Dimensions of NPAs in Indian Scheduled Commercial Banks

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Understanding NPAs in Indian Banks:
An Analysis of the Role of Banks and Corporate Sector

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Santosh Kumar Das[*]
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[**Abstract**: *An exploration into the current NPA problem suggests two distinct characteristics. These are, First, substantial volume of NPAs accumulated by the Public Sector Banks (PSBs), and Second, the non-performance of large loans, mainly corporate loans as primary reason behind accumulation of NPA in Indian Scheduled Commercial Banks (SCBs). The present paper is an attempt to understand the current NPA problem by analysing the role of the SCBs (lenders, PSBs in particular) and corporate sector (borrowers) in the above crisis. We found that broadly, there can be two major issues from the bank's side which can potentially explain the current NPA problem. These are gaps in credit approach and governance aspects of the banks. From the borrower's side, it is found that the Corporate sector as a whole does not seem to be so overleveraged that it cannot payback its loans. Except for a few sectors that exhibited high leverage, the rest of the corporate sector borrowings are under permissible level. Therefore, the notion that a weak corporate balance sheet is actually reflected in a weak bank balance sheet does not justify loan default. This can be further established from the fact that the volume of wilful default has gone up substantially in recent years. The increase in wilful default suggests that the loan money taken from the banks has not been used for the purpose it was taken by the borrowers. Increase in wilful default which implies greater incidence of diversion of borrowed fund from the banks suggests that the possibility of collusion between bank officials or executives and the borrowers cannot be ruled out.*

Keywords: NPAs, Indian Banking Sector, Credit Policy of SCBs, Corporate Performance, Wilful Default.

1. Introduction

In a bank based financial system like ours, a robust banking sector is central to greater financial intermediation, which is fundamental to overall growth and development. In recent years, there has been a deterioration in the health of the banking sector due to worsening of their asset quality. The NPAs of the Indian SCBs stood at Rs. 7,90,268 crores,

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which is 9.3 per cent of the Gross Advances in 2016-17. Between March and September 2017, the GNPA ratio[1] in the banking sector went up from 9.6 per cent to 10.2 per cent. On a year-on-year basis, the GNPA grew at 18.5 per cent during September 2017. Given the macroeconomic scenario, the RBI forecasts that the GNPA ratio may increase to 10.8 per cent and 11.1 per cent by March 2018 and September 2018 respectively (RBI, Financial Stability Report, December 2017). The volume of NPAs in PSBs is definitely worrisome. As of September 2017, the GNPA ratio of PSBs stood at 12.5 per cent. While the NPA of PSBs is higher than that of Private Banks, between March and September 2017 there was substantial increase in the growth of GNPA of Private Sector Banks vis-à-vis Public Sector Banks. Given the exposure of PSBs to large industrial and infrastructure projects, with increasing incidence of loan defaults, it is likely that the NPA figures would continue to increase.

The source of the stress in the banking system primarily coming from the large corporate industries. As per recent data, large loans constituted more than 50 per cent of the total loans disbursed by the SCBs and the large borrowers are found to be the source of high NPA in the banking sector. Therefore, it can be concluded that it is largely the non-performance of the large borrowers which has been responsible for deterioration in asset quality.

There can be different factors responsible for the occurrence of NPAs in the Indian banking sector. The present paper is an attempt to explore the different dimensions of NPA analysis in terms of factors responsible for NPA occurrence. The role of two key agencies—the lender (banks) and borrower (borrowing entity, the corporate sector in this case) have been analysed in detail to get insights into the above problem. While it may be difficult to single out any specific reason for the NPA problem, detailing out of different aspects of NPA analysis, however, suggests a set of issues or factors that may have played a critical role in the above problem. The paper consists of six sections. Section 1provides introduction. A review of literature on different factors responsible for NPAs has been presented in Section 2. Section 3 of the paper elaborates the role of lenders (banks) in the current problem. The role of Corporate Sector has been analysed in Section 4. Sections 5 briefly discusses about the accumulation of wilful defaults by the Indian Scheduled Commercial Banks. Finally, Section 6 of the paper provides the summary conclusion.

2. Factors Responsible for NPAs: Evidence from Literature

The factors responsible for NPAs can broadly be categorized into internal and external factors from the banks' perspective. While the internal factors refer to issues which are internal to the bank and its operation, external factors are largely issues which are external to the bank and its operation. Among several internal factors, the role of managerial efficiency in credit approval system is a significant determinant of credit risk. One of the

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[1] GNPA Ratio is Gross Non-Performing Advances as ratio of total advances.

reasons for commercial banks crisis is the inadequate management capabilities: credit assessment, evaluation of credit risk, and the risk management capability of the banks. Similarly, it can be categorised into the domestic factors and external factors. Among domestic factors, one factor that has been talked about almost everywhere is the diversion of funds for expansion, that is, funds were borrowed for a particular purpose but were not used for the same. The second factor is time delays which has led to cost overruns during the project's implementation stage specially arising due to late environment clearances, etc. (Lokare,2014). And the third factor is the 'twin balance sheet problem' which implies that corporate sector balance sheet is in bad shape because of the decline in capacity utilisation rate and dwindling profits that has in turn worsened the bank's balance sheet (Economic Survey, 2016-17). Besides the aforementioned, there may be many other factors responsible for asset quality impairment such as business (product, marketing, *etc.*) failure, inefficient management, strained labour relations, inappropriate technology/technical problems and product obsolescence (Lokare, 2014).

Some times over or excessive competition can result in loan default as has happened in the case of real estate and telecom sectors. Within the real estate sector, it is the developers rather than home buyers who seem to be defaulting on payments. Competition between developers led to massive accumulation of land, which meant that the interest burden accumulated by developers was huge, and in excess. As a result, leading developers stopped servicing debt and thus it became part of NPA. Now as a fallout of NPA, banks have disinclined to lend as they work on cleaning up balance sheets and finding funds to recapitalize themselves. This has hit even the housing sector, where defaults have been far less (Chandrasekhar and Ghosh, 2017). Similarly, in case of the telecom sector, high competition had caused price wars, which led to telecom rates fell to the lowest level in the world. This had resulted in margins reducing drastically during the period between 2007 and 2014. Such low prices caused by erratic competition level and aggressive bidding for frequency had resulted in manifold increase in debt burden, with no immediate increase in cash flow (PWC, 2014).

Borrower's misconduct is also found to be another major reason behind the rise of NPA. A case study on the Public Private Partnership (PPP) projects in infrastructure sector reveals that many concessionaires have misused the funds by diverting it to other businesses and at the same time hardly bringing any equity, thus violating the original intent of common equity from both the players in PPP model. This gross diversion of public sector banks funds highlights gaps in the existing policy and points towards a need to revisit the provisions of PPP model[2] (Singh and Brar, 2016).

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[2] Undue stress levels have also been observed in the large value loans of Public Private Partnership (PPP) projects financed by the PSBs. In the big public infrastructure projects, the intention is to harness funds through public and private sector partnership, thus a special purpose vehicle is developed in which, the public sector act as the procuring authority along with the public sector bank or a consortium.

Among external factors, during the post 2008 financial crisis, the pace of the global economic growth was rather slow which cast a gloom over India's economy. It seems to have impacted the Indian economy in terms of a time lag. From 2011 onward, the impact of global slowdown started getting reflected in the form of poor balance sheet of corporates as well as the banks. Sometimes, sharp fluctuations in the commodity and oil prices in the international markets can potentially impact the loan performance of the banks. In the early years of this decade, the Steel Sector was in a profitable passé, which was largely driven by the escalating Chinese economy. The global steel industry which was dramatically flourishing with the cumulative average growth in demand rising as high as 6.7 per cent between 2001 and 2007[3] was now caught in the typical post boom challenge of excess supply. In 2014, the growth of steel demand began to stall and turned negative (0. 3%). While the industry reached its peak demand in 2013, capacity continued to expand which resulted in excess capacity situation (Chalabyan, Mori and Vercammen, 2018). The overcapacity was more prominent in China, Europe, the Middle East and North Africa. Thus, with this imbalance, producers felt compelled to increase their exports, simultaneously resorting to 'dumping' practices to get rid of the excess capacity. Consequently, according to the OECD data, since 2011 the anti-dumping and countervailing duty cases, many of them against China, had increased tremendously (Chalabyan, Mori and Vercammen, 2018). China's case in detail shows that it had a crude steel capacity of 1.13 billion tons in 2016[4], which is more than 50 per cent of the total world capacity. Until a few years ago, there was robust demand for steel within the Chinese economy as their infrastructure sector was experiencing a major growth. However, with the economic slowdown in China, the demand started to decline. Driven by the pressure of survival and with full government support in the form of financial incentives, the Chinese started dumping steel in overseas markets. All this affected the Indian steel industry (Uppal, 2016).

