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The Performance of the Switching Forecast Model of Value-at-Risk in the Asian Stock Markets

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Abstract

This paper examines a comparative risk forecast experiment for Asian stock markets. Apart from the literature, this work extends previous methods to propose a Switching forecast model to increase forecast effectiveness. The Switching forecast model is explicitly designed to estimate the forecasting problem faced by the risk manager who does not rely on a specific Value-at-Risk (VaR) model and allows for the VaR model to change over time. It is found that the Switching forecast model is not only capable of capturing the characteristics of Asian stock markets but also provides a satisfactorily accurate measurement based on coverage tests. Additionally, the superiority test indicates statistically that the Switching forecast model is more effective than alternative models based on quadratic loss function.

Keywords: Value-at-Risk, Switching forecast model

JEL Codes: G01, G17

1. Introduction

Risk management has become even more crucial since the global financial crisis and its subsequent widespread disasters in the real economy. During periods of high volatility, accurate risk measurement and assessment are even more critical, since there is a widespread risk of global financial instability and possibility of huge loss. As one potential way of measuring future risk in quantitative terms, the use of Value-at-Risk (hereafter VaR) has become commonplace on both theoretical and practical grounds, mostly due to its conceptual simplicity. In particular, the VaR method collapses the entire distribution of the portfolio returns into a single number that investors have found useful and easily interpreted as a measure of market risk.

Many financial institutions and risk managers have now adopted VaR as an important tool for managing and reporting financial risk. VaR is a procedure designed to forecast the