

# ABSTRACT

This dissertation aims to understand the comovements of international stock markets, financial contagion, and the relationship between international stock market comovements and macroeconomic factors. It contains three essays as follows:

The first essay investigates the common movements of stock market returns across the world and the regions. I employ a Bayesian dynamic latent factor model to decompose stock market returns into common world, regional, and idiosyncratic country-specific factors simultaneously. The results indicate that a common world factor is a significantly important source of the fluctuations for most stock markets, providing evidence of the international stock market comovements. I also find that the regional factor is another important reason for the fluctuations in emerging markets, but not in most developed markets. Persistence properties of the factors are examined to measure the adjusting speed to different shocks, and variance decomposition analysis is also performed to investigate the role of each factor in the volatility of stock markets. The roles of the world and regional factors, however, differ substantially across stock markets within different regions, as well as across developed and emerging markets. I reassess simple correlation analysis of bilateral linkages and find that although it can partially mimic actual stock market integration, this method provides an imperfect and biased depiction. In a partially integrated global economy, the degree of a market's comovement with international stock markets is closely related with that of its own country's economic integration in the world.

The second essay aims to investigate the linkage of Asian markets through the channel of stock market realized volatility. When examining the weekly realized stock market volatility in Asia, I find significant change of stock market volatility over time, especially during the financial crisis. Further, several different models, including simple pair-wise correlation model, DCC-GARCH model, and time-invariant and time-varying VAR model, are employed to investigate the volatility comovements in the main Asian stock markets. The empirical result shows that the correlations of stock market volatility among most of the Asian markets have increased after the crisis. The study also provides evidence that there is a contagion effect among the Asian markets during the crisis. Interestingly, from both the impulse response and variance decomposition analyses, the result shows that the Hong Kong market has a stronger impact on

other Asian markets than the Thailand market. The responses of other Asian markets to either the Hong Kong or Thailand market were greatly increased after the crisis. And from the variance decomposition analysis, it shows that the contribution to the variance of other Asian markets from either the Hong Kong or Thailand market both showed an increase during the crisis.

The third essay investigates the relationship between international stock market comovements and macroeconomic factors across a large group of countries over 1995-2009 in a global perspective. I use Bayesian dynamic factor models to decompose stock market prices and other major macroeconomic variables of 34 economies into common global factors and idiosyncratic country-specific factors. The result shows that the global factors account for a significant portion of an individual country's stock market volatility as well as its macroeconomic fluctuations. The global macroeconomic shocks have strong effects on the price movement of the global stock market as well as that of an individual market. And the result also indicates that a country's exposure to the global stock market risk can be largely explained by that country's exposure to the global macroeconomic risks.