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Deciphering the Libor and Euribor Spreads during the subprime crisis[☆]



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ABSTRACT

This paper investigates the key role played by different factors, such as the use of Asset Backed Commercial Paper as collaterals in the short-term debt market, credit risk and the injection of liquidity by Central Banks through so-called unconventional measures, on the persistent spread during the subprime crisis bet. The empirical analysis shows that, in addition to credit risk, a relevant variable for explaining the interbank rate dynamics is the outstanding volume in the Asset Backed Commercial Paper market. In short, the large spread observed in the market is explained by the inter-relationship between collateralized short-term debt markets and the unsecured interbank market. It is also shown that Central Bank “non-conventional” intervention variables are relevant in affecting the spread both in the long-run but mostly in the short-run.

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1. Introduction

Since August 2007 we are experiencing in the international financial market what many call the worst financial crisis since the Great Depression of the 20s. Housing prices are falling after a decade of sky-rock flight in a worrying bubble-bust fashion, banks are experiencing huge losses due to “ponzi” investments betting on the never-ending house market inflation, financial innovations spread the losses to the entire bank system so that even a medium-size financial institution are likely to be seen as too-big-to-fail.

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Many authors try to give a systemic view of the subprime phenomenon and the consequent financial and economic crisis (Gorton, 2008; Brunnermeier, 2009 are two good examples), trying to deciphering all the main variables which probably took us at this point (housing bubble, securitization, leverage and shortening of the debt maturity structure, rating agency models, . . .). With this paper we focus the more on a particular feature of the crisis: the tension in the money market and specifically the inter-relationship between collateralized short-term debt markets and the unsecured interbank market.

In fact, one of the most puzzling phenomena we are facing during the current crisis is the unusually volatile dynamic that affects the money market unsecured interest rates (benchmarked by the Libor and the Euribor rates) in the main financial markets. In normal times, the interbank market rates are strictly connected to the expected policy rate fixed by the Central Banks and usually lie above these rates by a constant amount of basis points (the risk premium).

The strict link between the interbank rate and the policy rate is fundamental for the efficiency of the monetary policy, indeed the 3 (or 6) months interbank market rates are the benchmark rates on which the financial institutions calculate the mortgage and loan rates for household and firms. If these rates are strictly connected in a constant fashion to the key policy rates, a change in the later will be fully transferred to the former and through these to the credit rates on mortgages and loans and more generally to the real economy. However, if this condition does not hold and the spread between the interbank rates and the expected key policy rates (later on the “Spread”) is not constant but is a function of some market variables that conventional instruments of the Central Banks cannot influence, the monetary policy effectiveness is mined. This is unfortunately exactly what happens during the current crisis.

Thus it becomes extremely important to understand: (i) which variables are actually affecting the spread during this period, and (ii) whether the new actions Central Banks implemented has produced some results.

In this paper we investigate the two above issues and in particular we concentrate on the inter-relationship between the collateralized money markets and the unsecured money market: the interbank market. The main reason in fact for the interbank market rate to raise largely above the monetary policy rates is the tension between demand and supply of liquidity of short-term funding. If the supply falls short of the demand the price will tend to go up, above the Central Bank rate. Under normal condition, if there are these liquidity tensions the Central Bank injects liquidity in the money market through its Open Market Operations (OMOs), rising the supply of money and steering the money market rate back down to the key monetary policy rate. However, since during the current crisis the Central Banks were quite ineffective in doing so, we should investigate what kind of liquidity tensions the market experienced and why the injection of central money was unable to calm down this tension.

The answer to this question can be found investigating (i) the structural framework of the money market, (ii) the reasons behind financial institutions demand in the different segments of the money market during the last 4–5 years and (iii) the tools the Central Banks hold to act in the money market.

Another important aspect that needs to be considered is that the Spread is not affected only by the liquidity tensions but also by the credit risk as highlighted by Taylor and Williams (2009). Indeed the 3 months bank loans benchmarked by the Euribor/Libor rates have a higher credit risk attached than an overnight loans benchmarked by the Eonia/Overnight Libor. Credit risk that arises from the probability that the bank in 3 months defaults and therefore would be not able to pay back the loan.

The last issue we investigate in this paper is whether the Central Banks and Government intervention policies were able to affect the Spread.

In the paper we present some indicator of these notional variable of liquidity tension, credit risk and policy intervention and we investigate which one of them are empirically able to explain the Spread dynamic during the current crisis.

From the theoretical point of view our reading of the crisis fit into the well-known analytical framework of Diamond and Dybvig (1983, 2000) bank run model, the Fisherian debt-deflation model and the Bernanke and Gertler (1995), Bernanke and Gertler (1996) and Holmstrom and Tirole (1997) financial accelerator model. Moreover, our investigation of the crisis is also in line with Brunnermeier (2009), Adrian and Shin (2010), Adrian and Shin (2011), Benbouzid and Mallick (2013) and Shehzad and De Haan (2013).

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