

# Essays on Return and Volatility on World Stock Markets

By

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## **Abstract**

This research is mainly focused on investigating volatility dynamics of world stock returns. More specifically, the main goal is to capture co-movements and analyze dynamic transmission mechanisms of volatility of stock returns across the world. Understanding the mechanisms linking international equity markets is important for not only policymakers but also fund managers who make investment decisions based on the international risk diversification. But existence of co-movements in world stock markets is lack of evidence in the existing literature.

Chapter 1 gives a detailed literature review and clarifies the marginal contribution of this research. The chapter begins with introducing the importance of related research on this topic. Secondly, a number of influential literatures on the related field are reviewed. It shows that the existing literature is not able to capture a clear trend of co-movement across world stock markets. The problem could be resulted from model selections, data construction, and sample sizes and etc. Those questions are addressed in this dissertation research.

In Chapter 2, co-movements across worldwide stock markets are investigated. A dynamic factor model is designed to decompose stock return volatility into three orthogonal factors: the world factor, the regional factor and the local factor. The three factors are assumed to be well suited for explaining all the variation of volatility. Fourteen countries are included in the empirical study in order to cover both developed and emerging stock markets. The historical volatility growth

decomposition is conducted to analyze contributions made by different factors to the volatility growth for each market. The results show that there exist co-movements which are able to account for more than 50% of variation of volatility for most of countries. The world factor turns out to be significant for North American and Latin American markets; nevertheless the regional factor is important for Europe and Asia.

In Chapter 3, a modified dynamic factor model is conducted to investigate spill-over effects between different stock markets or regions. It begins with examining the dominant position of the U.S. in world stock markets, followed by analysis on the effect of U.S. stock market on Asian markets. Linkage between Asian stock markets and Latin American markets are also investigated. Moreover, the author extended the time horizon and adjusted the sample of countries in order to examine effects of financial integration on world stock markets. The results show that the dominance of the U.S. stock market in world stock markets has been getting weaker since international financial markets became more integrated. Emerging stock markets have become more independent of developed markets after financial globalization.