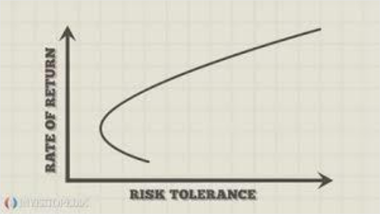
Zero Correlation

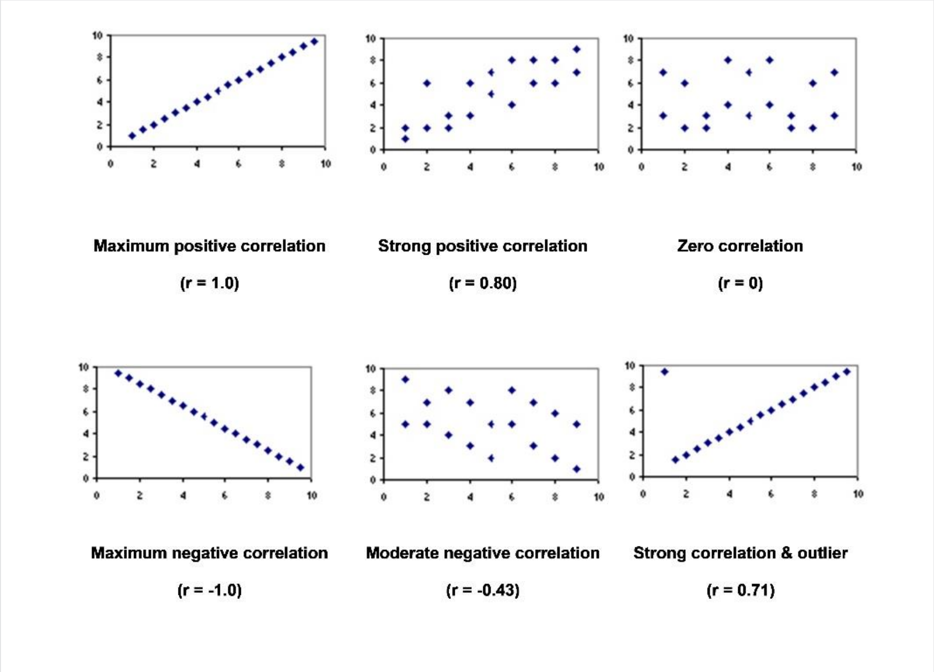


Executive Summary

Zero correlated investments are the free lunch of the investment world. Adding an uncorrelated investment to a portfolio is of value as it typically lowers overall volatility and can increase returns (efficient frontier).
Visualization of trend following's important non-correlation property reveals that this can only hold true in the long-term.
In the short term this strategy must stay highly adaptive.

Correlation

Correlation is a mathematical measure quantifying the interdependence between two (or more) variables. See chart 1.
In investments we correlate past returns of individual assets or portfolios or strategies against each other. A correlation coefficient of +1 means investments are perfectly linked. A negative -1 correlation means returns exactly off-set each other. A zero or close to zero correlation renders two investments uncorrelated.
Measures near the extremes +1 and -1 are understood intuitively. Investment returns move either up in tandem (identical risks) or they move in opposite directions (off-setting risks). **But what exactly means two investments are uncorrelated?**



<u>Chart 1</u>: Visualization of various correlation coefficients

Widespread Misconception

Highlighting and advertising the merits of investment diversification it is not uncommon to receive a rejecting comment like '**Diversifying means no capability to win'**. The fear being that diversification cancels out or at least diminishes profit potential.

This is a dangerous and costly misconception. Those investors wrongly equate non-correlation to negative correlation. Indeed holding negatively correlated investments reduces both the expected volatility and return of that portfolio (partial or full hedge). For example, stocks and bonds are negatively correlated at times. But adding a zero correlated asset in an appropriate portion is always desirable in the trade-off between volatility and return. The concept of non-correlation is so much harder to grasp, unfortunately creating confusion.

Trend Following

Trend following is an alternative investment strategy. Different from the classical stocks, bonds, precious metals or real-estate investments it does not invest in a specific asset class. Instead trend followers invest in an investment style (not assets per se) utilizing various asset classes, typically stocks, bonds, commodities and foreign exchange. It aims to exploit significant movements in the corresponding futures prices. As such trend following can potentially be profitable in up and down markets, as one is able 'to short' the underlying easily.

