



A document by the Ossiam

RESEARCH & INVESTMENT TEAM

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Topic: Is Low Volatility investing overcrowded?

Introduction	1
1- A fund flows approach.....	1
2- A fundamental valuation approach.....	2
3- A relative performance approach	2
4- A quantitative approach	3
Conclusion.....	3

Introduction

Minimum Variance and Low Volatility investment solutions (together “Low Volatility” in the rest of the document) have become very popular over the last few years. Many traditional active asset managers and ETF providers now offer some kind of Low Volatility strategies, applied to single country, regional or global equity markets.

One may reasonably argue that the recent flows into the Low Volatility strategies might affect their future performance because of the flow pressure on the prices of the companies that generally are selected by this investment approach. More recently, some market participants have even referred to Low Volatility investing as “a bubble”.

We look at four objective measures of “expensiveness” to detect whether Low Volatility strategies applied to Developed Markets are overcrowded:

- (i) **Fund flows:** one would expect large funds chasing the same stocks to have a significant market impact on those stocks. We present estimates of the global AUMs in Low Volatility funds/ETFs/mandates and compare them to the market cap of various investment universes
- (ii) **Fundamental valuation:** a traditional measure of the “cheapness/expensiveness” of a specific stock or index is the Price to Earnings ratio. We look at the historical and current P/E of various Low Volatility indices compared to their market cap weighted benchmarks to see if Low Volatility indices appear excessively expensive by historical standards. We also look at other fundamental metrics that are relevant to Low Volatility portfolios.
- (iii) **Relative performance:** if Low Volatility strategies are supposedly in a “bubble” mode, they must have been strongly outperforming market cap weighted indices in the recent period. We look at the recent performance of Low Volatility indices and try to assess if their recent behaviour looks abnormal from a historical perspective
- (iv) **Quantitative approach:** when investors trade stocks with similar characteristics (low volatility in this case) one would expect their cross-correlations to increase relative to the correlations of the overall market. We use a quantitative measure proposed by Deutsche Bank to detect whether low volatility stocks show any signs of herding.

1- A fund flows approach

- Current AUMs in Low Volatility mutual funds & ETFs stand at \$62bn globally¹. This estimation does not include mandates for which information is not publicly available. An estimate would be to assume the same AUMs for mandates on low volatility strategies, hence a total estimate of \$124bn. ²
- The current free float market capitalization of the MSCI World (Developed) Markets is \$33.045trn³
- Low Volatility AUMs therefore represent around 0.37% of the global market capitalization of Developed equity markets
- One might argue that what matters is not the share of the global markets being owned by Low Volatility managers but rather the share of low volatility stocks capitalization owned by the same managers. Below are the total market caps in USD of some Low Volatility indices (as of Nov 30th 2015). We present scenarios in which Low Volatility managers follow the same index and own a certain % of the market cap of each index. For example, if the AUMs levels for the products tracking the Ossiam US Minimum Variance Index reached \$107bn, they would collectively own 2% of the market capitalization of the constituents of this index⁴. We are currently very far from this level of AUMs, and definitely far from the 12% capitalization share of standard index funds tracking the S&P 500⁵.

¹ As of Nov 30th 2015. Source Bloomberg, calculation by Ossiam

² A recent estimate of 110.34bn\$ was recently provided by [eVestment LLC](#)

³ As of Oct 30th 2015. [Source MSCI](#)

⁴ Note that this number does not take into account any overlap between portfolios of different Minimum Variance strategies (e.g., the same US stocks can be included both in the US and the World Developed Low volatility strategies)

⁵ Current S&P 500 index assets stand at \$2.15 trn, that is 10.7% of the total market capitalization of the index ([source S&P](#), as of Dec 31st 2014)

Index	Market Cap (in \$bn)	1% Mkt Cap	2% Mkt Cap	5% Mkt Cap	12% Mkt Cap
Ossiam US Minimum Variance Index NR	5 369	54	107	268	644
Ossiam World Minimum Variance Index NR	8 992	90	180	450	1 079
Ossiam Emerging Markets Minimum Variance	0	0	0	0	0
iStoxx Europe Minimum Variance Index NR	2 828	28	57	141	339
Ossiam Emerging Markets Minimum Variance Index NR	3 002	30	60	150	360
Total (in \$bn)		172	344	859	2 063