Non-performing loans are seen to be procyclical as they are observed to be positively correlated with credit growth. Banks tend to follow a relatively liberal credit policy approach during high growth period, implying that they indulge in high risk taking which results in the financing of those borrowers which the banks may not have otherwise financed. The results are borne in the low growth period when these loans become non-performing. This procyclicality behaviour can be reinforced by 'disaster myopia' of the banks in which banks cannot understand the likelihood of loss or through 'cognitive dissonance 'wherein banks interpret the information in hand in a biased manner. Then there is the classical 'principal-agent' problem between the management and shareholders where the former is more interested in short term gains (Chavan *et al*., 2016).

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[3] World Steel Outlook 2016-17, World Steel Association, Platts Steel Markets Asia Conference, Mumbai, 17 November 2016.

[4] Stanway, "China Steel Capacity at 1.13 Billion Tonnes, More Cuts Required – Official,"Reuters, April 9. Available at: https://uk.reuters.com/article/uk-china-steel-capacity/china-steel-capacity-at-1-13-billion-tonnes-more-cuts-required-official-idUKKCN0X6051

3. Lender: The Banks

Broadly, there can be two major issues from the lender's (banks) side which can potentially explain the NPA phenomenon. In this section, the credit approach and governance aspects of PSBs have been examined in detail as they constitute the largest share in the total NPA.

Credit approach of every bank is supported by the Board approved credit policy. Besides, banks do have policy documents on management of various credit functions viz. credit risk management and credit administration. As part of risk management functions, every bank has a sub-committee of the board called the "Risk Management Committee of the Board" (name of the committee may vary from bank to bank). Risk Management Committee of the Board through various management committees and department works not only in formulating various policies on risk management, but also approves the strategy for integrated risk management. In the process, all risks related to the Credit risk, market risk and operational risks are managed and monitored. Within the scope of Credit Risk Management, risk planning, risk assessment and monitoring, risk analysis, and systems integration of risk procedures with credit systems is undertaken. The processes credit approach of the banks is by and large shared by multiple departments or wings[5].

In any banking transaction and relationship there would be multiple parties involved; however, focusing on credit approach, there are three important parties involved in a credit transaction i.e. the borrower, regulator and the bank. As a point of reference, each party influences the overall credit approach of the bank, which ultimately translates into the credit policy of the bank.

Every bank has a full-fledged Risk Management Department, yet the assessment of risk in the process of taking various credit decisions at various functional levels of the bank is always critical. The objective of the bank is not only to ensure credit delivery within its apatite i.e. available resources, but also to maintain the 'quality of assets.' Within the 'risk management framework' every bank has defined various risk mitigating tools. Whether the banks are following the laid down systems and procedures, have system of holding meetings/interface between the processing team and decision-making authorities/committees are indeed areas of concern for the present status of asset quality.

3.1 Strategy Factor

There could be various reasons a particular bank may need to accelerate its credit growth. As commonly observed, it could be to improve its credit-deposit (CD) ratio essentially required to improve the margin, or the bank may have surplus liquidity and desperately

[5] Broadly there can be four departments: (i) Credit Department, responsible for credit growth and also for maintaining asset quality; (ii) Risk Management Department, responsible for management of all risks including credit risk; (iii) Credit Monitoring Department, responsible for monitoring accounts by adopting various monitoring tools; and (iv) Assets Recovery Department, responsible for monitoring and recovery of bad loans.

need to deploy its surplus funds, or the yield in bond market could be shrinking, etc. Reason could also be to improve sectoral exposure to meet the lending norms under various business segments including priority sector lending. However, a bank cannot go overboard in expanding its exposure and compromising with the inherent credit risks. It is, therefore, imperative to ensure that appropriate balance between risk and growth is sustained. An unreasonable/unrealistic business budget may expose the bank to serious, damaging business risk. There could be a 'quest for achieving business budget' provided the budget is on realistic bases.' As part of strategy, it is essential that a bank has a road map to travel through every business segment it has decided to take-up. Approach for every business segment could be different yet the corporate objective should remain the same. Depending upon the corporate goal, short and/or long term, set for the bank, the bank should prioritize its strategy. It is, therefore, suggested that the banks have clear demarcation on strategic approach of different tiers of administrative system. Budgeting approach and strategy to achieve the budgeted business level of a branch office shall always be different from the approach of its controlling office and Head Office.

As a part of business strategy, it is observed that every PSB has a different business approach, which could be suitable to its business requirement and in line with the corporate goal of the respective bank. This aspect of differential business/credit approach by SCBs and the sub-sectors under stress has been highlighted by the RBI in its various Financial Stability Reports (FSRs). For more details on this aspect, please refer *Annexure-1*.

Financial Stability Reports of the RBI indicate that 2009-10 onward, Infrastructure, with reference to power generation and telecommunication, airline, commercial real estate, retail, mining, iron & steel, textile were the sectors under stress. Reference of five sub-sectors viz. infrastructure [which includes power generation, telecommunication, roads, ports, airport, railways (other than Indian Railways) and other infrastructure], iron and steel, textiles, mining (including coal) and aviation as stress sectors appear in FSRs. Apart from these five stressed sub-sectors, there were references to various other sub-sectors of industry like food processing, engineering, vehicles, wood, paper, glass and glassware, construction, amongst others, which showed a high and rising level of GNPA (RBI, Financial Stability Report, June 2015). As per FSR of June 2017, "stressed advances ratio in industry sector rose from 22.3 per cent to 23.0 per cent mainly on account of sub-sectors such as cement, vehicle, mining & quarrying and basic metals." Despite being cautioned by the RBI during the early years of Post-Financial crisis of 2009, the PSBs continued to lend to these sectors.

For some of the sectors, despite being under stress[6], the percentage of credit growth had been phenomenal (Table 1). Credit growth of infrastructure sector was at its peak (37.25%)

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[6] The RBI in its Financial Stability Report of June 2013 had indicated that "the corporate sector in India has come under stress in the recent past. Analysed on the basis of a few key variables such as Sales, Profit Margin [(EBITDA) (Earnings before Interest, Tax, Depreciation and Amortisation) to sales], EBIT (Earnings before Interest, Tax), Interest Expenditure, Net Profit among other

in the year 2010-11, which gradually declined to 20.83 per cent, 15.83 per cent and 14.61 per cent in 2011-12, 2012-13, and 2013-14 respectively. Similarly, credit growth in power sector was as high as 41.90 per cent in the year 2010-11, and credit continued to grow at 24.15 per cent, 25.66 per cent, 17.09 per cent and 14.51 per cent in 2011-12, 2012-13, 2013-14, and 2014-15, respectively. Growth of credit in all other sub-sectors viz. mining & quarrying (incl. coal), textiles, basic metal & metal product, food processing, and Engineering during this period was substantial. It is to be noted that credit growth in the above-mentioned sub-sectors exceeded the growth of total bank advances between 2009 and 2013.

Table 1: PSB's Lending to Different Sectors: 2009 Onward

SN.	*Industry*	*Outstanding as on, Amount in Rs. Billion*						
		2009-10	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*
1	Mining & Quarrying (incl. Coal)	180.84	252.97	324.46	346.39	358.45	359.51	390.21
	Percentage growth		*39.89*	*28.26*	*6.76*	*3.48*	*0.3*	*8.54*
2	Textiles	1213.75	1450.96	1594.14	1835.36	2022.13	2019.19	2057.96
	Percentage growth		*19.54*	*9.87*	*15.13*	*10.18*	*-0.15*	*1.92*
3	Basic Metal & Metal Product	1629.29	2129.57	2618.09	3141.16	3607.8	3853.89	4160.16
	Percentage growth		*30.71*	*22.94*	*19.98*	*14.86*	*6.82*	*7.95*
4	Infrastructure	3798.87	5213.93	6299.91	7297.21	8363.56	9245.31	9648.11
	Percentage growth		*37.25*	*20.83*	*15.83*	*14.61*	*10.54*	*4.36*
5	Power	1878.4	2665.51	3309.26	4158.49	4869.02	5575.67	5798.75
	Percentage growth		*41.9*	*24.15*	*25.66*	*17.09*	*14.51*	*4.00*
6	Food Processing	656.77	768.41	941.45	1173.68	1462.54	1714.95	1500.88
	Percentage growth		*17.00*	*22.52*	*24.67*	*24.61*	*17.26*	*-12.48*
7	All Engineering	738.21	926.67	1130.1	1284.47	1463.62	1540.05	1541.67
	Percentage growth		*25.53*	*21.95*	*13.66*	*13.95*	*5.22*	*0.11*
8	Other Industries	1248.21	1355.78	1797.24	1809.68	1880.6	1839.34	1945.36
	Percentage growth		*8.62*	*32.56*	*0.69*	*3.92*	*-2.19*	*5.76*
9	Industries	13114.5	16045.8	19373.3	22301.8	25164.84	26576.3	27306.8
	Percentage growth		*22.35*	*20.74*	*15.12*	*12.84*	*5.61*	*2.75*
10	Gross Advances of SCBs	32620.8	39959.8	46488.1	59718.2	68757.48	75606.7	81711.1
	Percentage growth		*22.5*	*16.34*	*28.46*	*15.14*	*9.96*	*8.07*

Source: Calculations based on RBI data.

variables, the corporate sector shows increasing stress. In general growth rate of sales and profits have fallen during Q3 -2012-13," yet credit growth in a few select banks had been phenomenal.

