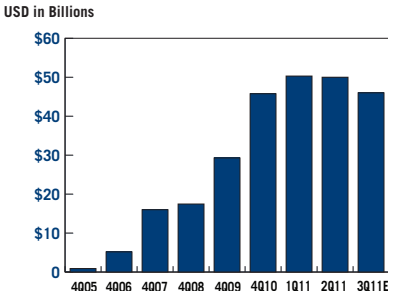
Fundamentals

John West

RAFI® Managed Assets*



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

research® affiliates
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

DE-STRESSING BALANCED FUND INVESTING

David Allen's bestselling book *Getting Things Done* has become a productivity miracle for the stressed, stretched, conflicted and, in short, the unbalanced. Allen describes the antithesis of feeling unbalanced and stressed, what martial artists call "mind like water" and world-class athletes call "the zone." In this state, the mind is clear and we react to our external world instinctively and with ease, a natural flow producing desired results. Allen says this higher state is no longer a luxury but a necessity "for high performance professionals who wish to maintain balance and a consistent positive output from their work."

Balanced fund management is sadly nowhere near such a zone of clarity and positive outcomes. Like dedicated stock and bond mandates, active asset allocation has largely become a benchmark-hugging exercise where strong convictions are muted by concerns over career risk and overly aggressive performance measurement. In this issue, we highlight some improvements for those interested in active asset allocation programs.

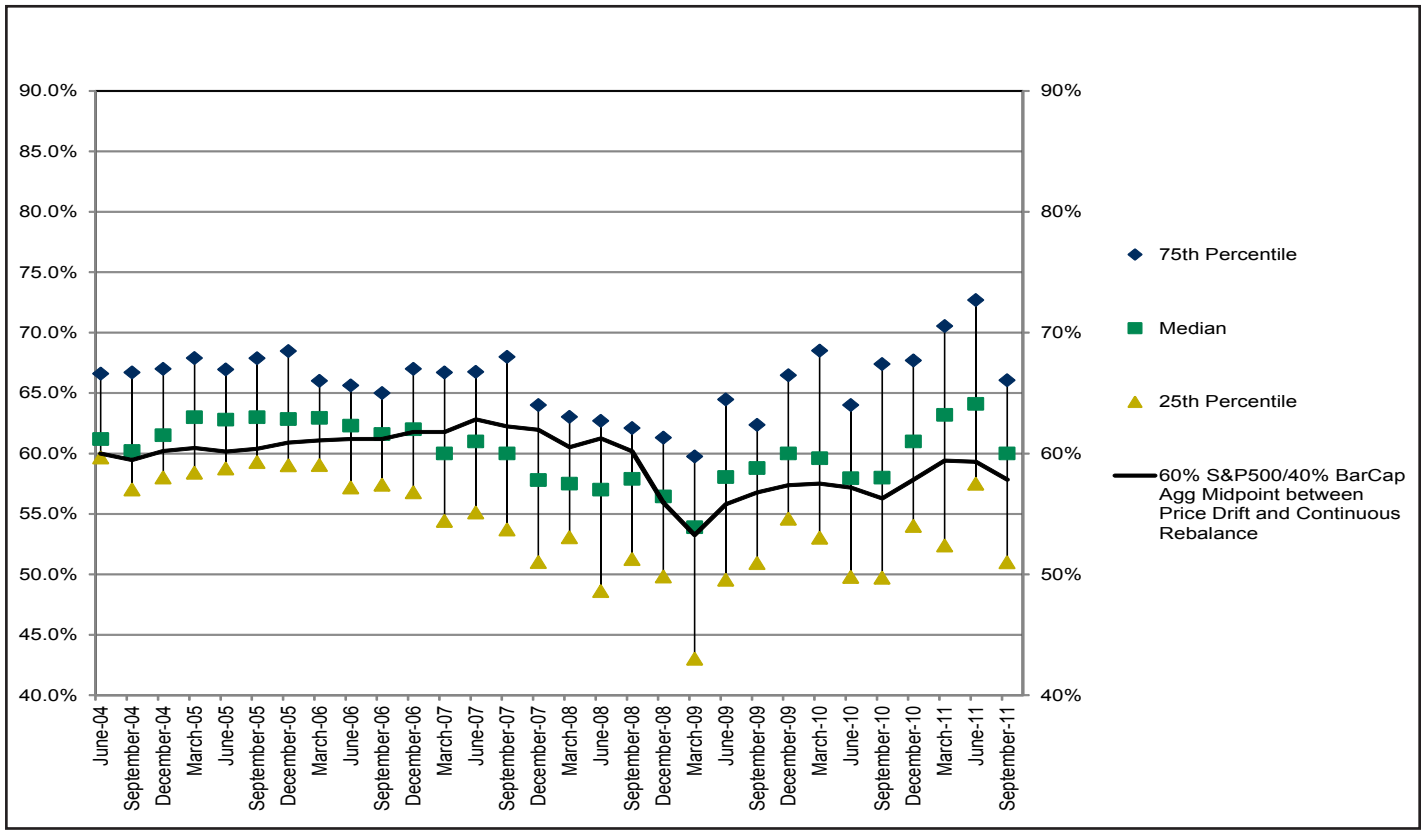
Fair and Balanced?

