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Shadow Banking, Financial Risk and Regulation in China

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3. The Shadow Banking System in China and the United States
4. Potential Risks and Regulations of the China's Shadow Banking System
5. Conclusion

Bibliography
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Declaration of Utilisation of Results from the Diploma Thesis
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References:

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The declaration

"Herewith I declare that I elaborated the entire thesis, including all annexes, independently"

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Contents

1 Introduction

Shadow banking is a phenomenon that is expanding so rapidly in China and the other parts of the world. As a financial innovation under the circumstance of the ‘‘financial repression”, the appearance of shadow banking reduced the indirect financing of the commercial bank to total social financing ratio. The financial crises that occurred in 2007 has increased people’s awareness and highlighted the importance of shadow banking system. China’s mounting shadow banking system has acted a substitute for financing within the formal financial system. On the one hand, it can enrich the channels of financing and investments and promote the interest rate linearization. On the other hand, the shadow banking system has been weaking and challenging the Chinese central bank’s monetary policy. China has actively involved in the global financial system and be an influential economy power since last three decades. Major default in the Chinese shadow banking system could affect the world’s financial markets in the same manner ［that the financial bubble created after Lehman Brothers in the US in 2007 lead to the world’s financial crisis］(Sebastian,2015). Thus, it becomes so important to enhance the regulation of the shadow banking finance in order to avoid the risk.

The aim of the thesis is to identify both the positive effect of the shadow banking bring and more importantly the potential risks of this activity. Then, we propose several solutions to reduce the risk. As research methods, we use the comparison approach to compare the shadow banking situation in China and the United States (US) and the qualitative method of investigating the case of shadow banking in the Chinese economy.

The thesis is made up of five main parts. The first Chapter is the basic introduction and the overview of the shadow banking problem. The second Chapter we illustrates the overall theoretical background of the banking system, the non-banking financial institution, securitization and the shadow banking. In the third Chapter we compare the similarities and differences of shadow banking in China and the United States (US). As the China's and the US shadow banking systems differ widely in many aspects, for example, the size of shadow banking system are different. And the financial products and financial intermediates which participate in their shadow banking system are different. In the fourth Chapter, we demonstrate the primary financial products and activities that have been actively participating in the China's shadow banking system. We illustrate all potential risks connected to these financial products and activities. Then, we put forward several solutions to reduce the risks. At very last, in Chapter five, we conclude that the China's shadow banking system is a growing problem in a booming economy. The main risks faced by Chinese banks stem from the shadow banking sector, the housing market and the quality of bank loans to local authorities. These parts of economies are connected to each other which creates extra risk. Thus, we present several possible solutions to the risk by the means of enhanced regulation. Overall, through this thesis, we present the China's shadow banking finance systematically and comprehensively.

2 Theoretical background of the shadow banking system

2.1 Traditional banking system

The banking business has experienced substantial change over the last 30 years or so as banks have transformed their operations by relatively narrow activities to full-service financial firms. According to Casu and Girardone (2006), the banking system is the structural network of institutions that offer financial services within a country. There are three major participation roles in the banking systems that are central banks, commercial banks, and investment banks respectively. Besides, we should always give importance to the regulation authority in the banking system within the board.

2.1.1 Central bank

2.1.1.1 The objectives of central bank

The Central bank is the principal monetary authority of a country or a group of countries and crucial to the functioning of all banks, financial markets, and the economy. Based on Casu (2006) central banks are focusing on the behavior and operation of banks. Central banks exist to ensure the safety and soundness of its country's financial system. For example, there are the European Central Bank (the European Union), the People's Bank of China (China), and the Federal Reserve System (the United States).

2.1.1.2 The roles and basic functions of a central bank

Casu et al. (2006) state that the core functions of central banks in any countries are: to manage monetary policy with the aim of achieving price stability, to prevent liquid crises, situations of money market disorders and financial crises, and to ensure the smooth functioning of payment system.

Their daily activities contain buying and selling government debt, determining and maintaining interest rates, setting reserve requirement levels, issuing currency, regulating and supervising banks and arranging payments between banks. Some central banks are also charged with maintaining certain foreign exchange rate levels for the home currency.

2.1.2 Commercial bank

2.1.2.1 The objectives of a commercial bank

Commercial banks are the major financial intermediary in any economy. From Mishkin (2013) we will know the primary objective of a commercial bank is to generate profitability for its ownership by providing quality based products and services to the residents of the communities and regions that they represent. Commercial banks are essential banks that are in the classic banking business of accepting deposits and making loans.

2.1.2.2 The roles and basic functions of commercial bank

Casu (2006) presents that commercial bank performing many functions: they satisfy the financial needs of the sectors such as agriculture, industry, trade, communication, so they play very significant role in a process of economic, social needs. The functions performed by banks, since recently, are becoming customer-oriented, and their functions have been widening.

They are the leading providers of credit to the household and corporate sector and operate the payments mechanism. Commercial banks are typically joint stock companies and may be either publicly listed on the stock exchange or privately owned. Commercial banks deal with both retail and corporate customers, have the well diversified deposit and lending books and offer a full range of financial services. The largest banks in most countries are commercial banks, and they include household names such as Citibank, HSBC, Deutsche Bank and Barclays. While commercial banking refers to institutions whose primary business is deposit taking and lending it should always be remembered that the largest commercial banks also engage in investment banking, insurance, and other financial services areas. They are also the key operators in most countries' retail banking markets.

2.1.3 Investment bank

2.1.3.1 The objectives of an investment bank

In the beginning, according to Mishkin (2013), investment bank was to help companies to raise capital through equity offerings and debt issuance and to advise and assist with mergers and acquisitions. Since then the role of the investment bank has evolved and expanded dramatically. These days, investment banks are involved with their original suggests, but they are also performing much more diversified activities. Investment banks mainly deal with companies and other large institutions, and they typically do not deal with retail customers apart from the provision of up market private banking services as noted earlier.

2.1.3.2 The roles and basic functions of an investment bank

Though the spotlight has recently been put on the investment banks role in creating highly leveraged debt instruments, their primary function is still to help corporations to raise capital. Mishkin (2013) explained that when a company needs additional capital it can go about raising it in two ways. The primary markets for securities are not well known to the public because the selling of securities to initial buyers often takes place behind closed doors. An important financial institution that assists in the initial sale of securities in the primary market is the investment bank. It does this by underwriting securities. It guarantees a price for a corporation's securities and then sells them to the public. The investment bank can sell equity in the company in the form of a stock offering, or they can offer advice on the issuance of debt, or bonds, by the company. In some cases, this issuance of equities or debt is placed privately, in other words the instruments are not offered in the open markets, but are rather sold to private individuals or companies. If this is the case, the investment bank often acts as a broker by bringing together the two involved parties. These private transactions include not only private equity investments and private debt placements, but also merchant banking services, strategic investments, and venture capital investments. Note that sometimes financial advisory and underwriting is referred to as investment banking to distinguish this from trading and other securities-related business. It is also important to remember that investment banks do not hold retail deposits and their liabilities are mainly securities and short-term wholesale financing.

2.2 Non-bank financial institution

2.2.1 The roles and basic functions of non-bank financial institution

It is agreed that financial intermediation through nonbank channels provides some benefits, and hence can constitute a useful part of the financial system (FSB 2011a; Pozsar 2010). A non-bank financial institution (NBFI) is a financial institution that does not have a full banking license or is not supervised by a national or international banking regulatory agency. In the world's economy, nonbank finance also plays an important role in channeling funds from lender-savers to borrower-spenders. Carmichael (2002) states that NBFIs facilitate bank-related financial services, such as investment, risk pooling, contractual savings, and market brokering. Examples of these include insurance firms, pawn shops, cashier's check issues, check cashing locations, payday lending, currency exchanges, and microloan organizations.

Non-bank financial institution offer most sorts of banking services, such as loans and credit facilities, private education funding, retirement planning, trading in money markets, underwriting stocks and shares, TFCs (Term Finance Certificate) and other obligations. These institutions also provide wealth management such as managing portfolios of stocks and shares, discounting services e.g. discounting of instruments and advice on merger and acquisition activities. The number of non-banking financial companies has expanded considerably in the last several years as venture capital companies, retail and industrial companies have entered the lending business. Non-bank institutions also frequently support investments in property and prepare feasibility, market or industry studies for companies. However, they are typically not allowed to take deposits from the general public and have to find other means of funding their operations such as issuing debt instruments.

2.2.2 The regulation of non-bank financial institution

These non-bank financial institutions are typically restricted from taking deposits from the public depending on the jurisdiction. Nonetheless, operations of these institutions are often still covered under a country's banking regulations. Regulation is needed to ensure consumers' confidence in the financial sector. According to Llewellyn (1999), the main reasons for financial sector regulation are to ensure systemic stability, provide retail clients with protection; and protect consumers against monopolistic exploitation.

2.3 The innovation of financial instruments

According to Mishkin (2013), although banking institutions are still the most important financial institutions in the U.S. economy, in recent years the traditional banking business of making loans that are funded by deposits has been in decline. Some of this business has been replaced by the shadow banking system, in which bank lending has been replaced by lending via the securities markets. To understand how the banking industry has evolved over time, we must first understand the process of financial innovation, which has transformed the entire financial system. Like other industries, the financial industry is in business to earn profits by selling its products. If a soap company perceives that a need exists in the marketplace for a laundry detergent with fabric softener, it develops a product to fit the need. Similarly, to maximize their profits, financial institutions develop new products to satisfy their needs, as well as those of their customers. Starting in the 1960s, individuals and financial institutions operating in financial markets were confronted with drastic changes in the economic environment: Inflation and interest rates climbed sharply and became harder to predict, a situation that changed demand conditions in financial markets. The rapid advance in computer technology improved supply conditions. In addition, financial regulations became more burdensome. Financial institutions found that many of the old ways of doing business were no longer profitable; the financial services and products they had been offering to the public were not selling. Many financial intermediaries found that they were no longer able to acquire funds with their traditional financial instruments, and without these funds they would soon be out of business. To survive in the new economic environment, financial institutions had to research and develop new products and services that would meet customer needs and prove profitable, a process referred o as financial engineering. In their case, necessity was the mother of innovation.

2.3.1 Securitization

Today, however, the definition of securitization has taken on a more specific meaning. As stated by Lumpkin (1999, p. 1):“ More recently, the term has been used to refer to so-called “structured finance,” the process by which (relatively) homogeneous, but illiquid, assets are pooled and repackaged, with security interests representing claims to the incoming cash flows and other economic benefits generated by the loan pool sold as securities to third-party investors.” Fabozzi (2008) presents a detailed definition of securitization; this definition encompasses the following characteristics: “A securitization differs from these traditional forms of financing in several important ways. The key in a securitization is that the cash flow generated by the asset pool can be employed to support one or more securities that may be of higher credit quality than the company’s secured debt. The higher credit quality of these securities is achieved by relying on the cash flow created by the pool of assets rather than on the payment promise of the borrowing firm, such cash flows having been isolated in a bankruptcy remote structure and “credit enhanced” using several credit enhancement techniques”. Moreover, in relying on the liquidation value of the collateral, the lender assumes that in a bankruptcy proceeding the distribution of assets will be based on the principle of absolute priority (i.e. secured lenders are repaid before unsecured lenders and equity investors receive any proceeds). However, while this is the case in a liquidation of a corporation, the principle of absolute priority typically does not hold in a corporate reorganization.[1]

2.3.2 Securities issued in a securitization

According to Fabozzi (2008), the SPV (special suggest vehicle) is structured as a bankruptcy-remote entity, thus insulating the transaction from the credit risk of the originator. The term used to describe the securities issued by the SPV in a securitization are referred to as asset-backed notes, asset-backed bonds, or asset-backed obligations. When the security is short-term commercial paper, it is referred to as asset-backed commercial paper (or ABCP). Asset-backed securities can have different credit exposure and based on the credit priority, securities are described as senior notes and junior notes (subordinated notes). In the prospectus for a securitization, the securities are referred to as certificates: pass-through certificates or pay-through certificates. The distinction between these two types of certificates is the nature of the claim that the certificate holder has on the cash flow generated by the asset pool. If the investor has a direct claim on all of the cash flow and the certificate holder has a proportionate share of the collateral's cash flow, the term pass-through certificate (or beneficial interest certificate) is used. When there are rules that are used to allocate the collateral's cash flow among different bond classes, the asset-backed securities are referred to as pay-through certificates.

[1] See, for example, Meckling (1977) and Miller (1977).

2.3.3 Securitization Products

From Joseph (2011), securitized products represent a complicated sector of the fixed-income market. These products are pools of financial assets. These are brought together to make a new security, which is then divided and sold to investors. Because the value and cash flows of the new asset are based on its underlying securities, these investments can be hard to analyze.

2.3.3.1 Mortgage-Backed Security (MBS)

According to the definition of Frank J. Fabozzi (2011), Mortgage-Backed Security is a type of asset-backed security that is secured by a mortgage or collection of mortgages. These securities must also be grouped in one of the top two ratings as determined by an accredited credit rating agency, and usually pay periodic payments that are similar to coupon payments.

2.3.3.2 Asset-Backed Security (ABS)

An asset-backed security (ABS) is a security whose income payments and hence the value is derived from and collateralized (or "backed") by a specified pool of underlying assets. The pool of assets is typically a group of small and illiquid assets that are unable to be sold individually.

2.3.3.3 Asset-backed commercial paper (ABCP)

The asset-backed Commercial paper is a short-term investment vehicle with a maturity that is typically between 90 and 180 days. The security itself is typically issued by a bank or other financial institution. The notes are backed by physical assets such as trade receivables and are generally used for short-term financing needs.

2.3.3.4 Pass-through Certificates (PTC)

Pass-through certificate (PTC) is an instrument that evidences the ownership of two or more equipment trust certificates. In other words, equipment trust certificates may be bundled into a pass-through structure as a means of diversifying the asset pool and increasing the size of the offering. The principal and interest payments on the equipment trust certificates are "passed through" to certificate holders. Pass through certificate is an instrument that signifies transfer of an interest in receivables in favor of the holder of the Pass through Certificate.

