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Regulation of securitisation in China: Learning from the US experience

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ABSTRACT

With the issuance of the latest adjustment on the Chinese securitisation regulatory framework, the originating institution only needs to hold 5% capital for each class of the securitised assets. Previously, the originating institution needed to hold a certain percentage of the lowest class of the securitised assets in one single securitisation deal, and the percentage in principal, should not be less than 5% of the entire term of the securitisation deal. This adjustment of the reduction of the minimum risk retention (MRR) requirement has to large extent, addressed the limitation of financing in participating in securitisation for Chinese banks. However, it has increased the risk of securitisation failure or even a crisis in the Chinese banking sector compared with the previous regulatory framework.

In the light of the potential risks of this latest adjustment, the study critically examined the effectiveness of the regulatory framework of the current Chinese securitisation market drawing from the US experience during the global financial crisis (GFC). Overall, we evaluated the regulations on the current Chinese securitisation market as relatively effective, whilst we also raised concerns on the future of the regulations and thereby provided suggestions for improvements.

1. Introduction

In June 2012, Chinese regulators (the People's Bank of China – PBC, the China Banking Regulatory Commission – CBRC and the Ministry of Finance – MOF) – issued the notice of restarting the securitisation pilot programme of 50 billion Yuan ($7.9 billion), which was stopped for four years due to the 2008 global financial crisis (GFC) (Wong, 2012; Chen, 2012). Since the restarting of the securitisation experiment by mid-2012, the Chinese government has expanded the scale of asset securitisation via issuing a further pilot programme of 200billion Yuan ($31.6 billion) in August 2013 (Zhao, 2013). On 31st December 2013, the PBC and CBRC eased the national regulatory rules of asset securitisation in comparison with the initial one which was issued at the restarting notice in June 2012 (Wang, 2014). In addition, the latest international regulatory framework for banks, known as Basel III (scheduled from 2013 to 2019), introduced after the GFC to address the problems that occurred in the crisis and strengthen the global financial sector is already being implemented in China (CBRC, 2011a).

However, while the focus has been on the benefits of securitisation to the Chinese banking sector and economy (Zhao, 2013; CICC, 2014; Wang, 2014), limited attention has been paid to the inherent risks of this financial instrument, especially after the latest adjustment on 31st Dec 2013. This is important given the wide acknowledgement that such extensive use of securitisation fuelled the US sub-prime crisis and thereby led to the GFC (see Acharya and Richardson, 2009; Bessis, 2010;

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Danila, 2012). Indeed, during the GFC, regulatory failures especially the weaknesses of Basel I and II and the failures of US national regulators were noted as major contributory factors to the securitisation crisis (Moosa, 2010). As the 2007–2008 crisis was directly associated with the US housing bubble, there are concerns that there might be a potential threat of housing bubble in the Chinese property sector (Davies, 2011; Charlie, 2013; Robin, 2013; Economist, 2014). The need for more attention to the Chinese real estate sector is further strengthened by its increasing linkage to other sectors in both real and financial channels (Chan et al., 2016). While real estate fixed asset investment accounts for about 25% of the economy's total fixed asset investment, its share in the total economy value added has been on the increase. A survey in 2012 of 64 small-scale credit intermediaries by Morgan Stanley revealed that about 20% of their credits were given to real estate developers. According to IMF (2011) about 30–45% of loans provided by five biggest Mainland banks were based on provision of collateral of which real estate is the dominant form of collateral used. The implication of all these is that any shock in the real estate sector will affect not only the real estate and the financial sector but other sectors of the Chinese economy (see IMF, 2011; Stanley, 2012; Chan et al., 2016).

Arguably, the identification of securitisation as a key trigger of the GFC exposed its drawback of contagion effect during the crisis, which was considered as an advantage for risk diversification under normal circumstance. To avoid a repetition of the securitisation crisis, the effectiveness of regulation in minimising risks and losses is therefore the central element in securitisation risk management (Valdez and Molyneux, 2013). As the latest Chinese securitisation regulatory adjustment has significantly reduced the minimum risk retention (MRR) requirement which incidentally can increase the risk exposure of the banks, a critical evaluation of the effectiveness of the Chinese securitisation regulatory framework is pertinent.

The aim of this paper therefore is to evaluate the effectiveness of the current Chinese securitisation regulatory framework in preventing another securitisation crisis. As securitisation and the GFC originated from the USA, a critically examination of the securitisation in both USA (during the GFC) and China (currently) will be drawn from to offer suggestions on how to improve the Chinese framework. The remaining parts of the paper will proceed as follows: in addition to providing an overview of the rationale and development of securitisation, Section 2 will examine the benefits and drawbacks of securitisation. Section 3 analyses the circumstances of the US securitisation market during the GFC with a focus on the contributions of the regulatory rules to the GFC. Section 4 provides a brief overview of the Chinese banking sector and its emerging securitisation market. With a comparison to the US securitisation experience during the GFC, Section 5 provides a further critical examination of the Chinese current securitisation regulations with the key challenges and suggestions identified. Section 6 is the conclusion.

2. The rationale and development of securitisation

According to Liaw (2012: 173), asset securitisation can be described as "the selling of securities backed by cash flows from a pool of financial assets, in an integral part of the global capital markets". To Fabozzi and Kothari (2008), the use of securitisation transaction is to pool assets together and in effect turn them into a tradable security. Altunbas et al. (2009) argues that the development of securitisation has changed the lending role of banks from an 'originate and hold' model to an 'originate, repackage and sell' model. Asset securitisation has two main categories which are asset-backed securities (ABS) and mortgage-backed securities (MBS). As Liaw (2006) explained, ABS is backed by receivables other than mortgage loans as the collateral of the cash flows.

