TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES
AND
RISK MANAGEMENT COMMITTEE

(Committee Chair and Members are Subject to Change at the September Board Meeting - Mr. McDonald, Committee Chair; Ms. Charleston; Mr. Colonnetta; Mr. Kelly; & Mr. Moss, Committee Members)

AGENDA

September 13, 2012 – 11:30 a.m.
TRS East Building, 5th Floor, Boardroom

1. Consider the approval of the proposed minutes of the June 7, 2012 committee meeting – Committee Chair.

2. Review the Investment Risk Report – Jase Auby.

NOTE: The Board of Trustees (Board) of the Teacher Retirement System of Texas will not consider or act upon any item before the Risk Management Committee (Committee) at this meeting of the Committee. This meeting is not a regular meeting of the Board. However, because a quorum of the Board may attend the Committee meeting, the meeting of the Committee is also being posted as a meeting of the Board out of an abundance of caution.

Tab 1

Minutes of the Risk Management Committee
June 7, 2012

The Risk Management Committee of the Board of Trustees of the Teacher Retirement System of Texas met on June 7, 2012 in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following committee members were present:

Eric McDonald, Chair
Karen Charleston
Joe Colonnetta
David Kelly
Chris Moss

A quorum of the committee was present. Others present:

Todd Barth, TRS Trustee
Anita Palmer, TRS Trustee
Nanette Sissney, TRS Trustee
Brian Guthrie, TRS
Ken Welch, TRS
Britt Harris, TRS
Conni Brennan, TRS
Dr. Keith Brown, Investment Advisor
Steve Huff, Reinhart Boerner Van Deuren
Brady O'Connell, Hewitt EnnisKnupp
Steve Voss, Hewitt EnnisKnupp
Jerry Albright, TRS
Jase Auby, TRS
Chris Cutler, TRS
Craig teDuits, State Street
Mark Shafer, State Street
Jeff Lambert, State Street
Howard Goldman, TRS
Amy Barrett, TRS
Don Green, TRS
Jay LeBlanc, TRS
Minerva Evans, TRS
Michelle Pagán, TRS
Sylvia Bell, TRS
Ashley Baum, TRS
Hugh Ohn, TRS
Mary Chang, TRS
Denise Lopez, TRS
Lynn Lau, TRS
Dan Herron, TRS
Michelle Bertram, TRS
Ted Melina Raab, Texas AFT
Tathata Lohachitkul, Albourne

Mr. McDonald called the meeting to order at 1:50 p.m.

1. Consider the approval of the proposed minutes of the April 19, 2012 committee meeting

On a motion by Mr. Moss, seconded by Mr. Kelly, the committee approved the minutes of the April 19, 2012 meeting as presented.

2. Receive a report on the Enterprise Risk Management Program, including a discussion of risk management activities relating to the TEAM Program, workforce continuity, confidential information, and procurement and contract management – Jay LeBlanc and Michelle Pagán.

Mr. LeBlanc provided the first report on the Enterprise Risk Management (ERM) Program. He recapped that the ERM program would from now on rotate with investment risk

management to present risk information to the Risk Management Committee. He noted that past investment risk management presentations had been primarily on quantitative risk information whereas the ERM team would present primarily qualitative risk information.

Mr. LeBlanc provided an overview of the enterprise risk inventory for 2012 and highlighted some of management's primary areas of concern. He pointed out that management was interested in knowing whether the risks were being properly mitigated. He explained that to gather risk and mitigation information, ERM staff may conduct a facilitated session, which includes brainstorming and dialogue, and discussions about next steps to further mitigate or accept the risk.

Ms. Pagán highlighted four key risk categories from the inventory: TEAM, workforce continuity, confidential information, and procurement and contract management. She provided a high-level overview of each category's goal, overall risk and risk drivers, as well as the mitigations in place. She also noted the recent activities and action items for each risk category. She referred the committee to the detailed risk reports included in the appendix for further reference.

Responding to a question from Mr. Colonnetta as to whether competing priorities and heavy workloads imposed on staff could increase the risks of fraud and regulatory noncompliance, Mr. LeBlanc stated that it was possible. . He further described how a control such as segregation of job duties could mitigate those risks. Mr. Welch added that major contracts for TEAM and health care pose a higher risk than fraud because there could be slippage on the schedule impacting the system and its members. He stressed the importance of ensuring that the contract terms and level of service provided by the vendor or service provider meet the agency's desired expectations. Mr. LeBlanc confirmed for Mr. McDonald that the enterprise risk inventory and spotlight on key risks provides system-wide identification of potential issues.

3. Receive a report on Disaster Recovery and Business Continuity Initiatives – Chris Cutler, Minerva Evans, and Jay LeBlanc.

Mr. LeBlanc stated that a tabletop exercise was conducted in February 2012, which is intended to raise awareness of emergency planning and disaster recovery. He stated that the exercise involves discussing different scenarios to determine gaps in responding to the scenario. He explained that if a disaster occurs, the incident management team (IMT) is assembled and provide a central command post to respond to the incident and to manage recovery efforts. Mr. LeBlanc stated that from the tabletop exercise, along with some good lessons learned, the IMT expressed the need for a shelter in place drill, which was conducted shortly thereafter. He commented that staff had identified some gaps and learned some good lessons through the drill. Mr. LeBlanc noted that should a disaster occur, the disaster recovery vendor and TRS disaster recovery teams will be contacted.

Ms. Evans described the disaster recovery and business continuity teams. She stated that the disaster recovery team comprises the mainframe, local area network, and telecommunication staff. She stated that the business continuity teams represent TRS' business units, each with their own business continuity plan and roles and responsibilities during the recovery process. She explained that if a disaster is declared, the teams will be deployed to the IBM Recovery Center in

Dallas to restore critical business functions. She noted that the disaster recovery exercise is conducted annually to ensure the plans stay current. Ms. Evans stated that during the annual exercise, disaster recovery teams test restoration of mission critical systems and business continuity teams test their restored systems for functionality.

Mr. Cutler reviewed the last disaster recovery exercise completed in April 2012, and highlighted the new co-location data replication strategy, which may provide new options and methods for performing future recovery exercises. He noted that two separate teams were assembled for this year's test, one traveled to the IBM recovery location in Dallas to restore the mainframe and imaging environments, and the other remained in Austin at the 816 Congress location to restore distributed systems such as email, network drives, SharePoint, and databases. He stated that this year's exercise at 816 Congress also focused on testing key investment applications for accessibility, security, and connection speed. Mr. Cutler reported that the exercise was successful. He reported an 83 percent objective success rate and that 110 servers and services were restored, including the mainframe, imaging system, core data and network servers, and investment systems. He also noted that a new staff member was able to successfully restore the mainframe environment using documentation prepared by staff from previous exercises, which is important in case a true event occurs and experienced staff are not available.

4. Receive report from the State Office of Risk Management on TRS' Risk Management Program – Jay LeBlanc

Mr. LeBlanc presented the State Office of Risk Management (SORM) report on TRS' Risk Management Program. He noted that every state agency has their risk management program reviewed every three years. Mr. LeBlanc commented that it was a good report and that TRS is reflected very positively in regard to health and safety and maintenance of the facility. He highlighted one observation related to a vent hood in the cafeteria area, but that the issue is in the process of being resolved. He referred the committee members to the report for details.

5. Receive a review of trust liquidity stress testing – Jase Auby.

Mr. Auby reviewed the daily and monthly liquidity stress testing process. He stated that the testing results indicated that the portfolio is highly liquid in both normal and stressed scenarios. He stated the key activities that require liquidity in plan operation include disbursing benefits to plan participants, trade settlement, rebalancing of the investment portfolio, derivatives transactions, funding new investments in the Real Assets and Private Equity portfolios, and supporting the securities lending program. Responding to a question from Dr. Brown about the risk of receiving less than the market value of the assets being converted into cash, Mr. Auby stated that the stress testing design also addresses that risk scenario. He responded to Mr. Colonnetta that the results of stress testing indicated no default on any capital call commitments would be likely to occur.

