OUR TWO CENTS

10 AUGUST 2023

The Subtleties of Investment Risk Measures

MICHAEL CAROLINE

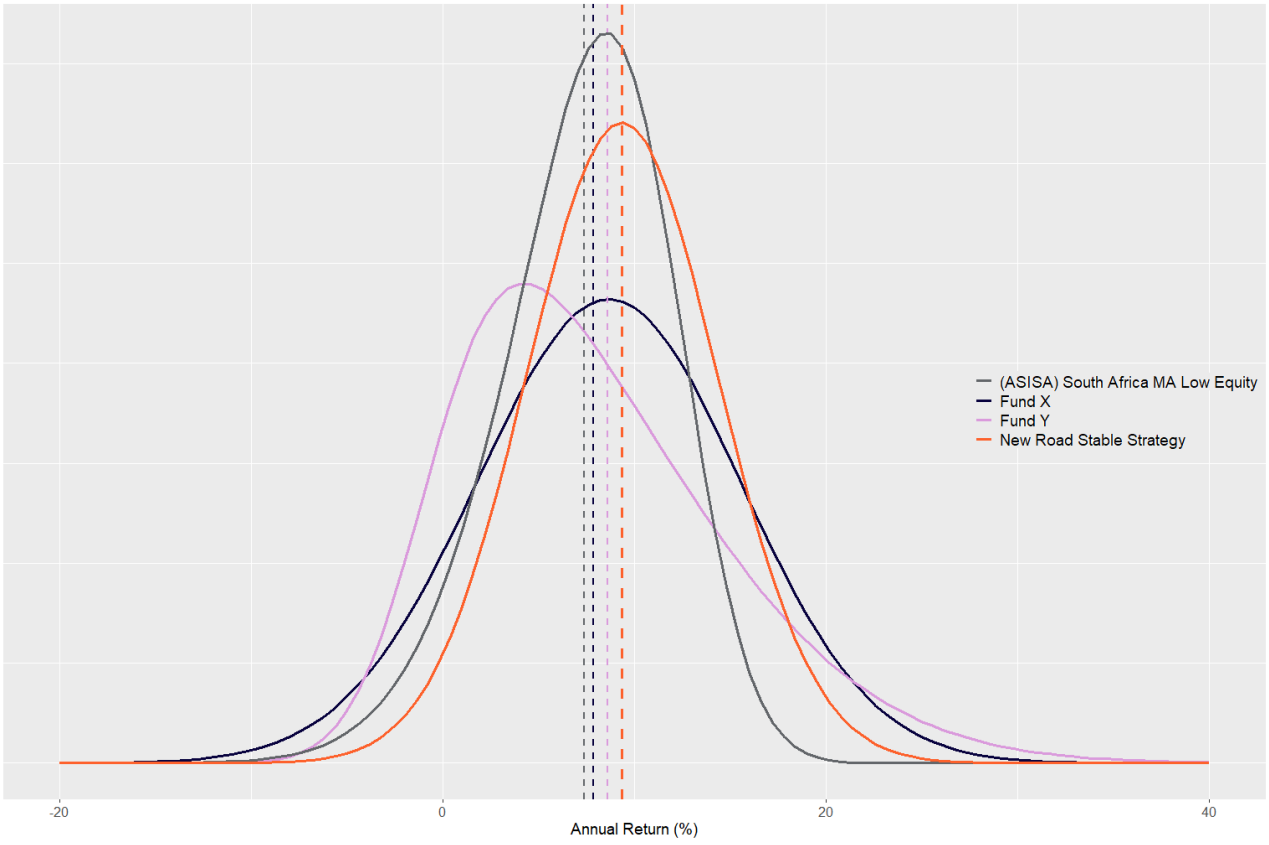
BCom (Hons) Investment Management (UP) | MPhil in Finance (UP) | Passed CFA Level 3

Michael joined as an investment analyst and has an MPhil (Financial Management Sciences) cum laude specialising in economic psychology and has passed the CFA level 2 exam. Prior to starting at New Road Capital, he worked as assistant lecturer at the University of Pretoria assisting with quantitative investment analysis. He has built and traded on models using CFDs. Outside of work, he enjoys flying motor gliders from Springs airfield as well as sailing his Laser class sailboat.

IThe potential reward of an investment doesn't come for free. To achieve this return, a price must be paid in the form of various risks. The most common risk is volatility. The return/volatility profile involved with an investment can be captured using various statistical measures such as mean and standard deviation, however; it's important to consider the downside portion of a payoff profile and focus on measuring unfavourable moves without punishing favourable performance.

