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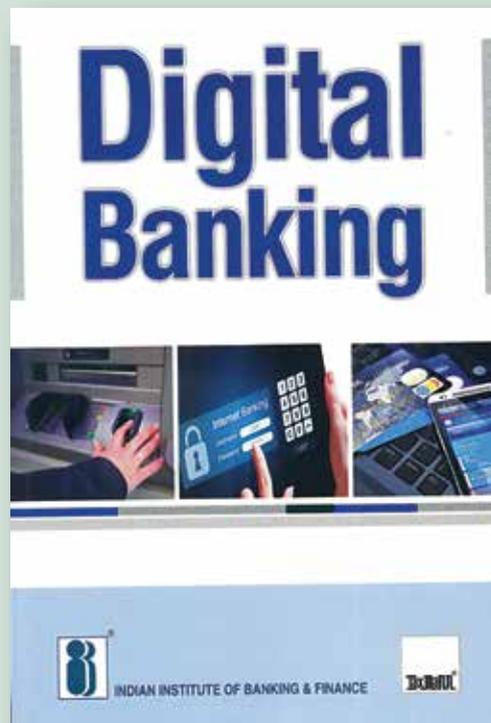
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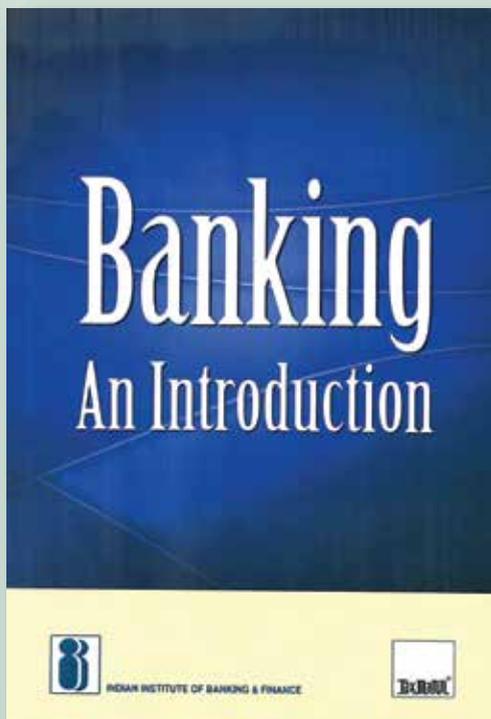
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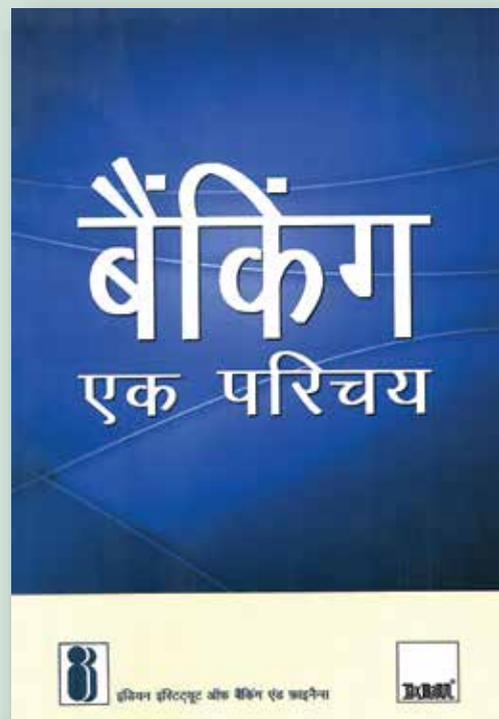
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The mission of the Institute is to develop professionally qualified and competent bankers and finance professionals primarily through a process of education, training, examination, consultancy / counselling and continuing professional development programs.

ध्येय

संस्थान का ध्येय मूलतः शिक्षण, प्रशिक्षण, परीक्षा, परामर्शिता और निरंतर विशेषज्ञता को बढ़ाने वाले कार्यक्रमों के द्वारा सुयोग्य और सक्षम बैंकरों तथा वित्त विशेषज्ञों को विकसित करना है।

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Dr. J. N. Misra

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Research is an important aspect of education. Research studies help the institutions to understand the lay of the road and shape of things to come such that the educational programmes can be appropriately modified and sharpened. In order to understand and explore solutions to the problems in the banking and finance industry and to initiate appropriate steps, research needs to be encouraged. With this view, the Institute conducts an annual essay competition for its members under its Micro Research initiative. Under this initiative members are encouraged to contribute original papers on any area of banking and finance. Essays received under this competition are evaluated by a panel of experts for contents and relevance.

For the financial year 2015-2016, the Institute had received 52 Micro Research Papers. Based on the score given by the experts, 3 of these essays on 3 different topics in Banking & Finance were approved by the Institute's Research Advisory Committee for the award of prizes for the year 2015-16. The prize winning articles are included in this issue.

The first article of this issue is titled "Domestic Systemically Important Banks (D-SIBs): Need for Higher Prescription of Additional Capital" and is authored by Mr. Anmol Chopra. As the Global financial crises had unfolded, the international community had moved to protect the global financial system through preventing the failure of systemically important financial institutions. Under Basel III, the primary focus of the Basel Committee on Banking Supervision has been to increase bank capital requirements and to introduce capital surcharges for systemically important banks. However, some economists have warned that the tighter Basel III capital regulation, which is primarily based on risk-weighted assets, may further negatively affect the stability of the financial system. The author has offered an interesting perspective on the need for higher prescription of additional capital in the context of the contemporary challenges being faced by the commercial banks in India.

The second essay is on "Funding Infrastructure: A Closer Look at the Financial System Structure of India" by Ms. Shromona Ganguly. In this article the author has discussed how the bank-dominated financial system has largely contributed to the rapid growth of private investments in India's Infrastructure over the past few years and how this has resulted in a growing concentration of risks in banks in terms of sector exposure and asset liability management.

The Third essay is on "Marketing and Sales Optimization through Deployment of Big Data Analytics in Indian Banking" by Mr. Bibekananda Panda and Mr. D Rama Krishna Reddy. Today, the Indian Banks have unanimously agreed that managing and analysing big data is critical to their success as Big Data Analytics (BDA) has become a vital part of

their standard business dynamics. The key to success for any organisation lies in the best utilisation of big data and technology driven business processes to give best in class products and services to customers. Leveraging BDA leads to more confident decision making, which means greater operational efficiencies, cost and risk reductions for the organisation.

Apart from the prize winning articles under the Micro Research initiative, we have also carried some other articles which are contemporary.

The fourth article is on “Corporate Governance in Loan Appraisal: A Case Study” by Dr. Ram Jass Yadav. Appraisal of term loans aims to ascertain whether the proposal is commercially viable taking into consideration the technical, economical, financial and managerial aspects of the project. Through this case study, the author has strongly suggested that the appraisal of any credit facility of the Bank should go beyond Financial Statement Analysis, should address the deeper issue of corporate governance and encourage further research for a timely detection of falling corporate governance standards. Towards the end, the case study under reference presents the significance of corporate governance on the appraisal of a term loan.

The fifth article is on “The interpretation of relationship between Net Working Capital and Current Ratio” by Mr. V. Sundararajan. Through this article the author has discussed the relationship between Net Working Capital and Current Ratio. As suggested by the author, for credit processing officers and the decision taking authority, the concept of relationship between Current Ratio (CR) and Net Working Capital (NWC) should be crystal clear. Individually the concept of Current Ratio and Margin are like chalk and cheese. The interpretation of the business, its growth, owners contribution depends purely on how to correlate these two aspects.

In the end of this issue there is an article on “Legal Decisions affecting Bankers” by Mr. M.G. Kulkarni focused on “Whether, Bank is vicariously liable for the acts of its employees?”

We are sure that the articles included in this edition will stimulate your interest. Your suggestions and feedback for improving the contents are welcome.

Dr. J. N. Misra



Domestic Systemically Important Banks (D-SIBs): Need for Higher Prescription of Additional Capital

 **Anmol Chopra**

After the 2008 financial crisis, Basel Committee on Banking Supervision (BCBS) had come out with a framework for identifying Global Systemically Important Banks (G-SIBs) after G-20 leaders had given this mandate to BCBS. Additional capital surcharge is imposed on these banks in order to protect depositor interest in case of sharp decline in cash flows for banks. On similar lines, Reserve Bank of India (RBI) too came out with a framework for identifying Domestic Systemically Important Banks (D-SIBs) with some differences as compared to BCBS G-SIB framework. RBI in August 2015 came out with the first list of two (2) D-SIBs. But considering unique situations related to Indian banking system, this paper argues that more number of Public Sector Banks (PSBs) may be identified in the future lists of D-SIBs. Also, this paper argues that the capital surcharge as per RBI Framework may not be sufficient to reach the desired goal of G-SIB and D-SIB framework. The framework may be revised to be more in tune with G-SIB framework which has higher capital surcharge requirement.

1. Introduction

The 2008 global financial crisis hampered the normal continuation of business growth in most banks and financial institutions worldwide. The crisis may have emanated from moral hazard and use of exotic derivative products, but it was severely exacerbated by lack of sufficient capital to address the risks that had increased due to the crisis. This lack of sufficient capital meant that the banks and financial institutions neither had the capital to clean the mess that their balance sheets were in, and nor to fund credit growth which would help the entire economy and this posed a risk towards depositors' interests.

Most of the bigger banks and financial institutions, which have since been termed as Systemically Important Financial Institutions (SIFIs) or Systemically Important Banks (SIBs), were reeling with very low market valuations during the period. Due to insufficient capital with these SIBs, and due to the significance of their size, complexity, inter-connectedness and impact on banking system and general economy, Governments worldwide had to step in to save these banks through cash infusion, bailouts and in some cases, helping them merge with other healthier banks.

In Seoul meeting of G20 nations in 2011, the policy framework on addressing systemic risks associated

with these "too-big-to-fail" SIBs prepared by Financial Stability Board (FSB) was discussed and finalized. The framework was planned to be implemented from 2012 onwards with full implementation by 2019. Using the Basel Committee on Banking Supervision (BCBS) methodology for assessment of SIBs and requirement of additional loss absorbency capital, FSB came out with a list of 29 Global Systemically Important Banks (G-SIBs) in 2011. It was decided that this list would be updated every year and the additional loss absorbency requirement will kick in from 2016¹.

In the updated methodology by BCBS in 2013, an indicator based measurement approach was developed and recommended². It was argued that a multiple indicator approach would address various distinct dimensions of systemic importance and would help in identifying the G-SIBs more accurately. The selected indicators were Size, Interconnectedness, Substitutability, Cross-jurisdictional activity and Complexity. This methodology gave 20% weightage to each of the five indicators. Banks on whom the methodology will be applied would change every year depending on the set criteria. Based on each banks' score, they would be put in five buckets, which would prescribe different levels of loss absorbing capital in form of common equity (CET1) as a percentage of risk-weighted assets (RWAs).

*** Manager, Department of Banking Supervision, Reserve Bank of India.**

¹See "Policy Measures to Address Systemically Important Financial Institutions" by FSB on November 04, 2011. Available at http://www.fsb.org/wp-content/uploads/r_111104bb.pdf?page_moved=1.

²See "Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement" by BCBS in July 2013. Available at <http://www.bis.org/pub/bcbs255.pdf>.

Similar to the BCBS methodology in identifying and regulating G-SIBs, RBI came out with draft guidelines to deal with Domestic Systemically Important Banks (D-SIBs) in 2013, which were finalized in July 2014³. Based on these guidelines by RBI, a four-indicator approach was finalized with different weights for each of the indicators. The criteria for selection of banks to compute their score was also defined and based on annual computation of these impact scores of banks, they would be bucketed in 5 categories, prescribing different levels of CET1 requirement percentages of RWAs. Since then, RBI released the first list of D-SIBs in August 2015 with additional capital requirements from April 1, 2016, to be fully effective from April 1, 2019.

The BCBS methodology for identification of G-SIBs, the RBI methodology for identification of D-SIBs and the additional capital prescription in case of both the methodologies, is presented in the following sections. In addition, this paper argues that the level of additional capital prescription in India, as prescribed by RBI, is not sufficient to fully address the risks posed by D-SIBs. To have a more comprehensive assurance in terms of addressing the risks posed by these banks, this paper argues that a higher number of D-SIBs be identified in future annual exercises done by RBI and a higher level of CET1 requirement be applied on these banks.

2. BCBS Methodology for assessment of G-SIBs

As mentioned above, BCBS had come out with an updated methodology in 2013 for assessing the G-SIBs

annually. This methodology uses a multiple indicator based measurement approach to comprehensively cover all aspects of the impact such banks may have on the banking system. These five indicators, as per the latest methodology of BCBS are Size, Interconnectedness, Substitutability, Cross-jurisdictional activity and Complexity. An equal weightage of 20% was given to each of the broad indicators. Within each of the indicator, except Size, there are multiple sub-indicators, which are equally weighted within the indicator.

The annual exercise would be done on a chosen sample of banks, which may vary from one year to another based on a set criteria. Banks which fulfil any of the following criteria are included in the sample. These criteria are (i) 75 largest global banks as identified by the Committee based on Basel III Leverage Ratio exposure measure, (ii) G-SIBs identified previous year, or (iii) banks added to the sample by national supervisors.

For calculating the score of each sub-indicator for each bank, the amount for the sub-indicator (in Euros) is divided by the aggregate sum of the values for all the banks taken in the sample. This value is then multiplied by 10,000 to express the same in basis points (bps). Then the score for each indicator is calculated by taking a simple average of the scores of all the sub-indicators. And the score for each bank is calculated by taking a simple average of the scores of all five indicators.

The basic summary of the multiple indicator approach as designed by BCBS is tabulated below.

Table 1: BCBS Methodology for assessment of G-SIBs

Indicator	Sub-indicator	Weightage
Cross-jurisdictional activity (20%)	Cross-jurisdictional claims	10%
	Cross-jurisdictional liabilities	10%
Size (20%)	Total exposures as defined for use in the Basel III leverage ratio	20%
Interconnectedness (20%)	Intra-financial system assets	6.67%
	Intra-financial system liabilities	6.67%
	Securities outstanding	6.67%
Substitutability/financial institution infrastructure (20%)	Assets under custody	6.67%
	Payments activity	6.67%
	Underwritten transactions in debt and equity markets	6.67%
Complexity (20%)	Notional amount of over-the-counter (OTC) derivatives	6.67%
	Level 3 assets	6.67%
	Trading and available-for-sale securities	6.67%

³See "Framework for Dealing with Domestic Systemically Important Banks (D-SIBs)" by RBI on July 22, 2014. Available at https://www.rbi.org.in/scripts/bs_viewcontent.aspx?Id=2861.

Cross-jurisdictional activity is focussed on capturing the global activities of banks and to reflect on the consequences of their failure on the international banking system. This is the reason why both cross-jurisdictional claims as well as liabilities are captured in the methodology to ascertain the spill over effect from the bank's failure on international market. So the greater the global footprint of a bank, the higher would be the impact of its failure.

Size is a key indicator in determining the impact of a bank on global markets. A larger bank is difficult to replace and the extent of its activities impacts a larger number of market participants. Basel III Leverage Ratio exposure measure is used for calculating the size of a bank as it takes into account both the on-balance sheet assets as well as the off-balance sheet assets.

Interconnectedness of a bank tells about the network of obligations related to a bank within the financial system and how the bank can pose systemic risk by impacting the claims and obligations of other institutions within the system.

Substitutability as an indicator measures the bank's degree of substitutability both as a market participant as well as a client service provider. The three sub-indicators within the indicator, assets under custody, payment system activities and underwritten transactions, measure the extent of a bank's involvement in financial system infrastructure and what would be the impact of its failure on market liquidity.

Complexity for a bank is measured in terms of its business, structural and operational complexity. It gives an idea about the costs to be incurred to replace the bank's activities as a market participant.

After the above methodology has been applied on the sample of banks and their score has been calculated, the banks are bucketed into 5 buckets of G-SIBs based on the cut-off level for each bucket. A bank's position may change each year, i.e. it may be in different buckets in different years depending on the score for the year or it may not even be a G-SIB for a particular year.

From the year 2013 onwards, it has been mandated that all banks with Basel III Leverage Ratio exposure measure greater than 200 billion Euros (approx. 13 to 15 lakh crore rupees depending on the prevailing exchange rate) should make the values on the 12 sub-indicators public and this should be enforced by national

supervisory authorities. This practice of disclosure of 12 sub-indicators is the minimum requirement as per BCBS methodology and individual national authorities may impose stricter disclosure norms.

The initial buckets that had been set in 2013, their cut-off score and the loss absorbency requirement for each bucket is tabulated below. The loss absorbency requirement is expressed as a percentage of RWAs and this is the additional CET1 that banks need to bring in within the requirement period.

