Weight by Fundamentals, Not By Price

An Interview With Robert D. Arnott

Article Highlights

- Any time a portfolio is not weighted in proportion to price, it will not systematically overweight the overvalued and underweight the undervalued.
- The ratio of price to sales is largely unrecognized or under-recognized, but sales is the wellspring from which profits, book value and dividends have to flow.
- Higher payout ratios are better. Companies that retain all of their earnings tend to view shareholders as having been a source of capital.

Robert "Rob" Arnott is the chairman and chief executive officer of Research Affiliates. He has published many research papers, served as the editor in chief for the Financial Analysts Journal and pioneered several unconventional strategies, including the Fundamental Index approach. We spoke recently about his quantitative approach to managing stock portfolios.

—Charles Rotblut

***Charles Rotblut (CR):** Given your background in quantitative analysis, what suggestions could you give individual investors regarding stock characteristics and ratios that lead to better returns?*

Robert Arnott (RA): The characteristics that historically produce the best returns are value measures. A higher yield does deliver a higher return and a lower price-earnings ratio delivers a higher return. One of my favorites is a lower price-to-sales ratio. While largely ignored, it does deliver a higher return.

To me, the more important opportunities are not so much in individual stocks as they are in portfolio construction. Typically when you buy a stock, the size of your investment in that stock drifts up and down with price—the higher the price, the higher the weight of the stock in your portfolio. That's also the Achilles' heel of market-capitalization-weighted index funds. So reweighting the portfolio to mirror the economic footprint of the business—something we call the Fundamental Index approach—weights companies by the fundamental size of the business and not by the popularity or price of the stock. This turns out to add a lot of value, partially because you're trading against the market. As the stock's price soars, if the underlying fundamentals aren't soaring, if the company isn't actually getting bigger, then a Fundamental Index portfolio will prompt you to sell some of what you own.

***CR:** In your Fundamental Index approach, at least in your core portfolio, you're using four different characteristics. Would an investor weight each characteristic individually, and then use the sum of the weights? How would they go about deciding how they'll weight it?*

RA: It's hard to construct a Fundamental Index portfolio if you're an individual investor. It's not easy to assemble all the data, put it into an Excel spreadsheet, and manipulate the data to get the relevant ratios and size of the business and so forth; it's very complicated.

One finding of our Fundamental Index research is that it doesn't matter which measure you use—sales or profits or book value or dividends—you're going to weight the companies that are bigger more heavily and the companies that are smaller less heavily. You'll still have lots of liquidity and a large company bias, but you won't have a large-cap bias, which means you won't put more money into a company because it's popular and beloved. The Twitters (TWTR) and Facebooks (FB) of the world are trading at vast multiples relative to sales, which tacitly means the market expects these companies to grow tremendously in the years ahead. They might, but they have to in order to justify their current price. The growth is already in the price; it's not profitable to buy these companies and see them grow and expect that the stock will go up just because they grew. The stock will go up only if growth expectations are exceeded, and if growth expectations increase.

A Fundamental Index strategy uses multiple measures, not because one measure is better or worse than another, but because multiple measures smooth the rough edges of the Fundamental Index construct. If you weighted strictly on sales, then low-margin businesses like Wal-Mart (WMT) would get an outsize weight. If you use book value accounting, then companies where the book value may be amended downward will tend to get dominant weight. Bank of America (BAC) has the largest book value of any company in the United States. Having it as the number-one holding tacitly implies that that book value doesn't have any unacknowledged disappointments buried in it. So, when we look at Fundamental Index products, the nice thing is to use multiple measures so that you're not over-relying on one measure that has a particular Achilles' heel.

CR: *You are rebalancing your indexes annually, correct?*

RA: That's right. Now, some clarification. The first of these was the FTSE RAFI Index, which is rebalanced once a year in March. [RAFI stands for Research Affiliates Fundamental Indexing.] There's a sweet spot at annual rebalancing. If you do it more often, the incremental return is pretty negligible. The incremental return even turns negative if rebalancing is as frequent as monthly or quarterly, so you start to add less value, not more, and you're just enriching the brokers. However, there's a certain measure of discomfort in rebalancing once a year, because halfway through that year, you might find your weights are very different from what you would choose if you rebalanced today. Both FTSE and Russell, in their Fundamental Index products, offer a quarterly partial rebalance in which you move one-fourth of the way toward today's target weight every quarter. This is roughly the same as a once-a-year rebalance, but it smooths trading over the course of the year, providing greater liquidity and comfort. I thought that was an elegant way to enhance the Fundamental Index portfolio, in terms of making it more comfortable with a little less tracking error.