Mr. Auby stated that the sources of liquidity are the trust assets, which totaled $110.3 billion as of March 31, 2012, and securities lending collateral. He presented the asset classes in the order of liquidity. He said that the stressed activities that require uses of liquidity include market-driven derivatives movements, lower-than-expected securities lending usage and accelerated capital calls. He confirmed for Mr. Colonnetta that State Street Bank and Trust

Company, which holds collateral for TRS as a custodian, assumes the counterparty default risk in securities lending. Mr. Auby explained that under the securities lending arrangement State Street would indemnify TRS if a counterparty did not perform its contract by returning borrowed securities or delivering collateral. Responding to a question from Dr. Brown as to whether a strategy was in place to set priorities for the selling assets based on their liquidity levels, Mr. Auby stated that the overriding strategy would be to rebalance by liquidating the most desirable assets, which did not lose value, to buy the less desirable assets. He stated that in a stressed scenario, staff would liquidate the more liquid and safer assets to rebalance. Mr. Auby explained how stress testing was conducted to ensure increasing the fund's liquidity to meet the trust's potential increased obligations. In addition to the normal cash flows projected for each month, he said, staff applied three stresses to monitor and ensure sufficient liquidity for the following month. The three stresses are (1) stressed derivative positions; (2) reduced usage of the securities lending program; and (3) increased capital calls and reduced return of capital within private markets. He said that current testing applied general stress comprising specific market stresses.

Presenting the results of the stress test as of March 31, 2012, Mr. Auby reported that the liquid assets resulted in a distressed value of $40.6 billion compared with its market value of $74 billion and the securities lending program resulted in a distressed value of $18.4 billion compared with its market value of $22.2 billion. He stated that the total sources of liquidity were distressed down from $96 billion to $56 billion. He noted that hedge funds, private equity and real assets were excluded because they were considered illiquid. He stated that staff projected a normal use of liquidity of $100 million in cash over a normal month and $5.1 billion in a distressed scenario. Mr. Auby concluded by presenting the combined liquidity ratio using the sources and uses of liquidity, which shows that the trust has 11.5 times more liquidity than required. He reported that the trust had $53.8 billion of net liquidity, or 12.2 times the annual benefit payments of $4.4 billion. Asked by Mr. McDonald to identify the biggest liquidity risks, Mr. Auby ranked them as follows: (1) securities lending, (2) derivatives, and (3) private markets. Mr. Kelly, Mr. McDonald, Mr. Harris, Mr. Auby, and Dr. Brown further discussed how liquidity came into play during the financial turmoil in 2008 and how the fund benefited from its liquidity and took advantage of it during that time.

The meeting was adjourned at 2:50 p.m.

Tab 2

Investment Risk Report

Jase Auby
Chief Risk Officer
September 2012

Contents

1. Summary
2. Asset Allocation
3. Value at Risk (VaR)
4. Tracking Error
5. Leverage
6. Counterparty Risks
7. Derivatives
8. Liquidity
9. Conclusions
10. Appendix

TRS

1. Summary

Policy Requirements	Description		In compliance?
1. Asset Allocation	In compliance with policy		✓
2. Value at Risk	8.8% (59% of the VaR limit range)		✓
3. Tracking Error	In compliance with policy		✓
	Tracking Error	As % of Max	
Total Public Fund	128	43%	✓
4. Leverage	In compliance with policy		✓
Total Trust			
Net Leverage	98.2% (Within historical norm)		✓
Gross Leverage	107.8% (Within historical norm)		✓
Securities Lending			
Net Leverage	100.5% (Within historical norm)		✓
Gross Leverage	120.2% (Within historical norm)		✓
Hedge Fund			
Net Leverage	58.8% (Within historical norm)		✓
Gross Leverage	316.6% (Within historical norm)		✓
Strategic Partners			
Net Leverage	107.0% (Within historical norm)		✓
Gross Leverage	151.9% (Within historical norm)		✓
Real Assets			
Loan to Value	43.7% (Within historical norm)		✓
5. Counterparty	In compliance with policy		✓
Exposure	In compliance with policy		✓
Rating	In compliance with policy		✓
6. Derivative Exposures	In compliance with policy		✓
7. Liquidity	In compliance with policy		✓

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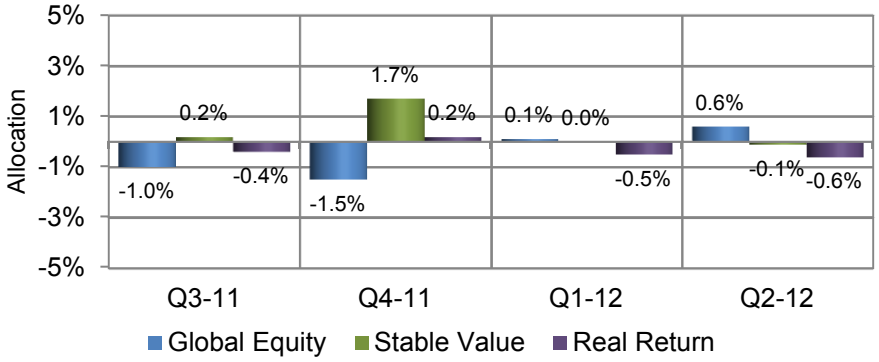
2. Asset Allocation

Market Value % as of June 30, 2012

Group Active Allocation

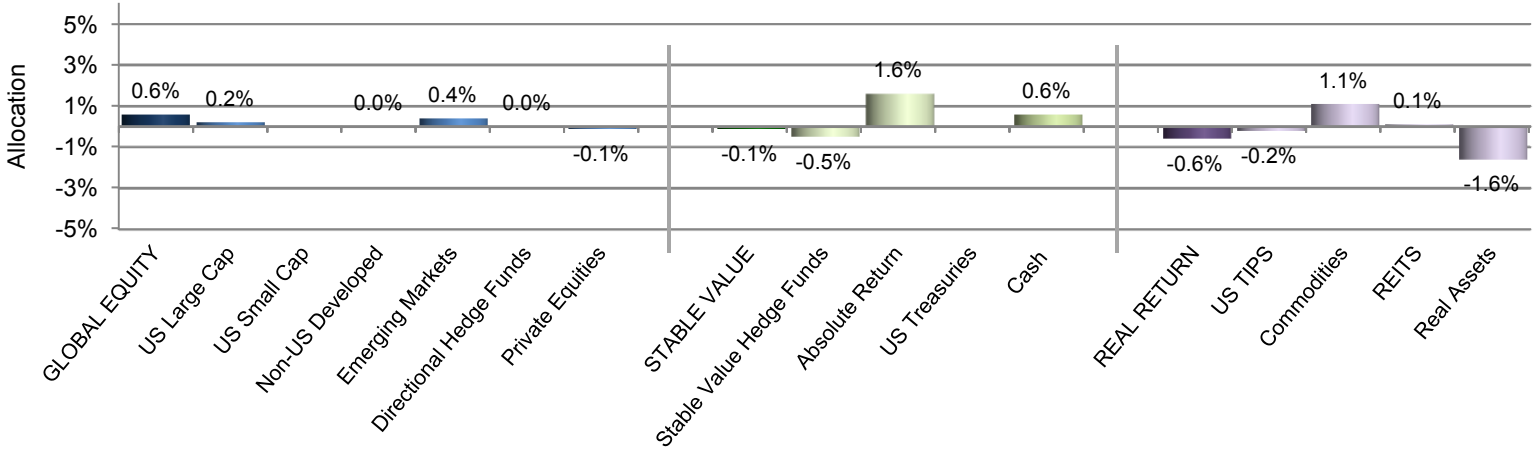


Top Three Overweights	
Absolute Return	1.6%
Commodities	1.1%
Cash	0.6%

Top Three Underweights	
US Treasuries	-1.8%
Real Assets	-1.6%
Stable Value Hedge Funds	-0.5%

Asset Group/Class Active Allocation

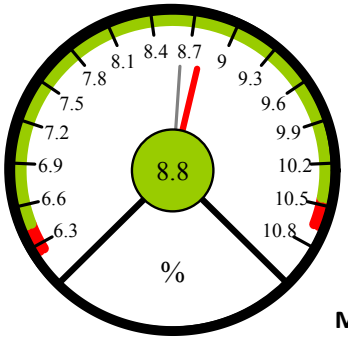
(In Compliance with Policy)



