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A NEWSLETTER OF THE FINANCE LAB

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INDIAN INSTITUTE OF MANAGEMENT CALCUTTA

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FRTL
Financial Research & Trading Laboratory

Diamond Harbour Road,
Joka, Kolkata - 700104
West Bengal
033 2467 8300

Financial Research & Trading Laboratory

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Editorial

The much waited Goods and Services Tax (GST) is finally launched on 1 July 2017 merging a large number of taxes and duties into a single tax. The registration process will continue till the end of July. There has not been major technological bottleneck so far in implementation of such a huge pan-India regulation. But there are issues with the format of GST-compliant invoice and returns. There are confusions, quite naturally, on the applicability of rates of GST. One possible reason for such confusion is multiple rates of tax. Singapore has a uniform GST rate of 7%. UK has two rates. Also the highest GST rate of 28% in India is too prohibitive according to some experts. Such a punitive tax (normally levied on sin goods) is levied on certain daily necessities like hair shampoo and ATM. We hear mixed reactions in different sectors in the early days of GST. Where the consumer off-takes and footfalls in retail stores have returned to normal levels within a fortnight, the real estate sector is hit hard. According to Bloomberg, new residential real estate project launches and sales in seven major cities of India were down last quarter to nine-year lows. One must not rush to conclude the success or failure of the implementation of GST in India. Let us reserve our comments for at least six months.

In the first article, the author construct a systemic financial distress prediction process based on the tone of corporate annual report text information and proposed a measure to quantify both positive and negative sentiments in the annual report's language without using any accounting information. The second piece argues a case for introduction of Wholesale and Long-Term Finance (WLTF) Banks in India given an experience with Development Institutions. . The third article deals with India's NPA problems and resolution. In the fourth article, the author analyses the investment decisions of an ordinary investor based on over simplistic understanding of past returns of Indian equity markets which fails to highlight the market risks associated with such returns and thus exposing the investor to possible adverse surprise.

The *Market Watch* section in this issue highlights what happened on 10 July when NSE halted trade for several hours (Manic Monday) and the weakening position of the US dollar.

You may send your comments and feedback on this issue to ashok@iimcal.ac.in
Happy reading!

Ashok Banerjee

Predicting Corporate Default Using Text

Ashok Banerjee & Sanjeev Kumar*

Ashok Banerjee, Ph.D., is Professor, Finance and Control, Indian Institute of Management Calcutta (IIM-C). He is also the faculty in-charge of the Financial Research and Trading Lab at IIM-C. His primary research interests are in areas of Financial Time Series, News Analytics and Mergers & Acquisitions

**Sanjeev Kumar, Consultant (Analytics Practice) TCG-Digital*

The rising corporate debt and higher default rates have led to a continuous increase in distressed loans in Indian financial system. The situation worsened when stressed asset ratio rose from 7.6 % in March 2012 to 11.5 % in March 2016 and further to 12% in March 2017. As of June 2016, the total amount of Gross Non-Performing Assets (NPA) for public and private sector banks was around Rs. 6 lakh Crore (almost $10 billion). Alarmed by the deteriorating asset quality, the Reserve Bank of India (RBI) in April 2015 had urged all commercial banks to put in place an early warning system to prevent financial fraud. In March 2016, the Securities and Exchange Board of India (SEBI), the Ministry of Corporate Affairs (MCA) and the Institute of Chartered Accountants of India (ICAI) had emphasised the need for developing an early warning system aimed at zeroing in on companies that have taken funds from public and whose balance sheet parameters show that they may renege on repayment. The problem with this approach –generating early warning signals from financial statements- is it may lack predictive power. This would be particularly true for firms which 'window dress' their financial numbers to 'defer' release of bad news. Lenders typically concentrate largely on financial parameters at the time of loan origination and subsequently track the behaviour of borrowers through financial statements and other financial data furnished by the borrower. However, the information in the financial statements may not reveal the actual state of affairs of a borrower. Take the following example (Table 1). These three companies defaulted in 2015. Their financial health did not show any sign of trouble/irregularity three years (2012) before the year of default. In fact, leverage (debt-equity) of two companies was much less than one. Operating profit margins were in double-digit for two firms. The Altman's Z-score[1] was much above the comfort zone for all the three companies in 2012. One might point out that the EMS can predict distress one year ahead and not so early. However, even in the year of default (2015), the EMS was above 2.6 for all three companies.

[1] The Altman Z-Score is used as a tool for analyzing the level of distress a firm might face in next one year. Altman et al (1995) introduced a revised Z-score model for the non-manufacturing and manufacturing companies operating in developing countries using the sample of Mexican Companies. They called the revised model as EMS (Emerging Market Score). The present study uses the EMS. Any firm, which secures an EMS of 1.1(2.6) or below (above), has high (low) risk of default.

Much of the research has so far explored the relationship between financial distress and historical accounting information. However, the quantitative financial information comprises only approximately 20% of all the information contained in annual reports (Beattie et al. 2004). Therefore to obtain a complete picture of financial health of a company, it is necessary that one uses the qualitative information provided in corporate annual reports. There is of late a growing interest among finance and accounting research community in analysing and quantifying the qualitative information present in annual reports. Loughran, McDonald (2011) analysed the tone of corporate annual reports (sentiment) and observed that sentiments expressed in annual report text data is significantly correlated with profitability, trading volume, and unexpected earnings for listed companies in USA.

