

Shadow Banking in the United States: Emerging Factors, Operation Modes and the Current Situation of Supervision

- Based on the Comparison with Chinese Shadow Banking System and Market

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Abstract: In 2009, Ben Bernanke, chairman of the Federal Reserve, described shadow banking as a financial intermediary that converts savings into investments in addition to regulated deposit-taking institutions. To put it simply, the essence of shadow banking is a financial innovation that breaks through traditional financial institutions in order to maximize profits in the financial market environment. In this paper, we compare the U.S. and Chinese shadow banking system and their market system. From that, we analyze their similarities and differences from the aspects of emerging factors, classification and scale, and operation mode. Based on the above analysis, we then discuss the current situation of supervision of shadow banking in the United States and find that the U.S. shadow banking is negligent in institutional constraints and has practical difficulties in legal supervision. Finally, we put forward some suggestions on the future development and financial structure optimization of shadow banking.

Keywords: Shadow banking in the United States and China, emerging factors, classification and scale, operational modes, current situation of supervision

1. Introduction

The emergence of shadow banking can be traced back to the famous American economic crisis from 1929 to 1933. Under the circumstances of the stock market crash and the Great Depression, both the American government and traditional commercial banks had to make corresponding decisions to improve the situation. This is also the reason why the later shadow banking will have different classification and operation mode, such as the government-led shadow banking and the shadow banking derived from commercial banks and so on. It was not until the 1960s and 1970s that shadow banking took shape. At this time, a credit crisis appeared in some European countries and the U.S., which triggered drastic market competition and brought a wave of financial innovation. In fact, the concept of shadow banking was not put forward until the subprime mortgage crisis in the U.S. broke out in the 21st century. Shadow banking is a very important financial concept, its core is securitization.

Shadow banking originated in the United States. Based on the comparison of the U.S. and Chinese shadow banking systems and markets, this paper will focus on the U.S. shadow banking and specifically elaborate the factors of the rise of the U.S. and Chinese shadow banking, the classification and scale of the U.S. shadow banking, the similarities and differences in the operation modes of the U.S. and Chinese shadow banking, and the regulatory status quo of the U.S. and Chinese shadow banking. This paper has a specific analysis of the evolution of the financial structure behind shadow banking and the development and influence of the U.S. and Chinese financial markets.

2. Literature Review

2.1. A review of shadow banking research in the United States

During the 1970s, the U.S. shadow banking appeared. It is the product of the complex era under the influence of the American economic crisis in the last century and the constantly evolving pattern of the financial market. The financial wave of that time led to the emergence of financial innovations such as money market funds, and the securities industry and non-bank businesses have since grown rapidly. In addition, the prevalence of neoliberalism in the United States and the mixed operation of the financial market brought about by the wave of liberalization are also one of the reasons. The U.S. shadow banking can be seen as three categories: internal shadow banking, external shadow banking, and government-led shadow banking. The three categories are different in their reasons, purpose, scale and mode of operation. One of the most representative shadow banking is the investment bank, which is an external shadow banking and does not rely on traditional commercial banks. However, the core is securitization in every way. Asset securitization is an innovation in the financial market, which has a profound impact on the financial market, and is also the precursor of shadow banking. Shadow banking first appeared in the U.S., so it has the longest development in the United States. It was first created by commercial banks in order to avoid government supervision. At present, the financial regulatory laws in the United States are very developed and thorough, but the supervision and restraint of shadow banking are neglected. If we further analyze, we will find that the U.S. law has been "benevolent indifference" to shadow banking, subjectively because the shadow banking business is considered to be conducive to the development of the financial market. That is why the U.S. financial markets have expanded so rapidly. The reason for this is subjectively because the shadow banking business is conducive to the economic development of investors and financial markets, and objectively because there are indeed difficulties in legal supervision. Design flaws in the existing system contribute to this difficulty.

2.2. A review of shadow banking research in China

There are mainly two reasons to build China's shadow banking. Firstly, too much money on the market liquidity, capital to seek the path of the added value. Secondly, there are a large number of enterprises and individuals who cannot get financial support in normal channels, and the two hit it off. In 2017, data show that since the beginning of the concentrated crackdown, the scale of shadow banking has dropped sharply from its historical high. Near the end of 2019, the scale of broad shadow banking fell to 84.80 trillion yuan, down nearly 16 trillion yuan as early 2017. The shadow banking operation mode is to carry out financial intermediation activities outside the banking supervision system and extend bank credit far above the credit issuance standards. Its business structure is complex, layers of nested, high leverage. At the same time, its information disclosure is incomplete, the transparency is low, and the pressure of centralized payment is great. China's traditional supervision model is that one line and three committees are divided into different sectors, and the supervision power is unified under the leadership of the central people's government, which has its own responsibilities to supervise China's financial markets separately. In this case, the existing

problems include inconsistent regulatory standards, serious regulatory arbitrage and so on. At the same time, there are problems such as regulatory competition, low regulatory efficiency, asymmetric information, inability to identify risks and suppression of financial innovation.