Examples of the various measures are illustrated below by considering the return distributions of the New Road Stable Strategy, Fund X, Fund Y and the (ASISA) South Africa Low Equity Category. Fund X has a wider bell shape than both the New Road Stable Strategy as well as the ASISA category average. This is indicative of a wider range of possible outcomes. Fund Y has a high degree of skewness as can be seen by the wider range of outcomes to the right of its peak compared to the left of its peak. Although the wider range of outcomes to the right compared to the left of the peak is more favourable, this characteristic inflates the standard deviation of returns and reduces the annual return.

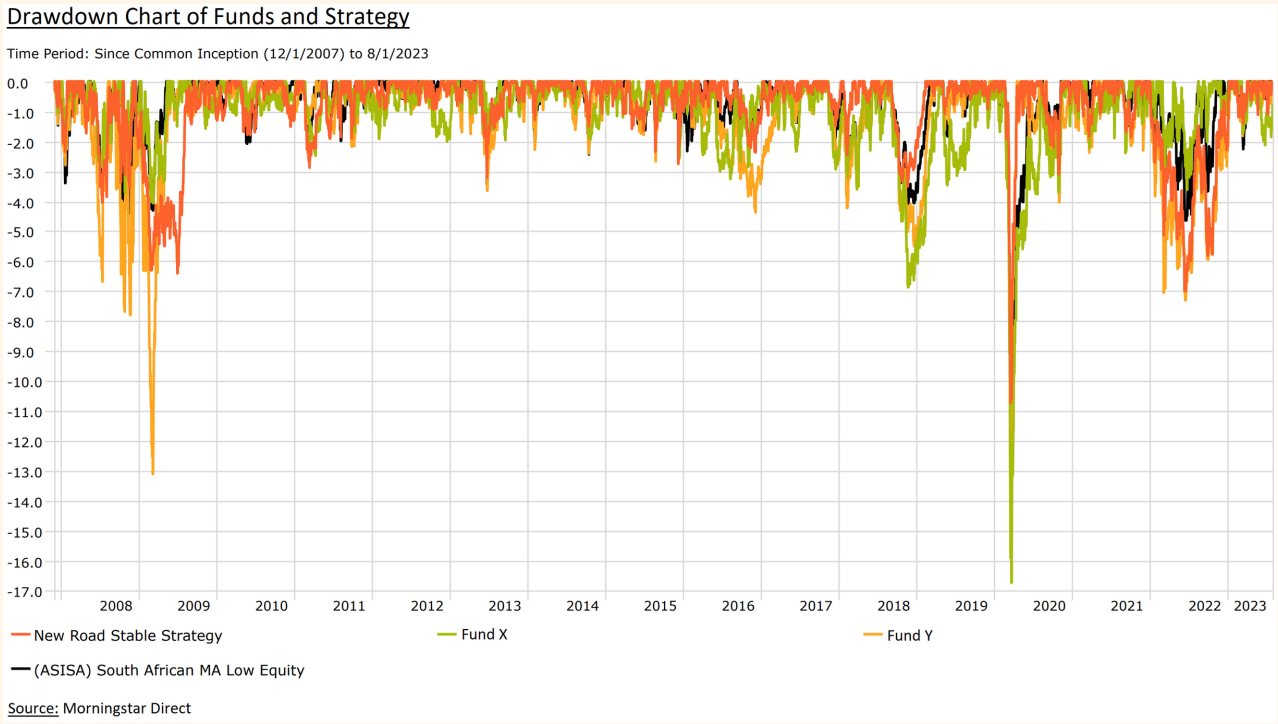
Return Distributions of Funds and Strategy



Source: Morningstar Direct

Drawdowns are not clearly apparent in the return distributions but can easily be analysed by considering a drawdown chart which provides a good understanding of downside risk. Drawdowns have a more direct impact on the investor; subjecting an investor to deep drawdowns may prompt them to take a loss by panic selling. Below is a drawdown chart of the New Road Stable Strategy, Fund X, Fund Y and the ASISA category average. Fund X had the worst maximum drawdown of about 16% and generally deeper drawdowns while the New Road Stable Strategy had the best maximum drawdown of about 11%.

The reduction of drawdowns can come at the cost of returns, so the Calmar ratio, the annual return divided by the maximum drawdown, is used to compare different funds and strategies. Fund Y achieved a higher Calmar ratio of 0.60 compared to Fund X which had a Calmar ratio of 0.51. The New Road Stable Strategy achieved a Calmar ratio of 0.89, showing that the fund achieves an efficient trade-off between long term returns and drawdowns.



It is important to consider carefully how risk is measured. The analysis of return distributions, drawdowns and the use of the Calmar ratio provides a substantial understanding of the investment risk by considering aspects of the payoff profile that have a direct negative impact on the investor. The New Road Stable Strategy is optimised by directly considering such measures.