3. Value at Risk Analysis (VaR)

As of June 30, 2012

VaR as a Percent of Market Value

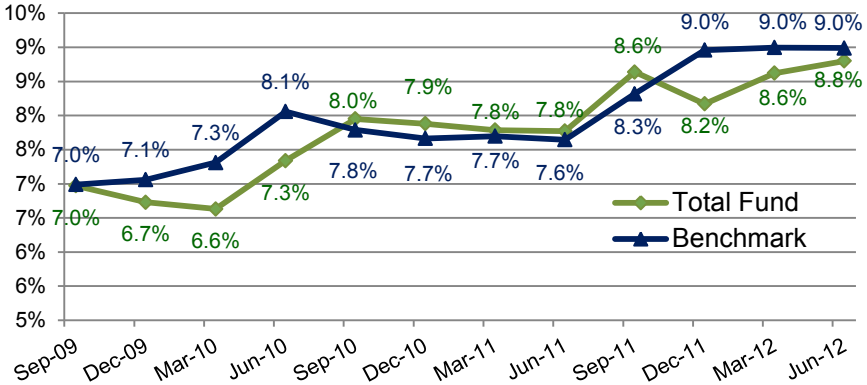


Min = 6.5% **Max = 10.4%**

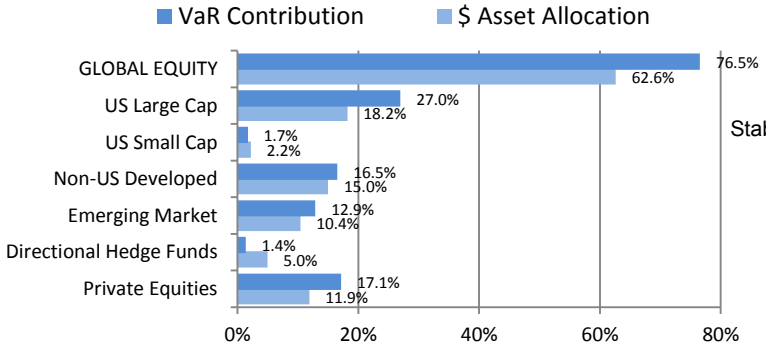
VAR is expressed as a percentage of the Fund's Market Value. Maximum and Minimum VaR values are determined by changing asset allocation of the Benchmark within the maximum and minimum ranges as outlined by the Investment Policy. The grey line represents VaR as of the prior quarter.

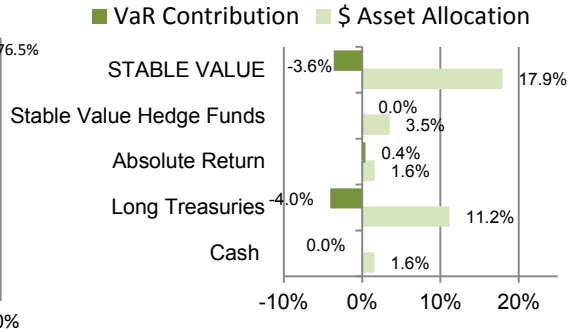
Three-Year VaR History

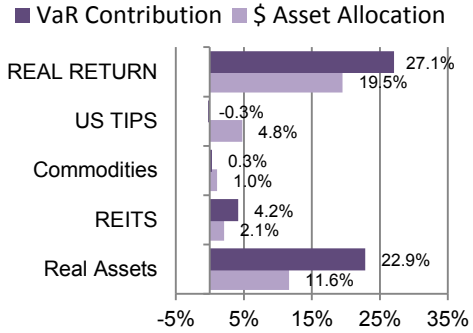
(as Percent of Market Value)



