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China's shadow banking sector: beneficial or harmful to economic growth?

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Abstract

Purpose – The purpose of this paper is to examine recent developments pertaining to China's shadow banking sector. Shadow banking has the potential not only to be a beneficial contributor to continued economic growth, but also to contribute to systematic instability if not properly monitored and regulated. An assessment is made in this paper as to whether shadow banking is beneficial or harmful to China's economic growth.

Design/methodology/approach – The authors start with providing an overview of shadow banking from a global perspective, with information on its recent growth and importance in selected countries. The authors then focus directly on China's shadow banking sector, with information on the various entities and activities that comprise the sector. Specifically, the authors examine the interconnections between shadow banking and regular banking in China and the growth in shadow banking to overall economic growth, the growth in the money supply and the growth in commercial bank assets.

Findings – Despite the wide range in the estimates, the trend in the size of shadow banking in China has been upward over the examined period. There are significant interconnections between the shadow banking sector and the commercial banking sector. Low deposit rate and high reserve requirement ratios have been the major factors driving its growth. Shadow banking has been a contributor, along with money growth, to economic growth.

Practical implications – The authors argue that shadow banking may prove useful by diversifying China's financial sector and providing greater investments and savings opportunities to consumers and businesses throughout the country, if the risks of shadow banking are adequately monitored and controlled.

Originality/value – To the authors' knowledge, this paper is among the few to systematically evaluate the influence of shadow banking on China's economic growth.

Keywords Banks, Financial markets and institutions

Paper type Research paper

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1. Introduction

The world of finance has undergone a fairly dramatic change in recent years with the growth of shadow banking. It can broadly be described as the system of liquidity transformation and credit intermediation that involves entities and activities fully or partially outside the regular banking system. The non-bank financial intermediaries that comprise shadow banking provide services similar to traditional commercial banks, but are not regulated or supervised like a bank. More specifically, shadow banks are not subject to capital requirements, loan to deposit ratios or loan loss provisions. Not being regular banks, moreover, they do not have access to the central bank's lender of last resort facility. Of course, shadow banks by offering similar services to commercial banks provide more competition and more choices for consumers. They can even contribute to economic growth and development by expanding the availability of financial services. However, as shadow banks have complicated structures and inter-linkages with commercial banks and are far less heavily regulated than regular banks, they have the potential to cause systemic risks.

The purpose of this paper is to examine recent developments pertaining to China's shadow banking sector. China, unlike many other countries, grew fairly rapidly before, during and after the recent global financial crisis. Its growth rate, however, has slowed somewhat in recent years, as reliance on exports has declined in favor of continued reliance on investment and greater emphasis being placed on consumption. Shadow banking has the potential not only to be a beneficial contributor to continued economic growth, but also to contribute to systematic instability if not properly monitored and regulated. An assessment will be made as to whether shadow banking is beneficial or harmful to China's economic growth.

The remainder of the paper proceeds as follows. Section 2 provides an overview of shadow banking from a global perspective, with information on its recent growth and importance in selected countries. Section 3 focuses directly on China's shadow banking sector, with information on the various entities and activities that comprise the sector. This includes information on the relative growth and importance of these components. Section 4 discusses the interconnections between shadow banking and regular banking in China. It is the existence of these interconnections that pose a systemic risk if shadow banking were to implode. Section 5 examines the growth in shadow banking to overall economic growth, the growth in the money supply and the growth in commercial bank assets. This is followed by a discussion of the factors that explain the reasons for the growth of shadow banking in Section 6. Given the relatively recent growth in China's shadow banking sector and its potential systematic risk, Section 7 discusses China's efforts to contain this risk through the implementation of various regulations. Finally, the concluding comments are presented in Section 8.

2. Global shadow banking in perspective

The size of the global shadow banking system, of course, depends on how one measures that system. At the global level, the Financial Stability Board includes the assets of financial institutions other than banks or non-bank financial intermediaries (OFIs). As shown in Figure 1, the size of the global shadow banking system has grown substantially over the past decade, both in absolute terms as well as relative to global gross domestic product (GDP). Indeed, it now is $75 trillion or 120 per cent of GDP. Figure 2 shows the share of global shadow banking system assets accounted for by

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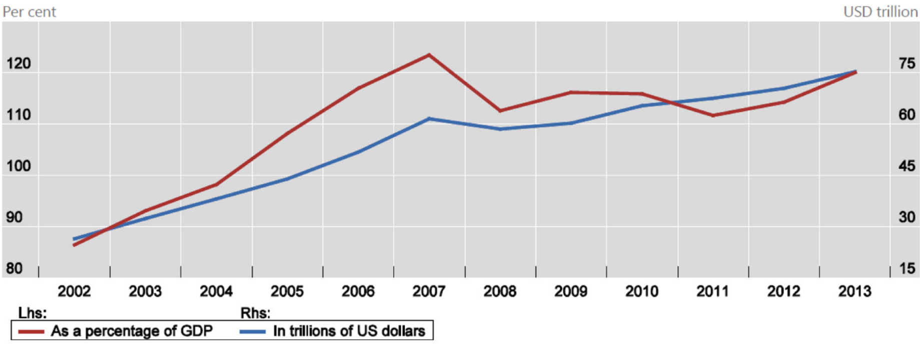
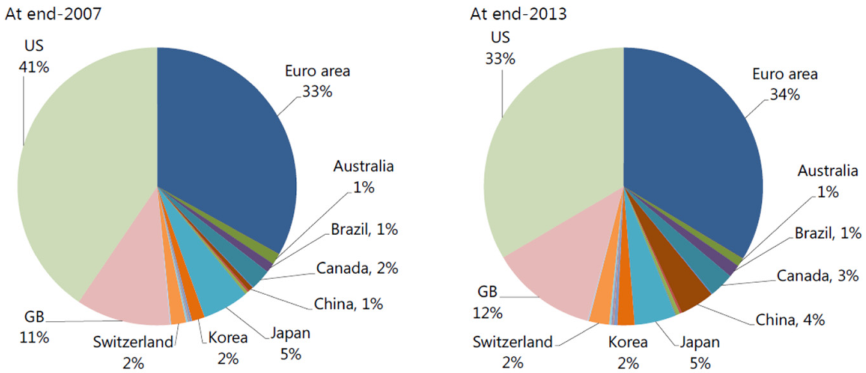


Note: 20 jurisdictions and Euro area
Source: Financial Stability Board (2014)

Figure 1.
Size of global shadow banking system



Note: 20 jurisdictions and Euro area
Source: Financial Stability Board (2014)

Figure 2.
Share of global shadow banking system by country

selected countries as well as the total share for the group of Eurozone members for 2007 and 2013. As may be seen, the USA accounts for the largest share of global shadow banking system assets at 41 per cent, with the Euro area having the second largest share at 33 per cent, in 2007. In 2013, however, their positions reversed with the USA share declining to 33 per cent and the Euro area share increasing to 34 per cent. In terms of individual countries, Great Britain ranks second in both years, at 11 per cent in 2007 and 12 per cent in 2013. The country with the biggest absolute percentage increase over the period is China, whose share increased to 4 per cent from 1 per cent or a 300 per cent increase in just six years.