Balanced portfolios add value in two primary ways: better security selection (picking stocks that outperform the equity benchmark such as the S&P 500 Index, bonds that outperform the bond index, etc.) and through managing the asset mix (shifting money between stocks, bonds, and other categories.) Given that (on a naïve basis) half of the value proposition comes through asset allocation management, we would expect to find a sizeable amount of variation in asset mixes in these portfolios. However, as **Figure 1** shows, the median equity allocation hovers between 55% and 65% over the seven-plus years analyzed.[1] Further, as the 75th and 25th percentile observations show, the managers do a remarkably good job sticking near one another: Half of the managers were within 5% of the median.

To illustrate the thoughtlessness of this allocation "bunching," we compared the median balanced manager to two alternative approaches—a "religious rebalancer" and a "diehard drifter." Our "religious rebalancer" maintains a near-continuous 60% equity allocation by

continued on page two

Figure 1. eVestment Alliance U.S. Balanced and TAA Manager Equity Allocations



Source: Research Affiliates based on data from eVestment Alliance.

rebalancing the portfolio back to 60/40 every month. In contrast, our "diehard drifter" never rebalances, allowing his portfolio mix to drift with the whims of the market.

The black line in Figure 1 plots the mid-point between these two allocators. Virtually all of the allocation movement of the peer group is captured by a combination of price drift and continuous rebalancing!

The other interesting tidbit is the performance of stocks versus bonds over this stretch. From June 2004 through September 2011, the S&P 500 underperformed the BarCap US Aggregate Bond Index by a significant margin (2.0% versus 5.8% compound annual return). This underperformance shouldn't come as a shock as during virtually the entire time horizon—save for a couple of months at the depths of the Global Financial Crisis—stocks were expensive, trading at Shiller P/E ratios well above the historical average. Asset allocation managers evidently don't put a whole lot of independent thought into these asset mixes.

The Method Behind the Madness—Benchmarks!

The late economic historian and consultant Peter Bernstein wrote a wonderful piece lamenting that the days of astounding active manager performance, like baseball's .400 hitters of yesteryear, were a thing of the past.[2] While much of this was due to markets becoming more efficient, Peter also noted that the focus on benchmarks was increasingly to blame. He cited Mark Kritzman's contribution to one of his *Economics and Portfolio Strategy* newsletters:

> *Failing unconventionally was never a happy event in this business, but clients' love affair with benchmarks has made large tracking errors extremely perilous for managers. As Mark Kritzman recently pointed out, active managers are reluctant to form portfolios on the basis of unconstrained optimization of risk and return because the recommended allocations typically deviate too far from the allocations in the benchmark.*[3]

Returning to the eVestment Alliance U.S. Balanced/TAA peer group, we find 75% of the managers with a stated benchmark are tied to a 50/50 or 60/40 equity–debt combination. No wonder their allocations are so tightly concentrated! Peer pressure attributable to short-term benchmarking has transformed asset allocation—arguably the largest determinant of future portfolio returns[4]—from an independent and informed exercise of risk and return to an automated process getting us to an approximate normal allocation.[5] Certainly adjustments are made—a tweak in favor of equities here, a small-cap bias there—but these differentiations tend to be trivial. The pattern still seems to be one size fits all.

