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"To improve your odds of outperforming, screen out the negative alpha managers."

Does Blame Predict Performance?

As an econometrician and a fund-of-funds portfolio manager, I spend much time researching quantifiable metrics to help me identify managers who can outperform consistently. There is, in fact, a rich body of literature exploring different manager selection criteria. Academic papers have considered portfolio manager attributes, such as tenure, the CFA designation, advanced degrees, and even SAT scores; they have also examined fund characteristics, such as portfolio turnover, expense ratios, and assets under management. Practitioners, especially investment consultants, have additionally focused on more nuanced and qualitative elements such as investment philosophy, compensation scheme, turnover of key professionals, ownership structure, and succession planning.

Ironically, perhaps, most people have given up on the hope that past positive alpha can predict future outperformance with any reliability.[1] Some might even go as far as asserting that manager outperformance is mean-reverting due to cyclicality in styles and "luck."

Some of the above-mentioned attributes may provide very incremental information on the true quality of the manager. However, most econometricians, asset owners, and investment consultants confess (although not all publicly) that effective methods for picking top quartile performers remain elusive. As one of my friends at a large Middle Eastern sovereign wealth fund famously proclaimed, "We are convinced that managers who can consistently deliver alpha exist. We are, however, also convinced that we do not know how to find them." Perhaps, then, the science of manager selection really is about winning what Charley Ellis calls "the loser's game."

As my high school basketball coach was fond of reminding me, "If you can't improve your shooting mechanics, you can still improve your field goal percentage by not forcing bad shots." His advice is equally relevant to the investment industry: To improve your odds of outperforming, screen out the negative alpha managers. If an investor focuses on eliminating the lower quality managers from his selection universe, the odds for achieving outperformance, in the long run, would be much improved—even if hiring the best managers from the screened short list is still a crapshoot.

So, how does one win in a loser's game? In this article, I argue that you can significantly improve your odds by employing simple rules for identifying and eliminating underperforming managers.

Predicting Long-Term Underperformance

First of all, we already know quite a bit about the predictors of poor long-term investment performance. High portfolio turnover, high expense ratios, and low active weights (Cremers and Petajisto, 2009; Sebastian, 2013) are quantifiable metrics that tend to predict underperformance in the long run. Qualitatively, anecdotes suggest that high turnover in the professional ranks, lack of organizational alignment due to poor compensation design, or deficient inter-generational transition planning also hurt long-term investment

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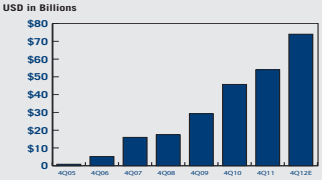

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results. Both finance academics and investment consultants have been working hard on identifying quantitative and qualitative attributes which might predict underperformance.

However, given the reported negative median and average underperformance for active managers, investors will have to work much harder in screening out low quality funds and managers just to get the expected alpha for the screened universe up to zero. For example, the average mutual fund underperforms by 1.6% net of fees; screening out high fee funds merely brings the average active return above −1%. Additionally, many low quality investment organizations are savvy enough to respond to RFPs and interviews carefully so as to tick most of the boxes on a consultant's due diligence report. The cynical perspective is that asset managers are far more adept at solving the challenge of gathering assets from asset owners than solving the challenge of producing alpha for asset owners.

Importance of Culture

So, how do we spot the lower quality asset managers who fly the colors of high quality managers? Are there other attributes predictive of long-term underperformance that cannot so easily be masked? I believe there are.

Over the past five years, Research Affiliates has engaged outside experts to learn about the transformative power of a positive and healthy corporate culture.[2] As a quant, I initially approached this new age touchy-feely voodoo magic with a great deal of suspicion. Over the years, I have come to understand and deeply appreciate the enormous impact that culture can have on the individuals who come together as a collective to drive organizational success. As I interact with different organizations and manage my own team, I have discovered that one of the most toxic culture elements for investment management organizations is the culture of blame.

