

INVESTMENT REPORT

TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

**Third Quarter
Fiscal Year 2014 - 2015**

January 1, 2015 – March 31, 2015

**Prepared for:
Board of Trustees**

June 26, 2015

Investment Advisory Council

Pursuant to T.C.A. Section 8-37-108, the state treasurer shall appoint, with the advice and consent of the board of trustees, an investment advisory council, consisting of five (5) persons who, at the time of their appointment, shall have at least five (5) years' professional experience as portfolio manager, economist, or as investment advisor in any field for which investments of Tennessee consolidated retirement system funds are authorized. The state treasurer and the chief investment officer for the Tennessee consolidated retirement system shall be ex officio, non-voting members of the council.

The TCRS investment staff consults at least semi-annually 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>
Frederick S. Crown, Jr., CFA 124 Longwood Place Nashville, TN 37215 Phone: 615-347-0343 E-mail: crownfl@gmail.com	June 30, 2017	5 year
Susan Logan Huffman, CFA Managing Director Reliant Investment Management, LLC 1715 Aaron Brenner Drive, Suite 504 Memphis, TN 38120 Phone: 901-843-0600 / Fax: 901-843-0325 E-mail: shuffman@reliantllc.com	June 30, 2016	5 year
George B. Stadler, CFA 95 White Bridge Road, Suite 414 Nashville, TN 37205 Phone: 615-416-3455 cell E-mail: george@hmscm.com	June 30, 2015	5 year
Carol Womack, Principal Diversified Trust Company 3102 West End Avenue, Suite 600 Nashville, TN 37203 Phone: 615-386-7302 E-mail: cwomack@diversifiedtrust.com	June 30, 2015	3 year

TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

Third Quarter
Fiscal Year 2014-2015

January 1, 2015 – March 31, 2015

TABLE OF CONTENTS

Page

Minutes of March 10, 2015 IAC Meeting	1
Portfolio Overview.....	5
Equity Portfolio.....	7
Fixed Income Portfolio	19
Real Estate Portfolio	27
Private Equity Portfolio	29
Strategic Lending Portfolio.....	33
Derivative and Currency Activity	36
Operations Report	41

**Minutes from the Investment Advisory Council Meeting
March 10, 2015**

Mr. George Stadler, Chairman of the Investment Advisory Council (IAC), convened the meeting at 1:39 p.m. in the 13th Floor conference room of the Andrew Jackson State Office Building. IAC members present included Chairman Stadler, Ms. Carol Womack, Mr. Fred Crown, Treasurer David H. Lillard, Jr (ex officio) and Mr. Michael Brakebill (ex officio). Investment Staff members present included Andrew Palmer, Michael Keeler, Tim McClure, Roger Henry, Jennifer Selliers, Roy Wellington, Kushal Gupta, JP Rachmaninoff, Matthew Haitas, Justin Denery, Daniel Crews, Michael Giggie, Thomas Kim, Rhonda Myers, Derrick Dagnan and Daniel Toomey.

Chairman Stadler opened the meeting by requesting a motion to approve the minutes from the IAC meeting on December 8, 2014. Upon a motion by Mr. Crown and seconded by Ms. Womack, the minutes were unanimously approved with no additions or corrections.

Mr. Brakebill began his comments with an update on the investment policy. He noted Jennifer Selliers, Compliance Officer, had gone through the policy and re-written the policy to reflect changes in law and regulation. These small changes will not have much impact on actual investments and there were no significant changes in the direction of the policy.

Mr. Brakebill noted there were four areas of change in the proposed policy that would impact the investment portfolio. The dollar threshold at which the Investment Committee must approve a private equity, real estate or strategic lending investment will increase from \$30 million to \$75 million. This change is meant to reduce the administrative load on the Investment Committee as the number of transactions increases due to growing investment allocation and commitment sizes. In another change, current policy permits up to 20% of the real estate portfolio be invested in non-core investments. The proposal raises that limit to 30% to prevent a policy exception as investments in non-core assets reach 20%. The policy also provides a specific definition of "international security" to facilitate compliance measurement. Finally, the proposed policy provides for delegation by the Board to the Treasurer the authority to procure services necessary for TCRS and to determine appropriate alternative procurement procedures.

A question was raised regarding what performance impact can be expected as a result of filling the 20% allocation to non-core real estate. The Real Estate team replied they believed the changes may improve performance by 0.5%.

A motion, made by Ms. Womack and seconded by Mr. Crown, to affirm the aforementioned changes to the investment policy was approved, unanimously.

Mr. Brakebill then discussed TCRS current investment allocation. Looking forward to next year, staff and the general consultant will be researching potential changes to the investment policy target portfolio construction that may be advisable to pursue in the next asset allocation review. These potential changes might require legislative initiatives. Research is beginning now to allow time for the legislative process.

A question was raised about the efficacy of modeling standard deviation in private assets. A brief discussion ensued during which Mr. Brakebill suggested using public market equivalents as a proxy for modeling the standard deviation of TCRS private investments.

Mr. Brakebill then discussed several investing concepts he and the team continue to monitor but do not currently plan to implement, including Low Volatility Equities, Hedge Funds, Infrastructure, Real Return, Commodities, Master Limited Partnerships, Risk Parity, Beta and Alpha Overlay, De-risking, and Liability Driven Investment.

Mr. Brakebill then addressed the team's progress on several key initiatives. The fixed income team hired Daniel Toomey to assist Thomas Kim with management of the credit portfolio. Recruiting for summer interns led by Carrie Green and Markus Klar has yielded two interns who will be joining TCRS this summer. The private equity consultant contract will expire this year. An RFP for a new contract, including work on the strategic lending portfolio, is being prepared. Process initiatives in both trading and legal remain ongoing.

Mr. Brakebill then kicked off a discussion of overall fund performance noting the fund returned 16.7% in fiscal 2014 and ranked in the 48th percentile among other public funds greater than \$1 billion (median of 16.43%). The composite fund returned 2.25% for the fourth quarter of calendar 2014 and ranked in the 27th best percentile (median of 1.30%). For the full calendar year 2014, the fund outperformed its policy (8.76% vs. 8.69%) and ranked in the 5th percentile among large public funds (median of 5.60%), beating 90%+ of its peers. The 7 year return has been 5.7% (median fund did 4.9%). He noted this performance coincides with the financial crisis.

Mr. Keeler discussed initiatives in the public equity portion of the investment portfolio and noted staff has been working on long range initiatives including updating evaluation processes for research & miscellaneous service providers. Mr. Wellington, Mr. Gupta and Mr. Keeler have been reviewing the long term strategic plan for domestic equities and will discuss it with Mr. Brakebill in the next month or so. Lastly, the team has several projects lined up for the summer interns in order to help with various projects and provide a meaningful experience for them.

Moving to the equity portion of the portfolio, Mr. Keeler said stocks were fairly strong through most of the December quarter, although global economic concerns put a damper on enthusiasm late in the period. Size factors (smaller was better) dominated relative returns during the period. Still, growth provided only a modest boost. Domestic equities lagged the S&P 1500 benchmark return for the quarter as mid and small cap stocks recovered somewhat from an extended period of underperformance while the fund remained underexposed. In addition, the large cap funds underperformed their benchmarks during the quarter. Poor performance in the Energy sector was detrimental to all portfolios. The team is looking to add to small cap and mid-cap assets on anticipation that the strong dollar will benefit smaller rather than larger companies.

Mr. Gupta noted the Quant Fund saw sector rotation in the December quarter, out of technology and into utilities, healthcare and others and away from companies with high risk from a strong dollar and collapsing oil prices. Oil prices slid 40%+ in calendar 4Q14. Forward earnings multiples were little changed for the market and most sectors with one exception – Energy. Earnings forecasts for the sector were slashed in December as oil continued to fall. Momentum and quality-based factors were the top-performing factors in 2014. The worst performing factors in 2014 were Price Volatility, Price Reversal, and Traditional Value. Utilities was the best performing sector in 2014 and Energy went from the best performing sector in the third quarter to the worst performing sector in the fourth quarter and the 2014 year. The quant fund underperformed in the quarter versus the benchmark. We reduced the portfolio beta and tightened the tracking error to further neutralize the risks. These changes helped and, as of the time of the meeting, the portfolio was up over 50 bps this quarter relative to the index.

Mr. Wellington said the Sector Fund is positioned for economic expansion with over weights to industrials, information technology and health care. Fourth quarter performance was hurt by the fall in oil prices despite the underweight to Energy. Most of the underperformance during the calendar 4Q came from the surprise forced bankruptcy of GT Advanced Technologies (GTAT), a would be supplier of sapphire cover glass to Apple and an acquisition bid for Baker Hughes by portfolio holding Halliburton.

The Mid Cap Fund underperformed the S & P Mid Cap 400 return during the quarter. Good stock selection in the Healthcare and Technology sectors was more than offset by difficulties in the Energy Sector.

The International managers benefited from good overall stock picking, continuing a string of good quarters. As previously reported, TCRS cut the allocation to Barings due to personnel turnover and performance. American Century migrated from a small-mid capitalization strategy to pure small cap during the quarter. Across developed market portfolios, a slight preference towards Europe was instituted as it appears that positive economic news, a weak euro and quantitative easing has arrested a long period of underperformance. Additional buying in Emerging Market ETFs has brought that portfolio to almost \$2bn.

Mr. Palmer began his review of the Fixed Income portfolio by discussing an initiative to coordinate the internal research effort that was begun at the beginning of the fiscal year. Thomas Kim is coordinating the effort. Mr. Klar has put together a treasury curve model used by the Fed to analyze the possible future path of interest rates. During this process, Mr. Klar came up with a probability surface model to analyze scenarios that has been very helpful to the team. He used it to analyze the major rally in interest rates in January and it recommended we get short duration, which benefited our performance in February as rates sold off significantly. From a performance perspective, Mr. Palmer reported that portfolios underperformed during the quarter. The two basic drivers of performance were less sensitivity to falling interest rates in a period of falling rates and as in the equity portfolios, an asset allocation bias towards the service sector portion of the Energy sector. Mr. Brakebill then noted calendar year 2014 performance for Fixed Income was over 12% which contributed to the good total fund performance.

Mr. Palmer then continued with his review of the fixed income portfolio. 10yr and longer credit widened out as non-US money flowed into treasuries and not into credit; treasury yields fell and corporate bond yields only fell marginally. In the portfolio, credit quality has been overweight BBB for some time. Treasury Inflation Protected securities (TIP) underperformed due to our short duration curve allocation. Shorter dated TIPs were hurt by lower energy prices as a sign of falling inflation.

Mr. Rachmaninoff began by discussing the current diversification of the real estate portfolio. He noted that there were no major changes from the prior quarter. He next reviewed the closed transactions in the quarter. The fund closed on a grocery-anchored retail center in suburban Atlanta and committed to a new opportunistic fund that was 25% invested at the time of closing. TCRS was also awarded an attractive retail opportunity in Washington DC. This transaction closed in the first quarter and is TCRS's first direct investment in Washington DC.

Mr. Rachmaninoff noted that there was a recent change in the valuation process for TCRS's direct real estate investments. Historically, all real estate assets were valued on an annual basis. All real estate assets will now be valued on a quarterly basis. This change contributed meaningfully to the outperformance of the portfolio in the recent quarter as TCRS had three quarters of price appreciation relative to one quarter for the index. Mr. Rachmaninoff reported

that Staff continues to look for an addition to the real estate team and hopes to have a hire finalized in the next 60 days.

In response to a question about rent trends across the portfolio, Mr. Rachmaninoff noted strength in the San Francisco office market as well as both the CBD Boston and suburban Boston office markets. In general, pricing leverage is shifting towards landlords in the office space. On the other hand, Houston is seeing new office space being delivered at a time when it is not needed given the pullback in the energy space.

Mr. Crews then gave several comments on the fund's private equity (PE) investments. Venture capital appears to be getting a little frothy based on current valuations. He noted Jet.com is valued at \$600 million and has yet to even launch its shopping website, has no revenue and has no profits. He added that Mr. Brakebill was invited to participate in a panel which focused on the idea that PE, as an industry, is moving to more standardization and transparency. The team closed two funds in the first quarter, working with Fairview and Oaktree.

Moving on to strategic lending, Mr. Dagnan commented the high yield market was very weak in the fourth quarter, led by the sell-off in energy. However, despite being underweight in energy the fund still underperformed. An overweight in low quality issuers was the primary driver while Euro exposure also had a negative impact. He noted that transaction terms have moved back into the lenders' favor as evidenced by the elimination of covenant light deals.

Under the authority provided in the initial investment approval and further approval of the Treasurer, the fund increased allocations to Beachpoint and Brigade, by \$25 million each, at the end of December, after the oil and high yield markets bottomed on December 15th. New allocations were made with Blackstone, GSO and Orbimed. Mr. Dagnan discussed different investment opportunities staff is currently considering and noted he finds European and liquid markets to be more attractive than a year ago.

As part of an operational update, Mr. Palmer discussed moving away from soft dollars and instead paying for research and other broker services directly.

Mr. Henry provided the update on securities lending. Mr. Henry stated that the securities lending program has been under way just over 13 months. Earnings from inception to present day (March 10th, 2015) are approximately \$25 million. Lastly, Mr. Henry noted securities lending income is allocated to each portfolio in which the income was derived.

Mr. Palmer then continued with a review of derivatives activity before moving onto mortgage TBA and currency which is awaiting ISDA approval.

Before wrapping up, Council Members Stadler, Crown and Womack offered their view of the markets and macro-economics.

Given no further questions or comments, Chairman Stadler adjourned the meeting at 3:28 p.m.

Performance Review

March 2015

Absolute comparison

- 1 quarter return of 2.4%
- 1 year return of 8.7% (median fund did 6.5%)
- 3 year return of 9.8% (median fund did 9.8%)
- 5 year return of 10.1% (median fund did 9.5%)
- 7 year return of 6.5% (median fund did 6.2%)

Benchmark (relative) comparison

- Qtr return beat allocation index by 0.2%
- 1 year return beat allocation index by 0.6%
- 3 year return beat allocation index by 0.5%
- 5 year return beat allocation index by 0.7%

Peer comparison

- 1 quarter return ranked at 42% (0% = best)
- 1 year return ranked at 4%
- 3 year return ranked at 50%
- 5 year return ranked at 27%
- 7 year return ranked at 38% (median fund did 6.2%)

Risk Adjusted Returns (Sharpe Ratio)

The Sharpe ratio measures the amount of return generated per unit of risk taken.

TCRS beat 75% of peers as measured via the Sharpe ratio for the trailing 3 year period and 91% for the trailing five year period.

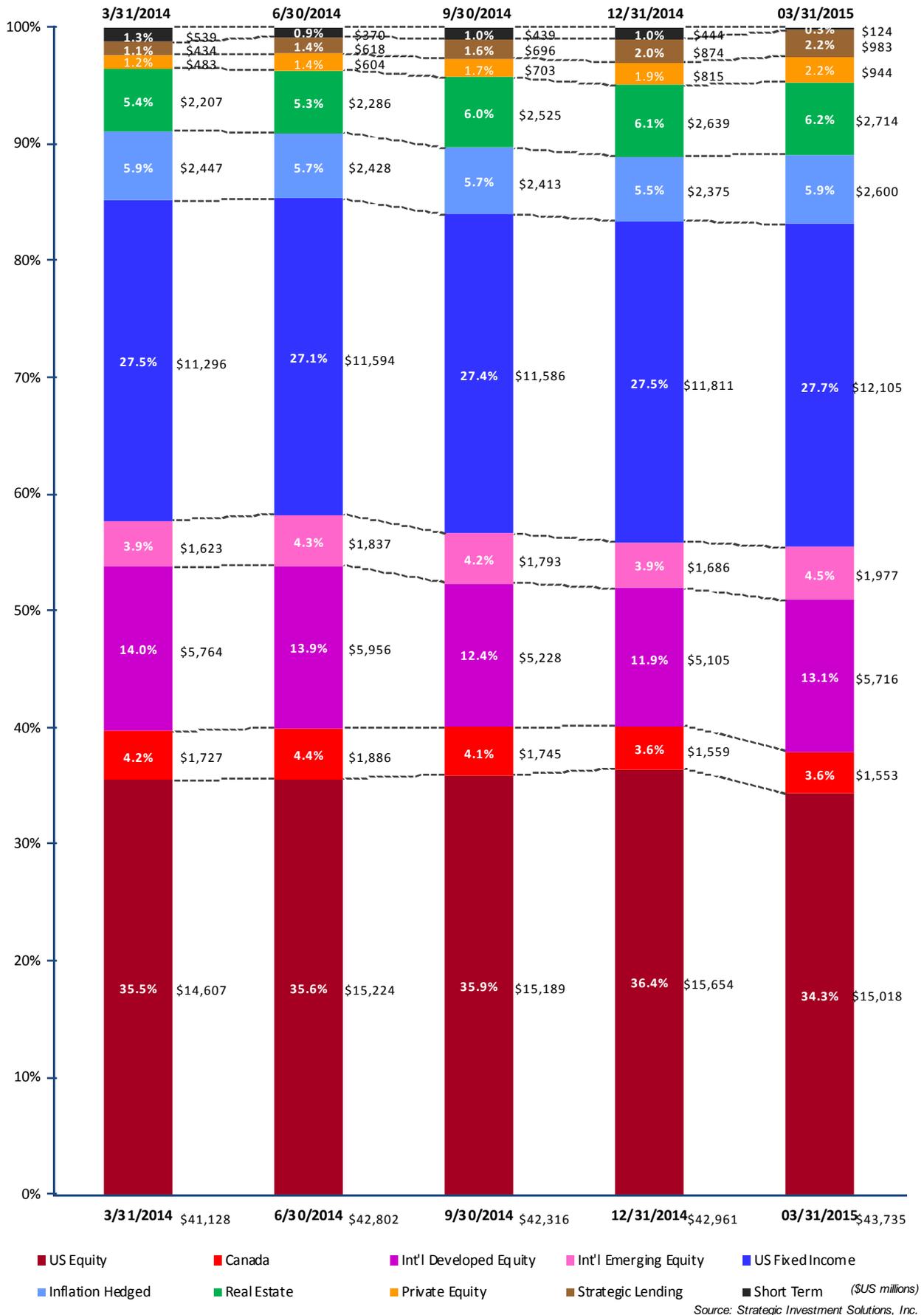
Key Initiatives

March 2015

- **People**
 - Recruiting for a real estate portfolio manager
 - Summer intern program
 - Andy Palmer taking position as CIO of Maryland
 - Five staff sat for CFA exams

- **Process**
 - Trading processes
 - Private equity consultant RFP
 - General consulting RFP
 - Relationship management system implementation
 - International manager selection and engagement process
 - Unitization/hybrid plan

