



Informal borrowing and home purchase: Evidence from urban China[☆]

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ABSTRACT

In this paper, we provide a new explanation for the co-existence of huge housing demand and low dependence on mortgage loans in urban China, focusing on the effect of households' informal borrowing from relatives and friends. Empirical analysis based on a national-level household survey suggests that because of the low financial cost of informal borrowing, households tend to borrow as much as possible from informal channels until they reach the constraint determined by their social capital, which significantly crowds out formal borrowing such as mortgage loans from commercial banks. Additionally, the existence of informal borrowing significantly increases households' housing demand. Understanding these effects is especially important in regions with less mature financial systems.

1. Introduction

The demand for urban housing in China has increased rapidly since the housing reform in the late 1990s (Wang, 2011), and China has become the largest housing market globally. According to the National Bureau of Statistics of China (NBSC), urban households spent 43.4 trillion RMB on housing purchases between 2000 and 2014 and over 7 trillion RMB in 2014 alone. The living space per capita in urban China has increased continuously from about 20 sq. m. in 2000 to over 34 sq. m. in 2014. Housing has also become the largest asset in urban households' balance sheets (Li and Wu, 2014).

This huge housing demand in China has attracted global research interest, and two facts are highlighted in the literature. The first is the large expenditure on housing purchases compared with buyers' current incomes (Yang and Shen, 2008; Yang and Chen, 2014). Wu et al. (2012, 2015) find the average price-to-income ratio in 35 major Chinese cities to be much higher than in most developed economies such as the U.S. Fang et al. (2015) find the average price-to-income ratio to be over 10 in first-tier cities and emphasize that even households in the bottom-income cohort are actively involved in purchasing residential units under huge financial burdens.

As a conventional method of formal borrowing, mortgage loans are widely regarded as an important financing channel in households' housing purchases (Leece, 2008). However, Chinese households are

well known for their low dependence on mortgage loans from commercial banks (Deng and Fei, 2008). According to the statistics from the Urban Household Survey conducted by NBSC, only 17% of homebuyers in urban China received mortgage loans between 2002 and 2009. In 2012, the outstanding balance of residential mortgages made up only 14.5% of GDP in China, which was much lower than in Japan (39%), the U.S. (72%), and the U.K. (86%).¹

These two facts jointly suggest that China's urban households must depend on other channels to finance their home purchases. Whereas most studies connect these facts to the high saving rate in China (Chamon and Prasad, 2010), in this paper, we focus on another informal financial arrangement: borrowing from relatives and friends based on social capital. Our empirical results, based on the Chinese Household Finance Survey (CHFS), indicate that such informal borrowing in China plays an important role in households' home purchases. Two findings are particularly noteworthy. First, because of the lower cost of informal borrowing, households tend to borrow from informal channels as much as possible until they reach the constraint given by their social capital; thus, informal borrowing crowds out formal borrowing such as mortgage loans from commercial banks. Second, informal borrowing can significantly boost home purchasers' housing demand; in other words, households who have better social capital and thus access to more informal borrowing tend to spend significantly more on home purchases and to buy larger and better

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¹ Data source: Global Financial Stability Report Durable Financial Stability: Getting There from Here, 2013.

housing units, controlling for other factors. The above findings are amplified in regions with less developed financial systems. We believe that these findings provide a new key insight into the underlying logic behind the booming housing demand in urban China during the previous decade.

In addition to offering better insight into Chinese urban housing markets, this paper contributes to the growing body of literature on the informal financial system. The informal financial system is suggested to play an important role in developing countries, although most research has concentrated on its effects on the corporate sector (Allen et al., 2005; Ayyagari et al., 2010) or rural households (Jia et al., 2010; Turvey et al., 2010; Khoi et al., 2013). To the best of our knowledge, this paper provides the first evidence of the importance of informal borrowing in urban households' home purchase behaviors, further highlighting the need to investigate informal financial channels for a better understanding of the financial system in developing countries such as China.

The remainder of this paper proceeds as follows. The next section develops the core hypothesis regarding the role of informal borrowing on mortgage and housing demand. Section 3 describes the survey data and the empirical strategy. Section 4 discusses the empirical findings. Section 5 concludes the paper.

2. Hypothesis of the analysis

A key feature of informal borrowing in developing countries, as suggested by existing literature, is that its explicit (monetary) financing costs are typically lower than those of formal borrowing (e.g., through bank loans). These lower costs result from three features of informal borrowing: information transparency, social guarantee, and potential reciprocity.

