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European Market Portfolio Diversification Strategies across the GFC

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Abstract

This paper features an analysis of the effectiveness of a range of portfolio diversification strategies as applied to a set of daily arithmetically compounded returns on a set of ten market indices representing the major European markets for a nine year period from the beginning of 2005 to the end of 2013. The sample period, which incorporates the periods of both the Global Financial Crisis (GFC) and subsequent European Debt Crisis (EDC), is challenging one for the application of portfolio investment strategies. The analysis is undertaken via the examination of multiple investment strategies and a variety of hold-out periods and back-tests. We commence by using four two year estimation periods and subsequent one year investment hold out period, to analyse a naive 1/N diversification strategy, and to contrast its effectiveness with Markowitz mean variance analysis with positive weights. Markowitz optimisation is then compared with various down-side investment optimisation strategies. We begin by comparing Markowitz with CVaR, and then proceed to evaluate the relative effectiveness of Markowitz with various draw-down strategies, utilising a series of backtests. Our results suggest that none of the more sophisticated optimisation strategies appear to dominate naive diversification.

Keywords Portfolio Diversification, Markowitz Analysis, Downside Risk, CVaR, Draw-down

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