



Fundamentally Active

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The release of the paper “Fundamental Indexation”¹ and the subsequent promotion by its authors of their Fundamental Index™ (RAFI) has sparked a wave of renewed interest in alternatively-weighted indexes. Equal weighted, dividend weighted, and fundamental weighted are just a few of the current alternatively weighted implementation strategies. With investor demands for high returns in a low expected returns market, the message of “passive” outperformance strikes a resounding chord.

Alternative to What

When investors think of indexes they think of capitalization-weighted indexes, which came out of modern portfolio theory developed in the 1950s. Simply stated, the size of the company and consequently its weight in the index is the product of the company’s price and its shares outstanding. Capitalization weighting has become the de-facto standard for indexing such that any index that is not capitalization weighted is alternatively weighted.

Implementations

S&P Equal Weighted

In January 2003, Standard and Poor’s (S&P) introduced an equal-weighted version of their S&P 500 large-cap index. Rydex launched a corresponding ETF shortly thereafter. According to Rydex, the potential advantages of this strategy are “(i) smaller, faster-growing companies get a fair shake at competing with industry giants; (ii) equal weighting forces disciplined rebalancing and dollar cost averaging; and (iii) there’s more internal diversification, as the larger companies stand shoulder-to-shoulder with their smaller siblings.”² Price movements create significant tracking issues so this index is rebalanced once a quarter.

Dow Jones Select Dividend

In November 2003, Dow Jones Indexes released the Dow Jones U.S. Select Dividend Index. This index initially represented 50 but now represents the top 100 U.S. stocks by dividend yield. Stocks are screened by dividend-per-share growth rate, dividend payout ratio, and average daily dollar trading volume before

¹ Arnott, Robert, Jason Hsu and Phillip Moore, “Fundamental Indexation,” *Financial Analysts Journal* (March/April 2005).

² John Mulvey, “Essential Portfolio Theory,” *A Rydex Investments White Paper* (July 2006, originally published April 2005).

being selected based on dividend yield. Weighting is by indicated annual dividend with a cap of ten percent.

RAFI

Fundamental Indexation outlined a methodology that weights the size of companies by “value” factors other than market capitalization. The marketing line is that market capitalization is “Wall Street’s” definition of size while fundamental indexes use “Main Street” measures. The Research Affiliates Fundamental 1000 Index (RAFI) consists of the top 1000 companies measured by the combined size metrics of book equity value, cash flow, sales, and gross dividends. Back tests on the RAFI between 1962 and 2004 are reported to outperform the S&P 500 by approximately 215 basis points annually with comparable volatility.³

WisdomTree

In June 2006, WisdomTree Investments, Inc. (formerly Index Development Partners, Inc.), using Wharton professor Jeremy Siegel as its spokesperson, released a collection of dividend-weighted indexes and ETFs. Most of the six domestic and 14 international dividend indexes are gross-dividend weighted but the remaining are yield weighted. Jeremy Siegel points out that “from 1926 [through] 2004, reinvestment of dividends accounted for 96% of the stock market's total return after inflation.”⁴ In February of 2007, WisdomTree launched six domestic earnings-weighted indexes that mirror the rules of the six domestic dividend indexes except that they use core earnings for the weights.

The Claims and the Myths

There are a number of claims and myths made by proponents of alternatively-weighted indexes which include fundamentally-weighted indexes:

The RAFI offers a better risk-adjusted return so it must be a better benchmark

Just because an enhanced index strategy can be created using factors that are “more efficient” than a target index with higher returns and similar volatility, does not mean that the resulting product should be considered a benchmark or an alternative measure of beta. RAFI does not meet the industry-accepted benchmark guidelines which include being representative of the mandate and reflecting the neutral position.⁵ The sum of the performance of all investors is capitalization weighted and thus a cap-weighted index reflects the performance of the average investor of the measured mandate or beta. If every investor invested fundamentally then capitalization-weighting would still reflect the performance of the average investor.

