Shadow Banking: The Emergence, Development, and Regulation

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Abstract. Since the 1980s, shadow banking has emerged and rapidly developed due to the rapid progress in financial liberalization and innovation in financial instruments, thereby fostering the prosperity of the global financial market. This study begins by examining the emergence and development of the shadow banking system, analyzing its classification and operational mechanism, and comparing specific manifestations across different countries. Building upon this foundation, it explores both positive and negative economic effects brought about by shadow banking while specifically addressing challenges and opportunities within China's current economic landscape. Furthermore, it compares distinct measures taken for macro supervision and examination of shadow banking in major economies worldwide. Based on these considerations, along with China's national circumstances, this paper examines certain shortcomings and deficiencies in the current regulatory framework about this matter ultimately proposing appropriate measures and recommendations.

Keywords: Shadow banking; Risk analysis; Mechanism of operation; Macro-prudential regulation.

1 Introduction

Since the 1980s, the rapid expansion of off-balance-sheet activities in commercial banks has been driven by financial instrument innovation and banks' motivation to circumvent Basel Accord supervision on bank capital adequacy ratios. This growth has facilitated the emergence of non-banking financial institutions beyond traditional banking channels, giving rise to shadow banking systems (SBS). The concept of shadow banking was introduced by Paul McCulley from Pacific Investment Management Company at the annual meeting of the Federal Reserve in 2007 [1], sparking extensive discussions among academics and practitioners. SBS refers to a network of specialized financial institutions that employ various securitization and secured financing techniques to intermediate funds from savers to investors. However, its potential liquidity and credit tail risks have also been identified as significant contributors to the US subprime crisis in 2007 [2-4]. Consequently, following this crisis, G20 established the Financial Stability Board (FSB) with a mandate to monitor global shadow banking risks. Additionally, different economies such as the United States, the European Union, and

A. Bhunia et al. (eds.), *Proceedings of the 2023 International Conference on Finance, Trade and Business Management (FTBM 2023)*, Advances in Economics, Business and Management Research 264,
https://doi.org/10.2991/978-94-6463-298-9_6

China have implemented distinct macroprudential measures tailored for their respective financial systems' SBS sectors. Due to China's relatively slower development in this area and an immature regulatory framework surrounding it, limited research is available on Chinese shadow banking practices—particularly at a regulatory level.

Furthermore, research conducted by Zhang and Sharma et al. has demonstrated that the Chinese SBS differs from its foreign counterpart in terms of its dominant position with commercial banks at the forefront [5-6], rigid payment structures, and implicit guarantees. These unique characteristics make it a focal point for global research and highlight the importance of studying shadow banking for financial innovation and systemic risk control. Given China's emerging shadow banking system with distinctive attributes, this paper aims to provide an analysis of international practices while discussing concept definition, classification principles established by various organizations, development processes related to the 2008 global financial crisis, operational mechanisms, and economic effects of SBS as well as macro regulation approaches adopted over time in the United States, European Union, and China. Ultimately, this paper proposes corresponding suggestions for regulatory development within China's SBS.

2 Theoretical Overview of Shadow Banking System

2.1 Definition of Shadow Banking

During the annual meeting of the Federal Reserve, Paul McCulley characterized shadow banking as "the whole alphabet soup of levered up non-bank investment conduits, vehicles, and structures" [1]. Subsequently, in their report, the FSB broadly defined SBS as "the system of credit intermediation that involves entities and activities outside the regular banking system" [7]. These institutions primarily rely on short-term and uncertain funding sources due to their unregulated nature. As they operate outside federal oversight, they are ineligible for rediscount facilities or membership with the Federal Deposit Insurance Corporation (FDIC) [2]. Shadow banks serve three key functions: credit transformation, maturity transformation, and liquidity transformation. However, they lack public credit support mechanisms and face limited capacity to effectively handle centralized payment systems. Liquidity risks arise when investors refuse to continue purchasing matured commercial papers within the SBS [4]. FSB advocates a practical two-step approach for identifying shadow banking. Firstly, authorities should ensure comprehensive data gathering and surveillance encompass all nonbank credit intermediation posing potential risks related to shadow banking. Secondly, attention should be directed towards developments in credit intermediation that increase systemic risk or indicate regulatory arbitrage undermining financial regulation efforts [7].

