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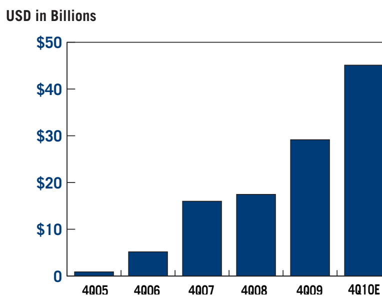
fundamentals

Rob Arnott

RAFI® Managed Assets*



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620 newport center drive, suite 900
newport beach, ca 92660 usa
phone +1 (949) 325-8700
fax +1 (949) 554-0192
info@rallc.com
www.rallc.com

MEDIA CONTACTS
Tucker Hewes
Hewes Communications
+1 (212) 207-9451
tucker@hewescomm.com

Joel Chernoff
Research Affiliates
+1 (949) 325-8729
chernoff@rallc.com

THE RAFI® FIVE-YEAR SCORECARD

When the Fundamental Index® concept was introduced, it was met with fierce attacks. Critics decried its backtested results as data-mining or said the approach was just a repackaged value investment process. Five years after the first RAFI indices went live, the proof is in: The methodology has generated superior performance during a period when value has lagged growth all over the world.

In a relatively short span of time, the Fundamental Index approach has revolutionized passive investing and has served as an important milestone in the evolution of our investment thinking, helping spawn a new field of investing—that of Alternative Beta or Strategy Indices. In this issue we show that live RAFI results support our earlier research and the robustness of the Fundamental Index methodology.

RAFI's Better Beta

We published our initial research on the Fundamental Index concept in the March/April 2005 issue of the F*inancial Analysts Journal*, showing how the methodology outperformed in U.S. markets during a 43-year span ending December 2004, based on a simulation.[1]

That initial research was extended by Nomura Securities to cover the 23 developed markets in the FTSE Developed Index.[2] The results are summarized in **Table 1**. Impressively, the Fundamental Index approach generated excess returns over cap weighting in 21 of the 23 developed market applications over a 21-year period. The average outperformance in developed large company markets was 2.7%. With these results in hand, we concluded that an investor could achieve a return of 2–4% over cap-weighted indexes in developed markets, over a complete market cycle.

Since FTSE launched its FTSE RAFI family of indexes in November 2005, we've lived through two bull markets sandwiched around the biggest global bear market since the 1930s. If this isn't a full market cycle, we are not sure what is. Value stocks won handily in 2006 and the middle quarters of 2009, flanked by years of mostly growth equity outperformance. So how has the Fundamental Index approach fared over this stretch?

Using live results, 19 of 23 countries added value via the Fundamental Index methodology. The average excess return per country has been 2.0%, as shown in **Table 2**. The FTSE RAFI US 1000 Index produced an excess return of 2.3% per annum, just a bit better than our original study showed.[3]

The live results fall into the 2–4% range we discovered in our initial research. But admittedly they are at the lower end. While an excess return of 2% is respectable, why didn't we *fully* match the long-term backtested results? For that, let's turn our attention to the other major criticism of the Fundamental Index approach—the value effect.

continued on page two

Table 1. Simulated Annualized Country Returns of FTSE RAFI Indices in Local Currency, Period Ending December 2004