VaR vs. $ Allocation - Detail

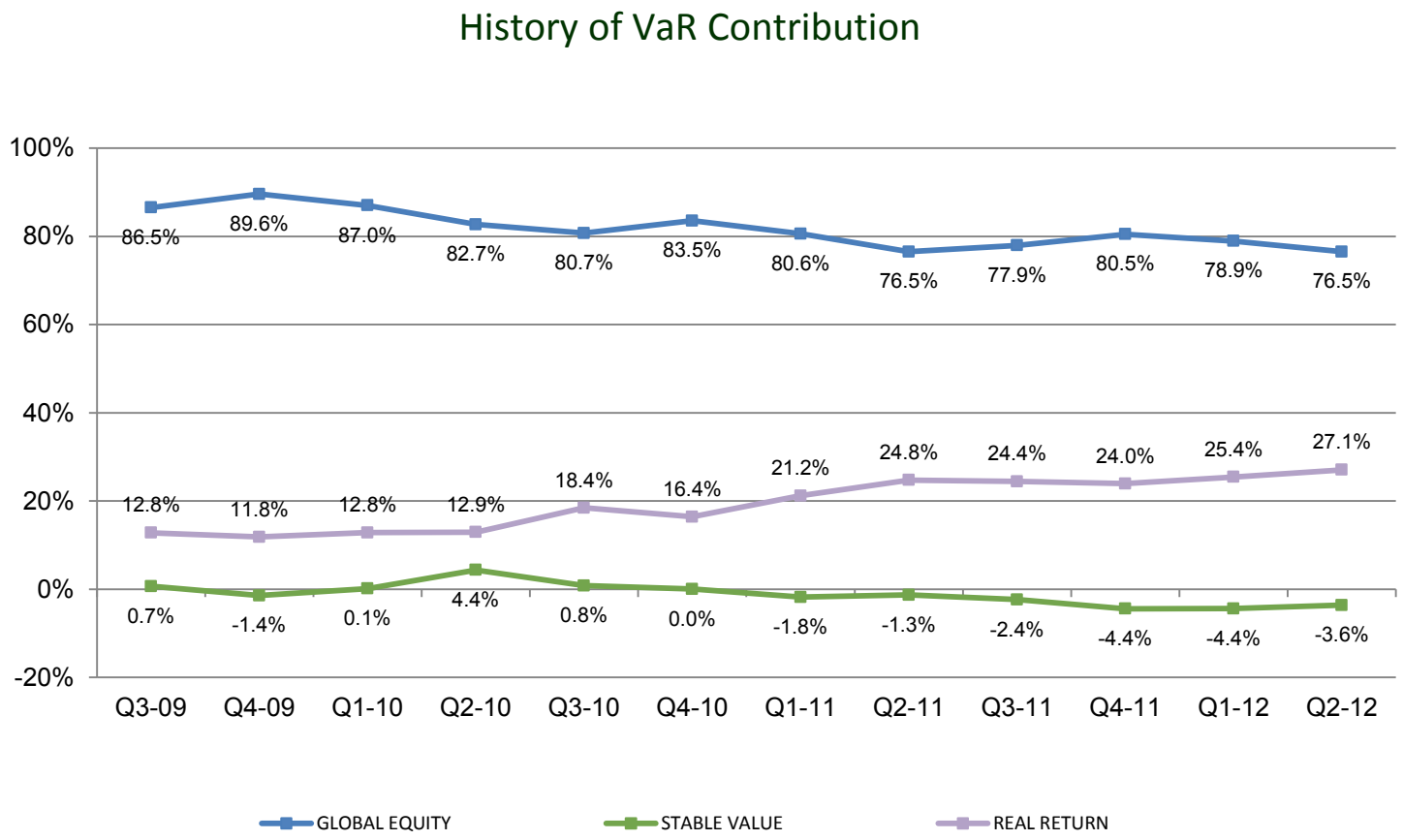






Source: State Street Bank

3. VaR Contribution by Asset Groups

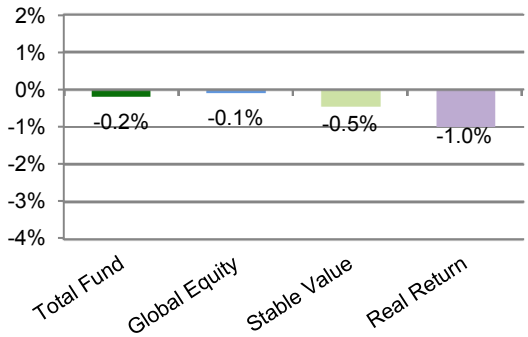


Source: State Street Bank

3. Relative VaR

One month, 95% Confidence

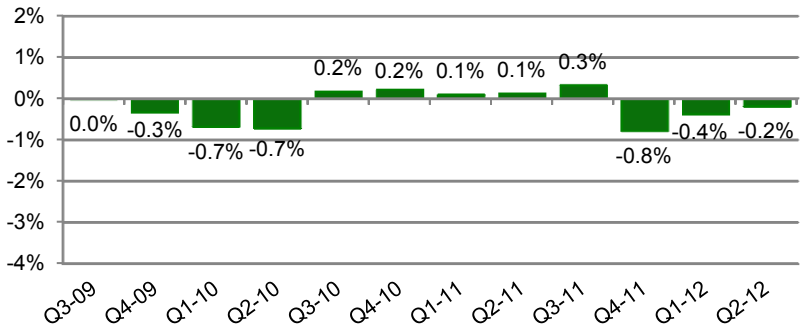
Fund & Group Level



Fund More Risky than the Benchmark

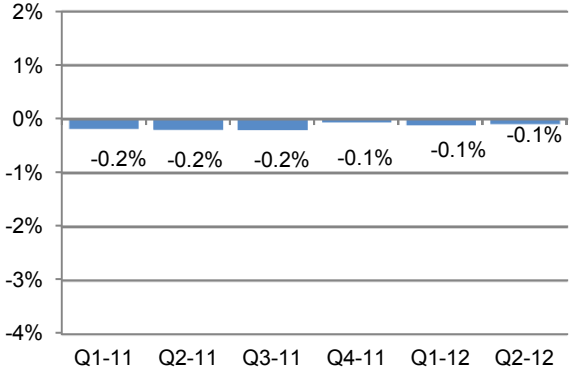
Fund Less Risky than the Benchmark

Fund Relative VaR History

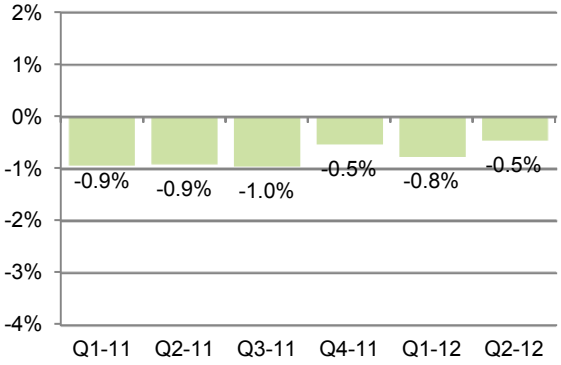


Relative risk measures the difference between the Fund's and the Benchmark's VaR. For example, the Stable Value was 0.5% less risky than the benchmark.

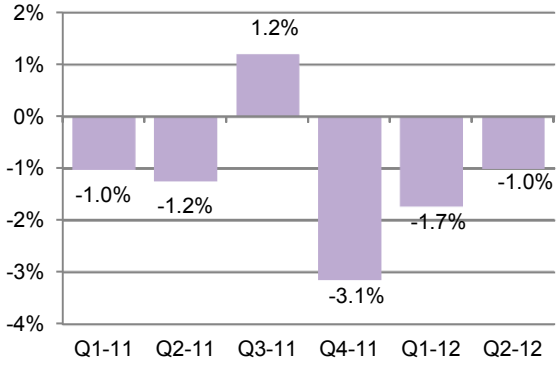
Global Equity



Stable Value



Real Return

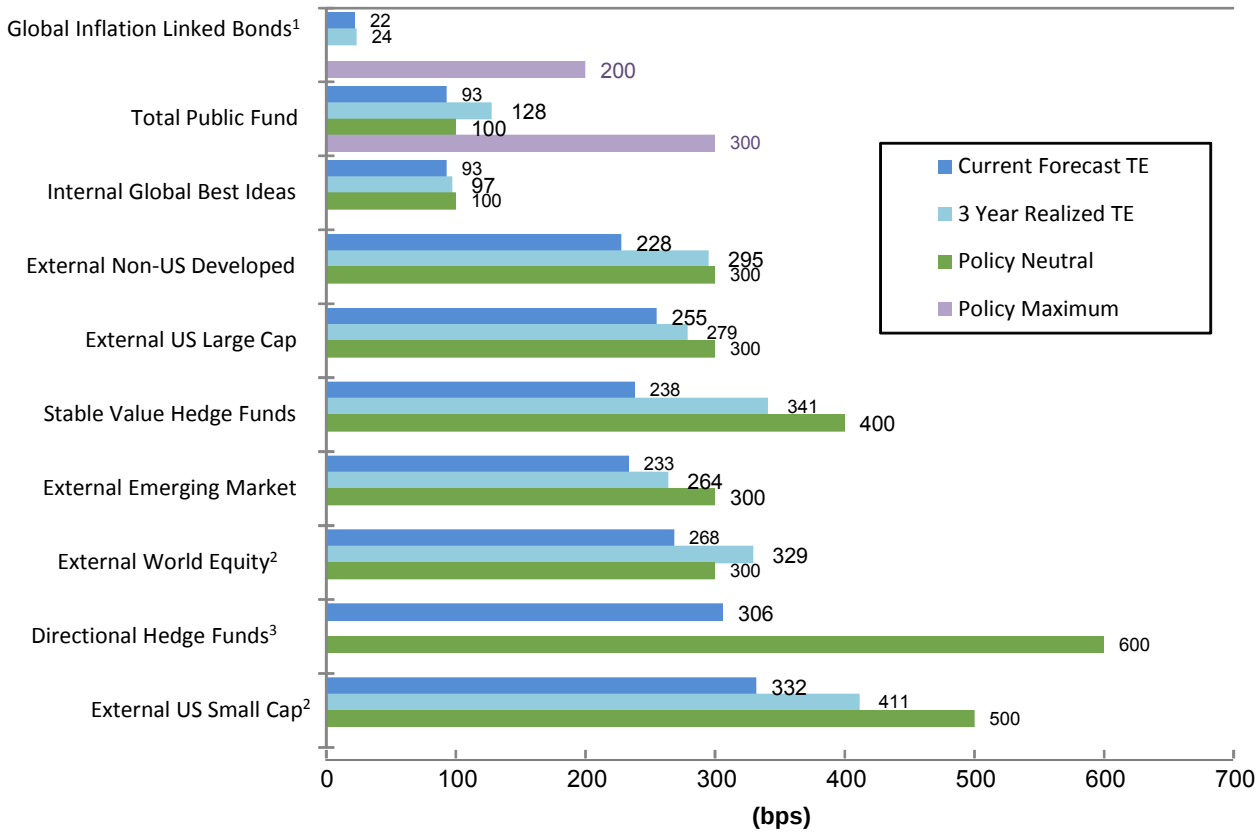


Source: State Street Bank

4. Policy Tracking Error

Annualized as of June 30, 2012

Actual Tracking Error Level vs. Policy Requirement



[1]No policy neutral tracking error set for Global Inflation Linked
[2]Realized tracking error calculated with data of less than 3 years
[3]Realized tracking error cannot be calculated because of the short history of this portfolio

Source: State Street Bank

4. Tracking Error

Annualized as of June 30, 2012

Policy Asset Class Tracking Error

Policy Assets	Market Value ($ in Millions)	Current Forecast (bps)	3 Year Realized (bps)
US Large Cap	$ 22.4	146	211
US Small Cap	1.3	526	249
Non-US Developed	15.7	109	179
Emerging Market	11.5	188	218
Directional Hedge Funds	5.4	306	[1]
US Treasuries	12.2	14	29
Absolute Return	1.3	1,191	774
Stable Value Hedge Funds	3.9	238	341
Cash	1.2	17	58
Global Inflation Linked Bonds	5.2	22	24
Commodities	1.1	1,982	1123
REITS	2.3	38	68
Total Public Assets	**83.3**	**93**	**128**
Private Equity	12.9	[2]	476 [3]
Real Assets	12.7	[2]	351 [3]
Total Private Assets	**25.6**	[2]	**404** [3]
Total TRS Policy Assets	**$ 108.9**	[2]	**222**

Policy target is 100 bps and policy maximum is 300 bps

[1]Realized tracking error cannot be calculated due to the short history of this portfolio
[2]Not modeled due to lack of transparency for the benchmarks
[3]Tracking error assuming current benchmark for entire period

