management fees are 1% per annum for the period from the initial closing through the fourth anniversary of the final close. Thereafter, the fees are 1% per annum of the reported value of all underlying investments of the Partnership.

VII. Distributions

Distributions will be apportioned as follows:

- (a) First, 100% to Limited Partners until funded commitment has been received;
- (b) Second, 100% to Limited Partners until an 8% cumulative, non-compounded annual return has been earned;
- (c) Third, 60% to the General Partner and 40% to the Limited Partners until the General Partner receives a 12% carried interest; and
- (d) Thereafter, 88% to Limited Partners and 12% to the General Partner.

^{**} LREF III was formed with \$21.3m of equity to acquire direct interests in value-added real estate investments and was not involved in making secondary investments, and consequently is excluded from this table.

VIII. Key Persons

If at any time there are two key persons who fail to devote substantially all of his or her business time and attention to the Partnership, a key person event has occurred. The key persons for the Partnership are Francisco Borges, Timothy Haviland, R. Paul Mehlman, James Sunday, and Robert Dombi.

IX. Investment Period and Term

The investment period is four years from the final close and the term is the later of (i) ten years from the final close and (ii) one year after the date by which all of the Fund's investments have been liquidated and its obligations have been terminated.

^{*} This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM") and the Limited Partnership Agreement (the "LPA"). It is qualified in its entirety by the more detailed information provided in the PPM and LPA.

ATTACHMENT E

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Wellspring Capital Partners VI, L.P.	
Type of Fund:	Private Equity - Buyout	
Target Fund Size:	\$1.2 billion	
Fund Manager:	Wellspring Capital Management LLC	
Manager Contact:	Taylor Lawrence	
	Wellspring Capital Management	
	390 Park Avenue	
	New York, NY 10022	
	(212) 318-9811	

II. Organization and Staff

Wellspring Capital Management (the "Firm" or "Wellspring") is forming Wellspring Capital Partners VI, L.P. (the "Partnership" or "Fund VI") to focus on value-oriented, control investments in middle-market companies based principally in North America. The Firm will employ its expertise in revitalizing undermanaged companies that have not reached their full potential.

The Firm was founded in 1995, and raised its first institutional fund in 1998. Over four prior funds, Wellspring has invested \$2.8 billion in 38 portfolio companies. From the beginning Wellspring has followed a proven value-oriented investment strategy which encompasses (a) a disciplined screening of deal opportunities to identify fundamentally sound companies with defined opportunities for improvement, and (b) a detailed post-investment strategy to create value through transformational change. The Firm has historically paid below-market purchase multiples and used leverage conservatively relative to industry averages in order to mitigate risk.

Wellspring employs 14 investment professionals and 22 total employees in its New York office. Wellspring Capital Partners VI will be led by Greg S. Feldman, William F. Dawson, Jr., Alexander E. Carles, Joshua C. Cascade, John E. Morningstar, Matthew G. Harrison and Seth R. Pearson. The Partners have been working together as a team, on average for 14 years and have invested approximately \$2.6 billion in 32 portfolio companies over Wellspring's three most recent funds.

III. Investment Strategy

Value Investment Discipline

The foundation of Wellspring's investment philosophy and approach is to acquire businesses with solid fundamentals at below-market multiples while employing moderate amounts of financial leverage. Wellspring seeks to identify companies with solid market positions that have not reached their full potential. Critical to this strategy is targeting companies with a narrow set of addressable issues that represent opportunities if accompanied by the right management leadership and sound business plans. These opportunities are often overlooked by other investors, presenting a unique opportunity for value-oriented investors such as Wellspring. As evidence of Wellspring's discipline, from 1998 through September 30, 2016 the average middle-market buyout purchase multiple was 8.0x LTM EBITDA, which is well above Wellspring's average purchase multiple of 6.0x LTM EBITDA.

Core to Wellspring's value-oriented investment strategy is its conservative use of leverage. Wellspring believes this mitigates downside risk and facilitates equity value creation. The Firm seeks to avoid using highly syndicated financing structures with tight covenants and predatory lenders, such as distressed-focused hedge funds. Instead, the Partners have cultivated a group of non-traditional financing relationships that the Firm has worked with over many years. These alternate sources have allowed Wellspring to execute transactions successfully during market downturns or when potential acquisitions are too complex for traditional lenders. In such cases, these relationships have allowed Wellspring to pursue opportunities during times or circumstances when some of its competitors could not. As an example, during the depth of the recession in 2008, Wellspring was able to close five transactions representing approximately \$311.8 million of invested capital.

Strategic Deal Screening

Wellspring is differentiated by its deal sourcing approach and ability to consummate complex, value-oriented investments. The Firm employs a disciplined screening process developed over its 22-year history to determine the key issues facing an acquisition target and to efficiently assess the prospects for earnings improvement. Wellspring has extensive experience evaluating the risk-adjusted likelihood of execution success, while avoiding the pitfalls of structural weaknesses or fundamental turnaround risk. By targeting opportunities with complexity that require significant pre-acquisition due diligence, Wellspring typically participates in limited auction processes that are less competitive than highly sought-after platforms that require minimal change and carry lower business risk/opportunity. Wellspring's value-orientated strategy of pursuing companies with issues that are ineffectively addressed in "sellside" marketing materials often leads to transaction processes where price is not the sole consideration in evaluating prospective investors. Wellspring strategically differentiates itself early in these processes by dedicating significant internal and external resources and prioritizing due diligence on the issues central to its investment thesis. As a result, Wellspring can often present itself as the "safest" alternative with the highest likelihood of completing the transaction and the lowest risk of transaction failure. Wellspring is also often the preferred partner by the senior management of portfolio companies as a result of the Firm's differentiated and conservative approach to leverage and transparent oversight model, which reflects its small group of senior professionals and absence of bureaucracy.

"Hands-on" Value Creation

A central tenet of each Wellspring investment is the early development and continuous evaluation of the "Wellspring Game Plan," which is the path for value creation through improvements to the target platform. During the due diligence process, Wellspring works closely with management and its network of industry resources to: (a) prioritize major opportunities for change initiatives; and (b) perform a realistic "gap analysis" on the key hurdles to success. Wellspring has a hands-on approach to each portfolio company that is centered on the belief that by investing in management the Firm can expedite and increase value creation. The Firm strategically upgrades each management team in order to accelerate improvement initiatives and enhance each portfolio company's attractiveness upon exit. Wellspring has upgraded management teams in 94% of its portfolio companies. Recognizing the resource challenges of driving major change while managing day-to-day operations, Wellspring leverages its network of external consultants and industry executives to assist management in specific functional areas. The Firm's exclusive operating partner, Bill Ramsey, manages a group of proven external process consultants to assist in areas such as salesforce effectiveness/training, price/product rationalization, procurement, logistics, working capital improvement and productivity ("LEAN").

Wellspring's success in transforming portfolio companies and marketing growth platforms to successor buyers is evidenced by the Firm's history of successful sales. For example, 44% of all sales of Wellspring portfolio companies have been to corporate buyers that did not compete when the prior Fund bought the portfolio company and 50% of all exits have been to larger private equity firms seeking a growth platform. In total, 80% of all exits were done at a higher multiple relative to the entry multiple due to enhancements to the business and the overall outlook.

IV. Investment Performance

Previous fund performance as of March 31, 2017 is shown below:

		Total			
	Vintage	Committed	SBI	Net	Net
Fund	Year	Capital	Investment	IRR*	MOIC*
WCP II	1998	\$268 million		20.2%	1.5x
WCP III	2004	\$640 million		27.2%	2.2x
WCP IV	2006	\$1.0 billion		8.2%	1.5x
WCP V	2011	\$1.2 billion		18.8%	1.5x

^{*} 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

The General Partner will commit an amount equal to 2% of aggregate commitments.

VI. Fees

Management fees are 2% per annum for first five years following the initial capital draw. Thereafter, the fees are 1% per annum of commitments through the end of the Commitment Period, and 1% per annum of actively invested capital thereafter.

The management fee and the General Partner's carried interest are subject to discounts for commitments larger than \$115 million.

VII. Distributions

Distributions will be apportioned as follows:

- (a) First, 100% to Limited Partners until each Limited Partner has received a return of capital on all realized or permanently written-down investments; *plus* management fees and other expenses allocated to such investments;
- (b) Second, 100% to Limited Partners until an 8% preferred return on the above amounts has been earned;
- (c) Third, 80% to the General Partner and 20% to the Limited Partners until the General Partner receives a 20% carried interest; and
- (d) Thereafter, 80% to Limited Partners and 20% to the General Partner.

VIII. Key Persons

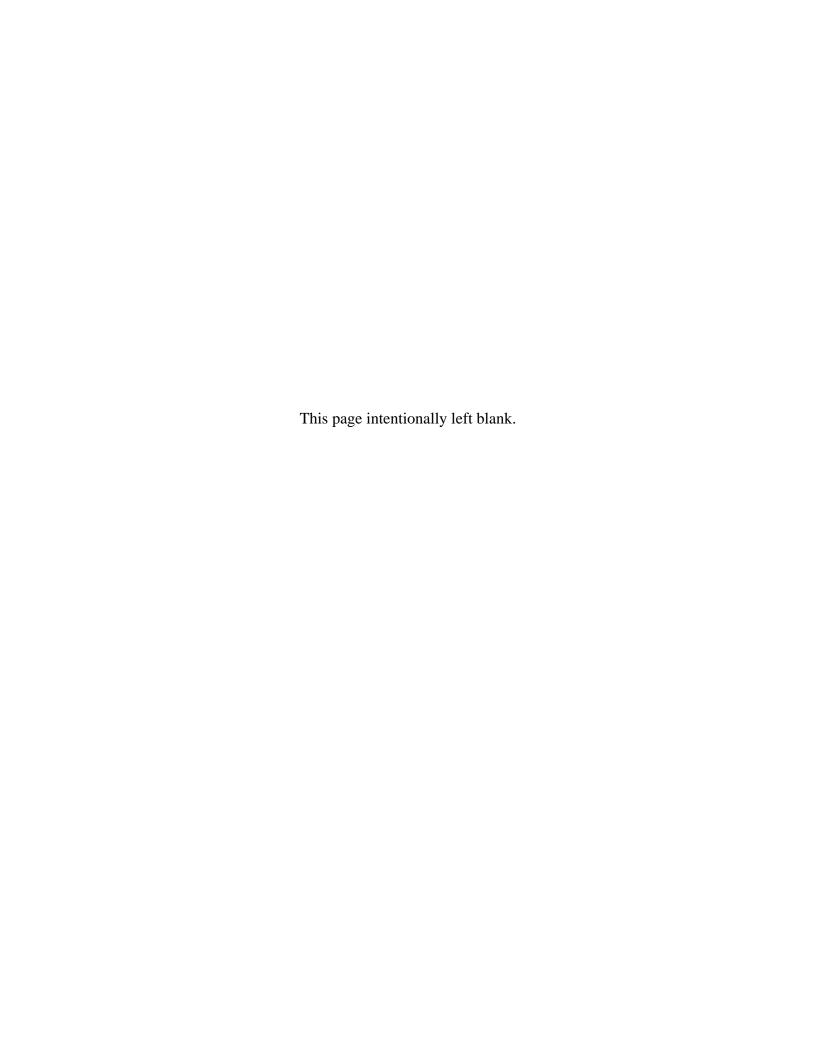
A Key Person Event will be triggered if at any time prior to the expiration of the commitment period less than three of Greg S. Feldman, William F. Dawson, Jr., Alexander E. Carles, Joshua C. Cascade or John E. Morningstar are actively involved in the affairs of WCP VI.

IX. Investment Period and Term

The investment period is six years from the initial capital draw, and the term is 10 years.

^{*} 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.

TAB E



DATE: August 7, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: Executive Director's Response to the Consultant Combined Funds

Portfolio Review

As outlined in my Fiscal Year 2018 Management Plan, I requested that each of the State Board of Investments' investment consultants perform a comprehensive review of the Combined Funds investment program. Our general investment consultant, Aon Hewitt Investment Consulting Inc., and the special consultant, Pension Consulting Alliance, were asked to provide an independent assessment of the Funds' asset allocation, manager structure, and risk profile. Each organization provided me with their perspective which I have reviewed and discussed with them. Not surprisingly, each organization presented similar findings. While there is not total agreement, many of their suggestions are in concert with some of my own observations. I believe that all would agree that the SBI is not broken, but that there are opportunities to derive more value from our assets and improve how the overall program is managed.

Following is a summary of observations and suggested items for consideration. I have provided a comment regarding any actions or recommendations that I plan to make in response to each item.

SUMMARY OF CONSULTANT OBSERVATIONS

1) Asset Allocation and Portfolio Structure

- A. Realign the Framework for the Strategic Asset Allocation Framework
 - Use strategic allocation categories reflecting similar underlying fundamental factors and economic drivers which impact asset classes
 - Define the role of the asset classes used in the portfolio
 - More reflective of the risk associated with the asset classes
- B. Consider an Inflation-Sensitive Asset Class
- C. Add an Opportunity Bucket to Provide Flexibility for New Investment Ideas

2) Private Markets / Alternatives

- A. Pacing and Increased Target Weighting
 - Increase the market value of private markets in the actual portfolio closer to the target
 - Increase the target weighting of private markets in the strategic asset allocation
 - Reduce the number of commitments and increase the commitment size

- B. Re-Categorize the Portfolio to Reflect the Different Types of Private Market Investments Utilized in the Portfolio
- C. Increase Allocation to Real Estate
- D. Consider Reviewing the Mandate of the Resources Segment
- E. Consider Developing Strategic Partnerships and Utilize Co-Investment Opportunities
- F. Develop Strategy, Investment Policy, and an Implementation Plan for Private Market Investments and Alternatives
- G. Consider Liquid Alternatives

3) Fixed Income

- A. Review Program Structure and Define Role
- B. Add Multi-Asset Credit Program

4) Public Equity

- A. Globalization/Home Country Bias
 - Reduce home country bias and move toward a more global market capitalization-weighted target for public equity
- B. Passive Management
 - Increase passive management in highly efficient markets
- C. Active Management
 - If active management continues as part of the public equity program, consider:
 - An allocation to active global equity managers
 - Allocate active risk to high conviction, broad and unconstrained mandates
 - Utilize active small cap international and emerging market
- 5) Consider Currency Management and a Review of Currency Philosophy
- 6) Increase Focus on Portfolio Risks

EXECUTIVE DIRECTOR'S RESPONSES TO CONSULTANT OBSERVATIONS

1) Asset Allocation and Portfolio Structure

A. Realignment of the Portfolio Structure and Asset Allocation Framework

I agree with the observation and propose that we revise the framework as presented in Exhibit I on Page 5.

I am recommending that we realign the framework of the strategic asset allocation to the approach which better defines the role that asset classes play in the portfolio. We should think less in terms of "what we invest in" and focus more on "why we invest." Such approaches were developed as a response to the "Great Recession" when we observed that diverse asset classes were highly correlated to public equities.

Many institutional investors have advocated the use of strategic allocation categories to recognize that while certain asset classes may be different (e.g., public equities versus private equity), these assets are related in that they respond to the same underlying fundamental factors and economic drivers, are highly correlated, and have limited ability to counter the investment risk of one another. The notion that implies including a number of different asset classes in a portfolio provides adequate risk reduction characteristics has now evolved to recognize that diversification comes from having assets which behave differently during various economic regimes. Some investors may refer to this approach as a risk-based allocation approach.

Key factors in the development of a realigned strategic asset allocation framework for the SBI will be 1) defining the role of the strategic allocation categories and 2) defining the role that specific asset classes perform. Each asset class used will be grouped with other asset classes that respond to similar economic drivers into a strategic allocation category defined to address the particular economic driver.

Following are the strategic allocation categories I am proposing and their intended roles within the portfolio. Please note that while considerable thought has gone into the proposal, there is not a unique set of strategic allocation categories. As a result, the proposal is based on judgement and some conclusions are arbitrary and subject to change before they are finalized.

- Growth: represents the primary reason one invest, which is to achieve attractive returns. Growth is the primary return-seeking strategic allocation category with the objective of generating long-term capital appreciation by participating in global economic growth driven primarily by exposure to the equity risk premium.
- Income: attributes of this category include the generation of stable levels of current income as well as the potential for capital appreciation at lower levels of risk than growth assets, presentation of the principal value of assets, and ability to provide diversification to the primary drivers of assets in the Growth category. (Please note for some asset classes there may be a "fine line" between whether it should be in, the

Growth or Income category. Out of necessity, at the end of the day, final judgements may be arbitrary.)

- Real Return: to provide diversification through investments in assets which have inflation-sensitive characteristics or the ability to provide a hedge against inflation.
- Protection: provides stability, protection during crisis, and can act as a hedge against deflation.
- Liquidity: provides liquidity to meet daily obligations, primarily benefit payments and capital commitment calls. Consists of cash and cash equivalents.
- Opportunity: the purpose of this bucket is to allow for investment in interesting opportunities or new strategies that do not fit within clearly-defined asset class lines. Asset allocation constraints should not preclude investors from accessing interesting and attractive opportunities.

The proposed framework will become the basis for developing and managing the asset allocation of the Combined Funds. The implementation of the transition to the proposed framework will result in assets transferring and modifications in investment manager mandates occurring as we define the role that particular assets are designated to play within the portfolio. For example, assets managed by fixed income managers may be designated for the Income bucket and the Protection bucket. In such cases, it may be more efficient to have one group of managers invest the assets in the Income bucket and another manage the Protection bucket assets. In some cases, we may conclude that fewer managers are needed to accomplish this objective. As a result, investment manager mandates could change and the lineup of managers could change.

EXHIBT I
Sample Asset Framework Outline*

Strategic Allocation Category	Potential Asset Classes (1)	Attributes Present in Strategic Allocation Category (2)
Growth	U.S. Equity	Return seeking
	Non-U.S. Developed Market Equity	Capture Economic GrowthExposure to Equity Risk
	Emerging Market Equity	Premium
	Private Equity	Capital Appreciation
	Non-Core Real Estate	
Income	Investment Grade Credit	Principal protection
	Private Credit	Income Stream
	Multi-Asset Credit	Lower relative volatility
	Debt-Related Private Equity	Diversification
	Debt-Related Real Estate	Potential for higher returns
	Global Diversified Credit	than traditional bonds
Real Return	Private and Public Real Assets	Diversification
	Core Real Estate	Inflation Hedge/Protection
	TIPS/Inflation-Linked Bonds	Income Stream
Protection	U.S. Treasuries	Diversification/Risk Control
	U.S. Government Bonds	Downside protection
		Deflation hedge
Liquidity	Cash and Cash Equivalents	Short-term liquidity needs
Opportunity	Niche Opportunities in Multiple Asset Classes	• Varies

- (1) In the sample outline, the asset classes which appear represent their potential placement within the strategic allocation categories. Some of the placements may change as we develop the final framework.
- (2) Each asset class may not possess all attributes present in the designated Strategic Allocation Category.

B. Consider an Inflation-Sensitive Asset Allocation

As noted in the previous section, we concur that an asset class which includes assets which have inflation-sensitive characteristics, or has the ability to provide some degree hedge against inflation, is appropriate. We have preliminary defined this as the "Real Return" bucket. As we develop the revised portfolio structure and asset allocation, we will be able to better define which assets we believe are most appropriate for each strategic allocation category. Please note that while there are asset classes which may be specifically identified as inflation-sensitive (e.g., timber, agriculture, infrastructure, inflation-linked bonds, commodities, etc.), there are others where some segments may be more appropriate in Real Return, but others might be placed in the "Growth" or the "Income" bucket (e.g., real estate and energy or resources).

C. Add an Opportunity Bucket to Provide Flexibility for New Investment Ideas

We concur that it makes sense to have an "Opportunity" asset class category. This approach enables investors to have both the flexibility to examine new investment ideas and to also ensure that attractive investments are not precluded because of the constraints of the asset allocation. We believe that such a category should not have a pre-specified allocation target, but instead have an allocation range with zero on the low end and a reasonable maximum limit. This provides flexibility but prevents forced investing.

2) Private Markets / Alternative Investments

A. Pacing and Increased Target Weighting

We concur with the observation that we attempt to increase the market value of private markets within the total fund. However, we prefer to adhere to a pacing approach whereby we can ensure that we are able to continuously make investments each vintage year. Increasing the market value is not simply a matter of increasing commitment size. While we believe there is room to allocate more dollars to some of our investments, we believe our current approach of focusing on quality investments regardless of sizing capabilities best achieves the SBI's goals. In some cases, we are constrained by how much we can invest either because General Partner imposed capacity constraints or the SBI's statutory ownership limitation of 20%.

During the past several years, we have been broadening the geographical focus and the scope of types of private investments we are making (e.g., credit, real estate, and infrastructure) beyond private equity and energy, which were the predominant focus in prior years. We believe by expanding the scope of private markets, we have an opportunity to put more dollars to work. With an expanded scope of private market opportunities, the probability of increasing the amount of dollars actually invested should improve. This approach improves the SBI's potential to continue to generate attractive returns in a more risk controlled manner.

We also concur with the observation that the target weighting of private market investments should be increased. However, rather than focusing on a broad target for private markets, we would propose that we focus more on the strategic development of a broadly diversified private investment program. If we adopt the proposed framework structure discussed earlier, we would envision that private market investments could reside in multiple strategic allocation categories (e.g., growth, income, real return). We would suggest that each strategic allocation category have a limit for private investments and that the total portfolio would have an overall maximum limit. The sum for the limits of each segment may be greater than the total portfolio level, but in total be controlled by the maximum limit. This would provide flexibility in each category, but control total exposure at the total portfolio level.

We are recommending that the target weighting of the market value of private investments in the total portfolio be increased from 20% to 25% and that the limitation on the market value range of private investments be increased from 24% to 30%. This will provide the flexibility to invest more assets in lower risk private investments such as private credit, real estate and other forms of private investments which can provide greater diversification and risk mitigation to the portfolio without sacrificing returns. While we are recommending that the target and range of private investments on a market value be increased, we believe that the combined weighting of private investments market value and unfunded commitments should still cap out at 35%.

B. Re-Categorization of Private Market Investments

Staff has been in the process of redefining and re-categorizing the private market investment portfolio during the past year. The current structure is based upon decisions made almost three decades ago. The intent and focus going forward is to continue to review and conduct due diligence of a broader range of investments than:

- Private Equity
- Resources
- Real Estate
- Yield-Oriented (represented the above three segments with the provision that there was an income orientation to the fund)

Our new approach currently follows:

- Private Equity
- Credit
- Real Assets (which includes Real Estate, Resources and additional sub-categories)
- Distressed/Opportunistic

The categories may undergo continued refinement as we begin to integrate the various asset classes into the strategic allocation categories. For example, this may become necessary as we review the appropriate categories for Real Estate (see section D below) or the Distressed/Opportunistic segment.

C. Increased Allocation to Real Estate

Regarding the suggestion to increase the Real Estate allocation, any increase in this allocation will likely be dependent upon an increase in the overall portfolio target (or limitation). In 2012, the SBI made an explicit decision to liquidate a significant portion of its Real Estate holdings. Staff has been reviewing this decision during the past year. At this time, we have no formal recommendation. However, we do think that Real Estate should continue to play a role in the portfolio. We anticipate that the various segments of Real Estate may reside in more than one strategic allocation category as the drivers of core real estate may very well be different from opportunistic real estate. There should also be the recognition that real estate can be invested in a variety of forms, i.e., as private investments, public Real Estate Investment Trusts (REITs), and as debt.

D. Consider Reviewing the Mandate of the Resources Segment

Regarding the Resources program, the central question revolves around whether its role in the portfolio is to be total return oriented or is the intention to capture relatively stable inflation-adjusted income (i.e., in a real asset context). Staff has also been discussing this issue. Currently, there is a mixture of different energy-related assets in the portfolio. There are some funds that are real asset oriented, but many funds are private equity funds that focus on the energy sector and are more total return oriented. We have been fortunate in that one of our managers, Merit Energy, was funded due to its income-producing orientation. However, since our first investment with Merit Energy, it has also provided the SBI with a significant amount of capital appreciation. That result has been acceptable. We believe there is a place in the portfolio for either approach, and under the new structure we anticipate that similar to Real Estate, these assets may appear in multiple categories. As a result, the Resources asset class, as the SBI has historically defined it, will no longer exist (except where it may continue to be present as a necessity for performance reporting purposes).

E. Strategic Partnership and Co-Investments

Staff has had numerous discussions regarding strategic partnerships and co-investment opportunities. We believe they could make sense for the SBI. However, in order to take full advantage of such opportunities, a statutory change is required. This will remain a topic for continued review.

F. Strategy and Implementation Plan for Private Investments

We concur that the SBI develop a strategy, investment policy, and an implementation plan for private market investments and alternatives. However, our approach would be dependent upon the change in the asset allocation framework and an increase in the target weighting to private investments. We believe a better approach would be to set limits on the total portfolio and within each strategic allocation category. We will develop a strategy and implementation plan which is primarily focused on each strategic allocation category. Within each strategic allocation category, we will address how best to implement the strategy as it pertains to both the tolerance and capacity for private investments. This

approach will provide flexibility to compose a portfolio which takes advantage of the global opportunity set.

G. Liquid Alternatives

We concur that liquid alternatives should be part of the investment opportunity set for the SBI. As we review the strategic allocation categories, we plan to designate appropriate asset classes to each category. I would anticipate that we would include different types of liquid alternatives during this process.

3) Fixed Income

A. Review Program Structure and Define Role

We have been reviewing the SBI fixed income structure for the past three plus years. The SBI has utilized a static core type fixed income approach for the past three decades. The central focus has been to assemble a group of managers and allow them to allocate assets among the broad U.S. investment grade fixed income market. Some managers have also been allowed to allocate assets to the high yield and international markets on an opportunistic basis.

The objectives of fixed income have been to provide diversification to the equity program, to serve as a deflation hedge, and to provide an appropriate risk-adjusted return. Since the great recession, many institutional investors have taken an approach which recognizes that the different segments of the bond market may play different roles in a portfolio. Different bonds may have different primary risk attributes. There are two major risks which impact bonds, interest rate risk and credit risk. These two risks may be more prevalent in some segments than in others. With the adoption of the strategic allocation category asset allocation framework, we will take this opportunity to segregate (or begin the process of doing so) the different segments and place the segment in the category which best suits the role that the particular bond segment should play in the portfolio. For example, Treasury bonds are well suited to be a deflation hedge and provide Protection of capital in the portfolio. Certain credit segments may be better suited in an Income or Growth category. As we define the composition of the portfolio under the lens of the strategic allocation categories, we will determine how to best assign the segments of the fixed income portfolio.

B. Introduce Multi-Asset Credit Allocation

In addition to the restructuring of the fixed income program within the strategic allocation category framework, we concur that we should develop a multi-asset credit program to take advantage of credit risk premia available from a broad range of non-traditional fixed income. Given the low yield environment being experienced in the traditional fixed income market, we believe taking advantage of other credit-related investments provides an opportunity to generate higher yields and may also decrease portfolio risk. Taking this approach as part of a more comprehensive approach to gaining fixed income exposure can

result in the potential for greater returns without increasing overall portfolio risk relative to portfolios built to be reflective of the traditional broad investment grade bond market.