The credit approach and loan quality of a bank have a strong association with the board room deliberations and skills and independence of the board members. The board room deliberations are quite complex as they differ along with a variety of factors like personalities and skills of the respective heads, degree of collaboration among the heads, independence they bring to the board, nature of strategic challenges faced by the institute, prevailing market conditions and many more[7]. The P.J. Nayak Committee (2014) concluded that out of the seven critical themes[8], the board room deliberations of PSBs must focus on the business strategy and risk as these themes are very critical for any bank. Inadequate focus on business strategy and risk, which are the most crucial themes among all, raises the first alarming bell. The report observed that out of the total number of issues pondered over, a mere fourteen per cent pertained to business strategy and risk mitigation in the PSBs.[9]

The Committee reinforces that there is a positive correlation between the total number of issues discussed and bank profitability, whereas the number of risk related issues conversed is negatively correlated with Net NPAs as percentage of advances. Henceforth, the Committee recommends that there is a clear need to upgrade the quality of board room deliberations in PSBs to provide impetus to the seven themes with a predominant weightage on business strategy and risk, which are vital for their medium-term strategy.

The Committee, based on the detailed scrutiny of the board notes, finds inadequate focus on long term strategy and largely revolves around tactical issues. Further the committee observed that "*the deliberations are driven from the vantage point of compliance rather than business economics*,"[10] Overall, the evidence of monitoring of quantifiable business goals in relation to targets is dismal. Amidst worsening asset quality, the Committee noted that there is a general absence of a calibrated discussion on the worst performing sectors, despite the fact that it has clear ramifications on further loan growth. Even recoveries through Debt Recovery Tribunals and SARFAESI Act are inadequately discussed. This highlights how risk mitigation is handled by the boards, with no scenario analysis through stress testing and hardly any specific plans for meeting worst case scenarios. Thus, the Committee recommends that "*as the quality of board deliberation across firms are sensitive to the skills and independence of board members, it is imperative to upgrade the skills in boards of public banks by reconfiguring the entire appointments process for boards. Otherwise it is unlikely that these boards will be empowered and effective.*"[11] The Committee further suggested that though there are limits for regulation and supervision to upgrade the quality of board level

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[7] RBI (2014), Report of the Committee to Review Governance of Boards of Banks in India, May 12.

[8] These are business strategy, risks, financial reports discussion and their integrity, compliance, customer protection, financial inclusion and human resources.

[9] RBI (2014), Report of the Committee to Review Governance of Boards of Banks in India, May 12.

[10] *Ibid*., p. 42.

[11] RBI (2014), Report of the Committee to Review Governance of Boards of Banks in India, May 12, p. 5.

deliberations, however, there is a need to empower the boards with strategic and domain skills along with independence in order to reform the quality of board deliberations.

3.2 Summary of Focused Discussions with Bank Executives

The gaps in the credit approach and working of the credit committee or mechanism is also evident from the findings of the focused discussions. Focused discussions were carried out involving senior bank executives of the seven PSBs, with an objective of understanding the working of existing institutional mechanism within the bank. The group discussions largely focused[12] on the credit allocation aspects and NPA of the banks. The focused group discussions centred around six major questions concerning the credit allocation mechanism of the banks and on the state of NPAs. A copy of the questionnaire and summary of responses is given in Annexure –II.

On the possible reasons for present scenario of stress in the asset quality of banks, majority of the banking executives held the view that while external factors did play a role in the NPA problem, however, it happened largely due to the internal factors. Poor diligence, lack of monitoring and lack of professional approach while dealing with credit proposals were cited as the major internal factors responsible for the current scenario. Several of the bank executives highlighted that the banks did not have the capacity to deal with the infrastructure and road projects. As majority of the high value loan accounts were sanctioned or approved at the Head Office level, default in these loan accounts definitely raises a question mark over the credit assessment capabilities of the banks. Though banks presently follow credit committee approach to consider giving credit facility to any person or entity, lack of skill and understanding of the dynamics of project appraisal and evaluation among the members of the committee is the gap in sanctioning quality advances. On the issue of decision-making process of credit committee, one common view that emerged during the course of discussion was that it largely depends on the person who is Chairing the credit approval committee and the technical abilities of the committee members.

On the issue of strengthening of the 'project appraisal system' of the banks, the views expressed by bank executives varied evenly. While some bank executives opined that there was adequate credit or project appraisal system in place, several others expressed the dire need to improve the project appraisal system of the bank. Even those executives who opined that there was adequate system in place, expressed concern over the deployment of technical officers within the system. Executives who felt that there was a need for improvement of the project appraisal system underlined that over the period the project appraisal system of the banks has become diluted. Technical officers are relieved for some other areas of banking as a result of which for several ventures, credit appraisal capabilities remained a point of concern. Respondents also expressed that the general attitude of the functionaries of the PSBs needs to be improved. Most of them admitted that there is a skill

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[12] See Annexure 2 for detailed summary.

deficit in the system, and therefore, the whole system needs to be revamped. On consortium lending approach, all the respondents overwhelmingly opined that the number of participating banks in any consortium should be as minimum as possible.

4. Borrowers: The Corporate Sector

The role of borrowers is crucial in the occurrence of NPAs. A loan becomes an NPA when the borrower fails to repay the borrowed money or fails to serve its debt as per the RBI guideline. Borrowers can be individuals, group of individuals, a joint stock company or firm. Similarly, the nature of loan account may vary in terms of occupation or economic activity. There can be several reasons behind a loan default, however, the reasons may vary from one loan account to another. While there would be certain micro issues contributing to a loan default, to understand the NPA phenomenon it would be interesting to explore macro level (aggregate) factors that play a key role. The balance sheet of the borrowers, in this case the companies or firms, has been studied to explore to what extent industrial or corporate borrowers are responsible for the current state of affairs in the banking sector. As the corporate sector accounts for substantial growth of NPAs in the banking sector, it would be interesting to explore to what extent corporate performance is impacting the balance sheet of the banks.

The financial performance indicators of NGNF listed companies suggests that corporate performance on several indicators has improved. It does not suggest any serious crisis in the corporate sector which could have constrained in paying back their borrowed loans (Table 2). As per the RBI, the performance indicators of 2400 companies (same companies monitored over time) suggests that the corporate sector as a whole is not overleveraged with Debt to Equity ratio varying between 32 and 39 per cent. Similarly, the Interest Coverage Ratio (ICR) suggests that, financially, the corporate sector is not severely constrained that it cannot serve its debt or pay the interest liability out of its earnings.

Sectoral or industry group-wise analysis indicates that leather, iron and steel, electricity and gas supply, construction and telecommunication are the stressed sectors (Table 3). The interest burden and interest coverage ratio of the above-mentioned industry group suggest that the firms in these sectors are financially constrained to meet their interest obligations. These firms do not earn enough to be able to serve their debt. The interest burden of the leather industry was 100 per cent and 97.4 per cent respectively in 2015-16 and 2016-17, and the interest coverage ratio was 1 (100%) in 2016-17. The interest coverage ratio '1' suggests that the earning of the firms in leather industry can only serve their debt. Similarly, the interest burden of the firms in the iron and steel industry group is too high with a low interest coverage ratio (1.1 in 2016-17). The interest burden on the firms in the electricity and gas supply, construction and telecommunication is too high, as reflected in low interest coverage ratio.

Table 2: Select Financial Ratios of Performance of NGNF Listed Companies

Financial Ratios	*H1: 2015-16*	*H2: 2015-16*	*H1: 2016-17*	*H2: 2016-17*
Sales Growth (y-o-y), in per cent	-3.9	2.2	1.9	5.4
Net profit to average* total asset (per cent)	2.4	2.6	3	2.5
Solvency ratio & (per cent)	21.3	19	27.4	20.6
Debt to equity ratio #	0.38	0.39	0.33	0.32
Interest coverage ratio$ (number of times)	4.5	4.2	6	4.4
Interest payment^ to average* borrowings (%)	14.8	15	13.6	15.3

Note: * Average is based on outstanding opening and closing positions for half year.
& Solvency ratio is defined as sum of profit after tax (PAT) and depreciation to total debt.
# Debt is taken as long-term borrowings and equity is the net worth.
$ ICR is defined as ratio of EBITDA to interest expense, where EBITDA is earnings before interest, taxes, depreciation and amortisation, which is derived as EBITDA = EBIT + depreciation and amortisation.
EBIT is earnings before interest and taxes.
^ Annualised interest payment is used.
Source: RBI: Financial Stability Report, June 2017.