As shown in Fig. 1.1, there are six key parties involved in the process of securitisation: originator, special purpose vehicle (SPV), credit rating agency (CRA), credit enhancer, underwriter and investors (Liaw, 2006; Fabozzi and Kothari, 2008; Zalewski, 2010; Valdez and Molyneux, 2013). In a securitisation transaction, the originator is the initial owner of the underlying assets and can be any financial institution, like a bank or a securities firm. The originator must complete a true sale to transfer the assets to the trust, which is called special purpose vehicle (SPV). The term true sale refers to the originator who will not possess any interest after this process. Thereafter, the SPV will package the assets and sell them as security (mainly MBS and ABS, depending on the type of the assets) to investors. In the meantime, the credit enhancer will be involved in this stage in order to create a better credit structure and reduce the risk for the securitisation programme. The credit rating agency (CRA) will offer a rating for the securitisation programme via analysing the risk of the assets and examining the legal and structural protections that investors will obtain. Finally, the securitisation product will be issued by an investment bank as the underwriter, and investors will gain the existing cash flows or future cash flows of the assets (Liaw, 2006; Fabozzi and Kothari, 2008; Zalewski, 2010; Valdez and Molyneux, 2013).

The use of asset securitisation started with the launch of MBS by the Bank of America in 1977. Initially, this new technique was not successful as every mortgage loan had a maturity of 30 years, which made the investment of the MBS to be easily influenced by the prepayment or default risks. Therefore, MBS was not attractive to investors at the initial period of securitisation market development. This issue led to the development of Collateralised Mortgage Obligation (CMO), which can separate the cash flow of each mortgage pool into a series of annual cash flows, and therefore create a range of unique products with different maturities. The CMO was first issued by Freddie Mac and was effective and successful in overcoming the previous difficulty of the MBS, and Investors could select their ideal length of maturity in securitisation product investment (see Liaw, 2012).

Afterwards, the technique of the securitisation transaction had been applied to other kinds of assets, like credit card receivables, corporate business loans and automobile loans. Expectedly, with a significant development in the USA, it spread to other regions of the global economy (Rita, 2006; Fabozzi and Kothari, 2008). From its establishment in 1970s until the

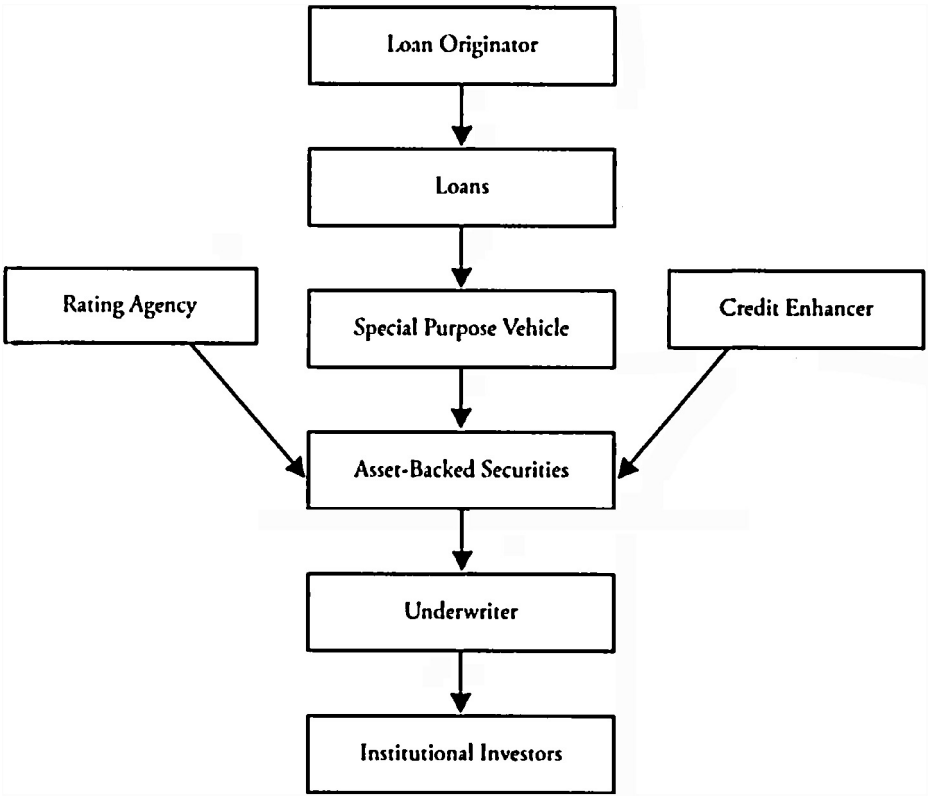

Fig. 1.1. The securitisation process.

Source: Liaw (2006, p. 171).

end of 2007, the popularity of the securitisation technique had sharply increased in the USA, becoming a leading tool of corporate finance (Solomon, 2012). However, in emerging markets, the securitisation markets have not developed like that of the USA. In a survey of 36 economies, while 9 responded that they did not have a securitisation market in their countries, 27 reported that their securitisation markets have started to develop but the scale was not considerable (IOSCO, 2010). Even with the limited development of securitisation and derivatives markets in emerging economies, it is argued that the use of some financial derivatives instruments negatively affect the stability of banks in emerging economies and even helped to escalate the recent financial crisis. Focusing on forwards, swaps, futures and options, while forwards and swaps had no significant general impact on bank stability and therefore cannot be labelled as risky derivatives, futures and options were considered inimical to the stability of banks in emerging economies and contributed to the intensification of the financial crisis (Keffala, 2015).