It is useful to compare the size of the shadow banking system in countries to the size of the regular banking system (which includes all deposit-taking institutions). This is done for a fairly broad group of countries in Figure 3, with both measures of size being expressed relative to GDP. The total for the countries indicates that bank assets exceed

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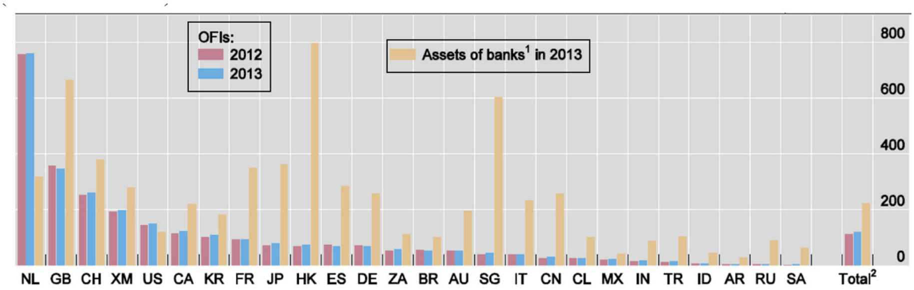

Figure 3. Shadow banking system assets versus bank assets for selected countries

Notes: AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CN = China; CL = Chile; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; US = United States; XM = Euro Area; ZA = South Africa; 1Note that "banks" refer to the broader category of "deposit-taking institutions"; 220 jurisdictions and Euro area; OFIs are other financial institutions or non-bank financial intermediaries; Percent of GDP
Source: Financial Stability Board (2014)

shadow banking assets for both 2012 and 2013. This is also the case for all of the countries except The Netherlands and the USA.

3. China's shadow banking sector

There exists a wide range of estimates regarding the size of China's shadow banking sector, due to differences in definitions, classifications and methodologies. This is mainly because most shadow banking activities are not subject to disclosure requirements, despite an official definition of the sector. Specifically, the People's Bank of China officially defines shadow banking as credit intermediation involving entities and activities outside the regular banking system, with the functions of liquidity and credit transformation, which could potentially cause systemic risks or regulatory arbitrage (PBOC, 2013). However, different sources provide different estimates of the size of the shadow banking sector. Figure 4 shows the range of both private and official estimates for three different years, 2012, 2013 and 2014. Despite the wide range in the estimates, it is clear that the trend in the size has been upward over the period. More specifically, the average size of the shadow banking system based on the estimates has increased from \$3.9 trillion in 2012 to \$4.6 trillion in 2013 to \$5.3 trillion in 2014. Figure 5 provides the size of China's shadow banking system as a percentage of its GDP, based on the various estimates. Once again, despite the wide range in percentages, the trend is clearly upward over the period. The average size of the shadow banking sector relative to GDP increased to 52 per cent in 2014 from 47 per cent in 2012 or by 5 percentage points. Yet even given this increase, China's shadow banking sector relative to its GDP is still smaller than that for most other countries, as shown in Figure 3.

The Fung Global Institute (Sheng and Soon, 2015) has provided a recent and excellent report that identifies the components of China's shadow banking system. Table I identifies the components and the reasons for including them as part of the shadow banking system. The three non-bank financial institution/business items are not

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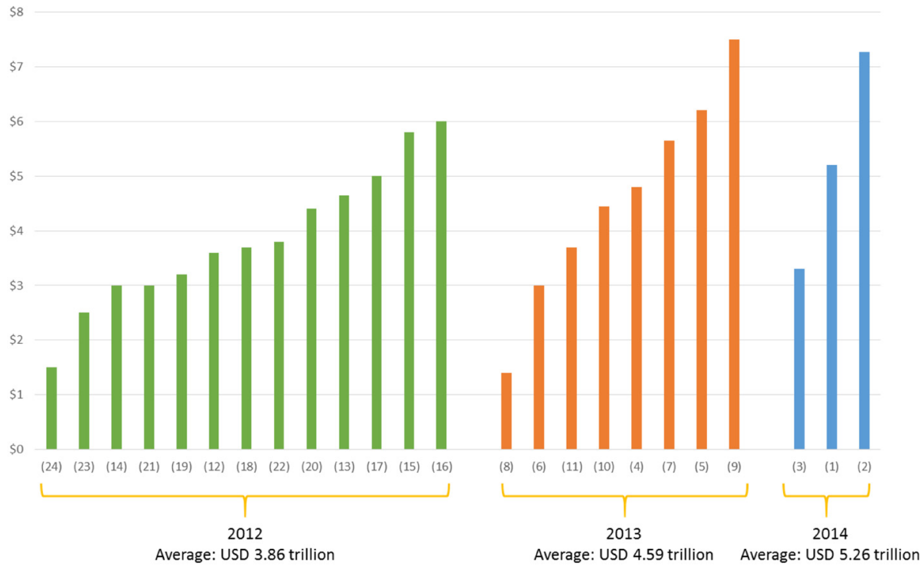

Note: USD trillion
Source: Appendix A1

Figure 4. Estimates of the absolute size of China's shadow banking system

Note: Per cent of GDP
Source: Appendix A1

Figure 5. Estimates of the absolute size of China's shadow banking system relative to GDP

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Table I Components of China's shadow banking system

Non-bank financial institutions/business	Belongs to shadow banking?	Reasons
Credit assets of trust companies	Yes	Subject to regulatory arbitrage, high leverage ratio, credit risk transformation, potential of systemic risks
Financial Leasing	Yes	Business includes liquidity and term transformation, regulation arbitrage exists
Financial guarantees	Yes	Most of the guarantors are involved in the lending activities of shadow banks, such as trust, micro credit companies and P2P platforms. Have the potential of expanding credit and spreading risks
Pawnshops	Yes	Non-bank credit intermediary, connected with banks. Although subject to approval of the Ministry of Commerce, effective supervision is limited
Microcredit companies	Yes	Non-bank credit intermediary, connected with banks. Regulatory arbitrage exists
P2P lending platform	Yes	Non-bank credit intermediary, currently subject to little direct regulation. Have complicated lending structure and risks
Money market funds	No	Low leverage, or liquidity transformation, are subject to strict supervision
Entrusted loans	Yes	Loans removed from financial institutions' balance sheet and traded as interbank asset
Bankers' undiscounted acceptances	Yes	Similar to banks' short-term loans, but removed from banks' balance sheet and traded in the interbank markets
Trust Loans	Yes	Loans made through bank-trust channel, kept off-balance-sheet and traded in the interbank market
Off-balance-sheet Banks' WMPs	Yes	Involves loan assets, packaged and sold to investors. Different from the above asset aside measures, banks' WMP is a liability side measure, which may cause double counting with trust loans and interbank assets
Securities companies' AMPs	Yes	Targeted asset management, includes channel businesses
Insurance companies' AMPs	No	Do not have the problem of liquidity transformation or high leverage and are subject to CIRC supervision
Asset securitization	No	Restarted since 2012, still very small in scale
Private lending	Yes	The high interest rate portion is subject to high risk. Private lending can also transfer risks to commercial banks through a number of channels, such as credit card lending, commercial papers guarantee companies, etc

Source: Sheng and Soon (2015)

included in China's shadow banking system: money market funds, insurance companies' asset management products and asset securitization because they are considered to be subject to strict regulatory supervision or very small in scale. Such items may, of course, be included in the definitions and measures of the size of the shadow banking system for other countries.