Bucket	Score range	Loss absorbency requirement (CET1 as a percentage of RWAs)
5	D–E	3.50%
4	C–D	2.50%
3	B–C	2.00%
2	A–B	1.50%
1	Cut-off point–A	1.00%

The score ranges are equal in size for all buckets. Initially, bucket 5 is kept empty so as to incentivise banks to avoid becoming more systemically important. Based on the above methodology, FSB came out with the latest list of G-SIBs on November 03, 2015⁴. The list has 19 banks in Bucket 1, 5 banks in Bucket 2, 4 banks in Bucket 3, 2 banks in Bucket 4 and Bucket 5 has been kept empty. The full list of bucket-wise banks is provided in Appendix 1. The banks in each of the buckets would be required to bring in additional loss absorbing capital in a phased manner from 2017 to 2019. Banks would have to bring in 50% of the loss absorbency capacity requirement from 2017 and full requirement in 2019.

3. RBI Methodology for identifying D-SIBs

In line with the BCBS Framework for identifying G-SIBs, RBI came out with the Framework for dealing with Domestic Systemically Important Banks (D-SIBs) in July 2014. As with the BCBS framework, the RBI framework too involved a two stage process. The first one dealing with identifying the sample of banks for which the systemic importance score is to be calculated and the next stage deals with bucketing the D-SIBs for loss absorbance capital surcharge.

The criteria for selecting the sample of banks for which the systemic importance score is to be calculated

⁴See "2015 update of list of global systemically important banks (G-SIBs)" by FSB on November 03, 2015. Available at <http://www.fsb.org/wp-content/uploads/2015-update-of-list-of-global-systemically-important-banks-G-SIBs.pdf>.

is different for RBI framework than it is for BCBS methodology. According to RBI framework, banks having their size, as measured by Basel III Leverage Ratio exposure measure, more than 2% of GDP at market price are selected in the sample for which the systemic importance score is to be calculated.

The methodology in terms of indicators used is also different in case of RBI framework. In this case, there

are four indicators which are used, each with a different weight. This is unlike BCBS methodology where five indicators are used and all have equal weightage. The four indicators used in RBI framework are Size, Inter-connectedness, Substitutability and Complexity.

The indicators used, the various sub-indicators within each indicator and the weights assigned to each of the indicator/ sub-indicator is tabulated below.

Table 3: RBI Methodology for assessment of D-SIBs		
Indicator	Sub-indicator	Weightage
Size (total exposure as defined for use in Basel III Leverage Ratio)	-	40%
Interconnectedness	Intra-financial system assets	6.67%
	Intra-financial system liabilities	6.67%
	Securities outstanding	6.67%
Substitutability	Assets Under Custody	6.67%
	Payments made in INR using RTGS and NEFT systems	6.67%
	Underwritten transactions in debt and equity markets	6.67%
Complexity	Notional amount of OTC Derivatives	6.67%
	Cross Jurisdictional Liabilities	6.67%
	Securities in Held For Trading and Available for Sale categories	6.67%

As can be seen from the table above, the sub-indicators and weightage assigned to these sub-indicators is different from the framework in BCBS methodology.

The definition of Size indicator and Interconnectedness indicator is same as that in BCBS framework. Within the Substitutability indicator, the definition of payments activity has been more elaborately defined to include RTGS and NEFT systems. Within the Complexity indicator, Level 3 assets have been replaced with Cross Jurisdictional Liabilities. The separate Cross Jurisdictional Activity indicator in BCBS methodology has been done away with.

Apart from definitional changes, changes have been made with respect to weightage assigned to different indicators/ sub-indicators. The Size indicator has been allotted 40% weightage in RBI framework instead of

25% weightage in BCBS methodology. The reason for this modification is that for a domestic economy, size as a factor is far more challenging to handle in case of failure of a large bank. Thus, Size has been taken as a more important indicator from a systemic risk point of view as compared to other indicators.

The annual assessment for identifying D-SIBs would be performed every year in July, taking into account the data for the year ending March.

Based on the overall score for each bank, calculated by taking the weighted average of the scores of each of the indicators, banks passing a particular threshold value for the buckets, would be assigned to different buckets.

Similar to BCBS framework, RBI framework for identifying D-SIBs also has 5 buckets with different prescription for

additional CET1 requirement as a percentage of RWAs. And like BCBS framework, here also the highest bucket, bucket 5 is to be kept empty initially. This is to incentivize banks with high D-SIB score to not increase their scores further. If the 5th bucket gets filled, an additional 6th bucket would get added to the entire framework.

In case of foreign banks having presence in India, they have to maintain additional CET1 capital in accordance with the additional capital surcharge on the parent

G-SIB. In case both the parent being a G-SIB and legal body in India being a D-SIB, a higher rate of capital surcharge has to be maintained in India.

This additional CET1 requirement is in addition to the Capital Conservation Buffer as defined in Basel III norms of capital adequacy. The implementation of additional capital surcharge in the form of CET1 requirement would be implemented in the following phased manner.

Bucket	April 1, 2016	April 1, 2017	April 1, 2018	April 1, 2019
5 (Empty)				
4	0.20%	0.40%	0.60%	0.80%
3	0.15%	0.30%	0.45%	0.60%
2	0.10%	0.20%	0.30%	0.40%
1	0.05%	0.10%	0.15%	0.20%

Based on the above framework and bucketing system, RBI in August 2015⁵ came out with a list of D-SIBs where State Bank of India was put in bucket 3 with 0.6% additional CET1 capital requirement and ICICI Bank was put in bucket 1 with 0.2% additional CET1 capital requirement. This additional CET1 capital requirement would be implemented in a phased manner as per Table 4 given above.

4. Argument for More Number of D-SIBs and Higher Capital Surcharge

The RBI framework for identifying D-SIBs is elaborated in the above section. As mentioned, RBI recently came up with the first list of two (2) banks identified as D-SIBs based on the data for the position as on March 31, 2015. SBI was placed in bucket 3 with 0.6% additional CET1 capital requirement and ICICI Bank was put in bucket 1 with 0.2% additional CET1 capital requirement.

This paper argues that in future exercises, this list of D-SIBs should be expanded to include more banks based on systemic impact score and the capital surcharge requirement should be increased for all the buckets in order to reach the basic goal of having D-SIB framework, i.e. protection of depositor interest, more effectively.

Firstly, let us look at the criteria used by RBI to select the sample of banks for which the systemic impact

score is to be calculated. As mentioned in the section above, banks having their size, as measured by Basel III Leverage Ratio exposure measure, more than 2% of GDP at market price are selected in the sample for which the systemic impact score is to be calculated.

Now we have taken the data on GDP at market prices for the period 2007 to 2015 as this is the period in which the effect of global financial crisis began. For comparing the GDP at market prices with the Size of the banks, we need Basel III Leverage Ratio exposure measure. But since the data about Off-balance sheet items is not available in public domain, for computation purpose, we have taken the On-balance sheet Total Assets of the banks.

Since only the On-balance sheet Total Assets are compared with GDP values, it would give fewer number of banks with Size meeting the eligibility criteria. If the Off-balance sheet assets are also added, more number of banks would meet the criteria. Still, on a conservative basis, we take the number of banks which meet the criteria, for which the systemic impact score is to be calculated, based on On-balance sheet Total Assets only.

The table below shows the banks which had Total Assets more than 2% of GDP at market price for different years from 2007 to 2015.

⁵See "RBI releases list of Domestic Systemically Important Banks (D-SIBs)" by RBI on August 31, 2015. Available at https://www.rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=34862.

Table 5: Banks with Total Assets more than 2% of GDP at Market Price (Rs. Crore)

Bank Name	2007	2008	2009	2010	2011	2012	2013	2014	2015
State Bank of India	5,66,565	7,21,526	9,64,432	10,53,414	12,23,736	13,35,519	15,66,261	17,92,235	20,48,080
Bank of Baroda	1,43,146	1,79,600	2,26,672	2,78,317	3,58,397	4,47,321	5,47,135	6,59,505	7,14,989
ICICI Bank Ltd.	3,44,658	3,99,795	3,79,301	3,63,400	4,06,234	4,73,647	5,36,795	5,94,642	6,46,129
Bank of India	1,41,637	1,78,830	2,25,502	2,74,966	3,51,173	3,84,535	4,52,603	5,73,190	6,18,698
Punjab National Bank	1,62,423	1,99,020	2,46,919	2,96,633	3,78,325	4,58,194	4,78,877	5,50,420	6,03,334
HDFC Bank Ltd.	91,236	1,33,177	1,83,271	2,22,459	2,77,353	3,37,910	4,00,332	4,91,600	5,90,503
Canara Bank	1,65,961	1,80,529	2,19,646	2,64,741	3,35,945	3,74,160	4,12,343	4,91,922	5,48,001
Axis Bank Ltd.	73,257	1,09,578	1,47,722	1,80,648	2,42,713	2,85,628	3,40,561	3,83,245	4,61,932
Union Bank of India	1,02,678	1,23,992	1,60,976	1,95,162	2,35,984	2,62,214	3,11,861	3,53,781	3,81,616
IDBI Bank Limited	1,03,839	1,30,694	1,72,402	2,33,572	2,53,377	2,90,837	3,22,769	3,28,997	3,56,031
Central Bank of India	93,008	1,23,956	1,47,655	1,82,672	2,09,757	2,29,800	2,68,130	2,89,496	3,11,940
Syndicate Bank	89,277	1,07,132	1,30,256	1,39,051	1,56,539	1,82,468	2,15,122	2,51,861	3,03,135
Indian Overseas Bank	82,257	1,01,860	1,21,073	1,31,096	1,78,784	2,19,648	2,44,656	2,74,905	2,85,637
UCO Bank	74,864	89,795	1,11,664	1,37,319	1,63,398	1,80,498	1,98,651	2,39,125	2,45,917
Oriental Bank of Commerce	73,936	90,705	1,12,583	1,37,431	1,61,343	1,78,130	2,00,697	2,20,303	2,30,514
Allahabad Bank	67,664	82,939	97,648	1,21,699	1,51,286	1,82,935	2,04,373	2,20,434	2,27,096
Total Assets of Banking System	34,63,903	43,26,979	52,41,304	60,26,274	71,85,529	83,00,481	95,74,276	1,09,65,320	1,20,36,450
GDP at market price	49,87,090	56,30,063	64,77,827	77,84,115	90,09,722	88,32,012	99,88,540	1,13,45,056	1,26,50,000
2% of GDP at market price	99,742	1,12,601	1,29,557	1,55,682	1,80,194	1,76,640	1,99,771	2,26,901	2,53,000

(Source: Balance Sheet of Banks for the respective years; Central Statistical Office)

The shaded banks are the ones which have Total Assets more than 2% of GDP at market price for that particular year. It can be seen that some of the banks have constantly had Total Assets more than 2% of GDP at market prices whereas some other banks meet the criteria for some particular years.

It is seen that eight (8) banks met the criteria in 2007, which increased to a peak of sixteen (16) banks in 2012 and then has declined to thirteen (13) banks in 2015. The reason for increase in number of banks meeting the criteria from 2007 to 2012 can be attributed to lower growth in GDP during the period.

It is seen that eight (8) banks have always met the criteria for all the years. These banks are State Bank of India, Bank of Baroda, ICICI Bank Ltd., Bank of India, Punjab National Bank, Canara Bank, Union Bank of India and IDBI Bank Limited.

The thirteen (13) banks which meet the criteria for the year 2015 are tabulated below along with their percentage share in Total Assets as well as their

percentage share in Total Deposits and their percentage share in Total Gross Advances. Total Deposits tell us about the liability faced by a bank. It is the total amount that a bank would have to pay when there is a run on the bank. Gross Advances, on the other hand, gives us an idea about the assets of a bank from lending point of view, i.e. the money it is expected to receive for the loans it has given out.

Table 6: Percentage Share of Banks for Important Metrics

Bank Name	Total Assets	% of Banking System	Total Deposits	% of Banking System	Gross Advances	% of Banking System
State Bank of India	20,48,080	17.02	15,76,793	16.71	13,35,424	17.66
Bank of Baroda	7,14,989	5.94	6,17,560	6.54	4,37,280	5.78
ICICI Bank Ltd.	6,46,129	5.37	3,61,563	3.83	3,98,962	5.28
Bank of India	6,18,698	5.14	5,31,907	5.64	4,11,727	5.44
Punjab National Bank	6,03,334	5.01	5,01,379	5.31	3,92,422	5.19
HDFC Bank Ltd.	5,90,503	4.91	4,50,796	4.78	3,67,888	4.86
Canara Bank	5,48,001	4.55	4,73,840	5.02	3,34,947	4.43
Axis Bank Ltd.	4,61,932	3.84	3,22,442	3.42	2,84,009	3.76
Union Bank of India	3,81,616	3.17	3,16,870	3.36	2,62,757	3.47
IDBI Bank Limited	3,56,031	2.96	2,59,836	2.75	2,15,792	2.85
Central Bank of India	3,11,940	2.59	2,55,572	2.71	1,94,967	2.58
Syndicate Bank	3,03,135	2.52	2,55,388	2.71	2,05,804	2.72
Indian Overseas Bank	2,85,637	2.37	2,46,049	2.61	1,79,041	2.37
Banking System	1,20,36,450		94,37,111		75,61,984	

(Source: Balance Sheet of Banks for 2015)

As can be seen, State Bank of India has around one-sixth share in Total Assets, Total Deposits as well as Gross Advances. While ICICI Bank, the other bank identified by RBI in the annual exercise for assessment of D-SIBs in 2015, is third in the list in terms of Total Assets, 7th in terms of Total Deposits and 4th in terms of Gross Advances.

As per RBI assessment for identifying D-SIBs, ICICI Bank has come in bucket 1 while other banks with higher Total Assets, much higher Total Deposits and higher Gross Advances have not come in any bucket. A

possible reason for the same may be that Size comprises only 40% of the total systemic impact score while there may be other factors related to Interconnectedness, Substitutability and Complexity, in which the other Public Sector Banks (PSBs) such as Bank of Baroda, Bank of India and Punjab National Bank are not very active.

By looking through individual elements of D-SIB framework for these three indicators, it may be seen that most of the indicators such as OTC Derivatives, Held for Trading and Available for Sale securities, Assets under Custody, Securities Financing Transactions and

Underwritten transactions fall under 'non-conventional' banking practices whereas most of the PSBs are involved in 'conventional' banking services.

These differences in business strategy have meant that some of these PSBs may have low systemic impact score due to low scores in Interconnectedness, Substitutability and Complexity indicators, despite having higher scores in Size indicator.

But going by the history and traditions of banking services in India, most of the 'non-conventional' services form a very low part of the total banking services provided by major banks. This can be verified by the share of non-interest income in total income of banks *vis-à-vis* the interest income share. The percentage share of interest income and non-interest income in total income for the above thirteen (13) banks for the years 2013 to 2015 are shown below.

Bank Name	Interest Income as % of Total Income			Non-Interest Income as % of Total Income		
	2013	2014	2015	2013	2014	2015
State Bank of India	88.18	88.02	87.1	11.82	11.98	12.9
Bank of Baroda	90.65	89.72	90.71	9.35	10.28	9.29
ICICI Bank Ltd.	82.76	80.9	80.13	17.24	19.1	19.87
Bank of India	89.44	89.83	91.12	10.56	10.17	8.88
Punjab National Bank	90.86	90.43	88.72	9.14	9.57	11.28
HDFC Bank Ltd.	83.65	83.86	84.34	16.35	16.14	15.66
Canara Bank	91.53	90.96	90.58	8.47	9.04	9.42
Axis Bank Ltd.	80.58	80.54	80.92	19.42	19.46	19.08
Union Bank of India	90.78	91.23	90.11	9.22	8.77	9.89
IDBI Bank Limited	88.62	89.93	87.54	11.38	10.07	12.46
Central Bank of India	92.91	92.7	93.31	7.09	7.3	6.69
Syndicate Bank	93.58	93.36	91.11	6.42	6.64	8.89
Indian Overseas Bank	91.29	91.27	91.8	8.71	8.73	8.2
Banking System	88.65	88.22	87.68	11.35	11.78	12.32

(Source: Income Statement of Banks for the respective years)

As can be seen from the table above, the share of non-interest income in total income for Private Banks such as ICICI Bank, HDFC Bank and Axis Bank is much higher as compared to PSBs. This non-interest income comes mainly from fee income on derivatives and other transactions and also from custodian activities and treasury activities. These categories fall under the 'non-conventional' banking services under the three indicators of Interconnectedness, Substitutability and Complexity.

The whole purpose of formulating G-SIB and subsequently D-SIB methodologies was to protect depositors from such a situation when the banks do not have enough money to pay them back due to stress in

income flow. The additional capital surcharge is put in place to take care of a situation when the loss of income in banks does not result in banks defaulting on their liabilities.

For most of the major global banks, as identified by FSB and shown in Appendix 1 below, majority income flow comes from 'non-conventional' banking services and thus BCBS methodology had assigned equal weightage to Size indicator as it had to other indicators, namely, Interconnectedness, Cross-Jurisdictional Activities, Substitutability and Complexity.

