Timing Low Volatility Investments

by Feifei Li, Ph.D., FRM

Shall we invest in the equity market? And, if so, shall we invest in the low volatility segment of the equity market? In this article, we describe and apply two approaches to evaluating market levels. The first approach, based on hypothetical long-term performance, estimates prospective returns of the broad equity market and the low volatility segment when price-to-earnings (P/E) ratios are below and above 20×. The second views low volatility investments as a hybrid of equity and fixed-income assets, and estimates fair valuation levels based on a range of market P/E ratios and low volatility betas. Nobody can reliably time the market, but this analysis may be helpful to investors who are currently thinking about committing assets to a low volatility strategy.

Whenever something new comes on the market, from the latest model of smart phone to the most advanced electric car, many of us are eager to prove how cool we are by promptly buying it and—of course—showing it off in social media outlets. Not everybody is as conservative as I am when contemplating a purchase. I always wait for reviews, and, by nature and training, I think critically about the reviewers' expertise, independence, and standards of excellence as well as about the points they make. Technology advances so quickly that I hesitate to buy the newest release or the product with the most novel features; if the manufacturer doesn't follow up soon with a faster, cheaper, more reliable version, the competition surely will. In short, when shopping for technology-intensive products, I make purchase decisions slowly and cautiously.

But when it comes to investment decisions I seem to take the lead. Many investors prove to be considerably more conservative than one might expect. It takes years of debate before a new concept, strategy, or design is broadly adopted, even though its advantages may be readily apparent. For example, when I joined Research Affiliates, we were pretty much all alone in advocating non-price-weighted index investing. And, to their credit, investors moved slowly and cautiously. But today—nine years later—the concept seems to be widely accepted in the investment community. We see asset owners collectively committing billions of dollars to smart beta strategies, leading consultants strongly recommending smart beta mandates, and academics and practitioners alike writing papers on this still-new way of thinking and investing. Smart beta investment strategies have come into their own.

For the past three years, I've been working in the area of low volatility investing, and here, too, I see much the same pattern: years—in this case, decades—of debate about what causes the "anomaly," followed at last by a rapid rise in global assets under management. Low volatility strategies clearly had the potential, all along, to generate superior risk-adjusted returns. But only after the shock of the Global Financial Crisis, when investors were stunned (once again) by the drawdown risk inherent in equity exposures, did low volatility strategies become a popular choice.

It is entirely reasonable for investors to educate themselves and evaluate the risks before buying into a new strategy. Indeed, investing without understanding a strategy and weighing the risk of an adverse outcome would be irrational. It is also reasonable for money managers to worry about the viability of their firm and the future course of their career. With one exception,[1] smart beta strategies tend to be contrarian, and they require patience; they can underperform cap-weight benchmarks for extended periods of time. Even for years. Managers know that clients may not prove steadfast in their commitment to investing for the long term; some investors are always liable to withdraw funds at the worst possible moment—just before declining stock prices reverse direction and head back toward their long-term averages. Thus investors may temporize, and managers may not be strongly motivated to help them make a timely decision about a promising new strategy. In the meantime prices may appreciate considerably.

Future Returns by P/E Range

The price of low volatility assets has, in fact, risen in step with or even faster than the broad cap-weighted index over the past five years. At this juncture, there are two distinct market timing questions to answer: Shall we invest in the equity market? And, if so, shall we invest in the low volatility segment of the equity market? Nobody can

dependably time the market, but historical experience may offer some guidance. Let's review information pertinent to each question separately.

For this research we created a benchmark portfolio, the CAP 500, by market capitalization weighting the 500 largest U.S. stocks in our universe. We also constructed a low volatility portfolio containing the 100 least volatile stocks in the benchmark, weighted by the inverse of their volatility. We simulated the performance of the benchmark and the low volatility strategy over the period from 1967 to 2013. **Table 1** shows the average 1-year, 3-year, and 5-year benchmark and strategy returns in two trailing 12-month price-to-earnings (P/E) ranges and in aggregate. The P/E ratios used were those of the market-cap benchmark as of the beginning of each year in the sample period.

The broad U.S. market cap-weighted CAP 500 benchmark has a trailing 12-month P/E ratio of 20 as of May 2014. Is it priced attractively? What short- to medium-term investment outcome does the current valuation level imply?

Let us assume for the sake of argument that, with the aggregate P/E ratio still compressed and the inflation-adjusted price level of the S&P 500 Index flat, we have not yet emerged from the secular bear market that started in 2000. This market environment calls for ongoing risk management. Ed Easterling of Crestmont Research uses the difference between rowing and sailing to explain a suitable approach to equity investing in a secular bear market.