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The importance of the various components, both in terms of RMB trillion and as a percentage of banking assets, are provided in Table II. As may be seen, all of the components have increased in recent years, both in absolute terms and relative to the assets of the banking system. Indeed, shadow banking assets have more than doubled in just three years, reaching 48 RMB trillion at year-end 2014. The size of the shadow banking system relative to the size of the banking sector has also increased to nearly 30 per cent in 2014 from 19 per cent in 2011. Clearly, however, the different items differ in terms of their relative importance. The most important component is wealth management products (WMPs), issues by both banks (off-balance-sheet) and securities firms, which amounted to 15 RMB trillion at year-end 2014. Bank WMPs are considered to be "quasi-deposits" or liabilities, as the underlying assets are mostly loans from regular banks or shadow banks. They may be kept either on-balance-sheet or off-balance-sheet, with the former being guaranteed with principal payment. The off-balance-sheet WMPs are not guaranteed, with most of the underlying assets being WMPs from shadow banks. As Wang Yao (in Sheng and Soon, 2015) points out, the structure of the WMPs process can be quite complex, as banks may use reverse repos to package discounted bills (short-term loans) into off-balance-sheet WMPs. He adds that the final issuer of the WMP will disclose only the reverse repo as an inter-bank asset, which means that a higher-risk loan is being disguised as a lower-risk inter-bank asset. Figure 6 shows this process and how convoluted it can become.

More generally, the creation of WMPs can be done through a fund/asset pool operation as shown in Figure 7. Different assets may then serve as backing for the WMPs that are issued. Of course, as the figure indicates, this process can be quite opaque with insufficient information disclosed about the risk characteristics of the underlying assets. The fund/asset pools, moreover, may have liquidity and maturity mismatch problems.

The second and third most important components of the shadow banking sector are entrusted loans and undiscounted banker's acceptances, respectively. Figure 8 shows the rapid growth in both of these items from 2007 to the first quarter of 2015. Entrusted loans are now 11 RMB trillion and undiscounted banker's acceptances are nearly 7 RMB trillion. Both of these items are major inter-bank assets, with entrusted loans being inter-enterprise credit that is sold to banks by principal owners seeking funding through a bank. Undiscounted banker's acceptances are created when banks discount credits between enterprises, with the result that a loan becomes an off-balance-sheet trading instrument. According to Wang Yao (in Sheng and Soon, 2015), these inter-bank assets are categorized as components of the shadow banking sector because they are actually loans between non-bank entities, with commercial banks as guarantors or custodians. He adds that they are traded as inter-bank assets between banks under repurchase agreements and categorized as inter-bank assets rather than on their own loans. These types of inter-bank assets may also be packaged into WMPs of banks.

Trust companies in China can engage in businesses like private equity and asset securitization that are not available to commercial banks. This enables them to work with the banks, so that the latter can benefit through such businesses. Figure 9 shows the tremendous growth in trust fund assets over the past five years, reaching a high of 13.5 RMB trillion in the first quarter of 2015. This is a fivefold increase in relatively short period of time. When the People's Bank of China tightened credit in 2010 and banks restricted their lending to property developers and local governments, trust companies became an alternative

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Table II. Size of different components of China's shadow banking system (RMB trillion and % of banking assets)

Credit intermediation products	2015.3	As % of total banking assets (%)	End 2014	As % of total banking assets (%)	End 2013	As % of total banking assets (%)	End 2012	As % of total banking assets (%)	End 2011	As % of total banking assets (%)
Entrusted loans	11.03	6.32	10.71	6.37	8.20	5.42	6.92	5.18	5.00	4.48
Trust loans	5.32	3.05	5.27	3.13	4.90	3.29	3.62	2.71	1.74	1.56
Informal lending	3.40	1.95	3.40	2.02	3.40	2.24	3.40	2.54	3.40	3.05
WMPs	n/a	n/a	15.10	8.98	9.80	6.29	4.80	3.59	2.50	2.24
Banks' off-balance-sheet	n/a	n/a	8.90	5.29	5.70	3.62	3.80	2.84	2.40	2.15
Securities firms	n/a	n/a	6.20	3.69	4.10	2.57	1.00	0.75	0.10	0.09
Undiscounted bankers' acceptances	6.62	3.79	6.57	3.91	6.70	4.11	5.65	4.23	4.90	4.39
Credit by financial guaranty companies	n/a	n/a	3.00	1.77	2.60	1.61	2.10	1.57	1.90	1.70
Loans by finance companies	n/a	n/a	2.30	1.35	2.20	1.35	1.00	0.75	0.90	0.81
Others+	n/a	n/a	2.09	1.25	1.70	1.04	1.30	0.97	0.88	0.79
Financial leasing	1.11	0.63	1.03	0.61	0.79	0.48	0.61	0.46	0.43	0.38
Microcredit	0.95	0.54	0.94	0.56	0.82	0.49	0.59	0.44	0.39	0.35
Pawn shop loans	0.09	0.05	0.10	0.06	0.09	0.05	0.07	0.05	0.06	0.05
Asset-backed bonds	0.03	0.02	0.02	0.01	0.01	0.01	0.03	0.02	0.00	0.00
Total	n/a	n/a	48.44	28.77	39.50	25.35	28.78	21.54	21.21	19.02

Notes: The figure for informal lending assumes no change since 2011 and it based on a survey by PBOC in May 2011 of 6,615 corporate borrowers
Source: Moody's Investor Service, Quarterly China Shadow Banking Monitor, January 2015, People's Bank of China, Ministry of Commerce of the People's Republic of China, Shanghai Clearing House, Chinese Banks Wealth Management Annual Reports, Securities Association of China and China Trustee Association. The data in red are from Moody's and other data are from the other sources listed