4) Public Equity

A. Globalization/Home Country Bias

In the past year, we have reduced the home country bias of the public equity portfolio from a 75% U.S./25% Non-U.S. split to a 67% U.S./33% Non-U.S. split. At this time, I am not recommending that we make further changes. The SBI's rationale for investing in international equities was based on the premise of diversification and the potential for higher returns. However, in the ensuing 25 years, correlations between domestic and international equities have increased and the SBI's experience has resulted in higher returns in domestic equities. Staff has had several discussions, over the years, and the change made this past year was the only reduction in the home country bias in the past twenty years. Fortunately, not making any changes has been beneficial for the Combined Funds. While past performance is not a predictor of future performance, most of the evidence presented to move closer to global market weights appears to be reminiscent of the arguments made when this topic was reviewed in the past. We will continue to review this issue, but I believe the recent reduction was significant and there is no compelling need to make further changes, at this time.

B. Passive Management

At this time, there is a higher probability that more assets will be shifted to passive management than to active management. There is a commitment to allow the recently hired small cap growth and emerging markets managers an opportunity to demonstrate that they can provide excess return to their designated benchmark over an extended period of time. While there has been a significant decline in the program's large cap active and semi-passive domestic managers, these areas may see additional asset withdrawals. There is also the possibility that the current international developed managers may also experience a decline in assets.

C. Active Management

As implied above, there remains a high probability that the domestic large cap segment may continue to experience increases in passive exposure.

Given the size and experience of the SBI's active public equity program, achieving alpha utilizing active management remains a significant challenge. However, we have not completely abandoned active management. We continue to have active management exposure in domestic small cap and both developed and emerging international markets. As stated above, the domestic small cap and the emerging markets managers were hired within the last year and there is a commitment to give them the opportunity to exhibit excess return capabilities.

While the current international developed managers may also experience a decline in assets, we may review the program and implement slight changes to the manager lineup. At a later date, we may consider the addition of active global equity managers as well as active small cap international and emerging market managers. However, at this time, consideration of nay review of these areas should be considered a low priority in the Executive Director's Work Plan.

5) Currency

The SBI had a currency hedging program covering the passive exposure of the international equity program for three years in the latter half of the 1990's. Although the program was considered successful and met program objectives, the decision was made to discontinue the program during Fiscal Year 1999. I have had discussions with currency management professionals during the past decade and anticipate that a review of currency management will be part of a future work plan.

6) Risk Measurement

We concur that there should be greater attention given to the reporting of portfolio risks at the manager or fund level, the asset class level, and the total portfolio level. Staff has begun an internal review focused on improving risk measurement and reporting. PCA also provides a quarterly Risk Monitoring Report which focuses on inherent risks within the Combined Funds portfolio.

SUMMARY

While there appears to be a significant amount of information to digest from the prior pages, the major considerations to be addressed are:

- The adoption of the proposed framework for the asset allocation incorporating the use of the Strategic Allocation Categories. This may require adoption of new asset classes and the designation of asset classes to certain allocation categories which could result in changing investment manager mandates and the lineup of investment managers.
- Increasing the overall portfolio target weighting and range for the market value of private investments. This approach will enable us to increase our exposure to private investments which improves the SBI's potential to continue to generate attractive returns in a more risk controlled manner.

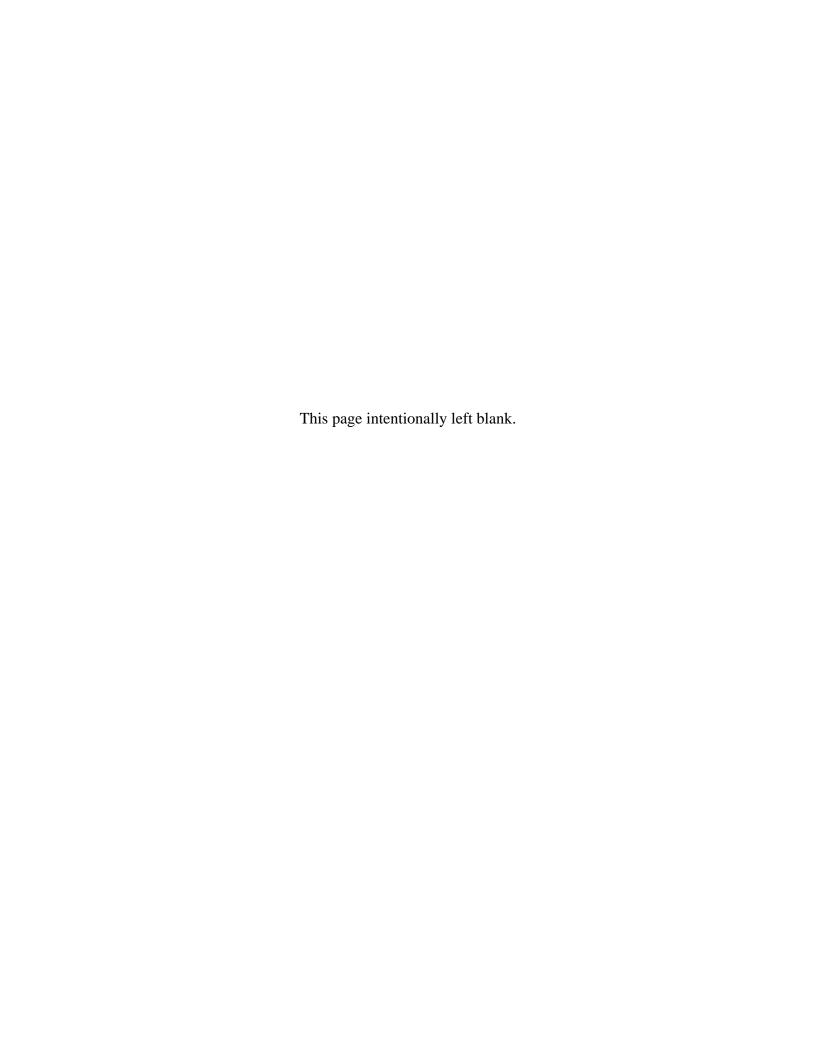
If these proposals are approved, we will work with our investment consultants to develop policy weights for the revised framework which will result in a modification of our asset allocation. We would then present a proposal for review by the Investment Advisory Council (IAC) and potential adoption by the State Board of Investment (SBI) Board at our fourth quarter meetings.

RECOMMENDATION:

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

- to adopt the framework of Strategic Allocation Categories as the basis for its asset allocation and authorize the Executive Director to implement the Strategic Allocation Category Framework consistent with investment policy and the positions presented in this memorandum;
- to increase the target allocation weighting for the market value of private investments from 20% to 25% and set a range with a maximum limitation of 30% rather than the current 24% limit; and
- work with the SBI's investment consultants to develop policy weights for the proposed framework to be reviewed by the IAC and make a recommendation to the SBI Board.

TAB F



DATE: August 7, 2017

TO: Members, Investment Advisory Council

FROM: Mansco Perry III

SUBJECT: Proposed Statement of Investment Beliefs for the SBI

Pension Consultant Alliance (PCA) conducted the survey for the SBI Investment Beliefs Project during June. PCA surveyed Board members and designees, the Investment Advisory Council, Staff, the former Executive Director and three former IAC Chairpersons. I worked with PCA to analyze the survey results.

PCA has prepared a proposed Statement of Investment Beliefs. The statement will be presented at the IAC meeting. We are requesting that the IAC endorse the recommendation to the SBI Board to adopt the Statement of Investment Beliefs.

RECOMMENDATION:

The Executive Director is requesting that the IAC endorse the recommendation that the SBI adopt the proposed Statement of Investment Beliefs.

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Date: July 27, 2017

To: SBI Investment Advisory Committee (IAC)

From: Pension Consulting Alliance, Inc. (PCA)

CC: Allan Emkin | Neil Rue, CFA | John Burns, CFA

RE: Consideration of Draft SBI Investment Beliefs

<u>Summary</u>

At its May 2017 meeting, the CIO and IAC provided direction to PCA to work with the CIO to develop a draft set of SBI investment beliefs by August/September 2017. After undertaking a process that included surveying dozens of SBI-related individuals, meeting with senior management, and conducting additional significant discussions on the matter, PCA and the CIO have developed ten investment beliefs the Board and IAC could consider for adoption.

Discussion

PCA provided the IAC with an introductory discussion on investment beliefs at the May 2017 IAC meeting. While such beliefs often reflect current investment activities and positioning, they can also prove extremely helpful in guiding institutional decision makers toward sound investment principles. In this respect, decision-makers can view investment belief statements as important foundational reference points when making key investment policy and strategy decisions.

Since the May meeting, Staff and PCA have made significant progress in developing an initial set of investment belief statements for the SBI. After considering approximately five dozen different belief statements, surveying dozens of individuals across Staff, IAC, Board, and other key individuals, and meeting with Staff leadership to take their input on framing investment beliefs, the CIO worked with PCA to collate the survey results and factor in key discussion points to develop the ten attached investment belief statements.

Across all these final beliefs, the different survey groups (Staff, IAC, Board and Others) either strongly agreed or agreed with a specific statement. In other words, there was consensus among all parties for the specific statement. That was not always the case across the several-dozen survey statements, as some groups agreed with some statements while other groups showed disagreement.



As expected, the set of draft investment belief statements help to convey SBI's perspective on several key topical/foundational investment areas. Topics covered include asset allocation in the context of the overall retirement system, cost management, expected rewards from exposure to certain risk premiums, active vs. passive management, and governance.

Upon adoption, these Investment Belief Statements will provide a guiding foundation for future strategic investment decisions of the Board and IAC and be a potential focal point for other various stakeholder groups.



SBI Investment Beliefs

In September 2017, the State Board of Investment adopted a set of ten Investment Beliefs for managing the assets of the Combined Funds (those funds utilized to support the defined benefit plans of the State's employees). The primary purpose of these Beliefs is to guide the SBI toward sound investing principles related to investing on behalf of the Combined Funds. In this respect, the Beliefs help provide context for SBI's actions, reflect SBI's investment values, and acknowledge SBI's role is supporting the State's broader retirement systems.

The SBI is a long-term investor whose primary mission is to maintain the viability of the retirement systems it supports.

When determining an appropriate level of risk that the systems' assets should bear the SBI must reflect the nature of those systems' liabilities and funding policy.

The SBI's strategic allocation policy is the primary determinant of (i) the asset portfolio's long-term investment return and (ii) asset portfolio's risk.

While the SBI can sacrifice some short-term liquidity to pursue a greater long-term return, the investment portfolio's net cash flows and ability to pay benefits on a year-by-year basis is a key risk consideration.

Diversification improves the risk-adjusted return profile of the SBI investment portfolio.

Diversification of the SBI investment portfolio takes place across several critical dimensions, such as allocation across global regions and country markets (e.g., U.S. versus Europe, Asia, emerging markets, etc.), allocation among different types of assets (equities, bonds, real estate, etc.), spreading assets across various sectors and industries (e.g., technology, financials, consumer-oriented, etc.), and weighting of different risk factor premiums (e.g., value vs. growth, small companies vs. big companies, carry, illiquidity, etc.). If the correlation (i.e., relationship) among the returns generated by these factors is less than perfect (i.e., less than 1.0), then diversification is beneficial.

There are long-term benefits to SBI managing investment costs.



The equity risk premium is significantly positive over a long-term investment horizon although it can vary over time.

The equity risk premium is also pervasive across several asset classes and its overall exposure should be managed accordingly.

Private market investments have an illiquidity premium that the SBI can capture.

This risk premium can increase the portfolio's long-term compound return and help diversify the portfolio's risk.

It is extremely challenging for a large institutional investor to add significant value over market-representative benchmarks, particularly in the highly-competitive public global equity markets.

Passive management should be utilized when there is low confidence that active management can add value. Active management can have potential to add value where information processing is difficult and challenging, allowing for market inefficiencies that are potentially exploitable.

The SBI benefits significantly when roles and levels of authority are clearly defined and followed.

<u>The Board</u> brings benefits to the SBI by establishing investment policy, delegating implementation of that policy, and monitoring the CIO's implementation activities and the portfolio's active risk level in the context of the portfolio's strategic allocation policy;

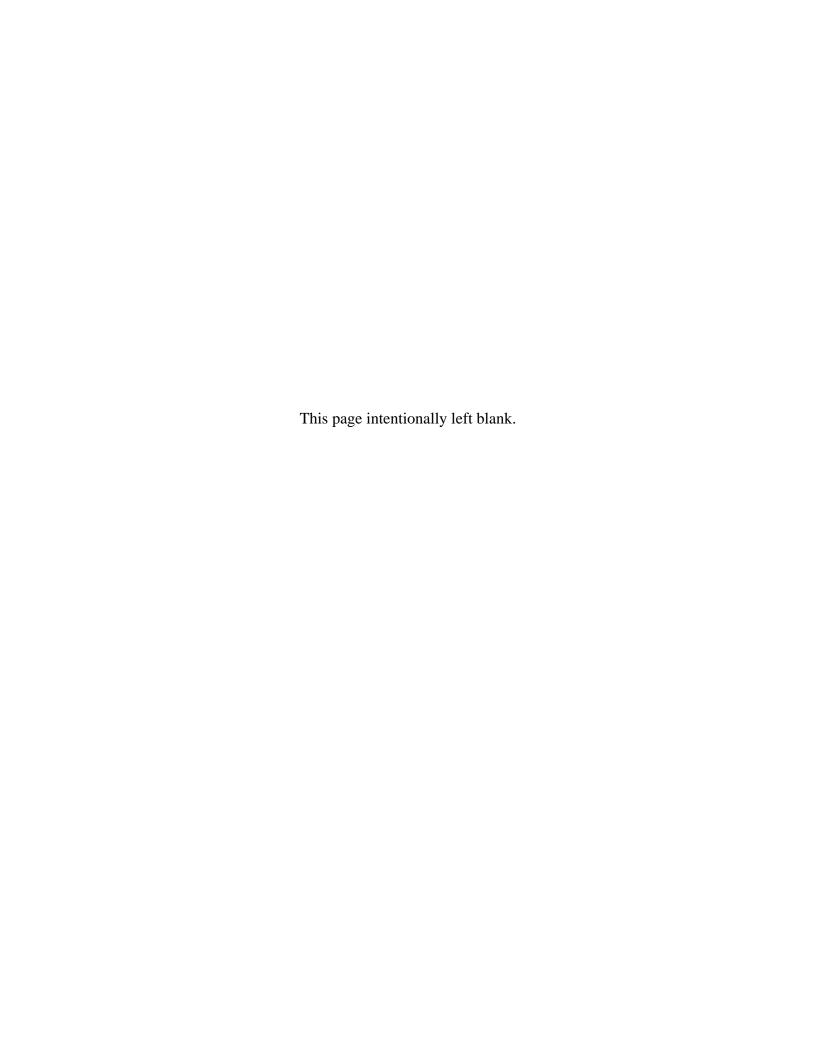
<u>The Investment Advisory Committee</u> (IAC) key role is advising the Board and Executive Director/CIO on general policy matters and methods to enhance the management of the investment portfolio;

<u>The Executive Director's/CIO's</u> key role is implementing SBI investment policies and setting the portfolio's active risk level in a prudent manner to achieve value-added over policy benchmarks.

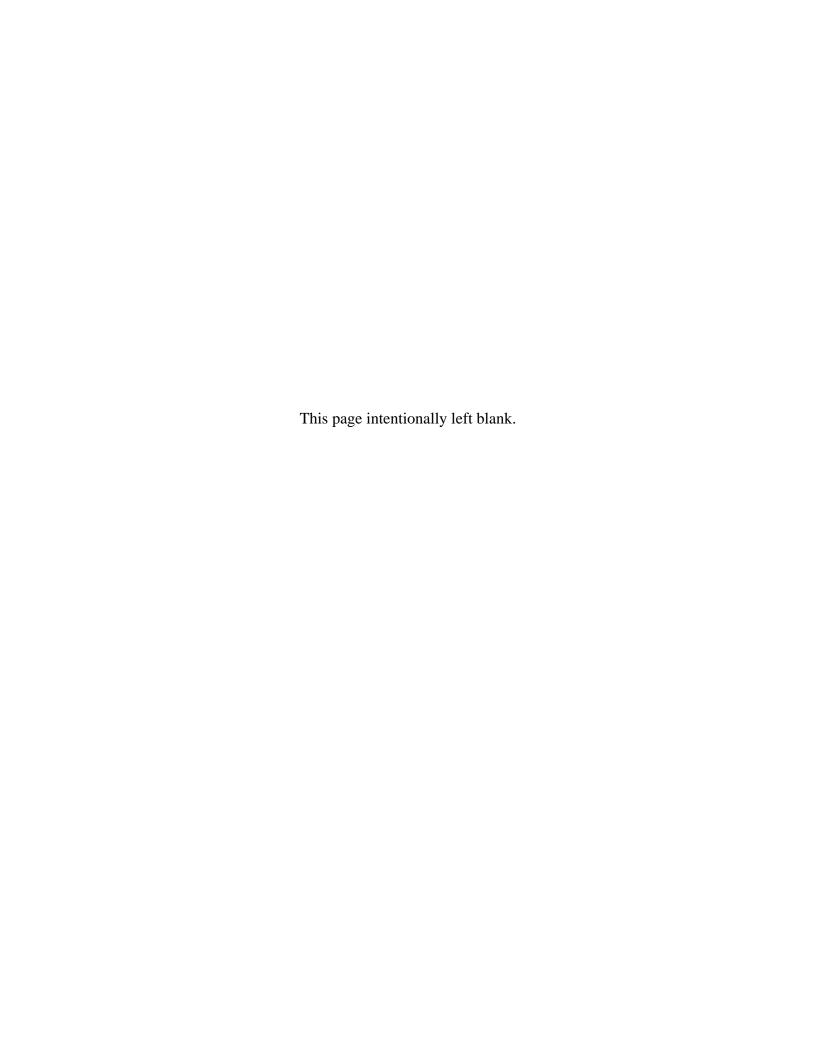


Utilizing engagement initiatives to address economic, social, and governance-related (ESG) issues can lead to positive portfolio and governance outcomes.

In addition to specific engagement strategies the SBI might apply, proxy rights attached to shareholder interests in public companies are also "plan assets" of the SBI and represent a key mechanism for expressing SBI's positions relating to specific ESG issues. By taking a leadership role in promoting responsible corporate governance through the proxy voting process, SBI can contribute significantly to implementing ESG best practices which should, in turn, add long-term value to SBI's investments.



TAB G



DATE: August 7, 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. Included in this section is a summary of investment manager activity for the public equity and fixed income managers in the SBI portfolio.

Also, we have included commentary for the non-retirement managers and deferred compensation plan mutual funds.

The report includes the following sections:

•	Public Markets Economic and Market Overview	Page 3
•	Public Markets Manager Activity	6
•	Non-Retirement Manager Update	9
•	Deferred Compensation Manager Update	10

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Public Markets Economic and Market Overview Second Quarter 2017

Overview

Continuity was the dominant theme for U.S. equity markets in the second quarter. Plunging oil prices, heightened political risk, and a rate hike from the U.S. Federal Reserve (Fed) were not enough to derail the eight-year-old market rally. The Fed hiked policy rates by 25 basis points in June and laid out a plan for balance sheet normalization later this year, provided the economy strengthens as anticipated. The so-called "Trump trade" reversed itself as initial enthusiasm for reform faded with a lack of progress on taxes, health care, regulation and infrastructure. The Russell 3000 broad market index returned 3.0% in the quarter. Health Care was the best performing sector in the index, while Energy was the weakest.

The U.S. Treasury yield curve flattened during the second quarter. While short end yields rose in response to FOMC tightening, long end yields fell in response to lackluster economic data, the absence of meaningful wage inflation, and political uncertainty regarding potential fiscal stimulus. On June 14th, the Fed raised rates for the second time this year, while the Consumer Price Index came in lower than expected, supporting the decline in yields. Ten year Treasury yields started the quarter at roughly 2.4% and remained range-bound during the quarter, ending June slightly lower at roughly 2.3%. Positive corporate earnings and cash flow supported credit, even with new multi-year lows in yields and weaker macroeconomic data. The Bloomberg Barclays Aggregate Index increased 1.5% for the quarter, with the long end Treasury curve appreciation complementing continued tightening in corporate sectors.

Developed markets advanced during the quarter, as represented by the 5.6% return of the MSCI World ex USA index amid accelerating global growth, and signs of diminishing political risk in the euro zone. Investor sentiment improved with the victory of French centrist candidate Emmanuel Macron who pledged to keep France in the European Union. Macron defeated Marine Le Pen, a populist candidate who campaigned on an anti-EU and anti-immigration platform. The Japanese market experienced strong returns amidst a more positive economic outlook as its exporting companies benefitted from a slight weakening of the Yen versus the dollar. Overall, the U.S. dollar weakened versus developed market currencies, which benefited U.S. dollar-based investors. For the quarter, the top performing sectors in the index were Information Technology, Consumer Staples and Health Care. The worst performing sectors were Energy, Materials, and Real Estate.

Emerging Market equities, represented by the MSCI Emerging Markets index, returned 6.3% during the second quarter. China, Taiwan and South Korea, which represent roughly half of the benchmark, posted double digit returns, while emerging countries in the Middle East as well as Russia lagged the overall index. The top performing sectors for the quarter were Information Technology and Real Estate, led by over 30% returns in Alibaba and Tencent. The worst performing sectors were Energy, Materials, and Utilities. Market style factors were especially pronounced within the EM Equity space, as the MSCI EM-Growth Index returned 9.5%, while its Value counterpart returned 3.2%.

SBI Portfolio - Quarter and Year Attribution

In the second quarter, the SBI's overall portfolio, the Combined Funds, exceeded the composite benchmark return 3.8% versus 3.4%. Domestic equities outperformed the Russell 3000 Index return 3.1% versus 3.0%, while international equities exceeded the MSCI ACWI ex US Index net return 6.6% versus 5.8%. The fixed income portfolio outperformed the Bloomberg Barclays U.S. Aggregate Index return 1.6% versus 1.5%. For the quarter, International equity's strong performance generated the largest contribution to the combined funds return, contributing 1.4 percentage points of the 3.8% total portfolio return. Domestic equity, with twice the market value weighting, contributed about 1.4 percentage points of the 3.8% total portfolio return. For the year ending June 30th, domestic equity contributed 8.4 percentage points of the 15.1% portfolio return, while international equity contributed 4.4 percentage points of the total portfolio return.

Domestic Equity

The large cap growth managers exceeded the Russell 1000 Growth benchmark by 4 percentage points for the quarter. Stock selection was positive across most sectors, led by the Consumer Discretionary sector. All three managers outperformed for the quarter.

The large cap value managers outperformed the Russell 1000 Value benchmark by 0.9 percentage points for the quarter. An underweight to Energy helped the quarterly return. All three managers outperformed for the quarter.

The small cap growth managers outperformed the Russell 2000 Growth benchmark by 1.0 percentage point for the quarter. Stock selection, within the Producer Durables, Technology and Health Care sectors helped the quarterly performance. This was the second quarterly performance for ArrowMark, Hood River, Rice Hall and Wellington. Arrowpoint changed its name to ArrowMark Colorado Holdings, LLC, effective March 31, 2017. All of the managers, other than McKinley, outperformed for the quarter.

The small cap value managers trailed the Russell 2000 Value benchmark by 0.2 percentage points for the quarter, due largely to stock selection. Peregrine and Martingale outperformed for the quarter, while Hotchkis & Wiley and Goldman Sachs underperformed.

For the quarter, the semi-passive managers in aggregate underperformed the Russell 1000 index return by 0.4 percentage points. Stock selection in the Consumer Staples, Producer Durables and Technology sectors contributed negatively to returns. The passive Russell 3000 and Russell 1000 index managers tracked their respective indices.

International Equity

The active developed markets equity managers outperformed the MSCI World ex USA Index (net) by 2.0 percentage points for the quarter. Stock selection in Australia, Japan and the United Kingdom was positive. With respect to sectors, stock selection in the Industrials, Health Care, Financials, and Consumer Discretionary sectors added value The semi-passive developed markets equity managers outperformed the MSCI World ex USA Index (net) by 0.4 percentage point for the quarter. Stock selection in Australia, Japan and Germany contributed positively to performance. With respect to sectors, stock selection in the Financials, Consumer Discretionary and Industrials sectors added value. The passive developed markets manager's performance tracked its index.

Emerging Markets

The SBI's six new emerging markets equity managers, funded on March 14, 2017, enjoyed a strong start. The Emerging Markets Active Equity composite outperformed the MSCI EM benchmark by 1.3 percentage points for the quarter. The overall EM program, including passive, outperformed the benchmark by 1 percentage point over the same period. Overall, stock selection and an underweight allocation to Russia and South Africa, contributed positively to returns, while stock selection and an underweight to Korea detracted from performance. Stock selection in the Financials and Energy sectors, and an underweight to a lagging Energy sector, contributed to the outperformance. The passive emerging markets manager's performance tracked its index.

Fixed Income

Each of the 7 SBI's fixed income managers in the fixed income pool outperformed the Bloomberg Barclays Aggregate benchmark this quarter, returning 1.6% in total vs. 1.5% for the benchmark. Managers with equal or overweight duration positioning, particularly in the long end, outperformed the benchmark, as yields fell at the long end of the curve. Managers with underweight benchmark duration, exposure to inflation protection securities (TIPS) and less credit focus underperformed their SBI peers. Exposure to credit, both corporate investment grade and high yield, was beneficial, as spreads narrowed during the quarter.

Public Markets Manager Activity Second Quarter 2017

For the quarter, the majority of investment managers performed in-line with expectations. Other noteworthy manager developments for the quarter are shown below.

Domestic Equity Managers

J.P. Morgan

Jason Ko, a member of the research team covering REITs transitioned over to J.P. Morgan's U.S. Equity Value Team. His responsibilities were assumed by Mathew Rand, who has been with J.P. Morgan since 2013. He joined the firm from Goldman Sachs where he covered the U.S. REIT sector. Staff has no concerns with this personnel change.

Manager Terminations

The following Domestic Equity Managers were terminated in the Second Quarter 2017:

- INTECH Investment Management, LLC large cap growth and large cap semi-passive
- Jacobs Levy Equity Management, Inc. large cap growth
- Mellon Capital Management Corporation large cap semi-passive
- Next Century Growth Investors, LLC small cap growth
- Systematic Financial Management, L.P. large cap value

International Equity Managers

Columbia Management Investment Advisors, LLC

In April 2017, Michelle Scrimgeour joined Columbia Threadneedle Investments as Chief Executive Officer, EMEA and CEO of Threadneedle Asset Management Limited. She will also join the executive leadership team of Ameriprise Financial, Inc. She joins from M&G Investments, where she was the current Chief Risk Officer and a Director of M&G Group Limited. Staff has no concerns with this change.