In examining the major benefits of securitisation for the originator, Valdez and Molyneux (2013) maintain that initially, the number of loans that banks offer without securitisation is only dependent upon the size of their balance sheet, which is quite limited. Securitisation as new source of finance allows lenders to sell their loans to other financial institutions or investors and to make more loans through the funds they have raised from securitisation, which can increase banks' profitability via the fee incomes and the profits from the new loans. Furthermore, this new innovation can allow financial institutions to finance at a lower cost in order to meet the capital demand, either for the capital requirement of the Basel Accord or a great amount of liquidity demand of the deposit withdrawal from their customers. Moreover, it can aid firms to avoid interest rate risk exposures because the assets are being removed from the balance sheet (Fabozzi and Kothari, 2008). In addition, as Casu et al. (2013) indicate, through securitisation, the credit risk of the loan will be mitigated via risk diversification as the loan is held by a number of individuals or institutions for securities investment.

However, the prepayment and default risks of securitisation are still the two main risks in the modern securitisation market, even though these two risks have been reduced due to the development of CMO (Fabozzi and Kothari, 2008). In the same vein, Peicuti (2013) argues that in normal circumstances, the risk of securitisation is quite limited, even though it could be stimulated in particular situations. The 2007/8 US housing bubble triggered the default risk of the securitisation which led to a subprime crisis, and the GFC eventually (Acharya and Richardson, 2009). During this crisis, geographic diversification, as one initial advantage of securitisation transaction in risk reduction, had become a drawback when the catastrophe of a great number of defaults in mortgages occurred (Peicuti, 2013). Initially, the benefit of securitisation of transferring the credit risk to the investors in the worldwide capital market made securitisation to be considered as a useful and successful

financial innovation (Jaffee et al., 2009). However, the occurrence of the GFC led financial practitioners (such as bankers, regulators, financial analysts) to question the model of securitisation, especially in the circumstances of financial institutions purchasing a great amount of securitisation products rather than public investors (Peicuti, 2013). For instance, many financial institutions (including United Bank of Switzerland, Merrill Lynch and Citigroup) suffered huge losses due to the substantial decrease in the value of MBS (Jaffee et al., 2009). It is on this note that Harmon (2008) argued that the US sub-prime crisis and subsequent financial crisis is more appropriate to be called as a securitisation crisis. While the crisis started in the US, it soon spread to other parts of the global economy starting from European financial markets due to their inter-connectedness with that of the US.

3. US securitisation market during the GFC

In examining the main cause(s) of the GFC, a key factor is the expansion of the credit boom in the US housing market and the consequent sub-prime crisis (Acharya and Richardson, 2009; Kirk and Ross, 2013). Owing to the recession from 2000 to 2003, the US Federal Reserve repeatedly reduced the key interest rates (6.5–1%), and simultaneously eased credit requirements during that period (Davies, 2010). With the low interest rate and the government support for increased housing through the two key government-sponsored enterprises (GSEs) – Fanie Mae and Freddie Mac, the US mortgage industry boomed especially the sub-prime sub-unit (Bessis, 2010; Casu et al., 2015). Interestingly, what stimulated the boom was securitisation that was extensively used in packaging mortgage loans and selling them in the money market as low risk products referred to as Mortgage-Backed Securities (MBS) (Acharya and Richardson, 2009; Avgouleas, 2012; Casu et al., 2015). Acharya and Richardson (2009) observed that of US residential mortgage with a total value of about $10 trillion, over 55% was securitised with the two GSEs accounting for about 64% of the securitised assets.

Nevertheless, the significant contribution of securitisation to the GFC does not imply that securitisation is a bad concept but in the way it was exploited by financial institutions especially the Systematically Important Financial Institutions (SIFI). Instead of using securitisation to raise capital through which risk can be spread across large number of investors, many SIFI from 2003 to 2007 used it mainly to manipulate the capital adequacy regulatory requirement and for profit generation. This expectedly led to increase in size of shadow banking through securitisation, high asset concentration and trading which ultimately led to the GFC (Acharya and Richardson, 2009). Recalling that shadow banking involves credit intermediation activities outside the normal banking system, SIFI securitisation activities contributed a significant size of the shadow banking system. While the size of the shadow banking system is almost the same as the traditional banking system in the US, it is less than half of the total banking assets in Euro area (Bakk-Simon et al., 2012). With the high involvement of SIFI in securitisation activities, the shadow banking system grew rapidly from about $26 trillion in 2002 to about $65 trillion in 2011 which is about 25% of world financial assets and 111% of global aggregate GDP (Claessens and van Horen, 2012).

As securitisation enabled banks to remove securitised assets from their balance sheets through the creation of off-balance entities (OBSE), they (banks) were able to manipulate regulatory requirements of having a minimum of 8% capital buffer of their total risk-weighted assets are stipulated by Basel accords. Under Basel accords, the two principal forms of capital are equity and retained earnings. Raising capital through equity sometimes might be perceived by investors as signifying limited retained earnings (Myers and Majluf, 1984) with existing shareholders concerned of potential dilution of their control by the new equity (Myers, 1977).

Fortunately for the banks, securitisation provided a somewhat solution through which the capital challenge can be fixed. Not only can more investible capital be raised, the regulatory requirement burden of having 8% capital buffer can be significantly reduced. Under the Basel calculation procedure, the value of the 8% is determined mainly by the total risk-weighted assets of a financial institution. This implies that a lower value for the 8% can be achieved through the removal and consequent reduction of the quantity and value of assets in a bank's balance sheet (see Girling, 2013; Rose and Hudgins, 2013; Blunden and Thirlwell, 2013). In addition, with the 8% capital more or less idle capital that does not generate profit (even though it helps to protect banks against losses), there is an inherent incentive to free up investible capital through the reduction or removal of assets from the balance sheet which securitisation provided and Basel accords allowed. With such regulatory loophole, significant size of the banks' assets were removed from the balance sheet which as will be further explained below, they (banks) were not able to manage when most of the assets started defaulting (Acharya and Richardson, 2009).