The Tonic—Outcome-Oriented Investing

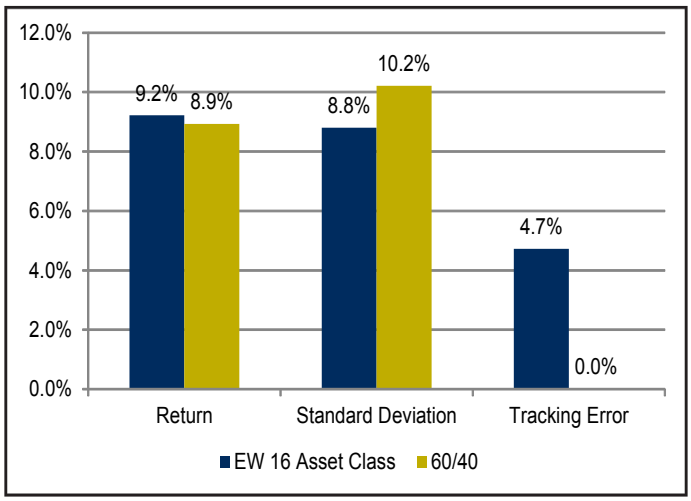
Solving this problem requires us to take a step back. What are these portfolio strategies trying to achieve? What is the desired outcome? Individual, long-only asset class mandates in equities or fixed income naturally should be expected to "beat the benchmark." Such a relative comparison is sensible given the huge swings in absolute performance over even 5- to 10-year stretches, particularly in equities. But active asset allocation, between basic diversification and shifting the mix, can presumably at least partially offset big declines.

We assert that the success of an asset allocation fund should be measured versus a full market cycle *outcome* rather than an intermediate-term benchmark. Since 1900, a 60/40 blend of U.S. equities and bonds have produced a total return of 8.1% according to our own research, not far from the 7–8% embedded in actuarial return assumptions and most 401(k) calculators. Of course, that is a nominal result, which is only of use to those whose liabilities are not subject to inflation—that is, very few if any! In the real world, retirees buy consumer products whose prices generally increase and in specific cases, like health care, rise very fast. Thus, we need to translate this ultra-long-term historical experience into real (post-inflation) returns. With inflation running at an annualized clip of 3% since 1900, we get to a 5% per annum real return. If history repeats, this figure is the long-term outcome investors are looking for from basic asset allocation management.

We further assert that it is reasonable to use such a "CPI-plus"[6] as our targeted outcome and build a long-term asset allocation program to meet it, benchmarks be damned. On this outcome-oriented approach, the construction of an asset allocation or balanced mandate allows for several important advantages versus the constraints of an asset allocation benchmark:

Greater Diversification. Using our oft-cited "Equally Weighted 16 Asset Class" portfolio,[7] **Figure 2** shows that this expanded opportunity set produces returns commensurate with a 60% S&P 500/40% BarCap Aggregate blend at a lower risk level. The Sharpe ratio of this approach is 0.61 versus 0.50 for the traditional 60/40 mix, an increase of over 20% in risk-adjusted results. However, this greater efficiency comes at a cost to benchmark-sensitive investors in the form of nearly 5% tracking error. An easy interpretation of this number is that, on average, once every six years the portfolio will underperform 60/40 by approximately 5%, well outside the comfort range of many fiduciaries, on a total portfolio basis.

Figure 2. Annualized Results, January 1988–October 2011



Source: Research Affiliates based on data from Morningstar Encorr.

