

# **INVESTMENT REPORT**

## **TENNESSEE CONSOLIDATED RETIREMENT SYSTEM**

**Third Quarter  
Fiscal Year 2012 - 2013**

**January 1, 2013 – March 31, 2013**

**Prepared for:  
Board of Trustees**

**June 28, 2013**

## Investment Advisory Council

Pursuant to T.C.A. Section 8-37-108, the State Treasurer shall nominate, with the advice and consent of the Board of Trustees, the Investment Advisory Council, comprised of five senior investment professionals in the Tennessee investment community, who shall have at least five years professional experience as a portfolio manager, economist or an investment advisor in any field of which investments of TCRS funds are authorized. The term of appointment is for five years. Also, the treasurer may nominate two (2) additional members for three year terms.

The TCRS investment staff consults quarterly with the Advisory Council on a formal basis for strategy and guidance, and on an informal basis as needed.

The current members are as follows:

<u>Council Member</u>	<u>Expiration of Term</u>	<u>Appointed Term</u>
<b>Frederick S. Crown, Jr., CFA</b> 124 Longwood Place Nashville, TN 37215 Phone: 615-347-0343 E-mail: <a href="mailto:crownfl@gmail.com">crownfl@gmail.com</a>	June 30, 2017	5 year
<b>Henry J. Delicata</b> Park Street Capital One Federal Street, 24 <sup>th</sup> Floor Boston, MA 02109 Phone: (cell) 617-347-8854 / (office) 617-897-9252 E-mail: <a href="mailto:hdelicata@parkstreetcapital.com">hdelicata@parkstreetcapital.com</a>	June 30, 2014	5 year
<b>Susan Logan Huffman, CFA</b> Managing Director Reliant Investment Management, LLC 6077 Primacy Parkway, Suite 130 Memphis, TN 38119 Phone: 901-843-0600 / Fax: 901-843-0325 E-mail: <a href="mailto:shuffman@reliantllc.com">shuffman@reliantllc.com</a>	June 30, 2016	5 year
<b>George B. Stadler, CFA</b> 95 White Bridge Road, Suite 414 Nashville, TN 37205 Phone: 615-416-3455 cell E-mail: <a href="mailto:george@hmscm.com">george@hmscm.com</a>	June 30, 2015	5 year
<b>Chuck Webb, CFA</b> Chief Investment Officer Weaver C. Barksdale & Associates One Burton Hills Boulevard, Suite 100 Nashville, TN 37215 Phone: 615-665-1088 E-mail: <a href="mailto:cwebb@wcbarksdale.com">cwebb@wcbarksdale.com</a>	June 30, 2013	5 year
<b>Carol Womack, Principal</b> Diversified Trust Company 3102 West End Avenue, Suite 600 Nashville, TN 37203 Phone: 615-386-7302 E-mail: <a href="mailto:cwomack@diversifiedtrust.com">cwomack@diversifiedtrust.com</a>	June 30, 2015	3 year

# TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

Board of Trustees Meeting

Third Quarter

Fiscal Year 2012-2013

January 1, 2013 – March 31, 2013

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## **Minutes from the Investment Advisory Council Meeting June 6, 2013**

Mr. Michael Brakebill, Chief Investment Officer, convened the meeting at 10:00 a.m. in the 11<sup>th</sup> Floor conference room of the Andrew Jackson State Office Building. The Investment Advisory Council (IAC) members present were: Mr. George Stadler and Mr. Chuck Webb. Ms. Susan Huffman and Mr. Henry Delicata participated by conference call. Mr. Fred Crown and Ms. Carol Womack were unable to attend. Investment Staff members present were: Michael Brakebill, Daniel Crews, Derrick Dagnan, Chris Denney, Michael Giggie, Carrie Green, Matthew Haitas, Peter Katseff, Thomas Kim, Tim McClure, Rhonda Myers, Andrew Palmer, Jesse Picunko, Jennifer Selliers, Jeff Turriffin, Lamar Villere, and Roy Wellington. Treasurer David Lillard and Mr. Bill Abney were also in attendance.

George Stadler, the Chairperson of the Investment Advisory Council, called the meeting to order and read the following:

Tenn. Code Ann. §8-44-108(b)(2) provides that in the event that a governing body does not have a physical quorum of the members present at the location of the meeting, then a quorum of members can participate by electronic or other means as long as the governing body makes a determination that a necessity exists for the teleconference participation. The necessity determination and a recitation of the facts and circumstances on which it is based, must be included in the minutes of the meeting. The Investment Committee determined that it was necessary to meet by teleconference.

Ms. Susan Huffman motioned that the Investment Advisory Council find the telephone participation in this meeting by some member is necessary. The motion was seconded by Chuck Webb and unanimously approved.

Next, George Stadler proposed that the minutes from the previous IAC meeting on March 6, 2013 be adopted. There were no questions regarding the minutes and Susan Huffman motioned to adopt the minutes. The motion was seconded by Chuck Webb and unanimously approved. The Chairperson turned the meeting over to Mr. Brakebill to give a review of investment performance and current initiatives.

Mr. Brakebill reviewed the fund's investment performance, which was illustrated in the Investment Report and in the Strategic Investment Solutions (SIS) quarterly performance report. He noted that 1-year performance of 10.6% beat 66% of funds. The fund outperformed its benchmark by 0.7% for 1-year returns and 0.8% for 3-year returns. The 3-year performance beat 96% of peers (10.5%) and the 5-year performance of the fund beat 78% of peers (5.4%).

Mr. Brakebill provided an update on the key initiatives. He noted that due diligence on private equity, strategic lending and real estate continues. A firm has been selected for the securities

lending program and legal negotiations with the firm are underway. Mr. Brakebill concluded by giving an update on personnel in investments. He noted that, in addition to the changes to personnel in the sector fund and strategic lending, progress is being made in hiring a real estate portfolio manager.

Roy Wellington made the presentation on domestic equities in the absence of Mike Keeler, who was at an investment conference. Roy informed the group that the Quant Fund is in the capable hands of Kushal Gupta for a temporary basis. A new manager has been hired to work with the Sector Fund and that person will start in June. Derrick Dagnan will be moving to the Strategic Lending portfolio and the same search process will be used to consider other candidates. Michael Moulder is taking on the Telecommunication Services sector and Rachel Roberts will manage the Financials sector.

The Domestic Equity portfolio essentially matched the S&P 1500 benchmark return in a challenging quarter as all three active funds beat their peers. Only the Mid Cap fund was able to add versus its benchmark. Domestic equities also got a performance boost from being right on the underweight to large cap stocks. Our valuation strategies were not rewarded by the market in January and activist investors drove the whipsaws in Information Technology accounting for the large cap underperformance. Roy noted that double digit returns for equities were oddly accompanied by leadership from the typically defensive value sectors like Health Care and Consumer Staples and not the growth areas like Information Technology. The Large Cap funds sold during the quarter to raise cash to fund the Emerging Markets ETF portfolio.

All of the active International Equity managers outperformed. Managers cited good stock selection or exposure to Japan as factors explaining the positive relative returns. Mr. Wellington made a due diligence visit to current and potential international managers in the northeast United States including a visit to Boston on the day of the marathon and bombing. TCRS also took some profits in February and April to raise funds for the Emerging Markets ETF and Fixed Income portfolios. Mr. Wellington noted that the Emerging Markets ETF portfolio performed roughly in line with the custom benchmark except some return measured by MSCI for January 2 happened in the ETFs the prior quarter as US quoted markets advanced in anticipation of the resolution of the fiscal cliff. TCRS will review the markets in the Emerging Markets ETF fund after MSCI announces possible country reclassifications.

Mr. Andrew Palmer reviewed the performance of the fixed income portfolios. He explained the better than benchmark performance of the domestic fixed income portfolio as a result of individual manager performance within the portfolios. He noted that the information ratio (excess returns divided by the volatility of the excess returns) as being between 0.5 and 1.0 for the trailing year for each of the component portfolios. These numbers represent significant manager skill over the time period.

Mr. Palmer noted that the portfolio had been moderating its exposure to credit risk by offsetting market gains with sales to keep the allocation flat and by lowering the average maturity of the corporate securities held. Since the end of the quarter, the allocation to MBS securities has increased to take advantage of cheaper relative prices. With regards to the overall domestic fixed portfolio, Mr. Palmer noted that the risk level relative to the benchmark has come down.

The Inflation Protected portfolio performed in line with the benchmark during the quarter and has been positioned to protect from lower near term inflation reports and longer term avoidance of long duration real interest rate risk. The Inflation Protected portfolio has been tactically smaller than the target since the fourth quarter. This underweight has been reduced in the recent sell off.

Mr. Palmer further noted that Compliance and Legal staff are working to meet new regulations on the use of currency forwards and TBA mortgages. He also provided an update on the Strategic Lending portfolio. Three managers have been approved for the Strategic Lending allocation and legal negotiations are in process. He expects additional managers will be recommended for approval in the new fiscal year.

Peter Katseff provided an update on the Real Estate portfolio. Mr. Katseff began by reviewing some of the recent separate account real estate transactions. He next reviewed the performance of the portfolio including returns and current occupancy levels. He noted that there had been a significant amount of transactions over the past year and that Staff expects to have a similar level of transaction activity for the remainder of 2013.

Mr. Brakebill moved the discussion to Private Equity and formally recognized Lamar Villere for his service to the Fund. Daniel Crews provided an update on the Private Equity program. He reviewed a snapshot of the portfolio's total commitments and allocation among venture capital, buyout, and distressed investments. Mr. Crews reported that Staff completed an extensive project to meet with current and prospective managers in order to transfer relationships to continuing members of the Private Equity program and senior staff. He reviewed the current market environment in private investments, noting that many other limited partners continue to sell their private equity holdings to generate liquidity and to right-size their programs.

Tim McClure gave an update on trading and operations for the quarter. He announced that Bill Perez had joined Virginia King in the Operations Area. Bill has approximately ten years of experience in the area of trading and settlement and also has experience in developing and troubleshooting equity trading platforms. Trade volume picked up some in the quarter over the previous quarter, but was still only in line with normal trade volume. Mr. McClure also mentioned that Brad Pritchett was testing a new front end trading portal provided by Instinet. The software will provide real time trading cost analysis on trades routed through the front end. During the testing period, only trades that would normally be routed to Instinet will be

monitored, but most of the approved brokers have electronic connectivity in place if TCRS decides to utilize the front end software on a permanent basis. There is no cost for the product.

The members of the Investment Advisory Council had no additional questions and Chairman Stadler asked for a motion to adjourn. Chuck Webb motioned to adjourn the meeting and the motion was seconded by George Stadler and unanimously approved. The meeting adjourned at 11:30 a.m.

# Performance Review

## March 2013

### Absolute comparison

- 1 quarter return of 5.0%
- 1 year return of 10.6%
- 3 year return of 10.5%
- 5 year return of 5.4%
- 10 year return of 7.0%

### Benchmark (relative) comparison

- Qtr return beat allocation index by 0.8%
- 1 year return beat allocation index by 0.7%
- 3 year return beat allocation index by 0.8%
- TAA gained 14 bps for quarter
- DFI added 19 bps in quarter
- RE added 17 bps in quarter
- IE added 18 bps in quarter

### Peer comparison

- 1 quarter return ranked at 44% (0% = best)
- 1 year return ranked at 34% (Beat 66% of funds for 1 year)
- 3 year return ranked at 4% (Beat 96% of funds for 3 years)
- 5 year return ranked at 22% (Beat 78% of funds for 5 years)

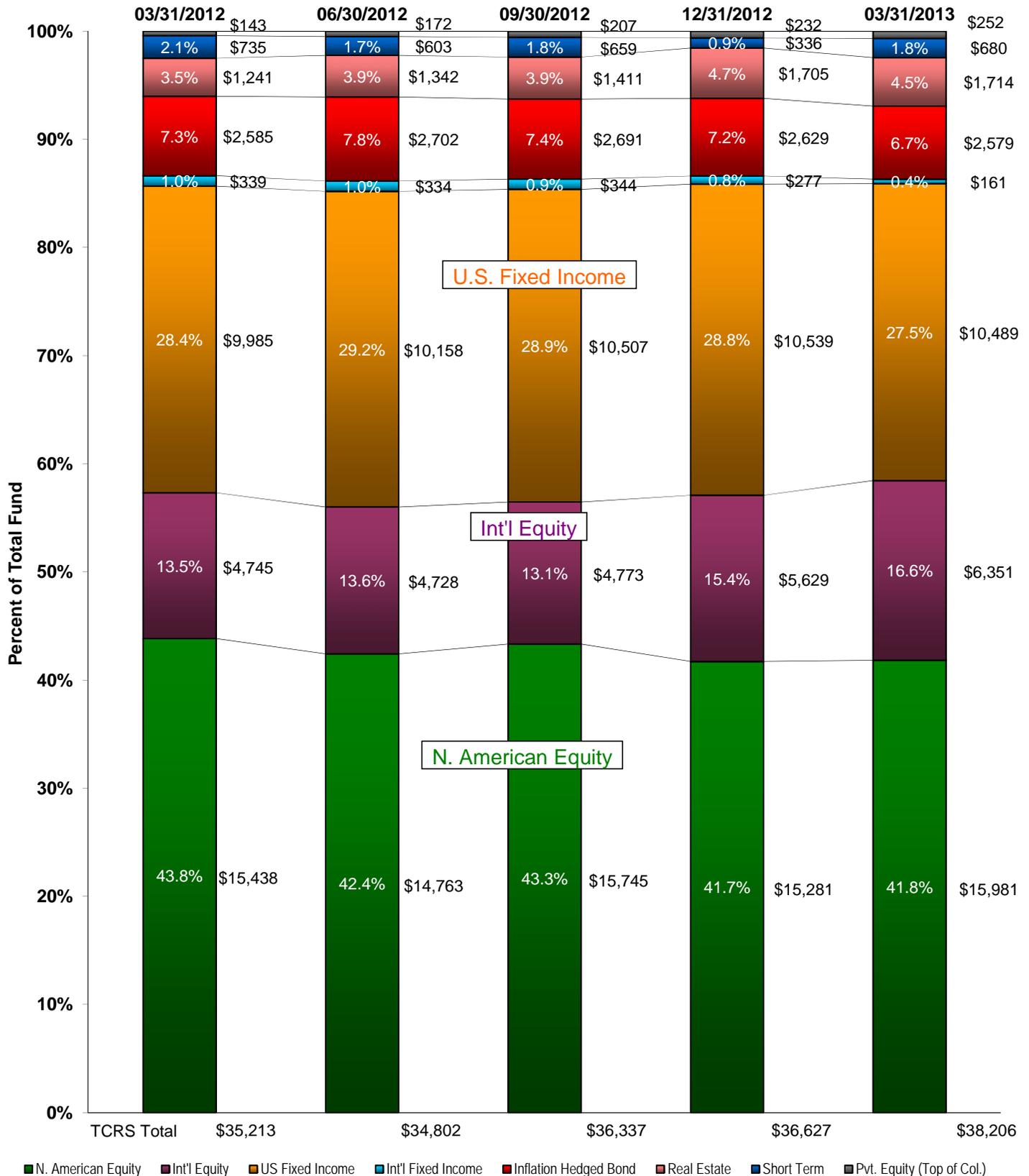
# Key Initiatives

## March 2013

- Asset Allocation Implementation
  - Transition Underway
  - Emerging market equities, transition underway
  - Strategic lending
  - Real estate strategy
  
- Securities Lending
  - Legal negotiations in process
  
- Private Equity Due Diligence
  
- Strategic Lending Due Diligence
  
- Tactical Allocation
  - Neutral, implementing strategic changes
  
- Personnel
  - Real Estate Portfolio Manager
  - Domestic Equity Analyst
  - Strategic Lending Analyst

# TCRS Asset Allocation

March 2013



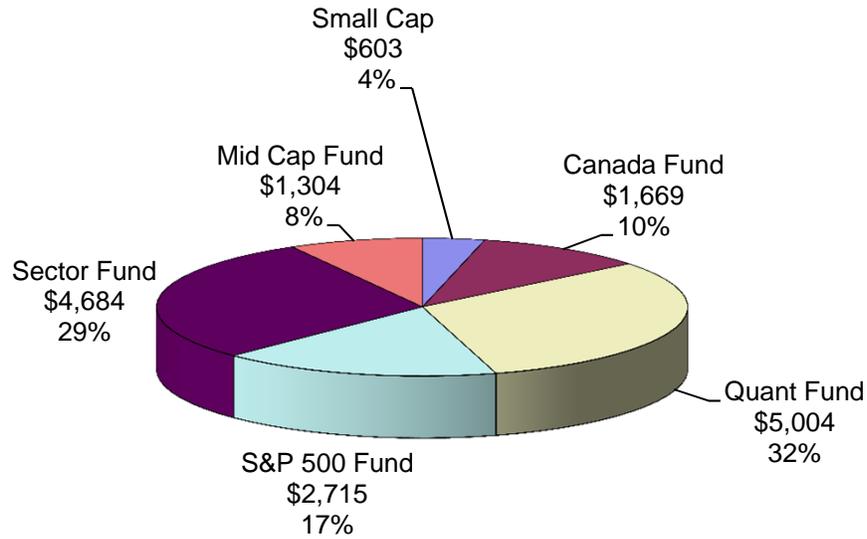
\$ = millions

Source: Strategic Investment Solutions, Inc.