But in India less than 50% population has bank accounts and the country accounts for 21% of the total unbanked

population in the World. Considering this and the nature of banking services provided by PSBs, which have a huge share in banking services in India, Size ought to have an even higher weightage in the D-SIB framework.

After all, additional capital surcharge would be used for protection of depositors, who in a country like India, are mostly people with a basic savings account. RBI website mentions that “The Reserve Bank’s overarching concern while supervising any financial entity is protection of depositors’ interest.” So if the weightage of Size indicator, which is primarily concerned with ‘conventional’ banking services, is increased, greater number of PSBs would have systemic impact score more than the threshold used by RBI for determining D-SIBs. These PSBs could possibly be Bank of Baroda,

Bank of India and Punjab National Bank, which together form 16.09% of the Total Assets in Indian banking system, 17.49% of Total Deposits and 16.42% of Gross Advances. Higher capital surcharge in respect of these banks would mean additional protection to everyday depositor, which ultimately was the goal behind G-SIB and D-SIB frameworks.

Regarding the quantum of additional capital surcharge for various brackets, a comparison between the capital surcharge under BCBS G-SIB framework and RBI D-SIB framework is tabulated below, and shows that even the highest capital surcharge under RBI D-SIB framework for bucket 4 is lower than the lowest capital surcharge under BCBS G-SIB framework.

Table 8: Capital Surcharge Comparison between BCBS Framework and RBI Framework

Bucket	Loss absorbency requirement under BCBS Framework	Loss absorbency requirement under RBI Framework
5	3.50%	
4	2.50%	0.80%
3	2.00%	0.60%
2	1.50%	0.40%
1	1.00%	0.20%

Considering that Indian banks, especially PSBs, have low levels of capital position, just meeting the minimum regulatory requirement in case of some banks, this capital surcharge level may not be enough. The asset quality levels of Indian PSBs has been degrading since the financial crisis and in an event of default by a large number of borrowers, the additional capital surcharge prescribed by RBI currently, may not be enough to fully protect the interest of depositors. Thus to have sufficient amount of assurance about reaching the desired goal of framing the G-SIB and D-SIB guidelines, i.e. protection of depositor money by requiring banks to bring in high quality additional capital, the RBI framework should be modified to have capital prescription quantum similar to BCBS Framework.

5. Conclusion

After the 2008 financial crisis, BCBS had come out with a framework for identifying G-SIBs after G-20 leaders had given this mandate to BCBS. This framework

was based on five (5) broad indicators of Size, Cross-Jurisdictional Activities, Complexity, Substitutability and Interconnectedness. Additional capital surcharge is imposed on these banks in order to protect depositor interest in case of sharp decline in cash flows for banks. On similar lines, RBI too came out with a framework for identifying D-SIBs. RBI in August 2015 came out with the first list of two (2) D-SIBs. But considering unique situations related to Indian banking system, this paper argues that the weightage given to Size indicator should be increased in RBI Framework, so that more number of Public Sector Banks may be identified in the future lists of D-SIBs. Also, this paper argues that as Indian banks already have a low level of capital position, and the capital surcharge as per RBI Framework ranging from 0.2% to 0.8% may not be sufficient to reach the desired goal of G-SIB and D-SIB framework. The framework may be revised to be more in tune with G-SIB framework which has capital surcharge requirement from 1.0% to 3.5%.

Appendix 1: List of G-SIBs by FSB (November 2015)

Bucket	G-SIBs in alphabetical order within each bucket
5 (3.5%)	(Empty)
4 (2.5%)	HSBC
	JP Morgan Chase
3 (2.0%)	Barclays
	BNP Paribas
	Citigroup
	Deutsche Bank
2 (1.5%)	Bank of America
	Credit Suisse
	Goldman Sachs
	Mitsubishi UFJ FG
	Morgan Stanley
1 (1.0%)	Agricultural Bank of China
	Bank of China
	Bank of New York Mellon
	China Construction Bank
	Groupe BPCE
	Groupe Crédit Agricole
	Industrial and Commercial Bank of China Limited
	ING Bank
	Mizuho FG
	Nordea
	Royal Bank of Scotland
	Santander
	Société Générale
	Standard Chartered
	State Street
	Sumitomo Mitsui FG
	UBS
	Unicredit Group
Wells Fargo	





Funding Infrastructure: A Closer Look at the Financial System Structure of India

 **Shromona Ganguly***

Introduction: Developing infrastructure lies at the core of any strategy for achieving sustainable economic growth of a country. Economists have described infrastructure as a key ingredient for both growth and productivity since the time of Adam Smith. According to the World Development Report, 1994, the adequacy of the infrastructure of a country is a major determinant of the country's success in diversifying production, expanding trade, coping with population growth, reducing poverty, or improving environmental conditions.

However, financing investment projects remains a key challenge for countries across the world and developing countries in particular, mainly due to their limited ability of public spending and relatively underdeveloped financial markets. Investment in infrastructure is different from any other investment, due to three key reasons; i) these investments are lumpy in nature and involve uncertainty due to long gestation period ii) investment in infrastructure involves externality and coordination with multiple stakeholders, including government and regulators iii) large infrastructure projects often involve significant environmental and social risk. Due to its unique nature, investment in infrastructure involves a crucial role of Government.

Notwithstanding, private participation in infrastructure development has increased significantly worldwide during the last decade due to increased usage of innovative project management techniques. Another factor that contributed to the upsurge of private investment in infrastructure is increased participation by pension funds, mutual funds, exchange-trade funds, insurance funds, private equity funds, hedge funds and sovereign wealth funds in financial systems across the

globe (World Bank, 2012). However, despite having great potential, private sector financing remains highly volatile to financial crises and is concentrated in a few sectors and countries. This, in turn, has widened the disparity of infrastructure development between the middle income countries (MICs) and the low income (LICs) countries. The MICs have a developed financial system and a wide range of investors. As a result, these countries have attracted huge private capital in infrastructure during recent times. In contrast, the share of private investment in infrastructure is abysmally low in LICs. Hence, financing infrastructure remains as one of the greatest challenge for these countries.

The interconnectedness of financial systems and the adoption of global regulatory practices and capital accords have been a key driving force behind changing pattern of infrastructure finance in developing countries during recent years. Though the association between financial system structure and investment flow to infrastructure has become even more visible during recent years, there is a dearth of empirical research on this issue in the context of India. This paper provides an analysis of infrastructure investment in India, the key issues involved in funding infrastructure projects through the existing form of financial markets in India and concludes with key findings and policy implications drawn from the analysis.

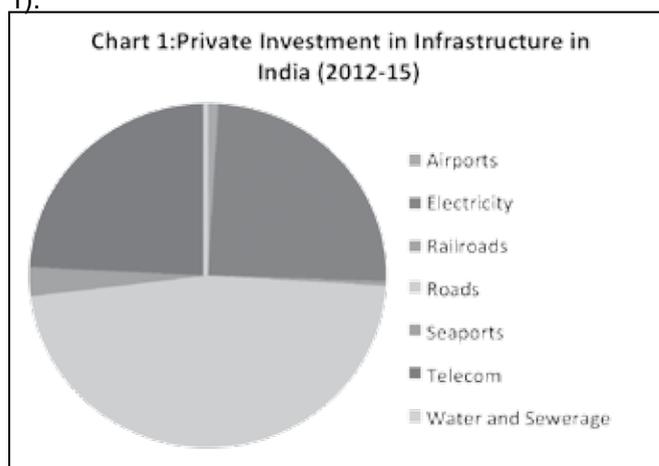
Financing Infrastructure in India: Some Highlights from the Working Group Report of 12th Five Year Plan (FYP) (2012-17)

The Working Group on Infrastructure, 12th FYP estimated a total amount of Rs 65 lakh crore investment requirements in infrastructure in real terms, to sustain a

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real GDP growth of 9 per cent. This is almost double the amount estimated during the eleventh plan. The sharp increase in estimated requirement of infrastructure investment is primarily due to the rise in urbanization and policy thrust to improve rural infrastructure in the country. Both these also entail greater reliance on budgetary support. The working group assumed fifty per cent of the total required investment in infrastructure to come from budgetary allocation.

Private investment in infrastructure during the period 2012-15 has been largely uneven across the sectors. Roads accounted for 47 per cent of total private investment to infrastructure during 2012-15, followed by electricity (25 per cent) and telecom (24 per cent). Compared to this, only 3 per cent of private investment went to seaports. Airports, railroads and water and sewerage accounted for less than 2 per cent of total private investment during the twelfth plan period (Chart 1).



Source: Private Participation in Infrastructure Database, World Bank

As per the projections envisaged by the working group, debt financing will continue to play a major role in financing infrastructure in India. Out of the remaining ₹32,50,000 crores of infrastructure investment to be financed privately, almost 41 per cent will be debt financed while equity and FDI financing is estimated at around 14 per cent. Within debt financing, commercial banks play the major role by accounting 55 per cent of

total debt. Taken together, the debt and equity market (including FDI) in India will be able to fund 55 per cent of the requirement left to be financed by private sources. Accordingly, the funding gap in infrastructure investment works out to be ₹14,60,875 crore (22.5 per cent) of total requirement in India (Table 1).

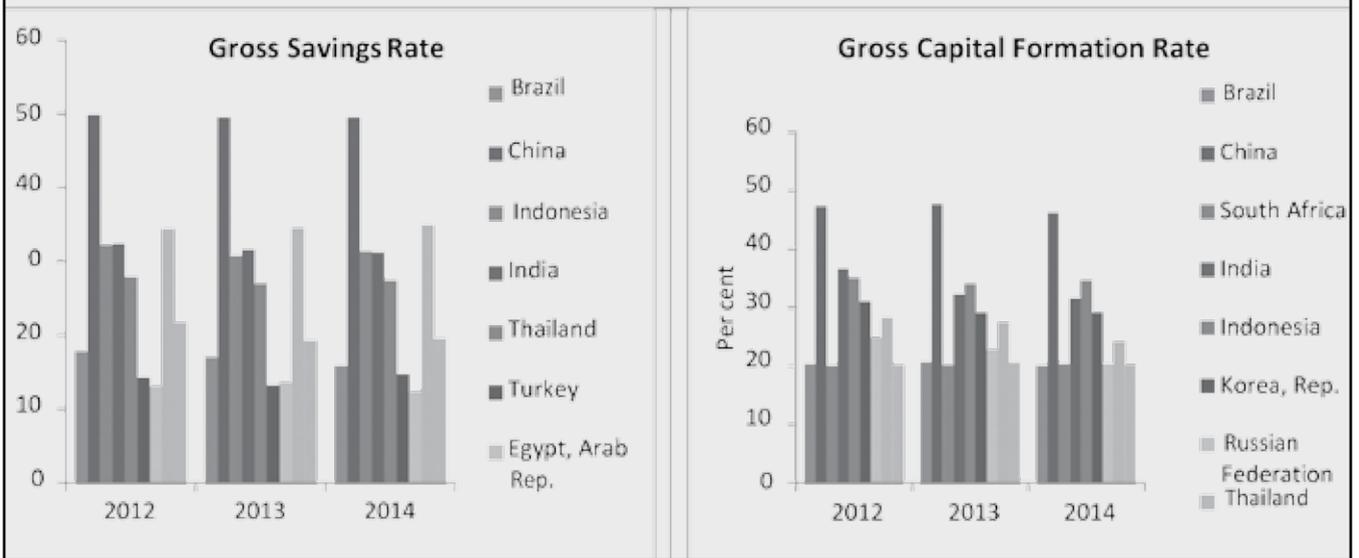
Instrument	Amount (₹ crore)	Per cent to total requirement
Equity and FDI	4,55,414	7.01
Debt	13,33,711	20.52
Commercial banks	7,43,511	11.44
IFCs	3,84,477	5.92
ECBs	54,957	0.85
Insurance funds	1,50,766	2.32
Total (debt and equity)	17,89,125	27.53
Total Requirement	65,00,000	100.00
Budgetary support	32,50,000	50.00
Funding Gap	14,60,875	22.48

Source: Working Group Report of 12th Five Year Plan

A critical question drawing the attention of policymakers is how to address this financing gap in infrastructure? The working group itself mentions the budgetary support of ₹32,50,000 crore to be “quite large” and hence, in the case of further fiscal consolidation adopted by the government, the possibility of a bigger deficit in infrastructure financing looms large.

An analysis of comparable countries in terms of infrastructure investment as proportion of GDP reveals that India’s savings rate remains at quite a high level compared to some of these countries (Chart 2). Hence, what lies at the core of the problem of infrastructure financing deficit in India is not the inadequacy of domestic savings, rather lack of financial intermediation and shallow investors base causing inadequate flow of funds to the infrastructure sectors.

Chart 2: Savings and Capital Formation (as per cent of GDP): Various Countries



Source: World Bank.

The dearth of financial intermediation to channelize the domestic savings in productive sectors is also evident if we look at the financial savings of the household sector. During the last three years, close to 60 per cent of total household savings was channelised in the physical asset class. Financial savings constitutes only around 30 per cent though this proportion has increased in most recent years. The risk-averse nature of Indian households is also visible if we look at the further breakup of financial savings by the household sector.

The bulk of financial savings of Indian households is in the form of bank deposits (56.6 per cent), life insurance funds (16 per cent) and provident/pension funds (11.7 per cent). As against this, a meagre 3 per cent of total household savings were kept on the capital market. This savings pattern clearly points towards a limited domestic retail investor base in the capital market of India, which partially acts as a deterrent to the potential domestic savings flow to infrastructure (Chart 3 and Table 2).

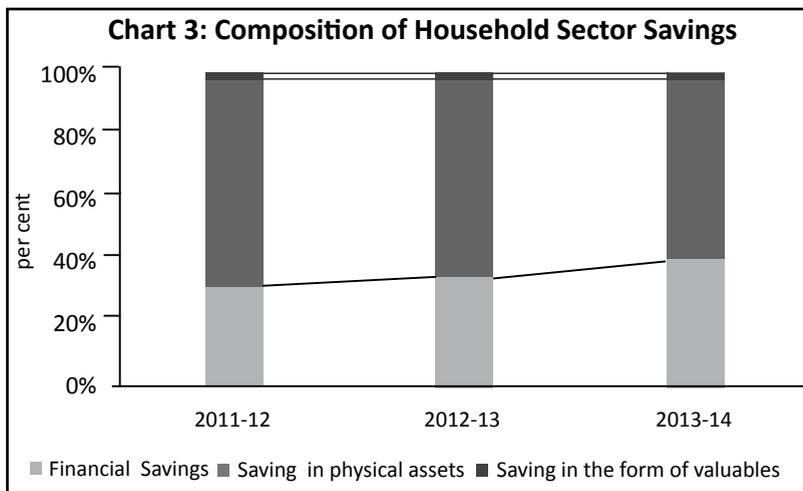


Table 2: Financial Savings of the Household Sector

Item	Per cent to Gross Financial Saving				₹ billion			
	2010-11	2011-12 (R)	2012-13 (R)	2013-14 (P)	2010-11	2011-12 (R)	2012-13 (R)	2013-14 (P)
1	2	3	4	5	6	7	8	9
A. Change in Financial Assets (Gross Financial Saving)	100.0	100.0	100.0	100.0	10,518	9,215	10,437	11,741
a. Currency	13.0	11.5	10.7	8.7	1,371	1,062	1,116	1,018
b. Deposits	49.9	59.1	56.6	58.8	5,248	5,445	5,906	6,908
i) With Commercial Banks	46.5	53.4	51.1	53.1	4,886	4,923	5,338	6,233
ii) With Cooperative Banks and Societies	3.0	3.6	3.9	4.2	311	336	412	489
iii) With Non-banking Companies	0.5	2.0	1.5	1.6	51	186	157	185
iv) Trade Debt (Net)	0.6	0.5	0.3	0.4	68	45	32	48
c. Shares and Debentures	-0.4	-0.3	4.1	2.9	-43	-28	430	337
of which :								
i) Private Corporate Business	0.6	0.4	0.4	0.3	68	41	44	31
ii) Banks	0.1	0.0	0.1	0.0	8	1	7	5
iii) Bonds of Public Sector Undertakings	0.1	0.0	0.0	0.8	8	1	2	92
iv) Mutual Funds (including UTI)	-1.1	-1.2	3.4	1.8	-116	-106	350	210
d. Claims on Government	2.7	-2.4	-0.8	0.4	287	-219	-83	46
i) Investment in Government securities	0.0	0.1	0.0	0.0	3	5	5	4
ii) Investment in Small Savings, etc.	3.4	-2.4	-0.7	0.6	361	-218	-73	75
e. Life Insurance Funds	20.0	21.3	17.3	17.0	2,101	1,958	1,803	1,996
of which :								
i) Life Funds of LIC and private insurance companies	19.9	21.2	17.2	16.6	2,095	1,955	1,800	1,943
f. Provident and Pension Funds	13.4	10.3	11.7	11.6	1,410	949	1,223	1,359
B. Change in Financial Liabilities					2,804	2,870	3,213	3,555
C. Net Financial Saving of Household Sector (A-B)					7,713	6,345	7,224	8,186

R: Revised Estimates. P: Preliminary Estimates.
Note : Components may not add up to the totals due to rounding off.