2.3.3.5 Collateralized debt obligations (CDOs)

CDOs, or Collateralized Debt Obligations, are sophisticated financial tools that banks use to repackage individual loans into a product that can be sold to investors on the secondary market. These packages consist of auto loans, credit card debt, mortgages or corporate debt. They are called collateralized because the promised repayment of the loans is the collateral that gives the CDOs value.

2.3.3.6 Repurchase agreements (Repos)

Repurchase agreements it's a form of short-term borrowing for dealers in government securities. The dealer sells the government securities to investors, usually on an overnight basis, and buys them back the following day. For the party selling the security (and agreeing to repurchase it in the future) it is a repo; for the party on the other end of the transaction, (buying the security and agreeing to sell in the future) it is a reverse repurchase agreement.

2.4 Shadow Banking

The current financial crisis has highlighted the growing importance of the shadow banking system, which grew out of the securitization of assets and the integration of banking with capital market developments. This trend has been most pronounced in the United States, but it has had a profound influence on the global financial system.

There are numerous definitions of the shadow banking in the literature. The FSB (2013, p. 5) broadly describes the shadow banking system"… *as the system of credit intermediation that investors entities and activities fully or partially outside the regular banking system, or non-bank credit intermediation in short."* Shadow banking is a loose term that refers to the provision of financing outside of traditional Banking channels, Former Federal Reserve Chair Ben Bernanke (2012) provided a detailed definition: "*Shadow banking, as usually defined, comprises a diverse set of institutions and markets that, collectively, carry out traditional banking functions--but do so outside, or in ways only loosely linked to, the traditional system of regulated depository institutions*. *Examples of important components of the shadow banking system include securitization vehicles, asset-backed commercial paper (ABCP) conduits, money market mutual funds, markets for repurchase agreements (repos), investment banks, and mortgage companies."* There are many ways to provide financing outside the traditional banking channels. Structured finance and securitization, for examples, raise financing indirectly through the capital markets using special suggest entities (SPEs) such as asset-backed commercial paper (ABCP) conduits and structured investment vehicles (commonly known as SIVs).[2] The term shadow banking also includes the provision of financing by finance companies, hedge funds, money market mutual funds, non-bank government-sponsored enterprises, securities lenders, and investment banks. The term even includes the provision of financing by banks using non-traditional means. For example, banks sometimes create and derive fee income from SPEs, ABCP conduits, and SIVs. Banks are also important players in repo markets.

2.4.1 The roles and functions of shadow banking

Like regular banks, shadow banks provide credit and generally increase the liquidity of the financial sector. Unlike their more regulated competitors, they lack access to central bank funding or safety nets such as deposit insurance and debt guarantees.[3]Contrast to traditional banks, shadow banks does not take deposits. Instead, they rely on short-term funding provided either by asset-backed commercial paper or by the repo market, in which borrowers in substance offer collateral as security against a cash loan, through the mechanism of selling the security to a lender and agreeing to repurchase it at an agreed time in the future for an agreed price. Michelle Martin(2012) state that money market funds do not rely on short-term funding; rather, they are investment pools that provide short-term funding by investing in short-term debt instruments issued by banks, corporations, state and local governments, and other borrowers. The shadow banking sector operates across the American, European, and Chinese financial sectors, According to Bouvert (2011), shadow banks can be involved in the provision of long-term loans like mortgages, facilitating credit across the financial system by matching investors and borrowers individually or by becoming part of a chain involving numerous

[2] For an introduction to structured finance and securitization in the context of China, see Schwarcz (2012)

[3] Compare the difference business of traditional bank and shadow bank, see Hall (2009)

entities, some of which may be mainstream banks.IMF (2013) defines the two key functions of the shadow banking system as securitization – to create safe assets, and collateral intermediation – to help reduce counterparty risks and facilitate secured transactions. As they are often less risk averse than regular banks, entities from the shadow banking system will sometimes provide loans to borrowers who might otherwise be refused credit. Money market funds are considered more risk averse than regular banks and thus lack this risk characteristic.

2.4.2 The risks associated with shadow banking

As shadow banks do not take deposits, they are subject to less regulation than traditional banks. They therefore increase the rewards they get from investments by leveraging up much more than their mainstream counterparts and this can lead to risks mounting in the financial system. Unregulated shadow institutions can be used to circumvent the strictly regulated mainstream banking system and therefore avoid rules designed to prevent financial crises.

At the same time, shadow banking activities can be an important source of systemic risk. After all, the global financial crisis originated in the shadow banking sector in 2008. Since then, there has been growing recognition that despite the beneficial role it can play in providing credit, the shadow banking system may pose even greater systemic risk than traditional banking, because its activities are exposed to similar financial risks as traditional banks, but are not subject to the same degree of oversight and regulation (IMF, 2014).

2.4.2.1 The potential for excess leverage[4]

These risks include the potential for excess leverage. Activities in the shadow banking system can be highly leveraged, including through securities financing transactions (SFTs) that entail a temporary transfer of securities by a lender to a borrower on a collateralized basis. SFTs include both repo markets (in which commercial banks also participate) and securities lending transactions. The use of such nondeposit sources of collateralized funding can facilitate high levels of leverage since these assets can be used as collateral to raise more funds, which can then be used to buy more assets that in turn can be used as collateral to raise more funds (hence amplifying procyclicality). The practice that allows a prime broker to use collateral posted by, say, a hedge fund, for its own funding (rehypothecation) plays an important role in shadow banking, increasing the estimated size of the system prior to the crisis to at least 50 percent larger than had been previously documented (Singh and Aitken 2010). A defined set of customer protection rules that limit rehypothecation of assets may not exist in all countries.

2.4.2.2 Amplification of procyclicality

As noted above, practices in the shadow banking system also amplify procyclicality-that is the mutually reinforcing interactions between the financial and real sectors of the economy that tend to exacerbate business cycle fluctuations and financial sector instability. Procyclicality can arise as a result of valuation changes in collateral assets can cause

[4] The World bank.,2012. *Chasing the Shadows: How Significant Is Shadow Banking inEmerging Markets?* [online database]. [cit 24.1.2015]. Available from internet: http://siteresources.worldbank.org/EXTPREMNET/Resources/EP88.pdf

procyclicality.Rising collateral asset values increase cash/securities lent and, because the value of collateral assets is positively correlated with the business cycle, rising collateral values increase the credit availability (Credit Swiss, 2014).

2.4.2.3 Transmission of systemic risk

Shadow banking activities are often linked to the regular banking system through a complex web of interconnections. Turner (2012) presents commercial banks are often part of the shadow banking chain, or provide explicit or implicit support to the shadow banking entities to enable maturity/liquidity transformation. Also, banks often invest in financial products of shadow banks, alongside other providers of funds, such as consumers and corporations. The failure of an institution in the shadow banking sector could then generate significant contagion and affect the overall financial system stability. These bank–nonbank linkages can also exacerbate the procyclical buildup of leverage discussed above, involve "flawed credit risk transfers" through securitization and heighten risks of asset bubbles, especially when both systems invest in the same assets. Hence, even in cases where there is no direct connection; banks can be exposed to common concentrations of risks in financial markets through common holdings of assets and derivative positions (FSB, 2013).

2.4.2.4 Regulatory arbitrage and circumvention

Shadow banking activities could be used to circumvent the tighter regulations imposed on banking institutions. Provided that shadow banks are not subject to a similar set of regulations and oversight, the tightening of the regulation of risky banking activities could push such activities from the regulated banking system toward less- or unregulated shadow banks, and could even generate systemically important nonbank financial institutions. Effectiveness of regulation to reduce systemic risk and leverage is hence undermined by the shadow banking system, leaving risks intact (or even greater) in the broader financial system, especially when the two parts of the financial system remain connected through ownership or financial linkages (FSB, 2014).

2.5 Revision of the chapter

In this chapter, firstly, we illustrated the overall theoretical background of the banking system that is the central bank, commercial bank and investment bank respectively. As for each participates in the banking system, we demonstrate their objectives and functions. The non-banking financial institution is absolutely another very significant role in the financial market. We then introduced the roles and functions of the non-banking financial institution. As a non-bank financial institution (NBFI) is a financial institution that does not have a full banking license or is not supervised by a national or international banking regulatory agency. We then explained the necessity of the regulation of NBFI. Then we introduced the securitization, firstly we emphasize the motivation of securitization, the securities issued in securitization, and we specifically explained several securitization products. Since the tremendous development of securitization have been take place in the past decade in the world. It is one of the very vital factors that contribute to the shadow banking. We first introduce the definitions of the shadow banking and then we points out the risks associated with the shadow banking system. And it will be extremely urgent to regulate the shadow banking system. We will highly emphasize the regulation of shadow banking system in chapter 4 of this thesis. We then will begin the Chapter 3 which is the difference of the shadow banking system between

China and US, the biggest two economy in the world, both are facing the rising of risk of shadow banking system.

3 The Shadow Banking System in China and US

Shadow banking sector posed great influence to the world financial markets last decade. The circumstance of shadow banking finance in the United States and China – the two biggest economies in the world, are both very critical. As the shadow banking activity used to be weekly regulated, and the growth of the sector is thought to threaten financial stability. Therefore, additional regulations are necessary for both these countries. It is also important to monitor and measure their financial activities. For the US, the shadow banking industry is large and an increasingly integral part of the financial sector. For China, regulations on shadow finance are helping to curb potential the bad behaviour. But as a result of the fast growing of new and unregulated instruments or aspects of the informal financial sector may present a problem. The Chinese economy is extremely difficult to regulate but essential to control, particularly since it is closely interconnected with the rest of the world economy. This chapter contains a comparison of the shadow banking system in China and the United States, including different definition, size, causes, the potential risks and the possible regulations to the risks.

3.1 The definition of shadow banking system for China and US

Chinese regulators have not given a formal definition of shadow banking so far. There are numerous definitions of the shadow banking by some institutions and experts. So the regulators appear to follow the relatively more official definition of the shadow banking system in China. For example, the chairman of the board of directors of bank of China Xiao Gang (2012, p.1) put forward a definition: *"shadow banking can broadly be described as the system of credit intermediation involving entities and activities outside the regular banking* *system"*. Where in Chapter two there are many ways of providing financing outside of traditional banking channels. Structured finance and securitization, for example, raise financing indirectly through the capital markets using special suggest entities ("SPEs" conduits and structured investment vehicles (commonly known as SIVs) have been described in previous chapter. And we have already stated the basic definition of the shadow banking system in the Unites States (Schwarcz, 2012).

3.2 The rationale for the rapid expansion of China's shadow banking

The main causes behind the increasing shadow banking and regulatory arbitrage in China can be traced back into two aspects. On the one side, regulatory policy measures in the traditional banking system are very restrictive. So there are many companies that wish to borrow, but cannot get access to traditional bank loans. Thus, they have to find the alternative way to borrow. On the other side, the demands for private credit are becoming stronger. The saving ratio in China used to be very high, but because of by keeping interest rates artificially low; the authorities push savers to seek higher returns outside the traditional banking system (Linden, 2013).

3.3 Financiers in shadow banking system

From the viewpoint of procuring funds, According to Schwarcz (2013), Chinese-style shadow banks can primarily be attributed to the rise of real estate developers, local financing platform and strong SME financing needs since 2010. The Chinese government's macro-control of the direction of change, to a certain extent, was causing the real economic situation of relative shortage of funds. There are some industries that have been regulated more, for example, industries like real estate, local financing platform, as well as small and medium private enterprises are been posed to more seriously funding gap, which greatly spawned the development of shadow banks. Shadow banking is increasingly important in China, especially as a source of funding to small and medium-sized enterprises ("SME"s), including entrepreneurial start-up companies. This trend may reflect the unintended consequence of the Chinese regulatory policy. Chinese banking law limits bank-loan profits to percentages of the loan,[5] which makes small and medium-sized loans much less attractive than large loans. SMEs, therefore, must seek other financing sources. Chinese real estate prices rose rapidly during the second half of 2009 to the first half of 2010, which led to the Chinese government to implement the restriction order which is characterized by a new round of macro-control of the real estate industry at the beginning of 2010. There is currently a considerable debate among Chinese stakeholders about the pros and cons of shadow banking. Proponents of more shadow banking stress the increasing economic efficiency through disintermediation, i.e. providing financing outside of traditional banking channels, and diversification of the provision of financial products and services. The emergence of shadow banks is an inevitable result of financial development and innovation. As a complement to the traditional banking system, shadow banks play an active role in serving the real economy and enriching investment channels for ordinary citizens. The shift from indirect to more direct finance will improve the efficiency of fund use, and well-conceived and balanced financial reforms have maximized the benefits of shadow banking while controlling the risks involved. However, some critics argue that shadow banking is not properly regulated, and its size and rapid growth does raise debt levels and make credit flows less transparent and riskier. In the current situation, there is still a key role for the government in the allocation of investments. Lending and deposit interest rates

[5] See for example Michael F. Martin (2012).