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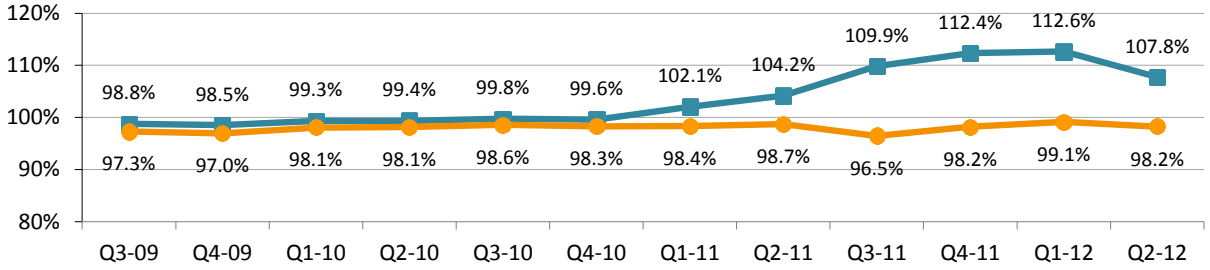
Source: State Street Bank

5. Leverage

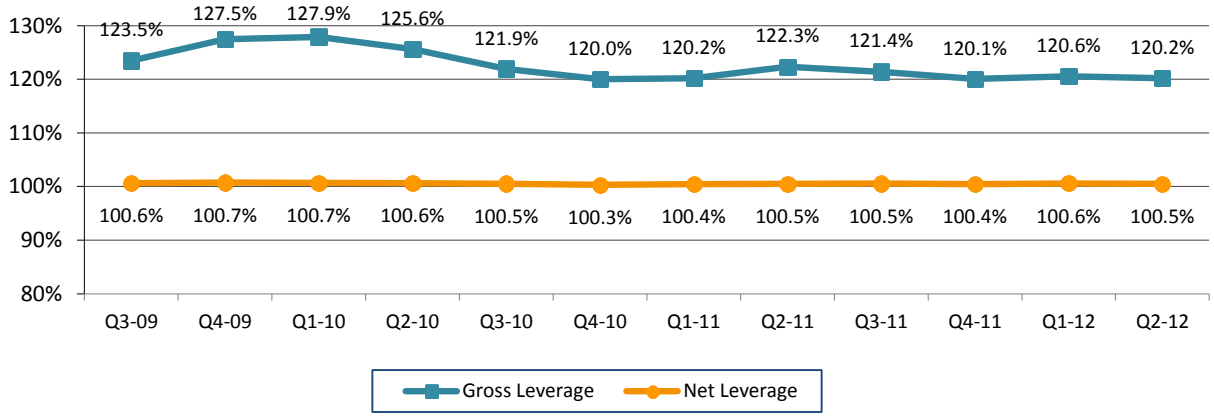
As of June 30, 2012

Trust-Level Leverage

(Excludes Securities Lending)