Sailing is analogous to passive buy-and-hold investing through an ETF or mutual fund that replicates a cap-weight index. Rowing, which requires skillful active management, "uses diversification, investment selection, and investment skill to limit the downside while accepting limits on the upside." Easterling argues that a secular bear market calls for rowing. For example, a portfolio constructed to capture 50% of a down market and 50% of an up market is a rower's portfolio. Easterling writes:

> ...let's assume that you have a half and half portfolio—50% down-capture and 50% up-capture. As the market falls 40%, your portfolio declines 20%—from $100 to $80. Then as the market recovers 67%, your portfolio rises by just over 33%. Your $80 increases to almost $107. So while the market portfolio gyrated from $100 to $60 and back to $100, your portfolio progression was $100, $80, and then $107.[2]

Low volatility investing may be particularly appropriate in a secular bear market. As Table 1 shows, the five-year return of the hypothetical low volatility strategy outperformed the cap-weight benchmark almost two-thirds of the time when the market P/E ratio was below 20.

Market Movements

Using observed price multiples as conditional variables provides a useful framework for evaluating the current market level in the context of long-term experience. But Table 1 does not tell us anything about the long-term trend of the market. The time series displayed in **Figure 1** show the U.S. market from another perspective.

In Figure 1, the inflation-adjusted price level is just about back where it was when the secular bear market started in 2000. The P/E multiple is not very high, but it has been expanding since 2012. There is evidence, therefore, that the secular bear market already came to an end two years ago. The risk is that prices rise further and the P/E ratio moves significantly above 20. In the past, when the benchmark trailing 12-month P/E ratio was greater than 20, equity

Table 1. Simulated Performance by P/E Range (1967–2013)

Investment Horizon	Portfolio	Prospective Return		
		P/E < 20 (*n* = 30) %	P/E > 20 (*n* = 17) %	Overall (*n* = 47) %
1 Year	Cap-Weight Benchmark	13.8	7.6	11.6
	Low Volatility Strategy	14.6	8.3	12.3
	Frequency of Low Volatility Outperforming	50.0	47.0	49.0
3 Years	Cap-Weight Benchmark	12.0	6.8	10.0
	Low Volatility Strategy	13.4	7.4	11.1
	Frequency of Low Volatility Outperforming	61.0	47.0	56.0
5 Years	Cap-Weight Benchmark	12.3	5.9	10.0
	Low Volatility Strategy	12.9	8.0	11.1
	Frequency of Low Volatility Outperforming	63.0	75.0	67.0

Source: Research Affiliates using data from CRSP/Compustat.

investors earned on average 7.6%, 6.8%, and 5.9% over the subsequent 1, 3, and 5 years—significantly below the average returns earned when the P/E ratio is not a conditional variable, as we saw in Table 1. Even if the risky scenario comes to pass, however, the valuation level may not remain elevated for an extended period, and a high single-digit return over the short term might prove attractive when compared with other investment opportunities. In this market environment, the simulated low volatility strategy outperformed the market-value-weighted CAP 500 benchmark regularly over different investment horizons. Table 1 indicates that long-term investors are rewarded for their patience three quarters of the time.

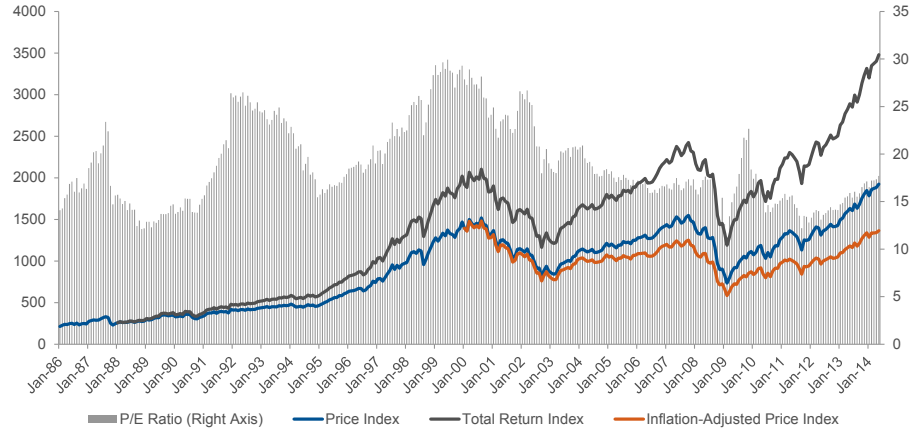
Low Volatility Valuations

Over the 47-year timespan from 1967 to 2013, low volatility stocks were on average 25% cheaper (as measured by the price-to-book and P/E ratios) than the cap-weight benchmark. As **Figure 2** shows, the valuation ratios oscillated around the benchmark levels over the entire sample period, and sometimes the variances were extreme. At present, the prices of low volatility stocks do not appear to offer much, if any, discount relative to the cap-weight index.