J.P. Morgan Asset Management

During the second quarter, Malcolm Smith was named as replacement for Howard Williams, Head of Global Equities, who will be retiring in the fourth quarter of 2017. Malcolm, who is based in London, is currently Head of the European Equity Team and joined J.P. Morgan in 2014. Effective June 30, 2017, J.P. Morgan integrated its Global Equity and European Equity teams into one International Equity team under the leadership of Malcolm Smith. As a result, J.P Morgan's three regional equity teams, U.S., Emerging Markets/Asia Pacific, and International, will be organized along a similar structure. In addition, Shane Duffy has been named CIO for the Global Specialist Team. Staff will monitor the change in the international equity team.

Fidelity Institutional Asset Management (FIAM)

Effective July 1, 2017, Judy Marlinski became president of FIAM. She also assumed the title of president of FIAM's two investment management units, FIAM LLC and Fidelity Institutional Asset Management Trust Company. Judy reports to Jeff Lagarce, president of Fidelity Institutional. She succeeded Scott Couto, who left the firm at the end of June 2017. Staff has no concerns with this change.

State Street Global Advisors (SSgA)

Effective April 1, 2017, Greg Hartch replaced Mathew Steinaway as SSgA's Chief Risk Officer. In June 2017, Mike Karpik, SSgA's Head of EMEA (Emerging Europe, Middle East & Africa), announced his intention to leave the firm later in the year. Cuan Coulter, who has served as State Street Bank's Chief Compliance Officer since 2011, will become SSgA's new Head of EMEA. Rory Tobin, in addition to his duties as Co-Head of Global SPDR, SSgA's ETF business, will also assume the role of Chairman of SSgA's EMEA region. Staff has no concerns with this change.

Morgan Stanley (EM)

On June 1, 2017, Morgan Stanley Investment Management Inc. underwent a legal entity restructuring when ownership was transferred to Morgan Stanley Capital Management, a wholly-owned subsidiary of Morgan Stanley. This change is not expected to have any impact on services or investments offered to the SBI. Staff has no concerns at this time.

Macquarie (formerly known as Delaware Investments) (EM)

On March 31, 2017, Delaware Investments adopted the name of its parent and became Macquarie Investment Management (MIM) to reflect the firm's global investment capabilities. Also, in March 2017, John Leonard joined the firm as Head of Equities, Americas. Leonard oversees the nine-U.S. based equity teams and serves as global chair of equities for Macquarie. Prior to MIM, Leonard served as global head of equities for UBS Global Asset Management for over 25 years. Staff has no concerns with these changes.

Fixed Income Managers

Dodge & Cox

Thomas M. Mistele, Chief Operating Officer, Senior Counsel and Secretary of Dodge & Cox has announced his retirement from the firm and has begun a two year transition with his replacement, Bill Strickland. While Mr. Mistele was on the Board of Directors, the change is not expected to affect the management of SBI's account.

PIMCO

Jay Jacobs, President and Managing Director, will be retiring from PIMCO at the end of September. Following the transition, Robin Shanahan, Managing Director and Global Head of Human Resources and Peter Strelow, Managing Director and Chief Administration Officer, will assume the roles of Co-Chief Operating Officers, reporting to PIMCO's CEO, Emmanual Roman. Staff has no concerns at this time.

2017 Manager Meetings

The second quarter manager reviews are noted below.

Investment Manager	Asset Class
AQR Capital Management, LLC	International Equity
Goldman Sachs Asset Management, L.P.	Domestic Equity
Goldman Sachs Asset Management, L.P.	Fixed Income
LSV Asset Management	Domestic Equity
Martin Currie Inc.	International Equity
Martingale Asset Management, L.P.	Domestic Equity
Morgan Stanley Investment Management Inc.	International Equity
Neuberger Berman Investment Advisers LLC	Fixed Income
Pacific Investment Management Company LLC	Fixed Income
Penza Investment Management, LLC	International Equity
Sands Capital Management, LLC	Domestic Equity
State Street Global Advisors	International Equity
Wellington Management Company LLP	Domestic Equity
Western Asset Management Company	Fixed Income

Non-Retirement Manager Update Second Quarter 2017

Domestic Equities

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 Bond Pool

The bond portfolio outperformed its benchmark, the Bloomberg Barclays Aggregate, for the quarter and for the year. For the quarter and the year the allocation to corporate bonds contributed to relative performance. The portfolio's shorter duration relative to the benchmark benefited performance for the year.

Deferred Compensation Manager Update Second Quarter 2017

Domestic Equities

Vanguard Dividend Growth Fund

The Fund outperformed its benchmark, the NASDAQ US Dividend Achievers Select Index, for the quarter and lagged for the year. For the quarter, stock selection in Consumer Staples and Financial companies were the biggest contributors to relative performance. For the year, the fund's underperformance relative to its benchmark was primarily from an underweight to and poor stock selection in Industrials, along with an overweight to and poor selection in Energy.

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 for the year.

T. Rowe Price

The small cap equity portfolio underperformed the Russell 2000 for the quarter and for the year. Stock selection in Health Care and Financial sectors detracted from relative performance for the quarter. For the year, stock selection in Consumer Discretionary, Materials, Information Technology, and Health Care 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. Favorable stock selection was the main driver to relative performance in addition to sector allocation. Regionally, the portfolio's emerging market allocation benefited returns the most during the quarter. For the year, stock selection in Energy, Consumer Discretionary, Consumer Staples, and Materials detracted from relative performance.

Vanguard Total International Stock Index

The portfolio outperformed its benchmark, the FTSE Global All Cap ex US Index, for the quarter but slightly lagged 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. Both the quarter and the year returns benefited from security selection and an overweight within corporate bonds. The portfolio's nominal yield advantage also benefited returns for the quarter and year. The portfolio's shorter duration relative to the benchmark benefited performance for the year.

Vanguard Total Bond Market Index

The fixed income portfolio outperformed the benchmark, the Bloomberg Barclays Aggregate Index, for the quarter and lagged the benchmark for the year. Small deviations in the fund's performance relative to the benchmark may occur given the fund's sampling approach to approximate the index.

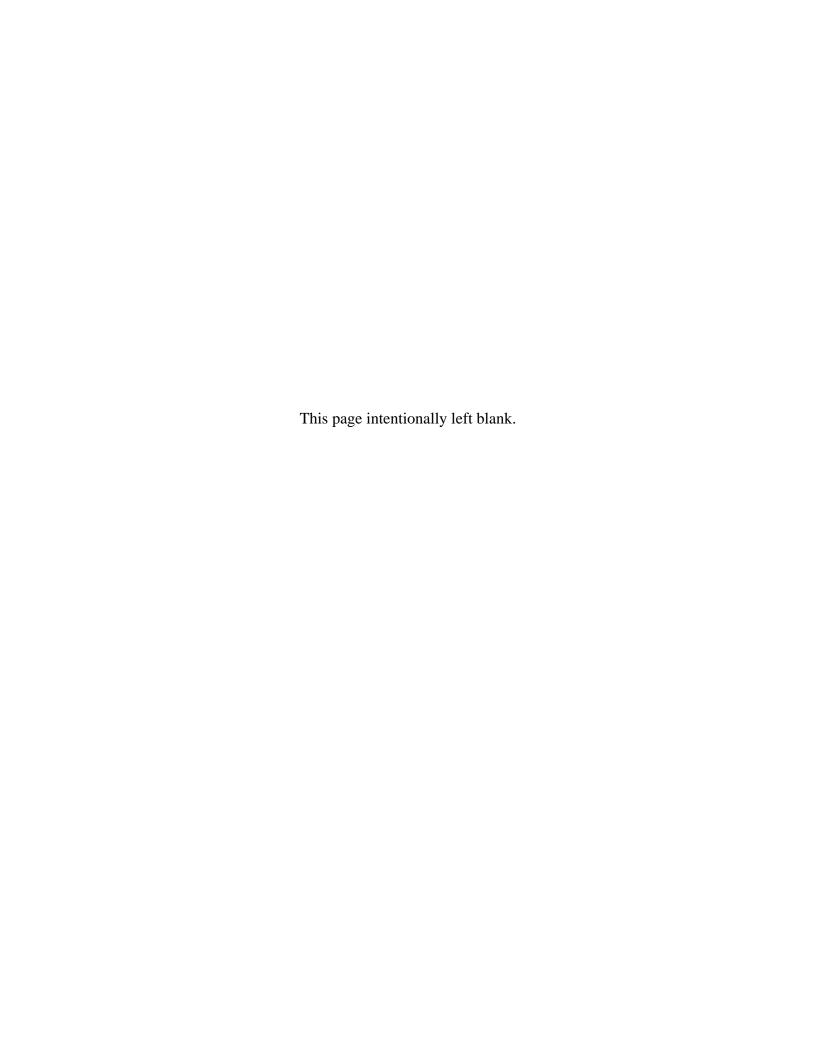
Balanced and Conservative Options

Vanguard Balanced

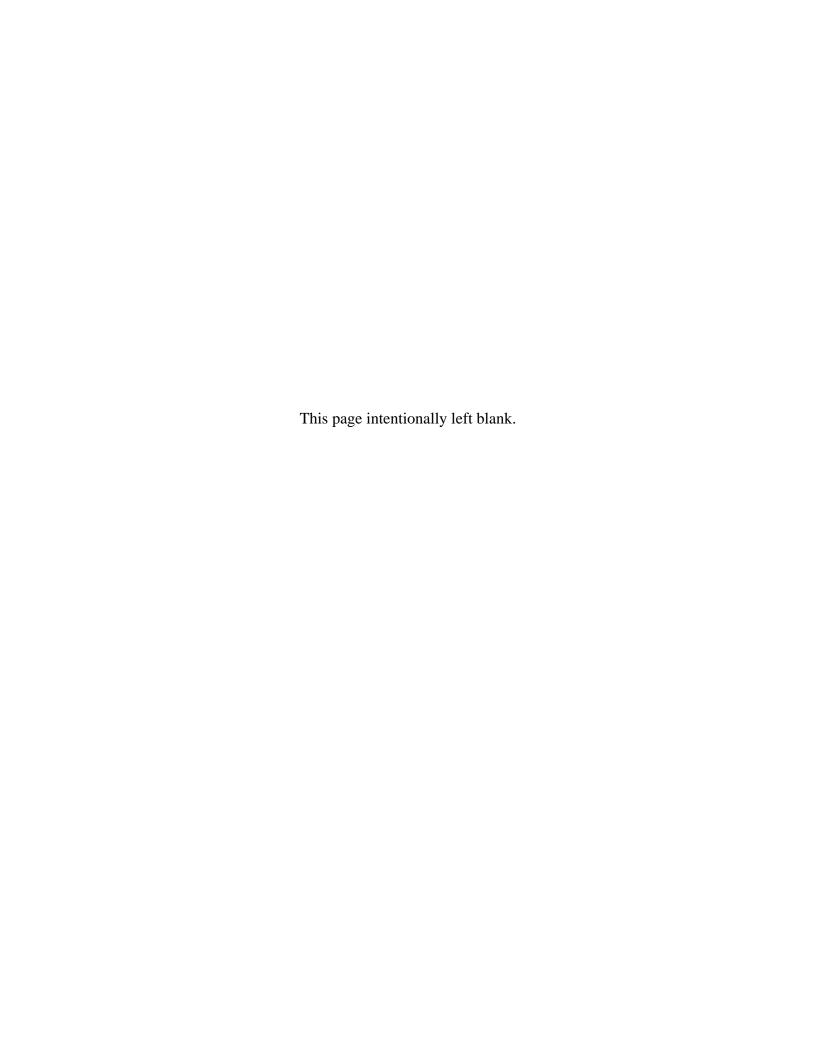
The portfolio matched the benchmark for the quarter and slightly underperformed for the year. The underperformance was attributed to the fee expense. The benchmark is a combined return of 60% CRSP US total Market and 40% Barclays Aggregate.

Galliard Capital Management

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



TAB H





Comprehensive Performance Report

June 30, 2017





Description of SBI Investment Programs

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

Combined Funds

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

Participant Directed Investment Program

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

Non-Retirement

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

State Cash

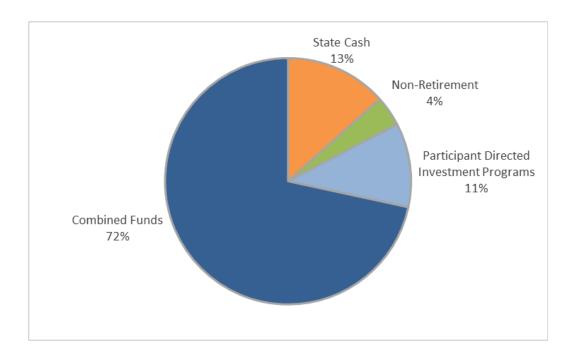
The State Cash accounts are cash balances of state government funds including the State General Fund. Most accounts are invested by SBI staff through a short-term pooled fund referred to as the Treasurer's Cash Pool. It contains the cash balances of special or dedicated accounts necessary for the operation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





Funds Under Management

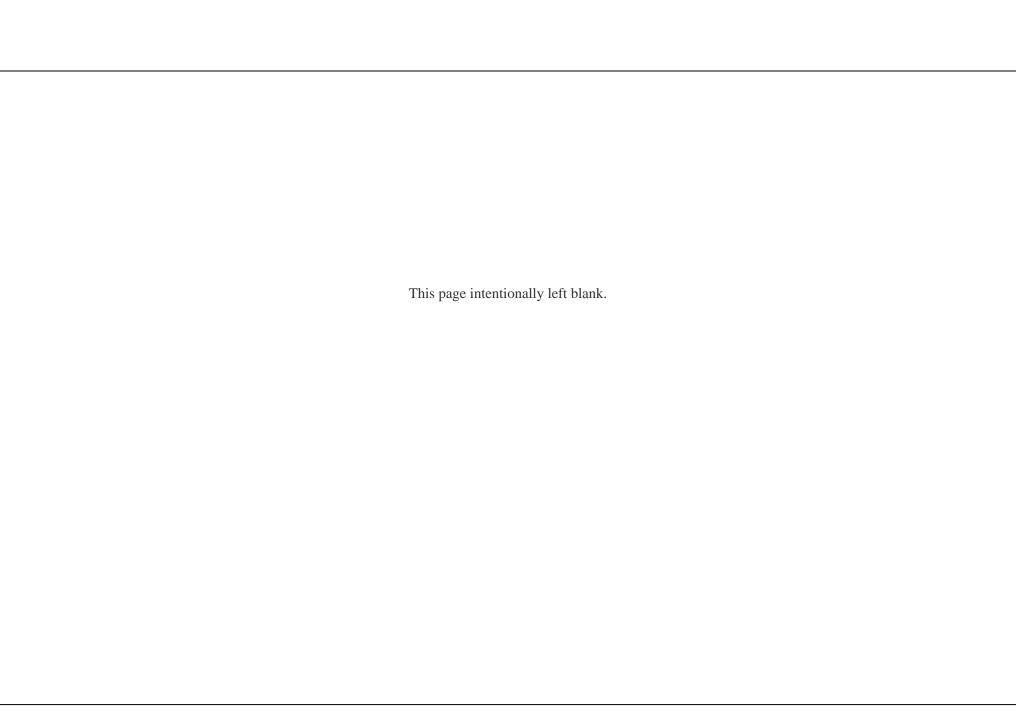
\$ Billions COMBINED FUNDS \$64.1 Combined Funds PARTICIPANT DIRECTED INVESTMENT PROGRAMS 2.1 Supplemental Investment Fund* 6.4 State Deferred Compensation Plan 1.3 Minnesota College Savings Plan 0.0 Achieve a Better Life Experience NON-RETIREMENT FUNDS 0.3 Assigned Risk Plan 1.3 Permanent School Fund 1.0 **Envrionmental Trust Fund** 0.1 Closed Landfill Investment Fund 0.2 Miscellaneous Trust Accounts 0.6 Other Post Employment Benefits Accounts STATE CASH ACCOUNTS 11.8 Invested Treasurer's Cash 0.1 Other State Cash Accounts 89.5 **TOTAL**



Note: Differentials within column amounts may occur due to rounding



^{*} Includes assets of smaller retirement funds which are invested with the SBI but are not included in the Combined Funds



Quarterly Report



Table of Contents

Combined Funds_______7 **Domestic Equity International Equity** Fixed Income Private Markets Participant Directed Investment Program____ Supplemental Investment Fund **Deferred Compensation Program** Minnesota College Savings Plan Achieve a Better Life Experience Non-Retirement Funds_____ Assigned Risk Plan Permanent School Fund **Environmental Trust Fund** Closed Landfill Investment Fund Non-Retirement Managers State Cash Accounts Invested Treasurer's Cash Other State Cash Accounts

Addendum_______95

Performance Reporting Legend

Manager Level Data

Aggregate Level Data

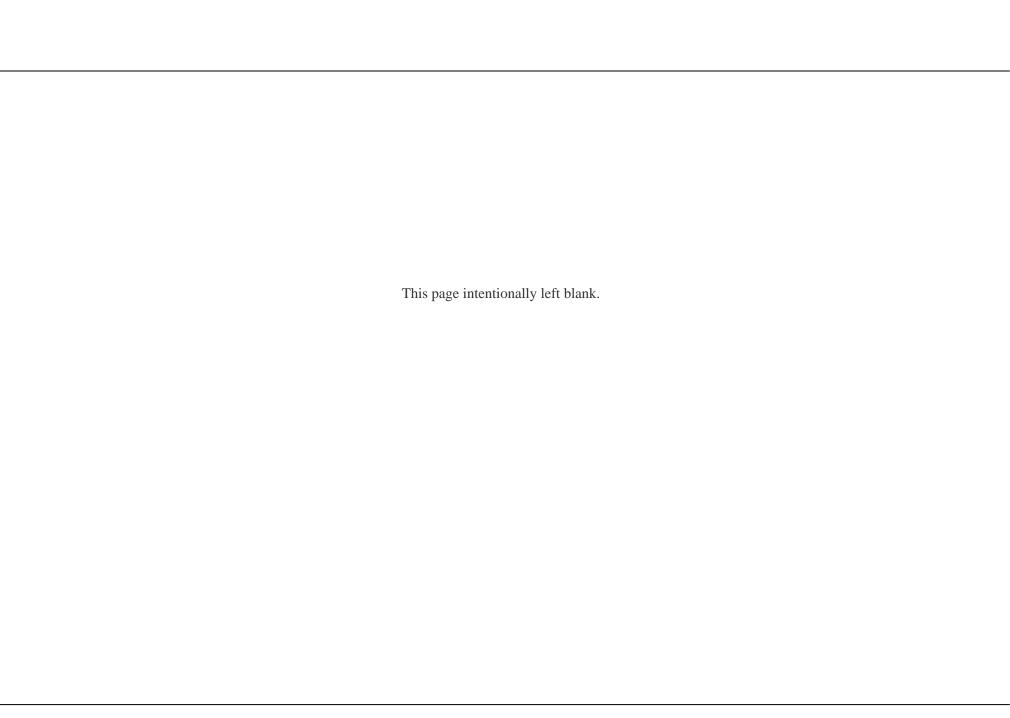
Sub-Asset Class Level Data

Asset Class Level Data

Note:

Throughout this report performance is calculated net of investment management fees, aggregates include terminated managers, and returns for all periods greater than one year are annualized. Inception Date and Since Inception Returns refer to the date of retention by the SBI. FYTD refers to the fiscal year to date return generated by an account since July 1 of the most recent year. For historical benchmark details, please refer to the addendum of this report.







Combined Funds

June 30, 2017





Combined Funds Summary

Combined Funds Change in Market Value (\$Millions)

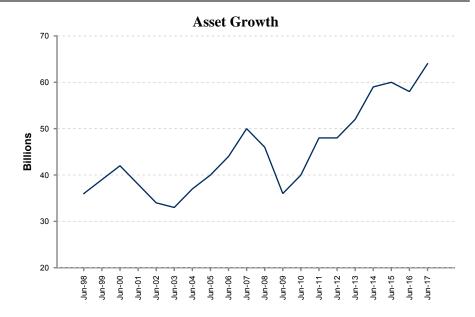
•	One Quarter
COMBINED FUNDS	
Beginning Market Value	\$62,351
Net Contributions	-561
Investment Return	2,326
Ending Market Value	64,116

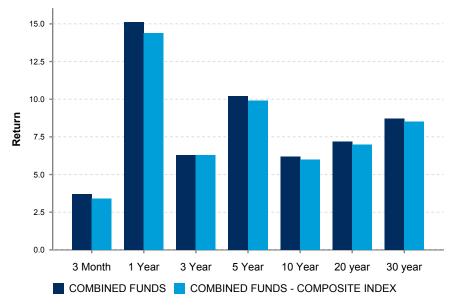
The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.

Performance (Net of Fees)

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

	<u>Qtr</u>	FYTD	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>20 Yr</u>	<u>30 Yr</u>
COMBINED FUNDS	3.7%	15.1%	15.1%	6.3%	10.2%	6.2%	7.2%	8.7%
COMBINED FUNDS - COMPOSITE INDEX	3.4	14.4	14.4	6.3	9.9	6.0	7.0	8.5
Excess	0.3	0.8	0.8	-0.1	0.3	0.2	0.2	0.2







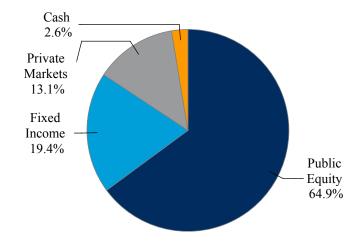
Combined Funds Summary



Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in Public Equity. The current Strategic Asset Allocation Policy Target became effective on 7/1/2016.

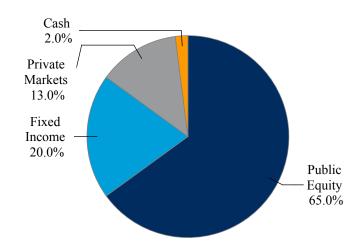
	(Millions)	Actual Mix	Policy Target
Public Equity	\$41,607	64.9%	58.0%
Fixed Income	12,425	19.4	20.0
Private Markets	8,409	13.1	20.0
Cash	1,675	2.6	2.0
TOTAL	64,116	100.0	



Composite Index Comparison

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target with the uninvested portion of Private Markets allocated to Public Equity. Asset class weights for Public Equity and Private Markets are reset at the start of each month. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

	Target Weight	Market Index
Public Equity	65.0%	69% Russell 3000/31% MSCI ACWI ex US
Fixed Income	20.0	BB Barclays U.S. Aggregate
Private Markets	13.0	Private Markets
Cash	2.0	3 Month T-Bills







Combined Funds Asset Class Performance Summary

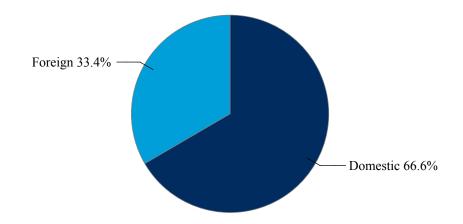
Public Equity

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

The Public Equity benchmark is 67% Russell 3000 and 33% MSCI ACWI ex USA.

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

The Morgan Stanley Capital International All Country World Index ex U.S. (net) is a free float-adjusted market capitalization index that is designed to measure equity market performance in developed and emerging markets other than the United States.



	Last Qtr	FYTD	1 Year	3 Year	<u>5 Year</u>	10 Year	20 Year
Public Equity	4.2%	19.9%	19.9%	7.0%	13.0%	5.9%	6.7%
Public Equity Benchmark	3.9	19.2	19.2				
Excess	0.4	0.6	0.6				
Domestic Equity	3.1	19.4	19.4	8.7	14.5	7.1	7.1
Domestic Equity Benchmark	3.0	18.5	18.5	9.1	14.6	7.3	7.2
Excess	0.1	0.9	0.9	-0.4	-0.0	-0.1	-0.1
International Equity	6.6	20.2	20.2	1.5	8.0	1.6	4.9
International Equity Benchmark	5.8	20.5	20.5	0.8	7.2	1.2	4.5
Excess	0.8	-0.2	-0.2	0.7	0.8	0.4	0.4

Note:

Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a total Public Equity return.





Combined Funds Asset Class Performance Summary

Fixed Income

The Combined Funds Fixed Income performance is shown here.

The Fixed Income benchmark is the Bloomberg Barclays U.S. Aggregate Index. This index 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.

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Fixed Income	1.6%	0.9%	0.9%	2.9%	2.9%	4.9%	5.6%
BBG BARC Agg Bd	1.4	-0.3	-0.3	2.5	2.2	4.5	5.2
Excess	0.2	1.2	1.2	0.5	0.7	0.4	0.3

Cash

The Combined Funds Cash performance is shown here. Cash is held by the Combined Funds to meet the liquidity needs of the retirement systems to pay benefits.

The Combined Funds Cash benchmark is the 90-Day U.S. Treasury Bill.

