InvestmentMetrics

Low Volatility Investing: The Holy Grail?

by InterSec Research

This client memo focuses upon the InterSec Low Vol Universe, highlighting portfolio risk and performance, benchmark options and potential implementation.

Last year, InterSec Research wrote a paper entitled ***Benchmark Agnostic Products in the Global Equity Landscape***, which examined benchmark awareness of global equity products. The conclusion of this research memo was that loosening manager constraints typically resulted in stronger returns on an absolute and risk-adjusted basis. Extreme market turbulence since 2008, and the expectation of continued uncertainty, encouraged plans to re-evaluate their risk tolerance levels. As a result, we observed a sub-set within the growing benchmark agnostic global equity universe (Exhibit 1) that challenges market capitalization-weighted benchmarks. The products in this subset are considered low volatility in that they strive to provide consistent returns and avoid the market highs and lows. After reviewing the InterSec Global Equity Universe, and each manager's process, philosophy, standard deviation, beta and turnover, InterSec created a Low Vol Universe consisting of 15 managers. These managers combined to win $1.6 of the $5.7 billion of U.S. tax-exempt institutional assets awarded to active global equity mandates for the first half of 2011. Through September 2011, these managers have reported an additional $800 million of inflows. This paper will focus on the InterSec Low Vol Universe, highlighting portfolio risk and performance, benchmark options and potential implementation.

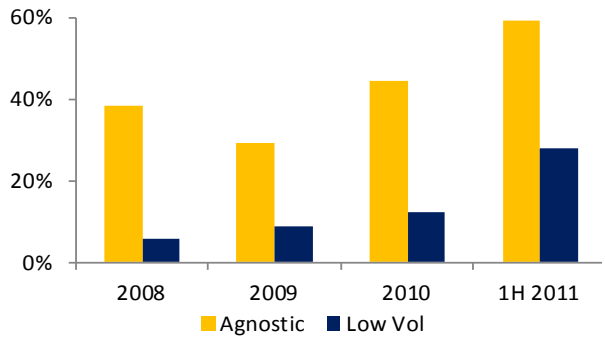


Exhibit 1.

InterSec Research Global Low Volatility Universe

The majority of products within InterSec's Low Vol Universe are all-cap focused and evenly divided by style and investment orientation. The quantitative offerings, whether targeting managed volatility or minimum variance, typically reduce overall portfolio risk (as measured by standard deviation) by 30% compared to market cap-weighted indices. These products tend to have tighter return bands with the lowest beta and standard deviation within the Low Vol Universe. While not all strategies market themselves as low volatility products, we have identified fundamental managers who exhibit specific characteristics necessary in defining the peer group. In general, these products are benchmark agnostic, focused on total returns, wealth generation, and/or capital preservation. Some fundamental products maintain lower comparative portfolio turnover, employing a "buy and hold" approach. Furthermore, several of these managers are incorporating non-equity holdings including high cash allocations, convertible securities, or hard commodities (such as gold). These managers also tend to have the highest excess returns amongst their Low Vol peers.

InterSec Research Low Volatility Universe Top Business Winners with Characteristics