Source: Annual Report, Reserve Bank.

Financial System Structure of India: The Gradual Evolution

On comparing the financial system structure of India with other countries, we see that India has done fairly well in terms of banking sector development. This is evident from the fact that financial system's deposit to GDP ratio of India is amongst the highest when compared with other lower-middle income countries. In India, the bulk of the deposits is absorbed by the banking sector. The soundness of banking sector in India is also captured by the higher Z-score compared to other countries, indicating a fairly high degree of stability in the banking sector in India¹. However, in terms of deepening of

other segments of financial markets, India remains at a lower end compared with even some of the low income countries. The two major indicators of stock market development, i.e., stock market capitalization to GDP and total value traded in the stock market to GDP stood at 68.66 per cent and 46.88 per cent respectively for India, lower than that China, South Africa, and Thailand and to some extent, Philippines. We get a mixed picture on comparing the life and non-life insurance penetration in India as compared to other countries. Life insurance sector penetration in India is significant though the non-life insurance penetration, captured by the premium (non-life) to GDP ratio of India remained one of the lowest even among the lower- middle income countries (Table 3).

¹ The Z-score is defined as the ratio of return on assets plus capital-asset-ratio to the standard deviation of return on assets. It compares the buffers (capitalization and returns) with the potential for risk (volatility of returns). Thus, a higher z-score indicates greater stability of the banking system.

Table 3: Comparing Financial System Deepening across Countries.

	Financial systems deposit to GDP rato	Bank Deposits to GDP	Bank Z score	Stock market total value traded to GDP	Stock market capitalization to GDP	Life insurance premium to GDP	Non-life insurance premium to GDP
Upper Middle Income Countries	53.2172	53.1634	15.0405	16.7268	43.2620	1.1821	1.2011
Brazil	50.3569	50.3569	19.6112	38.8328	58.3346	1.3940	1.0250
Chile	39.7411	39.7411	35.7268	22.7936	126.2846	2.2440	1.3960
China	49.9152	49.9152	19.5948	112.4194	58.7415	2.0620	0.9790
Colombia	19.2922	19.2922	6.4161	7.6613	62.8183	0.9610	1.1190
Thailand	99.6694	99.6694	6.2983	67.2344	81.6932	3.0740	1.1310
Turkey	46.7324	46.7324	5.2770	50.9274	30.9959	0.2080	0.8810
Mexico	25.1977	25.1977	18.0634	9.5490	37.4429	0.8620	0.7880
South Africa	59.1305	59.1305	9.3851	88.9578	145.2294	9.6140	1.5460
Lower Middle Income Countries	38.4475	38.4475	18.2366	6.3168	28.3571	0.4704	0.7904
India	61.9865	61.9865	40.1895	46.8846	68.6668	3.1480	0.3840
Indonesia	31.9916	31.9916	3.0052	16.1525	45.0337		
Sri Lanka	31.6029	31.6029	14.1802	7.0335	33.8166		
Philippines	51.2654	51.2654	24.7541	13.6121	73.9011	0.8790	0.4840
Nigeria	29.6810	29.6810	3.6164	1.8107	17.3039		
Bolivia	41.4029	41.4029	9.1836	0.0546	15.8462	0.2480	0.7260
High-income nonOECD member	92.7895	92.4889	19.0764	69.7245	88.2646	2.5541	1.4152
High-income OECD members	101.5829	101.5829	13.8219	51.7211	62.1627	3.2048	2.1303

Source: Compiled from Financial Development and Structure Dataset (2013), World Bank

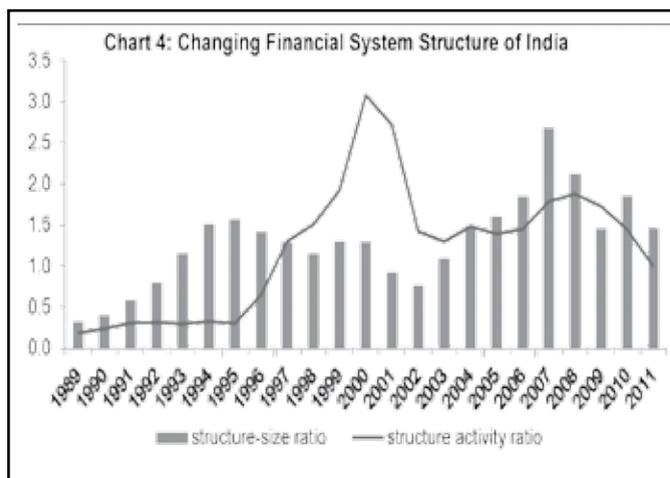
Typically, financial systems observed in countries around the world can be broadly classified into two groups; The Anglo-Saxon pattern of market-based system with developed capital markets and bank-dominated financial systems observed in Germany and Japan. In the empirical literature on cross-country evidence of finance and growth, there are various methodologies adopted by past researchers to classify a country's financial system into the two main variants. According to Levine (2012), the structure is determined by analysing the relative depth, access, efficiency and stability of the banking system of a country *vis-à-vis* its capital markets. A more precise methodology has been followed by Beck and Levine (2009) in analysing financial system structure. According to them, the two important ratios that are useful in understanding the relative development of markets versus banks in a country are structure-size ratio and structure-activity

ratio. Structure-Size equals Stock market capitalization to GDP divided by bank credit to private sector to GDP while Structure-Activity equals stock market value traded to GDP divided by private bank credit to GDP. For both the indicators, a higher value indicates a more market-based financial system. While structure-size ratio focuses on the relative size of financial markets as compared with the banking system, the structure-activity ratio focuses mostly on measuring the relative liquidity in the two segments of a financial system.

In the case of India, the structure-size ratio increased significantly during the early years of liberalization, reflecting the booming stock market of India during those years. The slowdown in Indian stock market in the later part of 90's is also captured by this ratio that exhibited a declining trend during the period 1995-1998. The stock market boomed in the subsequent years and again slowed down during the post-crisis period (2007

onwards). As expected, this ratio showed a similar trend as that of the market capitalization ratio.

On the other hand, the structure-activity ratio showed a somewhat different trend over the years. It is interesting to note that despite a slowdown in the stock market during late 90's, this ratio continued to increase during the same period, reflecting greater liquidity in the stock market. Since 1990 onwards, a steady increase in the structure-activity ratio continued till 2000-01, after which there was a very sharp and sudden fall in this ratio, triggered mostly by the stock market scam of 2001. The ratio again exhibited an increasing trend during 2005-2008 and slowed down in the post-crisis period. It is important to note that despite the somewhat volatile trend, both these indicators ended up with higher values in the recent years, compared to the 90's. This trend reflects the gradual evolution of capital markets in India since the liberalization (Chart 4).



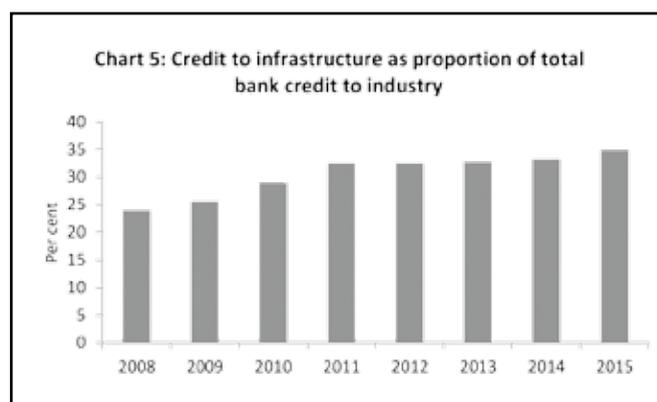
Source: (Same as Table 3) Compiled from Financial Development and Structure Dataset (2013), World Bank

Infrastructure Financing through Commercial Banks in India: a Behemoth too Heavy to Carry?

As analysed in earlier sections, infrastructure financing by banks till now constitutes a sizable proportion of total debt financing in India. During 2002-2008, total bank lending to infrastructure almost trebled (Lall and Anand, 2008). This could be partly attributed to the gradual

reduction in SLR and freeing up of funds for lending (Working Group on Infrastructure, 12th FYP). However, the two main issues involved in financing infrastructure through banks are i) such investments contribute to the growing asset liability mismatch of the Indian banking sector ii) increasing risk resulting from concentration in banks' credit portfolio. In addition, a third factor which further limits banks' ability to finance infrastructure is that many banks have already reached their sectoral exposure limit stipulated by the regulator.

Let us now look at some of the recent statistics on credit flow from commercial banks to the infrastructure sector. During the period 2008-15, total bank credit to infrastructure grew at a compounded annual rate of 28.5 per cent to reach Rs 9,245 billion at end-March 2015. Bank credit to infrastructure constitutes almost 38 per cent of total bank credit to industry as at end-March 2015, significantly higher compared to 24 per cent at end-March 2008 (Chart 5).



Source: Handbook of Statistics on Indian Economy, Reserve Bank

A closer look at the maturity profile of major assets as well as liabilities in the consolidated balance sheet of SCBs reveals that there are more short term liabilities in Indian banking system maturing within a year than that of assets maturing within the same period. More specifically, 46 per cent of the deposits and 53 per cent of the borrowings of the SCBs have

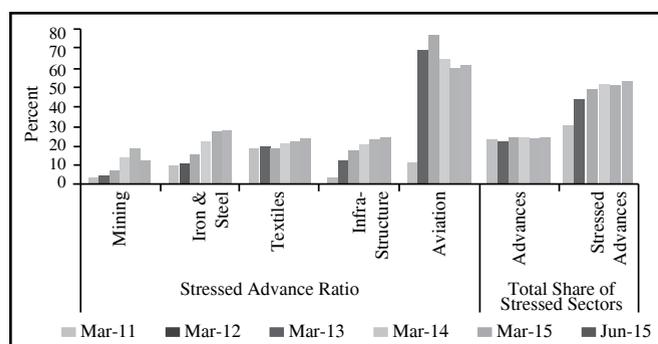
maturity within a year. As against this, 35 per cent of the total loans and advances and 27 per cent of total investments have maturity within a year (Table 4).

	1 - 14 days	15 - 28 days	29 days to 3 months	Over 3 months to 6 months	Over 6 months to 1 year	Over 1 year to 3 years	Over 3 years to 5 years	Over 5 years	Total
Loans and advances	51,08,457	17,54,801	70,01,017	52,24,981	66,60,349	281,01,562	78,37,673	123,51,286	740,40,128
	(6.90)	(2.37)	(9.46)	(7.06)	(9.00)	(37.95)	(10.59)	(16.68)	(100.00)
Investments	31,19,540	5,81,220	18,18,818	13,25,031	19,92,734	45,17,673	47,42,867	137,01,665	317,99,549
	(9.81)	(1.83)	(5.72)	(4.17)	(6.27)	(14.21)	(14.91)	(43.09)	(100.00)
Deposits	66,57,593	27,41,244	96,77,811	91,49,390	153,40,450	252,55,012	77,33,163	177,71,875	943,26,538
	(7.06)	(2.91)	(10.26)	(9.70)	(16.26)	(26.77)	(8.20)	(18.84)	(100.00)
Borrowings	22,13,302	4,24,036	12,31,620	10,40,069	11,80,471	18,47,984	12,73,939	21,71,520	113,82,940
	(19.44)	(3.73)	(10.82)	(9.14)	(10.37)	(16.23)	(11.19)	(19.08)	(100.00)

Source: Real Time Handbook of Statistics, Reserve Bank

Term deposits are considered to be the most stable form of deposits with the banking system. However, as at end-March 2014, close to 41 per cent of total term deposits with the banking system has a residual maturity of more than one year but less than 5 years. In contrast, most infrastructure projects take 8-10 years to complete and minimum 3-5 years to break-even. Clearly, banks' ability to fund infrastructure remains constrained given the maturity profile of its liabilities. Also, burgeoning non-performing assets in banks balance sheet further limits its ability to provide loans to this sector which is perceived as "risky". In recent times, infrastructure accounts for a major share of non-priority sector NPAs of the banks. The stressed advances ratio stood at 22 per cent for the infrastructure sector in June 2015 (Chart 6) (Lokare, 2014; Financial Stability Report, 2015, Reserve Bank).

Chart 6: Stressed Advances in Important Sectors



Source: Financial Stability Report, RBI

So far, banks have been dealing with this situation by annual interest rates and put/call options on the loans, thus passing the risk partly to the projects (Lall and Anand, 2009). However, most infrastructure projects

are inherently risky and thus pose a threat to the stability of the banking system. Also, Indian banking sector is predominated by many medium to smaller sized banks. Only two Indian banks (SBI and HDFC) feature on top 50 global banks in terms of market capitalization². For many smaller sized-banks, there is little scope to extend loan to infrastructure projects due to the prudential cap on sectoral exposure stipulated by the regulator. Unless new policy initiatives are envisaged regarding strengthening capital position of large banks, it would be unrealistic to assume the incremental investment in infrastructure to be mostly supported by banks in India.

Investment in Infrastructure by Non-bank Financial Companies

Large sized specialised NBFCs are an important source of financing infrastructure in India. Often these institutions have an edge over banks in assessing the risk of infrastructure projects due to their expertise in lending to this sector. However, the majority of NBFCs cannot accept public deposits.³ They rely on bank borrowing, debentures and commercial papers for funding. Following the tighter prudential norms introduced since 2007, bank lending to NBFCs attracts higher provisioning requirement. This has partially curbed bank lending to NBFCs and reduced their ability to lend for long gestation large projects.

Financing Infrastructure through Insurance Sector: Analysing the Risk Appetite

As described earlier, financial intermediation in India is predominated by the banks. While Indian banking sector has done fairly well in terms of both outreach and resilience, the other segments of financial markets in India remained relatively shallow, when compared with

² Business Standard, 17th January, 2015

³ NBFCs are classified into two broad categories: (a) Deposit taking NBFCs, and (b) Non-deposit taking NBFCs. As on March 31, 2015, there were 11,842 NBFCs registered with the Reserve Bank; out of which 220 were deposit-taking (NBFCs-D) and 11,622 were non-deposit taking (NBFCs-ND) entities.

some of the comparable countries. Within the capital market, though equity market has grown rapidly since the liberalization, debt market remained subdued. Likewise, insurance premium to GDP ratio for India remained low in general, and for non-life insurance in particular. In terms of insurance density, India ranks among the lowest of developing countries (IRDAI Annual Report, 2013-14, Chart I.3).

In addition to the low penetration of insurance business in India, the majority of investment by these companies

is kept with safe instruments like government bonds. Investment in central and state government securities as proportion of total investment stood at 57 per cent for Life insurance companies and 36 per cent for non-Life segment. It seems apparent that life insurance companies invest infrastructure projects only to meet the mandatory requirement for investment in the social sector (15 per cent). The non-life segment, however, invests 17.5 per cent in infrastructure projects, despite the statutory requirement for social sector investment being lower for them (10 per cent) (Charts 7 and 8).

Chart 7

TOTAL INVESTMENTS OF LIFE INSURERS : INSTRUMENT-WISE (As on 31 st March)				
(₹ crore)				
Investments from	31 st March 2013		31 st March 2014	
	Amount	Percentage	Amount	Percentage
Traditional Products				
1 Central Govt. Securities	5,12,180	36.52	6,04,651	37.19
2 State govt. and other Approved securities	2,65,989	18.97	3,33,951	20.54
3 Housing & Infrastructure	1,18,878	8.48	1,55,026	9.54
4 Approved Investments	45,6256	32.53	5,03,059	30.94
5 Other Investments	49,084	3.50	29,118	1.79
A. Total (1+2+3+4+5)	14,02,387	100.00	16,25,804	100.00
ULIP Funds				
6 Approved Investments	3,25,283	94.97	3,22,456	97.22
7 Other Investments	17224	5.03	9205	2.78
B. Total (6+7)	3,42,507	100.00	3,31,661	100.00
Grand Total (A+B)	17,44,894		19,57,466	

Chart 8

TOTAL INVESTMENTS OF NON-LIFE INSURERS : INSTRUMENT-WISE (As on 31 st March)				
(₹ crore)				
Pattern of Investments	2013		2014	
	Total	% to Fund	Total	% to Fund
Central Govt. Securities	30,658	24.93	35,877	25.66
State govt. and other approved securities	12,987	10.56	14,326	10.25
Housing and Loans to State Govt for Housing & FFE	10,275	8.35	12,742	9.11
Infrastructure Investments	18,997	15.45	24,544	17.56
Approved Investments	44,194	35.93	49,264	35.24
Other Investments	5,882	4.78	3,056	2.19
Total	1,22,992	100.00	1,39,809	100.00

Note: 1. Investments of ECGC and AIC of India have not been included.
2. FFE : Fire Fighting Equipment

Source (for charts 7 and 8): Annual Report, IRDAI, 2013-14

Apart from low penetration, the risk adverse nature of insurance companies further curtails the possibility of large scale funding from this sector towards infrastructure projects. However, this could be partially attributed to the extant regulations of the sector, which stipulates minimum credit rating for investment in debt instruments and dividend payout record for equity instruments. Often, private infrastructure projects lack required credit rating to attract funds from the insurance sector.