Table 1: Financial Health of Three Companies

Financial Parameters: Tale of three Default Companies		
Tarapur Transformers	**2012**	**2015**
Statutory Liabilities (INR Crores)	0.28	0.06
Debt-Equity Ratio	0.23	0.65
Interest Coverage	Negative	Negative
Debtors outstanding>6 months (% total)	37%	57%
5-year Sales growth (CAGR)		38.9%
Operating Profit Margin	Negative	Negative
Altman's EMS-Score	7.73	3.25
Vijay Textiles	**2012**	**2015**
Statutory Liabilities (INR Crores)	NIL	NIL
Debt-Equity Ratio	1.46	1.55
Interest Coverage	1.08	0.47
Debtors outstanding>6 months (% total)	29%	72%
5-year Sales growth (CAGR)		-7.2%
Operating Profit Margin	28.5%	10.4%
Altman's EMS-Score	3.85	3.73
Goldstone Infratech	**2012**	**2015**
Statutory Liabilities (INR Crores)	NIL	NIL
Debt-Equity Ratio	0.50	0.34
Interest Coverage	1.81	2.89
Debtors outstanding>6 months (% total)	3%	1%
5-year Sales growth (CAGR)		6.3%
Operating Profit Margin	14.8%	18.1%
Altman's EMS-Score	3.66	4.38

Realizing the need for greater scrutiny of annual reports, the RBI[2] instructed banks to undertake a detailed study of the Annual Report, and not concentrate merely on financial statements. At present detection of loan frauds takes an unusually long time, which may delay action against any fraudulent entity causing huge losses to financial institutions. So, early detection of any trouble or distress of borrowers would really help in controlling the menace of non-performing assets. The lenders in India should learn the art of extracting information from large text

[2] Framework for dealing with loan defaults, June 2016

documents and improve their present rating system by supplementing financial parameters with text-based information. This would make the existing rating system more robust.

We have observed, after manually going through hundreds of annual reports of corporates, firms reveal more in the 'text' part of the annual report. Companies, more so the listed ones, become careful while presenting financial statements simply because this section of the annual report is scrutinised most by analysts, investors and lenders. We have developed a proprietary text-based model for estimating default probability of firms and we claim that our model has much better predictive power than Altman's. Our proposed model is equally effective in case of unlisted firms. Further our text-based model is designed to capture any kind of trouble or uncertainty that a firm faces in addition to default risk.

Words reveal more

Our model is developed using text present in the annual report of a company. We have only used three sections of an annual report- Directors Report (including Management Discussion and Analysis), Audit Report and Notes to Accounts. It is important to note that annual report (except the audit report) is a self-report of a company and hence such a document is bound to have strong bias. Yet we were amazed by the quality of information that one can extract from such a biased text. Let us take the case of Vijay Textile (mentioned in Table 1). The company reported an operating margin of more than 28% in 2012 with a debt-equity ratio of less than 1.5. Even in the year of default, the debt-equity did not cross 2, though the sales growth was negative. However, if one looks at the annual report of the company over past few years prior to the year of default, one would notice that the company had started facing financial hardships at least four years before 2015 (Table 2). It is interesting to note that the Altman EMS improved over the years whereas the text of annual reports clearly showed that the firm was burdened with huge financial hardship so much so that the company had to dispose of some assets way back in 2011. The firm witnessed inventory pile up and lower profitability in 2012 and the situation did not improve thereafter leading to huge pressure on liquidity in 2014. The material information captured in the text of the annual report, in this example, proves that it makes economic sense to analyse the non-financial information as seriously as one does for financial information. We find that directors report provide most of material information and audit report provided least marginal information.

Magnusson et al. (2005) use self-organizing maps to visualize the changes in the writing style of the annual reports of telecommunication companies. They observed that when a company is expected to perform well, the tone of the report remains positive with extensive use of optimistic vocabulary as compared to a less optimistic and more conservative tone when expecting worse financial performance.

Table 2: Excerpts from Annual Report

Vijay Textiles Limited

- **Corporate Filling in 2011:**

…impact of political disturbance...recorded lower sales…steep rise of prices…fixed assets have been disposed off…
Altman EM-Score : 2.11

- **Corporate Filling in 2012:**

…tremendous cascading effect on production…loss of income directly…was a great dampener on working…bear the burnt of hardening of interest rates…inventory blocking considerable working capital…go for disinvestment…lower turnover and profitability…piled up inventory…production suffered..
Altman EM-Score : 2.46

- **Corporate Filling in 2013:**

…not provided for the preference shares…inadequacy of profit…economic slowdown…acute power shortage…lower turnover and profitability…decision to disinvest…deed cancellation…withdrawing from project…
Altman EM-Score : 3.84

- **Corporate Filling in 2014:**

…consistent pressure on operations…stress on liquidity…realignment of present debt…debt recast…lower performance…faced continuous problems…persisting problems…economic slowdown…arbitration case…cash losses…
Altman EM-Score : 3.68

Methodology Explained

Each piece of annual report text data provides one aspect of reality about a firm's condition for a particular financial year. But the text data contains a lot of noise or irrelevant information, which makes extracting only useful information, using computational tool, a bit cumbersome. So text data cleaning is a first important task before performing any analysis on it.

For cleaning the dataset, we have used the following steps:

1. Remove all hypertext data, urls etc.
2. Remove the selective dash only like un-relalistic is converted to unrealistic, un-certain to uncertain but not profit-loss to profitloss, rather profit loss. We identify the selective prefixes which changes/add stress on the only desired sentiment of words.
3. Remove all non informative text data like numbers, dates, serial numbers for starting points, comma, dots, anything between () or {} or [].
4. Remove all phrases which are general accounting literature terms like profit and loss, gain and loss, all words in capital letters.
5. Perform the lemmatization of the keywords to remove inflectional endings only and to return the base or dictionary form of a word, called lemma.

e.g. diminish , diminishes, diminishing, diminished reduced to diminish.

6. Remove all stop words. There is a list of around 4000 words mainly consisting of objective words which are common literature words and possess no sentiment. This stop word removal greatly helped in inferring the results.
7. The negation words change the overall sentiment of word used in a sentence. So the negation marking is done to correctly infer the actual sentiment expressed by a human writer.

We have used 'bag of words' approach in extracting sentiments out of text. A text document is converted into a vector of counts. The vector contains an entry for every possible word in vocabulary. The original text is a sequence of words but bag-of-words has no sequence. It just remembers how many times each word appears in the test. A matrix can represent the corpus of documents with one row per document and one column per feature (e.g. word) in the corpus (popularly known as term-document matrix). The element (i,j) within this matrix represents term frequency of j^{th} feature in i^{th} document. The resultant representation is called bag-of-documents representation. The final words list extracted from annual reports text using statistical feature selection methods is not exhaustive. The human intervention is desired. So finance and accounting expert intervention helped us create an exhaustive list of features (words) which may be generalized to all annual reports, e.g. qualified if used in auditor's report carries a negative sentiment but in general English dictionary it is a positive sentiment word. The expert judgments helped in categorizing the exhaustive list of keywords into most probable sentiments associated with the feature in finance and accounting literature. The feature selection process reduced the number of keywords by 98%.

