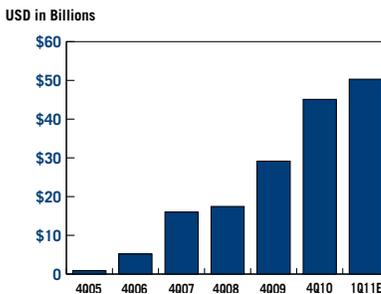


# Fundamentals



John West

## RAFI® Managed Assets\*



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



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## WHACK! TODAY'S MISALIGNED MANAGER SELECTION PROCESS

Golf has many parallels to the world of investing. Both are fickle. Some days every putt seems to drop and every stock seems to pop. But success can be fleeting—golf and investing have a nasty habit of transforming the best into mere shadows of themselves.

Many activities comprise a round of golf—putting, chipping, bunker shots, pitching, driving off the tee, and approach shots with the iron. Some are more important than others. Judging by a trip to the local practice facility, one would assume the most important shot is the first, where the golfer uses the longest club in the bag—the driver—to ensure a shorter approach shot onto the green. Station after station holds weekend hacks whacking away with the driver. But one golf professional, Dave Pelz, found that almost 80% of the shots lost to par (those that lead to poorer scores) occur inside of 100 yards of the hole.<sup>1</sup> Yet we see precious few golfers spending long hours on the putting green and chipping surfaces practicing their “short game.”

Clearly, the practice activities of golfers are misaligned with results. In the passages ahead, we highlight the investment equivalent of the driver—seeking positive alpha

through manager selection—and offer an important tip on where many investors can better allocate their precious resources in the search for excess returns.

### Picking Managers

The selection of active managers, whose philosophy and process are geared to produce market-beating results, is an exhaustive and time-consuming activity. Certainly, some can take a shortcut, relying on historical track records (such as the typical trailing five years of returns) to gauge skill but, as mutual fund advertisements proclaim, “past performance is no guarantee of future results.” Indeed, the goal of manager research is to determine if the manager and its strategy will be successful in the dark and unknowable future. And that requires separating the wheat from the chaff or, in this case, manager skill from pure luck. Unfortunately, this is easier said than done. Statistically speaking, it requires a track record of approximately 35 years to determine whether the average active manager has demonstrated skill.<sup>2</sup>

Because essentially no funds and institutional products sport such a lengthy tenure (especially

with the same people at the helm), proper selection of the “best” managers has to take several additional steps:

- Philosophy—What factors or inefficiencies are the managers trying to exploit and will they likely remain long-term phenomena?
- Process—How do firms systematically exploit this market inefficiency? Is the process repeatable?
- People—Who is responsible for the work and how are they motivated?
- Organization and Culture—Does the firm provide an environment for professional growth and long-term mutual success? Are the firm’s interests aligned with its clients?
- Back Office and Client Service—Is the manager responsive to client needs, promptly delivering accurate and relevant portfolio information?
- Performance Review—How are the performance figures calculated and by whom? Is the dispersion between accounts acceptable?

Manager research is unquestionably a resource-intensive undertaking. Is all of this work likely to be rewarded? One way to gauge the effectiveness of manager research is to examine the hiring decisions of sponsors of traditional pension plans. Goyal and Wahal (2008) compiled a database of over 8,700 hiring decisions by 3,400 plan sponsors between 1994 and 2003.<sup>3</sup> During this period, the plan sponsors hired managers to run more than \$600 billion in assets. If the tremendous efforts expended on manager selection paid off, we would expect these new managers to have produced returns in excess of their respective benchmarks. But the study found otherwise:

*Pre-hiring performance is significantly positive using all three measures of excess returns. For the full sample, post-hiring performance is statistically flat... Recall that the sample of hiring decisions is for active mandates in which, presumably, plan sponsors hope to earn future excess returns. Our results suggest that, on average, plan sponsors are unsuccessful in this endeavor.*

That is an extraordinary amount of time and resource expended for mediocrity. What’s the point?

### Can One Win at the Active Management Game?

Some can and will play the active management game... and win. But a frank assessment is in order. How will the investor or the institution earn excess returns from manager skill versus the *trillions* of assets geared toward the same goal? What is your comparative advantage? Is it resources and talent? Can you out-resource the largest and most sophisticated institutional investors and their consultants? What about patience? A commitment to active management is a lot like a marriage. The relationship will be occasionally strained and often will continue based solely on faith. Would you, as the legendary economic historian and consultant Peter Bernstein once recommended, be willing to sign a five-year contract with your managers?<sup>4</sup> Some investors believe that a first mover advantage exists; they try to identify superior managers early in their trajectories. But placing money with an unproven firm can be uncomfortable and nerve racking.

