How much informal credit lending responded to monetary policy in China? The case of Wenzhou

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Abstract
This study investigates empirically what the major factors are which have driven Wenzhou’s informal credit market and how much that market is responsive to monetary policies and the formal banking conditions nationwide. A number of relatively stable factors have been identified from this volatile market through a careful exploration of a monthly survey data set for the period of 2003–2011. The main findings are: (i) Wenzhou’s informal credit lending rates are highly receptive to monetary policies; (ii) Wenzhou’s market is dominantly demand driven; (iii) Wenzhou’s informal lending is substitutive to bank savings in the short run but complementary to banking lending in the long run; and (iv) Wenzhou’s market is complementary to excessive investments in the local real estate market.

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1. Introduction

The existence of an informal credit market alongside the formal banking and capital markets constitutes a key feature in many developing and emerging-market economies. Recently, the rapid growth as well as the high volatility of the informal or private shadow banking system in China has attracted a great deal of attention. The attention is mainly triggered by the severe debt crisis which erupted in Wenzhou in 2011, e.g., see The Economist (2012) and Zhu, Qiao, and Ho (2012). In March 2012, the Chinese government designated Wenzhou as a ‘special financial zone’ to pilot a number of reform measures which aim gradually to regulate and legitimise the informal credit market.

The official choice of Wenzhou is not an accidental or expedient decision. A prefecture-level coastal city in Zhejiang province, Wenzhou is well-known for its vibrant business activities with abundant entrepreneurs. In fact, Wenzhou enjoys the reputation of being the birthplace of China’s private economy through the early and rapid developments of household and small-enterprise based manufacturing industries and various specialised markets since the economic reforms, which started in the late 1970s. Subsequently, there came a phenomenal growth of private assets and with it the emergence of a private and informal credit market (‘informal’ referred to as ‘min-jian’ in Chinese, meaning ‘non-governmental’). Due to its

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1 The views expressed in this paper are solely of the authors and should not be interpreted as reflecting the views of the People’s Bank of China.
leading position in China, Wenzhou’s market caught the attention of the People’s Bank of China (PBC) over a decade ago and a regular monitoring system was put in place as early as 2003. The market is now one of the most developed min-jian credit markets in China. Its size is estimated to be roughly one fifth of the total formal lending by Wenzhou’s local banks (see Wu, 2011).

The present paper reports a pilot exploratory study into a monthly sample-survey data set of Wenzhou’s informal credit market collected by the PBC, as part of the monitoring system, for the period of 2003M1–2011M5. We are especially keen to find out how the dynamics of Wenzhou’s local informal credit market have evolved and reacted to the monetary policy measures and the formal banking conditions nationwide. Needless to emphasise, better understanding of the dynamics is particularly desirable for China’s policy makers in their search for effective policy instruments to harness and stabilise the rapidly growing and highly volatile informal credit market in the country.

The available literature on the informal credit market and shadow banking system is relatively sparse and disparate. Within the theoretical domain, the relationship between the informal and formal credit markets is commonly examined using game theory models, e.g. see Gupta and Chaudhuri (1997) and Madestem (2008). Recently, the relationship has been calibrated by means of a dynamic stochastic general equilibrium (DSGE) model by Ngalawa (2012). But this approach is ill-fitted to our task at hand. When it comes to more detailed empirical studies, however, objectives and findings are often disparate and subject largely to the diversity of available data. For example, Guirkinger (2006), using panel household survey data in Peru, explores the different motives of household demand for informal loans and different practice of informal lenders in handling contractual risk as compared to formal lenders; Ateno (2009) investigates how different linkages between small enterprises and financial institutions affect the financing of the enterprises and their performance, based on data collected from two urban centres in Kenya; Okpukpara (2009) analyses the main factors affecting the probability of small enterprises to obtain loans based on data collected in rural Nigeria. None of these studies look directly into the issue of how informal financing is related to the macro monetary policies of the country concerned. In fact, a similar situation can be found from empirical studies using the Chinese data. For instance, the nexus between financing sources and growth forms the primary objective of a number of recent studies exploring firm survey data, e.g. see Allen, Qian, and Qian (2005), Ayyagari, Demirgüç-Kunt, and Maksimovic (2010) and Degryse et al. (2012).

One of the very few studies which examine the relationship between informal lending and monetary policy was by Carpenter (Carpenter, 1999). The study employs a VAR (Vector AutoRegression) model to analyse how M2, the formal banking credits and market rates could affect the informal lending rates using quarterly data from Korea for the period of 1972–1994. The VAR approach is also adopted in a number of recent empirical studies analysing the same sample survey by the PBC mentioned above, e.g. see Liang, Xu, Jin, Ni, and Zhou (2011) and Zhou and Ren (2010). A major aim of these studies is to find out how much Wenzhou's informal credit market rates have reacted to the formal banking rates and key monetary policy variables.

To a large extent, the use of the VAR approach reflects the relative inadequacy of theoretical models in characterising the dynamic interactions between informal credit markets and monetary policies. However, the methodological limitations of the VAR approach, as discussed in (Qin, 2011), deem the findings of those recent studies somewhat unconvincing. In particular, there are at least two limitations which make the approach ill-suited for the present investigation – the limited number of variables practically includable in a VAR and the lack of rigorous specification, testing and also economic interpretation of individual regressors within it. Since there are no established theories on the informal credit market, it is particularly important for empirical studies to try and find as precisely as possible what kind of statistically regular or stable dynamic transmission channels there are between the variables representing the informal markets and all the possible explanatory variables available from data and various postulates. It is precisely out of such consideration that the present study chooses to follow the LSE (London School of Economics) dynamic model specification methodology.2

The rest of the paper is organised as follows: the next section prepares the modelling work by summarizing the developments of Wenzhou’s informal credit market and also the sample survey designed and conducted by the PBC. Section 3 describes the modelling procedure and discusses the key model results. The last section concludes with a summary of the main findings and their policy implications.

2 Economic background and summary description of Wenzhou’s s survey

The annual per capita GDP of Wenzhou is over 42,000 yuan according to the 2011 statistics, more than twice the national average. Nearly a quarter of Wenzhou’s population has migrated to other places and regions in China, and over 600,000 have gone overseas, many of them entrepreneurs, see Wu (2006). According to the estimates by the PBC, about 89% of Wenzhou’s households and nearly 57% of enterprises are involved in min-jian credit activities, see Ye (2011, p. 71). Before we go into more details of these activities, it is useful to take a quick look at Wenzhou’s formal credit market.

Fig. 1 plots the banking lending to GDP ratio of Wenzhou versus the ratio at the national level over the last three decades. It is seen there that Wenzhou remained substantially below the national level until 2005. In fact, its lending activities entered a stage of steady and rapid growth from the late 1990s, when banks were encouraged to extend their business to non-state owned firms during the banking reforms. The growth has accelerated in the late 2000s, leading Wenzhou up to about 0.6
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