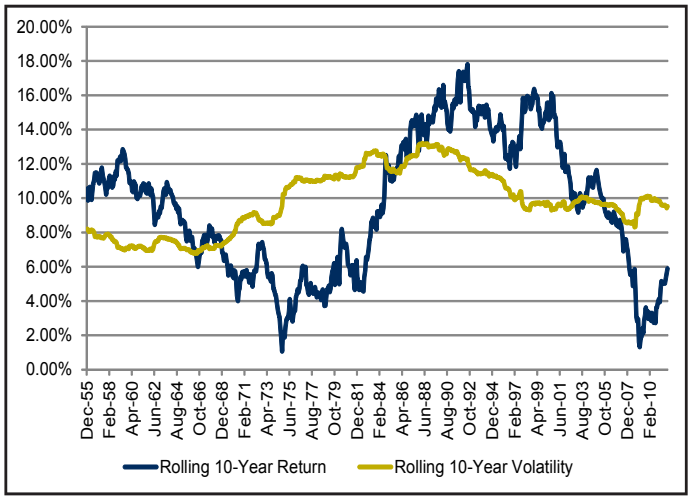
Tyranny of Asset Class Benchmarks.[8] The focus on 60/40 or 50/50 mixes also creates intra-asset class dilemmas at odds with producing a reasonable risk-adjusted outcome. As we've claimed before, cap weighting in equities structurally places more of the portfolio in overpriced stocks and less in underpriced. Ask 1999 era S&P 500 investors how Cisco, Oracle, and Lucent—the so-called axis of wealth destruction—treated them. As counterintuitive as cap weighting equities appears, bond cap-weighting may be even more egregious. Why on earth do we want to lend more to those companies or countries who are the biggest debtors? Given our 3-D prognosis,[9] where over-indebted nations will try to reflate away their obligations, short-term comparisons to a capitalization-weighted global sovereign debt yardstick may be incredibly burdensome to a forward-looking asset allocator.

Dynamic Risk Posture. Asset allocation benchmarks are more or less static risk portfolios as seen in **Figure 3**, which displays rolling 10-year returns and volatility for a 60% S&P 500/40% Ibbotson Long-term Government Bond blend in the post-World War II era. The 60/40 portfolio hovers around 10% volatility over most 10-year stretches, though it occasionally dips below 8% or rises above 12%. While the risk is more or less static, the returns swing from barely positive to 18% per annum, indicating regimes where risk bearing is rewarded and penalized. By focusing on an outcome, we allow ourselves to be in line with Warren Buffett's quote: "Be fearful when others are greedy and greedy when others are fearful." Using a benchmark with more or less constant risk exposure is inconsistent with a Buffett-like contrarian approach.

While this outcome-based approach has many advantages, we recognize that many investors will choose to embrace this approach for only a portion of their portfolio. "Here's a big chunk of our assets, good luck meeting the outcome, keep us informed and let's judge your success in five or seven years," is an unlikely statement.[10] We are all agents—portfolio managers, advisors, CIOs, and boards—facing increased short-term pressure to monitor and make changes, making asset allocation benchmarks a necessity for most.

Under such cases, we suggest clients give their managers sizeable leeway in allocation guidelines to capture much of their insights. A 30% equity allocation on a 60/40 benchmark is reasonable—let the asset allocator allocate! The tracking error should similarly have a wide band—who needs enhanced indexing in asset allocation? Lastly, the idea of tail-risk hedging is worth a discussion if we are constrained to a benchmark. Presumably, this overlay costs a little bit of performance in "normal" markets but causes a wide divergence in extreme down markets (when most clients ironically no longer care about big tracking error!).

Figure 3. Annualized 10-Year Return and Risk 60% S&P 500/40% Ibbotson LT Government Bond



Source: Research Affiliates based on data from Morningstar Encorr.

Conclusion

A key part of David Allen's prescribed method for managing projects is "Outcome Visioning," where the "Why" of the exercise is identified along with a definition of "Wild Success." The features, benefits,

and qualities of that success are then captured at the start of the project and provide a meaningful compass on the journey to completion.

We can apply the same Outcome Visioning to balanced fund investing. The "Why" for most people is to provide for a secure retirement or to satisfy some other liability in the future. The features of success would likely include a long horizon real return, a smooth ride, and intermediate inflation protection (so as to not force an unexpected change in plans). Outperformance over a blended benchmark ought to be a distant fourth. It's time to de-stress the balanced fund mandate.