2.3. A review of comparative research on shadow banking in the United States and China

Shadow banking first appeared in the United States, and its development in EU countries is no less than that in the United States. At the same time, Western countries are more aware of the dangers of shadow banking. However, Chinese shadow banking is only in its infancy, not only has not yet been standardized and mature, even the statistics need to be improved, and its value-added speed in China cannot be compared with other countries. At present, the size and proportion of shadow banks in the United States and the European Union both exceed the global average, with the United States ranking first in all indicators, while China's shadow banking is not only small in scale, but also lags behind the global average in every aspect. However, the growth rate is remarkable and far exceeds that of the United States.

Shadow banking in the U.S. and Europe is concentrated on securitization of assets. Both the bank and non-bank credit systems in the US and Europe are in the process of securitizing assets, but they play different roles. To be specific, commercial banks stand at the top cone of asset securitization and are mainly responsible for issuing the underlying asset—a loan. Shadow banking is responsible for the packaging and securitization of these loan assets, an extension of the banking products. The European and the U.S. capital markets are highly developed. Therefore, shadow banking relies more on the deep capital market. Moreover, the wide variety of derivatives in western financial markets has also separated financial products from the real economy, increasing the possibility of systemic risks. Compared with shadow banking in developed countries, China's shadow banking can almost be called the "shadow of the bank", or even an alternative to bank credit creation, due to its deep dependence on commercial banks. China's shadow banking is a response to financial repression, or the "white up and down" interest rate liberalization reform, which functions as an alternative to bank credit lending and does not involve complex asset securitization processes.

Shadow banking is the product of financial innovation, and its existence has its rationality and inevitability. Therefore, shadow banking must not be stopped, on the contrary, only reasonable measures should be taken to dredge and regulate it. Moreover, since the development of shadow banking has been changing, it is also necessary to ensure that regulatory policies are adapted to market needs. Firstly, according to the development of European and the U.S. shadow banking, we can find that the deepening of bank disintermediation to the capital market is universal. Therefore, it can be inferred that the future of China's shadow banking will no longer rely on banks, but rely on the capital market, from the current credit intermediation as the center of the transition to asset securitization, so the corresponding supervision must follow this change, should start. From interest rate liberalization to promoting mixed operation and management. To create a beneficial and favorable external environment for the smooth and even disintermediation of banks. Secondly, to protect investors, the government should regulate shadow banks and make them disclose more information about wealth management products and credit products, so that individual investors can make correct investment strategies and reasonably avoid risks after understanding the complete information. Thirdly, supervision must accommodate mixed business operations and highlight the leading role of monetary authorities in overall regulation. The financial crisis has taught us that financial assets that continue to be securitized are equivalent dangerous. In fact, various enhancement products of shadow banking have such characteristics. The experience of the United States shows that the importance of stress tests cannot be ignored. Although the scale of China's shadow is small, but it still needs to monitor.

3. Emerging factor analysis of shadow banking in the United States and China

3.1. Shadow Banking in the United States

3.1.1. The formation of shadow banking

It is widely believed that shadow banking is one of the important factors of the U.S. subprime mortgage crisis. Many studies acknowledged the importance of the shadow banking system in the 2008 U.S., and they say that exceeding private debt is the most basic reason for the 2007-2008 financial crisis and shadow banking is a convenient tool for credit accumulation [1]. On the one hand, shadow banking increases the demand for private mortgage loans. Using the ways like securitization, banks can ride the wind and waves to promote the demand of mortgage. On the other hand, the shadow banking system can strengthen the loan supply. Banks know they can sell home mortgages into securitization pools; they don't look carefully at borrowers without proof of income. Asset securitization reduces the incentive for banks to scrutinize and regulate borrowers [1].

