FUNDAMENTALS

research affiliates | July 2013

John West, CFA

“The investment business is one of the few businesses in which deep discounts drive away customers.”

Attention 3-D Shoppers

Most Americans are familiar with “Black Friday,” the day after Thanksgiving that marks the beginning of the Christmas shopping season. Hoping to get a jump on holiday sales, many retailers drastically slash prices and offer extended hours, with stores opening in the wee hours of the morning. The opportunity for deep discounts, often for a variety of the most popular wares and sought-after gifts (not the typical clearance of last season’s leftovers), creates massive interest with bargain conscious shoppers lining up around the block. By the time doors open, shoppers overwhelm the store, its employees, and often each other. The first day of the shopping season sadly brings out little spirit of sharing. Pushing, shoving, fighting, and trampling are commonplace. Such is the effect of dramatically lower prices; they create an almost frenzy-like rush to buy.

The capital markets are very different from Best Buy. The investment business is one of the few businesses in which deep discounts drive away customers. Falling prices are met with a mass appetite to return, not buy, merchandise and get the heck out of the store. Such is the effect of dramatically lower prices in investments; they create an almost frenzy-like rush to *sell*. Some of the biggest “sales” in the investment world have occurred on another black day of the week, Black Monday, most famously in October 1929 and October 1987, with some admittedly smaller examples recently (such as August 8, 2011, after the U.S. debt downgrade). While certainly no Black Monday, the second quarter of 2013 was filled with relatively sharp drawdowns for just about every asset class outside of U.S. equities. In this issue, we’ll explore recent events across the asset allocation spectrum.

Recent “Pillar” Performance

Most long-time readers of this publication know Research Affiliates’ views on projected long-term inflation, economic growth, and capital market returns. The CliffsNotes version is that over the next couple of decades the “3-Ds”—deficits, debt, and demographics—will produce a very different backdrop than the one to which most of us are accustomed. The developed world will have to monetize its burgeoning and eventually unsustainable debt burden via reflation and financial repression. Further, economic growth is likely to disappoint because of demographics alone. Baby boomers, already at peak productivity, will begin to leave the workforce without a large roster of young adults—those ready to make rapid incremental productivity gains—available to replace them. Sadly, the two main pillars of portfolio construction over the past 30 years—mainstream stocks and mainstream bonds—now offer very little in the way of yield (and therefore future returns) to compensate for these risks.

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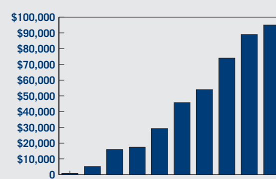
RAFI® Managed Assets*



**Includes RAFI® assets managed or sub-advised by Research Affiliates or RAFI licensees.*

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For these reasons, we have suggested investors build a sizable "Third Pillar" of assets that diversify equity risk and can perform better in a reflationary regime. The size and scope of this Third Pillar hinges on multiple issues. How willing are investors to shift from traditional portfolio approaches (and incur the inevitable maverick risk that comes with such a decision)? How much do they believe in the thesis of lower economic growth and higher inflation over the long-term that we and others assert?[1] The ultimate scope of such a Third Pillar is open for debate, but it's fairly obvious most investors are woefully short on inflation protection and equity diversification. Look no further than the 401(k) marketplace. The second largest provider of target date funds, Vanguard, has its 2020 target maturity fund invest exactly 0% in Third Pillar assets and contains over 90% of its risk budget in stocks!

Since about 2010, we've been urging investors to remain alert to buying opportunities for building a more robust Third Pillar. When will this opportunity arise? These alternative markets become cheap when investors are more concerned about deflation than inflation (deleveraging and demographics are often used to argue that deflation is the main risk). Building an inflation hedge is far less expensive when people are not concerned about the risk of inflation than when inflation is already self-evident. These markets become cheap when there's a "flight to safety," out of the unfamiliar "Third Pillar" assets and into the familiar first and second pillars. What a wonderful opportunity!!

Table 1 outlines a sampling of asset classes with Third Pillar strategies highlighted in blue and an equally weighted blend labeled "Third Pillar" near the top of the table. Note how these categories provide some diversification benefits relative to equities (all have correlations below 0.8 to the S&P 500 Index) as well as a measure of inflation protection (all are more positively correlated to inflation than mainstream stocks and bonds). Nearly all Third Pillar assets suffered mightily in the second quarter of 2013. We can see these strategies declined by –4.7% for the quarter, worse than the bludgeoning that Second Pillar assets (mainstream investment grade bonds) received at the hand of rising rates.