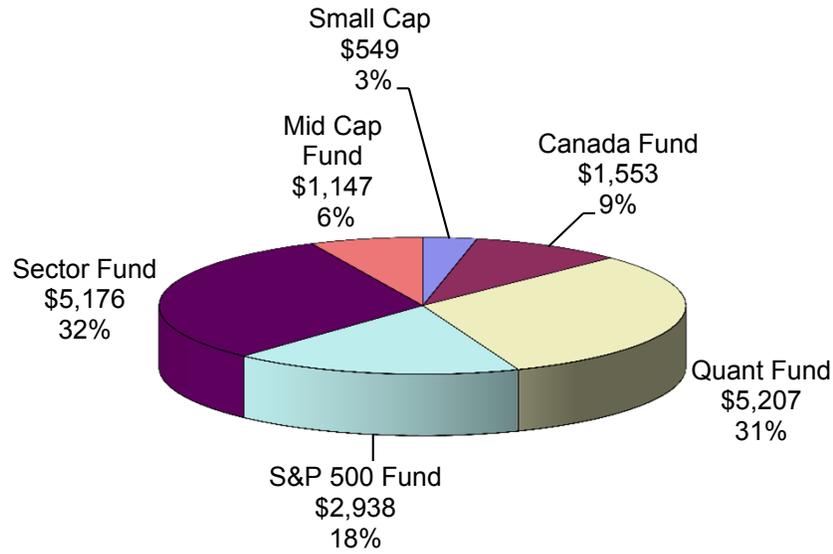
- **Portfolio**
 - Tactical allocation - Neutral
 - Strategic Allocation
 - Private equity fund additions
 - Strategic lending fund additions
 - Real estate property and fund additions



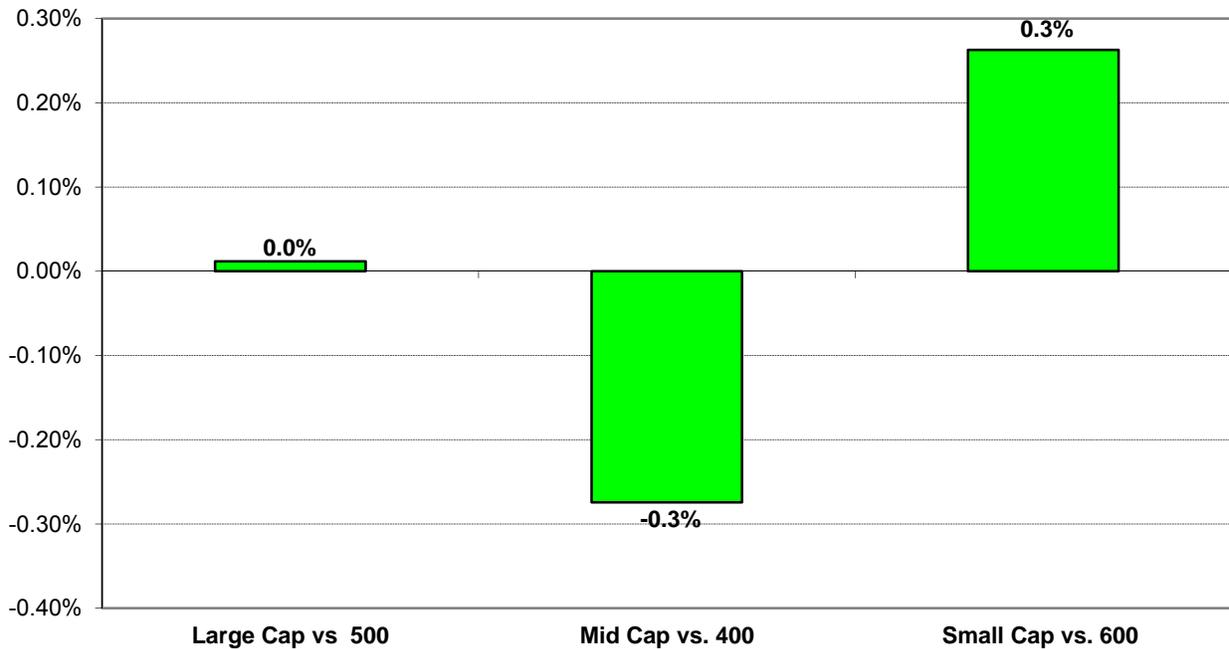
Domestic Equity Portfolio Overview

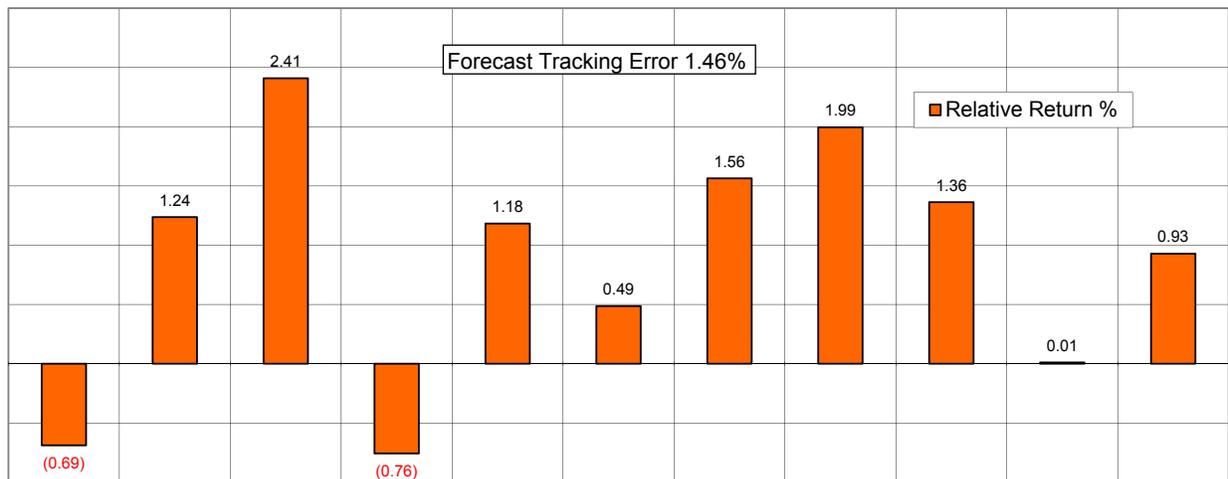
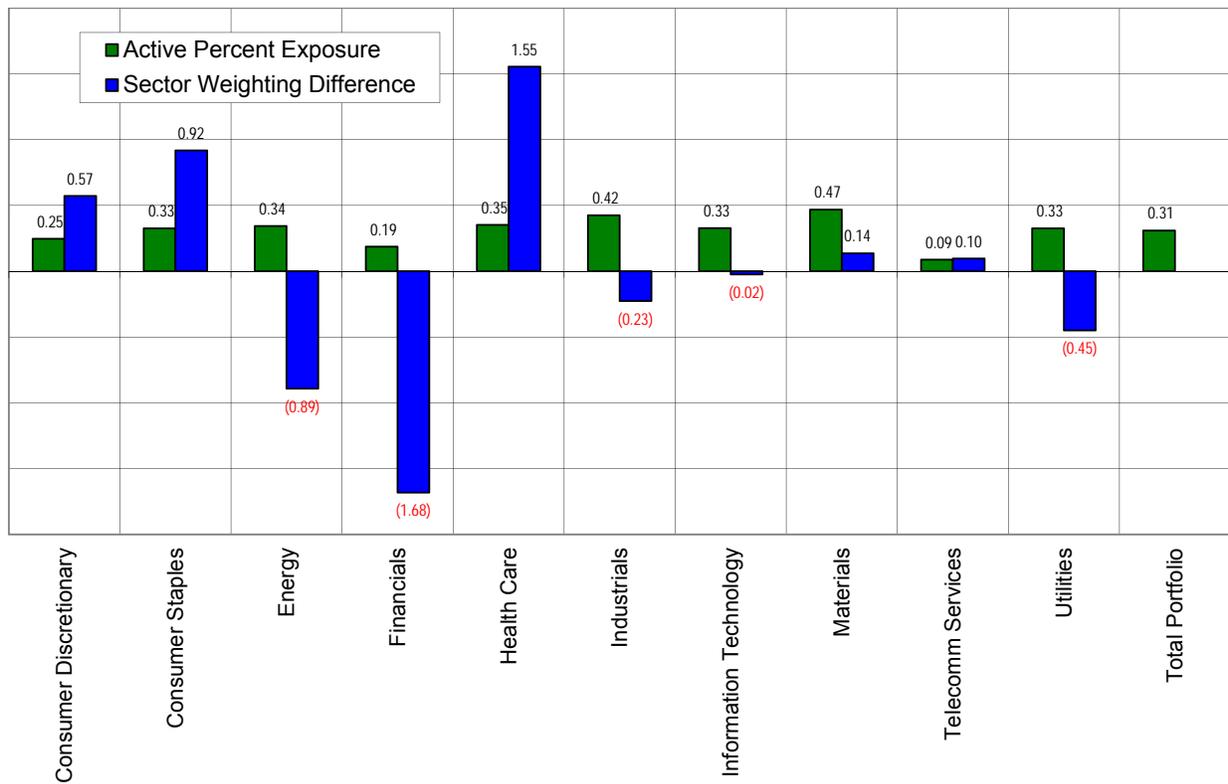
Michael Keeler, CFA

TCRS North American Equity Funds



TCRS Cap Weights vs. S & P 1500 Composite



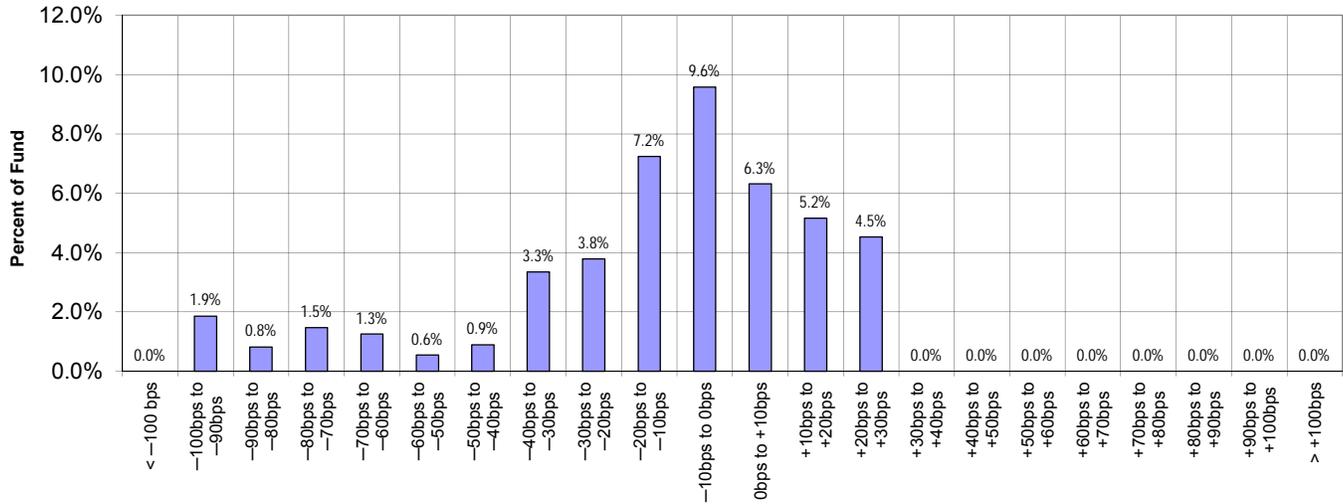


Global stocks advanced amid rising M&A activity, heightened central bank stimulus measures and signs of renewed economic growth in Europe and Japan. U.S. stocks were up 1% (S&P 500) in the first quarter but lagged behind other asset classes for the quarter, versus LT and IG bonds. Foreign exposed stocks underperformed during 1Q as dollar continued to rally.

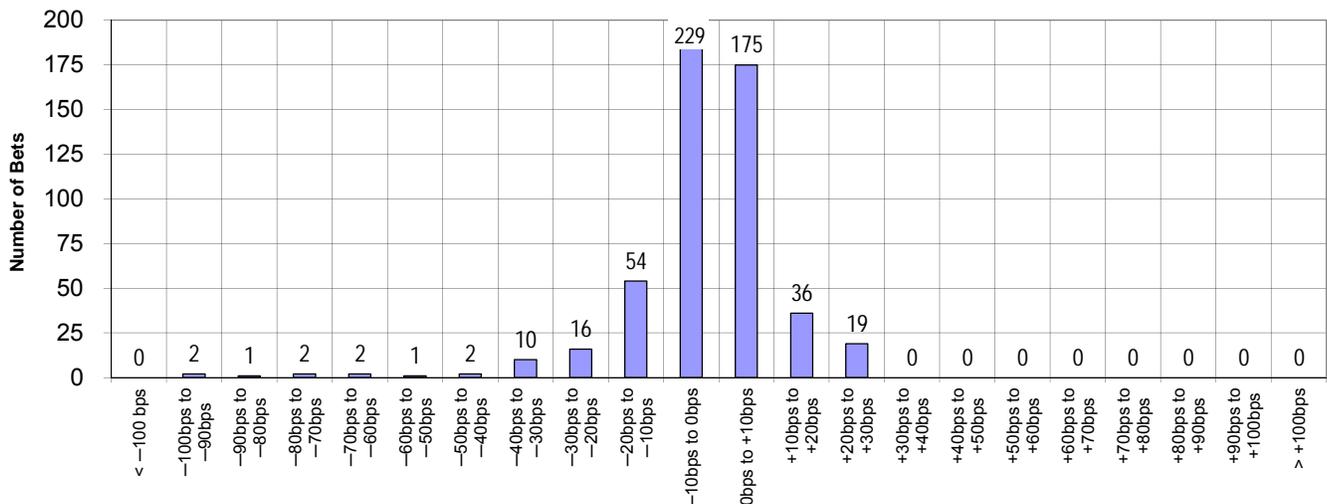
Growth and momentum factors fared well in the first quarter with high long term growth factors among the best performers. Value factors lagged and risk was the worst performing group. Low quality stocks typically outperform when VIX declines and monetary policy is easy, as was the case in 1Q. However, we expect high quality to come back and outperform for the calendar year. We saw narrow leadership as only two sectors outperformed – Health Care (+6.2%) and Consumer Discretionary (+4.4). These two sectors are more domestically oriented and have less perceived FX risk.

The quant fund outperformed in the first quarter versus the benchmark. We slightly increased the portfolio beta and loosened the tracking error. The Quant Fund's tracking error is 1.46%.

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



Number of Individual Stocks in Bet Size Bins

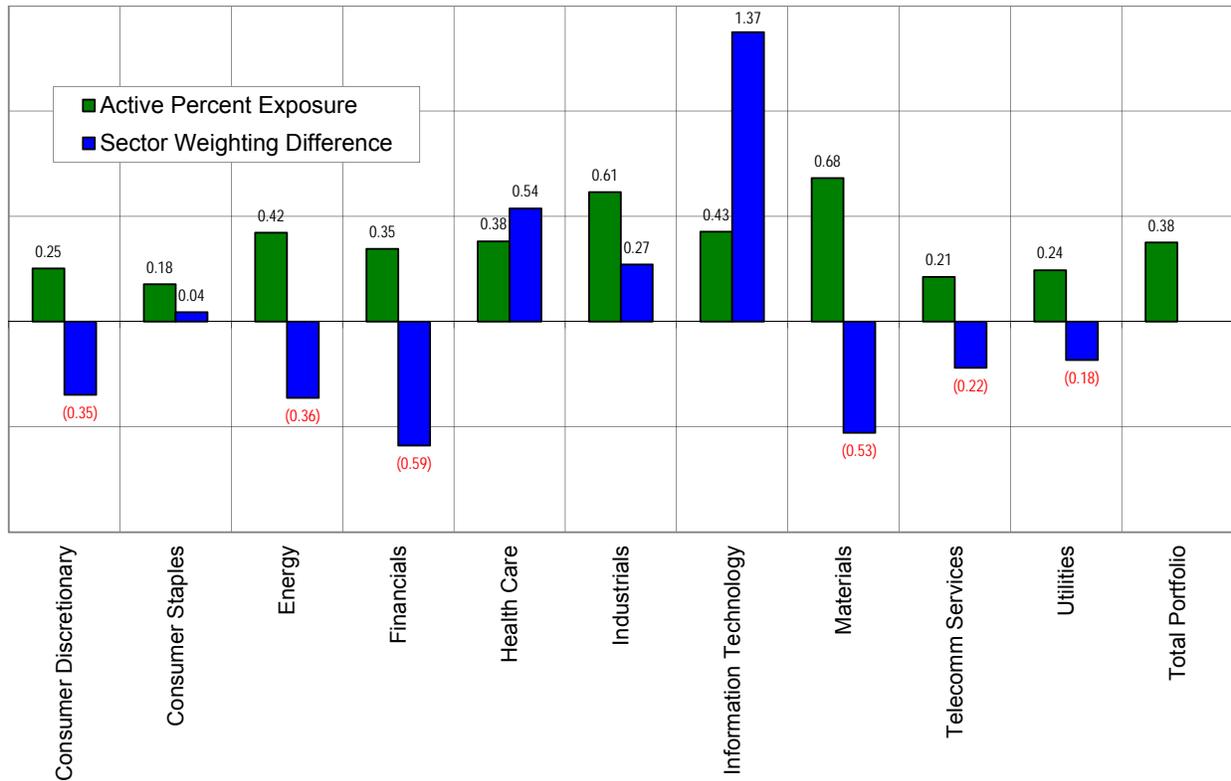


Largest Overweights by Stock in Fund

Ticker	Description	Bps Over
SWKS	Skyworks Solutions, Inc.	97
AAPL	Apple Inc.	90
AVGO	Avago Technologies Limited	82
NXPI	NXP Semiconductors NV	79
VLO	Valero Energy Corporation	73
LUV	Southwest Airlines Co.	68
MO	Altria Group, Inc.	62
DAL	Delta Air Lines, Inc.	59
ACT	Actavis Plc	53
FB	Facebook, Inc. Class A	52
SHW	Sherwin-Williams Company	50
BIIB	Biogen Inc.	46
LMT	Lockheed Martin Corporation	45
GILD	Gilead Sciences, Inc.	45
HON	Honeywell International Inc.	42
DPS	Dr Pepper Snapple Group, Inc.	42
DIS	Walt Disney Company	41
LO	Lorillard, Inc.	40
AET	Aetna Inc.	38
GD	General Dynamics Corporation	38

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
JNJ	Johnson & Johnson	-95
MSFT	Microsoft Corporation	-91
CVX	Chevron Corporation	-82
CSCO	Cisco Systems, Inc.	-77
GE	General Electric Company	-70
PM	Philip Morris International Inc.	-64
IBM	International Business Machines Co	-62
AMGN	Amgen Inc.	-55
QCOM	QUALCOMM Incorporated	-48
ORCL	Oracle Corporation	-42
BAC	Bank of America Corporation	-39
UPS	United Parcel Service, Inc. Class B	-37
EBAY	eBay Inc.	-35
ESRX	Express Scripts Holding Company	-34
MRK	Merck & Co., Inc.	-33
MDLZ	Mondelez International, Inc. Class A	-33
MCD	McDonald's Corporation	-32
HPQ	Hewlett-Packard Company	-31
ABT	Abbott Laboratories	-31
OXY	Occidental Petroleum Corporation	-31

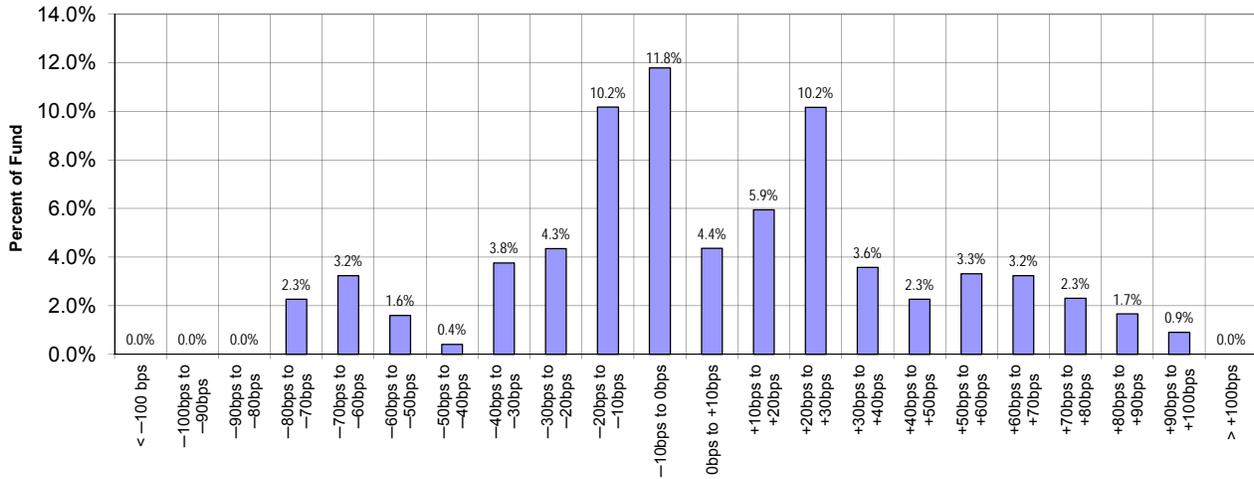


Some splashes on the Goldilocks story may cast doubt on the health of the equity markets. The US economy failed to grow in the first quarter and the second quarter appears lackluster. The broad decline in rail car loadings implicates other sectors of the economy beyond energy suggesting that the consumer is serious about rebuilding savings. The Fed finally noticed that both inflation and growth are low and acknowledged that there will be no rate hike in June. The equity market can continue bouncing at a high level given the implication that rates will stay low until the US has a much stronger economy. The unemployment rate is reaching levels associated with accelerating wage gains, which are starting to appear. The combination of a sluggish economy with higher labor and financing costs could overwhelm the equity markets.