Securities Lending Leverage

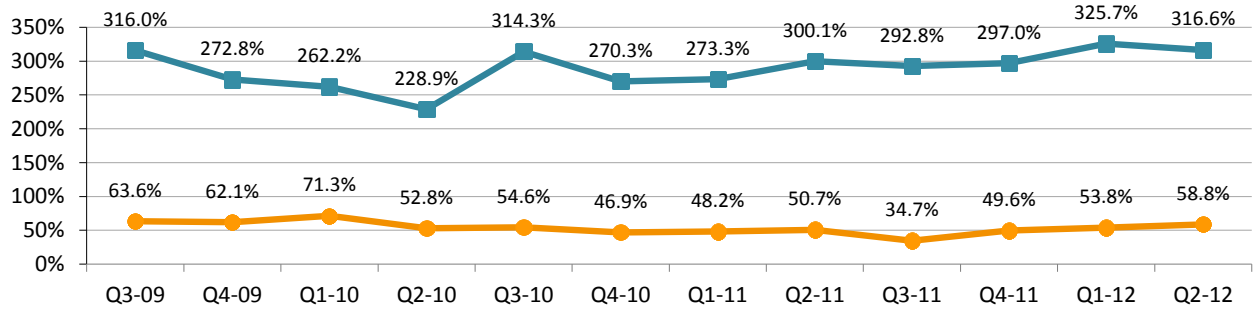


Source: State Street Bank

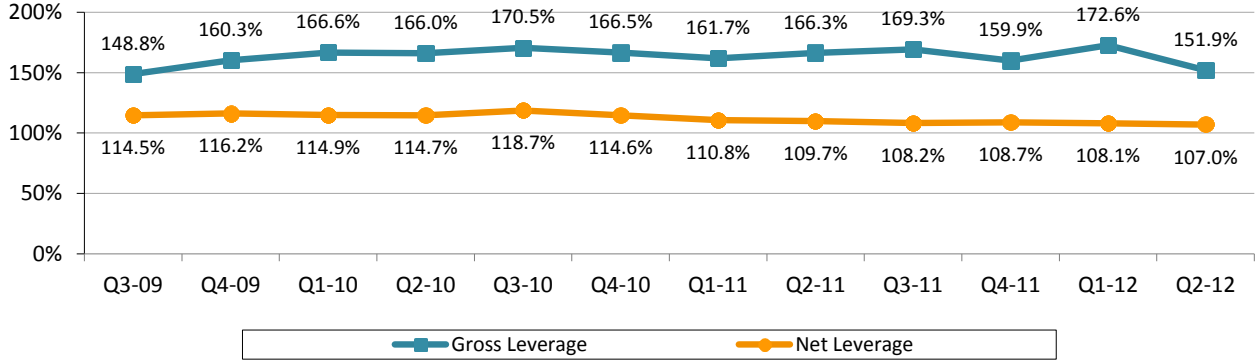
5. Leverage

As of June 30, 2012

Hedge Fund Leverage



Strategic Partners Leverage

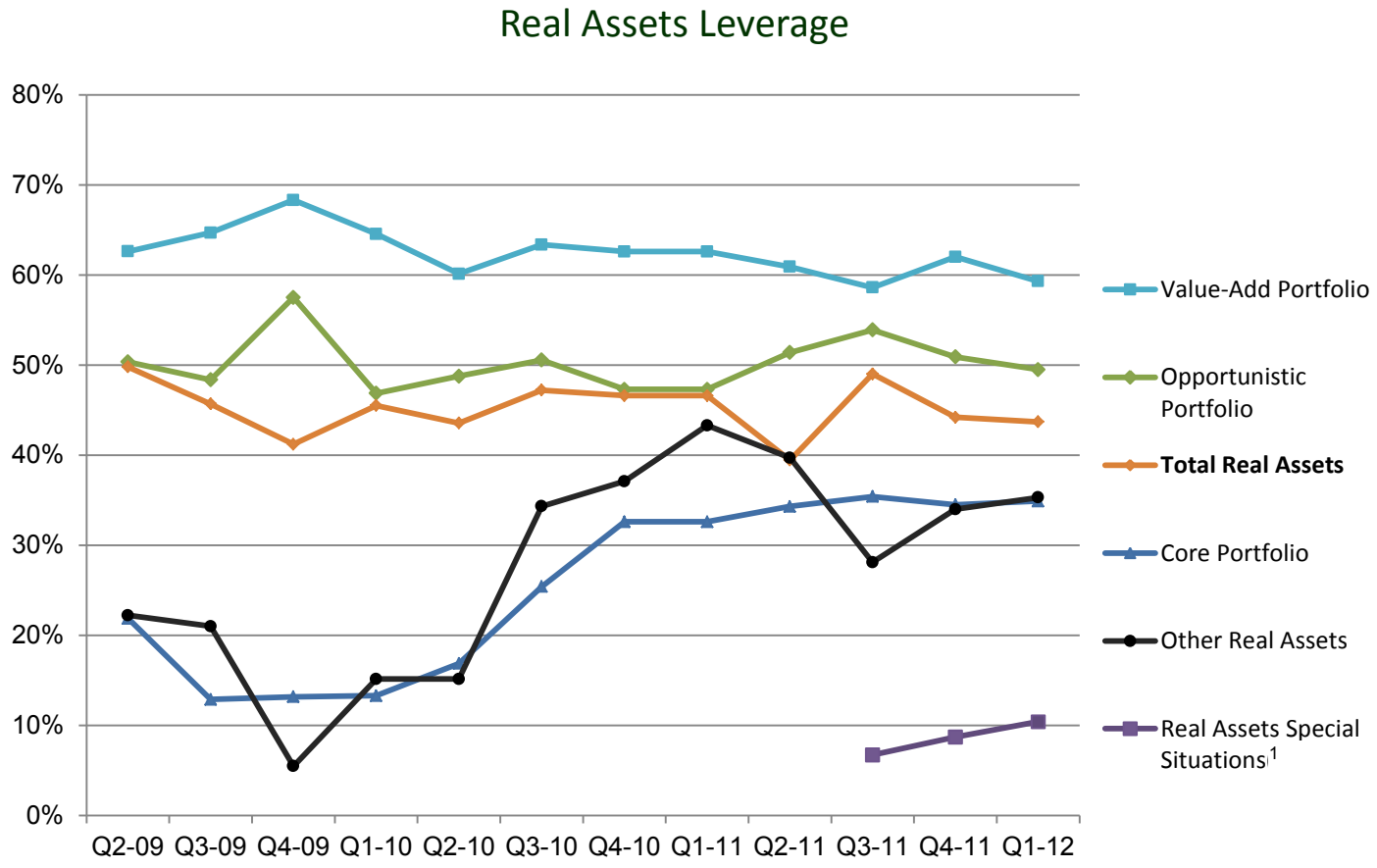


Note: Gross Leverage is defined as the sum of long exposure and short exposure and Net Leverage is defined as the difference between long exposure and short exposure

Source: State Street Bank

5. Leverage

As of March 30, 2012



[1]Real Assets Special Situations is a new category started in 3Q, 2011

Source: The Townsend Group, as of September 30, 2011

6. Counterparty Risk

As of June 30, 2012

Counterparty Exposure[1]

Counterparty	Swaps Number of Contracts	Currency Forwards Number of Contracts	Non-Currency Forwards Number of Contracts	OTC Options Number of Contracts	Total Counterparty Exposure less Collateral Held ($ in millions)	In Compliance with Policy
Barclays Bank PLC	1	24			7.3	Yes
Citibank N.A.	1	26			0.0	Yes
Deutsche Bank AG	8	51			4.8	Yes
Goldman Sachs International	18	56	4		0.0	Yes
JP Morgan Chase Bank N.A.	15	52			0.0	Yes
Morgan Stanley	4	21			0.1	Yes
Societe Generale	0	0			0.0	Yes
UBS AG	8	72		1	2.5	Yes
Total	**55**	**302**	**4**	**1**	**14.7**	

Counterparty Ratings[2] and Capital Assessment

Counterparty	S&P Rating	Moody's Rating	Fitch Rating	Tier 1 Capital	Common Capital
Barclays Bank PLC	A+ STABLE	A2	A	12.9	12.2
Citibank N.A.	A NEG	A3	A	13.5	15.0
Deutsche Bank AG	A+ NEG	A2	A+	12.9	9.9
Goldman Sachs International	A- NEG	A3	A	13.8	13.5
JP Morgan Chase Bank N.A.	A+ NEG	Aa3	A+	12.3	10.2
Morgan Stanley	A- NEG	Baa1	A	16.6	15.7
Societe Generale	A STABLE	A2	A+	10.7	9.5
UBS AG	A NEG	A2	A	15.9	18.2

[1] Counterparty exposures include TRS internally managed portfolios and externally managed separate accounts. Counterparty exposure is defined as positive market value of all OTC derivative positions less collateral posted. Policy limits this value to $500 million per counterparty.

[2] Rating of credit support provider. Policy requirement is A- or A3 by at least one of Fitch, Moody's or S&P.

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Source: State Street Bank
Source: Rating Agencies and Bloomberg

7. Derivative Exposure

As of June 30, 2012

Swap Exposure[1]

Swap by Asset Class	Number of Contracts	Gross Exposure ($ in millions)	Gross Exposure as % of Asset Class	Gross Exposure as % of Total Trust
Commodities	12	558.7	49.3%	0.5%
Non-US Developed	7	281.7	2.5%	0.3%
Emerging Markets	2	217.7	4.0%	0.2%
Credit	1	175.0	1.8%	0.2%
US Large Cap Growth	2	144.0	1.3%	0.1%
US Large Cap Value	3	113.8	1.0%	0.1%
US Treasuries	4	106.1	0.7%	0.1%
World Equity	18	104.1	3.0%	0.1%
Directional Hedge Funds	2	67.5	0.4%	0.1%
US Small Cap	1	30.0	0.2%	0.0%
OAR Non-Credit	3	10.3	0.8%	0.0%
Swap Total	**55**	**$1,808.9**		**1.7%**

Futures Exposure[1,2]

Futures by Asset Class	Number of Contracts	Gross Exposure ($ in millions)	Gross Exposure as % of Asset Class	Gross Exposure as % of Total Trust
Credit	12	2,300.5	21.2%	2.1%
Directional Hedge Funds	9	1,918.9	35.5%	1.8%
Emerging Markets	16	1,620.9	13.3%	1.5%
Global Developed Debt	4	1,146.3	91.3%	1.1%
Global TIPS	11	868.3	7.5%	0.8%
US Large Cap Growth	54	824.1	5.3%	0.8%
US Large Cap Value	1	400.1	30.1%	0.4%
Non-US Developed	11	274.4	20.7%	0.3%
OAR Non-Credit	10	246.6	2.1%	0.2%
US Small Cap	18	125.6	9.5%	0.1%
US Treasuries	12	49.1	1.4%	0.0%
World Equity	12	37.6	0.7%	0.0%
Futures Total	**170**	**$9,812.4**		9.0%

[1] Exposures include TRS internally managed portfolios and externally managed separate accounts.

[2] Percent of Absolute Return

Source: Investment Operations

TRS

7. Derivative Exposure

As of June 30, 2012

Forwards and Options Exposure[1]

Forwards and Options Exposure	Number of Contracts	Gross Exposure ($ in millions)	Gross Exposure as % of Total Trust
Emerging Markets	2	42.2	0.0%
Non-US Developed	1	23.7	0.0%
OAR Non-Credit	1	5.9	0.0%
Non-Currency Forwards Total	**4**	**71.9**	**0.1%**
Non-US Developed	1	30.7	0.0%
Options Total	**1**	**30.7**	**0.0%**
Euro Currency	68	840.3	0.8%
Japanese Yen	51	800.8	0.7%
Pound Sterling	38	796.7	0.7%
Canadian Dollar	23	566.0	0.5%
Hong Kong Dollar	9	305.2	0.3%
South African Rand	4	270.6	0.2%
Australian Dollar	18	170.4	0.2%
Swiss Franc	22	151.2	0.1%
Norwegian Krone	12	97.8	0.1%
Swedish Krona	15	90.5	0.1%
South Korean Won	5	68.9	0.1%
Other	37	133.1	0.1%
Forwards Total	**302**	**$4,291.4**	**3.9%**

[1]Exposures include TRS internally managed portfolios and externally managed separate accounts

Source: Investment Operations

TRS

8. Liquidity

As of June 30, 2012

Sources of Liquidity $ in billions	Market Value	Stressed Value
Liquid Assets Not on Loan (Cash, US Treasuries, TIPS, Equity, Commodities)	$54.4	$30.4
Securities Lending Collateral (Cash, Fixed Income)	21.3	17.9
Total Sources of Liquidity	**$75.7**	**$48.3**
Note: Excluded Illiquid Assets (Private Equity, Real Assets, Hedge Funds, Other)	*36.4*	*NA*
Note: Excluded Liquid Assets remaining on loan	*18.2*	*NA*

Uses of Liquidity $ in billions	Market Value	Stressed Value
Normal Uses of Liquidity	$1.1	$1.1
Stressed Securities Lending		-3.3
Stressed Derivatives		-0.5
Stressed Private Markets		-2.7
Total Uses of Liquidity	**$1.1**	**-$5.4**

Liquidity Ratio	
Sources of Liquidity	$48.3
Uses of Liquidity	-$5.4
Ratio (Sources/Uses)	**8.9**
Alert Threshold	4.0
Fail Threshold	3.0
Test Result	**Pass**
Note: Net Liquidity (Sources less Uses)	*$42.9*
Note: 12 Months Benefit Payments (at 4% Annual)	*$4.4*

Assumptions: In the stress case, Liquid Assets are market valued at 56% and Securities Lending collateral is valued at 84% which is meant to approximate 1.5x the worst monthly performance of these assets in the past ten years plus an additional liquidity stress. Within Securities Lending, 50% of equity on loan and 0% of US Treasuries on loan are assumed to be returned to TRS. Derivatives are assumed to experience the same market stress applied to the Liquid Assets. Private Markets investments are assumed to not return any capital and experience capital calls at 6x the normal amount expected for a month.