Source: Bloomberg / Calculations by Ossiam / Data as of Nov 30th 2015

2- A fundamental valuation approach

- An extensive analysis of fundamental biases of Minimum Variance portfolios was presented in the Ossiam Research Paper [Fundamental profile of the Ossiam Minimum Variance indices \(2013\)](#). Here we recall the main findings of the paper
- According to this study, in terms of Price to Earnings (P/E), Low Volatility indices often trade at a slight premium to the market (around 1 point of P/E) as investors usually value the stocks with the ability to deliver strong and recurring cash flows. After a phase of strong growth in earnings, those companies have usually gone through a phase of multiple expansions, rewarding their accession to the status of successful company
- As is shown in the full study, the disconnections between the valuations of Low Volatility indices and their Benchmarks (6 to 10 points of P/E ratio) coincide with periods of extreme stress in the market (March 2009 for example).
- Current values of the fundamental indicators (as of Nov 30th 2015) confirm the findings of the study: stocks in Low Volatility portfolios are concentrated on less indebted and more profitable companies than their market cap weighted Benchmarks, which explains why they trade at a premium to the market portfolio. However, the current levels of P/E and Price to Book (P/B) do not imply over-valuation relative to historical standards

Indicator	Ossiam US Minimum Variance Index NR	S&P 500 Index NR	+/-
Dividend Yield	2.5%	2.1%	0.4%
BEST Price to Earnings (P/E) Ratio Forward 12M	17.7	16.7	0.3
Price to Book Ratio P/B	3.0	2.6	-0.5
Total Debt to Common Equity	151%	118%	0.5%
Total Debt to Total Assets	31%	27%	-0.5%
Return on Assets	6.9%	7.4%	-1.7%
Return on Common Equity	22.0%	22.9%	0.4%

Indicator	iStoxx Europe Minimum Variance Index NR	Stoxx 600 Index NR	+/-
Dividend Yield	3.1%	3.3%	-0.2%
BEST Price to Earnings (P/E) Ratio Forward 12M	17.2	16.5	0.1
Price to Book Ratio P/B	1.8	1.8	0.1
Total Debt to Common Equity	94%	137%	0.0%
Total Debt to Total Assets	22%	25%	0.1%
Return on Assets	6.4%	6.3%	-2.2%
Return on Common Equity	19.9%	19.3%	-1.6%

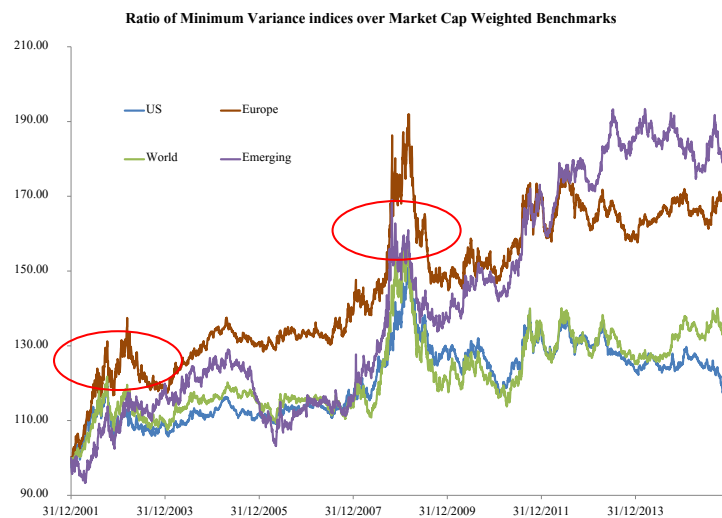
Indicator	Ossiam World Minimum Variance Index NR	MSCI World Index NR	+/-
Dividend Yield	3.0%	2.5%	0.5%
BEST Price to Earnings (P/E) Ratio Forward 12M	17.6	16.5	0.1
Price to Book Ratio P/B	2.2	2.1	0.0
Total Debt to Common Equity	122.9%	125.6%	0.2%
Total Debt to Total Assets	28.8%	26.2%	-0.7%
Return on Assets	5.7%	6.4%	-1.8%
Return on Common Equity	16.9%	19.4%	2.0%

Indicator	Ossiam Emerging Markets Minimum Variance Index NR	MSCI Emerging Markets Index NR	+/-
Dividend Yield	3.1%	2.9%	0.2%
BEST Price to Earnings (P/E) Ratio Forward 12M	14.8	12.7	0.3
Price to Book Ratio P/B	1.5	1.3	0.1
Total Debt to Common Equity	84.5%	102.7%	0.3%
Total Debt to Total Assets	21.3%	21.3%	0.9%
Return on Assets	7.9%	7.0%	-1.0%
Return on Common Equity	22.3%	17.0%	-1.6%