Currently, there exist three internationally recognized models for defining shadow banking: the source of funds model, the FSB model, and the non-core liability model. The source of funds model categorizes capital activities from non-banking institutions as shadow banking based on their financial activity sources, including money market funds (MMFs), financial leasing, securitization channels, and market makers. The FSB model serves as a global regulator of shadow banking and defines standards in both broad and narrow terms. The broad definition aligns closely with the source of funds model while the narrow definition emphasizes whether credit intermediation's economic function poses a threat to financial stability. Common institutions falling under this pattern include MMFs, loan companies, and investment funds. Meanwhile, the FSB also recognizes that international criteria for assessing shadow banking should be tailored to each economy's specific financial system and regulatory framework rather than imposing a uniform global standard [8]. Lastly, the non-core liability model proposed by the International Monetary Fund (IMF) expands beyond formal characteristics to encompass various institutional types such as non-resident deposits, securities lending operations, loans, etc., within its definition of SBS [9]. In conclusion, the international community has adopted diverse standards for defining shadow banking; selecting an appropriate definition according to each economy's circumstances will facilitate accurate and efficient oversight and regulation by governments.

Based on the international standards of SBS, the research conducted by the China Banking and Insurance Regulatory Commission incorporates the unique characteristics of Chinese-style shadow banking and presents four defining criteria [10]. Firstly, financial credit intermediation activities operate outside the purview of banking supervision, with significantly lower credit issuance standards compared to traditional bank lending. Secondly, these activities exhibit a complex and nested business structure that is highly leveraged. Thirdly, there is a lack of information transparency in this sector. Lastly, there exists substantial pressure on centralized payment systems due to high interconnectedness within the financial system, leading to potential risks spreading contagiously.

2.2 Development of Shadow Banking

2.2.1 Worldwide Expansion of Shadow Banking.

In the 1970s, the emergence of asset securitization had a profound impact on financial markets. Subsequently, driven by relaxed financial regulations in European and American countries, innovative financial instruments, and banks' circumvention of Basel regulation, there was a rapid expansion of commercial banks' off-balance-sheet activities contributing to the formation of the SBS comprising non-bank financial institutions. As investors' risk preferences increased, traditional conservative commercial banks were unable to meet these personalized needs. Leveraging the convenience offered by direct financing systems, SBS effectively caters to diverse demands and enriches the intermediary framework but also entails inherent financial risks. In 1999, recognizing its significance as one of the main causes behind the outbreak of the global economic crisis, G7 established the Financial Stability Forum (FSF) aimed at enhancing information exchange and cooperation on global financial regulation. Nevertheless, stringent credit constraints faced by numerous small and medium-sized enterprises have led to an increasing demand for capital supply of SBS. The establishment of the Financial Stability Board (FSB) took place at the 2009 London Summit of the Group of 20 leading economies (G20), aiming to uphold global financial stability. Diverging from its precursor, namely the FSF, it has actively incorporated various emerging economies such as China, Brazil, and India. According to a report by FSB in 2012, shadow banking assets in the United States amounted to approximately $25 trillion in 2007, which decreased to $24 trillion by 2011. Globally, shadow banking assets surged from $27 trillion in 2002 to $60 trillion in 2007 [11]. Nevertheless, monitoring reports from FSB indicate that shadow banking's share is rapidly increasing within emerging economies and has reached a significant magnitude that cannot be disregarded. Consequently, between 2011 and 2019, FSB continuously enhanced its standards for monitoring and supervising shadow banking by issuing multiple reports while urging central banks to strengthen their oversight over this sector to mitigate potential risks posed on financial stability. In conclusion, global shadow banking has experienced substantial and prolonged growth, with notable variations in development across different regions; however, the implementation of a comprehensive regulatory framework has been relatively delayed.