Provided with such regulatory laxity, securitisation grew beyond the traditional MBS securitisation (including sub-prime mortgages). Other forms of Collaterized Debt Obligations (CDOs) were developed and the assets used in backing the securities can include high-yield bonds, tranches of other ABS transactions, leveraged loans with other financial innovation techniques such as credit default swaps used to further expand securitisation (Casu et al., 2015). Describing the growth of securitisation in the US as staggering, Acharya and Richardson (2009) noted that in aggregate, securitisation globally grew from $767 billion at the end of 2001 to $1.4 trillion in 2004 and to $2.7 trillion in December 2006. Unsurprisingly, the market collapsed in October 2008.

Complementing the above impacts of the shadow banking and loophole in Basel accords is the credit rating agencies. As they helped in the classification and ranking of the securitised assets into tranches based on their assessment of the risk return of the securities, they lubricated the exacerbation of asset concentration, high frequency trading and by extension the GFC. Using unclear risk modelling techniques possibly due to desire to make profits through fees paid by the banks, unmerited securities were ranked AAA which signified lowest risk among other tranches of higher risks. With such affirmation of the

inherent strong performance, the AAA ranked securities witnessed high patronage not only from members of the investing public but also from other financial institutions such as pension funds, hedge funds, mutual funds, insurance companies (see White, 2009; Acharya and Richardson, 2009; Mullard, 2012). Interestingly, what led to increased securitisation, shadow banking, high risk concentration and eventually GFC is not really the investment of the general market investors but that of the SIFI who not only packaged the securitisation but were also the dominant buyers of the AAA rated securities (Acharya and Richardson, 2009).

As the Basel accords weighted risk of AAA rated securities is about half of the risk of normal commercial or mortgage loans, having more AAA rated assets therefore permits a lower capital requirement. Enhancing the manipulation of the regulatory capital requirement is the permission in 2004 by Securities and Exchange Commission allowing stand-alone American investment banks to use internal models in the calculation of credit risks and required capital charges. As at 2008, the value of AAA rated CDO backed by nonprime loans held by government sponsored enterprises (Fannie and Freddie) and other broker dealers were about $789 billion (Acharya and Richardson, 2009).

In addition to holding the AAA securities for the assured returns, the banks also used them as guaranties for sales of asset-backed commercial papers (ABCP) – bonds in the short term capital markets. While on one hand, the guaranties helped in the AAA ranking of the securities by the credit rating agencies, on the other hand, the AAA ranking helped the banks to sell ABCP to money – markets funds who incidentally were legally obliged to keep majority of their investment in the best rated securities. At the third quarter of 2007 when the GFC started, the ABCP had to be returned to the balance sheets of the banks as they could not be rolled over following the design of the guaranties on annual rolling over basis (Acharya and Richardson, 2009). Moreover another factor that enhanced the massive sale of ABCP was the innovation by banks of a kind of guarantee which though described a liquidity guarantee also covers credit risk (Acharya et al., 2013). By exploiting the regulatory requirement which required the banks to hold capital at a conversion factor of 10% of the amount protected under the liquidity guarantees, the banks were implicitly able to reduce the regulatory charges of their conduit assets by about 90% (Gilliam, 2005).

Of the $1.2 trillion in asset backed securities, only about 4.3% of the losses were absorbed by other market investors while the remaining which the banks were required to return to their balance sheets erased a substantial part of their capitals and questioned their solvencies. With a loan value of about $789 billion, the financial sector lost about $158 to $473 billion of their mortgage-backed AAA held securities. In the same vein, significant losses were also recorded by firms that that used guarantees to sell ABCPs. In the connected financial markets, other financial institutions such insurance companies were equally affected. As they provided insurance against failures in the economy especially the housing market, insurance firms such as AIG had to honour their insurance responsibility when the crisis emerged (see Acharya and Schnabl, 2009; Acharya and Richardson, 2009).

A related factor that exacerbated the contribution of securitisation to the GFC is the remuneration policies of most financial institutions especially the SIFI. Instead of rewarding employees based on the long term risk assessment and profitability of transactions, they were paid cash bonuses on short term basis determined by volume of transactions marked to market profits. Arguably, the employees were motivated to engage in all available trading (securitisation and related transactions) opportunity with little recourse to the inherent risks such as liquidity and maturity mismatches common in financial transactions (see Rajan, 2008; Acharya and Volpin, 2009). As profits were the only important factor, diligent assessment of the skills of employees and other supervisory and governance issues were not given the attention and importance they deserved (Acharya and Robinson, 2009).

As earlier stated, it was the same excessive profit pursuit that made some of the SIFI to rather than originate and distribute the risks in AAA rated securities, they preferred to keep them. In 2005, the Swiss bank UBS was noted for its high involvement in buying, re-packaging and selling of AAA securities. In this process, UBS made good profits while the credit risks that could have been held by UBS were transferred to the investors that purchased the securities. However in 2006, with the treatment of AAA securities as riskless by the UBS CDO unit, the value of held AAA securities grew from $5billion in February 2006 to about $50 billion in September 2007 (see Swiss Federal Banking Corporation, 2008). With the view that the same behaviour of short term profit pursuits was common in other SIFI such as Citigroup that had over $55billion of AAA rated CDOs in 2007, Acharya and Robinson (2009: 207) aptly captures the short-term profit orientation of UBS:

> *For every $1 of super-senior securities held, UBS booked the premium as immediate profit; and for every dollar of current "profit" booked, the members of the CDO group received correspondingly higher bonuses. The members of the group had every incentive to increase the quantity of CDOs on the balance sheet as much as possible, since their own bonuses were tied to instant profits with no recognition of any risks.*

With a rapid growth in the US interest rate within a short period 2006–2007, a great number of sub-prime borrowers defaulted on their payments because of the substantial increase in repayment burden. The US housing prices decreased continually and the demand for MBS and other asset-backed securities plummeted (Bessis, 2010). By mid-2007, the crisis was full blown and the US sub-prime market collapsed with a steep fall on the value of housing repossessions (Kirk and Ross, 2013). Eventually, as Danila (2012) has stressed, the GFC took place as the contagion effect of the securitisations in the global financial market. Expanding on the causes of the spread, Luchtenberg and Vu (2014) maintain that the contagion is not just due to the factors of inter-connectedness of the financial markets but also due to other economic factors such trade structure, interest rate, inflation rates, industrial production, regional effects and investor's risk aversion. They also showed that contrary to the views that developed markets were invulnerable of contagion (Forbes and Rigobon, 2002; Chevapatrakul

and Tee, 2014), the US was not only a contagion source but also a transmitter and receiver. While it transmitted to Australia, Canada, UK, Hong Kong, India and Spain, it did receive from Canada and UK.