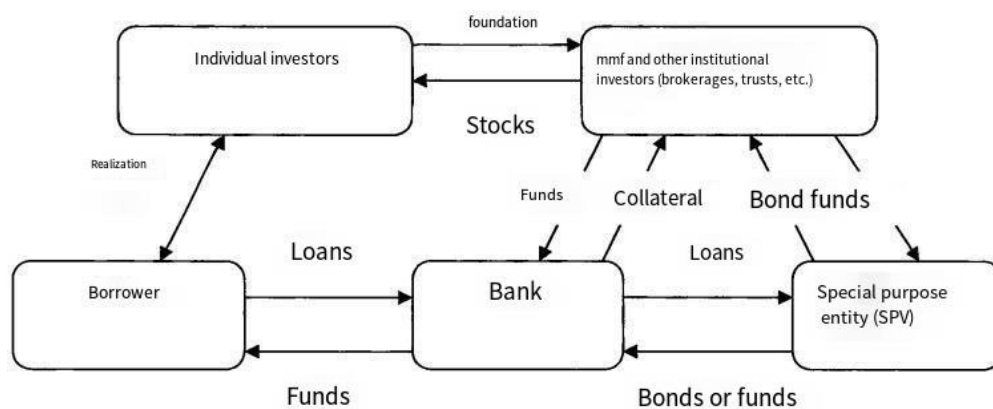


Figure 1: Bank's Off-Balance Operating Mechanism. Source: Teaching and Research (2022).

To trick the public into accepting new policies, some elites said that policies would lead to a quicker economic growth and will bring benefits to all people living in the U.S. This proposes called "trickle-down economics" that as the rich get richer, the wealth will go to the poor. That way workers accept lower wages and not participate in vital government programs. Over the years, economic growth in the United States not only lagged behind World War II golden age, but rich people get richer and poor people get poorer[2].

The money for the rich people has increased exponentially, while the real income for the average person have been stagnant for a long time. Therefore, the U.S. society has suffered serious strikes and unemployment has remained high. According to the latest World Inequality Report, while income inequality between countries is shrinking, inequality within countries is on the rise. The stratum differentiation between rich and poor in the U.S., Russia, India and other countries rising much more than in other countries [2]. After the outbreak of the epidemic, the U.S. government, which has been controlled by monopoly capital, ignored the basic welfare such as medicine and safety of the people and blindly adopted the monetary policy to maintain citizens' financial confidence.

Meanwhile, China has pushed up the stock market and housing prices, stimulating high-income groups to increase their assets. However, for the ordinary people, it is painful. Due to the deception of neoliberalism, more people have increased their demand for money, and in order to maintain their daily expenses and blind confidence in the economy, they choose to borrow from shadow banks [2].

3.1.2.Regulation of shadow banking

The primary function of shadow banking system is disintermediation. Financial markets replace traditional financial institutions to complete the intermediary and using different tools and transactions to finish the activities. Compared to traditional banks, shadow banks reduce the cost of intermediary institutions by indirect financing. For another obvious advantage is the regulation cost: shadow banks lie outside the boundary of financial regulation and is hardly regulated, so it does not have to bear the expensive regulatory costs that traditional banks do[3].

However, because it depends on direct financing products, the regulation of shadow bank uses information disclosure system as the center to control. The financing process of shadow banking system relies on both short time and long time financing. Long time financing is the process of securitizing assets and selling loans. Short-term financing involves the sale of commercial paper or asset-backed commercial paper, and transactions. Both of these activities are outside the scope of regulation [3].

The wave of financial liberalization has not only brought about a revolution in the financial market, but also had a profound impact on the reform of financial regulation. Since 1979, the United States has successively promulgated seven financial regulations, among which the most representative and influential is the Financial Services Modernization Act of 1999 [1]. The primary changes are as follows: Firstly, the requirements of the banking and securities industries in the Glass- Steagall Act were completely abolished. Secondly, it broke the geographical restrictions on banking operations, banking could operate across state lines. Thirdly, it relaxed restrictions on deposit interest rates and abolished the "Q Regulation". Fourthly, promoted competition in the financial sector and gradually launched interoperability among banks, securities companies, mutual depository banks, insurance companies and other institutions [1].