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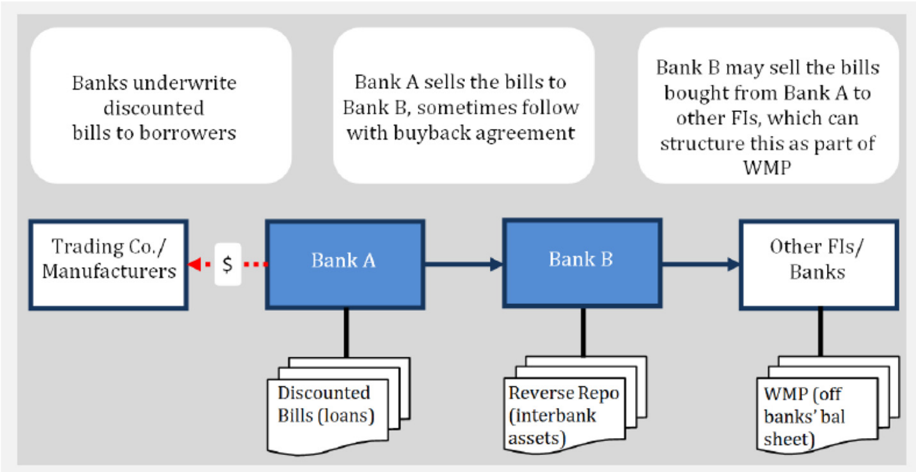
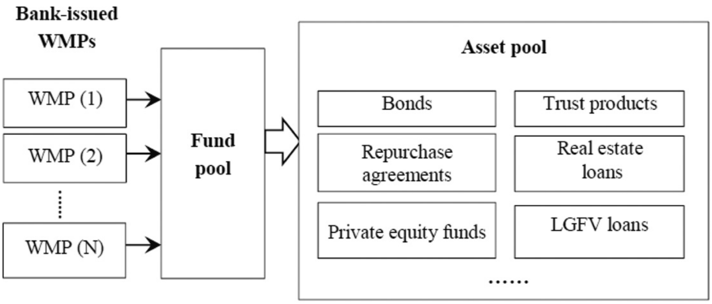


Source: Sheng and Soon (2015)

Figure 6. How banks shift discounted bills into reverse repos



Note: LGFV are local government funding vehicles
Source: Li (Cindy) (2013)

Figure 7. Illustration of asset-backed wealth management products

source of funds that fueled their growth. It is important to note that the companies are trustees, and therefore, the assets under management belong to the beneficiaries as do the risks. The figure also shows the amount of trust company loans separately. Because the trust companies obtain the majority of their funds from banks, double counting is avoided only by including the loans that are bought by banks and then end up as WMPs as a component of the shadow banking sector, as shown in Table II.

The relationship between trust companies and commercial banks is illustrated in Figure 10. It also demonstrates the need to avoid double accounting when measuring the size of the shadow banking sector.

Information on the composition of trust companies assets under management, grouped by both industry and type of investments are provided in Figure 11.

The remaining components of the shadow banking are relatively smaller but nevertheless still important. Also, it is interesting to know that according to the PBOC,

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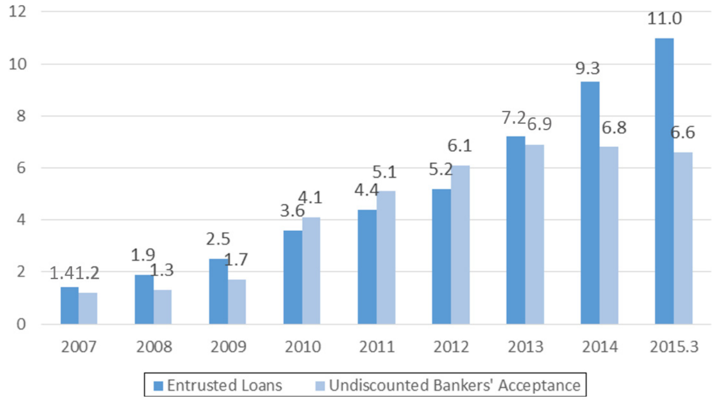

Figure 8.
Entrusted loan and undiscounted bankers' acceptances

Note: RMB trillion
Source: Sheng and Soon (2015)

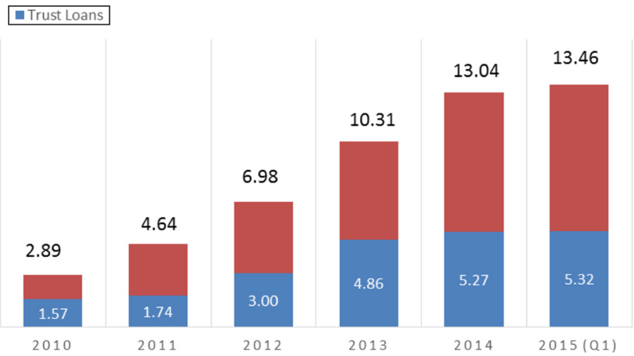

Figure 9.
Trust fund scale and loans

Note: RMB trillion
Source: China trustee association

the cost of borrowing in the Wenzhou underground lending market ranged between 21 to 25 per cent from mid-2011 to mid-2012. This market, as indicated in Table II, is 3.4 RMB trillion in size, although the actual size is quite difficult to determine.

4. Shadow banking and commercial banking interconnections

It is important to realize that China's shadow banking sector is substantially financed by the commercial banking sector. According to Sheng and Soon (2015, pp. 90-91):

> […] the trust company sector (now the second largest financial sector in China after commercial banks) is estimated to have 70 per cent of total funds sourced from banks. Microcredit companies source around 50 per cent of their funding from the banks. Private money lenders also borrow funds at official rates from banks and lend out in the usury market. In other words, as shadow banks cannot fund directly from the public, they source funding from the banking system or sell WMPs to rich corporations and investors.

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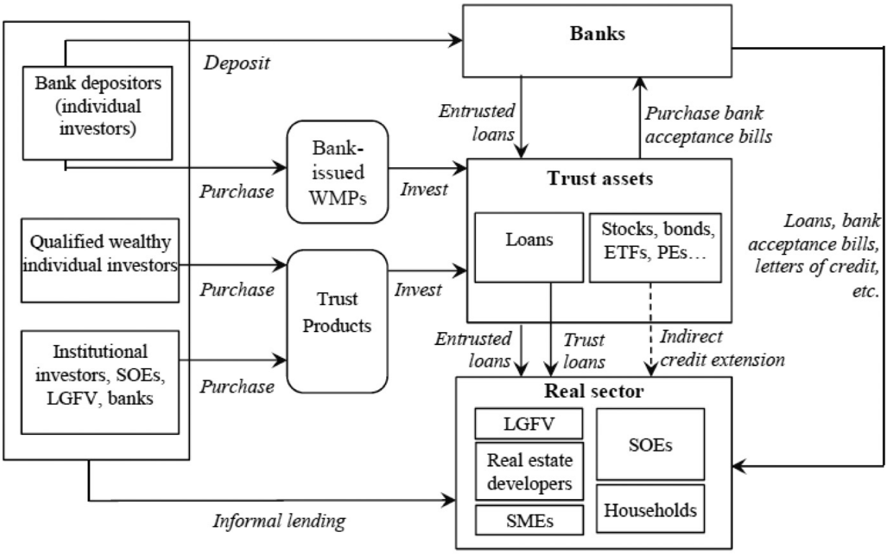
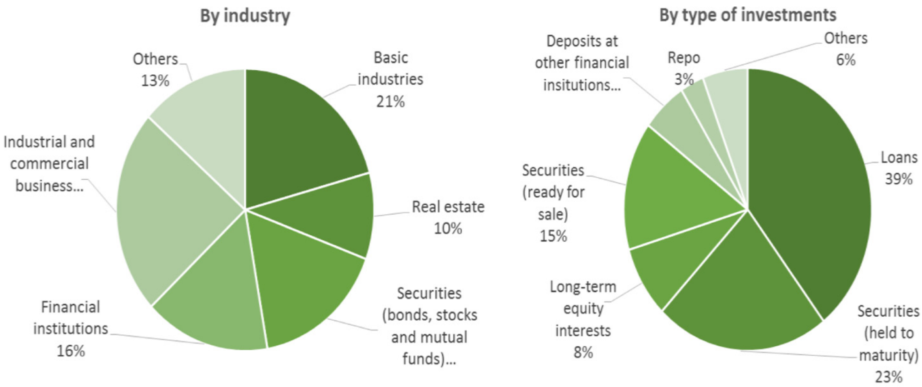