Due to the extent and speed of the crisis, many financial practitioners and researchers believe that regulatory authorities should be blamed for the GFC due to the lack or laxity of regulation. With such 'light touch' and sometimes absence of regulation due to over and hyped reliance on the effectiveness of the market, securitisation was highly used to expand and intensify the financialisation of the global financial sector and economy. As financialisation refers to a process of increased importance of financial markets and institutions due to their expanding profits and accumulation capability through financial innovation (Epstein, 2001), the contribution of securitisation is very evident with its massive contribution to the growth of shadow banking from $26 trillion in 2002 to about $65 trillion in 2011. As this represented about 25% of world financial assets and 111% of global aggregate GDP, the contribution of securitisation to financialisation of the financial sector and the global economy is not in question (see Claessens and van Horen, 2012).

To Giron and Chapoy (2012) the increased financialisation through securitisation can be attributed to the transition from a regulated financial sector to a liberalised system that encouraged financial accumulation as the primary aim of most financial institutions. While banks provided finance for industrial capitalism in the regulated system and period, speculation mainly through securitisation were supported and allowed using the process of originate and distribute or retained sometimes albeit in a different form. As every financial sector product and service became a possible securitisation asset, financilisation through securitisation overtook even the international financial institutions such as World Bank and International Monetary Fund (IMF) in the regulation and provision of liquidity, financial flows and development finance. With such prominence of financialisation through securitisation, other financial institutions outside banks such as mutual funds, hedge funds, pension funds, insurance companies and other non-institutional investors quickly joined the crusade in exacerbating global uncertainty and risk (see Epstein, 2001; Crotty, 2000; Giron and Chapoy, 2012). While Guttman (2008) describes it as the pioneer systemic crisis of a new finance-led accumulation, Lavoie (2012) calls for a return to a system of tight financial regulation where certain types of securitisation will be prohibited and shadow banking regulated as traditional banking.

Further examining the regulatory failures, MacNeil and O'Brien (2010), Papaikonomou (2010) and Mullard (2012) all point out that the US regulator failed in regulating and controlling CRA problems. As earlier stated, the CRA is an important element in securitisation process as it determines the risk that securitised assets possess. With limited transparency and understanding of the securitisation process and products, market participants relied heavily on CRAs for the creditworthiness of the products (Valdez and Molyneux, 2013). On the eve of the sub-prime crisis, a great percentage of ratings were inconsistent with the actual risk of the securitisation product (Mullard, 2012). This resulted from the circumstance of many credit rating agencies believing that the MBS market would not collapse in such a booming period and also because securitisation issuers could shop around to select the highest rating which led rating agencies to compete with each other in order to attract issuers.

Before the enactment of the CRA Reform Act of 2006, although the ratings that CRAs gave must be approved by US Securities and Exchange Commission (SEC), there was no clear and proper framework on the approval procedure and lack of requirements in relation to transparency and conflicts of interests of CRA businesses (Bayar, 2014). The sub-prime crisis and GFC accelerated the preparation of new CRA regulation. Dodd–Frank Wall Street Reform and the Consumer Protection Act were enacted in short periods of time to address the issues of accountability, conflicts of interests, accuracy of the credit ratings. The SEC also issued a new regulatory framework on the CRA after the crisis (Bayar, 2014). Arguably, during the sub-prime crisis, the US regulatory authority failed in preventing the crisis from the aspect of CRA.

The US regulators also failed to determine a proper strategy for the implementation of the Basel II (Moosa, 2010). Even though it was issued pre-financial crisis, it was implemented too late in the USA for most banks due to the bifurcated approach that the US regulator adopted (Herring, 2007; Moosa, 2010). Specifically, only 11 US international active banks that possessed greater than $250bn assets or $10bn international exposures were requested to meet the mandatory requirement of implementing Basel II. The rest of the US banks could either opt in to Basel II or remain on Basel I. The 11 banks are Bank of America, JP Morgan Chase, Citibank, Wachovia, Wells Fargo, Washington Mutual, HSBC, State Street, Bank of New York, Northern Trust, Deutsche Bank (Herring, 2007; Moosa, 2010).

In contrast with its early implementation in European countries, the implementation of Basel II across the whole USA banks was only started at the end of 2007 (Davies and Green, 2008; Mohanty, 2008). Expectedly, this contributed to the limited or no implementation of the Basel II securitisation regulatory rules. During the GFC, the 11 US international banks which adopted Basel II all survived, while several other banks went bankrupt including Bear Stearns, Lehman Brothers, and others subjected to different extents of large loses. As Caruana and Narain (2008) argued, its uneven implementation meant that the Basel II had not effectively played a role in ameliorating the financial crisis. Thus, the US regulator had been equally criticised for failure in Basel II implementation (Moosa, 2010).