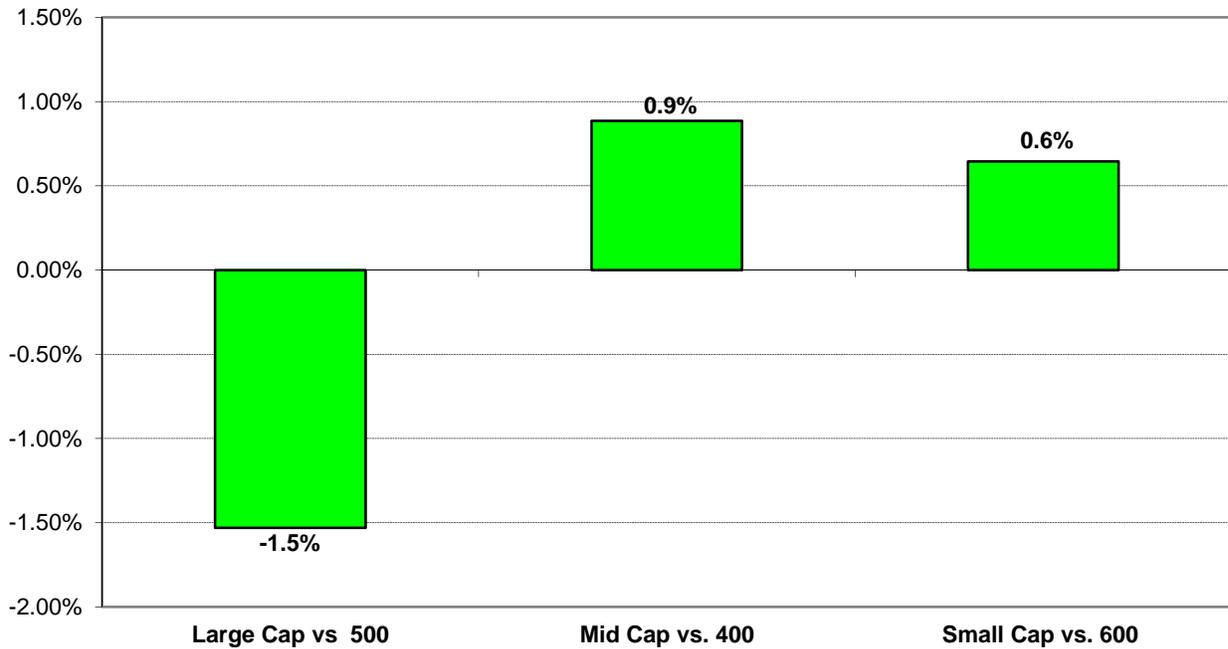
### Domestic Equity Portfolio Overview

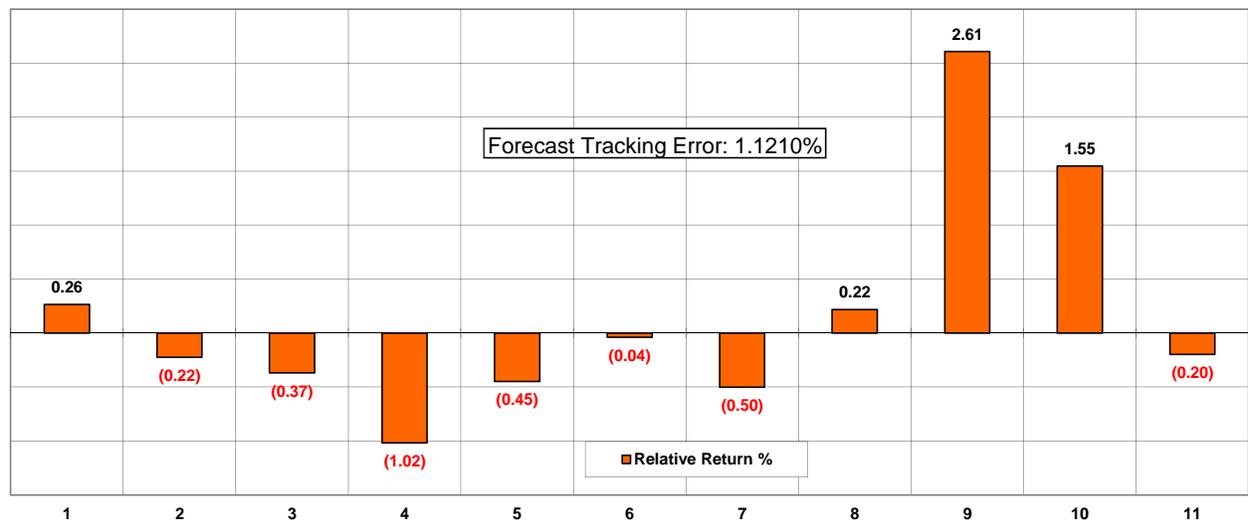
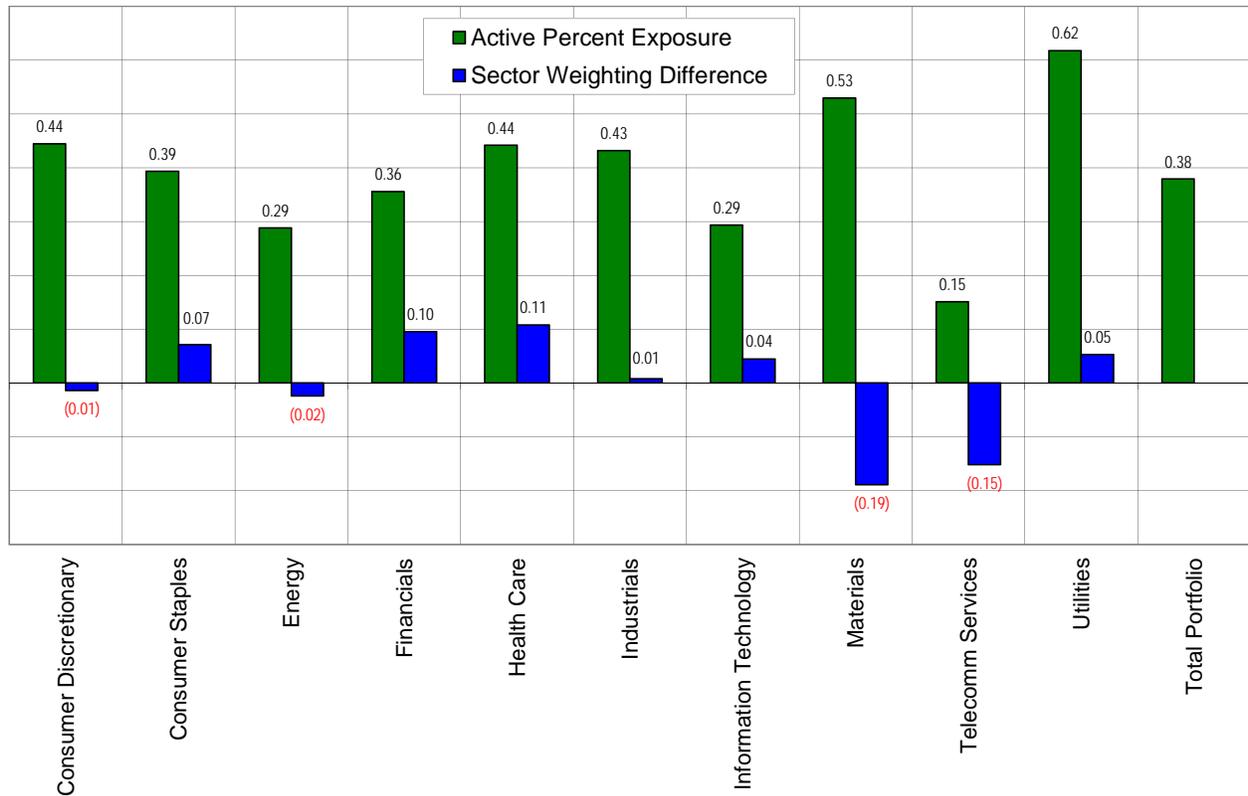
Michael Keeler, CFA

#### TCRS North American Equity Funds



#### TCRS Cap Weights vs. S & P 1500 Composite

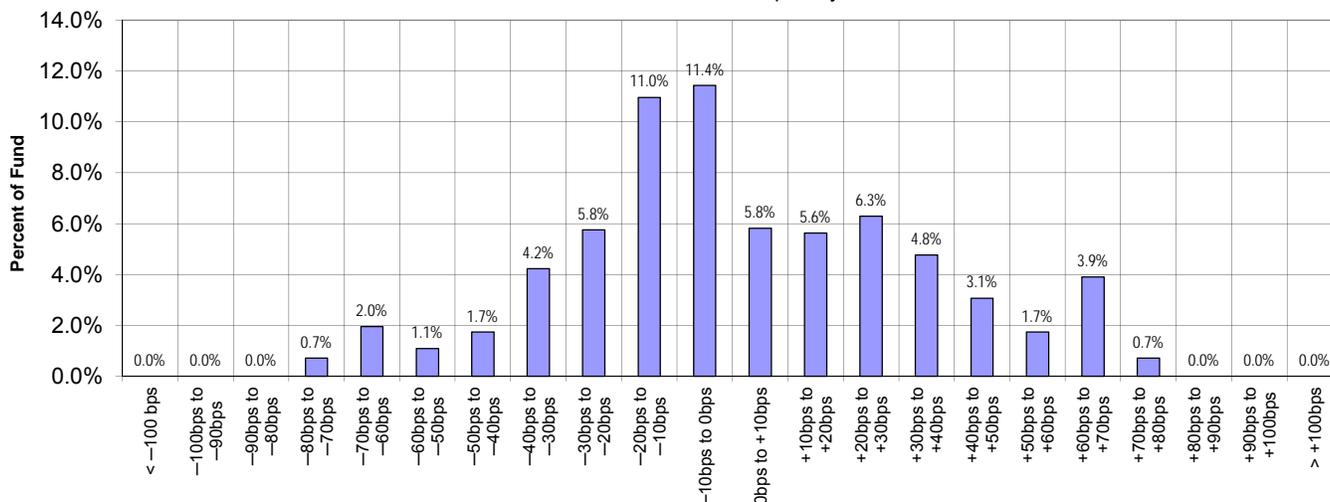




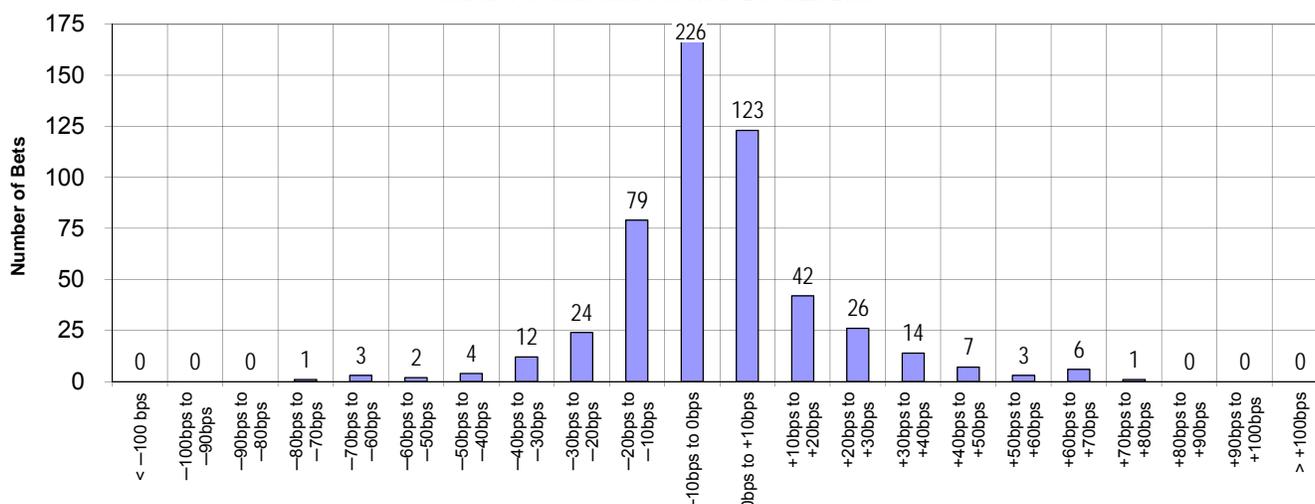
Merrill Lynch's Sell Side Indicator - their measure of Wall Street's bullishness on stocks - rose by 0.6pt in March to 47.3. This reverses part of February's decline, and is the sixth time in the last eight months that the indicator has improved since hitting an all-time low of 43.9 last July. Even though the S & P 500 has already risen 14% by the end of March, since sentiment bottomed, history suggests that strong equity returns can last for years after the indicator troughs.

The quant models slightly underperformed in the quarter. January was the worst and the only negative month this quarter. We still have the same provisions as last quarter to neutralize the risks. The Quant Fund's tracking error was once again maintained at levels similar to that which it was lowered in previous quarters. At December 31st the tracking error was 1.048. At March 31st the tracking error was 1.12, currently it sits at 1.145. The transfer coefficient is at 40. Systematic or factor risk has been taken down from about 30% to the fund's total risk to around 17%.

Active Bets in Fund vs. S&P500, Grouped by Bet Sizes



Number of Individual Stocks in Bet Size Bins

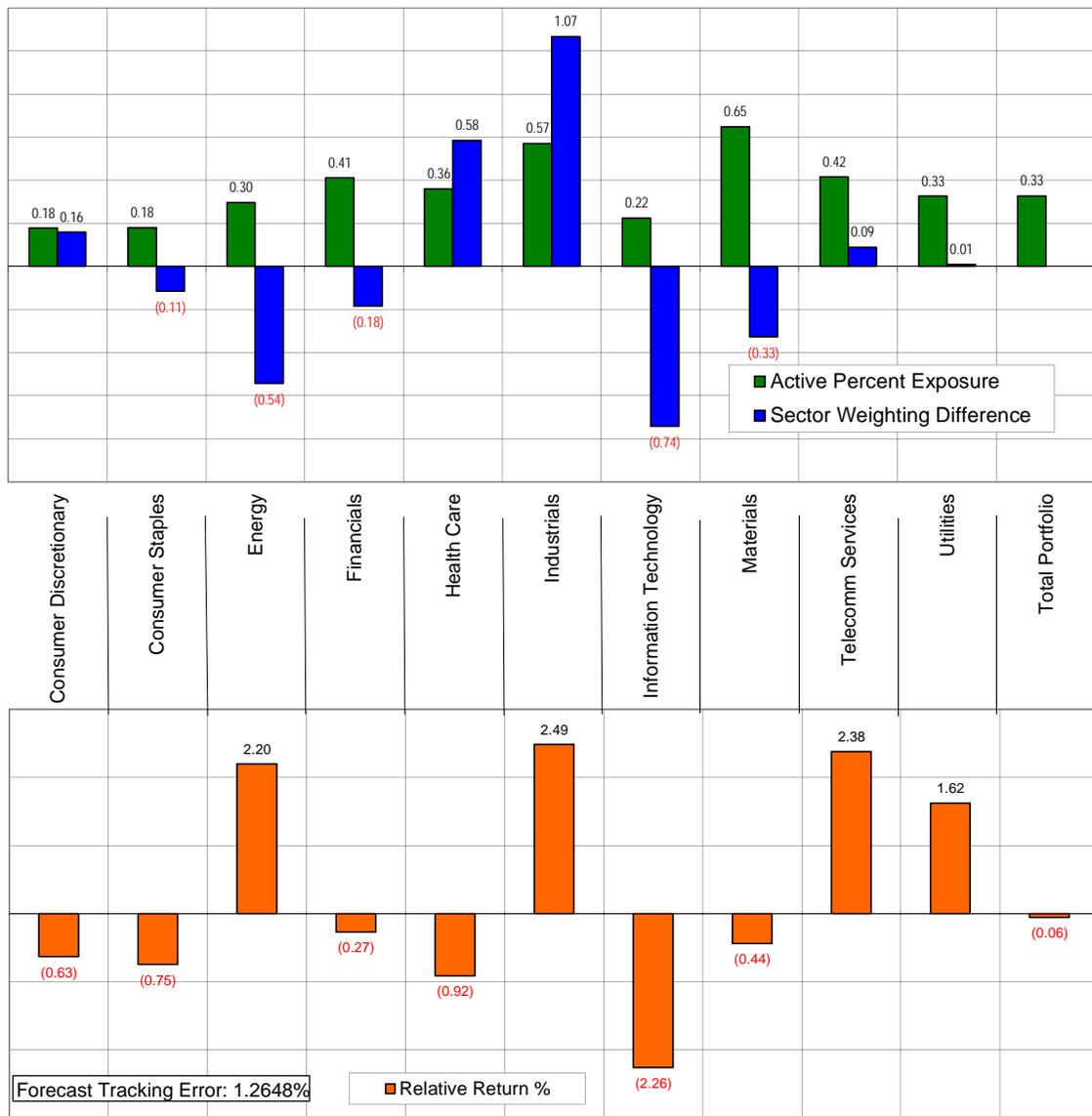


Largest Overweights by Stock in Fund

Ticker	Description	Bps Over
TJX	TJX Cos.	71
NEE	NextEra Energy Inc	69
MO	Altria Group Inc.	67
PFE	Pfizer Inc.	66
ORCL	Oracle Corp.	64
DE	Deere & Co.	64
MDT	Medtronic Inc.	60
GIS	General Mills Inc.	60
XOM	Exxon Mobil Corp.	58
CB	Chubb Corp.	56
CVX	Chevron Corp.	48
NOC	Northrop Grumman Corp.	47
CI	Cigna Corporation	44
TRV	Travelers Cos. Inc.	44
WMT	Wal-Mart Stores Inc.	42
K	Kellogg Co.	42
LLY	Eli Lilly & Co.	41
ABBV	AbbVie Inc.	40
BDX	Becton Dickinson & Co.	39
FITB	Fifth Third Bancorp	39

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
MCD	McDonald's Corp.	-72
PM	Philip Morris International Inc.	-70
MRK	Merck & Co Inc	-64
V	Visa Inc.	-63
UTX	United Technologies Corp.	-56
COP	ConocoPhillips	-52
MMM	3M Co.	-48
BYM	Bristol-Myers Squibb Co.	-43
KO	Coca-Cola Co.	-42
AIG	American International Group Inc.	-41
ABT	Abbott Laboratories	-40
MDLZ	Mondelez International Inc. CI A	-39
GOOG	Google Inc. CI A	-37
EBAY	eBay Inc.	-37
BRK.B	Berkshire Hathaway Inc. CI B	-36
AMZN	Amazon.com Inc.	-36
JNJ	Johnson & Johnson	-36
ESRX	Express Scripts Holding Co	-34
COST	Costco Wholesale Corp.	-33
BIIB	Biogen Idec Inc.	-33

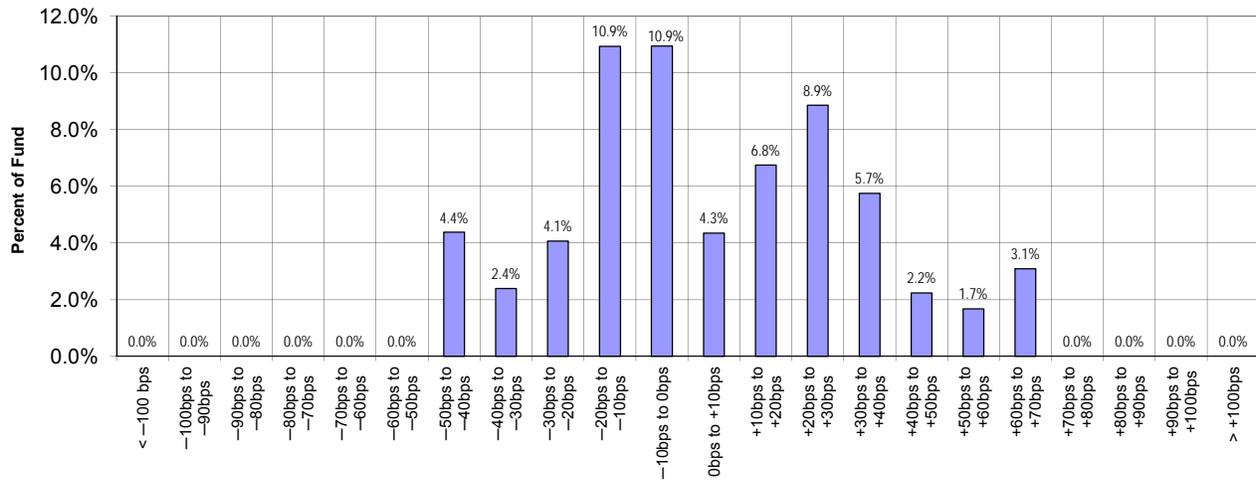


The Sector Fund almost kept up with the bull market without placing a bullish bet in the portfolio. Being bullish probably wouldn't have worked since the typically high growth/high beta Information Technology sector was the worst performing sector in the S&P 500 trailing well behind the defensive leaders in Health Care, Consumer Staples and Utilities. Our overweight to Health Care and underweight to Information Technology would have carried the day until private equity activity changed the market focus from iCool device leader Apple to corporate dinosaurs Dell and Hewlett-Packard.