For Third Pillar assets, these losses came after a lackluster first quarter. In some cases, the year-to-date returns have turned downright nasty, especially from a historical perspective. Through June 30, the year-to-date return of the JPM Emerging Market Plus Index was –9.4%. If this result holds for the year, it will be virtually the same calendar-year loss as the asset

Table 1. The "Pillars" of Portfolio Construction

Asset Class	Index	Correlation to S&P 500 Since 1997	Correlation to Inflation Since 1997	2Q13 Return	3-Year Return	5-Year Return	10-Year Return	10-Year Volatility
First Pillar	First Pillar	0.97	0.09	1.8%	15.9%	5.2%	8.3%	19.3%
Second Pillar	Second Pillar	-0.39	-0.37	-3.6%	4.6%	6.1%	4.9%	7.2%
Third Pillar	Third Pillar	0.73	0.32	-4.7%	6.7%	3.3%	7.6%	15.0%
60-40	60-40	0.99	0.04	0.8%	12.5%	6.3%	6.2%	11.0%
Large Cap US Equities	IA SBBI S&P 500 TR USD	1.00	0.07	2.9%	18.5%	7.0%	7.3%	15.8%
Small Cap US Equities	Russell 2000 TR USD	0.92	0.10	3.1%	18.7%	8.8%	9.5%	22.0%
Developed ex US Equities	MSCI EAFE GR USD	0.89	0.08	-0.7%	10.6%	-0.2%	8.2%	20.0%
Long Credit	Barclays US Long Credit TR USD	0.02	-0.28	-6.3%	7.6%	9.2%	6.2%	11.2%
Short Term Bonds	BofAML US Corp&Govt 1-3 Yr TR USD	-0.40	-0.19	-0.1%	1.3%	2.5%	2.9%	1.4%
Core Fixed Income	Barclays US Agg Bond TR USD	-0.43	-0.29	-2.3%	3.5%	5.2%	4.5%	3.8%
Long Treasury	Barclays US Treasury Long TR USD	-0.56	-0.37	-5.6%	6.2%	7.6%	6.1%	12.4%
Emg Mkts Equities	MSCI EM GR USD	0.78	0.11	-8.0%	3.7%	-0.1%	14.0%	28.2%
High Yield	Barclays US Corporate High Yield TR USD	0.67	0.24	-1.4%	10.7%	10.9%	8.9%	11.4%
Local Currency EM	JPM ELMI+ TR USD	0.53	0.04	-6.3%	2.7%	0.8%	6.4%	8.5%
REITs	FTSE NAREIT All REITs TR	0.61	0.18	-3.4%	18.0%	7.9%	10.0%	27.9%
Bank Loans	Credit Suisse Leveraged Loan USD	0.57	0.49	0.4%	6.9%	5.8%	5.2%	7.9%
Emg Mkts Bonds	JPM EMBI Plus TR USD	0.53	0.04	-6.3%	7.5%	8.4%	8.9%	10.0%
Commodities	DJ UBS Commodity TR USD	0.25	0.52	-9.5%	-0.3%	-11.6%	2.4%	19.0%
TIPS	Barclays Gbl Infl Linked US TIPS TR USD	-0.29	0.21	-7.1%	4.6%	4.4%	5.2%	7.0%

Source: Research Affiliates based on data from Morningstar Encorr.

class experienced in the 2008 Global Financial Crisis! The year-to-date return for TIPS, as measured by the Barclays Global Inflation Linked US TIPS Index, stood at –7.4%, far and away the worst calendar year (again assuming the result holds through year-end) of performance since the index's 1997 inception.

These and other losses *seem* all the more acute given the robust performance of mainstream equities in 2013. Through June, the S&P 500—riding a bull market driven by hope, hype, and Uncle Ben's printing press—was up 13.8%, while an equally weighted portfolio of Third Pillar assets was down –3.7%, a whopping gap of 17.5 percentage points. We would have to go back 15 years to 1998 to find such a double-digit shortfall.