	Last Qtr	FYTD	1 Year	3 Year	5 Year	<u>10 Year</u>	20 Year
Cash	0.3%	0.8%	0.8%	0.5%	0.4%	1.0%	2.7%
90 DAY T-BILL	0.2	0.5	0.5	0.2	0.2	0.6	2.2
Excess	0.1	0.3	0.3	0.2	0.2	0.4	0.5





Combined Funds Asset Class Performance Summary

Private Markets							
	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Total Private Markets	4.9%	19.7%	19.7%	8.9%	11.3%	9.0%	13.3%
Private Equity	5.4	18.7	18.7	12.6	14.1	10.9	14.0
Private Credit	5.2	20.0	20.0	14.4	14.6	11.1	13.2
Resources	3.9	27.3	27.3	-4.7	1.7	6.9	15.1
Real Estate	3.5	7.8	7.8	11.8	12.3	4.7	10.0

Private Markets

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

Private Equity Investments

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

Private Credit Investments

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

Resource Investments

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

Real Estate Investments

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

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



Quarterly Report



Asset Class & Manager Performance June 30, 2017

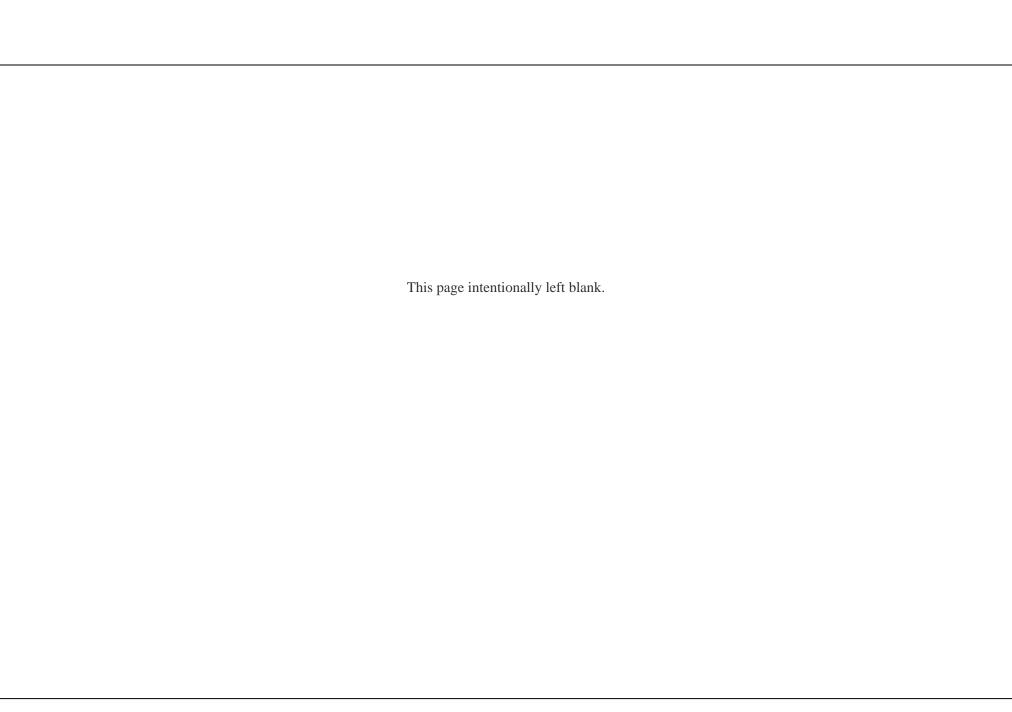
In compliance with the Strategic Asset Allocation Policy, the assets of the Combined Funds are allocated to public equity, fixed income, private markets, and cash. Each asset class may be further differentiated by geography, management style, and/or strategy. Managers are hired to manage the assets accordingly.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

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

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

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







Domestic Equity June 30, 2017





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Domestic Equity										
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	\$4,329,528,086	15.0%	4.0%	23.0%	23.0%	8.0%	14.5%	6.8%		
Active Domestic Equity Benchmark			2.7	19.9	19.9	8.9	14.5	7.2		
Excess			1.3	3.1	3.1	-0.8	0.0	-0.4		
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	2,251,648,409	7.8	2.6	17.9	17.9	9.0	14.6	7.2		
Semi Passive Domestic Equity Benchmark			3.1	18.0	18.0	9.3	14.7	7.3		
Excess			-0.4	-0.1	-0.1	-0.3	-0.1	-0.1		
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	22,189,815,579	77.1	3.0	18.4	18.4	9.1	14.6	7.3		
Passive Domestic Equity Benchmark			3.1	18.5	18.5	9.1	14.6	7.3		
Excess			-0.0	-0.1	-0.1	-0.0	-0.0	0.0		
TRANSITION AGGREGATE DOMESTIC EQUITY (4)	510,136	0.0								
TOTAL DOMESTIC EQUITY (5)	28,771,502,211	100.0	3.1	19.3	19.3	8.7	14.5	7.1	10.3	01/1984
Domestic Equity Benchmark			3.0	18.5	18.5	9.1	14.6	7.3	10.6	01/1984
Excess			0.1	0.8	0.8	-0.4	-0.0	-0.2	-0.2	

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

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



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

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

⁽⁴⁾ The Transition Domestic Equity Aggregate contains Domestic Equity securities that are being transitioned to a different manager.

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



	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Total Domestic Equity					
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	10.9%	-0.4%	9.3%	40.2%	15.4%
Active Domestic Equity Benchmark	15.7	-0.6	11.0	34.7	16.3
Excess	-4.8	0.3	-1.7	5.5	-0.9
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	11.1	0.5	14.2	33.2	17.7
Semi Passive Domestic Equity Benchmark	12.1	0.9	13.2	33.1	16.4
Excess	-1.0	-0.4	1.0	0.1	1.3
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	12.6	0.5	12.6	33.5	16.4
Passive Domestic Equity Benchmark	12.5	0.5	12.6	33.6	16.4
Excess	0.1	0.0	0.0	-0.0	0.0

TRANSITION AGGREGATE DOMESTIC EQUITY (4)

TOTAL DOMESTIC EQUITY (5)	11.5	0.3	12.3	35.1	16.6
Domestic Equity Benchmark	12.7	0.5	12.6	33.6	16.4
Excess	-1.3	-0.2	-0.2	1.6	0.2

- (1) The Active Domestic Equity Benchmark is a weighted composite each of the individual active domestic equity manager's benchmarks.
- (2) The current Semi-Passive Domestic Equity Benchmark is the Russell 1000 index.
- (3) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000 and Russell 3000.
- (4) The Transition Domestic Equity Aggregate contains Domestic Equity securities that are being transitioned to a different manager.
- (5) The current Domestic Equity Benchmark is the Russell 3000.

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





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Large Cap Growth										
SANDS	\$444,303,128	1.5%	7.1%	25.7%	25.7%	7.8%	14.2%	11.2%	9.9%	01/2005
Russell 1000 Growth			4.7	20.4	20.4	11.1	15.3	8.9	8.9	01/2005
Excess			2.4	5.3	5.3	-3.3	-1.1	2.3	0.9	
WINSLOW	187,395,528	0.7	7.2	21.6	21.6	10.1	14.7	9.1	9.6	01/2005
Russell 1000 Growth			4.7	20.4	20.4	11.1	15.3	8.9	8.9	01/2005
Excess			2.5	1.2	1.2	-1.0	-0.6	0.2	0.6	
ZEVENBERGEN	422,587,544	1.5	11.0	36.7	36.7	8.3	17.3	9.6	10.3	04/1994
Russell 1000 Growth			4.7	20.4	20.4	11.1	15.3	8.9	9.3	04/1994
Excess			6.4	16.3	16.3	-2.8	2.0	0.7	1.1	

RUSSELL 1000 GROWTH AGGREGATE	1,054,286,199	3.7	8.7	27.3	27.3	10.4	15.8	9.2
Russell 1000 Growth			4.7	20.4	20.4	11.1	15.3	8.9
Excess			4.0	6.8	6.8	-0.7	0.5	0.3





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Active Large Cap Growth					
SANDS	-6.9%	2.9%	9.1%	42.4%	24.2%
Russell 1000 Growth	7.1	5.7	13.0	33.5	15.3
Excess	-13.9	-2.8	-3.9	8.9	9.0
WINSLOW	-1.9	6.7	11.0	37.4	13.7
Russell 1000 Growth	7.1	5.7	13.0	33.5	15.3
Excess	-9.0	1.0	-2.0	3.9	-1.5
ZEVENBERGEN	-2.8	6.4	3.4	60.6	8.0
Russell 1000 Growth	7.1	5.7	13.0	33.5	15.3
Excess	-9.9	0.7	-9.6	27.1	-7.3

RUSSELL 1000 GROWTH AGGREGATE	1.0	4.6	9.6	42.0	15.5
Russell 1000 Growth	7.1	5.7	13.0	33.5	15.3
Excess	-6.1	-1.1	-3.4	8.5	0.3





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Large Cap Value										
BARROW HANLEY	\$353,009,072	1.2%	2.7%	15.8%	15.8%	7.2%	13.9%	5.7%	8.0%	04/2004
Russell 1000 Value			1.3	15.5	15.5	7.4	13.9	5.6	7.8	04/2004
Excess			1.3	0.3	0.3	-0.2	-0.0	0.1	0.2	
EARNEST PARTNERS	241,785,203	0.8	2.5	21.2	21.2	8.8	13.1	5.7	6.7	07/2000
Russell 1000 Value			1.3	15.5	15.5	7.4	13.9	5.6	7.1	07/2000
Excess			1.1	5.7	5.7	1.5	-0.8	0.2	-0.5	
LSV	374,418,566	1.3	1.5	20.6	20.6	7.9	16.6	6.2	9.0	04/2004
Russell 1000 Value			1.3	15.5	15.5	7.4	13.9	5.6	7.8	04/2004
Excess			0.1	5.0	5.0	0.5	2.6	0.6	1.2	

	RUSSELL 1000 VALUE AGGREGATE	969,212,840	3.4	2.2	20.1	20.1	7.2	14.4	5.8
ı	Russell 1000 Value			1.3	15.5	15.5	7.4	13.9	5.6
ı	Excess			0.8	4.6	4.6	-0.1	0.5	0.2





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Active Large Cap Value					
BARROW HANLEY	12.8%	-2.1%	13.0%	35.5%	15.5%
Russell 1000 Value	17.3	-3.8	13.5	32.5	17.5
Excess	-4.5	1.7	-0.5	3.0	-2.0
EARNEST PARTNERS	16.2	-2.7	14.0	32.0	10.7
Russell 1000 Value	17.3	-3.8	13.5	32.5	17.5
Excess	-1.1	1.1	0.5	-0.5	-6.8
LSV	17.0	-2.2	14.0	41.2	20.4
Russell 1000 Value	17.3	-3.8	13.5	32.5	17.5
Excess	-0.4	1.6	0.6	8.7	2.9

RUSSELL 1000 VALUE AGGREGATE	15.3	-3.2	13.1	36.5	16.9
Russell 1000 Value	17.3	-3.8	13.5	32.5	17.5
Excess	-2.1	0.6	-0.4	3.9	-0.6





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Semi-Passive Large Cap										
BLACKROCK	\$904,174,698	3.1%	3.1%	20.0%	20.0%	9.9%	15.2%	7.3%	9.7%	01/1995
Semi Passive Domestic Equity Benchmark			3.1	18.0	18.0	9.3	14.7	7.3	9.3	01/1995
Excess			0.0	2.0	2.0	0.6	0.6	-0.0	0.4	
J.P. MORGAN	1,347,473,711	4.7	2.6	18.9	18.9	9.7	15.2	7.9	9.7	01/1995
Semi Passive Domestic Equity Benchmark			3.1	18.0	18.0	9.3	14.7	7.3	9.3	01/1995
Excess			-0.4	0.9	0.9	0.4	0.6	0.7	0.3	
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	2,251,648,409	7.8	2.6	17.9	17.9	9.0	14.6	7.2		
Semi Passive Domestic Equity Benchmark			3.1	18.0	18.0	9.3	14.7	7.3		
Excess			-0.4	-0.1	-0.1	-0.3	-0.1	-0.1		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Semi-Passive Large Cap					
BLACKROCK	12.5%	0.8%	14.2%	33.3%	19.0%
Semi Passive Domestic Equity Benchmark	12.1	0.9	13.2	33.1	16.4
Excess	0.5	-0.1	1.0	0.2	2.6
J.P. MORGAN	12.3	0.8	15.0	33.7	17.6
Semi Passive Domestic Equity Benchmark	12.1	0.9	13.2	33.1	16.4
Excess	0.2	-0.1	1.8	0.6	1.2
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	11.1	0.5	14.2	33.2	17.7
Semi Passive Domestic Equity Benchmark	12.1	0.9	13.2	33.1	16.4
Excess	-1.0	-0.4	1.0	0.1	1.3





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Small Cap Growth		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u></u>	<u></u>
ARROWMARK	\$185,349,195	0.6%	7.3%						23.1%	11/2016
Russell 2000 Growth	,,,		4.4						21.4	11/2016
Excess			2.9						1.7	
HOOD RIVER	217,723,159	0.8	7.5						24.2	11/2016
Russell 2000 Growth			4.4						21.4	11/2016
Excess			3.2						2.7	
MCKINLEY	261,113,833	0.9	1.9	22.3%	22.3%	6.5%	16.0%	6.1%	7.4	01/2004
Russell 2000 Growth			4.4	24.4	24.4	7.6	14.0	7.8	8.8	01/2004
Excess			-2.5	-2.1	-2.1	-1.1	2.0	-1.7	-1.4	
RICE HALL JAMES	191,849,176	0.7	5.3						27.5	11/2016
Russell 2000 Growth			4.4						21.4	11/2016
Excess			0.9						6.0	
WELLINGTON	216,995,445	0.8	6.2						23.8	11/2016
Russell 2000 Growth			4.4						21.4	11/2016
Excess			1.8						2.4	
RUSSELL 2000 GROWTH AGGREGATE	1,073,030,814	3.7	5.4	21.7	21.7	5.8	11.6	5.5		
Russell 2000 Growth			4.4	24.4	24.4	7.6	14.0	7.8		
Excess			1.1	-2.7	-2.7	-1.9	-2.4	-2.3		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Active Small Cap Growth					
ARROWMARK					
Russell 2000 Growth					
Excess					
HOOD RIVER					
Russell 2000 Growth					
Excess					
MCKINLEY	12.9%	3.6%	2.0%	51.6%	23.2%
Russell 2000 Growth	11.3	-1.4	5.6	43.3	14.6
Excess	1.6	5.0	-3.6	8.3	8.6
RICE HALL JAMES					
Russell 2000 Growth					
Excess					
WELLINGTON					
Russell 2000 Growth					
Excess					
RUSSELL 2000 GROWTH AGGREGATE	4.7	1.0	-3.4	47.2	12.0
Russell 2000 Growth	11.3	-1.4	5.6	43.3	14.6
Excess	-6.6	2.4	-9.0	3.9	-2.6





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Small Cap Value										
GOLDMAN SACHS	\$330,771,470	1.1%	0.4%	20.9%	20.9%	6.9%	14.5%	8.5%	9.8%	01/2004
Russell 2000 Value			0.7	24.9	24.9	7.0	13.4	5.9	8.3	01/2004
Excess			-0.2	-3.9	-3.9	-0.1	1.1	2.6	1.6	
HOTCHKIS AND WILEY	287,810,622	1.0	-0.6	28.1	28.1	4.5	14.9	6.9	8.7	01/2004
Russell 2000 Value			0.7	24.9	24.9	7.0	13.4	5.9	8.3	01/2004
Excess			-1.3	3.3	3.3	-2.5	1.5	1.0	0.4	
MARTINGALE	274,684,991	1.0	1.0	23.2	23.2	8.7	16.6	6.2	8.3	01/2004
Russell 2000 Value			0.7	24.9	24.9	7.0	13.4	5.9	8.3	01/2004
Excess			0.3	-1.6	-1.6	1.6	3.2	0.2	0.1	
PEREGRINE	339,731,149	1.2	1.2	26.1	26.1	6.4	13.4	6.1	10.5	07/2000
Russell 2000 Value			0.7	24.9	24.9	7.0	13.4	5.9	9.9	07/2000
Excess			0.5	1.3	1.3	-0.6	0.1	0.2	0.6	

RUSSELL 2000 VALUE AGGREGATE	1,232,998,233	4.3	0.5	24.6	24.6	6.6	14.6	6.8
Russell 2000 Value			0.7	24.9	24.9	7.0	13.4	5.9
Excess			-0.1	-0.3	-0.3	-0.5	1.3	0.9





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Active Small Cap Value					
GOLDMAN SACHS	24.6%	-5.2%	7.4%	39.3%	16.6%
Russell 2000 Value	31.7	-7.5	4.2	34.5	18.1
Excess	-7.1	2.3	3.1	4.8	-1.4
HOTCHKIS AND WILEY	19.9	-8.5	13.0	46.0	24.1
Russell 2000 Value	31.7	-7.5	4.2	34.5	18.1
Excess	-11.8	-1.0	8.8	11.5	6.0
MARTINGALE	34.3	-5.2	7.3	43.1	20.1
Russell 2000 Value	31.7	-7.5	4.2	34.5	18.1
Excess	2.5	2.3	3.1	8.5	2.0
PEREGRINE	27.8	-6.7	4.1	37.3	18.8
Russell 2000 Value	31.7	-7.5	4.2	34.5	18.1
Excess	-3.9	0.8	-0.1	2.8	0.7

RUSSELL 2000 VALUE AGGREGATE	26.5	-6.5	7.5	40.8	19.6
Russell 2000 Value	31.7	-7.5	4.2	34.5	18.1
Excess	-5.2	1.0	3.3	6.3	1.5





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Passive Domestic Equity										
BLACKROCK RUSSELL 1000	\$10,743,076,421	37.3%	3.1%							10/2016
Russell 1000			3.1							10/2016
Excess			-0.0							
BLACKROCK RUSSELL 3000 (1)	11,446,739,157	39.8	3.0	18.5%	18.5%	9.1%	14.6%	7.3%	9.1%	07/1995
Passive Manager Benchmark			3.0	18.5	18.5	9.1	14.6	7.3	9.0	07/1995
Excess			-0.0	-0.0	-0.0	0.0	0.0	0.0	0.1	

	SIVE DOMESTIC EQUITY GREGATE	22,189,815,579	77.1	3.0	18.4	18.4	9.1	14.6	7.3
Pass	sive Domestic Equity chmark			3.1	18.5	18.5	9.1	14.6	7.3
Exce	ess			-0.0	-0.1	-0.1	-0.0	-0.0	0.0



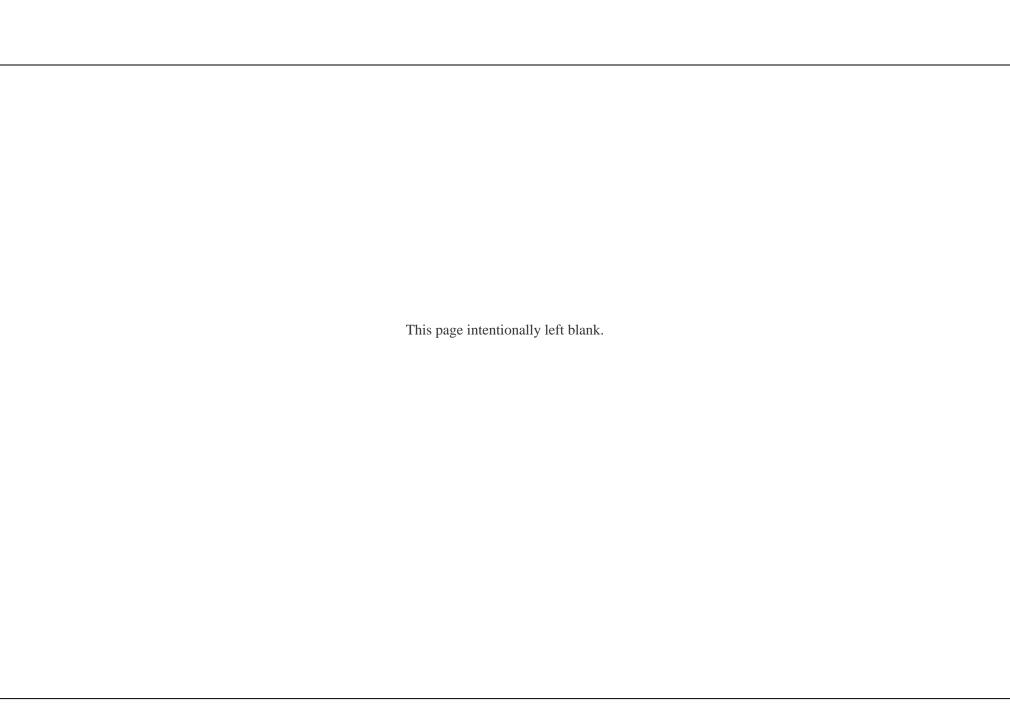
⁽¹⁾ The current Passive Manager Benchmark is the Russell 3000. For historical benchmark details please refer to the addendum of this report.



	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Total Passive Domestic Equity					
BLACKROCK RUSSELL 1000					
Russell 1000					
Excess					
BLACKROCK RUSSELL 3000 (1)	12.7%	0.5%	12.6%	33.5%	16.4%
Passive Manager Benchmark	12.7	0.5	12.6	33.6	16.4
Excess	0.0	0.0	0.0	-0.0	0.0
PASSIVE DOMESTIC EQUITY AGGREGATE	12.6	0.5	12.6	33.5	16.4
Passive Domestic Equity Benchmark	12.5	0.5	12.6	33.6	16.4
Excess	0.1	0.0	0.0	-0.0	0.0



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





International Equity June 30, 2017





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total International Equity										
DEVELOPED MARKETS (1)	\$10,691,430,763	75.9%	6.3%	19.5%	19.5%	1.5%	9.1%	1.7%		
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0		
Excess			0.7	-0.0	-0.0	0.8	0.9	0.6		
EMERGING MARKETS (2)	3,387,099,051	24.0	7.0	21.7	21.7	0.9	4.2	1.5		
BENCHMARK EM			6.3	23.7	23.7	1.1	4.0	2.0		
Excess			0.8	-2.1	-2.1	-0.2	0.3	-0.5		
TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)	5,742,910	0.0								

TOTAL INTER	NATIONAL 14,084,272,724	100.0	6.5	20.2	20.2	1.5	8.0	1.6	6.6	10/1992
International E	quity Benchmark		5.8	20.5	20.5	0.8	7.2	1.2	6.1	10/1992
Excess			0.7	-0.3	-0.3	0.7	0.8	0.4	0.5	

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



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

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

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

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



	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Total International Equity					
DEVELOPED MARKETS (1)	1.3%	-0.3%	-4.1%	23.3%	17.6%
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-1.5	2.8	0.2	2.2	1.1
EMERGING MARKETS (2)	7.5	-13.1	-3.8	0.2	17.6
BENCHMARK EM	11.2	-14.9	-2.2	-2.6	18.2
Excess	-3.7	1.9	-1.6	2.9	-0.7

TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)

TOTAL INTERNATIONAL EQUITY (4)	2.6	-2.9	-4.0	17.8	17.6
International Equity Benchmark	4.5	-5.7	-3.9	15.3	16.8
Excess	-1.8	2.8	-0.2	2.5	0.8

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



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

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

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

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



	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Developed Markets										
ACADIAN	\$486,068,897	3.5%	9.8%	29.6%	29.6%	6.7%	13.7%	1.7%	6.7%	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			4.1	10.1	10.1	6.0	5.5	0.7	1.7	
COLUMBIA	394,446,978	2.8	9.1	19.0	19.0	3.2	9.0	2.6	2.5	03/2000
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	3.3	03/2000
Excess			3.5	-0.5	-0.5	2.5	0.8	1.5	-0.7	
FIDELITY	394,957,135	2.8	7.0	19.0	19.0	2.1	9.7	2.9	6.5	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			1.4	-0.5	-0.5	1.5	1.5	1.9	1.5	
JP MORGAN	328,511,883	2.3	6.1	24.4	24.4	1.2	8.0	1.6	5.0	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			0.5	4.9	4.9	0.5	-0.1	0.6	0.1	
MARATHON	868,434,405	6.2	7.0	19.6	19.6	3.1	10.8	4.0	8.3	11/1993
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.1	11/1993
Excess			1.4	0.1	0.1	2.5	2.6	3.0	3.3	
MCKINLEY	322,843,723	2.3	6.4	17.1	17.1	0.6	8.5	-0.1	4.5	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			0.8	-2.4	-2.4	-0.1	0.3	-1.1	-0.5	
ACTIVE DEVELOPED MARKETS AGGREGATE	2,795,263,021	19.8	7.6	21.3	21.3	3.0	10.1	2.4		
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0		
Excess			2.0	1.8	1.8	2.3	2.0	1.4		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Active Developed Markets					
ACADIAN	8.1%	2.4%	-1.7%	26.1%	17.6%
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	5.4	5.4	2.6	5.1	1.2
COLUMBIA	-5.6	6.4	-5.6	23.9	19.0
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-8.3	9.4	-1.2	2.9	2.6
FIDELITY	1.2	0.1	-5.6	26.7	20.3
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-1.5	3.2	-1.3	5.7	3.9
JP MORGAN	4.0	-4.7	-5.1	19.5	18.4
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	1.2	-1.6	-0.7	-1.5	2.0
MARATHON	-1.1	6.7	-4.0	28.5	17.9
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-3.8	9.7	0.3	7.5	1.5
MCKINLEY	-7.5	3.1	-2.7	28.0	16.9
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-10.2	6.2	1.6	7.0	0.5
ACTIVE DEVELOPED MARKETS AGGREGATE	-0.2	3.2	-4.1	25.4	17.9
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-3.0	6.2	0.2	4.4	1.5





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	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Semi-Passive Developed Markets										
AQR	\$387,219,643	2.7%	5.8%	20.9%	20.9%	1.9%	10.1%	1.7%	5.7%	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			0.1	1.4	1.4	1.2	2.0	0.7	0.7	
FIDELITY	552,109,829	3.9	5.8	17.1	17.1	0.4	8.3	1.5	5.6	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			0.2	-2.4	-2.4	-0.3	0.1	0.5	0.6	
SSgA	343,220,435	2.4	6.6	22.7	22.7	0.9	9.4	0.5	4.6	07/2005
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	5.0	07/2005
Excess			1.0	3.2	3.2	0.2	1.3	-0.5	-0.3	
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	1,282,549,907	9.1	6.0	19.7	19.7	1.0	9.1	1.2		
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0		
Excess			0.4	0.2	0.2	0.3	1.0	0.2		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Semi-Passive Developed Markets					
AQR	0.8%	0.9%	-4.4%	24.1%	20.8%
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-2.0	3.9	-0.1	3.1	4.4
FIDELITY	-1.7	-0.7	-4.0	23.2	19.4
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-4.5	2.3	0.3	2.2	3.0
SSgA	0.6	-0.9	-5.1	25.3	17.3
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-2.2	2.1	-0.8	4.2	0.9
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	-0.4	-0.3	-4.4	24.0	19.2
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-3.1	2.7	-0.1	3.0	2.8





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Developed Markets										
ACTIVE DEVELOPED MARKETS AGGREGATE	\$2,795,263,021	19.8%	7.6%	21.3%	21.3%	3.0%	10.1%	2.4%		
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0		
Excess			2.0	1.8	1.8	2.3	2.0	1.4		
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	1,282,549,907	9.1	6.0	19.7	19.7	1.0	9.1	1.2		
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0		
Excess			0.4	0.2	0.2	0.3	1.0	0.2		
SSgA DEVELOPED MARKETS PASSIVE	6,613,617,834	47.0	5.9	20.0	20.0	1.1	8.6	1.4	6.3	10/1992
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0	6.0	10/1992
Excess			0.2	0.5	0.5	0.5	0.4	0.4	0.3	
DEVELOPED MARKETS TOTAL	10,691,430,763	75.9	6.3	19.5	19.5	1.5	9.1	1.7		
BENCHMARK DM			5.6	19.5	19.5	0.7	8.1	1.0		
Excess			0.7	-0.0	-0.0	0.8	0.9	0.6		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Total Developed Markets					
ACTIVE DEVELOPED MARKETS AGGREGATE	-0.2%	3.2%	-4.1%	25.4%	17.9%
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-3.0	6.2	0.2	4.4	1.5
SEMI-PASSIVE DEVELOPED MARKETS AGGREGATE	-0.4	-0.3	-4.4	24.0	19.2
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-3.1	2.7	-0.1	3.0	2.8
SSgA DEVELOPED MARKETS PASSIVE	3.2	-2.6	-3.9	21.4	16.7
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	0.4	0.5	0.4	0.4	0.3
DEVELOPED MARKETS TOTAL	1.3	-0.3	-4.1	23.3	17.6
BENCHMARK DM	2.7	-3.0	-4.3	21.0	16.4
Excess	-1.5	2.8	0.2	2.2	1.1





