View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Bradford Scholars

Banking in the Shadows: A Comparative Study of China and India

Abstract

Recent years have seen the increasing concern for the flourish of shadow banking in China and India. In this paper, we aim to get a better understanding of the differences in trends and investigate the factors leading to the rise of shadow banking in these two major emerging economies. We find that financial exclusion is a common factor leading to the rise of shadow banking in China and India. While financial reform has taken place in India, financial repressive policies still prevail in China. Although several regulatory measures have been adopted in India and China, the size of the shadow banking in these two countries remains underestimated. Thus, streamlining and enhancing data collection is a key priority for both India and China. We also argue that the regulation in both countries should be more activity focused rather than sector or entity based, and it should be at par with banks. As shadow banks provide last mile connectivity and enhance financial inclusion, a balanced approach is required keeping in view both benefits and costs of the shadow banking system.

Keywords:

Shadow banking, India, China, financial inclusion

JEL Classification:

O16; O17; O53; G21; G23

"Looking back to the year 2007/08… it's striking that the crisis did not at first look like a traditional banking crisis, but rather one related to a new phenomenon: shadow banking" (Turner 2012).

"If it looks like a duck, quacks like a duck, and acts like a duck, then it is a duck…What about an institution that looks like a bank, acts like a bank and behaves like a bank? Is it a bank? Often it is not a bank – it is a shadow bank" (Gandhi 2014).

INTRODUCTION

The global financial crisis (GFC), which began in the US and other developed countries in 2007, gradually spread to the developing and emerging economies through the channels of trade, remittances and capital flows (Mishkin 2010).[1] According to the decoupling hypothesis, developing countries were not supposed to be impacted by the crisis; but the collapse of Lehman Brothers in 2008 proved this to be wrong (Kose et al. 2008). As Dooley and Hutchison (2009) argued, "Lehman bankruptcy in September 2008 generated a very direct financial shock to emerging markets as trade credit evaporated and international trade declined sharply and uniformly around the world". The emerging and developing economies decoupled until mid-2008. However, subsequent developments in the US and Europe led to their recoupling accompanied with "revised expectations about the real effects of the crisis … on output in both industrial and emerging markets" (Dooley & Hutchison 2009). Also, as Eichengreen et al. (2012) suggest the fact that a major financial institution such as Lehman brothers was allowed to fail, undermined the confidence and trust in the financial system. They conclude,

> The heightened co-movement at least in part reflected incomplete knowledge about the magnitude of toxic asset positions in these relatively early stages of the crisis and hence, raised the possibility that instability could spread more quickly and widely than assumed in the consensus view. In the event, Lehman Brothers was allowed to fail, after which the sensitivity of the CDS spreads of global banks as a group experienced heightened sensitivity to the whole range of economic and financial variables. As those variables deteriorated, the result was a perfect storm.

The shadow banks have played a pivotal role in escalating the crisis, and this particularly holds for the US.[2] In the US alone, shadow banking assets constituted about 48% of global

[1] Interestingly, the spillovers from the developed countries occurred not only during the crisis, but have been taking place afterwards too as the monetary and fiscal stimulus measures to contain the crisis are being withdrawn (Lim et al. 2014; Eichengreen, et al. 2014; Mishra et al. 2014; Rajan 2014).

[2] The term 'shadow banking' was first coined by McCulley in 2007 with reference to the US financial sector, where shadow banks (non-banks) were recognized as major players in the run-up to the global economic crisis (Ghosh et al. 2012). McCulley (2007) defined shadow banks as "the whole alphabet soup of levered up non-banking investment conduits, vehicles, and structures." Its origin however, can be traced much earlier to D'Arista and Schlesinger (1993) who termed it as a 'parallel banking system'.

shadow banking assets in 2011 declining to 43.5% in 2013 and further to 40.4% in 2015. In terms of size, shadow banking assets in US were highest at 13.8 US$ trillion in 2015 followed by Cayman Islands (4.4 US$ trillion) and Japan ($ 3.2 trillion) (FSB 2016a). Oncu (2016) argues that shadow banking is "essentially an Anglo-American phenomenon" as North America, Europe and UK put together account for about 80% of shadow banking in all the regions.

Compared with developed countries, shadow banking in developing and emerging countries have uncomplicated structure and smaller size. According to Ghosh et al. (2012), factors underlying the rise of shadow banking in these countries include tight regulations and monetary and financial stability concerns. For example, recent years have seen growing concerns for the rise of shadow banks in many countries especially China and India (Ghosh et al. 2012; UN 2013; Li 2013). In China's case, along with the country's unprecedented economic growth, shadow banks have experienced significant growth (Ghosh et al. 2012; Li 2013). For India, the size of shadow banks, mainly registered non-banking financial companies (hereafter NBFCs), is relatively small, less sophisticated and fairly well regulated, yet it is growing rapidly. Thus concerns have been raised over its sustainability and impact on the economy (Sinha 2013; Acharya et al. 2013).

In this paper, we aim to investigate the differences of shadow banking in two major emerging economies - China and India. Specifically, we seek to answer three questions: (1) what is the extent of shadow banking in China and India; (2) what factors contribute to its rise, are there any common ones; and (3) is there adequate regulation on shadow banking in these two countries. Although a number of studies have emerged on shadow banking in the context of developed economies such as the US and European countries, surprisingly there are hardly few studies that focus on emerging economies (Farid 2012).[3] Moreover, hardly any study has examined the patterns and trends of shadow banking in India and China. The reason to conduct such a study is quite obvious. China is now the second largest economy. Along with India, these two countries contributed around 15.5% of global GDP in 2016 (IMF 2016). It is crucial to get a better understanding of their financial systems and the vulnerabilities therein as it could pose potential risks for global financial stability. Our paper shows that financial exclusion is a common factor leading to the rise of shadow banking in China and India. In terms of differences in finance policies, still repressive and highly

[3] For a review of literature see Adrian & Ashcraft (2012), Pozsar (2008) and Pozsar et al. (2010).

regulated policies in the financial sector in China and loosening of controls in India both prompted the rise of shadow banking.

The rest of this paper is organized as follows. Section 2 briefly lays down our theoretical analysis on the emergence of shadow banking. Section 3 examines the trends and patterns in the rise of NBFCs in India. Section 4 looks into the shadow banking in China. Section 5 presents a comparative perspective and investigates the factors leading to the rise of shadow banking in both countries. Section 6 concludes.

THEORETICAL ANALYSIS

Due to the complexity of the rise of shadow banking in emerging countries, developing a theoretical framework is quite an onerous task. We start our analysis with the neoclassical theory. According to this theory, an individual or a firm's prime concern is to maximize utility and profits. It also assumes that players are rational and make decisions based on full and relevant information. In line with these assumptions, capital is perfectly mobile and can move in any directions subject to returns. However in reality, the free movement of capital is constrained by factors, such as asymmetric information (which may lead to problems of adverse selection and moral hazard); segmentation of credit markets and weak institutions (He et al. 2017). Asymmetric information could cause credit rationing, that is, the lender may provide credit only to few borrowers and avoid lending to risky ones; high monitoring costs also prevent banks from lending to small and poor borrowers (Besley 1994; Stiglitz and Weiss 1981). For example, in developing countries, rural credit market faces problems such as collateral scarcity, less developed institutions, market segmentation and poor enforcement. Shadow banks including informal financial services such as moneylenders, pawnbrokers and other informal sources of finance emerge to fill in this gap in the financial sector. Compared with formal institutions which may be located at a distance, informal financial institutions are in close proximity to borrowers (e.g. they may be in the same community). This advantage enables them to overcome the problem of asymmetric information (Besley 1994).[4]

[4] Shadow banks in turn lead to the problems of adverse selection and moral hazard as they emerge in the periods of 'low uncertainty' and provide credit to risky borrowers (Moreira and Savov 2017). Gennaioli, Shleifer and Vishny (2013) too show that shadow banks which emerge during the "quiet times" and enable risk diversification for the banks contribute to build up of excessive risks and fragility of the financial system.

Regulatory arbitrage is another factor giving rise to the shadow banking. As Buchak et al. (2017) suggest:

> The narrative is that banks are subject to an ever-increasing regulatory burden, heightened legal scrutiny, and larger capital requirements, which have affected which products they can provide and have changed the cost of their funding. Therefore, banks, especially those facing tighter capital constraints, are withdrawing from markets with high regulatory costs. Shadow banks, which are largely free of regulatory costs and such concerns, then step into this gap.

According to Fleischer (2010), regulatory arbitrage is "a perfectly legal planning technique used to avoid taxes, accounting rules, securities disclosure, and other regulatory costs" and involves overcoming legal constraints, transaction costs, professional, ethical and political constraints. Regulatory arbitrage can take place under three circumstances: inconsistent regulatory regime under different regulatory regimes; reducing regulatory costs in a single regime and finally regulatory arbitrage to take advantage of future upcoming regulatory changes (Fleischer 2010). Shadow banking in many countries has emerged from taking advantage of differential regulatory regimes for banking and non-banking institutions (Buchak et al. 2017).

Financial innovation and technology also gives rise to the shadow banking. As mentioned earlier, neo-classical economics hypothesizes that market participants make rational and fully informed decisions with a view to maximizing their utility, so markets reflect the aggregate preferences of these participants. Viewed from this perspective, the extreme interest volatility of the 1970s and early 1980s can be seen as having spurred demand for innovations such as interest rate swaps and adjustable rate mortgages (Blair, 2010; Hu, 1993; Van Horne, 1985). As Awrey (2013) comments, innovation is a rational response to market imperfections. Tighter regulation by the financial regulator on banks also triggers innovation to circumvent regulation (Frame & White 2004).

Among various innovations, financial technology (fin-tech) stands out as a typical example. It enables financial institutions to overcome problems, particularly asymmetric information, through techniques such as alternative credit scoring methods (Frame and White 2004). On the other hand, scholars have found that fin-tech has a significant effect on shadow bank growth. For instance, Buchak et al. (2017) show that for the US, growth of financial technology accounted as much as 30% of the recent shadow bank growth.