Independent?	Investment Function Location	Orientation	Process	Style	Cap Bias	Product Status	U.S. Tax-Exempt Initial Funding through Sept 2011	Total Active Low Vol Product U.S. Tax-Exempt AUM Sept 2011	Total Product Assets'	Total AUM Worldwide Sept 2011'	3 Year Excess Return	3 Year Beta	3 Year Standard Deviation
No	US	Fundamental	BU	Value	All Cap	Open	$1,270	$1,453	$33,524	$56,171	9.30	0.69	16.3
Yes	FR	Quantitative	BU	Core	All Cap	Open	$401	$459	$459	$1,698	n/a	n/a	n/a
No	US	Quantitative	BU	Core	Large Cap	Open	$328	$443	$907	$5,510	4.22	0.58	14.9
No	US	Quantitative	TD/BU	Value	All Cap	Open	$101	$113	$1,400	$40,497	4.01	0.60	14.9
Yes	US	Fundamental	TD/BU	Growth	All Cap	Open	$91	$1,073	$2,801	$31,777	8.38	0.70	16.9
Yes	UK	Fundamental	BU	Value	All Cap	Closed	$80	$1,015	$5,660	$6,221	12.62	0.74	17.9
Yes	US	Fundamental	BU	Value	All Cap	Open	$49	$2,173	$13,019	$16,303	10.78	0.57	14.0
No	US	Quantitative	TD/BU	Core	All Cap	Open	$30	$30	$254	$66,752	n/a	n/a	n/a
No	UK	Fundamental	BU	Growth	All Cap	Open	$0	$5,253'	$22,893	$44,288	4.66	0.77	18.2
No	US	Fundamental	BU	Core	All Cap	Open	$0	$13'	$31	$40,777	1.54	0.79	19.3
No	US	Quantitative	BU	Core	Mid/Large	Open	$0	$0	n/a	$121,869	n/a	n/a	n/a
No	US	Fundamental	BU	Value	Large Cap	Open	$0	$950	$7,795	$118,650	11.60	0.70	17.5
Yes	US	Quantitative	TD/BU	Core	All Cap	Open	$0	$0	$655	$32,265	n/a	n/a	n/a
No	US	Quantitative	BU	Core	All Cap	Open	$0	$0	$32	$1,876,764	n/a	n/a	n/a
No	CH	Fundamental	BU	Growth	All Cap	Open	$0	$0	$346	$15,628	3.76	0.78'	19.70

' From external sources

Performance and Risk

Targeting low volatility is not a new concept. Academics have argued for decades that lower risk stocks outperform higher risk stocks overtime[1] [2]. Research from Guggenheim Investments demonstrates this as well. Exhibit 2 compares the returns of the lowest and highest decile risk holdings within the Guggenheim Universe (top 3,000 companies by market cap in developed countries) on a rolling three year basis[3]. The lowest risk decile outperforms the highest risk decile consistently for the entire 20-year time period. Within the InterSec Low Vol Universe, the same is true; over the trailing three years ending September 2011, the median returned 4.6% compared to the Global Equity Universe median return of 1.2%. Indices also follow the same pattern; over the last ten years, the back tested history of the MSCI World Minimum Volatility and Russell Developed Defensive Large Cap Indices both outperform their parent benchmarks by 260 and 90 basis points respectively.

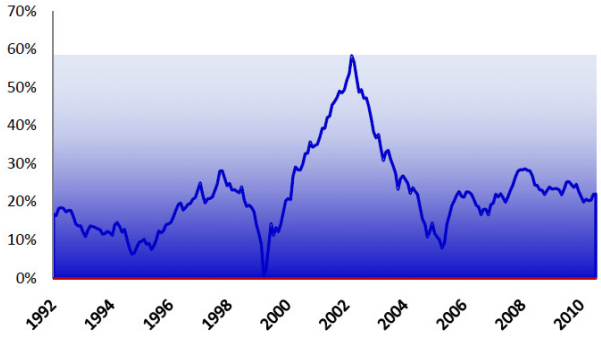


Exhibit 2.

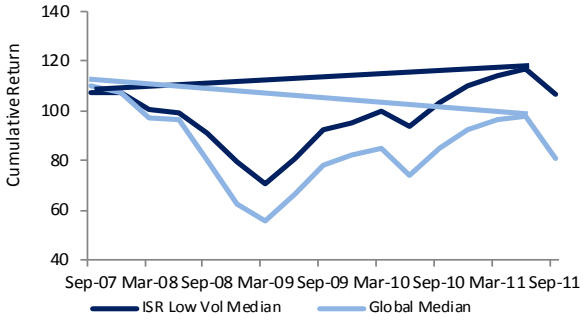


Exhibit 3.