Blame has many brothers, including fear, defensiveness, and self-righteousness. When the four horsemen are present, personal accountability, creativity, openness, and learning go into exile. From what I have heard and seen, when blame lives in an investment organization, professionals take joy in second-guessing investment decisions after poor short-term performance. Whether it is the board blaming the investment staff at a pension fund, or the client facing team blaming the portfolio management group at an asset management firm—the *modus operandi* is often righteous indignation seeking to assign fault. The logical moves for the investment professionals, in this environment, are either to get defensive and deflect blame onto others or to proactively hide poor results.

> *"When blame prevails, toxic fear becomes the main motivator of behavior."*

Most academics are bewildered by the existence of year-end and quarter-end window dressing of portfolios—it seems too absurd to believe that such ridiculous behavior could persist in the investment industry, where delivering alpha is the only thing that supposedly matters. But to practitioners, buying popular winners at high prices and selling the cheap beleaguered dogs are as natural as can be when one has to deal with reproachful board members or client account managers. When Apple is trading at $800 a share, they question why the portfolio manager did not buy the stock; everyone knows that Apple will take over the world. And when Apple craters to $400 a share, they proclaim that any fool knows the company is only half its former self without Steve Jobs.

Similarly, cases studies have questioned why pension funds and portfolio managers do not rebalance into risk assets after large price declines, given the documented long-term price mean-reversion pattern (Ang and Kjaer, 2011). Most practitioners would readily acknowledge that the driver of this behavior is based in organizational politics rather than investment conviction. In 2009, the *ex ante* sensible investment decision to rebalance into financial stocks and high yield bonds simply carried too much risk of *ex post* blame.

When blame prevails, toxic fear becomes the main motivator of behavior. In that culture, people tend to hide problems and/or to be uninvolved, unaware, and unaccountable with regard to anything that might look like a problem. They will not be identifying or solving problems. And a special few might just be too willing to point fingers with righteousness and, of course, with hindsight. It is difficult to imagine long-term investment success from an organization rooted in blame. On the other hand, we would believe that superior long-term investment results can be produced by an organization which (1) unflinchingly identifies problems, (2) debates them with openness and without blame, (3) emphasizes fixing them, and (4) focuses on learning to avoid similar mistakes in the future.

Investment Organization and the Blame Game

The investment management industry, for better or for worse, is one where the short-term investment results experienced by clients provide little or no information on

the true quality of the product. This might be especially true in volatile asset classes like equities where noise is especially prevalent. Given the dearth of actionable information contained in short-term performance, it is simply mind-boggling that so much acclaim and blame can be apportioned on the basis of short-term performance.

A culture of blame in an environment where outcomes are random can only lead to the most perverse behavior. When the organization's sport is to blame, it hardly matters that the assignment of fault is based on a metric (short-term performance) with no actual informational content. Whatever ceremonial committee meetings occur to conduct the *post mortem*, proclaim the faults, and distil the supposed lessons—the actual learning can only be naught. After all, how can someone take true responsibility for a random bad outcome and improve his investment process to assure positive random draws in the future?

Learning agility is the most valuable currency for long-term organizational performance in a dynamic environment where new facts are constantly being discovered and new theories are proposed to account for them. However, organizations plagued with fault-finding will often perceive "needing to be right" as more important than learning. Indeed, perhaps we blame others precisely to satisfy the ego's need to be right. Research finds that the highly intelligent and competitive people often have the greatest need to be right. The investment industry certainly has no shortage of smart, highly competitive people. When investment professionals debate in order to prove themselves right and others wrong, it eliminates the possibility for learning and so the possibility for improvement. When research analysts and portfolio managers focus on appearing to have the truth, they are implicitly committed not to seek the truth but merely to look for confirming evidence.

> *"Thoughtful people who build organizations for the long term don't tolerate a culture of blame."*

In my experience, a blame-oriented organization is often one that demands accountability for randomly unfavorable short-term outcomes. A by-product is wasting resources on developing skills to improve the odds of flipping heads on a fair coin. Prolonged exposure to this culture may eliminate creativity and true personal responsibility and replace them with a cynical commitment to the art of covering one's arse. When an organization's energy is devoted to CYA instead of creating value, it is difficult to imagine that it could deliver superior long-term investment results. Thoughtful people who build organizations for the long-term don't tolerate a culture of blame.

