

Re-assessing the “Defensive” Equity Factor - *How good is your defensive wall?*

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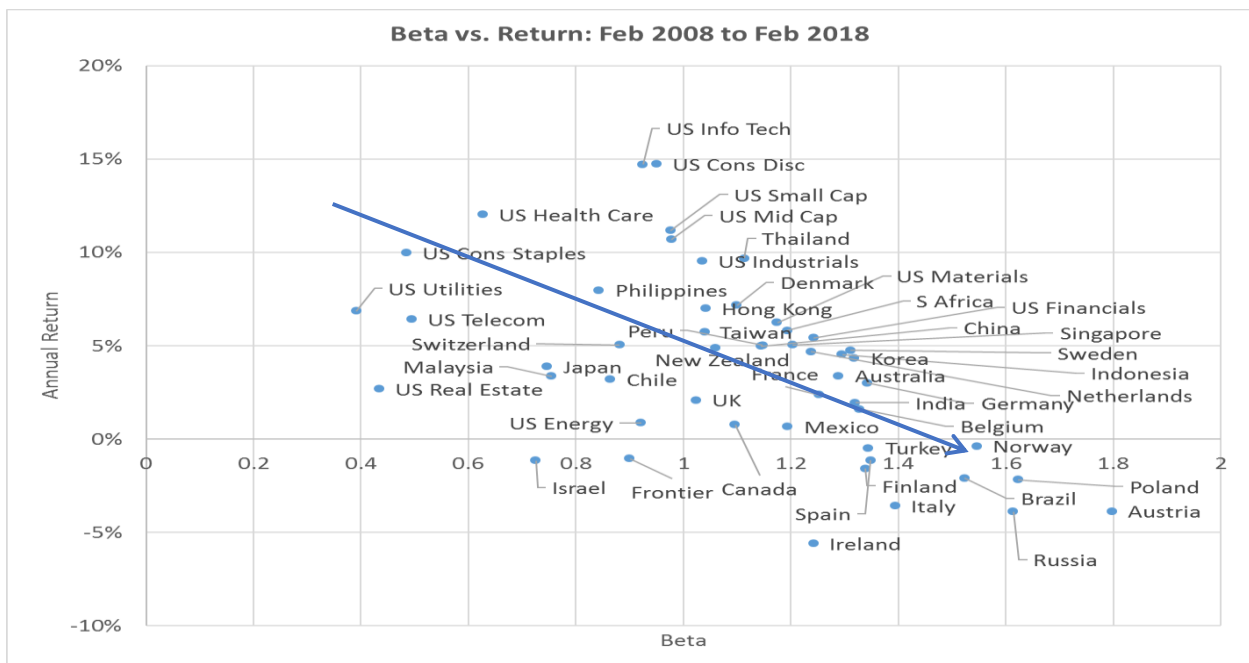
At SECOR we are all risk managers at heart – we are obsessed with differentiating rewarded risks and unrewarded risks, and how to best manage these risks in both good times and bad. In this endeavor, we have carefully explored “defensive” equity strategies – approaches to equity investing with a stock selection process that leads to lower volatility than the

cap-weighted equity indices. Low volatility equity investing has gathered an enormous amount of assets in recent years, and indeed we included “Min Vol/Low Vol”¹ as one of the approaches in the White Paper we published last year: “A Practical Guide to Downside Protection Strategies”. In the White Paper, we highlighted some areas of concerns regarding Low Vol, specifically the current valuation level, sector concentration and interest rate sensitivity.

We thought it might be interesting to re-assess this topic in light of the return of volatility to the equity market earlier this year. How did Low Vol strategies perform when there is a sudden increase in volatility after years of calm? What are the prospects for these strategies going forward?

¹ In this paper, we include low volatility, minimum variance, low beta strategies interchangeably in the same category.

The Capital Asset Pricing Model is a neat framework for understanding expected returns. Investors are familiar with the upward slope of the Capital Market Line, which indicates the more market risk we take, the more return we *should* receive. The problem for investors is that many years can go by where the opposite is true – where more risk means lower returns, not higher. The chart below shows the ten-year US\$ return of fifty equity indices as a function of the beta (to the MSCI ACWI index) of those indices². In this period, the correlation between beta and return was quite negative. On average, each 0.2 increase in Beta led to a *reduction* in the annual return of 1.6%. This is certainly not what our investment textbooks told us would happen! While many of the Low Vol strategies available today emphasize selecting lower volatility/quality/defensive stocks within a region (say, US or emerging markets), what this chart shows is that the Low Vol anomaly has been experienced at the country level as well.