Table 3: Performance of Non-Government Non-Financial Listed Companies: Select Financial Ratios (%)

	Sales Growth (Y-o-Y)		*Net Profit to Sales*		*Interest Burden*		*Interest Coverage*	
Industry / Industry Group	*2015-16*	*2016-17*	*2015-16*	*2016-17*	*2015-16*	*2016-17*	*2015-16*	*2016-17*
Agriculture and Related Activities	-1.1	3.2	2.5	2.6	50.2	48.8	2.0	2.0
Mining and Quarrying	-11.3	0.5	15.0	26.7	28.0	29.2	3.6	3.4
Manufacturing	-3.7	4.2	5.3	6.5	30.1	27.6	3.3	3.6
Textiles	*-8.8*	*-0.6*	*-0.4*	*0.7*	*100.1*	*97.4*	*1.0*	*1.0*
Leather	*-1.1*	*2.0*	*6.7*	*5.7*	*14.2*	*13.0*	*7.0*	*7.7*
Chemicals and Chemical Products	*1.7*	*1.6*	*7.8*	*9.1*	*16.0*	*14.5*	*6.3*	*6.9*
Pharmaceuticals and Medicines	*10.2*	*0.9*	*13.2*	*13.2*	*14.1*	*13.9*	*7.1*	*7.2*
Plastic Products	*3.7*	*6.8*	*4.9*	*4.9*	*34.9*	*32.1*	*2.9*	*3.1*
Cement and Cement Products	*3.0*	*5.2*	*5.7*	*7.5*	*30.1*	*25.3*	*3.3*	*4.0*
Iron and Steel	*-10.2*	*11.5*	*-5.9*	*-1.7*	*131.0*	*94.8*	*0.8*	*1.1*
Precious and Non-Ferrous Metals	*-1.5*	*10.2*	*16.0*	*15.3*	*22.1*	*19.0*	*4.5*	*5.3*
Fabricated Metal Products	*1.4*	*-2.9*	*7.7*	*2.9*	*16.3*	*34.7*	*6.1*	*2.9*

Industry / Industry Group	Sales Growth (Y-o-Y)		Net Profit to Sales		Interest Burden		Interest Coverage	
	2015-16	2016-17	2015-16	2016-17	2015-16	2016-17	2015-16	2016-17
Computer and Electronic Equipment	*-1.5*	*3.8*	*0.9*	*0.1*	*58.8*	*58.6*	*1.7*	*1.7*
Electrical Machinery and Apparatus	*6.2*	*5.8*	*2.4*	*5.2*	*35.3*	*34.8*	*2.8*	*2.9*
Machinery and Machine Tools	*3.5*	*4.3*	*5.3*	*6.5*	*17.5*	*15.0*	*5.7*	*6.7*
Motor Vehicles and Other Transport Equipment	*10.4*	*7.7*	6.0	6.6	14.4	16.2	6.9	6.2
Electricity and Gas - Supply	-6.5	-15.3	7.2	-6.6	58.0	91.3	1.7	1.1
Construction	1.0	-3.9	-1.7	-4.3	101.0	124.7	1.0	0.8
Services (other than IT)	4.9	-1.5	5.0	-0.9	41.1	54.4	2.4	1.8
Telecommunication	*7.6*	0.2	4.4	-13.0	38.7	89.0	2.6	1.1
Real Estate	*6.2*	-8.6	16.5	16.8	62.1	52.2	1.6	1.9
IT : Computer software and related services	11.3	9.4	22.5	21.0	2.2	1.8	45.9	57.1
All Companies	**-1.6**	**3.1**	**6.6**	**6.5**	**30.9**	**31.2**	**3.2**	**3.2**

Source: Reserve Bank of India.

To investigate the issue of debt overhang further in the corporate sector, it is imperative to examine the strength of the corporate balance sheet on two well accepted indicators – (i) DER[13], and (ii) ICR (Rajkumar, 2015). The DER measures the extent of firm's dependence on borrowed capital over its own capital. The general norm in terms of ratio for analytical purposes remains 1:1[14] (Rajkumar, 2015). Similarly, the ICR captures the ability of a firm or company to serve its debt. The ICR reflects the firm's capacity to pay interest out of its earnings (Rajkumar, 2015). The issue of debt overhang would be reflected in terms of lower ICR. Lower ICR suggests that the firms are financially constrained to serve their debt as they are not earning enough vis-à-vis their interest burden.

The DER and ICR of Public Limited Companies[15] suggest that Industry as a whole does not seem to be overleveraged and the earnings of the companies are enough to serve their debt (Table 4). The Debt to Equity ratio of Public Limited Companies varied between 45.9 per cent to 46.2 per cent. It suggests that these companies are not over relying on the borrowed funds for their operation. However, there are certain industry groups which are

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[13] As per the RBI definition of Debt and Equity. Debt includes long and short-term borrowings and Equity (net worth) comprises share capital, and reserves and surplus (Rajkumar, 2015).

[14] The DER may well vary depending on the nature of the business. Also, this norm (ratio between the two variables) has undergone changes over time (Rajkumar, 2015).

[15] RBI provides data for 19602 Public Limited Companies.

overleveraged. These include Sugar industry with a DER of 171.6 per cent in 2015-16, Glass and Glass Products (191.8%), Electricity, Gas Steaming and Air Conditioning Supply (144%), and Construction (124%). Few other industry groups with relatively high DER but that do not defy the 1:1 DER principle include Paper products, Iron and Steel, and Telecommunications. High DER is also reflected in low ICR for the above-mentioned industry groups. The ICR of the Sugar industry group stood at 1, Iron and Steel (0.9), and Telecommunication (0.3) during 2015-16.

Table 4: Debt of Equity Ratio (%) and Interest Coverage Ratio of Public Limited Companies.

		Debt to Equity Ratio (%)			*Interest Coverage Ratio*		
Sector/Sub Sector	*No. of Companies*	*2013-14*	*2014-15*	*2015-16*	*2013-14*	*2014-15*	*2015-16*
Mining & Quarrying	276	7.4	6.5	6.6	15.3	8.8	6.3
Manufacturing	7594	39.6	40	39.1	3.9	4.2	4.9
Food Products & Beverages	821	49.8	56.2	47.2	2.8	3.3	3.6
Dairy Products	66	60.2	32.3	21	9	9.7	7.8
Sugar	89	99.8	183.9	171.6	0.2	0.1	1
Textiles	956	43.3	46.4	43.2	3.6	4	4.8
Wearing Apparel	255	80.6	70.6	57.1	1.9	1.9	2.5
Leather Products	66	16.7	13.2	10.6	3.8	3.7	5.3
Wood Products	86	36.5	20.1	21.2	2.5	4	5
Paper Products	213	87.2	80.4	85.7	1.5	1.5	1.6
Chemical Products	1351	23.5	23.6	21.9	5.1	5.6	7.1
Basic Chemicals	306	30.6	29.8	24.3	3.3	3.1	4.7
Chemical Fertilizers	62	50	49.2	62.3	2.1	2.3	2.3
Paints and Varnishes	45	2	1.1	1.4	23.4	41.3	48.7
Pharmaceuticals	555	21.1	23.4	18.5	6.8	6.7	9.1
Rubber and Plastic Products	371	43.5	37.6	40.5	3.2	4.2	5
Tyres and Tubes	29	32.3	24.6	22.3	2.2	2	2
Plastic Products	259	51.9	46.1	54.3	3	4.3	4.7
Glass and Glass Products	45	146	182.4	191.8	0.4	0.8	1.5
Ceramic Products	80	14.6	12.3	11.9	4.6	6.5	8
Cement and Cement Products	144	52.1	56.9	47.8	2.5	2.9	2.9
Iron and Steel	656	76.2	82.5	91.8	1.6	1.5	0.9
Fabricated Metal Products	246	61.1	59.5	59.3	1.5	1.3	1.4
Computer and Electronic Equipment	84	8.2	7.1	7	16.5	27.9	37.1

Sector/Sub Sector	No. of Companies	*Debt to Equity Ratio (%)* 2013-14	2014-15	2015-16	*Interest Coverage Ratio* 2013-14	2014-15	2015-16
Electrical Equipment	322	65.8	62.5	72.9	1.8	2	2.5
Machinery and Equipment nec.	612	19.9	19.5	22.7	4.2	4.9	5.2
Motor Vehicles and Other Transport Equipment	153	7.6	5.5	4.4	7.8	10.1	17.8
Jewellery	84	8.4	8	7.5	1.7	2.4	2.8
Electricity Gas Steam and Air Conditioning Supply	655	117.9	126.3	144	1.1	1.1	1.2
Construction including Civil Engineering	1571	109	115.4	124	1.5	1.4	1.3
Services	8628	38.9	38.9	35	2.9	3.2	3.3
Trade Wholesale & Retail	1880	31.4	30.2	26	1.9	2	2.5
Transport and Storage Services	431	77.2	74.1	65.6	1.8	2	2.1
Accomodation and Food Service Activities	313	55.6	77.4	73.1	1.1	1.3	1.6
Telecommunication	106	117	92.9	88.1	-0.3	0.3	0.3
Computer Services	769	11	9	10.7	7.2	6.7	6.7
Real Estate	1013	57	56	52.5	1.7	1.8	1.5
All Industries	**19602**	**45.9**	**46.9**	**46.2**	**3.2**	**3.3**	**3.6**

Source: RBI: Corporate Sector Database.

