



# TRS Risk Management Committee



March 2014

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

*(Ms. Charleston, Committee Chair; Mr. Barth; Mr. Corpus; Mr. Kelly; & Mr. Moss, Committee Members)*

**AGENDA**

**March 27, 2014 – 10:15 a.m.  
TRS East Building, 5<sup>th</sup> Floor, Boardroom**

1. Consider the approval of the proposed minutes of the December 12, 2013 committee meeting – Karen Charleston.
2. Receive the Bi-annual 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 the full Risk Management Committee constitutes a quorum of the Board, the meeting of the Committee is also being posted as a meeting of the Board out of an abundance of caution.



## Minutes of the Risk Management Committee

December 12, 2013

The Risk Management Committee of the Board of Trustees of the Teacher Retirement System of Texas met on December 12, 2013 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:

Karen Charleston, Chair  
Todd Barth  
David Corpus  
David Kelly  
Chris Moss

A quorum of the committee was present.

Others present:

Joe Colonna, TRS Trustee	Rich Hall, TRS
Dolores Ramirez, TRS Trustee	
Anita Palmer, TRS Trustee	Dan Junell, TRS
Nanette Sissney, TRS Trustee	Eric Lang, TRS
Brian Guthrie, TRS	Lynn Lau, TRS
Ken Welch, TRS	Jay LeBlanc, TRS
Amy Barrett, TRS	Rebecca Merrill, TRS
Carolina de Onís, TRS	James Nield, TRS
Britt Harris, TRS	Hugh Ohn, TRS
Betsey Jones, TRS	Michelle Pagán, TRS
Marianne Woods Wiley, TRS	Sharon Toalson, TRS
Jerry Albright, TRS	Angela Vogeli, TRS
Thomas Albright, TRS	Dr. Keith Brown, Investment Advisor
Jase Auby, TRS	Steve Huff, Reinhart Boerner Van Deuren s.c.
Mohan Balachandran, TRS	Steve Voss, Hewitt EnnisKnupp
Sylvia Bell, TRS	Ann Fickel, Texas Classroom Teachers Association
Ronnie Bounds, TRS	Roger Martinez
Chi Chai, TRS	Philip Mullins, Austin Retired Teachers Association

Ms. Charleston called the meeting to order at 12:40 p.m.

### **1. Consider the approval of the proposed minutes of the September 12, 2013 committee meeting**

On a motion by Mr. Moss, the committee approved the minutes of the September 12, 2013 meeting as presented.

### **2. Receive report on Enterprise Risk Management**

Mr. LeBlanc introduced the item, beginning with explanations of the Enterprise Risk Management (ERM) structure and reporting procedures. He discussed the role of the Risk Oversight Committee, the internal staff committee chaired by the executive director. He described the Stoplight Report and the associated Risk Profiles and Risk Assessments for specified categories of system functions and activities. In response to Mr. Moss' questions about

two of the categories in the Stoplight Report, Mr. LeBlanc and Ms. Jones discussed the risk levels and trends for workforce continuity and active health care sustainability. Mr. LeBlanc then explained the Risk Heat Map in the committee's materials.

Ms. Pagán discussed the new report titled Risk Level and Trend Summary. The report compared risk levels and trends for all the risk categories from June to December 2013 and showed any changes over the six-month period, which Ms. Pagán noted. Responding to a question from Mr. Moss related to new legislation that contributed to the actuarial soundness of the pension fund, Mr. Guthrie and Mr. Welch explained staff's decision not to show the risk trend for Pension Funding as going down. Mr. LeBlanc pointed out that the risk level for the category had decreased from "caution" to "guarded" from June 2011 to June 2013 after the most recent legislative session. Ms. Pagán then reviewed changes, updates, or additions to the Stoplight Report, Risk Profiles, and Risk Assessments. She concluded by pointing out the slide highlighting ERM activities for the reporting period and the appendix containing detailed risk reports.

### **3. Receive report on the Value of ERM from the Perspective of the User – Marianne Woods Wiley.**

Ms. Woods Wiley reported on the value of ERM to her as Chief Benefit Officer. She described the value and benefits of developing the information in the Risk Profile and Risk Report for the Pension Benefit Administration risk category. She explained how the Risk Report pertained to the part of TRS' Strategic Plan concerning Benefit Services. She talked about how ERM helped in identifying and monitoring risks, controls, and mitigations and coordinating with other departments. She said the interdepartmental approach ERM used in identifying risks and controls facilitated team building, accountability, audits, and allocation of resources.

The meeting adjourned at 1:10 p.m.



# Investment Risk Report

Jase Auby  
Chief Risk Officer  
March 2014

# Contents

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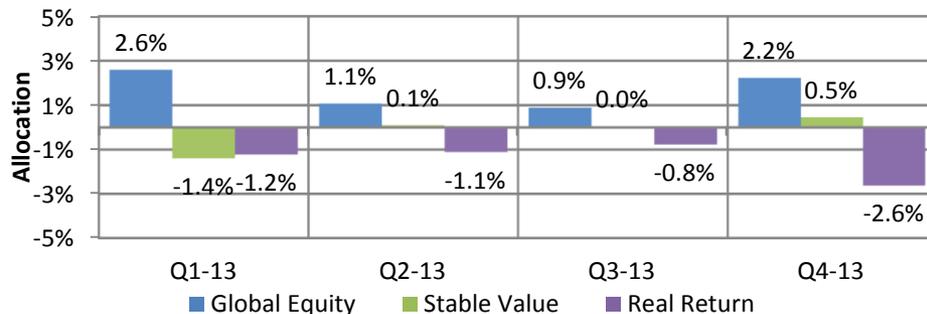
- Policy Requirements
  1. Asset Allocation
  2. Value at Risk (VaR)
  3. Tracking Error
  4. Leverage
  5. Liquidity
  6. Counterparty Risks
  7. Derivatives
- Conclusion
- Appendix
- Securities Lending

# Policy Requirements

Policy Requirements	Description	In compliance?	
<b>1. Asset Allocation</b>	<b>In compliance with policy</b>	✓	
<b>2. Value at Risk</b>	<b>8.1% (55% of the VaR limit range)</b>	✓	
<b>3. Tracking Error</b>	<b>In compliance with policy</b>	✓	
Total Public Fund	Tracking Error 107	As % of Max 36%	✓
<b>4. Leverage</b>	<b>In compliance with policy</b>	✓	
Total Trust			
Net Leverage	97.7% (Within historical norm)	✓	
Gross Leverage	115.8% (Within historical norm)	✓	
Securities Lending			
Net Leverage	100.4% (Within historical norm)	✓	
Gross Leverage	118.5% (Within historical norm)	✓	
Hedge Fund			
Net Leverage	69.7% (Within historical norm)	✓	
Gross Leverage	324.2% (Within historical norm)	✓	
Strategic Partners			
Net Leverage	102.4% (Within historical norm)	✓	
Gross Leverage	166% (Within historical norm)	✓	
Real Assets			
Loan to Value	37.6% (Within historical norm)	✓	
<b>5. Liquidity</b>	<b>In compliance with policy</b>	✓	
<b>6. Counterparty</b>	<b>In compliance with policy</b>	✓	
Exposure	In compliance with policy	✓	
Rating	In compliance with policy	✓	
<b>7. Derivative Exposures</b>	<b>In compliance with policy</b>	✓	

