

# **INVESTMENT REPORT**

## **TENNESSEE CONSOLIDATED RETIREMENT SYSTEM**

**First Quarter  
Fiscal Year 2012 - 2013**

**July 1, 2012 – September 30, 2012**

**Prepared for:  
Board of Trustees**

**December 7, 2012**

## 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

First Quarter

Fiscal Year 2012-2013

July 1, 2012 – September 30, 2012

## TABLE OF CONTENTS

## Page

Minutes of November 29, 2012 IAC Meeting .....	1
Portfolio Overview.....	5
Equity Portfolio.....	7
Fixed Income Portfolio .....	19
Real Estate Portfolio .....	29
Private Equity Portfolio .....	31
Derivative and Currency Activity.....	35
Operations Report.....	39
Appendix.....	

## **Minutes from the Investment Advisory Council Meeting November 29, 2012**

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, Mr. Chuck Webb, Mr. Fred Crown, and Ms. Carol Womack. Ms. Susan Huffman participated by conference call. Mr. Henry Delicata was unable to attend. Investment Staff members present were: Michael Brakebill, Daniel Crews, Derrick Dagnan, Michael Giggie, Carrie Green, Matthew Haitas, Peter Katseff, Michael Keeler, Thomas Kim, Tim McClure, Rhonda Myers, Andy Palmer, Jim Robinson, Lamar Villere, and Roy Wellington. Treasurer David Lillard, Ms. Janice Cunningham 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.

Next, George Stadler proposed that the minutes from the previous IAC meeting on June 6, 2012 be adopted. There were no questions regarding the minutes and Susan Huffman motioned to adopt the minutes. The motion was seconded by Fred Crown 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 18.1% beat 62% of funds. The fund outperformed its benchmark by 0.5% for 1-year returns and 0.7% for 3-year returns. The 3-year performance beat 82% of peers and the 5-year performance of the fund beat 93% of peers (3.5%).

Mr. Brakebill gave an overview of the key initiatives. He noted the allocation changes were approved by the Council on Pensions and Insurance on October 31, 2012. These changes include the implementation of a strategic lending program, non-core real estate investing and the addition of emerging market equities to the portfolio. Mr. Brakebill handed out a graph which contained the country exposures of the newly created emerging market portfolio as of November 28, 2012.

Mr. Brakebill added a few additional announcements. He noted Deutsche Bank had been selected as the firm to implement and manage the new securities lending program. The process of identifying and performing due diligence on private equity managers continues. He stated the fund has a neutral tactical allocation and is currently moving toward the new targets approved with the recent changes to Investment Policy.

Mr. Brakebill noted that the investment staff is evaluating Master Limited Partnerships (MLPs). Staff has researched these securities and is considering the suitability for the portfolio. In addition, the entire investments staff reviewed the pension fund for state employees of Missouri or MOSERS. Mr. Brakebill noted that MOSERS has implemented some fairly radical allocation changes over the past decade including the use of sophisticated securities and leverage. He noted staff intends to continue to study MOSERS and other cutting edge portfolios.

Mike Keeler moved the discussion to domestic equities. He noted the September quarter got off to a slow start as the Fed and the ECB took turns providing hopeful rhetoric with disappointing follow up until the last month of the quarter. Markets improved considerably as the Fed announced continued “QE” and the ECB initiated a bond buying program. It was primarily a “risk off” quarter with defensive, size, value and quality factors performing well although a rather sharp reversal occurred near the very end of the quarter coincident with the aforementioned global central bank announcements.

Mr. Keeler stated the Mid Cap Fund outperformed the S&P Mid Cap 400 primarily due to good stock selection in the Consumer Discretionary, Technology and Energy sectors somewhat offset by poor stock selection in the Consumer Staples sector. Stock selection accounted for all of excess return during the quarter.

Jim Robinson moved the discussion to the Quant Fund. He noted that central bank interventions appeased concerns about the sovereign debt crisis in Europe and the apparently fragile state of the global economy. The quantitative models the fund utilizes performed fairly well during the quarter, but in the last two weeks of September the Quant Fund lost traction with the big expectational shifts reflected in the market. Tracking error was lowered in the previous quarter. As of September 30, the tracking error was 1.08% and it currently sits at 1.10%. The transfer coefficient was 0.41, adequately high given the recent risk reduction measures taken. Even though systematic or factor risk is about 30% of the fund’s total risk, it has been reduced to quite low absolute levels.

Roy Wellington noted the Sector Fund moved at the mercy of macro forces that gave an unreal sense of stability despite the very real financial problems in the world. The Sector Fund focused on finding good companies with underappreciated earnings potential. The Sector Fund continued to de-emphasize economic sensitivity for stable value creators.

A representative trade for this quarter highlights the evolution in the technology. Mobile devices and apps continue to penetrate the postpaid wireless customer base and crossed the 50% of

penetration threshold. Apple, as expected, introduced their latest iPhone5, but doing the expected doesn't win outperformance in the stock market. The unexpected event was a mapping app that bombed while competitor Google introduced its own tablet: the Nexus 7. Corporate capital spending slowdowns due to fiscal cliff or China concerns hit Intel performance. Overweight positions in both Google and Intel served to bookend the active returns of holdings in the Sector Fund.

Roy Wellington stated that the International Equity managers combined to exceed the benchmark by a modest amount. Five managers beat their benchmarks and the attribution reveals that the quarter was won or lost on stock selection and Japan weighting (Japan was the only country down). Mr. Wellington traveled to London and Edinburgh in October to visit managers and attend a global investment conference. He visited some small cap and emerging market managers and also personnel at current managers who do not travel to Nashville.

Roy Wellington noted that the Russell 2000 Equity Futures program was wound down as the Small Cap Index Fund was created. The equity futures did an admirable job of tracking the Russell 2000 Index but the domestic equity benchmark is the S&P 600 for small cap stocks. That mismatch proved to be enough to make it worthwhile to create and maintain a dedicated small cap index fund. The transition was completed in October.

Mr. Palmer reviewed the performance of the Fixed Income portfolios. He noted that the Domestic Fixed Income Portfolio had a positive quarter, outperforming the benchmark by 75 basis points. The component portfolios all contributed to the quarterly outperformance. Spread tightening was the dominant driver of performance as the market's perception of the announcement of quantitative easing signaled a risk on environment. The sector allocations and positioning of the portfolio were little changed during the quarter but subsequently allocations to corporate and mortgage backed securities have been pared back modestly. Mr. Palmer commended Mr. Kim for his strong performance since the transition to a new benchmark for the Corporate Portfolio and Mr. Picunko for the consistent, low risk performance of the Mortgage Portfolio.

Mr. Palmer noted that underweight exposures to the Euro and the Yen were positive contributors to the performance of the International Fixed Income portfolio and reported that this portfolio will provide some of the funds for the new Emerging Markets Equity Portfolio.

While discussing the index matching performance of the Inflation Indexed portfolio, Mr. Palmer compared the return prospects of Treasury Inflation Protected (TIP) securities to Levered loans. He explained that because of the much higher yield in levered loans and strong inflation protection of the class the Strategic Lending Portfolio will likely focus on Loans as its first area of investment. Funding for the Strategic Lending Portfolio will largely come from the TIPs portfolio.

Mr. Palmer provided a summary of the use of derivatives and TBA mortgage securities in the fixed income portfolios during the quarter.

Peter Katseff provided an update on the Real Estate portfolio. The portfolio continues to perform well and is expected to show an appreciation in value when real estate assets are appraised at the end of the calendar year. He noted there had been a significant amount of acquisitions in 2012. Approximately 60% of these acquisitions are apartment communities and 40% are office buildings. Further, he noted that all of these acquisitions were either meeting or exceeding expectations. Mr. Katseff anticipates the Real Estate Portfolio to be 5% to 5 ½% of total plan assets by the end of 2013.

Lamar Villere provided an update on the Private Equity Portfolio. Mr. Villere stated that performance has been solid overall, but cautioned that it is still too early to evaluate that performance. Mr. Villere noted that areas of focus for 2013 will be smaller sized buyout funds as well as the addition of other credit strategies to the portfolio.

Tim McClure gave an update on trading and operations for the quarter. Tim congratulated Casey Wright, who was promoted to Assistant Cash Manager. This has created an opening in the Operations area. Trading volume was down slightly during the quarter and only five percent of the trades were momentum trades, therefore trading costs were up for the quarter due to the large number of illiquid trades. Implicit trading costs were down for the fourth consecutive quarter. Based on the trading volume for the quarter, this resulted in savings of over \$7.5 million. There should be more opportunities to improve efficiency as staff becomes more familiar with the data being received through trading cost analysis.

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

# Performance Review

## September 2012

### Absolute comparison

- 1 quarter return of 5.0%
- 1 year return of 18.1%
- 10 year return of 6.6%

### Benchmark (relative) comparison

- Qtr return beat allocation index by 0.4%
- 1 year return beat allocation index by 0.5%
- 3 year return beat allocation index by 0.7%
  - TAA added 15 bps for quarter
  - DFI up 70 bps in quarter, up 180 bps for year
    - 9.7% return for year, 8.6% for 5 years
  - DE up 20 bps in quarter, neutral for year
  - - Up 30.2% year to year!
  - IE up 20 bps in quarter, up 340 bps for year

### Peer comparison

- 1 quarter return ranked at 38% (0% = best)
- 1 year return ranked at 20% (Beat 80% of funds for 1 year)
  - Beat median fund (15.9%) by 2.2%
- 3 year return ranked at 18%
- 5 year return ranked at 7% (3.5% vs. 2.4% median)



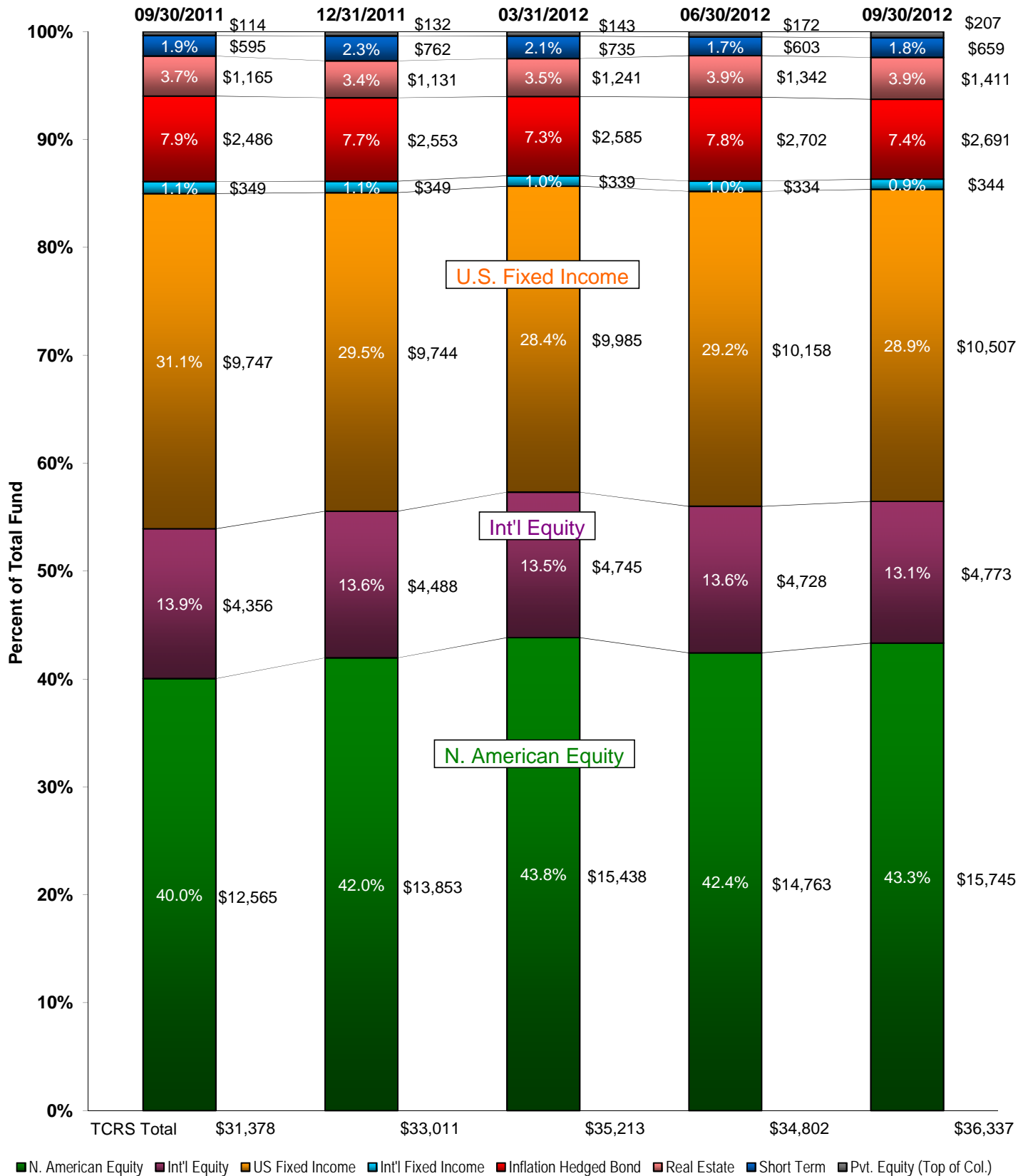
# Key Initiatives

## September 2012

- Asset Allocation Implementation
  - Approved by Council of Pensions and Insurance on October 31
  - Strategic lending
  - Real estate strategy
  - Emerging market equities
    - Screening methodology developed and approved
  
- Securities Lending
  - Selection process complete, negotiation underway
  
- Private Equity Due Diligence
  
- Tactical Allocation
  - Neutral, pending implementation of strategic changes
  
- Rating Agency Reviews
  
- Space Planning
  
- Investment Research
  - Study of Missouri Public Employees (MOSERS)
  - Researching Master Limited Partnerships (MLPs)
  
- Personnel
  - Assistant Cash Manager
  - Private Equity Analyst

# TCRS Asset Allocation

September 2012



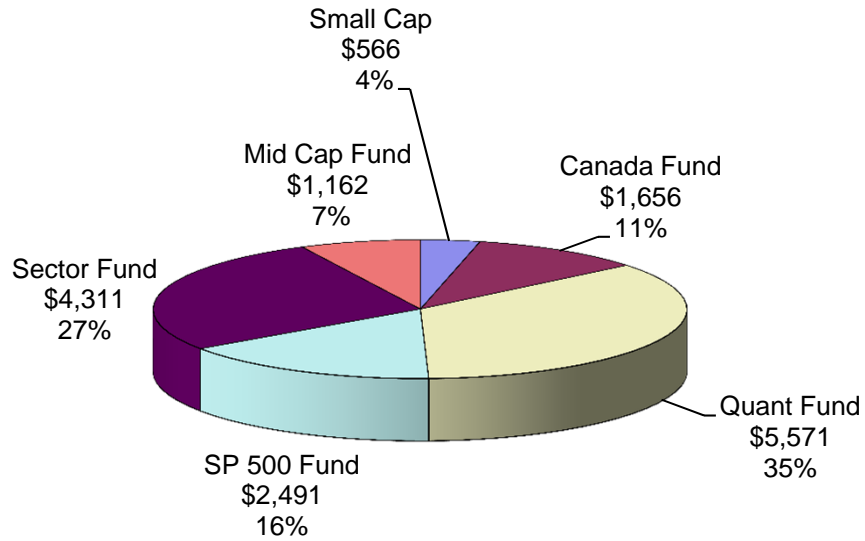
\$ = millions

Source: Strategic Investment Solutions, Inc.