The DER and ICR of Private Limited Companies[16] also suggest that Private Limited Companies in India are not overleveraged and earning enough to serve their debt (Table 5). However, there are certain sector or industry groups which exhibit higher DER and lower ICR. Construction and Hotel and Restaurant, and Real Estate Industry groups are found to be highly leveraged with 137 per cent, 112 per cent, and 101 per cent DER respectively in 2015-16. Other industry groups with relatively higher leverage ratio include Paper and Paper Products, and Iron and steel. On the other side, among the Private Limited Companies, only Iron and Steel industry group exhibited lower ICR (0.7) in 2015-16. Within the Private Limited Companies, the highly leveraged industry groups also exhibit higher ICR. It suggests that companies in the above-mentioned industry groups have the capacity to serve their debt even they are highly leveraged.

[16] The RBI provides data for 2,92,308 Private Limited Companies.

Table 5: Debt Dependence of Private Limited Companies

Sector/Sub Sector	*No. of Companies*	*Debt to Equity Ratio (%)*			*Interest Coverage Ratio*		
		2013-14	*2014-15*	*2015-16*	*2013-14*	*2014-15*	*2015-16*
Mining & Quarrying	3803	65.9	58.1	64.2	2.8	2.7	2
Manufacturing	72780	47.9	46.9	44.7	2.8	2.7	3.2
Food Products & Beverages	6931	45.6	43.6	44.2	2.6	2.5	2.8
Textiles	8050	76.6	74.5	73.1	2.5	2.5	2.4
Wearing Apparel	3526	61.3	57.4	54.8	3.6	3.5	3.8
Paper & Paper Products	1603	93	88.8	89.2	1.8	2.1	2.2
Chemicals & Chemical Products	10622	35.6	36.3	36.5	3.5	4.1	5
Basic Chemicals	1950	35.9	30.1	22	3.2	3.5	4.7
Pharmaceuticals & Medicines	4396	42	49.2	51.5	4.3	5	5.9
Rubber & Plastic Products	4359	55.9	52.8	47.1	2.9	2.5	2.9
Plastic Products	3253	55.2	56.5	56.9	2.7	3.1	3.1
Iron & Steel	4270	70.4	80.1	82.4	1	0.9	0.7
Fabricated Metal Products Except Machinery & Equip.	3296	53.8	47.1	42.2	2.6	3.2	3.3
Electrical Machinery And Appratus	3780	43.7	41.1	35.6	2.8	3.7	4.1
Machinery And Equipment Nec.	8190	26.9	25.4	24.2	5.2	6.4	6.3
Motor Vehicles And Other Transport Equipment	1445	58.2	57	53.6	1.4	1.8	1.8
Construction Including Civil Engineering	32717	123.4	130.1	137.2	1.6	1.9	1.9
Services	171532	39.1	39.8	42.5	4.8	5.2	5.1
Trade Wholesale & Retail	48941	23.4	24	27.9	2	1.9	1.9
Transport Storage And Communications	8117	71.4	66.8	72.1	3.7	3.9	3.6
Hotels & Restaurants	5970	98.2	103.1	112.3	1.4	1.4	1.6
Computer And Related Activities	18586	19.7	20.3	19.2	21.8	24.7	24.9
Real Estate	26290	87.3	94.5	101.1	1	1.9	1.6
All Industries	292308	51.2	52.2	53.8	3.4	3.5	3.7

Source: RBI: Corporate Sector Database.

There are certain industry groups which are more capital intensive and tend to borrow more. Iron and Steel, Construction and the Real Estate industry groups are more capital intensive in nature and, therefore, tend to borrow more. However, certain industry groups like Sugar and Paper and Paper Products have borrowed more, even if the nature of their activity and operation do not require more capital through borrowings.

The Infrastructure Sector which is capital intensive has also become highly leveraged in recent years (Table 6). And, it is this sector which is the source of substantial volume of NPAs. However, all Infrastructure companies do not seem to be highly leveraged (Table 28). Only few companies like Essar Steel, Essar Oil, Adani Power, Lanco Infratech, JP Iscon and Videocon Industries are found to have high DER. Therefore, the debt overhang argument does not seem to be true for even all infrastructure companies. However, it indicates that the DER of all major infrastructure companies increased substantially, beginning 2013. While the borrowings of the corporates have gone up substantially for infrastructure companies and meagrely for the corporate sector as a whole, it would be interesting to look at their composition of sources of funds to examine to what extent the corporate sector debt is financed by the banks.

Table 6: Debt to Equity Ratio of Selected Infrastructure Companies

Company Name	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*
Adani Power Ltd.	..	..	0.51	0.9	2.19	1.68	2.74	4.6	6.25	3.31	3.15	3.01
Essar Oil Ltd.	2.13	2.41	2.86	2.78	2.81	2.22	4.28	9.23	36.83	11.09	4.71	1.7
Essar Steel India Ltd.	4.4	5.07	1.7	1.37	1.59	2.01	2.13	2.97	4.24	5.94	3.82	14.37
G M R Infrastructure Ltd.	0.72	0.77	0.12	0.09	0.07	0.44	0.33	0.41	0.59	0.89	0.59	0.58
G V K Power & Infrastructure Ltd.	15.74	..	0.83	..	..	0.04	0.04	0.17	0.17	0.21	0.33	0.18
J P Iscon Pvt. Ltd.	..	0.09	5.86	4.11	0.36	0.02	1.31	1.44	2.19	2.59	2.41	3.1
J P L Industries Ltd.	2.19	1.2	1.64	1.74	1.05	1.67	1.77	..	..	0.96	0.71	..
J S W Energy Ltd.	0.95	0.64	0.72	0.67	1.19	0.39	0.91	0.87	0.8	0.71	0.56	0.58
Lanco Infratech Ltd.	0.44	0.6	0.12	0.35	0.72	0.86	1.1	1.17	1.33	2.16	3.38	4.65
Reliance Communications Ltd.	0	0	0.71	0.82	0.6	0.48	0.66	0.67	0.98	1.07	0.89	1.26
Reliance Infrastructure Ltd.	0.67	0.6	0.68	0.45	0.65	0.28	0.23	0.51	0.59	0.73	0.81	0.8
Reliance Power Ltd.	..	..	..	..	..	..	0.1	..	0.11	0.22	0.26	0.3
Videocon Industries Ltd.	0.9	1.23	0.95	1.19	1.26	1.26	1.26	1.88	2.32	2.34	2.34	2.31

Source: CMIE: Prowess-q

The composition of sources of funds of NGNF Public Limited Companies shows that while companies rely more on external sources for funds, borrowings from Banks constituted less than 6 per cent (considering both long and short-term borrowings) during 2014-15 and less than 4 per cent in 2015-16 (Table 7). These companies rely more on capital market as a

source of funds. However, there is a difference in the composition of sources of funds between the Public and Private Limited Companies. Private Limited Companies rely more on banks as a source of funds (Table 8). In 2014-15, borrowings from banks (as a source of funds) constituted about 25 per cent of the total funds.

Table 7: Composition of Sources of Funds of NGNF* Public Limited Companies (in per cent)

Source of Fund	*2014-15*	*2015-16*
I. Internal Sources (A+B+C)	**42.1**	**48.1**
A. Paid-up capital	14.5	4.9
B. Reserves and surplus	23.8	20.5
C. Provisions	3.9	22.7
of which: Depreciation	-1.7	22.9
II. External Sources (D to H)	**57.9**	**51.9**
D. Share capital and premium	7.8	5.9
E. Long-term borrowings	26.9	12.1
of which: i) Bonds / Debentures	10.1	4.5
ii) Term loans	9.3	-2.9
of which, From banks	9.3	-2.9
F. Short-term borrowings	-2.1	4.4
of which: From banks	-3.7	6.6
G. Trade payables	9.9	3.8
H. Other current liabilities	14.7	23.3
Total	**100**	**100**

*19,602 public limited companies
Source: Calculation based on RBI data.