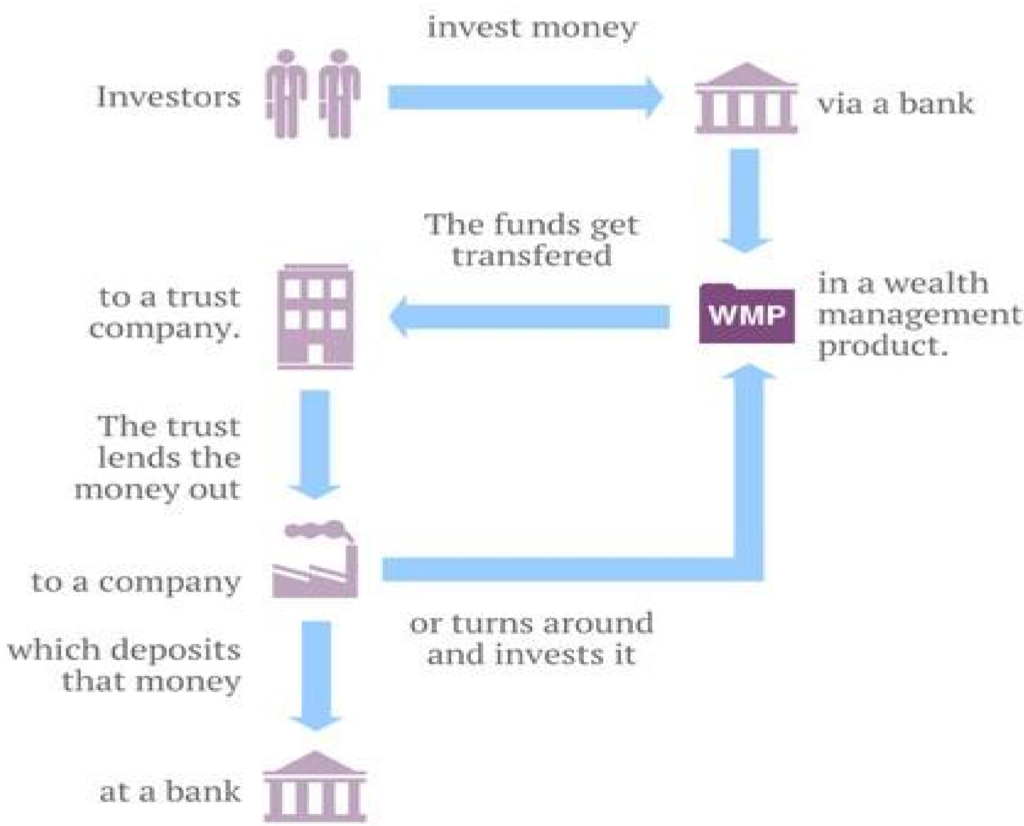
remain regulated and lending quotas are set by the government via strict loan/deposit ratio requirements. This system is widely perceived to have channeled huge capital flows to large and inefficient Stated owned enterprises in key industries such as energy, transportation, and infrastructure, many of which are facing significant overcapacity while causing difficulties for SMEs. It has become more apparent that this high level of lending to the state owned enterprise is beginning to deliver diminishing returns (The World Bank, 2012).

3.3.1 Wealth management products (WMPs)

A bank's wealth management product refers to the fund investment and management program that is designed for and sold by a commercial bank to specific target customers after analyzing customers groups (China Merchants Bank, 2015). Usually, they are four kinds of wealth management products that are principal-protected, non-principal-protected, estimated fixed -yield and estimated floating-yield. They are three steps for purchasing WMPs. The first step is that the investor should get to know the risks do exist, the level of which depends on the investment object of the corresponding product before buying. The second step is to select bank wealth management products. Investors need to understand the features of a product before buy it; for example, investors need to know whether the investment or linked object corresponds to the money market, bonds, trust loans, gold, the petroleum price, stock indices or foreign funds. They should select investment objects that you are familiar with so they fully understand the related risks and returns. The last step is to read the term sheet and especially understand the risk warning. If the investor has any questions, they should consult the customer service for wealth management of the bank.

The recent emergence of WMPs is driven by investors' request for higher yield. Issuance of WMPs has been a major source of funding that has fueled the rise in shadow banking credit. (The Federal Reserve Bank of San Francisco, 2013) In post crises years, higher yield alternative investment like wealth management products has become increasingly attractive for deposits. That was caused by the real deposit rate has been negative for than half of the time in post-crises years.

Figure 3.1: The lending cycle of a wealth management product



Source: (Thomson Reuters, 2014)

From the Figure 3.1, we can clearly see the lending process of Chinese commercial banks' lending cycle of WMPs. In the beginning, investors are investing their money to

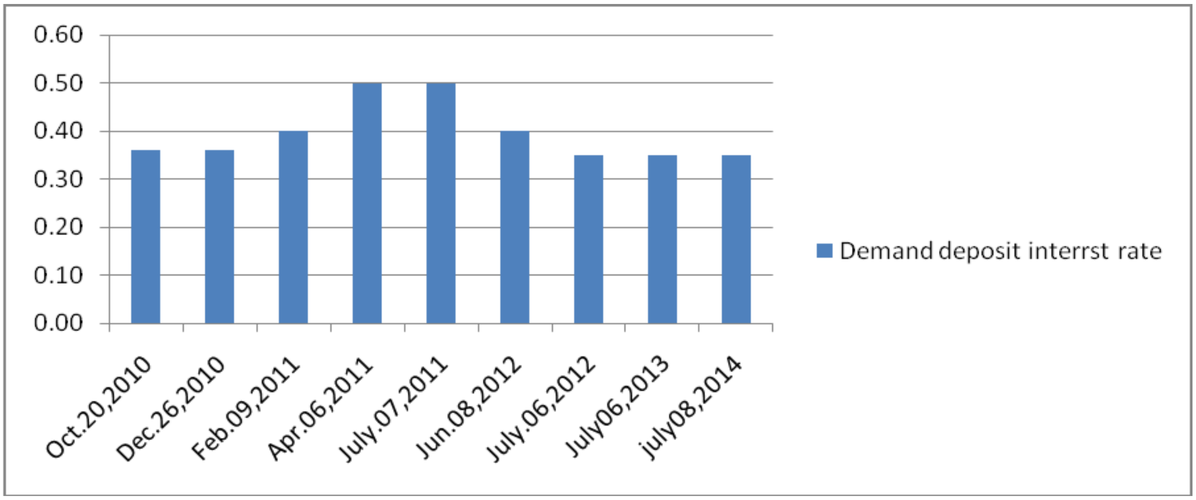
WMPs issued via a bank. Then the funds get transferred to a trust company. Because of the huge finance demand of the manufacturing company, so the trust company can lend the money out to a real estate company for instance. At the end, when the real estate company gets the fund by a trust company and make a profit. The real estate company can either save the money in a bank or purchase WMPs issued by the commercial bank.

3.3.2 The reason why Wealth management products (WMPs) develop rapidly

WMPs are issued and sold by commercial banks; they represent the expansion of their traditional deposit businesses, and the provision of new investment products in line with practice in other markets. WMPs are more an example of financial innovation rather than regulatory arbitrage. This distinction reflects the debate as to whether the shadow banking sector should be seen as inherently risky regulatory arbitrage or an innovative stimulus to financial reforms that also serve real needs of both investors and businesses (Summers, 2013). WMPs are typically short-term with an average maturity of four months and are sold mostly via banks and offer investors a return of around 2% above bank deposits.

WMPs have been a major source of funding that has fueled the rise in shadow banking credit. WMPs are usually of short maturity therefore banks have the flexibility to move assets and liabilities on- and off-balance-sheet by choosing the start-and end-dates of WMPs so they will maintain a low average deposit balance to avoid high reserve requirements. WMPs have been the major source of funding, and as WMPs are rolled over at short-term intervals, more and more new issuances are needed to pay off the expiring ones. A vicious cycle has developed, sparking growth in shadow banking activities and rendering these types of investments highly vulnerable to a sudden shortage of funds.

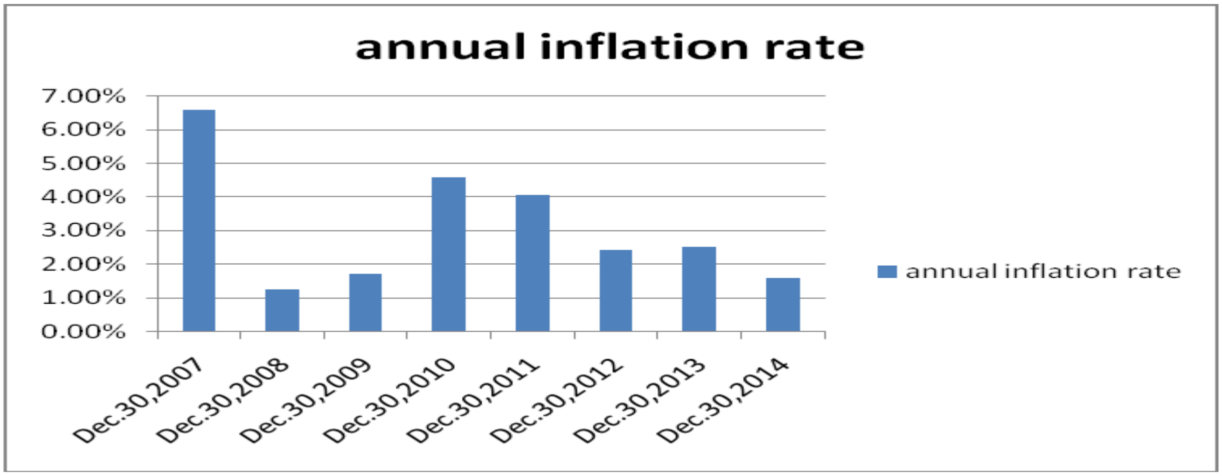
Figure 3.2: China deposit interest rate, 2008-2014 (in %)



Source: National bureau of statistics of China (2015)

From the Figure 3.2, we will know that the nominal deposit rate in China during the period 2008-2014, it reflects the interest rate that households receive on their savings in banks and rural credit cooperatives. We have to emphasize that this rate jumped shapely from 0.36 percent to 0.5 percent in the year 2010. While it decreases to 0.35 percent one year later. The low deposit interest rate is the reason makes people readjust their investment plan; they would like to purchase higher yield WMPs rather than deposit their money in the bank.

Figure 3.3: China inflation rate, 2008-2014 (in %)



Source: People's bank of China (2015)

Figure 3.3 shows us the evolution of China's inflation rate from 2008 to 2014, because of the world financial crises in 2009, China's inflation rate decreased to minus two percent around the year in 2009 as a result of economy recession. While after 2012, the inflation rate in China remains stable around two percent. But with the China's economy growth slowdown and the cheap oil price, there are a huge amount of concerns that China will face deflation problem like what had happened in Japan and Europe. Combined the Figure 3.2 and Figure 3.3, we will know the real deposit rate in China in these five years. Real deposit rates were negative for more than half of the time in post-crisis years. Consequently, higher-yielding alternative investments like WMPs have become increasingly attractive for depositors.

3.4 Investors in shadow banking system

As for the investors for Chinese shadow banking system that is primary Chinese citizens, it contains the enterprise and financial institutions as well. As result of the rise and development of the shadow banking system, it provides a new investment vehicle as a supplement of the traditional investment channels such as bank deposits, shares, real estate investment and foreign exchange investment. More importantly, the yield of the shadow banking product is much higher than the benchmark bank deposit rates. That will attract investors to allocate more of their money to the shadow banking products. This is, in fact, endogenous market interest rate liberation behaviour, breaking the financial repression aiming at the cap of benchmark bank interest rate. This will help the Chinese residence to diversity their assets allocation. Compared with stocks, real estate, foreign exchange and other risky assets, financial products and trust products and other shadow banking products usually have various types of warranties, so the risk is relatively controllable. In other words, China's shadow banking products as primary asset securitization products In fact connecting the Chinese money market, credit and bond markets together, which not only promote the development of financial mark From the perspective of financial institutions that serve as the intermediaries for funds, shadow banking is a way to circumvent regulations through financial innovation. As market competition has intensified, banks have come to use shadow banking as a tool for expanding lending in lieu of traditional channels in order to avoid regulations (RIETI, 2013), but also for the household sector to provide a more diversified investment options.

3.5 Trust companies

3.5.1 Defining “trust” and “trust property”

According to the Article 2 of the Trust Law defines “trust” as follows: “For the purposes of this Law, trust refers to the fact that the settler, based on his faith in the trustee, entrusts his property rights to the trustee and allows the trustee to, according to the will of the settler and in the name of the trustee, administer or dispose of such property in the interest of a beneficiary or for any intended purposes." Article 16 of the *Rules Governing Trust Companies* lists various types of trust business, including the following: (1) the entrusted management of cash, (2) the entrusted management of movable property, (3) the entrusted management of real estate, and (4) the entrusted management of securities. In addition, regarding the aforementioned administration or disposal of trust property, Neftci (2006) states that trust company is a legal entity that acts as fiduciary, agent or trustee on behalf of a person or business entity for the purpose of administration, management and the eventual transfer of assets to a beneficial party. The entity acts as a custodian for trusts, estates, custodial arrangements, asset management, stock transfer, beneficial ownership registration and other related arrangements. A trust company does not own the assets its customers assign to its management, but it may assume some legal obligation to take care of assets on behalf of other parties. Shadow banking credit in China is often extended through trust companies, the largest group of nonbank institutions in China as measured by total assets. (The Federal Reserve Bank of San Francisco, 2013) Trust companies engage in a wide range of businesses including lending, asset management, real estate investment, and private equity investment. It was used to be called trust investment companies (TICs) before 2007, which plays a specialized role in credit extension to private enterprise. Because of the trust investment companies were used to be less regulated, it motivated the local government to take advantage of TICs to finance long-term, risky real estate and infrastructure projects, which led to a rapid deterioration of TICs' asset quality in the early 1990s when the economy experienced a downturn. The trust sector subsequently experienced several dramatic booms and busts, followed each time by aggressive regulatory steps to clean up problem assets and improve risk management.

Table 3.1: Components of Shadow Banking System in China in 2012

Components	Percent
Trust	21%
Wealth Management Products	20%
Entrust Loans	16%
Bank Acceptance	16%
Pawn shops	1%
Brokerage firms	3%
Guarantor	3%
Small Lenders	2%
Finance companies	9%
Finance Leasing	2%
Underground Lending	7%
Estimated total size of shadow banking system	RMB36 Trillion

Sources: PBOC, CBRC (2012)

We can see from the Table 3.1 that Trust companies are the most important component of the Chinese shadow banking sector. They finance riskier borrowers and transactions that banks cannot undertake due to regulations. In 2012, according to the people's bank of China's estimation, that trust companies account for 21% of shadow banking system in China. Wealth management products are the other important components that account for 20%. As the local governments are prohibited to take on credit on their account, they set up platform companies, commonly referred to as LGFVs (Local Government Financing Vehicles), to finance their investment activities in the form of bank credit. The WMPs and TPs (Trust products), sold by banks and trust companies respectively, comprise the core of shadow banking products. Banks and trust companies, most of which are state-owned, are under the jurisdiction of the PBC and the CBRC (China Banking Regulatory Commission), so the sales of WMPs and TPs are also subjected to their supervision.