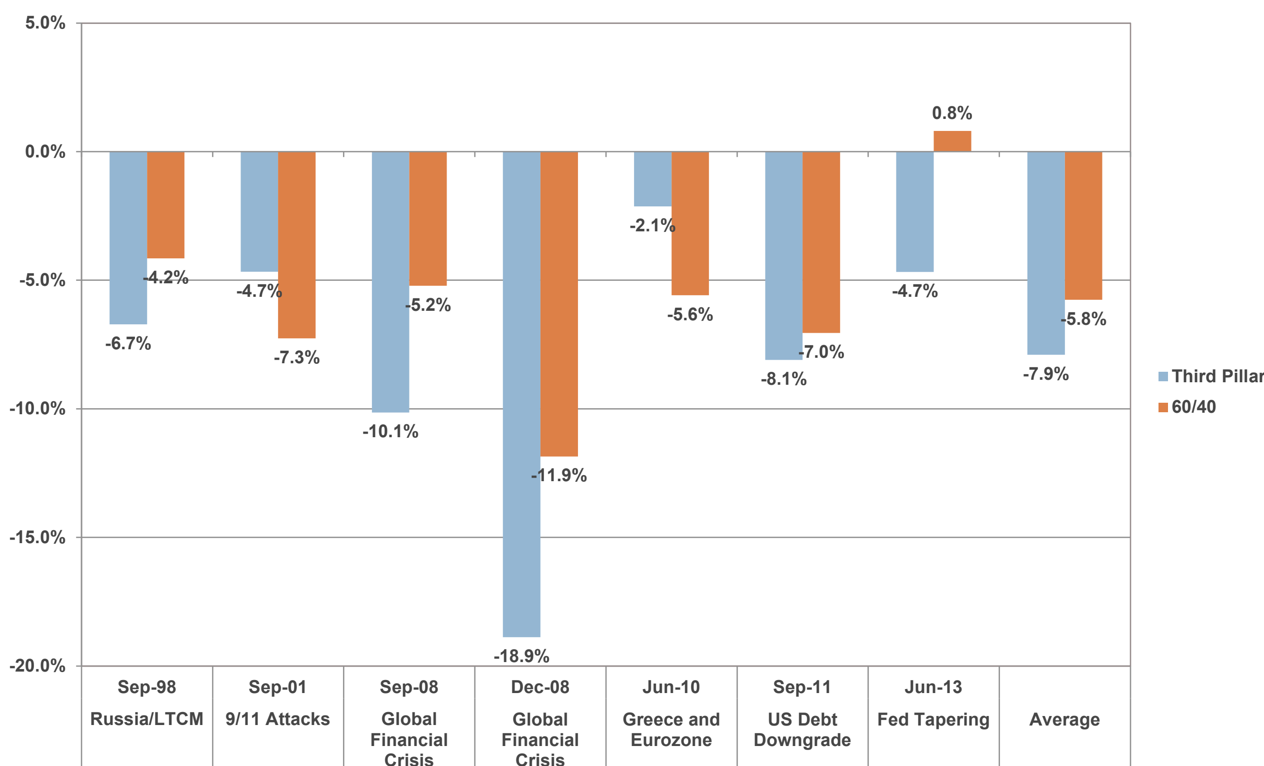
What Happened?

The catalyst for Third Pillar losses has been declining inflation expectations as measured by the so-called Break-Even Inflation rate—the difference between 10-year TIPS and 10-year Treasuries. The 10-year "BEI" fell by 50 bps during the second quarter of 2013. Over the past 15 years, we've seen six quarters where inflation expectations dropped by more than 40 bps. **Figure 1** outlines the results of an equally weighted portfolio of Third Pillar assets and a more mainstream blend of 60% S&P 500 and 40% BarCap Aggregate Bond in these three-month stretches.

Coincidentally, these periods are synonymous with crisis events, where investor risk tolerances shift in very rapid order and liquidity becomes king. This isn't surprising as declining inflation expectations are typically associated with a slowing economy where investors turn their attention to recessionary possibilities. So Third Pillar assets, with their natural inflationary bias, shouldn't be expected to produce solid absolute returns. And indeed they underperform 60/40 by about 2% on average in these instances. The 60/40 portfolio is buoyed by its 40% allocation to bonds and their natural inclination to rally on falling inflation expectations.

What's different this time? Well, we again witnessed underperformance of the Third Pillar trailing 60/40 by a bit over 5% in the second quarter of 2013. But this time equities are winners; so,

Figure 1. Third Pillar Assets and S&P 500 Returns in Quarters when 10-Year Expected Inflation Declined by More than 40 bps (June 1998–June 2013)



Note: For the break-even calculation, we use the Federal Reserve U.S. TIPS 10 Year (constant maturity) index. Prior to 2003, we use a 50% JP Morgan TIPS Index (1-10 year) and 50% JP Morgan TIPS Index (10 + year) blend to approximate a 10-year TIPS yield.

Source: Research Affiliates based on data from Bloomberg and Morningstar.