CR: *What about someone who is rebalancing a broad portfolio once a year? Have you found a particular month that tends to be better than another for rebalancing, or is it more about the discipline?*

RA: It's the discipline. There are months that are better and some that are worse, but by too small a margin to mean anything. That is to say, it could just be a happenstance that one month is better and another month is worse. The differences are too small to be significant.

CR: *You mentioned that you looked at the price-to-sales ratio. Is that your preferred valuation measure if you had to choose one or two?*

RA: If I had to choose one, I think price-to-sales is a great choice because too few people pay attention to it. Lots of people look at dividend yield, price to earnings, and price to book. With a dividend yield, you run the risk of loading up on companies that are about to cut their dividend. With a price-earnings ratio, you run the risk of buying companies with peak earnings that are about to fade. With book value, you run the risk of over-relying on companies that use aggressive accounting. Sales really is the wellspring from which profits, book value and dividends have to flow.

Price to sales is largely unrecognized, or under-recognized, in the marketplace. If you have a company that has a low price-to-sales ratio because its profit margins are thin, are they going to attract relatively few competitors? Probably. Can they then ramp up their profit margins? Probably. Does that mean they can see earnings growth that exceeds revenue growth? Absolutely. So if I had to pick one, I would say sales is the most interesting figure, and price-to-sales ratios are the most interesting of the valuation ratios, but they get very little attention in the marketplace, and I view that as a positive.

CR: *You also said that you weight by book value. Do you adjust at all for intangibles, or do you just factor them into the weighting?*

RA: Within the FTSE RAFI Index, the book value is taken as reported. And it's not the book value per share, it's the total book value of the company. For the Russell Fundamental Index, we don't use a book value measure at

Table 1. The Two Largest ETFs Following Research Affiliates' Fundamental Index Strategies

	YTD Return (%)	2013 Return (%)	Avg Ann'l Return (%) Last 3 Yrs	Avg Ann'l Return (%) Last 5 Yrs	Yield (%)	Exp Ratio (%)
PowerShares FTSE RAFI US 1000 (PRF)	7.5	**35.1**	**17.0**	**21.0**	1.5	0.39
Average of Large-Cap Stock ETFs	6.8	32.1	16.1	19.1	1.6	0.40
PowerShares FTSE RAFI US 1500 Small-Mid (PRFZ)	3.7	41.8	15.7	**23.3**	0.9	0.39
Average of Small-Cap Stock ETFs	3.6	39.7	15.8	21.7	1.1	0.30

Bold returns are in the top 25% of all funds within in the investment category.
Source: AAII's 2014 Individual Investors Guide to Exchange-Traded Funds. Data as of June 30, 2014.

all. We use retained cash flow on a trailing five-year basis. We're considering how much profit has been retained after paying out dividends on a five-year basis. This actually works out to essentially equal the five-year growth in book value. It's more of a profits measure than it is a gross assets measure.

CR: *I wanted to ask you about dividend payout ratios. You and Cliff Asness [of asset management company AQR Capital Management] wrote a paper several years ago where you found higher payout ratios actually led to higher growth. Could you comment on that?*

RA: Yes. The work we did was across time. When the aggregate market has higher payout ratios, do earnings subsequently grow faster? We found that, yes, they do. In a subsequent Financial Analysts Journal paper, four researchers tested the same idea across 11 international market countries and they found it works ["International Evidence on the Payout Ratio, Earnings, Dividends, and Returns," by Owain ap Gwilym, James Seaton, Karina Suddason, and Stephen Thomas, Financial Analysts Journal, January/February 2006]. Then, another study looked at it within a market, between companies, and asked the question: "Do the companies that have higher payout ratios have higher earnings growth?" And, shockingly, the answer there was yes, too ["Dividend Payout and Future Earnings Growth," by Ping Zhou, CFA, and William Ruland, Financial Analysts Journal, May/June 2006].