The market is not efficient and fundamental measures are a better way to value a company

It is argued that since stocks are not priced correctly then some stocks are overvalued and others are undervalued. If this is the case, then capitalization-weighting over-weights the overvalued stocks and under-weights the undervalued stocks. A weighting scheme that eliminates prices as a component of its index weights should not have this problem. Cap-weighting proponents will concede that stocks may be

³ Arnott.

⁴ Jeremy Siegel, *The Future for Investors*, 2005

⁵ “Benchmarks and Performance Attribution Subcommittee Report,” CFA Institute (August 1998).

overvalued or undervalued but add that this is most likely negligible as nobody really knows which is which. Active investors argue that they can find mispriced securities. Many fundamental weighting proponents argue that they have a better estimation of the relative value of a company using a “small” set of factors rather than the combined market intelligence of all participants using all available information, which the market reflects in the security’s price.

Alternatively weighted is a way to exploit the flaws in capitalization weighting

Research Associates makes the point that fundamental outperformance is not entirely fundamental’s style tilt but rather a flaw in capitalization-weighting. Jack Treynor’s discussion on market-valuation-indifferent concludes with, “[One can] avoid the problem with cap-weighted index funds...by investing randomly with respect to the market’s pricing errors.”⁶ Andre Perold counters that the error in the calculation flaw logic is that fundamental researchers anchor on fair value and thus “contradict the going in assumption of the noisy market hypothesis that we do not know fair value.”⁷ After providing mathematical proof, Perold concludes: “The notion that capitalization weighting imposes an intrinsic drag on performance is accordingly false.”⁸ Empirical evidence supports Perold’s findings. If there are “calculation flaws” in capitalization weighting they must be small. Active managers are alternatively if not randomly weighted, yet multiple empirical studies show that less than half outperform the cap-weighted benchmark.⁹ Put another way, the median performance (before fees) of equal weighted money managers is approximately less than or equal to the cap-weighted benchmark. If there were an intrinsic, significant flaw in cap weighting, active managers unwittingly would have the aforementioned reported annual tailwind of more than two percent.¹⁰ With a tailwind of this magnitude more than half of active managers should easily outpace the cap-weighted benchmark.

Fundamental weighting protects investors from market bubbles

One consistent theme with fundamentally-weighted indexes is that they fully participate in typical bull markets, slightly lag bubble periods, and have superior performance in bear markets. The recent tech bubble is held up as a perfect example. RAFI had a five-year annualized return of 6.5% ending 2004 compared to the S&P 500’s -2.3%.¹¹

Touting protection from bear markets has been a marketing staple of value investing for decades. This raises the question of the appropriateness of using the S&P 500, or any core index, as the performance benchmark for these fundamental indexes. Proponents of fundamental indexes freely admit to having a value and small-cap tilt compared to a cap-weighted index. Table 1 shows the five-year annualized performance of Dow Jones Wilshire U.S. size and style indexes.¹² The S&P 500 is a large-cap core index and thus should be compared to the DJ Wilshire Large-Cap return of -2.4% for the five-year period ending 2004. Because fundamental indexes invest in small-cap and over-weight in value, a large-cap core index is not an appropriate benchmark. A fundamental index’s benchmark should either be compared to a single index that includes comparable size and style tilts such as the DJ Wilshire Top 2500 Value IndexSM, or a custom index that recognizes the ratio of investments in various style categories such as

⁶ Treynor, Jack, “Why Market-Valuation-Indifferent Indexing Works,” *Financial Analysts Journal* (September/October 2005).

⁷ Andre F. Perold, “Fundamentally Flawed Indexing,” Draft: January 18, 2007.

⁸ Andre F. Perold.

⁹ Example: “Standard & Poor’s Indices Versus Active Funds Scorecard, Second Quarter 2006,” July 19, 2006.

¹⁰ Arnott.

¹¹ Steven A. Schoenfeld, “Insights on Alternatively Weighted Indexes,” April 2006.

¹² Steven A. Schoenfeld. Wilshire Associates Incorporated, <http://www.wilshire.com/Indexes/calculator/>.