SHADOW BANKING IN INDIA[5]

In India, banks are the major financial intermediaries. Recent statistics show that up to March 2017, the formal financial sector comprised of 21 public sector banks, 21 private banks, 3 local area banks, 10 recently established small finance banks, 6 payment banks, 44 foreign banks, regional rural banks, cooperative banks and non-banking financial companies (NBFCs). Alongside the formal financial sector, informal financial sector also exists such as moneylenders, share broking firms, loan brokers and traders and *multani shroffs* (RBI 2002).

Financial sector reforms, which are still ongoing, were initiated in 1991. However, despite several reforms, state ownership of banks still exists and 72.7% of the total banking assets are held by public banks (Arora and Wondemu 2018). Further, mandatory priority sector lending requirements continue to exist and all banks are expected to meet the targets. Priority sector target initially formalized in 1972 currently stands at 40% of bank credit for domestic commercial banks and foreign banks.[6] Prior to April 2011, banks were allowed to on-lend to NBFCs (for further lending to priority sectors) and these were classified as priority sector loans. However, since April 2011 this has been withdrawn (Acharya et al. 2013).

Shadow banks in India are mainly registered NBFCs (Gandhi 2014). According to Bhaskar (2014), NBFCs are defined as companies engaged in the business of making loans/advances, acquisition of shares/securities, hire purchase finance, insurance business and chit fund activities. To reduce ambiguity, the country's central bank introduced a 50-50 business criteria rule in 1999, according to which, a registered company (registered with RBI) is treated as an NBFC if its financial activities constitute more than 50% of the overall assets and gross income of an entity (RBI 2011). This rule, however, leaves out a large number of firms including informal sector entities such as pawn brokers and moneylenders. These companies undertake financial activities, but their assets or income do not meet the 50-50 criteria. As a result, they are not registered with the RBI, and are

[5] Among the criteria employed by the emerging economies in identifying non-banking financial intermediaries are their economic activities, extent of credit intermediation, maturity/liquidity transformation, leverage activities, interconnectedness with the financial system and extent of systemic risks (Financial Stability Board 2014).

[6] Priority sector lending is lending to selected sectors which may not otherwise receive adequate credit and includes sectors such as agriculture, MSMEs, education, social infrastructure and renewable energy. While foreign banks with 20 or more branches are expected to meet the 40% target, those with branches less than 20 are expected to meet this target in a phased manner by 2020.

either poorly regulated or fall outside the regulatory perimeters.

Historically, NBFCs in India have been in existence for a long time. Even prior to the country's independence in 1947, a complex indigenous financial system consisting of *banias*, *chettys*, *sahukars*, *podars* and *shroffs* provided finance to different sectors and population.[7] Besides these, moneylenders were also the primary source of finance including *pukka* moneylenders, *kaccha* moneylenders, pawnbrokers and goldsmiths, *qistias*, military moneylenders and amateur moneylenders (Tandon 1990). These indigenous bankers and moneylenders were different from the banks, primarily because they combined other business with banking and money lending and their operations were informal (Tandon, 1990). The role of the moneylenders varied across different parts of the country. In northern and central India, the moneylenders had a hold on the peasantry, particularly the small and marginal farmers. While in southern India, they financed trade and served agriculturists during the colonial period (Bose, 1994). Thus historically non-banking financial intermediaries have played an important role in providing finance to different sectors. Although the NBFCs in various forms have existed even before the independence, the term NBFC was first introduced in the early 1950s with the establishment of Sundaram Finance, a company financing purchases and sale of cars (Acharya et al. 2013).

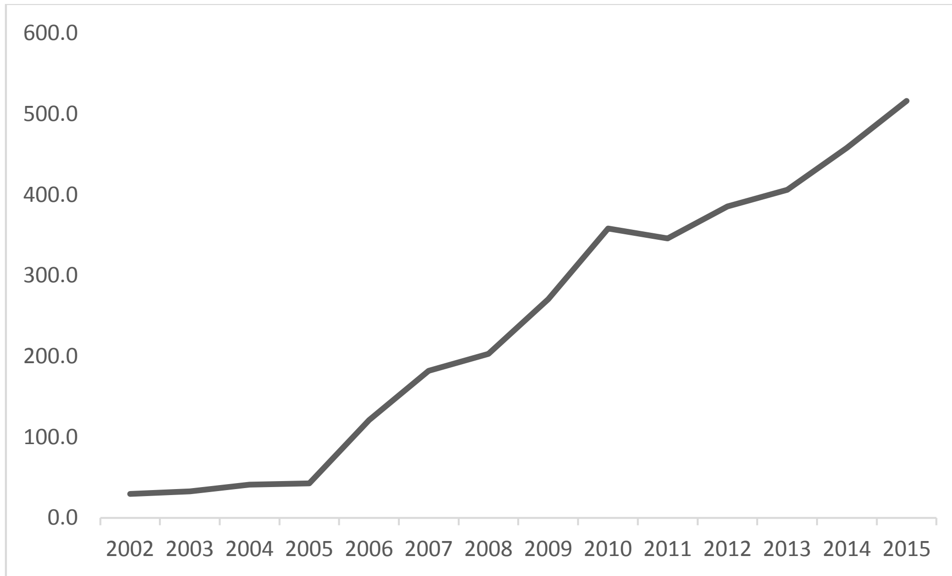
The annual growth of other financial intermediaries (OFIs) according to FSB (2016a) was 18.4 % in 2015.[8] This places India among the top 5 emerging economies experiencing high growth rates in shadow banking in 2015. Others are Argentina (45.6%), China (36.6%), Russia (21.8%) and Turkey (17.8%).[9] Figure 1 shows rising trend of OFI assets in India. Based on RBI data, NBFC assets (including assets of all NBFCs) as a proportion of GDP were 8.4% in 2005-06 and rose further to 12.9% in 2014-15. During the similar period, bank assets formed 75.4% of GDP rising to 96.4% of GDP in 2014-15 (Bhaskar 2014; Mohan and Ray 2017).

---

[7] The words 'bania', and 'sahukar' in Hindi language means the local shopkeeper. They played an important role in informal financial markets during the British rule and post-independence. Despite considerable expansion of institutional credit since 1969, the economic and political power of *sahukars* remains substantial. During the British period, *sahukars* remained the link between the natives and the British. It provided for the sale and financing of agricultural operations, and acted as buyers of agricultural products and also as agents for collecting taxes. Even now *sahukars* dominate informal credit markets in parts of India and charge usurious rates of interest (Rahul, 2003).

[8] OFIs are defined by Financial Stability Board as those financial institutions "that are not central banks, banks, insurance corporations, pension funds, public financial institutions, or financial auxiliaries."

[9] Although Argentina has the highest growth rate, it is the third smallest among the emerging economies in terms of its share in the total.



Source: Computed from FSB (2016a).

Figure 1: Trends in OFIs assets in India

Figure 2 shows the complex structure of NBFCs in India. According to RBI (2014), these have been classified on the basis of liabilities, activities and systemic importance.

Liabilities	Activities	Systemic Importance
• Deposit taking • Non-Deposit taking	• Asset Finance Companies • Loan Companies • Infrastructure • Core Investment Companies • NBFC Microfinance Companies • Factoring Companies • Mortgage Guarantee Companies • Residuary Non-Banking Companies	• Assets less than Rs.5 billion • Assets more than Rs 5 billion

Source: Adapted from RBI (2014).

Figure 2: Classification of Indian NBFCs

On the basis of liabilities, they have been categorized into deposit-taking and non-deposit taking NBFCs. Deposit-taking NBFCs, unlike banks, are only allowed to accept time deposits with a minimum maturity of one year. According to RBI (2016a), the total number of NBFCs registered with RBI, as of March 2016, was 11,682 of which 202 were deposit-accepting and 11,480 were non-deposit companies. Because of the increasing regulations on deposit-taking NBFCs, there is a sharp decline in their numbers. This is reflected in their smaller share of assets in contrast to the rising share of non-deposit taking NBFCs, especially those that are systemically important, as Figure 3 shows.

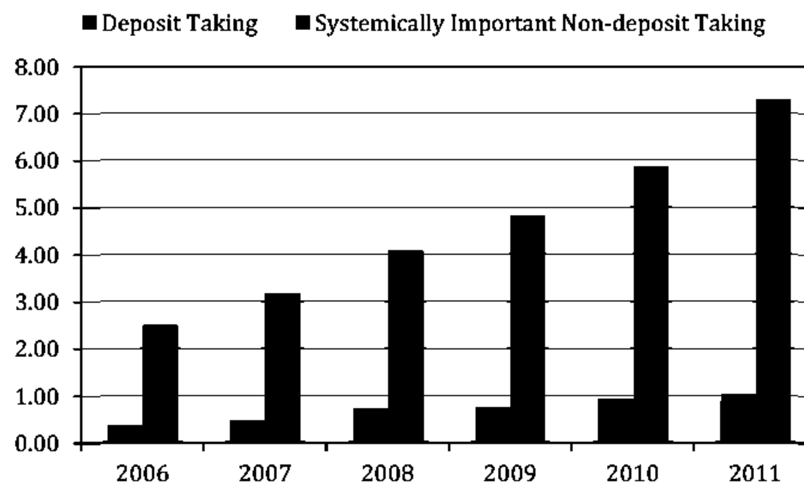


Figure 3: Assets (in Rs. trillions) of deposit taking and systemically important non-deposit taking NBFCs

Source: Acharya et al. (2013).

Further, Figure 4 shows that loans and advances constitute the largest proportion of the total assets of deposit taking and non-deposit taking (with asset size of Rs. 1 billion and above) NBFCs.