Conclusion

In the end, I am an economist, not an organization behavior researcher. My biggest issue with blame in an investment organization is that it seems to be strongly positively correlated with a genuine lack of comprehension for statistics at the most senior level. Blame-oriented investment organizations revel in the drama of short-term performance—there is always something to "hold someone accountable for" (code word: blame) the next quarter. It is difficult to imagine that using short-term results to direct organizational energy and resources would create outputs of substance. If an investment management organization is dominated by people who aren't wise enough to understand that short-term results are largely random, there can be no hope that this particular organization will be winning the loser's game.

My advice is to avoid investment organizations with a culture of blame. They are likely very bad at statistics.

Endnotes

1. Paradoxically, many asset managers continue to be hired and fired based on recent three-year performance, despite all evidence pointing to the harm of such a practice. See Towers Watson's (2011).
2. We have been working with Jim Dethmer's Conscious Leadership for the past five years on learning and building a strong corporate culture.

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Performance Update

FTSE RAFI® Equity Index Series*

TOTAL RETURN AS OF 2/28/13	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	10 YEAR VOLATILITY
FTSE RAFI® All World 3000[1]	TFRAW3	4.80%	9.94%	9.20%	2.83%	12.66%	18.88%
MSCI All Country World[2]	GDUEACWF	4.67%	9.92%	9.96%	1.96%	9.68%	16.77%
FTSE RAFI® Developed ex US 1000[3]	FRX1XTR	3.13%	6.85%	5.58%	-0.75%	11.00%	20.44%
MSCI World ex US Large Cap[4]	MLCUWXUG	3.92%	9.31%	7.22%	-0.68%	10.16%	18.40%
FTSE RAFI® Developed ex US Mid Small[5]	TFRDXUSU	5.37%	8.71%	9.57%	4.68%	14.89%	19.10%
MSCI World ex US Small Cap[6]	GCUDWXUS	5.21%	8.44%	10.09%	1.81%	13.24%	20.53%
FTSE RAFI® Emerging Markets[7]	TFREMU	-1.47%	-4.57%	5.30%	1.44%	22.21%	24.78%
MSCI Emerging Markets[8]	GDUEEGF	0.13%	0.62%	6.92%	0.64%	17.27%	24.10%
FTSE RAFI® 1000[9]	FR10XTR	7.99%	16.91%	14.41%	7.10%	10.75%	17.40%
Russell 1000[10]	RU10INTR	6.84%	13.62%	13.75%	5.21%	8.67%	15.09%
S&P 500[11]	SPTR	6.61%	13.46%	13.50%	4.94%	8.24%	14.79%
FTSE RAFI® US 1500[12]	FR15USTR	7.36%	14.59%	14.62%	10.17%	14.49%	22.13%
Russell 2000[13]	RU20INTR	7.43%	14.02%	14.71%	7.35%	11.16%	20.10%
FTSE RAFI® Europe[14**]	TFREUE	2.53%	9.30%	6.14%	0.38%	8.77%	17.91%
MSCI Europe[15**]	GDDLE15	3.85%	13.45%	9.34%	1.68%	8.08%	14.85%
FTSE RAFI® Australia[16**]	FRAUSTR	12.67%	31.89%	9.13%	5.06%	11.51%	13.38%
S&P/ASX 200[17**]	ASA51	10.59%	24.19%	8.03%	2.86%	10.97%	13.42%
FTSE RAFI® Canada[18**]	FRCANTR	5.55%	10.10%	7.18%	5.36%	11.18%	13.58%
S&P/TSX 60[19**]	TX60AR	3.89%	6.00%	5.66%	1.35%	9.69%	14.00%
FTSE RAFI® Japan[20**]	FRJPNTR	14.08%	16.97%	4.18%	-3.75%	4.74%	19.55%
MSCI Japan[21**]	GDDLJN	13.57%	19.74%	4.85%	-4.46%	3.50%	18.90%
FTSE RAFI® UK[22**]	FRGBRTR	8.47%	14.59%	10.14%	5.34%	10.37%	15.78%
MSCI UK[23**]	GDDLUK	8.46%	12.82%	9.81%	5.63%	9.60%	13.64%