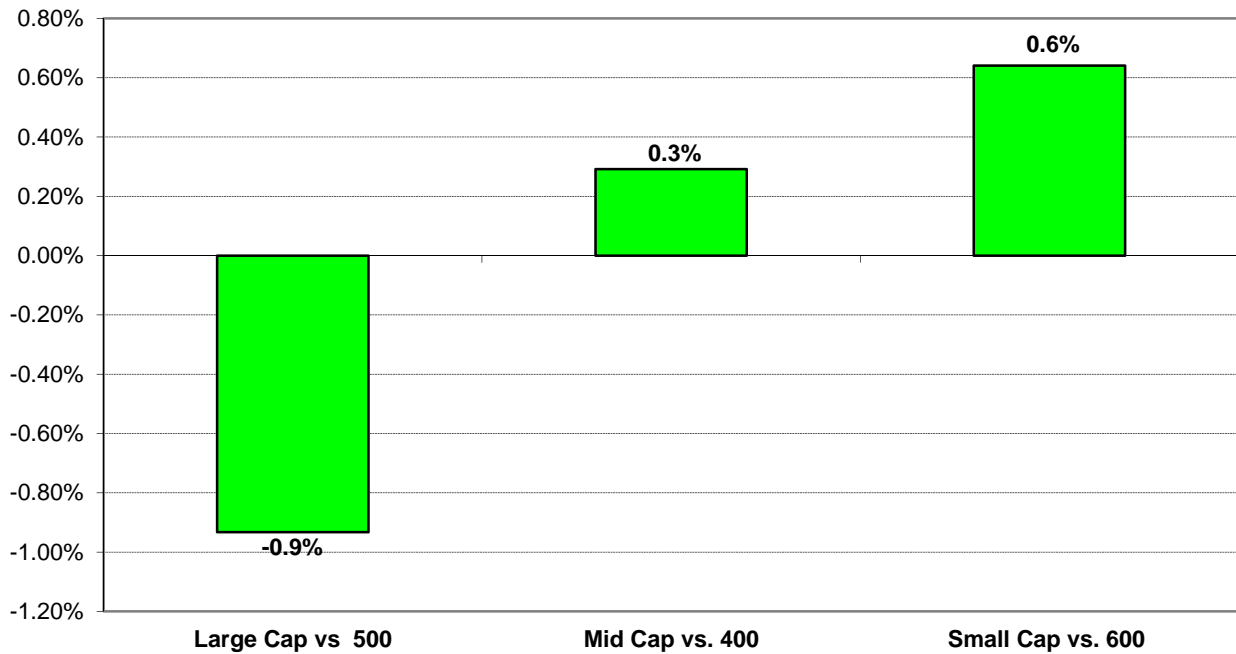
### Domestic Equity Portfolio Overview

Michael Keeler, CFA

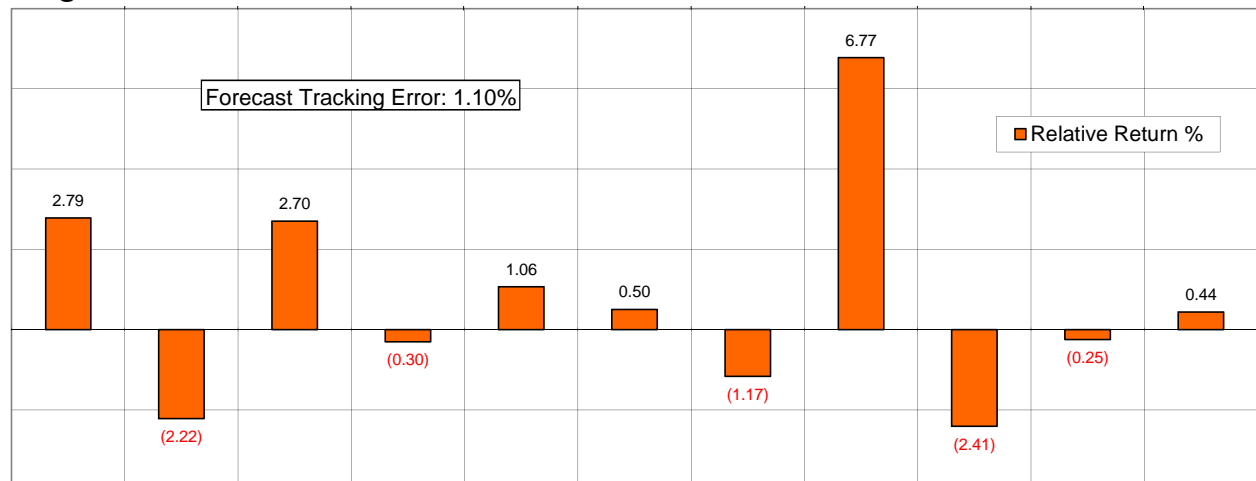
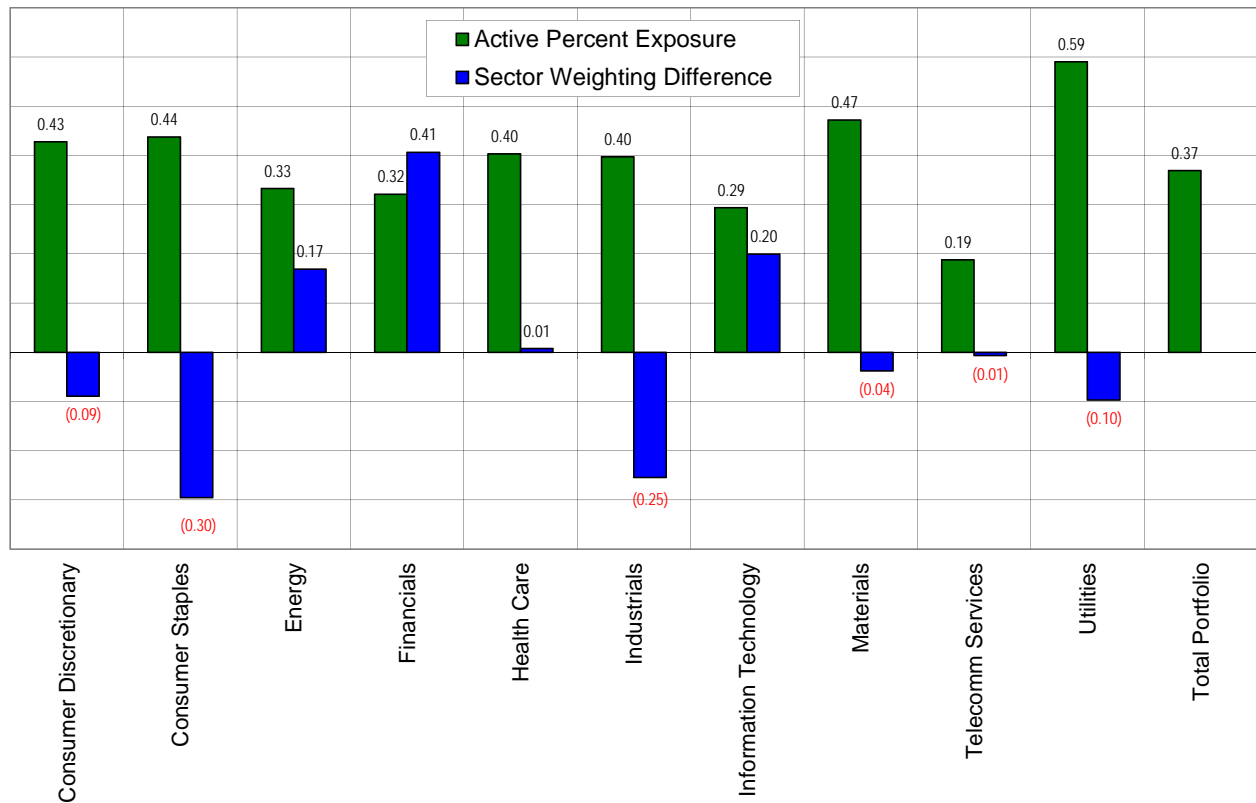
#### TCRS North American Equity Funds



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



Large Cap Quant Fund  
Jim Robinson, CFA



The S&P 500 was up 1.39% in July, 2.25% in August, and 2.58% in September for a total of 6.35% for the quarter. Central bank interventions appeased concerns about the sovereign debt crisis in Europe and the apparently fragile state of the global economy. Macroeconomic data and earnings news started off weak in July. However, the Bank of China, Bank of England, and the ECB all eased. In August, the economic data from the US was mixed, and expectations of further easing by the Fed increased. Improved earnings releases and reports of unlimited bond buying by the ECB reinforced the stock market's upward move. The uptrend continued in September with the ECB's confirmation of a bond buying program plus the Fed's announcement of continuing QE. Declining 179 basis points in the last two weeks, the quarter ended on a down note on doubts about the effectiveness of yet more monetary easing, especially without being accompanied by fiscal discipline.

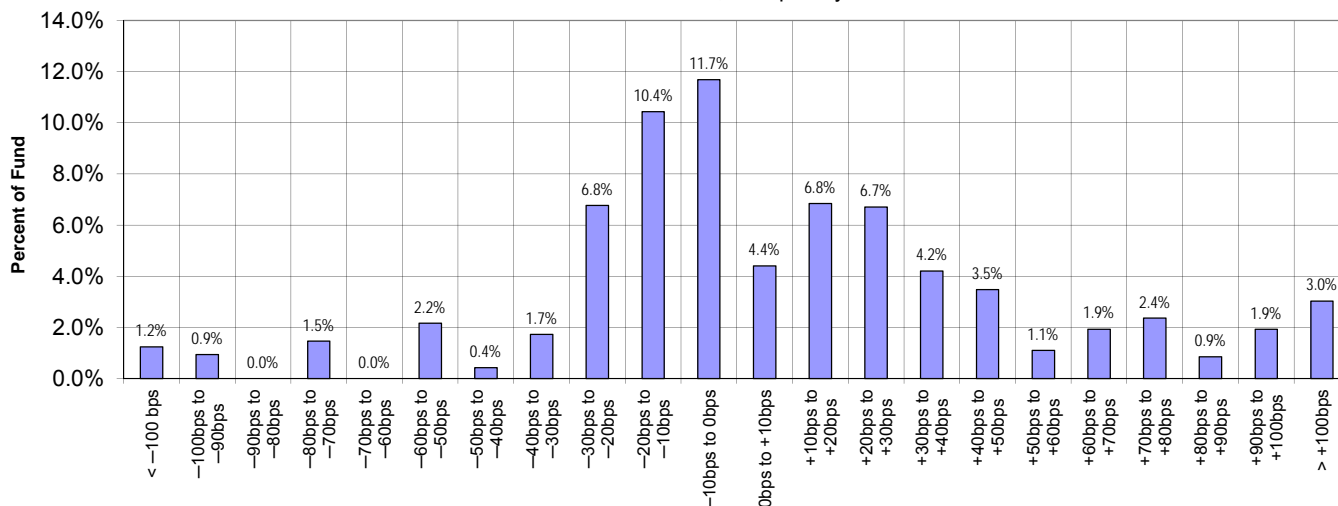
Looking at both of Merrill Lynch's stock versus bond models, stocks are still cheap. At the end of October, Merrill's dividend discount model versus AAA corporate yields shows an equity risk premium of 864 bps, near the record of 891 set in July. Comparing the S&P 500's earnings yield (E/P) to 10 year Treasury yields, this 604 bps difference also looks quite inexpensive versus its 659 bps peak set in September of 2011.

On the whole, our models performed fairly well, but in the last two weeks of September the Quant Fund lost traction with the big expectational shifts reflected in the market. Northern Trust's excess return number of 0.39% (which is truncated to 0.3% in the SIS report) is similar to the fund's APE Score of 36.9 times the D1-D10 return spread of 1.02%, or 0.376%. This is also similar to FactSet's Performance Attribution calculated excess return (not incorporating transaction costs) of 0.438%.

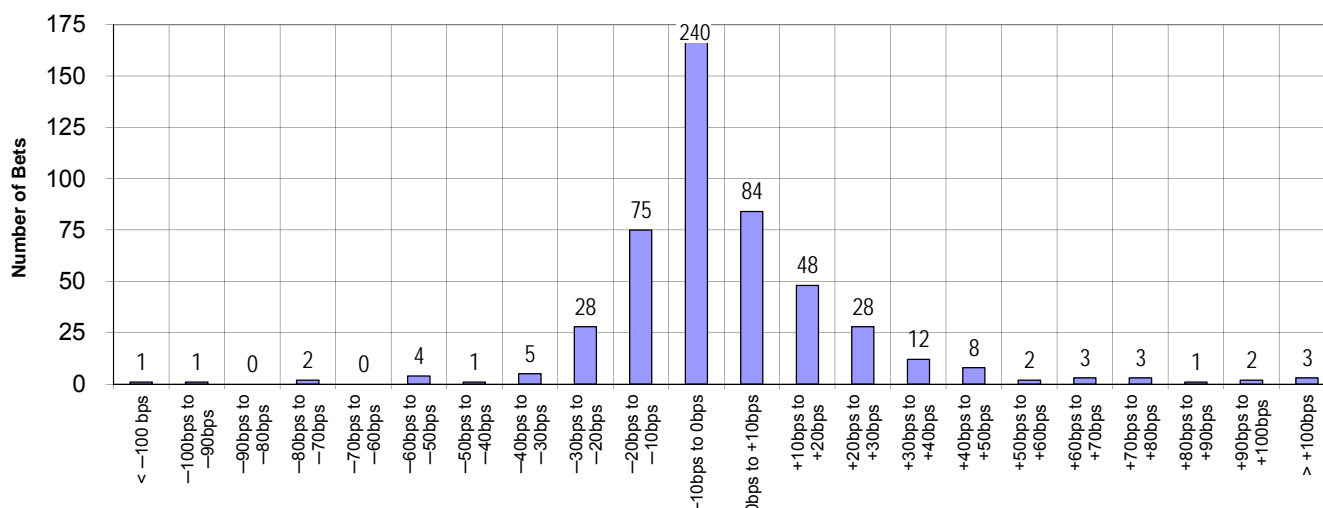
The Quant Fund's tracking error was lowered in the previous quarter. At September 30, the tracking error was 1.08. It currently sits at 1.10 and is still of similar magnitude. The transfer coefficient was 0.41, adequately high given the recent risk reduction measures taken. Even though systematic or factor risk is about 30% of the fund's total risk, it has been reduced to quite low absolute levels.

FACTOR	D1-D10 Return	3 Mo Avg IC
Quant	1.019	0.032
V+M	0.556	0.066
RV	1.612	0.062
EM	0.219	0.002
PM	0.045	0.015

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



Number of Individual Stocks in Bet Size Bins

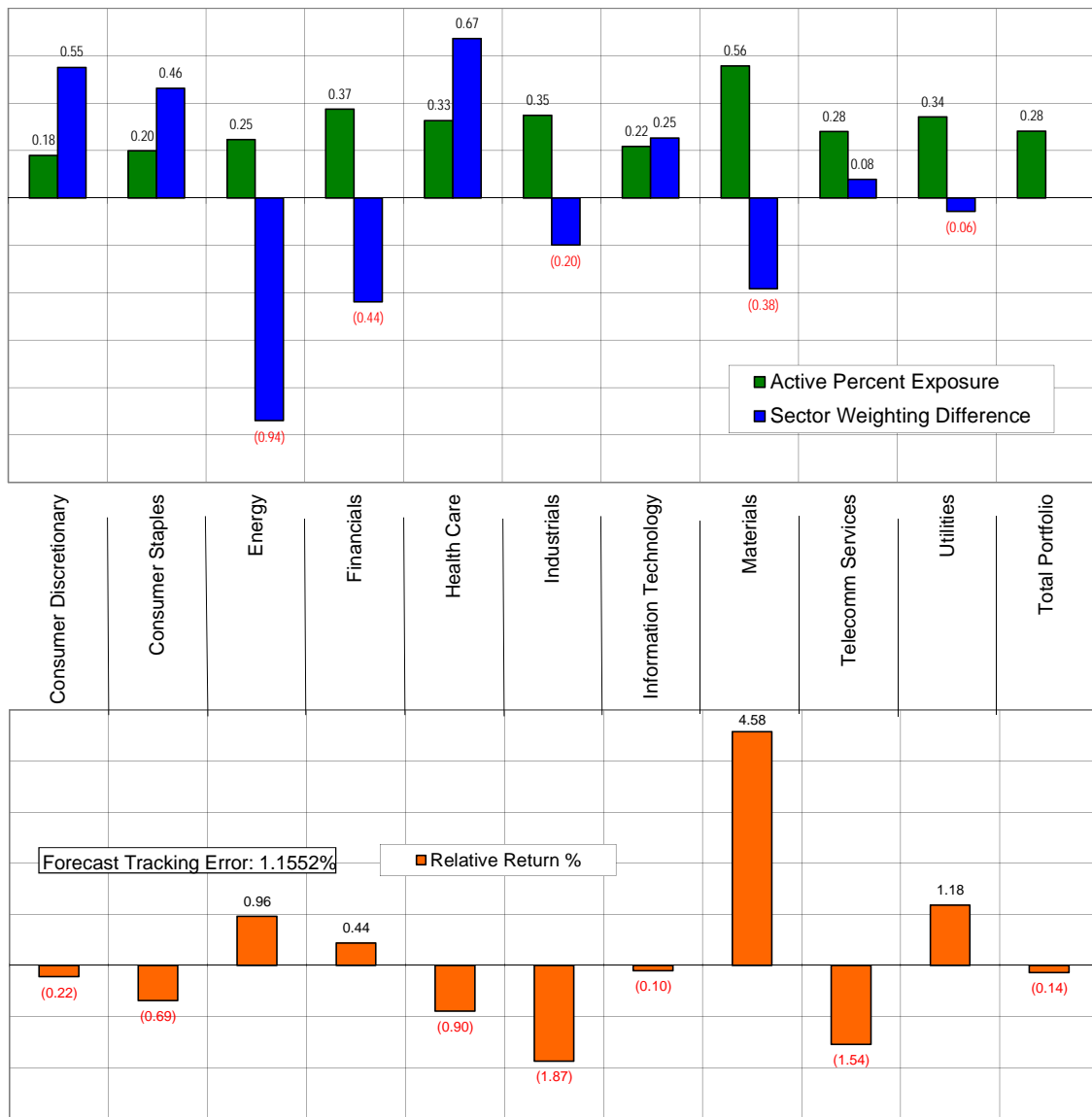


Largest Overweights by Stock in Fund

Ticker	Description	Bps Over
MDT	Medtronic Inc.	102
PEP	PepsiCo Inc.	101
CVX	Chevron Corp.	101
ORCL	Oracle Corp.	96
MSFT	Microsoft Corp.	96
AXP	American Express Co.	85
UNH	UnitedHealth Group Inc.	79
ABT	Abbott Laboratories	79
GIS	General Mills Inc.	79
AMGN	Amgen Inc.	68
KMB	Kimberly-Clark Corp.	64
PSX	Phillips 66	61
RTN	Raytheon Co.	59
NOC	Northrop Grumman Corp.	52
EMR	Emerson Electric Co.	49
CL	Colgate-Palmolive Co.	44
WFC	Wells Fargo & Co.	44
AIG	American International Group Inc.	44
T	AT&T Inc.	43
BA	Boeing Co.	43