# 1. Asset Allocation

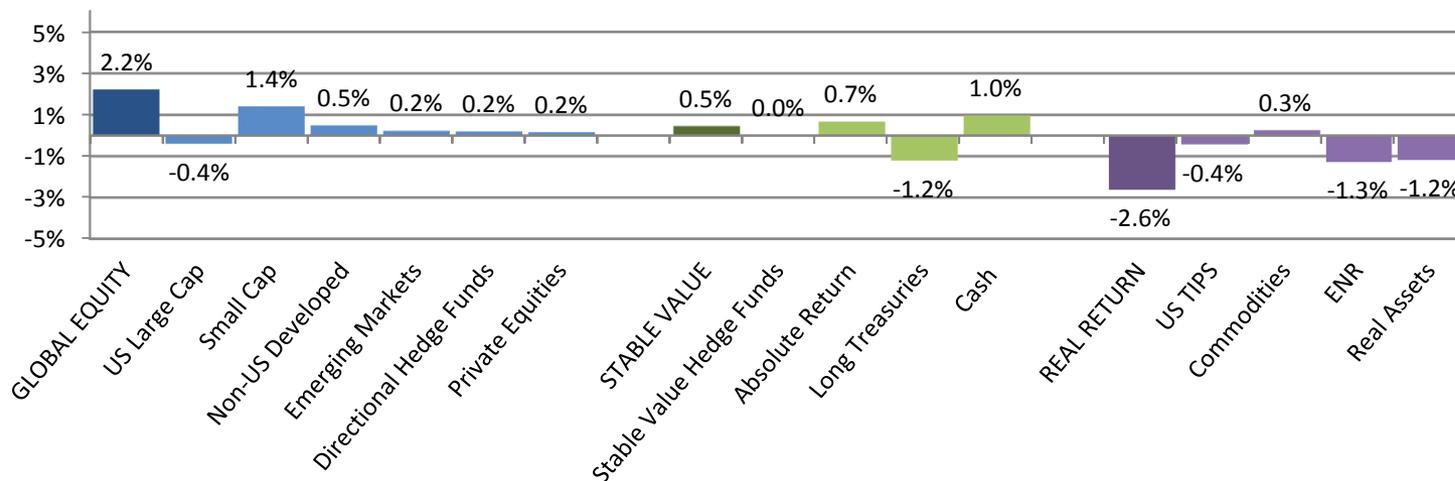
## Group Active Allocation



Top Three Overweights	
Small Cap	1.4%
Cash	1.0%
Absolute Return	0.7%

Top Three Underweights	
ENR	-1.3%
Long Treasuries	-1.2%
Real Assets	-1.2%

## Asset Group/Class Active Allocation (In Compliance with Policy)

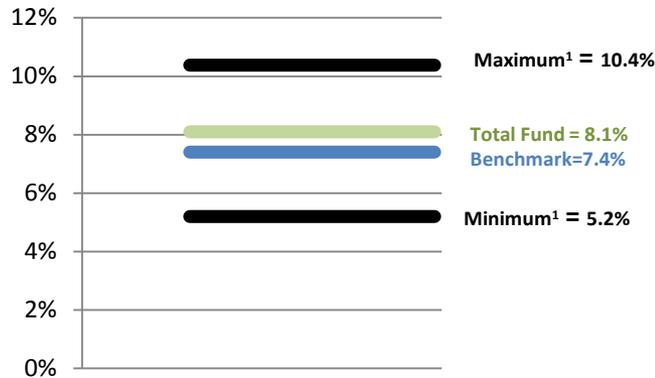


Source: State Street Bank

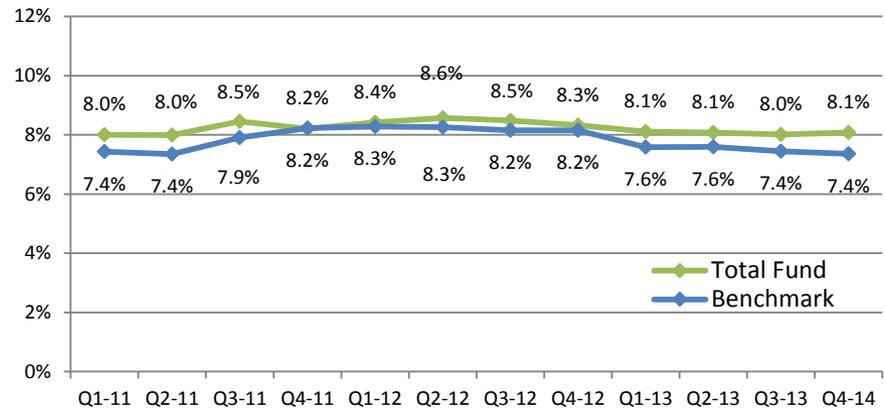
As of December 31, 2013

# 2. Value at Risk (VaR)

VaR as a Percent of Market Value  
(One Month, 95% Confidence)

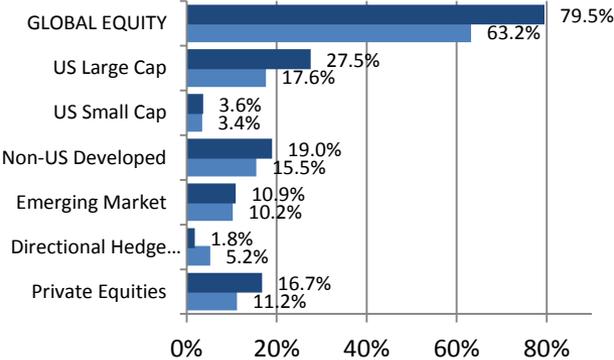


Three-Year VaR History  
(as Percent of Market Value)

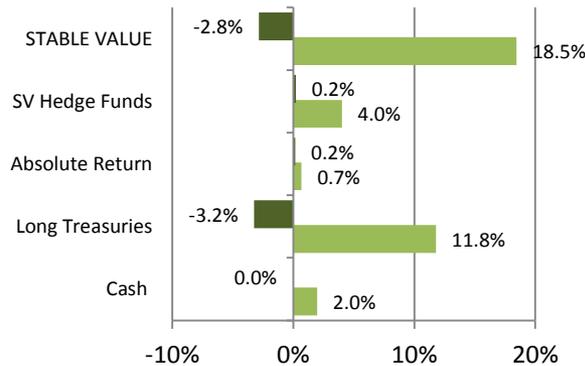


VaR vs. \$ Allocation - Detail

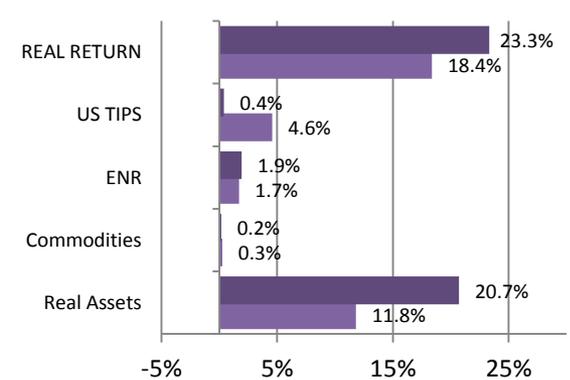
■ VaR Contribution ■ \$ Asset Allocation



■ VaR Contribution ■ \$ Asset Allocation



■ VaR Contribution ■ \$ Asset Allocation

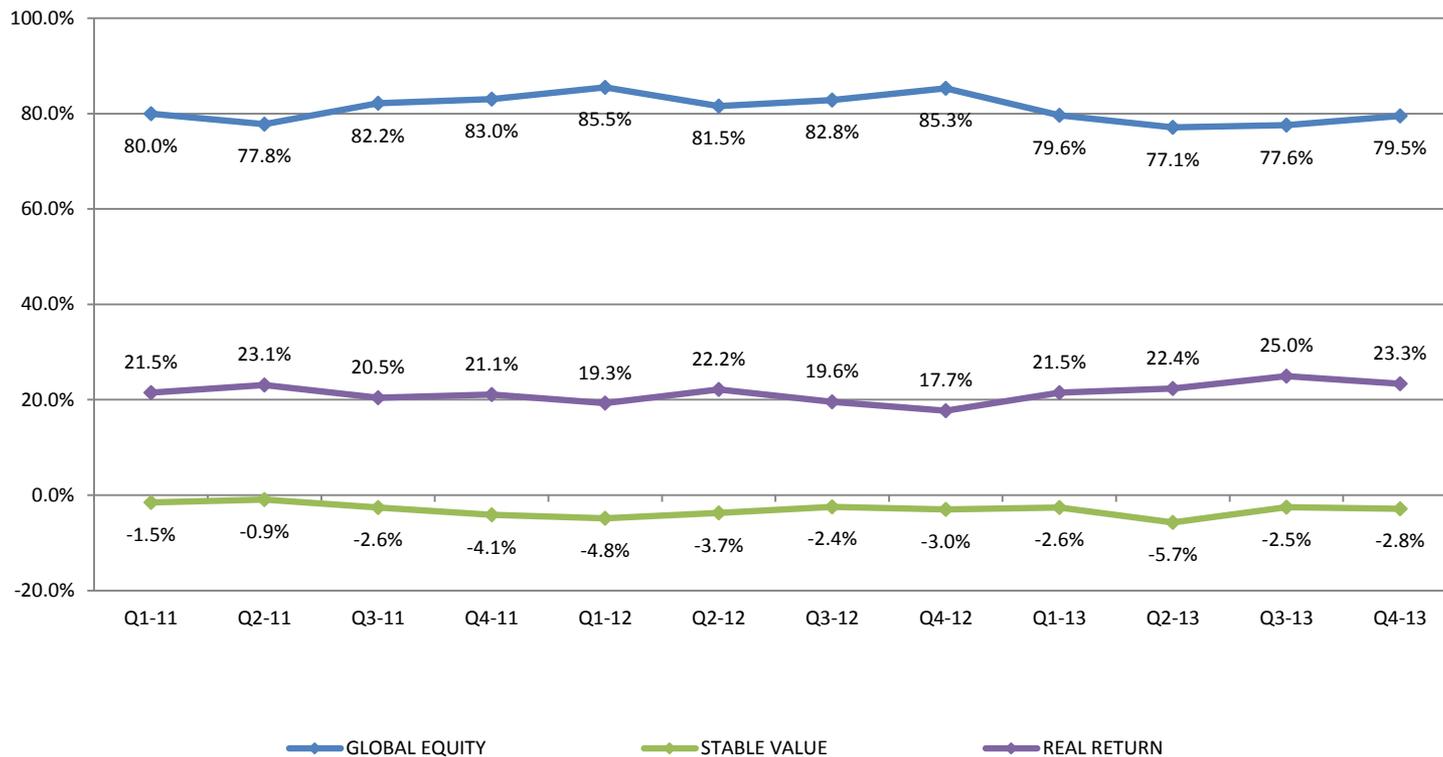


<sup>1</sup>Minimum and maximum VaR levels are determined by adjusting the allocation to each policy asset class within the allowable policy range such that VaR is minimized and maximized.