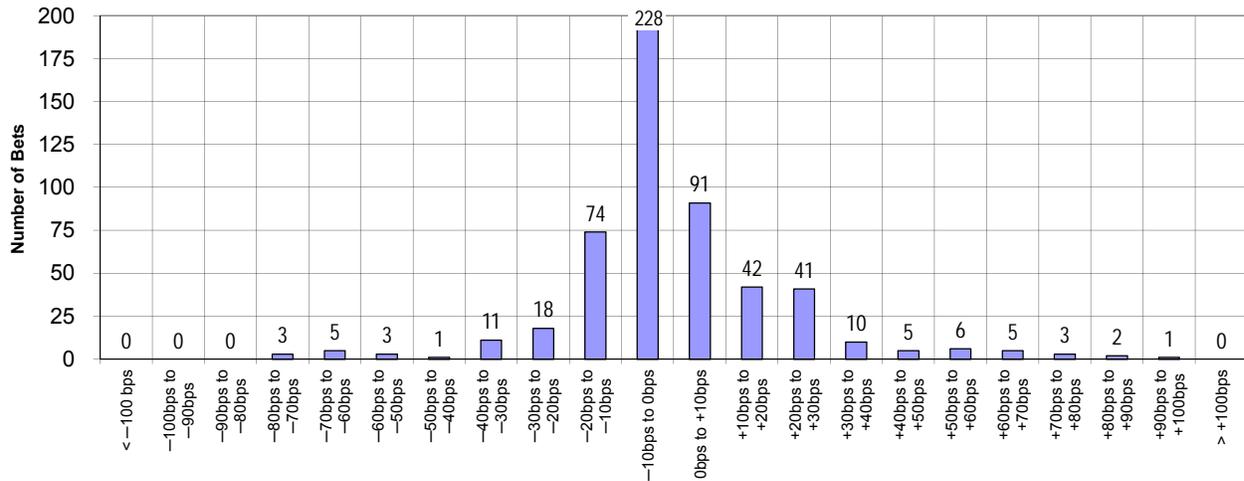
The Sector Fund maintained an overweight to Information Technology and Health Care while Industrials was trimmed to Neutral. The underweights to Energy and Utilities contributed to portfolio return. Mergers and acquisitions activity within Health Care and Technology will stay elevated when even the acquirer's stock price advances. Stock selection paid off spectacularly as nearly every sector contributed positively to portfolio returns, especially Materials, Information Technology and Energy.

NXP Semiconductors was a significant contributor to return and is an example of a stock that advanced on the announcement of the acquisition of Freescale Semiconductors. NXPI's chip for near field communication is enabling new services like Apple Pay found in the iPhone6. MeadWestvaco, a specialty paper and plastic bottle manufacturer for the food and personal care markets, was owned in part because it was a likely acquisition target. RockTenn is purchasing MWV, which is also big in folding cartons as well as cardboard for boxes.

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



Number of Individual Stocks in Bet Size Bins



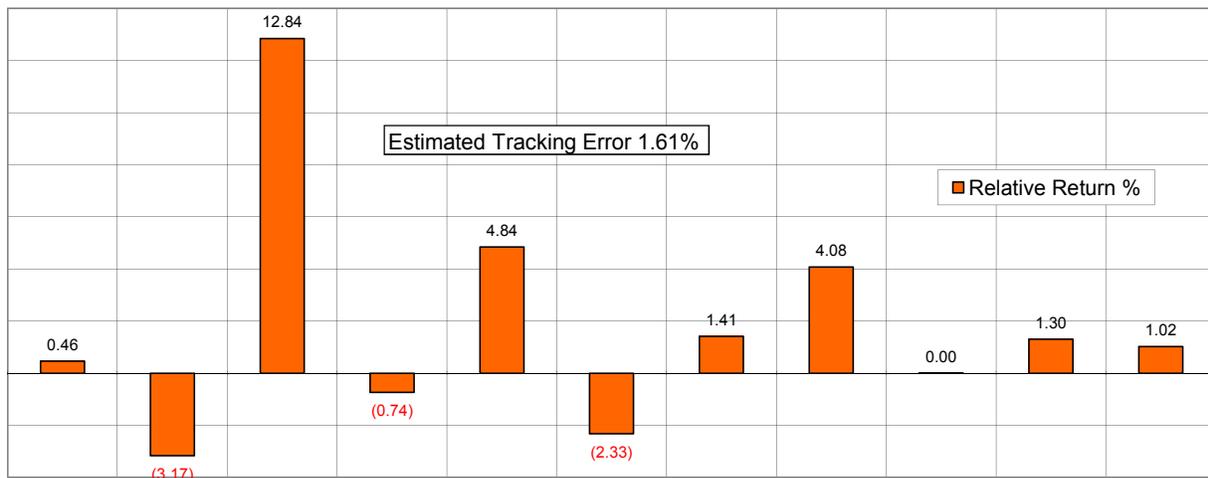
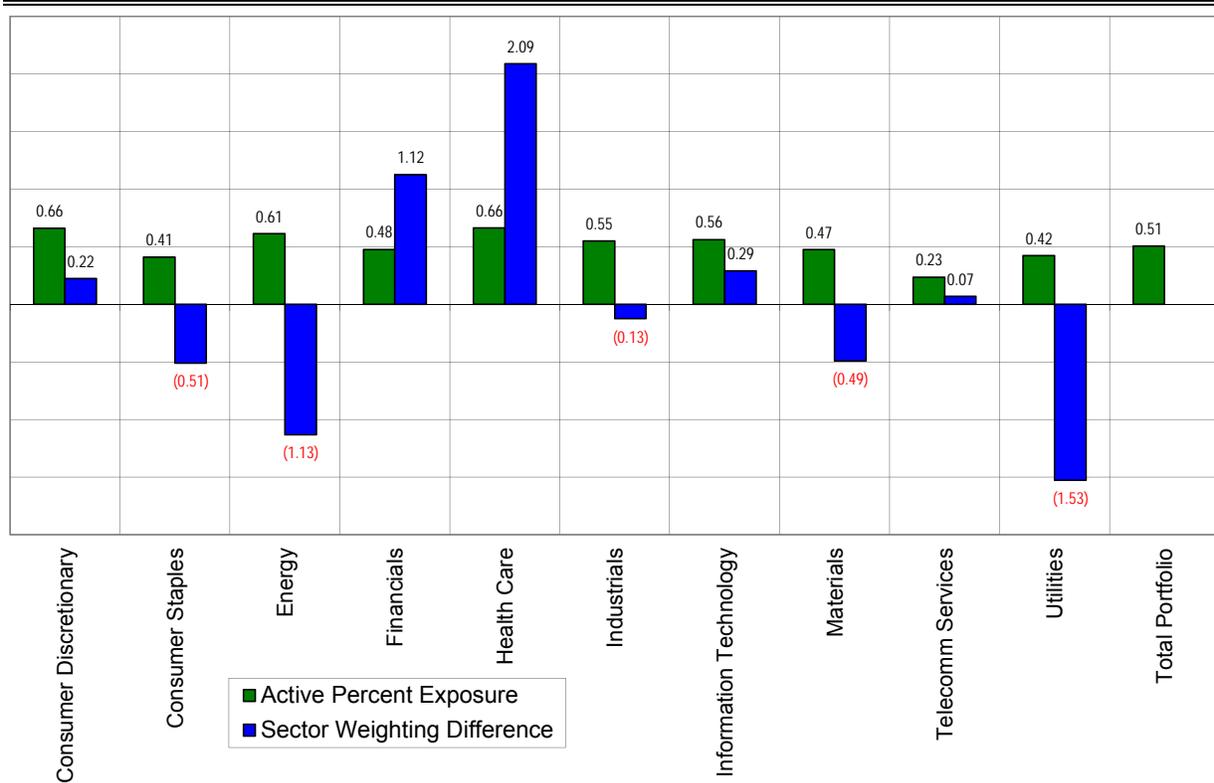
Largest Overweights by Stock in Fund

Ticker	Description	Bps Over Index Wt
SYNA	Synaptics Incorporated	90
AAPL	Apple Inc.	86
NXPI	NXP Semiconductors NV	81
AVGO	Avago Technologies Limited	79
MU	Micron Technology, Inc.	77
AMAT	Applied Materials, Inc.	75
DAL	Delta Air Lines, Inc.	66
DHR	Danaher Corporation	66
HON	Honeywell International Inc.	65
LUV	Southwest Airlines Co.	65
ACT	Actavis Plc	62
SNDK	SanDisk Corporation	58
LYB	LyondellBasell Industries NV	57
SWKS	Skyworks Solutions, Inc.	56
ALXN	Alexion Pharmaceuticals, Inc.	56
EOG	EOG Resources, Inc.	54
SWN	Southwestern Energy Company	51
VMW	Vmware, Inc. Class A	48
HCC	HCC Insurance Holdings, Inc.	47
WAB	Westinghouse Air Brake Technolog	47

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
MSFT	Microsoft Corporation	-79
CSCO	Cisco Systems, Inc.	-77
CVX	Chevron Corporation	-71
JNJ	Johnson & Johnson	-67
AMGN	Amgen Inc.	-66
ORCL	Oracle Corporation	-65
INTC	Intel Corporation	-64
UNH	UnitedHealth Group Incorporated	-62
BA	Boeing Company	-54
GE	General Electric Company	-53
UTX	United Technologies Corporation	-53
T	AT&T Inc.	-41
KMI	Kinder Morgan Inc Class P	-39
LLY	Eli Lilly and Company	-39
UPS	United Parcel Service, Inc. Class B	-37
DD	E. I. du Pont de Nemours and Comp	-35
EBAY	eBay Inc.	-35
ESRX	Express Scripts Holding Company	-34
TXN	Texas Instruments Incorporated	-33
ACN	Accenture Plc	-32

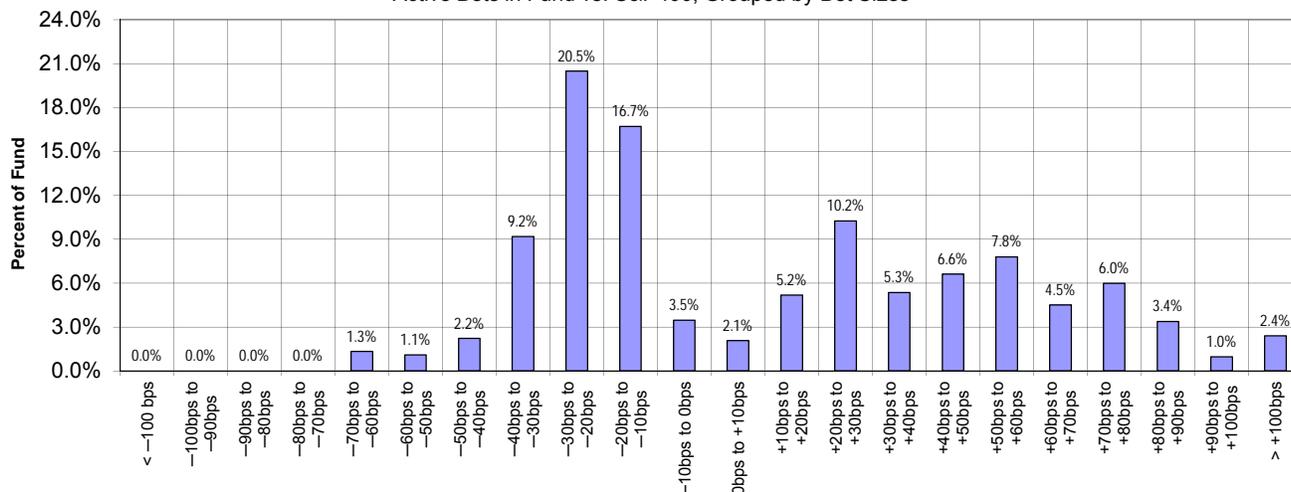
Mid Cap Fund
Mike Keeler, CFA



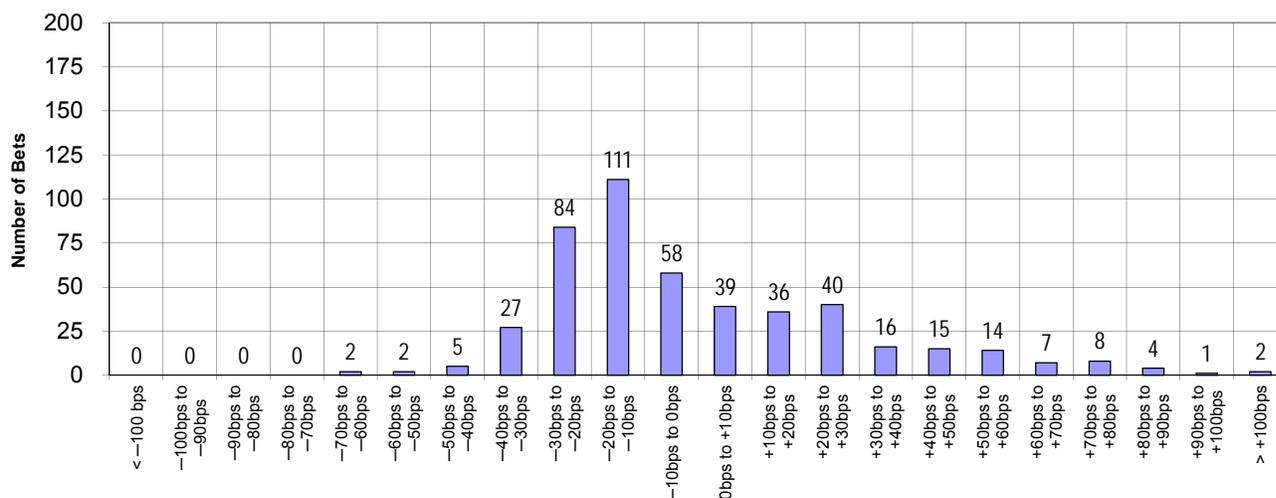
The Mid Cap team's business cycle analysis currently indicates we're in a mid to late expansion. Historically this period is characterized by rising inflation expectations and the Fed moving to neutral from expansive, which has the potential to spur volatility in the capital markets generally. In the meantime, an almost disconcerting complacency seems to have settled over the stock market as prices and valuations continue to creep higher, despite a run of disappointing economic results that has extended well into the current quarter.

The Mid Cap Fund outperformed the S & P Mid Cap 400 return during the quarter. Good stock selection in the Health Care and Energy sectors as well as the Chemical industry offset difficulties in the Machinery industry. Stock selection accounted for all of the return against the benchmark.