Largest Underweights by Stock in Fund

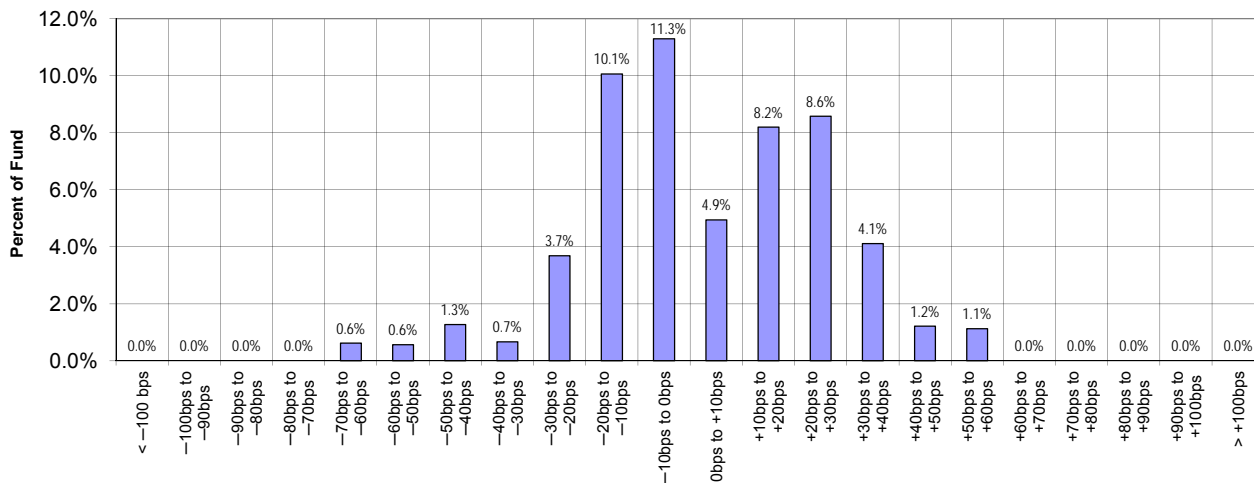
Ticker	Description	Bps Under
PG	Procter & Gamble Co.	-125
JNJ	Johnson & Johnson	-94
GOOG	Google Inc. Cl A	-76
AMZN	Amazon.com Inc.	-71
MDLZ	Kraft Foods Inc.	-57
XOM	Exxon Mobil Corp.	-55
COP	ConocoPhillips	-54
UTX	United Technologies Corp.	-51
EBAY	eBay Inc.	-44
V	Visa Inc.	-40
OXY	Occidental Petroleum Corp.	-34
QCOM	QUALCOMM Inc.	-34
COST	Costco Wholesale Corp.	-34
SO	Southern Co.	-31
SBUX	Starbucks Corp.	-30
MET	MetLife Inc.	-28
APC	Anadarko Petroleum Corp.	-27
PM	Philip Morris International Inc.	-27
DOW	Dow Chemical Co.	-27
LOW	Lowe's Cos.	-27



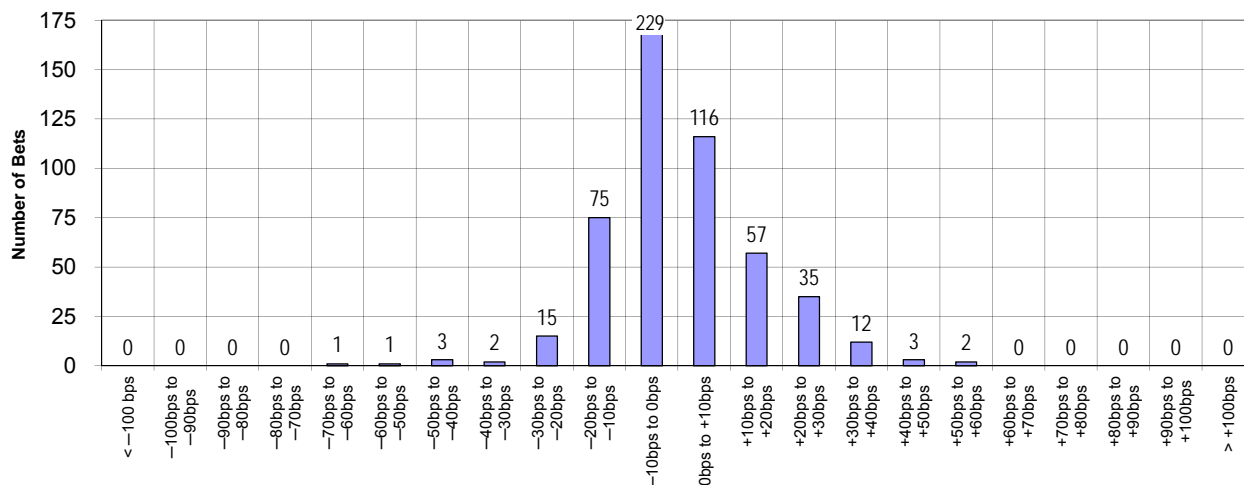
The Sector Fund bobbed along at the mercy of macro forces that gave an unreal sense of stability despite the very real financial problems in the world. Markets generally rose, especially the refiners. Investors still sought yield, except utilities. The biggest market mover was the ECB pledging to defend the Euro at all costs, but not actually doing anything. China continued its path towards slower growth but debates raged as to whether that constituted a "hard landing" or not. The fiscal cliff looms ever larger but we know that peril will be averted at the last minute, maybe, if the markets get scared enough. The Sector Fund focused on finding good companies with underappreciated earnings potential. The Sector Fund continued to de-emphasize economic sensitivity for stable value creators.

A representative trade for this quarter highlights the evolution in the technology market and the perils to standing still. Mobile devices and apps continue to penetrate the postpaid wireless customer base crossing the 50% of penetration threshold. Apple, as expected, introduced their latest iPhone5, but doing the expected doesn't win outperformance in the stock market. The unexpected was a mapping app that bombed while competitor Google introduced its own tablet: the Nexus 7. Mobile devices including tablets are sufficient for many consumers who may have bought notebooks in the past. Corporate capital spending slowdowns due to fiscal cliff or China concerns hit Intel performance. Overweights in both Google and Intel served to bookend the active returns of holdings in the Sector Fund.

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



Number of Individual Stocks in Bet Size Bins

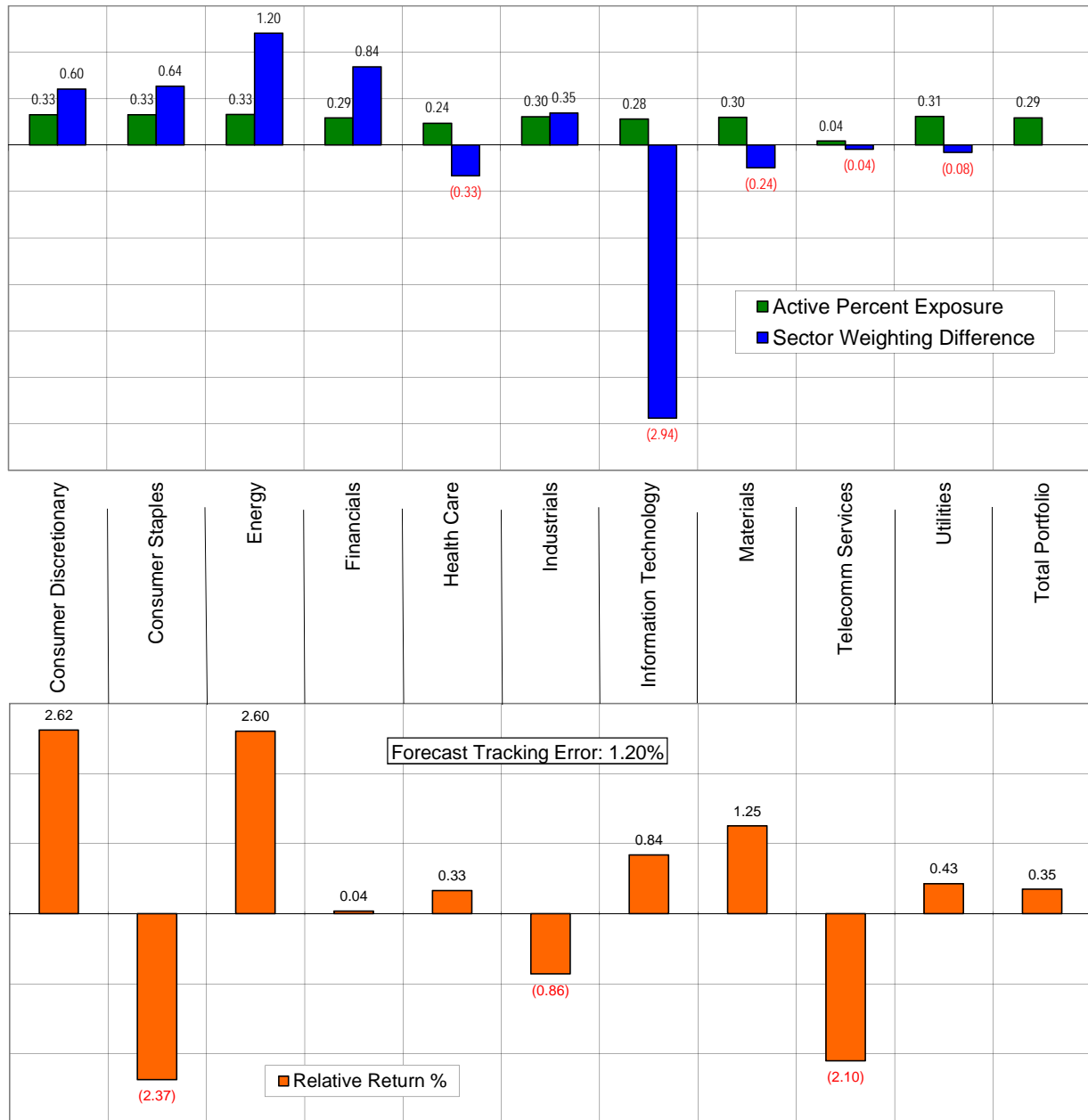


Largest Overweights by Stock in Fund

Ticker	Description	Bps Over Index Wt
AAPL	Apple Inc.	57
IBM	International Business Machines Co	56
BCE	BCE Inc.	41
MPC	Marathon Petroleum Corp.	40
DFS	Discover Financial Services	40
ORCL	Oracle Corp.	39
WMT	Wal-Mart Stores Inc.	37
MRK	Merck & Co Inc	37
INTC	Intel Corp.	37
ABT	Abbott Laboratories	35
TSO	Tesoro Corp.	34
AMT	American Tower Corp	34
WPI	Watson Pharmaceuticals Inc.	33
BEN	Franklin Resources Inc.	32
WFC	Wells Fargo & Co.	32
HFC	HollyFrontier Corp.	32
FCX	Freeport-McMoRan Copper & Gold	30
HON	Honeywell International Inc.	30
XOM	Exxon Mobil Corp.	30
QCOM	QUALCOMM Inc.	29

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
BRK.B	Berkshire Hathaway Inc. Cl B	-62
JNJ	Johnson & Johnson	-57
EBAY	eBay Inc.	-44
AXP	American Express Co.	-44
PFE	Pfizer Inc.	-40
V	Visa Inc.	-36
OXY	Occidental Petroleum Corp.	-31
VZ	Verizon Communications Inc.	-30
AIG	American International Group Inc.	-30
DOW	Dow Chemical Co.	-27
KMB	Kimberly-Clark Corp.	-26
CL	Colgate-Palmolive Co.	-26
BAX	Baxter International Inc.	-26
BAC	Bank of America Corp.	-25
PX	Praxair Inc.	-24
D	Dominion Resources Inc. (Virginia)	-24
EOG	EOG Resources Inc.	-23
ADP	Automatic Data Processing Inc.	-22
AGN	Allergan Inc.	-22
BMJ	Bristol-Myers Squibb Co.	-22



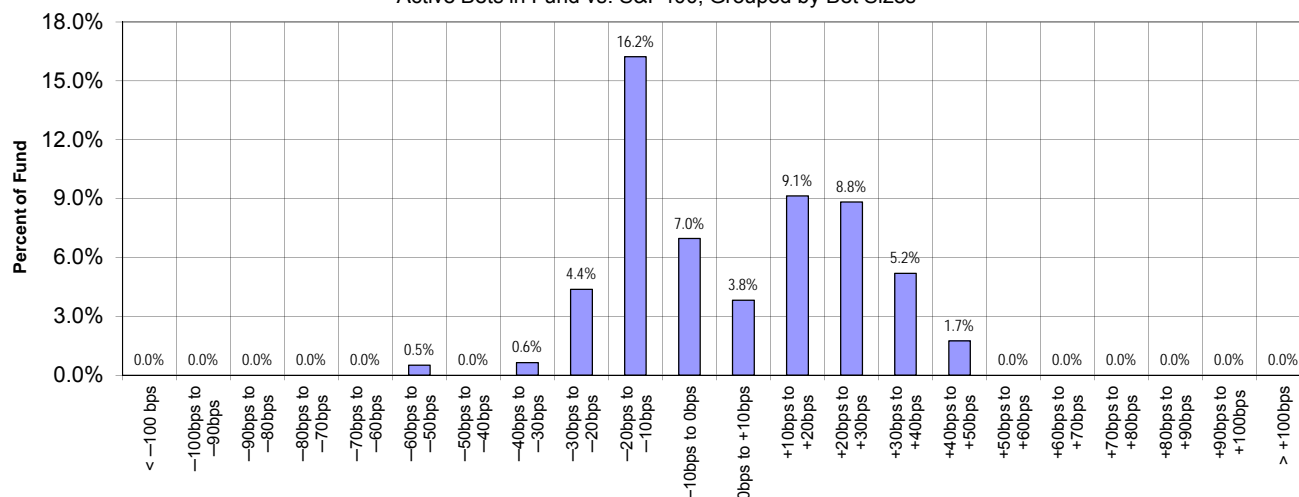
It appears the U.S. economy is still in an expansion phase but we are late in the cycle and vulnerable to exogenous factors. Several indicators appear uncertain or weak at this time so we are in for another "muddling through" quarter to close out the calendar year. Steady improvement in the housing sector continues, providing much needed support to the domestic banking industry and just enough steam to keep economic activity stumbling along. The impending fiscal tightening that will occur next year absent some sort of ameliorating action from Congress is looming ever larger as a psychological restraint on corporate investment decisions that will continue tamp down on the economy until some sort of resolution occurs.

Stocks appear attractive even considering the recent rally as returns on competing alternatives remain low relative to yields. However, earnings look increasingly dubious as a disturbing number of earnings models for the upcoming quarters seem to acknowledge slower top lines but depend not only on maintaining historically high margins but anticipate expanding them, thus setting up the potential for earnings disappointments and lower guidance such as we've seen and heard in the current quarter reports and conference calls. We remain comfortable with an overweight to large cap stocks although we will be working to narrow the gap on weakness.

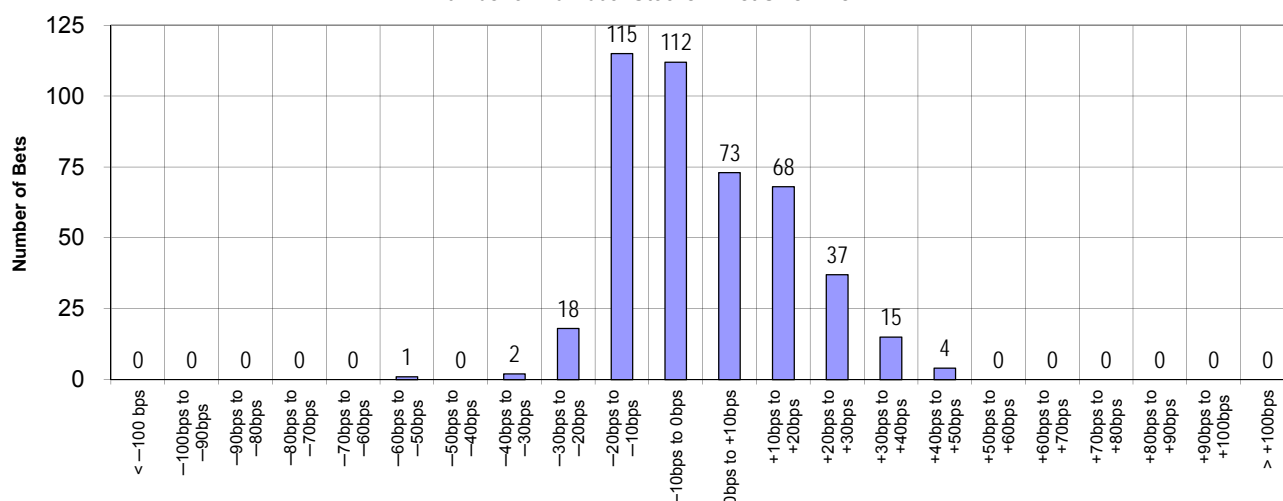
The September quarter got off to a slow start as the Fed and the ECB took turns providing hopeful rhetoric with disappointing follow up until the last month of the quarter. Markets perked up considerably as the Fed announced continued "QE" and the ECB initiated a bond buying program. It was primarily a "risk off" quarter with defensive, size, value and quality factors performing well although a rather sharp reversal occurred near the very end of the quarter coincident with the aforementioned global central bank announcements. The Mid Cap Fund outperformed the S & P Mid Cap 400 primarily due to good stock selection in the Consumer Discretionary, Technology and Energy sectors somewhat offset by poor stock picking in the Consumer Staples sector. Stock selection accounted for all of excess return during the quarter.



