

CHINA'S SHADOW BANKING SECTOR: RECENT DEVELOPMENTS AND SYSTEMIC RISK ASSESSMENT

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Abstract. It is said that the shadow banking system could be one of a variety of sources for the current global financial crisis. This sector also exists in China in a lesser advanced form than in Western economies in terms of instruments, risk measures or regulations. The official definition of China's shadow banking has not been developed yet. The article presents the current stage of China's shadow banking development, the size of this sector, recent studies focus on the role of informal financing in China's economic growth and the risk derives from expanding shadow banking instruments. Due to the lack of risk measuring institutions and lack of data concerning Chinese shadow banking, Western concepts of systemic risk measurement cannot be applied in China. Consequently this paper adopts simple approach to systemic risk assessment.

Key words: shadow banking, informal lending, risk assessment, China's financial system

INTRODUCTION

The shadow has wretched Chinese banking system recently. Among numerous formal financial institutions in Chinese financial system there is a dense web of nonbanking firms that acting similar to formal. These institutions have created shadow banking industry in China. Chinese shadow banking sector development derives from two main reasons. First, this problem has been in the spotlight ever since government began to tighten the monetary policy in 2010 [Hsu and Collier 2013]. The main goal of this policy was raining in credit and cooling inflation. Having limited access to bank loans, enterprises have started to seek alternative methods of financing their operation. As the result, numerous of enterprises have begun to cooperate with cash-rich institutions and borrow in the underground lending market (curbside financial market or shadow credit intermediation). The second reason of shadow banking recent development in the China lies in withdrawal of banks and official financial institutions from the rural areas or more risky lending

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niches (e.g. loans for small and medium sized enterprises – SMEs, sole proprietorship or customers who do not meet collateral requirements). The financial requirement of excluded groups is fulfilled by the underground lending sector [Barclay's Capital 2011]. Additionally the negative real deposit interest rates have pushed depositors to seek higher returns, thus spurring underground financial activities. Since these nonbanking services are usually not or barely regulated and non-transparent, the surge in shadow banking activities may pose a serious risk to China's future financial stability.

The article consists of five sections, introduction and conclusions. Firstly, it discusses adopted material and methods. The second section of this paper explains the terms and instruments of shadow banking. The third part presents selected literature on relation between informal finance and economic growth in China. The fourth section provides different estimates of shadow banking industry size in China. The fifth part analyzes systemic risk of shadow banking activity to the financial system in China. The article concludes several policy implications for the future.

MATERIAL AND METHODS

The main purpose of this research is to present the nature of Chinese shadow banking, classify its forms, estimate the size of informal sector and offer risk assessment approach. The method adopted in this paper partly focuses on the assessment of shadow banking size according to the approach recommended by the Financial Stability Board. It states that shadow banking data should cover first all non-bank credit intermediation where shadow banking risks to the official financial system may arise – outside the banking system approach. Although Chinese shadow banking seems to be different from the Western countries informal sector. That's why the definition of shadow banking in China should be broadening by activities specific for this country. It's worth to include into Chinese shadow banking system all activities of banks that are off-balance-sheet (e.g. wealth management products, trusts) – within bank approach. The practical two-step approach may be better, if we want to present informal banking sector in China multidimensionally and the risk derived from this activity. The statistical material is based on the reports of various financial institutions and China's financial authorities.

SHADOW BANKING TERMINOLOGY

The definition of shadow banking varies among international organizations and institutions. According to the World Bank: "Shadow banking comprises a set of activities, markets, contracts, and institutions that operate partially (or fully) outside the traditional commercial banking sector, and, as such, are either lightly regulated or not regulated at all" [The World Bank 2012]. The Financial Stability Board defines shadow banking as "the system of credit intermediation that involves entities and activities outside the regular banking system" [Financial Stability Board 2012]. According to the Staff Report of Federal Reserve Bank of New York, shadow credit intermediation includes all credit intermediation activities that are implicitly enhanced, indirectly enhanced or unenhanced by official guarantees [Pozsar et al. 2010]