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
SLG	SL Green Realty Corp.	134
CNC	Centene Corporation	106
UTHR	United Therapeutics Corporation	97
HBI	Hanesbrands Inc.	89
AFG	American Financial Group, Inc.	87
DST	DST Systems, Inc.	82
OCR	Omnicare, Inc.	80
PRXL	PAREXEL International Corporation	79
RE	Everest RE Group, Ltd.	79
URI	United Rentals, Inc.	74
RMD	ResMed Inc.	74
EWBC	East West Bancorp, Inc.	74
TSRA	Tessera Technologies, Inc.	74
JKHY	Jack Henry & Associates, Inc.	73
PII	Polaris Industries Inc.	72
HLS	HealthSouth Corporation	67
AFSI	AmTrust Financial Services Inc.	67
VAR	Varian Medical Systems, Inc.	66
R	Ryder System, Inc.	64
LPNT	LifePoint Health, Inc.	64

Largest Underweights by Stock in Fund

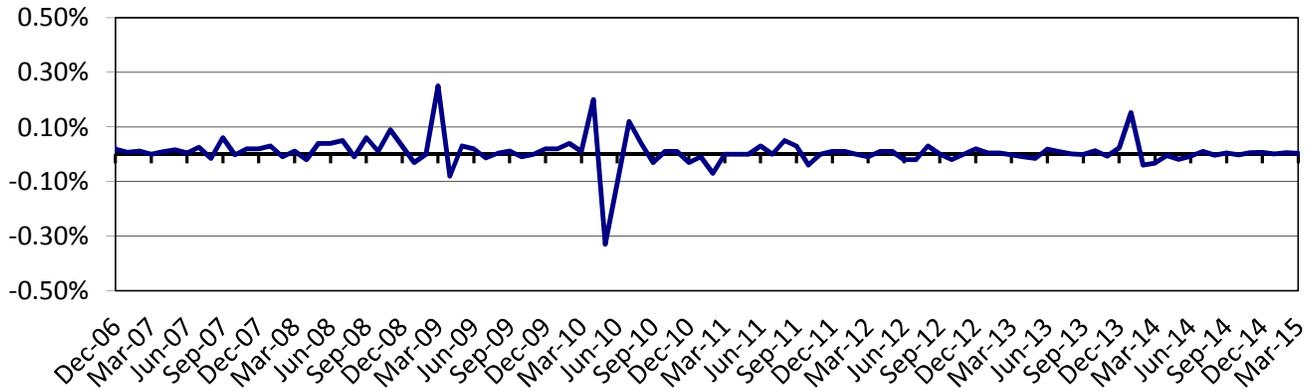
Ticker	Description	Bps Under
SLXP	Salix Pharmaceuticals, Ltd.	-67
AAP	Advance Auto Parts, Inc.	-66
COO	Cooper Companies, Inc.	-55
O	Realty Income Corporation	-55
HOLX	Hologic, Inc.	-49
LKQ	LKQ Corporation	-47
AYI	Acuity Brands, Inc.	-44
FRT	Federal Realty Investment Trust	-41
MAN	ManpowerGroup Inc.	-41
HAIN	Hain Celestial Group, Inc.	-39
RPM	RPM International Inc.	-39
MTD	Mettler-Toledo International Inc.	-39
FDS	FactSet Research Systems Inc.	-37
DRC	Dresser-Rand Group Inc.	-37
QRVO	Qorvo, Inc.	-37
SUNE	SunEdison, Inc.	-37
ARE	Alexandria Real Estate Equities, Inc.	-36
ALB	Albemarle Corporation	-36
MAA	Mid-America Apartment Communities	-35
KEYS	Keysight Technologies Inc	-35

Passive Domestic Equity Funds
Derrick Dagnan, CFA & Michael Giggie

Index Fund vs. S&P 500

Assets as of March 2015: \$3.1B

Monthly Excess Returns

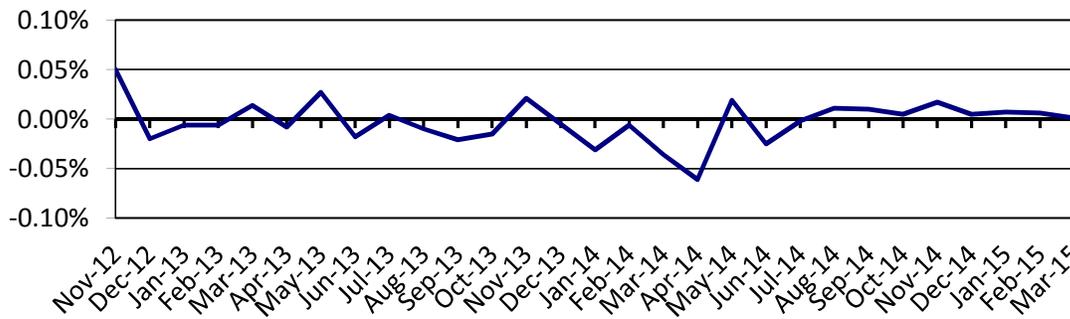


	1 Quarter	1 Year	3 Years	Since Inception
Index Fund	1.0%	12.7%	16.2%	7.7%
S&P 500	1.0%	12.7%	16.1%	7.6%
Excess Return	0.0%	0.0%	0.1%	0.1%
Tracking Error	0.01%	0.03%	0.10%	0.20%

Small Cap Fund vs. S&P 600

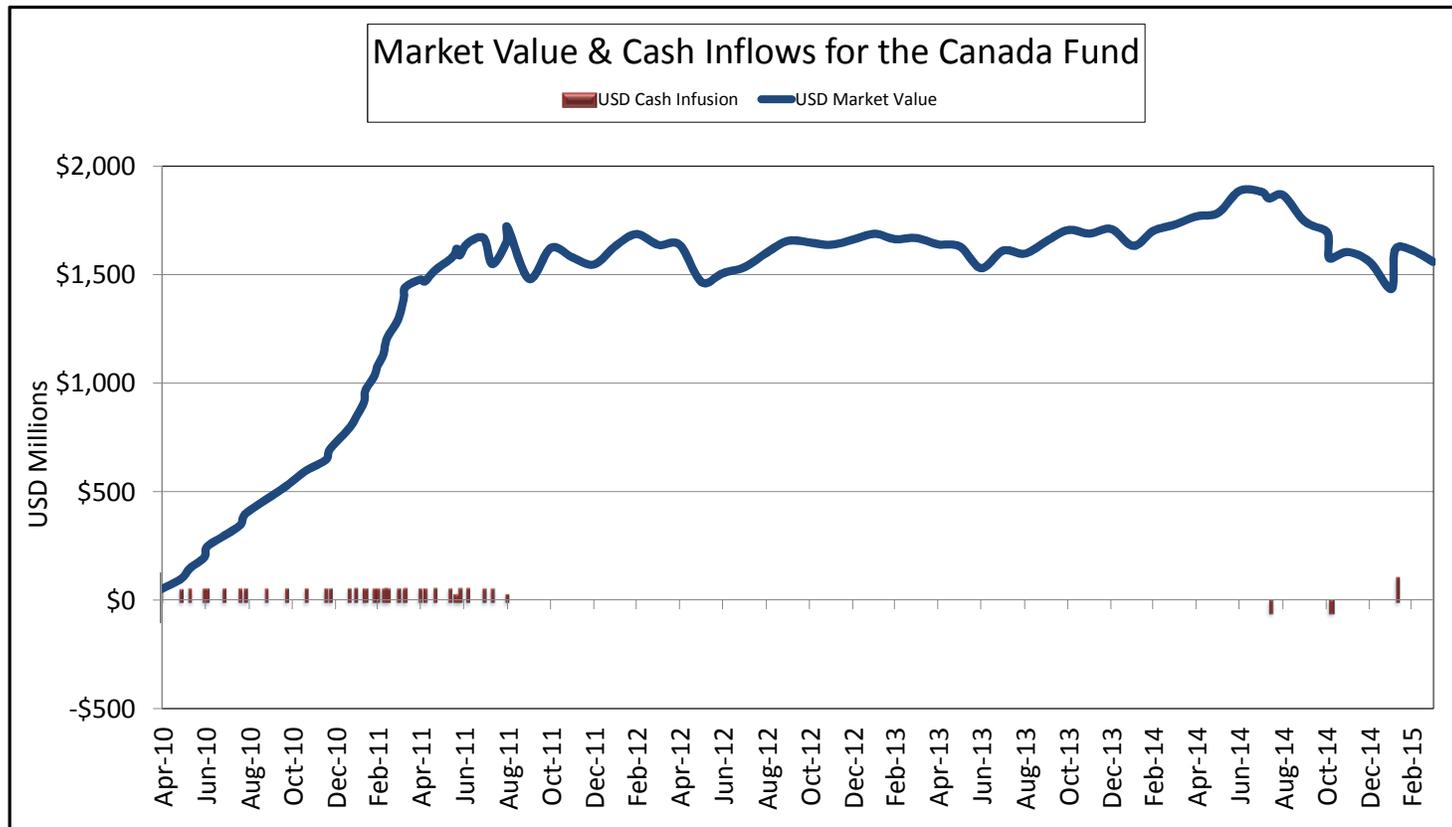
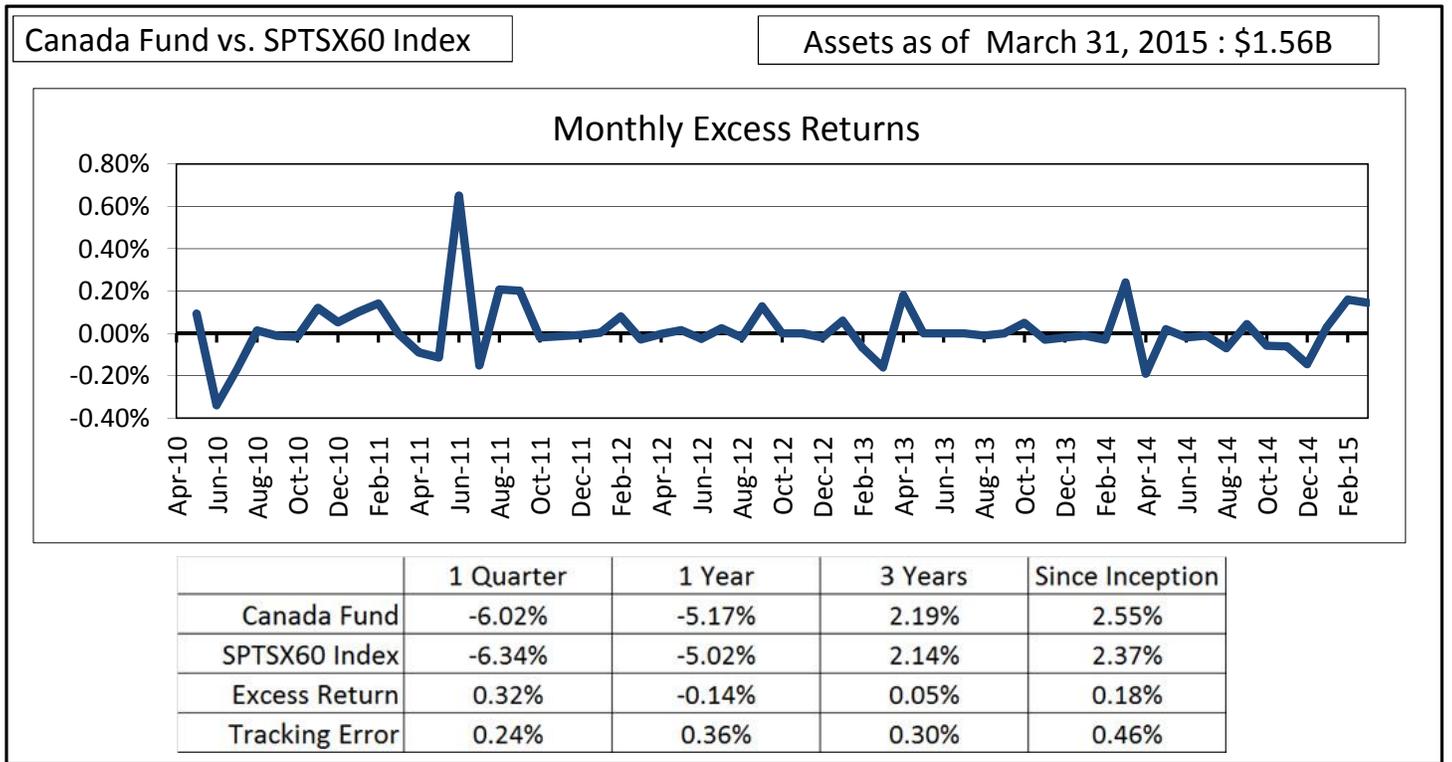
Assets as of March 2015: \$565M

Monthly Excess Returns



	1 Quarter	1 Year	3 Years	Since Inception
Small Cap Fund	3.98%	8.7%	N/A	22.12%
S&P 600	3.96%	8.7%	N/A	20.33%
Excess Return	0.01%	0.0%	N/A	1.79%
Tracking Error	0.01%	0.08%	N/A	2.39%

Canada Fund
Kushal Gupta, CFA, CAIA



Manager Performance Comparison - International Equity

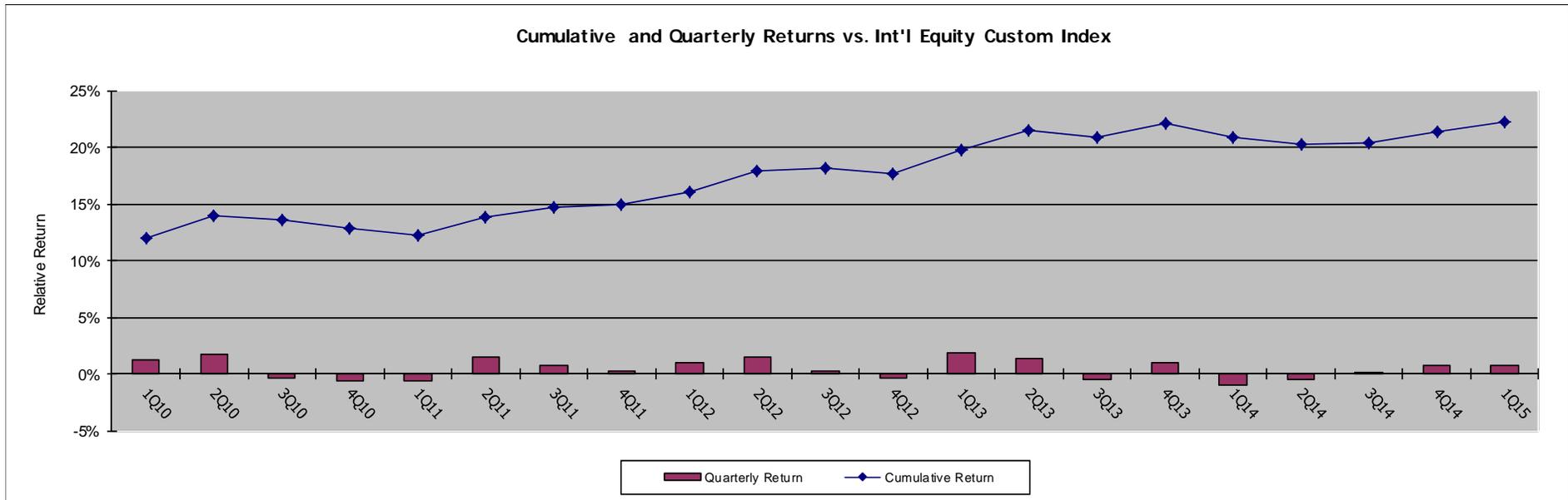
As of March 31, 2015

Manager Returns For The Quarter Ending March 31, 2015

Manager	Manager Return	Benchmark	Benchmark Return
American Century	6.85	MSCI EAFE Small Cap	5.56
Baring Asset Mgmt	5.49	MSCI EAFE	4.88
Emerging Market ETF	-0.39	MSCI Emg Mkts Net Custom	-0.12
GE Asset Mgmt	5.25	MSCI Europe	3.45
Marathon	6.16	MSCI EAFE net	4.88
Pacific Indexed Portfolio ¹	7.36	MSCI Pacific net	7.61
PanAgora Asset Mgmt	6.12	MSCI EAFE	4.88
Pyramis Global	6.05	MSCI EAFE Small Cap	5.56
TT International	6.30	MSCI EAFE	4.88
Walter Scott	3.71	MSCI EAFE net ²	4.88
International Equity	4.27	Int'l Equity Custom ³	3.54

Manager Returns For Five Years Ending March 31, 2015

Manager	Manager Return	Benchmark	Benchmark Return
American Century	11.94	MSCI EAFE Small Cap	8.80
Baring Asset Mgmt	7.31	MSCI EAFE	6.16
Emerging Market ETF		MSCI Emg Mkts Net Custom	
GE Asset Mgmt	6.36	MSCI Europe	6.38
Marathon	9.33	MSCI EAFE net	6.16
Pacific Indexed Portfolio ¹	5.54	MSCI Pacific net	5.92
PanAgora Asset Mgmt	9.24	MSCI EAFE	6.16
Pyramis Global	10.25	MSCI EAFE Small Cap	8.80
TT International	8.00	MSCI EAFE	6.16
Walter Scott	8.13	MSCI EAFE net ²	6.16
International Equity	7.22	Int'l Equity Custom ³	4.94



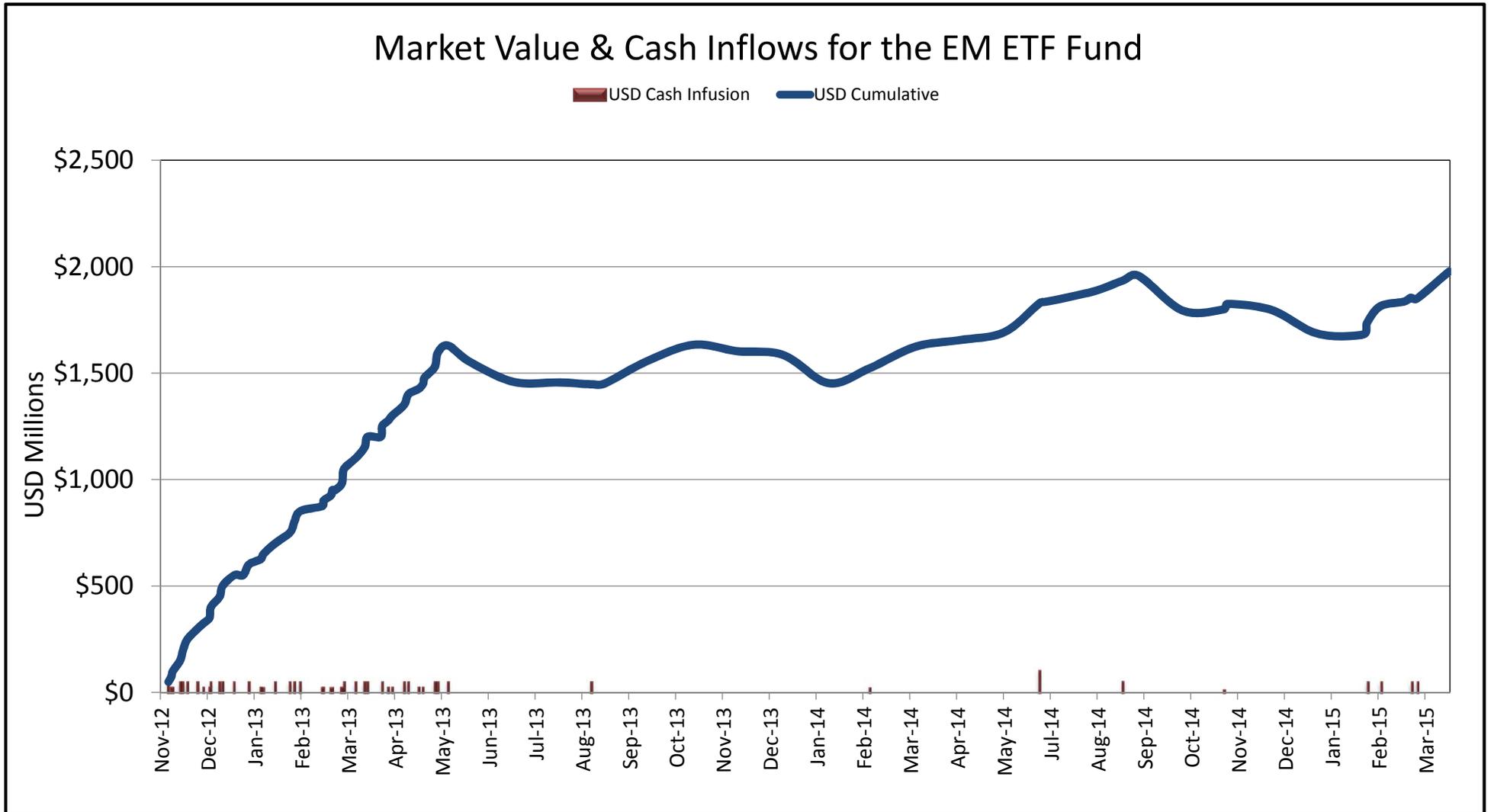
¹ Effective as of 9/4/10, internally managed by TCRS staff. Amundi Pacific terminated.

² Effective 3/1/09. Benchmark is linked to MSCI Europe Index.