Source: Li (Cindy) (2013)

Figure 10. Illustration of trust companies' business model



Note: As of first quarter of 2015
Source: China trustee association

Figure 11. Composition of trust companies' assets under management

This means that there are significant interconnections between the shadow banking sector and the commercial banking sector. Because China has been a predominately banking-oriented financial system, the growth of the shadow banking system has provided more diverse overall financial sector. At the same time, however, any problems that arise in one part of the system may spread to other parts of the system. Figure 12 illustrates China's shadow banking–commercial banking nexus and draws upon some of the information presented in Table II.

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5. Comparative growth in shadow banking

The International Monetary Fund (IMF) has noted that shadow banks have become an important source of financing in China as a natural outcome of a reform process to diversify a bank-dominated financial system. It has also therefore been a contributor, along with money growth, to economic growth, as shown in Figure 13. As may be seen, as growth in the money supply (M2) declined substantially after 2009, growth in the shadow banking sector increased significantly. This to some degree increased the

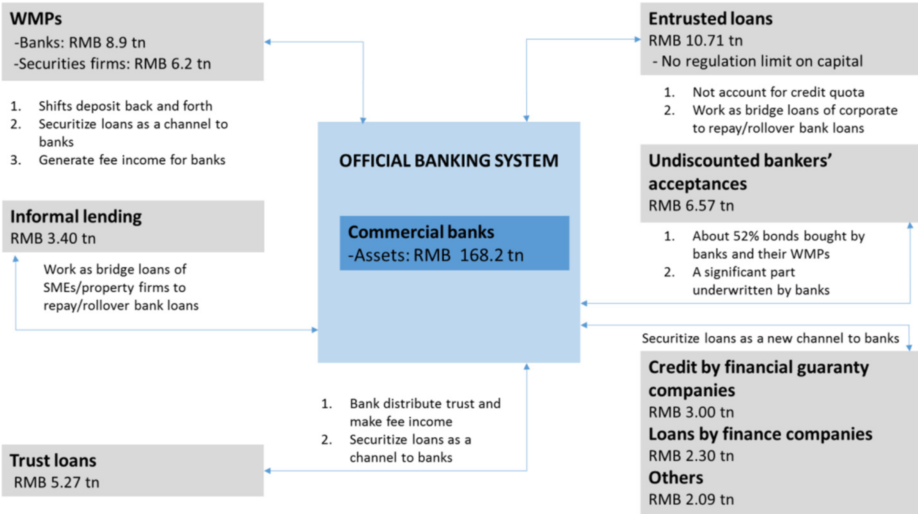

Figure 12. China's shadow banking–commercial banking nexus

Source: Sheng and Soon (2015) Table II and People's Bank of China

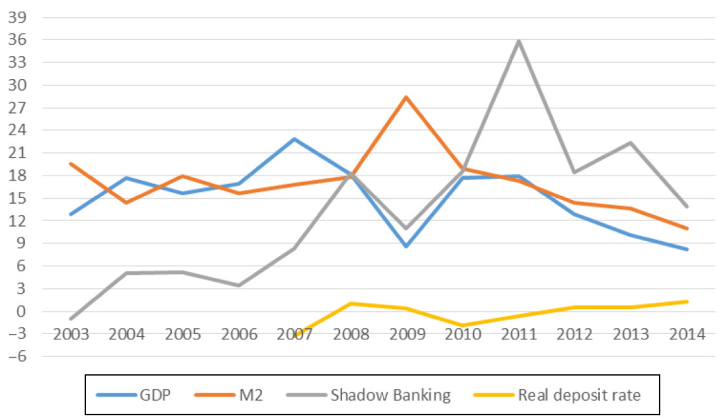

Figure 13. Shadow banking recently outpaces nominal GDP growth (per cent)

Note: Shadow banking components include entrusted loan, trust loan and undiscounted banker's acceptances in the TSF. It has slowed recently but remains above nominal GDP growth, leading to rising average

Source: Songcheng (2013), and Table II

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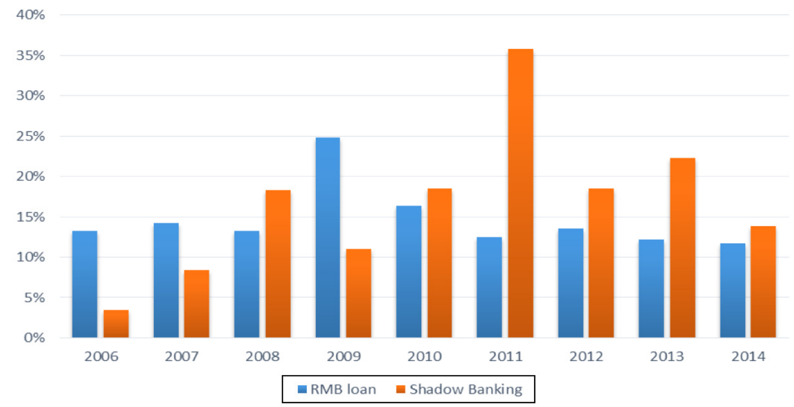
supply of credit and thereby helped to offset slower growth in the money supply. Indeed, the money supply declined from a growth rate of 28 per cent in 2009 to only 14 per cent in 2013. At the same time, the growth rate in shadow banking increased from 11 per cent in 2009 to 19 per cent and then to 36 per cent in 2011. Subsequently, it rose somewhat to 22 per cent in 2013 before declining to 14 per cent in 2014. The comparative growth rates in bank credit in shadow banking are shown more vividly in Figure 14.