3.6 The Recent Financial Crisis and the Shadow Banking System in US

The shadow banking system had been growing for some time prior to the outbreak of the financial crisis in 2007. The shadow banking system provided credit by issuing liquid, short-term liabilities against risky, long-term, and often opaque assets. The funding of credit through the shadow banking system significantly reduced the cost of borrowing during the run-up to the financial crisis, at the expense of increasing the volatility of the cost of credit through the cycle. At the beginning of the recent financial crisis, the thought that the U.S. subprime mortgages triggered the crisis was widespread, because of the lack of understanding of the magnitude and architecture of the whole banking system crisis (regulated and unregulated side or traditional and shadow)

3.6.1 The reason of the finance crises in 2007

The shadow banking system is responsible for the financial crises for some reasons. Firstly the collateralized debt obligations were created in the shadow banking system in US. the toxic securities that were at the epicenter of the crisis. Second, it was non-bank financial institutions, most notably hedge funds but also pension and mutual funds and insurance companies, which had causal primacy in the financial crisis. It was primarily these institutions that forced the accelerated rate of production of CDOs to a scale of sufficient proportions as to be able to cause the money markets to go into cardiac arrest on August 9th, 2007. (FESSUD, 2012)

3.6.2 The shadow banking system in outline in US

In China, WMPs and trust products are the major participate role contributes to the shadow banking finance. US shadow banking system is mainly caused by the financial innovation and securitization.

Table 3.2: Outline of the Commercial Bank-Shadow Bank Nexus at the Time of the Sub-Prime Crisis

On Balance Sheet Banking: Regulated

Capital - money Markets	Sellers: Governments, Other Banks, Non-bank Financial Institutions
	Securities
	Buyers
Banks	Assets: Cash, T-bills, T-bonds, Securities, Mortgages Loans, Credit Loans
	Liabilities: Share, Capital, Money, Borrowing, Bond Issues, Deposits
Capital - money Markets	Sellers
	Securities
	Buyers: Asset Managers, Money Market Funds, Cooperate Treasures

Source: FESSUD, (2012)

Off Balance Sheet Banking: Unregulated

Banks	Sellers of Loans
Shadow Banking Entities	Assets: 1) SPEs: Conforming Loans, Non- conforming Loans. 2) SIVs: ABS 3) Conduits: ABS, CDOs
	Liabilities: 1) SPEs: ABS, ABCP, Other Money Market Funding. 2) SIVs: CDOs, ABCP, Other Money Market Funding. 3) Conduits: ABCP
Capital - money Markets	Buyers of Securities: Asset Managers, Other Shadow Bank Entities, Money Market Funds, Cooperate Treasures

Source: FESSUD, (2012)

In the Table 3.2, it is the comparison of the on balance sheet banking which is regulated and the off balance sheet banking which is unregulated. We can see that on the asset side of banks' balance sheets the capital and money markets represent important sources of securities needed by the banks while on the liability side of banks' balance sheets these same markets represent important sources of demand for securities issued by the banks. However, the relation of mutual dependence between these sectors here is not one that subverts the clear distinction between the different types of activities taking place in them. By contrast, this is the case in the shadow banking realm where the capital and money markets are indispensable to the credit intermediation and maturity transformation functions performed by the special suggest entities (SPEs), structured investment vehicles (SIVs) and conduits. These three major types of off-balance sheet vehicles operating at the time of the subprime crisis constituted the central medium through which the basic banking activities of taking deposits and extending loans on one side of the equation were indissolubly mixed together with the basic capital and money activities of buying and selling securities on the other. The reality, as we see it, is that only the SPEs, SIVs and conduits constituted the core of the shadow banking system because only these three entities were the production factories supplying credit-based securities (Lysandrou, 2012)

3.7 The estimation of the size of the China's shadow banking system

China's shadow financial system is comprised of non-bank financial products, including bank trust cooperation financial products, products issued by trust companies and financial leasing companies and credit risk assets. Small loan companies, investment companies, credit guarantee companies, insurance brokerage firms, pawn shops, private equity investment funds, and venture capital funds are the major credit creation products. The shadow financial system is dominated by commercial banks (in off balance sheet transactions), insurance companies, and trusts. The shadow banking system is dominated by commercial banks (in off balance sheet transactions), insurance companies and trusts. Although the Chinese shadow banking system includes informal financing, we disregard this sector in this thesis because it is highly heterogeneous and relatively low-risk (Li, 2013).

The shadow banking system has grown rapidly in recent years. Supervision currently focuses on commercial banks, while attention is not given to property securities and other non-loan assets. Trust companies and security traders engage in activities that may be high-risk, with high returns as well. Below, we discuss some of the riskier shadow banking institutions, including commercial banks; trusts, and credit guarantee companies.

Table 3.3: Estimates of the size of China's shadow banking system

Source	Data	USD trillions	RMB trillions	% of bank assets *year end-2012	% of 2012 GDP
GF Securities	12/17/2012	4.8	30	31%	57%
Citi Research	1/11/2013	4.5	28	29%	54%
Barclays	Dec. 2012	4.1	25.6	27%	49%
Hua Tai Securities	12/14/2012	4	25	26%	48%
UBS	10/16/2012	2.2-3.9	13.7-24.4	14%-25%	26-46%
ANZ Bank	Dec. 2012	2.4-2.7	15-17	16%-18%	29-33%
Bank of America Merrill Lynch	7/6/2012	2.3	14.5	15%	28%

*Total assets of large state-owned commercial banks, joint-stock commercial banks and city commercial banks.

Source: FSB (2012), World Economic Outlook (October 2012)

Due to differences in the definition and treatment of double counting on shadow banking system, we can see from the Table 3.3 that the estimation of the size of shadow banking assets in China ranges widely. The figure showed us in 2012, to summaries all these estimation, that RMB 30 trillion (USD 4.8 trillion) seems to be a reliable upper bound. This amounts to 57 percent of GDP or 31 percent of bank assets. Putting these numbers in perspective, the FSB estimated that shadow banking assets around the world reached USD 67 trillion in 2011, which is roughly equivalent to 111 percent of global GDP or half the size of banking system assets.

Table 3.4: Shadow banking assets as of 2011

Country	USD trillion	% of 2011 GDP	% of World GDP
United States	23	152%	35%
Euro area	22	168%	33%
United Kingdom	9	370%	12%
World total	67	111%	100%

Sources: FSB (2012), World Economic Outlook (October 2012).

In the Table3.4, we can compare the proportion of the shadow banking assets account to the GDP, shadow banking assets in United States and Euro areas are really large, (23 USD trillions and 22 USD trillions respectively). As for China's shadow banking assets to GDP ratio it is according to the Figure 3.6 that, the shadow banking assets to GDP ratio is 57% that is the maximum estimation. While comparing the shadow banking assets to GDP ratio to the developed economies in the world, this ratio is 152% in United States, 168% of Euro area, and 370% in United Kingdom.

3.8 Comparison between China and the US shadow banking system

The reason of shadow banking system develops in China, and the US can both attribute to the demands for credit loans had been increasing in the past two decades. In western economies shadow banking generally refers to an investment management scheme, such as asset-backed commercial paper and structured investment vehicles, that employs excessive leverage to maintain margins by raising short-term funds and investing them in long-term assets (mostly in tax havens). Shadow banking can get involved in credit, period and liquidity transformation, with a function of creating credit. With maturity mismatch, high leverage, sensitivity to asset price fluctuation and less supervision, it increases the systematic financial risks.

China's shadow banking is an inevitable result of financial innovation and has played an active role in broadening the investment channels for the Chinese private sector. The shadow banking system in China is a small scale at first when viewing from the composition and operation of shadow banking, characteristics of commercial banks can still be found in shadow banking institutions in China, engaging in deposit taking and loan granting. Only a few of them got involved in the securitization of real estate loans like shadow banking institutions. The Chinese shadow banking industry carries less complex financial instruments. Most of the financial products are either bond or belong to the first layer of loan securitization. For example, loan trusts could be viewed as so-called privately issued bonds therefore allowing banks to sell or package the loans into WMPs. The Chinese shadow banking is similar to the West in the sense that it serves the function of maturity transformation and has become a tool to avoid regulations and liquidity crises due to massive withdrawal of funds as the shadow banking system is not supported by the deposit insurance system or the discount window of the central bank. While in the US shadow banking evolved from formerly government-sponsored securitization transactions that were utilized in order to enhance credit creation capacities for home mortgages. The US has well-developed shadow banking and capital market that includes a wide range of products that are far more complex in structure than those in China. Another significant parallel between both shadow banking systems relates to the interdependency between shadow and regulated banks through the utilization of off-balance sheet investment vehicles (e.g. trust companies) to evade regulatory constraints and to increase income from lending activities. In both cases, regulatory arbitrages incentivize regular banks to increase credit origination capacities through transferring credit risk to third parties. The interconnection between the Chinese shadow and commercial banking sector is far greater if compared to the US, which operates mainly outside the boundaries of its financial market. Therefore, potential defaults are much less to worry about than in the Chinese system where defaults have a greater effect on the domestic financial market.

Table 3.5: The difference between China and US's shadow banking system

China's shadow banking	US's shadow banking
Domestic financial system	Both domestic and foreign financial system
Mainly driven by commercial banks	Mainly driven by non-bank financial institutions
Underdeveloped secondary market	Well-developed secondary market
Low securitization rate	High securitization rate
Low leverage rate	High leverage rate
Purchases made by individual investors	Purchases made by institutional investors
Immature development phase with inherent risks	More mature development phase
Irregular fund raising and lending operations	More regular fund raising and lending operations

Source: Linden (2013)

As we can see from the Table 3.5, we generalize that the shadow banking system in China differs from the shadow banking system in US in several aspects. The American system is led by commercial banks through a relatively long and big sophisticated intermediation chain and has a relatively high securitization, and leverage rate and purchases are mostly made by institutional investors. By contrast, China lacks a market for secondary transfers of credit assets which would allow efficient diversification of credit and liquidity risks. It is because limited credit supply to private companies and projects, as well as interest rate ceilings for bank depositors initially, motivated banks to intermediate alternative sources of funds thereby tapping into the shadow banking system (Zhang, 2013).

3.9 Revision of the chapter

In this chapter, we have compared the different features of the shadow banking system in China and the United States. And argue that these specialized financial intermediaries in each country play a critical role in the rising and growth of the shadow banking finance. Thus, it is necessary to enhance supervision to the financial system. The comparison of the shadow banking system between China and US are in a number of aspects. Firstly we state the different definition of the shadow banking system in each country. Then we analyze the reason shadow banking rose and developed on so rapidly in these two countries. As for the China's case, it can be attributed to financiers and investors that have been activity participated in the Chinese financial market. This is because of their huge demand of financing and investing. In terms of the reasons for US shadow banking system, it would contribute to its advanced financial system and the enormous financial innovation, for example, the fast growing and development of the financial derivative instruments such as (Mortgage Backed Securities, Collateralized Debt Obligation). But since the subprime crisis took place in 2007, the risk has exploded and spread to the whole world very rapidly. And we will go further to the risk and regulation in the chapter four. Finally, we made the Table 3.5 which demonstrates the similarities and differences between China and the US shadow banking system. In conclusion, shadow banking systems are different in these two nations in several aspects. Firstly, the role of commercial bank plays in the whole financial system, secondly, the source and operation of funds, the feature of risks type and the regulatory authorities. Thought the comparison of shadow banking in these two biggest economies, we will be clearer to understand the commons and the unique characteristics, and it is the benefit for us to analyze these financial institutions systematically and comprehensively.

4 Potential risks and regulations of the China's shadow banking system

In recent years, with the growing of bank wealth management products, trust products, and internet finance, these off- balance sheet financial products aggravate the shadow banking problem. The response of the Chinese government at the end of 2013 was to issue an internal directive to the country's monetary authorities and local governments to tighten the regulation of shadow banking, to assign regulators for shadow banking operations and individual financial institutions, and to create a comprehensive regulatory framework. In addition, the Chinese government has set a timetable with a deadline of 2018 for adopting the Basel III framework and is seeking to put bank balance sheets on a sounder footing. (Sekine, 2013) Ultimately, the problems need to be solved as part of the process of reforming China's financial markets and fostering the development of the country's securities and asset management industries. In this chapter, we will introduce all kind of shadow banking activity risks, and then we will introduce several indicators to identify the financial crisis, at the end, we will suggest some possible solutions with can enhance the regulation on shadow finance or minimize the potential risk.

4.1 Risks posed by bank wealth management products

The participants in China's domestic markets have frequently expressed views on the risks posed by bank wealth management products. For example, chairman of the China Securities Regulatory Commission Xiao Gang (2013) state that:"*There are more than 20,000 WMPs in circulation, a dramatic increase from only a few hundred just five years ago. Given that the number is so big and hard to manage, China's shadow banking sector has become a potential source of systemic financial risk over the next few years. Particularly worrisome is* *the quality and transparency of WMPs. Many assets underlying the products are dependent on some empty real estate property or long-term infrastructure, and are sometimes even linked to high-risk projects, which may find it impossible to generate sufficient cash flow to meet repayment obligations. China's shadow banking is contributing to a growing liquidity risk in the financial markets. Most WMPs carry tenures of less than a year, with many being as short as weeks or even days. Thus in some cases short-term financing has been invested in long-term projects, and in such situations there is a possibility of a liquidity crisis being triggered if the markets were to be abruptly squeezed."*

4.1.1 Lack of transparency

According to China Securities Regulatory Commission (CSRC) (2014), as banks issue liquidity pool wealth management products, they usually do not disclose the detail information about the WMPs that they issued, such as investment ratios, risks, and profit/ loss during plan periods as well as investors' understanding of their investments. All this information will be disclosed inadequate and misleading.

Eiichi (2014) states that the use of liquidity pools by banks has led to bank deposits being converted into off-balance-sheet wealth management products which means the liabilities has been shifted off the balance sheet. For assets, as liquidity pool is being invested mainly wealth management products with no capital guarantee and a variable return are also being recorded off the balance sheet. So it means assets are also being shifted off the balance sheet. So there is a risk that the bank concerned may not have enough capital. If a bank that had failed to build up a sufficient capital base overinvested in high-risk assets, the capital needed to redeem those investments could overstretch the bank's risk management capability.