Financing of Infrastructure through Equity and External Commercial Borrowings

The major problem with equity financing of infrastructure in India is that the investor base remains shallow and risk-averse in nature. The penetration of private equity (PE) in India is quite low. Though during recent years, many PE investors have shown keen interest on India, complex rules on sell-down of equity as well as tax treatment of capital gains from unlisted projects inhibit the to take up infrastructure projects.

Tapping the global market for financing infrastructure projects remains a moot option for India, as often, private infrastructure projects lack the rating required to attract fund from the global market. Moreover, the restrictive cap on the interest rate for ECB introduced in 2007 further acts as an impediment to tap foreign funds for the sector.

Conclusion and Way Forward

Government assumes key role for creation of innovative “take out” arrangement

Going forward, rapid urbanization backed by active government policy initiatives of building smart cities as well as thrust on sanitization in rural areas would result in increased requirement of infrastructure investment. As analysed in the earlier sections, India does not have much policy room to accommodate the increased requirement of infrastructure spending through the traditional fund flow from the banking sector. The stressed asset ratio for infrastructure sector is already quite high against the bank lending that has already gone to the sector. Moreover, lending to infrastructure

could further exacerbate the already existing maturity mismatch in Indian banking sector. In this backdrop, maintaining even the existing proportion of debt financing of infrastructure through banks would require innovative take out arrangement. Be it refinancing infrastructure loans provided by banks or taking away such loans from their balance sheets and reengineering these to create financial instruments to suit the risk appetite of existing investors base, the government assumes a key role at this juncture.

National Investment and Infrastructure Fund (NIIF): Increased Equity Participation

The union budget of 2015-16 announced creation of the National Investment and Infrastructure Fund, which will be established as an Alternative Investment Fund (AIF), under the SEBI regulations. NIIF will have an initial corpus of ₹20,000 crore and it will infuse equity in infrastructure finance companies like National Housing Bank and Indian Rail Finance Corporation. The idea is that these infrastructure finance companies then can leverage the additional equity coming from NIIF and raise equity from the market. This would multiply the initial equity contribution of government through NIIF in the infrastructure sector. This innovative arrangement is expected to boost equity financing in the Indian infrastructure going forward.

Regulatory issues to be addressed in capital market and insurance sector

Turing to the capital and insurance markets, there are some key regulatory issues involved which hinder fund flow to infrastructure through these markets. First, the definition of “infrastructure” is not uniform across different agencies (Reserve Bank of India, income tax, Insurance Regulatory and Development Authority of India etc). This leads to confusion regarding tax treatment and other regulations. Secondly, listing of private infrastructure projects should be widened to make these attractive to investors by reducing information asymmetry and increasing liquidity. Thirdly, the tax treatment of unlisted Special Purpose Vehicles (SPVs) needs to be modified to make it at par with listed projects to attract investors in this segment.

Compared to banks, the insurance companies are more suited for funding infrastructure projects, as the liabilities of insurance companies are longer term in nature. However, in India, insurance penetration remains low and risk-averseness of insurance companies is reflected in their investment portfolio with significant proportion parked in government bonds. However, this limited risk appetite of insurance companies is partly attributed to the regulations prevalent in the insurance sector. This includes the stipulations as per the IRDA act on minimum

rating requirement of AAA for 75 per cent of investments excluding government bonds. Also, at present, investment in SPV, debentures of non-dividend private companies are not qualified as “approved instruments” in the insurance sector. Keeping in view the limited ability of banks to finance infrastructure projects, this calls for some modifications in the extant regulations governing investment of insurance companies. These measures, however, need to be complemented by policies to deepen other segments of the financial markets.

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Marketing and Sales Optimization through Deployment of Big Data Analytics in Indian Banking

 **Bibekananda Panda***

 **D. Rama Krishna Reddy****



Introduction

Data management has become a critical differentiator that separates market leaders from the rest. Today with the advancement of technology we are able to reap the benefits of Big Data. For example, retailers and banks are able to analyze behavioural pattern, changing tastes of customers' and able to provide personalized product offerings. Leveraging Big Data Analytics (henceforth BDA) leads to more confident decision making, which means greater operational efficiencies, cost and risk reductions for an organisation. In a hyper-competitive, customer-driven environment, banks must capitalise on internal as well as external data sources to gain an accurate understanding of customer, markets, products, services, channels, and competitors.

BDA is one of the fastest growing multi-billion dollar businesses today. The latest report of International Data Corporation (IDC) highlights that the Big Data technology and services market expect to reach USD 41.5 billion by 2018, nearly six times the growth of the overall IT market ¹.

BDA helps banks to drive tremendous contextual value across the entire customer lifecycle. It generates more targeted customer leads by looking beyond traditional structured datasets. Banking analytics is useful to change amorphous data to structured data and customer's life cycle to predict their next moves. Banks need to deepen their analytics capabilities to serve customers better. Analytics play a crucial role in adapting frequent regulatory norms and policies change.

Indian banks have made significant advancement in the operational area but are in nascent stage in analysing their own database. Though banks unanimously agree that managing and analysing big data is critical to their

success but till date some Indian banks are lagging in deploying the techniques. Those Indian banks which have penetrated BDA early have already enjoying the benefits.

BDA has its use in almost all the spheres of banking operations. It is seen to be rigorously getting used in compliance, risk management, fraud detection, customer delight, operations and execution, sales enhancement and cost reduction. Given a set of defined and undefined benefits offered by BDA, this paper intensively discusses the importance and usage of BDA in marketing and sales.

Under the Bancassurance model and cross-selling of investment products, banks are getting highly criticised among their customers for mis-selling. Each and every financial investment product (insurance, mutual fund etc.) is designed only after a deep research. But wrong pitching of these products result in loss of loyal and valuable customers and also hampering brand image of the banks. Most important challenge Indian banks facing today are cross-selling/ mis-selling. This paper highlights the use of BDA in overcoming the mis-selling issue. The study also gives a detailed analysis of BDA techniques that can be successfully implemented by Indian banks in marketing and sales success.

The paper is structured in the following way. Section 2 gives insight about sales and marketing issues faced by Banks and how BDA can help to resolve these issues. It also highlights the exact techniques in BDA to resolve the issue and how banks all over the world by utilising BDA techniques to enhance marketing efficiency and sales, increase in Return on Investment (ROI). These are explained through case studies in detail in this section. Present status of the adoption of BDA by Indian

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¹<http://www.idc.com/about/about.jsp>
Views are Personal

banks is explained in Section 3. Section 4 highlights the risks associated with using BDA in banking business and techniques to overcome those risks as well. Finally, the paper concludes with a brief discussion of the benefits of BDA and how Indian banks can optimally utilise it.

2.0 Big Data Analytics in Marketing and Sales

In marketing and sales, the main strategic goals are business expansion, sales amelioration, acquire new customers, and retain the existing ones. BDA examines large data sets containing a diversified data types to unearth hidden patterns, unknown correlations, market trends, customer preferences and other useful business information. The analytical findings of BDA would lead to more effective marketing, revenue generation, expected customer service, and enhanced operational competence, competitive edge over peer groups and other business benefits.

Banks generate humongous data such as purchase history including online transactions, customer profile data, browsing history, social media data on every single day. Using this information, banks can employ data analytics tools to reach effectively their main marketing objectives. Here we would highlight some of the usages of BDA in marketing and sales for a successful banking business. The broad classification of usage of BDA in marketing and sales can be classified as:

- (a) Sentiment Analytics
- (b) Customer 360
- (c) Customer Segmentation
- (d) Next Best Offer, and
- (e) Channel Journey

The deployment of BDA in all of these cases, in detail is elaborated below.

2.1 Sentiment Analytics (SA)

In social media, banks get access to large volume of unstructured data in the form of communications about brands, products and services. Customers' discussion, sharing, criticism or liking on different social platforms can easily be analysed through sentiment analytics. BDA prepares an executive summary of liking and disliking of products or services. Moreover, the reasons

backing these sentiments get easily extracted and used as valuable business insights. In more detail, sentiment analysis works resolving the issue as follows:

2.1.1 Monitoring customers' feedback in marketing

success: Sentiment analytics helps to analyse opinions about the products and services available on social media, blogs and review sites in text format. Text analytics algorithm (naïve Bayes) is the most successful analytics tool used to monitor customers' feedback. It analyses original comments and breaks them in groups as negative and positive sentiments. Later, scores are assigned accordingly in the ranges from highly negative (-1) to neutral (0) to highly positive (1). This scoring helps the bank to view the overall sentiment without having to read all the comments posted about their products or brand.

Case Studies:	
 BBVA BBVA	BBVA uses social media to determine the feelings of the customers about its brand and products. This helps to tweak marketing tactics to elicit positive feedback and achieve optimum customer satisfaction.
 NEDBANK Nedbank Ltd	Nedbank tracks various social media platforms on real-time basis to help marketing department in harvesting information about marketing campaign, customer preferences and complaints. Implementation of this strategy brought dual benefit for the Bank; significantly lowered social media monitoring cost and enhanced marketing success.

2.1.2 Identify key customers to boost word-of-mouth marketing:

A good product should ideally sell itself, but this still holds true to a certain extent as word-of-mouth recommendation is still the most trusted form of advertisement. Product awareness can rapidly be increased by targeting customers with high influence, and decision trees can be used to determine most important attributes of an influential customer, given such customers are known to the bank. In the absence

of such information, influence of customers in the social sphere can be determined by a combination of their reach and level of interaction they have with other people. Through link analysis and graph theory, banks get an accurate measure of reach by finding which customers act as nodes in the wider social network and accordingly every customer is assigned a leadership score, and high scoring leaders offered to try out new products, services or features to spread the product awareness or these customers may also be flagged for special attention.

2.1.3 Customer feedback in improving products and services: Traditional survey methods, used to get feedback of customers about products/ services offered by banks, were inherited with drawbacks of a small sample group. Today customers are freely giving feedback and product suggestions on social media. Naïve Bayes algorithm of BDA is an extremely popular method for classifying text and documents, and is well suited in finding positive and negative sentiments amongst a customer base. Once these sentiments are gathered, it is filtered based on product/service. The top 5-10 words that lead to negative or positive sentiment are extracted and these key words may provide insight on how the product/service can be improved.

Case Study:	
 Barclays	The mobile banking app launched by Barclays in 2012 did not allow young consumers under 18 to transfer or receive money. This led to a lot of negative comments from teenagers as well as from their parents in social media. Barclays derived actionable insights from real-time social media analytics and improved its app promptly allowing access to consumers of 16 years and above.

2.2 Customer 360

Banking space in India has undergone a dramatic change from an oligopolistic market to an almost perfectly competitive market. Customer is the king and knowing customer as a whole is important to stay ahead of competitors. Past and immediate behaviour of a customer is immensely important to predict her/his next course of action. Similarly, customers' transactions and their travel habits are also important to build their lifestyle profile and discover new insights. BDA uses such attributes to build a complete and holistic customer picture. Some of the areas, where BDA is used, are:

2.2.1 Identifying customer profile: Knowing individual profile of customers helps a bank to send out personalized marketing messages and a touch of personalization improves customer engagement, security and loyalty in the competitive environment. BDA classification algorithms, such as neural networks and decision trees can be used to determine, whether the customer is interested in a particular content? Logistic regression can be used to measure the probability that the customer will click a product advertisement. Together these algorithms provide powerful insights into how a customer will respond to a marketing message.

Case Studies:	
 HDFC Bank	HDFC Bank uses customer lifecycle events for credit card activations. The Bank sends personalized messages to each of the segments that it identifies. This has resulted in a significant increase in the number of credit card activations and a reduction in cost for acquisition of each customer.
 OCBC Bank	OCBC Bank by responding to a customer action, personal lifetime events and demographic profiles, has been able to achieve higher customer engagement.

2.2.2 Product engagement and detecting when a customer is about to leave: Identifying, where the customer is in a product lifecycle helps to build successful marketing strategy. This is done by classifying the total product lifecycle into three broad categories; acquisition, activation and relationship management. Nearest neighbour and linear regression are powerful tools on classifying the customers to product lifecycle stage by comparing them with their peers.

popular approach to predict when customers will leave.

Case Studies:	
 <p>The First Tennessee Bank</p>	<p>The Bank uses product lifecycle stages such as loyal, high value, apprehensive and wavering customers to name a few key segments. Re-engagement messaging is used for past high value customers who haven't been in contact with the Bank for a while. For loyal and engaged customers, VIP offers messaging is used.</p>
 <p>Bank Austria</p>	<p>Bank Austria makes use of BDA to retain customers. Specific behavioural pattern of the customers (like cancellation of a product) is detected and the Bank takes actions accordingly for a renewal.</p>

Cost of acquiring new customers is far greater than the cost of keeping the existing ones. Predicting churning customers forms a crucial part of an organisations customer orientated strategy. By analysing attrition related indicators, including cancellation of automatic payments, complaints on customer care or on social media, proper customer churn can be identified before it is too late. Decision tree approach is a widely used and a churn score or a probability that a customer is likely to churn is established. Survival analysis is another

Case Studies:	
 <p>American Express</p>	<p>Amex is using predictive models to analyse historical transactions and nearly 115 variables to predict customer churn. It has achieved huge success in its Australian operation.</p>
 <p>Tatra Bank</p>	<p>Tatra Bank segmented its customers and selected highly personalized retention campaigns for customer groups. It claims to have achieved target of lessening customer churn from credit card holders by 30 percent with the use of predictive models.</p>

2.3 Customer Segmentation

Customer segmentation is defined as classifying customers into natural groupings that share similar characteristics. Understanding these groups is necessary for successful sales and marketing strategy. It helps to see the existing customer base in new ways, which creates unique business opportunities. BDA facilitates to create these segments faster.

2.3.1 Designing marketing programs: Targeting the right customer groups with the right offers significantly improves marketing effectiveness. BDA does this by creating customers groups based on lifestyle, life stage and special events. This allows for new and more representative cohorts of a customer base that reveals the needs with greater accuracy and helps the marketing team to design more personalized marketing programs. K-means clustering algorithm is the most effective BDA technique.

Case Studies:	
 <p>Bank of America</p>	<p>With proper segmentation, the Bank increased the conversion rate. Using BDA, it realised the mistake in its marketing message and changed it from "Use the value of your home to send your kids to school" to "Use the value of your home to do what you always wanted to do".</p>

 BBVA	To pitch right product to the right customer, the Bank makes use of understanding the customer lifecycle. It groups the customers according to their life stages; bachelor, married, self employed, professionals, young families and retirees for appropriate marketing message.
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a classification algorithm such as a decision tree is used to assign customer prospects to one of the clusters.

Case Study:	
 Fifth Third Bank	BDA is used for product pricing engine to acquire new customers. It runs scenarios on how various price points will influence its customer acquisition and deposit levels. It predicts price in a rising/falling interest rate scenario and sets interest rates accordingly to acquire new customers.

2.3.2 Loyalty programs based on usage habits:

Proper and accurate segmentation of customers enables a bank to provide highly personalized cash back offers by tying up with vertical partners such as travel companies, food stores and retail shops. This strategy boosts both card loyalty and usage. Segmentation based on general transaction data such as purchasing habits and frequency also reveals lifestyle segments such as fashion conscious, family orientated, or travel oriented groups. K-means clustering helps to solve this problem by uncovering meaningful patterns amongst the customers profile and transactional data.

2.3.4 Building relation with valuable customers:

Banks always like to identify strategically valuable customers and puts extra care to reinforce the relationship. BDA uses segmentation technique to identify loyal and profitable groups and also advises the segment that is likely to evolve as important one in the near future. K-Means clustering algorithm is used to find natural groupings of valuable customers. Customer lifetime value indicates how the prosperity of a customer might increase or decrease over time.

Case Studies:	
 Citibank	Based on customer's transactional patterns, the Bank offers discounts at retailers and restaurants. Through this service, it has experienced a significant increase in its card usage, retention and overall improvement of customer satisfaction.
 RBC	The Bank has designed loyalty programs based on its customers' card usage habits. It offers tailored products to its customers like gifts for pets, carriers, dog feeders and doggie loungers.

Case Studies:	
 BARCLAYS	Barclays is using segmentation technique by targeting students with personalized advertisements. As students are most likely to pick a bank for the first time, Barclays tries to keep these customers in the long term to reap the benefit.
 Zions Bank	Zions Bank is using BDA to identify Hispanic consumers within its geographic footprint and segments down into groups and identifies financial needs for each group. Based on these segmentation insights, the Bank strengthens the customer relationship.