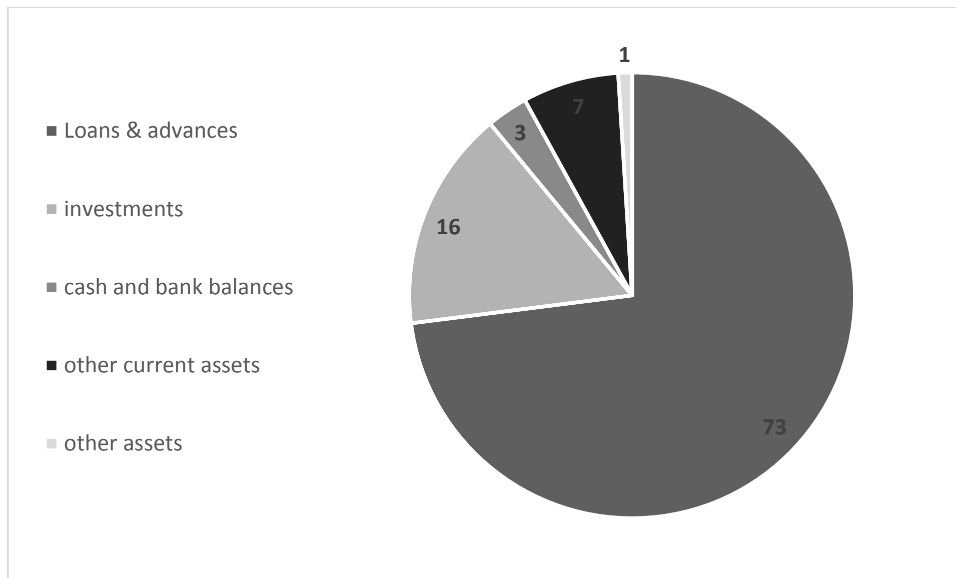


Figure 4: Asset structure of deposit taking and non-deposit taking NBFCs

Source: Adapted from Gandhi (2014).

Regarding liabilities, the most important components are owned funds, debentures and bank borrowings as at end March 2014 (Figure 5).

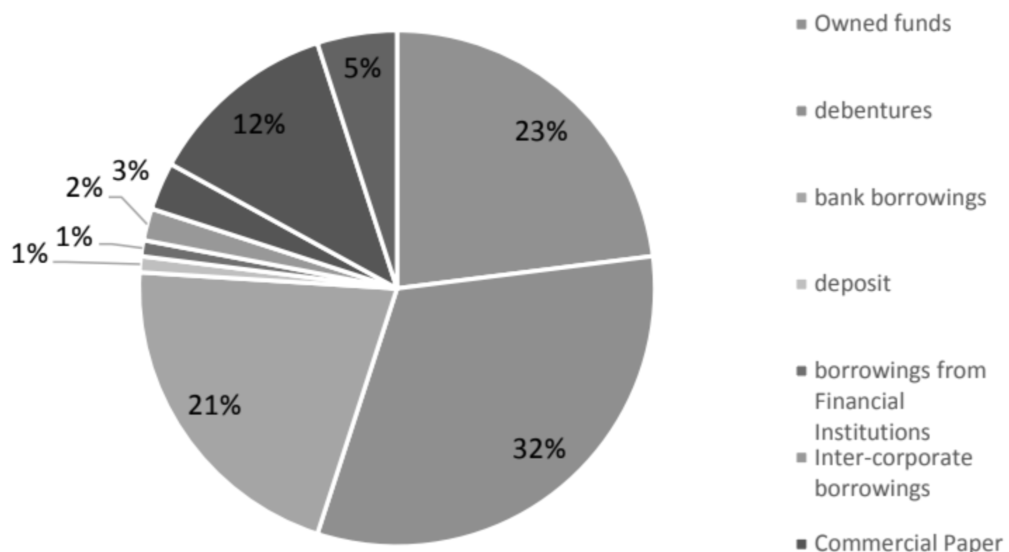


Figure 5: Liability structure of deposit taking and non-deposit taking NBFCs

Source: Adapted from Gandhi (2014).

On the basis of activities, NBFCs have been classified into loan companies, investment companies, asset finance companies and infrastructure finance companies. In recent years, new entities such as infrastructure finance companies, infrastructure debt funds, micro-finance institutions have been added to this group.

NBFCs have also been classified with their asset size and systemic importance. Since April 1 2007, non-deposit taking NBFCs with assets of Rs. 1 billion (limit raised to Rs. 5 billion since December 2014) and above, referred as NBFC-ND-SI, have been classified as systemically important (RBI 2014). They are crucial to financial stability because they hold linkages with the rest of the financial system. Most of the NBFC-ND-SIs are in infrastructure, microfinance and financial services catering to medium and large industries and transport sector.

A number of large NBFCs have been established by the corporate sector. These large NBFCs operate as conglomerates covering a range of areas such as insurance, broking and mutual funds (FSB 2016b). Besides NBFCs of the private sector, government owned NBFCs both at the central and state level also exist. Bank borrowings to these NBFCs were Rs. 385 billion as of 2014 (RBI 2014). Despite the fact that they are highly leveraged, these NBFCs are not under prudential regulatory requirements of RBI; and therefore pose risks for the stability of the financial system.[10]

Overall, Table 1 shows that a relatively small number of companies (3.8 % of NBFCs whose size of assets are above Rs. 1 billion) disproportionately hold nearly 90% of the total assets. Within this group, companies whose asset size is above Rs. 5 billion are considered systemically important (as mentioned earlier, NBFCs above Rs. 5 billion have been classified as systemically important by RBI). Table 2 also shows that, apart from the NBFCs with more than Rs. 1 billion assets, a large number of others (around 85%) co-exist which are much smaller in size. Although these smaller NBFCs, do not pose a major risk to systemic stability, yet as RBI (2014) argues "they give rise to issues with regard to consumer protection as well as reputational risks for the regulator".

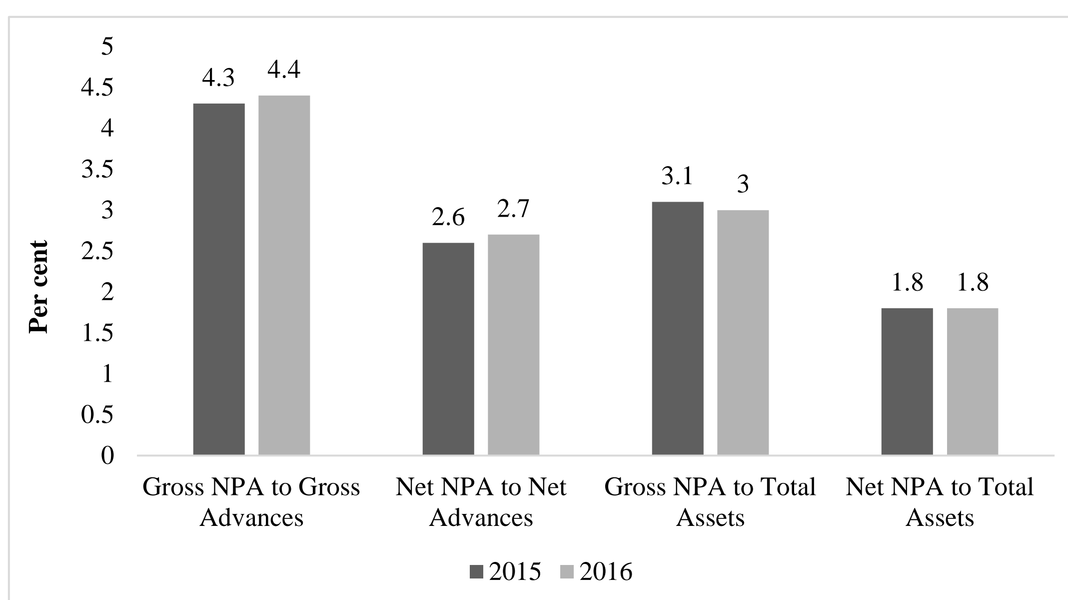
[10] According to FSB (2016b) the leverage ratio for these companies is 6.4 compared to 3.3 for the entire sector. These government NBFCs are only subject to rules and norms of the relevant government ministry to which they are attached.

Table 1: Size wise distribution of NBFCs registered with Reserve Bank (Rs. billion)

Size of assets	No. of companies	Total assets size	% of No. of companies	Prop. of total asset size
Above 1 billion	454	11621	3.8	8
500 Million to 1 billion	686	490	5.7	3
Up to 500 million	9555	854	79.4	6
Data not available	1334	NA	11.1	

Source: RBI, 2014.

Due to high level of non-performing assets (NPAs), recent years has seen the deterioration of the asset quality of the NBFC-ND-SIs. According to Figure 6, the deterioration measured with gross NPAs/advances ratio has experienced considerable increase from 1.5 % in June 2012 to nearly 2% in September 2014 and further to 4.4% in 2016.



Source: RBI (2014).

Figure 6: Asset Quality of NBFCs-ND-SI

Another concern is the interconnectedness of NBFCs to the rest of the financial system. Table 2 shows that the interconnection has in fact increased over the years.

Table 2: Exposure of Banks, Asset Management Companies and Insurance Companies to top NBFCs (Rs. bln)

	Mar-12	Mar-13	Mar-14	Sep-14
Banks	1513	1453	2919	1495
AMCs	83	624	756	912
Insurance Companies	780	880	965	1023

Source: Bhaskar (2014).

The exposure of asset management companies to NBFCs has increased more than tenfold from Rs. 83 billion in 2012 to Rs. 912 billion in 2014. Among major reasons for increased borrowings of NBFCs from different institutions are economic reforms including financial sector reforms and on-lending by banks through NBFCs to meet priority sector requirements (Sherpa 2013; Acharya et al. 2013).

