

INVESTMENT REPORT

TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

**First Quarter
Fiscal Year 2015 - 2016**

June 30, 2015 – September 30, 2015

**Prepared for:
Board of Trustees**

December 11, 2015

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 the three year terms.

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 5130 Ashland City Hwy Nashville, TN 37218 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

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**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

September 2015

Absolute comparison

- 1 quarter return of -4.2%
- 1 year return of -0.3% (median fund did -0.6%)
- 3 year return of 6.5% (median fund did 7.4%)
- 5 year return of 8.2% (median fund did 7.8%)
- 7 year return of 7.1% (median fund did 6.9%)

Benchmark (relative) comparison

- Qtr return beat allocation index by 0.2%
- 1 year return beat allocation index by 0.8%
- 3 year return beat allocation index by 0.5%
- 5 year return beat allocation index by 0.6%

Peer comparison

- 1 quarter return ranked at 20% (0% = best)
- 1 year return ranked at 37%
- 3 year return ranked at 66%
- 5 year return ranked at 40%
- 7 year return ranked at 42%

Risk Adjusted Returns (Sharpe Ratio)

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

TCRS beat 30% of peers as measured via the Sharpe ratio for the trailing 3 year period and 85% for the trailing five year period.

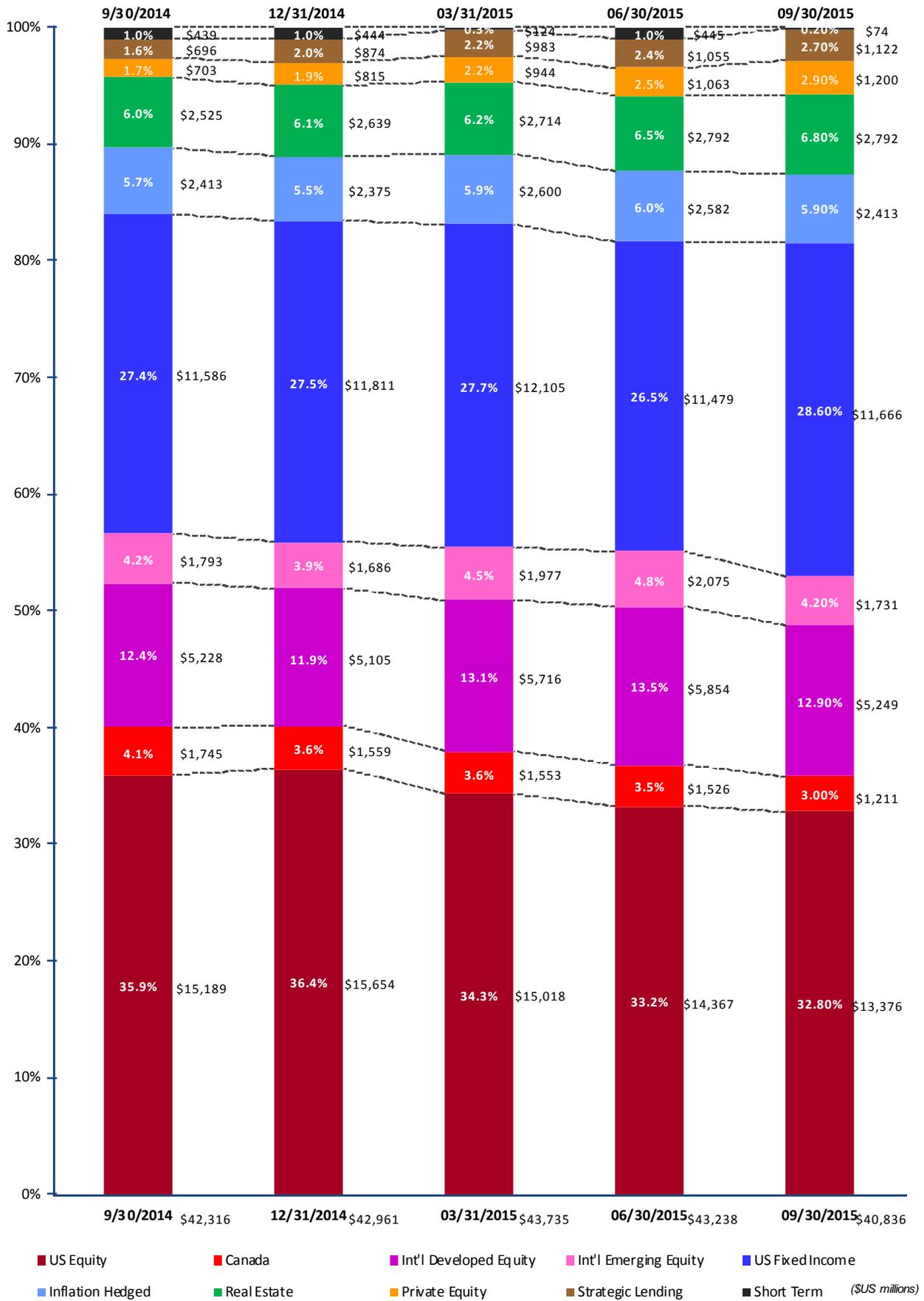
Key Initiatives

June 2015

- **People**
 - Hired a Real Estate Analyst
 - Completing Search for a Deputy Chief Investment Officer
 - Recruiting for a Fixed Income Portfolio Manager
 - Recruiting for Summer 2016 Interns

- **Process**
 - Transitioning PE Consulting to TorreyCove
 - Selection of SIS for General Consultant
 - Relationship management system implementation
 - International manager selection and engagement process
 - Treasury Managed Fund

- **Portfolio**
 - Tactical allocation – underweight in Canada and EM
 - Strategic Allocation
 - Private equity fund additions
 - Strategic lending fund additions
 - Real estate property and fund additions

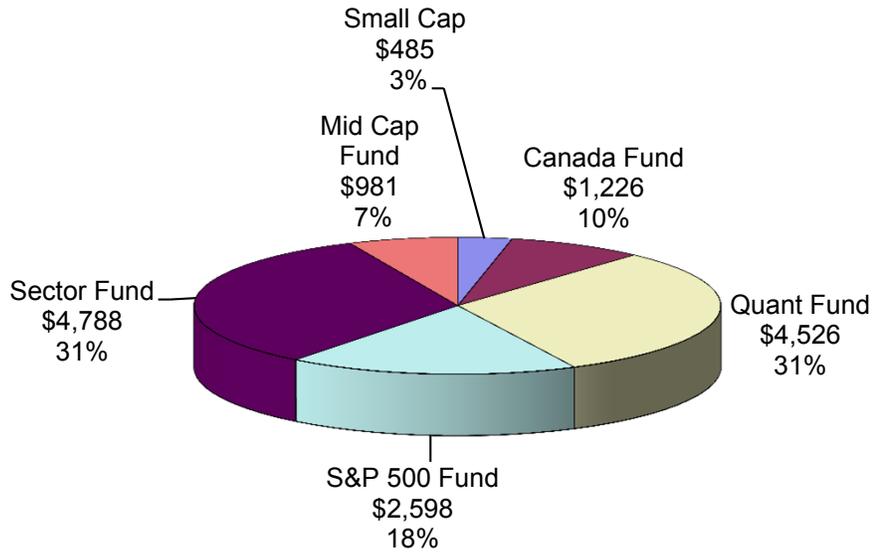


Source: Strategic Investment Solutions, Inc.

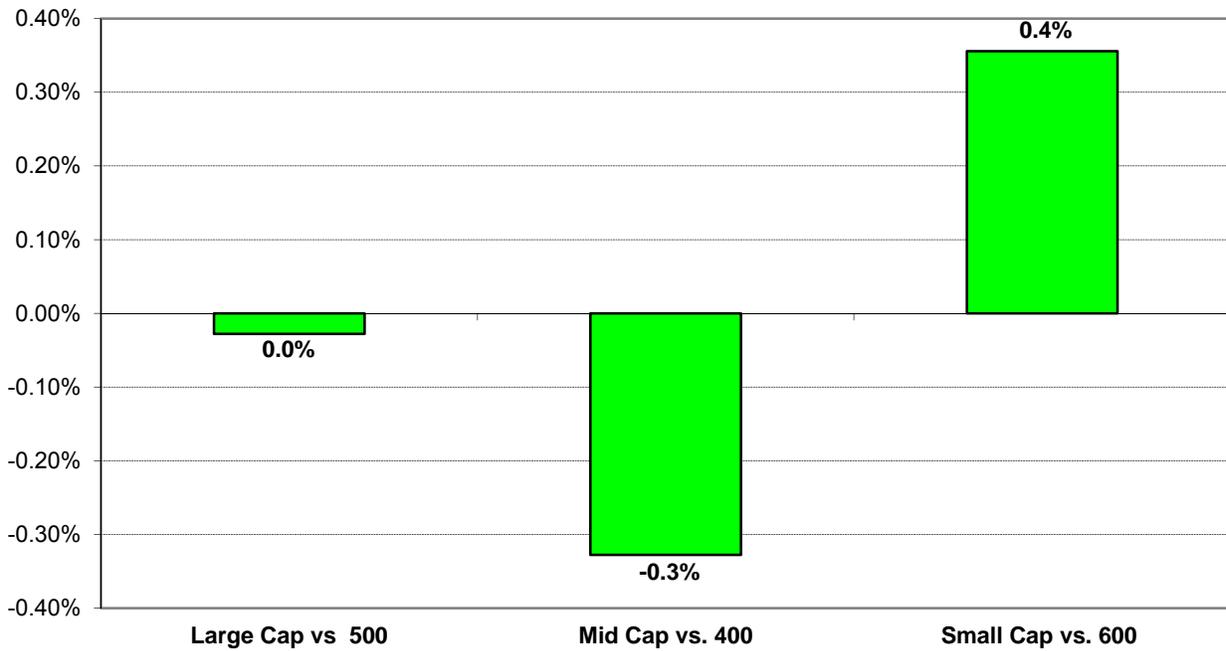
Domestic Equity Portfolio Overview

Michael Keeler, CFA

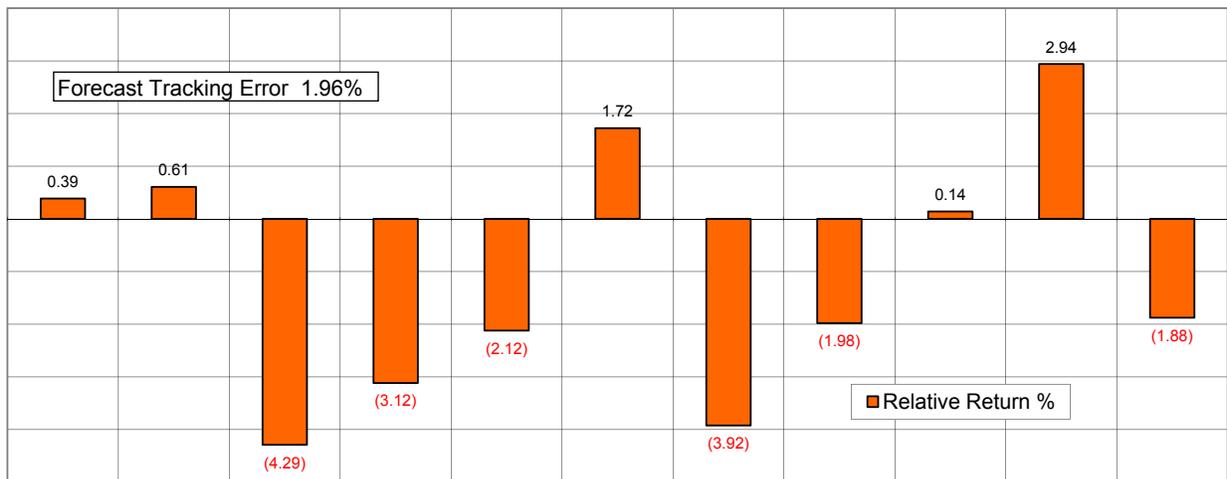
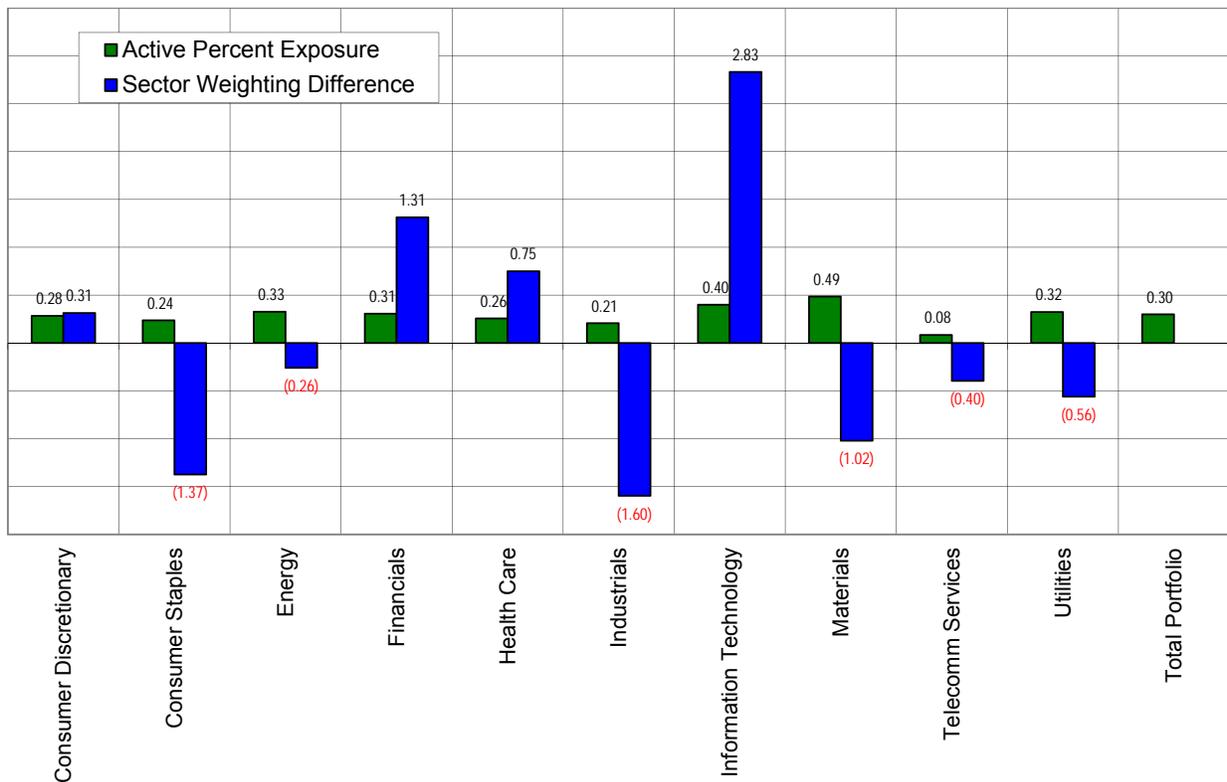
TCRS North American Equity Funds



TCRS Cap Weights vs. S & P 1500 Composite



Quant Fund
Kushal Gupta, CFA, CAIA

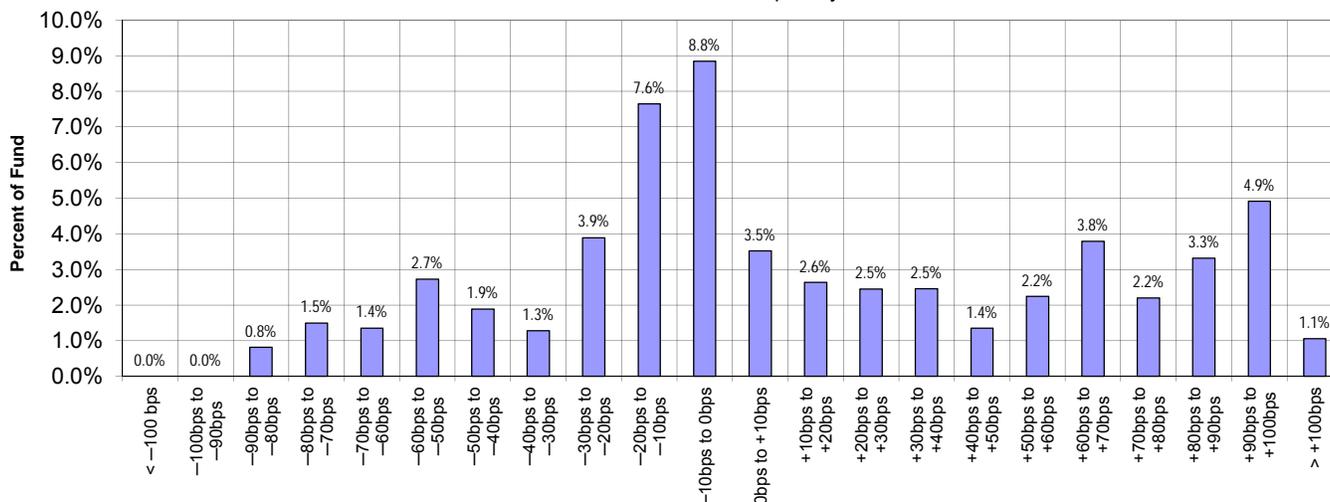


The large-cap S&P 500 Index endured its largest quarterly decline in four years as investors worried about a China-led global slowdown and the Fed's decision to leave rates on hold did little to quell (and actually likely reinforced) investors' fears. The S&P 500 index fell 2.5% in September and 6.4% in 3Q, the worst quarterly decline since 3Q11. The Utilities sector outperformed other sectors both last month (+2.6%) and in 3Q (+4.4%), the only sector in black. Commodity-exposed sectors were the weakest links, as both Energy and Materials lagged other sectors last month and in 3Q.