2.3.3 Pricing strategy optimization:

Pricing of a product is a complex business decision. Banks can identify the right pricing levels for customers by studying the price elasticity for each segment. Through clustering and classification algorithm, these groups are identified and their price willingness is determined. Clustering first identifies the spending habits of certain groups, lifestyles or demographics of customers to measure their willingness to spend on certain products. Each of these clusters can then be assigned a price to optimise ROI. Once the segments are identified and assigned a price,

2.4 Next Best Offer

Cross-selling is a challenge for Indian banks. Next best offer allows banks to deepen their up-sell and cross-sell opportunities by predicting what customer wants next. This is done by analysing the market basket of the customer and finding patterns between products to forecast future purchases. Next best offer is commonly

used to re-engage with customers, reminding them of the brand or service while simultaneously opening cross and up-selling opportunities.

2.4.1 Enhancing loyalty through targeted offers:

Offering an additional product to a customer that suits her/his need not only boosts sales, but also strengthens customer relationship. Relevant offers might increase the interest and “customer stickiness” to banking products. However, offering wrong products to a customer can cause a disjointed feeling against the bank. Market basket analysis employs the link analysis technique. Once links are found, timing is also important as some products are highly time sensitive. Decision trees are particularly useful in this regard as they can be used to score suitable timings for a marketing messaging, based on past customer experiences.

2.4.2 Increasing product propensity:

Identifying the products or services, customers are most likely interested in for their next purchase, is a valuable piece of information for any marketing manager. Measuring customers’ product propensity involves scoring each product or service based on customers’ historical purchases and behavioural characteristics. Scoring for product propensity is typically achieved through a classification algorithm such as linear regression and decision trees.

Case Study:	
 Westpac	Westpac measures each customer’s product propensity across their range of products and services, and is successfully making use of next best offer to drive its cross sales.

2.4.3 Product bundling to boost revenue: Bundling products that go well together can differentiate an organization from its competitors. Banks can apply product bundling to increase cross and up-selling in a better way. Finding which products naturally go well together has been a challenge for anyone wishing to develop an effective cross and up-selling campaign. Decision tree is a popular method for solving cross-selling problems.

2.5 Channel Journey :

Keeping track of customers’ journey is a difficult task as there are many alternate channels of interaction like TV, mobile, social media, clickable ads, stores, and publication platforms etc. Through BDA, entire customer journey and experiences on each channel is easily tracked. This also provides information on channels which are underperforming. Gathering this

information would help the bank to optimize the channel conversion, increase messaging effectiveness and measure marketing results across all channels. BDA helps to track the channel journey in the following ways.

2.5.1 More relevant content in the preferred channel:

Sending right message through right channel is equally important as the message itself, because every customer may not use all channels in the same way. BDA accurately finds those channels customers are intensively using and how. This forms a strategic advantage to reach specific target segments in the most cost effective way and optimize marketing budgets. As channels used for complaints are different from channel used for research, BDA prepares an engagement metrics. Text analytics is best suited for checking if a customer has made a complaint, while URL referrals and cookie data can assess if a customer is researching the product or is a frequently returning customer.

Case Studies:	
 HDFC Bank	HDFC Bank uses BDA to slash operational costs and average time spent by a customer at ATM centre. Customer’s preferred language is captured from previous interaction with the Bank and as soon as the customer injects debit card on ATM, it pops up convenient language. Most importantly, before releasing the card, the machine asks the customer to opt for need of other financial services including, home loan, auto loan and PL, that is already tracked from social media and other sources.
 OCBC Bank	OCBC Bank identifies that a large chunk of customers are shifting to online channels and their expectations of these channels are growing with rapid pace of technology. Accordingly, the Bank changed its core principles to deliver a high quality service through the channel of customer choice and expectation.

2.5.2 Guiding customers to low cost channels:

Marketing activities are always expensive. Shifting to low cost channels reduces transaction cost and optimises operational efficiency. Aiding customers during channel migration has increased pressure on assisted self-service and delivering a constant experience across the multi-channel market. Part of the drive towards a consistent and intuitive service is being helped by BDA through measuring the effectiveness of the channels and applying techniques to increase self-service efficiency. BDA uses metrics and classification algorithms to score effectiveness of the channel for each segment. Metrics such as engagement, content/navigation scores, drop-off rates, time-stamps and number of clicks to action are used to evaluate effective online medium.

Case Study:	
 HSBC Bank	HSBC Bank observed that some of the major barriers in using internet banking were; customer habit, security concerns and a lack of confidence. It followed a successful migration strategy to enable customers to undertake increasingly more complicated banking activities via internet.

2.5.3 Evaluating marketing effectiveness across channels:

Being able to track and measure marketing effectiveness across channels, allows marketing managers to optimise their budgets and delivering higher ROI on their marketing campaigns. Customer may purchase a product in one channel, but had made decision to purchase by influence of an advertisement in another channel. The amount of credit to be given to each channel for selling the product is a complex decision. Through BDA, online and offline metrics are prepared to evaluate campaigning effectiveness. Decision trees scores each channel, indicating its performance and how many indirect/direct sales the channel generates against the cost of the channel. Text analytics is another popular technique used in this case.

Case Studies:	
 Bank Polski PKO Bank Polski	The Bank employs a multi-channel campaign management platform and by using this platform, it performs analytics across its channels to develop a clearer picture of overall marketing effectiveness, leading to a higher ROI.
 Laurentian Bank	The Bank uses data analytics to aid its understanding of performance, factors and influence of its marketing campaigns across various channels. This allows the marketing managers to appropriately change its campaigns to improve performance.

3.0 Big Data Analytics in Indian Banking :

The use of BDA in Indian banking is not a new phenomenon. BDA was first used by HDFC in early 2000s. This was mainly done to effectively use the massive unstructured data captured by its information technology systems. Very soon other banks started following the trend and intensified their investment in BDA technology. Today starting from State Bank of India to RBL Bank, all are using the BDA in decision making. However, a few banks are yet to explore and experiment mode in big data and advanced analytics. The intensity of usage of the BDA by Indian banks is elaborated below.

3.1 HDFC Bank :

The Bank built an enterprise data warehouse in 2000 and from 2004-2006, it invested in building data. Today, the Bank is tracking every aspect of a typical customer’s financial habits using BDA. It keeps track on credit histories of customers and handing out loans accordingly. As well, the Bank keeps track of personal habits of its customers to identify promotional offers. The Bank also makes use of analytics tools to reduce chances of money laundering by identifying suspicious activity of moving money to multiple accounts, sudden activity in long-dormant accounts, finding high amount of cash deposits in a single-day, opening multiple accounts in a short period of time etc. In strategic

decisions, including channel efficiency measurement, geographic expansion and resource allocation, BDA is getting used by the Bank.

3.2 State Bank of India :

SBI started investing in BDA in 2009 by setting up one of the biggest data warehouse in the world with 170 TB of data that comes in through Core Banking Solution and 37 other systems – RTGS, NEFT, ECS, AML, cash management product etc. The Bank is using social media channel intensively to target its customers. Today, SBI has the largest number of followers in Facebook and largest subscribers in Youtube vis-à-vis other Indian banks. The Bank has also joined LinkedIn, Pinterest, Instagram and Google+ to keep track on social media. SBI has created a special department (analytics), with experts including statisticians, risk analysts and external consultants, who are intensively using BDA techniques to aid in operation and management decision. To check the growing bad loans in education, automotive, housing and SME sector as well as for fraud detection, the Bank is using BDA intensively. Even the bank is using analytics to identify the ideal locations for ATMs and the quantum & frequency of cash deposits in different ATMs.

3.3 ICICI Bank :

The Bank is using BDA technique in debt recovery and minimizing credit losses. It has developed an in-house technique that factored in several parameters such as efficiency of the recovery officer, customer profile, risk behaviour, and exposure etc. The defaulter basket of the Bank comprised of serious high risk and early low risk. It employed a 'centralized debtor allocation model' to allocate the right set of NPA cases to the most appropriate NPA collection channel. For early delinquencies cases, non-intrusive channels such as SMS, e-mails, IVR, dunning letters, and reminder calls through the call centres were used. For serious delinquent cases, a personal visit or even initiation of legal action was adopted.

3.4 Axis Bank :

The Bank is using BDA in almost all the spheres of banking but more intensively for customer intelligence and risk management. To arrest prepayments of loans and increase loyalty, the Bank has been using BDA rigorously.

3.5 Kotak Mahindra Bank :

BDA is rigorously getting used in data modelling and neural network scoring engine by the Bank. For Anti-Money laundering and fraud analysis, the Bank uses neural network scoring engine with a customized scoring models. The neural network compares the characteristics of a customer's financial activity with the custom-model and records the patterns of behaviour for each account holder. It then assigns a score reflecting the degree of risk for each transaction. The tool has a built-in 'learning' mechanism whereby the system learns or records the genuine behaviour or pattern of transaction. This feature helps the investigator in reducing repetitive alerts or false positives.

In Indian Banking space, some banks have been able to leverage analytics in a better way than others, which is reflected on their performance. The banks which are successful are the ones that have invested and leveraged technology better than the rest. To sum up, though Indian banks are still far behind in using BDA compared to their western counterparts, but they are on the right track.

4.0 Risks of Using Big Data Analytics :

While the ability to unlock marketable and income-generating insights from BDA throws an excellent opportunity for Indian banks, it is inherited with complexity. There is compliance, legal, commercial and ethical risks associated with unfettered data exploitation. In the first case, the BDA technique is highly criticised for overstepping the privacy precincts of customers in developed world. Indian banks while using BDA should ensure retaining integrity and trust of customers. This is very much critical to avoid public mistrust, and liability. Apart from that, quality of data is very important for any analysis. Large public and private sector banks, which are excelling in today's banking environment, cannot ignore the fact of poor quality data management. Poor data works as a noise and data illusion leads to bad analytics and poor management decision.

Conclusions :

Banks unanimously agree that managing and analysing big data is critical to their success as BDA has become a part of the standard business dynamic. The key to success for any organisation lies in the best utilisation

of big data and technology driven business processes to give best in class products and services to customers. Leveraging BDA leads to more confident decision making, which means greater operational efficiencies, cost and risk reductions for the organisation.

Globally, starting from banks in Africa to America, BDA is intensively getting used to handle problems in all aspects of banking including marketing and sales. Despite large portfolio of advances, Indian banks have made steady advancement in the operational area but are still in nascent stage in analysing their own database. Apart from the largest private and public sector banks, other State run and small private banks have started using BDA in addressing marketing and sales issues, but the adoption is not broad based, rather polarised.

Indian Banks should equally focus on investment on training people to think effectively and equip them with tools to do so to succeed analytically. Actuaries, data analysts, data scientists and advanced analysts need

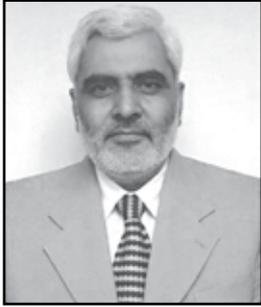
to be empowered with functional and foundational knowledge and skills to handle Big Data, which is very different from pure descriptive or general business analysis. The real challenge is not just incorporating new types of data but making it useful.

For sales optimisation and marketing success, Indian Banks can effectively use the humongous data viz., purchase history, online transactions, customer profiles, browsing history, comments & suggestions etc., available on social media. Using these information / data, banks can deploy BDA tools to effectively achieve their marketing objectives and minimise wrong pitching of insurance and other investment products, as relevant offers could increase the interest and customer stickiness towards banking products. All these techniques would help increasing business through cross-selling and up-selling as well as in building positive brand image of the banks.

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Corporate Governance in Loan Appraisal: A Case Study

 **Dr. Ram Jass Yadav***

Introduction

Lenders in present business environment are heavily depending on the audited financial statements and do very little to gain the maximum from cross-verification through formal and informal sources. The primary objective of appraisal is to ensure safety of the bank's money and its customers through market, management, technical, and financial evaluation. Thus, much needs to be done on Corporate Governance, because poor governance of the borrower can contaminate financial statements, and hence annul the entire credit appraisal exercise. In this background, the important issues relating to the appraisal of term loan has been presented with the help of a case study in this article focusing on corporate governance and due diligence in term loan appraisal.

A Case Study - Synopsis

A registered partnership firm was established on 20th October 2014 by five Gen-Y partners in the age group of 35-40 years. Promoters have experience of trading in rice for different brands and now ventured to set up a manufacturing plant with their own brand 'Gramin Basmati'. The firm has appointed a supplier & consultant M/s Johan Engineering Ltd on turnkey basis for the supply of rice mill plant. Bank Branch has opened current account in March 2015 and received loan application for term loan of ₹25 Million (Mn) and working capital limit for ₹6 Mn. Promoters have stock of 87 acres agriculture land in their personal names and in names of their family members for growing paddy and other agriculture produce. Raw material (paddy) is available in nearby agricultural market and also from Food Corporation of India. Family members and close

relatives of promoters, all put together eleven individuals having aggregated worth of ₹38 Mn, of which promoters have ₹12 Mn; have joined hands to infuse funds in the projects as their own contribution and also agreed to mortgage their properties to secure banks loans.

Bank's empanelled TEV consultant has considered the project viable from technical & economical angle. The firm proposes to commence its trial run from April 2016 and in the initial year of operation i.e. 2016-17, it proposes to achieve sale of ₹135 Mn at 50% capacity utilization. As there is no rice mill in the nearby areas, the firm will be able to supply the finished products to hotels, bakeries, and also to retailers in local market in addition to other big markets of the country. Proposed exposure is secured by equitable mortgage of factory land belonging to firm valued for ₹2 Mn which was purchased a year before in ₹0.20 Mn. Also the loan shall be secured by equitable mortgage of ten properties in name of partners & guarantors valuing ₹24 Mn. The valuation and legal opinion reports have been obtained by SME Loan Hub of the Bank at request of branch, from empanelled valuer & advocate respectively. Accordingly, original reports of valuation & legal opinion were sent to the Branch for doing needful with the directions that branch to get photocopy documents, based on which non-encumbrance certificate (NEC) obtained, verified from the original documents by bank's empanelled advocate. The project outlay of ₹43.70 Mn is depicted in table -1 and proposed credit facilities have been rated in 'investment grade' under Bank's internal rating system. Thus, credit facilities requested by the firm were sanctioned. Branch had disbursed term loan facility partly and also released cash credit limit fully to credit current and saving bank account of the firm and promoters.

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Cost of Project	Amount	Means of Finance	Amount
Freehold land	0.40	Capital	13.70
Building & civil works	12.00	Unsecured Loan	5.00
Plant & Machinery	27.36	Term Loan	25.00
Other fixed assets	0.10		
Electric security	0.04		
Escalation & Contingencies	0.80		
IDCP	1.00		
Margin for working capital	2.00		
Total	43.70	Total	43.70

Term Loan is repayable in 20 quarterly equal installments commencing from June 2016 with gestation period of one year. However, interest amount at rate of 12% per annum will be served on monthly basis and average

utilization of term loan reported ₹15 Mn. during the period. The repaying capacity assessed based on the cash flow presented in Table -2.

Year – 31 st March	2017	2018	2019	2020	2021
Profit After Tax	2.00	5.00	7.00	9.00	11.00
Depreciation	5.00	5.00	4.00	3.00	3.00
Interest on term loan	3.00	3.00	2.00	1.00	0.50
Term Loan installment	5.00	5.00	5.00	5.00	5.00
Net Current Assets	3.00	7.00	12.00	18.00	25.00

The factory site was visited by Branch Manager and found it easily accessible & adequate to set up the plant. Branch Manager also found the partners capable and thus recommended the proposal for sanction to SME Loan Hub (SMELH) on 01.06.15. Processing Manager of SMELH visited the factory site and also all the properties mortgaged to the Bank. During the physical visit, properties found marketable and their value observed realistic except of five properties which were taken at higher value thus their lesser value reported by the Processing Manager was considered for security coverage ratio. Branch Manager has also accompanied while visited all the properties including factory site with Processing Manager on 11th June 2015, through report was signed by Processing Manager only. SMELH has therefore, advised the branch to make pre disbursement visit and keep the satisfactory inspection report on its records. After a year when borrower had failed to repay bank's dues and account turned to non- performing

asset; the properties were visited and four properties mortgaged to the bank found fake during the inspection process. The owner of one property was reportedly passed away in year 2010.

Findings of Case

The observations from the case study are discussed herein the article from the angle of exercising due diligence in appraisal of term loan.