The interconnectedness between banks and NBFCs in India was further exposed during the GFC in 2008. Before the crisis, the banks, which had a low number of branches in semi-urban areas, were on-lending to the NBFCs for further lending so they can meet mandatory priority sector lending targets (Acharya et al. 2013). The crisis, however, led to the drying up of credit from the private sector banks because their deposits fell sharply and moved to public sector banks. As Acharya et al. (2013) put it, this withdrawal of liquidity appears to be a "shadow bank run" on the NBFCs, resulting from a "run" on the private sector banks (transmitted to the NBFCs through bank loans) and mutual funds (transmitted to through commercial paper).

The regulation of Indian NBFCs, which has undergone significant changes over the years, was introduced earlier on in the 1960s. The ASSOCHAM report (2016) observed that, "the evolution of the regulatory framework for NBFCs in India has gone through a cyclical phase-from simplified regulations to stringent and extensive regulations and finally towards rationalization as part of the recently revised NBFC regulatory framework." Regulation was necessary for three major reasons: ensuring efficacy of credit and monetary policy, safeguarding depositors' interest, and ensuring healthy growth of NBFIs (Sinha 2013). Several committees were appointed by the government timely to examine the regulatory standards of NBFCs.[11] Stringent regulation of the sector came in 1996, and subsequently in

[11] These include Bhabatosh Datta Study Group (1971), James Raj Study Group (1974); Chakravarti Committee (1985), Narasimham Committee (1991), Shah and Khanna Committee (1992, 1993) and Second Narasimham Committee (1998).

1998 as a result of the failure of one large NBFC, they were not allowed to raise deposits from the public. Because of these regulations, the number of deposit taking NBFCs declined significantly over the years from 1420 in 1997-98 to 428 in 2005-06, 280 in 2009-10, and further to 241 in 2014. As Table 3 shows, regulation monitoring is performed through market intelligence, complaints, industry sources and reports of the statutory auditors.

Table 3: Monitoring of NBFCs by Reserve Bank of India

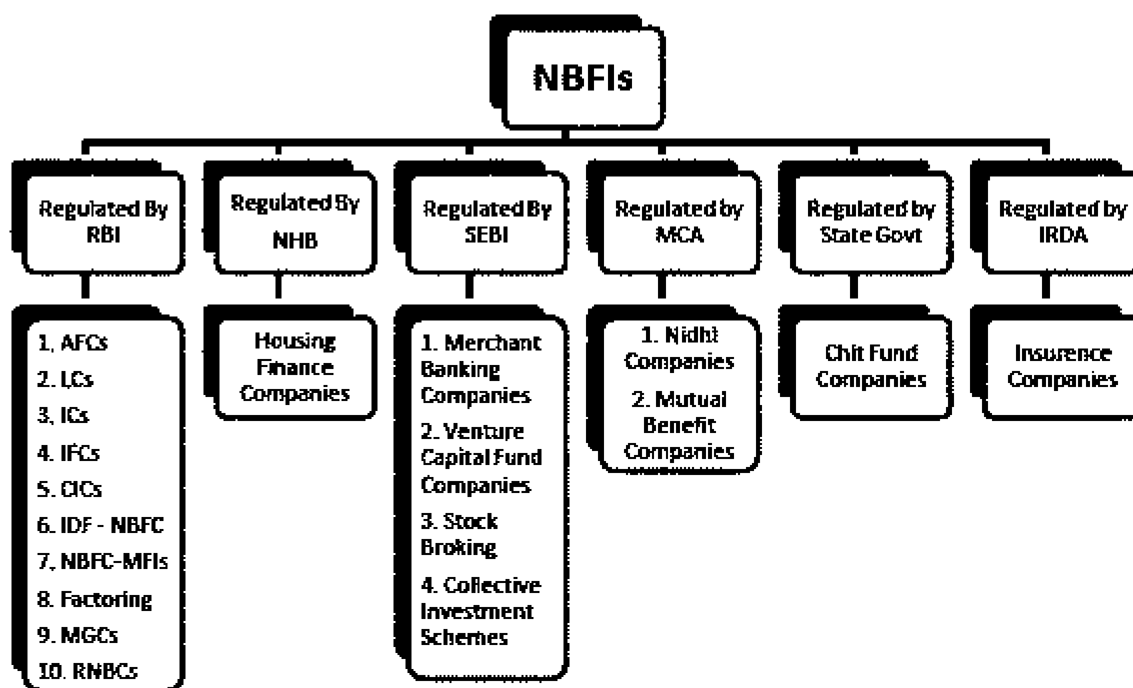
NBFC type	Reporting Requirements	Prudential Requirements	Onsite Inspections
NBFC-D	Quarterly (more granular)	Yes	Yes
NBFC - ND (below or equal to INR 5 billion)	Annual (less granular)	None	No
NBFC – ND-SI (above INR 5 billion)	Quarterly (more granular)	Yes	INR 5-10 bl: rotation INR 10-20 bl: every 2 years Above INR 20 bl: annually

Source: FSB, (2016b).

The GFC once again highlighted the importance of regulating NBFCs as regulatory arbitrage and the interconnectedness of the financial system increased in recent years. In 2010, a working group was constituted to revisit issues and concerns of NBFCs. It recommended that minimum net owned funds should be stipulated to start a NBFC, and small NBFCs (non-deposit) that is, those below asset size of Rs. 500 million, should be exempt from RBI registration. Minimum net owned funds of the existing NBFCs therefore, was increased to 20 million which is expected to be achieved in March 2017 (RBI 2014). In 2006, Tier I and Tier II capital adequacy requirements were introduced for systemically important non-deposit NBFCs at 10%, later increased to 15% of their aggregate risk weighted assets. The capital adequacy of these NBFCs has been much above the minimum requirement. For the deposit-taking NBFCs, it is 12 or 15% depending on their function (Acharya et al. 2013). Meantime, credit rating has been made compulsory for the existing unrated asset finance companies (AFCs) by March 31, 2016 (RBI 2014). The classification of non-performing assets was changed to 90 days as in the case of banks, instead of previously 180 days. Furthermore, NBFCs with less than Rs. 5 billion assets will not be subject to prudential requirements.

Recent reforms also include streamlining of procedures, for instance, the number of documents to be submitted by the NBFC applicants has reduced to 7-8 from 45 documents earlier. Figure 7 shows the regulatory structure of deposit and non-deposit accepting NBFCs

in India. According to figure, there are multiple regulators of NBFCs, with the regulation being institution focused rather than financial product focused. Overall, India's regulations over NBFCs are based on the acceptance of deposits and systemic importance. The two major criteria are accepting public funds and having customer interface. However, despite these NBFC reforms, considerable differences between the banks and NBFCs regulatory regimes continue to exist. For example, statutory reserve ratios and various prudential measures which are enforced on banks are not applied to NBFCs. This is indeed a great concern because as previously mentioned, a large number of NBFCs are either not registered or are below the threshold limits.



Source: Bhaskar (2014).

Figure 7: Regulatory Structure of NBFCs in India

SHADOW BANKING IN CHINA

Similar to India, banks are the major financial intermediaries in China with bank assets forming more than 310% of GDP or nearly 68% of country's financial system assets by the end of 2016 (IMF 2017).[12] Large commercial banks, mainly the big four banks (International

[12] Banking institutions include commercial banks (large commercial banks, joint stock commercial banks, city

Commercial Bank of China, Bank of China, China Construction Bank, and Agricultural Bank of China), continue to form large proportion of total banking sector assets and 115.4% of GDP.

One unique feature of China's financial sector is that despite the recent growth of private banks, the state is the 'promoter, owner and regulator of the financial system' (IMF 2017). This massive state presence accompanied with implicit state guarantees has led to many problems such as inefficient allocation of resources, high level of NPAs, moral hazard and buildup of risks in the financial system (IMF 2017). According to Zheng & Xiong (2018), it also breeds other problems such as soft budget constraint reflecting heavy lending to state owned enterprises at low interest rates, repressed financial system and political intervention depriving private firms of access to bank credit. In China, besides formal financial sector, informal financial sector also exists such as non-banking financial companies and shadow banks.

Compared with India, the definition of shadow banking in China is much broader and aligns more closely with FSB. According to the Circular 107 issued by the Chinese government, shadow banking is defined as "credit intermediation entities and activities outside the traditional banking system" (Huang 2015). This definition, however, does not take into account the different risks and vulnerabilities attached to shadow banking such as the interconnectedness between formal banking system and shadow banks (Barth et al. 2015, Lu et al. 2015).

Shadow banking in China has a long history. According to Lan (2015), pawn broking activities existed as early as in the Six Dynasties era (317-589 AD). Pawnbrokers in those days collected collateral in exchange for loans (Jiang 2009). Buddhist temples were also authorized to run pawnshops. Similar to India, money houses came into existence in the 19th century in Pingyao, Shanxi province (Hsu 2012). However, pawn broking firms and money houses were abolished in the later years; and nationalization of rural credit cooperatives took place in 1958. After economic reform in 1978, informal finance re-emerged, and has since then flourished in the past several decades (Hsu 2012).

In contrast to India, the fast-growing shadow banking sector in China is much larger in size,

---

commercial banks, rural commercial banks and foreign banks), policy banks & China Development Bank, cooperative financial institutions, new type rural financial institutions & China Postal Savings Bank, other non-bank financial institutions regulated by CBRC and banking asset management companies.

