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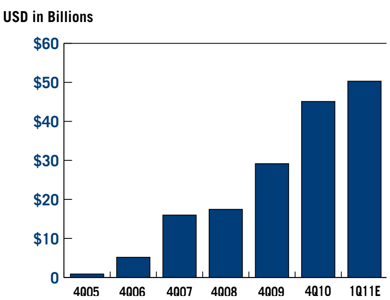
Fundamentals

John West

RAFI® Managed Assets*



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SECTOR WEIGHTS: ON AVERAGE WRONG, BUT DYNAMICALLY RIGHT

In Marcel Duchamp's famous 1912 painting, *Nude Descending a Staircase, No. 2*, the French painter captured the sense of motion by illustrating a series of images—all displayed in one frame.[1] The controversial painting was inspired by Cubism's breakdown of familiar images into multiple perspectives. But it went one better than the Cubists—who typically used static images—by adding motion, reflecting the influence of the nascent motion picture industry.[2] The painting forced the observer to rethink how he or she viewed art.

Similarly, the Fundamental Index® methodology forces investors to rethink how they view portfolio returns. Investors typically dissect returns, trying to understand how much of performance is attributable to sector bets and how much to stock selection. Like Cubists, they are deconstructing reality and then putting it back together. But what if we—like Duchamp—add motion to the picture?

We are commonly asked why the Fundamental Index methodology overweights and underweights certain sectors. What's the rationale? Why does the strategy "like" this sector or that sector? In recent years, the methodology has overweighted financials and underweighted energy, leading a rational person to conclude that holding such *wrong* weights surely caused performance problems. In this issue, we show such structural sector bets, in fact, don't matter over the long term. Indeed, the Fundamental Index strategy can be wrong on average but right in the long run because of its ability to contra-trade against market fads, crashes, bubbles, and speculation. Investors need to look at the movement embodied in such strategies—not just their average holdings over a period in time.

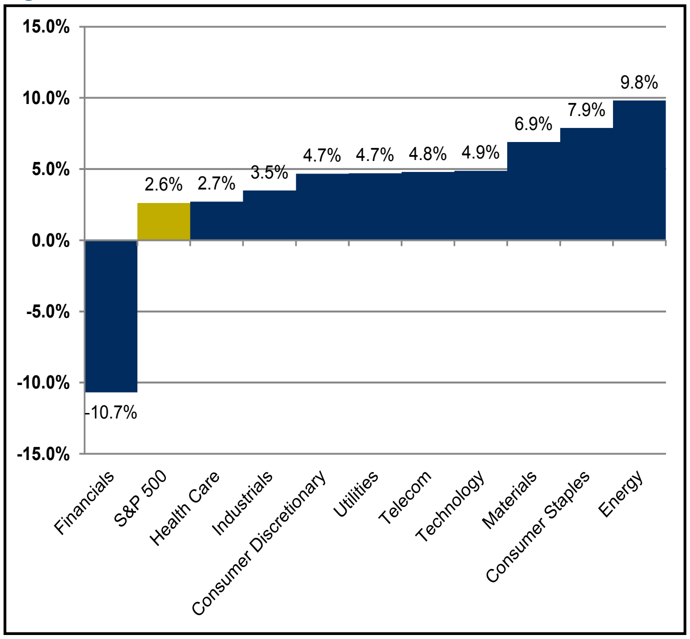
Contra-Trading—The Great Equalizer

The markets have been through an extraordinarily volatile period the past five years, beginning with strong equity returns in 2006–2007, followed by the Global Financial Crisis (GFC) in 2008, and the subsequent Mother of All Recovery rallies in 2009–2010. Talk about a full market cycle! Within this period, sector returns have varied widely as evidenced in **Figure 1**.

During this period, energy and financial stocks have experienced dichotomous lives. Energy stocks jumped 10% per year and led all sectors of the market. Meanwhile, the GFC pounded financial stocks.

continued on page two

Figure 1. Five-Year Annualized S&P 500 Sector Returns as of March 31, 2011



Source: Research Affiliates and Ibbotson Encorr.

To be fair, some financial institutions *caused* the GFC and were punished accordingly with the sector losing over 10% per annum. Indeed, financial stocks were the only sector to actually lose money and the only sector to underperform the S&P 500 Index during this time span. The other nine sectors all outperformed the broad market.