This often negative relationship between beta and realized returns is one of the most significant anomalies in finance, and one that has real-life asset allocation consequences. The premise that higher-risk investments will have higher returns, on average, pervades everything we learn about how to invest, and forms the basis of modern portfolio theory – determining the strategic asset allocation of most portfolios. What if that fundamental premise is wrong? What are the causes for this anomaly?

There have been many academic papers on the topic. Most explanations of the low volatility anomaly are behavioral. We get unreasonably excited about the future prospects of the “growth” parts of the equity market. For instance, many emerging markets are on the lower

² Source: Bloomberg

right of the chart – there has been an enormous gap between the enthusiasm that many of us had about emerging market equities in the past decade and the reward for that enthusiasm. Another part of the behavioral explanation is that the incentives of investors drive us primarily to seek higher returns and lower tracking error. The most consequential advantage of Low Vol is not higher returns, but rather the lower realized risk. This lower risk is accompanied by very high tracking error. Historically, not enough of us have been willing to accept this tradeoff, so the mispricing of equity risk has continued.

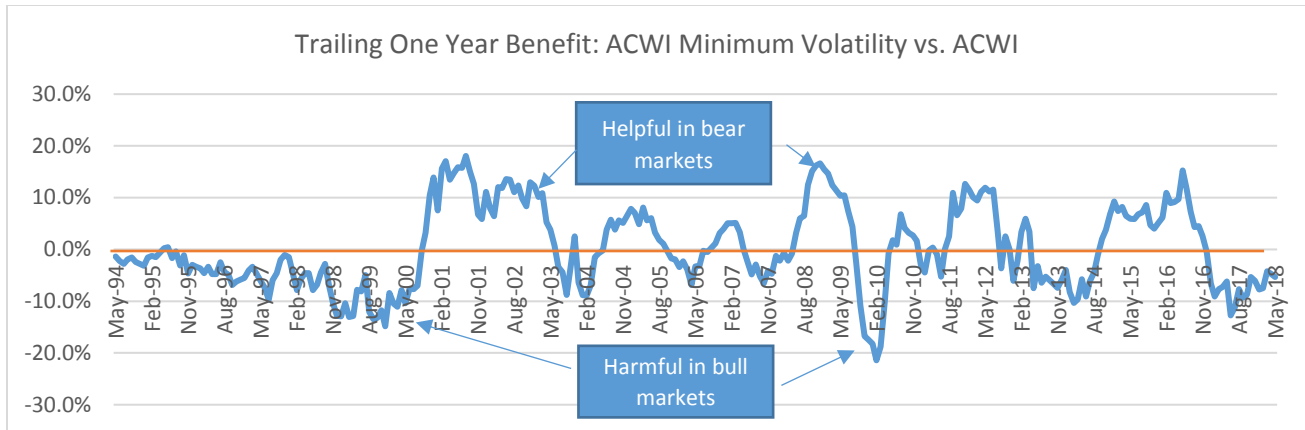
To date, investors in Low Vol strategies have enjoyed a double benefit – both lower risk and higher returns. For the last twenty-five years (May 1993 – 2018), the annual return has been 8.2%, with 10.4% risk, for a Sharpe ratio of 0.51. Over the same period, the annual return of MSCI ACWI was 7.2%, with 15.0% risk, for a Sharpe of just 0.29³.

Not only did the Low Vol approach realize its promise of higher return at lower risk, it had the additional benefit of posting smaller losses in bear markets. In the Global Financial Crisis (October 2007 to February 2009), ACWI was down 54.5%, while the Low Vol index was down 39.2%. The flip side to reduction in losses in big bear markets can be much lower gains in the early stages of bull markets. Nonetheless, if you were an early investor in Low Vol strategies, ***congratulations!*** You've done well.

The question that inevitably arises from the past success is: can we expect the same performance in the next 25 years?