2.2.2 Development of Shadow Banking in China.

Some shadow banking businesses in China began to emerge as early as the 1980s, such as the establishment of trust companies, insurance firms, and other non-bank financial institutions. Towards the end of the 20th century, there was substantial growth in the scale of securities investment funds. However, at the beginning of the 21st century, commercial banks' financial services started developing with clearly defined product boundaries and tighter monetary policies. Consequently, during this period, shadow banking experienced slow and limited growth. Following the international financial crisis in 2008 and the subsequent relaxation of credit scales and monetary policies by financial institutions to counteract its impact, China's shadow banking entered a phase of rapid expansion with an annual growth rate exceeding 20%. To evade macro regulation measures, banks significantly increased their off-balance sheet assets leading to a surge in various cross-market shadow banks. By 2013, wealth management investments accounted for 27.49% of non-standard assets held by banks. Concurrently during this period, new business models like internet-based financial products along with online peer-to-peer (P2P) lending platforms also witnessed significant surges. Regarding the rapid development of digital finance in China, Liu demonstrates that the emergence of blockchain [12], big data, cloud computing, and other technologies not only accelerates financial reform and innovation but also amplifies the risks associated with shadow banking expansion. As an online lending information intermediary platform, the growth of online lending institutions contributes to enhancing the financial system and effectively filling gaps in traditional lending practices. However, numerous institutions engage in credit and capital pool operations that violate laws and regulations, resulting in multiple risks such as illegal fundraising, poor credit quality, loan delinquencies, absconding behavior, and bankruptcy. These risks have a significant adverse impact on China's normal financial development [13]. By the end of 2016, shadow banking had become substantial and precarious in China. International organizations like the International Monetary Fund (IMF) and Bank for International Settlements (BIS) have repeatedly cautioned about its risks by highlighting how hidden credit growth and non-performing assets seriously jeopardize China's financial system security [10, 14]. Since 2017, Chinese regulatory authorities have initiated strict crackdowns on illicit activities within shadow banking. By late 2019, there was a notable decline in overall shadow banking size—particularly narrow shadow banking—which decreased by approximately 23% compared to 2016 figures from CNY 5.101 billion to CNY 39.14 trillion [10]. Since then, the international assessment of China's SBS has generally been moderate; however, the recent relaxation of China's deleveraging measures aimed at stimulating economic growth may potentially trigger a resurgence in shadow banking activities [15]. Therefore, the establishment of a robust regulatory framework plays a pivotal role in effectively managing the exponential growth of shadow banking in China and preventing its resurgence.

2.3 Shadow Banking and Financial Crisis

Historically, conventional financial institutions such as commercial banks and securities companies have been responsible for triggering the majority of financial crises. However, there is a widely held belief that the unregulated US SBS played a significant role in causing the 2007 subprime crisis [10, 16-17]. Since the beginning of this century, an increasing scale of asset securitization has attracted numerous profit-seeking market speculators. Consequently, this phenomenon has intensified competition among mortgage lending institutions while giving rise to nonconforming and high-risk subprime loans. Concurrently, before the subprime crisis, American mortgage lenders predominantly pursued a strategy of relaxing eligibility criteria for low-income home buyers as a means to foster growth in the real estate market. With the escalation of this housing bubble and expansion of lenders' tangible assets, SBS lending experienced an improvement in credit qualifications for these lenders; nevertheless, lender income failed to correspond with loan volume. Moreover, asset securitization facilitated intricate layers of nested real estate mortgage loans while mathematical models generated a significant number of high-risk financial derivatives marketed as secure assets. Under inflationary pressures, interest rates in the United States were repeatedly raised further exacerbating repayment challenges for subprime mortgages. In 2006, the United States experienced a decline in real estate prices, which exposed inherent flaws in the design of shadow banking through centralized payment and default events. This had a significant impact on both the US subprime mortgage market and financial derivatives market. Lenders faced asset write-downs during the crisis, leading to a liquidity crunch due to increased market liquidity and insufficient funding supply. The 2008 financial crisis witnessed a sharp decrease in investor preference for short-term funding markets such as asset-backed commercial paper (ABCP) and repurchase agreements (repos). The credit transformation of shadow banks through new issuances of asset-backed securities (ABS) and Collateralized Debt Obligation (CDO) came to an abrupt halt. Ultimately, the US subprime mortgage crisis escalated into a systemic financial crisis that spread globally due to the interconnectedness of financial markets, resulting in worldwide financial turmoil. Currently, asset securitization and shadow banking have become an integrated system in the United States. However, China's development of shadow banking is still in its early stages with limited levels of national financial innovation while asset securitization remains nascent. Therefore, implementing comprehensive regulatory measures is crucial for ensuring the compliant and healthy development of shadow banking in China and other emerging economies to prevent future outbreaks of financial crises.