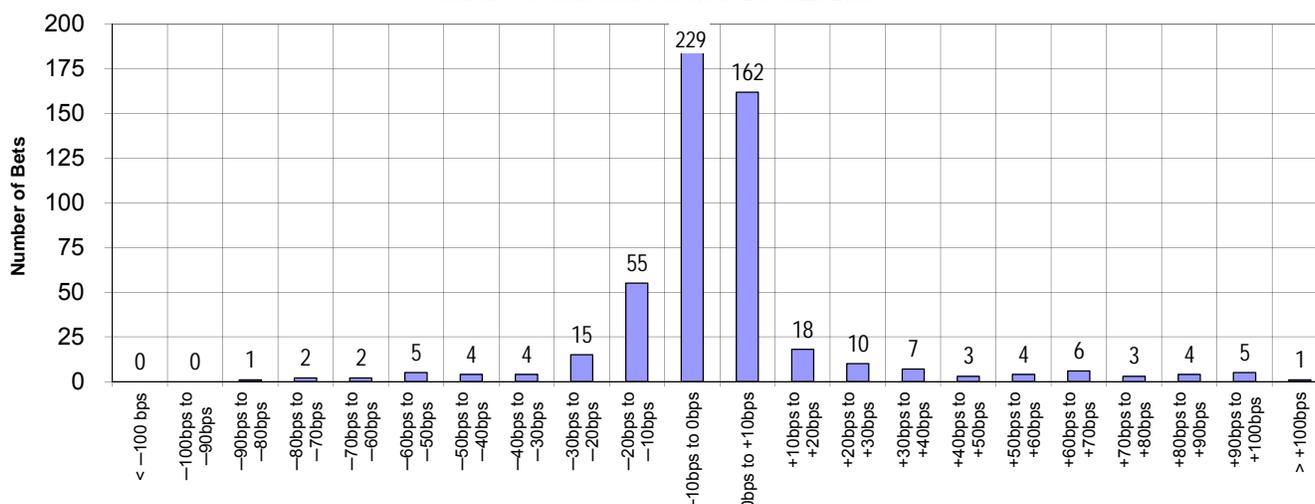
High Quality and large cap benefited from flight to safety. As the "risk-off" mood dominated once again last month, investors sought safety in high quality and larger cap names: High Quality ("B+ or Better") names (-2.2% Sep / -5.9% 3Q) were far more resilient than Low Quality ("B or Worse") stocks (-8.1% Sept. / -15.4% 3Q) with High Quality now leading Low Quality by 7.8ppt YTD. And the mega caps - the top 50 companies by market cap or "The Nifty Fifty" - returned -1.9% in September (-6.0% in 3Q) and led the rest of the S&P 500 index by 1.4ppt last month and 1.8ppt for the quarter. Year-to date the mega caps (-5.6%) lead the rest of the space by 2.2ppt.

Currently, the Quant Fund has a projected annualized tracking error of 1.96% and a projected beta of 1.04, both within our risk target range. At 30%, APE is up from our last report of 27% and well within tolerance.

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



Number of Individual Stocks in Bet Size Bins



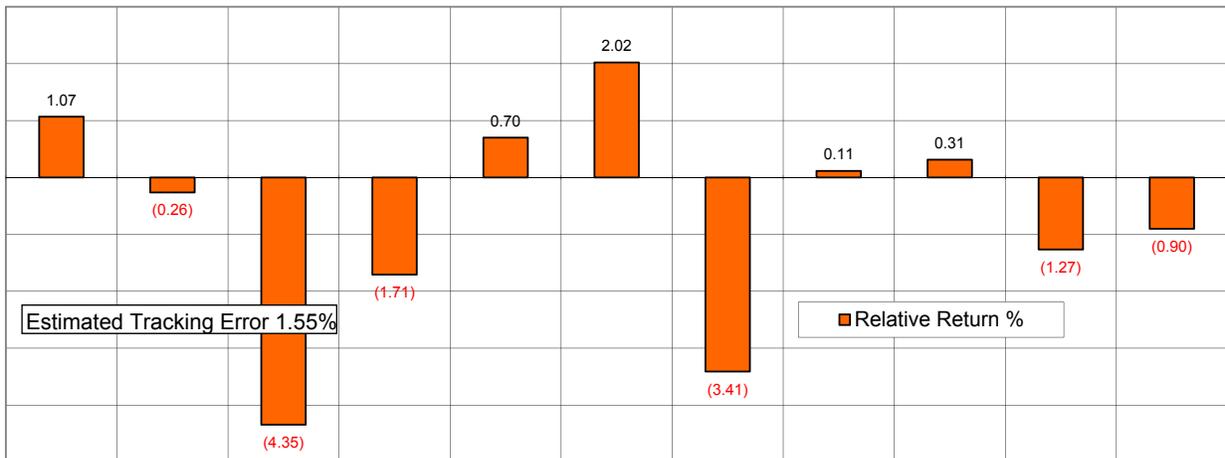
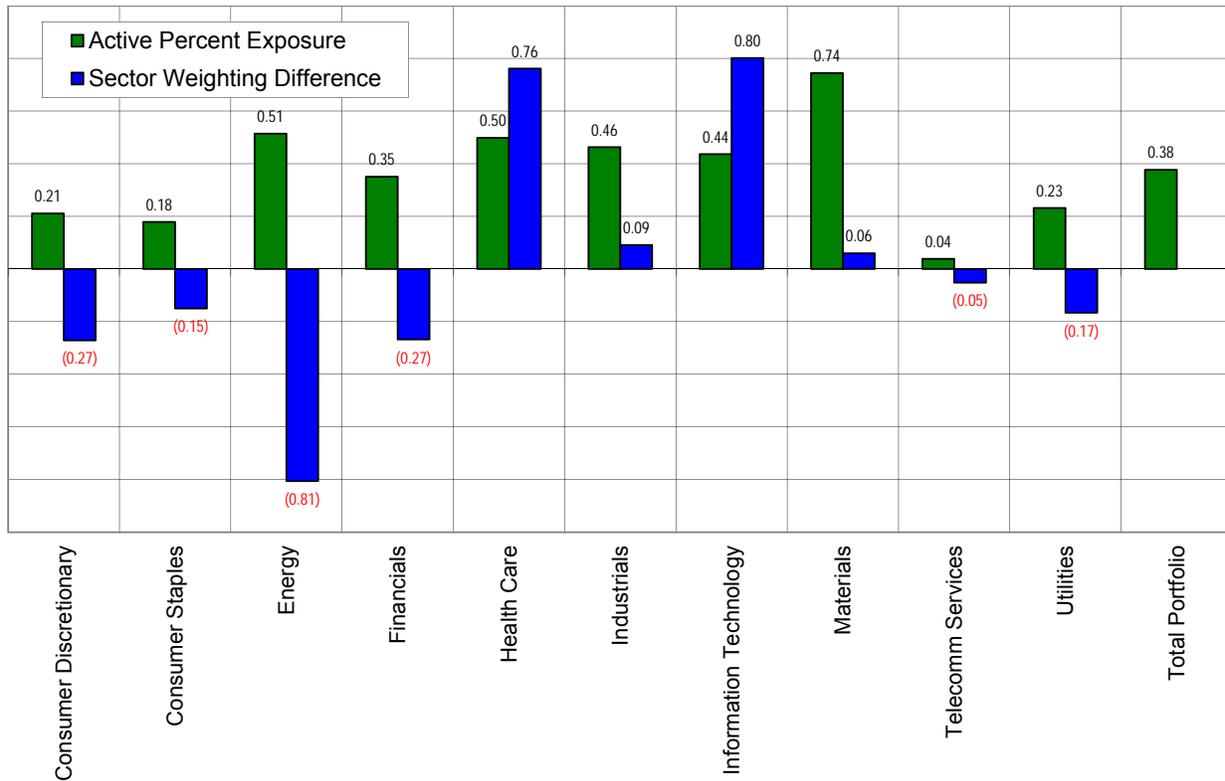
Largest Overweights by Stock in Fund

Ticker	Description	Bps Over
AAPL	Apple Inc.	106
WLL	Whiting Petroleum Corporation	99
SWKS	Skyworks Solutions, Inc.	99
MU	Micron Technology, Inc.	98
TWTR	Twitter, Inc.	98
NXPI	NXP Semiconductors NV	97
DIS	Walt Disney Company	88
JPM	JPMorgan Chase & Co.	83
MO	Altria Group, Inc.	81
LNKD	LinkedIn Corporation Class A	80
WFC	Wells Fargo & Company	76
AVGO	Avago Technologies Limited	73
GILD	Gilead Sciences, Inc.	71
C	Citigroup Inc.	66
BAC	Bank of America Corporation	64
SYNA	Synaptics Incorporated	64
GS	Goldman Sachs Group, Inc.	63
SNDK	SanDisk Corporation	62
MS	Morgan Stanley	61
AMBA	Ambarella, Inc.	58

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
CVX	Chevron Corporation	-82
PG	Procter & Gamble Company	-80
BRK.B	Berkshire Hathaway Inc. Class B	-70
ORCL	Oracle Corporation	-69
JNJ	Johnson & Johnson	-66
GE	General Electric Company	-58
KO	Coca-Cola Company	-55
MCD	McDonald's Corporation	-55
INTC	Intel Corporation	-54
IBM	International Business Machines Co	-52
QCOM	QUALCOMM Incorporated	-50
MSFT	Microsoft Corporation	-49
PM	Philip Morris International Inc.	-45
MRK	Merck & Co., Inc.	-45
T	AT&T Inc.	-35
SPG	Simon Property Group, Inc.	-34
TXN	Texas Instruments Incorporated	-30
TWC	Time Warner Cable Inc.	-30
DUK	Duke Energy Corporation	-29
SLB	Schlumberger NV	-29

Large Cap Sector Fund
Roy Wellington, CFA

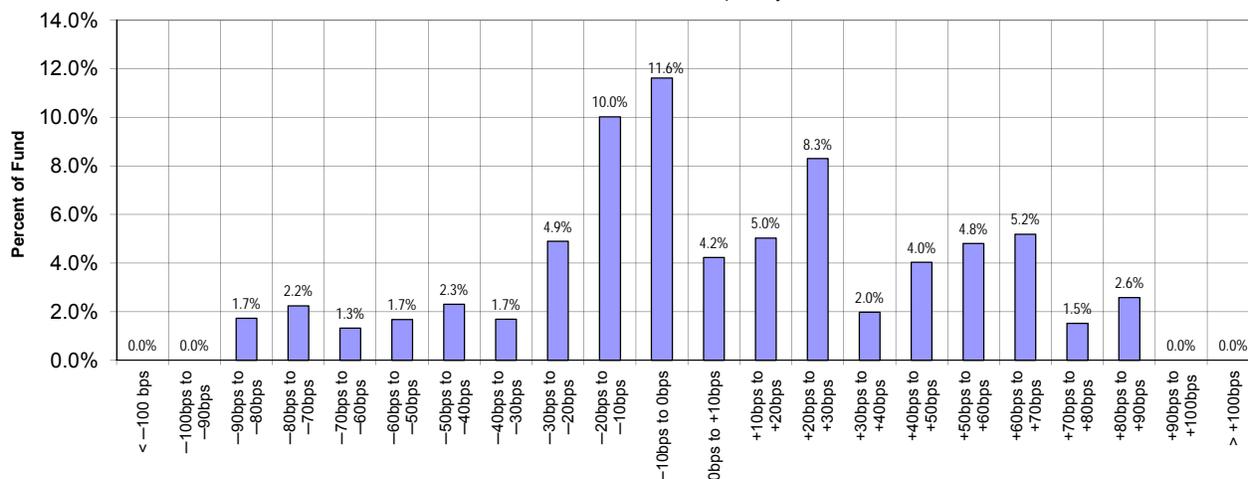


Market movement in the quarter was dominated by signs of weakness in the Chinese economy which spread into several of the emerging markets. Fear of a China “contagion” spreading to other Asian markets, high credit spreads making financing more expensive, and worsening terms of trade due to previous dollar strength in the dollar pushed a somewhat expensive S&P 500 down -6.4% for the quarter, since recovered. The China drama was so spooky that the Fed deferred its anticipated rate hike until December, maybe.

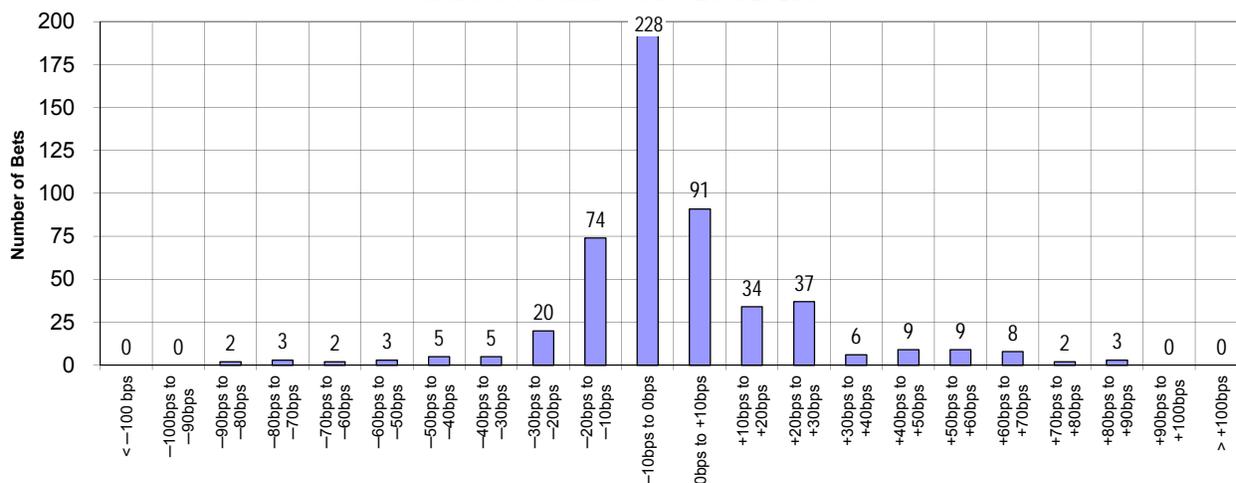
The Sector Fund maintained an overweight to Information Technology and Health Care and underweights to Energy and Materials. This is appropriate for an economic recovery with no incipient inflation. Industrials were held to a slight underweight due to sector weakness arising from a strong dollar and weak emerging market economies.

Returns were hurt by China demand worries and the impact on semiconductor demand. Commodity prices in general and energy prices in particular produced losses for the Sector Fund as companies exposed to oil and gas prices were bought. The Sector Fund remains underweight Energy as new purchases are made which are expected to be good long term holdings when supply reacts to the new commodity price environment and new demand comes from retirements of coal power plants, new chemical plants and growth in electricity demand. Industrials, especially our underweight to Industrial Machinery, were well positioned for weakness from overseas.