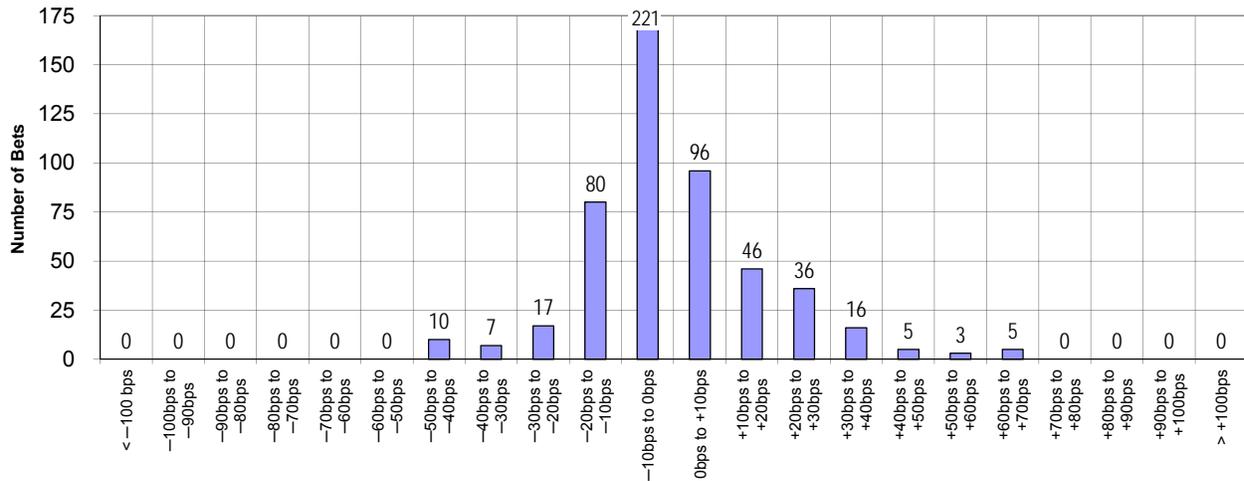
The bull market in equities (and home prices too, probably) is a reflection of the tremendous quantity of money being injected into the financial system. The Fed is trying to find that amount of liquidity that would switch people off of accumulating liquid assets and begin using funds for purchases, investment and hiring. Some question whether the Fed will be able to react appropriately when that switch occurs risking stampedes out of long term bonds, equities and other stores of value. The Sector Fund will not be looking to play the market whipsaws but continue to focus on those companies seem to be left behind in all the other excitement while delivering earnings to shareholders.

Our review of equity sectors highlighted a strong product cycle coming in biologics (Health Care), soft pricing and revenue growth that usually presage profit problems especially for Europe (multi-sector) and commodities (Energy and Materials) and a consumer with higher nominal wealth (some parts of Consumer Discretionary).

Active Bets in Fund vs. S&P500, Grouped by Bet Sizes



Number of Individual Stocks in Bet Size Bins

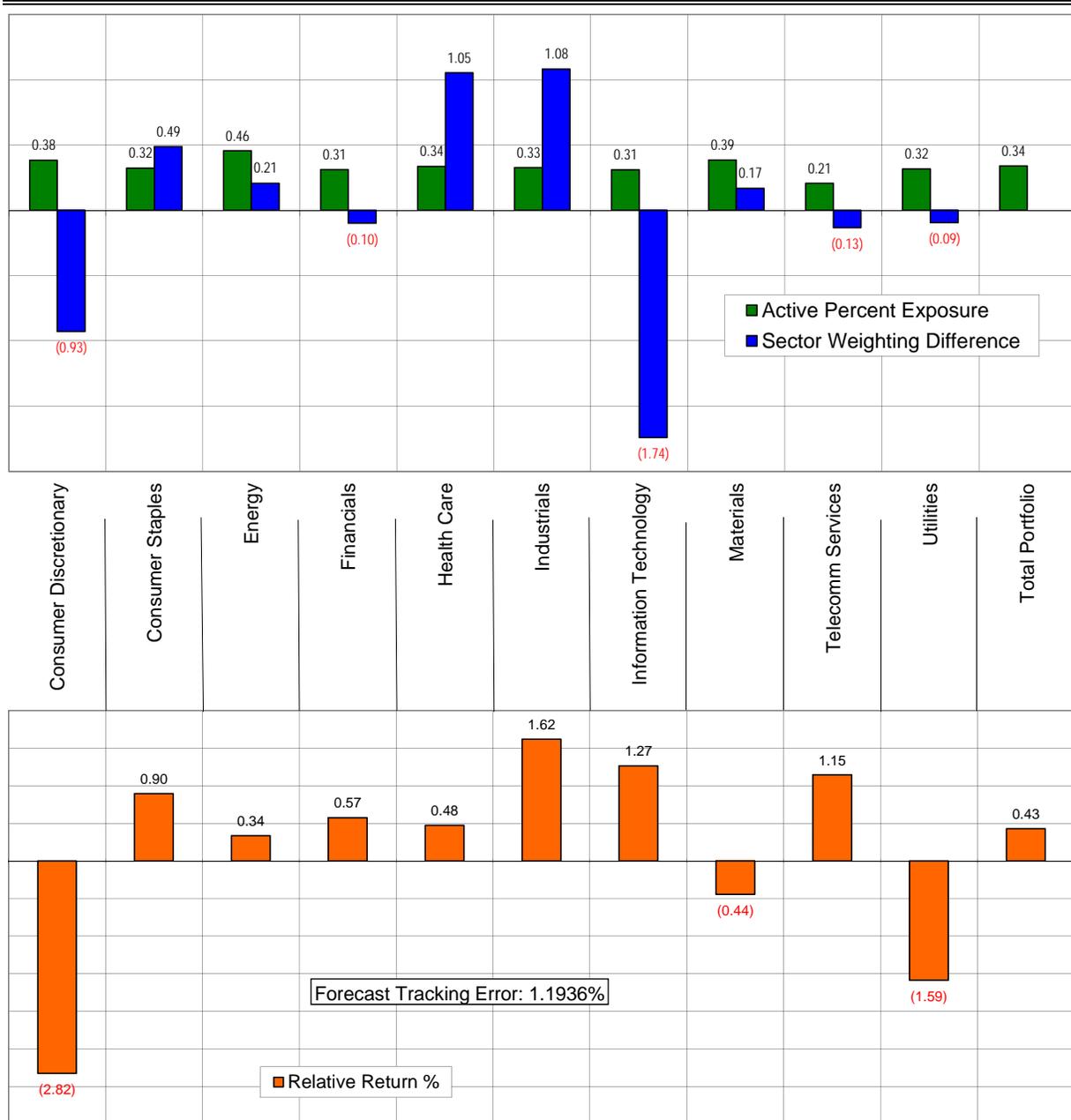


Largest Overweights by Stock in Fund

Ticker	Description	Bps Over Index Wt
BA	Boeing Co.	64
GE	General Electric Co.	62
UTX	United Technologies Corp.	61
UNP	Union Pacific Corp.	61
MPC	Marathon Petroleum Corp.	61
CTL	CenturyLink Inc.	59
IBM	International Business Machines Co	57
HCC	HCC Insurance Holdings Inc.	52
HON	Honeywell International Inc.	50
LLY	Eli Lilly & Co.	46
TSO	Tesoro Corp.	44
CVX	Chevron Corp.	43
TGI	Triumph Group Inc.	41
CAT	Caterpillar Inc.	40
TMO	Thermo Fisher Scientific Inc.	39
BEAV	B/E Aerospace Inc.	39
ORCL	Oracle Corp.	39
ACT	Actavis Inc.	38
SPW	SPX Corp.	37
DOV	Dover Corp.	37

Largest Underweights by Stock in Fund

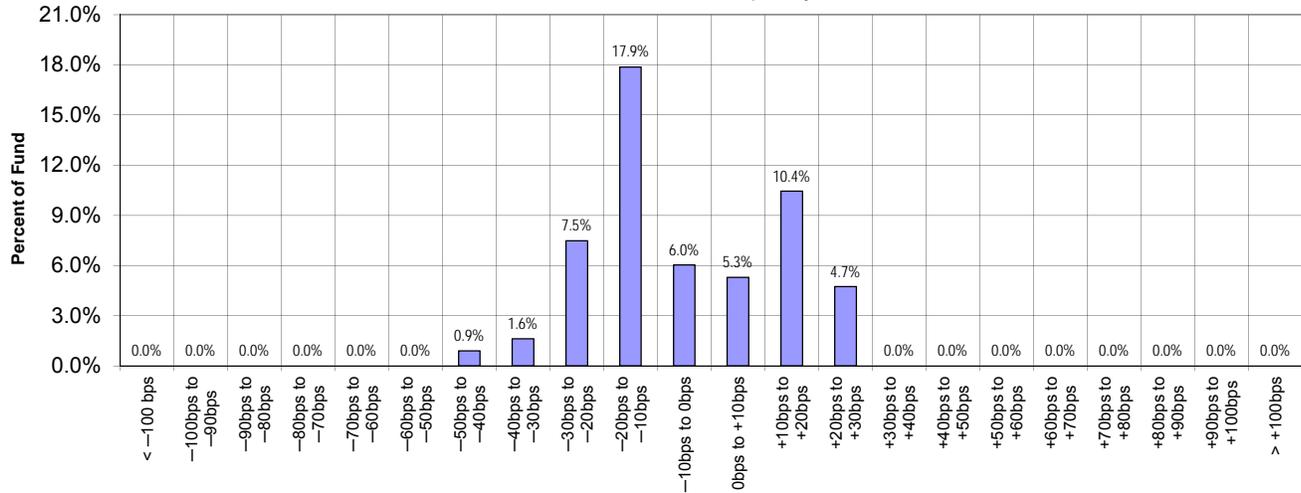
Ticker	Description	Bps Under
MMM	3M Co.	-48
BRK.B	Berkshire Hathaway Inc. Cl B	-47
AXP	American Express Co.	-46
MRK	Merck & Co Inc	-46
OXY	Occidental Petroleum Corp.	-45
VZ	Verizon Communications Inc.	-42
AIG	American International Group Inc.	-41
V	Visa Inc.	-41
T	AT&T Inc.	-40
UNJ	Johnson & Johnson	-40
BMY	Bristol-Myers Squibb Co.	-38
CL	Colgate-Palmolive Co.	-37
MDT	Medtronic Inc.	-34
EBAY	eBay Inc.	-34
DD	E.I. DuPont de Nemours & Co.	-33
BAC	Bank of America Corp.	-32
AMGN	Amgen Inc.	-32
ABT	Abbott Laboratories	-30
EMR	Emerson Electric Co.	-29
DOW	Dow Chemical Co.	-27



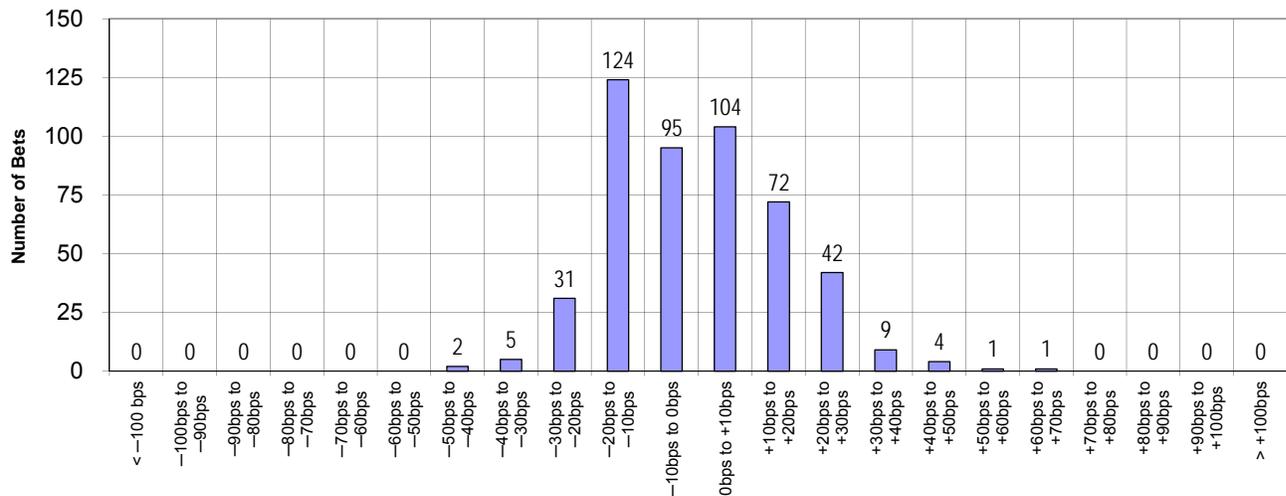
Domestic equities essentially matched the S & P 1500 benchmark return for the quarter primarily due to the mid cap fund out performing its benchmark as well as an overweight commitment to the mid and small cap funds relative to the S & P 1500. Value factors tended to outperform growth during the quarter as did smaller stocks despite a shift to safety that occurred about the middle of the quarter probably influenced by renewed concerns about Europe as well as the sequestration drama.

The Mid Cap Fund beat the S & P Mid Cap 400 return during the quarter primarily due to good stock selection in the Industrial Services, Capital Goods and Semiconductor industries somewhat offset by poor stock picking in the Retailing and Consumer Durables industries. Stock selection accounted for about half of the value added above the benchmark during the period as an underweight in the technology sector and an overweight in staples contributed to an unusually strong attribution from sector allocation.

Active Bets in Fund vs. S&P400, Grouped by Bet Sizes



Number of Individual Stocks in Bet Size Bins

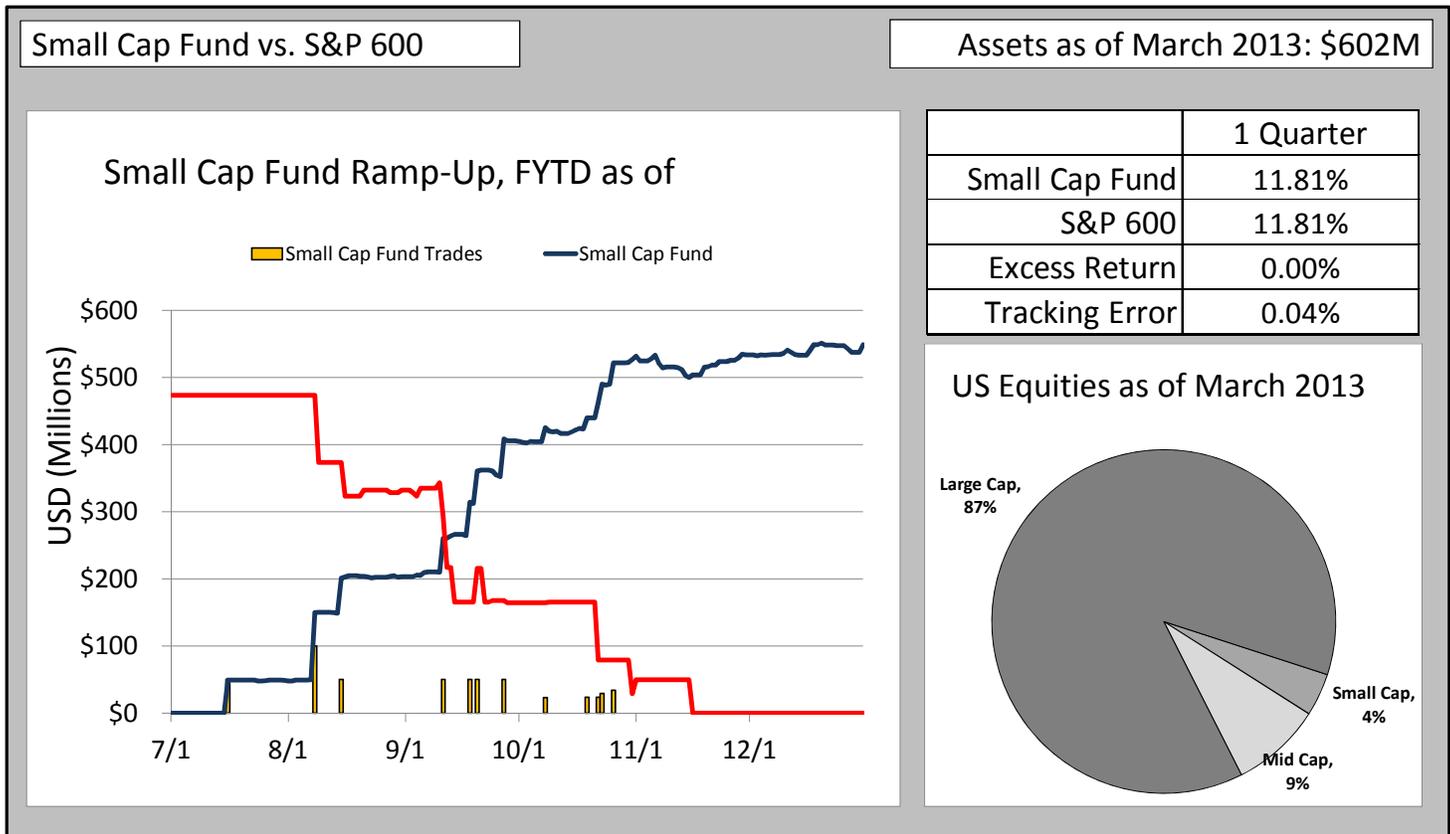
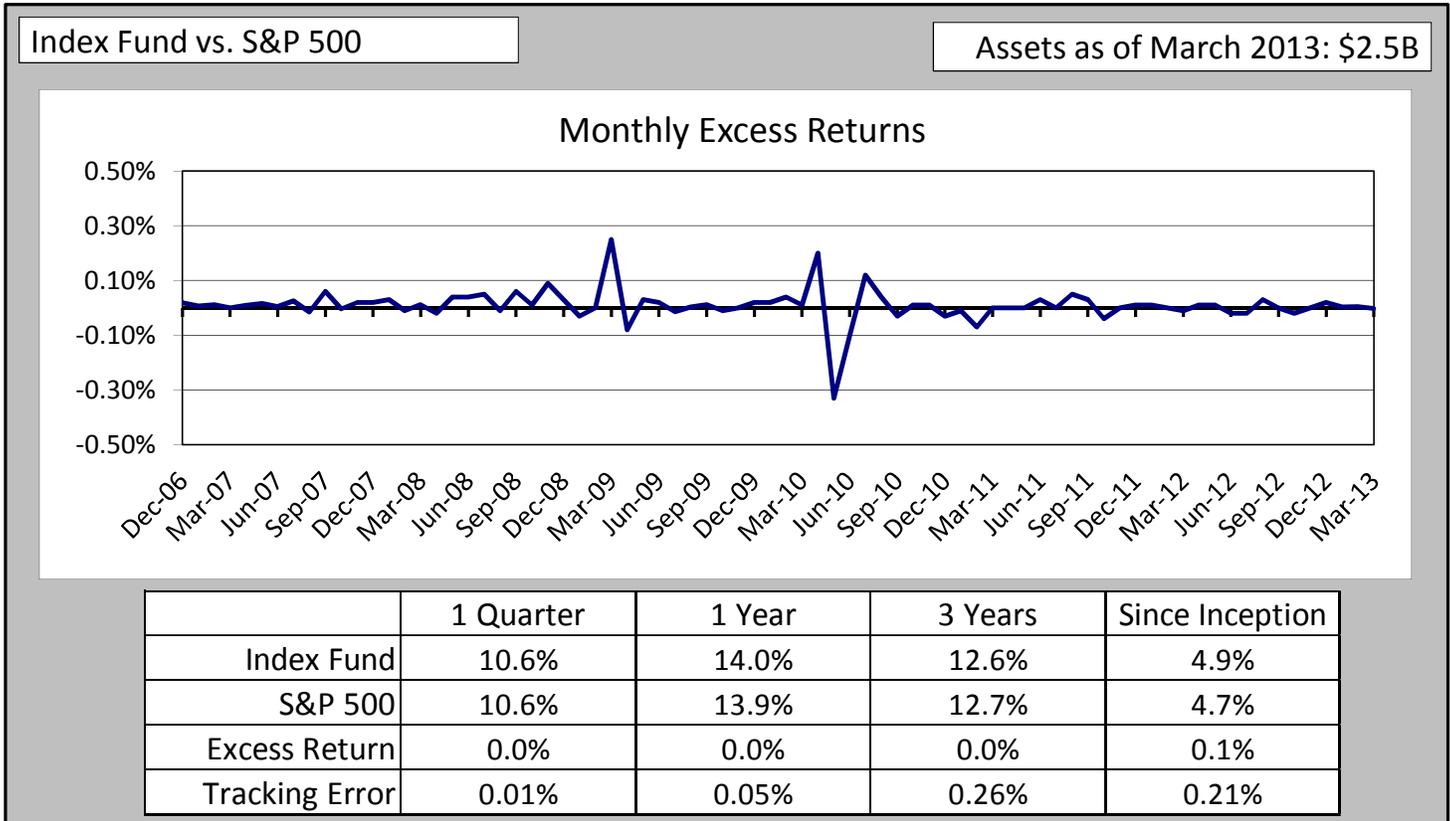