4.1.2 Liquidity risk by maturity mismatch of the WMPs

In China, WMPs can be defined as collective investment schemes originated and marketed by banks. WMPs are treated different from bank deposits and regulated as retail financial products. (Eiichi, 2014) One of the distinctive features of wealth management products is their short maturity. From the liability side, due to the fierce competition of the deposit business among the commercial banks, leading to the shadow banking products exhibit short-term trend. From the assets side, in order to obtain higher yield, the capitals in the shadow banking system are approaching to the long-term projects. Above maturity mismatch means that to ensure the stability of the asset side in order to obtain a higher rate of return, shadow banks must rely on short-term financial products rolling release (issued new-old) to address maturity mismatches caused by periodic liquidity pressures. Once the old financial products expire, and new financial products cannot be released in full, then the shadow banking system have to go through the emergency sale of long-term security product to repay the principal plus interest. Thus, the shadow banking system will undoubtedly suffered large losses.

Table 4.1 Maturity structure of renminbi (Chinese currency) wealth management products (issue amount) in %

Maturity structure	2006	2007	2008	2009	2010	2011	2012	2013
Less than a month	2.6	1.7	13.7	24	31	36.6	4.91	4.01
1-3 months	15.7	19.8	27.4	26.8	30	30.2	60.18	61.15
3-6 months	35.4	23.2	26.1	22.5	18.1	18.9	21.87	20.75
6-12 months	29.8	27.5	22	21	17.8	11.9	10.01	11.13
1-2 years	14.3	18.8	5.5	3.3	2	1.5	0.98	1.08
More than two years	1.9	5.6	2.4	1,9	0.6	0.4	0.31	0.18
N/A	0.3	3.3	2.8	0.6	0.5	0.6	1.74	1.69
Total	100	100	100	100	100	100	100	100

Source: Shanghai Wind Information Co., Ltd, Chinese Academy of Social Science, CBRC (2013)

From the Table 4.1, we can conclude from the statistics provided by the Chinese Academy of Social Science (CASS) and China Banking Regulatory Commission (CBRC), ultra-short-term wealth management products (i.e., those with a maturity of less than a month) accounted for 13.7% of the renminbi wealth management products issued in 2008 in terms of issue amount. This proportion increased to 24% in 2009, 31% in 2010, and 36.6% in 2011. While these numbers decrease dramatically in 2010, it turned to 4.91% in 2011 and 4.01 % in 2012. Before 2012, the reason for the high proportion of the short-term maturity wealth management products is that the banks found themselves short of cash and were able to raise cash by issuing high-yielding wealth management products with short maturities despite loan-to-deposit ratio limits. (Sekine, 2015). And after 2011, however, this sharp increase trend has reserved, until 2011 the banks would issue Ultra- Short- Term wealth management products with maturities of less than a month and record them as deposits on their books and then re-enter them as wealth management products at the end of each month and each quarter in order to stay within the loan-to-deposit ratio limits. While, in 2012, the monetary authority had restricted the issue of Ultra- Short- Term wealth management products, so the banks have to issue the wealth management products with 1-3 months maturity. (60.18% of the amount issued in 2012) and the sharp decrease in the issue of products with a maturity of less than a month (4.91% of the amount issued). This trend continued in 2013, with products with a maturity of 1–3 months accounting for 61.15% of the amount issued in the first half of the year and products with a maturity of less than a month accounting for 4.01%.

Table 4.2 Asset structure of renminbi wealth management products (issue amount)

Unit: percent	2006	2007	2008	2009	2010	2011	2012	2013
Interest rate products	60.78	42.74	40.4	37.02	55.27	54.32	62.81	58.12
Portfolio Products	0.78	3.06	1.09	15.63	31.47	37.64	33.21	36.31
Loan Products	22.82	20.21	49.94	42.83	10.81	5.69	0.52	2.38
Forex Products	6.12	1.11	0.75	0.92	0.72	1.12	1.89	0.07
Equity Products	7.92	30.63	5.46	2.8	1.37	0.97	1.05	2.18
Commodity Products	1.57	2.25	2.36	0.8	0.35	0.27	0.52	0.31
Total	100	100	100	100	100	100	100	100

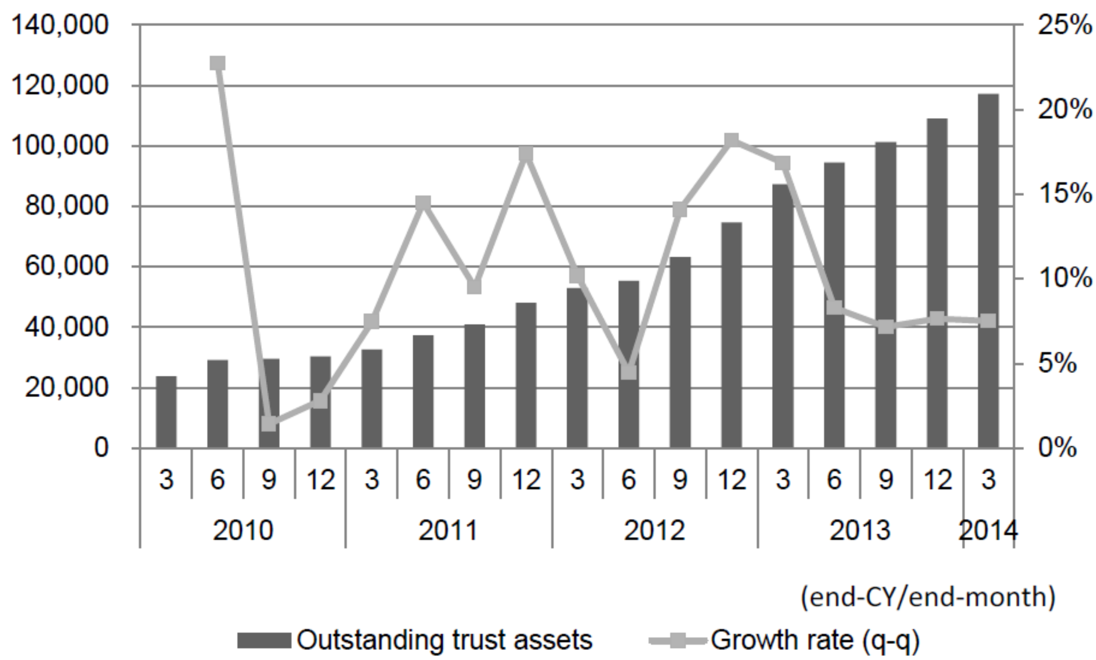
Source: Shanghai Wind Information Co., Ltd, Chinese Academy of Social Science, CBRC (2014)

According to the Table 4.2, Chinese Academy of Social Science (2013) gives a breakdown of the assets in which renminbi wealth management products which are interest rate products, portfolio products, loan products, forex products, equity products, and commodity products. At first, we have to emphasize the fluctuation process of the loan products; in 2008, the loan products accounted for 49.94 % of the total renminbi WMPs. But after three years, its proportion is smaller than 1 % that is only 0.52%. This is because the temporary increase to circumvent aggregate limits imposed on bank lending and subsequent rapid decline in issuance as a result of tighter regulation. Banks have originated portfolio products to raise cash by combining assets subject to a variety of different risks. As the money raised by issuing wealth management products is paid into a liquidity pool, it has been argued that these products are similar to collateralized debt obligations (CDOs). However, the two types of products differ in two respects. First, in the case of portfolio products, the source of the liquidity is not isolated from the underlying assets. As a result, any interruption to the cash flow from the investment assets inevitably poses a liquidity risk. Second, multiple wealth management products are not used to create overlapping layers of collateral, and the degree of leverage is relatively small (Eiichi, 2014)

4.2 Risks posed by Trust products

Trust companies engage in a wide range of businesses including lending, asset management, real estate investment, and private equity investment. Before 2007, trust companies were known as trust investment companies (TICs) and specialized in credit extension to private enterprises. Local governments also used lightly regulated TICs to finance long-term, risky real estate and infrastructure projects, which led to a rapid deterioration of TICs' asset quality in the early 1990s when the economy experienced a downturn (Li, 2013).

Figure 4.1 Chinese trust assets outstanding and rate of growth (quarter to quarter) unit: (RMB100mn)



Source: China Trustee Association (2014)

The Figure 4.1 illustrates that according to the estimation of Nomura Institute of Capital Markets Research based on the China Trustee Association data, we can see the latest data in the end March 2014, the total amount of trust assets under management was close to RMB 120,000 million. The total number of outstanding trust assets was just over 20,000 million in March 2010; it has increased almost 6 times within four years. And from the figure, we can understand that the total outstanding trust assets are continuous growing, but the growth rate are declining gradually when we see the trend of the quarter to quarter growth rate. And the growth rate is becoming stable after June 2013.

Table 4.3 Comparison between wealth management products and trust products

	Tenor	Minimum investment	Return
Wealth management products	30 days to one year	RMB50,000	4% to 6%
Trust products	1 to 2 years	RMB 1million	8% to 12%

Source: Author's Composition by the available data

We have mentioned that wealth management products and trust products are the most important composition in China's shadow banking finance. From the Table 4.3, we can see in terms of the maturity, trust products are longer with the maturity 1 to 2 years, whereas only 30 days to one year for wealth management products. And the minimum investments for trust products are much higher than wealth management products. So it can earn a high yield compared to the WMPs.

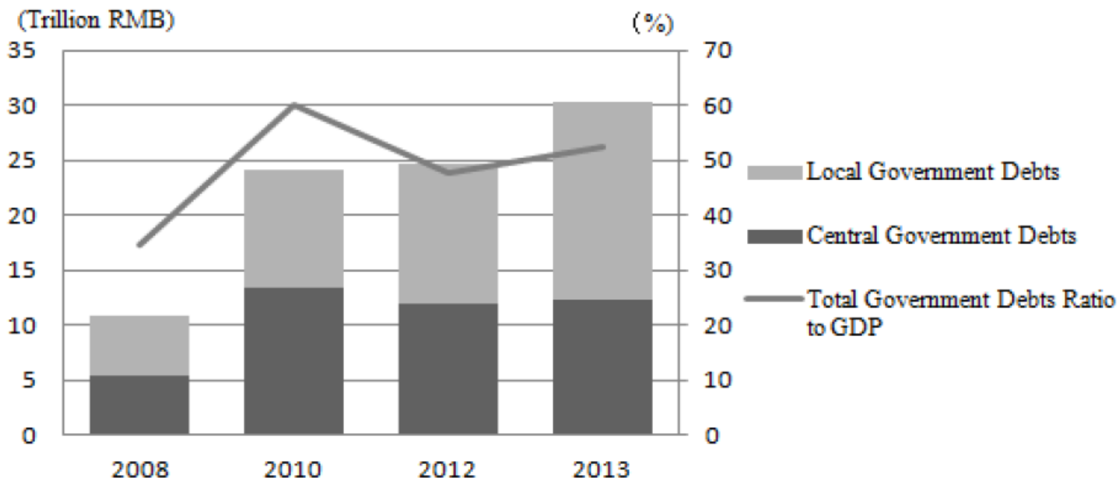
4.3 Local Governments and the Shadow Banking

In present China, the local government bears the burden of providing various public services while their financing faces perpetual shortage mainly because of the tax sharing system [6]and prohibition in principle of issuing bonds. (Kenji,2014) so this contribute to the rise of the so called "local government financing vehicles (LGFVs)", which local governments established to finance real estate development and other infrastructural projects such as road

[6] Tax sharing system divides tax revenues into central tax, local tax and shared tax between central and local governments, depending on the tax items and tax payers. It was introduced to secure the revenues for the central government.

and railway construction.” The local government mainly makes use of the LGFVs to raise funds.

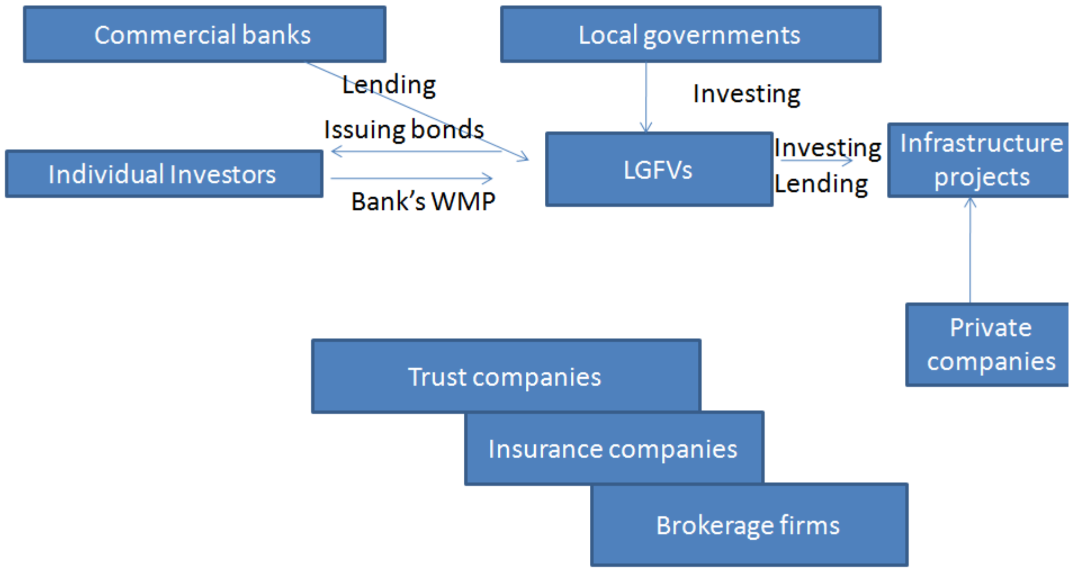
Figure 4.2 China’s government debt outstanding and total government debt ratio to GDP



Source: Calculated by the author based on data of China’s National Audit Office

According to the China’s National Audit Office (NAO), we can see the Figure 4.2, the Chinese local government debt outstanding has increased substantially, the local government debt outstanding in 2008 was approximately 5 trillion RMB, while after four years in 2013, and it has grown to more than 35 trillion RMB. In contrast, the central government debt outstanding in recent years has experienced the decline. But, in general, the total government debt has been increasing fast. Compare the data of total government debt in 2013 and 2008, it was approximately 10 Trillion RMB while, in 2013, it was around 30 Trillion RMB. The entire government outstanding has increased three times. The total debt to GDP ratio has increased from 35% in 2008 to around 55% in 2013. The rate reached its highest point in 2012; the total government debt has accounted for almost 60% of GDP.