The companies that retain all of their earnings tend to have a mindset of viewing the shareholder as having been a source of capital, where you don't have to worry about paying them back. Because of that, they wind up frittering away some of the retained earnings on building empires and that often doesn't work. So that second paper found that even between Company A and Company B, higher payout ratios are good for future earnings growth. It's the opposite of what finance theory would tell us.

CR: *Do you think there's a level of payout ratios where they're just too high, or does it vary by industry?*

RA: It varies by industry, but a payout ratio above 100% is always problematic. If a payout ratio is 60% or 80%, I think that's great. If a payout ratio is 0% to 20%, I think management presumes that every reinvestment idea they've got is better than any reinvestment idea that their shareholders have. And that's awfully arrogant.

CR: *And just to confirm, we're talking about using earnings as a payout ratio, not cash flow, correct?*

RA: Correct.

CR: *I just wanted to make that clear. The other thing is, I know last year during the Morningstar ETF conference you talked about turning your strategies upside down.*

RA: Yes, that was a fun bit of research.

CR: *It was interesting. Would you mind elaborating on that just a little bit?*

RA: There are lots of ways to construct a portfolio: Minimum variance uses an optimizer to create a low volatility portfolio; the Fundamental Index strategy weights companies by their economic footprint—the larger the company, the better; strategies that seek to maximize the Sharpe ratio; and so forth. The backers of each of these strategies will tend to have some argument for why their idea is good. So we just took those strategies and turned them upside down and said whatever this strategy puts the most money in, we'll put the least in, and whatever it puts the least money in, we'll put the most in and test how that works.

Intuitively, you would think if a particular strategy is adding a couple of percent to returns a year it will underperform by a couple of percent a year if you turn it upside down. It didn't work out that way. Turn the strategies upside down and the inverted strategies work just as well as the original—frequently better. This invites the question: "What's going on?"

What's happening is something very, very simple. Whether you're running these strategies in their original form, or in their inverted form, you aren't weighting in proportion to price. Anytime you aren't weighting in proportion to price, you won't systematically overweight the overvalued and underweight the undervalued. All of these strategies win for that reason, not the reason that their marketers will claim. If you invert the strategies, you will still have some measure of rebalancing in the portfolio, and that rebalancing won't be in favor of whatever's the most expensive stock. And so, the inverted strategies do just fine, too.

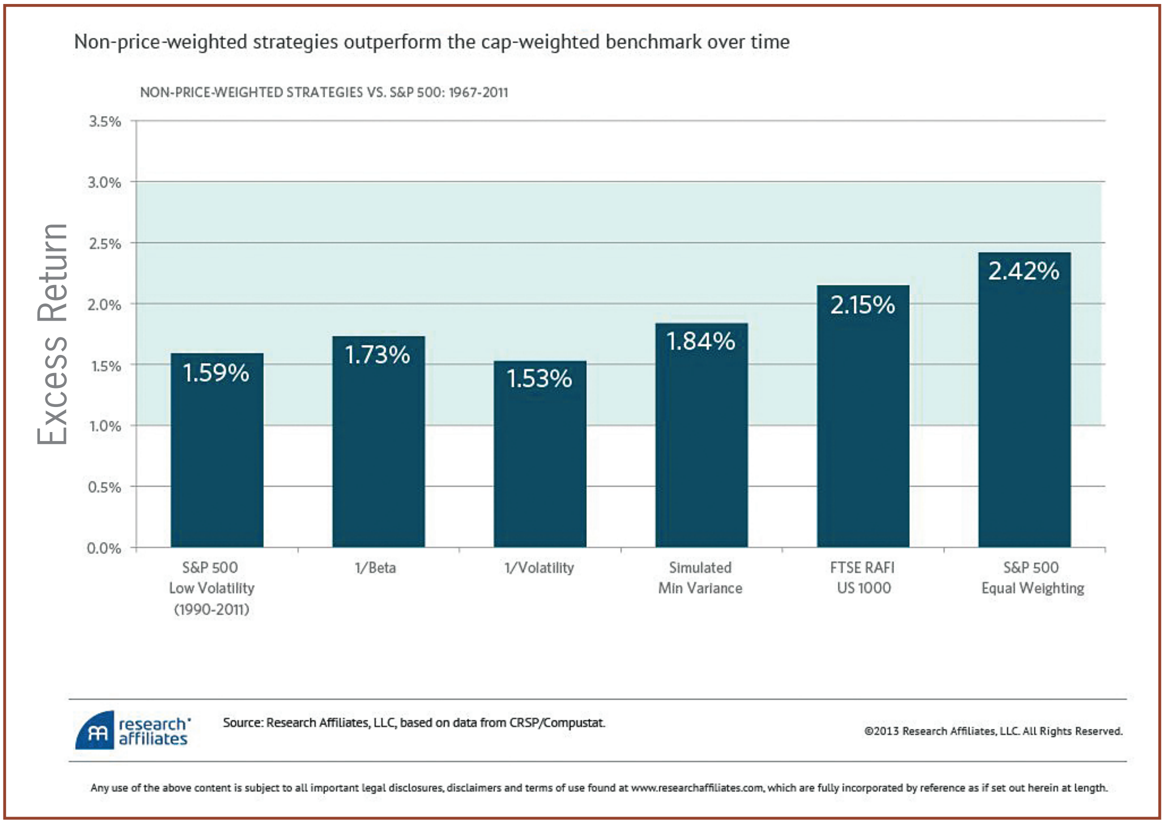
That was a fun paper. It deliberately rattled a lot of cages. And we had no qualms about poking fun at our own strategy, too. When you invert the Fundamental Index strategy it actually works a little better than the original Fundamental Index strategy. Does that mean you should put more money into whatever is the smallest business? Well, if you do that, it's not a very scalable strategy. But you could throw darts at a copy of the Wall Street Journal and it would beat the stock market most of the time.