As previously stated, the goal of low volatility investing is to produce more stable returns over longer time periods (Exhibit 3). In the drawdown chart on the left, the median manager in the Global Equity Universe lost 49% from June 2007 through March 2009, then recovered 75% of its losses by June 2011 (in light blue). The rebound however, failed to return the Universe median back to pre-crisis levels, falling below the June 2007 level by 9%. The Low Volatility group on the other hand stayed within a tighter return band, and ultimately performed better over the stated time period. The median manager lost 34% from June 2007 through March 2009, then bounced back 65% through June 2011 (in dark blue). These returns resulted in a 11% gain for the same time period.

The reason Low Vol products tend to perform well over the longer time periods is mainly due to their ability to preserve capital during down markets. The charts below separate up and down markets starting in mid 2007. During the eight down quarters since 2007, the median manager within the Low Vol Universe outperformed the median manager within the Global Equity Universe seven

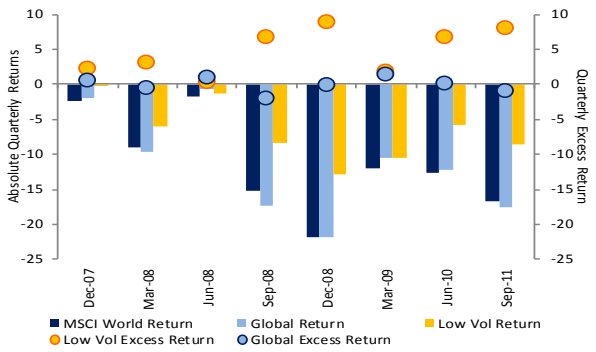


Exhibit 4.

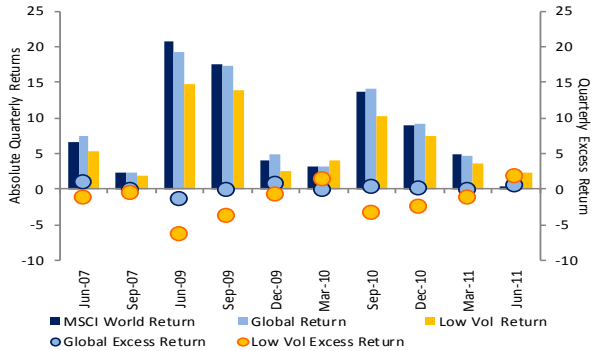


Exhibit 5.

1 Black , Jensen and Scholes
2 Black , Jensen and Scholes
3 Guggenheim Investments

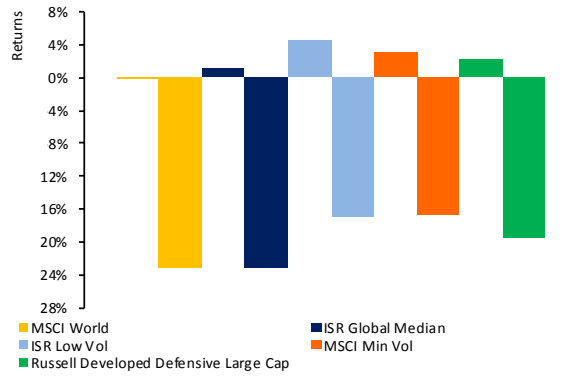


Exhibit 6.

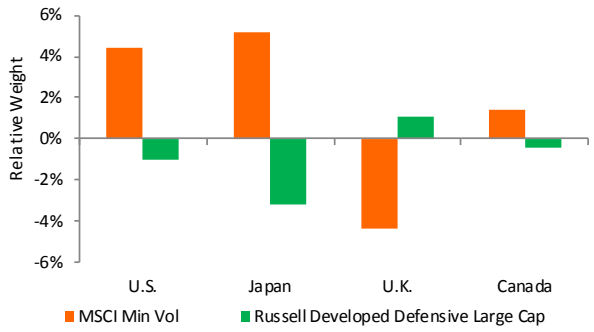


Exhibit 7.

times (Exhibit 4 on the previous page). In the ten positive quarters during the same time period, the opposite is true; the Global Equity Universe median outperforms the Low Vol manager in eight out of the ten time periods (Exhibit 5 on the previous page).