## 2. VaR Contribution by Asset Groups

History of VaR Contribution



# 3. Tracking Error

## Policy Asset Class Tracking Error

Policy Assets	Market Value (\$, billions)	Current Forecast (bp)	3 Year Realized (bp)
US Large Cap	\$21.8	215	193
US Small Cap	4.2	309	235
Non-US Developed	19.2	223	159
Emerging Market	12.7	172	162
Directional Hedge Funds	6.4	270	247 <sup>[1]</sup>
US Treasuries	14.6	14	22
Absolute Return	0.8	2291	1167
Stable Value Hedge Funds	5.0	173	266
Cash	2.5	0	58
Global Inflation Linked Bonds	5.7	19	13
Commodities	0.3	2276	1626
<b>Total Public Assets</b>	<b>\$93.2</b>	<b>149</b>	<b>107</b>
Private Equity	13.8	179	302
Energy and Natural Resources	2.1	288	<sup>[2]</sup>
Real Assets	14.6	665	220
<b>Total Private Assets</b>	<b>\$30.6</b>	<b>384</b>	<b>212</b>
<b>Total Assets</b>	<b>\$123.8</b>	<b>179</b>	<b>136</b>

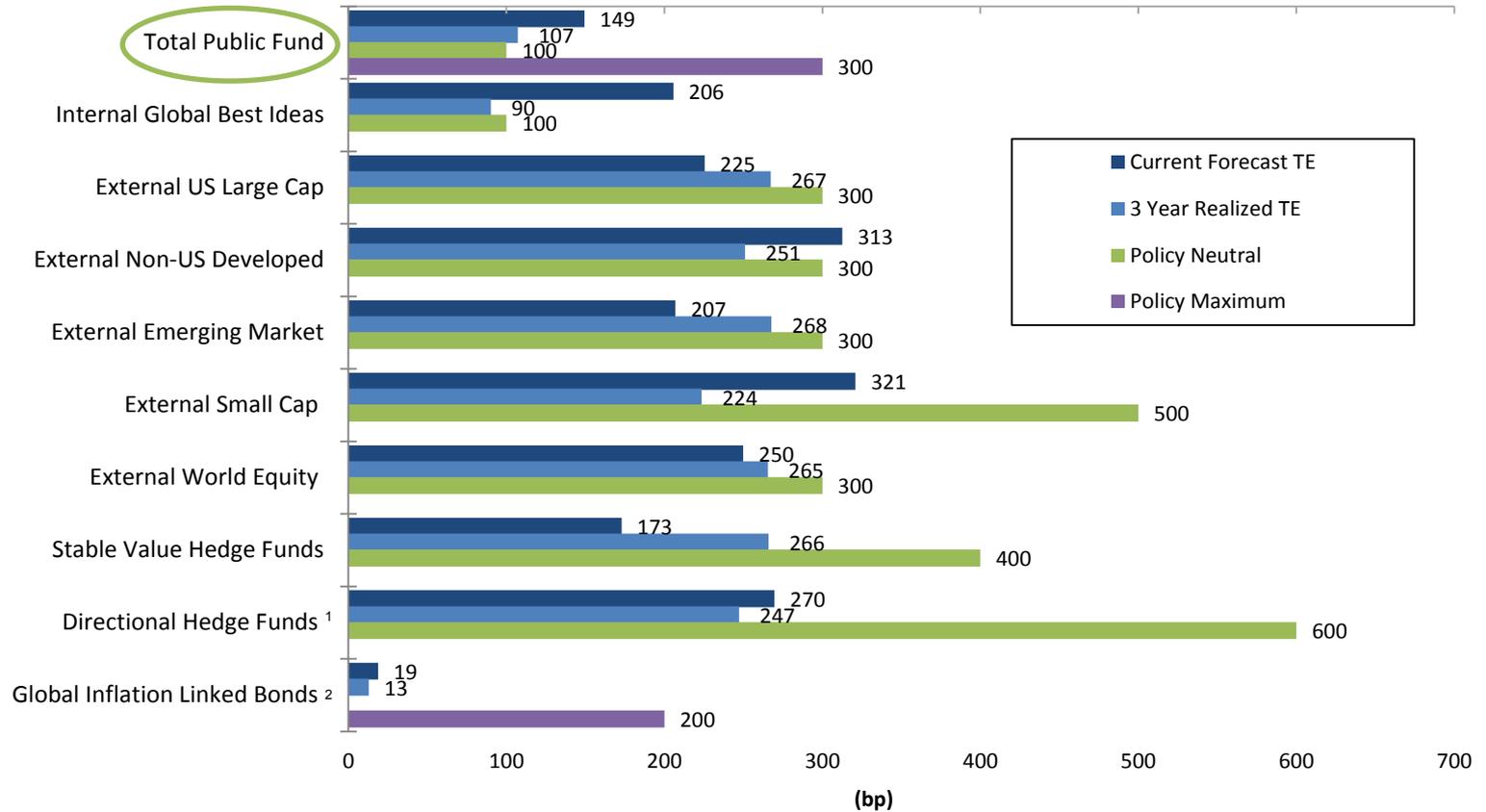
Policy neutral is 100 bps and policy maximum is 300 bps

<sup>1</sup> Realized tracking error is for less than 36 months

<sup>2</sup> Realized tracking error cannot be calculated due to the short history of this portfolio

# 3. Policy Tracking Error

## Actual Tracking Error Level vs. Policy Requirement



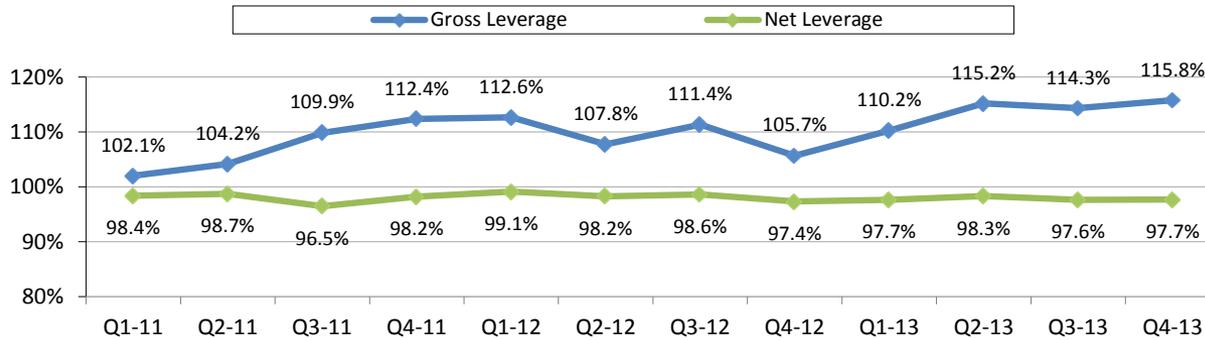
<sup>1</sup> Realized tracking error is for less than 36 months

<sup>2</sup> No policy neutral tracking error set for Global Inflation Linked Bonds