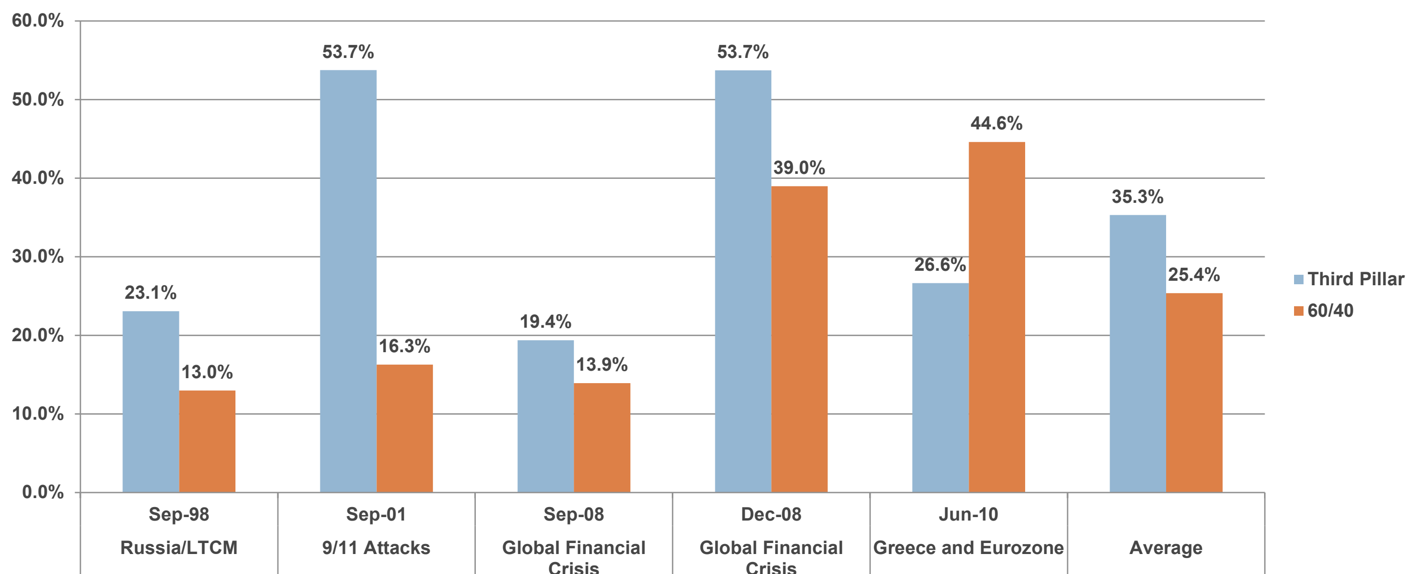
even with bleak bond market returns, 60/40 ekes out a small gain. During these crisis periods, equities have averaged a –11.0% return—hardly surprising given the tendency of inflation expectations to drop during crisis and recession, both of which aren't associated with robust corporate earnings and stock surges. But in the second quarter, the remarkably resilient U.S. stock market produced a gain of 2.9%, the first time in any of these periods where it outperformed mainstream fixed income. And Third Pillar assets finished last. This result is frustrating for those who want better downside protection with these diversifying assets, but history suggests that it's not unusual. U.S. stock market strength is unusual, and is clearly—at least in part—a function of global money printing by the central banks.

There's a silver lining for net savers over the long-term. If we can buy assets that protect against future inflation, would we rather do so when people fear deflation, not inflation, and when inflation hedges are newly cheap? Or should we wait until inflation is a self-evident risk, and inflation hedges are expensive? Clearly, we should be pleased to see inflation hedges hammered down in price, as they are today, so that we can build a deeper and stronger inflation protection for the future.

When the market punishes inflation-hedging Third Pillar assets, we often see those assets outperform mainstream markets in subsequent periods. Why? Falling prices means rising yields and rising yields mean higher forward returns. **Figure 2** outlines the subsequent three-year returns from these periods for both the equally weighted Third Pillar and the 60/40 blend. We find on average an excess return of nearly 10% cumulatively in the three years following these crisis periods of declining inflation expectations. Historically, the modest shortfalls that accompany economic crisis don't last and investors have been better off by sticking with these out-of-mainstream assets for the long haul. In other words, a 2% short-term average give-up isn't bad if we tend to recoup 10% over reasonable subsequent spans.

Who among us doesn't have a long investment horizon? For all but a scant few, liquid assets will be invested *somewhere* for the next 10-plus years. But, human nature conditions us to not *plan* long-term; on the African Veldt, we often had to focus on the next 10 seconds, never on the next 10 years.

Figure 2. Three-Year Cumulative Returns after Quarters when 10-Year Expected Inflation Declined by More than 40 bps (June 1998–June 2013)



Source: Research Affiliates based on data from Bloomberg and Morningstar.

Today, those with liabilities of only a year or two out are rare (and should be in ultra-conservative portfolios). The IRA of a retiring 65-year old, actuarially speaking, has nearly 20 years before the last dollar is likely to be spent. So we're all long-term investors and we have some profound advantages, best captured by Andrew Ang of Columbia University and Knut Kjaer of FSN Capital:

> *Long-horizon investors have an edge. They have the ability to reap risk premiums that are noisy in the short run and only manifest over the long run. They can acquire distressed assets when investors with over-stretched risk capacity have to sell.*[2]

Institutionalize Courage

Warren Buffett once said, "Whether we're talking about socks or stocks, I like buying quality merchandise when it is marked down."[3] Many investors today don't view emerging markets or TIPS as quality merchandise. We do. They're not concerned with eventual debt-induced dollar debasement or the near inevitability of demographic headwinds on economic growth. With most other assets, we must be. So we advise the long-term focused to bring their shopping carts and begin to add inflation protection. There's no need to rush—nobody's banging down the door, despite the deals. Investors, cognizant that market tops and bottoms are near impossible to predict, can take their time and carefully look at the very best bargains in a near-empty store.