*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 2/28/13	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	10 YEAR VOLATILITY
Russell Fundamental Global Index Large Company[24]	RUFGLTU	4.79%	10.23%	10.66%	3.98%	12.92%	17.36%
MSCI All Country World Large Cap[25]	MLCUAWOG	4.50%	9.84%	9.65%	1.75%	9.08%	16.43%
Russell Fundamental Developed ex US Index Large Company[26]	RUFDXLTU	2.85%	6.36%	6.18%	0.15%	12.28%	18.89%
MSCI World ex US Large Cap[27]	MLCUWXUG	3.97%	9.44%	6.95%	-0.83%	9.65%	18.26%
Russell Fundamental Developed ex US Index Small Company[28]	RUFDXSTU	5.78%	11.28%	10.26%	4.55%	15.00%	18.57%
MSCI World ex US Small Cap[6]	GCUDWXUS	5.21%	8.44%	10.09%	1.81%	13.24%	20.53%
Russell Fundamental Emerging Markets[29]	RUFGETRU	-0.59%	-0.61%	8.71%	3.88%	22.21%	24.47%
MSCI Emerging Markets[8]	GDUEEGF	0.13%	0.62%	6.92%	0.64%	17.27%	24.10%
Russell Fundamental US Index Large Company[30]	RUFUSLTU	8.12%	16.47%	14.95%	7.63%	11.22%	15.78%
Russell 1000[10]	RU10INTR	6.84%	13.62%	13.75%	5.21%	8.67%	15.09%
S&P 500[11]	SPTR	6.61%	13.46%	13.50%	4.94%	8.24%	14.79%
Russell Fundamental US Index Small Company[31]	RUFUSSTU	7.83%	15.01%	16.32%	11.38%	14.97%	21.01%
Russell 2000[13]	RU20INTR	7.43%	14.02%	14.71%	7.35%	11.16%	20.10%
Russell Fundamental Europe[32**]	RUFEUTE	2.32%	8.93%	8.24%	2.40%	11.42%	16.70%
MSCI Europe[15**]	GDDLE15	3.85%	13.45%	9.34%	1.68%	8.08%	14.85%

*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 2/28/13	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
RAFI® Bonds US Investment Grade Master[33]	—	-0.10%	5.92%	8.14%	7.91%	6.25%	5.97%
ML Corporate Master[34]	C0A0	-0.02%	7.08%	8.26%	7.45%	6.05%	6.12%
RAFI® Bonds US High Yield Master[35]	—	1.08%	10.60%	11.85%	12.03%	11.11%	9.79%
ML Corporate Master II High Yield BB-B[36]	H0A4	1.50%	11.23%	11.46%	9.78%	9.17%	9.22%
RAFI® US Equity Long/Short[37]	—	3.47%	7.90%	2.51%	5.56%	6.27%	11.45%
1-Month T-Bill[38]	GB1M	0.01%	0.05%	0.08%	0.26%	1.58%	0.51%
FTSE RAFI® Global ex US Real Estate[39]	FRXR	3.68%	23.50%	12.35%	2.21%	—	—
FTSE EPRA/NAREIT Global ex US[40]	EGXU	3.85%	22.07%	13.07%	0.67%	—	—
FTSE RAFI® US 100 Real Estate[41]	FRUR	7.97%	22.65%	21.16%	9.30%	—	—
FTSE EPRA/NAREIT United States[42]	UNUS	4.86%	17.35%	19.62%	6.81%	—	—
Citi RAFI Sovereign Developed Markets Bond Index Master[43]	CRFDMU	-1.66%	1.76%	5.13%	3.97%	6.58%	7.72%
Merrill Lynch Global Governments Bond Index II[44]	W0G1	-2.51%	-1.23%	3.64%	3.64%	5.52%	7.05%
Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Master[45]	CRFELMU	0.94%	7.64%	—	—	—	—
JPMorgan GBI-EM Global Diversified[46]	JGENVUUG	0.39%	6.09%	—	—	—	—

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.