Due to the bifurcated approach that the USA employed, most US banks (except those 11 banks) were exposed to the flaws of the Basel I during the GFC. One of the major criticisms or drawbacks of Basel I, according to Tarullo (2008), is admitting and even encouraging capital arbitrage, and securitisation is one of the most typical examples. Under the Basel I, the use of securitisation brought the advantage of reducing the capital charge via reclassifying the securitised loans into a lower level of capital requirement; rapidly plugging the gap with 8 percent capital requirement. These two advantages also caused the extensive use of securitisation in the USA, especially when the US housing market was booming before the sub-prime crisis. While the drawback of capital arbitrage in the Basel I had been addressed in the Basel II, it was not implemented in most US banks due to the inappropriate approach that the US regulators adopted (Herring, 2007; Tarullo, 2008). In summarising the

regulatory failures to the crisis, Taylor (2009:362) maintains that government actions and inactions caused, prolonged and worsened the crisis with the view that:

> *They caused it by deviating from the historical precedents and principles for setting interest rates that had worked well for twenty years. They prolonged it by misdiagnosing the problems in the bank credit markets and thereby responding inappropriately by focusing on liquidity rather than risk. They made it worse by providing support for certain institutions and their creditors but not others in an ad hoc fashion, without a clear and understandable framework.*

4. Overview of Chinese banking sector and the emerging securitisation market

Basically, there are seven major types of banks in the Chinese banking sector including policy banks, state-owned commercial banks, joint-stock commercial banks, city commercial banks, rural financial institutions, postal savings banks and foreign banks (CBRC, 2014a). The five state-owned commercial banks (Bank of China, Industrial and Commercial Bank of China, Agricultural Bank of China, China Construction Bank, Bank of Communications) are the top five leading banks in the Chinese banking sector, and ranked within world top 30 based on the value of total assets. In particular, the Industrial and Commercial Bank of China is in the first position worldwide ($3.062 trillion of total assets), followed by China Construction Bank, Agricultural Bank of China and Bank of China with the rankings of 7, 9 and 11, respectively (SNL Financial, 2013).

According to the statistical indicators in the first quarter of 2014, these five state-owned commercial banks have around 43% assets of the Chinese banking sector. The remaining foreign banks (such as Citigroup, HSBC, and Standard Chartered), policy banks, postal savings banks and other non-banking financial institutions account for about 16% of banking assets (CBRC, 2014b). Other assets are held by joint-stock commercial banks, city commercial banks and rural financial institution with the percentages of 18%, 10% and 13%, respectively (CBRC, 2014b). In terms of the regulation of the Chinese banking sector, the People's Bank of China (PBC), as the central bank is mainly involved in the Chinese macroeconomic management (PBC, 2014). The China Banking Regulatory Commission (CBRC) is the regulator that focuses on the supervision of banking institutions and the regulation of consumer protection. In relation to foreign banks, the regulatory rules and approach are changing to become consistent with domestic banks since China joined the WTO at 2001 (CBRC, 2011b, 2014c).

With regard to the development of asset securitisation market in China, it was much later than the USA, as it was only allowed in April 2005 (CBRC, 2005; PBC, 2013). Moreover, the use of securitisation only lasted for two years as it was stopped due to the sub-prime crisis, which was similar with the situation of Russia. After the GFC, most Chinese banks advocated that the securitisation should be restarted in order to address the high pressure of the new capital requirement of Basel III (Wang, 2013). Furthermore, many Chinese economists have considered that the use of securitisation can aid financial institutions to offer more lending services via securitising the existing loans, and thereby promote Chinese economic development (Wei, 2012). Consequently, as mentioned in Section 1, Chinese regulators announced the notice of restarting the experiment of securitisation of 50billion Yuan ($7.9 billion) in June 2012, and extended the scale of pilot programme for 200billion Yuan in August 2013.

In the notice of restarting the experiment of securitisation, the PBC and CBRC issued the regulatory framework for asset securitisation and this can be classified into six key features (see Trust-one, 2014):

1. **Underlying assets:** Encouraging financial institutions to choose major infrastructure projects loans and other types of credit assets which have close relation with national industrial policy as the underlying asset to do the securitisation programme. The securitisation product must have a simple and clear structure, and re-securitisation and synthetic securitisation are not allowed.
2. **Institutional access permission:** The originating institution and trustee organisation of the securitisation transaction must submit the complete application materials to CBRC for approval.
3. **Risk retention:** The originating institutions need to hold a certain percentage of the **lowest class** of the securitised assets in one single securitisation deal. The percentage, in principal, should be no less than 5% of the entire term of the securitisation deal. The holding period shall not be lower than the duration of the lowest class securities.
4. **Credit rating:** Each securitisation transaction should employ two credit rating agencies which have approved rating qualification to carry out continuing credit rating to guarantee the issuing and trading in national inter-bank bond market. In addition to improving the transparency and accountability of all transactions, the rating agencies are also required to submit rating reports to the relevant regulatory agencies before the issuance of securitisation. The securitisation investors are also encouraged to set up internal credit rating system in order to enhance the self-judgement on the investment risk and reduce the reliance on external rating.
5. **Information disclosure:** The originating institutions, trustee organisations, credit rating agencies and other participating institutions should timely, accurately, truly and completely disclose the information of the securitisation deal based on the requirement of the investors.
6. **Investors requirement:** Steadily expanding the scope of the institutional investors of asset-backed securities (ABS) and encouraging insurance companies, securities investment fund companies and other fund companies and compliance approved non-bank institutions to invest in ABS. The holding ratio of a single ABS of a banking financial institution, in principle, shall not exceed 40% of the single issuance of ABS.

Table 1.1
Securitisation in China and USA.