One of trend following's strong appeal is its historical non-correlation to the stock market. But how does that non-correlation actually looks like? Graph 2 shows the historical 30 business days backward rolling correlation of the Societe Generale Trend Index (average of top 10 global trend followers) to the S&P 500 stock index.

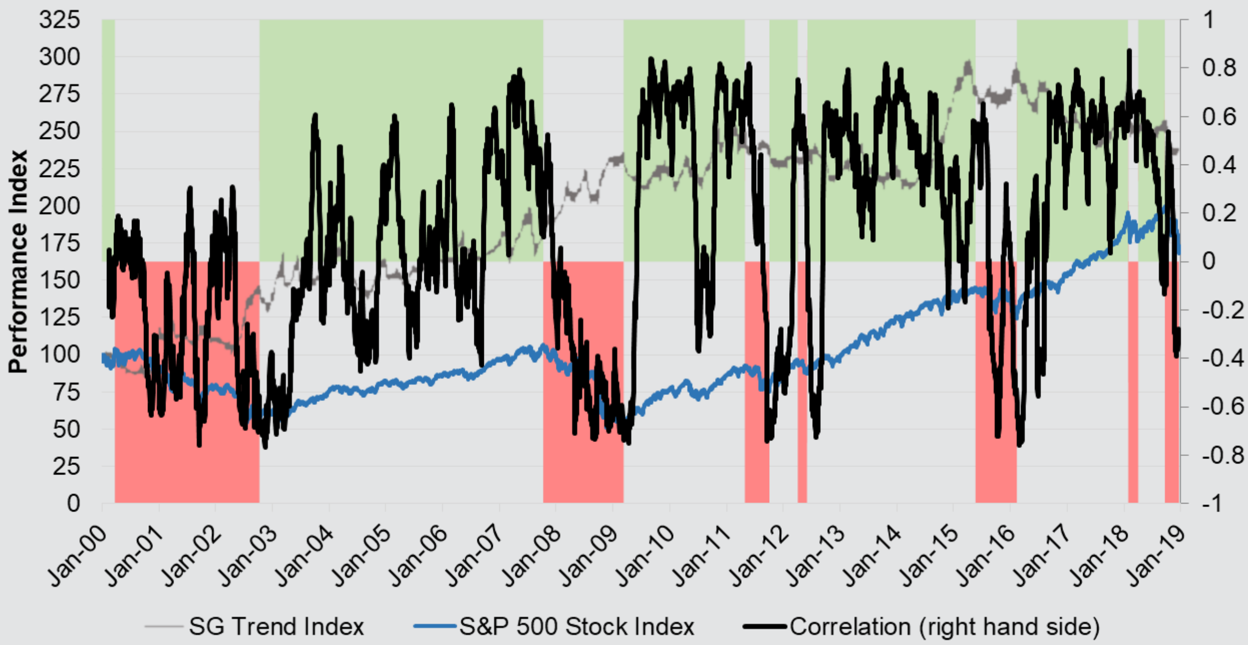


Chart 2: SG Trend Index, S&P 500 stock index and correlation since 1/1/2000. Daily data. Sources: investing.com, barclayhedge.com, own calculations

One observes dramatic correlation changes over time. No surprise, the strategy better be adaptable because by definition trend following passively follows the underlying. Meaning in a bullish stock period (green area), trend following should be positively correlated. But in a bear stock market (red area) the program would sell stocks or associated risk and would shift to negative correlation.

Now, the match between the trend index correlation and the chosen stock market proxy is not perfect. For one, trend following is simultaneously executed in many additional markets other than just U.S. stocks. Consequently, the trend index performance might be influenced by parallel trends in say cocoa or the New Zealand Dollar. Secondly, trend following suffers naturally a delay when reacting to price movements. The correlation line chart will therefore always enter and leave a bear stock period late. Trend following programs have to strike a balance between responsiveness and robustness.

Still, chart 2 shows what non-correlation really looks like over time. Trend following's non-correlation actually means being **sometimes positively and sometimes negatively** correlated. Equating only over time, on aggregate, to zero correlation. Even though at any point in time the actual short term correlation might be anywhere between +1 and -1.

It is equally important to emphasize what non-correlation does not mean in this context. Trend following returns are not independently, erratically flip-flopping from one day or week to another. Randomly generated returns would likewise be zero correlated to any other sufficiently long data series. But as graph 2 impressively depicts trend following correlation to the stock market is not random. Instead, just as the name implies, **trend following returns rely on the occurrence of lasting trends**.

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