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



Number of Individual Stocks in Bet Size Bins



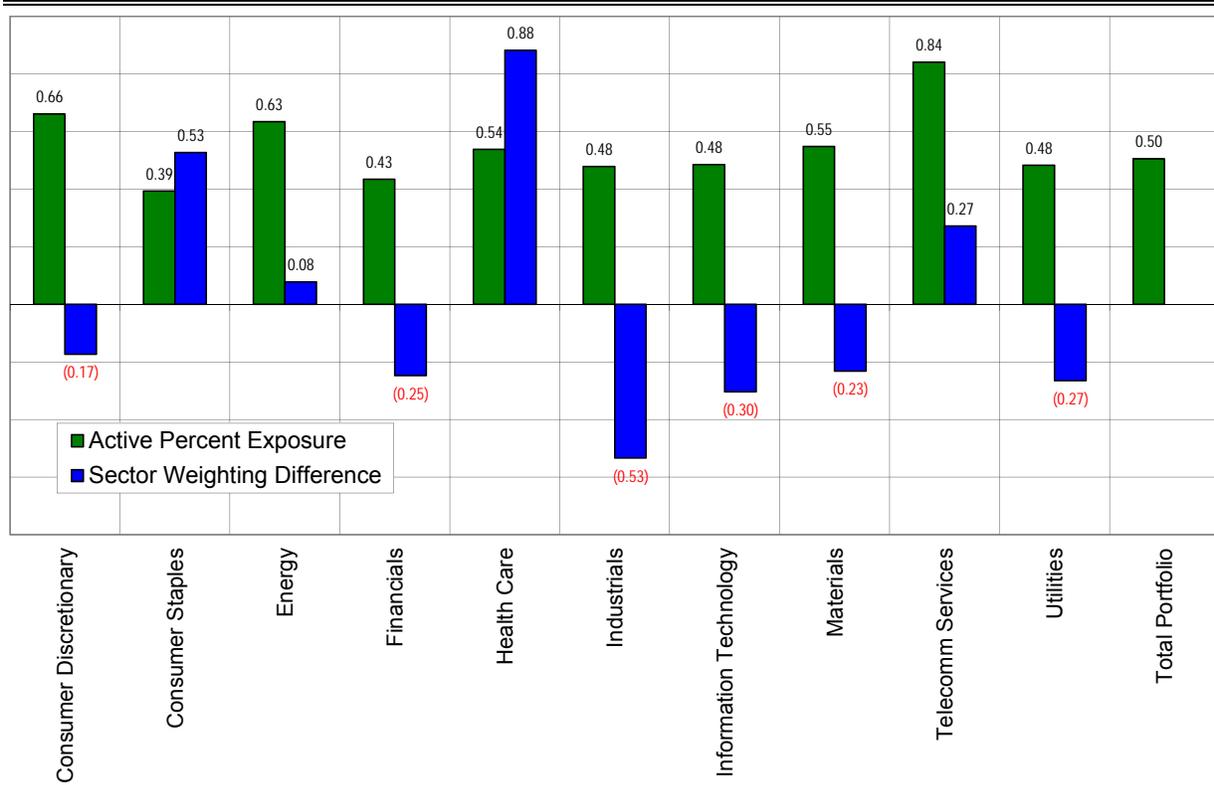
Largest Overweights by Stock in Fund

Ticker	Description	Bps Over Index Wt
SYNA	Synaptics Incorporated	90
AVGO	Avago Technologies Limited	88
AAPL	Apple Inc.	80
NXPI	NXP Semiconductors NV	78
SWKS	Skyworks Solutions, Inc.	74
MU	Micron Technology, Inc.	70
AMGN	Amgen Inc.	69
SYK	Stryker Corporation	66
PFE	Pfizer Inc.	65
JNJ	Johnson & Johnson	64
MRK	Merck & Co., Inc.	64
SWN	Southwestern Energy Company	61
SNDK	SanDisk Corporation	60
LYB	LyondellBasell Industries NV	59
WLL	Whiting Petroleum Corporation	56
AMAT	Applied Materials, Inc.	53
VMW	Vmware, Inc. Class A	53
GILD	Gilead Sciences, Inc.	52
HCA	HCA Holdings, Inc.	52
UBNT	Ubiquiti Networks, Inc.	52

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
MSFT	Microsoft Corporation	-88
INTC	Intel Corporation	-85
CSCO	Cisco Systems, Inc.	-79
XOM	Exxon Mobil Corporation	-75
CVX	Chevron Corporation	-71
ORCL	Oracle Corporation	-69
AGN	Allergan plc	-63
BMJ	Bristol-Myers Squibb Company	-58
MDT	Medtronic Plc	-56
ABBV	AbbVie, Inc.	-53
QCOM	QUALCOMM Incorporated	-50
GE	General Electric Company	-48
LLY	Eli Lilly and Company	-48
UTX	United Technologies Corporation	-44
BIIB	Biogen Inc.	-41
ACN	Accenture Plc	-36
ABT	Abbott Laboratories	-35
BRK.B	Berkshire Hathaway Inc. Class B	-35
ESRX	Express Scripts Holding Company	-32
TXN	Texas Instruments Incorporated	-30

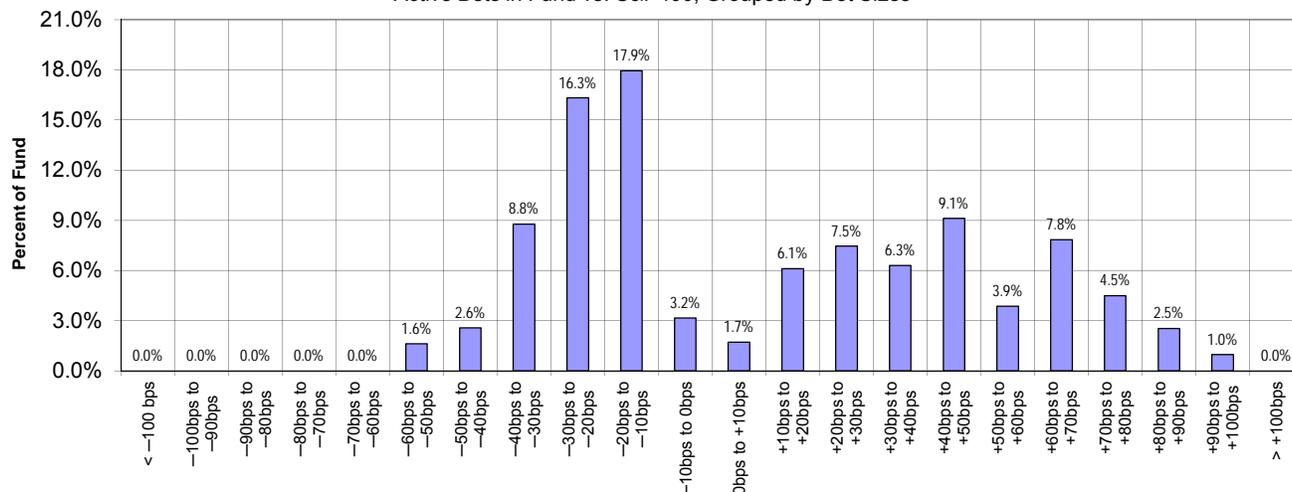
Mid Cap Fund
Mike Keeler, CFA



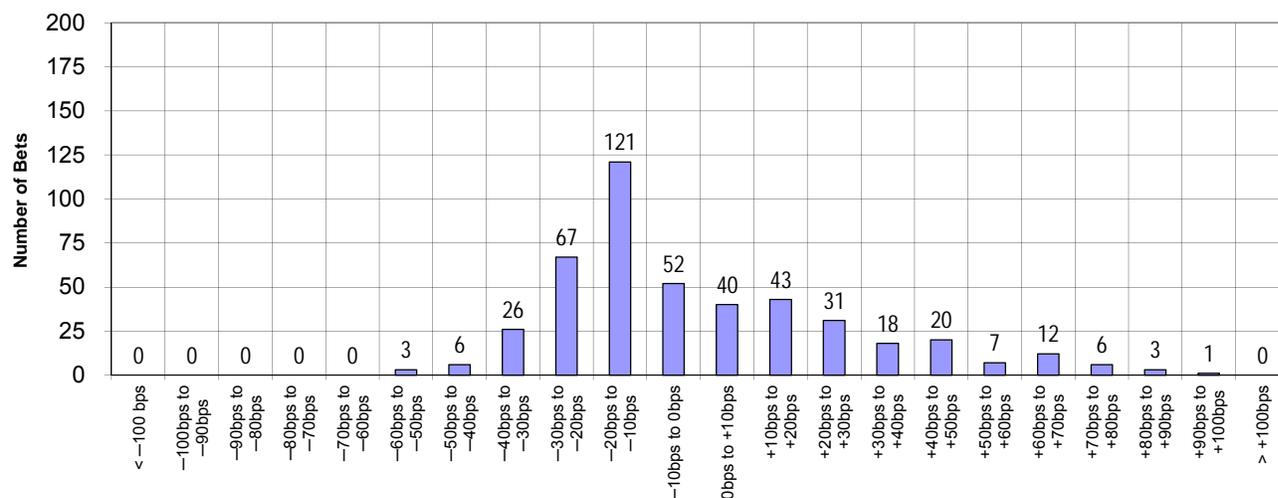
Stocks declined sharply during the quarter although large cap stocks performed relatively well while small and Mid Caps lagged badly. In general high quality, growthy and large market capitalization factors generally delivered less bad performance vs. value, small market cap and high risk names.

The Mid Cap Fund finished slightly ahead of the S & P Mid Cap 400 during the period as good stock selection in the Technology and Materials sectors could not offset difficulties in Energy and Health Care. Stock selection accounted for all of the excess return vs. the benchmark as industry sector diversification was neutral for 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
AFG	American Financial Group, Inc.	97
Y	Allegheny Corporation	86
FL	Foot Locker, Inc.	85
GPN	Global Payments Inc.	83
ALK	Alaska Air Group, Inc.	80
MSCI	MSCI Inc.	76
HBI	Hanesbrands Inc.	75
CRUS	Cirrus Logic, Inc.	74
AIZ	Assurant, Inc.	73
PII	Polaris Industries Inc.	72
TSS	Total System Services, Inc.	70
PNM	PNM Resources, Inc.	68
MD	MEDNAX, Inc.	68
WOOF	VCA Inc.	67
LDOS	Leidos Holdings, Inc.	66
EW	Edwards Lifesciences Corporation	66
MOH	Molina Healthcare, Inc.	65
HII	Huntington Ingalls Industries, Inc.	65
RJF	Raymond James Financial, Inc.	64
THG	Hanover Insurance Group, Inc.	64

Largest Underweights by Stock in Fund

Ticker	Description	Bps Under
LKQ	LKQ Corporation	-59
AYI	Acuity Brands, Inc.	-53
HCC	HCC Insurance Holdings, Inc.	-51
COO	Cooper Companies, Inc.	-50
FRT	Federal Realty Investment Trust	-43
MAN	ManpowerGroup Inc.	-43
DPZ	Dominos Pizza, Inc.	-41
ATO	Atmos Energy Corporation	-41
NVR	NVR, Inc.	-40
SKX	Skechers U.S.A., Inc. Class A	-39
RPM	RPM International Inc.	-38
SCI	Service Corporation International	-37
WR	Westar Energy, Inc.	-37
HAIN	Hain Celestial Group, Inc.	-36
CYT	Cytec Industries Inc.	-36
SIRO	Sirona Dental Systems, Inc.	-36
TFX	Teleflex Incorporated	-36
ULTI	Ultimate Software Group, Inc.	-35
TYL	Tyler Technologies, Inc.	-35
ANSS	ANSYS, Inc.	-34

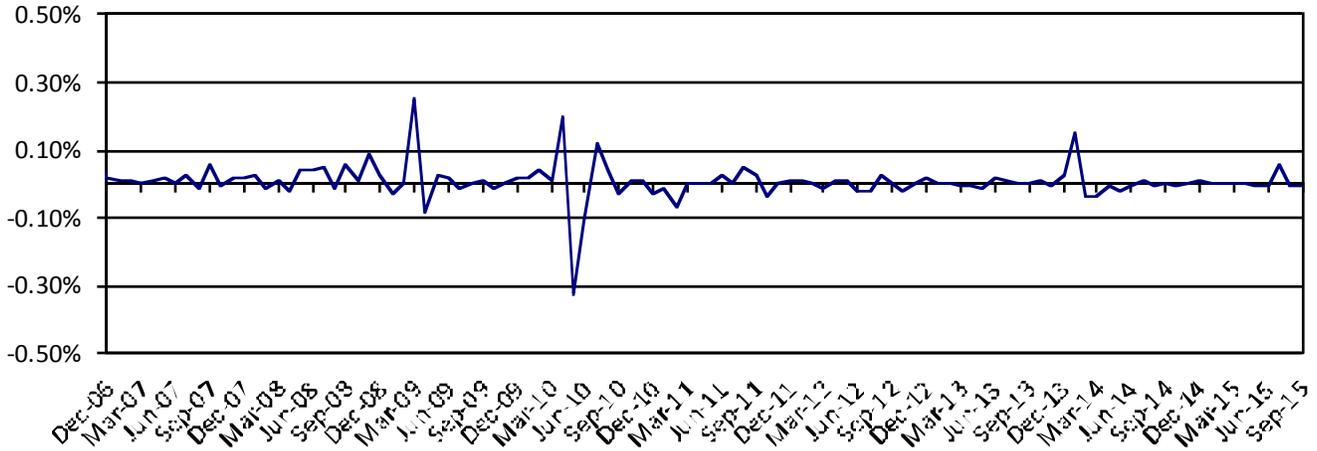
Passive Domestic Equity Funds

Michael Giggie & Chris Denny

Index Fund vs. S&P 500

Assets as of September 2015: \$2.7B

Monthly Excess Returns

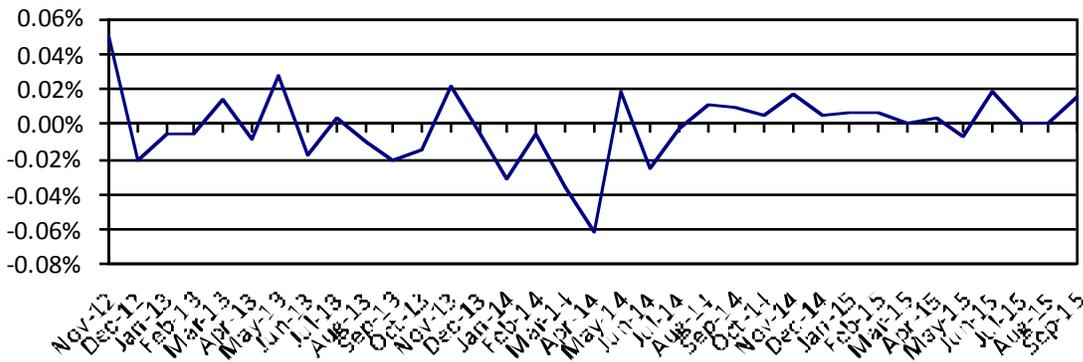


	1 Quarter	1 Year	3 Years	Since Inception
Index Fund	-6.4%	-0.5%	12.5%	6.5%
S&P 500	-6.4%	-0.6%	12.4%	6.4%
Excess Return	0.1%	0.1%	0.1%	0.1%
Tracking Error	0.13%	0.06%	0.10%	0.19%

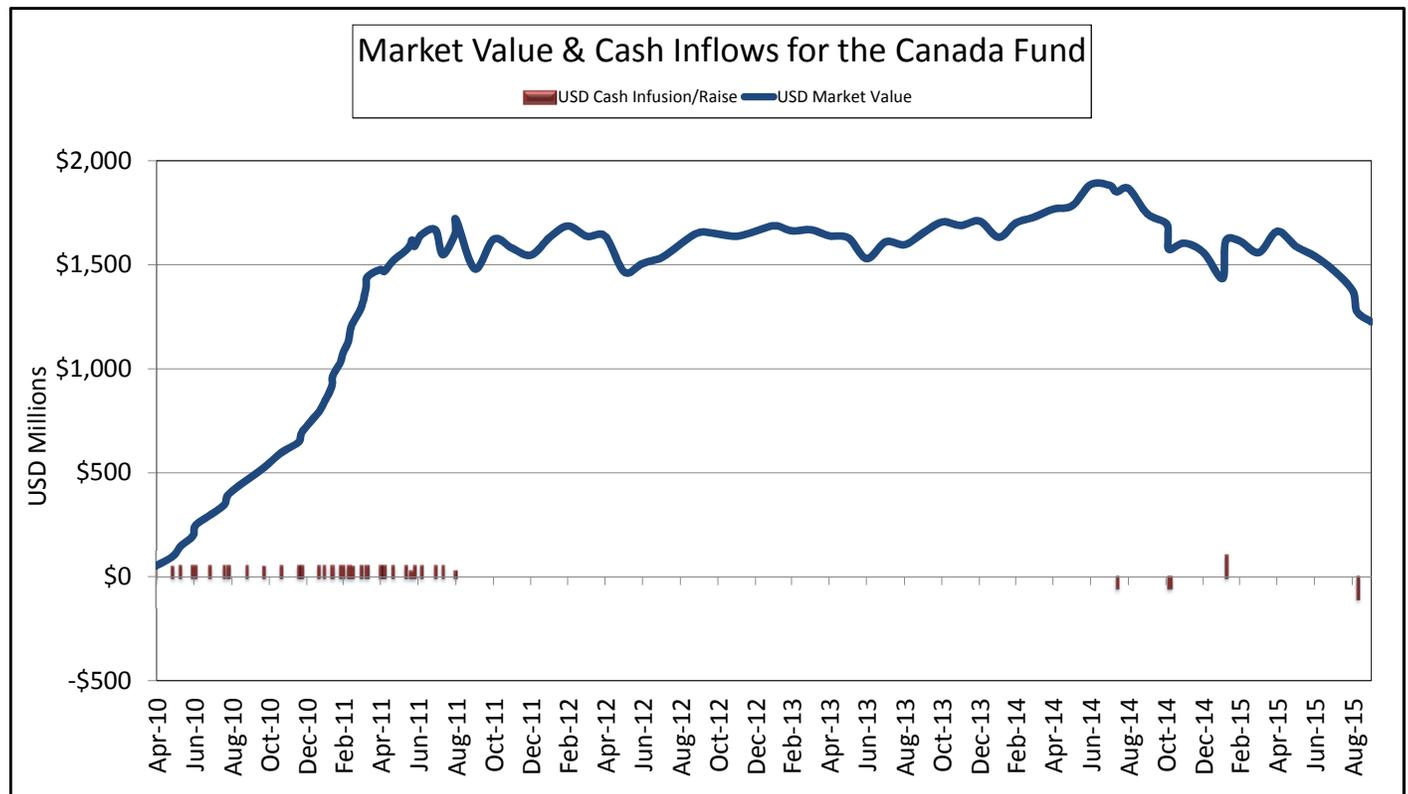
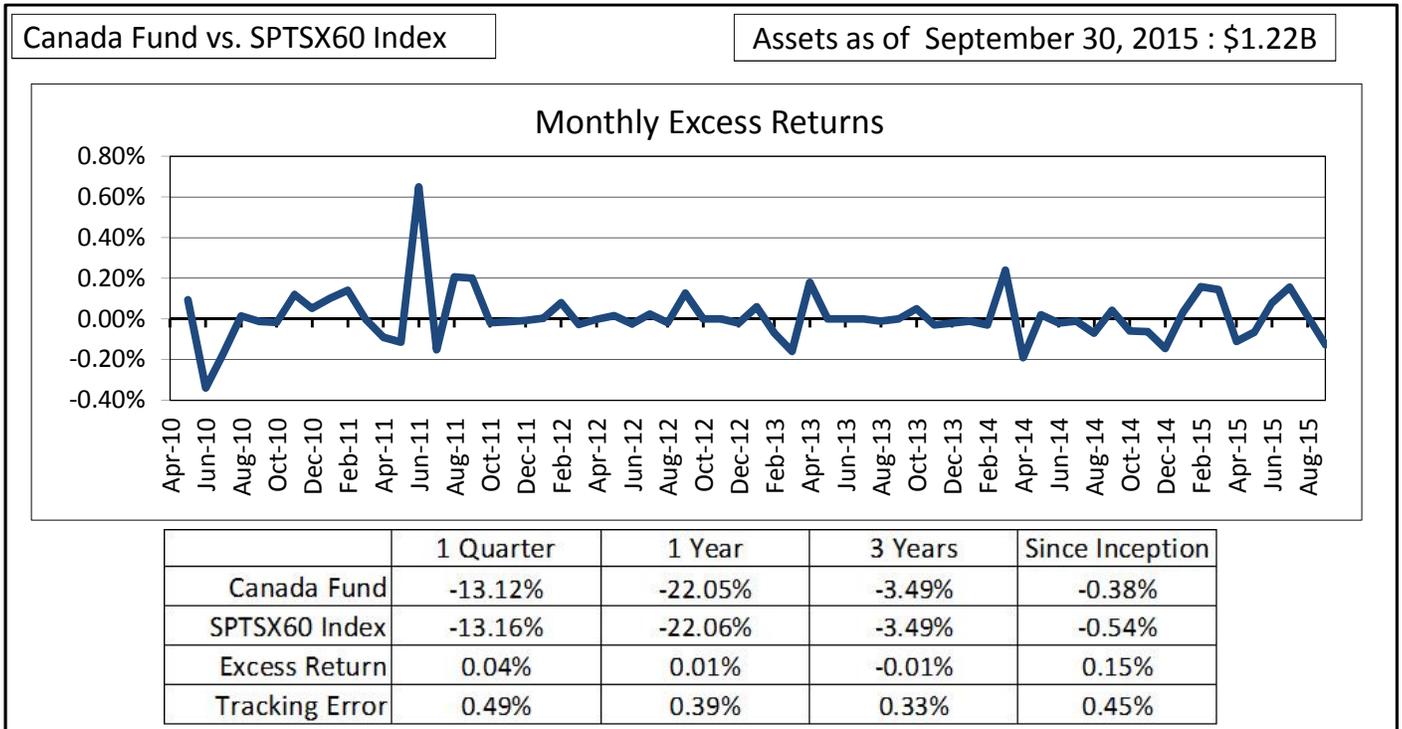
Small Cap Fund vs. S&P 600