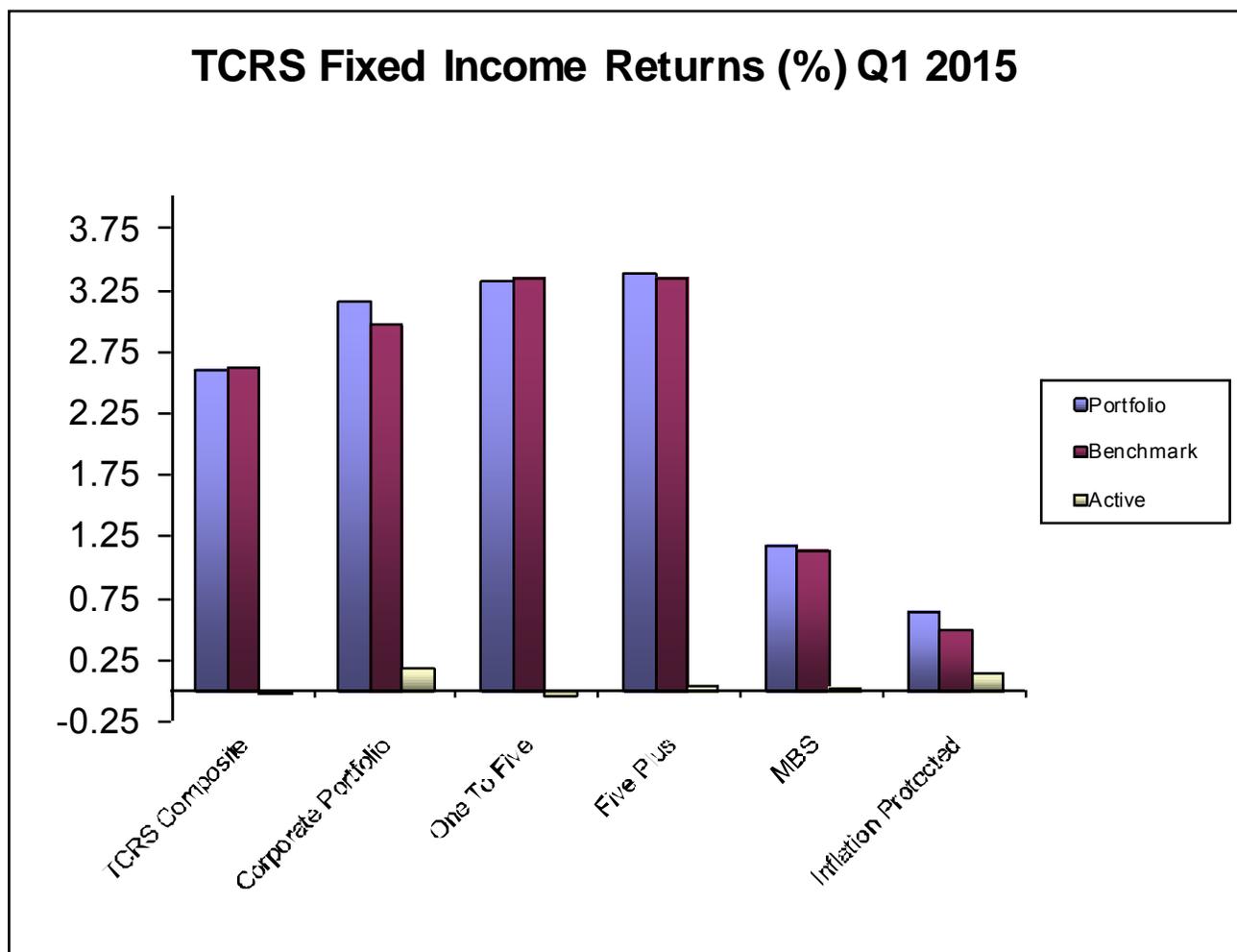
³ Effective 1/1/13, benchmark is 72.22% MSCI EAFE IMI net/ 27.78% MSCI Emerging Mkts net; linked to 100% MSCI IMI net.

Emerging Markets ETF Fund
Kushal Gupta, CFA, CAIA

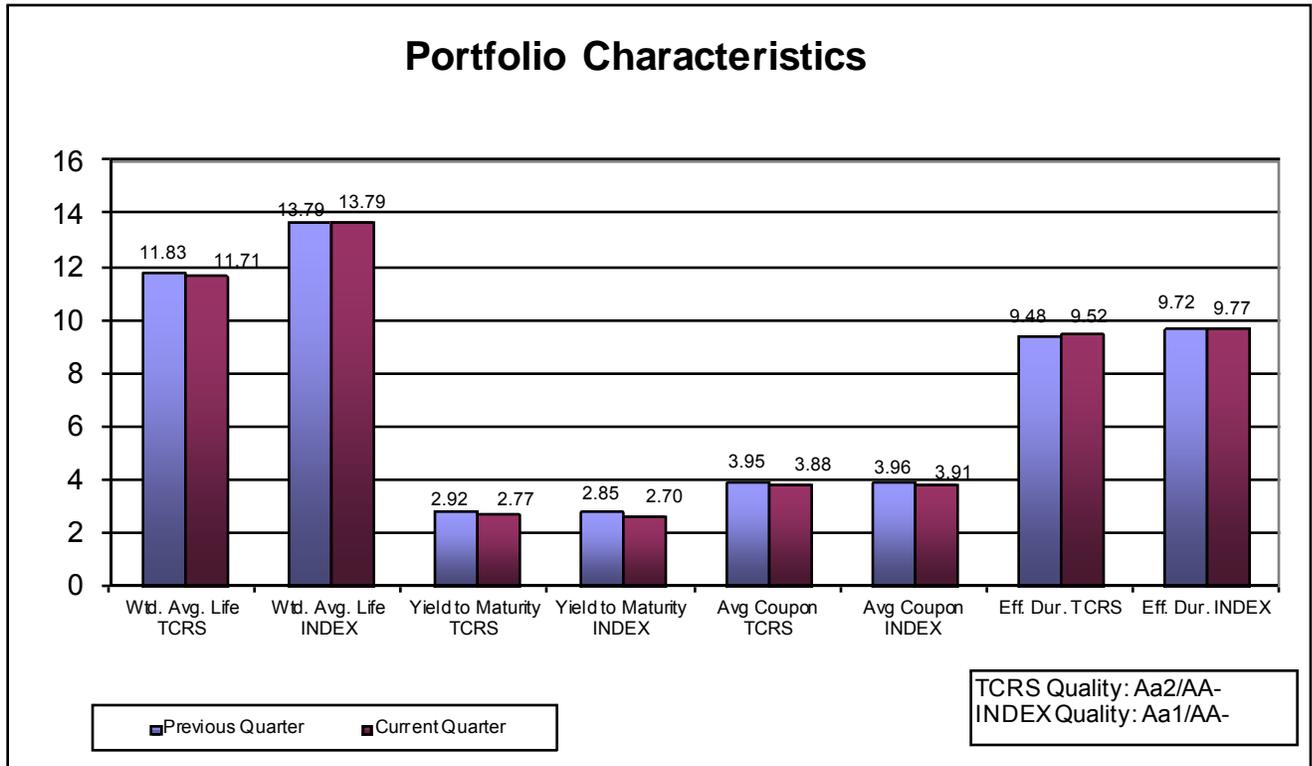
Assets as of March 31, 2015: \$1.98B



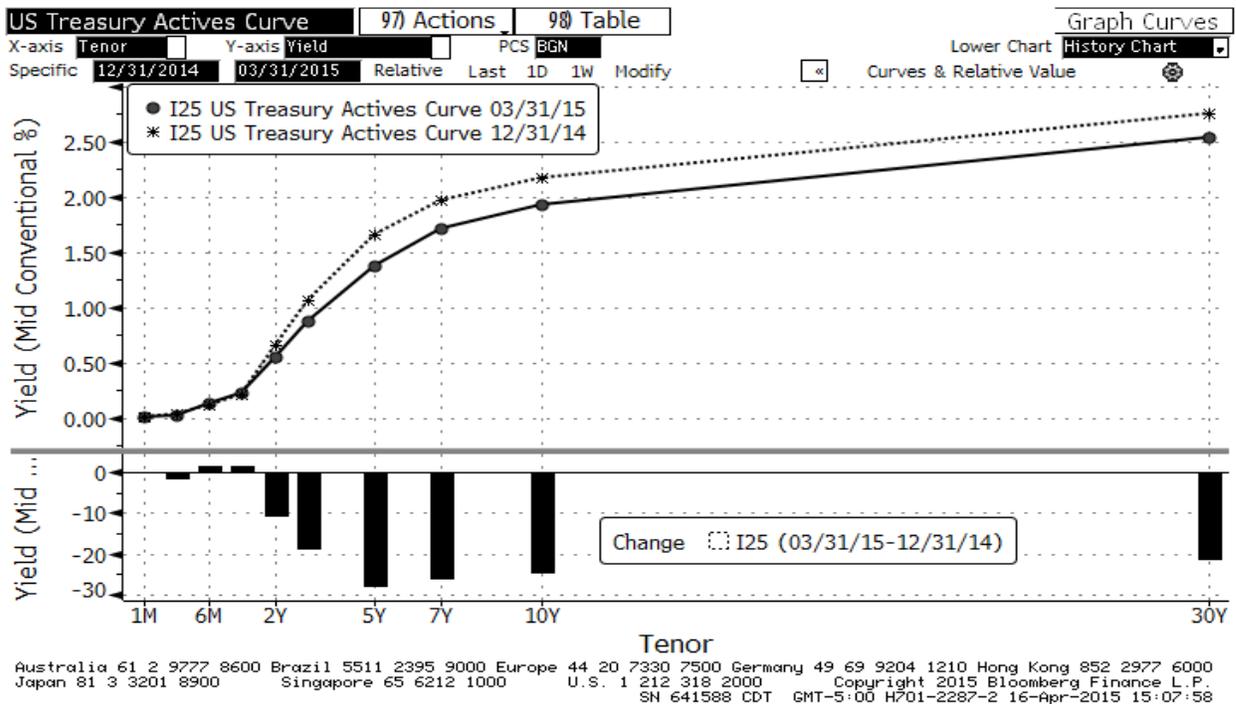
Portfolio	Value (Yield Book) (\$MMs)	Portfolio Return	Benchmark Return	Active Return
TCRS Domestic Fixed Income Composite	\$11,962	2.61	2.62	(0.01)
Corporate Portfolio	\$4,063	3.17	2.97	0.19
Government One To Five Years	\$2,011	3.33	3.36	(0.03)
Government Five Plus Years	\$2,015	3.39	3.36	0.04
Mortgage Portfolio	\$3,821	1.19	1.15	0.04
TCRS Inflation Protected Securities	\$2,593	0.65	0.50	0.15



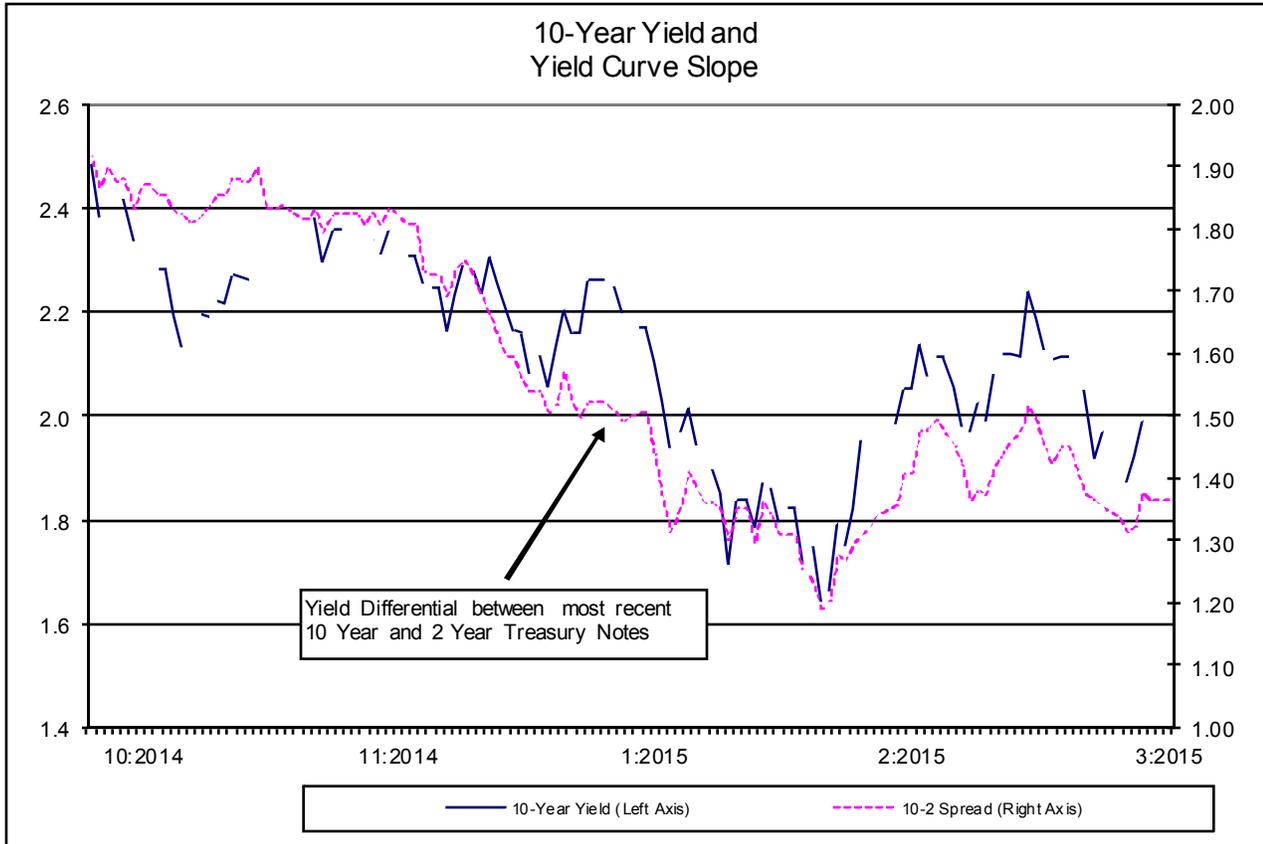
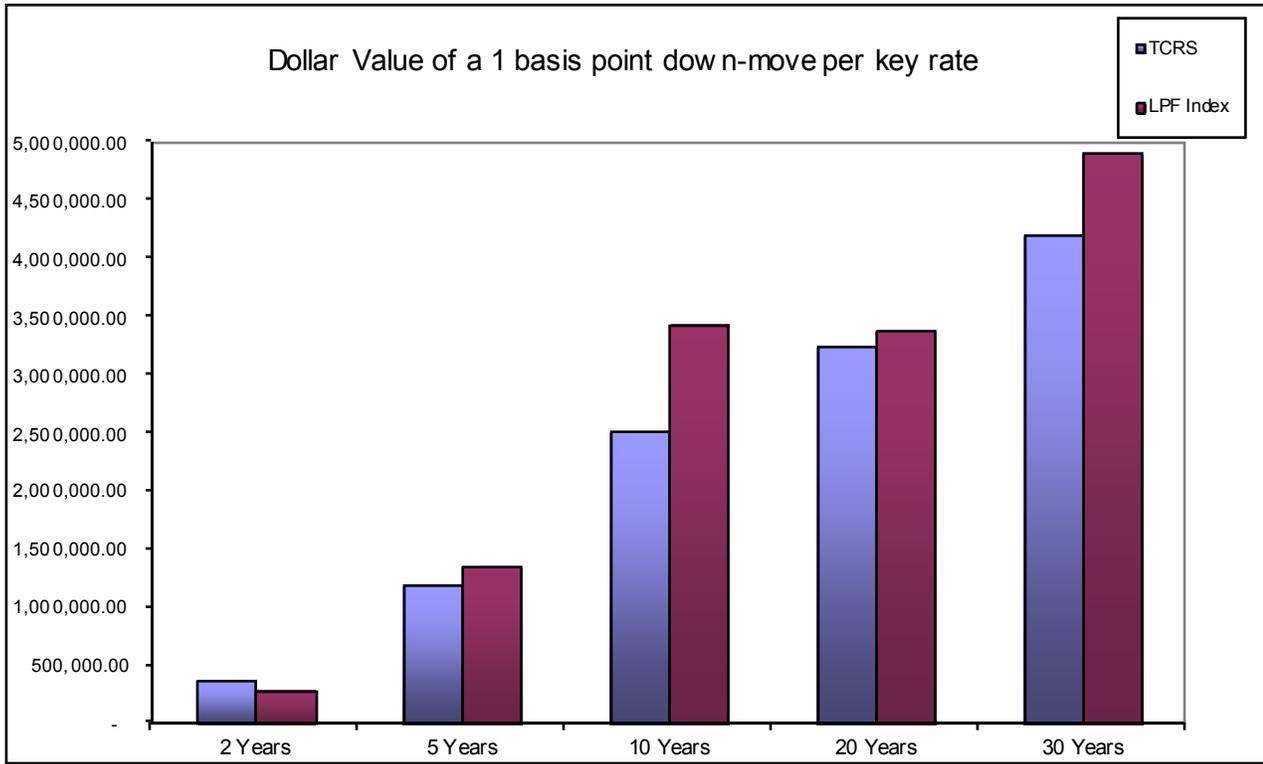
Characteristics were mostly stable from quarter to quarter, but relative duration, while still extended compared to the index, shortened.