The development of informal financial market was the important reason of the global financial crisis. However, Chinese shadow banking represents different form than both American and European shadow banking sectors [Hsu and Li 2009; Hsu et al. 2013]. The shadow banking systems in China and the Western countries differ in terms of composition, players and drivers. For example the U.S. shadow banking system is comprised of securitized loans and obligations, asset-backed commercial paper, repurchase agreements, and money market funds [Kozak 2008; Kozak and Teplova 2010]. China's shadow banking system includes direct credit extension by nonbank financial institutions (especially trust companies and brokerage firms) and informal securitization through the pooling of proceeds from wealth management products provided by banks. China's shadow banking system is simple in structure and is not dominated by complex derivatives. Chinese shadow banking is not driven by market mechanisms (such as securitization). The growth of shadow banking in China is largely lending-driven. It is defined by certain peculiarities of Chinese financial system, including the constrained availability of bank funding, especially for SMEs and higher-risk borrowers, given banks' limited risk pricing capacity; insufficient remuneration on bank deposits and limited financial investment opportunities, which induce private lending amid a search for higher yields; government persuasion directed to banks responsible for the high share of bank credit to domestic state-owned enterprises; regulatory arbitrage, with banks forced to use alternative channels to avoid loan target limits. The most important features of Chinese lending system are relatively high interest rates and short tenures of extended loans [IMF 2012].

Adopting the Chinese Academy of Social Sciences' narrow definition of shadow banking, it only covers banks' wealth management products and trust companies' trust

Table 1. Main channels of China's shadow banking sector

Shadow banking activity	Borrowers	Non-performing loans loss absorption (in practice)	Estimated sector size in 2013 ^a	Overall risk
Informal loans	companies and individuals	only lenders	\$0.81 trillion	low-medium
BANs (bankers acceptance notes)	companies and individuals	usually banks back company issued BANs and repay if necessary	\$1.45 trillion	low-medium
Entrusted loans	companies	usually lenders, but sometimes bank is also involved indirectly	\$0.25 trillion	low
Trust products ^b	companies	institutions selling trust products (trust companies and banks) may have to pay losses. Officially, these institutions are not liable for non-performing loans loss	\$1.6 trillion	medium-high
Wealth management products ^b	companies	institutions selling wealth management products may have to pay losses. Officially, these institutions are not liable for non-performing loans loss	\$1.45 trillion	medium

^a By People's Bank of China.

^b Narrow definition of shadow banking.

Source: Author's own study.

products [Zhang 2013]. In practice China's shadow banking contains wider range of forms (activities) of financing which are directed to companies mostly. Some of them have a long history and are deeply-rooted in Chinese tradition. Very popular are inter-personal lending (*minjian jiedai*, sometimes called *guanxi*) [Feng 2006; Nowotny et al. 2012], trade credit (*hangye xinyong*), often illegal usury, moneylenders and loan sharks (*gaolidai*) [Zhen 2013], rotating savings and credit associations (*huzhuhui, hehui, biao-hui, chenghui, juhui*) [Tsai 2001, 2004; Nowotny et al. 2012], and rural cooperative foundations (*nongcun hezuo jijinhui*) [Ming 2011]. All of mentioned forms can be classified as informal loans, which are usually neither regulated nor controlled and very often illicit. All entrusted loans, trust products and wealth management products (*licai*) are quite new trends in shadow banking sector, but in practice mostly unregulated [Credit Suisse 2011; Refkin and Cray 2012; Cieřlik 2013; Goldman Sachs 2013].

If we want to characterize Chinese shadow banking sector briefly, we should consider five points. First, because the informal credit market is illegal and unregulated, a bankruptcy of informal banks can have serious consequences and even lead to social unrest. Second, the government has adopted a series of policies to enhance access to bank finance for SMEs, but the financing gap is still substantial. Third, loan contracts between informal banks and private parties will not be enforceable through court, so informal lenders need to collect sufficient proprietary information before the lending decisions to screen out unreliable borrowers. Fourth, informal finance typically carries a higher interest rate than bank finance (among relatives are often interest free). Fifth, informal lenders can use a range of social sanctions ranging from mild disparaging of reputation and exclusion from business and personal relationships up to illegal threats of coercion and actual injury.

SELECTED LITERATURE REVIEW ON INFORMAL FINANCE AND ECONOMIC GROWTH IN CHINA

The findings of recent search in the literature that deal with informal and formal financing activities and their impact on economic growth are mixed. Many have argued that the private sector has been locked out of access to formal channels of capital in China [Zhang 2008]. Some studies show that informal financing based on relationships or reputation may support the development of the private sector in countries with less well developed legal and financial systems. There are also papers implying that only the development of the formal financing sector has an evident positive impact on companies and economic growth. Yet the most complex studies were carried out by Chong, Lu and Ongena [2012]. The authors tried to prove that informal finance was associated with higher growth for small companies in China, but was insignificant in the case of large firms. It was estimated that formal sector finance is associated with faster companies' growth, though informal finance is not. Allen, Qian and Qian [2005] pointed out that alternative financing channels with the governance mechanisms such as those based on reputation and relationships support the growth of the private sector generally. Cheng's and Degryse's [2010] research indicated that the development of non-bank financial institutions, which have characteristics of both formal and informal finance, was not correlated with growth. Jia, Heidhues and Zeller [2010] indicated that subsidized credit policies favor local authori-