Country	RAFI Return	MSCI Return	Value Added	Tracking Error	Info Ratio	Alpha *t*-statistic	Start Date
Ireland	19.6%	10.9%	8.6%	9.5%	0.91	4.31	1988
Austria	16.6%	11.7%	4.9%	10.1%	0.48	2.77	1984
France	16.3%	12.4%	3.9%	7.4%	0.53	2.71	1984
Singapore	11.1%	7.2%	3.9%	6.9%	0.57	2.38	1988
Norway	15.0%	11.2%	3.8%	6.5%	0.59	2.79	1984
Spain	15.9%	12.3%	3.6%	5.3%	0.69	4.22	1988
Canada	13.2%	9.7%	3.5%	6.9%	0.50	3.70	1984
Portugal	10.7%	7.4%	3.3%	8.8%	0.38	1.82	1989
Greece	21.3%	18.1%	3.2%	8.9%	0.35	1.30	1989
United Kingdom	14.9%	11.8%	3.1%	4.6%	0.67	3.18	1984
Japan	6.4%	3.3%	3.1%	5.6%	0.55	2.47	1984
Hong Kong	20.5%	17.6%	2.9%	6.6%	0.44	2.01	1984
Germany	12.0%	9.1%	2.9%	6.0%	0.48	3.64	1984
Australia	15.5%	13.0%	2.6%	5.4%	0.48	3.00	1984
Italy	15.6%	13.3%	2.2%	6.0%	0.38	1.76	1984
United States	15.1%	12.9%	2.2%	5.0%	0.44	2.83	1984
Denmark	11.3%	9.1%	2.1%	8.4%	0.25	1.68	1984
Sweden	16.7%	14.8%	1.9%	10.9%	0.18	1.26	1984
Finland	13.9%	12.3%	1.6%	21.7%	0.07	1.23	1988
Netherlands	13.4%	11.9%	1.5%	6.5%	0.23	1.22	1984
Belgium	15.8%	14.4%	1.4%	5.9%	0.24	1.90	1984
New Zealand	6.5%	6.6%	-0.1%	9.2%	-0.01	-0.06	1988
Switzerland	10.8%	11.3%	-0.6%	4.4%	-0.13	-0.45	1984
23-Country Average*	**15.9%**	**13.3%**	**2.7%**	**3.0%**	**0.89**	**5.01**	**1984**

*Values are determined from the return series of the average country, not the average of each respective statistic in the above table.
Source: Research Affiliates.

Positive Results In a Growth-Oriented Market

Critics have contended that the Fundamental Index methodology derives its benefit from a value tilt. We don't disagree with that view as they're half right. Let's explain. Suppose there are two stocks with identical sales, book values, cash flow, and dividends. The first stock, Growthy Shares Inc., trades at twice the market multiple due to its outstanding recent operating results and the investors' resultant high expectations for future growth. Meanwhile, Unloved Value Co., with a stream of recent bad news, sells at half the market multiple. Cap weighting doubles the weight of Growthy Shares and halves the weight in Unloved Value Co., relative to their economic scale, despite the companies being the exact same size. Repeat this exercise across the whole market and the result is a strong growth tilt for a cap-weighted index portfolio. Meanwhile, a fundamentally weighted index portfolio doesn't share that tilt to growth; it matches the look and composition of the economy. From a cap-centric point of view, the Fundamental Index portfolio does have a value tilt, but it's a special value tilt—an exact mirror image of the market's willingness to pay up for perceived future growth opportunities.

It is well documented that value has historically outperformed growth.[4] Our own analysis has found roughly one-fourth of the RAFI method's excess return is attributed to a static value tilt as outlined above. A majority of the excess return stems from contra-trading against the fads, bubbles, crashes, and constantly shifting expectations and speculations at work in the capital markets.

Table 2. Live Annualized Returns Since Inception of FTSE RAFI Indices in USD, November 30, 2005–December 31, 2010

Country	RAFI Return	MSCI Return	Value Added
Austria	4.9%	-5.2%	10.1%
Hong Kong	17.5%	12.1%	5.4%
Germany	11.7%	7.8%	3.9%
Greece	-11.1%	-14.3%	3.2%
Belgium	-1.8%	-4.8%	2.9%
Sweden	15.0%	12.1%	2.9%
Finland	6.2%	3.4%	2.7%
Singapore	19.2%	16.8%	2.4%
United States	4.7%	2.4%	2.3%
Italy	-1.1%	-3.3%	2.2%
Portugal	5.5%	3.9%	1.6%
France	4.9%	3.4%	1.5%
Japan	0.2%	-0.7%	0.9%
Canada	11.8%	10.9%	0.9%
Spain	6.3%	5.5%	0.9%
Switzerland	7.5%	6.7%	0.7%
Norway	9.7%	9.1%	0.6%
Australia	12.5%	12.2%	0.4%
New Zealand	0.0%	-0.1%	0.1%
United Kingdom	2.8%	3.2%	-0.4%
Netherlands	1.8%	5.1%	-3.3%
Denmark	7.5%	12.1%	-4.6%
Ireland	-24.1%	-19.2%	-4.9%
23-Country Average*	**6.0%**	**4.0%**	**2.0%**

*Values are determined from the return series of the average country, not the average of each respective statistic in the above table.
Source: Research Affiliates.

