

Is Standard Deviation Bad?

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Most conventional analyses of risk related to investment manager returns includes some calculation of standard deviation and some estimation of portfolio beta. Further pursuits of risk measurement will lead to calculations on upside/downside capture ratios.

Is standard deviation bad? Like most all philosophical questions, the answer is – "it depends." It depends on whether the standard deviation (risk) is caused during periods when the manager outperforms the market or during periods when the manager under-performs the market.

Managers are paid to outperform the market. Managers who excel at outperforming the market and who at the same time avoid much of the market's downside, will potentially have standard deviations that are higher than the market. Viewed in isolation, the manager who has a higher standard deviation than the market will also be perceived as having higher risk characteristics, while at the same time the manager is doing what he is being paid to do – that is, beat the market. Should the manager be punished (viewed as having higher risk) when he is executing his mandate of beating the market? We would argue the answer is no. But how can an adjustment be made to traditional measures of standard deviation to remove this undue punishment?

We utilize a method called "semi-deviance" or "down-side deviation", which is becoming a commonly used analytical technique within the industry(1). We will refer to it as "adjusted standard deviation (ASD)." The calculation is the same as that for traditional standard deviation, with one exception. In every period that the manager beats the market, the market's return is substituted for the manager's return and standard deviation is then calculated. The outcome of this calculation is important because it reveals if standard deviation (risk) is being generated when the manager beats the market or when he lags the market. That is, is it being generated on the "upside" or the "downside." If a manager's standard deviation is higher than the market simply because of the fact that he beat the market, that's good – he did what he was paid to do. It's acceptable to have risk if you add value.

One of two things will happen when standard deviation is adjusted in this manner. Either standard deviation will go up or it will go down. Ideally you would expect it to do two things: 1) Go down, and 2) Be less than the standard deviation of the market. If adjusted standard deviation goes down, then you know that it was originally high simply because the manager beat the market. If adjusted standard deviation goes up, then the client is accepting increased risk and giving up value because all the risk (standard deviation) is generated when the manager lags the market. Thus, there is no "value-added."

For example, our Limited Duration product has a standard deviation since inception of 1.95 versus 2.07 for the Lehman Intermediate Government/Corporate Index. Adjusted standard deviation for Limited Duration is even better at 1.89. Beta is .87. Overall, Limited Duration generates positive risk-adjusted returns or value-added and incurs only 87% of the market's risk as measured by beta and has a lower standard deviation. These composite characteristics are confirmed by an up-side capture ratio of 94% versus a down-side capture of only 50%. Thus Limited Duration has positive value-added, significantly less risk than the

market, and is very defensive in down markets.

(1) We are grateful to Gary Gould of Corporate Consulting Group for his thoughtful insights on this technique.