ties and elites, instead of the targeted poor groups, but informal credit channels are economically significant and can be tied to economic growth. Ayyagari, Demirgüç-Kunt and Maksimovic [2010] made a look at company financing patterns and development using a database of 2,400 Chinese firms. They found that a relatively small percentage of companies in their sample utilize formal bank finance with a much greater reliance on informal sources. Turvey and Kong [2010] studies prove that informal finance among relatives and friends may outcompete formal and semi-formal finance in the Chinese context. Qinghua University studying households in eight provinces in China estimated that 69% of them borrowed money from informal financial institutions [OECD 2010]. Turvey, Kong and Huo [2009] estimated that borrowers most often use informal sources of finance for the costs of consumption (72% of respondents), followed by treatment (68%) and education (61%). They based the research on survey of 730 rural households. A special case of the development of the informal market is the city of Wenzhou in the eastern China, where as many as 89% of the population (over 8 million) and 57% of companies are involved in illegal lending activities targeted primarily to SMEs in the region [Asia Now 2011].

Unfortunately, the current literature almost does not study whether the informal and formal credit markets are segmented in China and whether there are beneficial effects to subgroups of companies that differ in terms of activity. There are also very limited studies concerning the different types of informal financing in China, let alone the influence of each kind of informal financing for regional or social groups' development.

THE SIZE OF SHADOW BANKING IN CHINA

In the past Chinese formal financial institutions directed their services very seldom to SMEs, rural households and people with low creditworthiness. It has been estimated, that only 15% of Chinese SMEs applying for credit would obtain it, because of strict banking regulations and collateral requirements. Simultaneously mentioned potential borrowers would be charge with much higher interest rates than a large corporation, particularly state-owned enterprise which applies for the analogous amount of credit. It is evaluated that the average interest rates paid by SMEs are 20–50% higher than the interest rates burden state-owned enterprises [EconoMonitor 2012].

The shadow banking industry in China has grown considerably in recent years, taking on the role of an alternate funding source for domestic entities. Estimates of the size of the shadow banking system vary considerably, given its highly non-transparent nature and the varied assumptions on the types of activities that it encompasses. Although there are no official data characterized the size of the shadow banking segment in China, we can find a few studies that estimate the shadow banking industry. Estimates at different points of time and based on varied coverage assumptions put shadow banking lending in the range of approximately from 16 to 29% of total bank lending, suggesting that shadow banking is nontrivial for domestic funding. The Chinese institutions' estimations of the shadow banking size are diversified and range from \$2 trillion to \$3 trillion (mentioned by the Chairman of China Banking Regulatory Commission) to even \$4 trillion estimated by Credit Suisse on the low end to almost \$18 trillion on the high end. According to the narrow definition, the size of the shadow banking system in China was estimated to be

\$2.7 trillion (equivalent to 36% of GDP) as of the end of March 2013. The trust companies' and wealth management products' share in a market was almost the same (Table 3). MarketWatch estimated that 60% of these loans are invested into real estate projects [Oliver 2011]. Only in 2010 governmental State Information Center evaluated that capital flows in shadow banking amounted at least \$317 billion and UnionPay pointed out that nonbank lending sector in China has expanded to \$2.8 trillion annually (Table 2). Goldman Sachs Research Group estimated that shadow banking activities made up 39% of the increase in total incremental new credit and 27% in incremental M2 aggregate in 2012. Shadow banking activities in 2012 accounted for 24% of total credit to companies and consumers, and 45% of China's GDP [Goldman Sachs 2013].

In 2006 Chinese Academy of Social Sciences estimated the average household in China was burden with loan from informal sector accounted for \$165 [IFC 2008]. Guo and He [2005] examine the range of cases of shadow banking in China till 2005. They discovered that form 24% to even 95% of lending in rural areas derived from shadow banking. We can explain it with two reasons. The borrowers in rural areas live far from formal creditors and simply have no access to official financial system. Usually these people are not able to meet collateral requirements and would never obtain credit from bank or other formal lending institution [Turvey and Kong 2008].

In comparison to the Western developed economies, Chinese shadow banking sector is still not very extended. For example, in 2011 the shadow banking assets value in the U.S. was estimated at \$23 trillion, in the euro area – \$22 trillion, and in the United Kingdom – \$9 trillion. It was estimated that in the whole world shadow banking activity amounted to \$67 trillion. China's share in the world informal banking was estimated at the level of 4.2% [Financial Stability Board 2014].