Source: Bloomberg, as of Nov 30th 2015

3- A relative performance approach

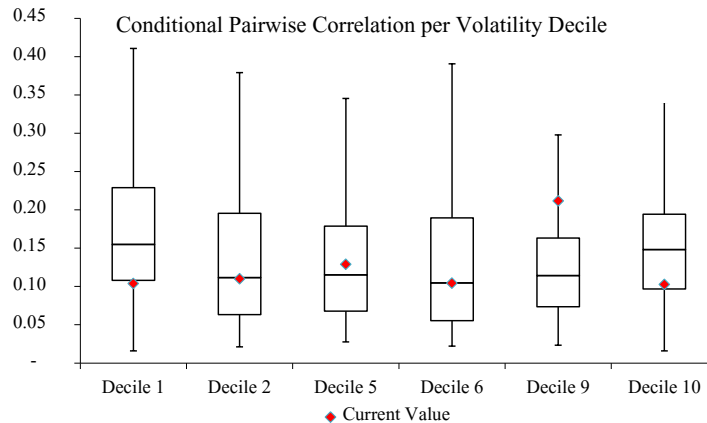
- The chart presented on the side shows the ratio historical values of Low Volatility indices over their respective Benchmarks since 2001. Periods of strong overperformance were observed on two occasions (February 2003 & March 2009, corresponding to the bottoms of bear markets)
- Low Volatility strategy applied to Developed Markets have been performing in line with their Benchmarks since March 2011 (but with less volatility)



Source: Bloomberg / Calculations by Ossiam
Period 31 Dec 2001 – 30 Nov 2015

4- A quantitative approach

- In a recent study⁶, Deutsche Bank Quantitative Team applied a proprietary metric to assess the crowdedness of Low Volatility strategies. The metric is based on pair-wise stock correlations, as when investors trade a group of stocks as a basket (e.g. a basket of low volatility equities), these stocks should show higher co-movements (correlation) compared to the market average, especially during market downturns. We construct a similar indicator to detect whether low volatility stocks are subject to herding⁷
- We consider the S&P 500 universe over the period March 1992 to May 2015. Each quarter, we build 10 portfolios corresponding to volatility Deciles (Decile #1 contains the 50 stocks with the lowest volatilities). We then measure the average pairwise correlation within each Decile during market downturns (i.e. conditional on market losses higher than the 95% Value-at-Risk of the S&P500)
- For sake of clarity, we focus here on two low volatility portfolios (Deciles 1 and 2), two mid volatility portfolios (Deciles 5 and 6) and two high volatility portfolios (Deciles 9 and 10) and present the data in a Whisker Box format (showing the max, min, first quartile, third quartile, median and current value):



Source: S&P/Datastream. Calculations by Ossiam
Period March 1992 – May 2015

- Based on the median value of pairwise correlations, Low Volatility stocks (Decile 1) are showing the highest correlations among the volatility Deciles. However, since the measure is not adjusted for fundamental biases such as sector concentration, it is not possible to directly conclude that the high correlation is a result of money flows in that Decile. This high correlation might come as well from the fact that this Decile is concentrated in just a few defensive sectors, such as Utilities⁸
- Most Deciles are currently in line or below their median values, with the exception of Decile 9. Historically, spikes in correlations have coincided with major events in global markets (1998 Asian crisis, 1998 Lehman default, 2011/2012 Euro crisis)
- The current pairwise correlation of Decile 1 is largely below its median. Indeed, the current value is lower than the level of the first quartile (25%), which does hint at any herding behaviour on Low Volatility stocks

Conclusion

In this paper, we looked at different objective measures of “expensiveness” or “crowdedness” of Low Volatility strategies applied to Developed Markets, ranging from fundamental considerations to quantitative criteria. For each criteria, there was no convincing evidence of abnormal or “bubble” behaviour of Low Volatility strategies and stocks in the recent period. Despite the recent interest to this investment style, the amount invested in this sector is small compared to the market capitalization of the low-risk stocks. These strategies do not exhibit bubble-like outperformance with respect to the market. From a fundamental point of view, the low-risk stock appear somewhat expensive, but the historical analysis reveals that this expensiveness was not generated just recently but is rather a manifestation of a premium that less indebted and more profitable companies benefit from. And finally, a correlation analysis shows that while the stocks with the lowest volatility are on average more correlated than the rest of the universe, the current level of pairwise correlations for this group of stocks is largely below its historical average.

Since pure Low Volatility strategies do not rely on market capitalization, rebalance regularly and use sector constraints, they are actually less prone to bubbles than traditional market cap weighted indices.

⁶ Seeking Return in Low Volatility, DB SYNDEX Portfolio Strategy, May 2013

⁷ Note that the relationship between this indicator and future performance is far from obvious. For example, Low Volatility stocks were showing the highest correlation in March 2007, before the market downturn and subsequently overperformed the market by a significant margin. Analysts at DB also noted that High Dividend strategies have been showing signs of overcrowding almost continuously in the last 10 years but this did not prevent them to be one of the best investment strategy over the same period

⁸ For more details on the sector concentration of low volatility portfolios, see for example section 4.5 of “Interest rate exposure for low volatility portfolios”, Ossiam Research team, April 24th 2015

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