3 Classification and Operation Mechanism of Shadow Banking

3.1 Classification of Shadow Banking

3.1.1 Methodology for International Shadow Banking Classification. The classification of shadow banking should be based on a standardized definition. Given the global variations in definitions, different economies may adopt distinct classifications for shadow banking. The FSB, being the most influential and authoritative organization in detecting shadow banking, has established its definition, monitoring scope, and calculation standards ahead of others. In its 2014 report [18], the FSB categorized shadow banking into three levels: The first level represents a wide measure of non-bank financial intermediation within the monitoring universe. The second level excludes insurance companies, pension funds, and financial auxiliary institutions from this wide measure while the third level represents the narrow measure of shadow banking. In its 2017 report [19], FSB further subdivided the third level into five economic functions: collective investment vehicles or funds that are susceptible to investor runs (EF1); finance companies whose lending is dependent on short-term funding (EF2); market intermediaries dependent on short-term funding or secured funding of client assets (EF3); insurers that facilitate credit creation (EF4); and securitization-based credit intermediation vehicles (EF5).In light of clearly defined economic functions, a more robust and precise identification of the financial stability risks associated with shadow banking can be achieved. The statistical data provided by FSB for the period between 2008 and 2015 reveals that EF1 constitutes the largest proportion of global shadow banking, with its total amount consistently increasing over time. Within this category, fixed-income funds hold the majority share, followed by mixed funds and MMFs. On the contrary, EF4 represents the smallest portion in narrow measure shadow banking as a whole, encompassing financial/mutual guaranty institutions, insurance corporations, etc. It is worth noting that EF5 is characterized by an annual decline in its total amount, including ABS-based credit intermediation and SFVs. The overall size of both categories -EF2 and EF3- exhibits relative stability despite occasional fluctuations. This classification analysis forms the basis for expressing concerns raised by the FSB regarding significant growth in EF1 while cautioning about its comparatively higher credit risk when compared to other classifications along with liquidity and maturity transformation issues; additionally highlighting elevated leverage levels in certain regions.

In summary, international classification methods for shadow banking have continuously refined the criteria and techniques used for classification since its inception.

These methods emphasize the distinctive features of shadow banking and focus specifically on high-risk narrow-scope shadow banking. To enhance the identification of risk factors and trends in shadow banking, these methods are further categorized into five groups based on their economic functions. Considering the dual nature of shadow banking, it is crucial to implement distinct regulatory measures that differentiate between various types of shadow banks. This will enable them to effectively fulfill their role as financial intermediaries while closely monitoring and regulating their level of risk to ensure compliance with development.