Table 8: Composition of Sources of Funds of Private Limited Companies* (in per cent)

Sources of Fund	*2014-15*	*2015-16*
Internal Sources (A+B+C)	**2.8**	**50.9**
A. Paid-up capital	15.0	7.0
B. Reserves and surplus	5.7	4.5
C. Provisions	-17.9	39.5
of which: Depreciation	-20.5	37.6
External Sources (D to H)	**97.2**	**49.1**
D. Share capital and premium	20.9	11.4
E. Long-term borrowings	24.0	16.1
of which: i) Bonds / Debentures	7.5	3.9

Sources of Fund	*2014-15*	*2015-16*
ii) Term loans	10.3	5.1
of which, From banks	10.3	5.1
F. Short-term borrowings	8.3	7.7
of which, From banks	14.2	2.4
G. Trade payables	22.5	5.1
H. Other current liabilities	17.0	9.0
Total	**100**	**100**

* 292308 Private Limited Companies
Source: Calculation based on RBI data.

5. Wilful Defaults in Indian SCBs

A wilful default is one where the fund is diverted or misused for a purpose other than originally intended by the borrower. As per the RBI guidelines, a wilful default largely covers the following (RBI: 2014c):

i) Deliberate non-payment of the dues despite adequate cash flow and good net worth;
ii) Siphoning off of funds to the detriment of the defaulting unit;
iii) Assets financed have either not been purchased or have been sold and proceeds have been mutualised;
iv) Misrepresentation/falsification of records;
v) Disposal/removal of securities without bank's knowledge; and,
vi) Fraudulent transactions by the borrower.

As per the CIBIL data[17], in recent years, the volume of wilful default on bank loans has increased substantially. Available data[18] suggests that the volume of wilful default stood at Rs. 2,79,191.2 crore as on December 31, 2017 (Table 9). The volume of wilful default of loans of PSBs stood at Rs. 2,22,570.2 crore, which is about 80 per cent of the total wilful default. The wilful defaulted loans of Private Banks is quite low in comparison to that of PSBs. Private Banks accounted about 16.5 per cent (Rs. 46,005.19 crore) of the total wilful default. Among different bank groups, the volume of wilful default of loans was lowest for Foreign Banks (Rs. 10,615.83 crore). The volume of wilful default went up substantially, beginning 2013. During 2015 and 2016, the volume of wilful default more than doubled in

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[17] As mandated by the RBI, the TransUnion CIBIL maintains a database on suit filed accounts of Rs. 1 crore and above and suit filed accounts (willful defaulters) of Rs. 25 lakhs and above. For more information, see https://www.transunioncibil.com/suit-filed-cases/overview

[18] In this section, we have analysed data on suit filed accounts (wilful defaulters) of Rs. 1 crore and above for study purpose.

comparison to previous years (Table 10). The PSBs continued to remain as the major source of funds for the wilful defaulted loans between 2002 and 2017.

Table 9: Number of Wilful Default^ as on December 31, 2017

	Number of Borrowers		*Amount*	
Bank Group	*Number*	*Share (%)*	*Amount (Rs. Crore)*	*Share (%)*
Public Sector Banks	13893	81.16	222570.2	79.72
Private Banks	2837	16.57	46005.19	16.48
Foreign Banks	389	2.27	10615.83	3.80
Total	17119	100	279191.2	100

^ suit filed cases; credit volume Rs. 1 Crore and above.
Source: Calculations based on TransUnion CIBIL database.

Table 10: Bank Group-Wise Wilful Default^: 2002-2017 (as of December) (Amount in Rs. Crore)

Bank Group	*2017*	*2016*	*2015*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*	*2004*	*2003*	*2002*
Foreign Banks	10615.8	9244.3	4003.5	2922.2	2308.1	3179.3	855.2	0.0	2194.8	373.4	1430.9	1177.2	1708.7	2294.3
Private Banks	46005.2	32433.9	29102.5	7883.9	7463.1	5826.4	3497.1	1888.1	2076.9	2154.7	2545.2	6770.3	10378.4	6576.5
Public Sector Banks	222570.2	195026.7	146174.9	32570.5	27876.7	37676.6	17938.1	15284.5	23433.2	11445.3	17177.2	28070.6	52971.9	47789.4
Total	279191.2	236704.9	179280.8	43376.7	37647.9	46682.3	22290.4	17172.6	27704.9	13973.4	21153.3	36018.1	65059.0	56660.1
Bank Group Wise share (%)														
Foreign Banks	3.8	3.9	2.2	6.7	6.1	6.8	3.8	0.0	7.9	2.7	6.8	3.3	2.6	4.0
Private Banks	16.5	13.7	16.2	18.2	19.8	12.5	15.7	11.0	7.5	15.4	12.0	18.8	16.0	11.6
Public Sector Banks	79.7	82.4	81.5	75.1	74.0	80.7	80.5	89.0	84.6	81.9	81.2	77.9	81.4	84.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

^ suit filed cases; credit volume Rs. 1 Crore and above. Willful default data for the year 2013 and 2014 has been excluded due to spurious figures.
Source: Calculations based on TransUnion CIBIL database.

Bank-wise analysis of wilful default loan data suggests that except for a few PSBs like the Vijay Bank, Indian Bank and Syndicate Bank which have less exposure to corporate credit, the rest of the banks recorded greater incidence of wilful loan default (Table 11). The wilful loan default is highest for the State Bank of India, with Rs. 77180.4 crore defaulted loans, which is 34. 7 per cent of the total wilful default as on December 31, 2017. It is followed by the Punjab National Bank with Rs. 26402.2 crore (11.9%), the IDBI Bank Ltd Rs. 24999 crores (11.2%), Canara Bank Rs. 11551.3 crore (5.2%), Corporation Bank Rs. 10311.3 crore (4.6%), Andhra Bank Rs. 9903.6 crore (4.4%) and Bank of Baroda Rs. 9661 crores (4.3%) of loan defaults.

Table 11: Public Sector Bank-Wise Wilful Default^ as on December 31, 2017

	Number		*Amount (Rs.)*	
Name of Bank	*Number*	*Share (%)*	*Amount*	*Share (%)*
State Bank of India	3733	26.9	77180.4	34.7
Punjab National Bank	1394	10.0	26402.2	11.9
IDBI Bank Limited	1789	12.9	24999.0	11.2
Canara Bank	1184	8.5	11551.3	5.2
Corporation Bank	510	3.7	10311.3	4.6
Andhra Bank	446	3.2	9903.6	4.4
Bank of Baroda	955	6.9	9661.0	4.3
Central Bank of India	1028	7.4	8523.2	3.8
Allahabad Bank	339	2.4	8085.0	3.6
Bank of Maharashtra	864	6.2	7863.0	3.5
UCO Bank	167	1.2	5916.8	2.7
Dena Bank	426	3.1	5254.1	2.4
Union Bank of India	245	1.8	4879.8	2.2
Syndicate Bank	296	2.1	4442.2	2.0
Punjab and Sindh Bank	299	2.2	2899.8	1.3
Vijay Bank	131	0.9	2302.2	1.0
Indian Overseas Bank	62	0.4	1968.8	0.9
Indian Bank	25	0.2	426.6	0.2
All PSBs	13893	100	222570.2	100

^ suit filed cases; credit volume Rs. 1 Crore and above.
Source: Calculations based on TransUnion CIBIL database.

While Private Banks constitute about 16.5 per cent of total willful loan default as on December 31, 2017, there are a few Private Banks with substantial loan defaults (Table 12). Bank wise (leading Private Banks) data suggests that loan default is highest for ICICI Bank (Rs. 16615.5 crore), which is more than 36 per cent of the total willful loan default of Private Banks. It is followed by Axis Bank with Rs. 9907.39 crores and HDFC Bank Rs. 3509.58 crores. Other private banks with high willful loan defaults include the Jammu and Kashmir Bank (Rs. 3079.38 crore), Kotak Mahindra Bank (Rs. 3034.93 crore), and the Federal Bank (Rs. 2364.1 crore).

Table 12: Private Bank-Wise Wilful Default^ as on December 31, 2017

	Number		*Amount (Rs.)*	
Name of Bank	*Number*	*Share (%)*	*Amount*	*Share (%)*
ICICI Bank Limited	554	19.53	16615.51	36.12
AXIS Bank Ltd	669	23.58	9907.39	21.54
HDFC Bank Limited	326	11.49	3509.58	7.63
The Jammu and Kashmir Bank Limited	179	6.31	3079.38	6.69
Kotak Mahindra Bank	185	6.52	3034.93	6.60
The Federal Bank Ltd	239	8.42	2364.10	5.14
All Private Banks	2837	100	46005.19	100

^ suit filed cases; credit volume Rs. 1 Crore and above.
Source: Calculations based on TransUnion CIBIL database.