The following chart shows the one year return advantage of Low Vol vs. ACWI. One might be surprised by the significant variation from year to year, as the active risk (tracking error) vs. the index is over 7% per year. Even though the Low Vol strategy has a higher overall return than ACWI for this 25 years, it had a lower return than ACWI in 56% of the rolling one year periods.

³ Source: Bloomberg, M00IWO\$0 for MSCI ACWI Minimum Volatility and GDUEACWF for MSCI ACWI through 1998, then NDUEACWF. Based on Monthly Data. One month Treasury Bills (GB1M) as the risk free rate for calculating the Sharpe ratio.



How has Low Vol performed recently? Unfortunately, the last two years have not been a fun experience for Low Vol investors. From May 2016 through May 2018 the total return of ACWI was 31.4%, vs. just 18.5% for ACWI Low Vol. In the higher volatility markets of this year, which conceivably should have rewarded risk-averse investors, Low Vol is down 0.6% with ACWI up 0.1% (January – May 2018).

It is easy to explain why Low Vol has been challenged: **sector selection**. The table below compares the sector weights of ACWI, vs. Low Vol,⁴ and the sector returns in the 24 months to May 2018.⁵ The overweight sectors (in blue) have had much lower performance than the underweight sectors (in green).

	ACWI	Low Vol	OW/UW	Total return May '16 – '18
Cons. Disc.	12.4%	9.4%	-3.0%	34.3%
Cons. Staples	7.8%	12.9%	5.1%	4.7%
Energy	6.6%	1.9%	-4.7%	28.8%
Financials	17.6%	13.3%	-4.3%	36.4%
Health Care	11.1%	12.9%	1.8%	15.1%
Industrials	10.5%	11.4%	0.9%	32.1%
Info Tech	19.9%	14.6%	-5.3%	69.8%
Materials	5.1%	2.6%	-2.5%	45.3%
Real Estate	3.0%	4.7%	1.7%	10.2%
Telecom	2.7%	7.5%	4.8%	-3.6%
Utilities	2.7%	7.5%	4.8%	10.5%

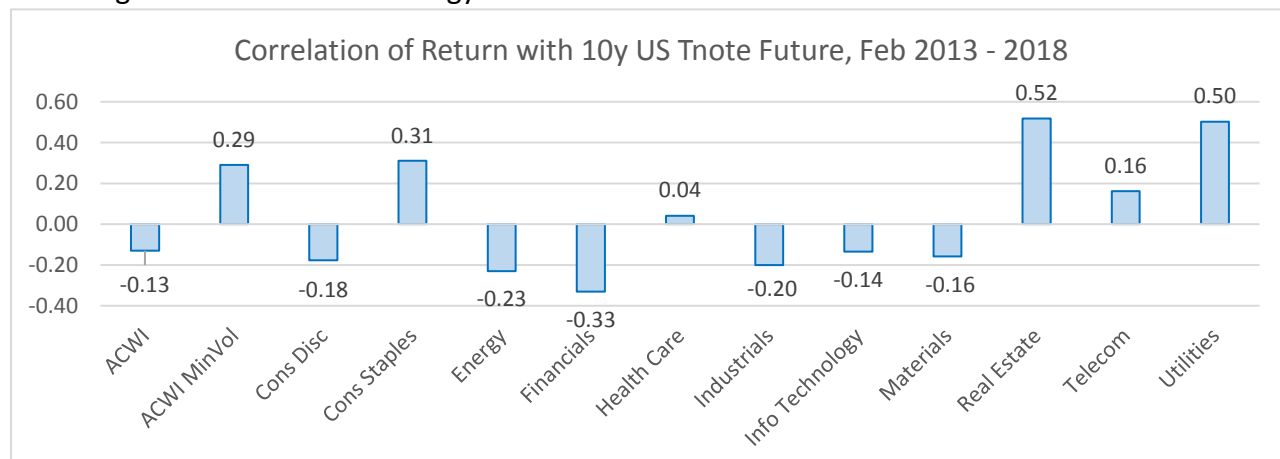
⁴ Source Bloomberg: Using ACWI and ACWV ETFs for sector weights. Data as of June 13, 2018