50% large-value plus 15% large-growth plus 35% small-value. (The simple five-year composite return ending 2004 was 6.6%).

Table 1: Five-Year Annualized Returns Ending 2004

	Value	Core	Growth
DJ Wilshire Large-Cap	5.0%	-2.4%	-9.2%
DJ Wilshire Mid-Cap	13.6%	6.1%	-3.3%
DJ Wilshire Small-Cap	15.7%	6.2%	-3.1%
DJ Wilshire Top 2500	6.1%	-1.5%	-8.5%
S&P 500		-2.3%	
RAFI	6.5%		

Source: Wilshire Associates and NorthernTrust

The naïve or simple approach avoids data mining and back-testing concerns

Another problem with these comparisons is that they were done with back-tested data, using rules that kept out the “young” large-cap technology companies—those with no dividends and/or no earnings history. This raises the question of data mining. Most of these tech companies were added to cap-weighted indexes towards the end of, or even after, the late-1990s bull market. This was too late to add to the bull market returns but these companies were clearly contributors when the bubble burst. Table 2 contains the ten largest of 23 technology companies that were added to the S&P 500 in 2000 as well as their subsequent 2001 returns.¹³

Table 2: Ten Largest Technology Companies Added to the S&P 500 in 2000

Company Name	IPO Date	Date Added	2001 Return
Linear Technology Co	05/30/1986	03/31/2000	-15.3%
Siebel Sys Inc	06/28/1996	05/04/2000	-58.6%
Maxim Integrated Products	03/04/1988	05/09/2000	9.8%
Agilent Technologies	11/18/1999	06/02/2000	-47.9%
Veritas Software Co	12/09/1993	06/20/2000	-48.8%
Broadcom Corp	04/17/1998	06/30/2000	-51.4%
Qwest Communications	06/24/1997	07/05/2000	-65.4%
JDS Uniphase Corp	11/17/1993	07/26/2000	-79.2%
Palm Inc	03/02/2000	07/27/2000	-86.3%
Applied Micro Circuits	11/25/1997	12/29/2000	-84.9%
S&P 500			-11.9%
RAFI			0.1%

Source: Wilshire Associates and NorthernTrust

Was S&P under pressure to “quickly” add these young tech companies? It’s a rhetorical question but Microsoft was added eight years after its IPO date and four years after it was larger than the 100th largest S&P 500 company.¹⁴ Russell changed its index addition rules to accommodate Google’s August 2004 IPO.¹⁵ Would a live fundamental index have made adjustments for dot.com companies during the tech

¹³ Steven A. Schoenfeld. Wilshire Atlas.

¹⁴ Wilshire Atlas: Microsoft IPO was March 14, 1986, market cap greater than 100th company March 1990, and entered the S&P 500 on June 7, 1994.

¹⁵ “Russell Indexes to Add IPOs on a Quarterly Basis,” Russell Press Release, August 31, 2004. “Russell Indexes to Add 48 IPOs on Sept. 30,” Russell Press Release, September 15, 2004.

bubble? It would have been easy to relax the five-year requirement of fundamentals to three years or even one year in order to allow some of these companies to enter the index. The metrics for combining fundamentals could have been changed to favor sales. These are examples of “minor” adjustments that would not compromise the intent of the index but could create differences between live- and back-tested index returns.

Fundamental indexes are a more reliable, conservative measure of a company’s value

Good or bad, market prices do respond quicker to changes in company valuations than fundamental measures. This is because prices reflect the expectations of all investors at that moment while fundamental measures use the past reporting of the company’s financials after their release. Stock manipulation is difficult and illegal. Fundamental measures are susceptible to both legal and illegal distortions. For example, a company’s management controls the size and frequency of dividend payments. These payments affect the company’s weight in many alternatively-weighted indexes. The market evaluates all news including changes in dividend payouts and adjusts the stock price, if necessary.