The Yield Curve flattened



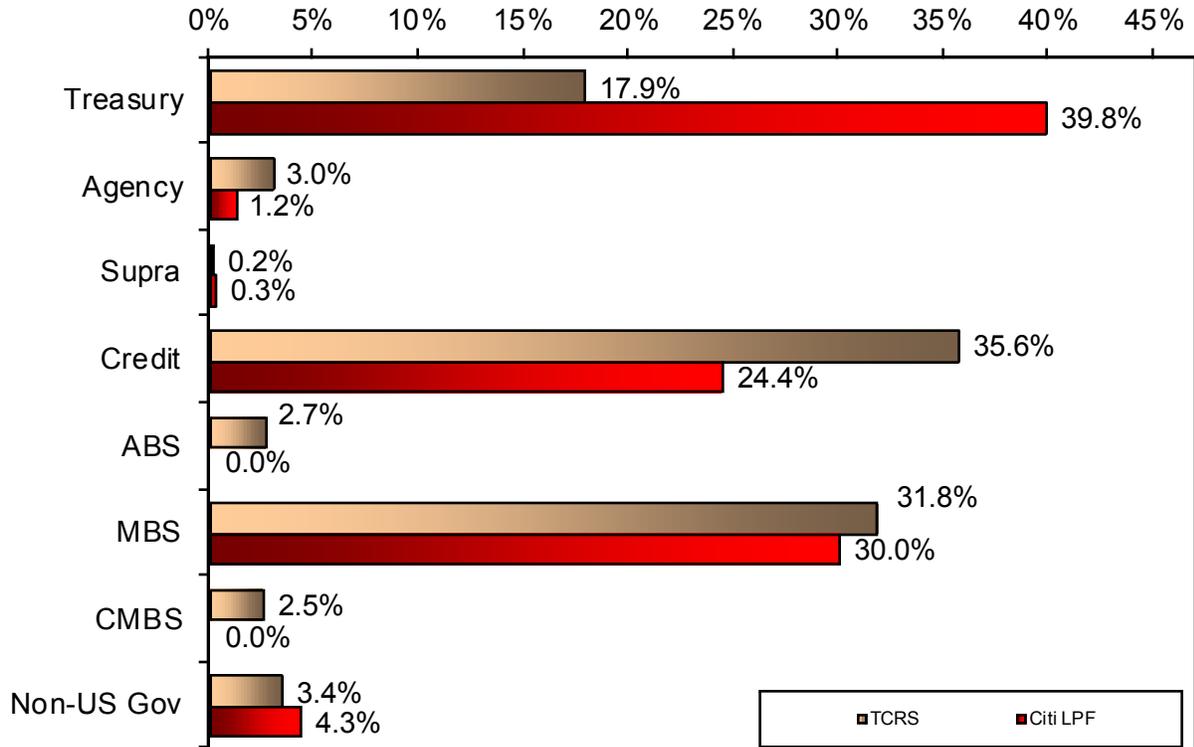
Curve positioning reflects our view that the Federal Reserve will begin to raise overnight interest rates in 2015



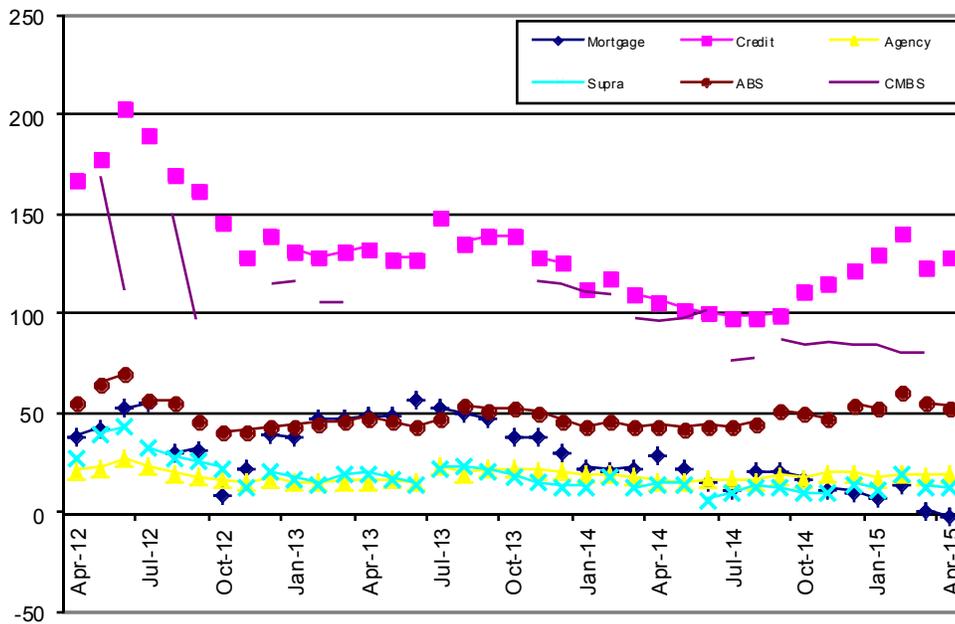
source: Bloomberg

Spreads generally tightened during the quarter. Exposure reflects increased preference for credit risk over MBS risk as the Fed tapers MBS purchases and credit spreads have widened

Sector Allocation v. Index
(% market value)



Spread to Treasuries by Asset Class
(in basis points, index data)

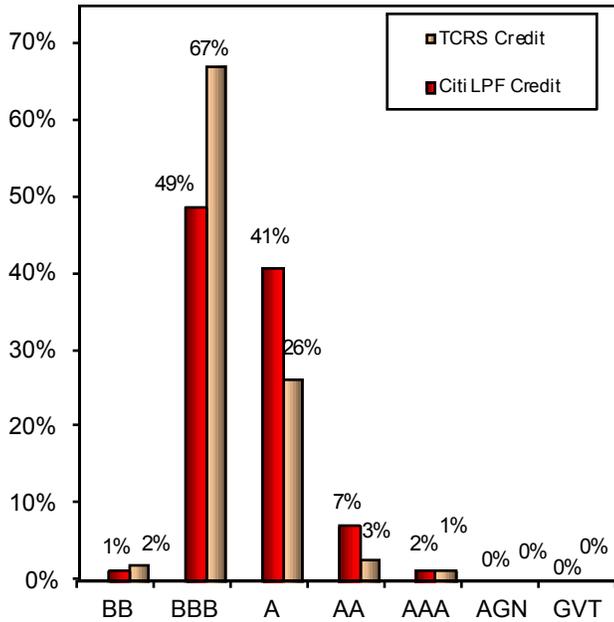


source: Yield Book

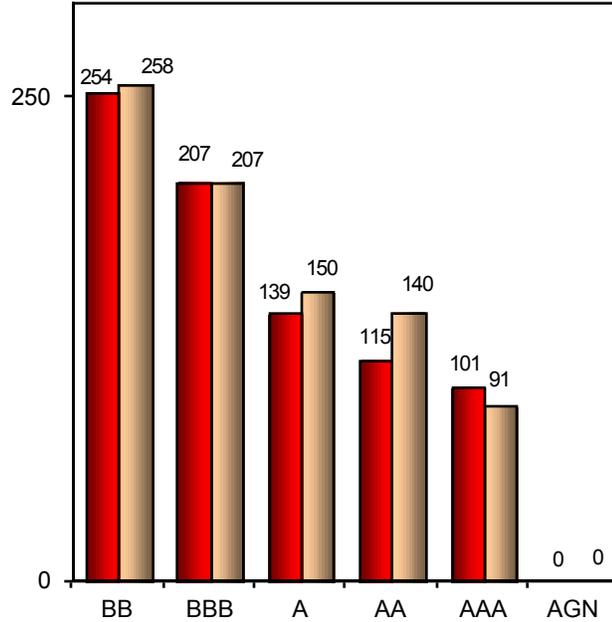
Credit Spreads tightened during the quarter

Credit allocations reflect lower quality holdings. However, spreads reflect a higher relative risk in higher quality issuers.

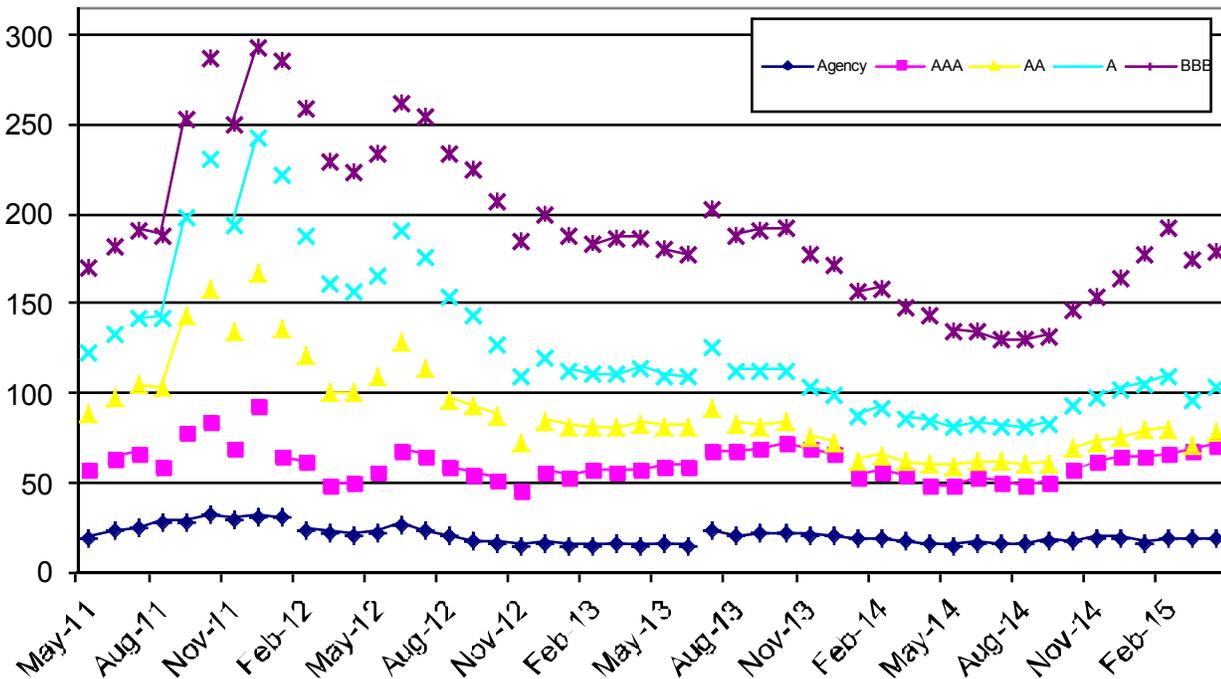
Credit Allocation v. Index
(% market value)



OAS by Credit Allocation



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

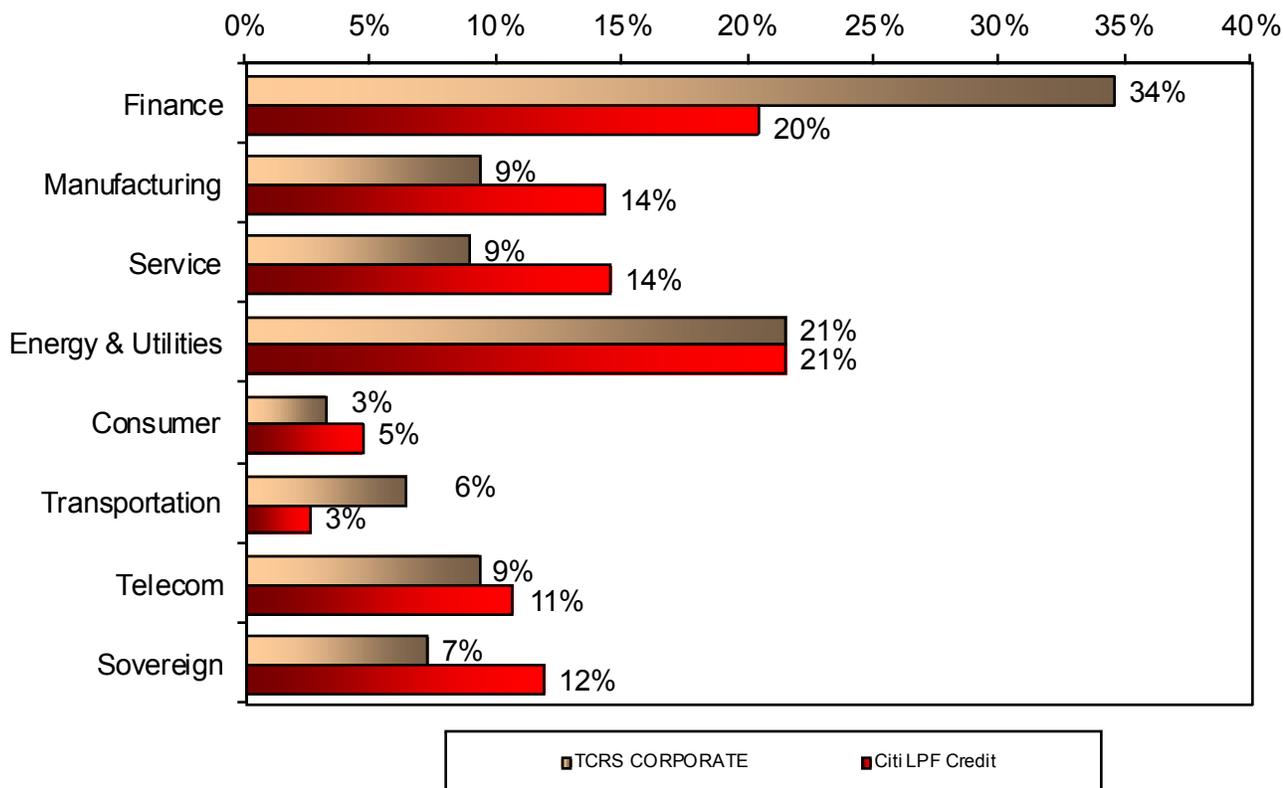


source: Yield Book

Top 5 Credit Holdings (by Market Value)	MktVal	% MktVal
GOLDMAN SACHS GROUP INC	31,586	0.3
CITIGROUP INC	28,532	0.2
PETROLEOS MEXICANOS	26,908	0.2
FIRST HORIZON NATL CORP	26,045	0.2
VERIZON COMMUNICATIONS INC	24,123	0.2

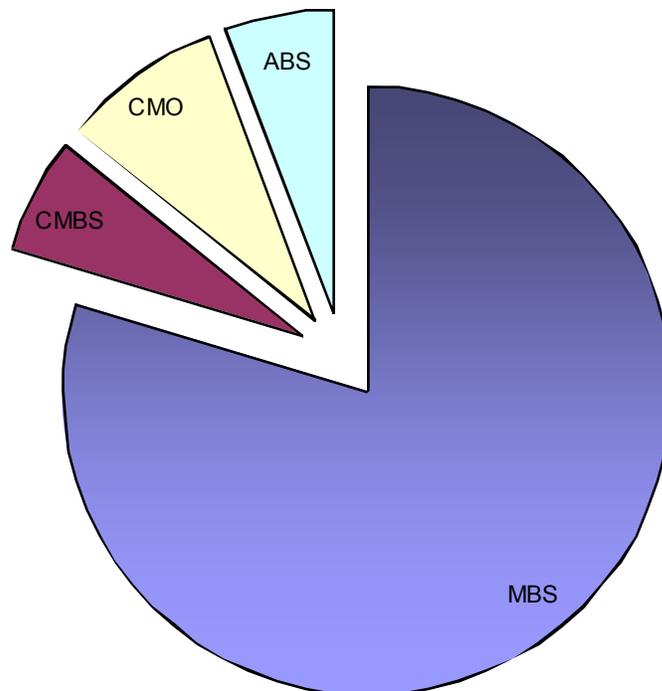
Top 5 Credit Holdings (by Dollar Duration)	\$ Duration	% \$ Duration
GOLDMAN SACHS GROUP INC	45.78	0.4
CITIGROUP INC	44.09	0.4
VERIZON COMMUNICATIONS INC	35.78	0.3
VERIZON COMMUNICATIONS INC	33.24	0.3
LEGG MASON INC	30.36	0.3

Sector Allocation v. Index
(% market value)



	Market Value (\$MM - Yield Book)	TCRS % of portfolio	CITI	Difference
Agency Mortgage Backed Securities	\$3,783,269	31.3	30.1	1.2
GNMA				
15-Yr	\$25,068	0.2	0.1	0.2
30-Yr	\$829,033	6.9	8.0	-1.2
FNMA				
10-, 15- & 20-Yr	\$472,221	3.9	2.7	1.2
30-Yr	\$1,564,450	13.0	11.6	1.3
FHLM				
15-Yr	\$96,953	0.8	1.5	-0.7
30-Yr	\$738,687	6.1	6.2	0.0
Agency Hybrid	\$56,857	0.5	0.0	0.5
Commercial Mortgage Backed Securities	\$289,136	2.4	0.0	2.4
CMO and Non Agency Passthroughs	\$406,148	3.4	0.0	3.4
Asset Backed Securities	\$271,221	2.3	0.0	2.2
Total Securitized Product	\$4,749,774	39.3	30.1	9.2

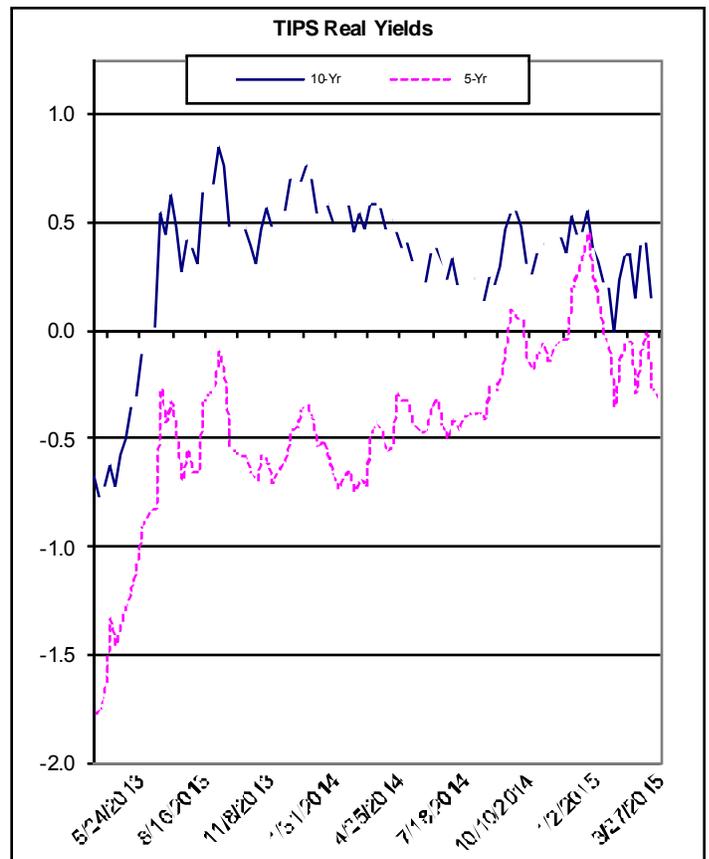
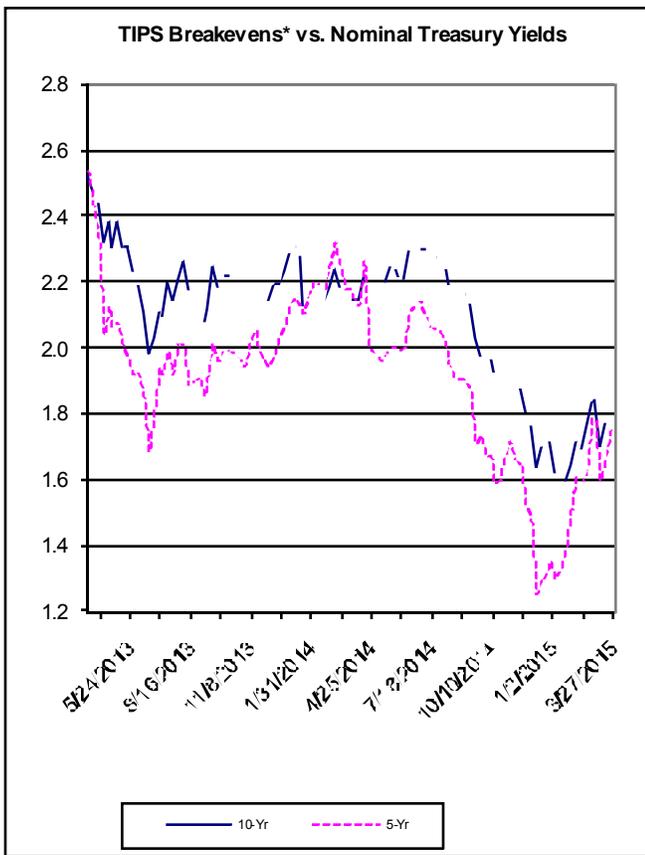
Percent of Securitized Product



Portfolio Value (Yield Book): \$2,592,633,245
 Portfolio Return: 0.65%
 Citigroup ILSI Index: 0.50%
Active Return: 0.15%

% Market Value by Duration

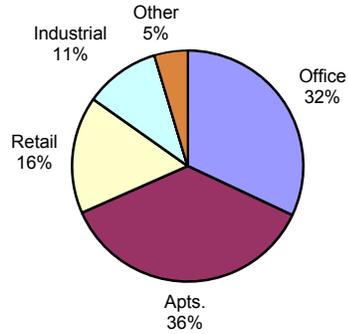
	TCRS	CITI	Difference
0-2	0.0%	0.0%	0.0%
2-4	1.5%	1.5%	0.0%
4-6	3.8%	3.5%	0.3%
6-8	5.4%	5.4%	0.1%
8-10	9.1%	8.3%	0.8%
10+	12.7%	14.6%	-2.0%