For the 21-year period ending December 2004, the global developed equity market witnessed a value premium of 1.3%, thus acting as a *tailwind* for the typically value-oriented RAFI performance.[5]

In opposite fashion, value acted as a *headwind* during the live period. In the United States, large-cap value stocks returned +1.4% from November 30, 2005, through December 31, 2010, while their

growth counterparts were up +3.6%.[6] Thus, the negative premium for value stocks has been about half of this 2.2% difference per year in the United States. Similarly, in developed markets, the value premium was –1.1% per year for the past five-plus years (See **Figure 1**).

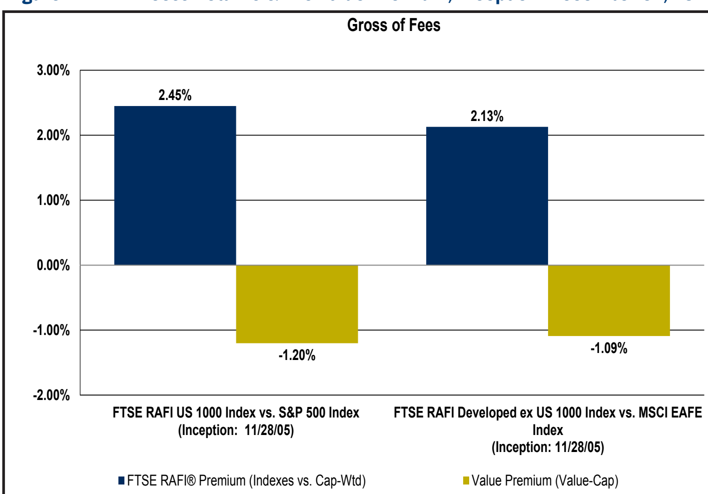
Our simulated results showed an average RAFI excess return of 2.7% per year vis-à-vis cap weighting in a period of 1.3% value outperformance, so clearly RAFI performance is more than just value. The RAFI live index results have been even more impressive, achieving 2.0% excess returns during a time when value indexes lagged the broad markets by more than 1% per year! The RAFI approach beat the cap-weighted value benchmark by well over 300 bps, winning while value was losing, compounded over five years.

How is that possible? One of the important features of the RAFI investment process is the annual reconstitution back to a company's fundamental scale as defined by a composite of sales, cash flow, book value, and dividends. This rebalancing, a key differentiator of RAFI indices, forces the portfolio to trim stocks whose prices recently outperformed their fundamentals and add to those stocks whose prices have underperformed the businesses' economic footprints. The market is constantly changing its mind as to which companies are growth stocks and which ones are value stocks, and how much premium or discount each company deserves. A conventional value index responds by adding and dropping companies as they fall in or out of the value camp; but the weight is always the cap weight if it's in the index. A Fundamental Index portfolio will adjust over- or underweights relative to the cap-weighted market to reflect the constantly changing premium or discount reflected in the share price. The size of the business is merely a convenient, and economically meaningful, anchor to use for rebalancing.

On a style basis, the RAFI approach increases its value exposure when value has recently underperformed and is cheap (i.e., investors are rewarded with a high *forward-looking* value premium). This phenomenon was vividly seen in 2009 when the RAFI strategies — oblivious to imminent Armageddon — rebalanced into the very finance, industrial, and consumer discretionary stocks that were ostensibly poised for extinction. Meanwhile, the RAFI approach reduces its value exposure when value has recently outperformed and is expensive. This contra-trading process is the reason why a value-tilted portfolio can win—even handily—in a secular growth-led market.