Table 2. Estimates of shadow banking size in China in 2010

Source	Estimates
State Information Center	\$317 billion of annual capital flows
Barclays Capital	\$492 billion of annual capital flows
Bernstein Research	\$429 billion; 5% of new loans
Credit Suisse	\$635 billion
PBoC	\$893.5 billion
Nomura Securities	\$1.35 trillion
Financial Times China Confidential	\$1.59 trillion
ANZ Bank	\$1.59 trillion
Barclays Capital	\$1.84 trillion; 22% of new loans
UBS	\$1.9 trillion
Roubini Global Economics	\$2.0 trillion
Société Générale's	\$2.3 trillion
Dragonomics	\$2.7 trillion
China UnionPay	\$2.8 trillion

Source: Author's own study on the basis of websites and reports of mentioned institutions.

Table 3. Size of the narrowly defined shadow banking sector in China from 2007 to 2013

Year	Wealth management products	Trust companies	Total	% of GDP
	billion USD			
2007	214.0	153.1	367.1	8.6
2008	154.8	197.3	352.1	7.0
2009	163.7	325.2	488.9	8.9
2010	403.2	49.0	452.3	13.8
2011	806.5	776.0	1 582.4	20.7
2012	1 145.2	1 205.0	2 350.2	28.1
2013	1 450.0	1 600.0	3 050.0	32.4

Source: People's Bank of China.

SYSTEMIC RISK IN CHINA'S SHADOW BANKING – A SIMPLE ASSESSMENT¹

In China some measures of risk are lacking, especially reliable credit rating firms to assess risk in individual, corporate, and product transactions, widely available and accurate accounting and auditing results, freely functioning markets for a variety of assets and liberalized interest rates that accurately reflect the cost of borrowing and lending. Examination of interlinkages of credit exposure [Allen and Gale 2006], the probability of default [Avesani et al. 2006], conditional value at risk [Adrian and Brunnermeier 2008], systemic expected shortfall [Acharya et al. 2010], valuation of put options written on a portfolio of aggregate bank assets [Hovakimian et al. 2012], network-based systemic risk, coupled stochastic processes [Lorenz et al. 2009], insurance against systemic financial distress [Huang et al. 2011] are useful in risk assessment in developed financial systems. Unfortunately in practice these tools are difficult to apply in China. Then a basic approach in assessing risk might be useful in case of China. In this approach we should answer following questions:

- What is the currency amount under management of shadow banking products?
- What type of income do shadow banking products depend?
- Who absorbs the non-performing loans loss of shadow banking products?
- Is the shadow banking product interconnected with another product?

Shadow banking products associated with the largest assets under management include trusts and wealth management products sold mainly by banks. Each of these currently amounts to around \$1.6 trillion and \$1.45 trillion respectively (Table 1). Bankers' acceptance notes also comprise a large and increasing component of the shadow banking system in China. Other shadow banking products measure in the billions rather than trillions, including pawn shop loans, interpersonal lending, loan sharks, and various other types of small scale loans. When these heterogeneous private loan categories are added together, private loans comprise about \$1 trillion (PBoC – People's Bank of China).

¹ Some of these aspects were discussed by the author during China-ASEAN Financial Forum 2013, Nanning, China.

Wealth management products are based on a range of underlying assets, including money market products, equities with repurchase agreements, bonds, and trust or entrusted loans. While some income streams are relatively stable and low-risk, others may contain a relatively high risk. The worrisome is that wealth management products are not regulated only should fulfill some marketing requirements. Also trust loans may be problematic since they are almost not regulated to the extent that bank loans are controlled. Although China Banking Regulatory Commission has issued some capital requirements and marketing regulations concerning these instruments. Trust loans to increasingly unproductive entities like local government financing vehicles or real estate developers comprise up to one-third of trust loans, while loans going back into the financial sector itself measure in at around 20% of trust loans (People's Bank of China, CEIC database). These products have been repaid or bailed out by companies or more often local governments. While bankers' acceptance notes are traded on the interbank market, improving their risk pricing mechanism, their use has been increasingly abused by banks to skirt loan regulations. They have been used not as instruments to provide a liquidity cushion, but as the means to extend loans to a variety of customers.

Concerning non-performing loans absorption the wealth management products and trust products very often institutions selling these products may have to repay losses in practice. Although officially, these companies are not liable for non-performing loans loss. This results in serious solvency, liquidity and market risk, especially when we take into consideration the substantial size of these sectors. In case all shadow banking activities connected to category "informal loans" and entrusted loans usually only lenders absorb non-performing loans loss, sometimes also banks if they are involved in the transaction indirectly. Fortunately these sectors of shadow banking are relatively small, so the potential risk derives from these activities is low-medium. Though bankers' acceptance notes share in shadow banking sector is considerable, they bring relatively low-medium risk to the financial system, because banks support companies issuing these instruments and in case of default repay losses.