The process of feature selection has started with initial corpus of 50 distressed and 50 non-distressed firms. With initial inferences, iteratively the corpus is increased to around 800 firm's annual reports for time period 2007-2015, representing different sectors and belonging to either of one category i.e. distressed or non-distressed firms. We have finally created two important bags of words- fear and sunshine. Fear word list consists of all the constraint words used in finance and accounting literature for disclosing the current or anticipated hardship. Sunshine word list consists of all the word used by managers for disclosing positive information in the annual reports[3]. We have used several metrics for measuring sentiments (Table 3).

Table 3: Sentiment Metrics

[3] We regret our inability to further describe the methodology due to its proprietary nature.

Sentiment Score:

- $Fear\_Score(i,t) = 100 * \frac{Total\ Count\ of\ Fear\ Words\ for\ i^{th} Company\ for\ t^{th} Year}{Total\ Length\ of\ Document^{*}}$
- $Sunshine\_Score(i,t) = 100 * \frac{Total\ Count\ of\ Sunshine\ Words\ for\ i^{th} Company\ for\ t^{th} Year}{Total\ Length\ of\ Document^{*}}$
- $DI(i,t) = \frac{1+ Fear\_Score(i,t)}{1+Sunshine\_Score(i,t)}$
- $DeDI(i,t) = DI(i,t) - Mean\big(DI(j,t)\big), j \epsilon\ All\ Non - Distressed\ Firms$

* Total number of words in the document. DI stands for Distress Intensity

Results

Our sample consisted of annual reports of both public and privately held companies operating and registered in India. We have selected the companies functioning in around 36 different sectors. Due to special nature of business and financial structure, insurance and banking firms were excluded from the sample. Our final sample consisted of 780 companies divided almost equally between financially distressed and healthy firms. The descriptive statistics of fear and sunshine words (Table 4) show that these words have discriminating ability between distressed and non-distressed firms. Average number of negative words (fear score) has increased for both financially distressed and healthy firms over the years. Surprisingly the optimism (sunshine words) in the Indian corporate sector has declined during 2007-2015. The fear score is high for financially distressed firms as compared to their sunshine score. Similarly for non-distressed firms the sunshine score is comparatively higher than their fear score.

Table 4: Descriptive Statistics of Bag of Words

	Distressed Firms						Non-distressed Firms					
	Fear_Score			Sunshine_Score			Fear_Score			Sunshine_Score		
Year	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
2007	7.22	3.15	14.04	8.2	3.38	15.1	6.9	2	11.61	9.62	4.78	20.27
2008	8.05	3.09	14.42	8.7	3.64	15.39	7.65	2.78	13.41	10.11	5.23	20.6
2009	8.89	3.58	14.73	8.55	4.05	14.95	8.15	3.27	12.98	9.97	4.62	20.17
2010	7.76	2.08	13.91	7.92	4.16	14.91	7.31	2.65	11.73	9.51	3.79	20.73
2011	7.99	3.92	12.83	7.84	4.78	14.9	7.24	2.84	11.83	9.59	4.58	21.38
2012	8.43	3.61	14.55	7.86	4.55	13.75	7.45	2.53	11.23	9.53	5.35	20.94
2013	9.3	3.99	15.54	7.68	3.09	14.18	7.92	2.76	11.66	9.56	4.31	21.17
2014	9.28	4.03	15.66	7.69	4.27	13.62	7.8	3.35	10.89	9.31	4.55	20.41
2015	9.31	4.29	13.8	7.93	3.68	13.25	7.88	3.98	11.08	9.46	5.02	20.04

Our results show that text–based model performs better than Altman Z-Score in predicting default (Table 5). Panel A of the table shows that our text-based model has better predictive power than Altman's EMS. For

example, our model could correctly classify 83% of distressed firms two years before the year of default where the Altman's EMS could classify only 44% correctly. One may wonder why our model wrongly identifies a third of healthy firms as distressed firms. The reason is our model captures any kind of trouble and not necessarily financial distress.

Table 5

Panel A: Percentage of firms identified as distressed using Text of Annual Report

t^{th} Year Annual Report	Defaulted in $(t+2)^{th}$ Year	Defaulted in $(t+1)^{th}$ Year	Defaulted in $(t)^{th}$ Year	Non Distressed Firms
2013	83%	75%	73%	33.5%
2014	-	88%	65%	34%
2015	-	-	77%	34%

Panel B: Percentages of firms identified as distressed using Altman EMS

t^{th} Year Annual Report	Defaulted in $(t+2)^{th}$ Year	Defaulted in $(t+1)^{th}$ Year	Defaulted in $(t)^{th}$ Year	Non Distressed Firms
2013	44%	58%	65%	15%
2014	-	61%	79%	18%
2015	-	-	67%	17%

We have also tried to map the default probability with firm ratings. We have used latest available rating of long-term debt instruments (or loans) issued (raised) by firms in our sample. Information on ratings were available for only 653 out of 780 firms in our sample. We observe that text-based probability estimates are highly correlated with the ratings of firms.

Table 6: Credit Ratings and Default Probabilities

RATINGS	Number of Companies	Mean PD	Median PD	SD	Standard Error	Confidence Interval
A	75	0.481215	0.478512	0.149147	0.017222	0.034316
AA	192	0.409935	0.416292	0.151555	0.010938	0.021574
AAA	62	0.309836	0.238397	0.141819	0.018011	0.036015
B	39	0.67719	0.656481	0.142903	0.022883	0.046324
BB	52	0.611038	0.609468	0.19681	0.027293	0.054792
BBB	59	0.470745	0.456779	0.172132	0.02241	0.044858
C	15	0.67049	0.640226	0.128924	0.033288	0.071396
D	155	0.610771	0.628122	0.169184	0.013589	0.026845
NM	2	0.786156	0.786156	0.052783	0.037323	0.474239
WD	2	0.309671	0.309671	0.062139	0.043939	0.5583

PD implies Probability of Default. NM=Not Mentioned. WD= Rating Withdrawn

The focus of the study was to design an early warning measure of financial distress based on qualitative information present in corporate annual reports. We set out to construct a systemic financial distress prediction process based on the tone of corporate annual report text information and proposed a measure to quantify both positive and negative sentiments in the annual report's language without using any accounting information. We turn to the case of Vijay Textiles for the last time (Figure 1). As mentioned earlier, the company defaulted in 2015 and Altman's EMS failed to capture the phenomenon. However, our 'fear score' surpassed 'sunshine score' in 2011 and thereafter the 'fear score' was always higher than the 'sunshine score'. Also the probability of default was close to 60% in 2011 and increased further thereafter.