The contra-trading impact is illustrated in **Figure 2**, which shows where RAFI excess returns are plotted given the value premium for the five years of live performance. The dashed line that starts in the lower left quadrant and rises to the right is how the Fundamental Index approach would have performed if it were a pure value strategy. Points above the dashed line are one-year periods when the RAFI strategy beats the pure value approach; points below the line are one-year

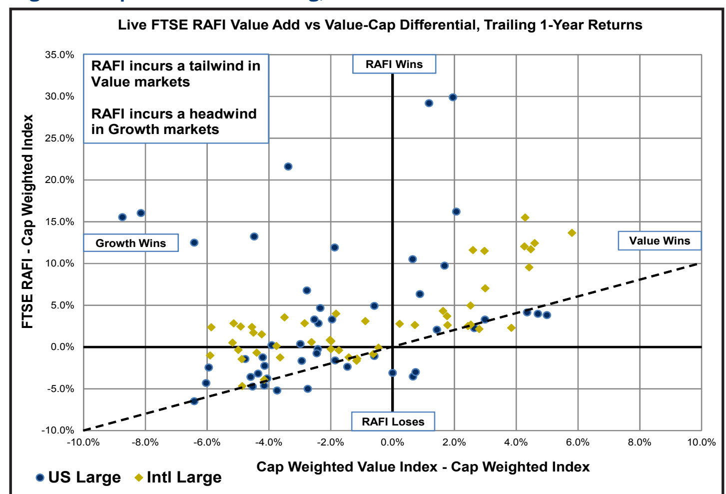
Figure 1. RAFI Excess Returns & The Value Premium, Inception–December 31, 2010



The FTSE RAFI Premium is the FTSE RAFI Index (FTSE RAFI US 1000 Index and FTSE RAFI Developed ex US 1000 Index) minus its corresponding cap-weighted index (S&P 500 Index and MSCI EAFE Index). Value premium is the cap-weighted value index (Russell 1000 Value Index and MSCI EAFE Value Index) minus the corresponding cap-weighted index.

Source: Research Affiliates on data from eASE Analytics.

Figure 2. Impact of Contra-Trading, 2005–2010



For US Large, Cap Weighted Value Index – Cap Weighted Index represents the Russell 1000 Value Index – the Russell 1000 Index. For International Large, Cap Weighted Value Index – Cap Weighted Index represents the MSCI EAFE Value Index – the MSCI EAFE Index.

Source: Research Affiliates.

periods when the RAFI approach loses to the pure value strategy.

Two things stand out. First, the RAFI approach generally plots above this dashed line…it beats the straight value strategy. Overall, the live batting average—or success rate—of RAFI wins is 80% of one-year periods. Second, the RAFI strategy outperforms as frequently when growth wins (the left half of the chart) as when value wins (the right half of the chart).

Conclusion

The Fundamental Index methodology does not work all the time; no investment process does. However, our research found that, over full market cycles, the RAFI methodology is strikingly effective at adding value over the cap-weighted benchmarks. A live five-year win rate of 83% in developed markets—during a span of substantial value underperformance when critics said the Fundamental Index methodology should have lost—is powerful evidence.

Any new scientific hypothesis—or backtested analysis—warrants a skeptical look. The Fundamental Index idea is no exception. We think the live results, however, provide strong empirical evidence that the RAFI idea holds merit and will begin to open the minds of many of the early disbelievers. Further, these results suggest that RAFI strategies can play an important role as a low-cost "core" part of your equity portfolio—a better beta achieved with all of the advantages of traditional cap-weighted indexes.

