

## Abstract

The four essays in this thesis deal with emerging markets and their empirical characteristics. They mainly explore the relationship among different markets and the thesis cover several asset classes, including stocks, bonds, and exchange rates.

**Essay 1** explores the linkages among the different stock markets in the Greater China region (China, Hong Kong, and Taiwan). The empirical findings show no indications of long-run relationships among the markets. There are, however, short-run spillover effects in both returns and volatility in the region. Both China and Hong Kong are affected by mean spillover effects from Taiwan. Volatility in the Hong Kong market spills over into Taiwan, which in turn affects the volatility in the Mainland China market. This means that the Mainland China market is related to other markets, even though the possibilities for outside investments have been limited until recently. Overall, the study shows significant interdependencies among the three markets, a result that has important implications for both policymakers and investors in the region.

**Essay 2** analyzes the causal relationship between stock markets and exchange rates by using signal decomposition based on wavelets. The causal relationship between stock market returns and exchange rates in six Asian countries is first analyzed using standard Granger causality tests. Wavelets are then used to separate the original time series into different timescales. By decomposing the original time series into different scales and then studying them separately, we show that the causal relationship differs depending on timescale. Furthermore, we detect cyclical differences between the two variables at different timescales, indicating a dynamic and time-varying dependency pattern between them. These findings help explain the conflicting results in previous research on the relationship between exchange rates and stock markets.

**Essay 3** analyzes the relationships among four Asian bond markets. The study shows that the markets exhibit strong long-term interdependencies with no less than three different significant cointegrating vectors among them. In addition, all markets show signs of short-run cross-dependencies in the mean. The correlations between the markets are time-varying and high, except for in short turbulent periods. The results indicate that a regional bond portfolio would allow for some level of risk diversification for investors and that a deepening in regional monetary cooperation is a natural way forward for policymakers.

**Essay 4** suggests an alternative method to estimate time-varying country risk. We first apply a new multivariate stochastic volatility (SV) model to a set of emerging stock markets using a Bayesian Markov chain Monte Carlo simulation procedure. The deviance information criterion show that the new model performs well relative to alternative multivariate SV models. We then compute the conditional betas for the different markets and compare the results with a commonly used procedure based on multivariate GARCH. It is shown that the new multivariate SV model more accurately captures the time-varying nature of country risk. The conditional betas show signs of large variations, indicating the importance of taking time-varying country risk into consideration when managing emerging market portfolios.

**Keywords:** Emerging markets; Asia; China; Stock markets; Bond markets; Exchange rates; Causality; Cointegration; Multivariate GARCH; Dynamic correlation; Timescales; Wavelet analysis; Heterogeneous markets; Multivariate stochastic volatility; Markov chain Monte Carlo; Country risk; Conditional beta.

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