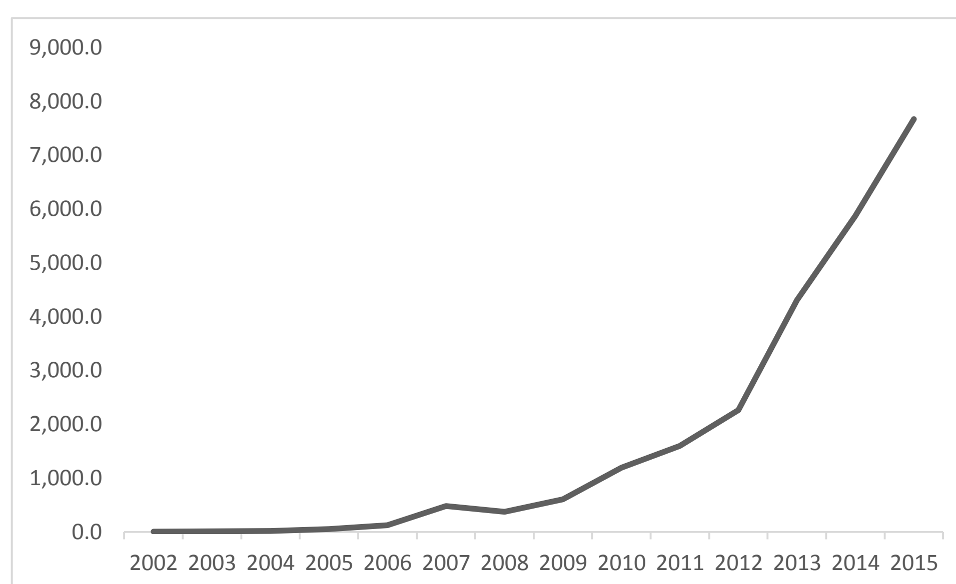
posing potential risks to the financial system. According to the FSB (2016a) estimates, non-banking financial intermediaries or Other Financial Intermediaries (OFIs) assets as a proportion of GDP in China formed 25.9% in 2013 rising to 71.1 in 2015.[13] Comparatively, this was substantially lower than 294.2% in the United Kingdom and 144.9% of GDP in the US in 2015. The figure varies considerably based on the methodology followed by individual studies as Table 4 shows.

Table 4: Estimates of the size of shadow banking system in China

Source	Date	RMB	USD	% of	% of bank assets
GF Securities	17/12/2012	30	4.8	57%	31
Citi Research	11/1/2013	28	4.5	54	29
Barclays	Dec 2012	25.6	4.1	49	27
Hua Tai Securities	14/12/2012	25	4.0	48	26
UBS	16/10/2012	13.7-	12.2-3.9	26-46	14-25
ANZ Bank	Dec 2012	15-17	2.4-2.7	29-33	16-18
Bank of America	6/7/2012	14.5	2.3	28	15

Source: Li (2013).

A trend which can be seen clearly from Figure 8 is the rising assets of OFIs in China - from 5.3 billion in 2002 to 7.7 trillion in 2015. It registered the largest increase among the BRICS including Brazil, Russia, India, China and South Africa. Among components of OFIs (finance companies, money market funds and special finance vehicle), finance companies recorded the highest increase over the period 2007-2011 in China (33%), Hong Kong (12%), India (25%) and Indonesia (24%).



[13] Other financial intermediaries as defined by FSB are non-banking financial institutions excluding insurance corporations, pension funds and public sector financial institutions.

Source: Constructed from FSB (2016a).

Figure 8: Assets of OFIs in China

According to Hsu et al. (2013), shadow financial system in China consists of three groups. The first group comprises commercial banks, investment banks (includes bank-trust cooperation in financial products), finance leasing companies and insurance brokerage firms. The second group includes quasi financial institutions such as micro-loan companies, pawn shops. The third group covers informal financial institutions such as private money houses, money brokers and internet borrower-lenders. Sheng et al. (2015) place shadow banking activities into three groups based on their regulatory coverage: i) those with a finance license that lack full regulation such as commercial banks, securities companies, trust funds and insurance companies; ii) those with no finance license and lack of regulation for instance, financial leasing companies, guarantors, pawnshops and microfinance companies; and finally iii) those which do not have a finance license and face no regulation (internet finance companies and underground banks including third party WMPs).

In contrast to India, China's classification of shadow banking activities is more comprehensive. It not only includes various financial products, cooperation between banks, trusts and security companies, but also covers small loan companies, finance guarantee corporations, internet finance companies, pawnshops and moneylenders. While for India, these informal lenders are not known as part of the shadow banking system. This could be perhaps, because they are small in size and therefore, not considered as a threat to financial stability (FSB 2016b). The reason why they are included in China's shadow banking system may lie in the high interconnectedness to the rest of the financial system (Hsu et al. 2013).[14]

One participant among the shadow banks in China are commercial banks who lend funds to trust and investment companies (Sharma 2014). Banks also hold controlling shares in trust companies (Li 2013). Another interesting channel is that of lending by large state owned enterprises (who get funds from banks at low interest rates) to small and medium enterprises (SMEs). These entrusted loans are given by one corporation to another using the bank as an intermediary. They do not enter banks' balance sheets as banks charge fees for the services rendered. On its part the bank monitors the usage of the loan of the borrower. Such entrusted

[14] Some studies however, do not take the informal sector into account due to its heterogeneity and potentially low risk (Li, Hsu and Qin 2014).

loans have been existed since 1996, but it is only recent years that these loans started flourish along with China's unprecedented economic growth. Apart from that, commercial banks also offer products such as trust products, negotiable securities, credit default swaps, wealth management products (WMPs), etc.

For example, WMPs are developed and managed by banks or channeled through other firms. Usually they have short-term maturity and high returns. Banks use these funds to invest in securities mainly in search of yields. According to recent estimates, the outstanding stock of WMPs exceeded 17 trillion Chinese Yuan as of 30th June 2014 forming around 26% of GDP (Perry and Weltewitz 2015).

The pure WMPs managed and controlled by the banks without involvement of other financial institutions formed 11% of the total outstanding WMPs in 2014. The interest rate offered on these WMPs is higher than that of bank deposits and are a balance sheet item of the bank. Besides sole bank managed WMPs, banks and trusts also jointly manage WMPs. These can be of three types: direct bank-trust cooperation products, indirect bank-trust cooperation products and collective trust products. Around 55% of WMPs are in direct and indirect cooperation between banks and trusts. For the collective trust products, the trusts are the active managers of WMPs and banks do not have them on their balance sheets.

Among the risks associated with WMPs are the high interest rates offered to investors above the deposit rates. As the WMPs are offered by the banks (or jointly with trusts), they also carry implicit bank guarantee, and a high potential risk in case of default. Meantime, because these funds are usually invested in sensitive sectors such as real estate, risks can be escalated even further (Perry and Weltewitz 2015). The pure bank WMPs, on the other hand, offer explicit bank guarantee, and invest in low risk financial products such as government bonds, inter-bank loans and high quality corporate bonds. The risks associated with unguaranteed bank WMPs are the mismatch of maturity between WMPs, which are of short-term nature, and on-lend to long-term projects. The maturity mismatch exists for each individual WMP separately leading to enhanced rollover risks as several WMPs could mature at the same time. The lack of transparency in WMPs is another risk. As the banks are involved in the issue of WMPs directly or indirectly as an intermediary, they are considered implicitly guaranteed and risk free. This is compounded by the fact that the banks are government owned. As many of these are off-balance sheet activities, they not only pose significant risks to the banking sector, but also hold risk for the investors if the WMPs are allowed to fail (Perry and

Weltewitz 2015).

Peer-to-peer (P2P) online lending is another recent innovation in shadow banking both in China and India. According to P2P finance association, cumulative global P2P lending was 4.4 billion GBP by the end of 2015 up from 2.2 million GBP in 2012 (RBI 2016a). The number of P2P online platforms in China has increased from only 50 in 2011 to 2520 in 2015. Total transactions under this category were 120 billion RMB (US$ 18.8 billion) in 2015 (Canuto and Zhuang 2015). Financing through P2P platform has contributed to a stock market bubble when the loans borrowed by the individual borrowers were invested in the stock market compelling the regulators to ban P2P lending for stock market purchases (Canuto and Zhuang 2015). Similar to other shadow banking products, the downsides of P2P lending in China include absence of central bank liquidity support, maturity mismatch, systematic risks, and guarantees of high returns similar to WMPs.

In India, P2P lending is also emerging gradually. The country's central bank, RBI, recently acknowledged that, "although nascent in India and not significant in value yet, the potential benefits that P2P lending promises to various stakeholders (to the borrowers, lenders, agencies etc.) and its associated risks to the financial system are too important to be ignored" (RBI 2016b). Accurate data on the number of P2P companies is not available for the country; but there are around 30 start-up P2P lending companies, much lower than that of China (RBI 2016b). These are largely tech companies registered under the Companies Act and they act as an intermediary between the borrower and the lender. RBI currently proposes to bring P2P lending under its regulatory perimeters by defining P2P lending platforms as NBFCs.

Similar to India's NBFCs, shadow banks in China are also closely interconnected to the banks. In fact, as discussed earlier, the state owned banks is a significant participant in the shadow banking system, and regulatory arbitrage has been a compelling factor in this role. As Sharma (2014, p.343) points out:

> Indeed, the formal banking sector has conspicuously utilized and created shadow banking services by exploiting loopholes in the regulatory and supervisory frameworks which limit their activities – as illustrated by the example of commercial banks acting as agents for the shadow banks by selling WMPs (for hefty transaction fees) to raise funds for Zhenfu Energy. For their part, official banks are also happy to channel or 'outsource' funds to trust companies, which in turn lend to small enterprises and businesses that generally have difficulty obtaining credit from commercial banks.

The probable risks attached with shadow banking in China include higher liquidity, solvency

risks and mismatch of maturities. For example, mismatch between raising funds through short-term wealth management products and investing in long-term projects and speculative real estate (Lu et al. 2015). What's more, the decline in overseas export demand could potentially hurt SMEs and their capacity to repay loans mostly borrowed from shadow banks. Furthermore, the interconnectedness between shadow banks and the banking sector is high and vulnerable to shocks, and could lead to disruptions and systemic crisis. Adequate external supervision and regulation is therefore crucial for a stable financial system.

Circular 107 has been an important step in the regulation of shadow banking in China (State Circular 107). In a balanced approach, it acknowledges that shadow banking plays a positive role in the economy, supports traditional banking system in providing financial services, and has enhanced financial development of the country through innovative financial products. Meanwhile, it also took into account the potential systemic risks of shadow banking (Huang 2015).