Endnotes

1. Robert D. Arnott, Jason Hsu, and Philip Moore, 2005, "Fundamental Indexation," *Financial Analysts Journal*, vol. 61, no. 2 (March/April): 83–99.
2. H. Tamura and Y. Shimizu, 2005, "Global Fundamental Indices: Do They Outperform Market-Cap Weighted Indices on a Global Basis?" Nomura Global Quantitative Research (October 28).
3. The statistician in me must admit this is fortuitous. While it is dead on with our historical average, the range of all five-year excess returns from the 1960s is considerably wider and investors should not assume all or even most five-year holding periods would produce such a similar outcome.
4. Eugene F. Fama and Kenneth R. French, 1992, "The Cross-Section of Expected Stock Returns," *Journal of Finance*, vol. 47, no. 2: 427–465.
5. Calculated by MSCI World Value Index (13.0%) – MSCI World Index (11.7%) from January 1984 through December 2004.
6. As measured by the Russell 1000 Value and Growth indexes.

Performance Update

TOTAL RETURN AS OF 12/31/10	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
FTSE RAFI® 1000 Index[A]	FR10XTR	19.98%	19.98%	0.74%	4.74%	5.58%	18.25%
S&P 500[B]	SPTR	15.06%	15.06%	-2.86%	2.29%	1.41%	16.38%
Russell 1000[C]	RU10INTR	16.10%	16.10%	-2.37%	2.59%	1.83%	16.59%
FTSE RAFI® US 1500 Index[D]	FR15USTR	29.36%	29.36%	7.53%	7.96%	12.44%	23.10%
Russell 2000[E]	RU20INTR	26.85%	26.85%	2.22%	4.47%	6.33%	21.14%
FTSE RAFI® Developed ex US 1000 Index[F]	FRX1XTR	7.53%	7.53%	-4.57%	5.15%	7.00%	20.13%
MSCI EAFE[G]	GDDUEAFE	8.21%	8.21%	-6.55%	2.94%	3.94%	18.65%
FTSE All World Series Developed ex US[H]	FTS5DXUS	9.85%	9.85%	-5.53%	4.08%	4.83%	18.86%
FTSE RAFI® Developed ex US Mid Small[I]	FRSDXUS	16.84%	16.84%	0.96%	5.43%	11.25%	18.71%
MSCI EAFE Small[J]	MCUDEAFE	19.44%	19.44%	-4.05%	0.65%	7.20%	20.36%
FTSE RAFI® Emerging Markets[K]	TFREMU	18.26%	18.26%	2.95%	17.35%	23.99%	25.17%
MSCI Emerging Markets[L]	GDUEEGF	19.20%	19.20%	-0.03%	13.11%	16.23%	24.77%
FTSE RAFI® Canada[M]	FRCANTR	14.59%	14.59%	4.58%	7.78%	9.30%	14.27%
S&P/TSX 60[N]	TX60AR	13.84%	13.84%	1.12%	6.49%	6.11%	15.65%
FTSE RAFI® Australia[O]	FRAUSTR	-1.56%	-1.56%	-3.50%	5.00%	9.39%	13.14%
S&P/ASX 200 Index[P]	ASA51	1.57%	1.57%	-5.02%	4.32%	8.40%	13.58%
FTSE RAFI® Japan[Q]	FRJPNTR	2.61%	2.61%	-11.70%	-7.14%	-9.36%	22.16%
MSCI Japan[R]	GDDLJN	0.71%	0.71%	-14.14%	-9.40%	-2.26%	18.33%
FTSE RAFI® UK[S]	FRGBRTR	12.29%	12.29%	-0.37%	4.33%	6.53%	18.31%
MSCI UK[T]	GDDUUK	12.22%	12.22%	0.82%	4.59%	3.01%	15.25%
RAFI Investment Grade Master[U]		9.05%	9.05%	8.03%	6.77%	6.81%	6.06%
Merrill Lynch US Corporate Master[V]	C0A0	9.52%	9.52%	6.92%	5.95%	6.61%	6.24%
RAFI High Yield Master[W]		13.82%	13.82%	13.20%	10.82%	10.53%	11.24%
Merrill Lynch US High Yield BB-B Rated[X]	H0A4	14.50%	14.50%	8.48%	7.73%	7.75%	10.11%
RAFI US Equity Long/Short Index[Y]		10.39%	10.39%	8.39%	5.80%	8.30%	12.50%
1-Month T-Bill[Z]	GB1M	0.12%	0.12%	0.52%	2.16%	2.70%	0.55%