TRS

Source: Investment Operations, State Street

9. Conclusions

- TRS investment exposures are in compliance with the Investment Policy Statement
  - At the end of the second quarter, TRS was overweight Global Equity while underweight Stable Value and Real Return
  - At the asset class level, TRS was overweight Absolute Return, Commodities, and Cash while underweight Stable Value Hedge Funds, US Treasuries, and Real Assets
- From Q1-12 to Q2-12 the Trust's overall Value at Risk (VaR) increased by 0.2% due to a shift from +0.1% overweight Global Equity to +0.6% overweight
- The Trust level VaR in Q2-12 is lower than that of the Trust benchmark (8.8% vs. 9.0%)

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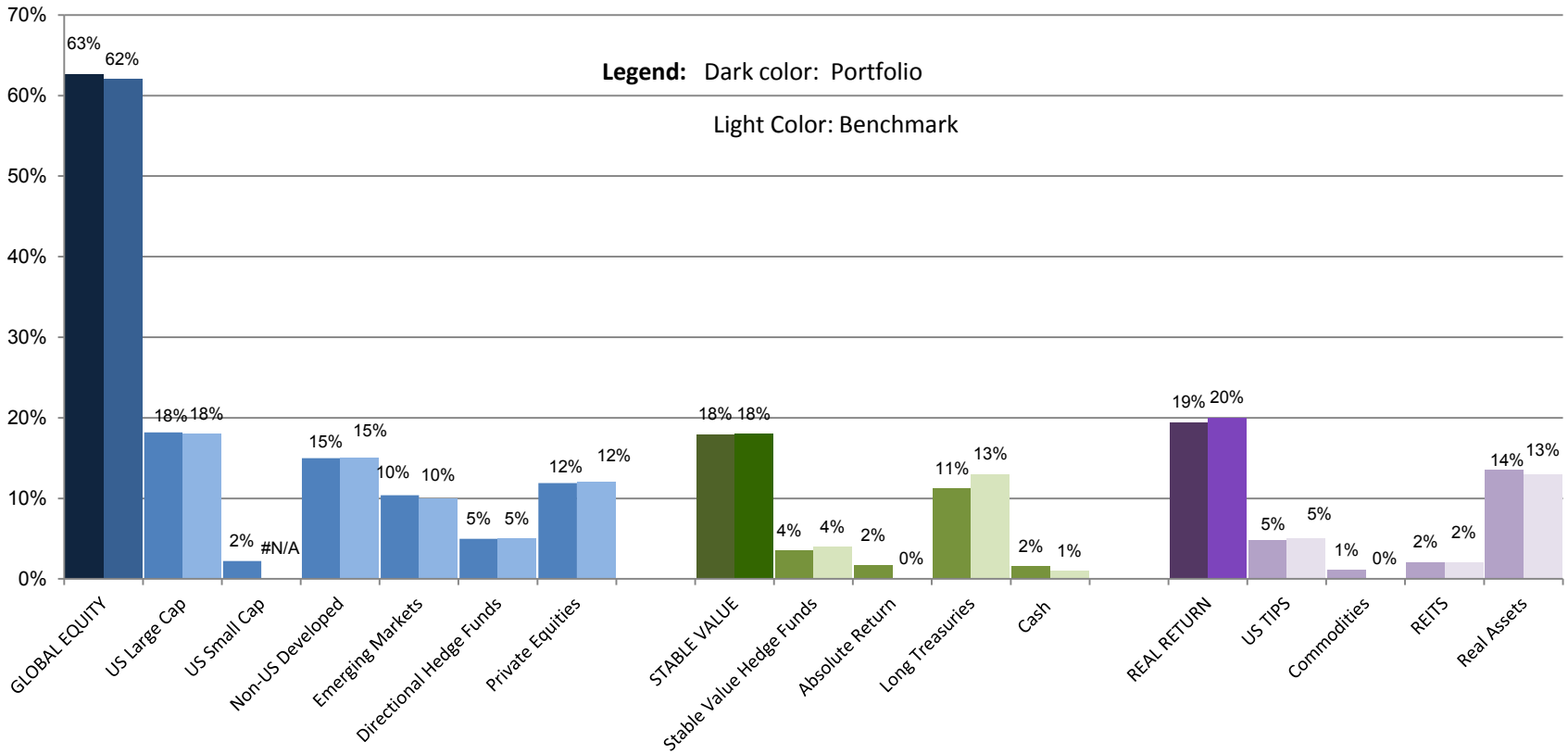
APPENDIX

Portfolio Weights vs. Long Term Policy Weights

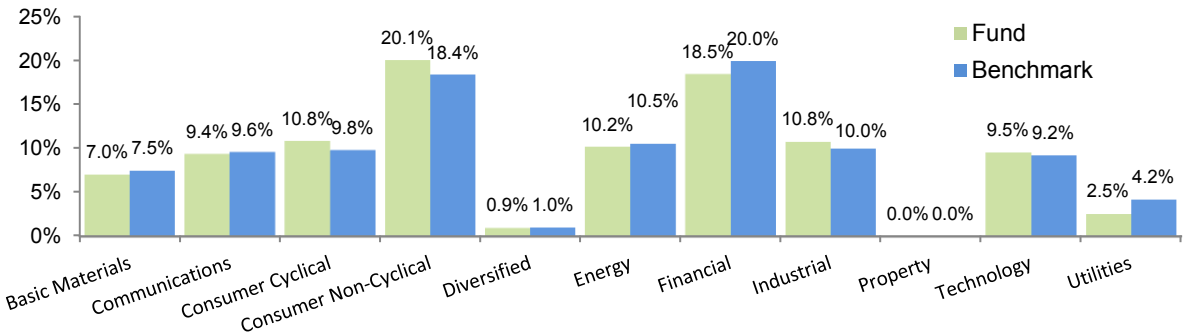
As of June 30, 2012



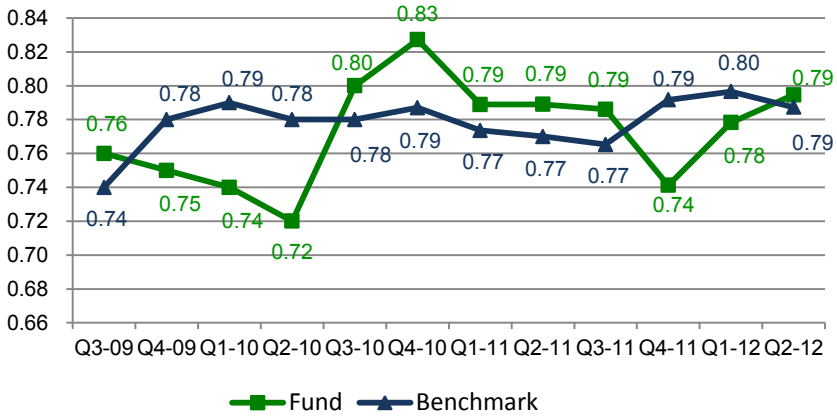
Source: Investment Operations

Sector Allocation: Beta & Scenario Analysis

Equity Sector Allocation

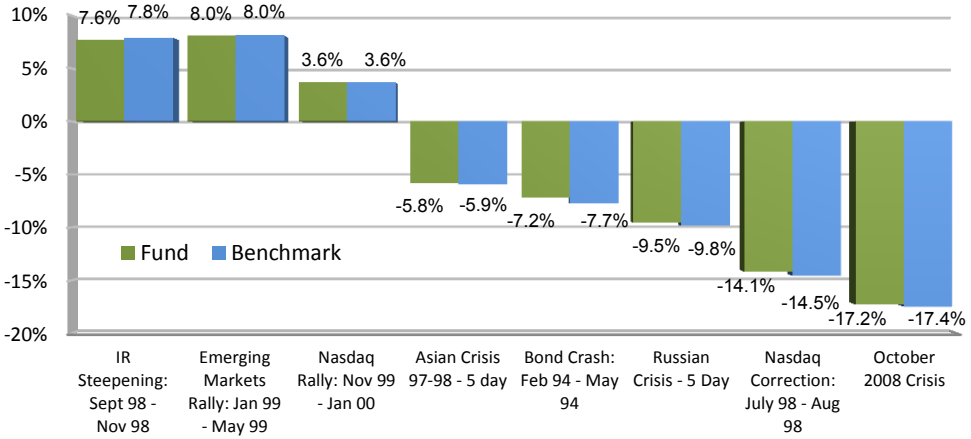


Beta Analysis
MSCI World Index



For every 1% the MSCI World Index rises, the Fund may rise by 0.8%.