Low Volatility Indices

MSCI launched the Minimum Volatility Index Series in April 2008 as a response to market conditions and the launch of specifically focused lower volatility strategies. The indices are constructed using a Barra multi-factor equity model to optimize a designated parent index, ultimately creating a portfolio with roughly 220 of the lowest total risk holdings. Constraints include no more than a +/- 5% country or sector variation from the parent index.[4] The Russell Stability Index Series followed in 2011. Also based on parent indices, Russell ranks stocks' volatility and quality using five metrics to define stability. The list ultimately results in approximately 1200 names that are deemed more stable by score, and those companies are included in the Defensive Index.[5] Exhibit 6 compares the medians of the InterSec Global Equity and Low Vol Universes to the MSCI World, MSCI World Minimum Volatility and the Russell Developed Defensive Large Cap Indices. The top half of the chart shows each respective median's three year absolute return, while the bottom half shows each groups' volatility. Clearly, the Low Vol Universe and both specific low volatility indices all have lower standard deviation and higher absolute returns than the broader global equity universe. Furthermore, the active median Low Vol manager within the InterSec Universe outperformed both corresponding MSCI and Russell indices, with less risk.

Although there are similarities between the risk/return profiles above, the Russell Developed Defensive Large Cap and MSCI Min Vol Indices are quite different from one another. One differentiator is highlighted in Exhibit C of the addendum; due to their differences in methodology, such as Russell's inclusion of quality factors, the indices perform differently from one another in up and down markets. As demonstrated in Exhibit 7, country allocations can be quite different as well. Interestingly, the greatest difference of index composition is within the least volatile major market, Japan. The MSCI Min Vol Index is overweight Japan relative to the MSCI World Index by just over 5%, while the Russell Developed Defensive Large Cap Index is underweight by 3.2% relative to the Russell Large Cap Index (a 8.4% swing). MSCI and Russell are split yet again in the U.S. by 5.4% with the MSCI Min Vol Index overweight 4.4% and Russell underweight by 1.0% (again, when compared to their respective parents). By comparison, both fundamental and quantitative Low Vol managers underweight the U.S. market (similar to their global equity peers), and overweight the Japanese market when compared with the World Index. (see addendum Exhibit D).

In Exhibit 8 on the following page, the MSCI Min Vol Index (when compared to the MSCI World Index), and the Russell Developed Defensive Large Cap Index (when compared to the Russell Large Cap Index) favor consumer staples and health care. Financials, which is traditionally the most volatile sector, is extremely underweight in

4 MSCI Minimum Volatility Indices Methodology
5 Russell Stability Index Series Methodology

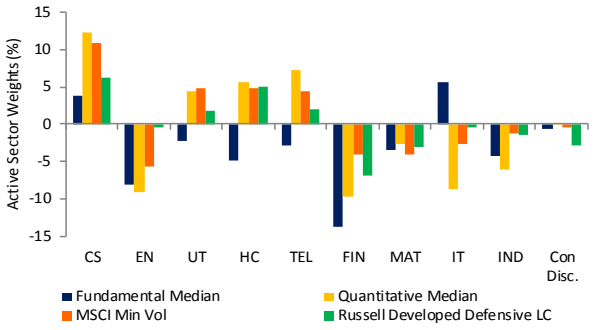


Exhibit 8.

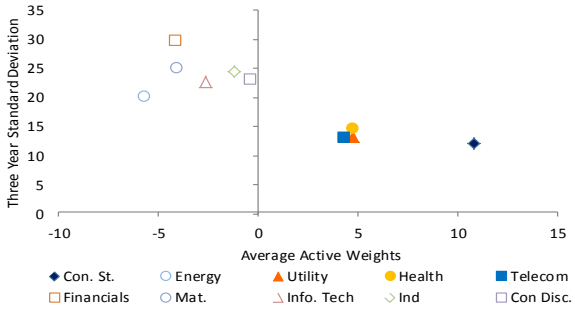


Exhibit 9.

both indices; -4.1% and -6.9% to their respective parent indices. While reviewing these sector allocations, we see key difference between the indices and managers, especially on the fundamental side. While both indices and quantitative managers are overweight health care, utilities, and telecommunications, fundamental managers are underweight as much as 5%. Exhibit 9 further demonstrates that active underweight positions by Low Vol managers to the most volatile sectors (financials, energy and materials) when compared to the MSCI World Minimum Volatility Index.