> *"Building an inflation hedge is far less expensive when people are not concerned about the risk of inflation than when inflation is already self-evident."*

Assets that add diversification to equity-centric portfolios, especially those that protect against inflation, have had an awful run in 2013. Meanwhile, U.S. equities have been an unexpected outlier, blissfully marching ever higher despite profligate money printing, declining inflation expectations, and high valuations. Given that U.S. equities are the largest allocation of many investors and overwhelmingly their largest risk exposure, this unusual circumstance should be most welcome. But this good fortune shouldn't be squandered. At a minimum, it's a marvelous rebalancing opportunity. We assert that now is the time to act like a long-term investor and go beyond rebalancing, by beginning to stock our carts with amply discounted quality Third Pillar merchandise.

Endnotes

1. Gross, William H. 2012. "The Great Escape: Delivering in a Delevering World," *PIMCO Investment Outlook* (April).
2. Ang, Andrew, and Knut Kjaer. 2011. "Investing for the Long Run." In *A Decade of Challenges: A Collection of Essays on Pensions and Investments*, Thomas Franzen, Ed., Andra AP-fonden, Second Swedish National Pension Fund-AP2:94–111.
3. Buffett, Warren. 2009. "Letter to Shareholders of Berkshire Hathaway," (February 27).

Performance Update

FTSE RAFI® Equity Index Series*

TOTAL RETURN AS OF 6/30/13	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	5 YEAR	10 YEAR	10 YEAR VOLATILITY
FTSE RAFI® All World 3000[1]	TFRAW3	7.42%	20.73%	12.42%	4.69%	10.80%	18.58%
MSCI All Country World[2]	GDUEACWF	6.38%	17.21%	12.96%	2.86%	8.14%	16.55%
FTSE RAFI® Developed ex US 1000[3]	FRX1XTR	3.64%	19.63%	8.84%	0.40%	9.14%	20.23%
MSCI World ex US Large Cap[4]	MLCUWXUG	3.37%	17.62%	9.96%	-0.34%	8.36%	18.20%
FTSE RAFI® Developed ex US Mid Small[5]	TFRDXUSU	3.27%	16.45%	10.20%	5.27%	12.33%	18.89%
MSCI World ex US Small Cap[6]	GCUDWXUS	5.93%	21.25%	12.25%	2.83%	10.77%	20.04%
FTSE RAFI® Emerging Markets[7]	TFREMU	-13.05%	-1.41%	1.02%	0.04%	17.64%	24.59%
MSCI Emerging Markets[8]	GDUEEGF	-9.40%	3.23%	3.72%	-0.11%	14.02%	24.02%
FTSE RAFI® 1000[9]	FR10XTR	16.73%	26.99%	19.41%	10.65%	9.57%	17.10%
Russell 1000[10]	RU10INTR	13.91%	21.24%	18.63%	7.12%	7.67%	14.88%
S&P 500[11]	SPTR	13.82%	20.60%	18.45%	7.01%	7.30%	14.58%
FTSE RAFI® US 1500[12]	FR15USTR	17.54%	28.65%	19.49%	12.84%	12.81%	21.80%
Russell 2000[13]	RU20INTR	15.86%	24.21%	18.67%	8.77%	9.53%	19.74%
FTSE RAFI® Europe[14]**	TFREUE	3.31%	17.57%	6.24%	2.59%	7.19%	17.59%
MSCI Europe[15]**	GDDLE15	4.16%	16.74%	9.05%	3.18%	6.78%	14.54%
FTSE RAFI® Australia[16]**	FRAUSTR	8.37%	28.49%	10.90%	6.22%	10.19%	13.56%
S&P/ASX 200[17]**	ASA51	5.46%	22.75%	8.56%	2.94%	9.39%	13.57%
FTSE RAFI® Canada[18]**	FRCANTR	2.49%	13.06%	6.77%	4.13%	9.90%	13.55%
S&P/TSX 60[19]**	TX60AR	-0.97%	8.16%	4.62%	-1.42%	8.43%	14.02%
FTSE RAFI® Japan[20]**	FRJPNTR	36.75%	54.84%	12.63%	-0.30%	5.50%	19.76%
MSCI Japan[21]**	GDDLJN	34.00%	52.43%	13.07%	-1.29%	4.37%	19.16%
FTSE RAFI® UK[22]**	FRGBRTR	9.05%	19.88%	13.44%	7.39%	8.87%	15.56%
MSCI UK[23]**	GDDLUK	7.48%	15.68%	12.20%	6.08%	8.20%	13.49%

*To see the complete series, please go to: http://www.ftse.com/Indices/FTSE_RAFI_Index_Series/index.jsp.