Assets as of September 2015: \$510M

Monthly Excess Returns



	1 Quarter	1 Year	3 Years	Since Inception
Small Cap Fund	-9.25%	3.9%	N/A	14.44%
S&P 600	-9.27%	3.8%	N/A	13.02%
Excess Return	0.02%	0.1%	N/A	1.41%
Tracking Error	0.03%	0.03%	N/A	2.18%



Manager Performance Comparison - International Equity

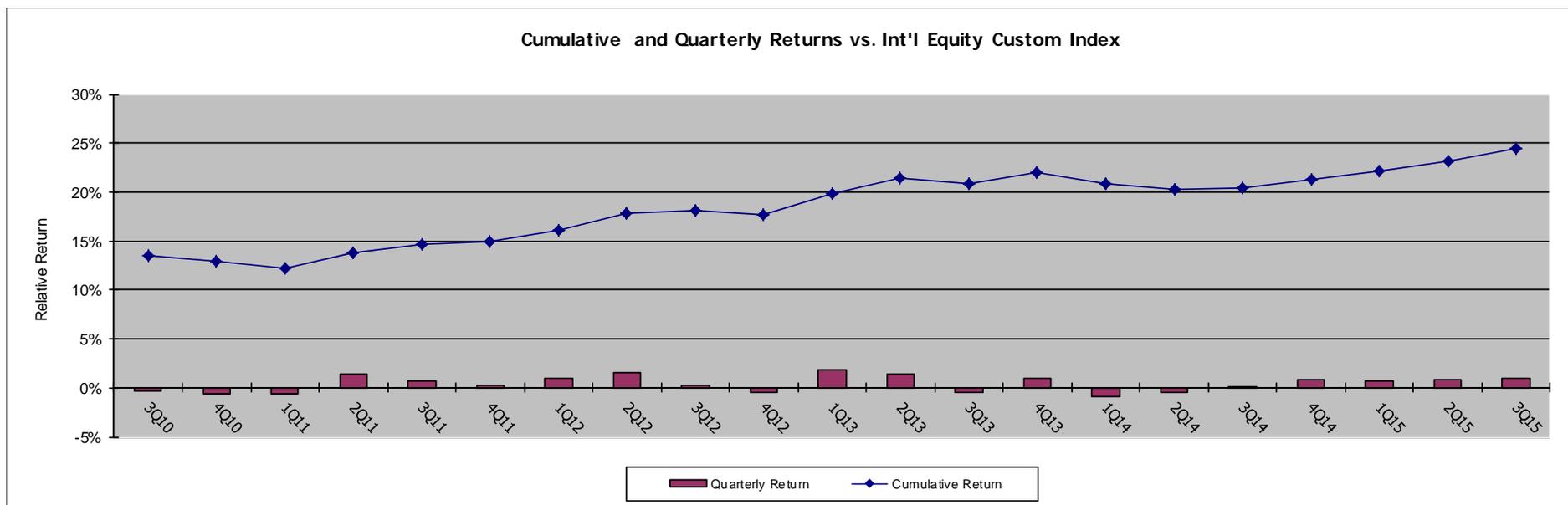
As of September 30, 2015

Manager Returns For The Quarter Ending September 30, 2015

Manager	Manager Return	Benchmark	Benchmark Return
American Century	-3.53	MSCI EAFE Small Cap	-6.83
Baring Asset Mgmt	-10.82	MSCI EAFE	-10.23
Emerging Market ETF	-15.96	MSCI Emg Mkts Net Custom	-16.66
FIAM	-6.63	MSCI EAFE Small Cap	-6.83
GE Asset Mgmt	-8.00	MSCI Europe	-8.69
Marathon	-7.69	MSCI EAFE net	-10.23
Pacific Indexed Portfolio ¹	-12.15	MSCI Pacific net	-13.21
PanAgora Asset Mgmt	-9.76	MSCI EAFE	-10.23
TT International	-10.09	MSCI EAFE	-10.23
Walter Scott	-9.33	MSCI EAFE net ²	-10.23
International Equity	-10.66	Int'l Equity Custom ³	-11.69

Manager Returns For Five Years Ending September 30, 2015

Manager	Manager Return	Benchmark	Benchmark Return
American Century	11.15	MSCI EAFE Small Cap	7.30
Baring Asset Mgmt	4.79	MSCI EAFE	3.98
Emerging Market ETF		MSCI Emg Mkts Net Custom	
FIAM	9.33	MSCI EAFE Small Cap	7.30
GE Asset Mgmt	5.00	MSCI Europe	4.28
Marathon	7.55	MSCI EAFE net	3.98
Pacific Indexed Portfolio ¹	3.63	MSCI Pacific net	3.49
PanAgora Asset Mgmt	6.79	MSCI EAFE	3.98
TT International	6.10	MSCI EAFE	3.98
Walter Scott	5.25	MSCI EAFE net ²	3.98
International Equity	4.58	Int'l Equity Custom ³	2.31



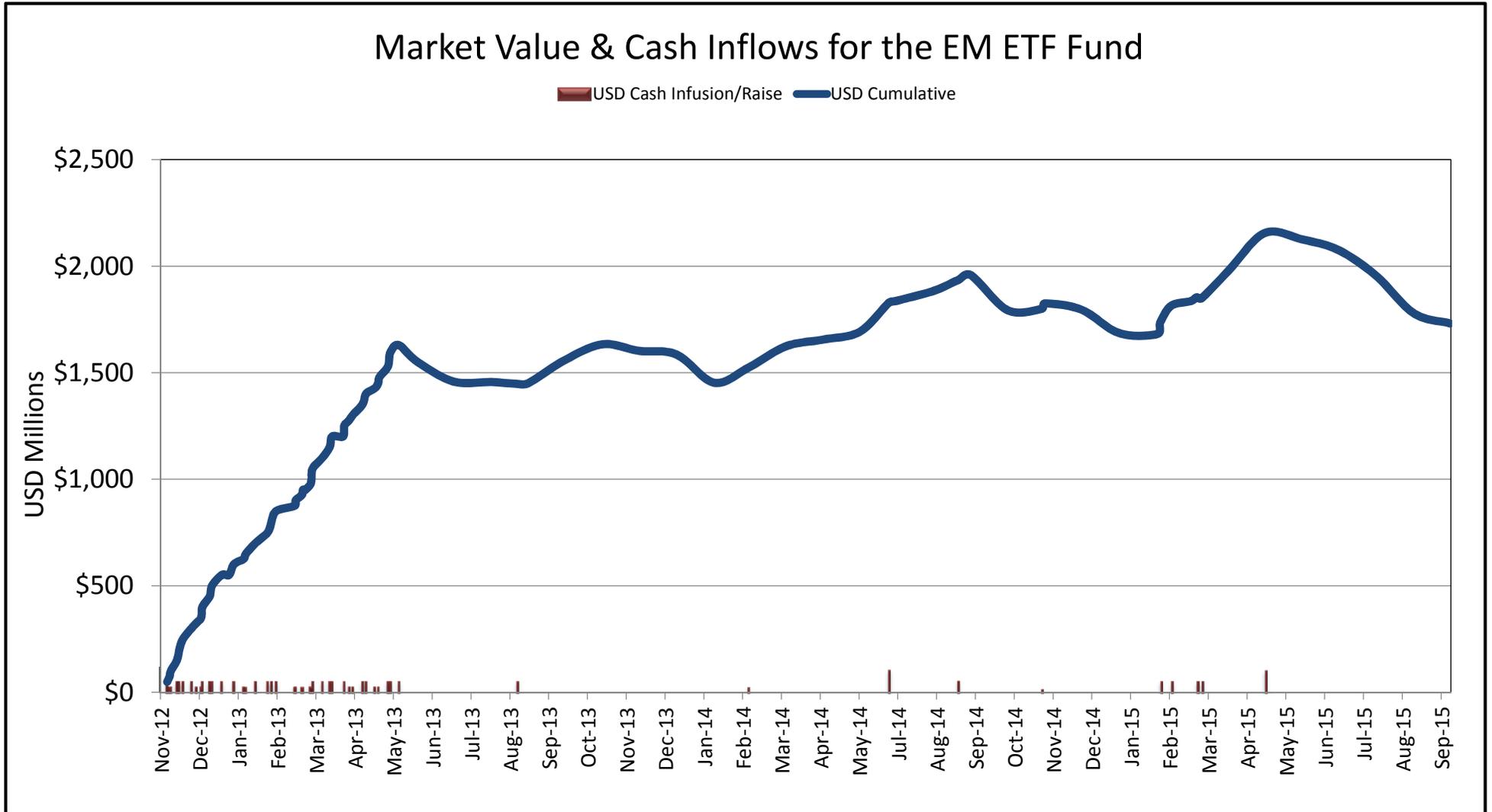
¹ Effective as of 9/4/10, internally managed by TCRS staff. Amundi Pacific terminated.

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.

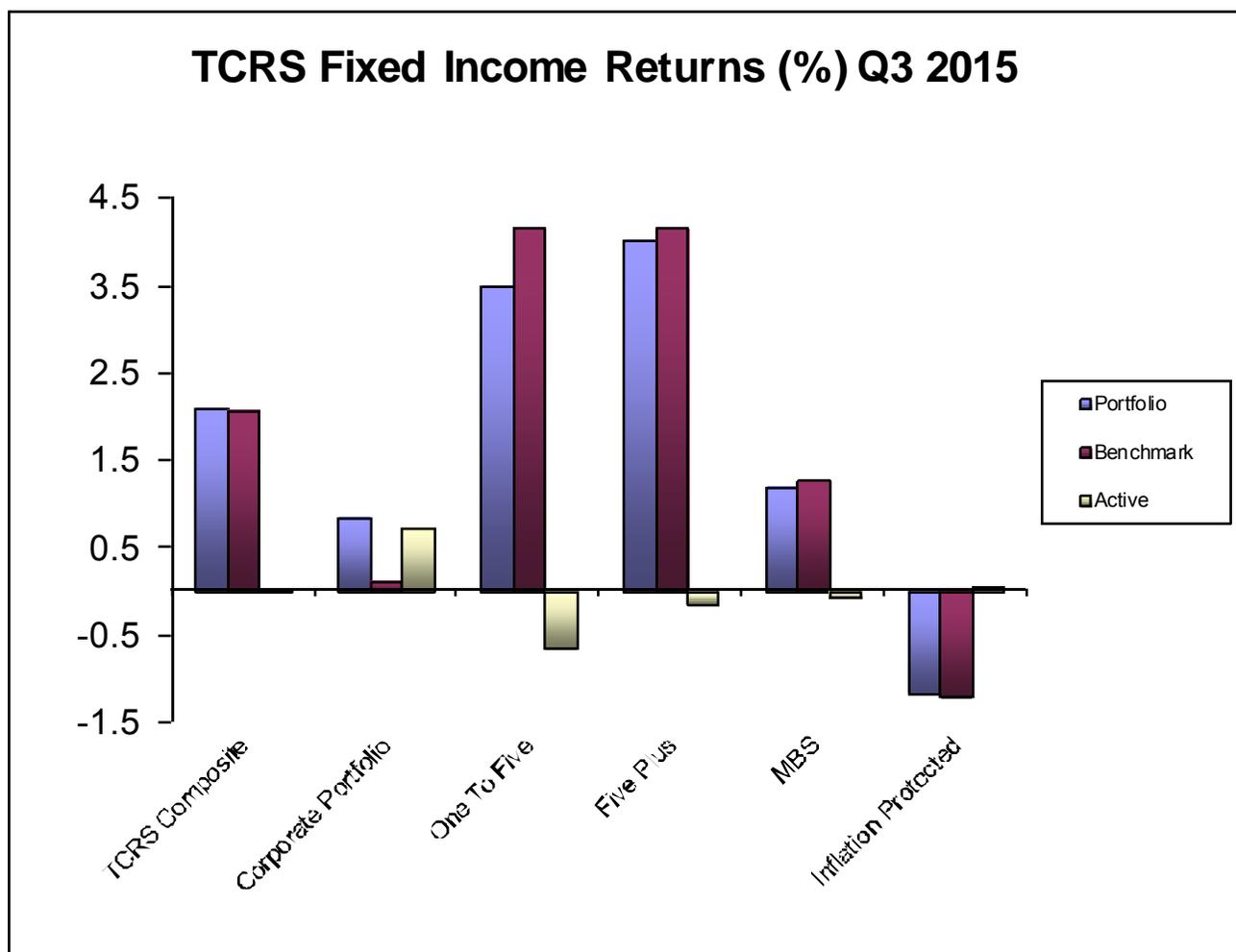
Emerging Markets ETF Fund
Kushal Gupta, CFA, CAIA