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
PETM	PetSmart Inc.	47
EE	El Paso Electric Co.	46
LANC	Lancaster Colony Corp.	41
FNF	Fidelity National Financial Inc.	40
JACK	Jack in the Box Inc.	38
WRC	Warnaco Group Inc.	38
CHS	Chico's FAS Inc.	38
IEX	IDEX Corp.	38
FL	Foot Locker Inc	37
CEB	Corporate Executive Board Co.	36
DLX	Deluxe Corp.	35
AVT	Avnet Inc.	35
EAT	Brinker International Inc.	35
VCI	Valassis Communications Inc.	34
ALK	Alaska Air Group Inc.	32
JW.A	John Wiley & Sons Inc. CI A	31
RGA	Reinsurance Group of America Inc.	31
DST	DST Systems Inc.	31
HSH	Hillshire Brands Co	30
IT	Gartner Inc.	29

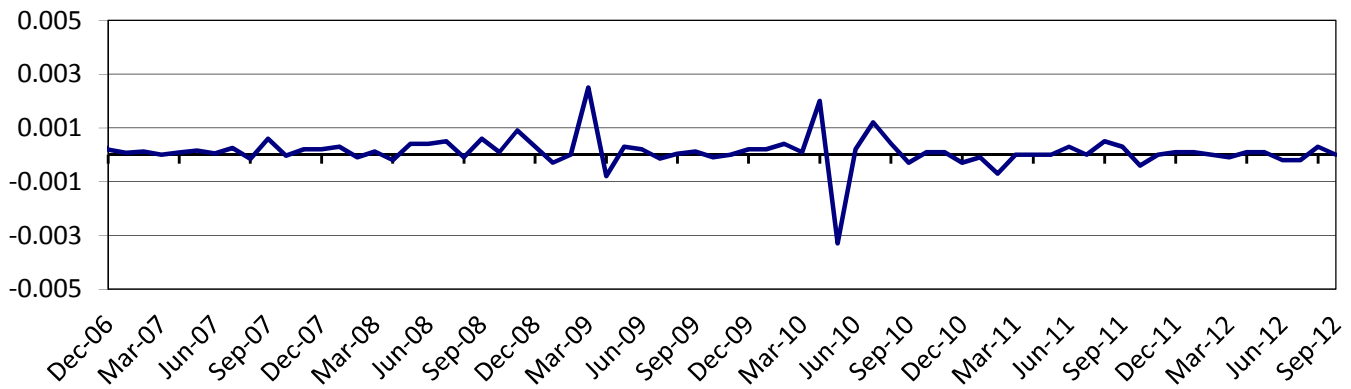
Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
Y	Alleghany Corp.	-50
RPM	RPM International Inc.	-32
WCN	Waste Connections Inc.	-32
EQIX	Equinix Inc.	-30
CNQR	Concur Technologies Inc.	-29
SPW	SPX Corp.	-29
UA	Under Armour Inc. CI A	-27
BEAV	B/E Aerospace Inc.	-27
SON	Sonoco Products Co.	-27
GGG	Graco Inc.	-26
HOLX	Hologic Inc.	-25
TFX	Teleflex Inc.	-24
CLGX	CoreLogic Inc.	-24
PMTC	Parametric Technology Corp.	-22
OGE	OGE Energy Corp.	-22
INT	World Fuel Services Corp.	-22
OHI	Omega Healthcare Investors Inc.	-21
AMG	Affiliated Managers Group Inc.	-21
REG	Regency Centers Corp.	-20
FLO	Flowers Foods Inc.	-20

Index Fund vs. S&P 500

Assets as of Sept. 30, 2012: \$2.5B

Monthly Excess Returns

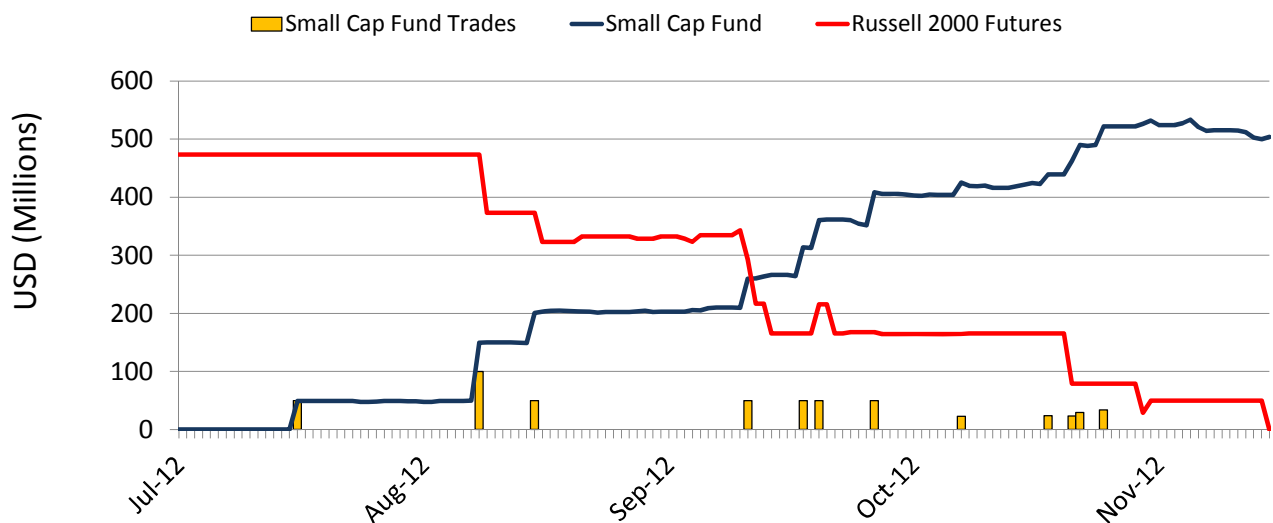


	1 Quarter	1 Year	3 Years	Since Inception
Index Fund	6.4%	30.2%	13.2%	5.0%
S&P 500	6.3%	30.2%	13.2%	4.3%
Excess Return	0.0%	0.0%	0.0%	0.7%
Tracking Error	0.09%	0.06%	0.25%	0.22%

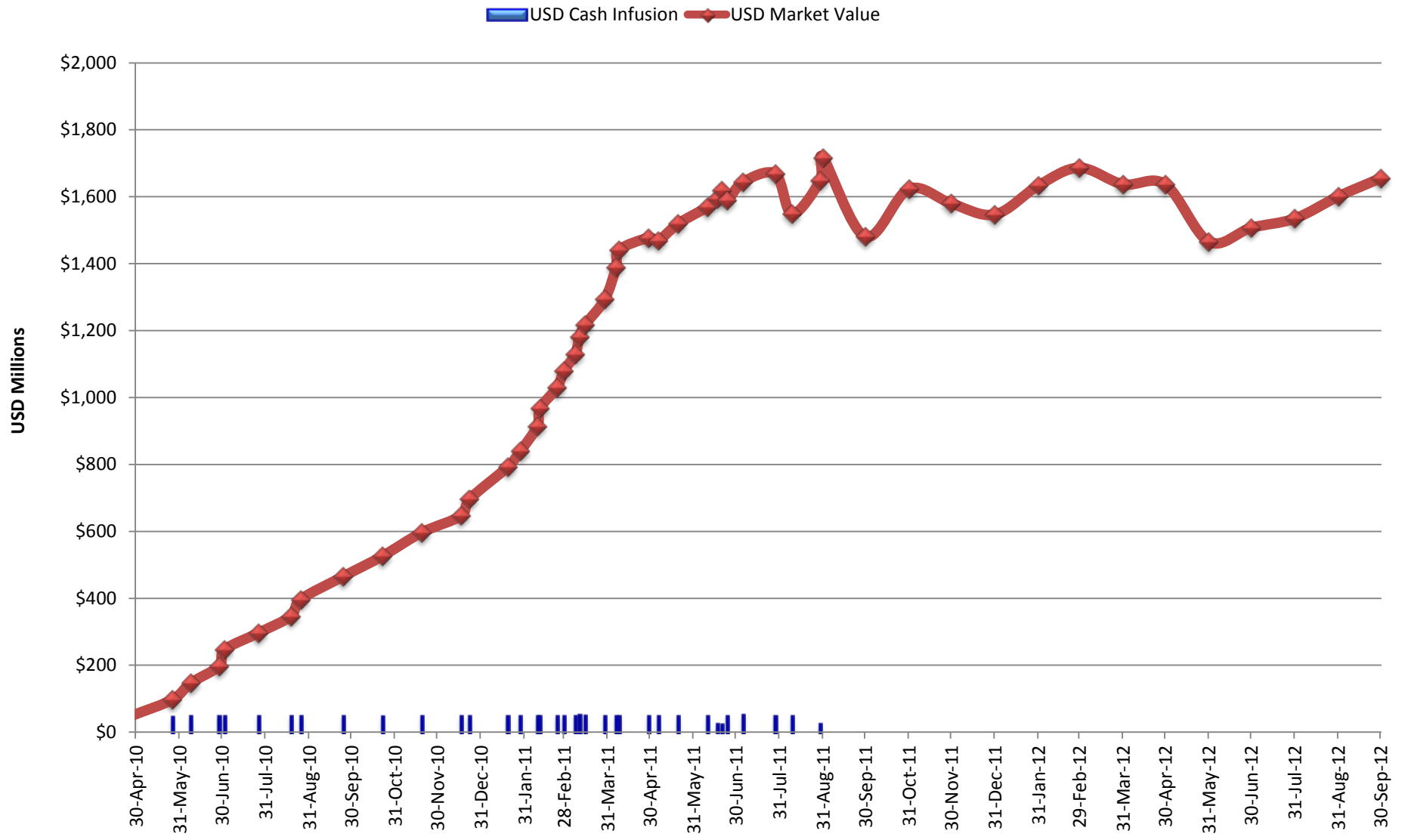
Small Cap Fund vs. S&P 600

Assets as of Sept. 30, 2012: \$402M

Small Cap Transition, FYTD as of 11/16/12



## Market Value & Cash Inflows for the Canada Fund September 30, 2012



Manager Performance Comparison – International Equity

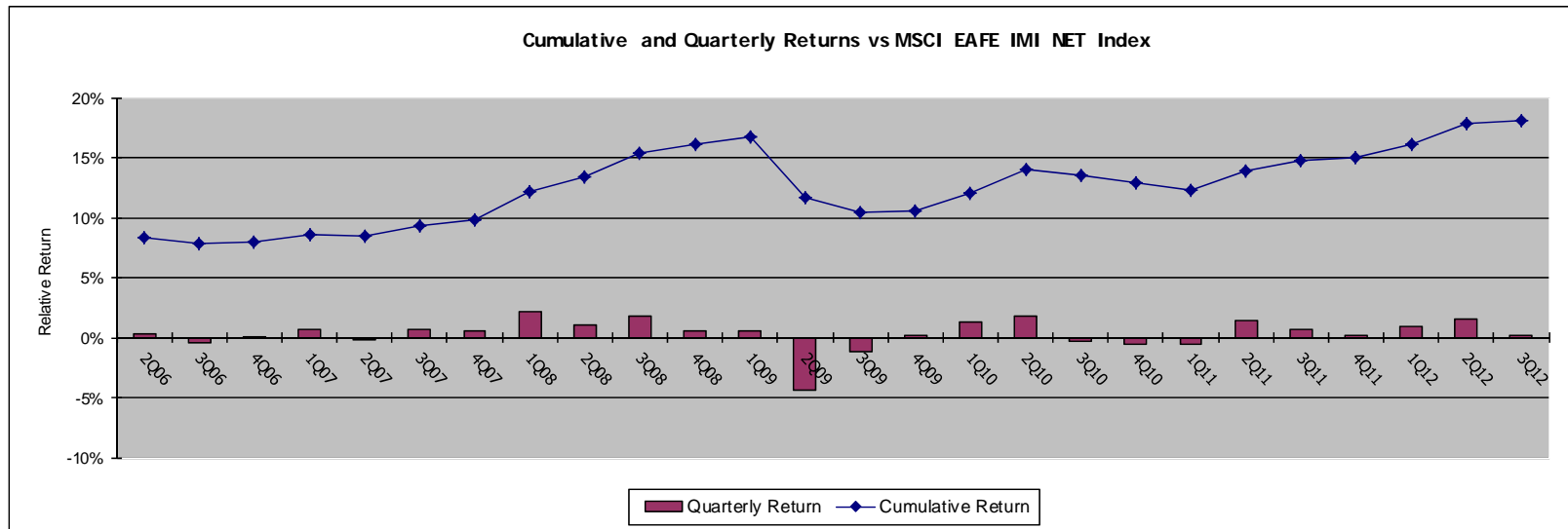
As of September 30, 2012

Manager returns for the quarter ending September 30, 2012

Manager	Manager Return	Benchmark	Benchmark Return
American Century	11.52	MSCI EAFE Small Cap NET	7.89
Baring Asset Mgmt	6.48	MSCI EAFE NET Index	6.92
GE Asset Mgmt	9.71	MSCI Europe NET Index	8.70
Marathon	7.12	MSCI EAFE NET Index <sup>2</sup>	6.92
Pacific Indexed Port <sup>5</sup>	3.12	MSCI Pacific NET Index <sup>1</sup>	3.73
PanAgora	7.11	MSCI EAFE NET Index	6.92
Pyramis	9.50	MSCI EAFE Small Cap NET	7.89
TT International	4.94	MSCI EAFE NET Index	6.92
Walter Scott	5.48	MSCI EAFE NET Index <sup>4</sup>	6.92
International	7.24	MSCI EAFE IM Net Index <sup>3</sup>	7.03

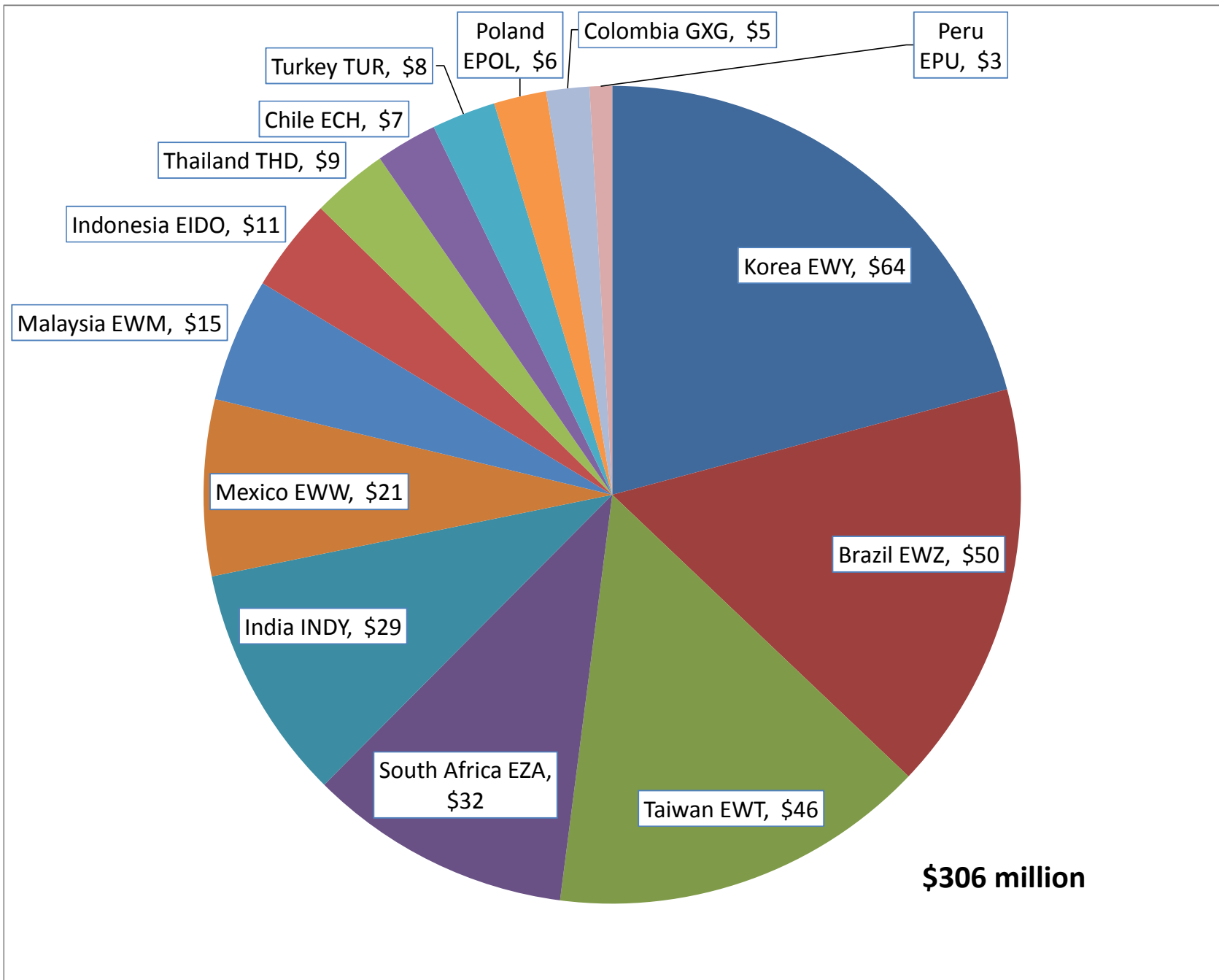
Manager returns for five years ending September 30, 2012

Manager	Manager Return	Benchmark	Benchmark Return
American Century		MSCI EAFE Small Cap NET	
Baring Asset Mgmt		MSCI EAFE NET Index	
GE Asset Mgmt		MSCI Europe NET Index	
Marathon	-0.81	MSCI EAFE NET Index <sup>2</sup>	-5.24
Pacific Indexed Port <sup>5</sup>	-6.04	MSCI Pacific NET Index <sup>1</sup>	-3.89
PanAgora	-3.49	MSCI EAFE NET Index	-5.24
Pyramis		MSCI EAFE Small Cap NET	
TT International		MSCI EAFE NET Index	
Walter Scott	2.33	MSCI EAFE NET Index <sup>4</sup>	-6.14
International	-2.57	MSCI EAFE IM Net Index <sup>3</sup>	-4.85