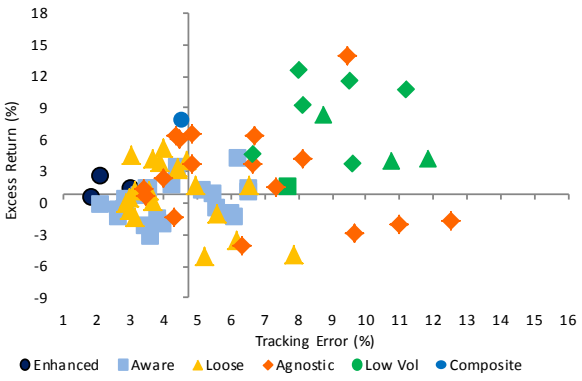
Conclusion

During the last three years we have witnessed unprecedented volatility in global equity markets. The MSCI World Index lost nearly 50% cumulatively, followed by a significant rebound. While the three year return as of September 2011 is slightly negative, impact from volatility has been significant, thus managers limiting losses have been the most successful (compounding dampened losses over a longer time period ultimately results in stronger absolute returns). Uncertainty in the markets has led some plans to de-risk their portfolios. Some plans have decreased their overall allocations to equity, favoring fixed income and hedge fund products, while others have continued to diversify their equity holdings by increasing allocations to both high alpha generators and low volatility portfolios. As a sample of the implementation benefits of low volatility to a global equity portfolio, we constructed a composite using successful asset gathering managers over the last three years. The most likely option would be a style neutral composite with various risk levels and benchmark awareness. The table on the right shows a portfolio that is equally split 25% low volatility, benchmark agnostic, loosely aware and benchmark aware. The portfolio style breakdown is 25% Growth and Value, 50% Core. As Exhibit A in the addendum suggests, the product ranks extremely favorably, with tracking error near median and top percentile three-year alpha and information ratios. Incorporating low volatility strategies can improve total plan global equity performance, particularly in significant down markets.

	MSCI World	ISR Global Composite	ISR Global Median	ISR Low Vol Median
Beta	1	0.95	0.98	0.7
Standard Deviation	23.09	22.35	23.12	16.94
Jensen's Alpha	-	7.46	1.37	4.07
Tracking Error	-	4.54	4.36	9.45
Information Ratio	-	1.72	0.3	0.7
R-Squared	1	0.96	0.97	0.88
Sharpe Ratio	-0.01	0.33	0.04	0.28
Downside Risk	17.33	15.44	17.35	11.85

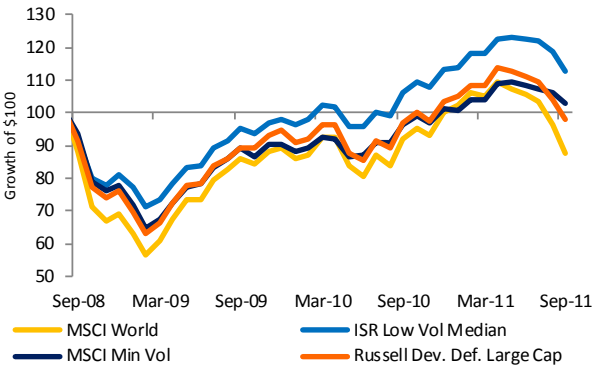
Addendum

Exhibit A: Tracking Error vs. Excess Return
Three Years Ending September 2011
vs. MSCI World Index