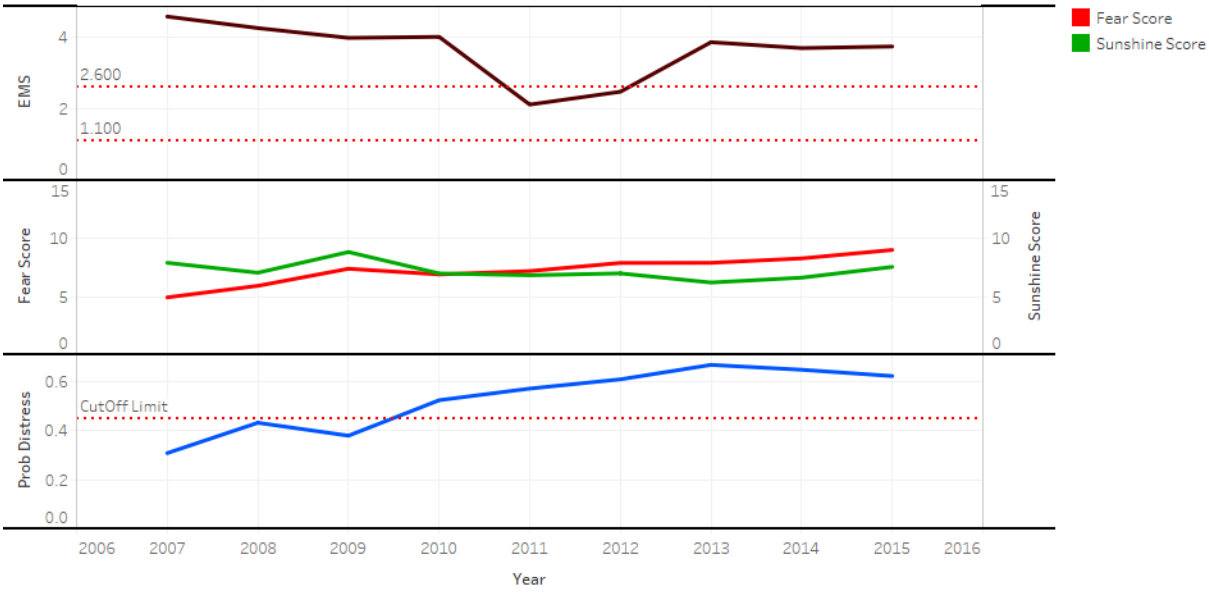

Figure 1: Vijay Textiles: Probability of Default Estimates

The proposed sentiment based method performed better than the traditional accounting information based models for predicting the probability of distress. Hence, it is harmful to ignore the boring text of an annual report.

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Wholesale and Long-Term Finance (WLTF) Banks: Are these Reincarnations of the Development Banks?

Partha Ray

Partha Ray, Ph.D., is Professor, Economics, Indian Institute of Management Calcutta (IIM-C). Prior to joining IIM-C, Prof. Ray, a career central banker, was the adviser to Executive Director, International Monetary Fund, Washington D.C. during 2007-2011.

The RBI has released an important and timely discussion paper on April 4 2017 on the "Wholesale and Long-Term Finance" (WLTF) Banks.[4] This is in consonance with announcement made in the first Bi-monthly Monetary Policy Statement 2016-17 (of April 5, 2016) which had mentioned that the RBI would "explore the possibilities of licensing other differentiated banks ....and had identified custodian banks and banks concentrating on wholesale and long-term financing, as two other classes of differentiated banks". Looking into cross-country experience, the present RBI proposal views extends that vision WLTF banks that would focus primarily on "lending to infrastructure sector and small, medium & corporate businesses." What is their genesis? Are these WLTF banks going back from the professed path of financial sector reforms whereby development banks like IDBI or ICICI banks were winded up? This short piece makes a speculative attempt to look into some such questions.

Genesis and Functions

As far as the genesis of WLTF banks is concerned, it can be traced in the Report of the RBI Committee on Comprehensive Financial Services for Small Businesses and Low Income Households (Chairman: Dr Nachiket More; June 2014) that envisaged a class of differentiated banks called "Wholesale Banks".[5] It noted:

> "Given the enormous cost and informational disadvantages that National Banks face in India it is possible that this may be an entirely acceptable and even a preferred strategy for a large, systemically important bank to follow, ... so that it is able to maintain an extremely high level of safety in its credit ratings and can therefore act as a high quality aggregator of both deposits and loans allowing smaller and more specialised banks and financial institutions to transfer their own systematic exposures to such a Wholesale Bank."

Taking a cue from the Mor Committee Report the April 2017 proposal of RBI has noted, "The Wholesale and Long-Term Finance (WLTF) banks will focus primarily on lending to infrastructure sector and small, medium & corporate businesses. They will also mobilize liquidity for banks and financial institutions directly originating

[4] https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=866 (accessed on July 23, 2017).
[5] https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/CFS070114RFL.pdf (accessed on July 23, 2017).

priority sector assets, through securitization of such assets and actively dealing in them as market makers" (p.10). It may be useful to note the following specific features of these WLTF banks:

a) Activities: The primary activities of WLTF banks will be deposits or loan products for wholesale clients and financing of infrastructure sector and core industries. These banks also act as "market-makers in securities such as corporate bonds, credit derivatives, warehouse receipts, and take-out financing etc" and will provide refinance to lending institutions. These banks may also offer investment banking services related to equity / debt investments and forex / trade finance. But unlike investment banks these services will be of ancillary interest to WLTF banks.