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Emerging Markets										
EARNEST PARTNERS	\$284,710,207	2.0%	8.0%						8.6%	03/2017
MSCI EMERGING MARKETS			6.3						8.6	03/2017
Excess			1.8						-0.0	
MARTIN CURRIE	294,560,389	2.1	8.9						11.8	03/2017
BENCHMARK EM			6.3						8.6	03/2017
Excess			2.6						3.1	
MACQUARIE	290,987,551	2.1	7.2						10.2	03/2017
BENCHMARK EM			6.3						8.6	03/2017
Excess			0.9						1.6	
MORGAN STANLEY	578,330,810	4.1	8.1	21.7%	21.7%	2.3%	5.4%	2.5%	10.1	01/2001
BENCHMARK EM			6.3	23.7	23.7	1.1	4.0	2.0	9.6	01/2001
Excess			1.9	-2.0	-2.0	1.3	1.5	0.5	0.5	
NEUDEDOED DEDMAN	000 504 540	0.4	0.0						0.4	00/0047
NEUBERGER BERMAN	289,501,516	2.1	6.8						9.4	03/2017
BENCHMARK EM			6.3						8.6	03/2017
Excess			0.6						0.8	
PZENA	283,599,658	2.0	5.7						8.3	03/2017
BENCHMARK EM			6.3						8.6	03/2017
Excess			-0.6						-0.4	00,2011
ROCK CREEK	283,101,164	2.0	5.3						9.3	03/2017
BENCHMARK EM			6.3						9.1	03/2017
Excess			-1.0						0.2	





Active Emerging Markets EARNEST PARTNERS MSCI EMERGING MARKETS Excess MARTIN CURRIE BENCHMARK EM Excess MACQUARIE BENCHMARK EM EXCESS	
EARNEST PARTNERS MSCI EMERGING MARKETS Excess MARTIN CURRIE BENCHMARK EM Excess MACQUARIE BENCHMARK EM	
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MACQUARIE BENCHMARK EM	
MACQUARIE BENCHMARK EM	
BENCHMARK EM	
BENCHMARK EM	
Fyrage	
LAUGOS	
	21.1%
	18.2
Excess -5.1 5.5 -0.3 3.1	2.8
NEUBERGER BERMAN	
BENCHMARK EM	
Excess	
PZENA	
BENCHMARK EM	
Excess	
ROCK CREEK	
BENCHMARK EM	
Excess	





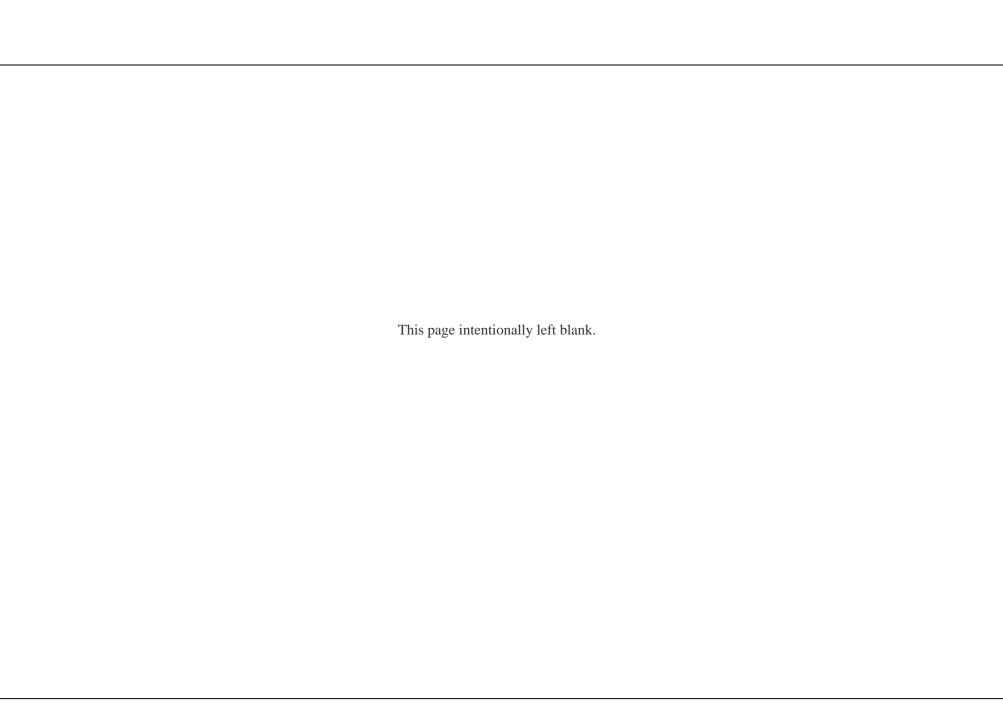
	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Emerging Markets										
ACTIVE EMERGING MARKETS AGGREGATE	\$2,304,791,296	16.4%	7.2%	19.4%	19.4%	0.3%	3.9%	1.3%		
BENCHMARK EM			6.3	23.7	23.7	1.1	4.0	2.0		
Excess			1.0	-4.3	-4.3	-0.8	-0.1	-0.6		
SSGA EMERGING MARKETS PASSIVE	1,082,307,756	7.7	6.5	23.4	23.4	1.3	4.1		4.5	01/2012
BENCHMARK EM			6.3	23.7	23.7	1.1	4.0		4.3	01/2012
Excess			0.2	-0.3	-0.3	0.2	0.2		0.1	
EMERGING MARKETS TOTAL	3,387,099,051	24.0	7.0	21.7	21.7	0.9	4.2	1.5		
BENCHMARK EM			6.3	23.7	23.7	1.1	4.0	2.0		
Excess			0.8	-2.1	-2.1	-0.2	0.3	-0.5		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Total Emerging Markets					
ACTIVE EMERGING MARKETS AGGREGATE	5.3%	-12.7%	-4.1%	0.6%	17.5%
BENCHMARK EM	11.2	-14.9	-2.2	-2.6	18.2
Excess	-5.9	2.2	-2.0	3.2	-0.8
SSGA EMERGING MARKETS PASSIVE	11.1	-14.6	-2.1	-2.5	18.5
BENCHMARK EM	11.2	-14.9	-2.2	-2.6	18.2
Excess	-0.1	0.3	0.1	0.1	0.3
EMERGING MARKETS TOTAL	7.5	-13.1	-3.8	0.2	17.6
BENCHMARK EM	11.2	-14.9	-2.2	-2.6	18.2
Excess	-3.7	1.9	-1.6	2.9	-0.7







Fixed Income June 30, 2017





	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Fixed Income										
ACTIVE FIXED INCOME AGGREGATE	\$5,970,655,905	46.8%	1.8%	1.9%	1.9%	3.3%	3.4%	5.0%		
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5		
Excess			0.3	2.2	2.2	0.8	1.2	0.5		
SEMI PASSIVE FIXED INCOME AGGREGATE	6,784,657,070	53.2	1.5	-0.1	-0.1	2.7	2.5	4.7		
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5		
Excess			0.1	0.2	0.2	0.2	0.3	0.2		
TRANSITION AGGREGATE FIXED INCOME (1)	94,072	0.0								
TOTAL FIXED INCOME (2)	12,755,407,047	100.0	1.6	0.9	0.9	2.9	2.9	4.8	7.7	07/1984
BBG BARC Agg Bd			1.4	-0.3	-0.3	2.5	2.2	4.5	7.4	07/1984
Excess			0.2	1.2	1.2	0.5	0.7	0.4	0.3	

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



⁽¹⁾ The Transition Aggregate Fixed Income includes fixed income securities that are being transition to a different manager.

⁽²⁾ The current Fixed Income Benchmark is the Bloomberg Barclays U.S. Aggregate calculated daily: BBG BARC Agg (Dly). For historical benchmark details please refer to the addendum of this report.



	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Total Fixed Income					
ACTIVE FIXED INCOME AGGREGATE	4.4%	0.6%	6.2%	-0.8%	8.1%
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	1.7	0.0	0.2	1.2	3.9
SEMI PASSIVE FIXED INCOME AGGREGATE	2.8	0.8	6.1	-1.8	5.3
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	0.2	0.2	0.1	0.2	1.1

TRANSITION AGGREGATE FIXED INCOME (1)

TOTAL FIXED INCOME (2)	3.6	0.7	6.1	-1.3	6.7
BBG BARC Agg Bd	2.6	0.5	6.0	-2.0	4.2
Excess	0.9	0.1	0.2	0.7	2.5

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



⁽¹⁾ The Transition Aggregate Fixed Income includes fixed income securities that are being transition to a different manager.

⁽²⁾ The current Fixed Income Benchmark is the Bloomberg Barclays U.S. Aggregate calculated daily: BBG BARC Agg (Dly). For historical benchmark details please refer to the addendum of this report.



	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Fixed Income Managers										
COLUMBIA	\$1,160,642,196	9.1%	1.8%	2.0%	2.0%	3.3%	3.2%	4.9%	5.5%	07/1993
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5	5.4	07/1993
Excess			0.3	2.3	2.3	0.8	1.0	0.5	0.1	
DODGE & COX	1,646,751,688	12.9	1.5	2.7	2.7	3.0	3.6	5.5	6.3	02/2000
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5	5.2	02/2000
Excess			0.1	3.0	3.0	0.5	1.4	1.1	1.0	
PIMCO	1,575,510,117	12.4	1.6	0.8	8.0	3.0	3.1		5.9	10/2008
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2		4.4	10/2008
Excess			0.2	1.1	1.1	0.5	0.9		1.5	
WESTERN	1,587,751,904	12.4	2.2	2.4	2.4	3.7	3.7	5.4	8.6	07/1984
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5	7.4	07/1984
Excess			0.8	2.7	2.7	1.2	1.5	0.9	1.2	
ACTIVE FIXED INCOME AGGREGATE	5,970,655,905	46.8	1.8	1.9	1.9	3.3	3.4	5.0		
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5		
Excess			0.3	2.2	2.2	0.8	1.2	0.5		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Active Fixed Income Managers					
COLUMBIA	5.2%	0.2%	5.8%	-1.0%	6.9%
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	2.6	-0.4	-0.2	1.0	2.7
DODGE & COX	4.8	0.3	6.0	0.9	8.5
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	2.2	-0.3	0.0	3.0	4.2
PIMCO	2.8	1.0	5.5	-1.3	9.3
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	0.2	0.4	-0.4	0.7	5.1
WESTERN	4.9	0.7	7.0	-1.4	7.8
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	2.2	0.1	1.0	0.7	3.6
ACTIVE FIXED INCOME AGGREGATE	4.4	0.6	6.2	-0.8	8.1
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	1.7	0.0	0.2	1.2	3.9





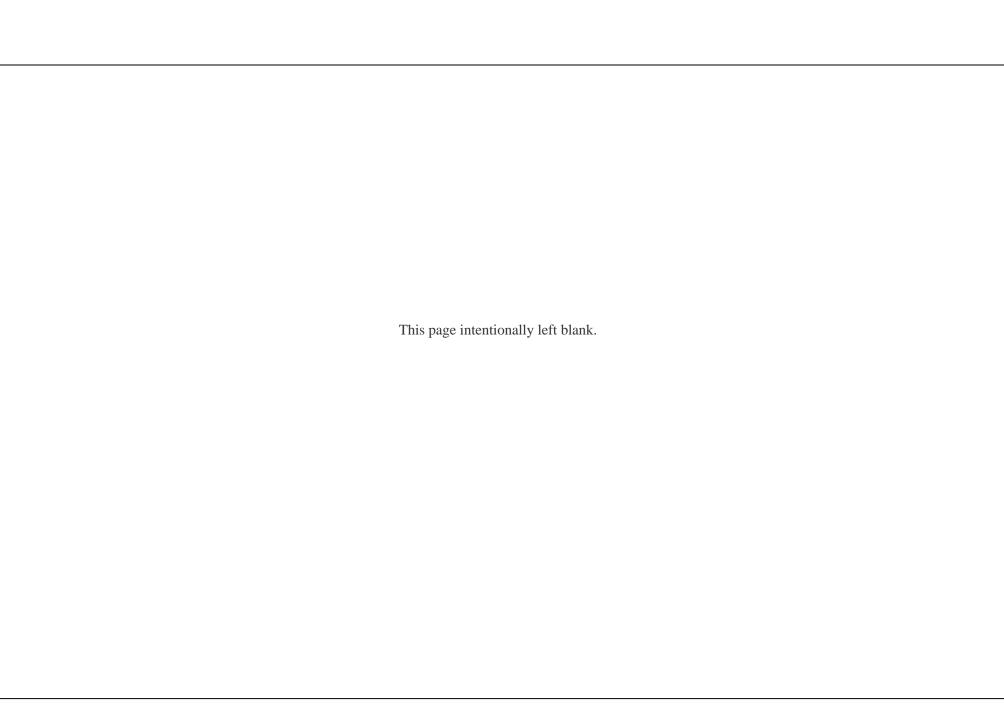
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	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Semi Passive Fixed Income Managers										
BLACKROCK	\$2,066,829,549	16.2%	1.5%	-0.1%	-0.1%	2.6%	2.4%	4.4%	5.4%	04/1996
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5	5.3	04/1996
Excess			0.0	0.2	0.2	0.2	0.2	-0.1	0.1	
GOLDMAN SACHS	2,486,566,007	19.5	1.5	0.2	0.2	2.7	2.6	4.8	5.7	07/1993
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5	5.4	07/1993
Excess			0.1	0.5	0.5	0.2	0.4	0.3	0.3	
NEUBERGER	2,231,261,515	17.5	1.5	-0.3	-0.3	2.6	2.4	4.9	6.6	07/1988
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5	6.4	07/1988
Excess			0.1	0.0	0.0	0.1	0.2	0.4	0.2	
SEMI PASSIVE FIXED INCOME	6,784,657,070	53.2	1.5	-0.1	-0.1	2.7	2.5	4.7		
BBG BARC Agg (Dly)			1.4	-0.3	-0.3	2.5	2.2	4.5		
Excess			0.1	0.2	0.2	0.2	0.3	0.2		





	2016 Calendar Return	2015 Calendar Return	2014 Calendar Return	2013 Calendar Return	2012 Calendar Return
Semi Passive Fixed Income Managers					
BLACKROCK	2.8%	0.9%	6.0%	-1.8%	5.0%
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	0.1	0.3	0.0	0.2	0.8
GOLDMAN SACHS	3.0	0.8	6.1	-1.7	5.4
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	0.3	0.2	0.1	0.3	1.2
NEUBERGER	2.7	0.7	6.1	-2.0	5.4
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	0.1	0.2	0.2	0.1	1.2
SEMI PASSIVE FIXED INCOME	2.8	0.8	6.1	-1.8	5.3
BBG BARC Agg (Dly)	2.6	0.5	6.0	-2.0	4.2
Excess	0.2	0.2	0.1	0.2	1.1







Private Markets June 30, 2017





Private Markets Performance

Private Markets							
	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Total Private Markets	4.9%	19.7%	19.7%	8.9%	11.3%	9.0%	13.3%
Private Equity	5.4	18.7	18.7	12.6	14.1	10.9	14.0
Private Credit	5.2	20.0	20.0	14.4	14.6	11.1	13.2
Resources	3.9	27.3	27.3	-4.7	1.7	6.9	15.1
Real Estate	3.5	7.8	7.8	11.8	12.3	4.7	10.0

Private Markets

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

Private Equity Investments

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

Private Credit Investments

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

Resources Investments

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

Real Estate Investments

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

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



	T-4-1	As of Julie 30,	2017		TIC	IDD		Dan's 1
Investment	Total	Funded	M 457 - 1	D: -4:14	Unfunded	IRR	MOTOS	Period
Investment	Commitment	Commitment	MarketValue	Distributions	Commitment	%	MOIC*	Years
I. REAL ESTATE								
Angelo, Gordon & Co.								
AG Realty Fund IX	100,000,000	60,538,360	63,856,791	1,500,000	39,461,640	10.25	1.08	1.29
AG Asia Realty Fund III	50,000,000	21,000,000	21,388,430	2,875,000	30,953,750	13.60		0.75
Blackstone	30,000,000	21,000,000	21,300,430	2,073,000	30,733,730	13.00	1.10	0.75
Blackstone Real Estate Partners V	100,000,000	97,030,342	33,641,998	170,585,770	4,174,052	10.88	2.10	10.93
Blackstone Real Estate Partners VI	100,000,000	99,320,387	18,643,123	194,555,798	4,907,906	12.93		10.00
Blackstone Real Estate Partners VII	100,000,000	93,824,566	86,658,179	79,572,577	16,659,681	17.71	1.77	5.34
Blackstone Real Estate Partners VIII	150,000,000	72,645,182	67,814,761	21,035,456	93,833,542	14.97		2.02
Blackstone Strategic Partners (CSFB)	120,000,000	72,013,102	07,011,701	21,033,130	75,055,512	1 1.77	1.22	2.02
Strategic Partners III RE	25,000,000	25,752,810	4,182,246	10,953,622	9,006	-6.98	0.59	11.75
Strategic Partners IV RE	50,000,000	50,601,452	10,825,903	38,815,182	1,368,796	-0.52		8.79
Colony Capital	, ,	, ,	, ,	, ,	, ,			
Colony Investors III	100,000,000	100,000,000	5,175,300	172,642,105	0	14.56	1.78	19.25
Rockpoint								
Rockpoint Real Estate Fund V	100,000,000	30,571,299	33,061,832	2,073,661	69,697,752	6.42	1.15	1.27
Rockwood								
Rockwood Capital RE Partners X	100,000,000	24,615,602	23,462,533	454,546	75,384,398	-3.88	0.97	0.96
Silverpeak Real Estate Partners								
Silverpeak Legacy Pension Partners II	75,000,000	78,673,707	5,544,602	87,952,458	7,742,386	4.44	1.19	11.75
Silverpeak Legacy Pension Partners III	150,000,000	70,138,520	16,833,935	9,565,043	79,861,480	-12.37	0.38	8.86
T.A. Associates Realty								
Realty Associates Fund VIII	100,000,000	100,000,000	42,930,264	52,803,114	0	-0.52	0.96	10.75
Realty Associates Fund IX	100,000,000	100,000,000	17,413,825	143,048,338	0	10.55	1.60	8.60
Realty Associates Fund X	100,000,000	100,000,000	84,426,736	54,280,759	0	11.76	1.39	5.08
Realty Associates Fund XI	100,000,000	40,000,000	39,828,160	572,862	60,000,000	1.40	1.01	1.75
Real Estate Total	1,600,000,000	1,164,712,227	575,688,618	1,043,286,290	484,054,389		1.39	

	Total	Funded			Unfunded	IRR		Period
Investment	Commitment	Commitment	Market V alue	Distributions	Commitment	ikk %	MOIC*	Years
mvestment	Communent	Communicati	Marketyalue	Distributions	Commitment	/0	MOIC	1 cals
II. RESOURCE								
Apache Corp.								
1986 Net Profits Interest	30,000,000	30,000,000	371,580	59,838,195	0	12.15	2.01	30.25
EIG Global Energy Partners								
EIG Energy Fund XIV	100,000,000	113,013,074	13,906,276	92,181,918	2,761,129	-2.40	0.94	9.95
EIG Energy Fund XV	150,000,000	145,074,733	94,110,712	85,829,469	6,322,679	6.24	1.24	6.82
EIG Energy Fund XVI	200,000,000	124,880,546	118,881,745	25,494,749	81,730,852	8.03	1.16	3.55
EnCap Energy								
EnCap Energy Capital Fund VII	100,000,000	96,692,592	8,574,882	132,528,983	3,860,151	15.26	1.46	9.75
EnCap Energy Capital Fund VIII	100,000,000	92,787,484	44,967,799	40,019,993	8,379,469	-3.09	0.92	6.50
Encap Energy Fund IX	100,000,000	97,848,189	71,072,669	61,606,909	18,569,791	18.59	1.36	4.31
EnCap Energy Capital Fund X	100,000,000	53,585,923	46,276,284	15,145,693	54,200,820	20.57	1.15	2.07
EnerVest Energy								
EnerVest Energy Institutional Fund XIV	100,000,000	84,214,273	77,813,840	6,136,266	17,540,521	-0.28	1.00	1.94
Energy & Minerals Group								
NGP Midstream & Resources	100,000,000	100,090,315	77,916,245	121,030,856	230,871	15.96	1.99	10.00
The Energy & Minerals Group Fund II	100,000,000	94,741,371	128,825,694	33,897,369	5,533,640	16.57	1.72	5.52
The Energy & Minerals Group Fund III	200,000,000	186,946,088	162,453,744	5,097,895	14,793,996	-4.81	0.90	3.07
The Energy & Minerals Group Fund IV	150,000,000	79,888,463	99,061,001	5,152,897	72,583,810	20.73	1.30	1.67
Energy Capital Partners								
Energy Capital Partners II	100,000,000	80,529,511	49,527,211	85,460,609	30,099,613	13.86	1.68	6.70
Energy Capital Partners III	200,000,000	106,956,580	109,839,479	8,889,828	93,043,420	7.48	1.11	3.28
First Reserve								
First Reserve Fund X	100,000,000	100,000,000	430,477	182,429,002	0	31.06	1.83	12.41
First Reserve Fund XI	150,000,000	150,292,121	12,807,276	92,012,153	0	-7.88	0.70	10.27
First Reserve Fund XII	150,000,000	160,143,186	44,713,115	71,186,004	3,440,286	-8.31	0.72	8.42
First Reserve Fund XIII	200,000,000	64,379,747	71,045,244	5,975,369	135,620,253	11.40	1.20	3.41

	—				77.0			-
	Total	Funded			Unfunded	IRR		Period
Investment	Commitment	Commitment	Market∑alue	Distributions	Commitment	%	MOIC*	Years
Merit Energy Partners								
Merit Energy Partners B	24,000,000	24,000,000	10,225,460	182,321,687	0	24.32	8.02	20.75
Merit Energy Partners C	50,000,000	50,000,000	18,668,994	497,681,630	0	30.98	10.33	18.42
Merit Energy Partners D	88,000,000	70,938,303	35,229,708	311,288,474	0	22.81	4.88	15.85
Merit Energy Partners E	100,000,000	39,983,197	26,049,011	73,805,235	0	13.15	2.50	12.46
Merit Energy Partners F	100,000,000	59,522,861	24,964,326	27,251,921	0	-2.24	0.88	11.02
Merit Energy Partners H	100,000,000	100,000,000	74,637,538	18,410,723	0	-2.27	0.93	6.16
Merit Energy Partners I	169,721,518	143,099,999	178,277,842	4,296,319	26,621,519	28.11	1.28	2.45
NGP								
Natural Gas Partners IX	150,000,000	161,702,525	7,907,594	235,442,290	1,473,974	11.77	1.50	9.44
NGP Natural Resources X	150,000,000	140,378,747	69,642,472	89,627,571	9,621,253	4.80	1.13	5.47
Natural Gas Capital Resources XI	150,000,000	87,730,791	88,614,495	17,344,708	68,431,215	24.28	1.21	2.31
Sheridan								
Sheridan Production Partners I	100,000,000	116,550,000	65,723,992	82,750,000	0	5.98	1.27	10.00
Sheridan Production Partners II	100,000,000	100,000,000	66,365,005	7,000,000	0	-7.15	0.73	6.50
Sheridan Production Partners III-B	100,000,000	34,350,000	41,942,015	2,000,000	65,650,000	26.67	1.28	2.31
T. Rowe Price	18,513,566	18,513,566	7,539,057	5,953,538	0	-38.65	0.73	
Resource Total	3,830,235,084	3,108,834,185	1,948,382,782	2,685,088,254	720,509,262		1.49	

		As of Julie 30,	<u> </u>					
	Total	Funded			Unfunded	IRR		Period
Investment	Commitment	Commitment	MarketValue	Distributions	Commitment	%	MOIC*	Years
III. PRIVATE CREDIT								
Audax Group								
Audax Mezzanine Fund III	100,000,000	90,175,036	50,995,033	63,054,397	18,332,960	9.76	1.26	6.99
Audax Mezzanine Fund IV	100,000,000	11,922,399	9,968,061	1,990,291	88,724,551	0.61	1.00	1.98
Avenue Capital Partners								
Avenue Energy Opportunities Fund	100,000,000	100,000,000	120,354,100	934,495	0	11.96	1.21	2.02
Citicorp Mezzanine								
CM Liquidating Partnership	100,000,000	88,029,296	11,799,488	149,642,633	0	16.87	1.83	17.41
Crescent Capital Group								
TCW/Crescent Mezzanine Partners III	75,000,000	68,835,269	2,437,594	156,868,939	29,733,852	35.88	2.31	16.00
Gold Hill Venture Lending								
Gold Hill Venture Lending	40,000,000	40,000,000	1,101,058	63,913,250	0	10.64	1.63	12.51
Gold Hill 2008	25,852,584	25,852,584	9,033,754	32,238,919	0	12.03	1.60	8.75
GS Mezzanine Partners								
GS Mezzanine Partners 2006	100,000,000	74,999,888	3,801,267	131,284,920	9,858,563	4.95	1.80	10.98
GS Mezzanine Partners V	150,000,000	112,057,963	6,380,624	172,683,972	38,044,131	8.85	1.60	9.44
Kohlberg Kravis Roberts								
KKR Lending Partners II	75,000,000	81,865,272	65,734,900	29,570,002	11,180,434	16.51	1.16	2.08
LBC Credit Partners								
LBC Credit Partners IV	100,000,000	25,001,167	25,685,799	416,312	74,998,833	9.43	1.04	1.17
Merit Capital Partners								
William Blair Mezzan. Cap. Fd. III	60,000,000	57,243,241	616,399	112,755,951	2,756,759	15.51	1.98	17.25
Merit Mezzanine Fund IV	75,000,000	70,178,571	17,960,267	107,010,285	4,821,429	10.58	1.78	12.29
Merit Mezzanine Fund V	75,000,000	70,420,408	54,724,865	41,939,385	4,579,592	9.79	1.37	7.28
Merit Mezzanine Fund VI	61,603,125	18,216,603	19,182,859	0	43,386,522	12.46	1.05	1.27
Oaktree Capital Management								
Oaktree Opportunities Fund X	50,000,000	20,000,000	19,695,225	5,619,660	35,000,000	28.06	1.27	2.08
Oaktree Opportunities Fund Xb	100,000,000	0	0	0	100,000,000	0.00	0.00	2.08
Pimco Bravo**								
Pimco Bravo Fund OnShore Feeder I	3,958,027	3,958,027	310,309	3,717,270	2,086,707	1.89	1.02	2.25
Pimco Bravo Fund OnShore Feeder II	5,243,670	4,618,670	5,529,874	5,187	625,000	6.89	1.20	2.25