Unless the investor hiring active managers clearly can define his “edge,” the game shouldn’t be played. An old adage said around the poker table, “If you’re not sure who the ‘fish’ (an inexperienced and clueless player) is, then you are likely the fish.” Investors should conclude they probably are the “fish” and don’t have any compelling advantages (it’s OK, most investors don’t!). Thus, they save the heartache of chasing the ever-changing roster of “best” managers and watching their investments fail to beat the benchmark.

### A Flying Fish

Even where active managers deliver alpha, so much of their added value is eaten up by fees that investors end up not being compensated for the additional risk they are taking. Instead, many investors turn to indexed investments, which offer a simple way to track the market at a low cost. John Bogle, the founder of the Vanguard Group, has spent nearly half his life preaching this gospel, and found that 87% of active managers fail to beat the market index after fees.<sup>5</sup>

But traditional passive management has its flaws too. Chief among them is that capitalization-weighted indices overweight overvalued stocks and underweight undervalued ones, creating a drag

on performance. Our research shows that this drag ranges from 2–4% for developed markets, and more for inefficient markets.<sup>6</sup>

Investors now have other options. In recent years, a whole new category of investments—called “alternative betas”—has emerged. Some of these alternative beta strategies, including the Fundamental Index<sup>®</sup> approach, use various structural schemes to select and/or weight securities in the index. In that sense, they fall between traditional cap-weighted approaches and active management: they pick up broadly diversified market exposure (beta) but seek to produce better results than cap-weighted indexes (what is desired from active managers).

Our CIO, Jason Hsu, and research staff have replicated the basic methodologies of many of these rules-based alternative betas, ranging from a simple equal-weighted approach to the straightforward Fundamental Index strategy to the truly exotic such as risk clustering and diversity weighting.<sup>7</sup> The potential rewards are promising. Of the 10 non-cap-weighted U.S. equity strategies studied, all outperformed the passive cap-weighted benchmark. The range of excess returns by alternative beta strategies was between 0.4% and 3.0% per annum—matching a reasonable estimate of the top quartile of active managers—that is, the small cadre of managers who generally are successful at beating the benchmark (see **Table 1**). The bottom line: investors can obtain top-quartile performance with far less effort than is required to research and monitor traditional active equity managers.

**Table 1. Alternative Beta Strategies Beat the Cap-Weighted U.S. Equity Benchmark (1964–2009)**

Select Alternative Beta Strategies	Annualized Returns	Excess Return
S&P 500 Index	9.46%	—
Fundamental Index	11.60%	2.14%
Equal-Weighting	11.78%	2.32%
Risk Clustering	10.91%	1.45%
Diversity Weighting	10.27%	0.81%
Minimum Variance	11.40%	1.94%

Source: Research Affiliates, LLC.

## Summary

An old golfing adage proclaims: “Drive for show and putt for dough.” Hiring winning active managers is inherently more fun and sparks interesting cocktail chatter. But like a consistently straight 300-yard drive, we assert this is an incredibly difficult and time-consuming skill to learn—for the relative handful who can master the skill. We prefer alternative beta strategies, which often display the benefits of the best active managers, are far easier to research, and generally are available at a far lower cost. By no means are these strategies “gimmies,” but, methodically practiced, should help investors avoid the double bogeys of active management and traditional passive management, giving them a better chance of beating par.

## Endnotes

1. See [http://www.pelzgolf.com/golfschools/aboutlocation.aspx?location=3\\_Day\\_Golf\\_Schools](http://www.pelzgolf.com/golfschools/aboutlocation.aspx?location=3_Day_Golf_Schools)
2. Using a very optimistic 2% excess return at the typical 6% tracking error level, for an information ratio of 0.33. An information ratio of 0.50 would take 16 years to confirm statistical significance, while a 0.25 ratio would take 62 years!
3. Amit Goyal and Sunil Wahal, 2008, “The Selection and Termination of Investment Management Firms by Plan Sponsors,” *Journal of Finance*, vol. 63, no. 4 (August):1805–1847.
4. In his March 1, 2004, newsletter, *Economics & Portfolio Strategy*, based on a comment here: <http://welling.weedenco.com/files/NLPP00001/642a.pdf>.
5. John C. Bogle, 2007, *The Little Book of Common Sense Investing*, New York: Wiley, p. 79. Of 355 equity funds operating in 1970, with only 21 beating the index by 0–1% through 2006 and another 24 winning by 1% or greater by the end of the study period—roughly one-eighth of the total.
6. Robert D. Arnott, Jason Hsu, and Philip Moore, 2005, “Fundamental Indexation,” *Financial Analysts Journal*, vol. 61, no. 2 (March/April):83–99.
7. Tzee-man Chow, Jason Hsu, Vitali Kalesnik, and Bryce Little, 2011. “A Survey of Alternative Equity Index Strategies,” *Financial Analysts Journal*, Forthcoming.