CR: *When choosing a strategy or creating a stock screen, is there any way an individual can look at a strategy and determine whether or not its performance is being caused by statistical outliers, or if it's just pure luck that the strategy's working over a given period?*

RA: Well, our work on upside-down strategies tacitly meant that market-cap weighting is in a class of its own in that it's the only one of these strategies that directly links the weights, the size of an investment in a company, to the price—the higher the price, the more you invest in it. And that idea is patently silly, to put more in a company just because it's more expensive. All of these strategies win because they break that link.

To me, if somebody has a discipline for creating a portfolio or a stock screen, the most important question is: "Will my portfolio link the size of my investment to the price?" If it does, forget it; this is not a good idea. If it severs that link, then ask: "How do I rebalance to make sure the link stays severed?" Because if I just buy a portfolio and hold it, the companies that perform best will be at higher multiples in one, two, three years

Figure 1. Excess Returns of Non-Price-Weighted Strategies vs. S&P 500



hence. If I'm not systematically rebalancing the portfolio, I'm reintroducing the link with price through the back door. So, those are really the two key issues.

We think the Fundamental Index strategy is a marvelous idea because it studiously mirrors the look and composition of the macro economy while severing the link between the price of a stock and its weight in the portfolio. But there are lots of other marvelous ideas that can break that link. They'll just be more niche strategies that can't take on the vast capacity, the low turnover, and the low trading costs of a Fundamental Index portfolio.

CR: *I want to offer you a chance to give a rebuttal before we finish up. I spoke with Jack Bogle [founder of The Vanguard Group] earlier this year. He made the allegation—and I'm sure you've heard it elsewhere—that smart beta funds are really actively managed strategies. [See "Achieving Greater Long-Term Wealth Through Index Funds" in the June 2014* AAII Journal.]

RA: I admire Jack tremendously. He's one of my heroes. He's right. They're actively managed relative to the stock market. The stock market is cap-weighted.

He's wrong in the sense that the stock market itself makes active bets relative to the economy. Is Twitter's footprint in the macro economy as big as its footprint in the stock market? Not even close. Facebook? Not even close. Tesla (TSLA)? Not even close. And so you could look at the cap-weighted market as being an active portfolio itself when measured relative to the macro economy. It's kind of nuanced. One strategy, cap weight, is passive relative to the market and active relative to the economy. The Fundamental Index strategy is active relative to the market, but studiously neutral relative to the macro economy.

I think Jack made an immense contribution to our industry when he launched Vanguard by popularizing the notion that active management is a zero-sum game. If you don't know who the loser is on the other side of your trade, stop playing that game. Just own the market. What a brilliant insight!

With the Fundamental Index strategy, it is a different form of indexing. Is it passive? Not in the eyes of the classic indexers. Is it an active strategy? Relative to the stock market, of course it is. Is it a clever repackaging of value investing? Yes and no. It has a value tilt, but it has added value over the last nine years since the idea was launched, where value has underperformed growth by nearly 2% a year over that same span. So, if value has underperformed and a Fundamental Index portfolio has outperformed, something's wrong with the simplistic critique that this is just value investing.