Assets as of September 30, 2015: \$1.73B

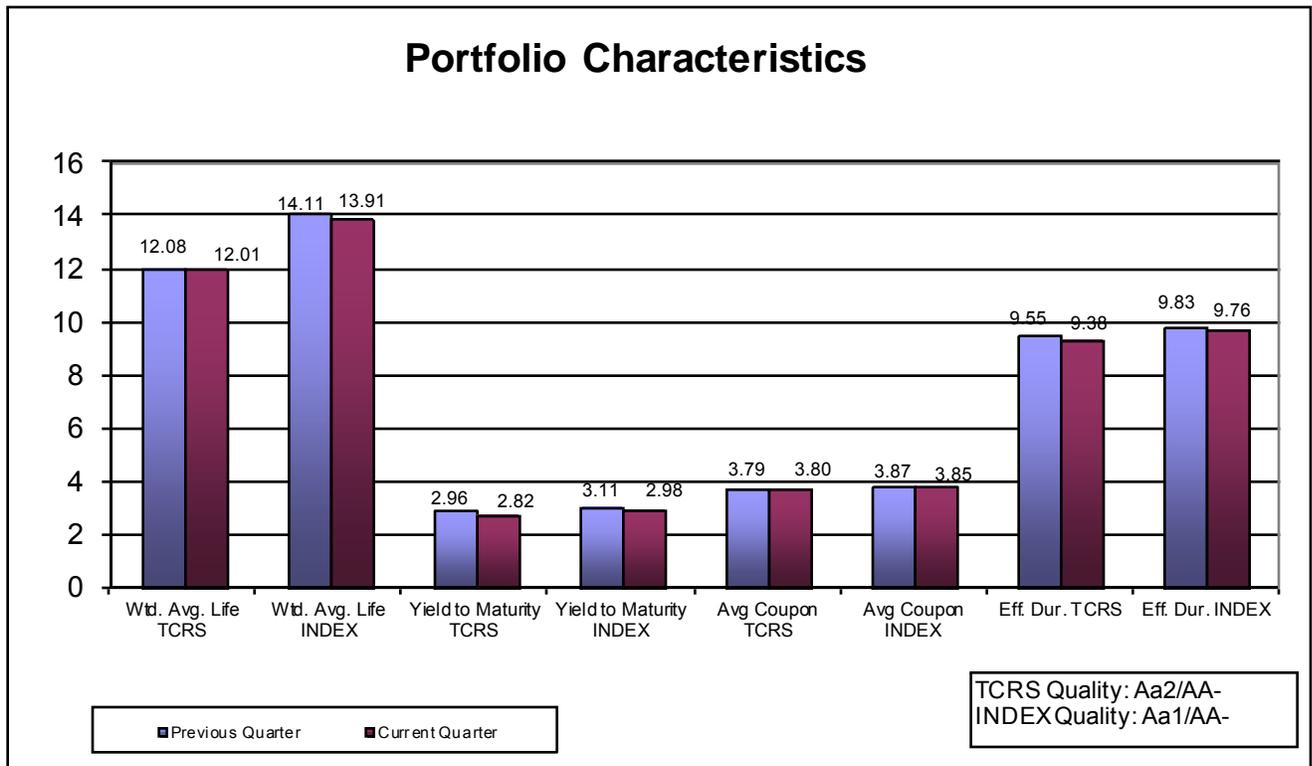


Thomas Kim, CFA

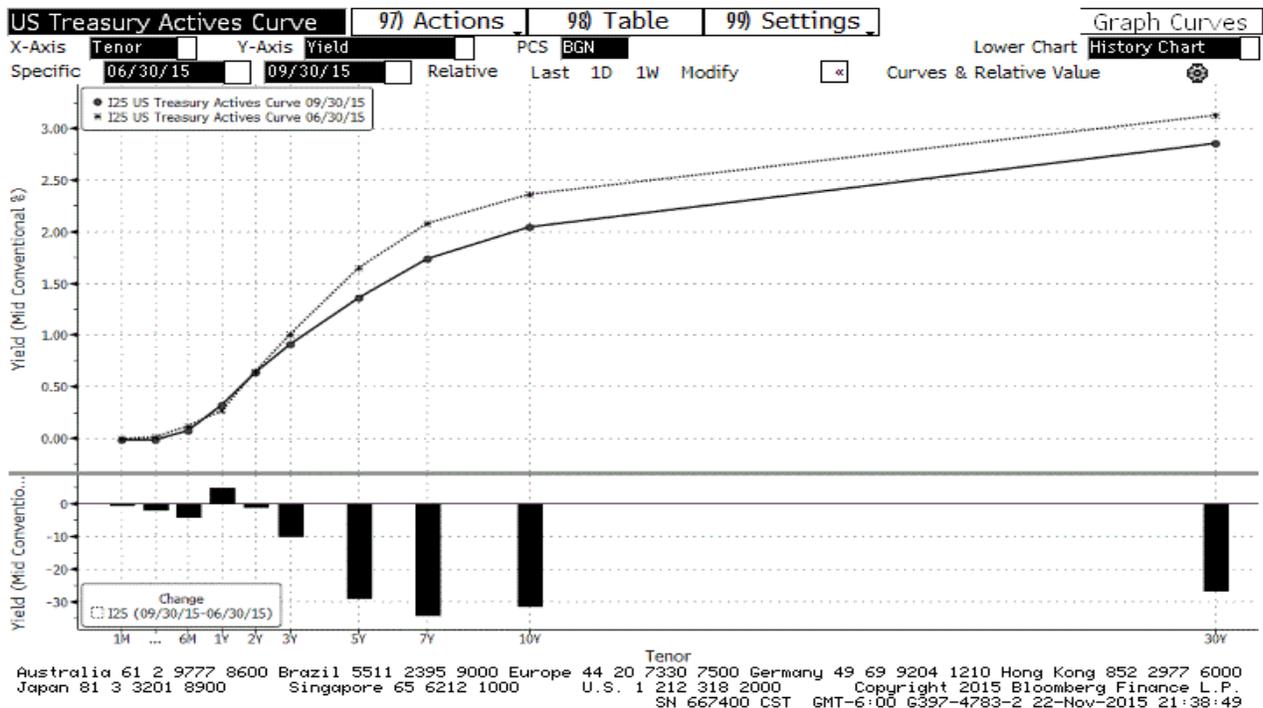
Portfolio	Value (Yield Book) (\$MMs)	Portfolio Return	Benchmark Return	Active Return
TCRS Domestic Fixed Income Composite	\$11,626	2.10	2.08	0.02
Corporate Portfolio	\$3,419	0.86	0.13	0.73
Government One To Five Years	\$2,147	3.51	4.16	(0.65)
Government Five Plus Years	\$2,127	4.03	4.16	(0.13)
Mortgage Portfolio	\$3,885	1.20	1.27	(0.07)
TCRS Inflation Protected Securities	\$2,413	(1.17)	(1.21)	0.04



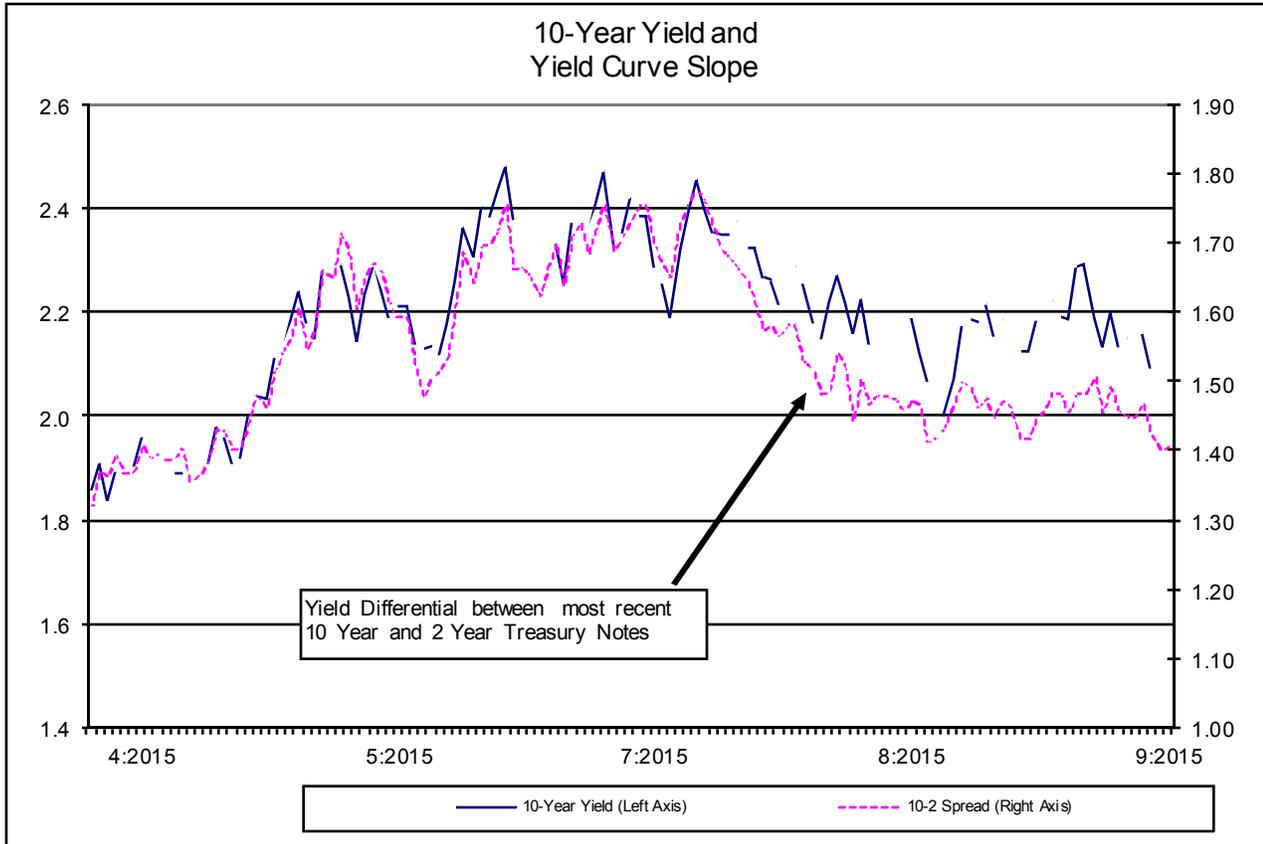
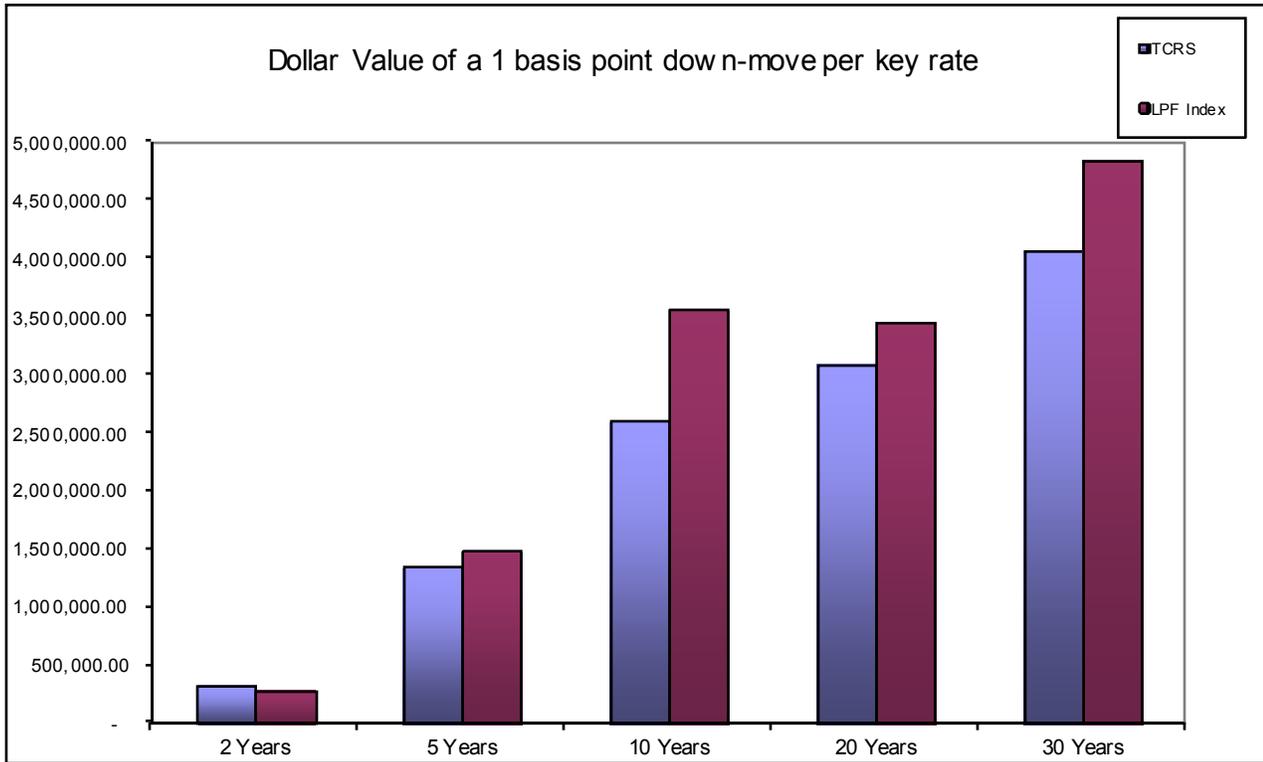
Despite the anticipation of a rate hike, we are close to the benchmark duration due to volatility in the market



The 2s-10s curve flattened by 30 bp



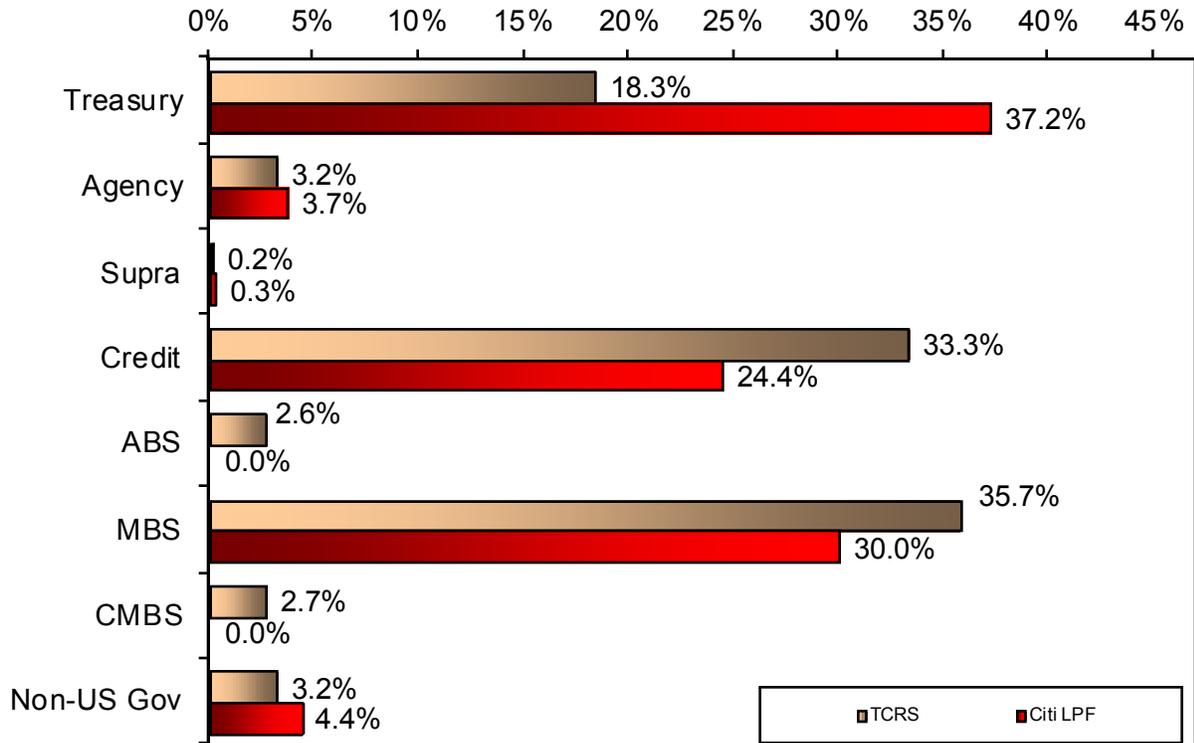
Curve positioning reflects our view that the Federal Reserve will begin to raise overnight interest rates in 2015



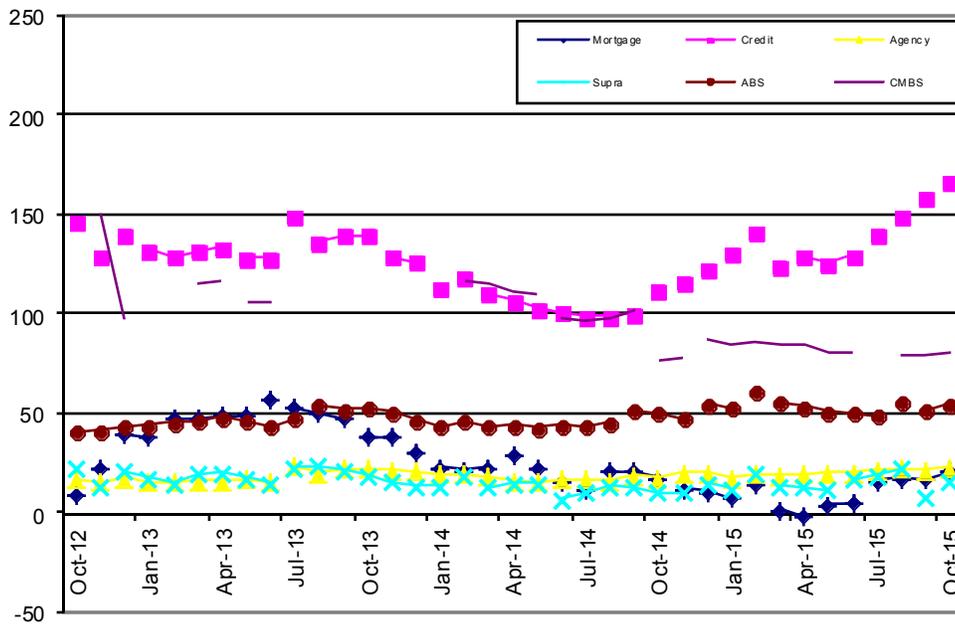
source: Bloomberg

Credit spreads generally widened during the quarter. We have been reducing credit risk exposure, and increasing Mortgage and high-quality fixed income products.