The Circular adopts an entity based approach in sharing the regulatory responsibilities- it assigns shadow banking products to different regulators based on their area of responsibility (Huang 2015). For example, the China Banking Regulatory Commission regulates and supervises banks and trust companies, including banks' and trusts' WMPs; the China Securities Regulatory Commission regulates and supervises securities and futures markets; and the China Insurance Regulatory Commission regulates and supervises insurance companies, including the activities of their asset management subsidiaries (Huang 2015). Local governments also regulate some shadow banking activities.

However, this policy, as defined by Circular 107 of "separate operation, separate regulation", has a number of problems. For example, multiplicity of regulators of the same product leads to regulatory inconsistencies and arbitrage (Huang 2015). The Circular also fails to deal with new innovative shadow banking products which may not fall within the perimeter of any regulatory agencies. As Huang (2015) observes, "There is a mismatch between China's regulatory structure and the underlying market it regulates, which has affected the efficacy of the regulation by creating regulatory inconsistency, gaps and overlaps".

Among other steps that have been taken to regulate and monitor the non-banking financial sector in China, the State Council outlined that the country's central bank, the People's Bank of China, will assess risks arising from the non-banking financial sector and that the

collection of data on these entities/products would be a priority. This data and information will be shared among the regulators. Shadow banking entities are further required to establish mechanisms for internal control, risk management and risk segregation in accordance with risk bearing capacity. It is also stipulated that financial institutions, especially commercial banks, must separate WMPs business from their other businesses. Overall, in the recent years many regulatory measures have been adopted by the government to regulate shadow banking in the country.

A COMPARATIVE PERSPECTIVE: INDIA AND CHINA [15]

Financial deregulation vs financial repression

Scholars argue that financial repression is a major driving factor behind the rise of shadow banking in China (Elliott, Kroeber and Qiao 2015; Hachem and Song 2015). This includes caps on lending volumes, interest rate restrictions including deposit rate ceilings, 75% loan-to-deposit limit for banks, entry barriers and high reserve requirements on the banking system. [16] Financial repression has encouraged regulatory arbitrage by the banks circumventing regulation through shadow banking.

Although the ceiling on lending rates and floor on deposit rates for all financial institutions were abolished in 2004, the ceiling on deposit rates and the floor on lending rates continue to exist, leading to a mismatch between savers' and borrowers' expectations (Gao 2015). Hachem and Song (2015) also note that the loan to deposit ratio varies by banks. For the Big Four banks -, it tends to be lower reflecting large portfolio of wealth management products.

[15] Some studies have also noted differences between factors responsible for the rise of shadow banking between the US and China. For instance, Li (2013) states that, in contrast to the rise of US shadow banking, which was a consequence of financial liberalization, Chinese shadow banking system rose as a result of tight regulatory regimes following the GFC. The structure of shadow banking in China is bank-centric with active participation from the banks, whereas the US shadow banking activities exist mainly in the capital market (Dang, Wang and Yao 2014). Further, in contrast to the US where complex products such as derivatives and collateralized debt obligations were popular, China's shadow banking system is relatively simple (Sharma 2014). Huang (2015) notes that in China "the relationship between the shadow banking system and the traditional banking system is more collaborative than competitive". Another difference with the US shadow banking is the timing of its rapid growth. While the US shadow banking system grew prior to the crisis and was a major factor contributing to the financial crisis, in contrast, shadow banking in China grew rapidly after 2008 after a tight monetary policy was undertaken by its central bank (Huang 2015). Another difference was the demand for such financial services by individuals in the US in contrast to most of the demand originating from private businesses in China (Gao 2015).

[16] This 75% cap was however not uniform for all banks and was lower for the four biggest banks (Hachem and Song 2015).

In this sense, financial repression plays an active role in the rapid rise of shadow banking in the country.

Other characteristics of financial repression also prevail in China such as barriers to entry for private sector banks and monopolistic state controlled banks. Nonetheless, at the same time, the flourish of shadow banks has weakened financial repression because it gives rise to an increased competition in the financial sector. This is reflected in the number of participants and innovative products (Gao 2015). Overall, poorly developed capital markets, lack of investment avenues and ceilings on bank deposit rates point to a fact that financial development in China is still low; and because of this, shadow banking products has flourished. Sheng et al. (2015) argue that imbalances in China's financial system, that is, excessive reliance on bank credit and poor development of the capital market, has resulted in a gap and it is now filled by the shadow bankers.

In contrast to financially repressive policies in China, significant financial sector reforms were carried out in India in 1991. The reform has led to interest rate liberalization, increased competition with the entry of a number of private and foreign banks, introduction of prudential norms, rationalization of bank branches and reduction in statutory ratios. The ongoing financial liberalization allowed loosening of restrictions on the major stakeholders such as commercial banks and NBFCs, which led to an increase in retail lending, infrastructure finance and rural lending. The volume of infrastructure finance by NBFCs alone increased by 26.2 % during the period March 31, 2010 - March 31, 2013 (Bhaskar 2014).

Role played by technology

A common factor leading to the rise of shadow banking in both countries is the role played by financial technology. Major technologies include online origination platforms used by fintech firms and the use of big data in screening borrowers (alternative credit scoring data such as mobile phone usage, use of social media). The use of online platforms has made it possible for shadow banks (fintech firms) to lower their costs (for instance labour costs, transaction costs); provide products more tailored to the needs of borrowers and efficiently price the products (Buchak et al. 2017). At the same time online platforms have led to increased convenience among the borrowers reflected in the increased demand of such products. Examples of fintech platform are peer to peer lending platforms, crowd sourcing. In

India for example the number of startups in online lending increased from only 2 in 2013 to 30 in 2015 (ASSOCHAM 2016).

Financial exclusion of households and small businesses

The failure of the mainstream banking to provide access to finance for households, SMEs, small borrowers and semi-urban and rural population, has been a major factor contributing to the growth of shadow banking in the two countries.[17] Chinese banks, for instance, mainly cater to large firms rather than SMEs. Specifically, though SMEs account for over 97% of registered firms, employing about 65% of the workforce and contributing approximately 60% to GDP, it is the large state owned enterprises that receive over 75% of loans and support from state owned banks and government (Gao 2015; Tsai 2015). As Tsai (2015) noted, “indeed, one of the enduring paradoxes of China’s reform-era growth is its maintenance of a bank-dominated financial system that privileges lending to state-owned enterprises (SOEs) rather than the thriving private sector.” Thus, lack of adequate finance for SMEs has led to the rise of shadow banks in the country (Schwarcz 2013; Lan 2015). Overall, about 87% of the small enterprises, 53% medium enterprises and 40% of microbusinesses are borrowers of the shadow banking sector.

There are many reasons why SMEs in China receive very little finance. One of these is the political concern. It can be seen in a number of ways such as using state sector including state commercial banks and state owned enterprises as a tool of social stability, running state owned enterprises with the objective of preventing mass unemployment, select development agenda of the government in targeting specific industries, limited capacity of bank loan officers to process credit applications of private sector, and also fear of job losses should the private businesses default (Tsai 2015).

Individual characteristics of borrowers also determined access to the formal or informal sector. For example, those with better education, political connections, credit rating experience and holding businesses for longer lengths were more likely to borrow from formal channels (Zhang 2008).

While capital market in India is fairly well developed, it is mostly accessed by large

[17] One can argue that a similar such exclusion exists in advanced economies such as US. For instance Buchak et al. (2017) showed in their study that shadow banks were playing a much larger role in lending to low income borrowers and minority borrowers, category of population shunned by the traditional banks.

corporates. SMEs, similar to China, face considerable difficulties in accessing finance (Allen et al.2012). The rise in shadow banking in India has been influenced by increasing demand for finance from the untapped sectors which are often overlooked by the mainstream banking especially in the rural areas. Strong demand in the rural areas for agricultural loans such as for farm equipment has had a sharp rise in number of NBFCs. Allen et al. (2012) observed that small firms in India increasingly rely on alternative or informal financing channels. Another study on micro SMEs by the International Finance Corporation noted large unmet needs of finance by SMEs in India (IFC 2012).

The recent focus of the government and central bank on financial inclusion has also led to sharp increase in NBFC lending. Bhaskar (2014) argued that the NBFCs in India have played a 'game changing role' because they promoted financial inclusion. Gandhi (2014) noted that the NBFCs provided access to finance especially for the poor in rural and urban areas. Recently gold lending NBFCs have been playing an important role in providing finance to the underfinanced or excluded population particularly in the rural areas. FSB (2016b) in its recent review of Indian NBFCs acknowledged:

> Many NBFCs have been traditionally involved in serving borrowers excluded from the formal banking sector. Over time the lines of operation between banks and NBFCs became increasingly blurred and, more recently, NBFCs emerged as an important alternative source of credit intermediation. Many NBFCs nowadays compete with banks across a range of consumer financing segments, such as small business lending, asset finance and infrastructure finance.

This positive role of NBFCs has also generated policy dilemmas such as balancing innovative and dynamic nature of the sector in providing 'last mile connectivity' and at the same time addressing risks therein (FSB 2016b).

High economic growth

Among other factors leading to the rise of shadow banks in China was the export-led growth model of the country, giving rise to an increased demand for finance by firms and businesses. China has experienced an annual average growth rate of 9 % since the 1990s (Makin and Arora 2014). A number of studies have mentioned that this high economic growth, in the absence of adequate support from the banking sector, was fueled by informal finance. With high growth rate and increased income, demand for investment products have increased significantly, leading to the emergence of investment companies (Li, Hsu and Qin 2014; Dang, Wang and Yao 2014).