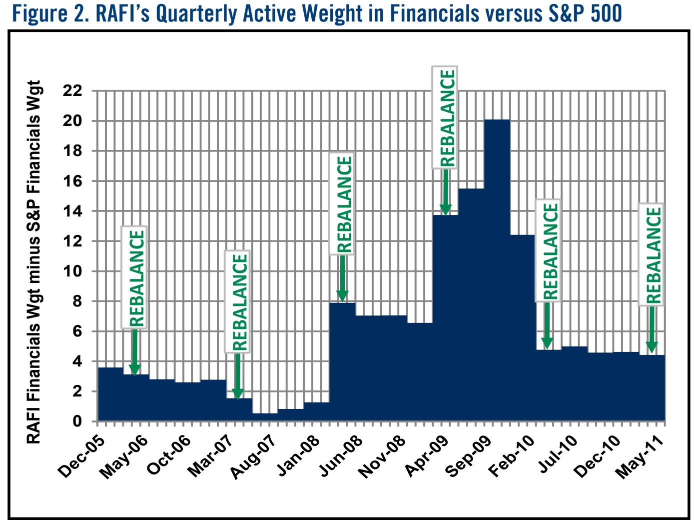
The FTSE RAFI® US 1000 held an average weighting of 24% in financials since it went live in November 2005, compared with the S&P 500's average weighting of 18%. In other words, the Fundamental Index concept held an average overweight of 6%. Uh-oh. At one point in this cycle, financials registered the worst performing one-year period for any sector going back to 1989,[3] even worse than technology stocks after the collapse of the TMT bubble. With the RAFI strategy's sizable overweight to the lone absolute and relative loser of the last five years, a logical expectation would be a big shortfall in RAFI's performance relative to cap-weighting. In reality, the FTSE RAFI US 1000 beat the S&P by 2.3% per year, similar to the excess return as published in the original research![4]

This counterintuitive result provides a good example of how the Fundamental Index concept adds value through the contra-trading embedded into the annual rebalance back to fundamental weights—that is, back to the economic footprint of the constituent companies. **Figure 2** shows the FTSE RAFI US 1000's relative financial weights (in other words, the active sector bet versus the S&P 500). Financials had a slight overweight in the FTSE RAFI US 1000 until the March 2008 rebalance, when the strategy took on an 8% overweight after bank share prices began to fall in summer 2007. In March 2009—six months after Lehman Brothers Holdings' spectacular collapse and changes that forever changed the face of the financial services industry—financials were again rebalanced back to their fundamental weights of 25% (versus 11% for the S&P). Then the sector—left for dead in early 2009—took off. The financials weight of the FTSE RAFI US 1000 reached almost 20% more than the respective S&P 500 weight in fall 2009. As bank prices rebounded strongly, the March 2010 rebalancing witnessed a trimming of financial weights back to their fundamental scale. All told, the RAFI strategy made profits in spite of a large overweight in a sector that would have lost half its value if the weight had not been adjusted from March 2006.

There's a lesson here. The Fundamental Index approach isn't designed to "pick" winning sectors (or even stocks). Rather, the methodology succeeds by breaking the link between stock price and portfolio weight. A price-indifferent approach like the Fundamental Index strategy makes the link between pricing errors and portfolio weights random, not structural. The expected result? Half the portfolio winds up in overpriced stocks and half in underpriced stocks. The errors cancel.

But don't take our word for it. Equal-weighted indexes break the link between price and weight and provide the same automated rebalancing as the Fundamental Index methodology (with a far

Figure 2. RAFI's Quarterly Active Weight in Financials versus S&P 500



Source: Research Affiliates and Wilshire.

less scalable and tougher to implement portfolio). Yet equal-weighting has had a substantial underweight to energy stocks. Why? Because the energy sector is narrow—a few mega-cap integrated oil companies dominate.[5] There are only 40 stocks in the energy sector in the S&P 500; at a 0.2% weight for each, that creates an 8% target weight in the equal-weighted index. In contrast, the cap-weighted S&P 500 has a 12% weight in energy stocks, led by Exxon Mobil at nearly 3.5%, followed by very large weights in Chevron, Schlumberger, and ConocoPhillips. In spite of a large underweight in top-performing energy stocks, the S&P 500 Equal Weighted Index beat the cap-weighted S&P 500 over the last five years by the same margin that FTSE RAFI did: 5.2% versus 2.9%.[6] Two independent non-price-weighted indexes—one with a huge overweight to the worst performing sector and one with a sizeable underweight to the best performing sector—beat the cap-weighted S&P 500 by more than 2%.