**The above indices have been restated to reflect the use of local currencies for all single country strategies and EUR for Europe regional strategies rather than USD.

Russell Fundamental Index Series*

TOTAL RETURN AS OF 6/30/13	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	5 YEAR	10 YEAR	10 YEAR VOLATILITY
Russell Fundamental Global Index Large Company[24]	RUFGLTU	8.17%	20.75%	14.08%	5.31%	10.87%	16.90%
MSCI All Country World Large Cap[25]	MLCUAWOG	6.05%	16.52%	12.78%	2.61%	7.59%	16.22%
Russell Fundamental Developed ex US Index Large Company[26]	RUFDXLTU	4.47%	20.04%	9.42%	0.80%	9.80%	18.32%
MSCI World ex US Large Cap[27]	MLCUWXUG	3.11%	17.28%	9.78%	-0.60%	7.89%	18.08%
Russell Fundamental Developed ex US Index Small Company[28]	RUFDXSTU	6.92%	20.74%	12.23%	5.55%	12.69%	18.32%
MSCI World ex US Small Cap[6]	GCUDWXUS	3.76%	18.25%	11.21%	2.44%	10.66%	20.26%
Russell Fundamental Emerging Markets[29]	RUFGETRU	-10.60%	2.80%	4.82%	2.83%	18.29%	24.31%
MSCI Emerging Markets[8]	GDUEEGF	-9.40%	3.23%	3.72%	-0.11%	14.02%	24.02%
Russell Fundamental US Index Large Company[30]	RUFUSLTU	16.38%	25.35%	20.22%	10.29%	10.01%	15.48%
Russell 1000[10]	RU10INTR	13.91%	21.24%	18.63%	7.12%	7.67%	14.88%
S&P 500[11]	SPTR	13.82%	20.60%	18.45%	7.01%	7.30%	14.58%
Russell Fundamental US Index Small Company[31]	RUFUSSTU	15.81%	27.64%	20.14%	13.23%	13.31%	20.75%
Russell 2000[13]	RU20INTR	15.86%	24.21%	18.67%	8.77%	9.53%	19.74%
Russell Fundamental Europe[32]**	RUFEUTE	2.56%	16.54%	7.58%	3.66%	8.83%	16.01%
MSCI Europe[15]**	GDDLE15	3.43%	15.95%	8.66%	2.74%	6.76%	14.80%

*To see the complete series, please go to: http://www.russell.com/indexes/data/Fundamental/About_Russell_Fundamental_indexes.asp.

**The above indices have been restated to reflect the use of local currencies for all single country strategies and EUR for Europe regional strategies rather than USD.

Performance Update

Fixed Income/Alternatives

TOTAL RETURN AS OF 6/30/13	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	5 YEAR	10 YEAR	10 YEAR VOLATILITY
RAFI® Bonds US Investment Grade Master[33]	—	-3.39%	0.71%	5.59%	7.63%	5.46%	6.06%
ML Corporate Master[34]	C0A0	-3.31%	1.75%	5.80%	7.17%	5.18%	6.20%
RAFI® Bonds US High Yield Master[35]	—	-0.21%	7.03%	10.29%	11.43%	9.46%	9.55%
ML Corporate Master II High Yield BB-B[36]	H0A4	0.77%	8.53%	10.08%	9.43%	7.99%	9.18%
RAFI® US Equity Long/Short[37]	—	8.97%	17.34%	3.35%	9.89%	5.76%	11.21%
1-Month T-Bill[38]	GB1M	0.02%	0.05%	0.07%	0.16%	1.54%	0.52%
FTSE RAFI® Global ex US Real Estate[39]	FRXR	-1.37%	21.84%	12.98%	4.14%	—	—
FTSE EPRA/NAREIT Global ex US[40]	EGXU	-2.19%	17.74%	12.80%	2.59%	—	—
FTSE RAFI® US 100 Real Estate[41]	FRUR	7.58%	14.62%	18.83%	10.65%	—	—
FTSE EPRA/NAREIT United States[42]	UNUS	6.39%	9.25%	18.18%	7.03%	—	—
Citi RAFI Sovereign Developed Markets Bond Index Master[43]	CRFDMU	-4.57%	0.02%	4.97%	3.52%	5.59%	7.68%
Merrill Lynch Global Governments Bond Index II[44]	W0G1	-5.77%	-4.70%	2.82%	3.23%	4.73%	7.03%
Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Master[45]	CRFELMU	-7.39%	0.80%	—	—	—	—
JPMorgan GBI-EM Global Diversified[46]	JGENVUUG	-7.15%	1.32%	—	—	—	—