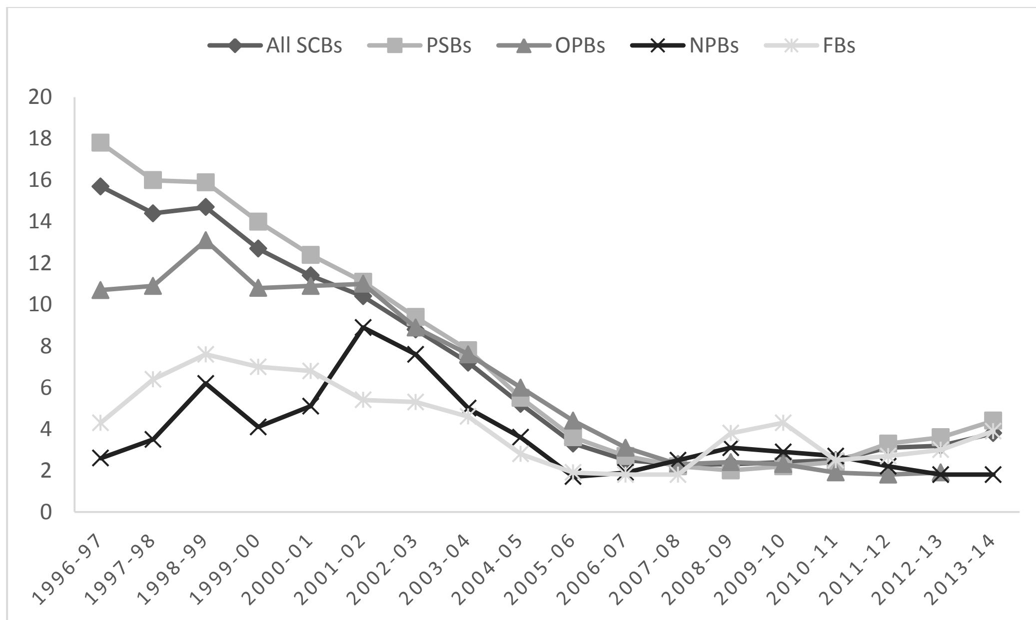
Global financial crisis and shadow banking

The policy stimulus measures adopted in China during the GFC period also pushed the growth of shadow banking in the country (Dang et al. 2014). The Chinese government implemented a policy stimulus package of around 4 trillion Chinese Yuan (approximately US$600 billion) (supported mainly with credit) in 2008 with 45% funding by the central government and the balance funded by the local governments (Sharma 2014; Hachem and Song 2015). Given the extensive regulations on the banking sector, it was the non-bank entities and off-balance sheet activities of banks that met the credit needs of the firms. Substantial funds were also provided to local governments for financing real estate and infrastructure projects through 'local government financing vehicles'. It has led to substantial debt at the local level and mismatch of maturities between short-term borrowings and long-term investment.

In contrast to China, a different set of fiscal stimulus measures along with monetary measures was employed by the Indian government during the GFC. It includes tax relief and increased expenditure on public projects. Public sector banks were the major providers of credit during the crisis. Shadow banks started playing a major role only in the post-reform period following risk averseness and high NPAs of the banking sector.

Other factors

Other factors leading to the rise of Indian NBFCs include the increase in NPAs of the Indian banks and the fall in bank credit. Gross NPAs of scheduled commercial banks as a proportion of total bank advances increased to 4.5% as of September 2014 (RBI 2014) (Figure 8).



Source: RBI (2014).

Figure 8: Trend in Gross NPAs as % of Gross Advances

High level of gross NPAs can be mainly found in infrastructure sector, iron and steel, textiles, mining (including coal) and aviation (RBI 2014). With the increased risk aversion of the banks, NBFCs have filled this lending space and continue to provide credit to several sectors (Javadker 2017). ASSOCHAM Report (2016) also noted that "the success of NBFCs can be clearly attributed to their better product lines, lower cost, wider and effective reach, strong risk management capabilities to check and control bad debts, and better understanding of their customer segments." Table 5 summarizes factors giving rise to the growth of shadow banking in the two countries.

Table 5: A Comparative summary of factors giving rise to shadow banking in India and China

India	China
Financial Deregulation- Interest rates liberalized	Financial Repression - Controlled interest rates for depositors
Financial exclusion of a large population - households and businesses	Financial exclusion of population - mainly small businesses
Demand from rural areas, SMEs	Demand from SMEs
Post 2008 crisis rise in NPAs of banking sector leading to fall in bank credit and rise in NBFC	Post 2008 crisis rise due to tight monetary policy and repression

lending	
NBFCs tightly regulated (still gaps), -NBFC regulation began in 1963	Regulation initiated in recent years although still less regulated
	High economic growth

Source: Compiled by the authors.

CONCLUSION

In the recent years, shadow banking has flourished in both developing and emerging countries as well as developed countries. In this paper, we first investigated the trends, structure and causes for the rise of shadow banking in India and China. Then, we examined the differences between the two countries and factors leading to the rise of shadow banking.

Differences in the regulation between the banks and shadow banks in the financial system have led to regulatory arbitrage. This particularly holds for China where regulatory arbitrage has been a major cause of the emergence of shadow banking. Interestingly, while financial repression was a driving factor in case of China, financial liberalization in contrast, was a contributory factor behind the rise of shadow banking in India. A common factor behind the rise of shadow banking in the two countries is financial exclusion. In both countries, SMEs and a large proportion of the population especially in the rural are financially excluded. NBFCs in India have played a significant role in providing finance to these excluded SMEs and households.

Nonetheless, shadow banks are not regulated adequately, posing potential risks to the financial system. Several regulatory measures have been adopted in China lately to regulate shadow banking. While in India, although several prudential and regulatory measures are taking place, the size of the shadow banking remains underestimated - many firms not classified as NBFC (below the threshold limit) are outside the regulatory perimeters. On the other hand, there is also insufficient knowledge about firms with less than Rs. 5 billion (FSB 2016b). Streamlining and enhancing data collection therefore, is a key priority for both India and China. For India, the norms for the regulatory perimeter (based on 50:50 criteria) for NBFCs and exemption of government owned NBFCs from a number of prudential measures should be reviewed (FSB 2016). What’s more, the regulation in both countries should be more activity focused rather than sector or entity based, and it should be at par with banks (FSB 2016b).

As shadow banks provide ‘last mile connectivity’ and enhance financial inclusion (Bhaskar 2014), a balanced approach is required keeping in view both benefits and costs of the shadow banking system. While the benefits of shadow banking certainly involve increased access to financially excluded groups, sharing of risks and increased economic activity financed by diverse intermediaries in the periods of “low uncertainty” such as Great Moderation of early 2000 (Moreira and Savov 2017), this however, at the same time leads to increased risk building (especially if these are neglected or poorly regulated), interconnectedness between the intermediaries resulting in increased fragility, instability and systemic showdowns presenting ultimately a “tradeoff between financial instability and economic growth” (Gennaioli et al. 2013; Moreira and Savov 2017).

References

Acharya, V. V., H. Khandwala and Sabri Oncu, T. (2013). The Growth of a Shadow Banking System in Emerging Markets: Evidence from India, *Journal of International Money and Finance*, 39, 207–230.

Adrian, T. and A. B. Ashcraft (2012). *Shadow Banking: A Review of the Literature*. Federal Reserve Bank of New York. New York, Federal Reserve Bank of New York. Staff Report No 580.

Allen, F., Chakrabarti, R. De, S., Qian, J. Qian, M. (2012). Financing firms in India. *Journal of Financial Intermediation* 21(3): 409-445.

Arora, R. U. and K. Wondemu (2018). Do public sector banks promote regional growth? Evidence from an emerging economy. *Review of Urban and Regional Development Studies* 30(1): 66-87.

ASSOCHAM (2016). Non-Banking Finance Companies: The Changing Landscape, Accessed from https://www.pwc.in/assets/pdfs/publications/2016/non-banking-finance-companies-the-changing-landscape.pdf

Awrey, D. (2013). Toward a supply-side theory of financial innovation. *Journal of Comparative Economics* 41: 401-419.

Barth, J., Tong Li, Wen Shi, Pei Xu, (2015). China's shadow banking sector: beneficial or harmful to economic growth? *Journal of Financial Economic Policy*, 7:4, 421– 445.

Beck, T., Chen, T., Lin, C..and Song, F.M. (2016). Financial innovation: The bright and the dark sides. *Journal of Banking and Finance* 72: 28-51.

Besley, T. (1994). How do market failures justify intervention in rural credit markets? *World Bank Research Observer,* 9(1): 27-48.

Bhaskar, P V. (2014). Non-banking finance companies – game changers, speech delivered at Associated Chambers of Commerce and Industry of India (ASSOCHAM), Delhi, January 23.

Blair, M. (2010). *Financial Innovation and the Distribution of Wealth and Income*. Vanderbilt Law & Economics Research Paper No. 10-22.

Bose, S. (1994). Credit, Markets, and the Agrarian Economy of Colonial India. Themes in Indian History (Ed), Oxford in India Readings. New Delhi, Oxford University Press.

Buchak, G., Matvos, G., Piskorski, T. and Seru, A. (2017). *Fintech, Regulatory Arbitrage, and the Rise of Shadow Banks* (September). Columbia Business School Research Paper No. 17-39. Available at
SSRN: https://ssrn.com/abstract=2941561 or http://dx.doi.org/10.2139/ssrn.2941561

Canuto, O. and Zhuang, L. (2015). *Shadow Banking in China: A Morphing Target* Accessed from http://www.huffingtonpost.com/otaviano-canuto/shadow-banking-in-china-a_b_8591706.html

Circular of the General Office of the State Council on Relevant Issues of Strengthening the Regulation of Shadow Banking (2013). State Council Circular No. 107.

Claessens, S. (2006). Access to Financial Services: A Review of the Issues and Public Policy Objectives. *World Bank Research Observer,* 21(2): 207-240.

Dang, T. V., Wang, H., Yao, A.(2014). *Chinese Shadow Banking: Bank-Centric Misperceptions*. HKIMR Working Paper No 22/2014. Hong Kong, Hong Kong Institute for Monetary Research.

D'Arista, J. W. and Schlesinger, T. (1993). *The Parallel Banking System*. Briefing Paper. Washington DC, Economic Policy Institute.