Conclusion

When Duchamp made art history with his notorious nude, he adopted Cubist ideas about deconstructing ideas while mocking its pretensions. He deconstructed images methodologically, but added motion and a jocular title painted along the bottom of the picture. In fact, Paris's Salon des Independents rejected the work because the jury believed that Duchamp "was poking fun at Cubist art."[7] In reality, he laid the foundation for two new art movements: Futurism and Dadaism.

Our story is less controversial, but the idea of examining an idea—whether it's art or investment returns—from multiple perspectives is important. We are often asked why the RAFI strategy is taking "bets" in certain sectors. The answer is the RAFI strategy's average sector bets just don't matter. The Fundamental Index methodology doesn't need structural (static) sector bets to succeed. In fact, the approach can succeed even when making "wrong" structural sector bets as we have seen with financials and energy during the GFC. All the Fundamental Index methodology needs to provide excess returns over the cap-weighted index is market volatility that inevitably occurs when investor ebullience or capitulation lead to mean reversion of security prices.

The author wishes to thank Joel Chernoff, our resident art historian, and Ryan Larson, our analyst without compare, for their substantial contributions.

Endnotes

1. See http://www.philamuseum.org/collections/permanent/51449.html.
2. See http://www.understandingduchamp.com/text.html.
3. The S&P 500 Financials returned -70% for the one-year period ending February 28, 2009; the next worst one-year return was -63% for S&P 500 Technology for the 12-month period ending September 30, 2001.
4. See Arnott, Hsu, and Moore (2005).
5. This lack of representativeness is another drawback to the equal-weighting approach.
6. We chose energy because it was the best performing sector and was a very large underweight by equal-weighting. However, the story was seen across the portfolio. Of the best four sectors that drove positive results in the period, equal-weighting was underweight in three. Also, equal-weighting was neutral in weight in financials, meaning it derived no benefit in that sector. In total, the S&P Equal Weighting Index was unfavorably positioned on a structural sector basis, yet beat the S&P handily.
7. See http://www.understandingduchamp.com/text.html.

Performance Update

FTSE RAFI® Equity Index Series*

TOTAL RETURN AS OF 4/30/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
FTSE RAFI® All World 3000[1]	TFRAW3	9.84%	19.32%	3.22%	6.43%	10.02%	18.70%
MSCI All Country World[2]	GDUEACWF	8.87%	19.13%	0.38%	3.63%	5.23%	17.12%
FTSE RAFI® Developed ex US 1000[3]	FRX1XTR	11.52%	20.60%	0.31%	4.43%	8.55%	19.95%
MSCI World ex US Large Cap[4]	MLCUWXUG	9.72%	19.23%	-2.17%	2.53%	5.50%	18.23%
FTSE RAFI® Developed ex US Mid Small[5]	TFRDXUSU	7.71%	21.39%	7.52%	6.55%	14.52%	18.60%
MSCI World ex US Small Cap[6]	GCUDWXUS	8.52%	25.95%	3.73%	2.78%	11.19%	20.26%
FTSE RAFI® Emerging Markets[7]	TFREMU	5.43%	20.71%	5.71%	13.98%	24.18%	24.49%
MSCI Emerging Markets[8]	GDUEEGF	5.29%	21.00%	2.98%	10.17%	16.92%	24.08%
FTSE RAFI® 1000[9]	FR10XTR	9.16%	17.16%	5.64%	5.18%	6.08%	18.07%
Russell 1000[10]	RU10INTR	9.44%	18.02%	2.30%	3.30%	3.34%	16.01%
S&P 500[11]	SPTR	9.06%	17.22%	1.73%	2.95%	2.82%	15.82%
FTSE RAFI® US 1500[12]	FR15USTR	9.87%	19.39%	12.99%	7.40%	12.42%	22.53%
Russell 2000[13]	RU20INTR	10.79%	22.20%	8.03%	3.89%	7.34%	20.84%
FTSE RAFI® Europe[14]	TFREUE	5.06%	11.24%	0.17%	1.01%	3.58%	19.12%
MSCI Europe[15]	GDDLE15	5.81%	11.66%	-0.64%	0.91%	1.94%	16.94%
FTSE RAFI® Australia[16]	FRAUSTR	3.71%	3.80%	1.34%	3.78%	9.15%	12.96%
S&P/ASX 200[17]	ASA51	2.92%	4.58%	-0.49%	2.60%	8.20%	13.33%
FTSE RAFI® Canada[18]	FRCANTR	4.62%	13.41%	6.37%	7.30%	9.97%	14.22%
S&P/TSX 60[19]	TX60AR	4.58%	14.32%	1.66%	5.71%	8.06%	14.68%
FTSE RAFI® Japan[20]	FRJPNTR	-5.33%	-12.62%	-11.30%	-9.36%	-0.63%	18.70%
MSCI Japan[21]	GDDLJN	-4.46%	-11.85%	-13.23%	-11.32%	-3.26%	18.42%
FTSE RAFI® UK[22]	FRGBRTR	3.88%	10.59%	3.43%	3.26%	4.75%	17.12%
MSCI UK[23]	GDDLUK	4.32%	12.89%	3.74%	3.80%	3.73%	15.05%