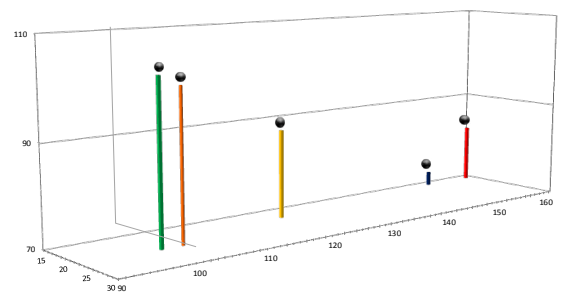
The chart on the left demonstrates that the tracking error of the median Low Vol manager is extremely high at 9.5% (compared to 4.4% for the median Global Equity Universe manager) when measured against the MSCI World Index (the composite return discussed on page 4 is highlighted in royal blue). High tracking errors would typically indicate the portfolio is taking on greater risk; however this is relative to a benchmark. When isolating portfolio risk (as measured by standard deviation), the median Low Vol standard deviation is 16.9% with a beta of 0.70, compared to 23.3% and 0.98 respectively for the median Global Equity Universe manager.

Exhibit B: Index Growth of a Dollar



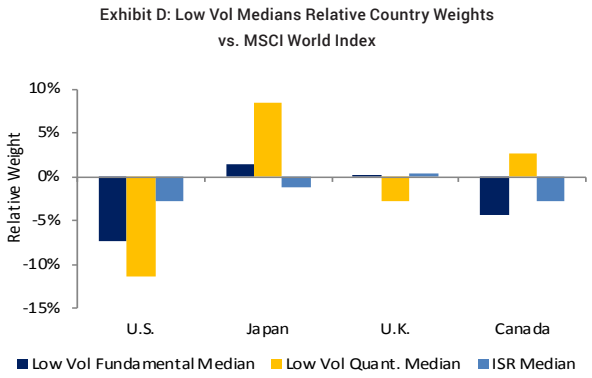
On page 3 we mention that the specific low vol indices have performed better than their parent index. Furthermore, these indices have stayed within a tighter return band than the World Index. In Exhibit 3, the MSCI Min Vol Index stays within 65 and 109 on a growth of a dollar chart, and the Russell Defensive Index stays within 63 and 114. The MSCI World Index vacillates between 55 and 110, and although the high does not quite reach the same levels as the MSCI Min Vol Index, the low dips well below each respective low volatility index low.

Exhibit C: Volatility Risk/Return
Three Years Ending September 2011



In Exhibit 3, we compare up and down market relative return ratios (values above 100 demonstrating outperformance) adding standard deviation as the third dimension. Over the trailing three years, while all sub groups within the global equity universe added value in down markets, low volatility products had incredibly strong down market performance with significantly lower standard deviations compared to their peers.

Addendum



When further reviewing country allocation, both fundamental and quantitative Low Vol managers underweight the U.S. market (similar to their global equity peers), but overweight the less volatile Japanese market when compared with the World Index.

Sources Cited

1. Black, F. Jensen, M.C. and Scholes, M. (1972), The Capital Asset Pricing Model: Some Empirical Tests, Studies in the Theory of Capital Markets, Praeger.
2. Blitz, D.C., and van Vliet, P. (2007), The Volatility Effect: Lower Risk Without Lower Return, Journal of Portfolio Management, Vol. 34, No.1, pp 102-113.
3. Baker, Nardin. Global Alpha Chief Strategist, Guggenheim Investments. "Why Low Volatility Wins: History, Explanations, and the Future of Low Volatility". Pensions and Investments Low Volatility Investing Summit, New York, October 13, 2011.
4. MSCI Minimum Volatility Indices Methodology. August 2011. http://www.msci.com/resources/factsheets/MSCI_GM_Volatility_Factsheet.pdf
5. Hintz, Dave, CFA. Head of U.S. Equity Research, Investment Division. "Third Dimension of Style: Introducing the Russell Stability Indices." December 2010 http://www.russell.com/indexes/documents/research/third-dimension-style-russell-stability-indexes-January2011.pdf

InvestmentMetrics

Based in Darien, Connecticut, Investment Metrics is an independent provider of investment performance analytics, manager research, reporting and data solutions for investment consultants, wealth advisors, asset managers and investors.

For more information, please visit our website at invmetrics.com.

For questions, please contact:

Brendan Cooper
Senior Consultant
brendan.cooper@invmetrics.com
203 662-8412