Definition of Indices:

(1) The FTSE RAFI® All World 3000 Index is a measure of the largest 3,000 companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value), across both developed and emerging markets.
(2) The MSCI All Country World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.
(3) The FTSE RAFI® Developed ex US 1000 Index is a measure of the largest 1000 non U.S. listed, developed market companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(4) The MSCI World ex US Large Cap Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets, excluding the United States.
(5) The FTSE RAFI® Developed ex US Mid Small Index tracks the performance of small and mid-cap companies domiciled in developed international markets (excluding the United States), selected and weighted based on the following four fundamental measures of firm size: sales, cash flow, dividends and book value.
(6) The MSCI World ex US Small Cap Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of small cap developed markets, excluding the United States.
(7) The FTSE RAFI® Emerging Markets Index comprises the largest 350 Emerging Market companies selected and weighted using fundamental factors (sales, cash flow, dividends, book value).
(8) The MSCI Emerging Markets Index is an unmanaged, free-float-adjusted cap-weighted index designed to measure equity market performance of emerging markets.
(9) The FTSE RAFI® 1000 Index is a measure of the largest 1,000 U.S. listed companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(10) The Russell 1000 Index is a market-capitalization-weighted benchmark index made up of the 1,000 highest-ranking U.S. stocks in the Russell 3000.
(11) The S&P 500 Index is an unmanaged market index that focuses on the large-cap segment of the U.S. equities market.
(12) The FTSE RAFI® US 1500 Index is a measure of the 1,001st to 2,500th largest U.S. listed companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(13) The Russell 2000 is a market-capitalization weighted benchmark index made up of the 2,000 smallest U.S. companies in the Russell 3000.
(14) The FTSE RAFI® Europe Index is comprised of all European companies listed in the FTSE RAFI® Developed ex U.S. 1000 Index, which in turn is comprised of the largest 1,000 non U.S. listed developed market companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(15) The MSCI Europe Index is a free-float adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in Europe.
(16) The FTSE RAFI® Australia Index is comprised of all Australian companies listed in the FTSE RAFI® Developed ex U.S. 1000 Index, which in turn is comprised of the largest 1,000 non U.S. listed developed market companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(17) The S&P/ASX 200 Index, representing approximately 78% of the Australian equity market, is a free-float-adjusted, cap-weighted index.
(18) The FTSE RAFI® Canada Index is comprised of all Canadian companies listed in the FTSE RAFI® Developed ex U.S. 1000 Index, which in turn is comprised of the largest 1,000 non U.S. listed developed market companies, selected andweighted using fundamental factors; (sales, cash flow, dividends, book value).
(19) The S&P/Toronto Stock Exchange (TSX) 60 is a cap-weighted index consisting of 60 of the largest and most liquid (heavily traded) stocks listed on the TSX, usually domestic or multinational industry leaders.
(20) The FTSE RAFI® Japan Index is comprised of all Japanese companies listed in the FTSE RAFI® Developed ex U.S. 1000 Index, which in turn is comprised of the largest 1,000 non U.S. listed developed market companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(21) The MSCI Japan Index is an unmanaged, free-float-adjusted cap-weighted index that aims to capture 85% of the publicly available total market capitalization of the Japanese equity market.
(22) The FTSE RAFI® UK Index is comprised of all UK companies listed in the FTSE RAFI® Developed ex U.S. 1000 Index, which in turn is comprised of the largest 1,000 non U.S. listed developed market companies, selected and weighted using fundamental factors; (sales, cash flow, dividends, book value).
(23) The MSCI UK Index is an unmanaged, free-float-adjusted cap-weighted index that aims to capture 85% of the publicly available total market capitalization of the British equity market.
(24) The Russell Fundamental Global Index Large Company is a measure of the largest companies, selected and weighted using fundamental factors; (adjusted sales, retained cash flow, dividends + buybacks), across both developed and emerging markets.
(25) The MSCI All Country World Large Cap Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.
(26) The Russell Fundamental Developed ex US Large Company is a subset of the Russell Fundamental Developed ex US Index, and is a measure of the largest non-U.S. listed developed country companies, selected and weighted using fundamental factors; (adjusted sales, retained cash flow, dividends + buybacks).
(27) The MSCI World ex US Large Cap Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of large cap-developed markets, excluding the United States.
(28) The Russell Fundamental Developed ex US Index Small Company is a subset of the Russell Fundamental Developed ex US Index, and is a measure of small non-U.S. listed developed country companies, selected and weighted using fundamental factors; (adjusted sales, retained cash flow, dividends + buybacks).