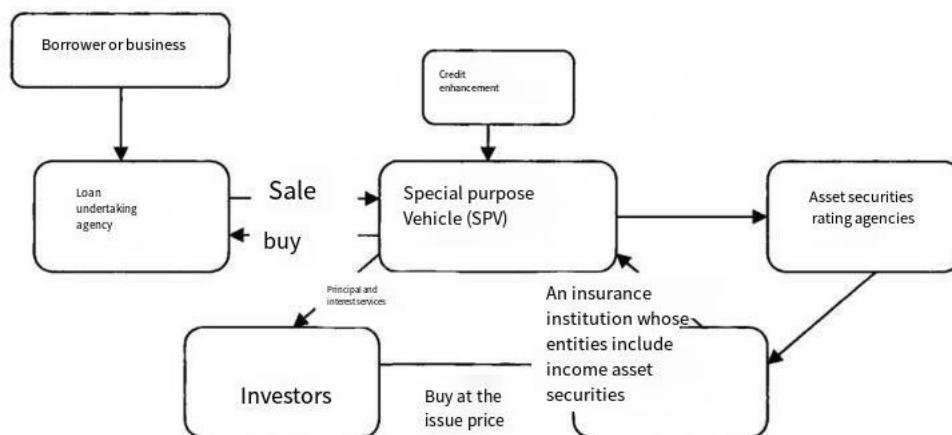


Figure 1: The Main Operating Process of Asset Securitization. Source: Teaching and Research (2022).

3.1.3.Asset securitization

It is considered as one of the most important financial innovations in the global financial market in recent decades. According to the different nature of underlying assets. Before the subprime crisis, the theoretical community generally held a positive qualitative view on asset securitization, believing that asset securitization can provide market liquidity and effectively reduce financing costs. However, with the outbreak of the subprime crisis, scholars have studied asset securitization more comprehensively, and paid attention to the instability of liquidity created by asset securitization. If there is a reversal of market confidence and asset prices, there will be a liquidity collapse[1].

As an important form of innovation, asset securitization emerged in the 1970s and had a profound impact on the financial market. It was the predecessor of the shadow banking system. With the bursting of the Internet economic bubble in the United States in 2001, the securitization business was basically integrated with the IT revolution, and the second wave of asset securitization emerged. The scope of institutions participating in securitization has expanded, and the scope of underlying assets has increased. Securitization has changed from simply buying loans at maturity and holding them for interest to the financing function, which has enhanced market liquidity to a greater extent and therefore developed more rapidly [1].

3.2. Shadow banking in China

3.2.1. Financing needs of shadow banks

Debt financing affects external investors judgment of corporate image through signal transmission function, which will encourage management to strive to maintain this image, thus reducing agency cost. Financing structure determines the allocation of corporate control rights in liquidation. When the management's inaction causes the enterprise to fall into the bankruptcy crisis, the assets are often difficult to repay all the debts. As a result, the control will actually be transferred to the creditors in the liquidation, making the management lose its status and interests, which has a great deterrent effect on the management. Then, the management can restrain its own behavior, thus reducing agency costs.

Secondly, from the perspective of the informal nature of shadow banking financing, shadow banking creditors have information advantages that bank credit does not have, so optimizing financing contracts and forming personalized mechanisms can help reduce agency costs of financing enterprises [4]. For shadow banking creditors in informal finance, they mainly obtain the required information through business cooperation such as the popularity and region of both lenders and borrowers. They not only collect explicit information, but also collect many implicit information, such as the personal habits of managers. This kind of information advantage. Moreover, according to incomplete contract theory and asymmetric information theory, no contract can be perfect due to incomplete information. At this point, the party with full information is often in a better position [4].

3.2.2. Supply of funds

As an important part of the financial intermediary system, the shadow banking system has weakened the impact of the slowdown in loan growth in 2010 on the macro economy to a certain extent. It also made up for the gap between the supply and demand of funds, and partly met the capital needs of China's real economy, especially small and medium-sized enterprises. It is a beneficial supplement and substitute to traditional credit channels [1].

3.3. Overall differences between shadow banking in the United States and China

The U.S. shadow banks are more creative than Chinese shadow banking. Lax financial regulation in the U.S. has led to the proliferation of financial institutions of all types. Any institution capable of attracting capital can do so. In the United States, shadow banks can include money funds, hedge funds, asset managers, private equity funds, investment banks, mortgage lenders, insurance companies, and all kinds of securitization vehicles, which can be the main body of capital raising. Loans from banks, or from mortgage lenders, are constantly being packaged and sold. Through securitization, bundles of loans or real estate charging rights are repeatedly packaged into asset-backed securities and sold at a profit. In other words, the core of the U.S. shadow banking is asset securitization [1].

Chinese shadow banking is like real shadow banking, which mainly raises funds through banks selling wealth management products. It also through interbank liabilities, and then invests the funds

through various channels. For example, trusts, securities brokers and fund subsidiaries. Essentially, it is still the investment behavior of banks themselves [1].