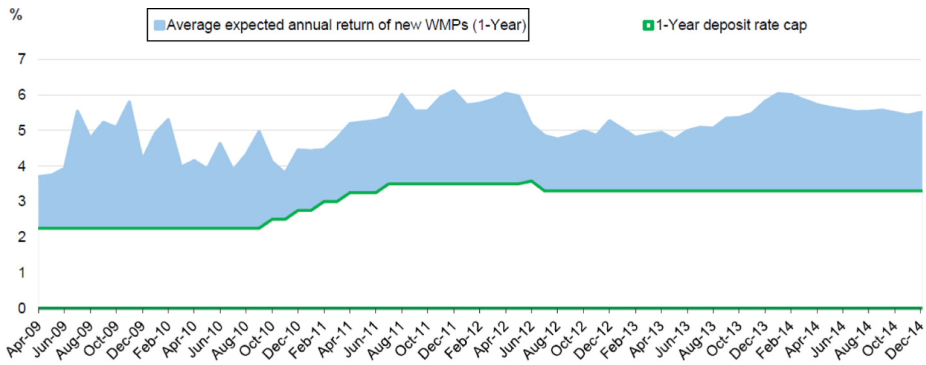
6. Factors driving growth in shadow banking

The participants in the shadow banking sector rely on liquidity transformation or credit transformation or high leverage when conducting business. It has been pointed out that they make use of low-interest, short-term funds, usually borrowed from the wholesale



Note: Shadow banking components include entrusted loan, trust loan and undiscounted bankers' acceptances
Source: Summary of sources and uses of funds of financial institutions, People's Banks of China

Figure 14. Post-crisis growth of bank credit and shadow banking (per cent, y/y)



Source: Moody's Investor Service (2015)

Figure 15. Funding costs are higher than deposit rate

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money market and then invest in long-term assets or projects to get higher returns. Figure 15 shows the average expected annual return of new WMPs as compared to the one-year nominal deposit rate cap set by the regulatory authorities. It is clear that there has been a substantial positive gap between the expected return on WMPs and the allowable rate on commercial bank deposits. It should also be pointed out that the real deposit rate was negative in 2007, 2010 and 2011 and either 1 per cent or 0 in intervening years and after 2011 through 2014. It is therefore no surprise that there was a strong

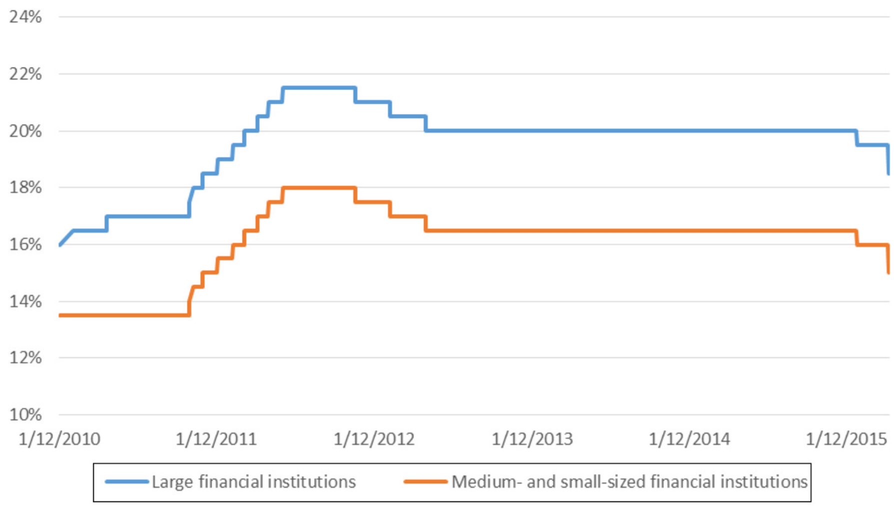

Figure 16. Reserve requirement ratios, 2010-2015

Note: Percent of deposits
Source: People's Bank of China

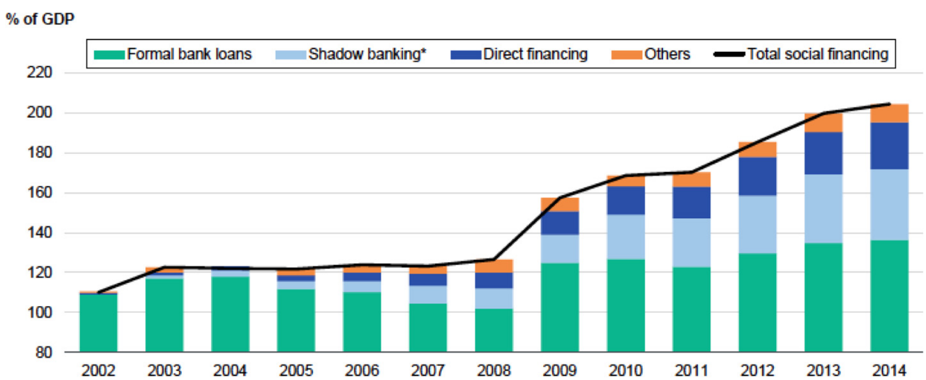

Figure 17. Shadow banking stabilizing as share of overall credit

Note: Shadow banking components include entrusted loan, trust loan and undiscounted bankers' acceptances in the TSF
Source: Moody's Investor Service (2015)

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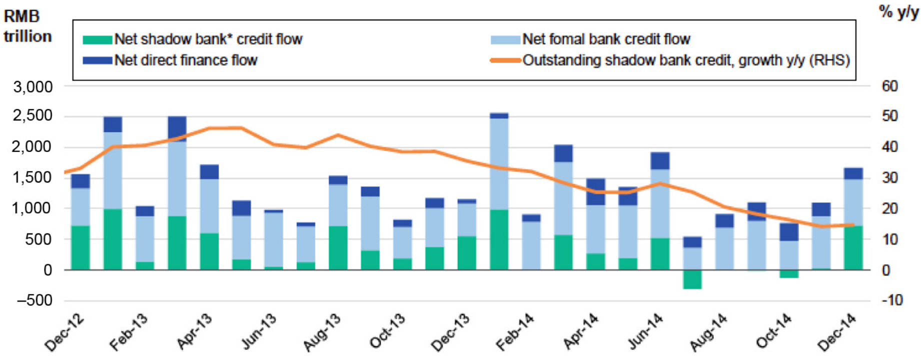
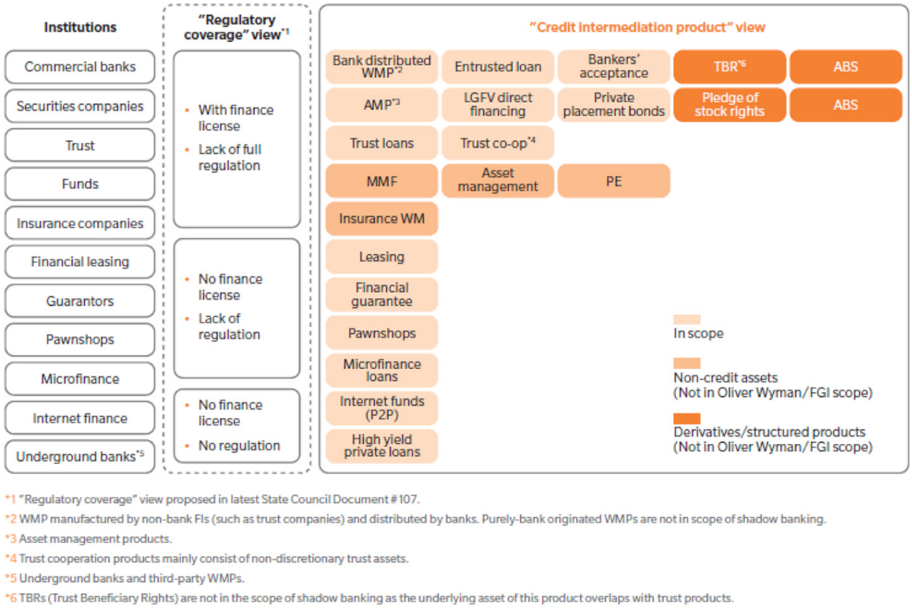
market demand for higher-yielding saving/investment products by China's household and corporate savers (Sheng and Soon, 2015).