3.1.2 Methodology for the Classification of Shadow Banking in China.

The classification methodology of SBS in China draws upon international standards while taking into account its localized characteristics for refinement, thereby ensuring a more professional and academically rigorous approach. In China, SBS can be categorized as either a wide or narrow measure [10]. The wide measure of shadow banking encompasses financial products and activities that generally adhere to the four aforementioned criteria, whereas the narrow measure refers to high-risk products and activities with distinctive features. Currently, generalized shadow banking in China includes interbank special-purpose vehicle investments, entrusted loans, capital trusts, trust loans, bank wealth management products, non-public offering funds of securities companies, asset management plans of insurance companies and securities companies, asset securitization business conducted by banks or other institutions approved by regulatory authorities, private equity investment funds (PE), online P2P lending platforms, financial leasing companies, and small loan company-provided loans. Furthermore, factoring services provided by commercial factoring enterprises, insurance businesses provided by financing guarantee enterprises, and consumer loans issued by unlicensed institutions are also considered part of generalized shadow banking. As of the end of 2019, the size of China's broad measure SBS sector amounted to CNY 84.80 trillion or approximately 29% of total banking assets during the same period [10]. However, consumer loans issued by unlicensed institutions as well as debt financing plans and structured financing products provided by local exchanges are not included in these statistics due to data limitations. The narrow measure of SBS refers to shadow banking activities that exhibit distinct characteristics and pose significant risks. These activities encompass investments in interbank specific purpose vehicles (SPVs), financial management by banks invested in non-standard creditor's rights and asset management, entrusted loans, trust loans, online P2P loans, as well as non-equity private equity funds. The total scale of these activities amounts to CNY 39.14 trillion, accounting for 46.2 percent of the wide measure of SBS [10].

In conclusion, China's classification standards for shadow banking closely align with the latest guidelines issued by the FSB in 2017 and place significant emphasis on shadow banking within its narrower definition [19]. However, whether broadly or narrowly defined, China's classification standards directly target specific financial products and activities while maintaining a relatively straightforward structure with fewer end products and activities.

3.2 Operating Mechanism of Shadow Banking

The operational mechanism of SBS is relatively intricate, with a multitude of non-bank intermediary financial institutions present throughout the credit intermediation chain. Pozsar and other scholars from the Federal Reserve Bank of New York have segmented the bank's credit intermediation chain into seven stages, and table 1 summarized its shadow banking activities [3].

Table 1. Seven stages in shadow banking activities

Step	Function	Shadow Banks
1	Loan Origination	Finance companies
2	Loan Warehousing	Single and multi-seller conduits
3	ABS Issuance	SPVs, structured by broker-dealers
4	ABS Warehousing	Hybrid, TRS/repo conduits, broker-dealer's trading books
5	ABS CDO Issuance	SPVs, structured by broker-dealer
6	ABS Intermediation	LPFCs, SIVs, securities arbitrage conduits, credit hedge funds
7	Wholesale Funding	MMFs, enhanced cash funds, securities lenders, etc.

Source: Shadow banking (Pozsar et al.) [3].

The credit intermediation chain can be divided into three stages. The first stage involves loan sales, including Steps 1 and 2, where depository institutions transfer loan assets from on-balance sheets to off-balance sheets by selling them to special purpose vehicles (SPVs). The second stage is asset securitization, encompassing Steps 3 to 6. This operation is crucial in SBS as sponsors sell illiquid assets based on predictable future cash flows to SPVs, separating and restructuring the benefits and risks of assets while enhancing their credit ratings. These assets are transformed into freely tradable securities backed by cash flows generated by the underlying loans and ultimately sold to investors in the market. In this process, SPVs create Asset-Backed Securities (ABS) based on loan pools and construct financial derivatives such as Collateralized Debt Obligations (CDOs). The third stage corresponds to step 7 and involves wholesale financing. Institutions such as MMFs provide financing for asset securitization entities through wholesale channels [20]. It is worth noting that not all shadow banking systems necessarily encompass these seven steps. Pozsar suggests that higher-quality underlying assets require fewer stages [3], as they only need a limited number of phases to meet the criteria for purchase by MMFs.

4 Analysis of the Economic Effects of Shadow Banking

4.1 Macroeconomic Effects of Shadow Banking

Due to the emergence of new financial instruments and ongoing reforms in the financial system, shadow banking has witnessed rapid development since the beginning of the 21st century. In capital markets such as Europe and America, shadow banking has surpassed traditional commercial banks in terms of trading volume and asset proportion, gradually establishing itself as a formidable competitor to conventional financial institutions.

