Monetary policy transmission on the yield curve in China during the financial crisis

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Extended Abstract

The term structure of interest rates represents a key analytical tool used by central banks in analysing monetary and financial issues. It is commonly defined as the relation between the interest rate and the time to maturity of the debt for a given borrower. It provides useful information for policy makers to gauge market expectations of future interest rates and can also be used for portfolio evaluation in risk management.

At its stage of development, China is in a gradual process of interest rate liberalization. Interest rate deregulation has progressed rapidly since the end of the 1990s, but the bond market is not yet very developed, the national interbank market being the most active one in China.

The aim of this paper is to explore the effectiveness of the transmission mechanism of monetary policy, analyzing the distortion generated in the term structure of interest rates in the Chinese interbank bond market. Indeed, as mentioned by Bernanke (2004): "Monetary policy works largely through indirect channels, in particular, by influencing the private-sector expectations and thus long-term interest rates".

Recently, a number of studies have focused on the relationship between monetary policy decisions and the yield curve in OECD countries, mostly using a VAR model (Piazzesi (2005), Diebold et al (2006)), or directly analyzing movements in yields of different maturities (Evans and Marshall (1998)).

However, to our knowledge, few papers have dealt with the effect of monetary policy on the yield curve in China, except for Fan and Johansson (2009) and Chen and Yeung (2006), the former arguing that monetary variables have a significant

impact on the variations in yields and that the long-end of the yield curve is more sensitive to changes in monetary policy. However, in all cases the specificities of Chinese monetary policy have not been accounted for.

Indeed, the monetary policy conducted by the People's Bank of China (PBoC) has its own characteristics with very different institutional features as compared to the US and Europe. Measuring the policy stance accurately requires to take into account a wide range of monetary policy instruments: regulated interest rates (one-year lending and deposit rates), the reserve requirement ratio, open market operations (central bank bill issuance, aimed at sterilizing foreign-currency reserve inflows) and credit supply controlled by credit quotas and moral suasion. In addition fully assessing the stance of monetary policy makes it necessary to code official communication, particularly appropriate in China's case (in line with Shu and Ng (2010) and He and Pauwels (2008)).

To explore the characteristics of the yield curve in China, an EGARCH model is applied to China using high-frequency data (from January 2006 to May 2011) on interbank fixed-rate Tbonds, which are often considered as bond yield benchmarks in China (maturities ranging from 1 to 10 years).

Interestingly, results clearly show that the most effective transmission mechanism in China is through the one-year deposit rate, at least over restrictive monetary policy periods, while changes in required reserve ratio are far less effective. However, we find that, during the 'crisis period' (from July 2008 to March 2009), the relative ability of these two instruments to impact Chinese bond yields is reversed. This implies the effect of each monetary instrument on yield curve is time-varying.