<u>.</u>	Total	Funded			Unfunded	IRR	15076:	Period
Investment	Commitment	Commitment	Market Value	Distributions	Commitment	%	MOIC*	Years
Danifalia Adairana								
Portfolio Advisors	27 27 1 60	22.4.4.24.7	02 602	24.020 7.55		10.05	4 = 4	15.05
DLJ Investment Partners II	27,375,168	23,164,217	82,683	34,829,566	0	10.37		17.25
DLJ Investment Partners III	100,000,000	72,260,040	5,677,044	88,389,198	29,739,249	7.32	1.30	10.77
Prudential Capital Partners								
Prudential Capital Partners II	100,000,000	97,079,158	5,231,021	135,600,498	3,053,595	8.89	1.45	11.75
Prudential Capital Partners III	100,000,000	96,292,841	39,326,728	123,359,252	7,149,552	13.72	1.69	7.96
Prudential Capital Partners IV	100,000,000	95,435,108	75,202,925	40,392,370	5,131,007	10.94	1.21	5.20
Prudential Capital Partners V	150,000,000	8,994,254	8,847,899	0	141,005,747	-3.98	0.98	0.87
Summit Partners								
Summit Subordinated Debt Fund III	45,000,000	42,750,000	9,745,381	55,057,070	2,250,000	9.32	1.52	13.12
Summit Subordinated Debt Fund IV	50,000,000	55,134,261	19,821,367	52,499,924	16,044,207	9.65	1.31	9.01
TCW Asset Management								
TCW Direct Lending	100,000,000	76,021,441	58,855,835	21,913,589	32,729,586	5.53	1.06	2.21
Windjammer Capital Investors								
Windjammer Mezzanine & Equity Fund II	66,708,861	56,569,498	68,519	84,876,800	10,139,363	8.94	1.50	17.00
Windjammer Senior Equity Fund III	75,000,000	61,619,620	19,235,282	126,531,293	13,380,380	18.91	2.37	11.24
Windjammer Senior Equity Fund IV	100,000,000	77,681,454	67,187,676	6,906,820	24,987,467	-2.29	0.95	5.10
Private Credit Total	2,410,741,435	1,726,376,286	734,593,836	1,844,002,249	749,739,485		1.49	

As of Julie 50, 2017										
	Total	Funded			Unfunded	IRR		Period		
Investment	Commitment	Commitment	MarketValue	Distributions	Commitment	%	MOIC*	Years		
IV. PRIVATE EQUITY										
Adams Street Partners										
Adams Street Global Secondary Fund 5	100,000,000	72,529,750	54,281,342	21,947,518	27,470,250	2.64	1.05	4.78		
Adams Street Global Secondary Fund 6	100,000,000	-	-	-	100,000,000	-	-	0		
Advent International										
Advent International GPE VI	50,000,000	50,000,000	31,298,588	76,885,584	-	17.98	2.16	9.00		
Advent International GPE VII	90,000,000	81,000,000	84,516,831	34,200,083	9,000,000	15.36	1.47	4.54		
Advent International GPE VIII	100,000,000	23,400,000	22,974,471	-	76,600,000	-4.02	0.98	1.40		
Affinity Ventures										
Affinity Ventures IV	4,000,000	4,000,000	1,154,149	1,541,970	-	-7.47	0.67	12.75		
Affinity Ventures V	5,000,000	5,000,000	2,886,784	1,585,611	0	-2.45	0.89	8.74		
APAX Partners										
Apax VIII - USD	200,000,000	204,727,016	208,803,242	45,725,902	18,017,529	11.30	1.24	4.06		
Apax IX - USD	150,000,000	5,250,000	2,550,440	-	144,750,000	-52.13	0.49	1.00		
Banc Fund										
Banc Fund VII	45,000,000	45,000,000	47,841,000	15,392,725	-	3.36	1.41	12.00		
Banc Fund VIII	98,250,000	98,250,000	156,858,108	48,533,973	0	15.48	2.09	8.93		
Banc Fund IX	107,205,932	85,764,746	104,940,885	1,407,814	21,441,186	17.86	1.24	2.81		
BlackRock**										
BlackRock Tempus Fund	1,774,870	1,774,870	726,609	1,308,352	-	12.70	1.15	1.81		
Blackstone										
Blackstone Capital Partners IV	70,000,000	72,325,477	7,426,131	192,304,580	1,945,831	37.06	2.76	14.72		
Blackstone Capital Partners V	140,000,000	130,994,409	14,559,305	227,295,035	8,522,239	7.97	1.85	11.16		
Blackstone Capital Partners VI	100,000,000	88,714,261	89,385,357	40,852,257	16,683,497	11.38	1.47	8.68		
Blackstone Capital Partners VII	130,000,000	16,498,486	16,809,897	46,064	113,521,841	-19.30	1.02	1.75		
Blackstone Strategic Partners (CSFB/ DLJ)										
Strategic Partners II-B	100,000,000	86,154,714	614,433	161,889,320	4,692,847	35.07	1.89	13.70		
Strategic Partners III-B	100,000,000	78,088,666	16,646,763	101,761,623	15,070,182	6.50	1.52	11.83		
Strategic Partners III VC	25,000,000	24,818,888	6,201,521	27,787,072	1,138,329	6.27	1.37	11.83		
Strategic Partners IV-B	100,000,000	92,041,126	22,290,928	128,192,214	18,379,014	12.43	1.63	9.01		
Strategic Partners IV VC	40,500,000	40,049,287	13,806,172	46,918,010	2,965,229	9.54	1.52	8.79		
Strategic Partners V	100,000,000	77,878,472	35,977,546	91,310,525	41,339,010	20.37	1.63	5.62		
Strategic Partners VI	150,000,000	81,280,504	84,312,285	32,501,432	71,617,717	22.13	1.44	2.96		

		As of June 30,	2017					
	Total	Funded			Unfunded	IRR		Period
Investment	Commitment	Commitment	Market∇alue	Distributions	Commitment	%	MOIC*	Years
Strategic Partners VII	150,000,000	14,700,409	17,789,543	1,804,121	135,299,591	88.23	1.33	1.38
BLUM Capital Partners								
Blum Strategic Partners II	50,000,000	40,185,889	134,317	89,708,870	2,127,584	22.42	2.24	15.70
Blum Strategic Partners III	75,000,000	78,121,020	-	83,524,046	471,064	0.26	1.07	11.83
Blum Strategic Partners IV	150,000,000	170,916,780	0	167,939,991	5,896,033	-0.75	0.98	9.36
Brookfield Asset Management Inc.								
Brookfield Capital Partners Fund IV	100,000,000	33,772,408	34,672,881	7,794,360	71,489,160	13.06	1.26	1.78
CVC Capital Partners								
CVC European Equity Partners V	133,942,703	132,413,576	55,106,428	187,825,177	1,628,978	14.37	1.83	9.01
CVC Capital Partners VI	254,303,501	139,313,187	155,352,866	2,223,185	115,918,953	8.56	1.13	3.73
Carval Investors								
CVI Global Value Fund	200,000,000	190,000,000	29,609,733	290,286,276	10,000,000	9.67	1.68	10.22
CVI Credit Value Fund I	100,000,000	95,000,000	41,609,805	167,914,197	5,000,000	19.10	2.21	6.50
CVI Credit Value Fund A II	150,000,000	142,500,000	127,845,275	62,800,217	7,500,000	8.18	1.34	4.42
CVI Credit Value Fund A III	150,000,000	97,500,000	113,147,970	-	52,500,000	13.10	1.16	1.83
Cardinal Partners								
DSV Partners IV	10,000,000	10,000,000	31,177	39,196,082	-	10.61	3.92	31.97
Carlyle Group								
Carlyle Strategic Partners IV	100,000,000	10,212,331	10,303,676	1,457,332	91,245,001	22.57	1.15	1.25
Chicago Growth Partners (William Blair)								
William Blair Capital Partners VII	50,000,000	48,150,000	59,631	67,985,017	1,650,000	8.26	1.41	16.06
Chicago Growth Partners I	50,000,000	52,441,998	5,119,924	53,058,188	300,000	2.40	1.11	11.68
Chicago Growth Partners II	60,000,000	58,095,626	21,503,013	94,583,860	1,652,374	18.74	2.00	9.06
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	15.30
Court Square Capital Partners II	175,000,000	158,503,096	44,278,211	255,085,071	17,544,102	12.91	1.89	10.57
Court Square Capital Partners III	175,000,000	97,116,094	56,930,988	63,877,629	85,547,995	10.47	1.24	4.83
Crescendo								
Crescendo IV	101,500,000	101,500,000	14,424,384	37,386,052	-	-6.05	0.51	17.06
Diamond Castle Partners								
Diamond Castle Partners IV	92,487,949	91,151,326	-	94,068,606	1,377,108	0.40	1.03	10.56
Elevation Partners								
Elevation Partners	75,000,000	69,311,710	579,089	113,091,463	799,634	11.82	1.64	11.87
Fox Paine & Company								

		As of June 30,	2017					
	Total	Funded			Unfunded	IRR		Period
Investment	Commitment	Commitment	MarketV alue	Distributions	Commitment	%	MOIC*	Years
Fox Paine Capital Fund II	50,000,000	46,299,626	4,068,672	86,859,891	11,953,212	18.91	1.96	16.75
GHJM Marathon Fund								
GHJM Marathon Fund V	50,000,000	50,093,425	-	95,948,519	46,502	12.10	1.92	12.50
TrailHead Fund	20,000,000	15,414,187	20,774,703	2,406,955	4,585,813	12.55	1.50	5.10
Glouston Capital Partners (fka Permal)**								
Glouston Private Equity Opportunities Fund	5,337,098	4,247,098	2,056,536	2,515,487	1,090,000	3.84	1.08	2.25
GTCR Golder Rauner								
GTCR IX	75,000,000	71,414,933	6,468,482	119,144,001	3,585,067	13.51	1.76	10.75
GTCR X	100,000,000	93,248,604	66,852,726	129,082,682	6,751,396	22.21	2.10	6.31
GTCR Fund XI	110,000,000	65,712,553	65,869,458	15,407,534	44,287,447	15.48	1.24	3.38
GS Capital Partners								
GS Capital Partners 2000	50,000,000	50,000,000	165,394	115,122,481	-	23.49	2.31	16.58
GS Capital Partners V	100,000,000	73,958,901	1,504,912	219,279,192	1,041,099	18.23	2.99	12.00
GS Capital Partners VI	100,000,000	80,215,619	19,803,130	110,990,160	15,039,971	5.80	1.63	10.16
West Street Capital Partners	150,000,000	13,500,000	12,822,165	-	136,500,000	-5.76	0.95	0.53
GS Vintage VII	100,000,000	2,000,000	2,000,000	-	98,000,000	0.00	1.00	0.37
HarbourVest**								
Dover Street VII Cayman Fund	2,198,112	2,070,612	746,213	1,163,702	127,500	-5.65	0.92	2.25
HarbourVest Intl PE Partners V-Cayman US	3,521,849	3,293,739	1,607,787	2,426,789	228,110	13.72	1.22	2.25
Harbourvest Intl PE Partners VI-Cayman	4,230,909	3,771,838	3,859,212	1,136,556	459,071	17.36	1.32	2.25
HarbourVest Partners VIII Cayman Buyout	4,506,711	4,194,711	2,566,540	2,634,438	312,000	13.99	1.24	2.25
HarbourVest Partners VIII-Cayman Venture	7,190,898	7,050,898	4,893,015	2,940,496	140,000	5.56	1.11	2.25
Hellman & Friedman								
Hellman & Friedman Capital Partners V	160,000,000	146,165,961	3,206,543	415,483,079	8,070,303	27.91	2.86	12.33
Hellman & Friedman Capital Partners VI	175,000,000	171,035,354	38,626,990	310,253,019	5,087,265	13.07	2.04	10.00
Hellman & Friedman Capital Partners VII	50,000,000	47,410,744	57,959,683	22,242,847	2,589,256	18.15	1.69	7.95
IK Investment Partners								
IK Fund VII	180,294,720	169,629,300	177,514,762	16,742,521	10,665,421	6.02	1.15	3.55
IK Fund VIII	169,923,527	28,807,990	27,883,132	2,213,957	143,261,439	6.55	1.04	0.95
Kohlberg Kravis Roberts								
KKR Millennium Fund	200,000,000	200,000,000	19,253,695	400,827,308	-	16.32	2.10	14.31
KKR 2006 Fund	200,000,000	211,063,288	89,063,198	262,796,284	3,360,223	8.45	1.67	10.51
KKR Americas Fund XII	150,000,000	-	-	-	150,000,000	0.00	0.00	1.33
KKR Asian Fund III	100,000,000	-	-	-	100,000,000	0.00	0.00	0.25

	Total	Funded			Unfunded	IRR		Period
Investment	Commitment	Commitment	Market Value	Distributions	Commitment	%	MOIC*	Years
Leonard Green & Partners								
Green Equity Investors VI	200,000,000	213,778,395	204,976,510	66,923,993	10,758,975	11.93	1.27	5.04
Lexington Capital Partners								
Lexington Capital Partners VI-B	100,000,000	98,365,297	21,316,397	120,963,822	1,634,703	7.80	1.45	11.27
Lexington Capital Partners VII	200,000,000	166,986,835	79,548,367	177,095,378	41,166,114	15.46	0.00	7.80
Lexington Capital Partners VIII	150,000,000	42,225,863	41,821,051	19,158,593	114,384,150	32.06	1.44	3.07
Lexington Middle Market Investors IV	100,000,000	-	-	-	100,000,000	0.00	0.00	0.52
MHR Institutional Partners								
MHR Institutional Partners IV	75,000,000	18,000,000	15,071,115	1,733,418	58,509,011	-5.20	0.93	1.96
Madison Dearborn Capital Partners								
Madison Dearborn Capital Partners VII	100,000,000	24,326,801	23,479,961	57,142	75,673,199	-4.21	0.00	1.53
Merced Capital								
Merced Partners II	75,000,000	63,768,881	4,985,045	124,662,721	-	23.92	2.03	10.00
Merced Partners III	100,000,000	100,000,000	56,370,960	76,497,107	0	6.63	1.33	6.90
Merced Partners IV	125,000,000	125,000,000	133,349,775	11,248,378	0	5.66	1.16	3.72
Merced Partners V	100,000,000	37,616,250	37,616,250	0	62,383,750	0.00	1.00	0.00
Neuberger Berman								
Dyal Capital Partners III	175,000,000	121,343,383	72,283,473	58,941,714	112,598,331	24.35	1.08	0.54
Nordic Capital								
Nordic Capital Fund VIII	177,604,412	116,521,186	146,944,838	49,418	61,083,226	10.80	1.26	3.55
North Sky Capital**								
North Sky Capital LBO Fund III	1,070,259	720,259	504,060	424,624	350,000	15.12	1.29	2.25
North Sky Capital Venture Fund III	1,384,080	1,277,830	522,505	869,341	106,250	5.51	1.09	2.25
Oak Hill Capital Management, Inc.	, ,	, ,	,	,	,			
Oak Hill Capital Partners IV	150,000,000	15,000,000	9,034,530	0	135,000,000	-40.39	0.60	0.56
Oaktree Capital Management	, ,	, ,	, ,		, ,			
Oaktree Principal Fund VI	100,000,000	38,652,814	32,160,874	11,561,586	72,509,912	20.56	1.13	2.25
Paine & Partners	, ,	, ,-	- , ,	7 7	. , ,-			
Paine & Partners Capital Fund IV	75,000,000	39,367,701	34,583,049	1,074,740	36,688,304	-8.85	0.91	2.30
PERMIRA	. 2,000,000	23,237,731	2 1,2 32,3 19	1,0 / 1,/ 10	20,000,000	3.32	0,7 1	_,,,
Permira V	178,586,154	161,392,363	186,219,659	2,229,773	17,193,792	7.62	1.17	3.25
Permira VI	135,926,608	21,164,465	20,882,024	0	114,762,143	-2.83		0.93
Public Pension Capital Management	155,720,000	21,101,103	20,002,027	O	111,702,113	2.03	0.77	0.75
Public Pension Capital	100,000,000	49,987,358	50,205,944	1,149,355	50,012,642	-8.89	1.03	2.88
1 none 1 choion Cupum	100,000,000	T),)U1,330	30,203,777	1,17,555	30,012,072	-0.07	1.03	2.00

	As of June 30, 2017									
	Total	Funded			Unfunded	IRR		Period		
Investment	Commitment	Commitment	Market∑alue	Distributions	Commitment	%	MOIC*	Years		
RWI Ventures										
RWI Ventures I	7,603,265	7,603,265	483,933	6,094,262	0	-4.30	0.87	10.75		
Silver Lake Partners										
Silver Lake Partners II	100,000,000	90,142,191	14,494,024	156,317,295	11,771,953	11.07	1.89	12.75		
Silver Lake Partners III	100,000,000	91,352,370	56,864,658	135,356,048	10,675,428	18.13	2.10	10.00		
Silver Lake Partners IV	100,000,000	76,189,252	80,704,541	32,761,458	35,839,166	28.04	1.49	4.51		
Silver Lake Partners V	135,000,000	-	-	-	135,000,000	0.00	0.00	0.25		
Split Rock Partners										
Split Rock Partners	50,000,000	47,454,543	26,715,874	25,998,744	2,545,457	1.36	1.11	11.92		
Split Rock Partners II	60,000,000	58,845,000	45,374,980	23,289,936	1,155,000	4.13	1.17	8.92		
Summit Partners										
Summit Ventures V	25,000,000	24,125,000	104,865	33,358,461	875,000	8.12	1.39	19.00		
Summit Partners Growth Equity Fund VIII	100,000,000	106,489,649	102,805,193	49,846,746	12,212,734	17.27	1.43	5.91		
Summit Partners Growth Equity Fund IX	100,000,000	6,000,000	6,248,724	-	94,000,000	4.20	1.04	1.84		
T. Rowe Price	28,282,209	28,282,209	15,837,583	22,494,869	-	20.44	1.36			
TPG Capital										
TPG Partners VII	100,000,000	35,547,673	34,651,220	1,250,410	65,676,741	1.26	1.01	1.56		
Thoma Cressey										
Thoma Cressey Fund VI	35,000,000	33,915,000	1,891	34,556,478	1,085,000	0.22	1.02	18.61		
Thoma Cressey Fund VII	50,000,000	50,000,000	919,353	106,625,069	-	23.60	2.15	16.60		
Thoma Cressey Fund VIII	70,000,000	68,932,574	1,524,016	233,860,926	770,000	18.27	2.93	10.92		
Thoma Bravo										
Thoma Bravo Fund XII	75,000,000	30,374,491	28,986,407	-	44,625,509	-5.50	0.95	0.81		
Thomas H. Lee Partners										
Thomas H. Lee Equity Fund VII	100,000,000	38,252,291	52,737,225	31,244	61,747,709	48.88	1.38	1.56		
Thomas, McNerney & Partners										
Thomas, McNerney & Partners I	30,000,000	30,000,000	3,032,665	15,087,143	-	-8.68	0.60	14.40		
Thomas, McNerney & Partners II	50,000,000	48,125,000	16,473,698	94,461,371	1,875,000	17.07	2.31	10.75		
Varde Fund										
Varde Fund IX	100,000,000	100,000,000	15,105,454	203,143,061	0	15.23	2.18	8.77		
Varde Fund X	150,000,000	150,000,000	119,311,838	171,061,240	0	12.84		6.94		
Varde Fund XI	200,000,000	200,000,000	260,254,600	-	-	7.83		3.73		
Vestar Capital Partners	, ,	,	,							
Vestar Capital Partners IV	55,000,000	53,635,969	746,203	102,141,056	57,313	14.66	1.92	17.29		
.	, , , ,	, , ,	,	, , ,	,					

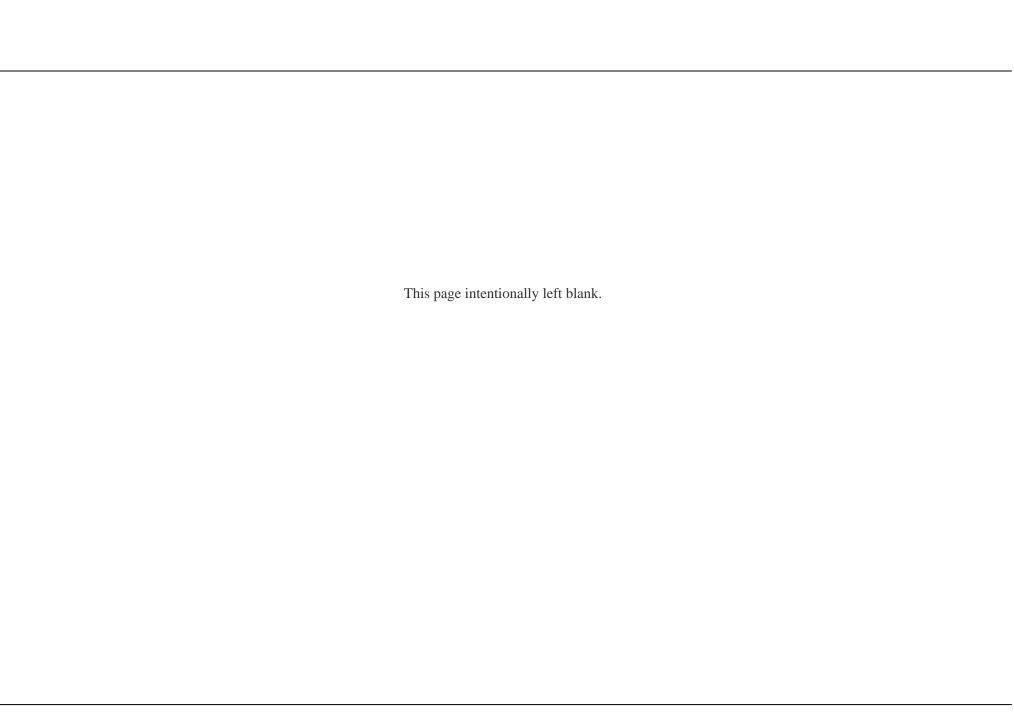
Total	Funded			Unfunded	IRR		Period
Commitment	Commitment	Market∑alue	Distributions	Commitment	%	MOIC*	Years
75,000,000	74,936,812	19,529,057	82,246,388	63,188	4.31	1.36	11.28
100,000,000	78,284,566	84,508,588	51,133,094	21,715,434	31.03	1.73	5.52
100,000,000	100,000,000	390,972	163,222,253	0	10.02	1.64	18.76
100,000,000	100,000,000	11,074,352	219,211,151	0	14.85	2.30	14.96
100,000,000	100,000,000	12,404,649	164,844,296	0	10.08	1.77	11.68
150,000,000	150,000,000	77,286,049	146,753,987	-	7.91	1.49	9.44
200,000,000	186,800,000	204,226,676	47,839,400	13,200,000	12.21	1.35	4.28
131,000,000	41,658,000	40,061,578	353,700	89,342,000	-5.23	0.97	1.36
45,000,000	8,100,000	5,882,686	1,935,000	38,835,000	-7.65	0.97	0.55
100,000,000	93,180,000	1,138,130	156,084,065	18,920,000	8.45	1.69	11.28
150,000,000	57,450,000	23,895,941	183,589,062	30,000,000	16.41	3.61	9.44
150,000,000	68,415,000	43,584,874	25,553,965	101,910,000	0.49	1.01	4.79
100,000,000	98,000,000	17,696,356	148,394,381	2,000,000	8.05	1.69	11.29
100,000,000	99,245,264	68,864,265	87,591,319	754,736	12.87	1.58	8.69
150,000,000	41,709,761	49,043,335	2,070,391	108,290,239	11.22	1.23	2.25
12,917,625,765	9,066,414,280	5,099,876,179	9,303,975,438	4,019,961,425		1.59	
20,758,602,284	15,066,336,978	8,358,541,415	14,876,352,231	5,974,264,561		1.54	
	75,000,000 100,000,000 100,000,000 100,000,0	Commitment Commitment 75,000,000 74,936,812 100,000,000 78,284,566 100,000,000 100,000,000 100,000,000 100,000,000 100,000,000 150,000,000 150,000,000 186,800,000 131,000,000 41,658,000 45,000,000 8,100,000 150,000,000 57,450,000 150,000,000 68,415,000 100,000,000 99,245,264 150,000,000 41,709,761 12,917,625,765 9,066,414,280	Commitment Commitment MarketValue 75,000,000 74,936,812 19,529,057 100,000,000 78,284,566 84,508,588 100,000,000 100,000,000 390,972 100,000,000 100,000,000 11,074,352 100,000,000 150,000,000 77,286,049 200,000,000 186,800,000 204,226,676 131,000,000 41,658,000 40,061,578 45,000,000 8,100,000 5,882,686 100,000,000 93,180,000 1,138,130 150,000,000 57,450,000 23,895,941 150,000,000 68,415,000 43,584,874 100,000,000 98,000,000 17,696,356 100,000,000 41,709,761 49,043,335 12,917,625,765 9,066,414,280 5,099,876,179	Commitment Commitment MarketValue Distributions 75,000,000 74,936,812 19,529,057 82,246,388 100,000,000 78,284,566 84,508,588 51,133,094 100,000,000 100,000,000 390,972 163,222,253 100,000,000 100,000,000 11,074,352 219,211,151 100,000,000 100,000,000 12,404,649 164,844,296 150,000,000 150,000,000 77,286,049 146,753,987 200,000,000 186,800,000 204,226,676 47,839,400 131,000,000 41,658,000 40,061,578 353,700 45,000,000 8,100,000 5,882,686 1,935,000 100,000,000 93,180,000 1,138,130 156,084,065 150,000,000 57,450,000 23,895,941 183,589,062 150,000,000 98,000,000 17,696,356 148,394,381 100,000,000 99,245,264 68,864,265 87,591,319 150,000,000 41,709,761 49,043,335 2,070,391 12,917,625,765 9,066,41	Commitment Commitment MarketValue Distributions Commitment 75,000,000 74,936,812 19,529,057 82,246,388 63,188 100,000,000 78,284,566 84,508,588 51,133,094 21,715,434 100,000,000 100,000,000 390,972 163,222,253 0 100,000,000 100,000,000 11,074,352 219,211,151 0 100,000,000 100,000,000 12,404,649 164,844,296 0 150,000,000 150,000,000 77,286,049 146,753,987 - 200,000,000 186,800,000 204,226,676 47,839,400 13,200,000 131,000,000 41,658,000 40,061,578 353,700 89,342,000 45,000,000 8,100,000 5,882,686 1,935,000 38,835,000 100,000,000 93,180,000 1,138,130 156,084,065 18,920,000 150,000,000 57,450,000 23,895,941 183,589,062 30,000,000 150,000,000 68,415,000 43,584,874 25,553,965 101,910,000	Commitment Commitment MarketValue Distributions Commitment % 75,000,000 74,936,812 19,529,057 82,246,388 63,188 4.31 100,000,000 78,284,566 84,508,588 51,133,094 21,715,434 31.03 100,000,000 100,000,000 390,972 163,222,253 0 10.02 100,000,000 100,000,000 11,074,352 219,211,151 0 14.85 100,000,000 100,000,000 12,404,649 164,844,296 0 10.08 150,000,000 150,000,000 77,286,049 146,753,987 - 7.91 200,000,000 186,800,000 204,226,676 47,839,400 13,200,000 12.21 131,000,000 41,658,000 40,061,578 353,700 89,342,000 -5.23 45,000,000 8,100,000 5,882,686 1,935,000 38,835,000 -7.65 100,000,000 57,450,000 23,895,941 183,589,062 30,000,000 16.41 150,000,000 98,000,000	Commitment Commitment MarketValue Distributions Commitment % MOIC* 75,000,000 74,936,812 19,529,057 82,246,388 63,188 4.31 1.36 100,000,000 78,284,566 84,508,588 51,133,094 21,715,434 31.03 1.73 100,000,000 100,000,000 390,972 163,222,253 0 10.02 1.64 100,000,000 100,000,000 11,074,352 219,211,151 0 14.85 2.30 100,000,000 100,000,000 12,404,649 164,844,296 0 10.08 1.77 150,000,000 150,000,000 77,286,049 146,753,987 - 7.91 1.49 200,000,000 186,800,000 204,226,676 47,839,400 13,200,000 12.21 1.35 131,000,000 41,658,000 40,061,578 353,700 89,342,000 -5.23 0.97 45,000,000 93,180,000 1,138,130 156,084,065 18,920,000 8.45 1.69 150,000,000

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

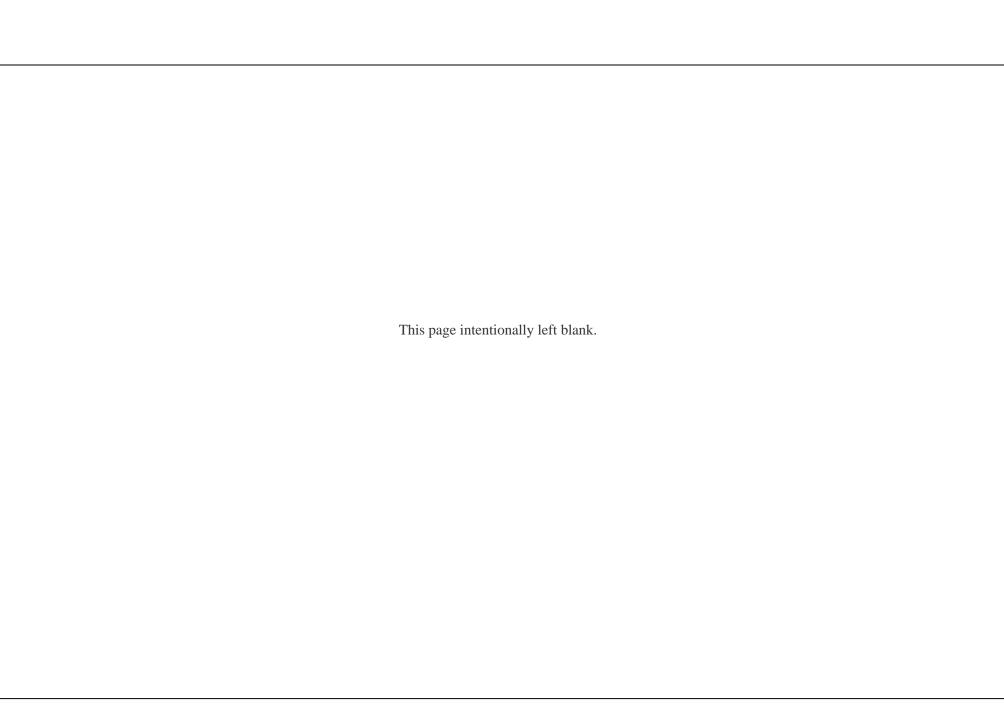
^{**}Partnership interests transferred to the MSBI during 1Q2015. All data presented as of the transfer date.