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

Russell Fundamental Index® Series*

TOTAL RETURN AS OF 4/30/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
Russell Fundamental Global Index Large Company[24]	RUFGLTU	10.62%	20.56%	4.09%	6.48%	9.96%	17.42%
MSCI All Country World Large Cap[25]	MLCUAWOG	8.76%	18.21%	-0.10%	3.55%	4.50%	16.82%
Russell Fundamental Developed ex US Index Large Company[26]	RUFDXLTU	11.09%	20.19%	6.32%	3.75%	10.21%	18.35%
MSCI World ex US Large Cap[27]	MLCUWXUG	9.72%	19.23%	-2.17%	2.53%	5.50%	18.23%
Russell Fundamental Developed ex US Index Small Company[28]	RUFDXSTU	6.71%	19.12%	5.62%	4.83%	13.06%	18.47%
MSCI World ex US Small Cap[6]	GCUDWXUS	8.52%	25.95%	3.73%	2.78%	11.19%	20.26%
Russell Fundamental Emerging Markets[29]	RUFGETRU	7.41%	25.78%	8.70%	15.18%	23.54%	24.41%
MSCI Emerging Markets[8]	GDUEEGF	5.29%	21.00%	2.98%	10.17%	16.92%	24.08%
Russell Fundamental US Index Large Company[30]	RUFUSLTU	10.51%	18.13%	5.67%	5.54%	6.92%	16.51%
Russell 1000[10]	RU10INTR	9.44%	18.02%	2.30%	3.30%	3.34%	16.01%
S&P 500[11]	SPTR	9.06%	17.22%	1.73%	2.95%	2.82%	15.82%
Russell Fundamental US Index Small Company[31]	RUFUSSTU	11.31%	21.75%	13.88%	8.57%	13.33%	20.90%
Russell 2000[13]	RU20INTR	10.79%	22.20%	8.03%	3.89%	7.34%	20.84%
Russell Fundamental Europe[32]	RUFEUTE	5.31%	12.92%	2.63%	2.84%	6.31%	18.07%
MSCI Europe[15]	GDDLE15	5.81%	11.66%	-0.64%	0.91%	1.94%	16.94%

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

Fixed Income/Alternatives

TOTAL RETURN AS OF 4/30/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
RAFI® Bonds Investment Grade Master[33]		2.36%	7.12%	8.29%	7.56%	6.67%	6.03%
ML Corporate Master[34]	C0A0	2.67%	7.55%	7.69%	6.83%	6.48%	6.21%
RAFI® Bonds High Yield Master[35]		5.52%	12.80%	12.69%	11.23%	10.12%	11.04%
ML Corporate Master II High Yield BB-B[36]	H0A4	5.08%	13.22%	9.76%	8.19%	7.80%	9.91%
RAFI US Equity Long/Short[37]		1.24%	-0.08%	10.80%	5.25%	7.17%	11.80%
1-Month T-Bill[38]	GB1M	0.03%	0.13%	0.33%	1.87%	1.96%	0.48%
FTSE RAFI® Global ex US Real Estate[39]	FRXR	6.10%	19.46%	-4.29%	-0.08%	10.37%	22.35%
FTSE EPRA/NAREIT Global ex US[40]	EGXU	4.18%	17.42%	-8.25%	-2.51%	7.54%	20.29%
FTSE RAFI® US 100 Real Estate[41]	FRUR	11.88%	18.12%	1.84%	-2.15%	7.05%	27.14%
FTSE EPRA/NAREIT United States[42]	UNUS	11.19%	18.30%	-3.24%	-1.56%	5.85%	25.53%

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 and weighted 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 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 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.

Source: All index returns are calculated using total return data from Bloomberg, except for the real estate indices and benchmarks, which use price return data. Returns for all single country strategies and Europe regional strategies are in local currency. All other returns are in USD.

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