At the same time, there were regulatory limitations placed on commercial banks that impeded their ability to supply as much credit after 2009. As Figure 16 shows, reserve requirement imposed on banks were raised on financial institutions beginning in 2010



Note: Shadow banking components include entrusted loan, trust loan and undiscounted banker's acceptances in the TSF
Source: Moody's Investor Service (2015)

Figure 18. Recent credit flows have been sustained by bank lending



Source: Oliver Wyman and Fung Global Institute (2015)

Figure 19. Shadow banking product mapping

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and kept relatively high for a few years before being lowered again in 2015. This action, of course, restricted the extent to which commercial banks could extend credit.

Moody's investor service has recently issued a report indicating that China's shadow banking sector has recently been stabilizing as share of overall credit and that formal bank loans have increased somewhat, thereby offsetting to some degree be slow down in the growth of shadow banking. These recent developments are indicated in Figures 17 and 18.

7. The regulation of shadow banking

At the present time, China's shadow banking is relatively small by global standards and, thus, is more a domestic problem than a threat to the global financial system. In this regard, Yan and Li (2014) point out that China's shadow banks and shadow banking activities have the following common features:

Table III. Regulatory measures to curtail shadow banking risks

Date	Key regulatory developments
January 2014	The China Banking Regulatory Commission (CBRC) tightens regulations on shadow banking activities for banks, trust companies, microfinance companies and credit guarantee companies.*
April 2014	The CBRC strengthens supervision of trust companies, banning non-standardized capital pool operations that involve covering payouts from maturing WMPs with the proceeds from sales of new WMPs
May 2014	Three financial regulators (CBRC, CSRC and CIRC), together with PBOC and SAFE, jointly announce new measures on monitoring interbank business among banks and other financial institutions
July 2014	The CBRC further tightens regulations on banks' wealth management products, including establishing an independent department for supervision and prohibiting banks from intra-trading WMPs with the aim of improving the performance of their portfolios. This is another step the authority has taken to break the practice of "Rigid Redemption" of WMPs and enhance the risk awareness of investors in WMPs
December 2014	The CBRC announces plans to encourage banks to invest funds raised through WMPs directly, rather than engaging the services of trust and security companies to reduce risky lending in the shadow banking market. Among other things, banks are to be encouraged to set up their own investment accounts for funds raised from WMPs
	The CBRC and MOF announce plans to establish an insurance fund for the trust sector, financed through funds from trust companies
	The Asset Management Association of China announces draft proposals to prohibit the packaging of local government debt in asset backed securities as a way of discouraging a further build up of local government debt and to enhance financial stability in the securitization market
January 2015	The CBRC seeks to tighten regulation of entrusted (company-to-company) loans through proposals to disallow firms from relending bank loans and to prohibit borrowers of such funds from investing in financial assets, such as WMPs, bonds and equity

Source: Moody's Investor Service (2015)

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WMP	CBRC requires banks to limit the investment of wealth management product proceeds in credit-related assets at any time to below the lower of 35% of WMP fund balance or 4% of banks' total assets CBRC: Banks are also prohibited from providing explicit or implicit guarantee to these non-standardized credit assets (which include loans, trust loans, entrusted loans, bank acceptances, letter of credit, receivables, equity investments with repo clause, etc.) CBRC: Separate accounting is required for each product. Any change of asset quality needs to be disclosed to investors within five days CBRC: Banks' on-sale of other institutions' products need to be approved by their headquarters PBOC bans bond trading between banks' proprietary book and WMP accounts and requires banks to have separate accounts for every WMP
Bank off-balance-sheet assets	CBRC requires global systemically important banks and banks with total assets (on- and off-balance-sheet) of over RMB1.6 TN to disclose 12 indicators by end-July every year. These indicators include on- and off-balance-sheet assets, interbank assets and liabilities, financial instruments issued, trade payment, entrusted assets, underwriting business, derivatives, trading and Available for Sale (AFS) securities, Tier 3 assets and cross-border assets and liabilities
Trust	CBRC requires trust products to discontinue the asset/fund pool business model CBRC plans to launch a registry system for trust products and make trust company staff (including project managers, project companies, department heads and shareholders) liable for trust projects for life
LGFV	CBRC requires banks • not to increase bank loan exposure to LGFVs • incorporate bonds, trust products and wealth management products into the calculation of total LGFV exposure • centralize the approval to their headquarters regarding LGFV bond purchase • stop providing guarantee to LGFV bonds. In addition, banks need to contain the share of LGFV loans which are less than 100% cash flow covered or debt/asset ratio is over 80% New LGFV loans should be extended mainly to provincial-level LGFVs, social housing projects and central government projects For LGFV loans maturing this year (2013), banks need to work with borrowers and local governments and submit detailed loan collection plans by the end of May. The final notice has slightly loosened the requirements compared to the draft issued previously
Shadow banking	The State Council's guidelines call for tighter regulation of banks' off-balance-sheet lending and specify that trust companies should return to their original purpose as asset managers and not engage in "credit-type" business

Source: Sheng and Soon (2015)

Table IV. Regulations on China's shadow banking system

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- they involve liquidity transformation or credit transformation or high leverage;
- they are subject to insufficient or no regulation, do not have access to the central bank's lender of last resort facility and are not subject to capital requirements, loan to deposit ratios or loan loss provisions; and
- they have complicated structures/inter-linkages with other financial institutions and commercial banks and thus have the potential to cause systemic risks.

These characteristics are captured in Figure 19.

Given these characteristics, even though shadow banking can contribute to economic growth, it must be carefully monitored and subject to prudential regulation. Table III indicates that the regulatory authorities have recently taken steps to curtail the risk associated with bank's off-balance-sheet WMP assets. More broadly, Table IV shows the regulations adopted to do with the different components of the shadow banking system.