Largest Overweights by Stock in Fund

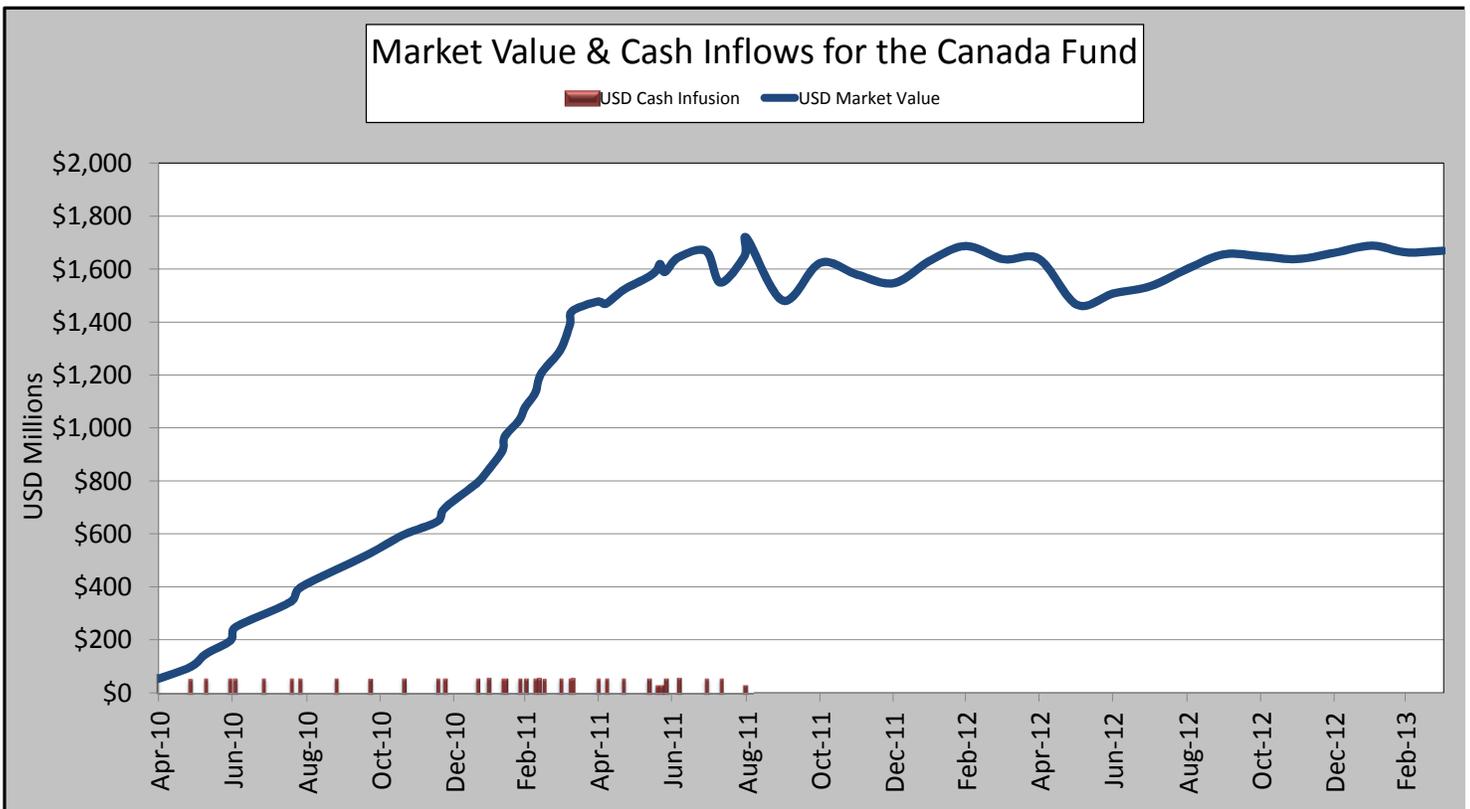
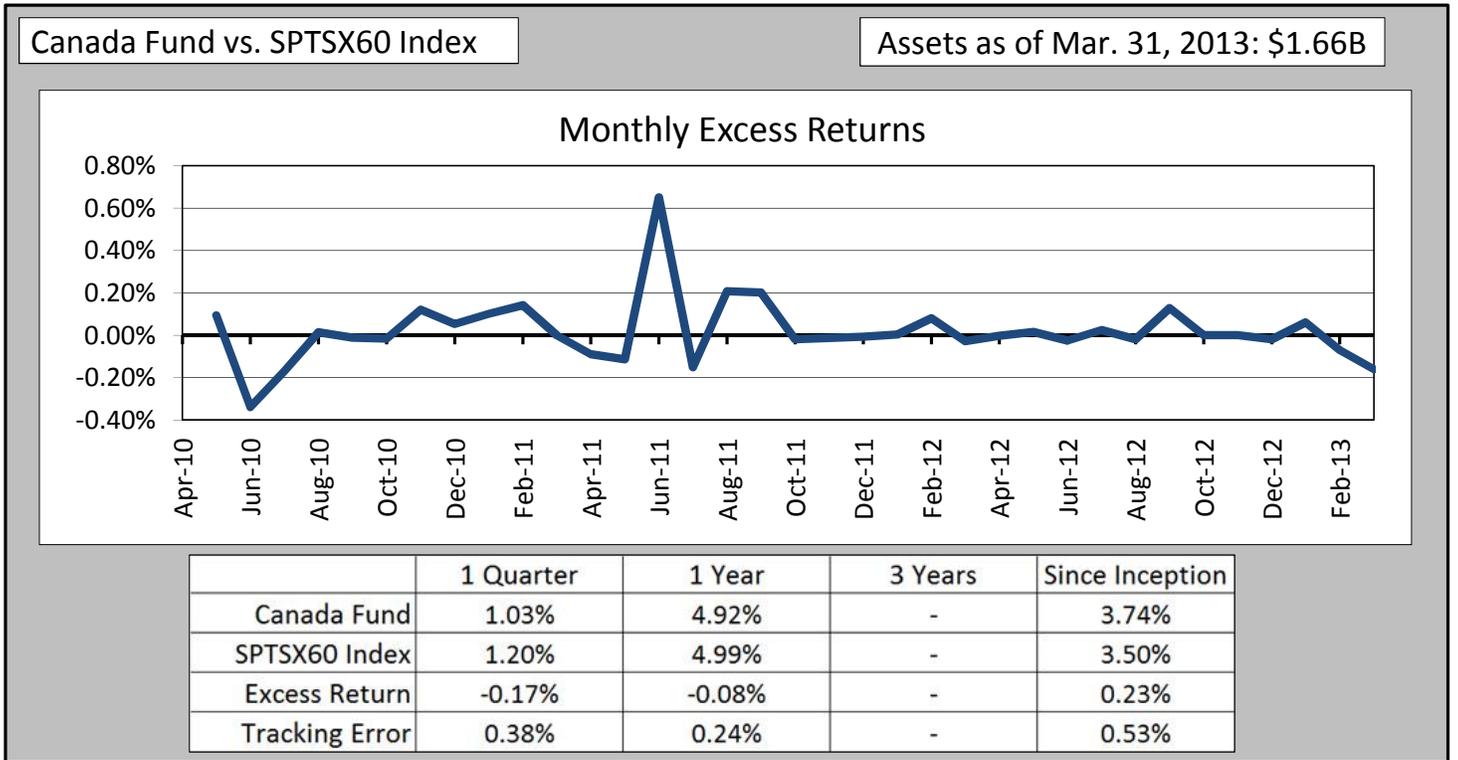
Ticker	Description	Bps Over
RE	Everest Re Group Ltd.	60
PVH	PVH Corp.	52
RJF	Raymond James Financial Inc.	50
GEF	Greif Inc. CI A	46
ENR	Energizer Holdings Inc.	46
DLX	Deluxe Corp.	41
NVE	NV Energy Inc.	37
ALK	Alaska Air Group Inc.	37
WDR	Waddell & Reed Financial Inc. CI A	36
CRI	Carter's Inc.	35
OSK	Oshkosh Corp.	35
EWBC	East West Bancorp Inc.	34
SBNY	Signature Bank	33
AVT	Avnet Inc.	33
RYN	Rayonier Inc. REIT	32
USTR	United Stationers Inc.	30
HBI	Hanesbrands Inc.	30
VECO	Veeco Instruments Inc.	30
FNF	Fidelity National Financial Inc.	29
CR	Crane Co.	29

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
PXP	Plains Exploration & Production Co.	-46
HOLX	Hologic Inc.	-45
ADS	Alliance Data Systems Corp.	-35
GWR	Genesee & Wyoming Inc. CI A	-34
ANSS	Ansys Inc.	-31
HSIC	Henry Schein Inc.	-31
SPN	Superior Energy Services Inc.	-31
KRC	Kilroy Realty Corp.	-29
LKQ	LKQ Corp	-28
ATR	AptarGroup Inc.	-28
FLO	Flowers Foods Inc.	-28
SPW	SPX Corp.	-28
AMCX	AMC Networks Inc. CI A	-27
DCI	Donaldson Co. Inc.	-27
SON	Sonoco Products Co.	-26
GGG	Graco Inc.	-26
TFX	Teleflex Inc.	-26
OHI	Omega Healthcare Investors Inc.	-26
SLG	SL Green Realty Corp.	-25
CYT	Cytec Industries Inc.	-25



Canada Fund  
Kushal Gupta, CFA



Manager Performance Comparison – International Equity

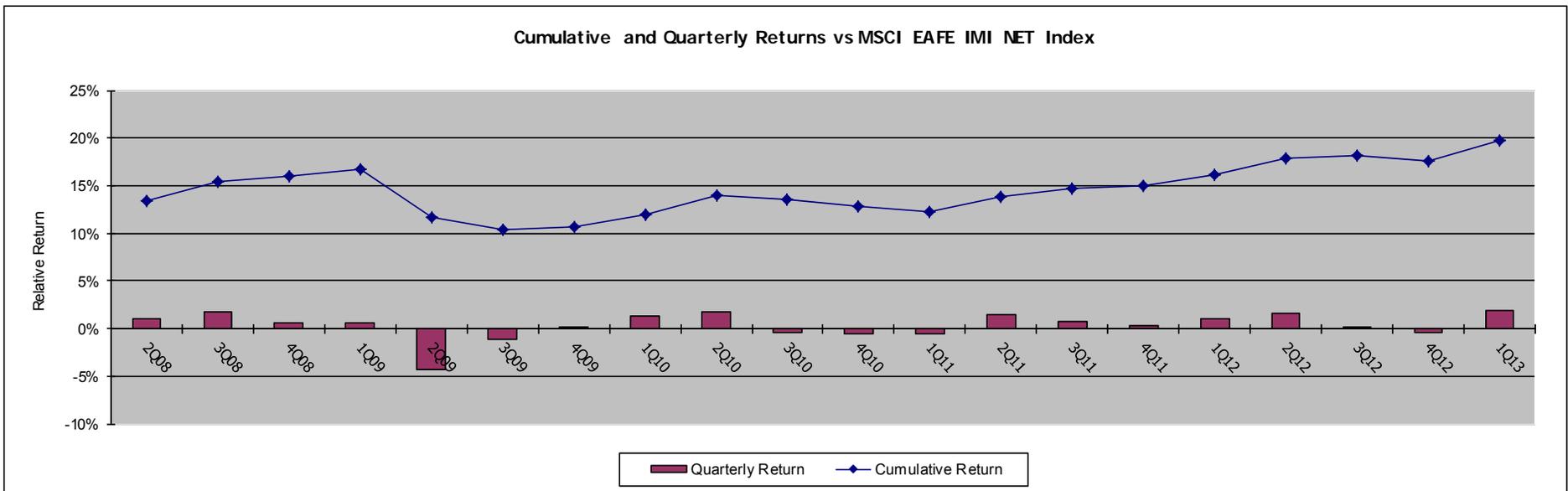
As of March 31, 2013

Manager returns for the quarter ending March 31, 2013

Manager	Manager Return	Benchmark	Benchmark Return
American Century	10.48	MSCI EAFE Small Cap NET	8.42
Baring Asset Mgmt	6.77	MSCI EAFE NET Index	5.13
Emerging Market ETF	-2.73	MSCI EMERGING NET CUSTOM	-0.90
GE Asset Mgmt	3.01	MSCI Europe NET Index	2.71
Marathon	7.77	MSCI EAFE NET Index <sup>2</sup>	5.13
Pacific Indexed Port <sup>5</sup>	8.98	MSCI Pacific NET Index <sup>1</sup>	9.74
PanAgora	5.95	MSCI EAFE NET Index	5.13
Pyramis	8.48	MSCI EAFE Small Cap NET	8.42
TT International	8.01	MSCI EAFE NET Index	5.13
Walter Scott	6.59	MSCI EAFE NET Index <sup>4</sup>	5.13
International	5.58	MSCI EAFE IM Net Index <sup>3</sup>	3.72

Manager returns for five years ending March 31, 2013

Manager	Manager Return	Benchmark	Benchmark Return
American Century		MSCI EAFE Small Cap NET	
Baring Asset Mgmt		MSCI EAFE NET Index	
Emerging Market ETF		MSCI EMERGING NET CUSTOM	
GE Asset Mgmt		MSCI Europe NET Index	
Marathon	3.06	MSCI EAFE NET Index <sup>2</sup>	-0.89
Pacific Indexed Port <sup>5</sup>	0.04	MSCI Pacific NET Index <sup>1</sup>	1.98
PanAgora	0.91	MSCI EAFE NET Index	-0.89
Pyramis		MSCI EAFE Small Cap NET	
TT International		MSCI EAFE NET Index	
Walter Scott	5.37	MSCI EAFE NET Index <sup>4</sup>	-2.16
International	1.88	MSCI EAFE IM Net Index <sup>3</sup>	-0.76



<sup>1</sup> Effective as of 7/1/04; prior was MSCI AC Asia Pacific Free Index.

<sup>2</sup> Effective as of 5/19/06; prior was MSCI Europe Index.

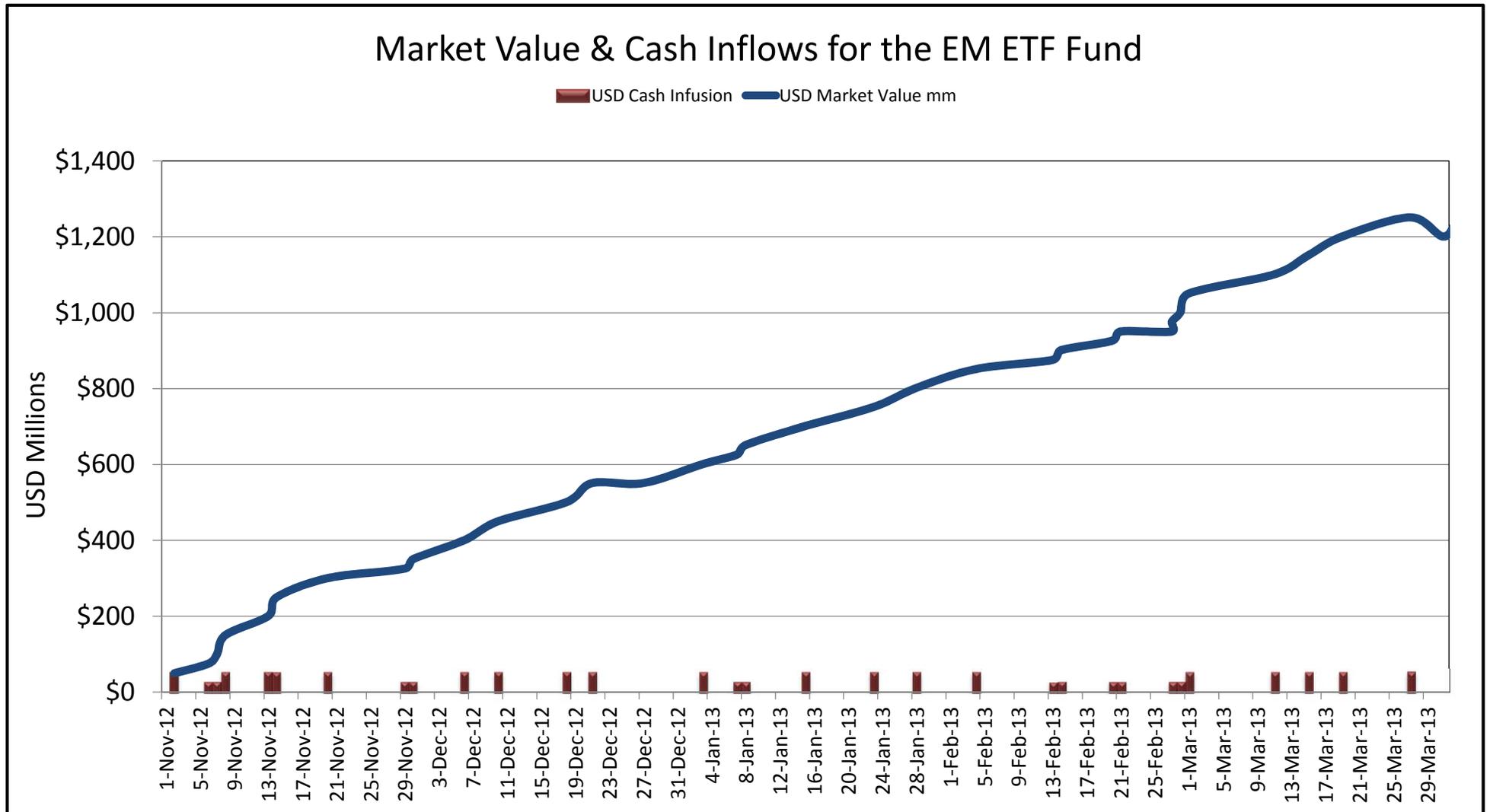
<sup>3</sup> Effective as of 10/1/08; prior was MSCI EAFE NET Index.

<sup>4</sup> Effective as of 2/2/09; prior was MSCI Europe Index.

