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THE MONTHLY INSIGHT

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Risk Management – The Tortoise & the Hare

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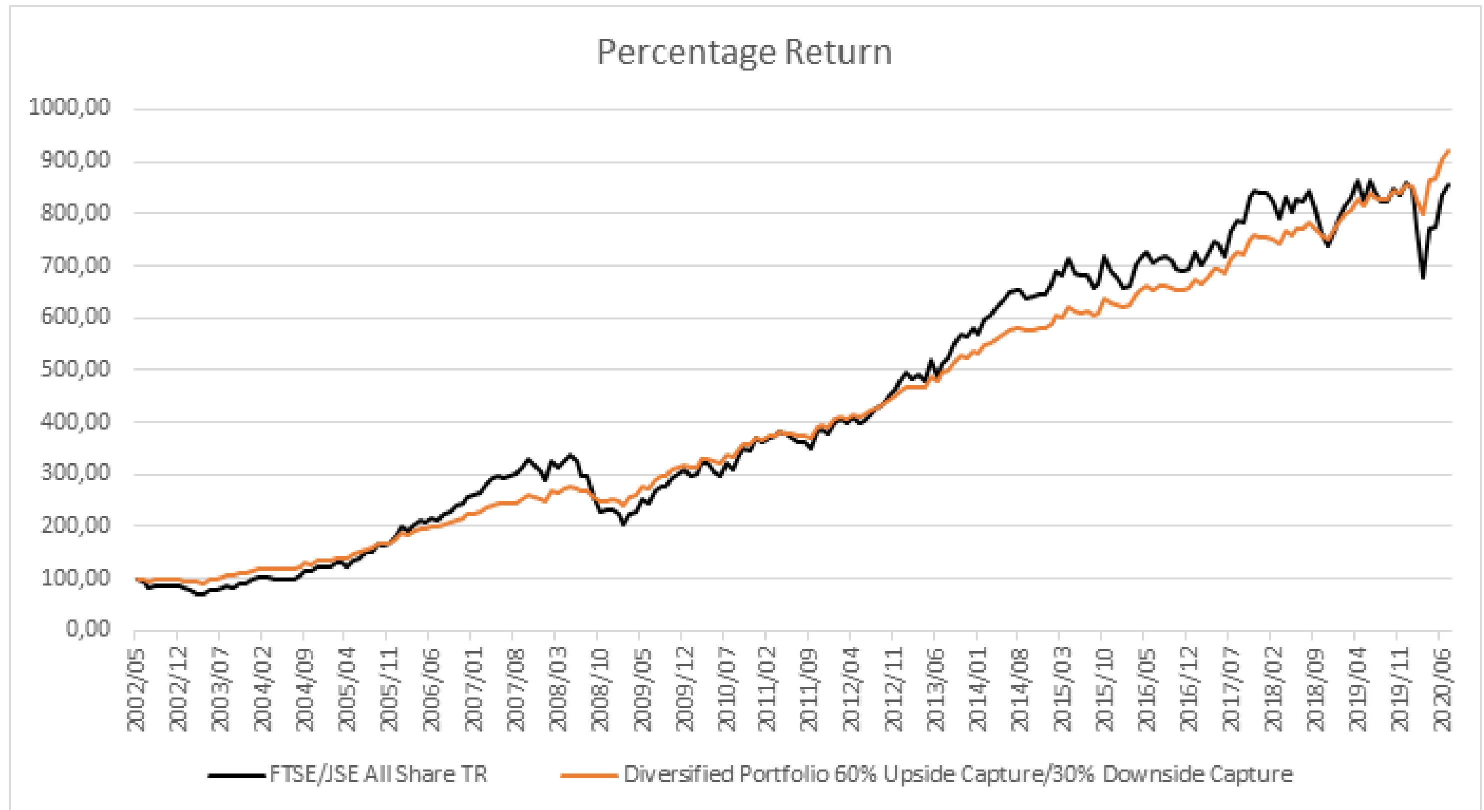
Most investors assume that in order to generate higher returns, one needs to take on more risk (or in the case of a basket of assets, volatility). While this is generally true when looking at individual asset classes in isolation, it is not the case when assets are combined in a portfolio in specific ways. Although most investors are aware of the benefits of portfolio diversification, less are acutely aware of the mathematics behind various risk management strategies, in this case upside/downside capture ratios.

To illustrate, I have created an imaginary diversified portfolio that would allocate not only to equities, but also to other asset classes with lower returns but better risk adjusted payoff profiles. This portfolio would theoretically only achieve 60% of the equity market's upside (FTSE/JSE All Share) as a result of allocating money to lower return asset classes, but importantly it would only participate in 30% of the equity market's downside. Since the start of the data set, this portfolio actually beats the FTSE/JSE All Share on a total return basis with less than half the volatility and lower drawdowns as can be seen below.



Std Deviation (Volatility) FTSE/JSE All Share: 16.03%
Std Deviation (Volatility) Diversified Portfolio: 7.76%
Rebased to 100 in May 2002 Source: New Road Capital

The portfolio underperforms when the equity market does well, by participating in 60% of the upside, however when the equity market pulls back as it naturally does, the portfolio only gives away half of this in drawdowns. Not only does this kind of return profile yield a better result, but it also benefits the investor from a behavioural perspective as the journey is smoother over time. It is well known in the behavioural science literature that a portfolio drawdown has a many times greater negative emotional impact than a similar gain has a positive impact. Thus a 10% drawdown feels equally as bad as a 20% or 30% return feels good. This enables most investors to more easily stay the course, and to stick to their long-term investing goals.

Additionally, for retired investors the sequence of return risk is minimised as larger drawdowns are avoided. These drawdowns can have a greater impact on capital values when monthly incomes are withdrawn out of the portfolio during the drawdowns.

While, creating a portfolio with these characteristics in reality is easier said than done, the current risk-return environment amongst the various asset classes allows for asset allocations that produce similar results. Fixed rate government bonds are generally less than half as volatile as the equity market, however the current generous yields of over 9% in the medium to long term sections of the yield curve are similar to our expected returns of the SA equity market over the medium term.

The yields also provide a positive asymmetric payoff profile as well as better downside protection since the yields pay out independently of the capital movements of the underlying bonds themselves. Thus a bond yielding 10% would need to lose 10% of capital in a year for the investor to come out even, whereas a share in the equity market with a 2% dividend yield would leave the investor 8% behind if the capital price dropped 10% over a year.

Similar characteristics can be shown for corporate bonds and certain offshore assets which we also use in our portfolios.

While the above graph shows a comparison against the pure equity market, we try to achieve the same type of relative payoff profiles across the range of our multi asset strategies, which include high, medium and low equity mandates.

The below table shows the upside and downside capture ratios of our 3 multi-asset strategies since inception relative to their particular benchmarks.

	Stable (Benchmark: ASISA SA MA Low Equity Average)	Moderate (Benchmark: ASISA SA MA Medium Equity Average)	Managed (Benchmark: ASISA SA MA High Equity Average)
Upside Capture Ratio	79.4%	63.8%	59.5%
Downside Capture Ratio	64.4%	36.8%	35.8%

Daily Capture Ratios
Source: Morningstar Direct

All 3 portfolios manage risk by giving away some of the upside relative to their benchmarks, however this is more than offset by the relative gains made on the downside. By using the correct risk management framework when the opportunity presents itself, the tortoise can beat the hare.