# Performance Update

## FTSE RAFI® Equity Index Series\*

TOTAL RETURN AS OF 5/31/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
FTSE RAFI® All World 3000 <sup>1</sup>	TFRAW3	7.07%	29.30%	2.17%	6.58%	9.67%	18.73%
MSCI All Country World <sup>2</sup>	GDUACWF	6.63%	28.77%	-0.86%	4.02%	5.13%	17.13%
FTSE RAFI® Developed ex US 1000 <sup>3</sup>	FRXIXTR	7.63%	32.19%	-1.05%	4.41%	8.34%	19.99%
MSCI World ex US Large Cap <sup>4</sup>	MLCUWXUG	6.48%	29.84%	-3.68%	2.64%	5.58%	18.22%
FTSE RAFI® Developed ex US Mid Small <sup>5</sup>	TFRDXSUS	5.08%	33.40%	5.98%	6.82%	14.19%	18.63%
MSCI World ex US Small Cap <sup>6</sup>	GCUDWXUS	5.61%	39.23%	2.09%	3.38%	10.86%	20.29%
FTSE RAFI® Emerging Markets <sup>7</sup>	TFREMU	2.39%	26.96%	3.83%	15.61%	23.33%	24.53%
MSCI Emerging Markets <sup>8</sup>	GDUUEEGF	2.57%	29.18%	1.45%	12.04%	16.48%	24.12%
FTSE RAFI® 1000 <sup>9</sup>	FRIOXTR	7.87%	26.05%	5.21%	5.32%	5.76%	18.07%
Russell 1000 <sup>10</sup>	RUI0INTR	8.26%	26.81%	1.32%	3.69%	3.16%	16.01%
S&P 500 <sup>11</sup>	SPTR	7.82%	25.95%	0.91%	3.32%	2.64%	15.83%
FTSE RAFI® US 1500 <sup>12</sup>	FR15USTR	7.80%	27.84%	10.74%	8.00%	11.54%	22.49%
Russell 2000 <sup>13</sup>	RU20INTR	8.71%	29.75%	5.75%	4.70%	6.88%	20.85%
FTSE RAFI® Europe <sup>14</sup>	TFREUE	3.93%	16.77%	-0.10%	1.70%	3.29%	19.12%
MSCI Europe <sup>15</sup>	GDDLE15	4.53%	16.86%	-1.33%	1.66%	1.99%	16.93%
FTSE RAFI® Australia <sup>16</sup>	FRAUSTR	0.98%	9.52%	0.32%	4.26%	8.58%	12.99%
S&P/ASX 200 <sup>17</sup>	ASA51	0.90%	10.84%	-1.64%	3.18%	7.81%	13.35%
FTSE RAFI® Canada <sup>18</sup>	FRCANTR	4.57%	16.68%	5.04%	8.17%	9.57%	14.19%
S&P/TSX 60 <sup>19</sup>	TX60AR	3.57%	17.00%	-0.79%	6.36%	7.66%	14.68%
FTSE RAFI® Japan <sup>20</sup>	FRJPNTR	-6.73%	-3.27%	-12.89%	-8.39%	-0.45%	18.68%
MSCI Japan <sup>21</sup>	GDDLJN	-5.90%	-2.45%	-14.67%	-10.11%	-3.01%	18.38%
FTSE RAFI® UK <sup>22</sup>	FRGBRTR	3.27%	18.42%	3.98%	4.12%	4.64%	17.12%
MSCI UK <sup>23</sup>	GDDLUK	3.42%	19.20%	3.57%	4.63%	3.92%	15.03%

\*To see the complete series, please go to: [http://www.ftse.com/Indices/FTSE\\_RAFI\\_Index\\_Series/index.jsp](http://www.ftse.com/Indices/FTSE_RAFI_Index_Series/index.jsp).