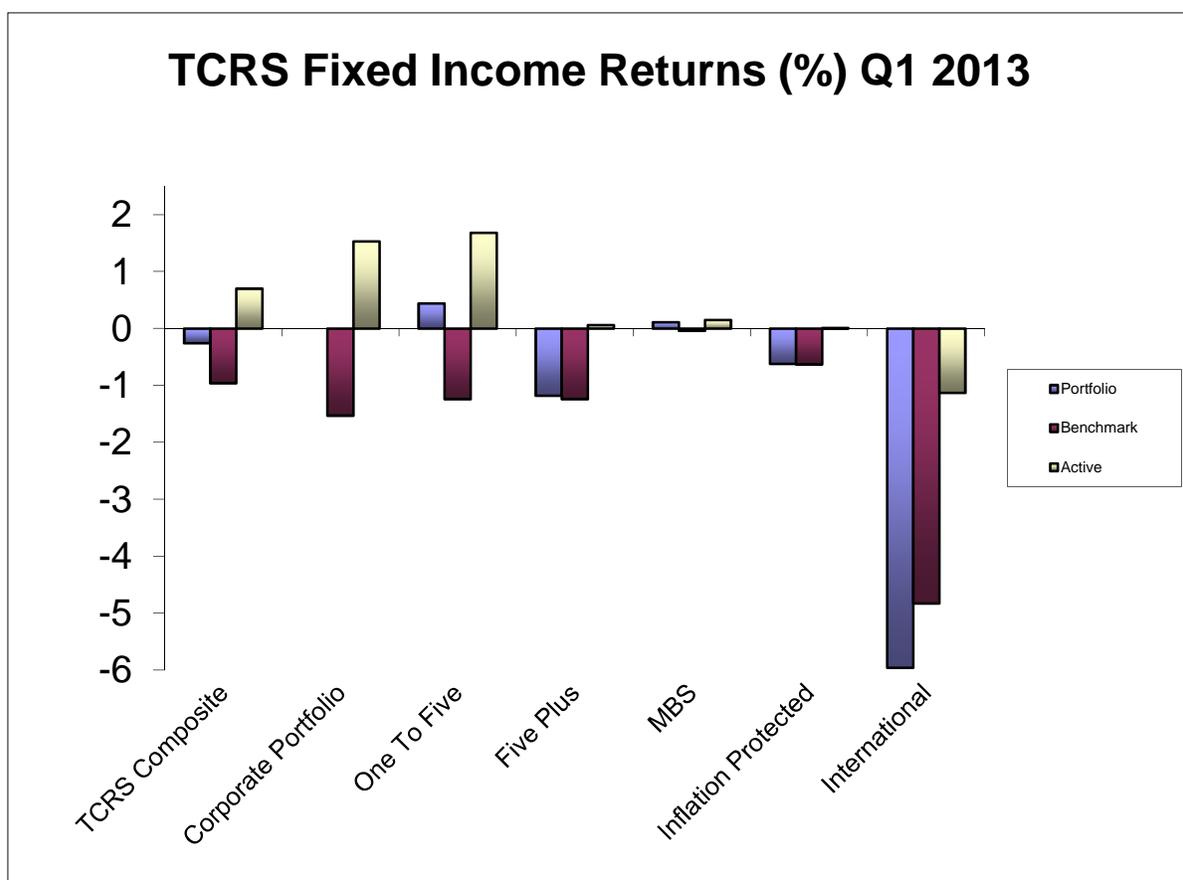
<sup>5</sup> Performance was attributable to Amundi through 9/3/10; portfolio managed by TCRS staff afterward.

Emerging Markets ETF Fund  
Kushal Gupta, CFA

Assets as of Mar. 31, 2013: \$1.20B

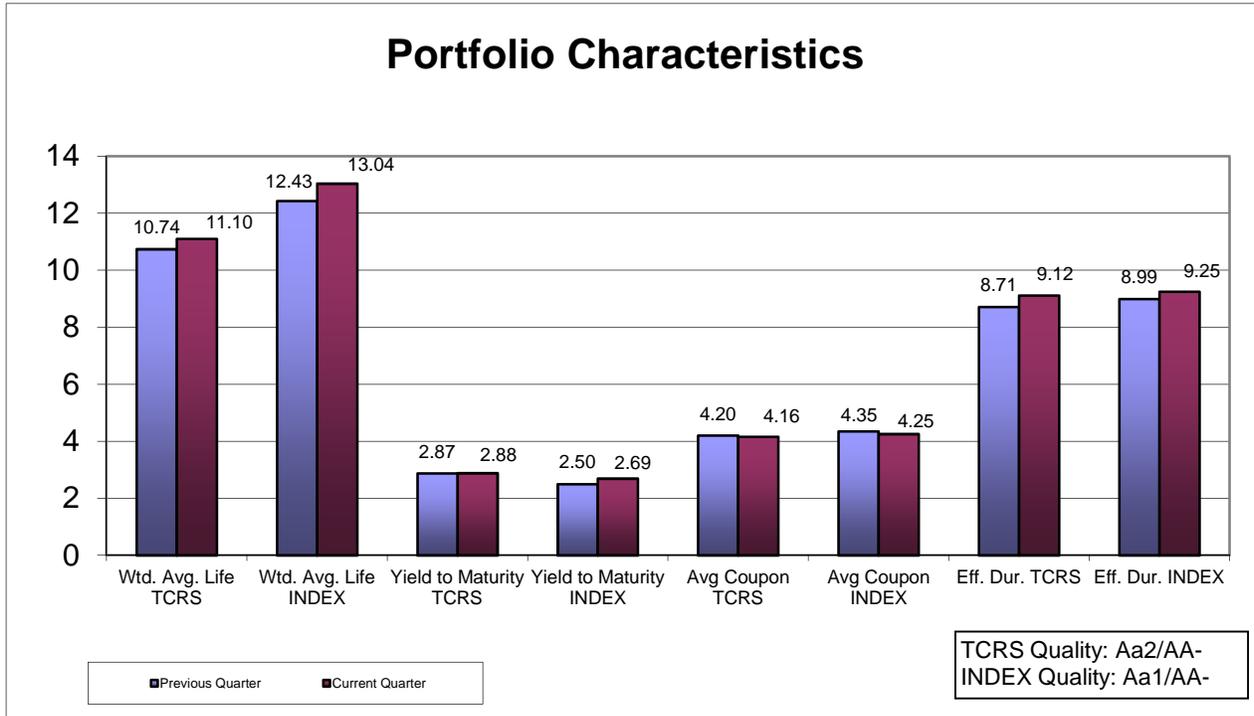


Portfolio	Value (Yield Book) (\$MMs)	Portfolio Return	Benchmark Return	Active Return
TCRS Domestic Fixed Income Composite	\$10,602	(0.26)	(0.96)	0.70
Corporate Portfolio	\$3,505	-	(1.53)	1.53
Government One To Five Years	\$1,622	0.44	(1.24)	1.68
Government Five Plus Years	\$1,923	(1.18)	(1.24)	0.06
Mortgage Portfolio	\$3,500	0.11	(0.04)	0.15
TCRS Inflation Protected Securities	\$2,579	(0.62)	(0.63)	0.01
TCRS International	\$161	(5.96)	(4.83)	(1.13)

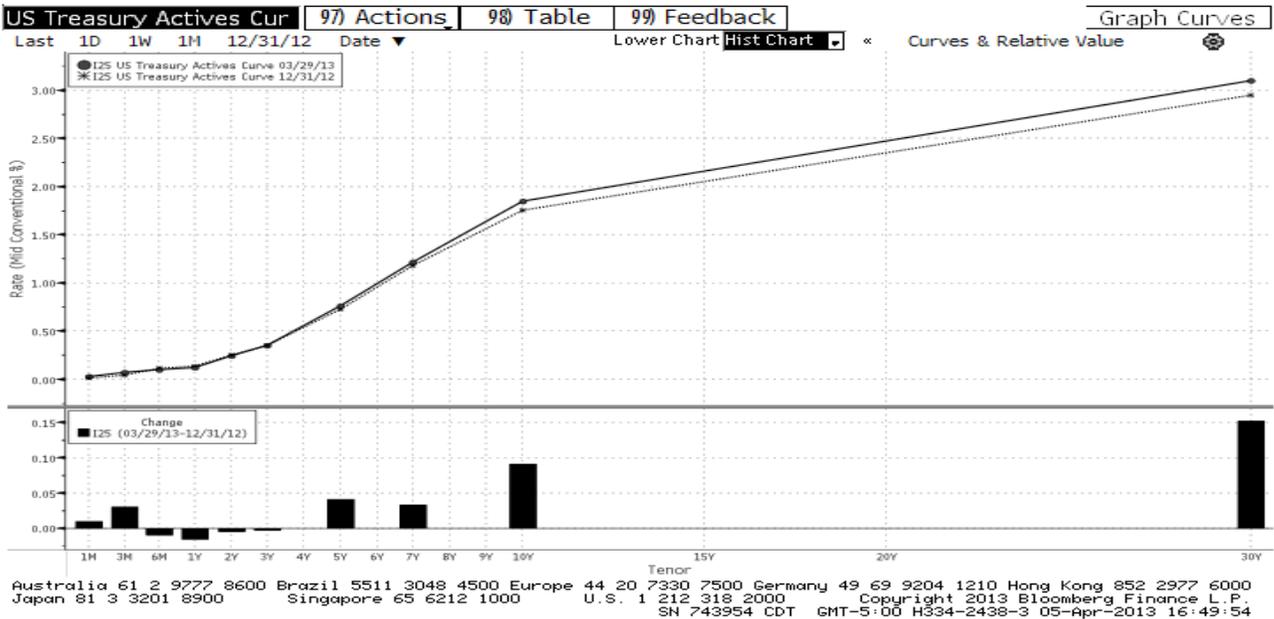


Note: All positions and market values are as of March 30, 2013

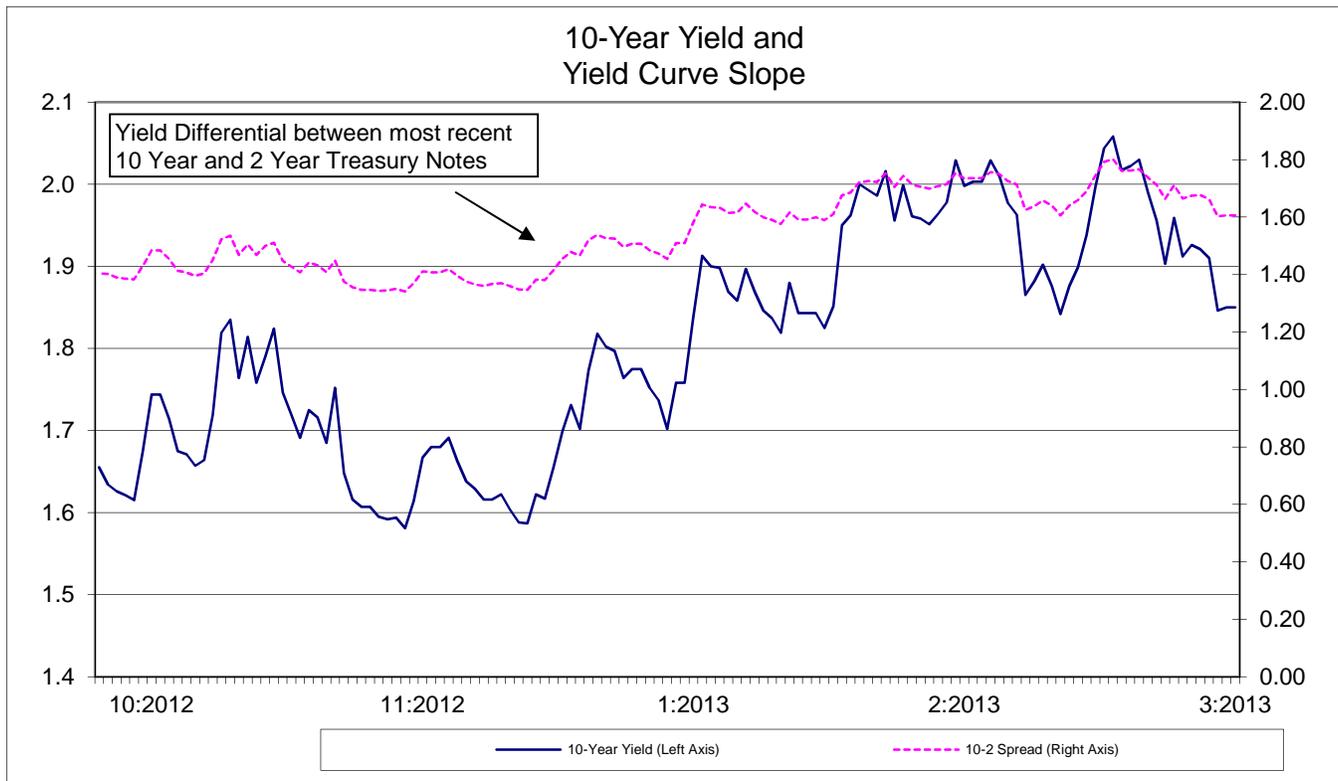
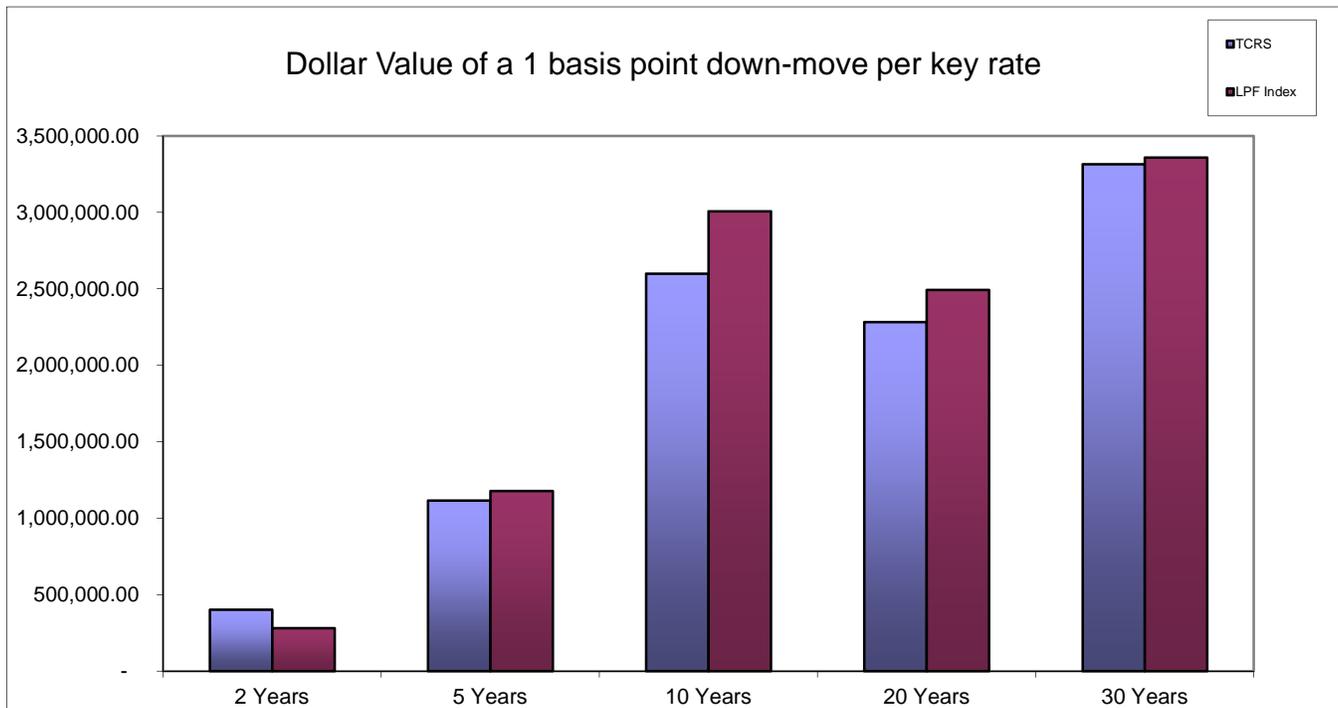
*Characteristics show an increase in duration risk as long term yields rose during the quarter*



*Yields rose and the curve steepened*

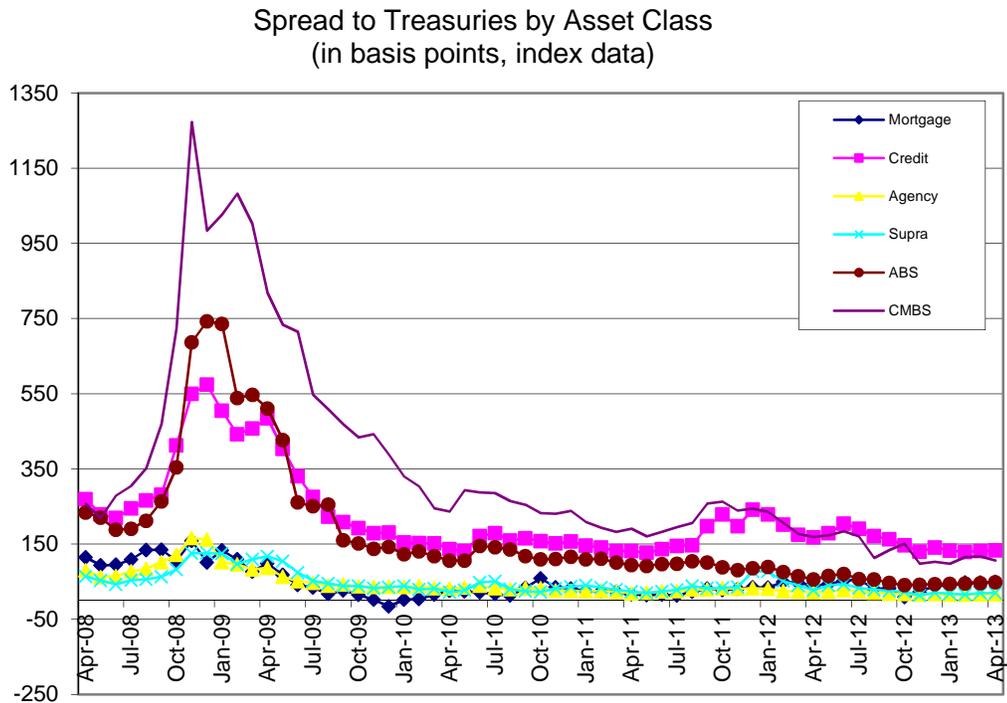
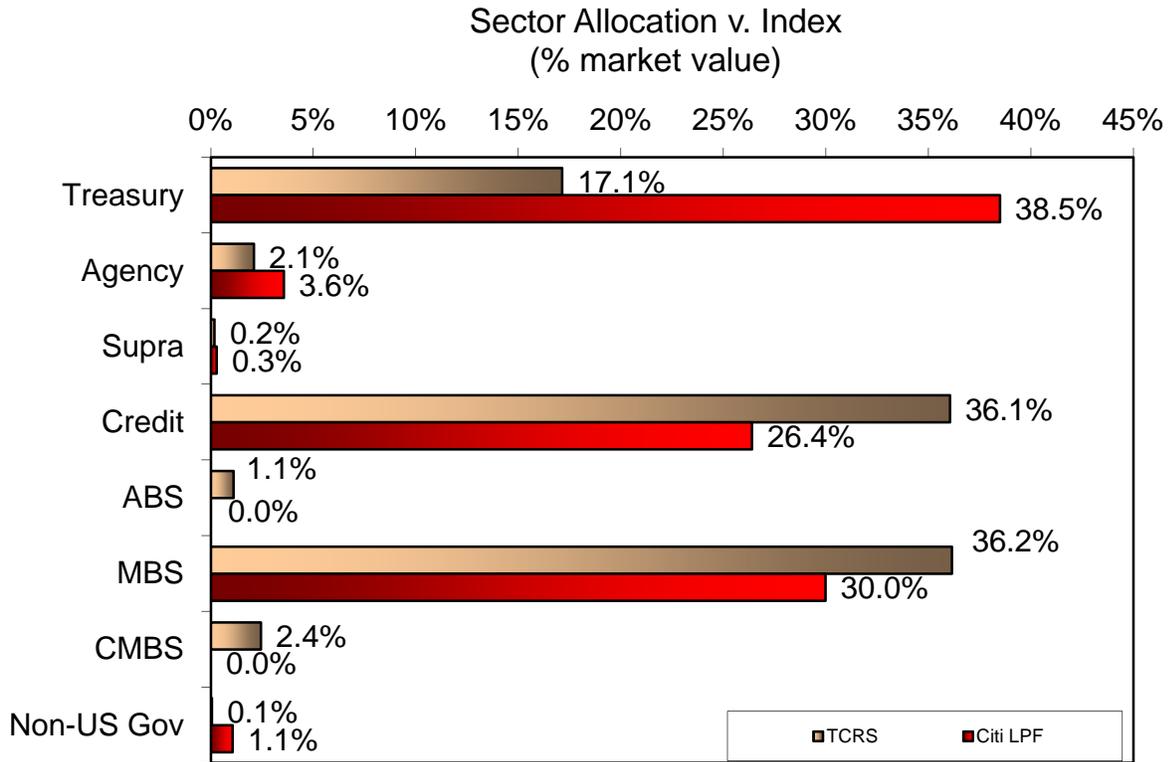