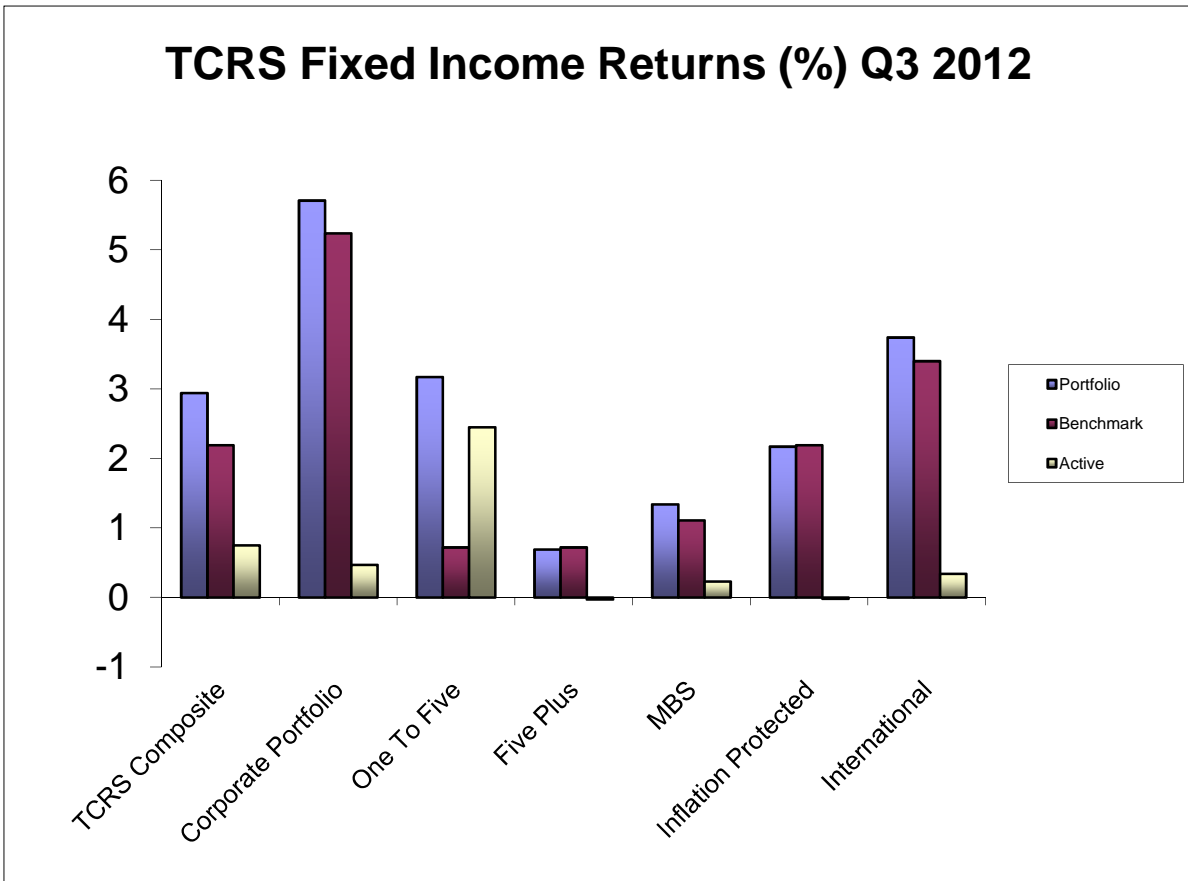


<sup>1</sup> Effective as of 7/1/04; prior was MSCI AC Asia Pacific Free Index.  
<sup>2</sup> Effective as of 5/19/06; prior was MSCI Europe Index.  
<sup>3</sup> Effective as of 10/1/08; prior was MSCI EAFE NET Index.  
<sup>4</sup> Effective as of 2/2/09; prior was MSCI Europe Index.  
<sup>5</sup> Performance was attributable to Amundi through 9/3/10; portfolio managed by TCRS staff afterward.

# Tennessee Consolidated Retirement System Emerging Market Holdings as of November 28, 2012

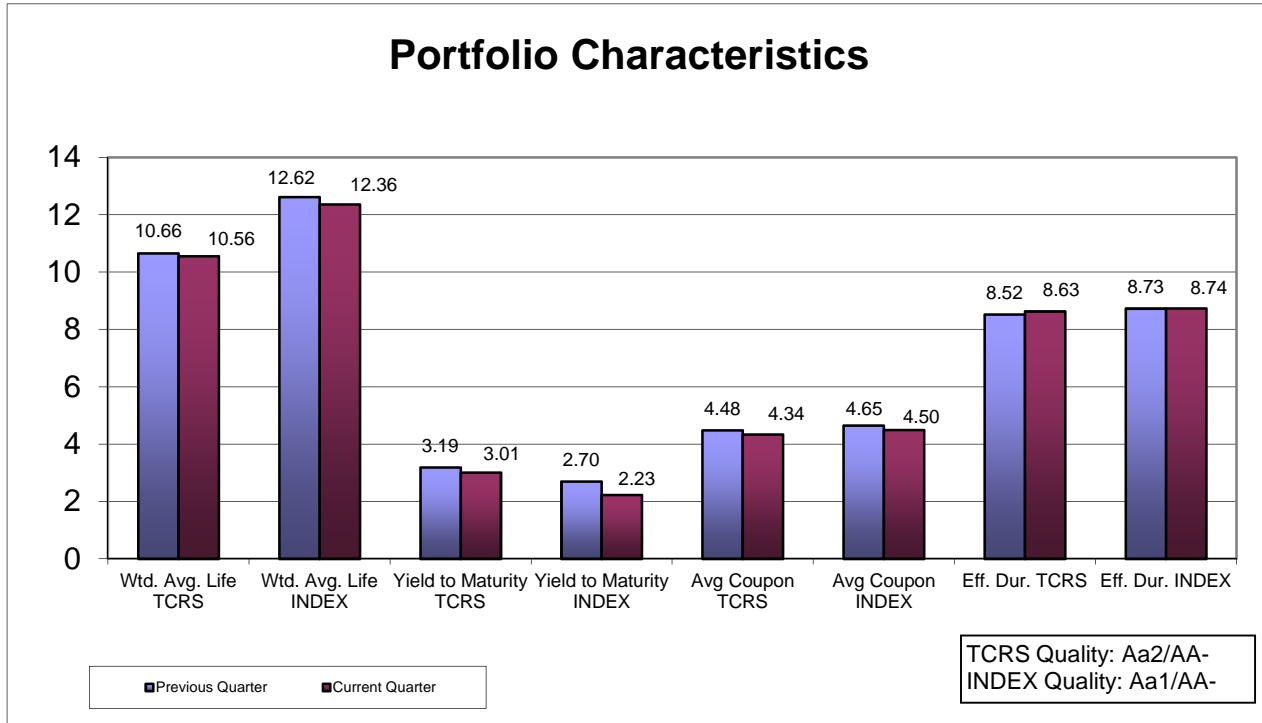


Portfolio	Value (Yield Book) (\$MMs)	Portfolio Return	Benchmark Return	Active Return
TCRS Domestic Fixed Income Composite	\$10,534	2.94	2.19	0.75
Corporate Portfolio	\$3,638	5.71	5.24	0.47
Government One To Five Years	\$1,479	3.17	0.72	2.45
Government Five Plus Years	\$1,842	0.69	0.72	(0.03)
Mortgage Portfolio	\$3,523	1.34	1.11	0.23
TCRS Inflation Protected Securities	\$2,691	2.17	2.19	(0.02)
TCRS International	\$344	3.74	3.40	0.34

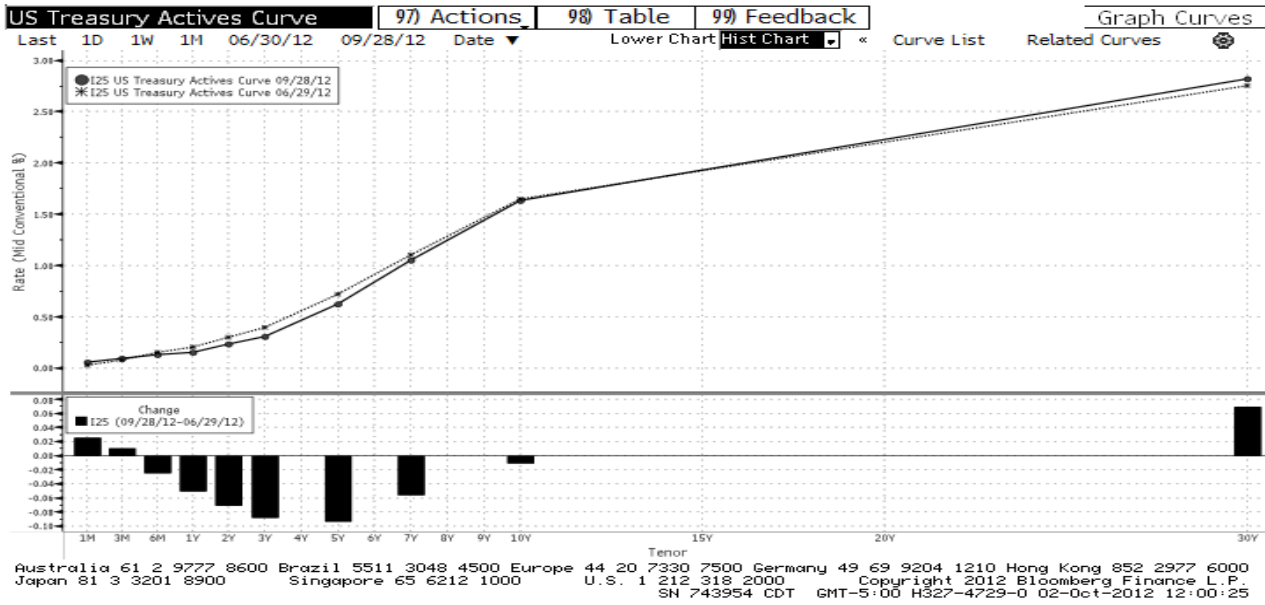


Note: All positions and market values are as of September 30, 2012

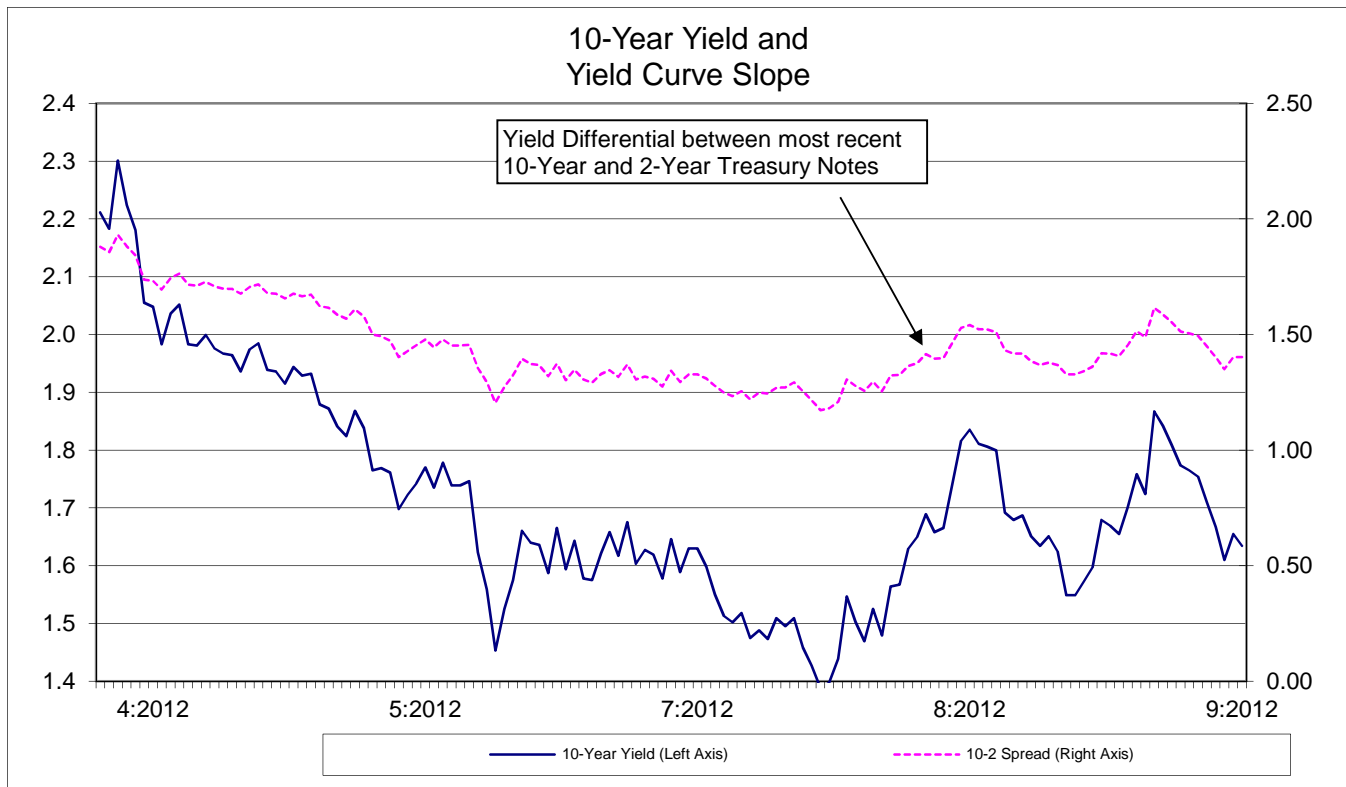
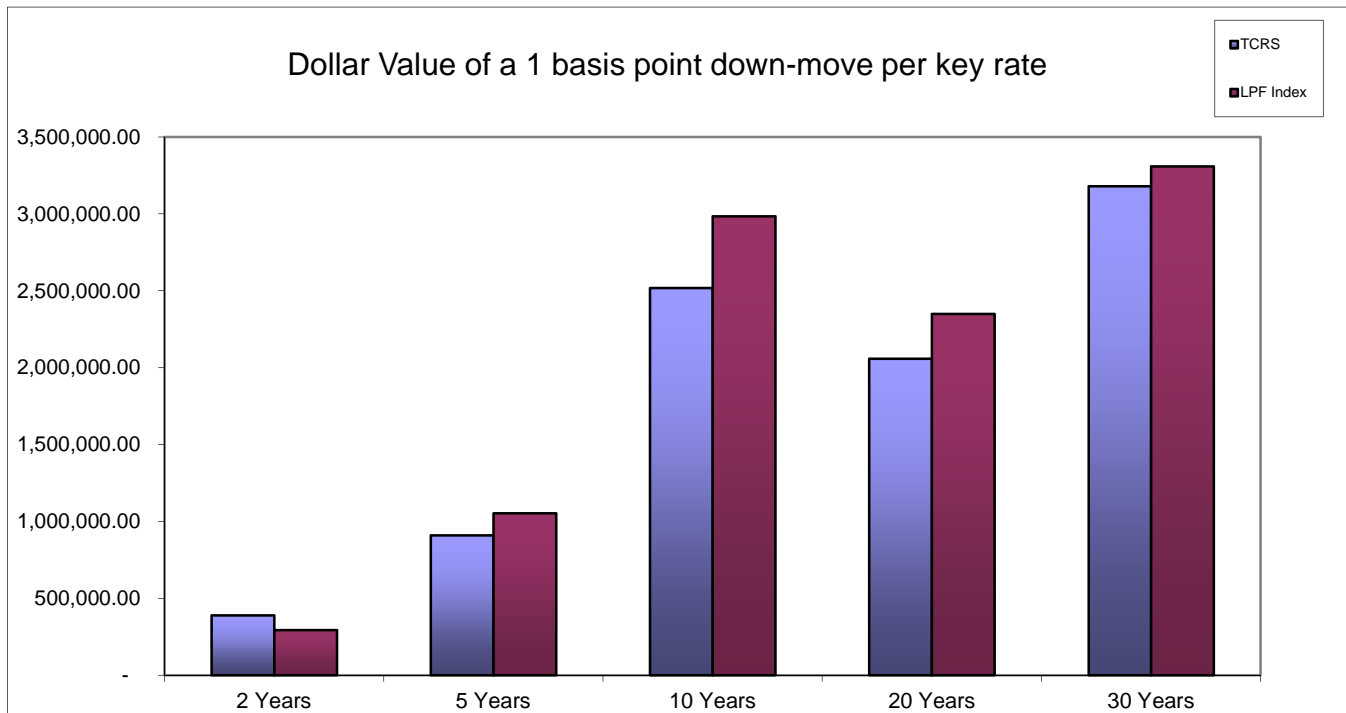
*Characteristics show an increase in duration risk as long term yields rose during the quarter*