## Russell Fundamental Index® Series\*

TOTAL RETURN AS OF 5/31/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
Russell Fundamental Global Index Large Company <sup>24</sup>	RUFGLTU	7.89%	30.31%	2.62%	6.68%	9.65%	17.45%
MSCI All Country World Large Cap <sup>25</sup>	MLCUAWOG	6.39%	27.66%	-1.33%	3.85%	4.41%	16.83%
Russell Fundamental Developed ex US Index Large Company <sup>26</sup>	RUFDXLTU	7.22%	30.74%	9.34%	5.51%	9.94%	18.40%
MSCI World ex US Large Cap <sup>27</sup>	MLCUWXUG	6.48%	29.84%	-3.68%	2.64%	5.58%	18.22%
Russell Fundamental Developed ex US Index Small Company <sup>28</sup>	RUFDXSTU	4.49%	31.08%	4.18%	5.33%	12.72%	18.50%
MSCI World ex US Small Cap <sup>6</sup>	GCUDWXUS	5.61%	39.23%	2.09%	3.38%	10.86%	20.29%
Russell Fundamental Emerging Markets <sup>29</sup>	RUFGETRU	4.18%	34.60%	6.76%	16.93%	22.97%	24.46%
MSCI Emerging Markets <sup>8</sup>	GDUUEEGF	2.57%	29.18%	1.45%	12.04%	16.48%	24.12%
Russell Fundamental US Index Large Company <sup>30</sup>	RUFUSLTU	9.08%	26.87%	4.93%	5.68%	6.57%	16.52%
Russell 1000 <sup>10</sup>	RUI0INTR	8.26%	26.81%	1.32%	3.69%	3.16%	16.01%
S&P 500 <sup>11</sup>	SPTR	7.82%	25.95%	0.91%	3.32%	2.64%	15.83%
Russell Fundamental US Index Small Company <sup>31</sup>	RUFUSSTU	9.52%	30.24%	11.70%	9.20%	12.77%	20.91%
Russell 2000 <sup>13</sup>	RU20INTR	8.71%	29.75%	5.75%	4.70%	6.88%	20.85%
Russell Fundamental Europe <sup>32</sup>	RUFEUTE	4.11%	18.31%	1.53%	3.66%	6.00%	18.08%
MSCI Europe <sup>15</sup>	GDDLE15	4.53%	16.86%	-1.33%	1.66%	1.99%	16.93%

\*To see the complete series, please go to: [http://www.russell.com/indexes/data/Fundamental/About\\_Russell\\_Fundamental\\_indexes.asp](http://www.russell.com/indexes/data/Fundamental/About_Russell_Fundamental_indexes.asp).

## Fixed Income/Alternatives

TOTAL RETURN AS OF 5/31/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
RAFI® Bonds Investment Grade Master <sup>33</sup>		3.90%	8.96%	9.23%	7.89%	6.74%	6.05%
ML Corporate Master <sup>34</sup>	COAO	4.16%	9.74%	8.54%	7.15%	6.52%	6.22%
RAFI® Bonds High Yield Master <sup>35</sup>		6.70%	17.22%	13.07%	11.39%	9.84%	11.05%
ML Corporate Master II High Yield BB-B <sup>36</sup>	HOA4	5.73%	17.40%	9.90%	8.34%	7.70%	9.91%
RAFI US Equity Long/Short <sup>37</sup>		0.68%	0.25%	11.94%	4.62%	6.85%	11.79%
1-Month T-Bill <sup>38</sup>	GB1M	0.03%	0.12%	0.30%	1.79%	1.93%	0.48%
FTSE RAFI® Global ex US Real Estate <sup>39</sup>	FRXR	4.27%	32.79%	-3.60%	0.53%	10.16%	22.37%
FTSE EPRA/NAREIT Global ex US <sup>40</sup>	EGXU	3.43%	30.79%	-7.07%	-1.77%	7.57%	20.29%
FTSE RAFI® US 100 Real Estate <sup>41</sup>	FRUR	12.43%	27.94%	1.75%	-1.57%	6.42%	27.08%
FTSE EPRA/NAREIT United States <sup>42</sup>	UNUS	12.30%	26.77%	-2.90%	-0.82%	5.70%	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/NAREIT Global Index and the EPRA/NAREIT North America Index and contains publicly quoted real estate companies that meet the EPRA Ground Rules. EPRA/NAREIT 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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