*Curve positioning reflects overweight to MBS and Credit*



source: Bloomberg

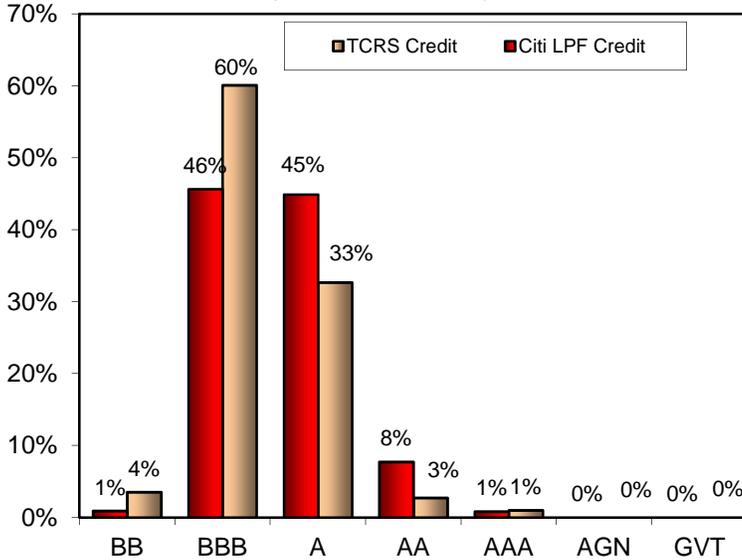
Allocation to ABS continues to shrink



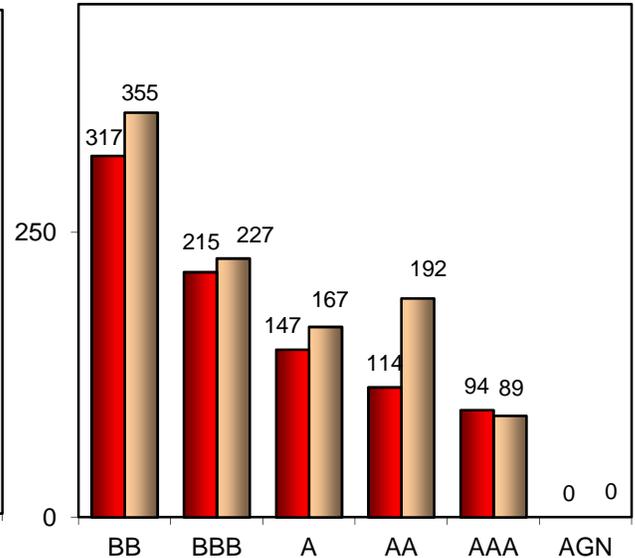
source: Yield Book

*Spreads tightened during the quarter.  
TCRS spreads were slightly higher than the index in most sectors,  
reflecting expectations of continued spread tightening.*

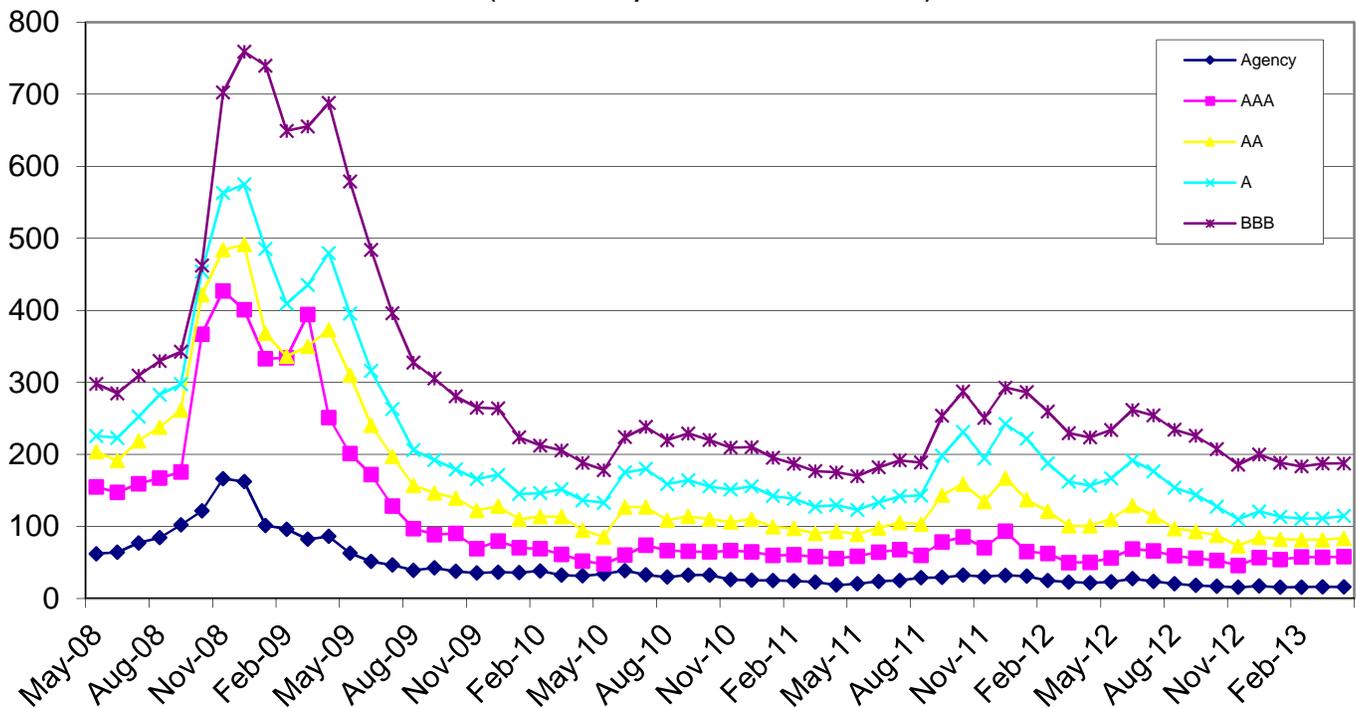
Credit Allocation v. Index  
(% market value)



OAS by Credit Allocation



Spread to Treasury by Credit Rating  
(in basis points, index data)

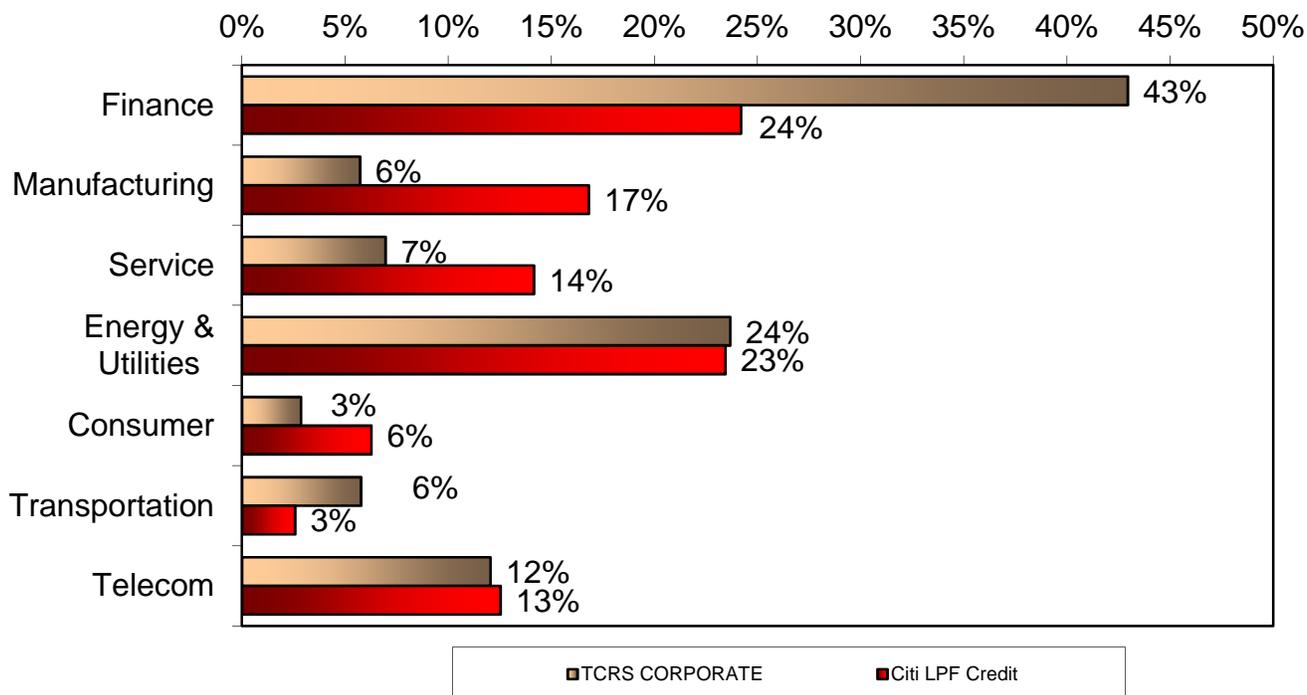


source: Yield Book

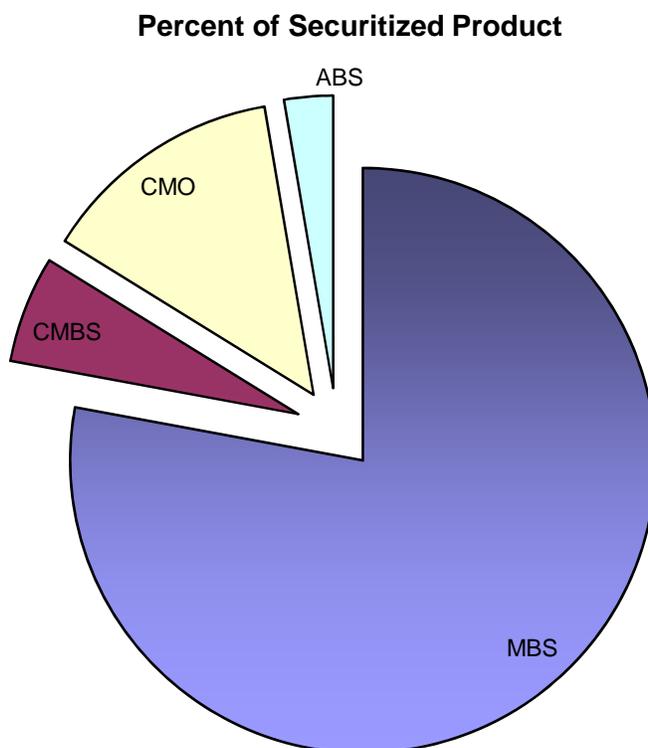
<b>Top 5 Credit Holdings (by Market Value)</b>	MktVal	% MktVal
CITIGROUP	164,000	1.6
GENERAL ELECTRIC CO	122,000	1.2
BANK OF AMERICA CORP	104,000	1
JPMORGAN CHASE & CO	91,713	0.9
GOLDMAN SACHS GROUP	86,210	0.8

<b>Top 5 Credit Holdings (by Dollar Duration)</b>	\$ Duration	% \$ Duration
CITIGROUP	119.18	1.3
GENERAL ELECTRIC CO	107.01	1.1
COMCAST CORP	102.41	1.1
JP MORGAN CHASE & CO	91.69	1
AT&T INC	87.00	0.9

**Sector Allocation v. Index  
(% market value)**



	Market Value (\$MM - Yield Book)	TCRS % of portfolio	CITI	Difference
<b>Agency Mortgage Backed Securities</b>	\$3,347,468	32.2	30.0	2.2
<b>GNMA</b>				
15-Yr	\$9,655	0.1	0.1	0.0
30-Yr	\$553,808	5.3	7.5	-2.2
<b>FNMA</b>				
10-, 15- & 20-Yr	\$350,674	3.4	2.8	0.6
30-Yr	\$1,352,279	13.0	11.3	1.7
<b>FHLM</b>				
15-Yr	\$108,252	1.0	1.7	-0.6
30-Yr	\$830,174	8.0	6.5	1.5
<b>Agency Hybrid</b>	\$142,626	1.4	0.0	1.4
<b>Commercial Mortgage Backed Securities</b>	\$253,597	2.4	0.0	2.4
<b>CMO and Non Agency Passthroughs</b>	\$580,735	5.6	0.0	5.6
<b>Asset Backed Securities</b>	\$115,408	1.1	0.0	1.1
<b>Total Securitized Product</b>	<b>\$4,297,208</b>	<b>41.3</b>	<b>30.0</b>	<b>11.4</b>



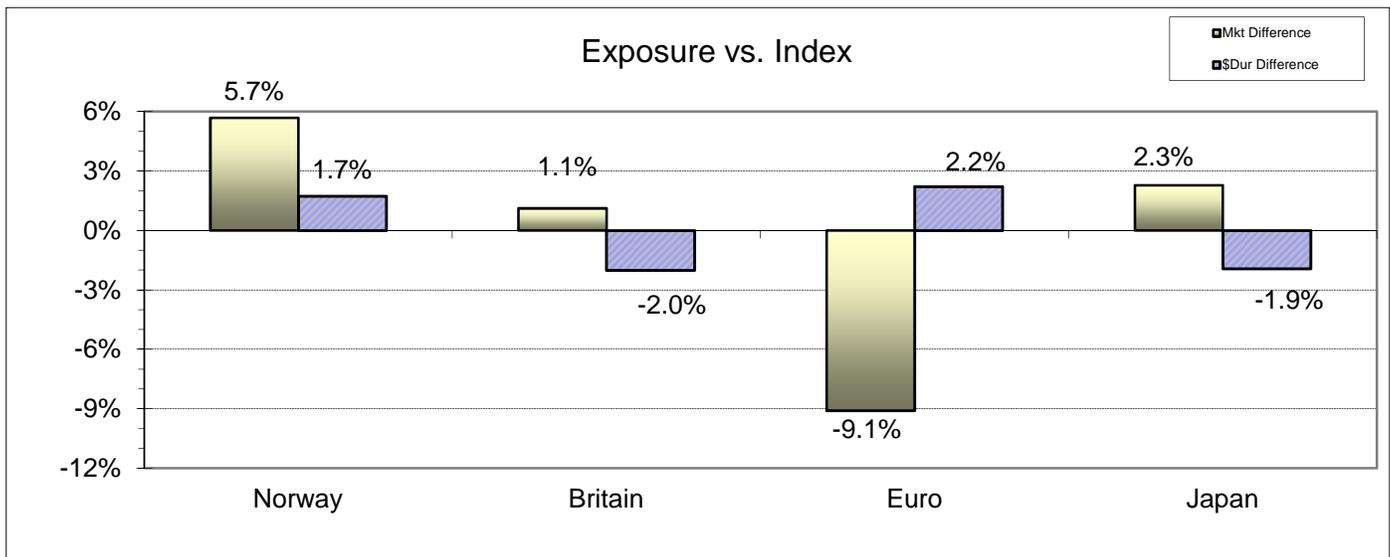
Portfolio Return: -5.96%  
Citigroup Non-US G5 Index: -4.83%  
**Active Return: -1.13%**

	TCRS		Percent of Value	Percent of \$Dur
	Yield	M. Dur		
Norway	1.84	2.19	5.7%	1.7%
Britain	1.92	6.68	12.4%	11.6%
Euro	1.49	9.50	19.5%	25.8%
Japan	0.30	6.98	62.5%	60.9%
	0.82	7.16	100.0%	100.0%

	Citigroup G5 Sovereign Index (ex-US)		Percent of Value	Percent of \$Dur
	Yield	Dur		
Britain	1.70	9.82	11.3%	13.6%
Euro	1.01	6.74	28.6%	23.6%
Japan	0.45	8.51	60.2%	62.8%
	0.75	8.15	100.0%	100%

**Difference**

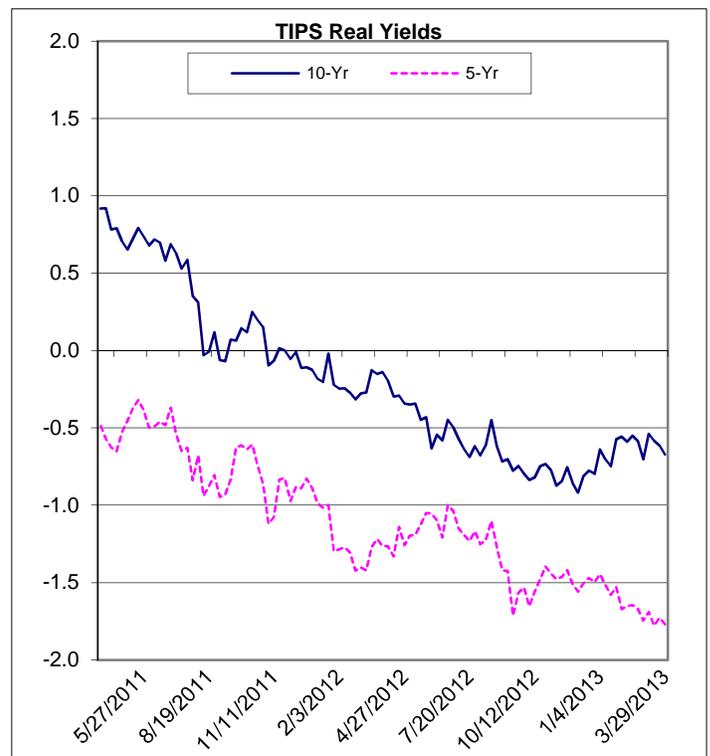
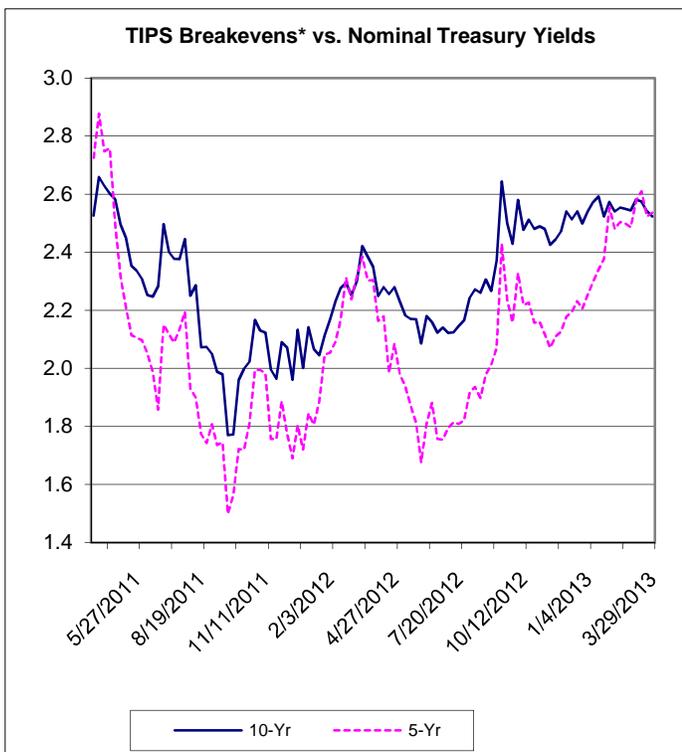
	Value Differ	M. Dur Differ	\$ Dur Differ
Norway	5.7%	2.2	1.7%
Britain	1.1%	-3.1	-2.0%
Euro	-9.1%	2.8	2.2%
Japan	2.3%	-1.5	-1.9%
	0.0%	-1.0	0.0%



Portfolio Value (Yield Book): \$2,578,825,014  
 Portfolio Return: -0.62%  
 Citigroup ILSI Index: -0.63%  
**Active Return: 0.01%**