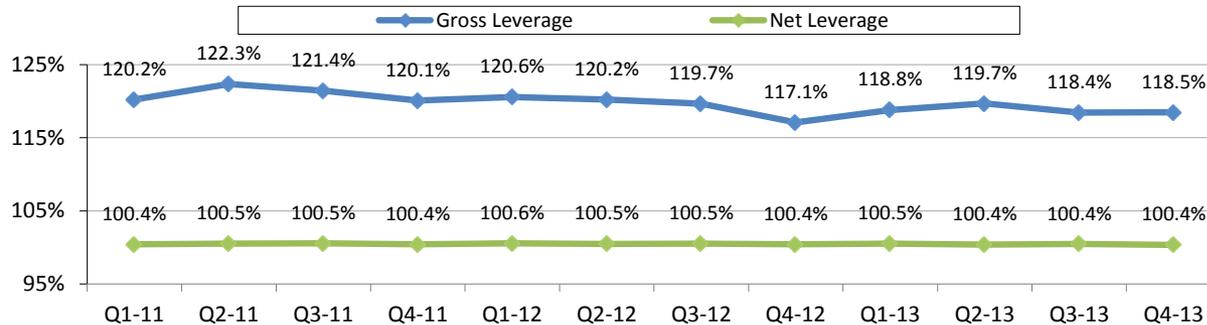


# 4. Leverage

## Trust-Level Leverage (Excludes Securities Lending)

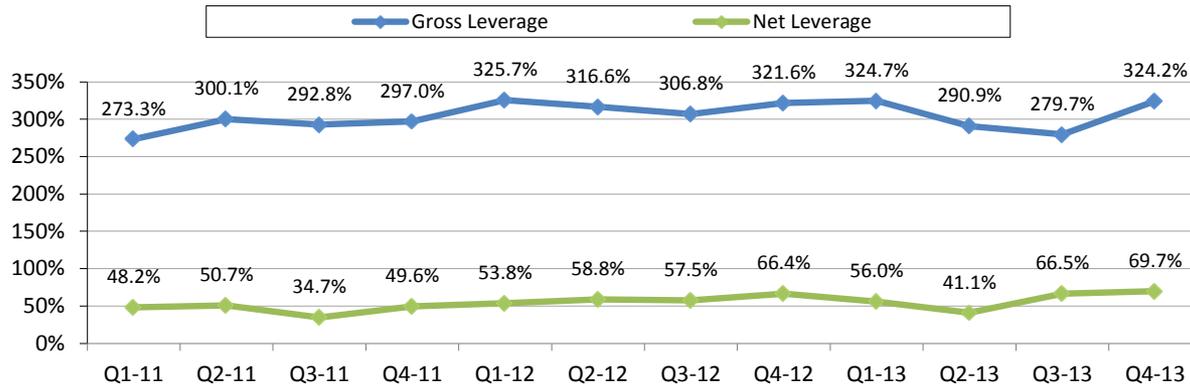


## Securities Lending Leverage

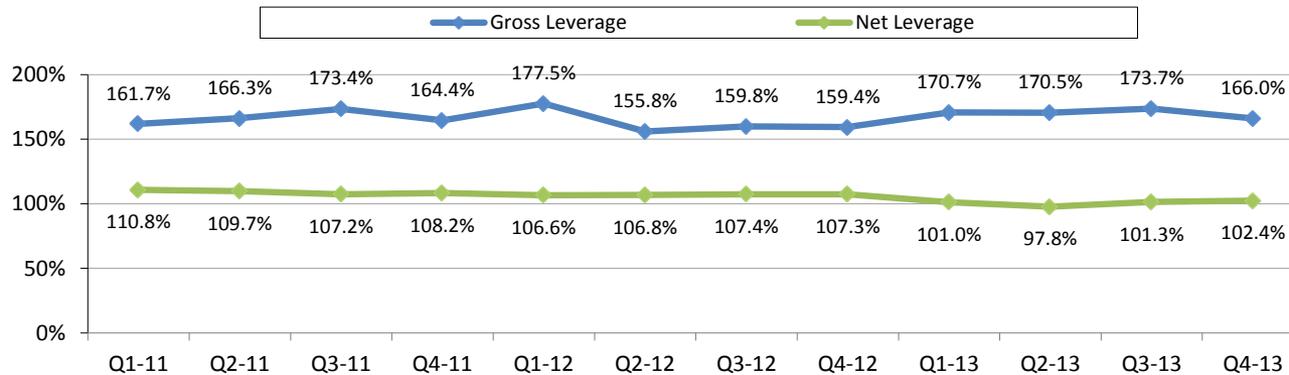


# 4. Leverage

## 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.

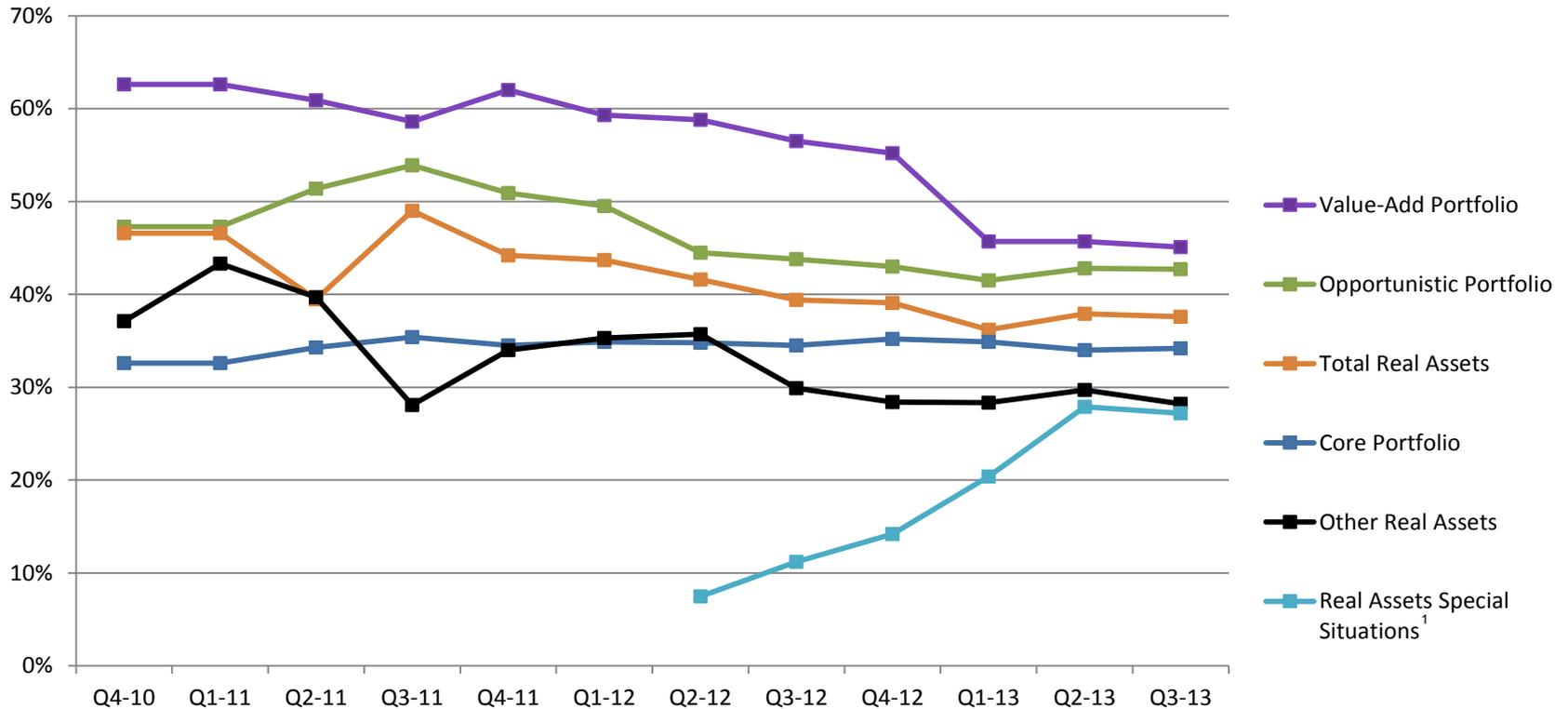
Source: State Street Bank

As of December 31, 2013



# 4. Leverage

## Real Assets Leverage



<sup>1</sup>Real Assets Special Situations is a new classification started in 3Q 2011

# 5. Liquidity

Sources of Liquidity (\$, billions)	Market Value	Stressed Value
Liquid Assets Not on Loan (Cash, UST, TIPS, Equity, Commodities)	61.2	34.6
Securities Lending Collateral (Cash, Fixed Income)	23.2	18.2
<b>Total Sources of Liquidity</b>	<b>84.4</b>	<b>52.7</b>
<i>Note: Excluded Illiquid Assets (Private Equity, Real Assets, Hedge Funds, Other)</i>	43.3	NA
<i>Note: Excluded Liquid Assets remaining on loan</i>	19.1	NA

Uses of Liquidity (\$, billions)	Market Value	Stressed Value
Normal Uses of Liquidity	0.1	0.1
Stressed Securities Lending		-2.4
Stressed Derivatives		-0.6
Stressed Private Markets		-2.0
<b>Total Uses of Liquidity</b>	<b>0.1</b>	<b>-4.9</b>

Liquidity Ratio	
Sources of Liquidity	52.7
Uses of Liquidity	-4.9
<b>Ratio (Sources/Uses)</b>	<b>10.8</b>
Alert Threshold	4.0
Fail Threshold	3.0
<b>Test Result</b>	<b>Pass</b>
<i>Note: Net Liquidity (Sources less Uses)</i>	47.9
<i>Note: 12 Months Benefit Payments (at 3% Annual)</i>	3.7

Assumptions: In the stress case, Liquid Assets are valued at 53% and Securities Lending collateral is valued at 77% 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.