b) Sources of Finance: Primary sources of funds for WLTF banks could be a combination of "term deposits, debt / equity capital raised from primary market issues or private placement, and term borrowings from banks and other financial institutions".

c) Deposits: These banks may be permitted to accept deposits only "above a large threshold amount" and are expected to have negligible retail segment exposure. Deposits of these banks will have deposit insurance cover.

d) Regulatory Requirements: These banks are expected to have a higher level of initial minimum paid-up equity capital, say Rs. 1,000 crore or more. While these banks may be required to maintain CRR they would be eligible for exemption from CRR requirement for the liabilities under infrastructure bonds. Finally, some relaxation in respect of prudential norms on liquidity risk (e.g., Liquidity Coverage Ratio / Net Stable Funding Ratio) may be considered for WLTF banks. Opening of rural and semi-urban branches and compliance to priority sector lending norms would not be mandated for these banks

The Rise and Fall of Development Banks in India

But why does a country need WLTF banks? Are these not look-wise quite similar to the development banks? It is useful to turn to Nayyar (2015), who said:[6]

> "The economic logic of development banks is simple. In countries that are latecomers to industrialisation, capital markets are imperfect. Therefore, new firms, which seek to enter the industrial sector, find it exceedingly difficult to obtain finance for their initial investment..... The problem is exacerbated when such investments are characterised by lumpiness and returns accrue only after a gestation lag. In these circumstances, firms might underinvest, or fail to invest, in the creation of manufacturing capacities that require learning capital. ... The problem is far more acute for long-term finance where there are indivisibilities in the capital needed by new firms, as the initial losses are high and the learning period is long. .... Latecomers to industrialisation create development banks essentially to meet these financing needs of pioneering firms in a non-existent or infant manufacturing sector, which are not met by capital markets or commercial banks because, in their calculus, the risk is too great" (p.51; emphasis added).

[6] Nayyar, Deepak (2015): "Birth, Life and Death of Development Finance Institutions in India", Economic & Political Weekly, August 15, pp. 51 -60.

It may be useful to get a historical perspective of development banks here. India's first development bank, the Industrial Finance Corporation of India (IFCI) was set up in 1948. Within next five years, a number of state governments with the encouragement of the central government set up their own State Financial Corporations (SFCs). Later in 1954 the National Industrial Development Corporation (NIDC) was set up as an agency of the Central government to provide both entrepreneurship and finance to the industrial sector and functioned till early 1963. The Industrial Credit and Investment Corporation of India (ICICI) was floated as a public limited company with initiatives of the World Bank, the Government of India and representatives of Indian industry. While its primary objective was to provide medium-term and long-term project financing to Indian businesses, it emerged as the major source of foreign currency loans to Indian industry as well as for doing underwriting for the Indian corporates. Subsequently in 1964, the Industrial Development Bank of India was set up as an apex institution in the sphere of medium- and long term finance. It took over the business of the Refinance Corporation for Industry, which was set up in 1958 for SFCs. The control of the IFCI was transferred to the IDBI from the Central Government. The IDBI was constituted as a wholly owned subsidiary of the RBI and the RBI has created a new long-term fund known as the National Industrial Credit (Long-term Operations) Fund with an initial contribution of Rs 10 crore to which the RBI used to make annual allocations out of its surplus profits before these were transferred to the government (Ray, 2015).[7]

It is important to note that one of the key outcomes of the financial sector reforms in India has been the demise of the so-called development banks. This was in line with the report of the Narasimham Committee II, which recommended that the IDBI should be corporatized and converted into a Joint Stock Company under the Companies Act on the lines of ICICI, IFCI and IDBI. In some sense, the Narasimham Committee II echoed the spirit reflected in the World Bank's World Development Report, 1989 which commented, "Nonbank financial intermediaries, such as development finance institutions, insurance companies, and pension funds, are potentially important sources of long-term finance.....most of the existing development banks are insolvent, however" (p. 4). Development banks were winded up in India primarily due to lack of sources of non-concessional finance which in turn emanated from a binding fiscal constraint. Put simply these development banks became unaffordable and their concessional sources of funds dried up. Accordingly in January 2001, the RBI permitted the reverse merger of ICICI with its commercial bank subsidiary. Later on October 1, 2004, IDBI was converted into a banking company and subsequently in April 2005 it merged its banking subsidiary (IDBI Bank Ltd.) with itself. With the demise of the IDBI and the ICICI, the term lending of the country had experienced a distinct transformation.

[7] Ray, Partha (2015): "Rise and Fall of Industrial Finance in India", *Economic and Political Weekly*, January 15, pp.61-68.

Need for the WLTF Banks

After a decade of the demise of development banks, there is a strong view that while winding up the development banks, India policy makers committed the folly of throwing the baby along with the bath water. After all, the death of development banks created a vacuum of term and infrastructure financing. Who filled up the void of terms-lending / wholesale funding? In an economy with well-developed financial markets, private corporate bonds could have come up. But despite various attempts, corporate bond market in India remained largely a private placement market catering primarily to blue-chap corporates. Thus, commercial banks had to come up to fill-up this void. But commercial banks have typically short term deposits as their main source of funds; hence any exposure to long term lending created a serious asset liability mismatch in their balance sheet.

Long-term loan to infrastructure is a major issue here. Such exposure to long-term infrastructure lending has been a key reason behind the accumulation of non-performing assets (NPAs) in commercial banks in India in recent times. The problem is a serious one as the RBI Financial Stability Report of June 2017 noted that the gross NPAs of scheduled commercial banks in India rose from 9.2 per cent in September 2016 to 9.6 per cent in March 2017 - it is anticipated to rise to 10.2 per cent by March 2018. Furthermore, their stress tests indicated that to loans to infrastructure could considerably impact the profitability of banks so much so that a severe shock (defined as 15 per cent of restructured standard advances and 10 per cent of standard advances become NPAs and move to the loss category) could completely wipe out the recorded profits of 2016-17. Faced with such a situation WLTF banks seem to be the right answer.