Do these data imply that low volatility strategies have become too expensive?

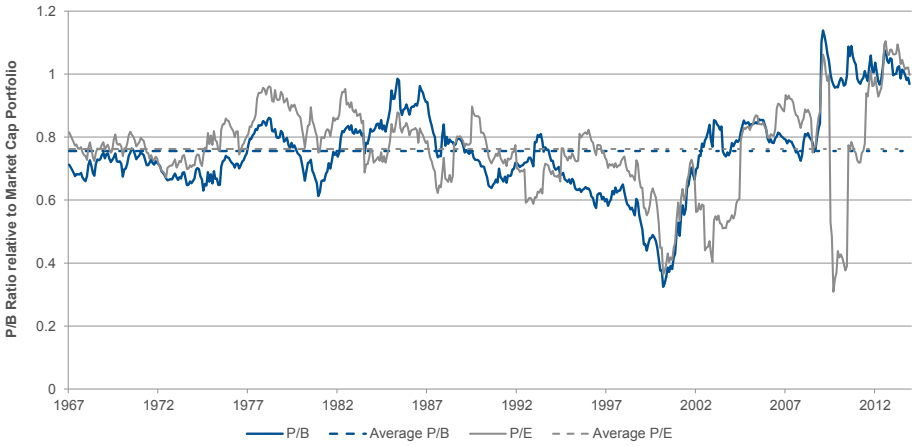
James Moore of PIMCO has suggested a plausible way to determine the fair valuation level for low volatility strategies, which can be viewed as a hybrid of equity and income.[3] The equity piece is valued like a stock; the income piece is valued like a bond. The equity-income mix is determined by the market beta. Beta × Market P/E values the equity component; (1 – Beta) × (Bond Market Price/Coupon), which simplifies to (1 – Beta)/Yield, values the bond component. Moore uses long Treasuries in this model because stocks provide long-term expected payment streams; alternately, one could use long corporates to include the default premium. Using Moore's methodology, **Table 2** displays a range of fair-value P/E ratios given a 10-year U.S. Treasury bond yield of 2.48%.

Figure 1. S&P 500 Price, Return, and Price-to-Earnings Ratio (January 1986–May 2014)



Source: Research Affiliates using data from Bloomberg and Robert Shiller.

Figure 2. Low Volatility Valuations Relative to the Cap-Weight Benchmark (1967–2013)



Source: Research Affiliates using data from CRSP/Compustat.

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As Table 2 demonstrates, if we use the May 2014 CAP 500 trailing 12-month P/E of 20, a reasonable earnings multiple for low volatility strategies is around 26. If we make provision for interest rate and credit risk by plugging in a 4% yield, the adjusted P/E is around 22. In this analysis, there appears to be plenty of room for further price appreciation in low volatility strategies before we call them "expensive". [4]

In Closing

As a strong believer in long term investing, and a strong believer in the persistence of behavioral biases, I may make investment decisions faster than average investors. Equity investing is still a significant portion of my portfolio, although the percentage allocation is declining over time as the valuation level trends upward. The portion of the low volatility component is, however, increasing fast, given the stable income stream it creates and the relative performance advantage it has over the core equity investment vehicle.

Table 2. Fair Trailing Price-to-Earnings Ratios for Low Volatility Strategies

Beta	P/E Ratio of CAP 500 Index						
	10.0	12.5	15.0	17.5	20.0	22.5	25.0
0.5	25.2	26.4	27.7	28.9	30.2	31.4	32.7
0.6	22.1	23.6	25.1	26.6	28.1	29.6	31.1
0.7	19.1	20.8	22.6	24.3	26.1	27.8	29.6
0.8	16.1	18.1	20.1	22.1	24.1	26.1	28.1
0.9	13.0	15.3	17.5	19.8	22.0	24.3	26.5
1.0	10.0	12.5	15.0	17.5	20.0	22.5	25.0

Note: Calculated values assume a 10-year U.S. Treasury bond yield of 2.48%.

Source: Research Affiliates, LLC.

Endnotes

1. The exception is momentum investing.
2. See Ed Easterling, 2014, "Half & Half: Why Rowing Works," Crestmont Research (January 1):3.
3. See James Moore, 2014, "Waiting for the Great Pumpkin," PIMCO Viewpoints (January).
4. Empirical tests indicate that the valuation gap defined by James's approach (here, the difference between the actual P/E ratio of 20 and the implied P/E ratio of 26) can potentially forecast the risk-adjusted return of low volatility strategies. The statistical power, however, is low.

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