Source: State Street Bank

As of December 31, 2013



# 6. Counterparty

## Counterparty Exposure

Counterparty	Swaps Number of Contracts	Forwards Number of Contracts	Futures Number of Contracts	OTC Options Number of Contracts	Counterparty Exposure (\$, millions)	Net Notional (\$, millions)
<b>Over the Counter</b> <sup>[1]</sup>						
Bank of America, N.A		7			\$0.2	-6.2
Barclays Bank PLC	6	31			\$0.4	-36.0
Citibank N.A.	7	295			\$0.0	-599.4
Credit Suisse International	2	2			\$0.0	-63.7
Deutsche Bank AG	10	80		2	\$0.0	122.4
Goldman Sachs International	17	27			\$0.0	-871.5
JPMorgan Chase Bank N.A	24	115			\$0.0	-936.0
Macquarie Bank Limited	1				\$0.0	25.0
Morgan Stanley	6	17		2	\$0.0	-28.9
Societe Generale	5	22		1	\$0.2	35.1
UBS AG	13	79			\$2.0	15.6
<b>Exchange Traded Futures</b> <sup>[2]</sup>						
Goldman Sachs & Co.	3		134		\$159.4	3,221.9
JP Morgan Securities LLC			82		\$105.1	-1,570.2
<b>Grand Total</b>	<b>94</b>	<b>675</b>	<b>216</b>	<b>5</b>	<b>\$267.4</b>	<b>-\$691.8</b>

<sup>1</sup> 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.

<sup>2</sup> Counterparty exposure is initial margin posted.

# 6. Counterparty

## Counterparty Ratings and Capital Assessment<sup>1</sup>

Counterparty	S&P Rating	Moody's Rating	Fitch Rating	Capital Ratios <sup>2</sup>	
				Tier 1	Common
<b>Over the Counter</b>					
Bank of America, N.A.	A	A2	A	16.7	11.7
Barclays Bank PLC	A	A2	A	13.2	11.0
Citibank N.A.	A	A2	A	14.1	16.0
Credit Suisse International	A	A1	A	19.4	12.0
Deutsche Bank AG	A	A2	A+	15.1	11.9
Goldman Sachs International	A	A2	A	16.7	16.1
JPMorgan Chase Bank N.A	A+	Aa3	A+	12.6	11.4
Macquarie Bank Limited	A	A2	A	16.7	16.0
Morgan Stanley	A	A3	A	17.7	16.4
Societe Generale	A	A2	A	12.5	11.6
UBS AG	A	A2	A	21.3	20.5
<b>Exchange Traded Futures</b>					
Goldman Sachs & Co.	A	NR	A	16.7	16.1
JP Morgan Securities LLC	A+	Aa3	A+	12.6	11.4

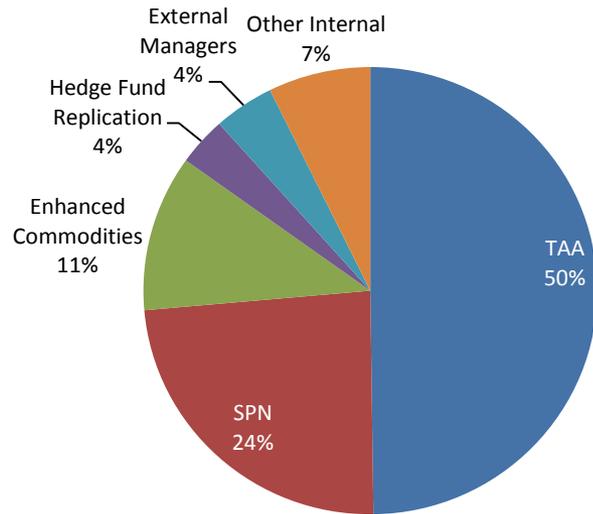
<sup>1</sup>Rating of credit support provider. Policy requirement is A- or A3 by at least one of Fitch, Moody's or S&P.

<sup>2</sup> When fully implemented, Basel 3 will require 8.5% Tier 1 capital and 7.0% Common capital.

# 7. Derivatives

## Gross Notional

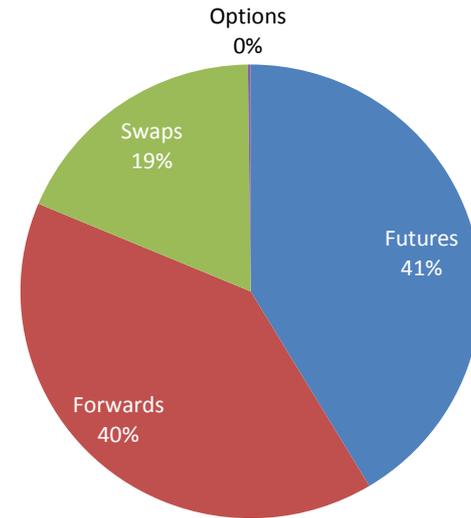
TRS Gross Notional by Portfolio



The bulk of derivatives usage is TAA (tactically adjusting the Trust's asset allocation) and the SPNs (TAA and benchmark replication)

Portfolio	Gross Notional (\$, millions)
TAA	10,875.25
SPN	5,203.67
Enhanced Commodities	2,466.78
Hedge Fund Replication	766.68
External Managers	939.63
Other Internal <sup>1</sup>	1,592.86
<b>Total</b>	<b>\$ 21,844.89</b>

TRS Gross Notional by Instrument Type



Futures and forwards, which are among the most liquid forms of derivatives, constitute the bulk of the Trust's derivatives portfolio

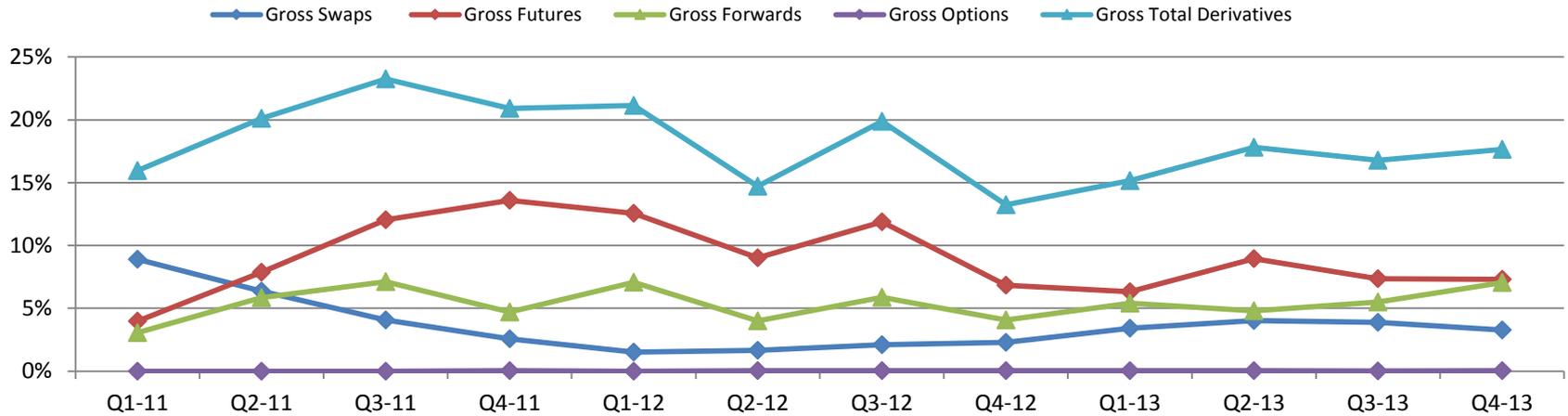
Instrument	Gross Notional (\$ millions)
Futures	9,040.98
Forwards	8,722.03
Swaps	4,039.58
Options	42.31
<b>Total</b>	<b>\$21,844.89</b>

<sup>1</sup>Other Internal includes Quantitative Vector Fund (QVF), Risk Parity, Low Volatility with Overlay portfolio and FX Forwards used for settlements.