01. Land: It is the fundamental requirement of setting up a project to have adequate land in light of the plant size and its capacity. Land can be owned and rented for the project. In the given case it was purchased a year before in ₹0.20 Mn which is having market value of ₹2.00 Mn but shown in the project cost at ₹0.40 Mn. The higher amount of land by ₹0.20 Mn taken in cost of project shall inflate promoters fund for the equivalent amount without actual flow of funds into business. Thus, acquisition cost of land

should be taken in the project cost to accept realistic project outlay and also to avoid fabricated source of finance submitted by the entrepreneur.

02. Building & Civil Work: It is to be ascertained from plant layout whether proposed building is sufficient and building design is approved by the competent local bodies. Cost estimates of the proposed building need to be compared with the unit cost of construction notified by the government department of the area concerned such as Public Works Department (Bridges & Roads) apart from peer comparison of similar building & civil work. Higher amount of cost shall require justification in terms of quality of construction and building material proposed to be used; by the Bank's Architects in their report. This may cause over-financing with less or nil promoters' contribution if estimated cost is not compared with notified rates.

03. Plant & Machinery: Project implementation largely depends on the quality and timely supply of the machines to be commissioned at the plant. It thus obligatory on the part of the appraisal officer that reasonableness of the cost estimates should be cross checked by competitive quotations and independent verifications from reputed manufacturers. The credibility, experience and standing of machinery suppliers have to be examined. The prices quoted in the respective supply contracts have to be fixed. In case price is subject to escalation clause, adequate contingency provision must be made in cost of project. Contract between the borrower and supplier should be thoroughly examined with respect to warranty and damage clause. Illustratively, in the extant case when services of a turnkey vendor is hired following issues to be fully addressed before accepting the project cost –

- a) Relationship, if any between turnkey vendor and promoters?
- b) Expenses of training for Indian technical staff & also foreign technicians involved in turnkey supply?
- c) Track records of the vendor to commission project in time from other users?
- d) Provision of compensation clause in agreement if delay caused in commissioning the plant?

It can be observed from the case that no provision of preliminary & preoperative expenses has been made towards training expenses for technical know-how that signifies understatement of project cost leading to less provision of margin by promoters toward the project. Besides, failing in due diligence on other vital issues narrated in the case may lead to accept unrealistic Date of Commencement of Commercial Operation (DCCO) causing to the turning the loan as NPA on technical grounds and also un-warranted modification in sanctioned proposal to accept new DCCO.

04. Electricity Security: Power being the pre-requisite to run a project successfully should be adequate and uninterrupted. It is therefore inevitable to verify that power connection for required power load is applied and security amount for the applied power load has been adequately provided. In the given case security amount required to be deposited with state electricity board for required power load connection was found to be ₹0.10 Mn as against actual amount provided in project cost of ₹0.04 Mn. It leads to the inferences that power load for which security deposited shall not be adequate to achieve projected level of production which may cause short supply of power at later stage for which no provision is made in the project report. Also the receipt produced in support of depositing the security amount to be verified from the amount reflected in audited financials of the borrower or bank statement submitted by the client.

05. Escalation & Contingencies : Provision towards contingencies depend on the economic factors of the country and thus it should be worked out in light of the expected increase in cost due to rise in prices, sales tax, excise duty, transportation charges, fluctuation in foreign exchange rates, inflation rate etc. Besides the time involved in commissioning the project shall be another determinant as longer implementation period require higher amount of contingencies. As such no standard norms have been set for contingencies; the accepted practice is to keep 10-15% of the project cost as contingency requirements. The amount provided towards contingencies in the given case is merely ₹0.80 Mn against the project cost of ₹43.70 Mn which is much

lower than the required amount that caused to funds deficit because of cost escalation and hence, delays in project commission or failure of the project.

06. Interest During Construction Period (IDCP):

Interest on term loan during the construction period need to be serviced by the borrowers for which adequate provision of funds to be made by them. Moratorium period, applicable rate of interest and average amount of withdrawal in sanctioned limit are the key determinant to accept realistic amount of IDCP. In the extant case at given amount of average utilization of ₹15 Mn of term loan at 12% p.a. rate of interest for a period of one year the IDCP works out ₹1.80 Mn as against the amount provided in the project cost of ₹1.00 Mn that will result non-serving of interest payable to the Bank during construction period, thus account may turn into NPA before a year period which was observed in the case too.

07. Margin for Working Capital:

Borrower has to finance a part of its current assets through long term sources. Also cash margins on any LC/ BG / DPG to be issued should be arranged by the client. Generally margin requirements for working capital for the first full year of commercial production are taken in total project cost. It can be observed from the given case that year 2016-17 shall be first year of its commercial production for which required margin i.e. net working capital (NWC) projected for ₹3.00 Mn while the actual provision made by the borrower in cost of project is merely ₹2.00 Mn resulting liquidity crisis and may also cause of turning the account under stress due to disbursement of facilities without adequate margin from promoters; which observed to be one of the reasons of becoming account NPA.

08. Capital and Unsecured Loans (USL):

After accepting cost of project, the next step is to find out the sources of funds that may include contribution by the promoters themselves and also raising loans from others including term loans from financial institutions and also unsecured loans from friends & relatives. The norms for minimum promoter's contribution to be followed by financial institutions which varies but in most of the cases it is 25% of the project cost, of which 'core promoters' contribution should not be less than 15% of the project cost. In this context, core contribution is ₹13.70 Mn which

constitutes 31.35% of project cost apart from unsecured loan of ₹5.00 Mn. with project leverage ratio of 1.33 which is considered to be financially sound. However, a credit officer should satisfy upon the sources of promoters to raise projected funds.

09. Physical Verification of Assets:

Bank officials need to make personal visit of properties proposed to be mortgaged to verify their marketability, valuation and genuineness. In the extant case all properties visited by bank officials and found them marketable with realistic value except the five properties which were valued on higher side thus their lesser / realistic value reported by the Processing Manager was considered for security coverage ratio. Besides, SMELH has advised the branch to make pre disbursement visit to its satisfaction on the valuation and enforceability of the properties. However, four properties found fake during the process of initiating actions under the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI) 2002. This could have been avoided by the branch to observe not only laid down guidelines in routine but also to exercise due diligence with respect to proper KYC of depositors of title deeds, opening their accounts and sending them letter by registered post confirming the creation of mortgage on their properties.

Learning from the Case

Based on the empirical observations of case, following important learning are emerged from the study.

01. Technical Due Diligence (TDD) –

Compliance and due diligence are assumed to be synonym by the lenders as against the fact that due diligence is beyond laid down guidelines which is expected from a lender to exercise for safeguarding bank's interest. Illustratively, in the given case acquisition cost mentioned in the purchase agreement of the land to be commensurate with rates of legal / registration charges to ensure the genuineness of the title deeds and proper stamping on the deed of the properties. Similarly, amount of fee paid to the architect by the prospective borrower to be commensurated with the market rates of professionals. The genuineness of properties mortgaged need to be assured by getting its lien noted with respective state revenue

authorities, sending a letter by registered post to the depositors of title deeds having confirmed that properties in their name is charged to the Bank and keep its acknowledgement with memorandum of entry of title deeds as part of KYC compliance by lenders in addition to other formalities like obtaining title clearance report from empanelled advocate of the Bank, getting them vetted by bank's law officer and making physical verification of properties. The incidence of creating ineffective mortgage on the properties of owner expired in year 2010 could have been avoided by adopting the suggestive measure of sending a letter by registered post to the depositor by the bank branch which was found missing in the case.

02. Moderating Project Cost (MPC) - Project outlay is to be viewed in integration with audited / projected financials considered for assessment of bank finance to avoid any kind of trumped-up presentation in accounts. Illustratively, the acquisition cost of the land in the given case was ₹0.20 Mn as against its cost shown of ₹0.40 Mn taken in project outlay that inflates the promoters' contribution to the extent of ₹0.20 Mn without actual infusion of margin by promoters. Also working capital margin envisaged ₹3.00 Mn in year 2016-17 for proposed working capital but the actual margin provided by the promoters' in project outlay is merely ₹2.00 Mn that may cause release of working capital limit without raising projected margin from the borrower.

03. Know Your Customer (KYC) – KYC should not be limited to the verification of photo copies of identity and address proof of the client but this need to be explored beyond this point to assess prospective business risk and measures of their mitigation. KYC from lender perspective include establishing genuineness of documents submitted by the borrower such as worth report, valuation report, legal opinion report and sales / purchase order of buyers and suppliers of the client. Cost estimates of building and civil work should be compared with the rates notified by the government department of concerned area and justification of abnormal hike in prices to be asked from architect who certifies the

cost estimates. The capacity of suppliers also to be verified during KYC process to ensure uninterrupted supply of raw material and appetite of buyers to absorb projected product supply on the estimated price to be fully examined for realistic revenue projected to assess project viability.

04. Financial Closure (FC) – It is a process of completing all project-related financial transactions to release work site. Among others, promoters' contribution is also one of the activities of financial closure wherein funds are arranged by the borrower through equity and sub ordinate debt to commercialize the project in time. It symbolize the promoters interest to set up the project and achieve its commercialization in scheduled time, thus bankers need to discreetly verify the source of equity and also un-secured loan. Promoters in the case under reference have their worth of ₹12 Mn then it would be unrealistic to accept capital of ₹13.70 Mn from their available worth. Thus, the available liquid worth of individuals should always be higher than amount expected to be raised from them. Similarly, the liquid worth of the unsecured lenders with the conditions of raising funds from them should be fully ascertained before fixing financial closure to ensure timely achievement of DCCO.

05. Charter of Governance (COG) – The success of an advance proposal meticulously and carefully appraised largely depends on the effective post-disbursement control, follow up and monitoring of loan accounts. Good credit governance observed to be missing in carrying out due diligence in the given case study such as poor KYC, accepting realistic project outlay, promoters contribution, releasing working capital facility without completion of the project and disbursing the term loan to credit bank accounts of promoters etc. It is therefore, suggested to document Best Business Practices (BBP) in credit for introducing good credit governance in branches. Each loan officer should be given Charter of Governance for its adherence.

06. Loan Arranger Diligence (LAD) – Engaging the professionals like Chartered/Cost Management Accountants, retired bankers etc. as loan arranger by

entrepreneurs has become a regular and legitimate activity to avail finance from banks. However, instances of collusion are being frequently noticed in sanctions of loan proposal for which regulators and investigating agency are expressing their concern. Since the loan arrangers are found to be involved in preparing loan application and project report of borrowers to appraisal note for bankers. Such types of outsourcing resulting poor quality of appraisal and becoming cause of corporate financial frauds. It is therefore, suggested that besides the KYC of borrower it is to be satisfactorily established of loan arrangers too along with obtaining an appointment letter with detailed scope of mandate given by the borrower to loan arranger. Dealing credit bankers should maintain arms length without getting influenced by the present / past position of arranger. The reference of loan arranger to be mentioned

in appraisal note together with past experience for other accounts sponsored and dealt by the concerned arranger.

Conclusion

Appraisal of term loan aims to ascertain whether the proposal is commercially viable taking into consideration the technical, economical, financial and managerial aspects of the project. It is strongly suggested that the appraisal should go beyond Financial Statement Analysis and to address this deeper issue of corporate governance or lack of it, encourage further research for a timely detection of falling corporate governance standards. Towards this end, the case study under reference presents significance of corporate governance on appraisal of term loan.



माइक्रो यूनिट्स डेवलपमेन्ट रीफाइनान्स एजेन्सी (मुद्रा) लिमिटेड

यूनियन बजट 2015-16 में मुद्रा लि. की स्थापना की घोषणा की गई, जो कि विनिर्माण, कारोबार और सेवा क्रियाकलापों में संलग्न सूक्ष्म/लघु कारोबारी संस्थाओं को ऋण देने के व्यवसाय में लगी सभी सूक्ष्म वित्त संस्थानों के विनियमन और पुनर्वितीयन के लिए उत्तरदायी होगी, और यह लघु/सूक्ष्म व्यवसायी उद्यमों को वित्त प्रदान करने वाले अंतिम वित्तपोषकों को वित्त प्रदान करने वाले राज्य स्तरीय/क्षेत्रीय स्तर के समन्वयकर्ताओं के साथ काम करेंगी। सरकार द्वारा प्राथमिकता क्षेत्र को उधार देने से बची रही गई रकम में से ₹200 बिलियन की रकम मुद्रा को आबंटित की जाएगी ताकि अंतिम वित्त पोषकों को पुनर्वित्त प्रदान करने के लिए पुनर्वित्त निधि का सृजन हो सके। मुद्रा को बजट में से ₹300 बिलियन की रकम भी दी जाएगी ताकि सूक्ष्म उद्यमों को प्रदत्त ऋणों की

गारंटी हेतु क्रेडिट गारंटी कोष का सृजन हो सके।

मुद्रा की स्थापना के लिए केन्द्र सरकार द्वारा समुचित विधान का प्रारूप तैयार किया जा रहा है। विधान का अनुमोदन होने तक लघु/सूक्ष्म उद्यमों के विकास और वित्त पोषण से संबंधित क्रियाकलापों के लिए भारतीय लघु उद्योग विकास बैंक (सिडबी) के पूर्ण स्वामित्व वाली सहायक इकाई के रूप में 18 मार्च, 2015 को कम्पनी अधिनियम, 2013 के तहत मुद्रा लि. की स्थापना की गई, और इसे 6 अप्रैल, 2015 को जमाराशि स्वीकर नहीं करने वाली गैर बैंकिंग वित्तीय कम्पनी के रूप में पंजीकृत किया गया। सिडबी को अन्य बैंको/वित्तीय संस्थानों द्वारा पूंजी की क्रॉस-होल्डिंग के लिए मुद्रा में ₹7.5 बिलियन के निवेश से छूट प्रदान की गई है।

स्रोत : भारतीय रिज़र्व बैंक वार्षिक रिपोर्ट के माध्यम से



The interpretation of relationship between Net Working Capital and Current Ratio

 V. Sundararajan*

Introduction:

For any credit processing officers and the decision taking authority, the concept of relationship between Current Ratio (CR) and Net Working Capital (NWC) should be crystal clear. Individually the concept of Current Ratio and Margin are like chalk and cheese. The interpretation of the business, its growth, owners contribution depends purely on how to co relate these two things.

Net Working Capital:

Net Working Capital is the excess of Long Term Sources over Long Term Uses in a business entity. This margin grows year after year by generating sufficient profit and healthy picture of Reserves and Surplus. One of the main long term sources of the finance is the ploughed back profit of the business, which constitutes the part of Reserves and Surplus. If this is built up on a regular basis, then we can think of commanding a sizeable amount of premium during the Initial Public Offer share issue, which again contributes to the Long Term Sources. For plough back of profit, it is normally expected that the business volumes should grow which finally contributes to the profit. We can confidently say except for the initial years of the business during which period the owners brings in Capital, in the subsequent years the business should generate sufficient profit for its sustainability.

Current Ratio :

This is an important ratio where we are comparing the Current Assets against Current Liabilities. Being a liquidity position dealing with day to day business, it is expected that this ratio is at an acceptable level of 1.33. This indicates the promoter / borrower is having a sound

margin of 25% in the business. ($133:100 = 33.33 \times 4 / 33.33 \times 3$). While Current Ratio takes care of the margin component in running the business, the same work is taken care by DER in case of a Term Loan in starting the business.

Improving the margin :

Improving and sustaining the margin is one of the basic stipulations in any credit proposal. Unfortunately, the billion dollar question when to stipulate the improvement of margin is a big question mark even for a seasoned credit decision taking authority. This article tries to educate the relationship between Current Ratio and NWC. It also goes in depth about the understanding the dynamics of change between NWC and Current Ratio.

What is NWC and how it differs from CR?

Net Working Capital is the money with which a borrower runs the business as his contribution towards the same. It can be defined as the excess of Long Term Sources over Long Term Uses. Without basic margin, the borrower cannot think of running the business by availing working capital loan commonly known as "Cash Credit" in the Indian context. NWC is value of margin in absolute terms. It means the margin in the system is ₹5.00 lakhs indicates that after meeting all his Long Term Uses from his Long Term Sources, he is left with this much amount to run the business.

The short term funds are basically Short Term Sources and Short Term Uses. All the current liabilities of the unit are short term sources and Inventories, Receivables, Other Current Assets, Cash on Hand are known as Current Assets. Current ratio is comparing the Current Assets with that of Current Liabilities. In the short term, in case of need the liquidity position of the company

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should be good to run the business and whether he is having sufficient Current Assets to meet the Current Liabilities is seen by the Current Ratio.

While NWC is in absolute amount CR is only a ratio. When we say margin is ₹5.00 lakhs this is absolute.

When we say Current Ratio for the business unit with a NWC of ₹5.00 lakhs it totally conveys a different meaning. This margin need not reflect only one current ratio. All the combinations of the following tables with the same margin reflect different current ratio.