A transparent, rules-based index is a passive index

A non-judgmental buy/sell methodology does not make the investment process passive. Passive indexes theoretically require little to no maintenance—invest in it and forget about it. Low turnover is the appeal of a passive index and a major selling point for capitalization-weighted investing. In practice, cap-weighted indexes require maintenance because of corporate actions and membership changes.¹⁶ If there were no corporate actions or membership changes, cap-weighted indexes would have zero turnover and thus zero maintenance. In addition to the turnover created by corporate actions and membership changes, alternatively weighted indexes have turnover built into the construction methodology. Table 3 identifies some of the sources of turnover.

Table 3: Potential Sources of Turnover

Sources for Turnover	Cap-Weighting	S&P Eq Wt	RAFI	WisdomTree
Membership changes	Yes	Yes	Yes	Yes
Dividend payments	Yes	Yes	Yes	Yes
Shares outstanding changes (dividend payers)	Yes	No	Yes	Yes
Shares outstanding changes (non-dividend payers)	Yes	No	No	No
Price changes	No	Yes	No	No
Sales changes	No	No	Yes	No
Cash flow changes	No	No	Yes	No
Book value changes	No	No	Yes	No

It is important to point out that cap-weighting an index does not make it passive. Cap-weighted style benchmark indexes have imbedded, active style bets similar to fundamental indexes. The difference is that cap-weighted style benchmarks attempt to reflect the sum of all investors of the targeted style or the style’s beta. Turnover is a result of making the style index more representative of the targeted style. Fundamental index goals, like those of any active manager, are to outperform. Research Affiliates’ Jason Hsu, when asked to clarify if the RAFI was active or passive during a May 1, 2007 roundtable sponsored by *Global Pensions*, replied: “I’m leaning towards active, low turnover, rules-based.”¹⁷

¹⁶ Membership changes include mergers and acquisitions, IPOs, delistings, as well as size, style, industry and country changes for sub-indexes.

¹⁷ “The age of investment strategy indices,” *Global Pensions*, June 2007: page 40.

Fundamental indexes are a core investment

Dividend weighting schemes that eliminate approximately 60% of the non-dividend paying universe cannot be considered core investments but many fundamental methods invest in all sizes and styles of stocks. It is clear that most fundamental indexes have a strong value and/or small-cap tilt compared to a cap-weighted index. In fact, the factors chosen for RAFI and WisdomTree inclusion as well as portfolio weights are traditional value metrics. Steven Schoenfeld summed up this style tilt well: “RAFI’s composite-weighted index is, in fact, a naïve approach to a multi-factor model with well-documented value factors (and therefore exposures) that have performed very well since the 1960s.”¹⁸

Fundamental investing is a no-skill method for outperformance

Eugene Fama and Ken French documented the persistent return attribute to value and small-cap going back to the 1960s.¹⁹ The question is: Does fundamental investing deliver outperformance versus an investment strategy with the specific goal of capturing a value and size premium? William Bernstein’s answer was that “slightly less than two-thirds of the ‘excess return’ of the RAFI over the S&P [500] is due to naïve factor exposure, and slightly more than one-third seems to be inherent to the technique. Unfortunately, this latter effect is not statistically significant, raising the issue of data mining.”²⁰

RAFI’s outperformance in other markets proves that cap-weighting is flawed

Alternatively weighted supporters claim that since fundamental indexes outperform cap-weighted indexes in every market and every size category, then the cap-weighted methodology must be flawed. The reported outperformance is the value premium, which has been documented as a global phenomenon by Fama and French in 1998²¹ and updated by the Brandes Institute in 2006.²²

Fundamental indexes offer higher returns at similar or lower risk levels

As the adage goes: If an investment offers higher returns with similar to lower risk, then invest in it. Most risk measures begin or end with the standard deviation of returns. Table 4 shows that the standard deviation of the RAFI compared to the Dow Jones Wilshire Large-Cap IndexSM implies that the RAFI has lower risk. When comparing the RAFI to a more representative value benchmark such as the DJ Wilshire Large-Cap Value IndexSM or DJ Wilshire 2500 Value IndexSM, the “similar or lower risk” statement no longer holds.