Figure 4.3 General Scheme of a LGFV



Note:(→indicates the flow of money）

Source： Author's Composition

As the Figure 4.3 showed, we made the general scheme of the relationship of the local government financing vehicles (LGFVs); we can see the local governments investing in local government financing vehicles, and then LGFVs will issue bonds to individual investors to get money. Conversely, the individual investors will sell the bank's wealth management products to LGFVs. Then if the local infrastructure projects need to be funded, it will be invested by LGFVs. A lot of bank WMPs are invested in these LGFV bonds. Reportedly banks are investing their lion's share of money in the lower rated LGFV bonds to secure higher profits, revealing the structure where the money of individual investors supports the LGFVs. Furthermore, in the so-called "bank-trust cooperation model", banks channel funds to trusts via entrusted loans; trusts make high-yield loans to risky or small borrowers that have difficulty directly obtaining bank credit. By engaging in this type of cooperation, banks can "outsource" part of their lending business to trust companies and move these loans off their balance sheets.

4.4 China's debt concern

Linden (2014) states that although the China's economic growth over the last decades has been spectacular; this growth has become increasingly dependent on debt creation. The increasing reliance on debt for growth is partly a consequence of the China's relatively low domestic consumption ratio which the State Council wants to rebalance as part of the last Five Year plan 2011-2015[7]. The excess savings of China's households, private and public sectors are channeled into the SOBs (State Owned Banks) which lend it to finance domestic investments.

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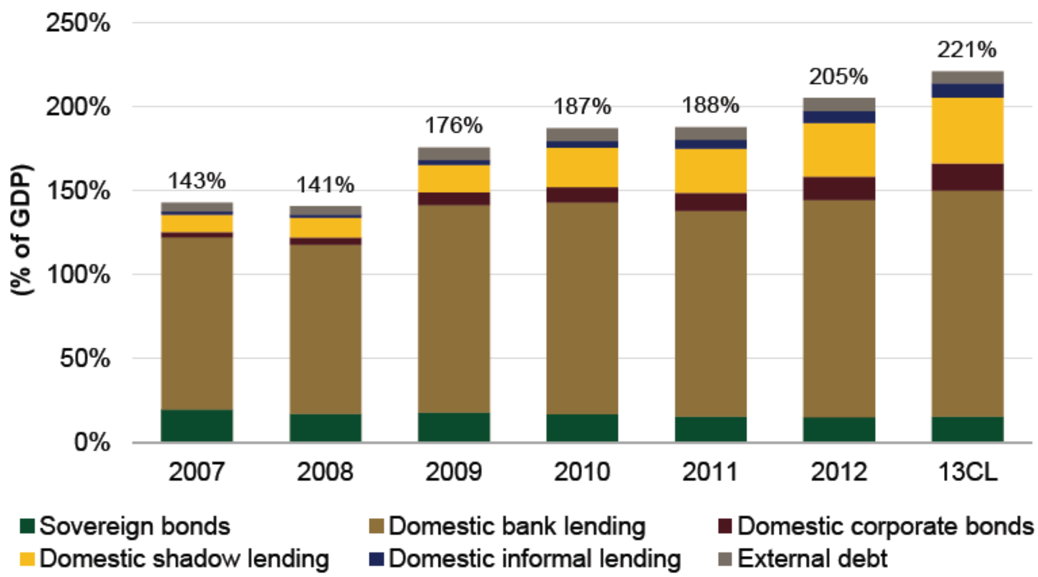
[7] The rebalancing of China's economy includes not only lowering investment and increasing overall consumption but also scaling down the role of the state sector, reducing speculative investment in real estate, altering the way credit is allocated, and speeding growth of the services sector. An effective rebalancing of China's economy is aiming a more sustainable long-term growth with lower short-term growth as a result.

Figure 4.4 China's debt development from 2007 to 2012 (in % of GDP)



Source: PBOC (2014)

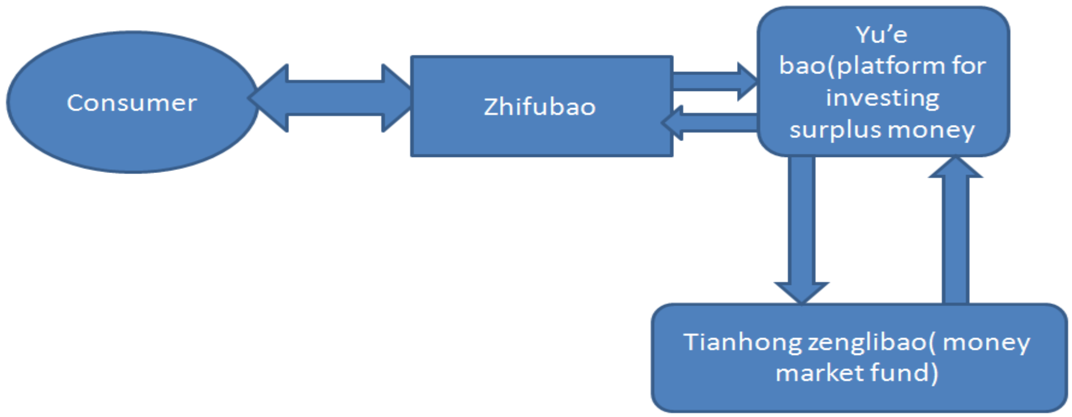
From the Figure 4.4, we will see the China's debt development from 2007 to 2012. The central government debt has increased from 147% of GDP in 2008 to more than 250% of GDP in 2014, so especially the fast increase of this debt in such a short time is worrisome since in other economies this often led to a financial collapse. The question is to what extent China's private debt-to-GDP ratio can continue to raise taking into account that more investments are made in non-productive projects, and more debt is being used to repay old debts. Domestic shadow lending is keeping increase that will destabilize the financial system.

4.5 Rise of Internet finance

4.5.1 Internet Finance in China

The development of Internet finance has not only taken advantage of modern information technology but also improved the quality, quantity, and efficiency of financial services, reduced the cost of financial transactions, and made it easier for SMEs and microenterprises to borrow. The rise of internet finance has draw people's attention; acting as a new type of shadow banking has emerged that has slipped through the regulation. Zhang (2013) distinguishes three different types of Internet finance in China. The first is Internet lending, otherwise known as P2P (peer-to-peer lending) social finance, the leading providers of this service in China include companies such as Yixin, Renrendai, and PaiPaiDAI. The second is Internet wealth management. This business, whether conducted by a traditional financial institution or an Internet company, involves issuing wealth management products on the Internet, investing the money raised, and using the return on the investment to pay principal and interest to the investors in the wealth management products. One of the leading providers of this service is the Yuebao platform of Internet giant Alibaba. The third is Internet payment and settlement. This service involves using the Internet as a third-party payment platform to provide payment and settlement services to Internet shopping customers. One of the leading providers of this service is Alibaba's Zhifubao platform. Of these providers, however, it is Yu'ebao that has caused a stir among market participants and is at the center of the debate on the future of Internet finance in China (Zhang, 2013)

Figure 4.5 Schematic diagram of how surplus cash invested via Yu'e bao



Source：Author's Composition

It is clear to see from the Figure 4.5 the schemes of how the surplus cash invested via Yu'e bao. The basic process is that at first consumers agree to signs the Yu'e bao user agreement. Secondly, the consumers transfer their money from bank to Yu'e bao account via their own Zhifubao.[8] Because Yu'e bao as a platform for investing surplus money, it can invest in the capital market as a money market fund. It can purchase Tianhong zenglibao automatically. And vise verse, when the money market fund (Tianhong zeng libao) makes the profit, these profit will goes to the consumer's accounts finally. Since Yu'e bao was launched in June 2013, the amount outstanding in user accounts has continued to increase. As a result, Tianhong Asset Management's assets under management have risen sharply to RMB197.9 billion (as of the end of 2013), putting it in second place behind China Asset Management with RMB288.6 billion. As of end-February 2014, the amount outstanding in Yu'e bao

[8] Zhifubao also called Alipay, is a third-party online payment platform with no transaction fees. Alipay has the biggest market share in China with 300 million users and control of just under half of China's online payment market in February 2014.

accounts was reported to have passed the RMB400 billion. Yu'e bao is a very convenient, high-value-added service for users of Zhifubao and is essentially an innovative combination of a third-party payment service and a money market fund. Under the Yu'e bao model, Zhifubao is not involved in marketing the fund; nor does it interfere in the fund's investment operations. All it does is act as a portal for customers. Yu'e bao is a by-product of interest rate deregulation and the growth of the Internet in China. In order to ensure that Yu'e bao and other Internet funds continue to develop steadily and in a healthy manner, the CSRC will require money market funds to improve their risk management and is currently devising rules for regulating funds sold on the Internet (Eiichi, 2014)

4.5.2 Rapid growth of money market funds

Tianhong zenglibao is one of the money market funds in China, when we take a look at the Chinese market for money market funds as a whole. The value has increased significantly. The rapid growth of Yu'e bao has been matched by outflows from bank deposits, and the platform has been seen as posing a threat to smaller banks, in particular. Another point to bear in mind is that Yu'e bao invests in the money (interbank) market, where most of the activity is in bonds (bank debentures) and ultra-short-term negotiated deposits, and that it has taken advantage of the interest rate rises in that market. What this means for banks is that money is flowing out of their ordinary savings accounts only to reappear (via Yu'e bao) on their balance sheets as a liability, namely in the form of high-interest-rate negotiated deposits. There have therefore been increasing calls from the banks for tighter controls on internet finance. On the other hand, there have been calls from securities companies, mindful of the liquidity money market funds add to the money market and the role they have played in anticipating the deregulation of interest rates, to allow them to continue to develop, subject to proper risk management. (Eiichi, 2014)

4.5.3 Regulatory policy on Internet finance and money market funds

China Securities Regulatory Commission (CSRC) has voiced its views on how Internet finance should be regulated. On 14 and 28 February 2014, CSRC had made the comments on internet finance and money market funds. The recent report states that although the development of internet finance has made the breakthrough in the traditional banking system, and it has lots of advantages. But Internet finance is essentially still finance. Therefore, it needs to comply with the financial rules and regulations currently in force. At the same time, there are some non-traditional aspects of Internet finance, and these must also be regulated. And the People's bank of China (PBOC) sets out its plans to introduce a system of regulating Internet finance in order to support its sound development. First, innovations in Internet finance must be based on the fundamental principle of providing a financial service to the real economy, and their limitations and level must be properly understood. Second, innovations in Internet finance must be subject to the overall requirements of macro-prudential controls and financial stability. Third, consumers' legal rights must be safeguarded. Fourth, the market must remain a level playing field. Fifth, a proper balance must be struck between government regulation and industry self-regulation. (PBOC, 2014)

4.6 Repayment problems and defaults

According to China Financial Stability Report (2014), the regulatory authorities should pay more attention to the repayment problems and debt default risk which will lead to the systematic financial risk. In early 2014, a number of trust products and listed (publicly offered) corporate bonds encountered repayment difficulties. Eiichi (2014) states that there are two possible scenarios for these products have the repayment problems and defaults. The first scenario is that when the commercial banks make the trust products, but they are responsible for their redemption. But if the commercial banks has accepted some of the responsibility in order to preserve their reputation, overseas credit rating agencies would regard the amounts as contingent liabilities on the bank's balance sheets and possibly lower their ratings. Particularly, if banks listed on overseas exchanges were subject to a possible re-rating, this could have a knock-on effect on overseas financial markets. The second scenario is that if a large number of trust products encountered repayment difficulties, even if confined to particular parts of the country or sectors of the economy, this could have a knock-on effect, especially on domestic financial markets, if other companies in the same sector with corporate bonds were re-rated. This would inevitably affect the confidence of overseas investors (Eiichi, 2014).

In either these two scenarios, the initial response of the government, the financial authorities, market participants and proposals for a convincing resolution would clearly be crucial when there was a knock-on effect on financial markets. The regulatory authorities should improve monitoring, deal promptly with any defaults, and to avert any regional or systemic risks.

4.7 Challenges to China central bank's monetary policy

The rise of China's shadow banking also challenges the PBOC's monetary policy. Traditionally, the monetary policy of China central bank is more M2 oriented. From the first month to the third month in every quarter, the incensement of the renminbi deposits are kept on growing. In the first month, the growth of the renminbi deposit is always negative. It is because of the rise of the WMPs leading to the new trend. Because at the end of every quarter, China Banking Regulatory Commission and People's Bank of China will assess the commercial bank's deposit to lend ratio and other indicators. Thus, the commercial bank has the motivation to maintain higher renminbi deposits at the end of every quarter. In order to avoid the regulation, the commercial banks tend to issue the wealth management products with the maturity less than three months at the beginning of every quarter.