Sector Allocation v. Index
(% market value)



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

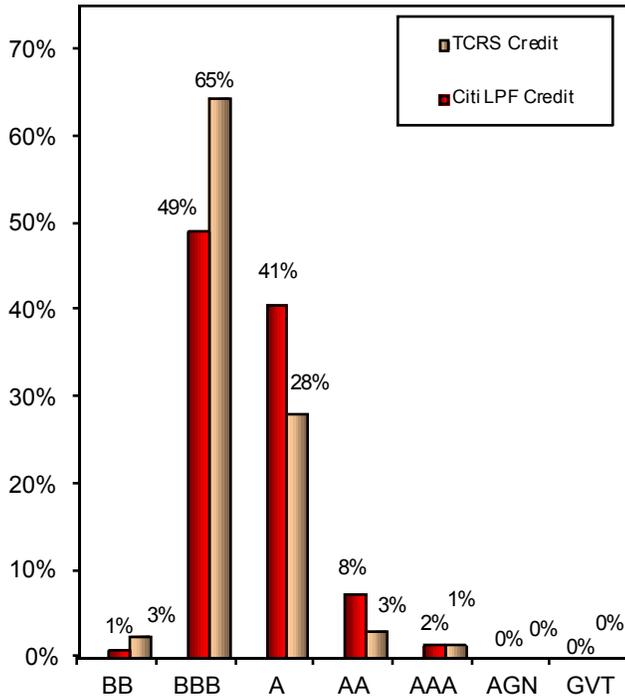


Credit Spreads widened during the quarter.

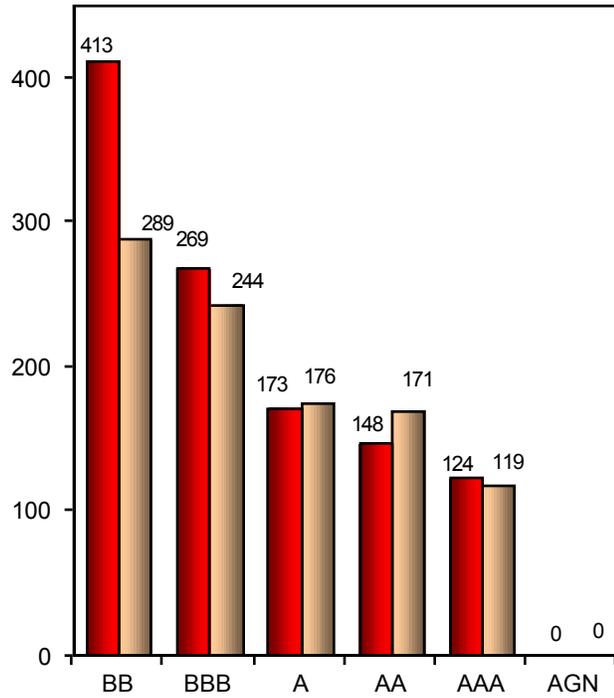
We continue to reduce BBB- credit and move up in credit quality.

However, spreads reflect a higher liquidity risk in higher quality issuers.

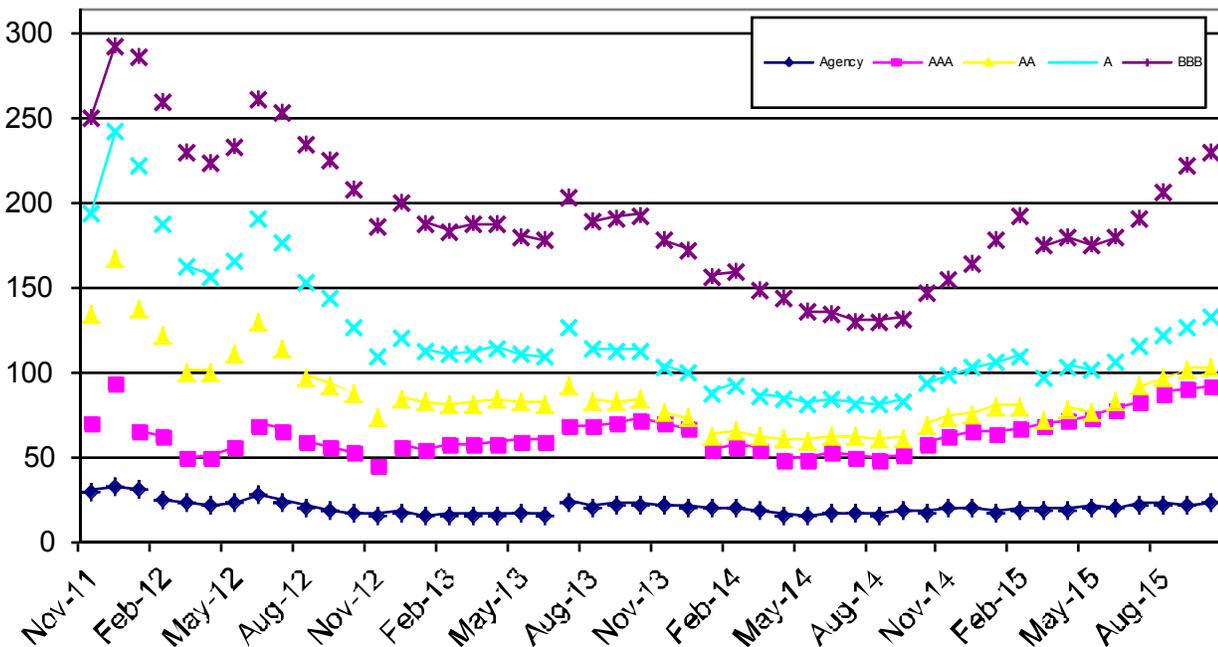
Credit Allocation v. Index
(% market value)



OAS by Credit Allocation



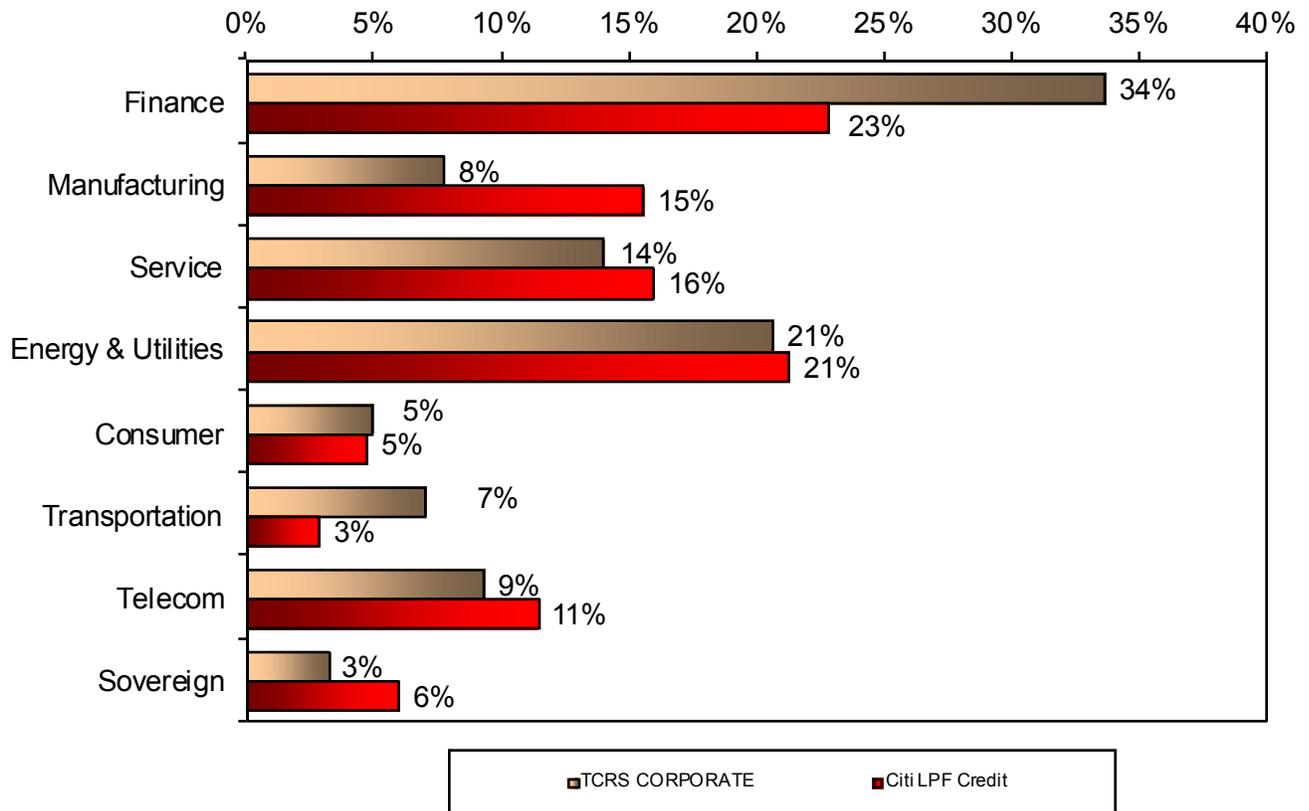
Spread to Treasury by Credit Rating
(in basis points, index data)



Top 5 Credit Holdings (by Market Value)	MktVal	% MktVal
NEW YORK CITY WATER & SEWER	35,918	1.0
METROPOLITAN GOVT NASHVILLE	35,565	1.0
ARMY HAWAII FAMILY HOUSING TRUST	31,684	0.9
CITIGROUP INC	29,788	0.9
J.P. MORGAN & CO INC	25,960	0.8

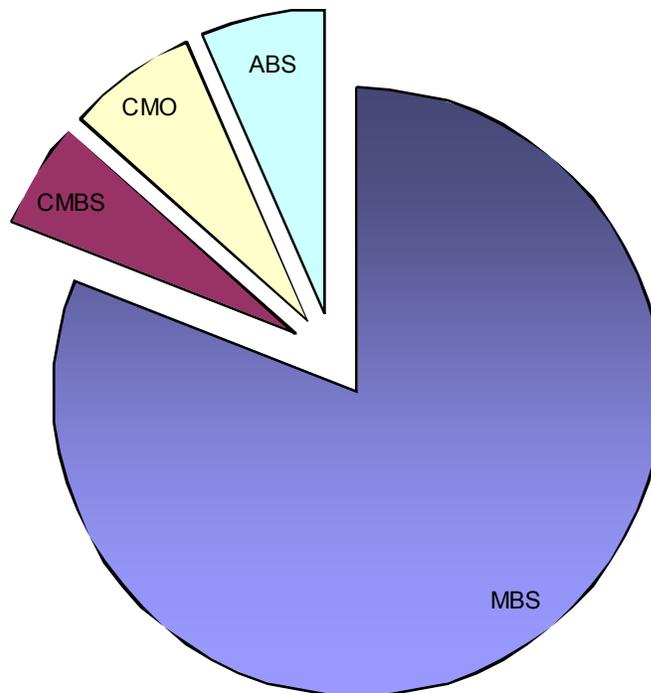
Top 5 Credit Holdings (by Dollar Duration)	DV01	% DV01
NEW YORK CITY WATER & SEWER	55,209	1.4%
METROPOLITAN GOVT NASHVILLE	43,210	1.1%
ARMY HAWAII FAMILY HOUSING TRUST	40,968	1.1%
J.P. MORGAN & CO INC	38,814	1.0%
AT&T INC	36,336	0.9%

Sector Allocation v. Index
(% market value)



	Market Value (\$MM - Yield Book)	TCRS % of portfolio	CITI	Difference
Agency Mortgage Backed Securities	\$3,839,728	33.0	29.9	3.1
GNMA				
15-Yr	\$18,575	0.2	0.1	0.1
30-Yr	\$1,054,532	9.1	8.3	0.8
FNMA				
10-, 15- & 20-Yr	\$343,317	3.0	2.6	0.3
30-Yr	\$1,235,323	10.6	11.5	-0.9
FHLM				
15-Yr	\$128,272	1.1	1.4	-0.3
30-Yr	\$983,908	8.5	6.0	2.5
Agency Hybrid	\$75,801	0.7	0.0	0.7
Commercial Mortgage Backed Securities	\$266,327	2.3	0.0	2.3
CMO and Non Agency Passthroughs	\$327,249	2.8	0.0	2.8
Asset Backed Securities	\$308,479	2.7	0.0	2.6
Total Securitized Product	\$4,741,783	40.7	29.9	10.8

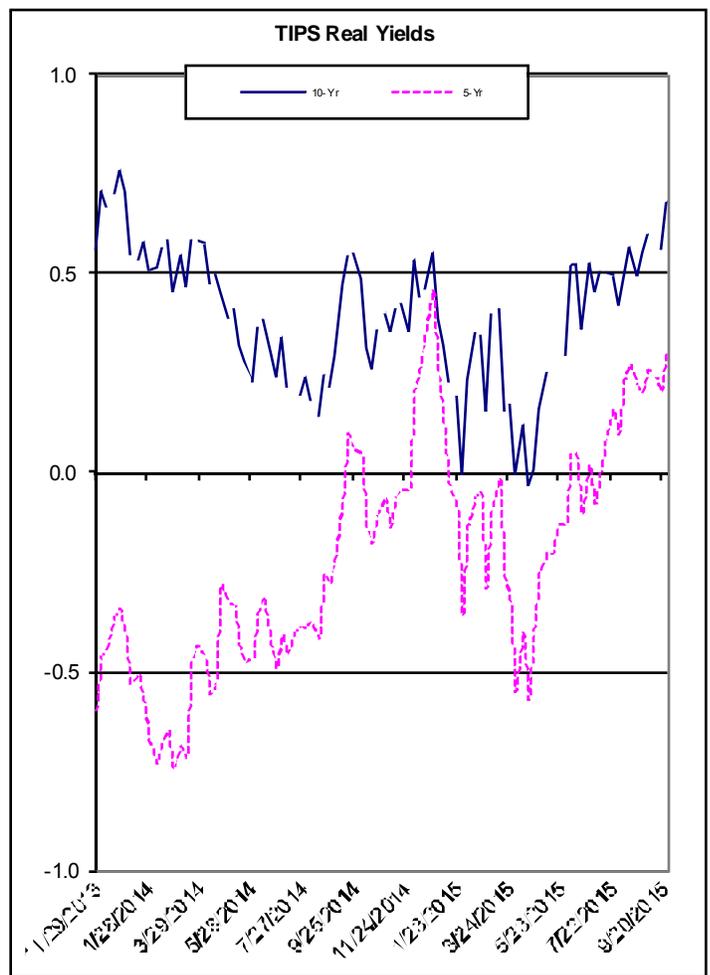
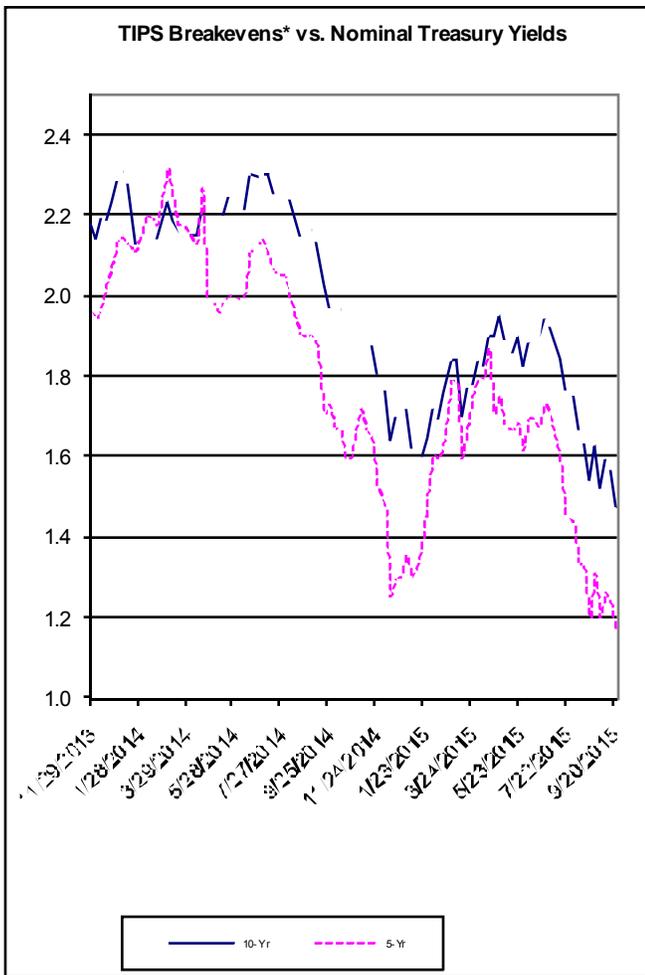
Percent of Securitized Product



Portfolio Value (Yield Book): \$2,413,337,320
 Portfolio Return: -1.17%
 Citigroup ILSI Index: -1.21%
Active Return: 0.04%

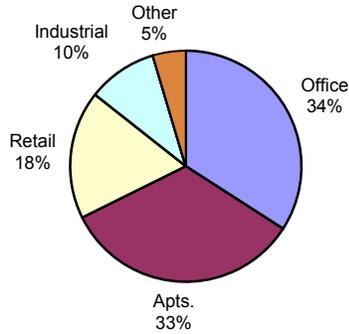
% Market Value by Duration

	TCRS	CITI	Difference
0-2	0.0%	0.0%	0.0%
2-4	1.5%	1.6%	-0.1%
4-6	3.3%	3.4%	-0.1%
6-8	5.2%	5.2%	0.0%
8-10	8.6%	8.0%	0.6%
10+	13.2%	15.4%	-2.2%