*Yields fell and the curve steepened modestly*



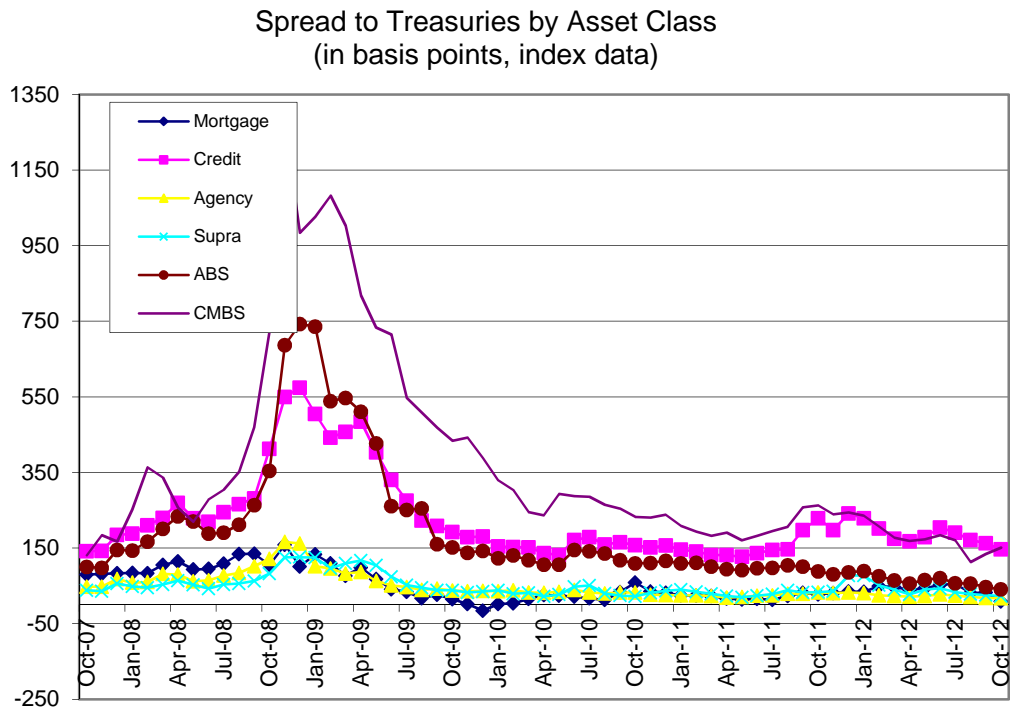
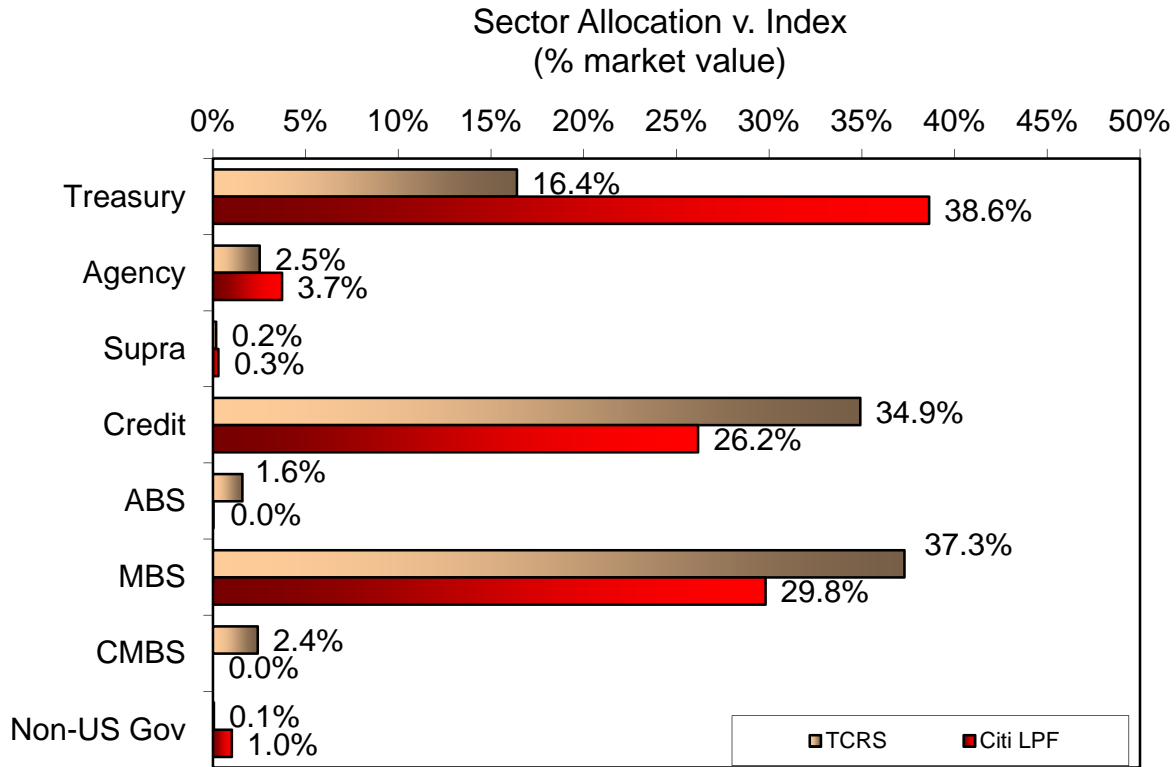
*Curve positioning reflects overweight to MBS and Credit*



source: Bloomberg



*Added to Credit from Agencies and Treasuries*

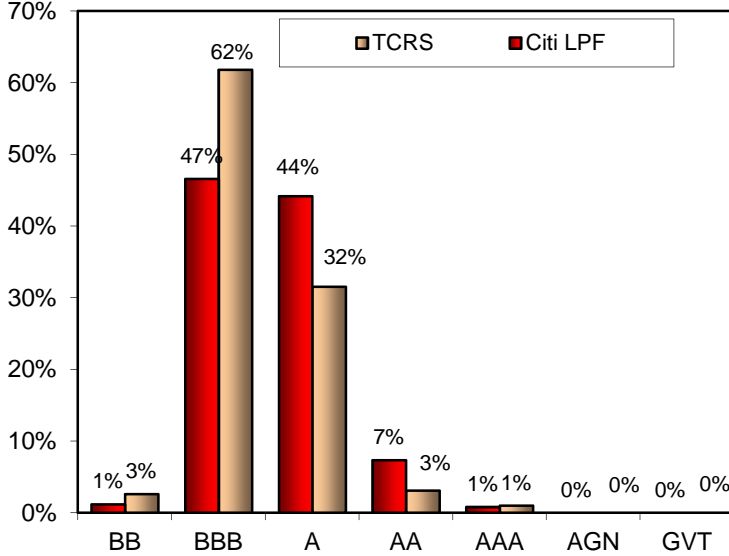


source: Yield Book

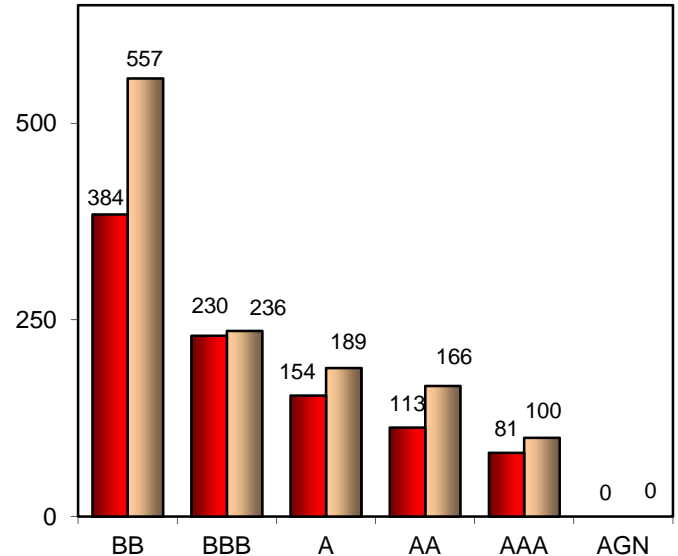
*Spreads tightened during the quarter.*

*TCRS spreads were slightly higher than the index in higher quality sectors, reflecting expectations of continued spread tightening.*

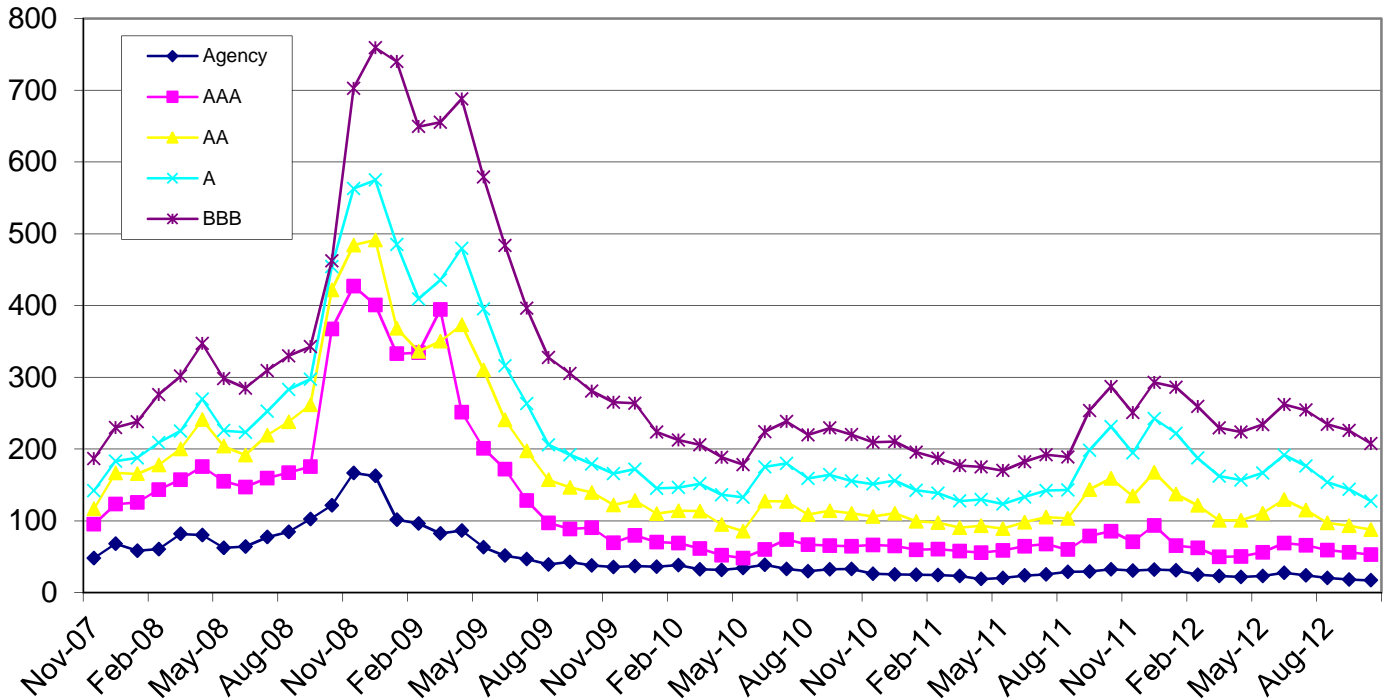
**Credit Allocation v. Index**  
 (% market value)



**OAS by Credit Allocation**



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

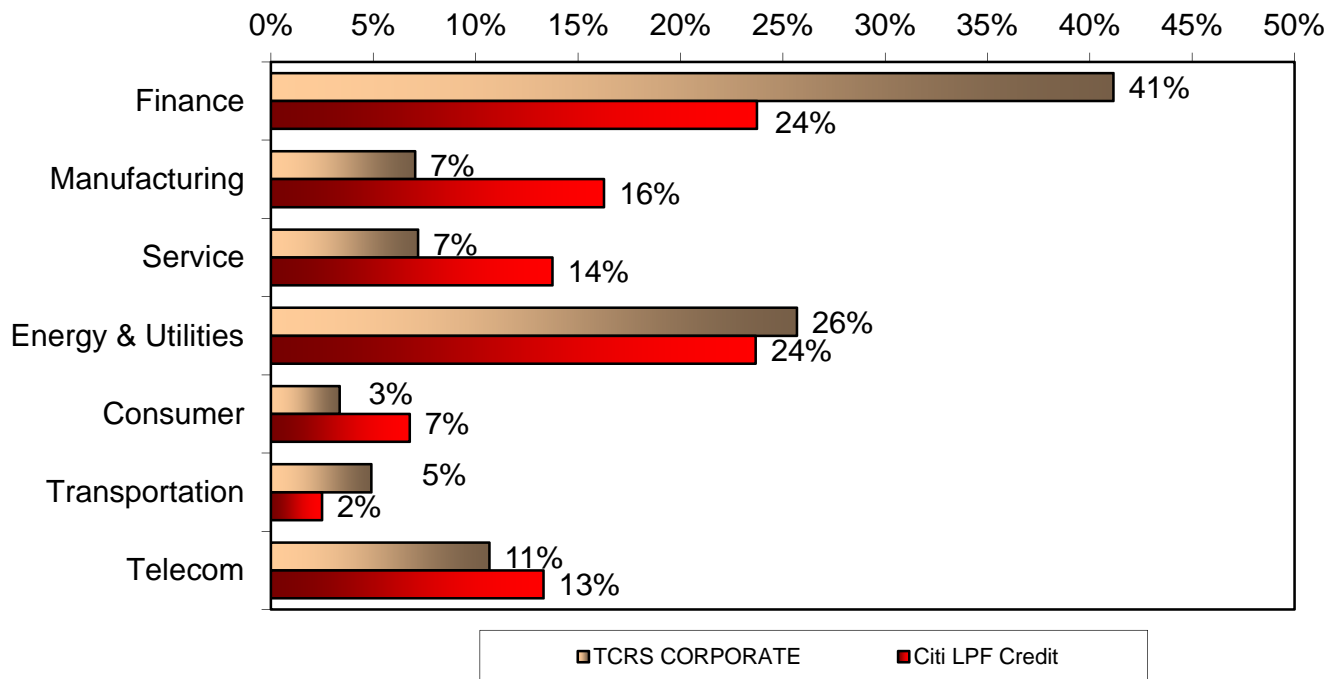


source: Yield Book

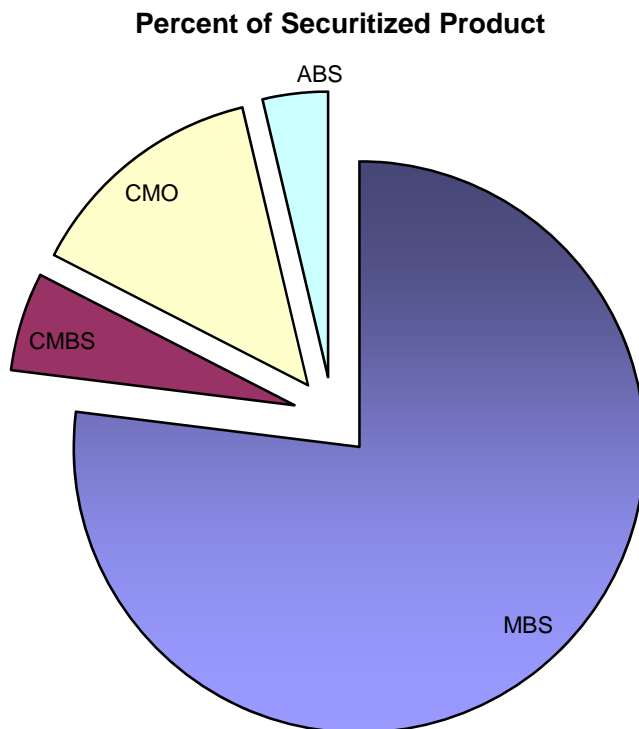
<b>Top 5 Credit Holdings (by Market Value)</b>	MktVal	% MktVal
CITIGROUP	124,000	1.2
GENERAL ELECTRIC CO	124,000	1.2
BANK OF AMERICA	117,000	1.1
GOLDMAN SACHS GROUP	91,827	0.9
AMERICAN INTERNATIONAL GROUP	83,968	0.8

<b>Top 5 Credit Holdings (by Dollar Duration)</b>	\$ Duration	% \$ Duration
CITIGROUP	124.17	1.4
GENERAL ELECTRIC CO	107.62	1.2
BANK OF AMERICA	94.91	1
JP MORGAN CHASE & CO	86.89	0.9
GOLDMAN SACHS GROUP	86.43	0.9

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



	Market Value (\$MM - Yield Book)	TCRS % of portfolio	CITI	Difference
<b>Agency Mortgage Backed Securities</b>	\$3,541,084	33.4	29.8	3.6
<b>GNMA</b>				
15-Yr	\$10,497	0.1	0.1	0.0
30-Yr	\$534,890	5.0	7.2	-2.2
<b>FNMA</b>				
10-, 15- & 20-Yr	\$243,013	2.3	2.6	-0.3
30-Yr	\$1,621,000	15.3	11.4	3.9
<b>FHLM</b>				
15-Yr	\$147,427	1.4	1.6	-0.2
30-Yr	\$805,955	7.6	6.8	0.8
<b>Agency Hybrid</b>	\$178,302	1.7	0.0	1.7
<b>Commercial Mortgage Backed Securities</b>	\$257,013	2.4	0.0	2.4
<b>CMO and Non Agency Passthroughs</b>	\$632,566	6.0	0.0	6.0
<b>Asset Backed Securities</b>	\$169,793	1.6	0.0	1.6
<b>Total Securitized Product</b>	<b>\$4,600,456</b>	<b>43.4</b>	<b>29.8</b>	<b>13.5</b>