Participant Directed Investment Program June 30, 2017





Quarterly Report



Participant Directed Investment Program

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

- The Supplemental Investment Fund (SIF) is a program which provides individuals the opportunity to invest in many of the same investment pools as the Combined Funds. Participation in the SIF is accomplished through the purchase or sale of shares in each Fund. The SIF is 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 statutory requirements and rules established by the participating organizations. It provides some or all of the investment options for the Unclassified Employees Retirement Plan, Minnesota Deferred Compensation Plan, Public Employees Defined Contribution Plan, Hennepin County Supplemental Retirement Plan, and Health Care Savings Plan. All Funds in the SIF program, except the Stable Value Fund, are available to local volunteer fire relief associations who invest their assets with the SBI. The Volunteer Firefighter Account is available only for those local firefighter entities that participate in the Statewide Volunteer Firefighter Plan. Local entities that participate in this Plan must have all their assets invested in the Volunteer Firefighter Account.
- The Minnesota Deferred Compensation Plan offers plan participants three sets of investment options. The first is a set of actively and passively managed options that includes four mutual funds, a Money Market Fund, a Stable Value Fund and five passively managed mutual funds. The second is a set of target date funds called Minnesota Target Retirement Funds. The third is a self-directed brokerage account window which offers thousands of mutual funds. The SBI has no direct management responsibilities for funds within the self-directed brokerage account window. The Minnesota Deferred Compensation Plan uses two of the SIF investment options, the Stable Value Fund and the Money Market Fund, for its participants.
- The Minnesota College Savings Plan is an education savings plan designed to help families set aside funds for future college costs. It is established under the provisions of the Internal Revenue Code Section 529, which authorized these types of savings plans to help families meet the costs of qualified colleges nationwide. The SBI is responsible for the investments and the Minnesota Office of Higher Education (OHE) is responsible for the overall administration of the Plan. The SBI and OHE have contracted jointly with TIAA-CREF Tuition Financing, Inc. to provide administrative, marketing, communication, recordkeeping and investment management services.
- The Minnesota Achieve a Better Life Experience Plan (ABLE) is a savings plan designed to help individuals save for qualified disability expenses without losing eligibility for certain assistance programs. The plan is administered by the Department of Human Services (DHS). The SBI and DHS have jointly contracted with Ascensus to provide recordkeeping, administrative, and investment management services for the plan.

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



Supplemental Investment Fund Summary



The Minnesota Supplemental Investment Fund (SIF) is a multi-purpose investment 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.

Investment Option Descriptions

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Option Since
BALANCED FUND	\$403,114,401	2.4%	11.3%	6.6%	9.9%	6.6%	01/1980
U.S. ACTIVELY MANAGED FUND	229,166,850	3.7	20.5	8.7	14.6	7.1	07/1986
U.S. STOCK INDEX FUND	559,315,447	3.0	18.5	9.1	14.6	7.3	07/1986
BROAD INTERNATIONAL STOCK FUND	179,233,485	6.6	20.2	1.5	8.0	1.6	09/1994
BOND FUND	154,814,304	1.6	0.9	2.9	2.9	4.9	07/1986
MONEY MARKET FUND	383,817,052	0.2	0.7	0.4	0.3	0.8	07/1986
STABLE VALUE FUND	1,565,131,997	0.5	2.0	2.0	2.1	3.1	11/1994
VOLUNTEER FIREFIGHTER ACCOUNT	75,432,019	2.8	10.1	4.9	7.8		01/2010

On June 30, 2017 the total market value of the Supplemental Investment Fund was \$2.1 billion.

Note:

The Market Value for the Money Market Fund and the Stable Value Fund also includes assets held through the Deferred Compensation Plan. The total Supplemental Investment Fund value does not include the Deferred Compensation Plan assets.





Balanced Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BALANCED FUND	\$403,114,401	2.4%	11.3%	6.6%	9.9%	6.6%
SIF BALANCED FUND BENCHMARK		2.3	10.7	6.4	9.5	6.1
Excess		0.1	0.6	0.1	0.4	0.5

U.S. Actively Managed Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	<u>5 Year</u>	10 Year
U.S. ACTIVELY MANAGED FUND	229,166,850	3.7	20.5	8.7	14.6	7.1
Russell 3000		3.0	18.5	9.1	14.6	7.3
Excess		0.7	2.0	-0.4	0.1	-0.2





U.S. Stock Index Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
U.S. STOCK INDEX FUND	\$559,315,447	3.0%	18.5%	9.1%	14.6%	7.3%
Russell 3000		3.0	18.5	9.1	14.6	7.3
Excess		-0.0	-0.0	0.0	0.0	0.1

Broad International Stock Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BROAD INTERNATIONAL STOCK FUND	179,233,485	6.6	20.2	1.5	8.0	1.6
International Equity Benchmark		5.8	20.5	0.8	7.2	1.2
Excess		0.8	-0.2	0.7	0.8	0.5





Bond Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BOND FUND	\$154,814,304	1.6%	0.9%	2.9%	2.9%	4.9%
BBG BARC Agg Bd		1.4	-0.3	2.5	2.2	4.5
Excess		0.2	1.2	0.5	0.7	0.4

Money Market Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
MONEY MARKET FUND	383,817,052	0.2	0.7	0.4	0.3	0.8
90 DAY T-BILL		0.2	0.5	0.2	0.2	0.6
Excess		0.0	0.3	0.2	0.1	0.2





Stable Value Fund

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
STABLE VALUE FUND	\$1,565,131,997	0.5%	2.0%	2.0%	2.1%	3.1%
3-Year Constant Maturity Treasury + 0.45%		0.5	1.7	1.5	1.3	1.7
Excess		0.0	0.3	0.4	0.7	1.5

Volunteer Firefighter Account

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
VOLUNTEER FIREFIGHTER ACCOUNT	75,432,019	2.8	10.1	4.9	7.8	
SIF Volunteer Firefighter Account BM		2.6	9.1	4.6	7.2	
Excess		0.2	1.0	0.3	0.5	





Deferred Compensation Plan Summary

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 a set of 10 target date 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 available through a mutual fund brokerage window. The current plan structure became effective July 1, 2011.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Option Since
VANGUARD INSTITUTIONAL INDEX PLUS	\$1,146,183,944	3.1%	17.9%	9.6%	14.6%	7.2%	07/1999
VANGUARD DIVIDEND GROWTH	567,687,115	3.8					10/2016
VANGUARD MID CAP INDEX	501,700,896	2.8	17.3	8.1	14.8	7.5	01/2004
T. ROWE PRICE SMALL-CAP STOCK	657,583,937	2.4	21.2	8.0	14.5	9.5	07/1999
FIDELITY DIVERSIFIED INTERNATIONAL	284,406,521	7.7	18.0	2.7	9.5	1.8	07/1999
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	180,252,784	5.8	20.1	1.4	7.7		07/2011
VANGUARD BALANCED INDEX	747,660,445	2.4	10.6	6.5	9.6	6.6	12/2003
DODGE & COX INCOME	227,154,150	1.5	3.2	2.8	3.4	5.2	07/1999
VANGUARD TOTAL BOND MARKET INDEX	205,425,822	1.5	-0.4	2.4	2.1	4.5	12/2003
SIF MONEY MARKET	69,947,395	0.2	0.7	0.4	0.3	8.0	07/1986
SIF FIXED INTEREST	1,351,219,935	0.5	2.0	2.0	2.1	3.1	11/1994
2020 FUND	106,126,981	1.9	6.8	2.8	5.8		07/2011
2025 FUND	91,460,954	2.5	9.1	3.7	7.4		07/2011
2030 FUND	61,885,426	3.1	11.4	4.5	8.5		07/2011
2035 FUND	48,914,476	3.5	12.7	4.7	9.2		07/2011
2040 FUND	34,676,543	3.7	13.9	4.9	9.7		07/2011
2045 FUND	27,776,921	3.8	15.0	5.0	10.2		07/2011
2050 FUND	19,478,232	3.9	15.8	5.2	10.3		07/2011
2055 FUND	10,285,562	3.9	15.8	5.2	10.3		07/2011
2060 FUND	9,989,248	3.9	15.8	5.2	10.3		07/2011
INCOME FUND	77,247,843	1.6	5.4	2.4	4.3		07/2011

On June 30, 2017 the total market value for the Deferred Compensation Plan was \$6.4 Billion.



Deferred Compensation Plan Options



LARGE CAP EQUITY

Vanguard Index Institutional Plus (passive)

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

Vanguard Dividend Growth (active) (1)

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

MID CAP EQUITY

Vanguard Mid Cap Index (passive) (2)

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

SMALL CAP EQUITY

T Rowe Price Small Cap (active)

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

INTERNATIONAL EQUITY

Fidelity Diversified International (active)

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

Vanguard Total International Stock Index (passive) (3)

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Large Cap US Equity						
VANGUARD INSTITUTIONAL INDEX PLUS	\$1,146,183,944	3.1%	17.9%	9.6%	14.6%	07/1999
S&P 500		3.1	17.9	9.6	14.6	07/1999
Excess		-0.0	-0.0	-0.0	-0.0	
VANGUARD DIVIDEND GROWTH	567,687,115	3.8				10/2016
NASDAQ US Dividend Achievers Select		3.6				10/2016
Excess		0.2				
Mid Cap US Equity						
VANGUARD MID CAP INDEX	501,700,896	2.8	17.3	8.1	14.8	01/2004
CRSP US Mid Cap Index		2.8	17.3	8.1	14.8	01/2004
Excess		-0.0	-0.0	-0.0	0.0	
Small Cap US Equity						
T. ROWE PRICE SMALL-CAP STOCK	657,583,937	2.4	21.2	8.0	14.5	07/1999
Russell 2000		2.5	24.6	7.4	13.7	07/1999
Excess		-0.0	-3.4	0.7	8.0	
International Equity						
FIDELITY DIVERSIFIED INTERNATIONAL	284,406,521	7.7	18.0	2.7	9.5	07/1999
MSCI EAFE FREE (NET)		6.1	20.3	1.1	8.7	07/1999
Excess		1.6	-2.3	1.6	0.9	
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	180,252,784	5.8	20.1	1.4	7.7	07/2011
FTSE Global All Cap ex US Index Net		5.6	20.2	1.2		07/2011
Excess		0.2	-0.1	0.2		





Deferred Compensation Options

Vanguard Balanced Index (passive) (4)	
A fund that passively invests in a mix of domestic stocks and bonds.	The fund i

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

FIXED INCOME

BALANCED

Dodge & Cox Income Fund (active)

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

Vanguard Total Bond Market Index (passive)

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

SIF Money Market Fund (5)

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

STABLE VALUE

SIF Stable Value Fund (5)

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Balanced Funds						
VANGUARD BALANCED INDEX	\$747,660,445	2.4%	10.6%	6.5%	9.6%	12/2003
Vanguard Balanced Fund Benchmark		2.4	10.7	6.5	9.6	12/2003
Excess		0.0	-0.1	-0.0	-0.0	
Fixed Income						
DODGE & COX INCOME	227,154,150	1.5	3.2	2.8	3.4	07/1999
BBG BARC Agg Bd		1.4	-0.3	2.5	2.2	07/1999
Excess		0.1	3.6	0.4	1.2	
VANGUARD TOTAL BOND MARKET INDEX	205,425,822	1.5	-0.4	2.4	2.1	12/2003
BBG BARC Agg Bd		1.4	-0.3	2.5	2.2	12/2003
Excess		0.0	-0.1	-0.0	-0.1	
SIF MONEY MARKET	69,947,395	0.2	0.7	0.4	0.3	07/1986
90 DAY T-BILL		0.2	0.5	0.2	0.2	07/1986
Excess		0.0	0.3	0.2	0.1	
Stable Value						
SIF FIXED INTEREST	1,351,219,935	0.5	2.0	2.0	2.1	11/1994
3-Year Constant Maturity Treasury + 0.45%		0.5	1.7	1.5	1.3	11/1994
Excess		0.0	0.3	0.4	0.7	



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

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

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

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

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

Deferred Compensation Plan Options



LARGE CAP EQUITY

Vanguard Index Institutional Plus (passive)

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

Vanguard Dividend Growth (active) (1)

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

MID CAP EQUITY

Vanguard Mid Cap Index (passive) (2)

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

SMALL CAP EQUITY

T Rowe Price Small Cap (active)

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

INTERNATIONAL EQUITY

Fidelity Diversified International (active)

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

Vanguard Total International Stock Index (passive) (3)

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

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Large Cap US Equity						
VANGUARD INSTITUTIONAL INDEX PLUS	\$1,146,183,944	3.1%	17.9%	9.6%	14.6%	07/1999
S&P 500		3.1	17.9	9.6	14.6	07/1999
Excess		-0.0	-0.0	-0.0	-0.0	
VANGUARD DIVIDEND GROWTH	567,687,115	3.8				10/2016
NASDAQ US Dividend Achievers Select		3.6				10/2016
Excess		0.2				
Mid Cap US Equity						
VANGUARD MID CAP INDEX	501,700,896	2.8	17.3	8.1	14.8	01/2004
CRSP US Mid Cap Index		2.8	17.3	8.1	14.8	01/2004
Excess		-0.0	-0.0	-0.0	0.0	
Small Cap US Equity						
T. ROWE PRICE SMALL-CAP STOCK	657,583,937	2.4	21.2	8.0	14.5	07/1999
Russell 2000		2.5	24.6	7.4	13.7	07/1999
Excess		-0.0	-3.4	0.7	8.0	
International Equity						
FIDELITY DIVERSIFIED INTERNATIONAL	284,406,521	7.7	18.0	2.7	9.5	07/1999
MSCI EAFE FREE (NET)		6.1	20.3	1.1	8.7	07/1999
Excess		1.6	-2.3	1.6	0.9	
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	180,252,784	5.8	20.1	1.4	7.7	07/2011
FTSE Global All Cap ex US Index Net		5.6	20.2	1.2		07/2011
Excess		0.2	-0.1	0.2		





Deferred Compensation Options

Vanguard Balanced Index (passive) (4)	
A fund that passively invests in a mix of domestic stocks and bonds.	The fund i

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FIXED INCOME

BALANCED

Dodge & Cox Income Fund (active)

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Vanguard Total Bond Market Index (passive)

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SIF Money Market Fund (5)

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Excess		0.0	0.3	0.4	0.7	



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

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Deferred Compensation Options



MN TARGET RETIREMENT ACCOUNTS

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

T	Data	Dating	ent Funds
raruet	Date	Retirem	ent runas

rarget Date Retireme		1 (6:	4 ٧-	0.1/-	5 V	0		Fording Mades (37.1	L == (O:	4 V-	0 V	5 V	0
	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since		Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
SSgA													
2020 FUND	\$106,126,981	1.9%	6.8%	2.8%	5.8%	07/2011	2045 FUND	\$27,776,921	3.8%	15.0%	5.0%	10.2%	07/2011
2020 FUND BENCHMARK		1.8	6.9	2.9	5.9	07/2011	2045 FUND BENCHMARK		3.8	15.2	5.1	10.3	07/2011
Excess		0.0	-0.1	-0.0	-0.1		Excess		0.0	-0.2	-0.0	-0.1	
2025 FUND	91,460,954	2.5	9.1	3.7	7.4	07/2011	2050 FUND	19,478,232	3.9	15.8	5.2	10.3	07/2011
2025 FUND BENCHMARK		2.5	9.3	3.7	7.5	07/2011	2050 FUND BENCHMARK		3.9	16.0	5.2	10.4	07/2011
Excess		0.0	-0.2	-0.0	-0.1		Excess		0.0	-0.3	-0.0	-0.1	
2030 FUND	61,885,426	3.1	11.4	4.5	8.5	07/2011	2055 FUND	10,285,562	3.9	15.8	5.2	10.3	07/2011
2030 FUND BENCHMARK		3.1	11.7	4.5	8.6	07/2011	2055 FUND BENCHMARK		3.9	16.0	5.2	10.4	07/2011
Excess		0.0	-0.2	-0.0	-0.1		Excess		0.0	-0.2	-0.0	-0.1	
2035 FUND	48,914,476	3.5	12.7	4.7	9.2	07/2011	2060 FUND	9,989,248	3.9	15.8	5.2	10.3	07/2011
2035 FUND BENCHMARK		3.4	12.9	4.8	9.2	07/2011	2060 FUND BENCHMARK		3.9	16.0	5.2	10.4	07/2011
Excess		0.0	-0.2	-0.0	-0.1		Excess		0.0	-0.3	-0.0	-0.1	
2040 FUND	34,676,543	3.7	13.9	4.9	9.7	07/2011	INCOME FUND	77,247,843	1.6	5.4	2.4	4.3	07/2011
2040 FUND BENCHMARK		3.6	14.1	5.0	9.8	07/2011	INCOME FUND BENCHMARK		1.6	5.5	2.4	4.4	07/2011
Excess		0.0	-0.2	-0.0	-0.1		Excess		0.0	-0.1	-0.1	-0.1	

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



MN College Savings Plan Options



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

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

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.

RISK BASED ALLOCATIONS

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

ASSET CLASS BASED ALLOCATIONS

U.S. LARGE CAP EQUITY INDEX - A passive domestic stock portfolio that tracks the S&P 500.

INTERNATIONAL EQUITY INDEX - A fund that passively invests in a mix of developed and emerging market equities. The fund is expected to track a weighted benchmark of 80% MSCI ACWI World ex USA and 20% MSCI Emerging Markets Free Index.

U.S. AND INTERNATIONAL EQUITY INDEX - A fund that invests in a mix of equities, both U.S. and international, across all capitalization ranges and real estate-related securities. The fund is expected to track a weighted benchmark of 60% Russell 3000, 24% International, 6% Emerging Markets, and 10% Real Estate Securities Fund.

PRINCIPAL PLUS INTEREST OPTION - A passive fund where contributions are invested in a Funding Agreement issued by TIAA-CREF Life. The funding agreement provides for a return of principal plus a guaranteed rate of interest which is made by the insurance company to the policyholder, not the account owners. The account is expected to outperform the return of the 3-month T-Bill.

EQUITY AND INTEREST ACCUMULATION - A fund that passively invests half of the portfolio in U.S. equities across all capitalization ranges and the other half in the same Funding Agreement issued by TIAA-CREF Life as described above. The fund is expected to track a weighted benchmark of 50% Russell 3000 and 50% 3-month T-Bill.

100% FIXED INCOME - A fund that passively invests in fixed income holdings that tracks the Bloomberg Barclays U.S. Aggregate and two active funds that invest in inflation-linked bonds and high yield securities. The fund is expected to track a weighted benchmark of 70% BB Barclays Aggregate, 20% inflation-linked bond, and 10% high yield.

MONEY MARKET - An active fund that invests in high-quality, short-term money market instruments of both domestic and foreign issuers that tracks the iMoneyNet Average All Taxable benchmark.







MINNESOTA COLLEGE SAVINGS PLAN

Performance Statistics for the Period Ending: June 30, 2017

Fund Name	Ending Market	3 Months	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Managed Ages 0-4	\$27,345,298	3.53%	13.72%	-	-	-	6.59%	8/12/2014
BM: Managed Ages 0-4		3.33%	13.91%	-	-	-	6.73%	
Managed Ages 5-8	\$70,373,952	3.31%	12.11%	-	-	-	6.07%	8/12/2014
BM: Managed Ages 5-8		3.06%	12.20%	-	-	-	6.21%	
Managed Ages 9-10	\$69,675,333	3.00%	10.50%	-	-	-	5.54%	8/12/2014
BM: Managed Ages 9-10		2.78%	10.51%	-	-	-	5.68%	
Managed Ages 11-12	\$103,946,305	2.59%	8.82%	-	-	-	4.91%	8/12/2014
BM: Managed Ages 11-12		2.46%	8.82%	-	-	-	5.03%	
Managed Ages 13-14	\$138,242,649	2.36%	7.32%	-	-	-	4.30%	8/12/2014
BM: Managed Ages 13-14		2.14%	7.16%	-	-	-	4.38%	
Managed Age 15	\$73,647,164	1.84%	5.73%	-	-	-	3.59%	8/12/2014
BM: Managed Age 15		1.72%	5.48%	-	-	-	3.50%	
Managed Age 16	\$69,227,714	1.67%	4.89%	-	-	-	3.20%	8/12/2014
BM: Managed Age 16		1.49%	4.64%	-	-	-	3.01%	
Managed Age 17	\$67,851,465	1.40%	4.23%	-	-	-	2.84%	8/12/2014
BM: Managed Age 17		1.26%	3.80%	-	-	-	2.52%	
Managed Ages 18 & Over	\$179,835,961	1.13%	3.38%	-	-	-	2.44%	8/12/2014
BM: Managed Ages 18 & Over		1.02%	2.97%	-	-	-	2.02%	
U.S. and International Equity Option	\$294,512,994	4.05%	16.99%	6.65%	11.89%	4.97%	6.77%	10/ 1/2001
BM: U.S. and International Equity Option		3.88%	17.39%	6.78%	12.21%	5.60%	7.71%	





MINNESOTA COLLEGE SAVINGS PLAN

Performance Statistics for the Period Ending: June 30, 2017

]			
Fund Name	Ending Market	3 Months	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Moderate Allocation Option	\$60,700,840	2.91%	10.46%	4.89%	7.78%	-	5.03%	8/ 2/2007
BM: Moderate Allocation Option		2.78%	10.51%	5.09%	8.09%	-	5.64%	
100% Fixed-Income Option	\$13,047,311	1.06%	0.49%	2.01%	1.46%	-	3.72%	8/16/2007
BM: 100% Fixed-Income Option		1.15%	0.80%	2.31%	1.90%	-	4.41%	
International Equity Index Option	\$3,206,463	6.43%	20.56%	1.19%	-	-	4.80%	6/18/2013
BM: International Equity Index Option		6.15%	20.99%	1.22%	-	-	5.05%	
Money Market Option	\$9,508,516	0.10%	0.29%	0.10%	0.06%	-	0.30%	11/ 1/2007
BM: Money Market Option		0.10%	0.21%	0.09%	0.06%	-	0.34%	
Principal Plus Interest Option	\$114,147,923	0.34%	1.42%	1.33%	1.35%	2.10%	2.59%	10/10/2001
Citigroup 3-Month U.S. Treasury Bill		0.18%	0.46%	0.20%	0.15%	0.51%	1.27%	
Aggressive Allocation Option	\$14,598,464	3.45%	13.74%	_	-	-	6.53%	8/12/2014
BM: Aggressive Allocation Option		3.33%	13.91%	-	-	-	6.73%	
Conservative Allocation Option	\$6,822,495	1.86%	5.58%	-	-	-	3.28%	8/18/2014
BM: Conservative Allocation Option		1.72%	5.48%	-	-	-	3.26%	
Equity and Interest Accumulation Option	\$1,953,508	1.76%	9.76%	-	-	-	5.25%	8/18/2014
BM: Equity and Interest Accumulation Option		1.59%	9.19%	-	-	-	4.85%	
U.S. Large Cap Equity Option	\$16,215,091	3.04%	17.69%	-	-	-	10.23%	8/12/2014
BM: U.S. Large Cap Equity Option		3.09%	17.90%	-	-	-	10.46%	
Matching Grant	\$2,492,587	0.34%	1.42%	1.33%	1.35%	2.10%	2.61%	3/22/2002
Citigroup 3-Month U.S. Treasury Bill		0.18%	0.46%	0.20%	0.15%	0.51%	1.24%	

MN ABLE Plan Options



MINNESOTA ACHIEVE A BETTER LIFE EXPERIENCE

The Minnesota Achieve a Better Life Experience Plan (ABLE) is a savings plan designed to help individuals save for qualified disability expenses without losing eligibility for certain assistance programs. The plan is administered by the Department of Human Services (DHS).

The SBI and DHS have jointly contracted with Ascensus to provide recordkeeping, administrative, and investment management services for the plan.

