

價格波動傳遞效果分析－EGARCH 方法之應用

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摘要

本研究以 2000 年 1 月 4 日至 2010 年 11 月 31 日的研究期間，以中國、台灣、香港、日本和南韓的股價指數和匯率日資料為研究標的，以 EGARCH 模型，研究上述樣本國對美國的股價指數報酬之間的波動傳遞關係，以及匯率對波動的影響。實證結果發現美國影響最少的是中國，美國股價報酬對各樣本國的波動傳遞效果，除了中國之外，其餘皆有波動傳遞效果。匯率變動方面，我們發現在南韓和台灣匯率變動負向的影響國內股票市場波動，中國則是符合 Mun(2007)的結果，匯率變動會正向的影響國內股票市場波動，而南韓和日本的匯率變動會對美國股價報酬波動有正向的影響。另外匯率變動對本地和美國股票市場的相關性只有很少的影響，只有中國和韓國匯率變動對相關性有正向關係。

比較 2007 年次貸危機之前和之後波動傳遞效果，估計結果顯示在次貸危機之後，台灣和香港與美國之間的波動傳遞效果皆有增加，由單向轉為雙向的波動傳遞。此外，中國是唯一不受美國股價波動傳遞效果的國家，無論在危機之前或之後，顯示中國受到次貸危機的影響會較小。匯率變動方面，中國的匯率變動對國內股價報酬波動的影響在危機過後顯著性增加。在匯率對相關性方面，中國和韓國在次貸危機之後轉變為有正向的關係。

關鍵詞:多變量 EGARCH 模型、波動傳遞性。

An Analysis of Price Volatility Transmission - Application of EGARCH

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ABSTRACT

The study used China, Taiwan, Hong Kong, Japan and Korea's stock indexes and exchange rates whose date from Jan. 4, 2000 to Nov. 31, 2010 daily data that applied EGARCH model to research the volatilities transmission in return between above several sample countries and US, and the relationship between exchange rates and volatilities. The Empirical results indicate that China is less influenced by US, US has volatility spillovers effects to the others, except for China. We find that foreign exchange rate variability mostly negative influent local stock market volatilities in Taiwan and Korea but positive influent volatility for the US stock market in Korea and Japan, but China confirms Mun(2007)'s findings, that a higher foreign exchange rate variability mostly increases local stock market volatility. Moreover, exchange rate fluctuations held small influence on the US/local equity market's correlation, only in China and Korea are influenced by exchange rate fluctuations.

2007 subprime mortgage crisis is considered, the Empirical results indicate that post-2007 Taiwan and Hong Kong have more influence on US, moreover China is has less influenced by financial crises. We find that China's local stock market is more

influenced by exchange rate variability in post-2007 period, China and Korea have positive relationship between exchange rate fluctuation and US/local equity market correlation because of the subprime mortgage crisis.

Keywords: Multivariate EGARCH Model 、 Volatility Transmission



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