**% Market Value by Duration**

	TCRS	CITI	Difference
0-2	-0.1%	0.0%	-0.1%
2-4	1.8%	1.8%	0.0%
4-6	3.2%	3.5%	-0.3%
6-8	5.8%	5.8%	0.1%
8-10	10.2%	8.9%	1.3%
10+	14.5%	16.2%	-1.8%

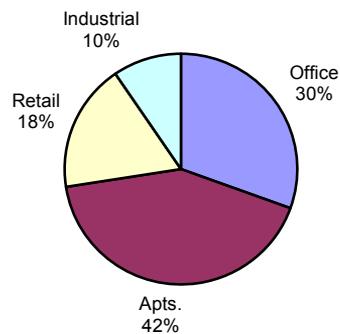


\* The "breakeven" rate is the expected rate of inflation at which investment in TIPS yield the same return as investment in Treasuries

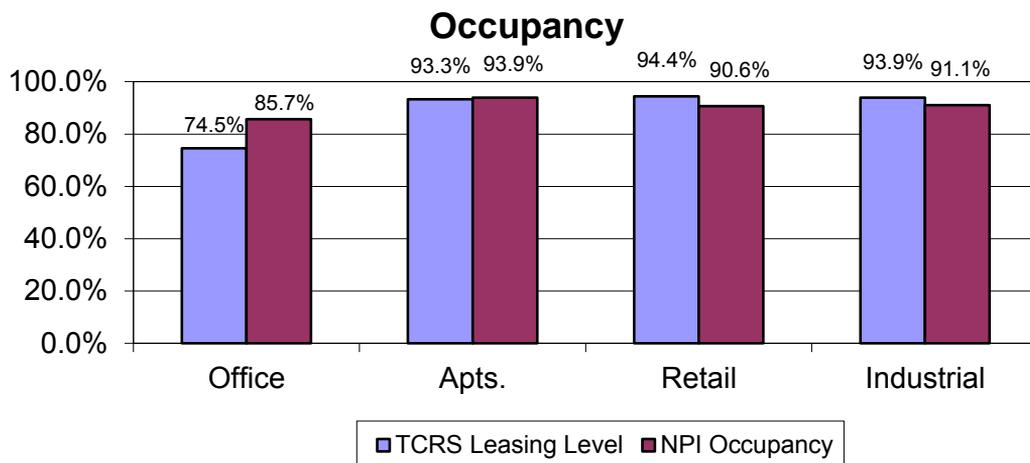
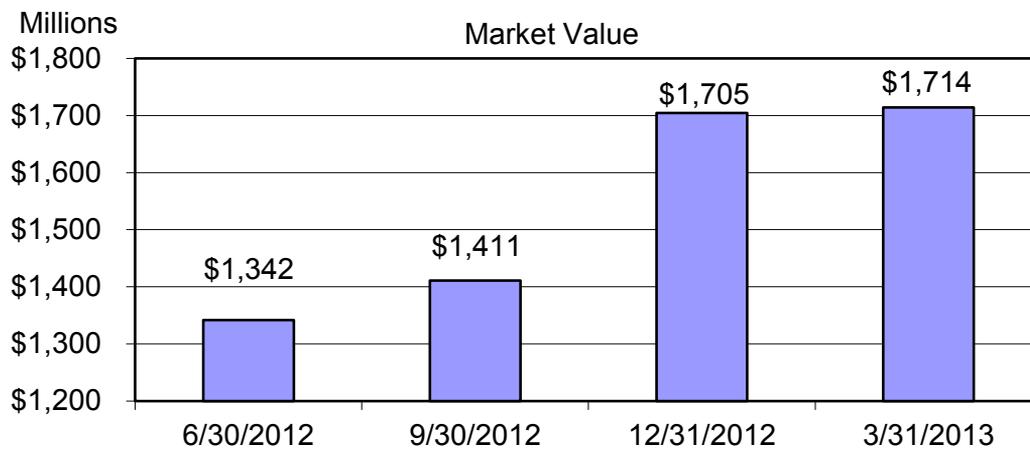
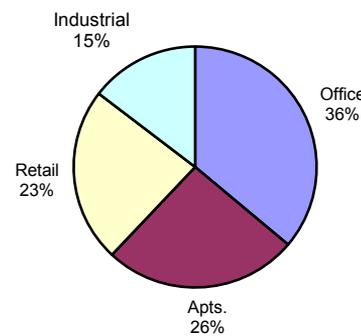
Source: Bloomberg

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**TCRS By Property Type**

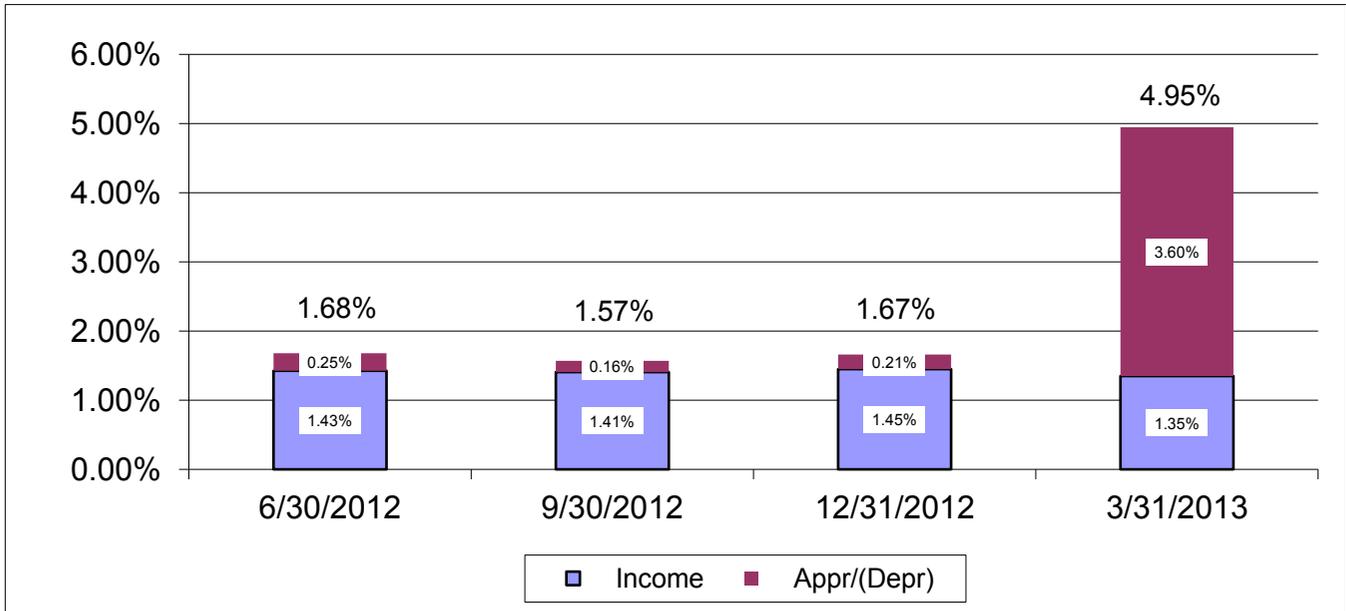


**NPI By Property Type**



The NPI is the National Property Index of the National Council of Real Estate Investment Fiduciaries (the index used for US core properties).

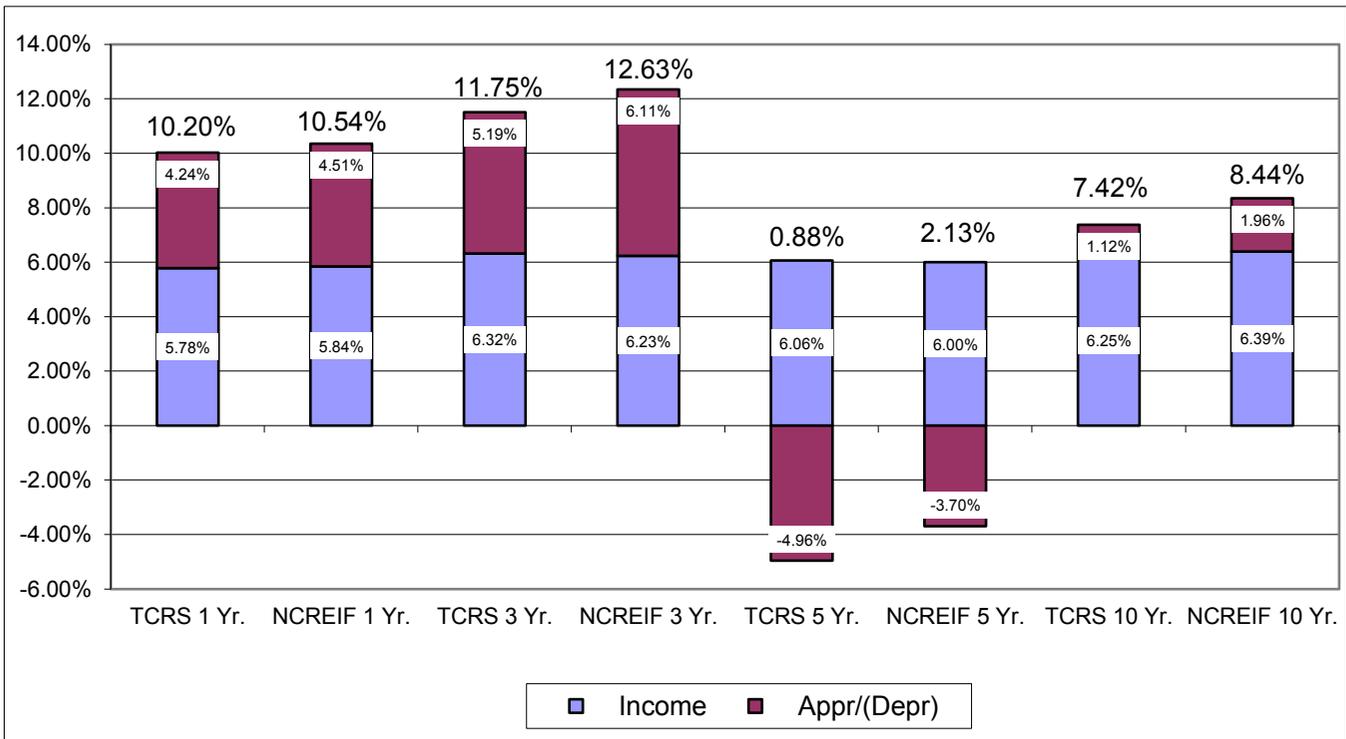
Peter Katseff



All returns shown above are reported one quarter in arrears

Budgeted Annual Income Return for calendar year 2013 (excluding REITs)

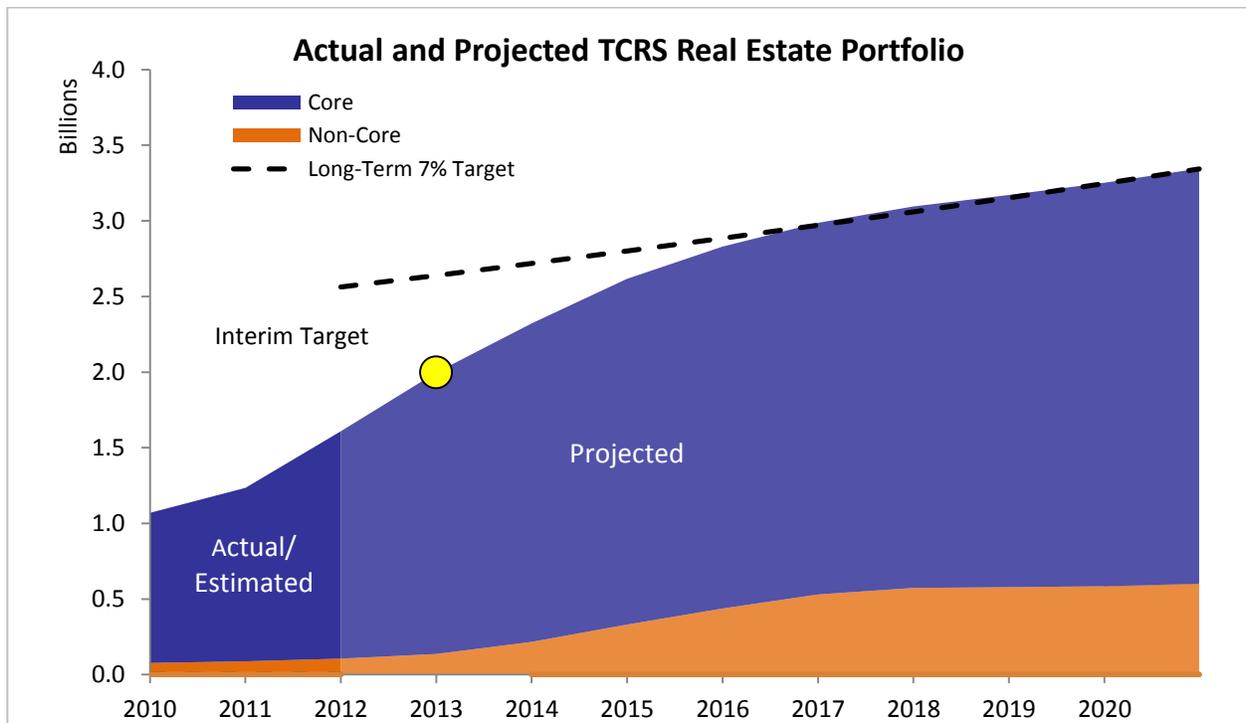
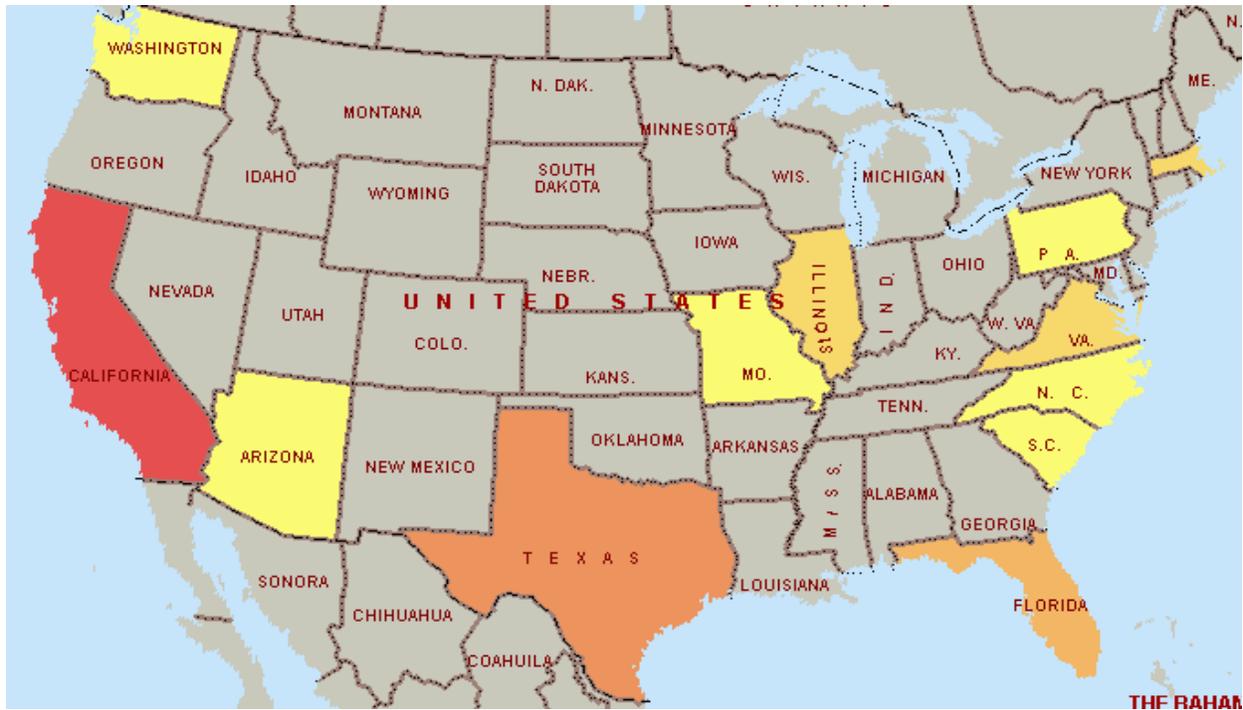
5.50%



All returns shown above are reported one quarter in arrears

Peter Katseff

Separate Account Diversification across the United States



## Tennessee Consolidated Retirement System

Private Equity Program

Fiscal Q3 2013 Update

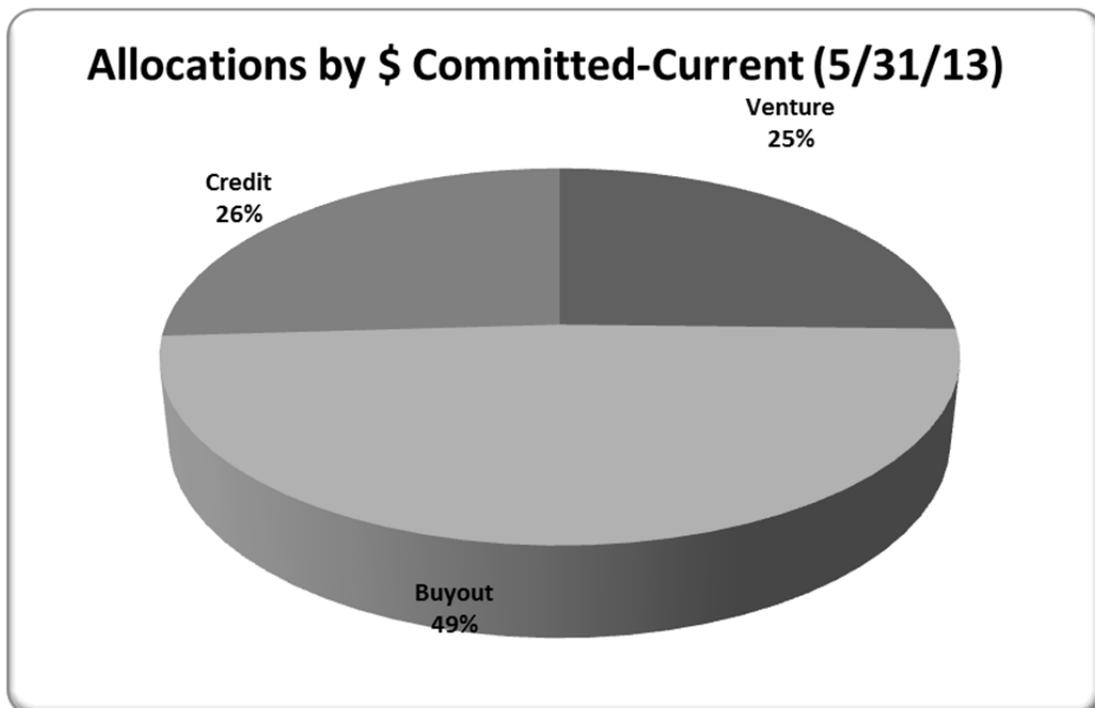
Lamar Villere, CFA

Daniel Crews, CFA

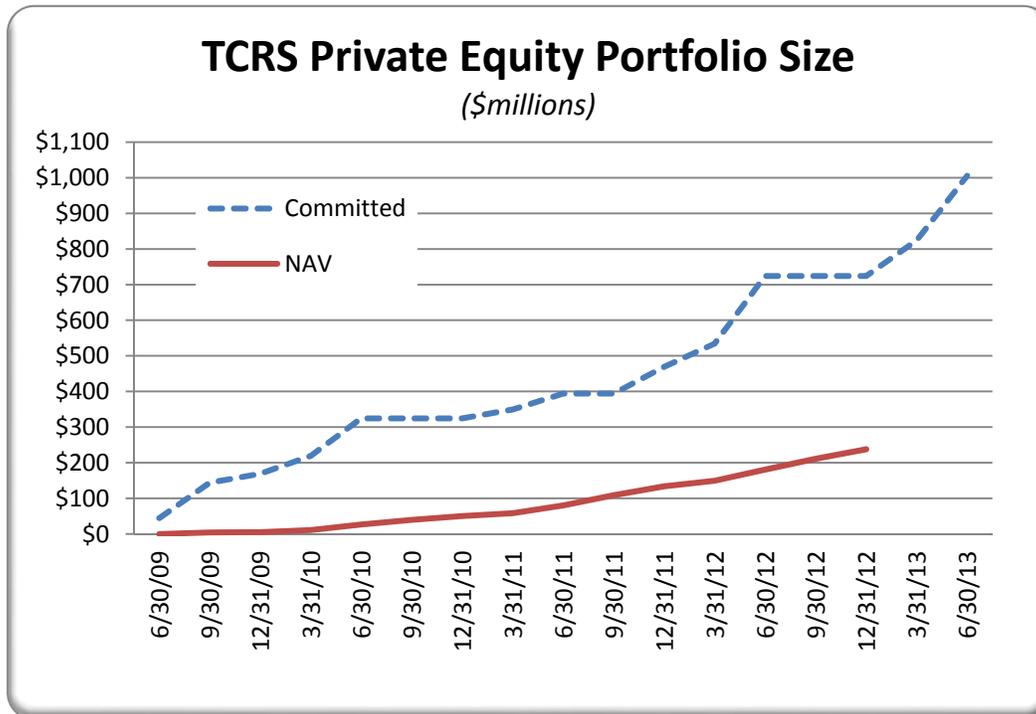
We have finalized our fiscal Q2:2013 results (the period ending 12/31/12), and are pleased to report that the program continues to show positive returns. That said, early strong returns have begun to show the impact of the J-Curve, as most portfolio companies are still held at cost. Additionally, the portfolio outpaced the S&P 500+3% in the quarter, driven by strong results in the credit portfolio.