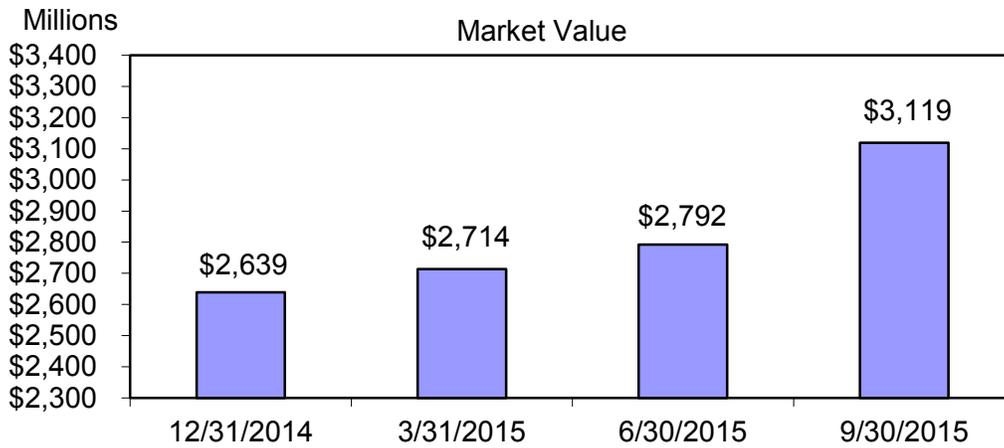
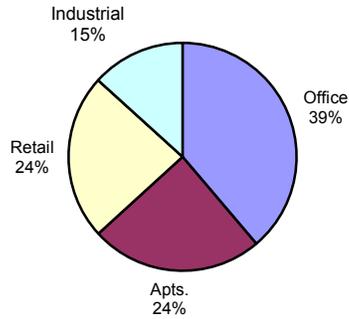


* The "breakeven" rate is the expected rate of inflation at which investment in TIPS yield the same return as investment in Treasuries

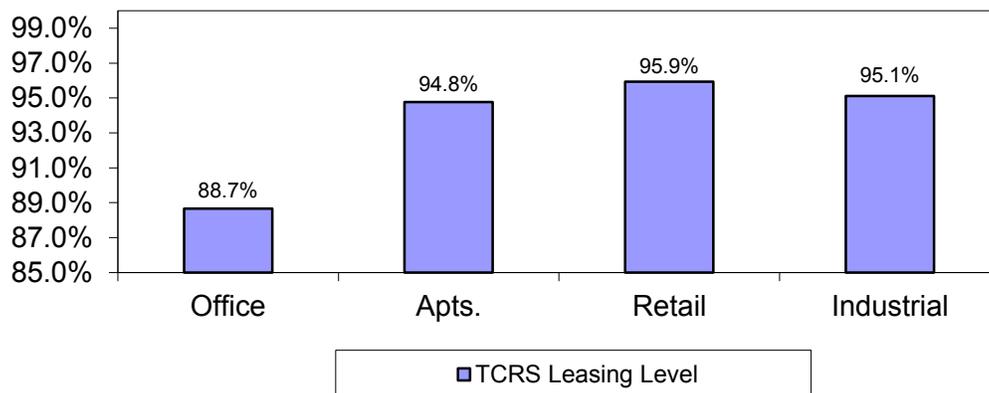
TCRS By Property Type



NPI By Property Type

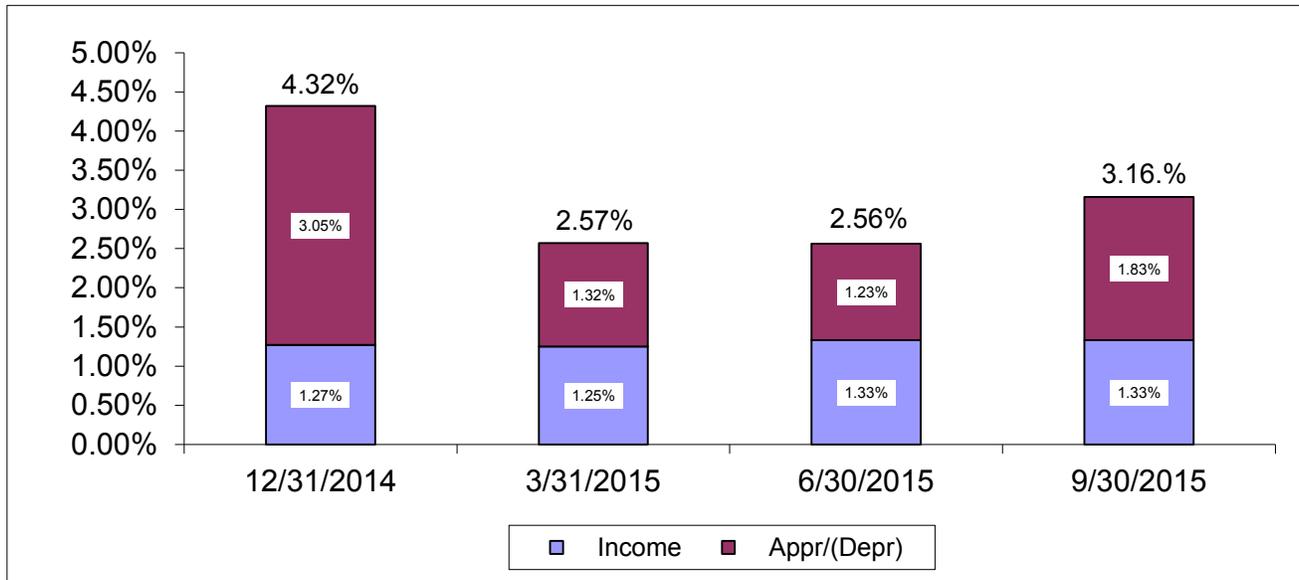


Occupancy



*Occupancy data does not include non-core investments.

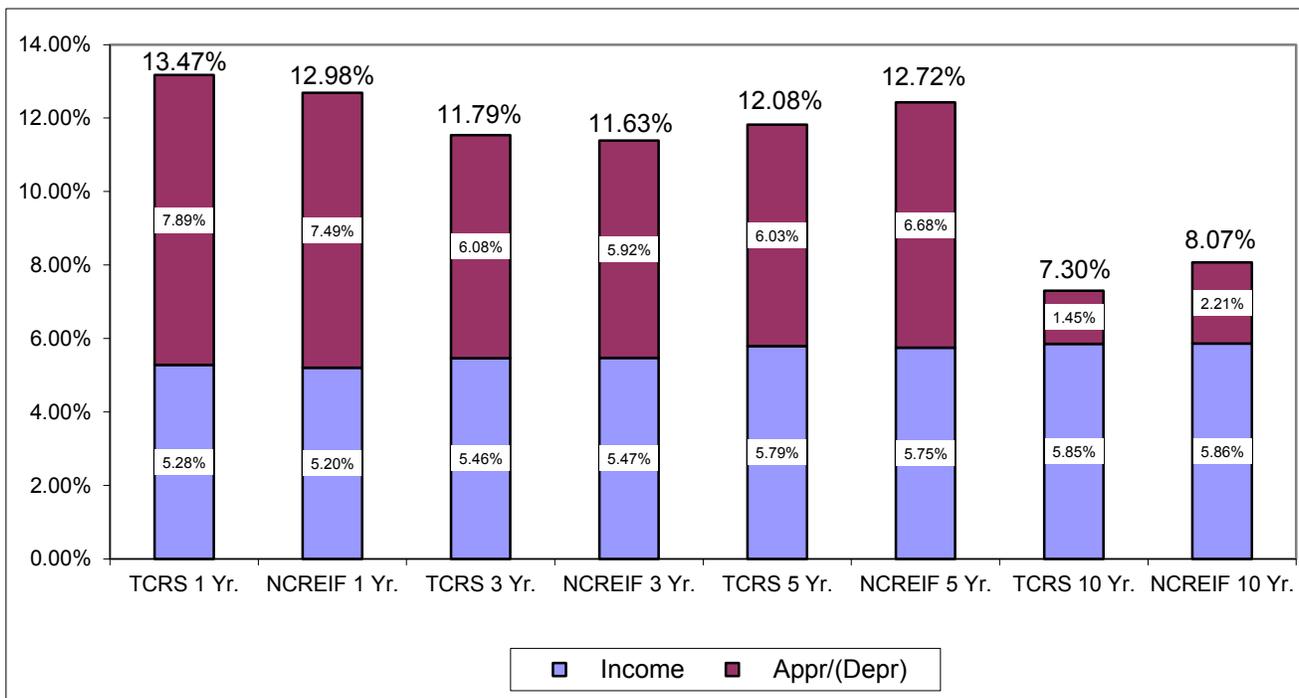
The NPI is the National Property Index of the National Council of Real Estate Investment Fiduciaries (the index used for US core properties).



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

We have finalized our fiscal 4Q2015 results (the period ending 6/30/15), and are pleased to report that the program continues to demonstrate positive momentum.

PORTFOLIO BENCHMARK

AS OF JUNE 30, 2015	1 YEAR	3 YEAR	5 YEAR	SINCE INCEPTION	TVPI
Portfolio	21.2%	20.7%	18.9%	18.9%	1.3x
S&P 500 (+ 300 bps) ¹	10.3%	18.1%	18.1%	17.9%	N.A.
Value Added	10.9%	2.5%	0.8%	1.1%	

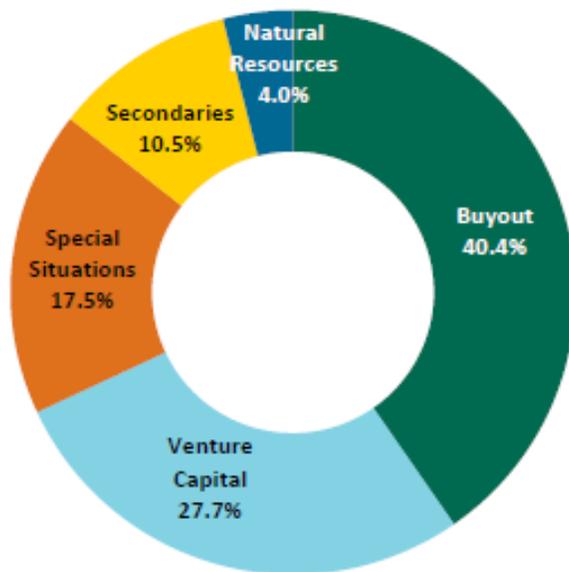
PEER BENCHMARK

AS OF JUNE 30, 2015	1 YEAR	3 YEAR	5 YEAR	SINCE INCEPTION	TVPI
Portfolio	21.2%	20.7%	18.9%	18.9%	1.3x
Cambridge Associates ²	10.4%	16.4%	15.3%	15.1%	1.3x
Value Added	10.8%	4.3%	3.7%	3.8%	0.0x

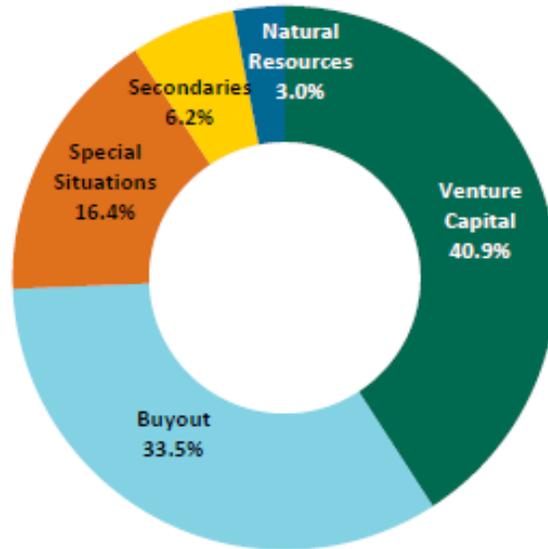
¹ Data is dollar-weighted Long-Nickels calculation of monthly changes in the S&P 500 total returns index plus 300 basis points.

² Cambridge Associates Pooled IRR: Inclusive of all Buyout, Distressed, Private Equity Energy, Secondary, Upstream Energy & Royalties, and Venture Capital private equity funds with geographies of Global, North America, or Europe as of June 30, 2015.

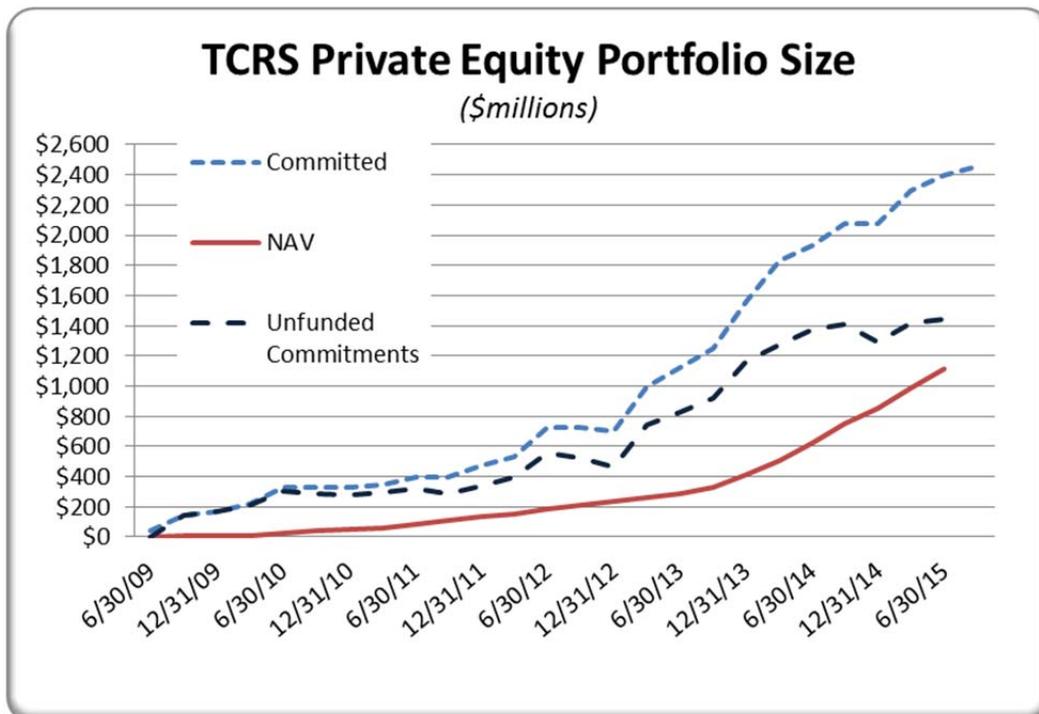
The following chart shows the total exposure to the sub-asset classes based on commitments through the end of June, 2015. By total exposure, the portfolio is very close to its neutral target weights for each segment of the portfolio.



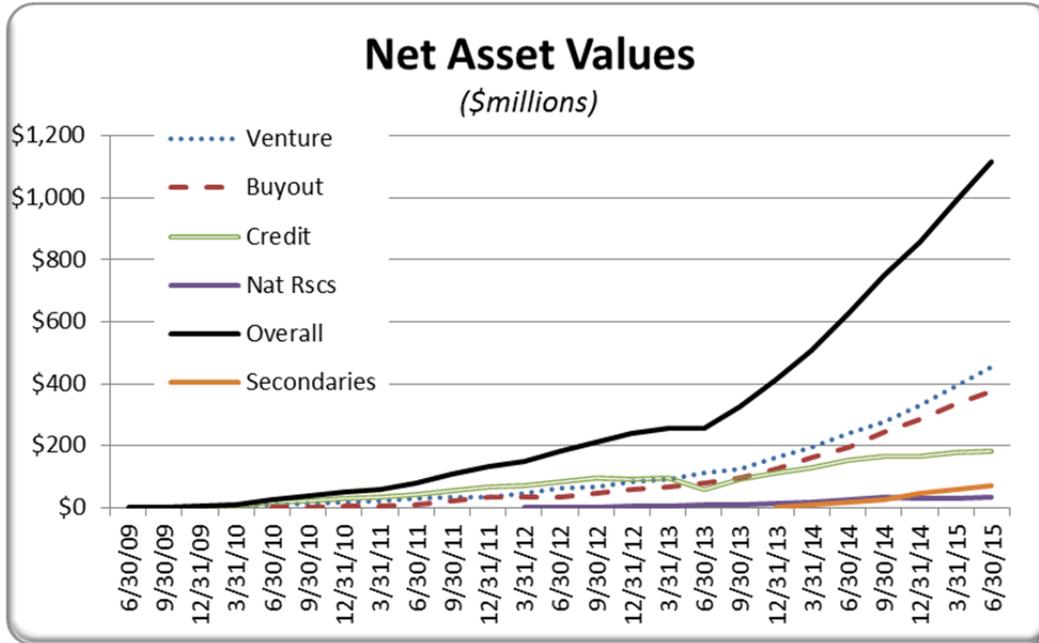
By Net Asset Value (NAV), a divergence is evident between Buyouts and Venture, indicating the timing differences of the program’s commitments in those categories. Venture is experiencing meaningful gains in recent funds but distributions remain low, while Buyout firms are net sellers and are generally slow in drawing capital committed to recent funds.