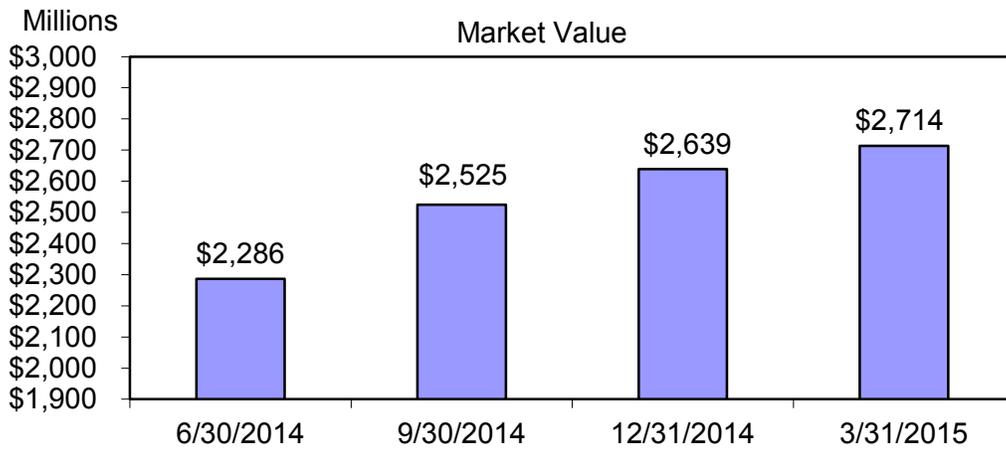
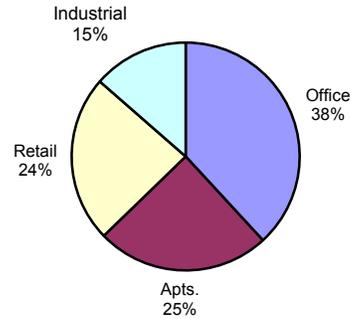
* The "breakeven" rate is the expected rate of inflation at which investment in TIPS yield the same return as investment in Treasuries

Source: Bloomberg

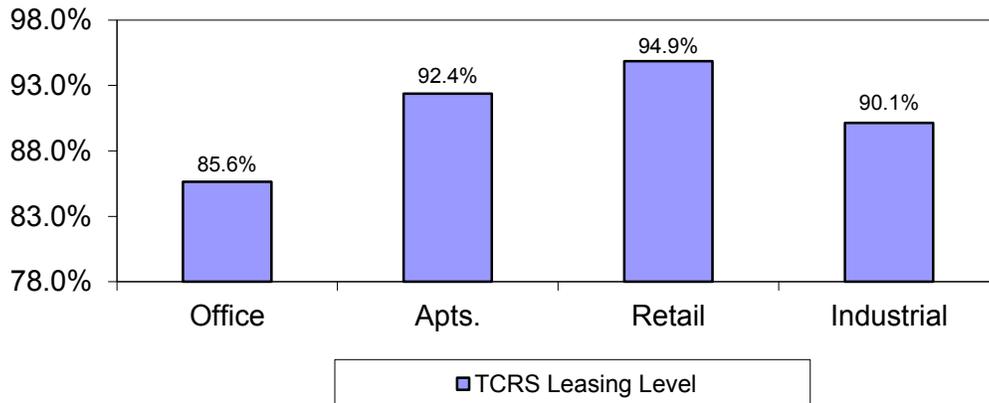
TCRS By Property Type



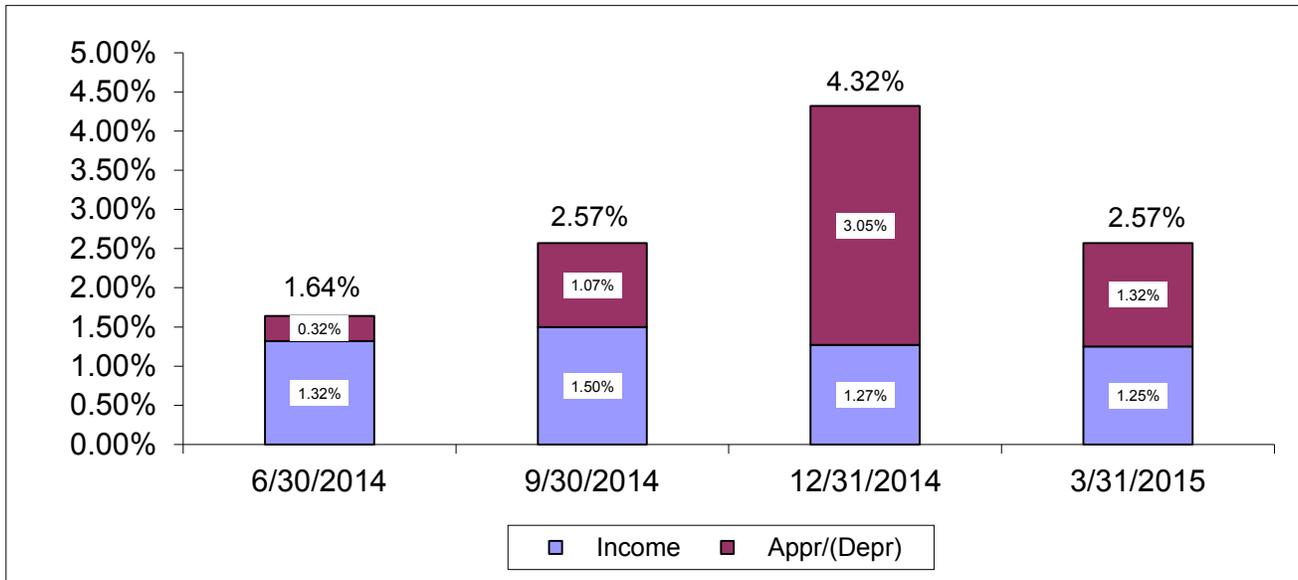
NPI By Property Type



Occupancy



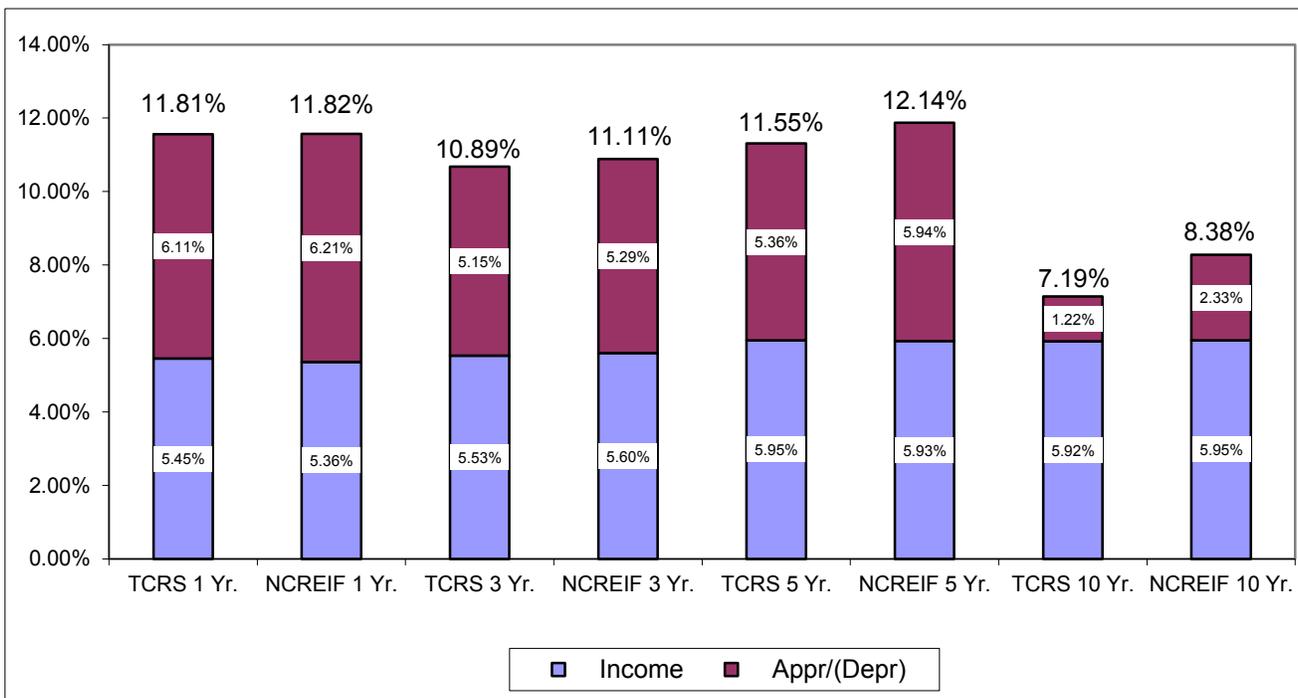
The NPI is the National Property Index of the National Council of Real Estate Investment Fiduciaries (the index used for US core properties).



All returns shown above are reported one quarter in arrears

Budgeted Annual Income Return for calendar year 2015 (excluding funds)

5.41%



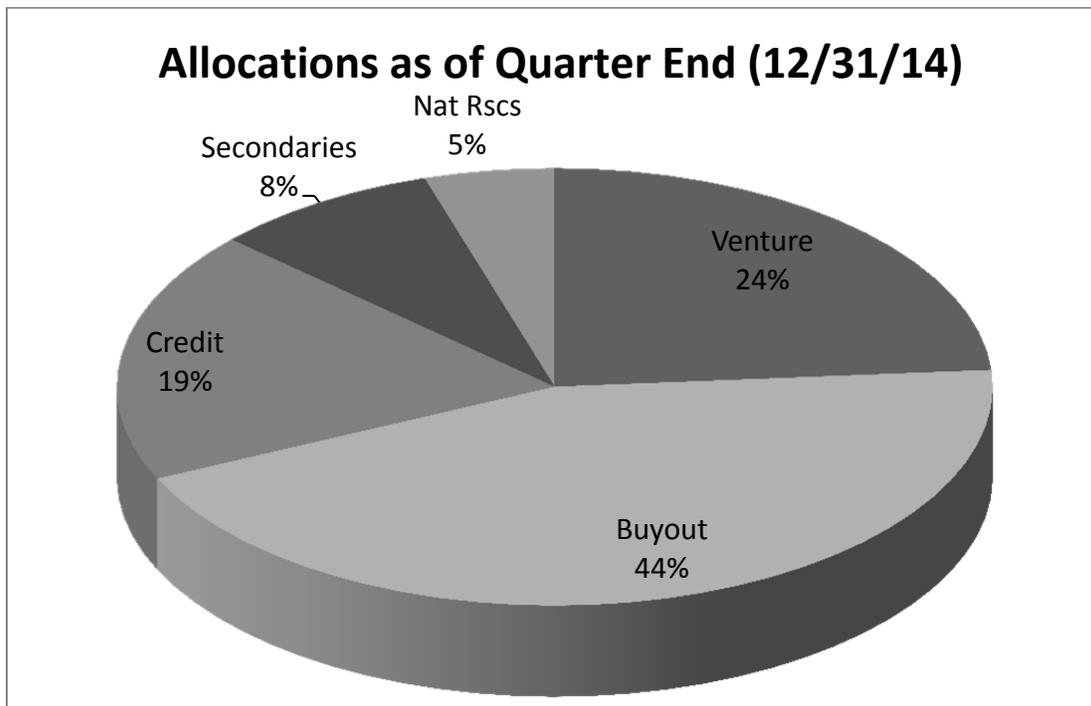
All returns shown above are reported one quarter in arrears

Tennessee Consolidated Retirement System
Private Equity Program
Fiscal 3Q 2015 Update
Daniel Crews, CFA CAIA

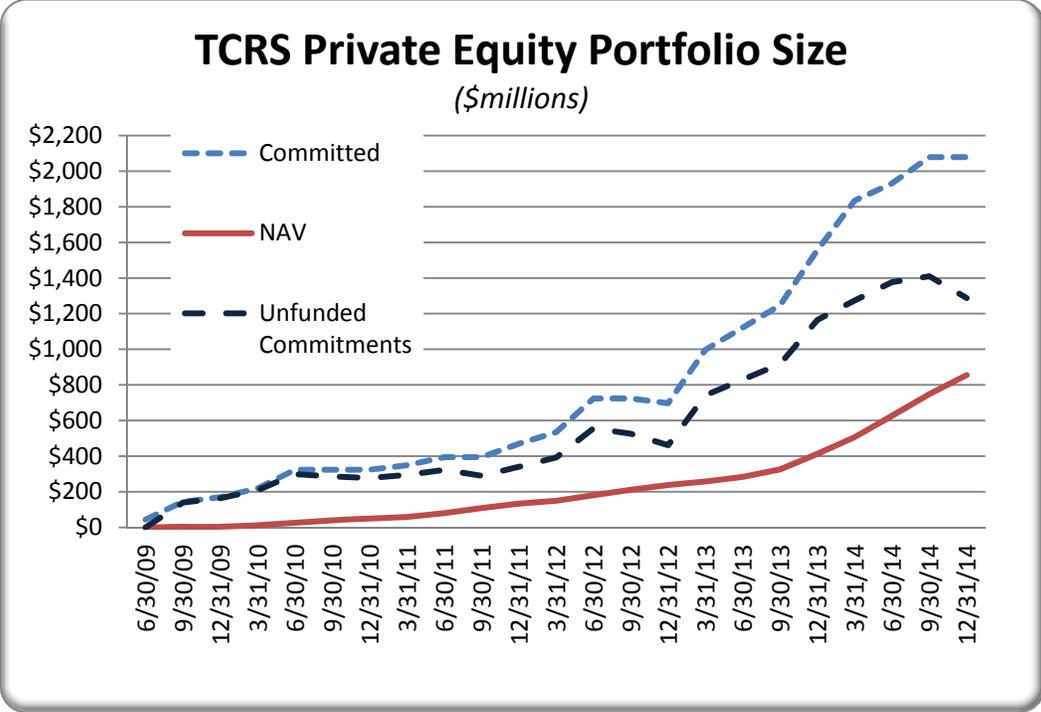
We have finalized our fiscal 2Q2015 results (the period ending 12/31/14), and are pleased to report that the program continues to demonstrate positive momentum. While Venture Capital, Buyout, and Secondaries returns accelerated, the Natural Resources and Credit portfolios lagged.

<i>Trailing IRR</i>	Quarter	Trailing 1 Year	Since Inception
Buyout	3.7%	12.7%	13.5%
Credit	-1.9%	2.0%	9.5%
Secondaries	12.1%	68.3%	68.3%
Venture	9.7%	42.4%	25.7%
Natural Resources	<u>-9.7%</u>	<u>15.4%</u>	<u>6.5%</u>
TCRS PE Overall	4.5%	22.0%	17.2%
<i>S&P 500 + 3%</i>	5.6%	17.0%	21.1%

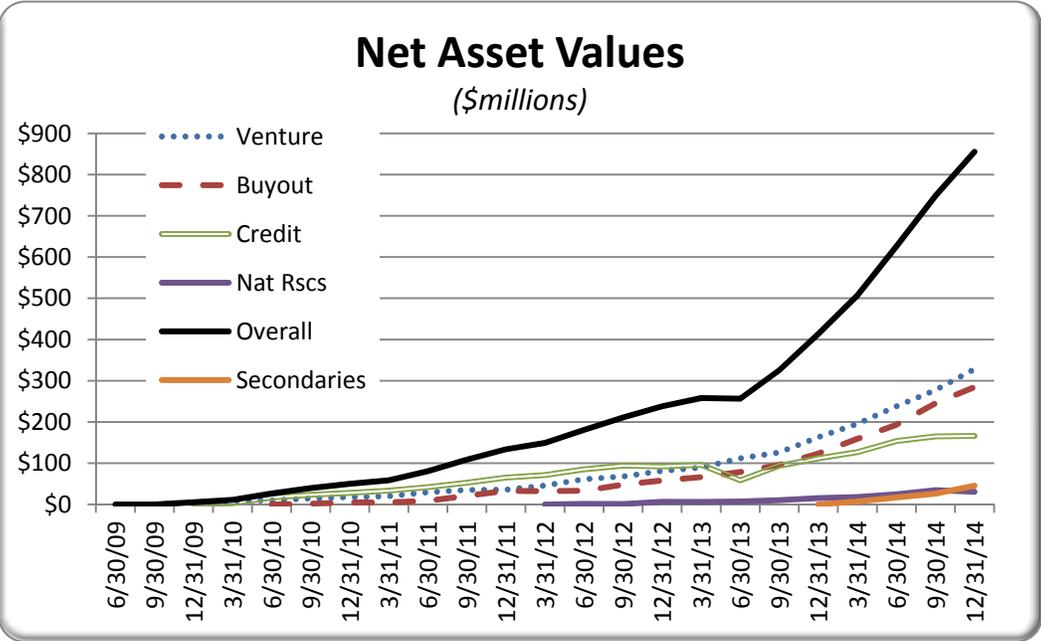
The following chart shows the allocations to the sub-asset classes based on commitments through the end of December 2014. As of now, the portfolio is very close to its neutral target weights for each segment of the portfolio.



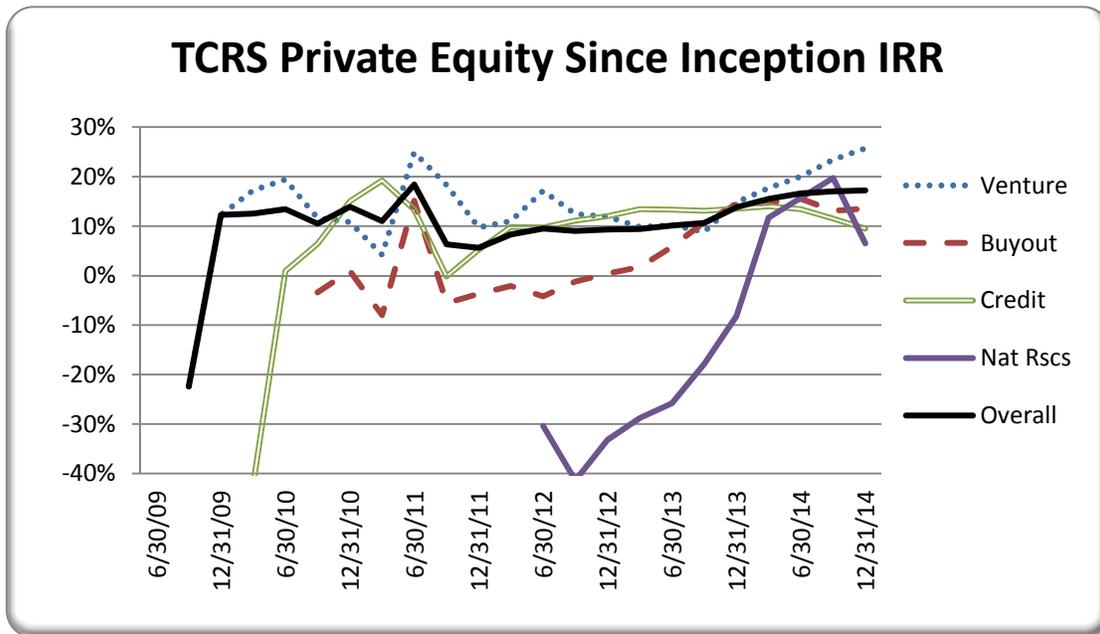
The next chart shows the overall size and growth of the TCRS portfolio in terms of commitments, unfunded commitments, and net asset value.