First, information asymmetry problems can be substantially alleviated in informal borrowing systems. As highlighted by Stiglitz and Weiss (1981) and many subsequent papers, information asymmetry is a major challenge for lenders in formal credit markets. This problem is especially important in emerging mortgage markets of developing countries because the borrowers are typically informationally opaque. In contrast, in informal borrowing, information is more likely to be symmetrical and transparent due to the mutual understanding based on social networks between family members and friends (Besley and Coate, 1991). This information transparency can help identify and lock out high-risk borrowers, eliminating the adverse selection problem and reducing transaction costs (Turvey and Kong, 2010; Ghatak, 1999).

Second, in informal borrowing systems, borrowers implicitly pledge their social capital as collateral, which mitigates the potential moral hazard problem and reduces default risk (Salas and Saurina, 2002). In most cases, borrowers do not need to pledge their housing units as collateral in informal borrowing. However, at delinquency or default, they are exposed to high social costs, including the loss of future benefits (such as informal loan access), social stigma, or even expulsion from the social network (Guiso et al., 2009). Such social pressure can be effective in reducing default in informal borrowing systems and thus also contributes to lower financial costs.

Finally, lenders in informal borrowing systems are willing to accept lower monetary interest rates because they expect additional returns from other sources. In mortgage markets, interest collected from borrowers serves as the major or even only source of profit for lenders. However, in the spirit of mutual aid, socially embedded ties in informal borrowing facilitate coordination and cooperation for mutual-benefit norms (Lin, 1999), which provides broader potential reciprocity in the long term for lenders. Lenders can reasonably expect to receive some other monetary or non-monetary returns from borrowers, such as emergency medical aid, valuable information sharing, or emotional support (Nahapiet and Ghoshal, 1998; Franzen and Hangartner, 2006). Controlling for the overall expected return,

the existence of potential reciprocity enables lenders to lower monetary interest rates.

The above three factors suggest that the financial cost of informal borrowing may be much lower than the cost of formal bank loans, even as low as a (monetary) interest rate of zero (Karaivanov and Kessler, 2013). In housing markets, the use of such lower-cost informal borrowing will affect households' purchase and financing behaviors in at least two ways. First, due to more favorable interest rates of informal channels, a household would prefer to choose informal borrowing to finance its home purchase, if feasible, given its budget constraint. This would lead to a reduction in demand for formal credit, generating our first hypothesis:

Hypothesis 1. Because of lower financial costs, informal borrowing will crowd out mortgages from commercial banks to finance households' home purchases.

Second, the existence of lower-cost informal borrowing will increase the demand for housing. Capital cost is a major component of user cost in housing markets (Poterba, 1984), and the lower real user cost resulting from the lower capital cost will have a positive effect on housing demand. This generates our second hypothesis:

Hypothesis 2. Informal borrowing will increase households' housing demand.

One noteworthy factor is the implicit cost of informal borrowing (Madestam, 2014). Because most informal borrowing from family and friends is done in the form of an unwritten/non-contractual commitment with leniency and flexibility, borrowers are subject to higher pre-payment requirements due to the financial urges of the lender (Fafchamps and Lund, 2003). Borrowers also face a high delinquency cost as mentioned above (Lee and Persson, 2016; Karaivanov and Kessler, 2013). Moreover, the establishment and maintenance of social networks requires some costs, including actual expenditures (such as excess costs of dining-out and travel costs), opportunity cost (such as time), and pressure from certain ethnic norms (Glaeser et al., 2002). However, the literature suggests that all these implicit costs are typically underestimated or even ignored by borrowers in developing countries (Boucher and Guirking, 2007), including China (Chen and Chen, 2009; Chen and Chen, 2004). Thus, we believe that the existence of implicit costs do not significantly alter the effects of informal borrowing on mortgage and housing demand. We provide some preliminary evidence of this at the end of the empirical analysis.

3. Data and empirical design

3.1. Data description and variable identification

Our empirical analysis is based on data from the 2013 China Household Finance Survey (CHFS). The CHFS is a nationwide micro-level survey conducted by the Survey and Research Center for China Household Finance, Southwestern University of Finance and Economics (SWUFE). Using a stratified three-stage probability proportional to size (PPS) random sample design,² the 2013 survey includes 18,000 urban households from 262 districts/counties in 29 provinces. More details on the survey are available in Gan et al. (2013).

We obtain our sample from the following two steps. First, we exclude all rental households, which account for about 10.5% of the urban sample in the data. Second, we drop all observations with null or abnormal values in the key variables (such as households with negative income,

² The primary sampling units (PSU) include 2585 counties (including county level cities and districts) from 31 provinces (including provincial cities) in China. The second stage of sampling involves selecting residential committees/villages from the counties/cities selected in the first stage. The last stage is to select households from the residential committees/villages chosen in the second stage. Every stage of sampling is carried out using the PPS method and is weighted by population size.

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