¹⁸ Steven A. Schoenfeld.

¹⁹ Fama, Eugene and Ken French, “The Cross-Section of Expected Stock Returns,” *Journal of Finance* (June 1992).

²⁰ William J. Bernstein, “Fundamental Indexing and the Three-Factor Model,” *EfficientFrontier.com* (May 2006).

²¹ Fama, Eugene F. and Kenneth R. French, “Value versus Growth: The International Evidence,” *Journal of Finance* 53 (December 1998): page 1976-1999.

²² “Value vs. Glamour: The Value Premium in Non-U.S. Markets,” www.brandes.com/institutue, December 2006.

Table 4: Annualized Standard Deviations Ending December 2004

	RAFI	DJ Wilshire Large-Cap	DJ Wilshire Large-Cap Value	DJ Wilshire Top 2500 Value
1 year	7.20%	7.50%	7.28%	7.73%
3 years	14.94%	14.65%	14.52%	14.49%
5 years	15.53%	16.54%	13.93%	13.81%
7 years	15.79%	17.22%	14.23%	14.21%
10 years	14.50%	15.86%	13.25%	13.17%

Source: NorthernTrust and Wilshire Associates

Research from Brandes Institute has shown that lower standard-deviations for value companies versus growth (glamour) companies are a global phenomenon.²³

Quantitative Value Investing

Moving beyond the myths, the remaining question for fundamental indexing is: Is this an appropriate, attractive [fill in the adjective of choice] investment strategy? These are clean, simple ways to construct active value portfolios. RAFI's implementation deals with capacity well and claims to have turnover approaching that of a cap-weighted core index. Fees are generally between those of an active fund and a cap-weighted index fund. It could be argued that fundamental indexes are a near-passive means of capturing the value and small-cap attributes popularized by Fama and French.

A problem with investment strategy indexes is the inclusion of the word "index." It is fair to say that if the portfolio was not published ahead of time that the word "index" would not apply leaving only investment strategy or a quantitative, structured portfolio. The classic question when evaluating a quantitative manager is, "How often do you tinker with your model?" If the investment strategy becomes an index, the answer is never. Is this any different from investing in a value or small-cap index fund? If the goal is outperformance, how does an investment strategy index offer a better chance for persistent outperformance over an index fund versus a quant manager?

Shortcomings of Static, Structured Portfolios

If we assume that a market anomaly exists and is harvestable, the investment question becomes: Will it persist? Structured portfolio managers and hedge fund managers look for market anomalies to construct model portfolios and capture anomalies until they are gone. If we assume that the fundamental methodology does harvest a market anomaly, what will happen when it is gone? The "anomaly" has been made public. Investors are investing in the strategy using a number of alternative methods including those of RAFI and WisdomTree. Hedge funds are set up to capture the spread between fundamental weights and cap-weights. As with any perceived market anomaly, it will be exploited until it is found either to have never existed or it goes away leaving the investor with, at best, expensive beta.

Conclusion

Calling a transparent, structured portfolio an index does not make it passive. Alternatively-weighted indexes, such as fundamental indexes, are structured portfolios where the active bets are part of the index construction. These are portfolios built with the intention of beating the market--the true nature of active

²³ "Value vs. Glamour: The Value Premium in Non-U.S. Markets," www.brandes.com/institutie, December 2006.

investing. The value and small-cap tilts are performance bets that have been documented for nearly 20 years, and, consequently, the response to the investment question should be the standard line, “Past performance does not guarantee future results.” These alternatively-weighted strategies should be evaluated the same as those of a computer driven investment process not as a replacement for core beta investing. The problem with investing in these structured portfolios as an active index strategy is that the process to improve them ceases once the index is released. Eugene Fama may have said it best: “It’s a triumph of marketing, and not of new ideas.”²⁴

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²⁴ “Straight Talk: Fama and French,” *Journal of Indexes*, March/April 2007: page 11.