RISK BASED ALLOCATIONS

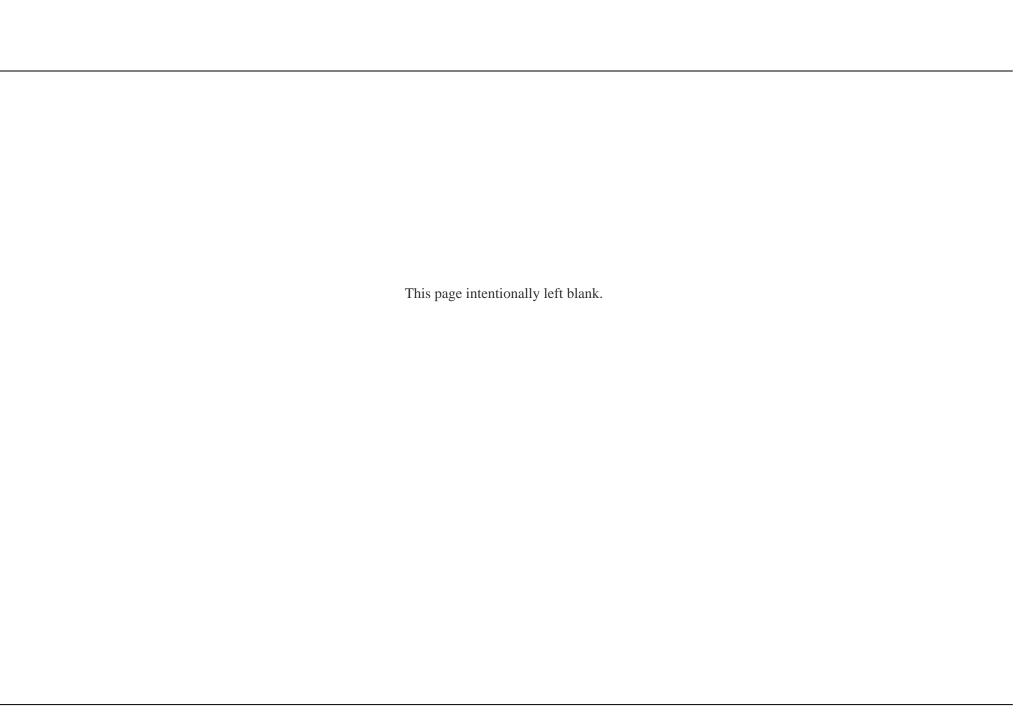
The plan offers seven different allocation investment options: Aggressive, Moderately Aggressive, Growth, Moderately Conservative, Conservative, and Checking. Each allocation is based on a fixed risk level.



Performance as of 06/30/17

Total Market Value: \$ 512,208

Fund Name Aggressive Option ABLE Aggressive Custom Benchmark	<u>Mark</u> \$	ket Value 62,755	% of Plan 12.25%	1 Month 1.03 1.02	3 Months 3.06 3.18	<u>YTD</u> 8.01 8.34	1 Year	3 Year	<u>5 Year</u>	<u>10 Year</u>	Inception 7.90	<u>Date</u> 12/15/16
Variance				0.01	(0.12)	(0.33)						
Moderately Aggressive Option ABLE Moderately Aggressive Custom Benchmark Variance	\$	53,446	10.43%	0.94 0.81 0.13	2.69 2.72 (0.03)	6.90 7.11 (0.21)					6.90	12/15/16
Growth Option ABLE Growth Custom Benchmark Variance	\$	92,825	18.12%	0.57 0.60 (0.03)	2.13 2.27 (0.14)	5.49 5.89 (0.40)					5.70	12/15/16
Moderate Option ABLE Moderate Custom Benchmark Variance	\$	55,782	10.89%	0.38 0.39 (0.01)	1.65 1.82 (0.17)	4.49 4.69 (0.20)					4.80	12/15/16
Moderately Conservative Option ABLE Moderately Conservative Custom Benchmark Variance	\$	52,298	10.21%	0.29 0.25 0.04	1.17 1.30 (0.13)	3.09 3.28 (0.19)					3.40	12/15/16
Conservative Option ABLE Conservative Custom Benchmark Variance	\$	97,197	18.98%	0.10 0.08 0.02	0.59 0.60 (0.01)	1.40 1.41 (0.01)					1.60	12/15/16
Checking Option	\$	97,906	19.11%	0.00	0.00	0.00					0.00	03/30/17





Non-Retirement June 30, 2017



Quarterly Report



Non-Retirement Funds

The SBI manages funds for trusts and programs created by the Minnesota State Constitution and Legislature.

- The Permanent School Fund is a trust established for the benefit of Minnesota public schools.
- The Environmental Trust Fund is a trust established for the protection and enhancement of Minnesota's environment. It is funded with a portion of the proceeds from the state's lottery.
- The Minnesota Workers Compensation Assigned Risk Plan provides worker compensation insurance for companies unable to obtain coverage through private carriers.
- The Closed Landfill Investment Fund is a trust created by the Legislature to invest money to pay for the long-term costs of maintaining the integrity of landfills in Minnesota once they are closed.
- Other Post-Employment Benefits Accounts (OPEB) are the assets set aside by local units of government for the payment of retiree benefits trusteed by the Public Employees Retirement Association.
- Miscellanous Trust Accounts are other small funds managed by the SBI for a variety of purposes.

All equity, fixed income, and cash assets for these accounts are currently managed internally by the SBI except the fixed income portion of the Assigned Risk Plan. RBC is the manager for the Assigned Risk Plan fixed income allocation.



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Non-Retirement

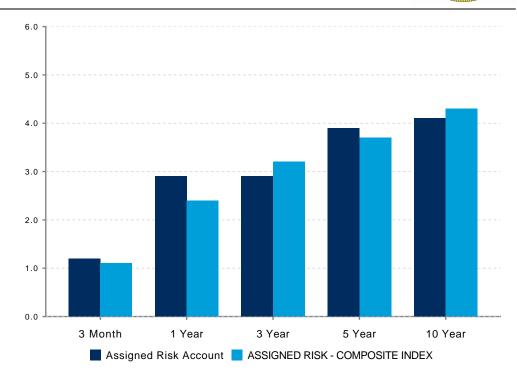
Assigned Risk Plan

The Assigned Risk plan has two investment objectives: to minimize the mismatch between assets and liabilities and to provide sufficient liquidity for the payment of ongoing claims and operating expenses.

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

RBC Global Asset Management (U.S.) Inc. manages the bond segment of the Fund. SBI Staff passively manages the equity segment to track the performance of the S&P 500.

The fixed income benchmark is the Bloomberg Barclays Intermediate Government Index. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Actual Weight	Policy Weight
Assigned Risk Account	\$323,086,323	1.2%	2.9%	2.9%	3.9%	4.1%		
EQUITIES	65,944,239	3.1	19.6	8.0	14.3	7.1	20.5%	20.0%
FIXED INCOME	257,142,085	0.7	-1.1	1.5	1.1	3.2	79.5%	80.0%
ASSIGNED RISK - COMPOSITE INDEX		1.1	2.4	3.2	3.7	4.3		
Excess		0.0	0.5	-0.2	0.1	-0.2		
S&P 500		3.1	17.9	9.6	14.6	7.2		
BBG BARC US Gov: Int		0.7	-1.2	1.5	1.1	3.4		

Note: Prior to 1/17/2017 the Assigned Risk equity segment was managed by SSgA (formerly GE Investment Mgmt.).



Non-Retirement

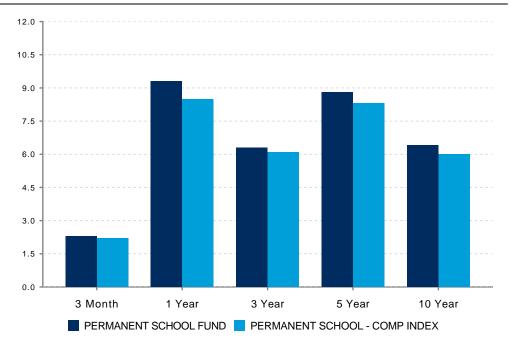


Permanent School Fund

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

The Permanent School Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds provide portfolio diversification and a more stable stream of current income.

SBI staff currently 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. The fixed income benchmark is the Bloomberg Barclays U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Actual Weight	Policy Weight
PERMANENT SCHOOL FUND	\$1,316,578,080	2.3%	9.3%	6.3%	8.8%	6.4%		
CASH EQUIVALENTS	25,139,621	0.2	0.6	0.3	0.3	0.8	1.9%	2.0%
EQUITIES	672,924,099	3.1	17.9	9.7	14.6	7.2	51.1%	50.0%
FIXED INCOME	618,514,360	1.6	0.8	3.0	3.1	5.1	47.0%	48.0%
PERMANENT SCHOOL - COMP INDEX		2.2	8.5	6.1	8.3	6.0		
Excess		0.1	0.8	0.2	0.4	0.4		
S&P 500		3.1	17.9	9.6	14.6	7.2		
BBG BARC US Agg		1.4	-0.3	2.5	2.2	4.5		

Note: Prior to 7/1/97 the Fund allocation was 100% fixed income.



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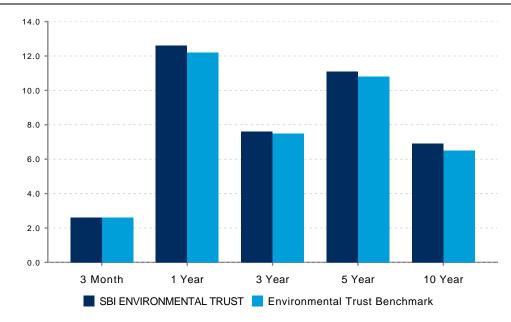
Non-Retirement

Environmental Trust Fund

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

The Environmental Trust Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds act as a deflation hedge and provide portfolio diversification.

SBI staff currently 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. The fixed income benchmark is the Bloomberg Barclays U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Actual Weight	Policy Weight
SBI ENVIRONMENTAL TRUST	\$1,028,370,411	2.6%	12.6%	7.6%	11.1%	6.9%		
CASH EQUIVALENTS	19,869,976	0.2	0.6	0.3	0.3	0.8	1.9%	2.0%
EQUITIES	724,795,128	3.1	17.9	9.7	14.6	7.2	70.5%	70.0%
FIXED INCOME	283,705,307	1.6	0.8	3.0	3.1	5.1	27.6%	28.0%
Environmental Trust Benchmark		2.6	12.2	7.5	10.8	6.5		
Excess		0.0	0.4	0.1	0.2	0.3		
S&P 500		3.1	17.9	9.6	14.6	7.2		
BBG BARC US Agg		1.4	-0.3	2.5	2.2	4.5		

Note:

From 7/1/94 to 7/1/99, the Fund's target allocation and benchmark was 50% fixed income and 50% stock. Prior to 7/1/94 the Fund was invested entirely in short-term instruments as part of the Invested Treasurer's Cash pool.



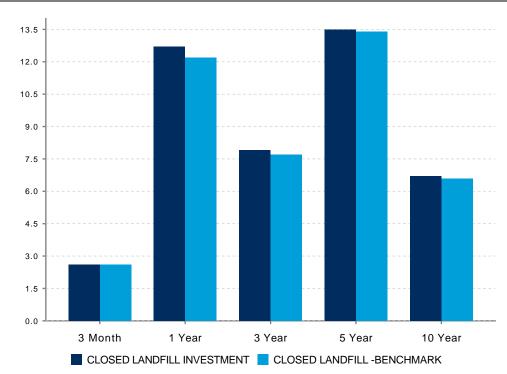
Non-Retirement



Closed Landfill Investment Fund

The investment objective of the Closed Landfill Investment Fund is to increase the market value of the Fund and to reduce volatility to meet future expenditures. By statute, the assets of the Fund are unavailable for expenditure until after the fiscal year 2020 to pay for long-term costs of maintaining the integrity of landfills in Minnesota once they are closed. In FY 2011, \$48 million was transferred out of the general fund leaving a balance of \$1 million in the account. Legislation was enacted in 2013 to replenish the principal and earnings back into the fund and in FY 2014 a repayment was made in the amount of \$64.2 million. In 2015, legislation was passed which repealed any further repayments.

SBI staff currently 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. The fixed income benchmark is the Bloomberg Barclays U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Actual Weight	Policy Weight
CLOSED LANDFILL INVESTMENT	\$81,193,833	2.6%	12.7%	7.9%	13.5%	6.7%		
EQUITIES	57,145,885	3.1	17.9	9.7	14.6	7.2	70.4%	70.0%
FIXED INCOME	24,047,947	1.6	0.8				29.6%	30.0%
CLOSED LANDFILL -BENCHMARK		2.6	12.2	7.7	13.4	6.6		
Excess		0.0	0.5	0.1	0.0	0.1		
S&P 500		3.1	17.9	9.6	14.6	7.2		
BBG BARC US Agg		1.4	-0.3	2.5	2.2	4.5		

Note: Prior to 9/10/14 the Fund's target allocation and benchmark was 100% domestic equity.





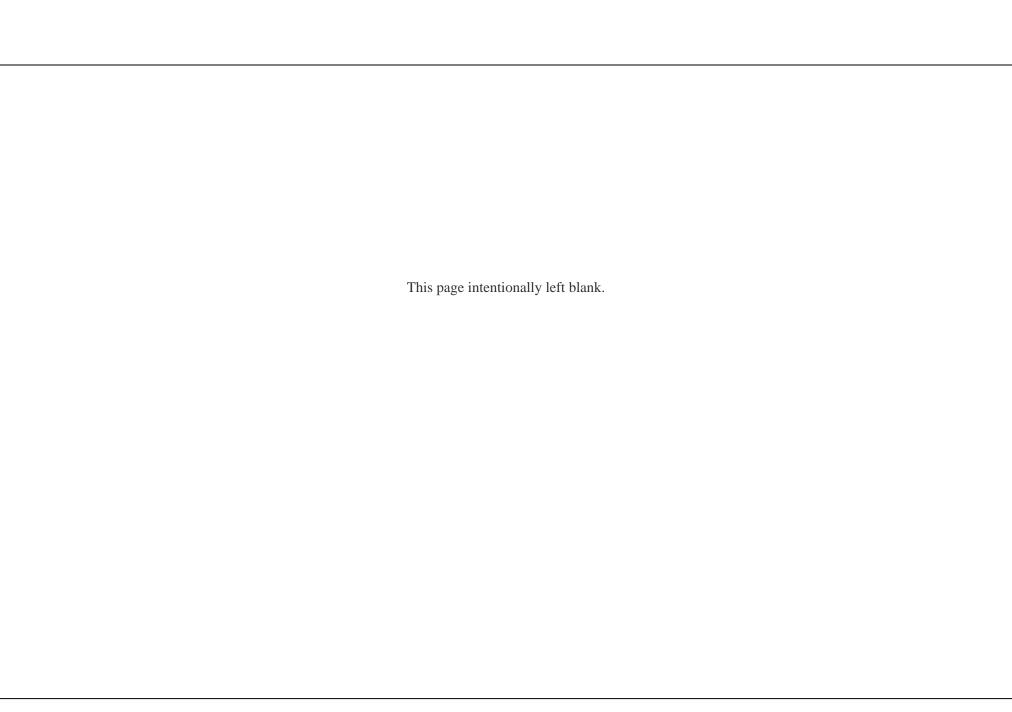
	Ending Market Value	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
SBI INTERNAL EQUITY INDEX	2,104,743,210	3.1	17.9	17.9	9.7	14.6	7.2	9.5	07/1993
S&P 500 INDEX (DAILY)		3.1	17.9	17.9	9.6	14.6	7.2	9.4	07/1993
Excess		-0.0	-0.0	-0.0	0.0	-0.0	0.0	0.1	
SBI INTERNAL FIXED INCOME	1,085,050,891	1.6	0.8	0.8	3.0	3.1	5.1	6.2	07/1994
BBG BARC Agg (Dly)		1.4	-0.3	-0.3	2.5	2.2	4.5	5.7	07/1994
Excess		0.1	1.2	1.2	0.5	0.9	0.6	0.5	
RBC	257,142,116	0.7	-1.1	-1.1	1.5	1.1	3.2	5.1	07/1991
Voyageur Custom Index		0.7	-1.2	-1.2	1.5	1.1	3.4	5.2	07/1991
Excess		0.0	0.2	0.2	0.1	0.0	-0.2	-0.1	

Note:

RBC is the manager for the fixed income portion of the assigned risk account. RBC changed its name from Voyageur Asset Management on 1/1/2010. The current benchmark is the Bloomberg Barclays Intermediate Government Index. Prior to 7/1/11 the Voyageur Custom Index was 10% 90 day T-Bill, 25% Merrill 1-3 Government, 15% Merrill 3-5 Government, 25% Merrill Mortgage Master.

In addition to the Non-Retirement Funds listed on the previous pages, the SBI Internal Equity Index and the SBI Internal Fixed Income also include the assets of various smaller Miscellaneous Trust Accounts and Other Post Employment Benefits.





Quarterly Report



State Cash June 30, 2017

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State Cash Accounts

Invested Treasurer's Cash

The Invested Treasurer's Cash Pool (ITC) represents the balances in more than 400 separate accounts that flow through the Minnesota State Treasury. These accounts vary greatly in size. The ITC contains the cash balances of certain State agencies and non-dedicated cash in the State Treasury.

The investment objectives of the ITC, in order of priority, are as follows:

- Safety of Principal. To preserve capital.
- Liquidity. To meet cash needs without the forced sale of securities at a loss.
- Competitive Rate of Return. To provide a level of current income consistent with the goal of preserving capital.

The SBI seeks to provide safety of principal by investing all cash accounts in high quality, liquid, short term investments. These include U.S. Treasury and Agency issues, repurchase agreements, bankers acceptances, commercial paper, and certificates of deposit.

Beginning in January 2003, the Treasurer's Cash Pool is measured against the iMoneyNet, All Taxable Money Fund Report Average.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Treasurer's Cash	11,820,363,556	0.3	0.8	0.7	0.6	1.3
iMoneyNet Money Fund Average-All Taxable		0.1	0.3	0.1	0.1	0.5

Other State Cash Accounts

Due to differing investment objectives, strategies, and time horizons, some State agencies' accounts are invested seperately. These agencies direct the investments or provide the SBI with investment guidelines and the SBI executes on their behalf. Consequently, returns are shown for informational purposes only and there are no benchmarks for these accounts.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Debt Service	77,601,891	1.1	0.7	2.4		
Housing Finance	48,150,932	0.3	0.2	1.5		
Public Facilities Authority	18,437,255	1.0	1.4	2.4		



Addendum

Addendum



Benchmark Definitions

Active Domestic Equity Benchmark:

A weighted composite each of the individual active domestic equity managers' benchmarks. Effective 3/1/2017 the calculation uses the average weight of the manager relative to the total group of active managers during the month. Prior to 3/1/2017 the beginning of the month weight relative to the total group was used.

Benchmark DM:

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

Benchmark EM:

Since 6/1/08 the emerging markets managers' benchmark, "Benchmark EM," is the Standard (large + mid) MSCI Emerging Markets Free (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI Emerging Markets Free (net). From 1/1/01 to 9/30/07 the benchmark was the MSCI Emerging Markets Free (net). Prior to that date, it was the MSCI Emerging Markets Free (gross), including from 10/1/01 to 5/31/02 when it was the Provisional MSCI Emerging Markets Free (net).

Combined Funds Composite Index:

The Composite Index performance is calculated by multiplying the beginning of month Composite weights by the monthly returns of the asset class benchmarks. Effective 1/1/2017, the Combined Funds Composite weight is set as the Strategic Asset Allocation Policy Target with the uninvested portion of Private Markets allocated to Public Equity. Asset class weights for Public Equity and Private Markets are reset at the start of each month. From 7/1/2016-12/31/2016 the composite weights were set to match actual allocation as the portfolio was brought into line with the new Strategic Asset Allocation Policy Target. Prior to 7/1/2016 the uninvested portion of the Private Markets was invested in Fixed Income and the Composite Index was adjusted accordingly. When the Strategic Asset Allocation Policy Target changes, so does the Composite Index.

Domestic Equity Benchmark:

Russell 3000 effective 10/1/2003. From 7/1/1999 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/1999, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.



Addendum



Benchmark Definitions (continued)

Fixed Income Benchmark:

In 2016, the Barclays Agg was rebranded Bloomberg Barclays Agg to reflect an ownership change. Prior to 9/18/2008 this index was called the Lehman Brothers Aggregate Bond Index. From 7/1/84-6/30/94 the asset class benchmark was the Salomon Brothers Broad Investment Grade Index

International Equity Benchmark:

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 (gross). From 7/1/99 to 9/30/03, the weighting of each index fluctuated with market capitalization. From 10/1/01 to 5/31/02 all international benchmarks being reported were the MSCI Provisional indices. From 12/31/96 to 6/30/99 the benchmark was fixed at 87% EAFE Free (net)/13% Emerging Markets Free (gross). On 5/1/96, the portfolio began transitioning from 100% EAFE Free (net) to the 12/31/96 fixed weights. Prior to 5/1/96 it was 100% the EAFE Free (net).

Passive Domestic Equity Benchmark:

A weighted average of the Russell 1000 and Russell 3000 effective 10/1/2016. From 10/1/2003 to 10/1/2016 it was equal to the Russell 3000. From 7/1/2000 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/2000, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Passive Manager Benchmark:

Russell 3000 effective 10/1/2003. From 7/1/2000 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/2000, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Public Equity Benchmark:

67% Russell 3000 and 33% MSCI ACWI ex USA effective 7/1/2017. Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a total Public Equity return. From 6/30/16-6/30/17 the Public Equity benchmark adjusted by 2% each quarter from 75% Russell 3000 and 25% MSCI ACWI ex USA until it reached its current weighting.

Semi-Passive Domestic Equity Benchmark:

Russell 1000 index effective 1/1/2004. Prior to 1/1/2004 it was the Completeness Fund benchmark.



MINNESOTA STATE BOARD OF INVESTMENT Composition of State Investment Portfolios By Type of Investment Market Value June 30, 2017 (in Thousands)

	Cash & ST	Bonds Int	Bonds Ext	Stock Int	Stock Ext	Ext Intl	Alternative	Total
COMBINED RETIREMENT FUNDS								
Teachers Retirement Fund	622,773	0	4,098,977	0	9,142,315	4,583,377	2,773,952	21,221,394
	2.94%		19.32%		43.08%	21.60%	13.07%	100%
Public Employees Retirement Fund	468,437	0	3,744,268	0	8,351,176	4,186,750	2,533,903	19,284,534
	2.43%		19.42%		43.31%	21.71%	13.14%	100%
State Employees Retirement Fund	312,411	0	2,412,541	0	5,380,906	2,697,645	1,632,670	12,436,173
	2.51%		19.39%		43.27%	21.69%	13.13%	100%
Public Employees Police & Fire	188,309	0	1,535,288	0	3,424,290	1,716,722	1,038,994	7,903,603
	2.39%		19.43%		43.33%	21.72%	13.15%	100%
Highway Patrol Retirement Fund	17,761	0	133,670	0	298,137	149,467	90,460	689,495
2 .	2.58%		19.39%		43.24%	21.68%	13.12%	100%
Judges Retirement Fund	5,629	0	35,578	0	79,354	39,783	24,078	184,422
	3.05%		19.29%		43.03%	21.57%	13.06%	100%
Correctional Employees Retirement	27,810	0	197,493	0	440,487	220,832	133,652	1,020,274
. ,	2.73%		19.36%		43.17%	21.64%	13.10%	100%
Public Employees Correctional	14,956	0	116,764	0	260,430	130,563	79,019	601,732
. ,	2.49%		19.41%		43.28%	21.70%	13.13%	100%
PERA Minneapolis Retirement	16,674	0	150,750	0	336,232	168,565	102,020	774,241
1 Elevi Millicapons Retirement	2.15%	Ü	19.47%	O	43.43%	21.77%	13.18%	100%
TOTAL COMBINED FUNDS	1,674,760	0	12,425,329	0	27,713,327	13,893,704	8,408,748	64,115,868
TOTAL COMBINED FORDS	2.61%	V	19.38%	Ü	43.22%	21.66%	13.11%	100%

	Cash & ST	Bonds Int	Bonds Ext	Stock Int	Stock Ext	Ext Intl	Alternative	Total
MINNESOTA SUPPLEMENTAL FUNDS	40.00=		0				•	400.444
Balanced Fund	18,807 4.66%	141,210 35.03%	0	0	243,097 60.30%	0	0	403,114 100%
U.S. Stock Actively Managed Fund	0	0	0	0	229,167 100.00%	0	0	229,167 100%
Money Market Fund	313,870 100.00%	0	0	0	0	0	0	313,870 100%
U.S. Stock Index Fund	0	0	0	0	559,315 100.00%	0	0	559,315 100%
Bond Fund	0	0	154,814 100.00%	0	0	0	0	154,814 100%
Broad International Stock Fund	0	0	0	0	0	179,233 100.00%	0	179,233 100%
Stable Value Fund	0	0	214,091 100.00%	0	0	0	0	214,091 100%
Volunteer Firefighters Account	3,448 4.58%	0	34,052 45.14%	0	26,597 35.26%	11,335 15.03%	0	75,432 100%
TOTAL SUPPLEMENTAL FUNDS	336,125 15.79%	141,210 6.63%	402,957 18.93%	0	1,058,176 49.71%	190,568 8.95%	0	2,129,036 100%
MN DEFERRED COMP PLAN	78,927 1.23%	0	2,278,476 35.45%	0	3,505,055 54.54%	564,607 8.78%	0	6,427,065 100%
TOTAL RETIREMENT FUNDS	2,089,812 2.88%	141,210 0.19%	15,106,762 20.79%	0	32,276,558 44.41%	14,648,879 20.16%	8,408,748 11.57%	72,671,969 100%

	Cash & ST	Bonds Int	Bonds Ext	Stock Int	Stock Ext	Ext Intl	Alternative	Total
ASSIGNED RISK PLAN	185 0.06%	0	256,957 79.53%	0	65,944 20.41%	0	0	323,086 100%
ENVIRONMENTAL FUND	19,870 1.93%	283,705 27.59%	0	724,795 70.48%	0	0	0	1,028,370 100%
PERMANENT SCHOOL FUND	25,140 1.91%	618,514 46.98%	0	672,924 51.11%	0	0	0	1,316,578 100%
CLOSED LANDFILL FUND	0	24,048 29.62%	0	57,146 70.38%	0	0	0	81,194 100%
Metropolitan Landfill Contingency Action Trust	0	2,411 26.84%	0	6,573 73.16%	0	0	0	8,984 100%
MISCELLANEOUS TRUST FUND	553 0.27%	77,810 37.78%	0	127,603 61.95%	0	0	0	205,966 100%
Other Post Employment Funds (OPEB's)	16,509 2.87%	105,931 18.42%	0	452,721 78.71%	0	0	0	575,161 100%
TREASURERS CASH	11,819,222 100.00%	0	0	0	0	0	0	11,819,222 100%
MISCELLANEOUS STATE ACCOUNTS	0	145,221 100.00%	0	0	0	0	0	145,221 100%
MN COLLEGE SAVINGS PLAN	9,509 0.71%	0	635,194 47.59%	0	491,500 36.83%	198,657 14.88%	0	1,334,860 100%
TOTAL CASH AND NON-RETIREMENT	11,890,988 70.62%	1,257,640 7.47%	892,151 5.30%	2,041,762 12.13%	557,444 3.31%	198,657 1.18%	0	16,838,642 100%
GRAND TOTAL	13,980,800 15.62%	1,398,850 1.56%	15,998,913 17.87%	2,041,762 2.28%	32,834,002 36.68%	14,847,536 16.59%	8,408,748 9.39%	89,510,611 100%