4. Classification and scale of shadow banking in the United States

The U.S. shadow banking is a product of the economic and social development of the United States and its special era. Its system is very complex, and its operating subjects include the following categories: First of all, internal shadow banking, which is mainly composed of credit intermediaries and structured investment entities controlled by financial holding companies. Second, external shadow banking, which is independent investment bank, is not attached to the commercial banking system. The third category is government-led shadow banking, also known as government-sponsored enterprises [1]

4.1. Specific classification of shadow banking in the United States

4.1.1. Internal shadow banking

Internal shadow banking refers to all kinds of financial holding companies derived from commercial banks and dependent on commercial banks, including credit intermediaries such as banks, financial industry companies, economic dealers and asset management companies under the control of commercial banks and financial holding companies. These credit intermediaries originated from inside traditional commercial banks and financial holding companies. That's why it's called internal shadow banking [1].

Why do shadow banks breed in traditional commercial banks? The emergence of shadow banking can also be seen as the operation transformation of large traditional commercial banks. In the 1980s, the United States government strictly regulated commercial banks, and the operating costs of American businesses were high. Not only that, but also the rapid development of non-bank institutions put increasing pressure on traditional commercial banks. In order to solve these problems, commercial banks acquired most of the economic dealers and asset management companies that posed a threat [1] and changed the original lending methods, that is, securitization of traditional financial products. This change in lending practices has also created a new type of institution, the securitization agency, which is also part of the shadow banking system.

Off-balance sheet business carried out by commercial banks is mainly engaged in internal shadow banking business, while off-balance sheet business is the business activity engaged by commercial banks. These activities are not included in the balance sheet but affect the bank's profit or loss in the current period. There are three main types of off-balance sheet business: guarantee business, commitment business and financial derivatives business.

4.1.2. External shadow banking

Different from internal shadow banking, external shadow banking is an independent investment bank that does not depend on commercial banks and mainly refers to diversified economic traders. Foreign shadow banking in the United States mainly refers to the original five independent investment banks and independent professional credit intermediary networks [1].

Investment banks are a kind of financial institutions corresponding to commercial banks. They occupy a very high position in shadow banking and occupy a mainstream position in the capital market and the trading of financial derivatives and bulk commodities. The main purpose of such investment banks is to bypass government regulation. In the more than 20 years since the financial crisis, the business of investment banking has changed with the development of the market. For

example, its business focus has shifted from stock market trading to financial derivatives trading, which has brought rich returns to investment banks, but also increased risks.

In addition to investment banks, investment funds are also one of the representatives of external shadow banking. Investment fund includes hedge fund, which is a form of investment fund and combined by financial derivatives. For example, financial options, financial futures, financial organizations, and for the purpose of profit, this financial fund adopts hedge trading means.

However, neither investment banks nor hedge funds can do without securitization. Securitization is also where external investment banks have something in common with internal investment banks, both of which raise money globally and then originate and securitize loans in the United States.

4.1.3. Government-led shadow banking

Part of the reason for the development of external shadow banking and internal shadow banking is to avoid the supervision of the government. Different from the former two, government-led shadow banking is a carrier for the government to use means to promote the flow of the financial market. The housing market downturn caused by the economic crisis from 1929 to 1933 was alleviated by the U.S. government provision of long-term low-interest mortgage loans. In the meantime, the U.S. Congress approved the establishment of the Federal Home Loan Bank Agency, and the later ones known as Fannie Mae and Freddie MAC were also typical government-led shadow banks [1].

Above, we divide shadow banking in the United States into three categories, each of which has different causes, purposes, development and changes, different scales, and different characteristics, especially internal shadow banking and external shadow banking.

4.2. The specific scale of shadow banking in the United States

4.2.1. The size of internal shadow banking - two representative investment vehicles and money market funds

To show the scale of internal shadow banking, look at two of the most representative types of investment vehicles or firms: structured investment vehicles (SIVs) and money market funds. A SIV is an investment business backed by a commercial bank that sells short-term debt. For example, commercial paper, long-term debt, subordinated bonds, and profits from the spread between the two types of debt.

Before the financial crisis erupted in 2007, there were 55 SIVs with total assets of \$400B. Among them, Citibank in the United States has seven structured investment vehicles, with total assets reaching 100 billion U.S. dollars, which has the most investment structured instruments, so it can be seen that the scale of structured investment vehicles in the United States is very large, ranking first in the world [5].

Money market funds in the United States are also in the leading position in the world. According to JRJ, their number and asset scale grew rapidly in 1982, only ten years after the establishment of the first money market mutual fund in the United States in 1972, it has developed to more than 200, and the asset scale has expanded to 240 billion, showing its rapid development. During the 2008 financial crisis, money market funds peaked at \$3.8 trillion. Later, it was affected by the U.S. subprime mortgage crisis.