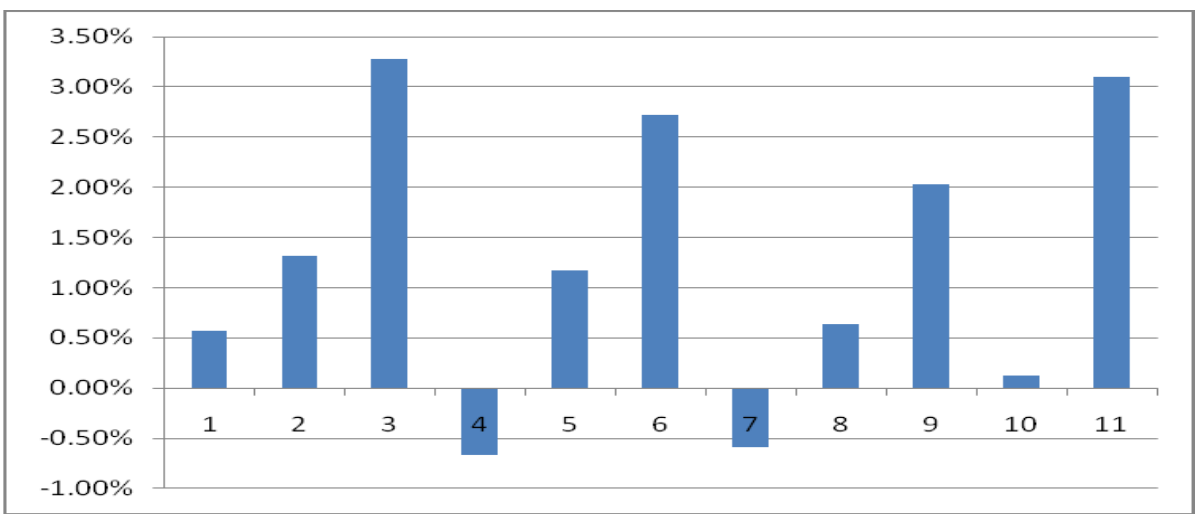
Table 4.4 China's M2 in 2012   CNY Billion

January	85109.09
February	85589.89
March	86717.14
April	89556.55
May	88960.4
June	90004.88
July	92449.12
August	91907.24
September	92489.46
October	94368.88
November	94483.24
December	97414.88

Source: People's Bank of China

From the Table 4.4, we can see the money supply is decrease at the first month of every quarter. The money supply in March 2012 was 89556.55 billion. It has decreased to 88960.4 billion in April. We can also see in the first month of the third quarter which is July, compared to the money supply in June, the money supply has decreased from 92499.12 billion to 91907.24 billion. According to the definition from Gwarthrey (2004), M1, the narrowest definition of the money supply, is composed of currency, checking deposits, and traveler's checks. M2, which contains M1 plus the various savings components indicated, is approximately five times the size of M1. In fact, from the first quarter of 2012, the growth of the M2 in the first month every quarter shows a negative trend.

Figure 4.6 Rate of Increase of Money Supply over the Previous Corresponding Period (in %)



Source: Authors' calculation

From the Figure 4.6, we can see the negative growth at the first month of each quarter; the money supply has decreased over 0.5% compared to the money supply in March. The same happened in July. It illustrates the rise of shadow banking activity has influence the traditional monetary policy's effectiveness such as M2.

4.8 The key risk indicators to identify a financial crisis

The refinancing risk within the banking industry, as well as the liquidity risk in the Chinese housing market, has heightened the default risk of borrowers and even the overall market risk in the financial market (Linden, 2014). In order to better understand the driver indicators that lead to a deterioration in stability. It is essential for the investors to identify the key indicators.

4.8.1 House prices

The Chinese housing market is distinguished from most countries by some certain specific characteristics. Firstly, in China, the property is regarded as an investment; householders are tending to buy the second or third house as an investment tool. It was caused by the few investment alternatives apart from bank savings and equities for the Chinese household. Secondly, the continuous urbanization process is fuelling the demand for resident properties. Thirdly, it is because of the household's relatively small mortgage debt. The Figure 4.7 will illustrate the mortgage loans to household disposal income from 2007 to 2013. We can see in this period, this rate has not reached 26% that is very low compared to other economies.

Figure 4.7 Mortgage loans as percentage to household disposable income, in %

Source: National Bureau of Statistics of China (2013)

From the Figure 4.7, we can see the mortgage loans to household disposable income ratio in these eight years is smaller than 26%, although, from 2008, this ratio has increased for the last few years. But compared to the western peers, this ratio is quite low. Currently, the Chinese housing market is supported mainly by new investments and domestic real estate speculations, where large sums of money for real estate developments are sourced from WMPs. The house price is becoming weak; it would lower returns and increase the default risk of loan repayments. Linden, (2012) states that the growth of vacant apartments is a resolute of Chinese constructors' foremost aim of attracting investment rather than contributing to residential demand is becoming the more serious problem.

4.8.2 Financial performance of the Chinese commercial banks

As a result of a large portfolio of bad loans, the commercial banks in China were extremely weak and unprofitable. Within a decade, the large banks were recapitalized and restructured through government capital transfers.

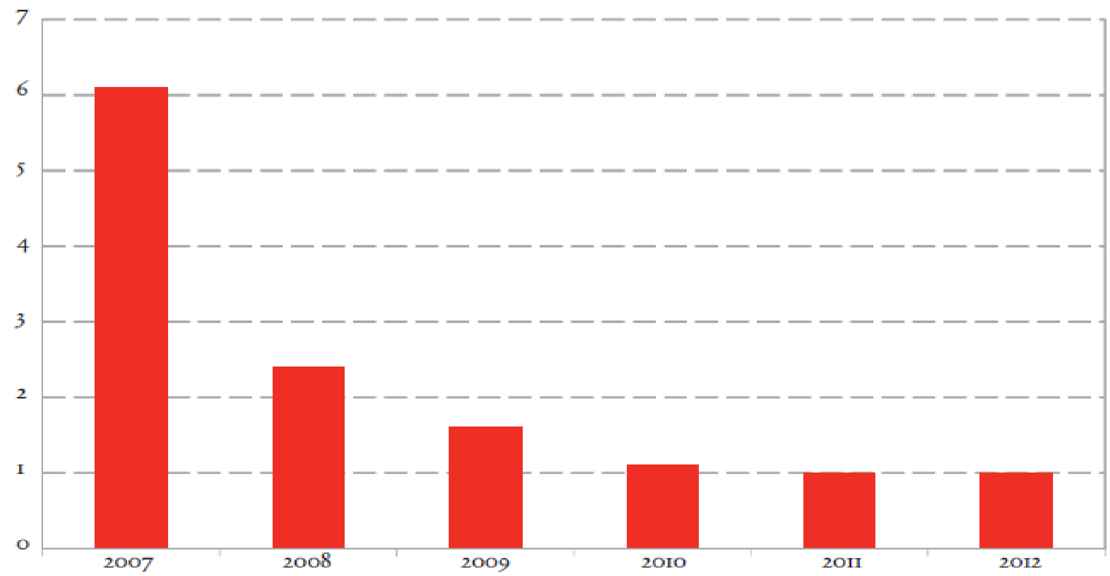
Table 4.5 Financial indicators of the five large commercial banks, 2012 year-end

	ROE (%)	CAR (%)	COR (%)	NPL (ration) (%)	NPL coverage ratio (%)	International ranking(Tier 1 capital volume)
Industrial and Commercial Bank of China	23	13.7	10.6	0.9	296	1
China Construction Bank	22	14.3	11.3	1	271	5
Bank of China	18.1	13.6	10.5	1	236	9
Agriculture Bank of China	20.7	12.6	9.7	1.3	326	10
Banks of Communications	17.9	14.1	11.2	0.9	251	23
All commercial banks	19.8	13.3	10.6	1	296	

Source: Annual reports of Banks (2013), China Banking regulatory Commission (2013)

The Table 4.5 illustrates some indicators for the capital position for the big five. The ROE for all these big five banks is around 20%, which is quiet high in banking industry. It illustrates that the Chinese banks have good ability in terms of profitability. The reason is that the Chinese government sets the maximum interest rate paid on savings deposit and minimum interest rate they charged on loans. This policy has enabled banks to generate high returns.

Figure 4.8 Non-performing loans of Chinese commercial banks (percentage of total loans)

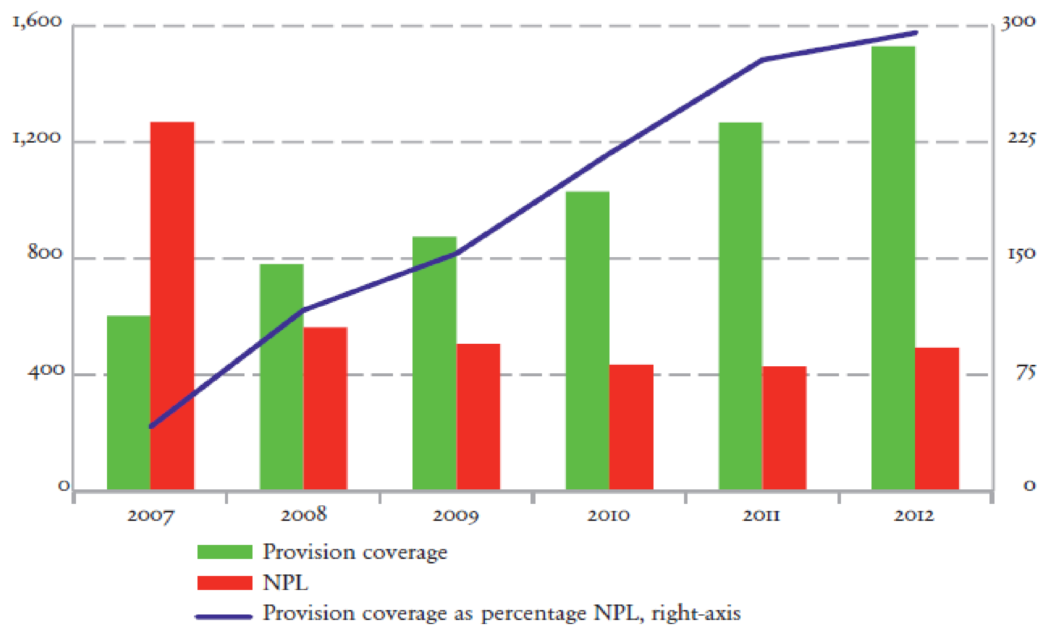


Source: China banking regulatory Commission (2013)

According to the Basel II capital adequacy ratio, all the commercial banks' capital adequacy ratio (CAR) must be higher than 8 %. From Table 4.5, we can see all these big five banks has reached the requirement. Figure 4.8 illustrates that the non-performing loans ratio has improved strongly within these few years. In 2007, it was more than 6 % while in 2012 it was close to 1%. The reason for the lower NPL is partly attributed to bank restructurings, so the amount of bad loans has declined. And the increase of the dominator can also contribute to the decline of this ratio. This dominator effect is caused by the strong growth of lending. Internationally, the current NPL ratio of the Chinese banks is low. According to the statistics, the NPL ratio for some foreign banks is higher than 1%. For instance, the NPL ratio was 3.2% in Dutch banks in 2013, 2.9% in Germany in 2012, 8.2% in Spain in 2013, 15.1% in Italy in 2013 (World Bank, 2014) The overall bank loans ratio of Chinese bank is 1%, the percentage vary considerably from sector to sector. 1.4% for manufacturing, 0.7% for real estate, 0.6% for construction and 0.3% for resident mortgage (Buitelaar, 2013) The figure for resident mortgage is so low because the strict supervision in recent years. As home buyers are required to make a down payment of 30% on their mortgage, Chinese householders are less heavily indebted than in many western countries.

Figure 4.9 Provision coverage and non-performing loans (NPL)

Billions RMB, percentage NPL respectively



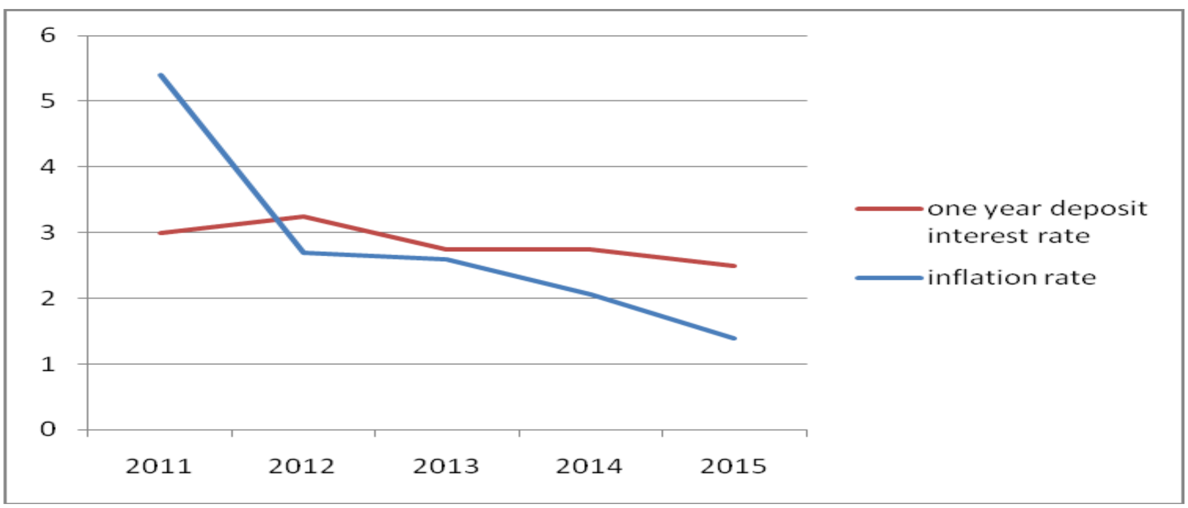
Source: China banking regulatory Commission (2013)

The banking supervisor requires bank to maintain high provisions for their non-performing loans. From the Figure 4.9, in 2007, provisions for non-performing loans were only 40% of the outstanding amount. Thanks to bank recapitalization and restructurings, the amount of bad loans has declined significantly. On the other hand, the provisions have been raised. As a result, provisions for non-performing loans are now almost three times greater than the outstanding amount of such loans.

4.8.3 Interest and Inflation Rates

Currently, China's deposit interest rate is still controlled by the People's Bank of China. Investing in shadow banking products can earn a high net interest margin between the controlled and the black market rates. This high margin attracts investors seeking high returns, further stimulating the rapid development of shadow banking in China (Linden, 2014).

Figure 4.10 Basic rates on One year deposit and annual inflation rate



Source: PBOC (2014)

From the Figure 4.10, the deposit interest rate is quiet stable, ranging from 2 % to 4%, but the fluctuation band of the inflation rate is wide. China's average inflation rate has declined a lot from 2011. In 2011, the annual inflation rate was about 5.5%, it declined dramatically to 1.5% this year. As China has the potential risk of deflation, the authority has taken some expansion monetary policy to stimulate the economy and increase the inflation rate. A higher interest rate would reduce the net interest margin, thereby reducing the amount of funds flowing into shadow banking products and increasing the risk of a fund shortage. This is the reason shadow banking finance develops so rapidly since 2010 this is because, in that period, the Chinese inflation rate was so high.