Endnotes

1. We use eVestment Alliance as it has allocation data for many managers.
2. Peter L. Bernstein, 1999, "Where, Oh Where Are the .400 Hitters of Yesteryear?," *Financial Analysts Journal*, vol. 55, No. 2 (March/April):9–11.
3. Mark Kritzman, 1998, "Wrong and Alone," *Economics & Portfolio Strategy*, New York: Peter L. Bernstein, Inc.
4. Gary P. Brinson, L. Randolph Hood, and Gilbert L. Beebower, 1986, "Determinants of Portfolio Performance," *Financial Analysts Journal*, vol. 42, no. 4 (July/August):39–44.
5. True, the last decade has witnessed a continued if not glacial move away from the domestic 60/40. The addition of alternatives to the mix has probably moved institutional investors toward a "50/35/15" mix with a still dominant but more globally oriented equity slice. Regardless, this new standard still shares the equity dominance and peer group herding of the old domestic 60/40.
6. The Consumer Price Index is a standard measure of inflation in the United States.
7. See "The Long View—Building the 3-D Shelter," *Fundamentals*, October 2011. http://researchaffiliates.com/ideas/pdf/fundamentals/Fundamentals_Oct_2011_The_Long_View_Building_the_3-D_Shelter.pdf.
8. PIMCO's Bill Gross penned an *Investment Outlook* of a similar title in 2006, which is worthwhile reading. http://www.pimco.com/EN/Insights/Pages/IO%20April%202006.aspx.
9. The combination of debt, deficits, and demographics will likely create a storm for developed markets. See, for example, "The Long View—Building the 3-D Shelter," *Fundamentals*, October 2011, and "The '3-D' Hurricane Force Headwind," *Fundamentals*, November 2009. http://researchaffiliates.com/ideas/fundamentals.htm.
10. Peter Bernstein suggested almost that very thing, however. In 2004, he suggested that clients and managers may be better served by signing a five-year contract for investment management services to more fully align agent and client on long-term objectives. The client would have an option to quit at the end of each year, with the cost of getting out declining over time. See Peter L. Bernstein, 2009, "Realigning Incentives," *Welling@Weeden*, vol. 11, no. 9 (May 15). http://welling.weedenco.com/files/NLPP00001/642a.pdf.

Performance Update

FTSE RAFI® Equity Index Series*

TOTAL RETURN AS OF 11/30/11	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	-8.94%	-1.46%	16.32%	0.72%	8.89%	19.17%
MSCI All Country World[2]	GDUEACWF	-6.71%	0.15%	14.03%	-0.94%	4.87%	17.46%
FTSE RAFI® Developed ex US 1000[3]	FRX1XTR	-13.12%	-5.65%	12.29%	-2.25%	7.41%	20.50%
MSCI World ex US Large Cap[4]	MLCUWXUG	-10.55%	-3.55%	10.70%	-2.89%	5.20%	18.66%
FTSE RAFI® Developed ex US Mid Small[5]	TFRDXUSU	-11.12%	-1.87%	21.53%	1.62%	13.41%	18.97%
MSCI World ex US Small Cap[6]	GCUDWXUS	-13.85%	-4.09%	20.24%	-1.91%	9.84%	20.48%
FTSE RAFI® Emerging Markets[7]	TFREMU	-16.84%	-11.37%	24.05%	7.09%	21.83%	24.80%
MSCI Emerging Markets[8]	GDUEEGF	-17.18%	-11.26%	23.98%	3.86%	15.21%	24.35%
FTSE RAFI® 1000[9]	FR10XTR	-1.49%	6.40%	19.43%	1.12%	5.47%	18.29%
Russell 1000[10]	RU10INTR	0.66%	7.38%	15.10%	0.07%	3.37%	16.14%
S&P 500[11]	SPTR	1.08%	7.83%	14.13%	-0.18%	2.91%	15.92%
FTSE RAFI® US 1500[12]	FR15USTR	-6.25%	1.45%	25.82%	3.12%	10.29%	22.88%
Russell 2000[13]	RU20INTR	-4.80%	2.75%	17.56%	0.09%	6.18%	21.16%
FTSE RAFI® Europe[14]	TFREUE	-13.50%	-8.64%	8.93%	-4.22%	2.81%	19.23%
MSCI Europe[15]	GDDLE15	-9.67%	-4.74%	7.93%	-3.21%	1.89%	16.91%
FTSE RAFI® Australia[16]	FRAUSTR	-8.09%	-4.95%	7.79%	-0.16%	7.18%	13.18%
S&P/ASX 200[17]	ASA51	-9.32%	-5.99%	7.97%	-1.33%	6.58%	13.37%
FTSE RAFI® Canada[18]	FRCANTR	-8.14%	-4.27%	13.49%	3.08%	8.52%	14.27%
S&P/TSX 60[19]	TX60AR	-7.46%	-3.77%	10.31%	1.57%	7.29%	14.51%
FTSE RAFI® Japan[20]	FRJPNTR	-19.62%	-16.28%	-1.62%	-11.78%	0.05%	18.51%
MSCI Japan[21]	GDDLJN	-18.55%	-15.12%	-2.66%	-13.32%	-2.30%	18.13%
FTSE RAFI® UK[22]	FRGBRTR	-4.04%	2.86%	12.93%	0.82%	4.84%	17.11%
MSCI UK[23]	GDDLUK	-3.03%	3.50%	12.92%	1.77%	4.02%	15.14%