<i>Trailing IRR</i>	<b>Quarter</b>	<b>Trailing 1 Year</b>	<b>Since Inception</b>
Buyout	1.3%	1.9%	0.4%
Credit	4.1%	17.8%	12.0%
Venture	2.4%	13.7%	11.9%
Natural Resources	<u>2.7%</u>	<u>N/A</u>	<u>-33.2%</u>
<b>TCRS PE Overall</b>	<b>2.7%</b>	<b>11.9%</b>	<b>9.3%</b>
<i>S&amp;P 500 + 3%</i>	<i>0.4%</i>	<i>17.2%</i>	<i>15.2%</i>

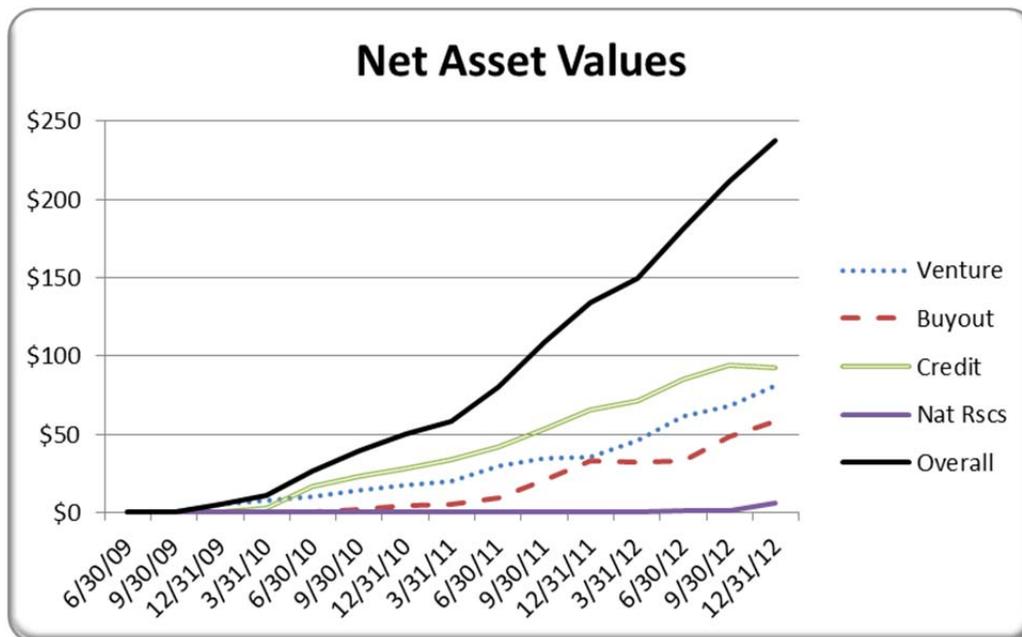
As a result of recent allocations, the overweight to venture capital has finally been mitigated. The following chart shows the allocations to the sub-asset classes based on commitments through the end of May, 2013.



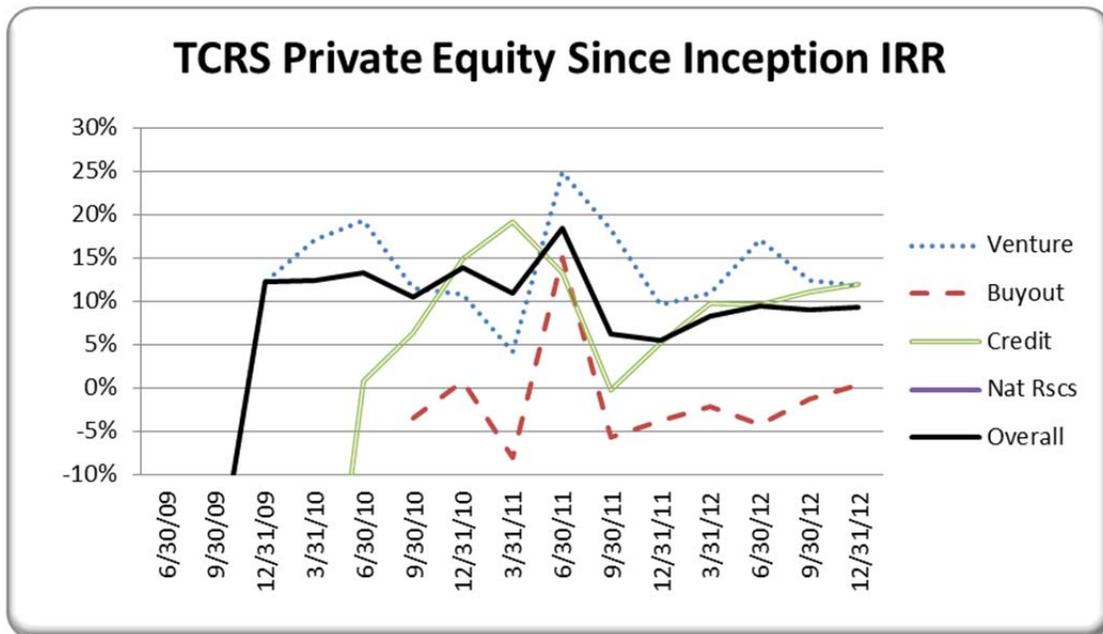
The next chart shows the overall size of the TCRS portfolio as it has grown since inception, both in terms of commitments as well as actual growth in net asset value.



The chart below illustrates the net asset value of each subcategory since the program's inception. As expected, NAVs have accelerated significantly as the portfolio begins to reflect gains from early commitments.



As shown in the chart below, the overall since inception IRR has steadied at around 10% in recent quarters.



### Recent Commitments

TCRS has closed on four new commitments in the first half of 2013: \$100 million to General Atlantic, \$75 million to Bain Capital, \$81 million to KPS, and €35 million to Triton. We expect to close on two additional funds in the coming months.

### Leadership Transition

Lamar Villere, Director of Private Equity, will leave TCRS at the end of June, 2013. TCRS engaged Mr. Villere in 2009 to build our Private Equity program. Current Private Equity Analyst Daniel Crews will assume leadership of the Private Equity program on an interim basis.

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# TCRS Equity Derivative Report

## Domestic Stock Index Futures Roy Wellington, CFA

### Domestic Stock Index Futures Transaction Log

Date	B/S	Contracts	Broker	Price	Total	Reason
Begin		-			-	
Trades						
<b>There was no Index Futures activity in the report period.</b>						
Contracts Outstanding on March 31, 2012						
End		-			-	
			Total 3Q FY2013	\$	-	

# Domestic Fixed Income Derivatives Report

Andrew C. Palmer, CFA

## Domestic Fixed Income Derivatives Transaction Log

ACCT	SOLD	BOUGHT	NET	EXPIRATION	CONTRACT	TYPE	STRIKE
<b>Begin</b>			-156		10 T-NOTE 13 Mar		
			2565		T-BONDS 13 Mar		
			3855		ULTRABOND 13 Mar		
<b>TRADE SUMMARY BY ACCOUNT</b>							
<b>5+ Gov't (1381)</b>							
	-	-	-		<b>10 T-NOTE 13 Mar</b>		
	-	375	375		T-BONDS 13 Jun		
	375	-	(375)		<b>T-BONDS 13 Mar</b>		
	-	1,000	1,000		ULTRABOND 13 Jun		
	1,000	-	(1,000)		<b>ULTRABOND 13 Mar</b>		
<b>1-5 Gov't (1368)</b>							
	expired	1,000			10 T-NOTE 13 Mar C 133		
	expired	3,000			10 T-NOTE 13 Mar C 133.5		
	-	-	-		<b>10 T-NOTE 13 Mar</b>		
	-	2,530	2,530		T-BONDS 13 Jun		
	2,080	-	(2,080)		<b>T-BONDS 13 Mar</b>		
	-	2,259	2,259		ULTRABOND 13 Jun		
	2,259	-	(2,259)		<b>ULTRABOND 13 Mar</b>		
<b>Overlay (1371)</b>							
	-	-	-		<b>10 T-NOTE 13 Mar</b>		
	-	600	600		T-BONDS 13 Jun		
	600	300	(300)		<b>T-BONDS 13 Mar</b>		
	-	680	680		ULTRABOND 13 Jun		
	680	30	(650)		<b>ULTRABOND 13 Mar</b>		
<b>Corporate (1365)</b>							
	160	316	156		<b>10 T-NOTE 13 Mar</b>		
	-	-	-		T-BONDS 13 Jun		
	110	300	190		<b>T-BONDS 13 Mar</b>		
	100	100	-		ULTRABOND 13 Jun		
	300	354	54		<b>ULTRABOND 13 Mar</b>		
<b>End</b>			3505		T-BONDS 13 Jun		
			3939		ULTRABOND 13 Jun		

# Domestic Fixed Income Derivatives Report

Andrew C. Palmer, CFA

## Domestic Fixed Income Derivatives Transaction Log

### **SUMMARY OF LAST QUARTER'S ACTIVITY:**

#### **CONTRACTS IN USE:**

- 10-year Futures
- Call options on 10-year Futures
- Long Bond Futures
- Ultra-Long Futures

#### **STRATEGIES:**

- Used Ultra-Long, Long Bond and Call Options on Ten-Year Futures to manage interest rate exposures in the 1-5 Gov't portfolio and the Corporate portfolio .
- Rolled Thirty-Year and Ultra Futures contracts in 5+ Gov't portfolio to replicate the duration profile of the index without using physical Treasury notes.
- Used Ultra-Long Bond Futures and Long Bond Futures to offset the duration impact of a strategic overweight to the MBS portfolio and Credit Portfolios.

#### **EFFICACY:**

- Futures positions performed as expected. The replication strategy produced returns similar to the LPF Government Index and the duration adjustment transactions produced the expected impact on interest rate sensitivity. The call option trade expired out of the money but provided protection against a sharp drop in rates.

### **PROPOSED STRATEGIES FOR CURRENT QUARTER:**

- Use Ultra-Long, Long Bond and Ten-Year Futures to manage interest rate exposures in the 1-5 Gov't portfolio, the 5+ Government Portfolio and the Corporate portfolio.
- Use Ultra-Long Bond Futures to offset the duration impact of a strategic overweight to the MBS portfolio and Credit portfolios.
- Use Ultra-Long, Long Bond and Ten-Year Futures along with cash equivalents to replicate the duration profile of the LPF Government Index without using physical Treasury notes.
- Employ Ultra-Long, Long Bond, Ten-Year and Five-Year Futures in the Corporate portfolio to offset the duration impact of timing differences in individual corporate bond trades.
- Buying out-of-the-money calls or puts on long and intermediate Treasuries to hedge big movements in rates.

# TCRS Currency Derivative Report

## Currency Forwards Activity Jesse Picunko, CFA

2013 3rd Quarter Activity

**NO ACTIVITY**

---

TCRS MORTGAGE PORTFOLIO

END OF QUARTER MORTGAGE TBA POSITIONS

Jesse Picunko, CFA

	PRICE	PAR	MARKET	SETTLE	FIRM
	(\$million)	(\$million)	(\$million)		
DW2.5	103.75	6.50	6.74	APR	C
GII3.0	104.45	30.00	31.34	APR	BNP
GII3.5	106.94	50.00	53.47	APR	BAML
GII3.5	106.94	50.00	53.47	APR	BARC
GN3.5	107.58	22.50	24.21	APR	DB
GN3.5	107.58	27.50	29.58	APR	JPM
GN3.5	107.58	22.50	24.21	APR	NOM
GN4.0	109.02	15.00	16.35	APR	JPM
GN4.0	109.02	27.50	29.98	APR	DB
GN4.0	109.02	10.00	10.90	APR	MZ
GN3.5	107.58	10.00	10.76	APR	CS
GD3.0	102.70	25.00	25.68	APR	BAML
Total		296.5	316,678		

By Firm	
	(\$million)
CRT	0.00
C	6.74
BAML	79.14
JPM	45.94
DB	54.18
JEF	0.00
NOM	24.21
CS	10.76
BNP	31.34
BARC	53.47
MZ	10.90
316.68	

**OPERATIONS UPDATE**  
**Tim McClure, CTP**

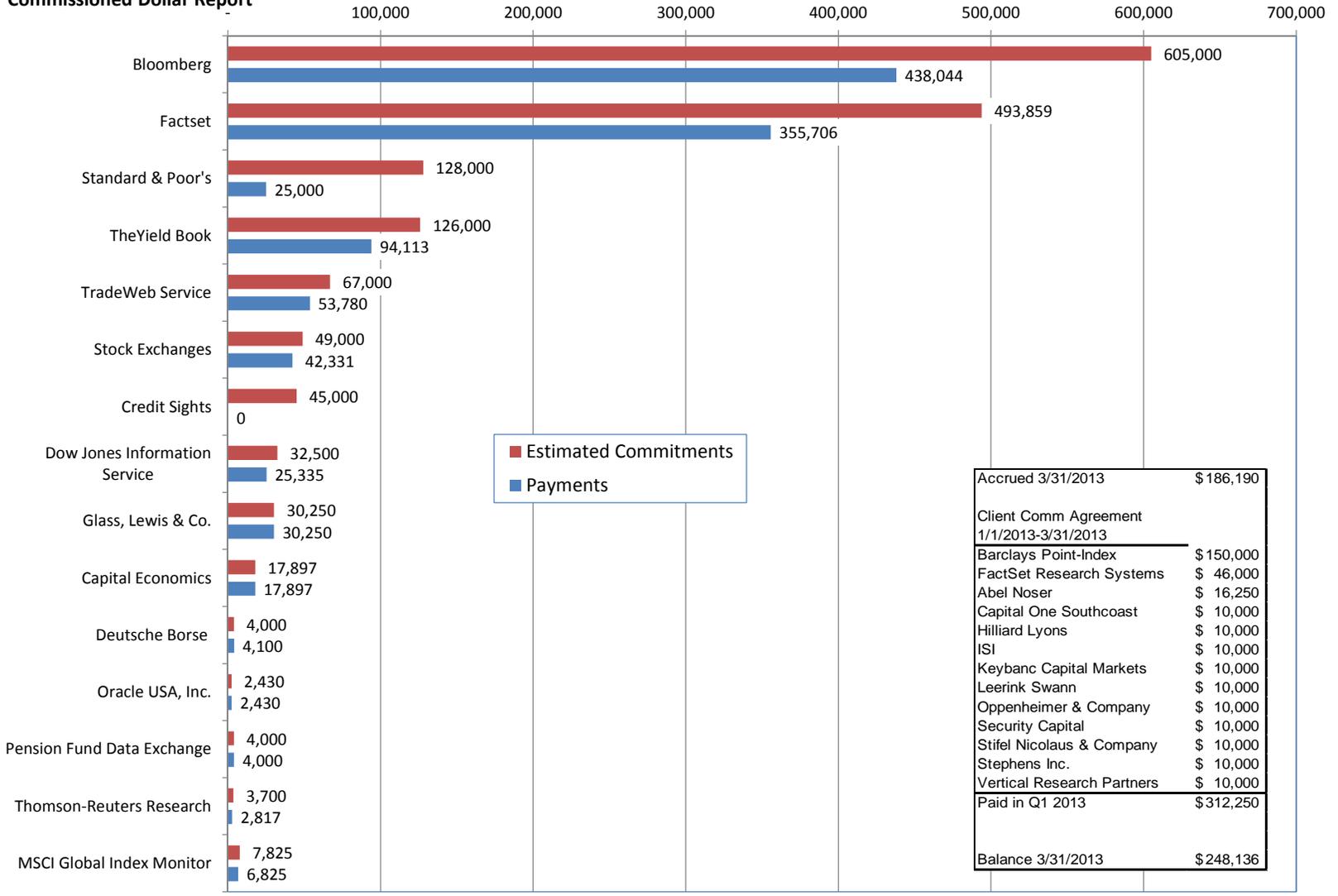
TCRS continues to move forward with changes to the Operations area. As TCRS looks for ways to add value to the Fund, this is an area that offers some opportunity for efficiencies and technology upgrades.

Personnel Changes – Bill Perez has been added to the Operations area. Bill has eight years of combined experience with the Federal Home Loan Bank and Deutschebank in trade clearing and settlement as well as 3 years of experience with Nexa Technologies troubleshooting an equity trading platform.

Trading – Trade volume for the quarter increased slightly to 234 million shares valued at \$9.7 billion, compared to the previous quarter of 193 million shares valued at \$7.2 billion. The Quant Fund was the most active followed by the Sector Fund, Index and then Mid-Cap. Implicit trading costs continue to trend lower, and have dropped four of the previous five quarters.

Trading Cost Analysis – As the data that is received from Abel Noser becomes more granular and staff becomes more comfortable using the data, patterns are starting to emerge. Portfolio manager timing profiles are becoming more consistent. In the very near future, recommendations will be made to management concerning trading strategies and firms that are being used. Brad Pritchett has also begun a review of a front-end trade platform from Instinet that will offer real time and end of day trading cost analysis. While this is not the same kind of data obtained from Abel Noser, it does appear to offer the traders more flexibility and control over a trade while the trade is in progress and will give immediate feedback on the quality of execution. Initially, the platform will be utilized to monitor trades at Instinet, and later other firms will be added if the software proves useful.

**Commissioned Dollar Report**



Accrued 3/31/2013	\$186,190
Client Comm Agreement 1/1/2013-3/31/2013	
Barclays Point-Index	\$150,000
FactSet Research Systems	\$46,000
Abel Noser	\$16,250
Capital One Southcoast	\$10,000
Hilliard Lyons	\$10,000
ISI	\$10,000
Keybank Capital Markets	\$10,000
Leerink Swann	\$10,000
Oppenheimer & Company	\$10,000
Security Capital	\$10,000
Stifel Nicolaus & Company	\$10,000
Stephens Inc.	\$10,000
Vertical Research Partners	\$10,000
Paid in Q1 2013	\$312,250
Balance 3/31/2013	\$248,136