The development of shadow banking is a double-edged sword. On the one hand, shadow banking plays a pivotal role in facilitating financial reform and fostering growth by efficiently channeling funds to diverse enterprises, particularly small and medium-sized ones, thereby stimulating the expansion of financial markets. Conversely, due to its inherent characteristics such as high leverage ratios, substantial asset scales, limited transparency, and inadequate supervision; the presence of shadow banking significantly amplifies systemic risks within the financial system and poses threats to national economic security. During the global financial crisis, the heightened leverage ratio of shadow banking resulted in an abnormal proliferation of risks and triggered a liquidity squeeze within the financial system, thereby intensifying the imperative to maintain financial stability. The blurred distinction between shadow banking and traditional commercial banks, coupled with inadequate oversight, led regulators to belatedly recognize that ignoring the issue of shadow banking would have dire consequences for the entire financial market.

4.1.1 Influence on China's Monetary Policy.

The transmission mechanism of monetary policy primarily operates through two channels: interest rate adjustments and open market operations. By manipulating interest rates, it can influence investment levels and subsequently impact economic conditions. Through the implementation of open market operations, it can regulate the money supply and thus exert an effect on economic performance. The influence of shadow banking on monetary policy is evident in various aspects:

Firstly, the significance of money and credit indicators should be attenuated. Shadow banking undermines the importance of monetary credit indicators as it engages in credit creation similar to commercial banks, thereby expanding the overall volume of credit in financial markets. Consequently, relying solely on traditional monetary credit indicators targeting commercial banks will diminish in effectiveness. Secondly, there should be an acceleration in the velocity of money. The proliferation of shadow banking accelerates the circulation speed of money by not only enriching financing channels within financial markets but also inevitably hastening the turnover of complex financial instruments it offers. This may impede the desired outcomes of established monetary policies by central banks. Thirdly, shadow banking has an impact on the effectiveness of monetary policy implementation. The presence of shadow banking enables financing activities in the financial market to circumvent the regulatory constraints imposed by traditional commercial banks, resulting in an expansion of overall credit volume in the market. As a result, this inevitably undermines the efficacy of certain quantity-based monetary policy tools.

4.1.2 Influence on the Marketization of Interest Rates in China.

In China, the emergence of SBS is influenced by a multitude of factors. The incomplete marketization of interest rates, stringent financial regulations, limited financial innovation, and nascent development of the derivatives market collectively contribute to the rise of SBS as a means to circumvent regulatory measures. The extensive utilization of novel and intricate financial instruments with market-based pricing mechanisms within the realm of shadow banking effectively bypasses existing price controls and compels traditional commercial banks to gradually relax their interest rate restrictions and elevate interest rates to ensure survival. Consequently, this phenomenon partially facilitates the process of interest rate liberalization in China.

4.2 Microeconomic Effects of Shadow Banking

From a micro perspective, the rapid development of shadow banking has primarily led to economic consequences such as increased financial leverage, asset securitization, and financial innovation. In response to the successful implementation of various versions of the Basel Accord with stringent capital adequacy controls, traditional banks have resorted to off-balance sheet activities through asset securitization to generate higher profits and evade regulatory oversight. During the process of asset securitization, financial institutions have extensively engaged in financial innovation to mitigate risks and safeguard returns, resulting in the emergence of diverse complex new financial derivatives. Consequently, substantial leverage within the financial industry has swiftly materialized and exacerbated market volatility.