CR: *Is there anything I haven't asked you that you think is important to bring up?*

RA: Yes: Where are there good investment opportunities in the world? Right now, developed economy stocks and bonds are pretty fully priced. So you shouldn't buy stocks today with an expectation of lofty returns matching anything seen in the past 30 years. You shouldn't buy mainstream bonds expecting to earn a higher return than their yield. Where do you turn? Right now, I think the opportunities are in emerging markets. While it will feel scary, diversification into emerging markets—stocks and bonds—is likely to carry much better rewards in the coming three, five or 10 years. There's no such thing as a bargain in the absence of fear. What makes these investments attractively priced is the fact that people are afraid of them.

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Enterprise value is shown in *Stock Investor Pro* for the entire company. If the enterprise value for the entire company is used, total revenues should be used as well. If sales per share is used, the enterprise value should be divided by the number of shares outstanding.

Conclusion

Revenue-based valuation methodologies can be a useful tool for determining if a stock is inexpensive, fairly priced or expensive. Because these measures are less commonly used, they may lead you to stocks whose bargain valuations have not been uncovered by other investors.

Like any valuation measure, other factors should be considered, including profitability, to ensure the stock truly is a bargain and is not cheap for a reason. ➤

Charles Rotblut, CFA, is a vice president at AAII and editor of the AAII Journal. Find out more about Charles at www.aaii.com/authors/charles-rotblut and follow him on Twitter at twitter.com/CharlesRAAII.

Stock Strategies

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CR: *If I remember correctly, you don't think that conventional bonds themselves offer as much diversification as people think. You think people should look outside a traditional domestic stock/domestic bond allocation.*

RA: Exactly. We liken the classic way of investing to a two-pillar model—mainstream stocks and mainstream bonds, with a little dabbling around the fringes. But it makes so much more sense to build a third pillar—assets that have higher yield, higher growth or both. Assets that are diversified, not very highly correlated with your mainstream stocks and bonds. Assets that are positively correlated with inflation. Because if inflation reignites, mainstream stocks and bonds will struggle. It's going to be a real disappointment. So I look on the notion of building that third pillar as the most important thing an investor can do for their long-term prosperity. ➤

Bonus audio of Charles' interview with Rob Arnott can be accessed through the online version of this article on AAII.com. Arnott gives advice on creating stock screens and reveals the investing lessons he has learned throughout his career.

Robert "Rob" Arnott is the chairman and chief executive officer of Research Affiliates, which specializes in smart beta and asset allocation strategies. Find out more at www.aaii.com/authors/robert-arnott. Charles Rotblut, CFA, is a vice president at AAII and editor of the AAII Journal. Find out more about Charles at www.aaii.com/authors/charles-rotblut and follow him on Twitter at twitter.com/CharlesRAAII.

Financial Planning

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F. Each year, the investment results will show either a gain or a loss. A gain large enough to cover the policy's expenses will increase the death benefit because the cash value shows a gain. A loss will reduce the cash value and likewise the death benefit. As this is going on, I check the ratio (from step C). A variable universal life policy with positive compound earnings will be close to the cash-value-to-death-benefit ratio, or it could be higher. Being higher is no problem. However, if the cash-value-to-death-benefit percentage is below the calculated ratio because of a market crash, after conferring with the agent and client it is usually decided to wait a year or a few years to see if gains will correct the low percentage. If it remains low, the death benefit can be reduced to bring the percentage back into line with the calculated ratio. This step is the key to eliminating, as much as is possible, the risk of a policy lapsing.

This variable universal life methodology allows the death benefits to increase as long as compound earnings are high enough to cover the policy's expenses. It also provides a release valve by reducing the death benefit to keep it properly funded during periods when the compound earnings have not covered the policy expenses or when they are negative.

Clients who are not willing to set variable universal life policies up in this manner should forgo participation in these products. ➤

Peter Katt CFP, LIC, is sole proprietor of Katt & Co., a fee-only life insurance advising firm located near Kalamazoo, Michigan (269/372-3497); www.peterkatt.com. Find out more about the author at www.aaii.com/authors/peter-katt.