A Comparison of US and Hong Kong Cap-Floor Volatility Dynamics

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Summary

Cap-Floor volatilities contain important information concerning interest rates and macroeconomic environment. These volatilities are primarily affected by conditions in the money and foreign exchange markets. Monitoring Cap-Floor and swaption volatilities is relevant for Central Banks, and specifically for the Hong Kong Monetary Authority, due to the existence of the “peg”. A nervousness in the foreign exchange market would reflect as increased Cap-Floor volatilities. In this paper we investigate the dynamics of Hong Kong Cap-Floor volatilities and compare this dynamic with the US Cap-Floor volatilities. We use linear and non-linear factor models with VARs. The results show that the first principal components, both linear and non-linear, do a very good job in explaining the dynamics of the volatility curve and that there is not much to be gained by moving to non-linear models in the case of Hong Kong data. Secondly, we see that Hong Kong cap-floor volatilities cannot be obtained from the USD cap-floor volatilities by simply adding a volatility spread. The two sets of volatilities are non-trivially related to each other.