Scenario Analysis
(% Gain/Loss in Market Value)



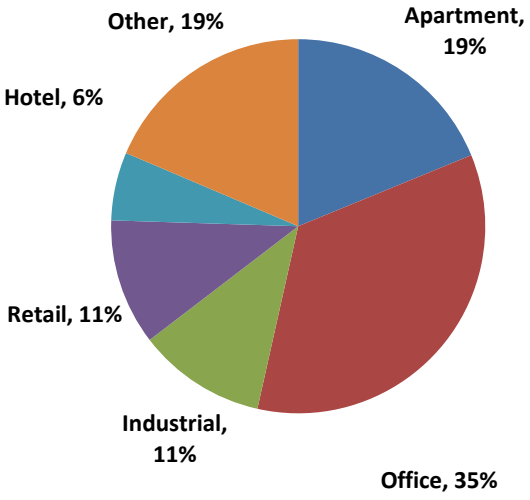
If the markets experienced another Nasdaq 25% correction identical to the one in July 1998, the Fund may lose 13.7% of its market value. The effects on the Fund and Benchmark are quantified for each scenario indicated.

Source: State Street Bank

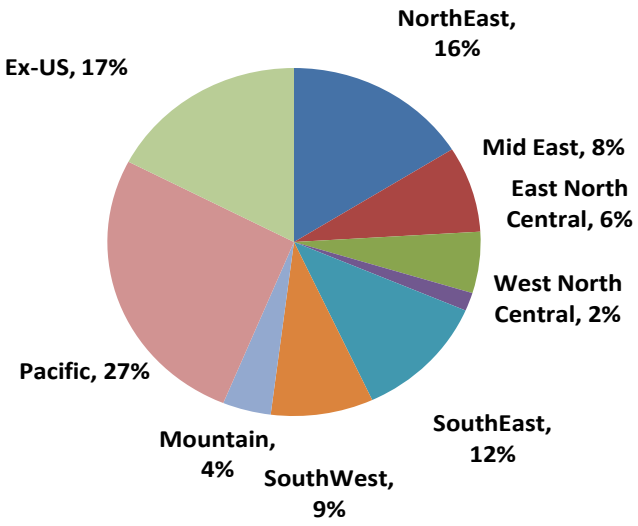
Real Estate Diversification

As of March 31, 2012

Property Type Diversification



Geographic Diversification



Source: Townsend Group

Glossary & Notes

Glossary

Beta is a measure of an asset's volatility in relation to a specific market or risk factor. Beta is the measure of an asset's risk in relation to the market (for example, the S&P500) or to an alternative benchmark or factors. Roughly speaking, a security with a beta of 1.5 will move, on average, 1.5 times the market return.

Collateral is assets pledged to secure payment of a party's obligation under a transaction. Collateral is a risk reduction tool which mitigates risk by reducing credit exposure.

Counterparty is the offsetting party in an exchange agreement.

Forward Contract is a non-standardized contract for the physical or electronic (bookkeeping entry) delivery of a commodity or financial instrument at a specified price at some point in the future.

Futures Contract is a standardized contract for either the physical delivery of an instrument at a specified price at some point in the future, or a financial settlement derived from the change in market price of the commodity or financial instrument during the term of the contract.

Leverage is a condition where the net potential monetary exposure of an obligation exceeds the value of the underlying assets which support the obligation.

- Gross Leverage: Additional investment assets owned by the trust which are directly funded by liabilities (short sales). For securities lending this would be the value for the collateral taken in against loans.
- Net Leverage: Additional investment assets net of the liabilities. For securities lending this would be the excess collateral (the 102% or 105% collateralization) net of the short positions. Generally, leverage allows greater potential return to the investor than otherwise would have been available. The potential for loss is also greater because if the investment becomes worthless, not only is that money lost, but the loan still needs to be repaid.

Notional Value is the value of a derivative's underlying assets at the spot price. In the case of a swap, this is the agreed principal amount on which the swap is based, but which neither party is obligated to pay to the other.

Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, models, people, and systems, or from external events. Overdrafts accounts for losses from failed transaction processing or process management.

Settlement risk is the risk that a counterparty fails to perform, causing a trade failure. Generally, this happens because one party defaults on its clearing obligations to one or more counterparties. As such, settlement risk comprises both credit and liquidity risks. The former arises when a counterparty cannot meet an obligation for full value on due date and thereafter because it is insolvent. Liquidity risk refers to the risk that a counterparty will not settle for full value at the due date but could do so at some unspecified time thereafter, causing the party which did not receive its expected payment to finance the shortfall on short notice.

Total Return Swap is a bilateral financial contract in which one counterparty pays out the total return of the index, including its dividends and capital appreciation or depreciation, and in return, receives a regular fixed or floating cash flow.

Tracking Error predicts the difference in returns between the managed portfolio and an equal investment in the market. Tracking error includes the effect of residual risk (risk not attributable to market influences) and market or systematic risk (beta is a measure of market risk).

Value at Risk ("VaR") is an established method of measuring economic exposure of risk. The measure conveys the maximum potential loss (in dollars or percent of total assets) for a particular investment position, for a particular period of time, for a particular level of confidence. VaR is based on historical market trends, correlations and volatilities. Confidence level is expressed as a percentage and seeks to indicate the percent likelihood that any result (loss) will not exceed the VaR.

Notes

State Street IFS produces their risk measures using historical simulations. They have found historic simulation is the most direct technique for computing VAR and is widely favored because it provides universal coverage of all instruments and all types of market risk -- a major strength. Statistically, in historic simulation, VaR is derived from the distribution of portfolio values over a given time horizon, given a series of historical market data prices. The distribution of portfolio values is calculated by revaluing the portfolio many times using a time series of market prices. The portfolio total return is measured as the change in market value between one date and the next, as determined by the length of the time horizon. TRS uses a 5 year lookback, monthly horizon with weekly sampling. No decay factor is applied, thus all periods are equally weighted. The Hedge Fund, Real Estate, Real Assets, and Private Equity portfolios are proxied in the State Street IFS risk model. Prior to October 2007, Bear Measurisk was our risk provider.

Liquidity Analysis: For the equity portfolio, our holdings were analyzed relative to the average of the last 20 day trading volumes. We assumed liquidation would be 12% per day. For the Hedge Fund portfolio, we analyzed contractual terms such as lock-up, period, redemption notification requirements, and the presence of "gate" contractual term for our calculation. For the Fixed Income instruments, we assumed static liquidation assumptions per asset class and market value (i.e. $X Billion of TSY could be liquidated in 1 day). We assumed the Real Estate and Private Equity could be liquidated no sooner than seven years. The size of the OTC market was taken into account for each Total Return Swap. Liquidation was assumed to happen over several days.

Beginning on 3/31/08, the modeling of the emerging market ETF was updated to better capture the true economic risks of the portfolio. Beginning 6/30/08, tracking error methodology was changed to measure the standard deviation of the difference in the benchmark and the portfolio's returns. Prior to 6/30/08, only the downside volatility was reported.

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