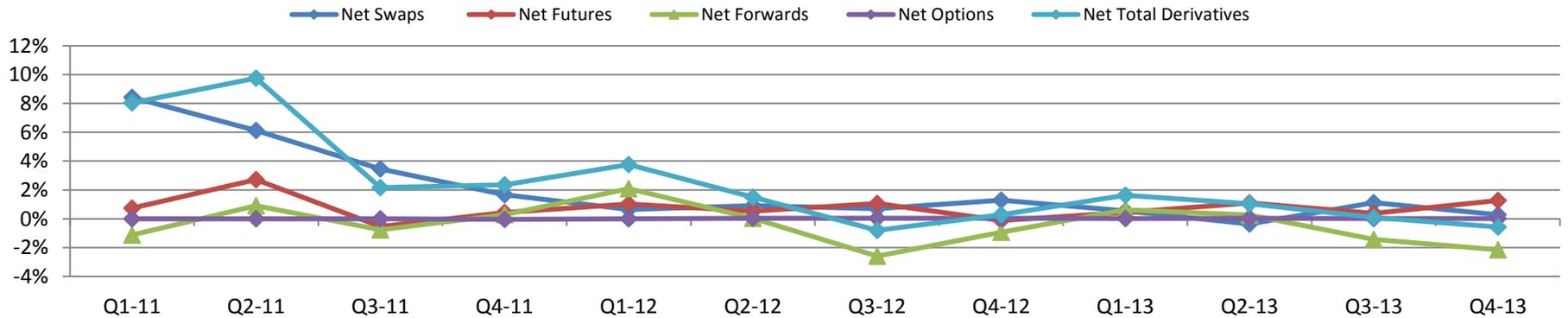
# 7. Derivatives

## Gross Notional and Net Notional (as a % of Total Trust)

### Gross Notional

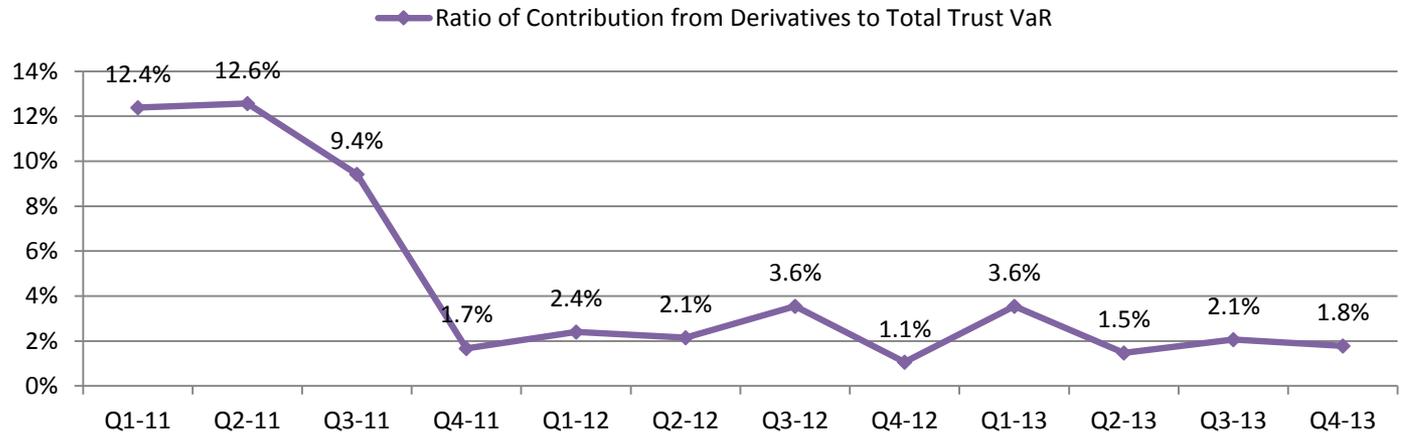
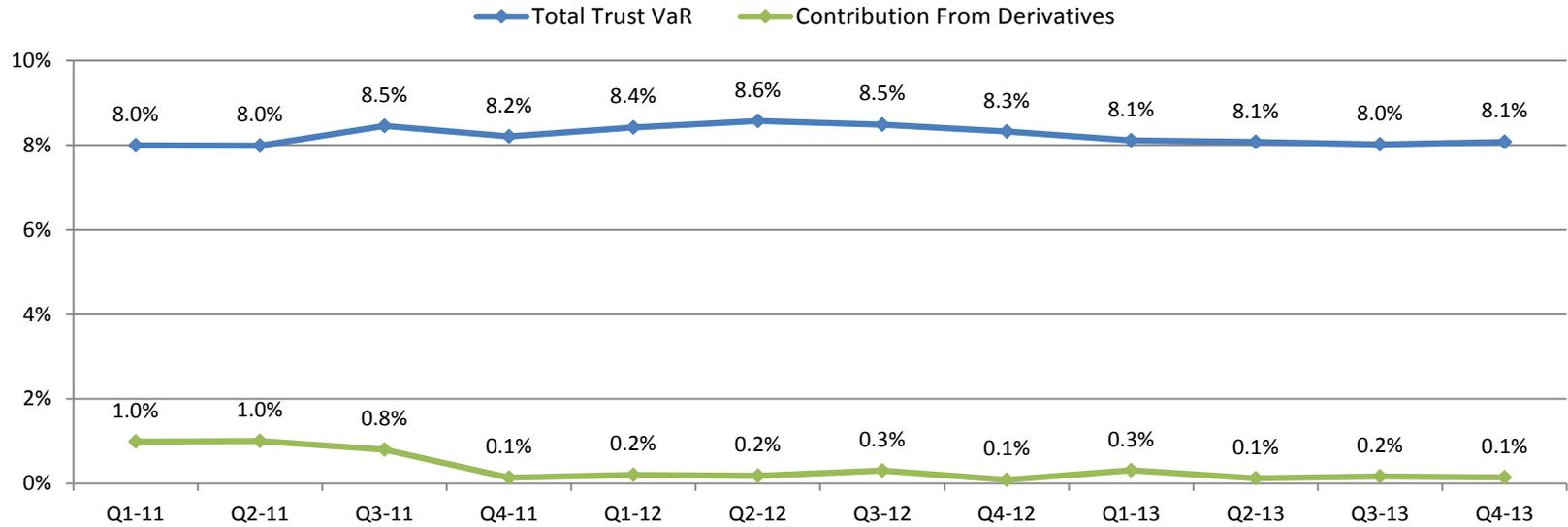


### Net Notional



# 7. Derivatives

## Value at Risk



As TAA has moved to a nearly net zero funded position, the contribution to Total Trust VaR from derivatives has decreased



Source: State Street Bank

As of December 31, 2013

# 7. Derivatives

## Gross Notional and Net Notional

### Gross Notional

(\$, millions)	TAA	SPN	Enhanced Commodities	External Managers	Hedge Fund Replication	Other Internal	Total
Futures	5,239.8	2,283.1		117.3	201.5	1,199.3	9,041.0
Forwards	5,635.5	2,099.8		692.7	159.9	134.1	8,722.0
Swaps		820.4	2,466.8	89.6	405.3	257.5	4,039.6
Options		0.3		40.0		1.9	42.0
<b>Total</b>	<b>\$10,875.3</b>	<b>\$5,203.3</b>	<b>\$2,466.8</b>	<b>\$939.6</b>	<b>\$766.7</b>	<b>\$1,592.9</b>	<b>\$21,844.6</b>

The bulk of derivatives usage is TAA (\$10.9) and the SPNs (\$5.2 )

### Net Notional

(\$, millions)	TAA	SPN	Enhanced Commodities	External Managers	Hedge Fund Replication	Other Internal	Total
Futures	288.7	1,066.5		-51.6	102.0	172.7	1,578.3
Forwards	-2,252.9	-163.6		-349.3	41.8	72.1	-2,651.9
Swaps		-242.3	-0.6	-51.0	266.3	227.0	199.4
Options		-0.2		14.5		1.9	16.2
<b>Total</b>	<b>-1,964.2</b>	<b>\$660.4</b>	<b>-\$0.6</b>	<b>-437.4</b>	<b>\$410.1</b>	<b>\$473.7</b>	<b>-858.0</b>

TAA's \$10.9 billion gross notional nets to a much lower (-\$1.9 billion) net position.

The Trust's \$21.8 billion gross notional nets to a much lower (-\$858 million) net position.

<sup>1</sup>Other Internal includes Quantitative Vector Fund (QVF), Risk Parity, Low Volatility with Overlay and FX Forwards used for settlements.