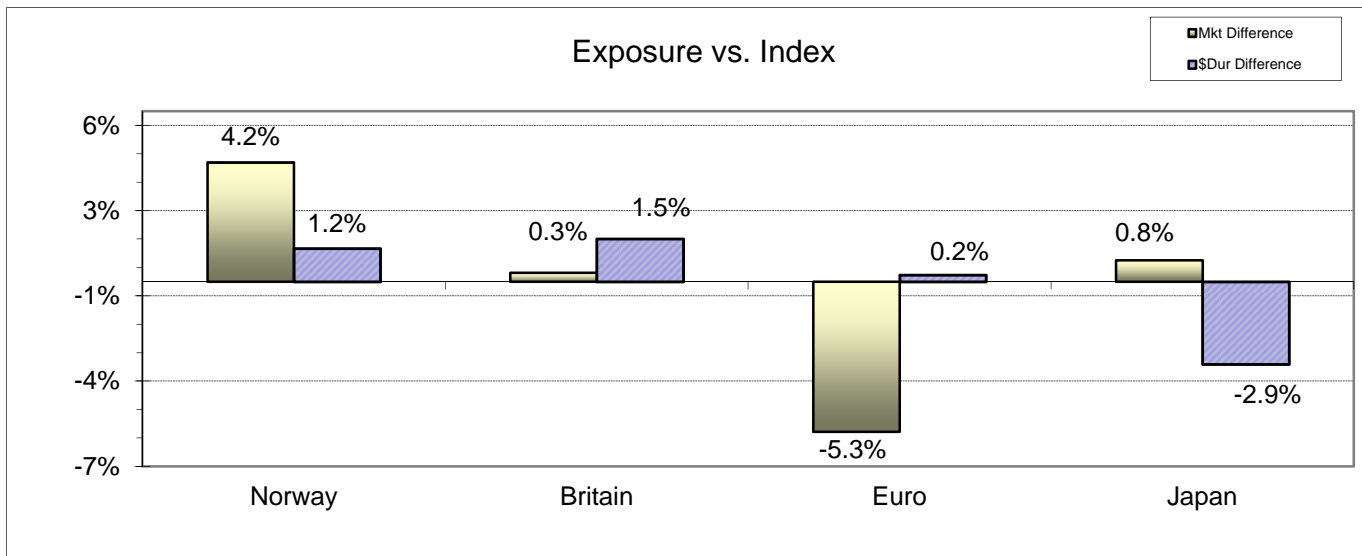


Portfolio Return: 3.74%  
Citigroup Non-US G5 Index: 3.40%  
**Active Return: 0.34%**

	TCRS		Percent of Value	Percent of \$Dur
	Yield	M. Dur		
Norway	2.06	2.07	4.2%	1.2%
Britain	2.30	9.96	11.3%	15.0%
Euro	1.34	8.15	20.0%	21.8%
Japan	0.51	7.16	64.6%	62.0%
	0.94	7.46	100.0%	100.0%

	Citigroup G5 Sovereign Index (ex-US)		Percent of Value	Percent of \$Dur
	Yield	Dur		
Britain	1.64	9.79	10.9%	13.5%
Euro	1.16	6.77	25.2%	21.6%
Japan	0.65	8.05	63.8%	64.9%
	0.89	7.92	100.0%	100%

	Difference		
	Value Differ	M. Dur Differ	\$ Dur Differ
Norway	4.2%	2.1	1.2%
Britain	0.3%	0.2	1.5%
Euro	-5.3%	1.4	0.2%
Japan	0.8%	-0.9	-2.9%
	0.0%	-0.5	0.0%

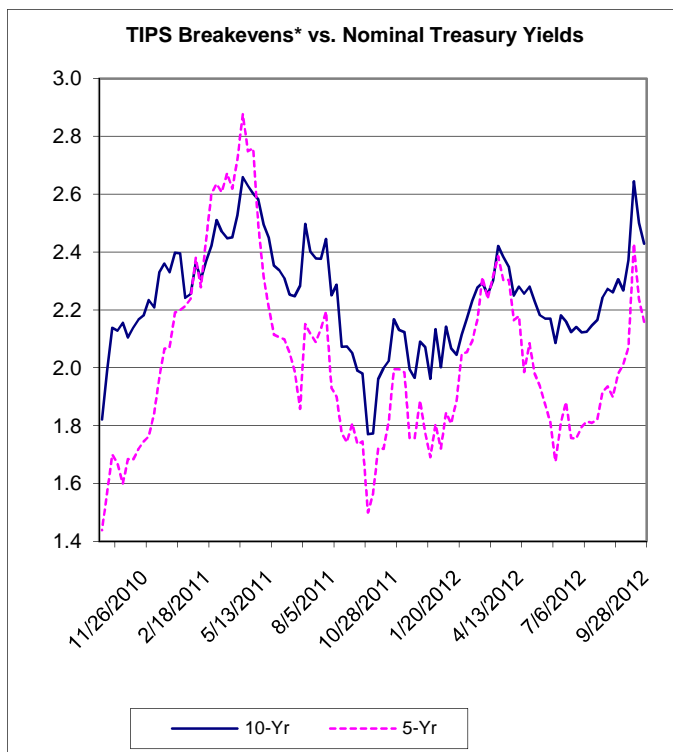


*Inflation Protected Fixed Income*

Portfolio Value (Yield Book): \$2,690,766,337  
 Portfolio Return: 2.17%  
 Citigroup ILSI Index: 2.19%  
**Active Return: -0.02%**

**% Market Value by Duration**

	TCRS	CITI	Difference
0-2	0.02	0.02	0.00
2-4	0.04	0.04	0.00
4-6	0.06	0.05	0.00
6-8	0.12	0.13	-0.01
8-10	0.18	0.19	-0.02
10+	0.20	0.19	0.01

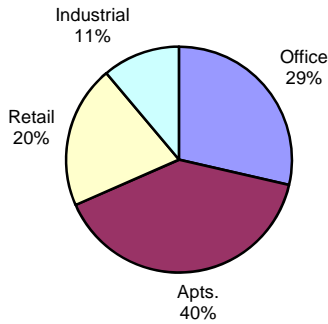


\* The "breakeven" rate is the expected rate of inflation at which investment in TIPS yield the same return as investment in Treasuries.

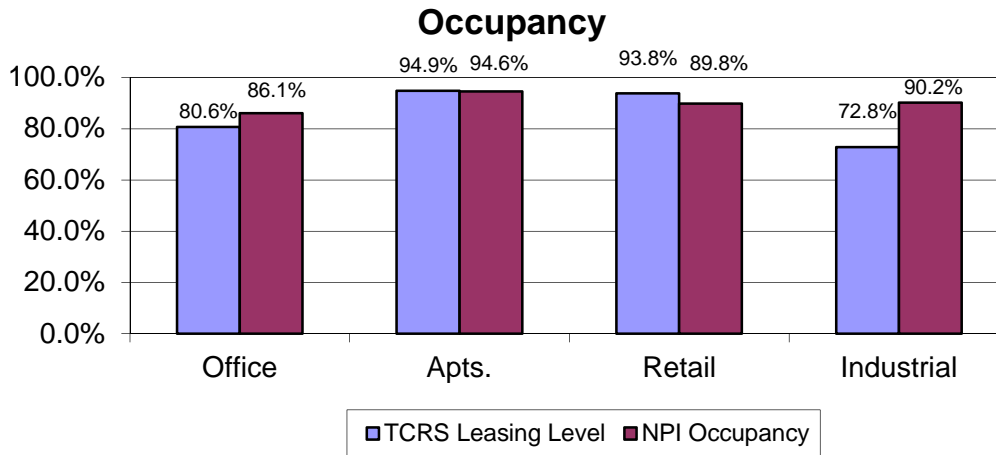
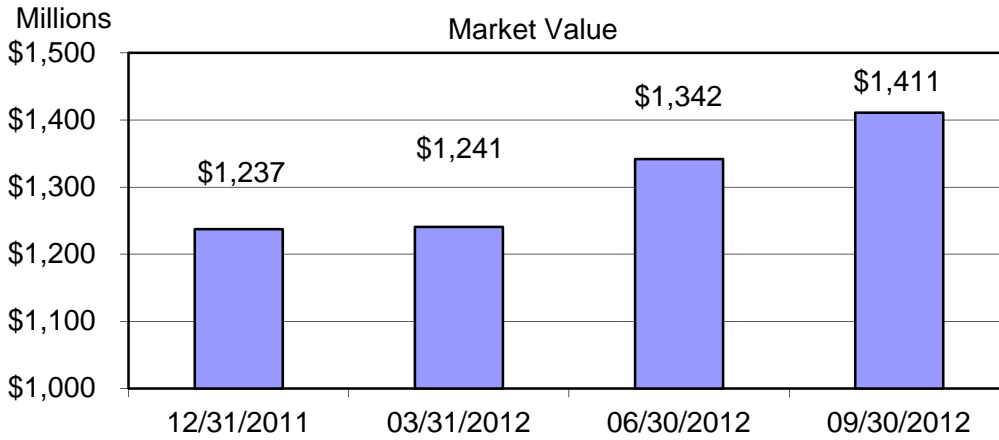
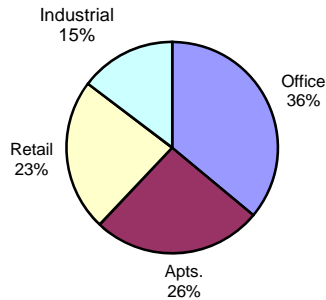
Source: Bloomberg

Page is intended to be blank

**TCRS By Property Type**



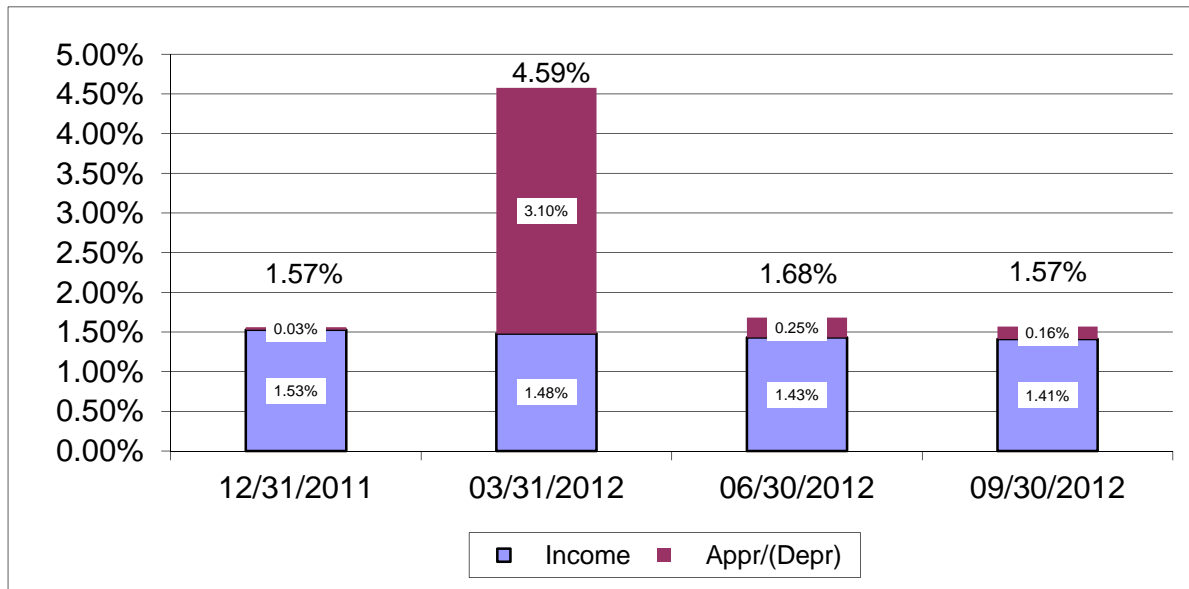
**NPI By Property Type**



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

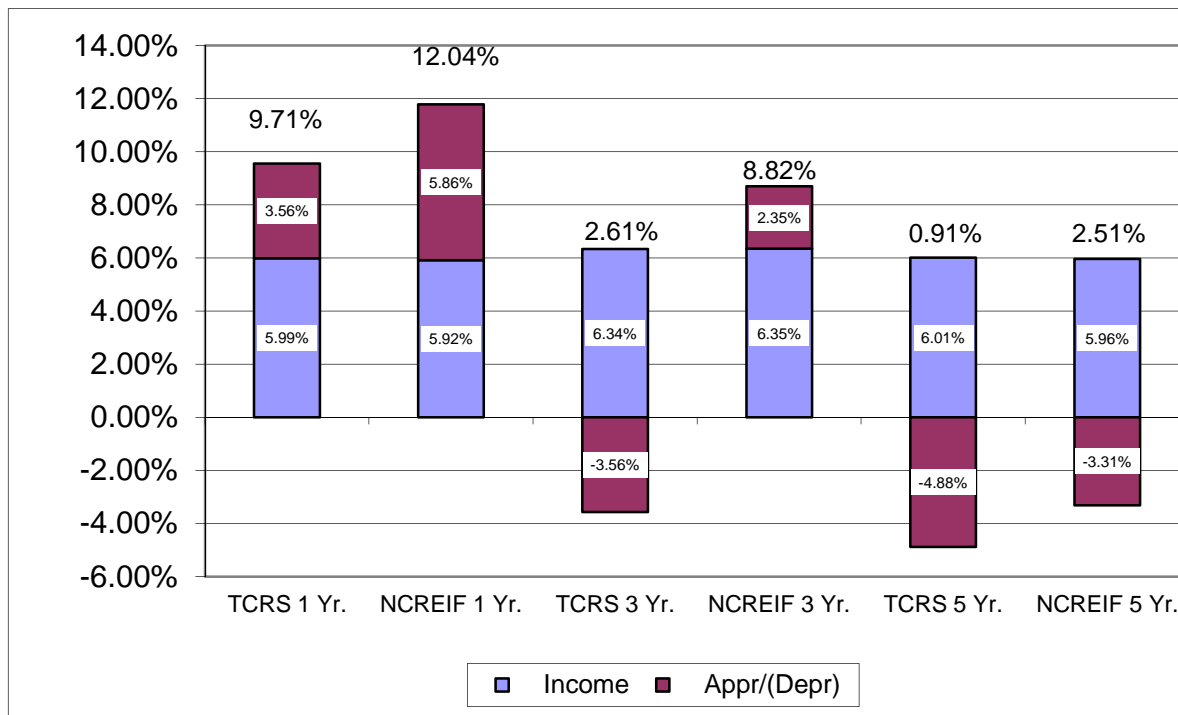


Peter Katseff



All returns shown above are reported one quarter in arrears

Budgeted Annual Income Return for calendar year 2012 (excluding REITs) 5.82%



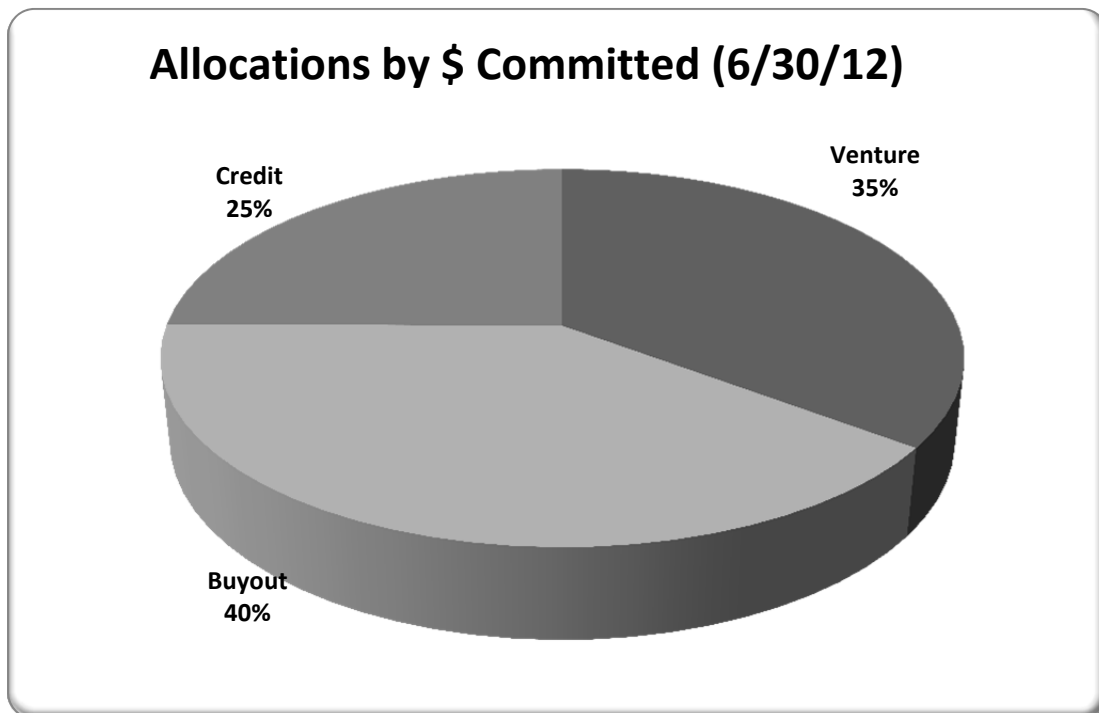
All returns shown above are reported one quarter in arrears

**Tennessee Consolidated Retirement System**  
 Private Equity Program  
 Fiscal Q4 2012 Update  
 Lamar Villere, CFA

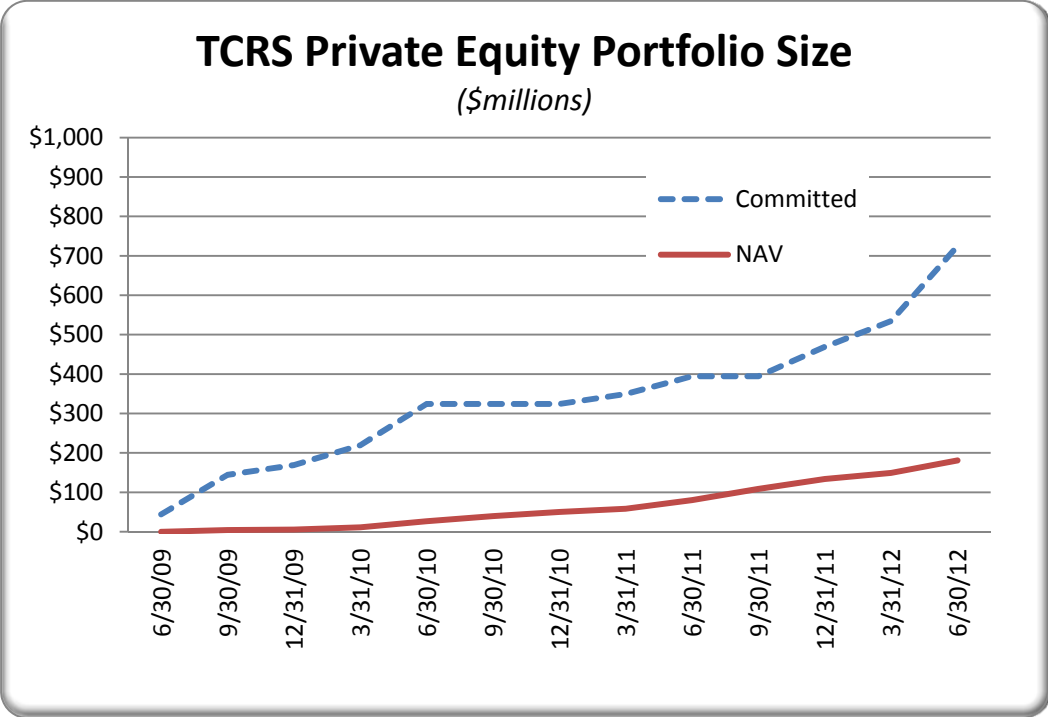
We have finalized our fiscal Q4:2012 results (the period ending 6/30/12), and are pleased to report that the program continues to show positive returns. That said, early strong returns have begun to show the impact of the J-Curve, as most portfolio companies are still held at cost. Additionally, continued significant strength in the public markets negatively impacted our relative performance.