The analysis of willful loan defaults of Foreign Banks suggests that while Foreign banks as a group recorded the lowest number of willful loan defaults (Rs. 10615.83 crore, 3.8 per cent of the total wilful loan default of the SCBs), there are few banks with substantial exposure to willful loan defaults (Table 13). The Standard Chartered Bank constituted about 54 per cent (Rs. 5725.95 crore) of the total willful default exposure of the Foreign Banks as a group, followed by Citi Bank (Rs. 1167.23 crore) and Barclays Bank (Rs. 959.94 crore).

Table 13: Foreign Bank-Wise Wilful Default^ as on December 31, 2017

	Number		*Amount (Rs.)*	
Name of Bank	*Number*	*Share (%)*	*Amount*	*Share (%)*
Standard Chartered Bank	180	46.27	5725.95	53.94
Citi Bank	38	9.77	1167.23	11
Barclays Bank plc	28	7.2	959.94	9.04
Development Bank of Singapore	15	3.86	665.87	6.27
HSBC Bank ltd	20	5.14	540.95	5.1
All Foreign Bank	389	100	10615.83	100

^ suit filed cases; credit volume Rs. 1 Crore and above.
Source: Calculations based on TransUnion CIBIL database.

As discussed in earlier sections, it is observed that the Corporate sector as a whole does not seem to be so highly leveraged that it cannot pay back its loans. Except for a few sectors that exhibited high leverage, the rest of the corporate sector borrowings are under permissible level. Therefore, the notion that a weak corporate balance sheet is actually reflected in weak bank balance sheet does not justify loan default. This can be further established from the fact that the volume of wilful default has gone up substantially in recent years. The increase in wilful default suggests that the loan money taken from the banks has not been used for the purpose it was taken by the borrowers.

6. Summary Conclusion

There can be two major issues from bank's side which can potentially explain the NPA problem. These are the credit approach and governance aspects of the banks. The focus is on PSBs as they constitute the largest share in the total NPA. It is found that there are gaps in the credit approach of the banks. There is a mismatch between the credit policy or objective of the banks and the supervisory advisory extended by the RBI. Since the global financial crisis, the RBI has issued advisories in its Financial Stability Reports (FSRs) to sectors under stress. Yet, the banks continued to lend to these stressed sectors. Credit growth to these sectors was substantially high, higher than the average bank credit growth. It is observed that all of the RBI referred (in FSRs) sectors are now the source of majority of NPAs in India. Credit approach and loan quality have a strong association with the quality of governance of a bank. The focused discussion with bank executives' reveals that though there is a credit appraisal committee and project approval system in place, they often fail to attain the stated objective due to lack of required technical capabilities of the committee members. It is also found that often technical officers are placed or assigned some other responsibilities. The bank executives felt that there was a need for building up technical capabilities to ensure that the projects are properly appraised.

The role of borrowers is critical in the occurrence of NPAs. A loan becomes an NPA when a borrower fails to repay the borrowed money or fails to serve its debt as per the RBI guidelines. The borrowers can be individuals, group of individuals, a company or firm. The balance sheets of the borrowers, in this case the companies or firms, have been studied to explore to what extent industrial or corporate borrowers are responsible for the current state of affairs in the banking sector. The financial performance indicators of Non-Government Non-Financial (NGNF) listed companies does not suggest any serious crisis in the corporate sector which could be a constraint in paying back borrowed loans. The corporate sector as a whole is not overleveraged with Debt to Equity ratio varying between 32 and 39 per cent. Similarly, the Interest Coverage Ratio (ICR) suggests that, financially, the corporate sector is not so severely constrained that it cannot serve its debt or pay the interest liability out of its earnings. Similarly, Debt Equity Ratio (DER) and ICR of Public Limited Companies suggest that the Industry as a whole does not seem to be overleveraged and the earnings of the companies are enough to serve their debt. The Debt to Equity ratio of Public Limited Companies varied between 45.9 per cent and 46.2 per cent. It suggests that these companies are not overly relying on borrowed funds for their operation. The DER and ICR of Private Limited Companies also suggest that the Private Limited Companies in India are not overleveraged and earning enough to serve their debt. However, there are certain industry groups which are overleveraged. Except for a few sectors which exhibited high leverage, the rest of the corporate sector borrowings are under permissible level. Therefore, the notion of a weak corporate balance sheet does not justify loan default. This can be further established from the fact that the volume of wilful default has gone up substantially in recent years. The increase in wilful default suggests that the loan money taken from banks has not been used for the purpose it was taken by the borrowers.

Annexures

Annexure 1: Financial Stability Reports (FSR) Quotes of References

FSR-2010: *The credit growth in the recent times however has been mostly in sectors like* ***infrastructure and commercial real estate*** *both of which require longer term funding. The resultant ALM mismatch would require careful monitoring on an ongoing basis.* (Overview and Assessment, p. V).

FSR-2011: *Even with the broadly diversified credit portfolio, the contribution to the credit growth was disproportionately very high for three sectors –**retail, commercial real estate and infrastructure**. As each of these sectors have a peculiar set of asset quality propositions, the brisk growth in exposure seen during 2010-11 poses some concern* (Assessment and Outlook, p. 3).

FSR-June, 2012: ***Asset quality in some key sectors remained under strain;*** *the increase in gross NPAs for the year ending March 2012 was largely contributed by some key sectors viz.,* ***priority sector, retail and real estate****. The growth rate of NPAs in the infrastructure segment, however, decelerated as at end March 2012, partially on account of base effects and sharp moderation in credit to infrastructure projects. Certain sectors like* ***power and airlines*** *saw significant increase in impairments* (Chapter III Financial Institutions: Soundness and Resilience p. 26).

FSR-December 12: *Some industrial sectors like* ***iron & steel, infrastructure and textile experienced a much greater degree of restructuring of advances in the recent period*** (Chapter II Financial Institutions: Soundness and Resilience p. 32).

Credit Risk to Power Sector*- The risks faced by banks in lending to the power sector were highlighted in the previous FSR. Pressure on asset quality in the power sector has worsened since then* (Chapter II Financial Institutions: Soundness and Resilience p. 32).

FSR - June 2013: *The corporate sector in India has come under stress in the recent past. Analysed on the basis of a few key variables such as Sales, Profit Margin [(EBITDA) (Earnings before Interest, Tax, Depreciation and Amortisation) to sales], EBIT (Earnings before Interest, Tax), Interest Expenditure, Net Profit among other variables, the corporate sector shows increasing stress. In general growth rate of sales and profits have fallen during Q3 -2012-13* (Chapter I Macro-Financial Risks p.16).

Industry and service sector account for a major proportion of restructured loans of the banking sector. As these sectors have a relatively higher share of total bank credit, the trend in restructuring of loans to these sectors make a bigger impact on the health of the banking sector. ***Within the industrial sector, a few sub-sectors namely; Iron and Steel, Textile, Infrastructure, Power generation and telecommunication; have become a cause of concern in recent times****. In case of sectors* ***like aviation****, though the incidence of restructuring is high, its share of bank credit is relatively low* (Chapter II Financial Institutions: Soundness and Resilience p.30).

FSR-Dec 2013: *The medium and large sized industries contributed more towards stressed advances than macro and small sized industries. Five sectors namely* ***Infrastructure, Iron and Steel, Textile, Aviation and mining*** *together contribute 24 per cent of total advances of SCBs and account for around 53 per cent of their total stressed advances* (Overview p. 2).

FSR- June 2014: *There are* ***five sub-sectors; infrastructure (which includes power generation, telecommunication, roads, ports, airport, railways [other than Indian Railways] and other infrastructure), iron and steel, textile, mining (including coal) and aviation*** *services which contribute significantly to the level of stressed advances* (Chapter II Financial Institutions: Soundness and Resilience, p.17)

<u>FSR- Dec 2014:</u>* *Five sub-sectors: infrastructure, iron and steel, textiles, mining (including coal) and aviation, *had significantly higher levels of stressed assets and thus these sub-sectors were identified as 'stressed' sectors in previous FSRs* (Chapter II Financial Institutions: Developments and Stability, p.13).

<u>FSR-June 2015:</u>* *Five sub-sectors, namely, mining, iron & steel, textiles, infrastructure and aviation, *which together constituted 24.8 per cent of the total advances of SCBs, had a much larger share of 51.1 per cent in the total stressed advances* (Chapter II Financial Institutions: Soundness and Resilience, p.14).

Apart from the these five stressed sub-sectors, there were some other sub-sectors of industry, like ***food processing, engineering, vehicles, wood, paper, glass and glassware, construction,*** *amongst others, which showed a high and rising level of GNPA. Among these sub-sectors,* ***food processing, engineering, vehicles and construction*** *had more than one per cent share each in SCBs' total advances* (Chapter II Financial Institutions: Soundness and Resilience, p.15).