Interconnectedness among wealth management products, trust loans, and bankers' acceptance notes also presents a serious problem. Wealth management products may include either trust loans or bankers' acceptance notes as underlying assets. Even more generally, unproductive entities such as local government financing vehicles and real estate developers comprise an increasingly large percentage of borrowers for each product category, raising the possibility of interlinked financial failures in the face of an external shock. The good example of this interlinked financial failure is Huaxia Bank default [The Wall Street Journal 2012].

CONCLUSIONS

China's shadow banking system is relatively small (comparing to advanced economies) and straightforward, but its increasing share of Chinese GDP is worrisome (Table 3). Still the use and retailing of any derivative-type products is relatively rare. The PBoC and its branches are continually monitoring risks from the shadow banking system. Steps are under way to collect data on a more regular basis and to develop a regulatory frame-

work that would guide the healthy development of the shadow banking system in China in terms of wealth management products and entrusted loans, financial guarantee companies, pawn shops, and private lending. Shadow banking may affect the stability of Chinese banking system in the future, because China's financial system is still in the phase of moving towards maturity and needs sufficient regulations and appropriate institutions.

In terms of risk, trust and all non-standard debt assets under wealth management products represent a medium threat to the Chinese financial system yet. If these assets can be appropriately priced for risk this would represent very difficult but serious step forward the financial deepening process. Since non-standard debt assets held in wealth management instruments sold by securities companies and often banks do not price appropriately for risk, these should be banned from inclusion in these products marketed to unaware consumers. Some recommendations for further regulation in these specific areas of shadow banking include requiring the establishment of independent regulatory compliance and risk control offices/departments in trust companies, restricting use of bankers' acceptance notes to trade transactions, requiring risk control of entrusted loans, and improving/enforcing information disclosure to wealth management customers of banks and securities companies. Requiring the establishment of independent regulatory compliance and risk control departments in trust companies would help ensure that trust companies comply with regulations. It also would help steer trust companies away from ventures that contain much risk in comparison to returns on investment and toward ventures that provide more balanced risks and returns. Restricting use of bankers' acceptance notes to trade transactions in which borrowers are most likely to repay the amount can also help to reduce rising risk in this area. Finally, further publicizing to wealth management customers that they are assuming the risk of these products would underscore that fact that the government will not bail out wealth management products of banks.

China is already moving forward with a number of financial reforms including moving toward an elimination of Qualified Foreign Institutional Investor and Qualified Domestic Institutional Investor limitations, aiming toward some liberalization of the capital accounts, launching an individual overseas investment schemes, expanding markets for debt product pricing, promoting trading of interbank credit default swaps, and moving toward the creation of a managed currency float. Although the huge concern with these reforms is that major changes will require ongoing regulation and enforcement as financial innovations increases. Although movement toward creation of financial markets will help to price in risk to some extent, some institutions necessary to control and provide accurate information about risk remain lacking. The goal of China's highly skilled policy makers is and should be movement toward a deeper financial system – one in which there are markets for a variety of assets for which risk is controlled and appropriately priced.

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CHIŃSKI SEKTOR BANKOWOŚCI NIEFORMALNEJ: POSTĘPY I OCENA RYZYKA SYSTEMOWEGO

Streszczenie. Bankowość nieformalną (shadow banking) można uznać za jedno z wielu źródeł obecnego globalnego kryzysu finansowego. Sektor ten wykształcił się także w Chinach, ale w mniej zaawansowanej formie niż w krajach rozwiniętych, biorąc pod uwagę instrumenty, sposoby oceny ryzyka i regulacje. Dodatkowo, w Chinach nadal nie opracowano oficjalnej definicji bankowości nieformalnej. W artykule przedstawiono: aktualny stan

rozwoju shadow banking w Chinach, rozmiary tego sektora, ostatnie badania dotyczące roli finansowania nieformalnego w stymulowaniu chińskiego wzrostu gospodarczego oraz ryzyko wynikające z instrumentów bankowości nieformalnej. Ze względu na brak wykształconych instrumentów oceny ryzyka i danych dotyczących chińskiego sektora nieformalnego zachodnie koncepcje pomiaru ryzyka systemowego nie znajdują zastosowania w Państwie Środka. W artykule zastosowano dlatego proste podejście do oceny ryzyka systemowego.

Słowa kluczowe: bankowość nieformalna, nieformalne kredytowanie, ocena ryzyka, chiński system finansowy

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