4.2.2. The size of external shadow banking - two representative forms: investment banks and hedge funds

As the most representative investment bank among external shadow banks, its scale has been greatly expanded in the years before the 2008 financial crisis broke out, and its business income has

maintained a high growth rate. It reached an all-time high of more than \$100 billion just before the financial crisis. In 2008, the financial crisis caused great harm to the development of investment banks, and their income dropped sharply. However, in the development of the following years, they recovered growth and their income continued to increase [5].

Similarly, hedge funds in the external shadow banking sector were also affected by the U.S. subprime mortgage crisis in 2008, and in 2007 the number of hedge funds exceeded 10,000 with total assets of \$2 trillion. However, under the subprime crisis, its size has shrunk to a quarter of 2007. Unlike investment banks, hedge funds have recovered quickly and strongly, surpassing pre-crisis levels in just two years [5].

5. The similarities and differences in the operation modes of shadow banking in the United States and China

5.1. Operation mode of shadow banking in the United States

The U.S. shadow banking is not only a complete capital flow system formed by a variety of channels and financial markets, but also an institution of loan securitization and financing. The operation mechanism of the U.S. shadow banking is centered on asset securitization, which is a typical off-balance sheet operation. Its main business is to link banks and non-bank financial institutions together under the two activities of asset securitization and mortgage guarantee intermediation [6], so as to carry out maturity conversion and risk transfer. Among them, the short-term deposit mainly uses the securitization process to convert the credit classification and original risk assets into safe liquid debt. However, long-term deposits are mainly used to reduce the corresponding risk between the borrower and the lender in the process of securing the mortgage.

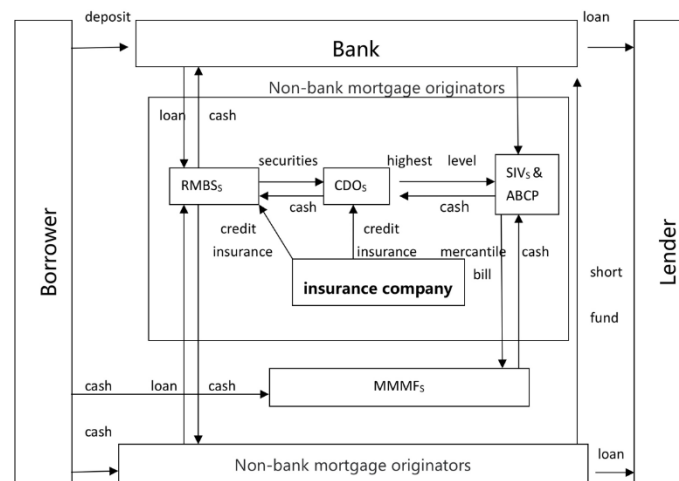


Figure 2: The Structure of Shadow Banking System Source: IMF (2014).

In the world, the operation mode of the U.S. shadow banking is the most complex and mature [7], which can be generally divided into the following four steps.

Step 1: Commercial banks make loans. Commercial banks will issue different types of loans to different borrowers, and different types and durations of credit contracts can be obtained from their normal lending procedures.

Step 2: The warehouse bank (and sometimes the commercial bank itself) buys the loan contract. When commercial banks pursue their own competitiveness in the market, they will choose to sell their own loan contracts [7]. Warehouse banks then step in to buy these loan contracts to create a pool

of capital, which not only increases the liquidity of credit assets, but also increases the risk of mismatching loan maturities.

Step 3: Special Purpose Vehicles (SPVs) purchase pools of capital. In most cases, SPVs will be applied to the asset-backed securities market in the form of companies, trusts or partnerships. Its role is to solve the financing problem and reduce the risk of securities trading by reducing the cost of securitization with professional means [7]. SPVs would buy a warehouse bank's pool of capital and use it as collateral to issue asset-backed securities (ABS). Underwritten by investment banks, ABS is sold to various bond dealers and structured investment vehicles and pays regular interest to investors.

Step 4: Secondary financial derivative process. In the third step, SPVs has completed the primary derivatives of shadow banking credit assets when it issues ABS, and then secondary derivatives can be completed through various bond dealers and structured investment vehicles. After various bond dealers and structured investment vehicles purchase ABS and repackage and issue it, the broker will issue it in the market in the form of debt certificates and sell it to money market funds, institutional investors and other groups.

In the operation mechanism of shadow banking in the United States, financial instruments will be securitized and sold through asset packaging, classification, credit enhancement and other procedures to create liquidity in the financial market. This is a process in which depositor funds flow into commercial banks, money market funds, and money custodians, and are packaged into securitized products through the maturity and risk conversion of SPVs, and eventually flow to loan demanders and leveraged investors in the financial market. In this process, the main mode of operation of the U.S. shadow banking is to package and securitize safe assets such as bank deposits and monetary funds for loan expansion [6].