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.



Looking Forward

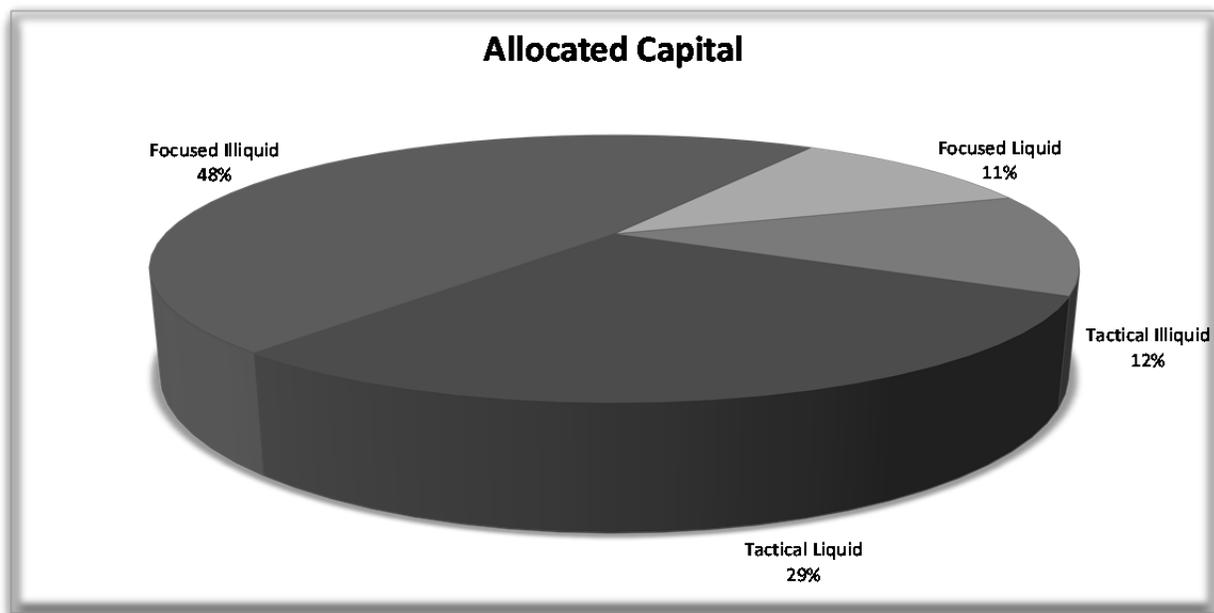
Staff continues to pursue two important existing projects: implementation of eFront, a Contact Resource Management (CRM) software program and managing the transition to the new private equity consultant, TorreyCove.

Our diligence pipeline is extremely full as many existing managers decided to raise successor funds all at the same time. As such, Staff will be spending substantial time and energy in the diligence process during calendar 1Q16.

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During calendar 2015, the Strategic Lending Portfolio has made investments focused on diversifying the portfolio from a concentration on below investment grade corporate credit. Staff developed tools and procedures that help indicate when market dislocations create attractive capital deployment opportunities. 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.

As of September, TCRS had committed over \$2.1 billion with over \$1.1 billion being invested in eight larger separate accounts and eight co-mingled funds. The eight separate accounts amount to \$1.6 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 first quarter of 2016, the liquid U.S. below-investment grade market deteriorated as the oil and commodity sell-off in June created renewed stress in the bonds of energy companies. The Barclays High Yield Bond Index returned -4.8% and the Credit Suisse Leveraged Loan Index returned -1.2%. The relative outperformance of loans was driven by the lower energy and commodity

exposure in the loan market. The Strategic Lending benchmark (50/50) underperformed the long TIPS Index by 190 basis points in the quarter.

During the fiscal first quarter, US credit markets showed significant stress with the new issue investment grade market being closed for 13 consecutive trading days prior to Labor Day. To put this in perspective, this pause in new issuance was longer than the pause following 9/11 and the Lehman event. Even relatively “high quality” high yield issuers faced significant spread widening when market activities resumed in September. While recent index yields are high relative to the last five years, there is a clear line between the stressed (energy) and strong borrowers. Plenty of capital has been raised to address the distressed energy problem, but many managers have slowed the pace of investments and companies are beginning to languish and approach bankruptcy. That being said, default rates do remain low, but the low quality portion of the liquid markets are no longer quickly bouncing back from sell-offs.

With respect to the private debt market, it does not appear that originators have begun adjusting to the wider spreads in the liquid market. At this point, the U.S. liquid markets may post a more attractive risk-adjusted return in calendar 2015.

Recent Developments

During the fiscal first quarter, staff began investing in a new separate account focused on high yield asset backed securities with an initial investment of \$100 million. At this time, staff continues to favor loans over bonds, senior over junior debt, and liquid over illiquid investments.

Future Activity

Recently, Staff has focused more on a consultant transition, new software program implementation, and renegotiating a separate account where the manager experienced a change in control. Additionally staff continues to focus on portfolio monitoring, process, procedures, internal investment capabilities, and other key program initiatives.

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TCRS Equity Derivative Report

Domestic Stock Index Futures Roy Wellington, CFA

No Activity

Domestic Fixed Income Derivatives Report

Thomas Kim, CFA

Domestic Fixed Income Derivatives Transaction Log

ACCT	SOLD	BOUGHT	NET	EXPIRATION	CONTRACT	TYPE	STRIKE
------	------	--------	-----	------------	----------	------	--------

Begin

1,568 CBOT 10 T-NOTE 15 Sep 0
0 CBOT 2YR TNOTE 15 Sep 0
-3,520 CBOT 5YR TNOTE 15 Sep 0
1,870 CBOT T-BONDS 15 Sep 0
5184 CBOT ULTRABOND 15 Sep 0

TRADE SUMMARY BY ACCOUNT

5+ Gov't (1381)

-	-	-		CBOT 10 T-NOTE	15	Dec	0
-	-	-		CBOT 10 T-NOTE	15	Sep	0
-	-	-		CBOT 2YR TNOTE	15	Dec	0
-	-	-		CBOT 2YR TNOTE	15	Sep	0
145	100	(45)		CBOT 5YR TNOTE	15	Dec	0
125	250	125		CBOT 5YR TNOTE	15	Sep	0
-	330	330		CBOT T-BONDS	15	Dec	0
330	-	(330)		CBOT T-BONDS	15	Sep	0
170	1,495	1,325		CBOT ULTRABOND	15	Dec	0
1,740	455	(1,285)		CBOT ULTRABOND	15	Sep	0

1-5 Gov't (1368)

-	1,918	1,918		CBOT 10 T-NOTE	15	Dec	0
1,918	500	(1,418)		CBOT 10 T-NOTE	15	Sep	0
800	-	(800)		CBOT 2YR TNOTE	15	Dec	0
800	800	-		CBOT 2YR TNOTE	15	Sep	0
1,895	-	(1,895)		CBOT 5YR TNOTE	15	Dec	0
-	3,395	3,395		CBOT 5YR TNOTE	15	Sep	0
-	1,175	1,175		CBOT T-BONDS	15	Dec	0
1,540	-	(1,540)		CBOT T-BONDS	15	Sep	0
-	2,949	2,949		CBOT ULTRABOND	15	Dec	0
3,099	-	(3,099)		CBOT ULTRABOND	15	Sep	0

Overlay (1371)

-	-	-		CBOT 10 T-NOTE	15	Dec	0
600	-	(600)		CBOT 10 T-NOTE	15	Sep	0
-	-	-		CBOT 2YR TNOTE	15	Dec	0
-	-	-		CBOT 2YR TNOTE	15	Sep	0
-	-	-		CBOT 5YR TNOTE	15	Dec	0
-	-	-		CBOT 5YR TNOTE	15	Sep	0
-	375	375		CBOT T-BONDS	15	Dec	0
375	375	-		CBOT T-BONDS	15	Sep	0
-	900	900		CBOT ULTRABOND	15	Dec	0
800	-	(800)		CBOT ULTRABOND	15	Sep	0

Corporate (1365)

-	1,320	1,320		CBOT 10 T-NOTE	15	Dec	0
320	770	450		CBOT 10 T-NOTE	15	Sep	0
-	-	-		CBOT 2YR TNOTE	15	Dec	0
-	-	-		CBOT 2YR TNOTE	15	Sep	0
-	-	-		CBOT 5YR TNOTE	15	Dec	0
-	-	-		CBOT 5YR TNOTE	15	Sep	0
-	-	-		CBOT T-BONDS	15	Dec	0
-	-	-		CBOT T-BONDS	15	Sep	0
-	100	100		CBOT ULTRABOND	15	Dec	0
-	-	-		CBOT ULTRABOND	15	Sep	0

Domestic Fixed Income Derivatives Report

Thomas Kim, CFA

Domestic Fixed Income Derivatives Transaction Log

End

3,238	CBOT 10 T-NOTE 15 Dec 0
-800	CBOT 2YR TNOTE 15 Dec 0
-1,940	CBOT 5YR TNOTE 15 Dec 0
1,880	CBOT T-BONDS 15 Dec 0
5,274	CBOT ULTRABOND 15 Dec 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

2016 1st Quarter Activity

NO ACTIVITY

Trading – TCRS’s Equity Trading Group transacted approximately 131 million shares and \$7.0 billion of notional value between July 1, 2015 – September 30, 2015. When compared with the previous 3 month period (Apr 2015 – Jun 2015), these numbers illustrate an 11% decrease in share volume quarter over quarter (131 million shares vs 147 million shares).

The broker trading partner count for the quarter remained constant at 27 counterparties, and staff continues to evaluate broker performance on a daily basis. In addition, Abel Noser’s Transaction Cost Analysis group helps to verify the trading desk’s analysis with hard data on broker performance.

Total commission dollars spent during this time period were approximately \$1.87 million. This represents a 15% decrease in commissions from the prior three month period (\$1.87 million vs \$2.2 million). Total commission dollars spent dropped at a more accelerated rate than shares traded. The strategic shift in Q3 towards lower cost broker service providers is the key reason for the decrease on the commission side. According to third party transaction cost analysis data (Abel Noser), this shift not only reduced total commission costs but also improved overall performance on the trading side vs benchmarks. This strategy will continue during the upcoming quarter with the goal of continued outperformance.

Operations – Operations continues to support the Treasury Managed Fund and the additional responsibilities associated with the program, such as the reconciliation process that is so critical to the accuracy of the daily operation. The goal of “no failed trades” continues to drive the priorities of this group. With the addition of several new accounts for TCRS and other Treasury initiatives, the staff deserves commendation for their dedication to ensuring that trades settle accurately and timely.

Securities Lending – The TCRS securities lending program has been using Deutsche Bank as its securities lending agent since January 30, 2014 (21 months). As of September 30, 2015, TCRS earnings since inception totaled \$41.8 million (\$7.5 million of that was earned third quarter 2015). All cash collateral continues to be invested in indemnified repurchase agreements.

The average on loan balance since inception was \$4.9 billion with a spread of 57 bps. The average on loan balance for Q3 2015 was \$6.8 billion with spread of 48 bps. The largest earnings contributor since inception was Domestic Equities making up 42% of the total (42% as well for Q3 2015) followed by Emerging Market Equities 29% (32% Q3 2015), Fixed Income 20% (22% Q3 2015), and International Equities 9% (4% Q3 2015).

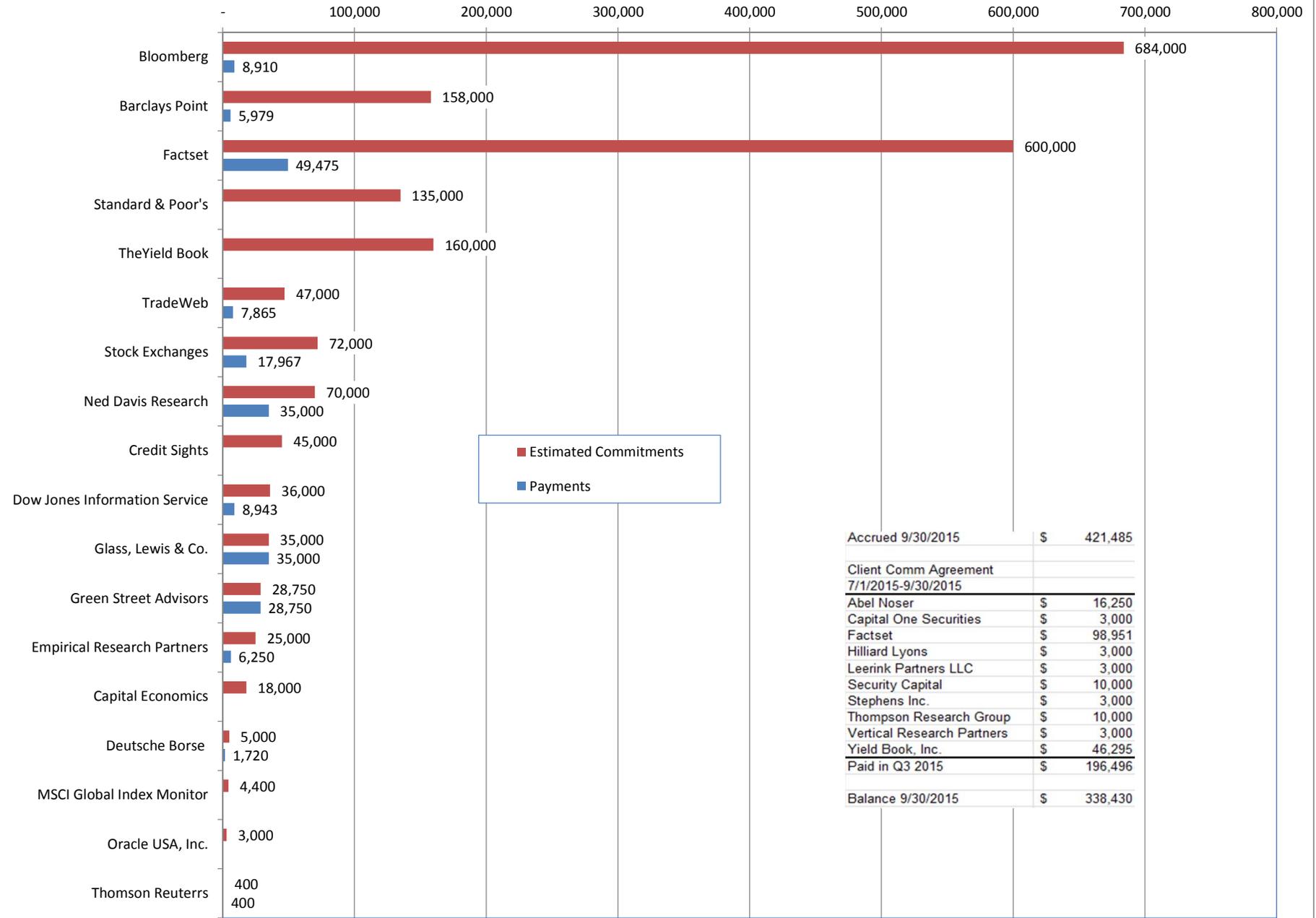
Tim McClure, CTP

With regards to balances in the 3rd Quarter 2015, the top 5 borrowing counterparties were JP Morgan (representing 17% of the total on loan balance), BNP Paribas (16%), Merrill Lynch (15%), Morgan Stanley (9%), and Goldman Sachs (9%).

The majority (3 out of the 5) of TCRS' top 5 earners for the period of January 30, 2014 to September 30, 2015 occurred within the ETF space. The overall leader for the 21 month period was iShares MSCI Brazil (EWZ) (6.3% or \$2.14 million). This was closely followed by Armbarella (5.5% or \$2.3 million) and GoPRO (4.9% or \$2.1 million). The other two places were held by the following: iShares MSCI Taiwan (EWT) (4.1% or \$1.7 million), and iShares MSCI Indonesia (EIDO) (3.3% or \$1.4 million). These 5 securities accounted for 25% or \$10.2 million of the TCRS earnings since inception.

	Jan 1, 2014 - Sept 30, 2015	Apr 1, 2015 - June 30, 2015	July 1, 2015 - Sept 30, 2015
TCRS Earnings \$	41.8M	7.4M	7.5M
Lending	21.7M	3.3M	2.8M
Reinvest	20.1M	4.1M	4.7M
Avg On Loan	4.9B	5.9B	6.8B
Spread	57 BPS	56 BPS	48 BPS
Domestic Equities	42%	34%	42%
Emerging Market Equities	29%	27%	32%
Fixed Income	20%	24%	22%
International Equities	9%	15%	4%

Commissioned Dollar Report



Accrued 9/30/2015	\$ 421,485
Client Comm Agreement 7/1/2015-9/30/2015	
Abel Noser	\$ 16,250
Capital One Securities	\$ 3,000
Factset	\$ 98,951
Hilliard Lyons	\$ 3,000
Leerink Partners LLC	\$ 3,000
Security Capital	\$ 10,000
Stephens Inc.	\$ 3,000
Thompson Research Group	\$ 10,000
Vertical Research Partners	\$ 3,000
Yield Book, Inc.	\$ 46,295
Paid in Q3 2015	\$ 196,496
Balance 9/30/2015	\$ 338,430