<i>Trailing IRR</i>	<b>Quarter</b>	<b>Trailing 1 Year</b>	<b>Since Inception</b>
Buyout	-2.5%	-7.0%	-4.2%
Credit	2.2%	7.8%	9.7%
Venture	10.3%	12.0%	17.1%
Natural Resources	<u>-30.4%</u>	<u>#N/A</u>	<u>-30.4%</u>
<b>TCRS PE Overall</b>	<b>3.4%</b>	<b>5.5%</b>	<b>9.5%</b>
<i>S&amp;P 500 + 3%</i>	-2.0%	16.6%	15.7%

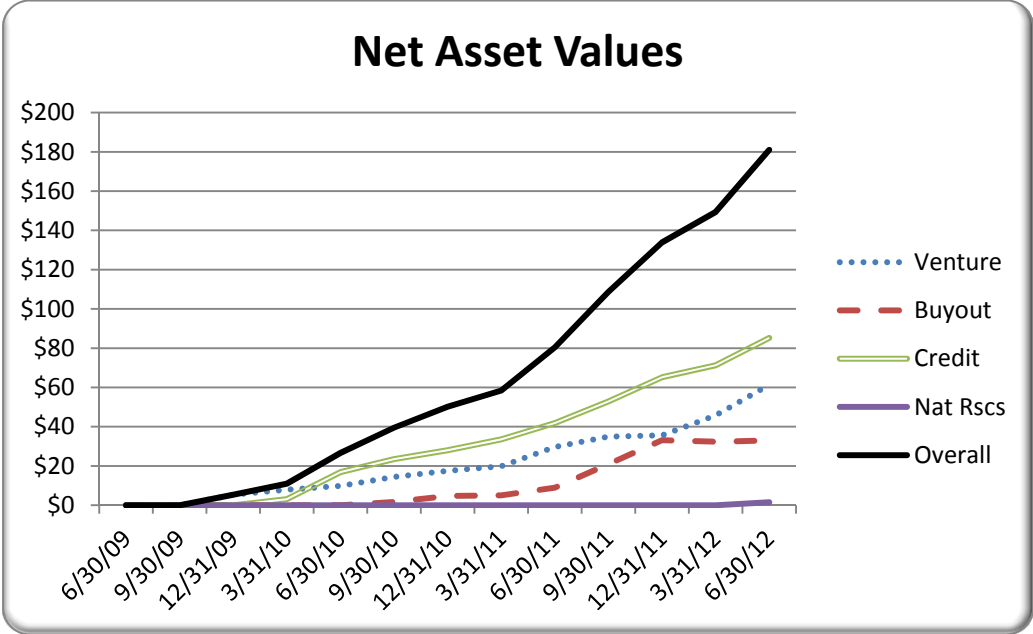
The overall portfolio is still significantly over weighted to venture capital, a situation which should be reversed as the commitment pace in buyouts increases in the coming years. The following chart shows the allocations to the sub-asset classes based on commitments.



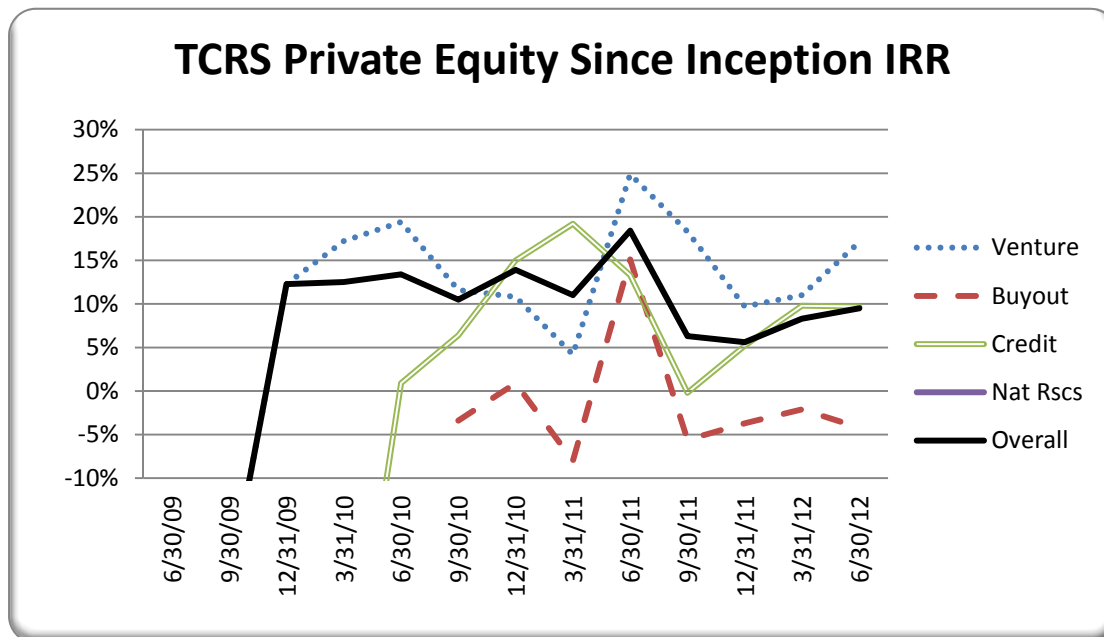
The next chart shows the overall size of the TCRS portfolio as it has grown since inception, both in terms of commitments as well as actual growth in net asset value.



The chart below illustrates the net asset value of each subcategory since the program’s inception. We would expect buyout NAVs to accelerate significantly in the next 12 months.



Finally, to illustrate the early volatility of IRR (over time the since-inception program IRR will become fairly steady), we have included a chart showing the IRR of the overall portfolio and the sub-asset classes over time.



### New Commitments

Thus far in calendar 2012, we have closed on seven new commitments, as shown in the table below (commitments shown in \$millions).

Partnership	Commitment	Description
Lightspeed IX	\$25	Early Stage IT VC
Canaan IX	\$25	Early Stage IT/HC VC
Bain Ventures 2012	\$15	Diversified VC
Khosla Seed B	\$20	Early Stage IT/Cleantech VC
IVP XIV	\$20	Late Stage IT VC
Oaktree Opps IX	\$50	Credit/Distressed Debt
Advent GPE VII	<u>\$100</u>	Global Buyout
	<b>\$255</b>	



# 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>			250		SEP (U) 2012	EURODOLLAR	PUT	96
			2305		T-BONDS 12	SEP	FUTURE	
			4234		ULTRABOND 12	SEP	FUTURE	

### TRADE SUMMARY BY ACCOUNT

ACCT	SOLD	BOUGHT	NET	EXPIRATION	CONTRACT	TYPE	STRIKE	
<b>5+ Gov't (1381)</b>								
	-	375	375		T-BONDS 12	Dec		
	375	-	(375)		T-BONDS 12	Sep		
	-	1,000	1,000		ULTRABOND 12	Dec		
	1,000	-	(1,000)		ULTRABOND 12	Sep		
<b>1-5 Gov't (1368)</b>								
	-	2,080	2,080		T-BONDS 12	Dec		
	2,080	150	(1,930)		T-BONDS 12	Sep		
	-	2,284	2,284		ULTRABOND 12	Dec		
	2,284	-	(2,284)		ULTRABOND 12	Sep		
	Expired	1,000	-		10 T-NOTE 12	Sep C 136		
	Expired	-	(250)		SEP (U) 2012			
<b>Overlay (1371)</b>								
	-	300	300		T-BONDS 12	Dec		
	-	-	-		T-BONDS 12	Sep		
	-	750	750		ULTRABOND 12	Dec		
	750	-	(750)		ULTRABOND 12	Sep		
<b>Corporate (1365)</b>								
	-	-	-		T-BONDS 12	Dec		
	50	50	-		T-BONDS 12	Sep		
	180	380	200		ULTRABOND 12	Dec		
	350	150	(200)		ULTRABOND 12	Sep		

<b>End</b>			2755		T-BONDS 12	Dec		
			4234		ULTRABOND 12	Dec	FUTURE	

# Domestic Fixed Income Derivatives Report

Andrew C. Palmer, CFA

## Domestic Fixed Income Derivatives Transaction Log

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

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

- 5-year Futures
- 10-year Futures
- Long Bond Futures
- Ultra-Long Futures
- Eurodollar Put

#### **STRATEGIES:**

- Used Ultra-Long, Long Bond and Ten-Year Futures to manage interest rate exposures in the 1-5 Gov't portfolio, the 5+ Gov't Portfolio and the Corporate portfolio and as part of the transition to the LPF Index.
- Rolled Ten-Year, 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 to offset the duration impact of a strategic overweight to the MBS portfolio.

#### **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 Eurodollar put option trade was held and still provides protection against a tightening of monetary policy and a widening in Eurodollar spreads.

### **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.
- 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 1st Quarter Activity

**NO ACTIVITY**

---



TCRS MORTGAGE PORTFOLIO

END OF QUARTER MORTGAGE TBA POSITIONS

Jesse Picunko, CFA

	PRICE	PAR	MARKET	SETTLE	FIRM
	(\$million)	(\$million)	(\$million)		
FGLMC 4.0 30yr	107.48	20.00	21.50	OCT	UBS
FGLMC 4.0 30yr	107.48	12.00	12.90	OCT	JEF
FGLMC 4.0 30yr	107.48	20.00	21.50	OCT	BNP
FGLMC 4.0 30yr	107.48	18.00	19.35	OCT	C
GNMAII 3.5 30yr	109.36	25.00	27.34	OCT	BAML
GNMA 3.5 30yr	109.57	20.00	21.91	OCT	BAML
GNMA 3.5 30yr	109.57	45.00	49.31	OCT	DB
GNMA 3.5 30yr	109.57	27.50	30.13	OCT	NOM
GNMA 3.5 30yr	109.57	37.50	41.09	OCT	BARC
GNMA 3.5 30yr	109.57	12.50	13.70	OCT	CS
GNMA 3.5 30yr	109.57	15.00	16.44	OCT	JPM
GNMA 4.0 30yr	110.27	15.00	16.54	OCT	CS
GNMA 4.0 30yr	110.27	20.00	22.05	OCT	JPM
GNMA 4.5 30yr	109.80	15.00	16.47	OCT	BARC
GNMA 4.5 30yr	109.80	12.50	13.72	OCT	NOM
GNMA 4.5 30yr	109.80	12.50	13.72	OCT	CS
GNMA 4.5 30yr	109.80	15.00	16.47	OCT	JPM
Total		342.50	374.13		

By Firm  
(\$million)

C	\$ 19.35
BAML	\$ 49.25
JPM	\$ 54.96
DB	\$ 49.31
JEF	\$ 12.90
NOM	\$ 43.86
UBS	\$ 21.50
CS	\$ 43.96
BNP	\$ 21.50
BARC	\$ 57.56
	\$ 374.13

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

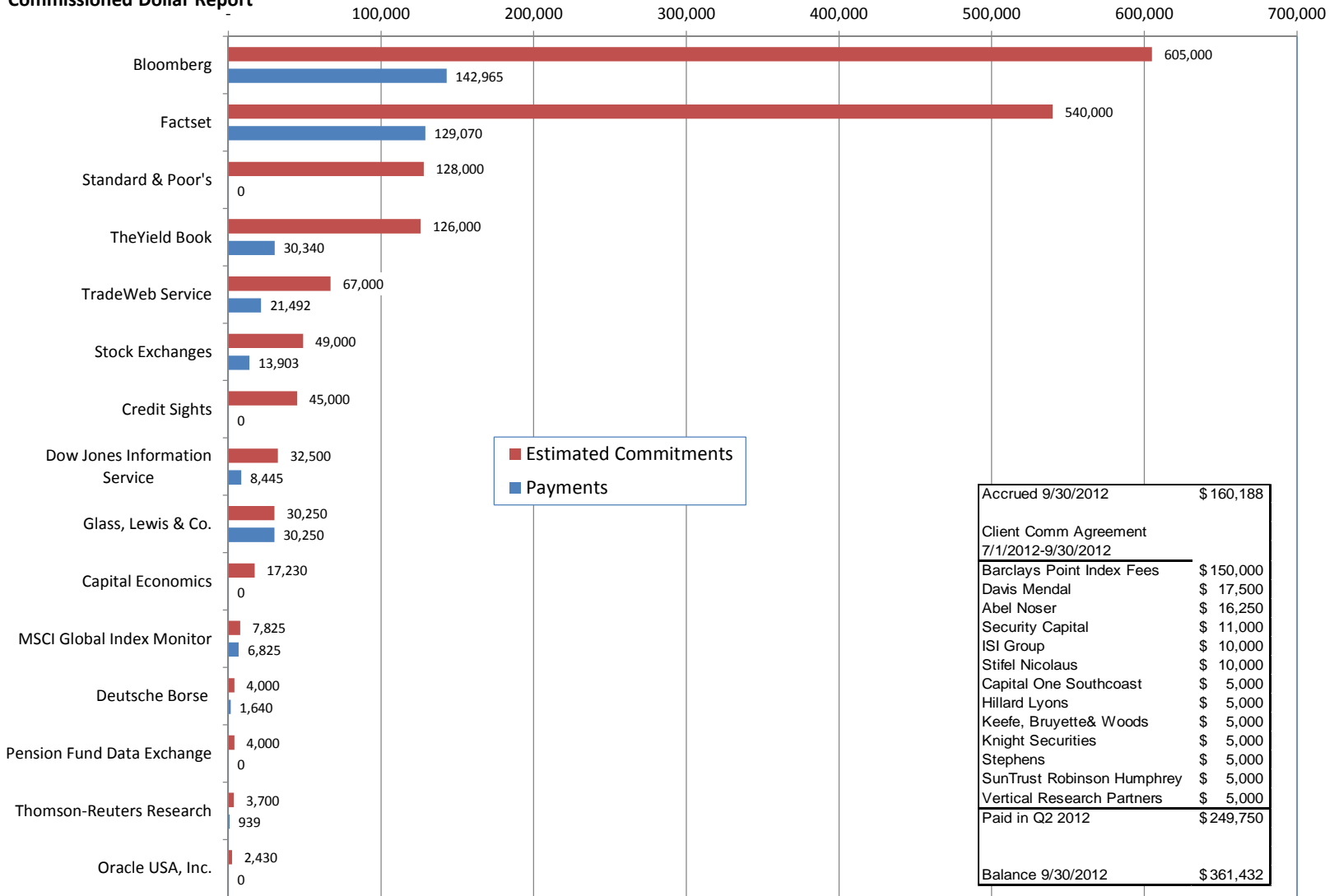
TCRS continues to move forward with changes to the Operations area. As TCRS looks for ways to add value to the Fund, this is an area that offers some opportunity for efficiencies and technology upgrades.

Personnel Changes – Casey Wright was recently promoted to Assistant Cash Manager and will administer the LGIP program. His promotion leaves a vacancy in the Operations area that will need to be filled very soon.

Trading – Trade volume for the quarter was off slightly at 252 million shares valued at \$9.5 billion, compared to the previous quarter of 289 million shares valued at \$11 billion. Only 5% of the trades for the quarter were momentum trades, down from nearly 30% two quarters ago. With the large number of illiquid trades for the quarter, trading costs were slightly elevated. The cost for the quarter was 2.85 basis points versus VWAP, and the cost for the Abel Noser universe for similar trades was 1.99 basis points. The good news is that implicit trading costs continue to trend lower, and have dropped each of the previous four quarters, moving from 19.34 basis points down to 11.58 basis points. This reduction equates to a savings of \$7.5 million for the quarter based on current volume.

Trading Cost Analysis – The latest full quarter of time stamped data (April thru June 2012) has recently been reviewed. 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. In the very near future, recommendations will be made to management concerning trading strategies and firms that are being used.

**Commissioned Dollar Report**



Accrued 9/30/2012	\$ 160,188
Client Comm Agreement 7/1/2012-9/30/2012	
Barclays Point Index Fees	\$ 150,000
Davis Mendal	\$ 17,500
Abel Noser	\$ 16,250
Security Capital	\$ 11,000
ISI Group	\$ 10,000
Stifel Nicolaus	\$ 10,000
Capital One Southcoast	\$ 5,000
Hillard Lyons	\$ 5,000
Keefe, Bruyette& Woods	\$ 5,000
Knight Securities	\$ 5,000
Stephens	\$ 5,000
SunTrust Robinson Humphrey	\$ 5,000
Vertical Research Partners	\$ 5,000
<b>Paid in Q2 2012</b>	<b>\$ 249,750</b>
<b>Balance 9/30/2012</b>	<b>\$ 361,432</b>