Dooley, M. and Hutchison, M. (2009). Transmission of the U.S. subprime crisis to emerging markets: Evidence on the decoupling-recoupling hypothesis. *Journal of International Money and Finance,* 28(8), 1331-1349, December.

Eichengreen, B. and Gupta, P. (2014). *Tapering talk: the impact of expectations of reduced Federal Reserve security purchases on emerging markets*. Policy Research Working Paper Series 6754, World Bank.

Elliott, D. J. and Yan, K. (2013). *The Chinese Financial System, An Introduction and Overview.* Washington DC, John L. Thornton China Center at Brookings.

Farid, M. (2012). Monitoring shadow banking and its challenges: the Malaysian experience. *IFC Bulletin* (36): 99-122.

Financial Stability Board (2011). *Shadow Banking: Strengthening Oversight and Regulation*. Available at http://www.financialstabilityboard.org/publications/r_111027a.pdf.

Financial Stability Board (2014). Global Shadow Banking Monitoring Report 2014.

Financial Stability Board (2015). *Peer Review of China: Review Report*, Financial Stability Board.

Financial Stability Board (2016a). Global Shadow Banking Monitoring Report 2016.

Financial Stability Board (2016b). *Peer Review of India: Review Report*, Financial Stability Board, August.

Fleischer, V. (2010). *Regulatory Arbitrage*. Legal Studies Research Paper Series, Colorado Law, University of Colorado Law School.

Frame, S. W. and White, L. J. (2004). Empirical Studies of Financial Innovations: Lots of Talk, Little Action? *Journal of Economic Literature,* 42(1): 116-144.

Gao, S. (2015). Seeing Gray in a Black-and-White Legal World: Financial Repression, Adaptive Efficiency, and Shadow Banking in China. *Texas International Law Journal,* 50(1): 95-143.

Gandhi, R. (2014). *Role of Non-Banking Finance Companies (NBFCs) in financial sector – regulatory challenges*, Bank of International Settlement: 1-8.

Gennaioli, N., Shleifer, A., and Vishny, R.W. (2013). A Model of Shadow Banking, *The Journal of Finance*, 68:4, 1331-1363.

Ghosh, S., I. G. del Mazo, et al. (2012). *Chasing the Shadows: How Significant Is Shadow Banking in Emerging Markets?* Economic Premise. Washington DC., World Bank. September: 1-7.

Hachem, K. and Song, Z. M. (2015). *The Rise of China's Shadow Banking System*. Retrieved May 20, 2016, from https://www.economicdynamics.org/meetpapers/2015/paper_931.pdf.

He, Q., Xue, C. and Zhu, C. (2017). Financial Development and Patterns of Industrial Specialization: Evidence from China. *Review of Finance*: 1593–1638.

Hsu, S. (2012). Role of Informal Finance in China's Continuing Economic Development. *The Chinese Economy*, 45(1): 28–45.

Hsu, S., Li, J., and Qin, Y. (2013). *Shadow Banking and Systemic Risk in Europe and China.* CITYPERC Working Paper Series. London, City Political Economy Research Centre, City

University London: 1-21.

Hu, H. (1993). Misunderstood derivatives: the causes of information failure and the promise of regulatory incrementalism. *Yale Law Journal*. 102: 6, 1457-1513.

Huang, (Robin) Hui (2015). *The Regulation of Shadow Banking in China: International and Comparative Perspectives*. 30 Banking and Finance Law Review 481; UNSW Law Research Paper No. 2015-67; The Chinese University of Hong Kong Faculty of Law Research Paper No. 2015-05. Available at SSRN: http://ssrn.com/abstract=2658924

IFC (2012). *Micro, Small and Medium Enterprise in India: A Research Study on Needs, Gaps and Way Forward,* International Finance Corporation.

IMF (2016). *World Economic Outlook*.

IMF (2017). *Financial System Stability Assessment*. Washington DC, Internattional Monetary Fund. IMF Country Report No. 17/358.

Javadekar, A. (2017). *Non-bank funding sources and Indian corporates.* Mint Street Memo No 6. Mumbai, Reserve Bank of India.

Jiang, S. (2009). The Evolution of Informal Finance in China and its Prospects', in Li, J. and Hsu, S. (eds.), *Informal Finance in China: American and Chinese Perspectives*, New York: Oxford University Press.

Kose, M. A., Otrok, C. and Prasad, E. (2008). *Global Business Cycles: Convergence or Decoupling*? IZA Discussion Papers 3442, Institute for the Study of Labor (IZA)

Laeven, L., Levine, R. and Michalopoulos, S. (2015). Financial innovation and endogenous growth. *Journal of Financial Intermediation,* 24: 1-24.

Lan, G. (2015). Insights from China for the United States: Shadow Banking, Economic Development, and Financial Systems, *Berkeley Business Law Journal* 12(1): 144-195.

Li, C. (2013). *Shadow Banking in China: Expanding Scale, Evolving Structure*. Country Analysis Unit, Asia Focus, Federal Reserve Bank of San Francisco. April.

Li, J, Hsu, S and Qin Y. (2014). Shadow banking in China: institutional risks, *China Economic Review*. 31, 119-129.

Lim, J. J., Mohapatra, S. and Stocker, M. (2014). *Tinker, taper, QE, bye? The effect of quantitative easy on financial flows to developing countries*. Policy Research Working Paper, WPS 6820, World Bank.

Lu, Y, Geo, H., Kao, E.H. and Fung, Hung-Gay (2015). Shadow banking and firm financing in China, *International Review of Economics and Finance*, 40-53.

McCulley, P. (2007): *Teton Reflections*, PIMCO Global Central Bank Focus.

Mishra, P., Kenji Moriyama ; Papa M'B. P. N'Diaye ; Lam Nguyen (2014), *Impact of Fed Tapering Announcements on Emerging Markets*, IMF Working Paper No. 14/109.

Mishkin, F. S. (2010). *Over the Cliff: From the Subprime to the Global Financial Crisis.* Cambridge, MA 02138, National Bureau of Economic Research.

Moreira, A and Savov, A. (2017). The Macroeconomics of Shadow Banking, *The Journal of Finance*, 72: 6, 2381-2432.

Oncu, T. Sabri, (2016). *Shadow Banking in Advanced and Emerging Market Economies: Need for Better Regulation* (March 12). Available at SSRN: https://ssrn.com/abstract=2790558 or http://dx.doi.org/10.2139/ssrn.2790558

Perry , E. and Weltewitz, F. (2015). Wealth Management Products in China. *RBA Bulletin* Sydney, Reserve Bank of Australia: 59-67.

Pozsar, Z. (2008). *The Rise and Fall of the Shadow Banking System*. Available at http://www.economy.com/sbs.

Pozsar, Z., Adrian T., Ashcraft, A. and Boesky, H. (2010). *Shadow Banking*. Federal Reserve Bank of New York Staff Reports, Staff Report No 458, New York, Federal Reserve Bank of New York.

Rajan, R. (2014). *Competitive Monetary Easing: Is it yesterday once more?*. Retrieved February 5, 2015, from http://www.rbi.org.in/scripts/BS_SpeechesView.aspx?id=886.

RBI (2011). *Working Group on the Issues and Concerns in the NBFC Sector: Reports and Recommendations*, Reserve Bank of India, August.

RBI (2014). *Financial Stability Report (including Trends and Progress of Banking in India*

2013-14), Reserve Bank of India, Mumbai, December.

RBI (2016a). *Report on Trend and Progress of Banking in India, 2015-16*, Reserve Bank of India, Mumbai, December.

RBI (2016b). *Consultation Paper on Peer to Peer Lending,* Reserve Bank of India, Mumbai, April.

Schwarcz, S.L. (2013). *Shadow banking, financial risk, and regulation in China and other developing countries*, The Global Economic Governance Programme, University of Oxford, GEG Working Paper 2013/83.

Sharma, S. D. (2014). Shadow Banking, Chinese Style. *Economic Affairs,* 34(1): 340-352.

Sheng, A., Edelmann, C, Sheng, C. and Hu, J. (2015). *Bringing Light Upon the Shadow: A Review of the Chinese Shadow Banking Sector*. Hong Kong, Oliver Wyman and Fung Global Institute, University of Hong Kong.

Sherpa, D. (2013). Shadow banking in India and China: Causes and Consequences. *Economic & Political Weekly,* 68(43): 113-122.

Sinha, A. (2013). *Regulation of Shadow Banking – Issues and Challenges*. Accessed June 20, 2013, from http://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/RSB0102131800F.pdf.

Stiglitz, J. E. and A. Weiss (1981). "Credit Rationing in Markets with Imperfect Information." The American Economic Review **71**(3): 393-410.

Tandon, P. (1990). Development of Banking in India. *Journal of Indian School of Political Economy,* 2(1): 51-80.

Tsai, K. S. (2015). *Financing Small and Medium Enterprises in China: Recent Trends and Prospects beyond Shadow Banking*. HKUST IEMS Working Paper No. 2015-24. Hong Kong,
HKUST Institute for Emerging Market Studies, The Hong Kong University of Science and Technology.

Turner, A. (2012). *Shadow Banking and Financial Instability*. Cass Lecture 2012. Accessed June 25, 2013, from http://www.fsa.gov.uk/static/pubs/speeches/0314-at.pdf.

UN (2013). *World Economic Situation and Prospects 2013*. New York, United Nations.

Van Horne, J. (1985). Of financial innovations and excesses. *Journal of Finance,* 40(3), 621.

World Bank. 2017. *China - Financial sector assessment (English)*. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/361891512597572360/China-Financial-sector-assessment

Zhang, G. (2008). The choice of formal or informal finance: Evidence from Chengdu, China. *China Economic Review*, 19: 659-678.

Zheng (Michael), S. and Xiong, W. (2018). *Risks in China's financial system*. BOFIT Discussion Papers. Helsinski, The Bank of Finland Institute for Economies in Transition.