# 7. Derivatives

## Mark to Market and Tenor

### Mark to Market

(\$, millions)	TAA	SPN	Enhanced Commodities	External Managers	Hedge Fund Replication	Other Internal	Total
Futures	-16.7	19.7		-1.3	3.9	15.9	21.4
Forwards	-17.7	-1.9		1.6	-0.9	3.1	-15.7
Swaps		-5.8	0.5	-1.5	2.8	-0.2	-4.3
Options		0.0		-1.6		0.3	-1.3
<b>Total</b>	<b>-\$34.4</b>	<b>\$12.0</b>	<b>\$0.5</b>	<b>-\$2.8</b>	<b>\$5.8</b>	<b>\$19.1</b>	<b>\$0.1</b>

### Average Tenor in Years

(\$, millions)	TAA	SPN	Enhanced Commodities	External Managers	Hedge Fund Replication	Other Internal	Total
Futures	0.20	0.32		0.21	0.22	0.20	0.23
Forwards	0.19	0.04		0.23	0.02	0.05	0.15
Swaps		1.09	0.11	4.29	0.84	1.75	0.52
Options		0.03		0.52		0.04	0.50
<b>Total</b>	<b>0.19</b>	<b>0.33</b>	<b>0.11</b>	<b>0.63</b>	<b>0.51</b>	<b>0.76</b>	<b>0.25</b>

The low mark-to-market is mainly due to the short term maturity of the derivatives positions – on average 3.0 months

The longer tenor in swaps is due to holding interest rate swaps and credit default swaps (typically 5-10 years)

<sup>1</sup>Other Internal includes Quantitative Vector Fund (QVF), Risk Parity, Low Volatility with Overlay and FX Forwards used for settlements

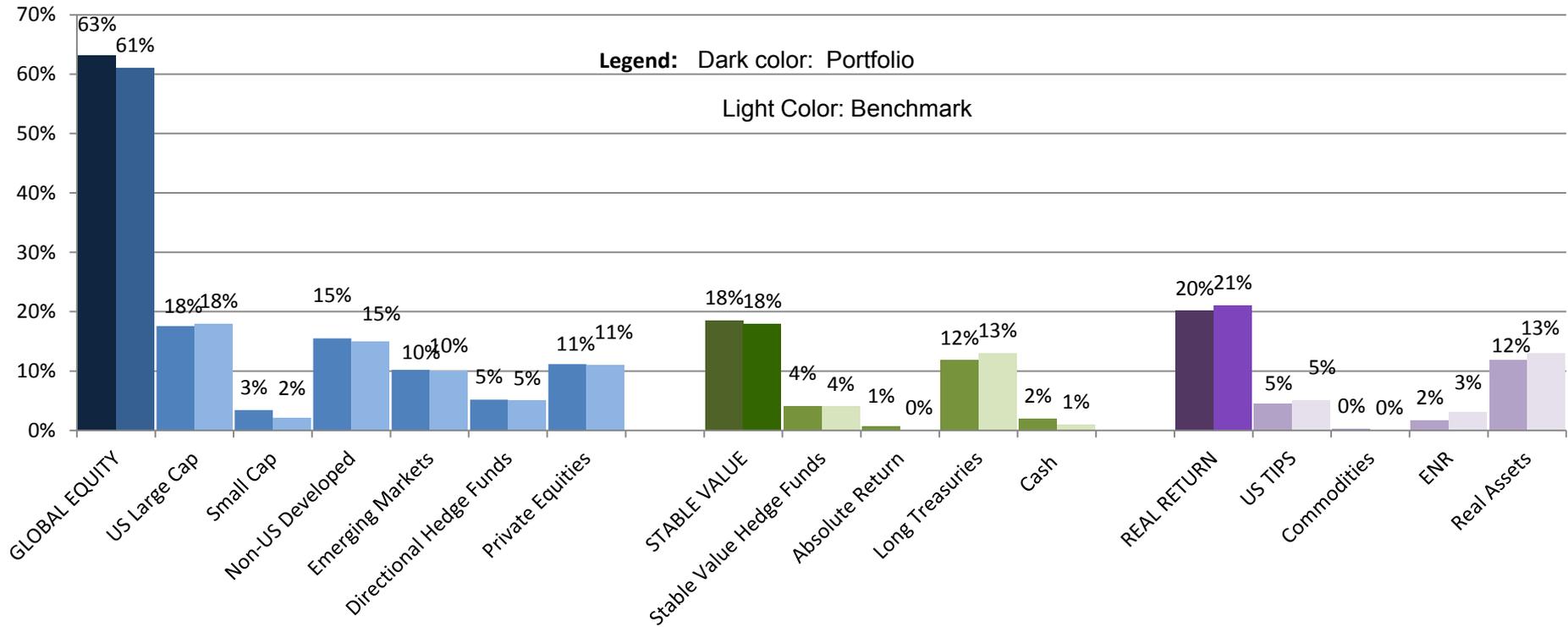
# Conclusion

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- As of December 31, 2013, TRS investment exposures are in compliance with the Investment Policy Statement
  - As the end of the calendar year 2013, TRS was overweight Global Equity (+2.2%) and Stable Value (+0.5%) and underweight Real Return (-2.6%)
  - At the asset class level, TRS was overweight Small Cap, Cash and Absolute Return while underweight Energy and Natural Resources, Long Treasuries and Real Assets

# APPENDIX

# Portfolio Weights vs. Long Term Policy Weights



Source: State Street Bank

As of December 31, 2013

# Derivative Exposure

## Futures Notional<sup>1,2</sup>

Futures by Asset Class	Number of Contracts	Gross Exposure (\$ millions)	Gross Exposure (% of Asset Class)	Gross Exposure (% of Total Trust)
US Large Cap	23	2,795.2	90.6%	2.3%
Non-US Developed	63	2,169.3	340.6%	1.8%
Absolute Return	20	1,069.4	10.9%	0.9%
US Treasuries	23	972.0	73.2%	0.8%
Small Cap	8	618.6	80.7%	0.5%
Global Inflation Linked	48	572.6	74.7%	0.5%
Emerging Markets	10	503.2	13.8%	0.4%
Directional Hedge Funds	21	340.7	28.9%	0.3%
<b>Future Total</b>	<b>216</b>	<b>\$9,041.0</b>		<b>7.3%</b>

## Swap Notional<sup>1,2</sup>

Swap by Asset Class	Number of Contracts	Gross Exposure (\$, millions)	Gross Exposure (% of Asset Class)	Gross Exposure (% of Total Trust)
Absolute Return	15	2,496.0	80.9%	2.0%
Non-US Developed	13	436.9	68.6%	0.4%
Directional Hedge Funds	23	432.2	4.4%	0.3%
Emerging Markets	5	271.2	20.4%	0.2%
Commodities	6	160.6	20.9%	0.1%
US Large Cap	7	116.3	11.4%	0.1%
Global Inflation Linked	18	75.7	2.1%	0.1%
US Treasuries	5	45.4	3.8%	0.0%
Small Cap	2	5.2	3.2%	0.0%
<b>Swap Total</b>	<b>94</b>	<b>\$4,039.6</b>		<b>3.3%</b>

<sup>1</sup>Exposures include TRS internally managed portfolios and externally managed separate accounts.

<sup>2</sup>Percent of Absolute Value.

Source: State Street Bank



# Derivative Exposure

## Forwards and Options Notional<sup>1,2</sup>

Non-Currency Forwards by Asset Class	Number of Contracts	Gross Exposure (\$ millions)	Gross Exposure (% of Total Trust)
Non-US Developed	2	153.5	0.1%
Emerging Markets	4	240.7	0.2%
Total Absolute Return	1	78.8	0.1%
<b>Non-Currency Forward Total</b>	<b>7</b>	<b>473.0</b>	<b>0.4%</b>
Non-US Developed	3	23.2	0.0%
US Large Cap	2	1.9	0.0%
Small Cap	2	13.0	0.0%
Global Tips	3	.3	0.0%
Real Estate	2	3.8	0.0%
<b>Options Total</b>	<b>7</b>	<b>42.3</b>	<b>0.0%</b>
Euro Currency	134	2,124.0	1.7%
Japanese Yen	80	1,490.6	1.2%
Pound Sterling	66	1,292.2	1.0%
Canadian Dollar	49	636.2	0.5%
Australian Dollar	62	568.0	0.5%
Other Non-US Developed	241	1,554.0	1.3%
Emerging Markets	27	342.8	0.3%
<b>Forwards Total</b>	<b>659</b>	<b>8,007.7</b>	<b>6.5%</b>

<sup>1</sup>Exposures include TRS internally managed portfolios and externally managed separate accounts.

<sup>2</sup>Percent of Absolute Value.