(29) The Russell Fundamental Emerging Markets Index is a measure of Emerging Market companies, selected and weighted using fundamental factors; (adjusted sales, retained cash flow, dividends + buybacks).
(30) The Russell Fundamental U.S. Index Large Company is a subset of the Russell Fundamental US Index, and is a measure of the largest U.S. listed companies, selected and weighted using fundamental measures; (adjusted sales, retained cash flow, dividends + buybacks).
(31) The Russell Fundamental US Index Small Company is a subset of the Russell Fundamental US Index, and is a measure of U.S. listed small companies, selected and weighted using fundamental measures; (adjusted sales, retained cash flow, dividends + buybacks).
(32) The Russell Fundamental Europe Index is a measure of European companies, selected and weighted using fundamental factors; (adjusted sales, retained cash flow, dividends + buybacks).
(33) The RAFI® Bonds US Investment Grade Master Index is a U.S. investment-grade corporate bond index comprised of non-zero fixed coupon debt with maturities ranging from 1 to 30 years issued by publicly traded companies. The issuers held in the index are weighted by a combination of four measures of their fundamental size—sales, cash flow, dividends, and book value of assets.
(34) The Merrill Lynch U.S. Corporate Master Index is representative of the entire U.S. corporate bond market. The index includes dollar-denominated investment-grade corporate public debt issued in the U.S. bond market.
(35) The RAFI® Bonds US High Yield Master is a U.S. high-yield corporate bond index comprised of non-zero fixed coupon debt with maturities ranging from 1 to 30 years issued by publicly traded companies. The issuers held in the index are weighted by a combination of four measures of their fundamental size—sales, cash flow, dividends, and book value of assets.
(36) The Merrill Lynch Corporate Master II High Yield BB-B Index is representative of the U.S. high yield bond market. The index includes domestic high-yield bonds, including deferred interest bonds and payment-in-kind securities. Issues included in the index have maturities of one year or more and have a credit rating lower than BBB-/Baa3, but are not in default.
(37) The RAFI® US Equity Long/Short Index utilizes the Research Affiliates Fundamental Index® (RAFI®) methodology to identify opportunities that are implemented through long and short securities positions for a selection of U.S. domiciled publicly traded companies listed on major exchanges. Returns for the index are collateralized and represent the return of the strategy plus the return of a cash collateral yield.
(38) The 1-Month T-bill return is calculated using the Bloomberg Generic 1-month T-bill. The index is interpolated based off of the currently active U.S. 1 Month T-bill and the cash management bill closest to maturing 30 days from today.
(39) The FTSE RAFI® Global ex US Real Estate Index comprises 150 companies with the largest RAFI fundamental values selected from the constituents of the FTSE Global All Cap ex U.S. Index that are classified by the Industry Classification Benchmark (ICB) as Real Estate.
(40) The FTSE EPRA/NAREIT Global ex US Index is a free float-adjusted index, and is designed to represent general trends in eligible listed real estate stocks worldwide, excluding the United State. Relevant real estate activities are defined as the ownership, trading and development of income-producing real estate.
(41) The FTSE RAFI® US 100 Real Estate Index comprises of the 100 U.S. companies with the largest RAFI fundamental values selected from the constituents of the FTSE USA All Cap Index that are classified by the Industry Classification Benchmark (ICB) as Real Estate.
(42) The FTSE EPRA/NAREIT United States Index is a free float-adjusted index, is a subset of the EPRA/NARIET Global Index and the EPRA/NAREIT North America Index and contains publicly quoted real estate companies that meet the EPRA Ground Rules. EPRA/NARIET Index series is seen as the representative benchmark for the real estate sector.
(43) The Citi RAFI Sovereign Developed Markets Bond Index Series seeks to reflect exposure to the government securities of a universe of 23 developed markets. By weighting components by their fundamentals, the indices aim to represent each country's economic footprint and proxies for its ability to service debt.
(44) The Merrill Lynch Global Government Bond Index II tracks the performance of investment grade sovereign debt publicly issued and denominated in the issuer's own domestic market and currency.
(45) The Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Series seeks to reflect exposure to the government securities of a universe of 14 emerging markets. By weighting components by their fundamentals, the indices aim to represent each country's economic footprint and proxies for its ability to service debt.
(46) The JPMorgan GBI-EM Diversified Index seeks exposure to the local currency sovereign debt of over 15 countries in the emerging markets.

Source: All index returns are calculated using total return data from Bloomberg and FactSet. Returns for all single country strategies and Europe regional strategies are in local currency. All other returns are in USD.

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