Countries/comparison categories	Securitisation market and economic condition	Domestic regulatory frameworks	Basel accords
China	1. Only ABS 2. Pilot programme (200bln Yuan–worth 32bln dollars) 3. Housing Bubble–but no securitisation risk at moment as MBS not yet allowed. 4. Government-oriented economy	1. 5% Risk Retention Requirement (5% capital for each level of risk weight of the securitised assets) 2. Two external rating agencies required and submitting rating reports to regulators; Encourage investors internal rating 3. Investors requirement: only compliance approved financial institutions and each institution can only hold 40% of a single ABS	1. Basel III in China: - Started in Jan 2013 - Most in line with International Basel III Standards - Will be fully implemented from 2019 2. The major enhancements of Basel III: - Core capital ratio increases to 6% from 4%; - Introduction of 2.5% Countercyclical Capital Buffer and 2.5% Capital conservation buffer - Establishment of the regulatory frameworks of leverage and liquidity
USA (sub-prime crisis period)	1. MBS and ABS Massive investments on securitisation products by banking institutions Housing market booming/Housing bubble 2. Market-oriented economy 3. Sub-prime Mortgage Significantly increased repayment burdens due to the rapid growth on interest rate before the crisis	1. No risk retention requirement 2. Failed in regulating credit rating agencies in securitisation ratings 3. No investor requirements 4. Bifurcated Approach for Basel II implementation	1. Basel I for most banks 2. Major weaknesses in Basel I - No securitisation frameworks - Admitting securitisation for regulatory arbitrage - Only one approach for credit risk measurement - No operational risk 3. Basel II only for 11 international active banks (Greater than $250bln or 10bln international exposures)

Source: BCBS (2006, 2010, 2013), PBC (2013) and CBRC (2014b).

By the end of 2013, the PBC and CBRC issued the adjustment on securitisation regulation with respect to the requirements of risk retention ([2013] no. 21). The major change was that the originating institutions of securitisation only need to hold 5% capital for each class of the securitised assets (PBC, 2013; Wang, 2014). For instance, one securitisation deal consists of three types of assets, 60% for asset A, 30% for asset B and 10% for asset C, and the risk weights for these three assets are 20%, 100% and 1250%, respectively. Under previous regulatory rules, the originating institution should hold 62.5% capital which is calculated by $5\% * 100\% * 1250\%$. Under the current regulation, the requirement of capital holding is only 8.35% for the risk retention, which is calculated out by the equation of $5\% * (60\% * 20\% + 30\% * 100\% + 10\% * 1250\%)$. In this case, banks or other originators can release around 91.65% (100–8.35%) capital of the assets they securitised rather than 37.5% (100–62.5%) under the previous regulatory framework.

Nevertheless, the new regulatory law requires originator to keep no less than 5% amount of the securitisation products for risk retention (PBC, 2013). For illustration, suppose the asset that banks securitised contains only one type of asset which has the risk weight of 20%, then the originating bank should hold 5% capital instead of 1% which is calculated by $5\% * 20\% * 100\%$. Furthermore, the holding period requirement has been adjusted from not lower than the duration of the lowest class of securitises to not lower than the duration of the each class of securitises. As Wang (2014) maintains, this adjustment makes the risk control system more malleable and as such gives the banks more incentive to conduct securitisation. On the other hand, the risk associated with the banks and even the whole banking sector has been increased due to the reduction of risk retention requirement.

5. Comparing China with the USA

Arguably, the restarting of securitisation in 2012 should aid Chinese banks in addressing the difficulty of financing due to the availability of more loans via securitisation. However, while the previous version of the 2012 Chinese securitisation regulatory framework might enhance risk management due to the high MRR requirement, it also has its drawback. It can be argued to be restrictive and lacking the required incentive for banks to participate and benefit from securitisation due to the requirement to hold a high percentage of capital for the risk retention. As explained in Section 4 only a limited amount of capital from the securitised assets can be released. In the new 2013 regulatory framework, there are risks but the incentives for banks to participate are higher due to the reduced MMR which will enable a higher level of capital to be released from the securitised assets (see, CICC, 2014; Wang, 2014).

In comparison with the US securitisation, there are some similarities and differences as itemised in Table 1.1. For instance, although China has the potential threat of housing bubble, the MBS is yet to start in China and the housing market is strongly

controlled by Chinese government via series of purchasing limitation policies such as new 'Nation Ten' in 2010, 'Nation Eight' in 2011 and 'Nation Five' in 2013 (see State Council of China, 2013). Further, the scale of Chinese securitisation market is quite limited in comparison with the US securitisation market during the sub-prime crisis.

In line with the global improvements in the securitisation regulation after the GFC (IOSCO, 2010), China is applying the approach of risk retention and a more rigorous investor requirements and investment restrictions. These are to enhance the accountability for the originator and to diversify the risk of the non-systematic securitisation failure. Moreover, it could be argued that CRA problems are being properly regulated in China with the strict requirements faced by the securitisation originators and investors, which were noted as the major factor of the US sub-prime crisis (see Mohanty, 2008; Papaikonomou, 2010; MacNeil and O'Brien, 2010).

In addition, Basel III which China is currently using has significantly enhanced the capital adequacy requirements, leverage and liquidity risk management and systematic risk management, which were all not properly managed during the GFC. As stated in Section 3, the bifurcated approach that US regulator adopted for the Basel II implementation caused most US banks to be exposed to the weaknesses of Basel I (as listed in Table 1.1). In the Regulatory Consistency Assessment Programme (RCAP) of Basel III in China, the Basel Committee evaluated the 'Chinese Capital Rules' as mostly in line with the International Basel III Standards and that they were set up in a higher requirement on some selected aspects in a prudent way (BCBS, 2013). Overall, the Basel Committee has concluded that the 'Chinese Capital Rules' are compliant and that the Chinese assessment team were proficient in formulating and implementing the regulations (BCBS, 2013). Therefore, the implementations of Basel II and Basel III in the Chinese banking sector can be argued as further advantages that Chinese banks currently have as compared to the US banks during the GFC.

