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Effect of dynamic option hedging on price movements in the South African equity market

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¹ **Note:** The findings from this working paper does not in any way reflect the views of the Development Finance Centre (DEFIC). The views are only representative of the authors.

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Abstract

This study examines the problem of constructing multi asset class portfolios. The investment process is aimed at solving two problems. The first problem is estimating the future returns of individual securities, which is an exercise fraught with uncertainty as the future is fundamentally unpredictable. This uncertainty means that the investor must allocate his portfolio to several assets instead of just one, in case his predicted future returns do not materialize. This leads the investor to the second problem of how best to construct the portfolio. It is this part of the investment process which is the subject of this study which examines whether it is best to construct multi-asset class portfolios using a top-down or bottom-up approach. In the top-down approach one begins by creating independent single asset class portfolios which are then combined to create a multi-asset class portfolio. The bottom-up approach constructs the portfolio by considering all the securities available to the investor (irrespective of asset class) at the same time. The Mean-Variance and Black-Litterman models are reviewed in detail. Portfolios are then created using these portfolio construction methods to compare the two approaches. In constructing these portfolios, the commonly encountered problem of missing data in financial return series is also examined. The main result is that the top-down and bottom-up approaches create similar efficient frontiers, though the bottom-up approach results in an extended frontier which allows investors to obtain efficient portfolios with either a higher expected return or a lower volatility.

Keywords: Asset Portfolio | Top-down | Bottom-up | South Africa |