4.9 Possible solution to minimize the risk of shadow banking

Many enterprises in China are engaging in shadow banking in order to evade taxes and regulation. This phenomenon has a negative influence on the development on the China's economy and the stability of our society. The Chinese government has published some relevant laws to contain illegal fund-raising. The legal explanation concerning judging illegal fund-raising is a meaningful statute that mainly focuses on defining what kind of enterprise fund-raising is illegal.

The problem of the liquidity of the interbank market is likely to recur as improvements are made to regulate the shadow banking. So it becomes very necessary to control the liquidity of the interbank market. From the document No107, The application of Basel III to domestic banks is an attempt to control market liquidity risks. That the capital adequacy ratio of the banks whose balance sheets have been bolstered as a result of tighter regulation of shadow banking will meet the Basel III standards that the deadline for implementation of Basel III is 2018, leaving several years to normalize China's shadow banking system.[9]

[9] Document No. 107 is an attempt by the State Council at comprehensive regulation of China's shadow banking system

4.9.1 Provision of fund-raising platforms for SMEs

Limited access to fund-raising has forced SMEs in China to borrow through the shadow banking system. To reduce shadow banking activity, more funding sources should be provided, particularly for SMEs. The Chinese government should accelerate the creation of capital markets and introduce new investment tools by, for example, relaxing restrictions on SMEs' issuance of preferred stocks. (PBOC, 2014)

4.9.2 Stress Testing on Banks

Stress test are commonly used of the to analyze whether a bank has sufficient capital to withstand the impact of unfavorable economic scenarios and adverse developments in worldwide. But China rarely published the result in the public domain. Furthermore, they are not always standardized or aligned with international requirements and are only reviewed occasionally and unsystematically of the stress test which conducted by the local government. China Financial Stability Report (2014) states that standardized stress tests on banks and financial institutions systems are required, with all banks following the same scenarios and results disclosed to the public. Not only would this help both the government and banks to be prepared for any potential problems, but it would also raise general awareness about banking system health.

4.9.3 Reform of Interest Rate Liberalization

Currently, the investors are earning high margins on shadow banking products, thus it will be very necessary for the linearization of the interest rate to allow the interest rate to return to the market level, and reduce the net interest margin and thus the scale of shadow banking. Product returns would then be constrained by inherent credit risks.

4.9.4 Reform Banking Regulation

For financial institutions that serve as the intermediaries for funds, shadow banking is a tool for avoiding supervisory management regulations through financial innovation. Banking authorities have established interest-rate regulations and relatively high reserve requirement ratios (20.0% in the case of large banks as of July 2013), and regulate bank lending through the loan-to-deposit ratio (75%) and window guidance, etc. As market competition has intensified, banks have come to use shadow banking as a tool for expanding lending in lieu of traditional channels in order to avoid regulations (RIETI, 2015).

In 2010, the CBRC has imposed some restrictions on bank lending activities, thus the growth rate of bank loans has significantly reduced, and arguably these regulations have helped banks to reduce the risk inherent in regular operations, but this risk has merely shifted into shadow banking activities, which are harder to control. Regulators should relax the restrictions for loans so as to shift risk back to the traditional regulated platform, rendering this risk transparent to both investors and regulators. More direct measures to regulate off-balance sheet activities should also be implemented (CBRC, 2014).

4.9.5 Tighter regulation of bank wealth management products

China Securities Regulatory Commission has been taking some regulation on this problem of WMPs. On 30 September 2011 (with immediate effect), the CBRC promulgated a circular entitled Notice on Further Strengthening Risk Management of Wealth Management

Business. The circular calls on banks to develop wealth management products “objectively,” are more transparent in their product disclosure, provide separate plan calculations, and manage their affairs properly. Because most banks' wealth management products are not stated on their balance sheets, as banks do not assume the risk of their own, in general, given that the contract documents do not guarantee the principal or interest rates. By implementing this regulation measure on WMPs. It will require the banks to disclose the information of WMPs and enhance the regulation.

4.9.6 Tighter regulation of collaboration between banks and trust companies

On 12 August 2010, the CBRC promulgated a circular clarifying and tightening the rules governing collaboration between banks and trust companies on wealth management products, services, investments, and risk management. In particular, the CBRC called on the banks to put back on their balance sheets in two years (2010 and 2011) the assets they had previously removed and to raise their loan-loss reserve ratios to 150%. Currently, the collaboration of banks and trust companies are less regulated. And the trust companies continue to invest its funds in the financing platforms of local governments; the real estate industry; and industries with high contamination. The investments by trust company to those areas can lead to heavy resource consumption, and excess investment. In addition, they could induce a moral hazard and adverse selection by hiding the problem of bad loans by making up for any losses. This measure can set a high standard of the collaboration between banks and trust companies.

4.10 Revision of the Chapter

In this Chapter, we specifically explained all kinds of the risk of the shadow banking finance in China, wealth management products and trust products play the major acting role in the Chinese shadow banking system and create the risk. Due to the short maturity of the WMPs, it becomes attractive for both asset side and the liability side. But because of the lack of transparency and off-balance-sheet treatment of both assets and liabilities side and the maturity mismatch, it will cause the liquidity problem. Also, trust products are the other very important tools that cause the shadow banking. Especially, the local government uses the local government financing vehicles (LGFVs) to cooperate with trust companies to raise funds. In recent years, similar to the developed western countries, the China's debt to GDP ratio has increased very sharply. Therefore, it brings the debt concern. Also, with the growing of the internet finance in recent years, it develops rapidly without so much regulation. Then, these risky financial activities contain the credit risk which means potential repayment problem and default risk. Finally, all these modern financial products and risky financial activities can challenge the central bank's monetary policy of China. After introducing all the potential explode of these risks, and then we used several indicators to identify the financial crises. For instance, the indicator of house prices, the performance of the commercial bank, interest and inflation rate. Finally, we suggested the possible solutions how can regulate or decrease the risks. We recommend the tightening of regulation on WMPs management and the increase the collaboration between banks and trust companies. And it will be a possible solution to implement the stress tests on banks and disclose the results to the public and to reform banking regulation and interest rate liberalization.

5 Conclusion

The aim of the thesis was to identify both the positive effect of the Chinese shadow banking and more importantly the potential risks of this activity and then we put forward some possible solutions that could enhance the regulation and reduce the risks. The structure of the thesis was as follows. In Chapter 2, the literature knowledge of the financial system in China has been described. We introduced the theoretical background of not only the traditional banking system, Non-banking financial institution. But also the shadow banking has also been described. In Chapter 3, the similarity and difference of shadow banking system in China and US has been compared. By comparison the different situations of the shadow banking system, we can emphasize the special characteristics of Chinese shadow banking. The most significant characteristics are that the Chinese shadow banking are dominated by WMPs and trust products. In chapter 4, we mentioned all the potential risks and challenges of the shadow banking system, it including challenging the monetary policy of Chinese central bank, liquidity risk by the mismatch of the WMPs, credit default risk of the shadow banking financial products and more seriously the systematically financial risk. Finally, we suggested the possible solutions to regulate the risks. We recommend to tightening the regulation on WMPs and to implement the stress tests on banks. Reforming on interest rate liberalization can be an effective method to enhance the regulation.

In China, there is a concern about the rapid expansion of shadow banking financing, such as the WMPs sold by commercial banks and the trust products sold by trust companies. This rapid expansion of shadow banking in China is the result of financial innovation to meet the needs by pouching, investing and intermediate funds in the Chinese financial market. To be more specific, from the viewpoint of pouching funds, the real economy started to face a shortage funds in 2010 since the tight monetary policy in China. Thus, the real estate industry, the financing platform of local government and small and medium private enterprises are facing severe lack of fund. So they have to find an alternative way to get the fund, which contribute to the expansion of shadow banking. Secondly, from the viewpoint of investors, shadow banking provides new investment products other than bank deposits, equities, real estate, foreign exchange, etc. These new products, which provide a higher rate of return than the maximum bank deposit rates, are attractive to investors. Thirdly, for the intermediating funds (financial institutions that serve as the intermediaries for funds), shadow banking is a tool for avoiding supervisory management regulations through financial innovation. We compared to the reason of shadow banking activity in China and US. The shadow banking finance is different in these two countries in terms of the size of shadow banking; reason causes the shadow banking and the regulation measures. In the US, shadow banking generally means an investment management scheme, such as asset-backed commercial paper, conduits, or structured investment vehicles (SIVs), that employs excessive leverage to maintain margins by raising short-term funds and investing them in long-term assets. Shadow banking in Europe and the US can be said to have been born when asset securitization made rapid progress as part of financial innovation.

Because of the existence of the financing platforms of local government, the funds financed by shadow banking are directly or indirectly flowing into the real estate market. Ultimately, the housing prices are keeping increasing to become the potential risk of the housing bubble that will continue to develop to the systematic risk of the Chinese financial market. Besides that, the shadow banking finance has a lot of risks. Not only may the effectiveness of macroeconomic policies and financial supervision decrease, but also shadow banking can adversely impact the management of regular financial institutions. To prevent or minimize the risks we recommend the tightening of the regulation imposed on WMPs management and increase the collaboration between banks and trust companies. And it could be a possible solution to implement the stress tests on banks and disclose the results to the public and to reform banking regulation and interest rate liberalization.

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List of Abbreviations

NBFI	Non-Bank Financial Institution
FSB	Financial Stability Board
TFC	Term Finance Certificate
SPV	Special Suggest Vehicle
ABCP	Asset-Backed Security Paper
MBS	Mortgage-Backed Security
ABS	Asset-Backed Security
PTC	Pass-Through Certificate
CDOs	Collateralized debt obligations
Repos	Repurchase Agreements
SPEs	Special Suggest Entities
IMF	International Monetary Fund
SMEs	Small and Medium Enterprises
WMPs	Wealth Management Products
TICs	Trust Investment Companies
LGFVs	Local Government Financing Vehicles
PBOC	People's Bank of China
CBRC	China Banking Regulatory Commission
RIETI	Research Institute of Economy, Trade & Industry, IAA

CASS	Chinese Academy of Social Science
NAO	China's National Audit Office
SOBs	State Owned Banks
P2P	Peer-to-Peer lending
CSRC	China Securities Regulatory Commission
NBSC	National Bureau of Statistics of China
CMB	China Merchants Bank

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List of Annex

Annex 1 Rate of Increase of Money Supply over the Previous Corresponding Period (in %)

Year	Money and Quasi-Money (M2)	Money (M1)	Currency in Circulation (M0)	Corporate Demand Deposits	Quasi-Money	Corporate Time Deposits	Personal Savings Deposits	Other Deposits
2005	17.6	11.8	11.9	11.7	21.1	30.4	18.0	31.3
2006	17.0	17.5	12.7	18.9	16.7	17.2	14.6	36.3
2007	16.7	21.1	12.2	23.5	14.3	21.2	6.8	63.2
2008	17.8	9.1	12.7	8.2	23.2	28.1	26.3	-1.5
2009	27.7	32.4	11.8	37.7	25.2	37.7	19.7	39.4
2010	19.7	21.2	16.7	22.1	18.9	28.7	16.3	16.0
2011	13.6	7.9	13.8	6.7	16.8	18.1	16.2	17.7
2012	13.8	6.5	7.7	6.2	17.6	17.6	16.6	25.1
2013	13.6	9.3	7.1	9.7	15.6	18.8	13.5	19.5

Source: China Statistical Yearbook (2014)

Annex 2 Money Supply at Year- end (100Million RMB)

Year	Money and Quasi-Money (M2)	Money (M1)	Currency in Circulation (M0)	Corporate Demand Deposits	Quasi-Money	Corporate Time Deposits	Personal Savings Deposits	Other Deposits
2008	475166	166217	34219.0	131998.2	308949.5	60103.1	217885.4	30961
2009	606225	220001	38246.0	181755.5	386223.5	82284.9	260771.7	43166
2010	725851	266621	44628.2	221993.4	459230.3	105858	303302.5	50069
2011	851590	289847	50748.5	239099.2	561743.2	166616	352797.5	42329
2012	974148	308664	54659.8	254004.5	665484.6	195940	411362.6	58181
2013	1106525	337291	58574.4	278716.6	769233.9	232696	467031.1	69506

Source: China Statistical Yearbook (2014)

Annex 3 Official Interest Rates of Deposits of Financial Institutions (% p.a.)

Item	Oct.20,2010	Dec.26,2010	Feb.09,2011	Apr.06,2011	July.07,2011	Jun.08,2012	July.06,2012
Demand	0.36	0.36	0.40	0.50	0.50	0.40	0.35
Time							
3-Month	1.91	2.25	2.60	2.85	3.10	2.85	2.60
6-Month	2.20	2.50	2.80	3.05	3.30	3.05	2.80
1-Year	2.50	2.75	3.00	3.25	3.50	3.25	3.00
2-Year	3.25	3.55	3.90	4.15	4.40	4.10	3.75
3-Year	3.85	4.15	4.50	4.75	5.00	4.65	4.25
5-Year	4.20	4.55	5.00	5.25	5.50	5.10	4.75

Source: National Bureau of Statistics of China (2014)

Annex 4 Changes in Non-performing Loans and the Provisioning Coverage Ratio of Commercial Banks in China

Year	Balance of non-performing loans (Billion Yuan)	Non-performing ratio (%)	Provision coverage ratio (%)
2006	1254.9	7.09	34.3
2007	1268.4	6.17	41.4
2008	568.2	2.45	116.6
2009	497.3	1.58	153.2
2010	433.6	1.10	217.7
2011	428.2	0.96	278.1
2012	492.9	0.95	295.5

Note: Values at period end

Source: Compiled by the author based on data from the "CBRC 2012 Annual Report" of the China Banking Regulatory Commission

Annex 5 Size of the (Narrowly Defined) Shadow Banking System in China

Year	Size of bank's wealth management products (Billion Yuan)	Size of trust company's trust products (Billion Yuan)	Total (Billion Yuan)	Percentage of GDP (%)
2007	1327	949	2276	8.6
2008	960	1223	2183	7.0
2009	1015	2016	3031	8.9
2010	2500	3040	5540	13.8
2011	5000	4811	9811	20.7
2012	7100	7471	14571	28.1
March 2013	8200	8730	16930	26 (estimate)

Note: Values at period end

Source: Compiled by the author based on data from Wind Information, the China Banking Regulatory Commission, and the China Trustee Association