⁵ Source Bloomberg: M1WD0CD, M1WD0CS, M1WD0EN, M1WD0FN, M1WD0HC, M1WD0IN, M1WD0IT, M1WD0MT, M1WD0RL, M1WD0TC, M1WD0UT

While the sector weighting differs in time periods, Low Vol strategies often are overweight consumer staples, health care, real estate, telecom and utilities that have more stable revenue, cash flow and dividend yield – hence lower volatility. The recent history is perhaps a particularly painful one, but we caution that there might not be a good reason to expect these Low Vol sectors to consistently outperform the broader market over the long run, which is more driven by sector fundamentals – earnings growth, revenue growth, etc., than by volatility. Indeed, improving fundamentals were a key driver in the strong performance of Info Tech, Consumer Discretionary and Financials sectors in 2017 - 2018.

Another challenge with Low Vol is the valuation concerns, which we discussed in the White Paper and won't repeat here. We would just note that Low Vol index is 10 - 20% more expensive than the cap weighted index, which was not the case prior to previous downturns. That puts Low Vol investors in a bind: if the current bull market is to continue (which is largely driven by Info Tech, Consumer Discretionary and Financials), how much underperformance can I tolerate? If the bull market is about to end, how much protection can the Low Vol sectors provide given the current value premium?

That brings us to the last point about Low Vol – interest rate sensitivity. In addition to investor behavior, we believe that interest rates are a big part of the story of why Low Vol strategies have had a good run in the past 25 years. The chart below shows the correlation of the returns of ACWI, ACWI Low Vol and the eleven ACWI sectors with the return of the US ten year Treasury Bond future, in the five years to Feb. 2018.⁶ We can see that Low Vol had a positive 0.29 correlation to bonds, vs. -0.13 for ACWI. Also, there are five ACWI sectors which had a positive bond market correlation and six with negative. If we look back at the table that compares the sector weights of Low Vol to ACWI, we can see that all of those five sectors are overweights in the Low Vol strategy.



⁶ Source Bloomberg: M1WD0CD, M1WD0CS, M1WD0EN, M1WD0FN, M1WD0HC, M1WD0IN, M1WD0IT, M1WD0MT, M1WD0RL, M1WD0TC, M1WD0UT and TY1

So, for the past 25 years, we had two key elements boosting the return of Low Vol strategies. The first was valuation. Low Vol transitioned from having favorable value metrics in the 1990's to unfavorable value metrics now. The second was the steady decline in interest rates over this period. As Low Vol strategies normally overweight stocks and sectors that have positive correlation to bonds (often those with high dividend yields), the decline in interest rate was a strong tailwind for the Low Vol strategies. Going forward, however, it seems that valuation and interest rates are more likely to become headwinds for Low Vol types of strategies.

In conclusion, we think that a tilt toward low volatility stocks will indeed lower the volatility of the overall equity portfolio, and there's a reasonable chance of reducing some losses in big bear markets (at a cost of missing some gains in the subsequent recovery). However, the concerns we outlined here would give us reasonable doubt about whether Low Vol can also achieve higher returns than the cap-weighted index in the years ahead, particularly if interest rates trend upwards. For those of us who own Low Vol strategies in our portfolio, it might be a good time to discuss some of these concerns with Trustees or the Investment Committee to re-align expectations. We would suggest plan sponsors review the reasons for the initial investment in Low Vol strategies and check whether the original rationale remains in place. If not, it might be a good time to re-examine the sizing of the allocation in the context of the overall asset-liability management:

- In the ALM study, how much volatility reduction and loss mitigation from Low Vol has been expected at the total plan level?
- How much interest rate sensitivity do I have from my Low Vol strategies? Is this sensitivity incorporated in my overall plan level interest rate risk budget? (This is particularly important for pension funds which tend to manage interest rate risk explicitly)
- Are the excess return and volatility reduction assumptions from Low Vol appropriate on a go-forward basis?
- If the allocation in Low Vol is reduced, what are the best alternative replacements to retain the risk reduction and downside protection characteristics in my portfolio? (P.s. We don't think there is one silver bullet that would solve every problem. The right approach is likely a custom solution depending on the size, current asset allocation, funded status, risk tolerance and governance requirements of each plan.)