<u>FSR-Dec 2015:</u> *Sectoral data as of June 2015 indicates that among the broad sectors,* ***industry continued to record the highest stressed advances ratio*** *of about 19.5 per cent, followed by* ***services at 7 per cent****. The retail sector recorded the lowest stressed advances ratio at 2 per cent. In terms of size,* ***medium and large industries each had stressed advances ratio at 21 per cent****, whereas, in the case of micro industries, the ratio stood at over 8 per cent.* ***Five sub-sectors viz. mining, iron & steel, textiles, infrastructure and aviation,*** *which together constituted 24.2 per cent of the total advances of SCBs as of June 2015, contributed to 53.0 per cent of the total stressed advances. Stressed advances in the aviation sector increased to 61.0 per cent in June 2015 from 58.9 per cent in March, while stressed advances of the infrastructure sector increased to 24.0 per cent from 22.9 per cent during the same period. The performance of these sectors and their impact on the asset quality of banks continue to be a matter of concern* (Chapter II Financial Institutions: Soundness and , p.18).

<u>FSR-June 2016:</u> *Amongst major sectors,* ***the industrial sector*** *showed a decline in the stressed advances ratio from 19.9 per cent to 19.4 per cent between September 2015 and March 2016, though the GNPA ratio of the sector increased sharply to 11.9 per cent from 7.3 per cent. Retail loans continued to witness the least stress. Among the major sub-sectors within the* ***industrial sector, 'basic metal and metal products'*** *accounted for the highest stressed advances ratio as of March 2016 followed by* ***'construction' and 'textiles.'*** *It is notable that the stressed advances ratio of the* ***'infrastructure'*** *sector declined to 16.7 per cent from 21.8 per cent between September 2015 and March 2016* (Chapter II Financial Institutions: Soundness and Resilience, p. 24).

<u>FSR- Dec 2016:</u> *A macro-stress test of sectoral credit risk reveals that among the select seven sectors (Agriculture, Construction, Cement, Infrastructure, Iron and steel, Engineering, Automobiles), iron and steel is expected to register the highest GNPAs followed by construction and engineering in March 2017 as well as in March 2018 under the baseline scenario* (Chapter II Financial Institutions: Soundness and Resilience, p.25).

<u>FSR-June 2017:</u> *While there is a fall in stressed advances ratio in agriculture, services and retail sectors, the* ***stressed advances ratio in industry sector, however, rose from 22.3 per cent to 23.0 per cent mainly on account of subsectors such as cement, vehicle, mining & quarrying and basic metals****. Accretion of new NPAs from restructured standard advances declined in 2016-17* (Chapter II Financial Institutions: Soundness and Resilience, p. 22).

Sectoral credit risk: *Credit risk arising from exposure to the* ***infrastructure sector (specifically power, transport and telecommunications****) was examined through a sectoral credit stress test where GNPA ratio of the sector was assumed to increase by a fixed percentage point impacting the overall GNPA*

ratio of the banking system. The results showed that shocks to the infrastructure segment will considerably impact the profitability of banks, with the most severe shock (15 per cent of restructured standard advances and 10 per cent of standard advances become NPAs and move to the loss category) completely wiping out the recorded profits of FY 2016-17. The most significant effect of the single factor shock appears to be on the power and transport sectors (Chapter II Financial Institutions: Soundness and Resilience, p.30).

Source: RBI: Financial Stability Reports, Various years.

Annexure 2: Summary of field notes/discussion

SN.	*Topics inviting views*	*Response of banks*
1.	What could be the reasons for the present situation of stress in the asset quality of the banks; is it internal or external.	*Views included deficiency in processing, poor due diligence, reckless financing could be result of directed financing. Besides lack of monitoring had also been the reasons for loan diversion to NPA. There is lack of professional approach while dealing with the credit proposal. Psyche of the management was at times found in favour of the politicians. Approach of borrowing companies was by camouflaging the factual details. Infra and road project are our incapacity to judge the cash flow. As a result of which with 10 to 15 per cent capital borrowing companies were able to arrange capital in multiple projects by adopting circular capital route. Diversions in case of large value account are mainly due to external reasons however small value accounts have failed due to internal reasons. Failure of education loan as part of directed advance, impact of loan waiver announced during assembly and or parliamentary poll, delay in clearance from the govt. for various approvals are also attributed to the external factors influencing asset quality of the bank. Majority of high value accounts are sanctioned /approved at Head Office level which raises question mark of the credit assessment capabilities of the bank.*
2.	Banks presently have credit committee approach to consider the credit facility to any person or entity. The committee approach is considered better than the old system of delegated powers to the individual functionary of the bank in the system, an opinion.	*There is diverse opinion on current credit approval system. Whereas some of the views were in favour of committee approach at the same time there are views that the old system of sanctioning power with individual functionary is considered good. Issues such as rejection due to diverse opinion amongst committee members resulting there by non-existence of unanimity, "Let go" approach of some of the members at the same time reluctance due fear of accountability have also affected not only the credit delivery but also the credit quality. Lack of skill, knowledge of understanding credit amongst the members of the committee is the gaps in sanctioning quality advance. Besides, the accountability policy which needs to be studied and re-examined. <u>One common view that emerged during the course of discussion was; much depends upon the person who is chairing the credit approval committee.</u>*
3.	Considering the exposure, PSU banks have exposure in wide range of	*Whereas some of the banks opined that the banks have adequate credit /project approval system within the bank,*

SN.	*Topics inviting views*	*Response of banks*
	business ventures and sectors, is there a need to strengthen the 'Project Appraisal System' of the banks.	*however expressed concern over the deployment of technical officer within the system. There was another set of banks expressing a dire need to improve the project appraisal system of the bank. The views were; project appraisal group in the banks over the period has been diluted. Technical officers are relieved for some other areas of banking as a result of which for select ventures credit appraisal capabilities shall remain a point of concern. Besides general attitude of the functionaries need to be improved. There is skill deficit as such the whole system need to be revamped. In case of infrastructure projects there are the hindrances such as allotment of land, release of funds by all financing institutions etc. Instances were quoted that the private sector banks have excellent research on market information at the same time PSU bank may not have expertise for all the sectors /fields.*
4.	One of the concern which time and again have been discussed is; large number of banks participating in consortium lending. Do you suggest that the approach on participation of the banks in the consortium lending should the revised /restricted to smaller number of banks?	*Number of participating banks in any consortium arrangements shall depend upon the total cost of project, its funding requirement vis a vis participating banks appetite to take exposure. Besides need and concept of large banks having international presence may also be a point of consideration depending upon the the engagement of business entity in cross border trade. However the terms for participation in consortium arrangement need to be more stringent. Exposure in the companies/group of leading business houses at time becomes USP for banks to take enthusiastic exposure. To quote exposure in ADAG. Views were common that number of banks in any consortium arrangement should be as minimum as possible. Difficulties have been experiences when all the banks particularly smaller banks were averse taking additional exposure on the pretext of their appetite due to prudential norms restrictions a the same time banks opt for exit to avoid additional exposure on a particular account. Besides, in any consortium meeting bank/branch should be represented by officer not below the rank of Asst. General Manager so that appropriate decision with all the seriousness of the agenda points is taken and consortium meeting does not remain mere a formality.*
5.	Multiple banking arrangements have been another area which the banks have been facing difficulties at the	*It is experienced that banks are lending under multiple banking arrangement without taking any prior consent from the existing lenders, Instances have been noticed*

SN.	*Topics inviting views*	*Response of banks*
	time of redressal of assets. Your views in the matter.	*when the banks are informing to the lenders when it has already taken exposure in the account/company. Banks at time take this route as an opportunity to enter in the consortium arrangements. In fact the entry of new lenders in the form of lending under multiple banking arrangements should not only be monitored as part of regulatory provisions but also be restricted with some conditions such as for business entities up to a certain credit limit.. To enforce credit discipline "NBFC should take exposure in any entity only with the concurrence of the existing lenders. Views also emerged that it should be sopped forthwith or beyond a certain limit say Rs. 5.00 crore. One of the constraints the banks are experiencing is and above no credit facility is lack of systematised information system amongst the banks. Besides, no NPA borrower is permitted to open account with other banks. Regulatory violation of private sector banks should be examined.*
6.	How about restricting lending to the Flagship companies, instead of financing to the subsidiary and step-down subsidiary companies.	*There is a need on imposing restriction in financing to the subsidiary company. No cross holding should be permitted. Lending to group company should be in such a way that holding company is taken in loop. There should be an approval mechanism, Debt Equity ratio of holding company/group Company should also be taken into consideration. Parent company if not engaged in the business should not be financed for the business being taken up by the subsidiary company. In practice, banks are providing financial help to the parent company when financials of the subsidiary company is not good. It is also suggested that the consolidated balance sheet of the group should be seen and analyzed. Financial restrictions should be examined and approved. Wholly owned subsidiary should not be financed. Declaration from the companies should be in such a way that "any wrong or misrepresentation if found, is treated as criminal offence. There are no checks and balances. RBI should impose some policy mechanism. There is need to change the approach*

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