*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 11/30/11	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	-5.83%	1.72%	15.71%	1.40%	9.04%	17.84%
MSCI All Country World Large Cap[25]	MLCUAWOG	-6.37%	0.46%	13.10%	-1.00%	4.26%	17.15%
Russell Fundamental Developed ex US Index Large Company[26]	RUFDXLTU	-11.53%	-4.14%	11.05%	-1.09%	9.07%	18.91%
MSCI World ex US Large Cap[27]	MLCUWXUG	-10.55%	-3.55%	10.70%	-2.89%	5.20%	18.66%
Russell Fundamental Developed ex US Index Small Company[28]	RUFDXSTU	-10.91%	-1.55%	18.89%	0.63%	12.23%	18.58%
MSCI World ex US Small Cap[6]	GCUDWXUS	-13.85%	-4.09%	20.24%	-1.91%	9.84%	20.48%
Russell Fundamental Emerging Markets[29]	RUFGETRU	-15.14%	-7.52%	26.62%	8.20%	21.44%	24.58%
MSCI Emerging Markets[8]	GDUEEGF	-17.18%	-11.26%	23.98%	3.86%	15.21%	24.35%
Russell Fundamental US Index Large Company[30]	RUFUSLTU	1.45%	8.97%	17.40%	1.82%	6.29%	16.77%
Russell 1000[10]	RU10INTR	0.66%	7.38%	15.10%	0.07%	3.37%	16.14%
S&P 500[11]	SPTR	1.08%	7.83%	14.13%	-0.18%	2.91%	15.92%
Russell Fundamental US Index Small Company[31]	RUFUSSTU	-3.92%	3.83%	26.18%	4.43%	11.19%	21.56%
Russell 2000[13]	RU20INTR	-4.80%	2.75%	17.56%	0.09%	6.18%	21.16%
Russell Fundamental Europe[32]	RUFEUTE	-11.35%	-6.24%	10.61%	-1.94%	5.70%	18.10%
MSCI Europe[15]	GDDLE15	-9.67%	-4.74%	7.93%	-3.21%	1.89%	16.91%

*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 11/30/11	BLOOMBERG TICKER	YTD	12 MONTH	ANNUALIZED 3 YEAR	ANNUALIZED 5 YEAR	ANNUALIZED 10 YEAR	ANNUALIZED 10 YEAR VOLATILITY
RAFI® Bonds Investment Grade Master[33]		6.66%	5.62%	13.10%	7.05%	6.37%	6.05%
ML Corporate Master[34]	C0A0	5.48%	4.48%	13.45%	5.98%	6.03%	6.23%
RAFI® Bonds High Yield Master[35]		5.22%	6.45%	26.66%	9.33%	8.95%	10.96%
ML Corporate Master II High Yield BB-B[36]	H0A4	2.99%	4.42%	22.46%	6.38%	7.40%	9.85%
RAFI® US Equity Long/Short[37]		-6.74%	-2.56%	12.63%	1.73%	4.87%	11.74%
1-Month T-Bill[38]	GB1M	0.05%	0.06%	0.09%	1.30%	1.78%	0.49%
FTSE RAFI® Global ex US Real Estate[39]	FRXR	-20.54%	-14.41%	13.76%	-8.52%	7.97%	23.22%
FTSE EPRA/NAREIT Global ex US[40]	EGXU	-16.52%	-10.69%	10.43%	-9.68%	5.89%	20.84%
FTSE RAFI® US 100 Real Estate[41]	FRUR	-5.46%	-0.17%	26.23%	-8.39%	4.41%	27.75%
FTSE EPRA/NAREIT United States[42]	UNUS	-0.16%	4.13%	20.39%	-7.52%	4.61%	26.05%

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.