Way Ahead

Development of corporate debt market is not the only way to fund longer term financing needs – there are complementary approaches. It is in this context that the RBI Discussion Paper flagged the instances of a number of globally successful WLTF banks - Brazil, South Korea, Japan to name a few. When commercial banks in India are burdened with NPAs and infrastructural needs of the country are huge to reap the full growth potential, the proposal to set up WLTF banks is really opportune at the current juncture. However, it will be illusive to treat these WLTF banks as reincarnation of erstwhile development banks. It remains to be seen as to how far successful these WLTF banks will be in terms of getting access to non-concessional market based finance and still be viable.

ALUMNI CORNER

The NPA crisis: genesis and resolution

Balachandran R

Balachandran R is an alumnus of IIM Calcutta (1987-89) with extensive experience in corporate banking, investment banking and product management.

The financial crisis that originated in the United States in 2008 laid the foundation for much of today's non-performing loans plaguing the Indian banking sector. Tracing the history of the crisis, lax underwriting standards and risky behavior at Wall Street, abrogation of the Glass Steagall Act which mandated a Chinese Wall between investment banking and commercial banking, explosion in financial engineering in the form of Credit Default Swaps, CDO's etc., and "originate and sell" strategy by banks through securitization were some of the contributing factors; not in the least was the role played by Credit Rating Agencies in precipitating the crisis. Analysts from the agencies privately expressed skepticism about the fate of the subprime securities that they were tasked to rate, but went ahead with a AAA rating, to win and stay in business giving a false sense of comfort to the buyers.

When fault lines emerged in the markets in early 2008, and the securities firm Bear Stearns faced a run, the US Government arranged for its bail out through JP Morgan Chase Bank. But for reasons best known to him, Henry "Hank" Paulson US Treasury Secretary, chose to let Lehman Brothers with its trillion dollar balance sheet fail. The markets seized up, banks refused to lend to each other in the overnight money markets, the commercial paper market for corporates froze and money market funds which were known to never "break the buck", did so at the peak of the crisis.

Next in line to reach the verge of collapse was the insurer AIG with its trillion dollar balance sheet and a massive exposure to subprime securities which it underwrote through Credit Default Swaps. Having belatedly realized its folly in the Lehman Brothers episode, the US government stepped in with an unprecedented bailout of USD 180 billion for AIG. Through the Troubled Asset Relief program or TARP, banks accepted capital from the US government in its bid to restore confidence in the banking and financial system. The US Federal Reserve brought its Federal Funds Rate to zero and unleashed a wave a liquidity through the program known as Quantitative Easing.

Cut over to India, with its economy growing at more than 9.5 pct. pre crisis, and believing that its growth rate was still below potential. The financial crisis emanating in the US reached the Indian shores and impacted the markets in India as well. Money markets nearly seized up and rates went through the roof. Foreign investors stampeded for the exits. The equity market fell by over 50 pct. from its peak. In the first half of 2008-9 more than Rs 50,000 crores flew out of debt mutual funds. The central bank stepped in and infused liquidity through a special 14 day Repo and other liquidity measures for mutual funds through banks.

The crisis in the Indian markets took a toll on the economy. GDP growth fell to 6.72 pct. in 2008-09 from 9.32 pct. in the previous year. The government sought to revive "animal spirits" in the economy and get back to pre-crisis growth rates to prove to the world that India was immune to the impact of the financial crisis exported by the US. Public sector banks were under tremendous pressure to lend to steel, power and infrastructure companies in big ticket loan transactions. This was often backed up by project reports prepared by consultants and others that provided a rosy picture of demand and supply. A period of euphoric lending followed with GDP growth rate rebounding back to levels seen before the financial crisis.

And then came the NPA day of reckoning. When the tide finally turned, most of the old guard like the Tata and Birla group companies who had their fair share of woes, never defaulted in the most adverse of conditions. But the relatively new generation entrepreneurs with their mega projects threw up their hands. What can be done, if international commodity prices collapse, or if power tariffs do not cover the cost of production was the oft repeated justification; or if the coal block allotted by the government is taken away by judicial intervention. The facts of excessive leverage, low skin in the game of promoters and at times inflated project costs, were glossed over.

While it is unfair to paint everyone with same brush, many unscrupulous promoters seized the opportunity during the lending euphoria, sometimes with the help of bankers. Here is an egregious example. The borrower wished to "execute projects" in foreign countries. Towards this the borrower requested banks to issue performance guarantees. This appeared to be a legitimate request and banks obliged. Soon, the overseas banks of the beneficiaries invoked the guarantees, and the domestic banks were contractually obligated to pay. The money was never recovered. When the transaction was investigated, the whole scam unraveled. The promoter had registered trusts in offshore tax havens. The sole beneficiary of these trusts was the promoter. The trusts then incorporated legal entities/shell companies in other foreign countries. These shell companies controlled by the promoter pretended to have work contracts for which they sought performance guarantees from banks in the home country of the promoter. The guarantees were deliberately invoked and the local banks were forced to remit money in millions to overseas banks. Along with the money, the promoters are also known to have fled to tax havens leaving the tax payer at a loss. Such cases of corporate malfeasance are not isolated and have made a significant contribution to the current banking morass.

Enter Raghuram Rajan as the Governor of the RBI in 2013. Sensing that banks were ever greening loans ("extend and pretend that a loan is not a NPA") by constantly restructuring and deferring loan payment installments, he ordered an Asset Quality Review(AQR) in 2015-16. The AQR resulted in banks making humongous provisions on hitherto unclassified NPA's with a significant impact on the capital adequacy ratio of banks. The Common Equity Tier 1 ratio is a critical parameter of a bank's health as per the Basel Committee for Banking Supervision. Here is a look at how some PSU banks' CET1 ratio has been impacted by NPA's.

	31.3.2015	31.3.2016	31.3.17
PNB	8.48	8.48	8.17
IDBI Bank	7.36	8.06	5.75
Bank of India	7.18	8.34	7.71
Bank of Maharashtra	7.48	7.18	7.28
Uco Bank	8.94	7.52	7.64

Source: disclosures by respective banks

IDBI bank has been relatively most impacted. Fall in CET1 ratio below threshold levels and inadequate reserves will affect the Additional Tier1 bonds issued by the banks under Basel norms. These bonds are quasi equity instruments with no repayment date, with bond holders carrying default risk much higher than plain vanilla bank deposits.