5 Current Analysis of Macroprudential Regulation on Shadow Banking

5.1 The United States

The United States was the earliest to develop SBS, and its financial regulatory laws and regulations are relatively mature. Before the financial crisis, macro-prudential supervision of shadow banking was generally loose but later became stricter. Following the outbreak of the international financial crisis in 2008, a significant reform of financial regulation was carried out in the US to address exposed problems. In 2010, the Dodd-Frank Act was issued by the government to protect consumers, address systemic risks in finance, and prevent another financial crisis from occurring. The act established new financial regulatory institutions such as 'Financial Stability Oversight Council' (FSOC) and 'Consumer Financial Protection Bureau' (CFPB), thereby strengthening supervision over systemically important banks for maintaining safety and stability within finance. Additionally, Volcker Rules were introduced which prohibited risk investment behaviors like proprietary trading by banks that could potentially trigger another financial crisis. Furthermore, regulation on private equity funds and hedge funds was strengthened along with enhanced regulation on asset securitization and derivatives businesses. However, there is still controversy surrounding whether this act is effective in preventing crises or not [21]. Xia argues that this regulatory system has the potential to activate government rescue mechanisms for specific shadow banking systems, enhance market risk monitoring, and mitigate operational risks in shadow banking. However, she also acknowledges its heavy reliance on traditional frameworks, which results in an inadequate regulation of the shadow banking system. This exacerbates the regulatory gap with traditional banks and widens the scope for exploitation, thereby amplifying the issue of regulatory arbitrage. Despite ongoing debates regarding its effectiveness, the Dodd-Frank Act pioneers by filling the regulatory void in the shadow banking system and underscores the significance of preventing systemic financial risks through financial regulation. It offers valuable insights for constructing global financial regulatory systems.

5.2 European Union

Before the European debt crisis, there existed relatively lenient regulation within the EU, and member countries maintained consistent commercial policies with frequent capital movements. The emergence of the European debt crisis followed the global financial crisis in 2008. In line with G20 requirements, the EU implemented legislative reforms to regulate macroprudential supervision of shadow banking systems. These reforms aimed at enhancing transparency within shadow banking and promoting its long-term compliance development to facilitate real economic activities while mitigating systemic risks and regulatory loopholes. In 2012, various stakeholders were consulted by the European Commission regarding the regulation of shadow banking, who recognized both its advantages for strengthening financial systems as well as acknowledging substantial associated systemic risks [22]. The European Commission introduced a regulatory [23] to mitigate emerging risks within the financial sector. The plan advocated for stringent legislation and primarily focused on imposing restrictions on money market funds and securities financing, as these aspects exerted significant influence on the EU's shadow banking system. These measures were planned to be gradually implemented over five years.

The European Systemic Risk Board (ESRB) is responsible for monitoring shadow banking activities in the European Union and published its inaugural monitoring report in 2016. In terms of institutional oversight, the ESRB employs a comprehensive approach encompassing both general and targeted supervision to gain an all-encompassing understanding of shadow banking activities, with a particular focus on investment funds and other financial institutions. Since 2017, the ESRB has acknowledged the potential integration of fintech's impact on shadow banking into regulatory frameworks. It posits that as fintech-driven financial services proliferate, there exists a possibility of interconnection with credit intermediation activities. To summarize, certain aspects of macroprudential regulation within the EU bear resemblance to those in the United States; they emphasize regulating financial institutions and innovative financial products, enhancing oversight over credit rating agencies, and establishing organizations to monitor real-time developments within the shadow banking sector.

5.3 China

China's SBS underwent gradual development with mixed operations initially as banks and trusts expanded. However, due to delayed financial regulation, imperfect laws and regulations, and a lack of self-discipline among financial institutions, the market experienced overheating and disorderly phenomena in the 1990s [24]. In response to these challenges, the State Council issued the Decision on Financial System Reform in 1993 transforming China's financial institutions into separate operations while establishing separate regulatory bodies like the Banking Regulatory Commission, Securities Regulatory Commission, and Insurance Regulatory Commission. By the late 20th century, due to growing financial globalization and the need for Chinese commercial banks to improve their international competitiveness, financial controls gradually relaxed leading to a shift towards a mixed operational model. Nevertheless, in the early 21st century, different types of financial institutions mainly concentrated on their specific business areas with simple product structures; consequently, shadow banking's overall scale stayed restricted.