(₹ In lakhs)				
Levels of Business	Current Assets	Current Liabilities	NWC	Current Ratio
Level I	25.00	20.00	5.00	1.25
Level II	30.00	25.00	5.00	1.20
Level III	35.00	30.00	5.00	1.17
Level IV	40.00	35.00	5.00	1.14
Level V	45.00	40.00	5.00	1.13
Level VI	20.00	15.00	5.00	1.33
Level VII	15.00	10.00	5.00	1.50
Level VII	10.00	05.00	5.00	2.00

In the practical situation there is no business unit maintaining the same margin and current ratio over a period of time. The margin in absolute amount undergoes a change and NWC also changes as it has no direct relation to the margin but depends purely on the level of Current Assets and Current Liabilities created with that margin. If it is so, then how to ensure that the banks funds are safe in business. How to ensure course of correction in case of aberrations, when to stipulate to bring additional margin for sustaining the business are always a cause of concern which is to be taken with proper understanding of the business.

The relationship:

We have seen the two variables i.e., Margin in the system mainly boosted by the plough back of profit for a healthy running unit and Current Ratio which has no relevance to the absolute margin in the system but depends on level of CA and CL. Since both are variables, each of the variable can remain constant, increase or decrease. This results in the permutation of nine different situations while comparing the margin and current ratio with the base year. Let us see the various situations of these permutations:

Margin	=	=	=	+	+	+	-	-	-
CR	-	+	=	+	-	=	=	+	-
Situation	1	2	3	4	5	6	7	8	9

We can confidently say that the situation where both are increasing, it is good both for bank and borrower, whereas where both are decreasing; it is an alarm bell for both.

To understand the various situations, let us put the above table in understandable figures for the convenience sake.

Current Assets	500	600	400	500	600	600	720	460	400	380
Current Liabilities	400	500	300	400	460	490	576	368	310	310
Margin	100	100=	100=	100=	140+	110+	144+	92-	90-	70-
Current Ratio	1.25	1.20-	1.33+	1.25=	1.30+	1.22-	1.25=	1.25=	1.29+	1.23-
Situation	Base	1	2	3	4	5	6	7	8	9

As there are only two variables, which can increase decrease or remain constant with the base year, there cannot be any other combination even in real life situation.

Let us understand the various situation and the meaning/interpretations behind it:

Situation 1: Margin remaining constant but Current Ratio Declines:

This situation happens because the borrower is expanding the business but at the same time for the increased level of current assets for the growing business, he has not brought in pro rata margin. Whatever the margin available in the system he is managing with the same but to meet the increase there are two options before him i.e., increasing the Short Term Sources of Sundry creditors or Bank Borrowings. Increase in Sundry Creditors can be treated as the improvement in the quality of business or brand reputation. If that is the situation after thorough due diligence, then there is nothing to worry. The situation can also because of double whammy i.e., reduction in the level of Sundry Creditors and increased level of bank borrowings. In either case it is an alarm signal. Indirectly it means he is contributing his share of margin for the business which had existed in the earlier year. The customer may also argue the acceptable level of margin is only 1.17, so, I am removing my excess margin for business expansion. Again, it is a point to be probed whether it is for business expansion or diversions. A proper supervision and due diligence will suggest whether to induce more margin or to take corrective steps.

Situation 2: Margin remaining constant but Current Ratio increases:

When the business is growing this situation will never happen. Only when the business is shrinking unit can show a better current ratio with the same margin. This is a cause for concern as the business is coming down

due to various factors, either he has to improve it or diversify into other areas of business to sustain his sales and profit level. Bank can't be complacent that current ratio is increasing with the same margin rather it should be taken with a pinch of salt.

Situation 3: Margin and Current Ratio both remaining Constant:

When there is no change either of these elements it indicates the borrower has reached the maximum possible level of production / output and hence the business remaining constant. This is very rare in the present situation due to competition at all levels. This is not a cause for concern but from the borrower's point of view he should take proactive step for diversification of the business or fresh value addition. This can be counseled to the borrower as the share of the borrower is likely to come down in the coming years due to competition and also there is no guarantee that he can sustain the business at this level for ever.

Situation 4: Margin and Current Ratio both increases:

This is the ideal situation for the bankers. This is a growing concern with gradually less depending on other short term sources of finance. Clear indication of plough back of profit on a regular basis is visible, if there is no additional capital or term liabilities introduced. There is no cause for worry. It is to be ensured that he is not indulging in overtrading or speculative as a prudent banker with social responsibility.

Situation 5: Margin increases and Current Ratio declines:

This is a situation where the business is growing but gradually with fewer margins. Care is required because to maintain a current ratio at the existing level for the increased business, the stipulation of bringing additional margin is must. The current ratio may be above the acceptable level of 1.17 which does not give the freedom to the borrower that he can continue the

trend of reduced margin when the business is growing. If checked unabated the situation may turn in to the Current Ratio going below the acceptable level at which time the course of correction will be costly.

Situation 6: Margin increased and Current Ratio remains constant:

This situation apparently looks rosy. This clearly interprets that the borrower is maintaining his margin even in the increased level of business and total current assets. This also throws an intriguing question which deserves attention from the monitoring point of view what he is doing with the profit accumulated. If the plough back of profit is just sufficient to maintain the margin then what he will take back as dividend? Steps to improve the profitability are to be taken. May be in the initial years of competition from the new entrant he may reduce the margin of profit but if it is allowed to continue then he cannot remain amidst the competition. This is high time for the borrower to have value addition, product specialization and diversification if there is scope.

Situation 7: Margin decreases and Current Ratio remain constant:

Any reduction in margin but with the same current ratio is possible only when there is fall in revenues/sales of the business unit. Maintaining the same ratio is not a boon or gift to bank but at what circumstances is more important. There is no profitability in the business and / or the revues are shrinking could be a reason for this situation. Care is to be taken with reference to availability of current assets and constant supervision and brining of additional margin is the requirement of the hour.

Situation 8: Margin decreases and Current Ratio increases:

This may be a clear sign of winding up of the business. At the same time he is keeping his margin high reducing the outside liabilities. Now the intention of the borrower and his business model are to be studied in detail to know the truth of the matter. Gradually he is quitting the business and we may also in the process loss a borrower customer.

Situation 9: Margin and Current Ratio both decreases:

This is a red flag situation. The unit may be making losses year after year and could not sustain the business resulting in the reduced level of business and eroding of the margin year after year. Unless the rot is stemmed it is difficult to control the return of our assets. If any drastic situation is not taken by the borrower to check the downfall, as bankers we have no option to recall the advance if the viability is no more existing in the business unit.

The above study is feasible and possible only in a free market. As Indian Economy is sailing through the capital market with socialism as undercurrent, most of the situations are applicable for a normal working capital transaction. This is not applicable where the production/sales is controlled by Government control or the borrower indulging in speculation and / or hoarding.

With this study, it is a ready reference to study the effect of both margin and current ratio though both are like chalk and cheese in comparison. Any individual effort or study of these two variables will throw no light on the actual health of the business. A combined study of both these variables with reference to previous year gives the right interpretation.



BANK QUEST

THEMES FOR NEXT ISSUES

The themes for next issues of “Bank Quest” are identified as:

- July-September, 2016: Stressed Account Management & Financial Stability
- October-December, 2016: Digital Banking
- January-March, 2017: Business Analytics
- April-June, 2017: Challenges in Infrastructure financing



 **M.G. Kulkarni***

Legal Decisions Affecting Bankers

**Triveni Kshetriya Gramin Bank. . . . Bank/Petitioner
(Now Allahabad UP Gramin Bank)**

Banda, Uttar Pradesh

v/s

**Prashant Singh and others. . . . Complainants/
Respondents**

Banda, Uttar Pradesh

National Consumers Disputes Redressal

Commission- Date of order 13th March, 2015

Issue:

Whether, Bank is vicariously liable for the acts of its employees?

Facts:

Complainants had placed various fixed deposits with the Bank between 2001 to 2005. The deposits have staggered dates of maturity at an agreed rate of interest. Bank issued Fixed Deposit Receipts (FDRs) to the Complainants on the printed stationary bearing signature of Manager of the Bank. In 2005 Bank issued an advertisement in the news papers informing the public that its Manager had stolen certain Fixed Deposit Leaves (mentioning their numbers) and that the bank has filed criminal cases against him. After reading the said advertisement, Complainants approached the Bank for encashment of their respective Fixed Deposits (FDs). The Bank refused encashment on the ground that- the FDRs were issued without depositing actual consideration on the respective FDs, the then manager has played fraud on the Bank and that the Bank has already filed criminal complaint against the said Manager for cheating/breach of trust.

On the refusal of Bank to encash the respective FDs, Complainants filed Consumer Complaint before District Consumer Disputes Redressal Forum (District Forum) inter alia seeking directions against the bank to pay back their money against encashment of respective FDs in question and for other ancillary reliefs. Bank countered the complaint submitting that FDRs in question were not issued by the Bank, there is no privity of contract between Complainants & Bank, no entry in the records of the Bank relating to said FDs, Bank is not vicariously liable and that the Forum cannot entertain the complaint since the complaint involves complicated questions of law.

Allowing the complaints, Forum directed the Bank to honor its obligation and discharge the liability arising out of acceptance of Fixed Deposits as the Bank is vicariously liable for the acts of its employee.

Aggrieved by the decision of Forum, Bank filed Appeals before State Consumer Disputes Redressal Commission (SCDRC). SCDRC dismissed the Appeals filed by the Banks. The Bank challenged the said orders by filing a Revision Petition before National Consumer Disputes Redressal Commission (NCDRC).

Observations and Decision:

The FDRs in question were issued by the Manager of the Bank in the course of his employment. FDRs bear the signature of said Manager though alleged to have been stolen by him. The FDRs were used for the purpose for which they were meant for and bear the serial numbers. It is not the case of the Bank that the said Manager was not authorized to sign and issue such Receipts. The Bank in its Complaint/FIR has alleged that the 'said Manager had stolen certain numbered FDRs belonging to the Bank and has used them for misappropriating public money, without proper entries in Bank's books of accounts'. Hence, the Bank's contention that there is no

* Deputy Director, Indian Institute of Banking & Finance.

evidence to show that it has received money from the Complainants towards Fixed Deposit is not proper. The bank although in its written statement stated that the Manager played fraud on the bank in connivance with the Complainants but in the FIR neither such allegations were made nor Complainants were named as suspects. There is nothing on record from the Bank to show that when and how the alleged fraud was noticed and what prompted it to lodge FIR against its Manager.

Hence the Bank is liable for the fraud committed by its Manager in the course of his employment and should pay the amounts due against FDRs in question to the respective holders.

The National Commission agreeing with orders of District Forum and State Commission dismissed the Revision Petitions of Bank.



भारत की नव विदेश व्यापार नीति 2015-2020

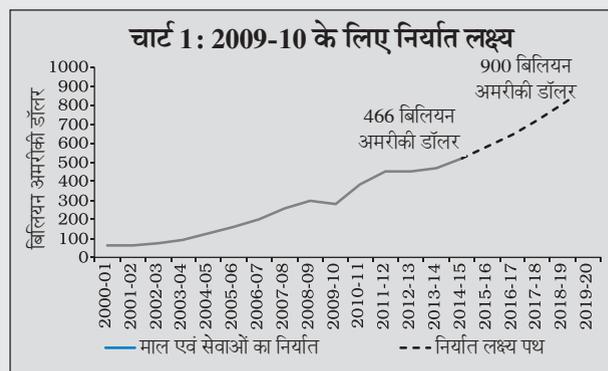
1 अप्रैल, 2015 को वाणिज्य एवं उद्योग मंत्रालय द्वारा भारत को 2020 तक विश्व व्यापार में एक महत्वपूर्ण सहभागी बनाने और देश को अंतरराष्ट्रीय व्यापार प्रकटीकरण में एक नेतृत्व का स्थान दिलाने की दृष्टि से विदेश व्यापार नीति 2015-2020 (एफटीपी) की घोषणा की गई। एफटीपी भारत में 'व्यापार क्रिया को और सरल' करने की दृष्टि से निर्यात और आयात संबंधी नियमों, प्रक्रियाओं एवं प्रोत्साहनों को अन्य पहलों (उदाहरण के लिए मेक इन इंडिया, डिजिटल इंडिया और स्किल्स इंडिया) के साथ जोड़ता है। एफटीपी की प्रमुख विशेषताएं इस प्रकार हैं:

- भारत के पण्य एवं सेवा निर्यात को 2013-14 के 465.9 बिलियन अमरीकी डॉलर से बढ़ाकर 2019-20 में 900 बिलियन अमरीकी डॉलर करना और उसी अवधि के दौरान विश्व निर्यात में भारत के हिस्से को 2 प्रतिशत से बढ़ाकर 3.5 प्रतिशत करना।
- प्रोत्साहन स्वरूप को सरल करने के उद्देश्य से बहु योजनाओं के स्थान पर एक नई योजना, अर्थात्, भारत से पण्य निर्यात योजना (एमईआईएस), का शुभारंभ करना।
- व्यापक दायरे वाली एक नई योजना, अर्थात्, भारत से सेवा निर्यात (एसईआईएस) शुरू करना जो न केवल 'भारतीय सेवा प्रदाताओं' को अपितु 'भारत में कार्यरत सभी सेवा प्रदाताओं' को लाभान्वित करेगा।
- एमईआईएस एवं एसईआईएस के अंतर्गत निर्यातकों को प्राप्त होने वाले ड्यूटी क्रेडिट स्क्रिप के प्रयोग के संबंध में अंतरणीयता एवं अत्याधिक लचीलापन के लिए अनुमति प्रदान करना।
- कुल वृद्धि लक्ष्यों को प्राप्त करने के लिए जहां निर्यात में पर्याप्त मात्रा में वृद्धि करने की जरूरत है वहां घरेलू विनिर्माण क्षमताओं एवं संभाव्य मांग वाले क्षेत्रों (उदाहरण के लिए ड्रग्स एवं फार्मास्यूटिकल्स, केमिकल्स एवं इलेक्ट्रॉनिक्स) को प्राथमिकता देना।
- अन्य क्षेत्र जहां निर्यात की अधिक संभावना पाई गई, वह है - इंजीनियरिंग, चमड़ा, कपड़ा, चिकित्सा संबंधी उपकरण, प्राकृतिक संसाधन आधारित मर्दें, रत्न एवं आभूषण, कृषि उत्पाद और रक्षा उपकरण।
- विश्व आपूर्ति श्रृंखलाओं में भारत की सहभागिता को बढ़ाने की आवश्यकता पर जोर देना। राज्य सरकारों/अन्य विभागों के साथ बेहतर समन्वय स्थापित करने के लिए एक महत्वपूर्ण उपाय के रूप में

'संपूर्ण सरकार' दृष्टिकोण अपनाया जाना।

- तीन वर्षों के लिए चिन्हित क्षेत्रों से निर्यात के लिए ब्याज अनुदान योजना के पुनः प्रवर्तन का संकेत, यद्यपि क्षेत्रवार कवरेज एवं ब्याज दर अनुदान के बारे में सूचित नहीं किया है।
- भारत में आसानी से व्यापार करने हेतु रात-दिन सात-दिन माहौल में कागजरहित कार्य की दिशा में विचार करना।

नई एफटीपी के अंतर्गत, सरकार ने नई योजनाओं के दायरे में विशेष आर्थिक क्षेत्रों (एसईजेड) को शामिल किया है। यद्यपि, 2019-20 हेतु माल एवं सेवाओं के निर्यात के लिए निर्धारित लक्ष्य प्राप्त किया जा सकेगा, लेकिन प्रमुख व्यापार भागीदार अर्थव्यवस्थाओं में मांग स्थितियां अनुकूल होनी चाहिएं और घरेलू बाधाओं (बुनियादी संरचना एवं नीति, दोनों के संदर्भ में) को पर्याप्त रूप से कम किए जाने की आवश्यकता है। यदि विश्व की अर्थव्यवस्था आईएमएफ (2015) द्वारा जताई गई संभावनाओं के अनुसार 2009-14 अवधि की अपेक्षा 2015-19 के दौरान तेज से वृद्धि करती है, तो भारत का निर्यात गत वर्ष की तुलना में बेहतर होगा। फिर भी, निर्यात को 2019-20 तक 900 बिलियन अमरीकी डॉलर के स्तर तक ले जाने के लिए एफटीपी अवधि (2015-16 से 2019-20) के दौरान लगभग 14 प्रतिशत उच्चतर काम्पाउंड वार्षिक वृद्धि दर (सीएआरजी) की आवश्यकता है, जो चुनौतीपूर्ण हो सकता है (चार्ट 1)



स्रोत : भारतीय रिज़र्व बैंक वार्षिक रिपोर्ट के माध्यम से

Bank Quest Articles - Guidelines For Contributors

Contributing articles to the Bank Quest : (English/Hindi)

Articles submitted to the Bank Quest should be original contributions by the author/s. Articles will only be considered for publication if they have not been published, or accepted for publication elsewhere.

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Indian Institute of Banking & Finance,

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e-mail address (if any), or last position held, in case of retired persons. Passport size photograph should also be sent along with the submission.

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