5.2. Operation mode of shadow banking in China

The operation mechanism of Chinese shadow banking is centered on credit intermediation. As an alternative to bank credit, Chinese shadow banks can be understood as financing financial institutions that do not involve complex derivatives. Meanwhile, the development of Chinese shadow banking is closely related to commercial banks. It will shift the deposit and loan business of commercial banks to off-balance sheet, and then other institutions will carry out off-balance sheet business, such as trust and entrusted loans, alone or together with commercial banks [8].

In the operation mode of Chinese shadow banking, an indispensable off-balance sheet business is the issuance of wealth management products [6]. Most of these WMPS invest in 'non-standard credit assets' such as stocks and bonds. According to the statistics of FSB, one third of the wealth management products of Chinese banks are guaranteed products, which will be included in the balance sheet of the bank under the guarantee of the distributing bank. However, the remaining two-thirds of Bank of China's WMPS are unsecured and will not be placed on the bank's balance sheet, so they fall outside the scope of accounting and regulation. For example, because the deposit rate of WMPs is below the yield and not regulated, it does not appear as a fixed item on a bank's balance sheet. As a result, banks can attract depositors and use their money to invest in trust companies.

Shadow banking in China can be regarded as a small extension of credit under the dominant model of commercial banks, so its operation mechanism is relatively simple [9]. For example, trust companies, as an indispensable part of Chinese shadow banking, will raise trust funds from customers or other financial institutions in the name of investment trust products. The trust company will provide this in the form of trust entrusted loans to enterprises or local government projects, which allows the trust company to earn profits but also bear the corresponding default risk. As mentioned above, shadow banking in China is closely linked to commercial banks. Many risky assets in commercial banks can be withdrawn through asset management companies and trust companies. However, in

most cases, Chinese shadow banking only act as guarantors in the supply chain of bank credit funds in disguise.

5.3. The differences and similarities of shadow banking operation modes in the United States and China

In general, there are some similarities and differences between shadow banking in the United States and shadow banking in China. As far as differences are concerned, the first point is that the two operate for different purposes. The main purpose of the U.S. shadow banking is to regulate arbitrage, obtain liquidity and cater to consumer demand [9]. For different financial activities of the capital provision, reserves and risk asset requirements, and so on, the United States financial regulators will be different. At this point, shadow banking in the United States can take advantage of loopholes in regulatory rules to arbitrage. At the same time, most of the bonds from the asset pool of shadow banking in the United States are indirectly providing credit support to consumers [9], so as to match the growing consumer demand. However, the main operation purpose of shadow banking is totally different in the U.S. and China on a similar basis. Its main purpose is to obtain net interest margin, cater to investment and financing needs and regulatory arbitrage. The lack of supervision of commercial banks gives shadow banks the opportunity for regulatory arbitrage. Therefore, Chinese shadow banking is equivalent to the extension of the resource chain of commercial banks to some extent, so as to make up for the vacancy of commercial banks in the existing system. At the same time, this will more or less lead to the overlap of functions and business between Chinese shadow banking and commercial banks.

The second point is that they operate differently. The U.S. shadow banking operates more efficiently. For acceptable and non-acceptable credit loans of banks, the U.S. shadow banking has successfully achieved economies of scale in the process of initiation, service, structuring, transaction and financing, which is more efficient than traditional banks [10]. The specialized division of labor of the U.S. shadow banking will usher in high liquidity and low transaction costs of various products, which greatly improves its operational efficiency. However, although some of the better qualified Chinese shadow banking also have good operation efficiency, the overall operation efficiency of Chinese shadow banking is still not high. The main reason is that the qualifications of Chinese shadow banks are uneven, the products are different, and there is no uniform operating code. As a result, many trading products have incomplete information, and there is no way to form a secondary market. This will produce greater trading friction and greatly reduce the efficiency of operation.

The third and most important point is that the mode of operation centers differently. The operation mode of the shadow banking system in the United States is based on the securitization of assets and the securitization and financing of loans issued by banks, so as to supplement and extend various banking products [11]. For the United States, a country with a developed capital market, the shadow banking system relies on the developed capital market to survive, so as to carry out financial derivatives in the financial system and create more financial derivatives. However, this will gradually separate financial capital from the development of the real economy, resulting in alienation and may even lead to an unprecedented crisis [11]. In contrast, Chinese shadow banking is centered on credit intermediation. While it is attached to banks, it forms a parallel model with banks, or becomes a substitute for banks. A major realization of Chinese shadow banking is to shift its deposit and loan business from on-balance sheet to off-balance sheet and carry out similar bank wealth management services such as bank-trust wealth management products by itself or through other institutions.