8. Conclusion

Shadow banking has become an ever more important development in many countries around the world in recent years. This has been the case in China as well, though not nearly to the extent in such countries as the USA. Because China has a heavily oriented banking system with fairly strict limits on interest rates that can be paid on deposits, it is no surprise that less regulated financial firms took advantage of an opportunity to offer higher rates of return and help expand the overall availability of credit. The problem that arises, however, is that if the shadow banking sector was to encounter serious difficulties, then they may be transmitted throughout the commercial banking system and thereby contribute to a systemic crisis. To limit the possibility, China has recently enacted various rules and regulations governing the operations of not only shadow banks but also the allowable interrelationships between commercial banks and shadow banks. Shadow banking may, therefore, prove useful by diversifying China's financial sector and providing greater investments and savings opportunities to consumers and businesses throughout the country, if the risks of shadow banking are adequately monitored and controlled.

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Appendix 1

Table AI. Estimates of the size of the Chinese shadow banking system

Source	Estimate period	Report date	RMB (trillion)	USD (trillion)	% of GDP	Description of components
Fung global institute	12/31/2014	3/15/2015	32.2	5.2	51% of 2014 GDP	Our estimate encompasses trusts, banks' WMPs, entrusted loans, undiscounted banker's acceptance, trust products/loans, securities firms' AMPs, microcredit companies, pawnshops, P2P lending, financial guarantee, financial leasing and private/informal lending as shadow banking activities. It should be noted that the simple addition of different products and assets of shadow banking activities with specific characteristics inevitably introduces the element of double counting
Moody's	12/31/2014	1/15/2015	45	7.3	71% of 2014 GDP	Shadow banking components include entrusted loan, trust loan and undiscounted bankers' acceptances in the TSF
IMF	3/2014	10/14/2015	19.9	3.3	35% of 2014 GDP	Total social financing less bank loans, equity-like items and bond issuance. Entrusted loans and trust loans account for a "large share of shadow bank social financing"

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Source	Estimate period	Report date	RMB (trillion)	USD (trillion)	% of GDP	Description of components
Fung global institute	12/31/2013	3/15/2015	30.1	4.8	53% of 2013 GDP	See FGI 2014
Moody's	12/31/2013	9/22/2014	37.7	6.2	66% of 2013 GDP	Entrusted loans, trust loans, informal lending, wealth management products, bankers' bills acceptances, credit by financial guaranty companies, loans by finance companies, financial leasing, microcredit, pawn shop loans and asset-backed bonds
Financial stability board	12/31/2013	10/14/2014	18.2	3	31.2% of 2013 GDP	Intermediation conducted by non-bank financial institutions excluding insurance companies, pension funds and public financial institutions
UBS	12/31/2013	3/14/2014	28.4-39.8	4.7-6.6	50-70% of 2013 GDP	Range based on three different definitions of shadow banking. All definitions include trust and entrusted loans, commercial bills, other trust assets and "Other" items. Definitions vary based on inclusion of informal lending and corporate bonds not held by banks

(continued)

Table AI.

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Table AI.

Source	Estimate period	Report date	RMB (trillion)	USD (trillion)	% of GDP	Description of components
Standard chartered	12/31/2013	3/14/2014	4.6-12.5	0.7-2.1	8-22% of 2013 GDP	Defined as "credit intermediation by non-bank institutions" and excluding inter-company lending and bond issuance, shadow banking would consist of trust loans, estimated at 8% of 12/31/2013 GDP; if under reporting of trust activity is assumed that figure may be closer to 12 to 14%; if P2P lending, which is estimated at approximately 8% of GDP, is also included then the previous figure ranges from 20-22%
JP Morgan	12/31/2013	1/14/2014	46	7.5	80.9% of 2013 GDP	N/A
Chinese academy of social sciences	12/31/2013		27	4.45	47.5% of 2013 GDP	Used "narrow definition" with only banks' wealth management products and trust companies' trust products
Emerging advisors group	9/2013	02/2013	22.8	3.7	40% of 2013 GDP	Using "standard international definition of shadow banks" as "formal non-bank entities that carry out bank-like credit activities", including credit from trusts and direct credit from financial companies other than banks

(continued)

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Table AI.

Source	Estimate period	Report date	RMB (trillion)	USD (trillion)	% of GDP	Description of components
Fung global institute	12/31/2012	3/15/2015	22.5	3.6	43.3% of 2012 GDP	See FGI 2014
Moody's	12/31/2012	5/13/2013	29	4.65	55% of 2012 GDP	The report estimates that core Chinese shadow banking products–those that are relatively non-transparent, loosely regulated and carry elevated credit risk–totaled a large RMB21 trillion at 12/31/2012, or 39% of 2012 GDP To gain a wider perspective on potential risks, Moody's considers it prudent to also monitor a wider range of instruments that facilitate non-bank credit extension. This broader approach to shadow banking leads to an estimate of RMB29 trillion (55% of GDP) in products at 12/31/2012
Chinese academy of social sciences	12/31/2012	10/9/2013	16.9	3	36% of 2012 GDP	Used "narrow definition" with only banks' wealth management products and trust companies' trust products

(*continued*)

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Table AI.

Source	Estimate period	Report date	RMB (trillion)	USD (trillion)	% of GDP	Description of components
JP Morgan	12/31/2012	5/13/2013	36	5.8	69% of 2012 GDP	Broad definition of all "non-bank credit intermediation" applied. This definition includes investments made by trust companies, entrusted loans, bankers acceptances, wealth management products, intermediation by other financial institutions (OFIs) and underground lending
Bangkok Bank	12/31/2012	3/14/2013	36.4	6	70% of 2012 GDP	"Shadow banking is high-yield lending outside normal bank lending channels"
Fitch ratings	12/31/2012	4/13/2013	31.2	5	60% of 2012 GDP	Main components include peer-to-peer lending, trust loans and bankers acceptances
Standard & Poor's	12/31/2012	4/13/2013	22.9	3.7	44.4% of 2012 GDP	Wealth management products, trust company products, entrusted loans and private loans
Deutsche Bank	1/2013	1/13/2013	20	3.2	38% of 2012 GDP	N/A

(*continued*)

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Source	Estimate period	Report date	RMB (trillion)	USD (trillion)	% of GDP	Description of components
China International capital corporation	4/2013	4/13/2013	27	4.4	52% of 2012 GDP	N/A
GaveKal Drogonomics	12/31/2012	4/12/2013	19	3	36.6% of 2012 GDP	Includes microfinance, private lending, trust loans, designated loans, letters of credit and bankers' acceptances (net)
UBS	9/31/2012	10/12/2013	24.4	3.8	46.5% of 2012 GDP	Based on broad definition, including outstanding commercial bills, trust and entrusted loans included in TSF, trust assets not included in TSF, informal lending and corporate bonds not held by banks
GaveKal Drogonomics	6/30/2011	9/11/2013	17	2.5	35.9% of 2011 GDP	Includes microfinance, private lending, trust loans, designated loans, letters of credit and bankers' acceptances (net)
UBS	6/30/2011	10/11/2013	10	1.5	23.6% of 2010 GDP	"Shadow banking refers to non-bank loans such as entrusted loans, trust loans, credit guarantees and private lending"

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