The various stressed loan resolution schemes like 5/25, SDR, S4A have not had the desired impact. Lack of decision making at banks to take haircuts on their bad loans has been hampering the efforts to clean up their balance sheets. Such a decision to write off could always attract investigations down the line and put off the risk averse bankers. The crux of the issue is the valuation of such non-performing loans with no mechanism in place to determine that in a transparent manner.

The US has an active market for distressed loans. Like equity quotes, the loan market provides quotes for syndicated corporate loans which are traded in the secondary market. The industry body Loan Syndication and Trading Association based in New York acts as a self-governing organization that seeks to increase transparency and efficiency in the loan markets. Such loan market associations exist in Europe and Asia Pacific too. Perhaps either the regulators or the market players in India should work towards building a transparent loan market though that will not be a solution for the immediate NPA clean up problem on hand.

The RBI in its Financial Stability report in June 2017, has estimated that Gross NPA's of banks may rise from 9.6 pct. in March 2017 to 10.2 pct. in March 2018. A buyer could emerge for any asset even if it is non performing in nature, provided the price is right. Asset Reconstruction companies which acquire NPA's have already been established in India though their capacity is a drop in the ocean compared to the humongous size of NPA's in the banking sector. Foreign funds can be sizable players provided banks are willing to take a decision to price the bad loans at a point that will make it attractive to buyers.

In order to force the hands of the dithering bankers, the Government passed the Insolvency and Bankruptcy Code (IBC) and subsequently through an ordinance empowered RBI to direct banks to refer defaulted loans for resolution through the bankruptcy code. If the borrowers and their lenders along with the Insolvency Professional are unable to come up with a viable plan for turning around a company within 180 plus a grace period of 90 days, then the borrower will be forced into liquidation. The new mechanism does not seek to address the issue of a lack of a transparent and efficient price discovery mechanism which is at the root cause of the lack of progress in NPA resolution and cleanup of banks' balance sheets. It remains to be seen if the IBC will nudge the stakeholders, viz. the lenders, borrowers, insolvency professionals, Asset Reconstruction Companies and other investors- to evolve such a mechanism over the next 6 months. Indian banking can then put aside its past NPA problems and start anew.

GUEST COLUMN

The Many Truths about India's Long Term Equity Returns

Deep N Mukherjee

Deep N Mukherjee is currently Chief Product Officer, handling product design and analytics in a Indian credit bureau. He has over 14 years of experience in Risk Management and Credit Assessment. Prior to his current role, within Fitch he was in structured finance team. Prior to his organization he was with American Express where he was heading the Institutional Risk Management Team focusing on quantitative risk management. He is also a visiting faculty in finance with IIM Calcutta. He has done his graduation in engineering from IIT, Kharagpur (BTech, 1999) and has obtained his management degree from IIM Lucknow (PGDM 2002).

Markets are now at historic highs. On 20th July 2017, Nifty 50 closed at 9873. On 20th July 1990 Nifty 50 had a level of 302, a mind-blowing 32 times growth over a period of 27 years with an annualised return of 13.7%. Prima facie, these numbers clearly create a case for investment in Indian equities. But such headline numbers often sets wrong expectations on risk and return among investors. Besides they also form the basis of various claims which superficially appear to be correct but on deeper analysis appears to be somewhat exaggerated.

Claims by various stake holders in equity market such as brokerage houses and mutual funds looks barely conservative even when the annualised 13.7% is considered. A lot of purveyor of equity products often suggest that over the long term an investor in a portfolio of Indian equities may expect 12% to 15% annualised returns. As such the Nifty 50 was launched for trading on April 1996. The data dating back till 1990 was market data reflecting the index value used for the index creation. From the launch date of Nifty50 the current level suggest an 8.7X growth with annual returns (including dividend) of around 11%. Thus one may say that typical claims of long term returns on Indian equity are possibly exaggerated. It is to be noted that this is a 21 year (and not 27 year) return and hence a bit lower. Such observations dovetail into the popular narrative of compounding of returns and how 27 years being longer than 21 years results in higher returns (even annualised!!). However this explanation is not only simplistic but may be misleading under certain scenarios.

Of course in each of the solicitations and advertisements for investment in equity, as mandated by the market regulator SEBI, the advertiser sensitises the investors that past returns may not reflect the future returns and the returns themselves are subject to market risk. Despite these warning notes, an ordinary investor is made to believe that a)long term returns (5 to 10 years) have been handsome, enough to justify the 'market risk' , b)the returns

were well above rates of bank deposits or investment in bonds. This understanding of common investors is directly driven by the near constant promotional bombardment with overarching headlines which hides nuances of historical return.

Lot of investment decisions based on over simplistic understanding of past returns of Indian equity markets fails to highlight the market risks associated with such returns thus exposing the investor to possible adverse surprise. One may of course wonder why the various purveyors of equity products, more importantly the market regulator, have not taken enough steps to elucidate the story as opposed to limiting itself with the catch all 'equity returns are subject to market risk'.

The prospective investor in equity market needs to know that there were long stretches where 5 year returns had been negative and some instances where even 10 year returns on equity index has been negative and would turn barely positive if the dividend is added.

The forgotten subplot of a popular story: From July 1990 till July 2017, one may divide Indian equity markets into 5 phases based on returns. The short two year period between 1990 and 1992 and then again the four and a half year period between July 2003 and January 2008 accounted for bulk of the returns, till date. However, the 11 year period between 1992 and 2003 and then again from January 2008 to August 2013, the long term growth has been largely flat to negative. One may say that since 1991 Indian markets have given flat to negative returns in most of the years. However there were shorter stretches where the returns have gone through the roof.

Representation of Returns: There are two typical ways in which equity returns are calculated for public consumption. One is the way described above where the index values at the start and at the end of a multi-year period are used to find the cumulative returns and then annualised based on number of years in that period using annual compounding assumptions. Mutual funds while highlighting their returns often take returns between

specific dates such as 1 January or 1st April as start date and end dates of 31st December or 31 March after one or multiple years. And then of course the annual compounding calculations kick in. The annualised returns thus calculated are used to present the annual return an investor may expect over a longer term holding period. These are of course not incorrect methods in themselves but they do not consider a very practical aspect of investment behaviour.

