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Research Article

Modelling the absolute returns of different stock indices: exploring the forecastability of an alternative measure of risk

Clive W. J. Granger, Chor-Yiu Sin

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Abstract

Conventional measures of the risk of a financial asset make use of the *unobserved* (conditional) variance or standard deviation of its return. In this paper, we treat the *observed* absolute return as a measure of risk and explore its forecastability. Two simple models are considered. One is a new *AR-like* model which is applied to the absolute return. The other is an *ARCH-like* model called Asymmetric Power ARCH. The forecastability is evaluated with the average log-likelihood of absolute return, instead of that of return itself. While the absolute return is interpreted as 'volatility', some quantities of its entire distribution, such as the 95th quantiles, can be interpreted as 'volatility of volatility'. We apply both models to three stock indices, namely the Hang Seng Index, the Nikkei 225 Index and the Standard and Poors 500 Index. The new model by and large outperforms the ARCH-like model in both in-sample goodness of fit and post-sample forecastability. It performs exceptionally well in the post-sample period after the outbreak of the Asian financial crisis. Copyright © 2000 John Wiley & Sons, Ltd.

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