To sum up, even though the U.S. and Chinese shadow banking's operation modes are different in terms of operation purpose, operation efficiency and operation center, they are also similar in some ways. The essence of the U.S. and Chinese shadow banking is the credit intermediary of financing, both engaged in regulatory arbitrage and fund arbitrage, and their operations lack transparency. In the

meantime, they provide credit and liquidity conversions that turn risky assets into relatively safe assets through packaged ratings, which not only promotes distinct credit expansion, but also increases source risk.

6. Current situation of shadow banking regulation in the United States

According to Peking University Finance Law Research Center, the most similar business between shadow banking and banking is "short financing and long investment". However, the risk of banks "short financing and long investment" mainly lies in the formation of bad debts. Also, the threat of this risk to bank operations is limited by the capital adequacy ratio requirements that banks must meet. The threat to depositors, on the other hand, is insured by the deposit insurance system in which banks participate. Barring a massive to run on deposits and a disruption in the liquidity of interbank lending [2].

Banks are generally able to contain their business risks. If a bank can't meet depositors' demands to withdraw their money on demand, it must be because the bank is on the verge of failure. However, when investors in securities can't liquidate their holdings, investment banks or other securities firms that act as underwriters may be willing to lose trading commissions because of liquidity difficulties. In a worst-case scenario, they could be fined and forfeited profits due to lawsuits from investors. For claims of the same nature, Bank of America creditors are protected by both deposit insurance and government guarantees, while security creditors can only enforce their rights through litigation. It now seems that the protection of rights differs only depending on whether investors invest in commercial banks or "shadow banks".

The U.S. financial regulatory law is known for being comprehensive and developed, but the lack of institutional constraints on "shadow banking" is not due to the lack of sufficient and strong reasons. Further analysis will reveal the subjective and objective reasons for the "benign disregard" of shadow banking in the U.S. law [2].

The subjective and objective reasons are that shadow banking business is considered to be beneficial to the financial market, economic development and investors. They play an important role in maintaining and improving market liquidity, maintaining the true value of assets by detecting and correcting distorted market prices, and bringing "absolute returns" to investors through flexible portfolio strategies. While the financial crisis has led to unprecedented calls for greater regulation of shadow banking, regulators more familiar with financial rules have been less vocal because they fear that stricter regulation of the vibrant shadow banking sector would curb their enthusiasm for leading the financial innovations that have helped the United States continue to lead the world economy. The shadow banking sector has emerged as a global leader. And helped the United States gain the world's support during the crisis — even if that support was necessary[4].

That's because of the practical difficulties of legal regulation. Take tax as an example, because tax havens can facilitate the offshore formation and profit shifting of shadow banks, stricter registration procedures and higher information disclosure requirements for shadow banks may lead to a significant shrinkage of shadow banks, as private investment require everyone to keep secret of relevant information. The relevant information is also a requirement for private asset to obtain "absolute returns". Flaws in the system make the whole process very difficult for regulators to efficiently get the information they need to monitor the risks of shadow banks. In the meantime, due to the salary and business nature of making the profit, which has attracted large numbers of rich people, the gap between the regulatory authorities and the regulated authorities has become a serious problem to strengthen supervision [4].

7. Conclusion

In conclusion, the U.S. shadow banking has been developing continuously for many years since the subprime crisis. Nowadays, the U.S. shadow banking has become a major part of the financial market, and the development trend even exceeds the traditional bank. The significance of studying shadow banking is to supplement financial macro-control and determine the direction of regulation more accurately, so as to improve the shadow banking system. This is beneficial to controlling the excessive expansion of the financial risks of shadow banking and can reduce the instability of the financial system and ensure the sustainable and healthy development of the economy. By comparing the U.S. and Chinese shadow banking, we can find that they emerged under different period, historical background, economic environment and policy conditions. Even though there are some similarities between the two, there are great differences in the emerging factors, participants, operation modes and so on. Based on the above analysis, we come to the conclusion that on the development path of shadow banking, countries should appropriately learn from each other's experience. However, they should not completely imitate each other, and should formulate corresponding development plans based on their own specific conditions. On this basis, in order to achieve the sustainable and healthy development of shadow banking, it is necessary to carry out corresponding legal supervision measures to avoid certain financial risks and encourage standardized financial innovation.

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