

The Exchange Rate Volatility Co-movements between the Renminbi and other East Asian Currencies under DCC-GARCH

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Abstract:

In East Asia, China's economic influence has expanded with its fast-growing economy, and because of close trade ties with other East Asian countries and the reform of exchange rate system of the Renminbi (RMB), it is likely that its role in East Asia may have changed in recent years. One important relationship between countries is their exchange rates, and exchange rate volatility co-movement is an important aspect in this exchange rate relationship, for it can reveal whether the currencies' exchange rates remain stable to each other. A DCC-GARCH (Dynamic Conditional Correlation Generalized Autoregressive Conditional Heteroskedasticity) model is employed in this paper in order to estimate the dynamic conditional correlations between the RMB, US dollar (USD), Euro (EUR), Japanese Yen (JPY) and other East Asian currencies. The empirical results show that the volatility co-movements between the US dollar and East Asian currencies, including the RMB, have always been significant, more than the EUR and JPY. Further, after the subprime crisis of 2008, more of the sample East Asian currencies showed a greater but still limited degree of exchange rate co-movement with the RMB only when the USD-RMB exchange rate extremely fluctuated. From the analysis, we conclude that the USD is still very important in East Asia. Compared to the USD, the RMB's importance in East Asian exchange rate volatility co-movements has been grown, but is still limited.

JEL Classification: F31 (foreign exchange).

Key Words: exchange rate volatility, DCC-GARCH, dynamic conditional correlation