Using the key features of their securitisations as itemised in Table 1.1, it is evident that the current Chinese securitisation regulatory framework is stricter than the regulations that USA adopted during the crisis. These include the rules of pilot programme scale restriction, MRR requirements, strong credit rating regulation, investors' requirements and no MBS securitisation. In addition, comparing with the circumstances of most US banks due to the weaknesses of Basel I and late implementation of Basel II, Chinese banks can be said to be proactive having implemented Basel II and currently implementing Basel III.

5.1. Challenges and suggestions

Although current regulations on the Chinese securitisation market seem effective in comparison with the regulations USA adopted at sub-prime crisis period, we cannot say that the current Chinese securitisation regulatory framework will be reliable in the coming years. This is mainly due to the fragility of the Chinese banking sector and the ever emerging uncertainties of the global economy. To sustain the effectiveness of the regulation, the following suggestions might be helpful:

1. Chinese regulators could slightly improve the overall percentage of MRR or adopt a bifurcated approach for MRR requirement to ensure that long-term securitised assets have higher MRR requirement than short-term securitised assets. This will improve the accountability of the originating institutions. For instance, suppose the MRR requirement increases to 10% from 5%, there will be no significant difference for banks to raise funds by securitising loans. Under 10% MRR requirement, banks can still release 90% instead of 95% capital from the loans they securitised. However, the amount that banks will retain for MRR will considerably increase from 5% to 10% which will make the banks to take more responsibility in managing securitisation deals. In addition, the bifurcated approach of holding higher MRR for long-term assets would also address the issue of higher uncertainty of the long-term assets.
2. The investor requirements of investment limitation of 40% in a single ABS should continue to be implemented as it can, to a large extent, prevent risk concentration in securitisation investment. In this case, as the 40% limitation, the institutional investors would not bear the whole losses of the ABS even if a securitisation failure occurs in one securitisation deal. In other word, this regulatory rule enforces a risk diversification for the securitisation investment.
3. Chinese regulators should adjust the regulation to a much stricter level if they decide to start MBS due to the potential risk of housing bubble in the Chinese property sector and the importance of the banking sector to the economy. Even though the scale of the issuance volumes of securitisation in China is much smaller than the previous circumstance in the USA during the GFC, as an emerging economy, China's financial market is fragile and not as efficient as the USA. A small scale of securitisation failure can therefore result in a serious consequence in the Chinese banking sector, and even the financial industry and the whole economy.
4. On the basis of prudential regulation, Chinese regulators should improve the scale of credit asset securitisation pilot programme. At current stage, although the new regulatory adjustment ([2013] no. 21) has increased the proportion of the capital that can be released from securitised assets, the incentive to participate is still relative low due to the 'small scale' permit. The benefit of carrying out a small scale securitisation might not be very sufficient after the deduction of the costs of human resource and other relevant expenses of originating institution and other securitisation participating parties.
5. With the expansion of the Chinese financial sector including the emerging securitisation market, it might be important to review the effectiveness of its institutional approach to financial sector regulation. As the scale of the pilot programme is likely to increase, issues of miscommunication, information mismatch, shirking supervisory responsibility between

the regulatory authorities might cause a big problem in the securitisation programme. Due these inherent challenges of institutional regulatory approach especially with issues of effective cooperation among the different regulators, it is argued that it might be necessary to consider the adoption of an objective led integrated approach (see Goodhart et al., 1998; Goodhart, 2001; Carmichael et al., 2004).

6. With securitisation a process that involves other institutions other than the banks, the issue of transparency and disclosure should be properly examined and pursued by the regulators. As Avgouleas (2010) cautioned, the problem is not with disclosure per se but with understanding the inferences of what has been disclosed. This becomes very important in China due to the oligopolistic nature of its banking sector and its limited disclosure standard. For a start, it might be important to have a cap on the share of the securitisation market an individual bank is allowed to have especially the systematically important ones. This will help to curtail issues of systemic risk and failure.
7. Given the increasing importance of China in the global economy even with a developing financial sector, we are of the view that ABCP should be properly examined before it is allowed in the securitisation programme. In a situation where it will be allowed, it might be important that guaranties to be used should properly cover credit risk as well as liquidity risk. This is to ensure that banks are not allowed to manipulate the capital adequacy requirements through the removal of many assets from their balance sheet using the same type of unclear liquidity guarantee used by many banks during the GFC. It might also be important for robust regulations and proactive rules to be formulated for the regulation and supervision of the Chinese shadow banking sector. This will help reduce the impact of the shadow banking sector especially its contribution to possible financialisation of the Chinese economy which if left unchecked might cause a worse crisis than the GFC due to the increasing inter-connectedness of China to both developed and developing countries.

6. Conclusion

Given the benefits of securitisation such as the generation of additional capital from the securitised assets, the development of the securitisation market should indeed be on the agenda of most economies especially emerging economies such as China. However, while the benefits are not in doubt, the major concern is in formulating and implementing the appropriate regulation to ensure that not only the benefits are realised, the risks are also effectively managed and minimised. In comparison of the regulatory framework in China with that of USA before and during the GFC, China's framework can be said to the more effective as it seems to have addressed the key regulatory factors through which securitisation contributed to the GFC. These include factors such as the bifurcated approach of the US regulators, the weakness of Basel I, late implementation of Basel II and limited regulation of the CRA. Possibly in an effort to avoid a failure such the US experience, China has made various enhancements on its securitisation regulatory framework such as no allowance on MBS, higher MRR requirement, strong regulation of CRAs and strict investor requirements.

In addition, not only is Basel II widely used across the Chinese banking sector, even the latest international regulatory framework, Basel III with its higher capital adequacy requirements and other risk management demands is currently being implemented in China. However, the fragility of the Chinese banking sector and the inherent uncertainties of the global economy imply that further improvements might be helpful. These include a higher MRR requirement or a bifurcated approach that will require long-term securitised assets to have a higher MRR requirement than short-term ones, a stricter level of regulation for MBS, effective collaboration among the regulators and a limit to the level of securitisation a bank can bear.

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