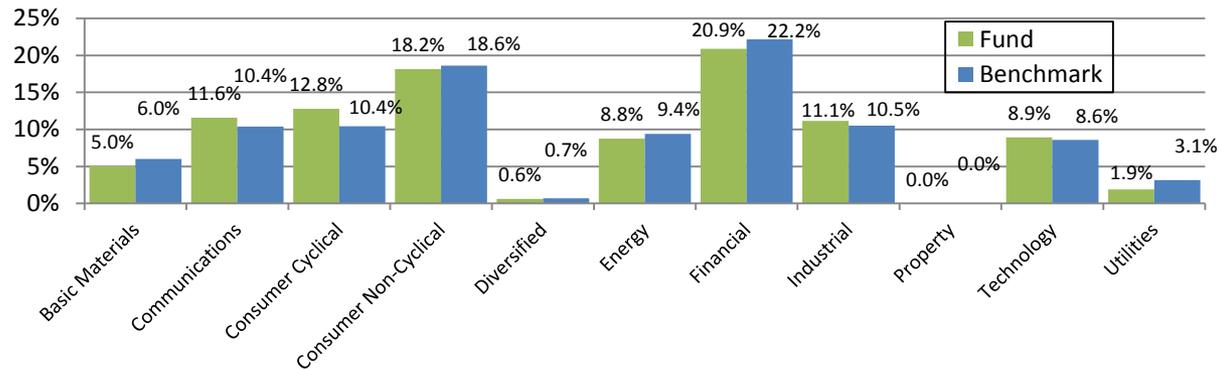


Source: State Street Bank

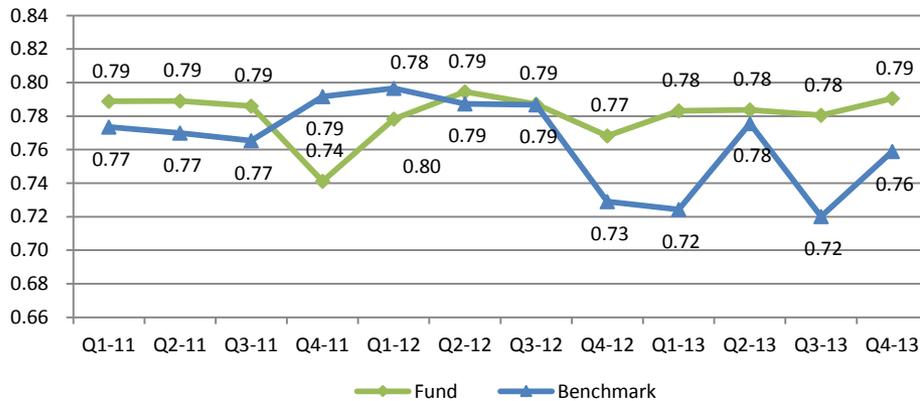
As of December 31, 2013

# Sector Allocation: Beta & Scenario Analysis

## Equity Sector Allocation (%)

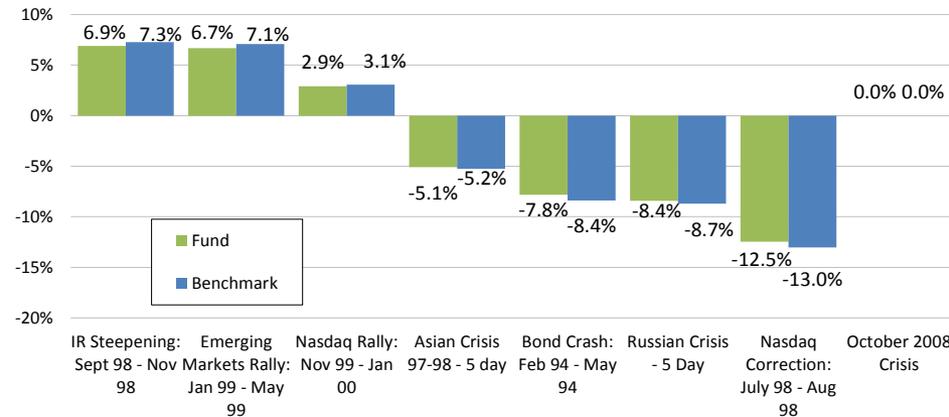


## Beta Analysis MSCI World Index



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.

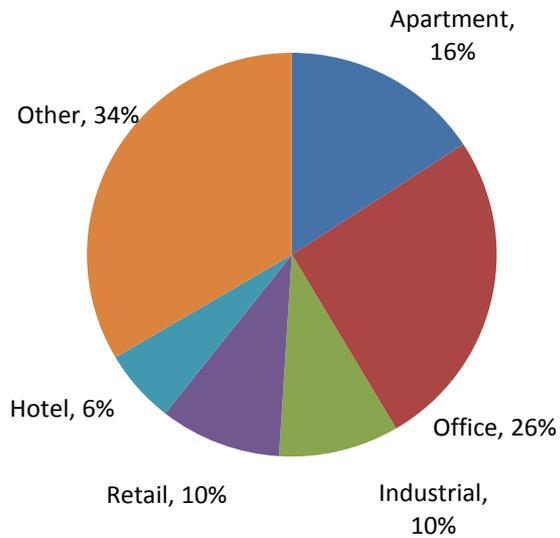


Source: State Street Bank

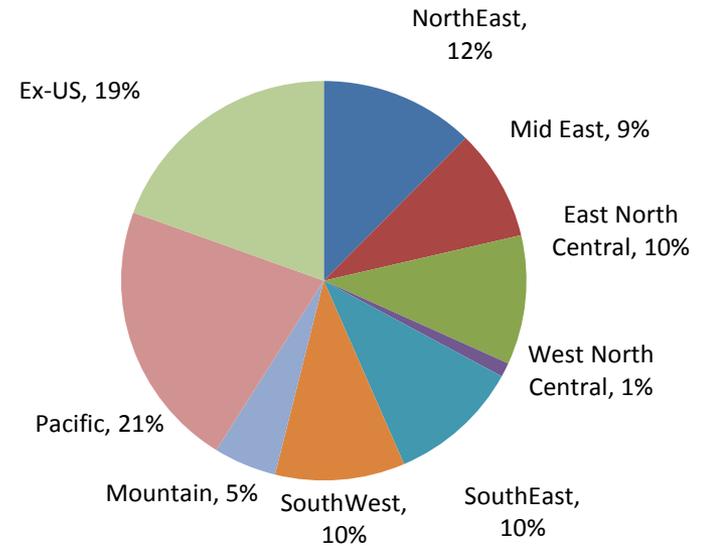
As of December 31, 2013

# Real Estate Diversification

## Property Type Diversification



## Geographic Diversification



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# Securities Lending

# Securities Lending

*As of December 31, 2013*

	2011	2012	2013
Amount Lent (\$, billions)			
Average Lendables	\$61.4	\$60.6	\$61.0
Average On Loan	22.9	21.9	21.7
Utilization	37.3%	36.1%	35.6%
Earnings by Program (\$, millions)			
US Equity & Corporates	\$21.1	\$28.4	\$18.9
US Governments	\$48.9	\$55.7	\$50.5
Non-US Equities	\$16.5	\$21.7	\$16.9
Non-US Fixed Income	\$0.0	\$0.0	\$0.0
Other Earnings	\$0.0	\$0.0	\$0.0
Total	\$84.3	\$105.8	\$77.3
Components of Spread (bp)			
Demand Spread	8.8	10.1	10.2
Reinvestment Spread	38.9	53.5	38.4
Net Spread	47.7	63.6	48.6
Annualized Return (bp)	13.7	17.5	12.7



Source: State Street Bank

As of December 31, 2013

# Securities Lending-Broker Limits

*As of December 31, 2013*

Broker	Credit Limit (\$, billions)	Broker	Credit Limit (\$, billions)
Morgan Stanley	\$7.0	CIBC	\$1.0
CITI	6.5	Commerzbank Ag	1.0
Barclays	5.5	Daiwa	1.0
BNP Paribas	5.5	Fidelity	1.0
Bank of America	5.0	Jefferies	1.0
Credit Suisse	5.0	RBC	1.0
Goldman Sachs	5.0	SEB	1.0
RBS	4.0	TD	1.0
Societe Generale	3.5	Banca IMI	0.5
UBS	3.5	Bleichroeder	0.5
Deutsche Bank	3.0	Citadel	0.5
HSBC	3.0	CRT	0.5
J.P. Morgan Chase	3.0	HBK	0.5
Bank of Montreal	2.5	Macquarie	0.5
Nomura	2.5	Mizuho	0.5
ING	1.5	Newedge	0.5
Mitsubishi	1.5	Pierpont	0.5
Scotia	1.5	Wells Fargo	0.5
ABN	1.0	AXA	0.3
Banco Santander	1.0	Maple	0.3



Source: State Street Bank

As of December 31, 2013