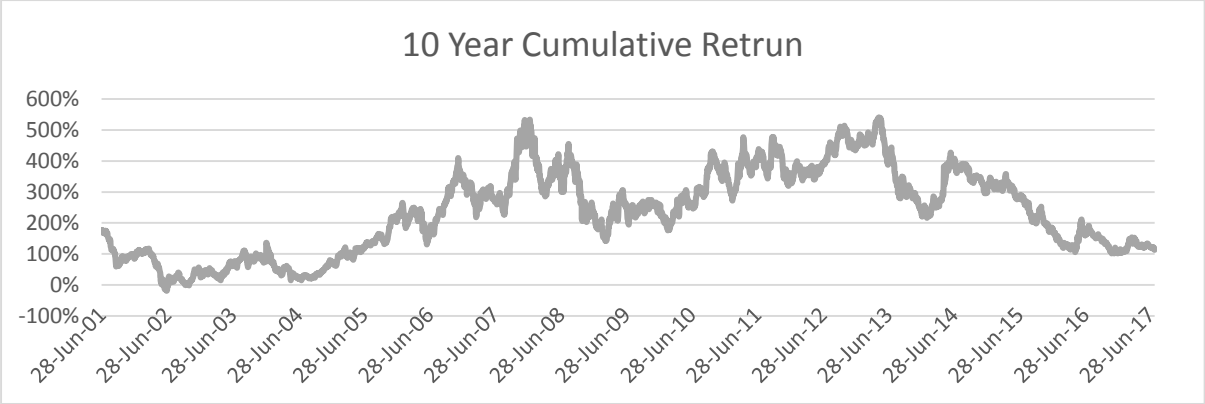
An investor will invest in any day when the market is open for trading and will likewise sell on any day when the market is open. Under such a scenario it may be argued that if the 1-year, 5 year,10 year(or for that matter any period) returns are calculated on a rolling basis and the median or average returns are taken then it may be more representative of the 'true' return. In fact this approach also shows the standard deviation of returns for each of these holding periods. More importantly it easily identifies stretches where the returns were significantly low or negative.

	1 Year Return	5 Year Cumulative Return	10 Year Cumulative Return
Median	11%	55%	240%
10 Percentile	-20%	2%	48%
25 Percentile	-6%	23%	114%
75 Percentile	37%	107%	345%
90 Percentile	63%	212%	413%
Returns do not include dividend, which typically average around 0.5% returns a year			

The table suggests that at least one in four years the one year return is negative. However the bright spot has been that in one out of four year (refer 75 percentile) the annual return has been in excess of 37%. Indeed a very volatile market as is the case with most emerging markets. While commentators often highlight that short investment period such as one year gives volatile return and try to assuage that longer holding period gives more stable and higher returns. Now this is correct if one looks at median 5 year and 10 year cumulative returns.

But there are one in 10 instances where the cumulative 5 year return is just 2% and if one includes dividends the cumulative returns of these 5 year holding period is 5%. There are one in four instances where the cumulative 5 year return is just 23%(without dividend). Even considering the dividend there were stretches where for five year holding period the return was barely higher than interest rates on savings deposit of bank.

Of course longer term holding period does tend to reduce volatility of returns, but there were 10 year investment holding periods where cumulative returns were less than 48% which is the same return the investor would have received had they kept their money in savings deposit of banks.



The point to note here is the median annual returns for 5 year and 10 year holding period ranges between 9% and 12%. Often an ordinary investor will take this at face value without realising upfront that there can be long stretches where the equity market returns even for longer holding period of 5 years or 10 years barely beat the savings deposit interest and on many instances such returns would be lower than returns of bank fixed deposit or fixed income mutual funds.

SEBI should clarify the communication: SEBI should go beyond the present mandate of informing investors about market risk of equity returns. It will do well to suggest that Mutual Funds should also calculate their return on rolling basis. Besides the investors must be communicated in simple language that while the average returns has been 11% to 12% there were instances where even a 10 year holding period had flat returns and stretches where 5 year returns yielded negative return. This phenomenon can be easily captured in the disclosure requirements for mutual funds by making it mandatory for the funds to report maximum drawdown and days of recovery in addition to historical returns.

Of course investors who invest after knowing these divergences in long term return truly exhibit the appetite for handling equity market risks and will lend to long term stability of the market. Else it is possible that quite a few investors are joining the equity band wagon without the knowledge of negative divergence of past returns. These investors are likely to get disillusioned with the equity markets and switch off from the markets after an initial burst of activity.

Manic Monday on NSE

Vedant Bagry

(PGP Student, 2nd year, IIM Calcutta)

A technical glitch on National Stock Exchange (NSE) shut down trading for five hours on July 10, creating embarrassment for India's top stock exchange. Trading resumed fully with mid-day after three attempts to re-open.

Although the markets re-opened for trading at midday, traders were frustrated that individual stocks were not immediately updating, or had wide gaps in bid and offer prices. After trading resumed, the NSE's broader index also rose as much as 1.2 per cent to a record high, but volumes were only a fraction of the average seen last week. Rival BSE saw its average volume triple on the day as market participants turned to the other exchange.

The incident on Manic Monday not only highlights the lack in infrastructure at India's top exchange but most importantly shows the importance of having multiple exchanges in a country. Many questions need to be answered; Why the back-up system of NSE did not work? Why was communication and incident management so poor? Was it an act of cyber terrorism or simply irresponsible management?

Sinking US Dollar; Global Currencies Rally

Snehal Singhania

(PGP Student, 2nd year, IIM Calcutta)

US Dollar Index Spot Rate (DYX)

Source: Bloomberg

Slower economic data and funds flowing back to European markets is weakening the position of dollar. A stalemate in Washington post the collapse of healthcare bill hit dollar hard, with dollar index falling to lowest levels post the election of Donald Trump. Federal Reserve caution on fed-rate hike and concerns about US inflation is adding to the weak dollar position.

US Dollar is falling against its developed world peers, as well as emerging markets, with euro rising 0.65% at $1.155, AUD rising 1.6% to $0.792(a two-year peak). Is the negative effect of Trump administration finally kicking in, or is it just a temporary phenomenon? It remains to be seen!

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