

Information Flow between Sovereign CDS and Dollar-Yen Currency Option Markets in the Sovereign Debt Crisis of 2009-2011

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Summary

A change in the credit risk of a sovereign borrower anticipated by financial markets is reflected in its sovereign credit default swap (CDS) spread, which is a direct measure of creditworthiness of the underlying issuer. Increased sovereign risk due to economic-political instability would lead investors to sell securities denominated in the country's currency and to repatriate funds, hence putting downward pressure on and heightening volatility in the currency, which is reflected in the prices of currency options. The US and Japanese sovereign CDS spread varied in a wide range and the US dollar once depreciated about 30% against the yen when the global financial crisis emerged in late 2007. This raises the question of interconnectivity between the anticipated sovereign credit risk and the market expectation of the dollar-yen exchange rate in the crisis.

By using the Granger causality test, cross-correlation test and extracting the market-specific innovations, this paper shows evidence of one-way information flow from the sovereign CDS market to the dollar-yen currency option market during the sovereign debt crisis from September 2009 to August 2011 when concerns about sovereign credit risks in the developed economies were triggered. The empirical results imply that the impact of sovereign credit risk on dollar-yen option prices is driven by the US, and is a separable risk factor in driving the market expectation of the dollar-yen exchange rate after controlling the macro-financial variables. While the Japanese sovereign CDS spread was higher than its US counterpart, its impact on the option prices was not significant.