The wide measure of shadow banking reached its highest level at CNY 100.4 trillion in 2017 [10]. The period under consideration is characterized by an immature regulatory framework for shadow banking, inadequate risk control capabilities due to talent shortages in compound regulation, and a lack of coordination among regulatory authorities. These factors have contributed to the unchecked expansion of the shadow banking sector and the continuous transmission and accumulation of financial risks. Following repeated warnings from international organizations such as the International Monetary Fund (IMF) and the Bank for International Settlements (BIS), as well as extensive coverage in the Financial Times, regulatory authorities have underscored the imperative of addressing risks associated with shadow banking during the Central Economic Work Conference, subsequently proposing five specific regulatory measures: Firstly, strengthen financial market supervision by rectifying complex structured products, strictly prohibiting false transactions such as drawer contracts, regulating private sales of wealth management products and other irregular promotional and sales activities. Secondly, standardize cross-financial regulation by adjusting off-balance sheet business for credit-like loans to reflect their true nature in shadow banking monitoring and adhering to investor suitability management. Thirdly, addresses illegal financial groups and requires risk isolation between institutional finance and non-financial businesses. Fourthly, enhance the accountability system and strengthen penalties for violations. Finally, issue the "Guiding Opinions on Regulating the Asset Management Business of Financial Institutions", which clarifies the attributes of asset management business at the legislative level, unifies product standards, and reduces cross-market arbitrage. Since 2017 when rectification began, the overall scale of shadow banking has decreased from CNY 100.4 trillion to 84.8 trillion within three years, and new illegal financial activities have reduced while risk levels have decreased [10].

The introduction of this governance initiative in China marks a significant milestone, as it establishes a comprehensive monitoring system and statistical standards for domestic shadow banking. This development holds immense importance for the ongoing regulation and oversight of its standardized growth. However, given the prolonged accumulation period and elevated stock risks associated with China's shadow banking sector, there is still considerable progress to be made towards achieving a state of healthy development. Consequently, there remains ample scope for enhancing the continuous regulatory framework. From a global perspective, effective governance of shadow banking in emerging economies like China assumes a pivotal role in mitigating worldwide shadow banking risks. By leveraging regulatory measures from developed economies, bolstering international information sharing and cooperation, and fostering research on shadow banking within emerging economies, we can contribute significantly to improving global financial stability while simultaneously reducing the perils posed by shadow banking.

6 Conclusion

In general, shadow banking serves as a vital component of the financial intermediation system, effectively addressing the issue of asymmetric information in the financial market. It leverages direct financing to cater to diverse funding needs and demands by offering high-risk appetite financial products and services. However, it is important to acknowledge that shadow banking entails risks that have the potential to trigger a financial crisis. Therefore, it is imperative to consistently monitor and regulate its standardized development to uphold financial stability and support the real economy. Considering the regulatory measures on shadow banking in Europe and America, which are distinct from current domestic regulatory practices and deficiencies, this article proposes relevant policy suggestions from a macro-supervisory perspective.

a. Adhere to the classification and hierarchical supervision of shadow banking, while flexibly controlling its healthy development. Implement varying levels of regulatory measures for shadow banks based on their risk profiles, thereby facilitating their role as financial credit intermediaries while effectively managing risks. This approach enhances regulatory flexibility and better addresses future developments in the financial system.

b. Strengthen the disclosure of off-balance sheet information and conduct substantive analysis of on-balance sheet asset business. By imposing policy constraints on the structure of on-balance sheet assets and liabilities, potential risk information can be disclosed, impairment provisions can be established, and issues such as maturity mismatch can be mitigated. Regulatory authorities should clarify the disclosure responsibilities for financial enterprises' off-balance sheet businesses to achieve a reasonable risk assessment and address any resulting regulatory lag.

c. Enhancing coordination in the regulation of shadow banking and traditional banking is crucial, as the effectiveness of regulatory boundaries established by conventional financial institutions and market supervision logic diminishes with the shifting of financial functions from traditional banks to shadow banks. Therefore, it is imperative to address potential new risks that may arise in the financial market, foster coordinated regulatory measures between shadow banking and traditional banks, and mitigate any adverse effects resulting from regulatory arbitrage.

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