Definition of Indices: (A) The FTSE RAFI® 1000 comprises the 1000 largest companies selected and weighted using our Fundamental Index methodology; (B) The S&P 500 Index is an unmanaged market index that focuses on the large-cap segment of the U.S. equities market; (C) 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; (D) The FTSE RAFI® 1500 comprises the 1001st to 1500th largest companies selected and weighted using our Fundamental Index methodology; (E) The Russell 2000 is a market-capitalization weighted benchmark index made up of the 2,000 smallest U.S. companies in the Russell 3000; (F) The FTSE RAFI® Developed ex US 1000 Index comprises the largest 1000 non US-listed companies by fundamental value, selected from the constituents of the FTSE Developed ex US Index; (G) MSCI EAFE (Morgan Stanley Capital International Europe, Australasia, Far East) is an unmanaged index of issuers in countries of Europe, Australia, and the Far East represented in U.S. dollars; and (H) The FTSE All World ex-US Index comprises Large and Mid-Cap stocks providing coverage of Developed and Emerging Markets excluding the United States. It is not possible to invest directly in any of the indexes above; (I) The FTSE RAFI® Developed ex US Mid Small Index tracks the performance of small- and mid-cap equities of companies domiciled in developed international markets (excluding the United States), selected based on the following four fundamental measures of firm size: book value, cash flow, sales, and dividends. The equities with the highest fundamental strength are weighted according to their fundamental scores. The Fundamentals Weighted® portfolio is rebalanced and reconstituted annually. Performance represents price return only; (J) The MSCI EAFE Small Cap Index targets 40% of the eligible small-cap universe (companies with market capitalization ranging from US$200 to US$1,500 million) in each industry group of each country in the MSCI EAFI Index; (K) The FTSE RAFI® Emerging Markets Index comprises the largest 350 companies selected and weighted using the Fundamental Index® methodology; (L) The MSCI Emerging Markets Index is an unmanaged, free-float-adjusted cap-weighted index designed to measure equity market performance of emerging markets; (M) The FTSE RAFI® Canada Index comprises the Canadian stocks represented among the constituents of the FTSE RAFI® Global ex US 1000 Index, which in turn comprises the 1,000 non-U.S.-listed companies with the largest fundamental value, selected from the constituents of the FTSE Developed ex US Index; (N) 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; (O) The FTSE RAFI® Australia Index comprises the Australian stocks represented among the constituents of the FTSE RAFI® Global ex US 1000 Index, which in turn comprises the 1,000 non-U.S.-listed companies with the largest fundamental value, selected from the constituents of the FTSE Developed ex US Index; (P) The S&P/ASX 200 Index, representing approximately 78% of the Australian equity market, is a free-float-adjusted, cap-weighted index; (Q) The FTSE RAFI® Japan Index comprises the Japanese stocks represented among the constituents of the FTSE RAFI® Global ex US 1000 Index, which in turn comprises the 1,000 non-U.S.-listed companies with the largest fundamental value, selected from the constituents of the FTSE Developed ex US Index; (R) 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; (S) The FTSE RAFI® UK Index comprises the U.K. stocks represented among the constituents of the FTSE RAFI® Global ex US 1000 Index, which in turn comprises the 1,000 non-U.S.-listed companies with the largest fundamental value, selected from the constituents of the FTSE Developed ex US Index; (T) 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; (U) The RAFI® 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; (V) 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; (W) The RAFI®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; (X) The Merrill Lynch U.S. High Yield Master II 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; (Y) 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; (Z) 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.

Source: All index returns are calculated using Total Return data from Bloomberg except for the FTSE RAFI Developed ex US Mid Small (FRSDXUS) and the MSCI EAFE Small (MCUDEAFE) which uses price return data.

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