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 continues to rise in tandem with private markets. A divergence is evident between Buyouts and Venture, indicating the timing differences of the program’s commitments in those categories. Venture is experiencing meaningful gains in recent funds but distributions remain low, while Buyout firms are net sellers and are generally slow in drawing capital committed to recent funds. Given the youth of the secondary investments to date, the since inception IRR is not meaningful at this point. That said, the secondary program has begun with strong early gains.



Looking Forward

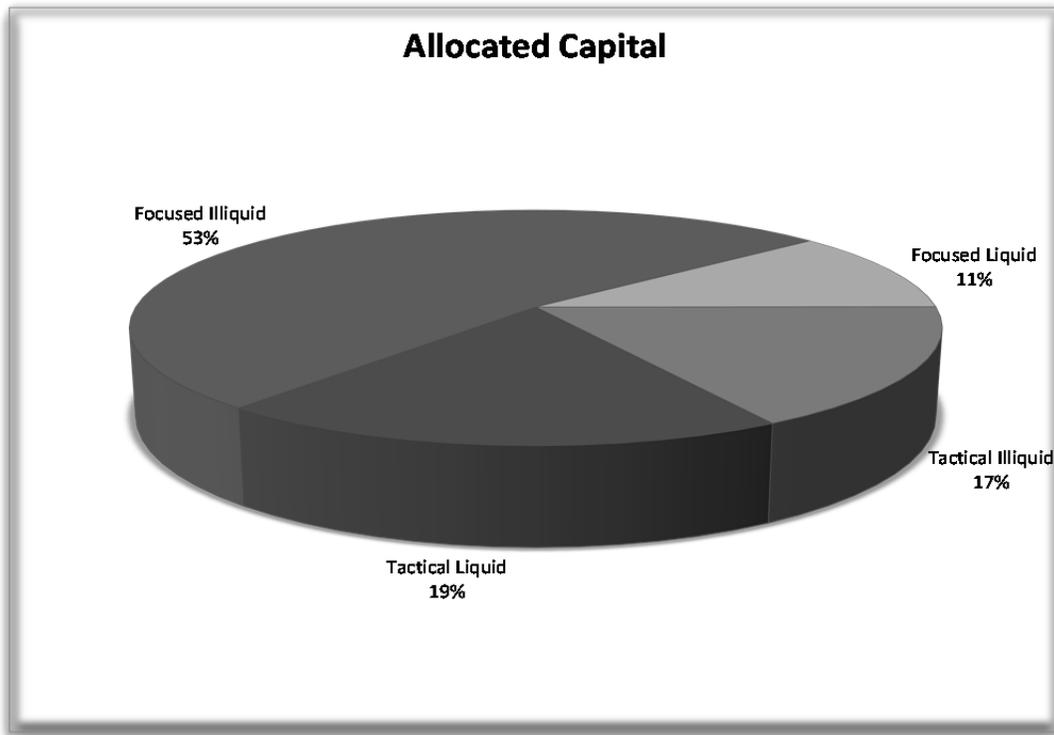
Over recent months staff has finalized the procurement processes for both an internal contact resource management (CRM) and portfolio management software package and for a private equity consultant. eFront and Torrey Cove represent new relationships for TCRS in CRM and portfolio management software and private equity consulting, respectively. While staff continues to refine our short list of potential new managers in 2015, the transition in consultants and the installation of new CRM and portfolio management software will represent noteworthy endeavors for staff over upcoming months.

Page is intended to be blank

Tennessee Consolidated Retirement System
Strategic Lending Portfolio
Fiscal Q3 2015 Update
Andrew Palmer, CFA

During fiscal 2015, the Strategic Lending Portfolio has made significant investments to fund strategies approved in fiscal 2014, opportunistically deployed capital during times of market dislocation, and approved four commingled investments. The portfolio aims to opportunistically invest in both liquid and illiquid below-investment grade strategies focused on high yield bonds, leveraged loans, private debt, structured products and other unique cash flow-producing investments. Conceptually, Staff aims to capture market inefficiencies by balancing investments between focused and tactical managers that primarily specialize in liquid or illiquid investments.

As of March, TCRS had committed nearly \$2.0 billion with over \$1.0 billion being invested in seven larger separate accounts and eight co-mingled funds. The seven separate accounts amount to \$1.5 billion of the allocation and can be cancelled on short notice and \$500 million is committed to the other eight, less liquid, lock-up vehicles.



Market Outlook

During the fiscal third quarter of 2015, the liquid U.S. below-investment grade market began to rebound from the previous two quarters of stress, posting total returns of 2.5% in the bond market and 2.1% for the loan market. The stabilization of oil prices helped stem the deterioration of energy credits. Many investors had discarded energy companies and the world was full of bargains in December and January. Since January, many energy credits have rebounded. However, investors do have a lower appetite for risk, as lower quality CCC issuers did not begin to rebound until after the end of the quarter. Credit availability has improved and new issue terms are more favorable to issuers than at the end of December. Default rates have ticked up as expected, driven by energy companies and the Caesar's and the TXU bankruptcies. That being said, default rates remain low and liquid markets continue to bounce back from sell-offs.

While the liquid below-investment grade market remains frothy in Europe, the story remains more constrained in the U.S. and European middle market, where banking regulations have limited capital availability. However, the private debt market has not adjusted to the spread widening in the U.S. liquid market and the illiquidity premium in 2015 is tighter. At this point, the U.S. liquid markets may post a more attractive risk-adjusted return in calendar 2015.

Recent Developments

During the third quarter of the fiscal year, TCRS committed €50 million to a commingled fund focused on European Junior Debt financing and another \$30 million to a commingled fund focused on Global Pharmaceutical Royalties. Staff also allocated \$50 million in late December and early January to liquid tactical strategies to pursue stressed bonds and loans. At this time, staff continues to pursue one larger separate account investment and opportunistic capital deployments.

Future Activity

Recently, Staff has focused more on portfolio monitoring, process, procedures, internal investment capabilities, and other key program initiatives.

Page is intended to be blank

TCRS Equity Derivative Report

Domestic Stock Index Futures Roy Wellington, CFA

No Activity

Domestic Fixed Income Derivatives Report

Andrew C. Palmer, CFA

Domestic Fixed Income Derivatives Transaction Log

ACCT	SOLD	BOUGHT	NET	EXPIRATION	CONTRACT	TYPE	STRIKE
Begin							
					1418	CBOT 10 T-NOTE	14 Mar 0
					2900	CBOT T-BONDS	14 Mar 0
					4324	CBOT ULTRABOND	14 Mar 0
					-3060	CBOT 5YR TNOTE	14 Mar 0
TRADE SUMMARY BY ACCOUNT							
5+ Gov't (1381)							
	-	-	-			CBOT 10 T-NOTE	15 Jun 0
	-	-	-			CBOT 10 T-NOTE	15 Mar 0
	-	-	-			CBOT 5YR TNOTE	15 Jun 0
	-	-	-			CBOT 5YR TNOTE	15 Mar 0
	-	330	330			CBOT T-BONDS	15 Jun 0
	500	-	(500)			CBOT T-BONDS	15 Mar 0
	-	1,360	1,360			CBOT ULTRABOND	15 Jun 0
	1,743	438	(1,305)			CBOT ULTRABOND	15 Mar 0
1-5 Gov't (1368)							
	-	1,418	1,418			CBOT 10 T-NOTE	15 Jun 0
	2,638	1,220	(1,418)			CBOT 10 T-NOTE	15 Mar 0
	3,645	-	(3,645)			CBOT 5YR TNOTE	15 Jun 0
	835	3,895	3,060			CBOT 5YR TNOTE	15 Mar 0
	-	1,540	1,540			CBOT T-BONDS	15 Jun 0
	3,000	600	(2,400)			CBOT T-BONDS	15 Mar 0
	100	3,144	3,044			CBOT ULTRABOND	15 Jun 0
	3,319	250	(3,069)			CBOT ULTRABOND	15 Mar 0
Overlay (1371)							
	-	-	-			CBOT 10 T-NOTE	15 Jun 0
	-	-	-			CBOT 10 T-NOTE	15 Mar 0
	-	-	-			CBOT 5YR TNOTE	15 Jun 0
	-	-	-			CBOT 5YR TNOTE	15 Mar 0
	-	-	-			CBOT T-BONDS	15 Jun 0
	-	-	-			CBOT T-BONDS	15 Mar 0
	-	800	800			CBOT ULTRABOND	15 Jun 0
	800	600	(200)			CBOT ULTRABOND	15 Mar 0
Corporate (1365)							
	-	100	100			CBOT 10 T-NOTE	15 Jun 0
	100	100	-			CBOT 10 T-NOTE	15 Mar 0
	500	-	(500)			CBOT 5YR TNOTE	15 Jun 0
	-	-	-			CBOT 5YR TNOTE	15 Mar 0
	-	-	-			CBOT T-BONDS	15 Jun 0
	-	-	-			CBOT T-BONDS	15 Mar 0
	-	190	190			CBOT ULTRABOND	15 Jun 0
	100	350	250			CBOT ULTRABOND	15 Mar 0

Domestic Fixed Income Derivatives Report

Andrew C. Palmer, CFA

Domestic Fixed Income Derivatives Transaction Log

End

1518	CBOT 10 T-NOTE 15 Jun 0
1870	CBOT T-BONDS 15 Jun 0
5394	CBOT ULTRABOND 15 Jun 0
-4145	CBOT 5YR TNOTE 15 Jun 0

SUMMARY OF LAST QUARTER'S ACTIVITY:

CONTRACTS IN USE:

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

STRATEGIES:

Used Ultra-Long, Long Bond, Ten-Year Futures and Five-Year Futures to manage interest rate exposures in the 1-5 Gov't portfolio and the Corporate portfolio.
Employed 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.

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.

PROPOSED STRATEGIES FOR CURRENT QUARTER:

Use Ultra-Long, Long Bond, Ten-Year Futures and Five-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, Bond Futures, Five-Year Futures and Ten-Year 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 Albert Chang

2015 1st Quarter Activity

NO ACTIVITY

TCRS MORTGAGE PORTFOLIO

END OF QUARTER MORTGAGE TBA POSITIONS

Albert Chang

	PRICE	PAR	MARKET	SETTLE	FIRM
	(\$milion)	(\$million)	(\$million)		
15yr FNMA 3.0	104.81	7	7.34	APR	SOC GEN
15yr FNMA 3.0	104.81	19	19.91	APR	WFC
15yr FNMA 3.5	106.09	21	22.28	APR	BOA
15yr FNMA 3.5	106.09	0.5	0.53	APR	C
15yr FNMA 3.5	106.09	15	15.91	APR	SOC GEN
30yr FNMA 3.5	105.05	33	34.67	APR	JPM
30yr FGLMC 3.0	102.02	33	33.67	APR	BARC
30yr FGLMC 3.0	102.02	23.5	23.98	APR	CSFB
30yr FGLMC 3.0	102.02	33	33.67	APR	DMG
30yr GNMA II 3.0	103.00	20	20.60	APR	BARC
30yr GNMA II 3.0	103.00	22.5	23.18	APR	WFC
30yr GNMA II 3.0	103.00	20	20.60	APR	CSFB
30yr GNMA II 3.0	103.00	14	14.42	APR	DCM
30yr GNMA II 3.5	105.24	25	26.31	APR	C
30yr GNMA II 3.5	105.24	25	26.31	APR	WFC
30yr GNMA II 3.5	105.24	32	33.68	APR	NOM
30yr GNMA I 3.0	102.91	11	11.32	APR	SOC GEN
Total		355	368		

<u>By Firm</u>	<u>(\$million)</u>
BARC	54.27
C	26.84
CSFB	44.58
JPM	34.67
SOC GEN	34.57
WFC	69.40
BOA	22.28
DMG	33.67
DCM	14.42
NOM	33.68
Total	368.37

Tennessee Consolidated Retirement System
Operations Update
Fiscal Q3 2015 Update
Tim McClure, CTP

Trading – There were 1,773 purchases totaling over 68.8 million shares with a market value of \$2.94 billion, and 3,278 sales totaling over 67.3 million shares with a market value of \$3.04 billion.

Trading costs analysis for the quarter indicated that TCRS outperformed the Abel Noser universe by 0.9 basis points when looking at the combined costs of commissions and the execution price of the stocks (compared to the cost at the time of delivery to the broker). Costs have been trending down during the last three quarters and volumes have been relatively stable for the last six quarters.

Operations – Considerable time is being spent by staff in preparation for the Treasury Managed Fund. Reconciliation processes are being strengthened and the settlement process has been altered in order to accommodate the unitization of the fund.

Securities Lending – The TCRS securities lending program has been using Deutsche Bank as its securities lending agent since January 30, 2014. Deutsche Bank continues to employ an intrinsic value lending strategy which focuses on lower rebate rates, higher lending spreads and lower dependency on reinvestment earnings. As of March 31, 2015, TCRS earnings since inception totaled \$26.9 million (\$7.4 million of that was earned first quarter 2015). All cash collateral continues to be invested in indemnified repurchase agreements.

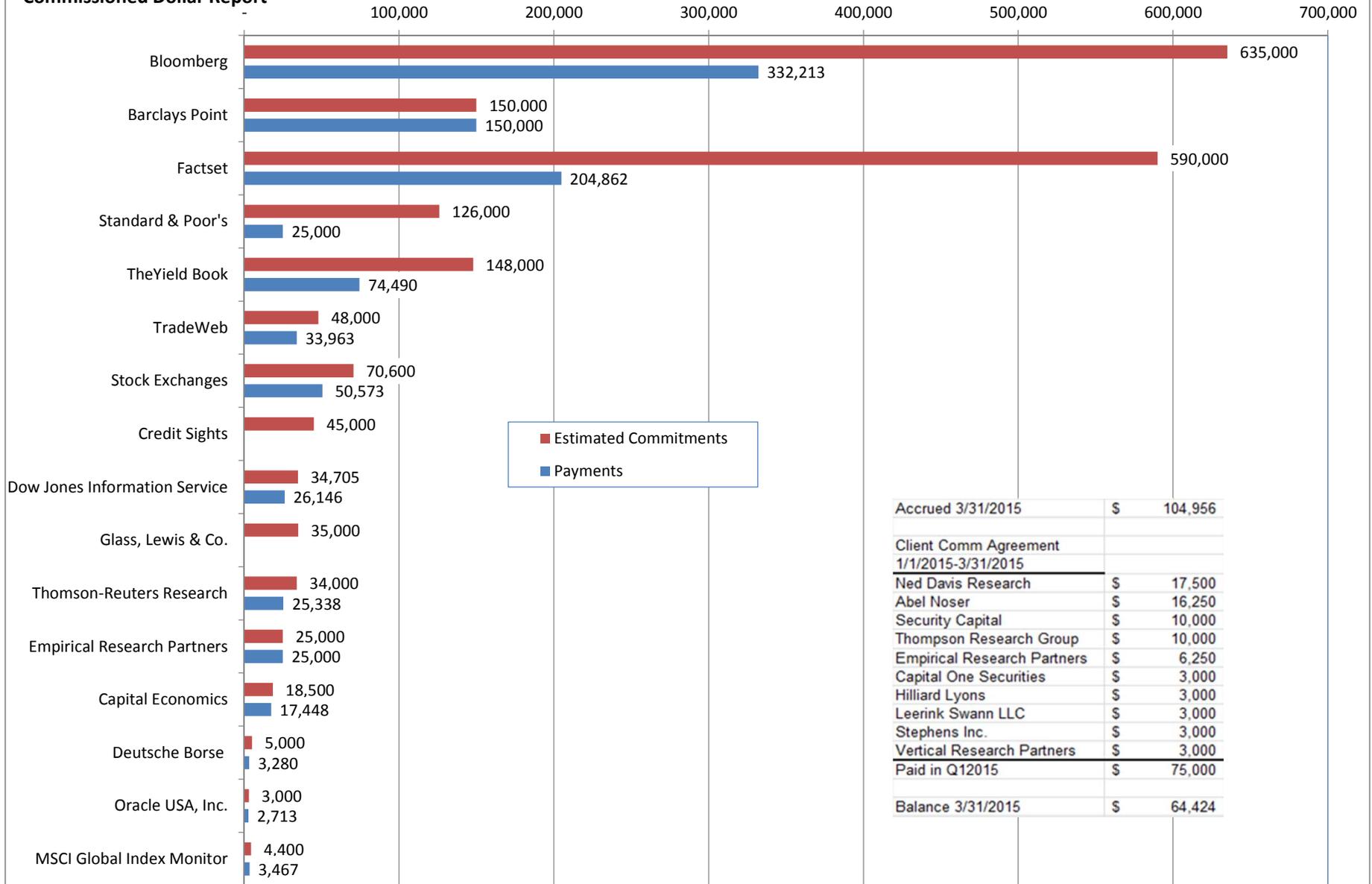
The average on loan balance since inception was \$4 billion with a spread of 60 bps (the average on loan balance for Q1 2015 was \$5.7 billion with spread of 59 bps). The largest earnings contributor since inception was Domestic Equities making up 43% of the total (50% for Q1 2015) followed by Emerging Market Equities 29% (23% Q1 2015), Fixed Income 20% (24% Q1 2015), and International Equities 8% (3% Q1 2015).

With regards to balances in the 1st Quarter 2015, the top 5 borrowing counterparties were Citigroup (representing 13% of the total on loan balance), Morgan Stanley (13%), JP Morgan (12%), BNP Paribas (12%), and SG Americas (9%).

The majority (3 out of the 5) of TCRS' top 5 earners for the period of January 30, 2014 to March 31, 2015 occurred within the ETF space. However, the overall leader for the 15 month period was GoPRO (7.5% or \$2 million). This was followed by Ambarella (6.5% or 1.74 million). The other three places were held by the following ETFs (14% or \$ 3.8 million); iShares MSCI Brazil (EWZ), iShares MSCI Taiwan (EWT), and iShares MSCI Indonesia (EIDO). These 5 securities accounted for 28% or \$7.5 million of the TCRS earnings for this period.

	<u>Jan 1, 2014 - Mar 31,</u> <u>2015</u>	<u>Oct 1, 2014 - Dec 31,</u> <u>2014</u>	<u>Jan 1, 2015 - Mar 31,</u> <u>2015</u>
TCRS Earnings \$	26.9M	7.6M	7.4M
Lending	15.2M	4.3M	3.7M
Reinvest	11.7M	3.3M	3.7M
Avg On Loan	4B	5.3B	5.7B
Spread	60 BPS	63 BPS	59 BPS
Domestic Equities	43%	53%	50%
Emerging Market Equities	29%	23%	23%
Fixed Income	20%	20%	24%
International Equities	8%	4%	3%

Commissioned Dollar Report



Accrued 3/31/2015	\$ 104,956
Client Comm Agreement 1/1/2015-3/31/2015	
Ned Davis Research	\$ 17,500
Abel Noser	\$ 16,250
Security Capital	\$ 10,000
Thompson Research Group	\$ 10,000
Empirical Research Partners	\$ 6,250
Capital One Securities	\$ 3,000
Hilliard Lyons	\$ 3,000
Leerink Swann LLC	\$ 3,000
Stephens Inc.	\$ 3,000
Vertical Research Partners	\$ 3,000
Paid in Q12015	\$ 75,000
Balance 3/31/2015	\$ 64,424