A Newsletter of Finance Lab

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Indian Institute of Management Calcutta

Editorial

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✦ **Prof. Ashok Banerjee**

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✦ **Prof. Partha Ray**

✦ **Dr. Golaka C. Nath**

The India Finance Conference was held during 19-21 December, 2012 at IIM Calcutta. This was the first conference held under the joint banner of IIM Calcutta, IIM Bangalore and IIM Ahmedabad. Prof. Kaushik Basu, Senior Vice President and Chief Economist, World Bank was the Chief Guest. The plenary sessions were addressed by Prof. Sudipto Dasgupta, Chair, Dept. of Finance, HKUST and Prof. Marti Subrahmanyam, Charles E. Merrill Professor of Finance, Stern School of Business, New York University. The three-day conference has seen presentation of 115 research papers. Several overseas participants from USA, United Kingdom, Singapore, Australia, Nairobi and Indonesia have attended the conference and presented papers in various technical sessions.

The present issue contains three articles. The first piece examines the efficacy of capital market in processing signals. The article finds that investors at times are myopic. The second article looks at micro financial risks and the role of banks. The article looks at the ingredients of micro financial risks. The third article looks at structural issues with benchmarking rates. The author suggests that benchmark rates should be designed in such a manner that it has proper audit trail and extremely difficult to manipulate.

I hope you'll enjoy reading the newsletter. Please offer suggestions for further improvement to ashok@iimcal.ac.in

Editor

TABLE OF CONTENTS

Wrong Signal?

Prof. Ashok Banerjee

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.

The reaction of stock market to publicly available information is well researched. Researchers have looked into the aspect of stock market reaction to a variety of information generating events. For example, studies have shown that stock market react positively to corporate strategic investment decisions, dividend increasing announcements etc. The stock prices are said to underreact when prices keep trending up (down) after initial reaction to a positive (negative) news. On the other hand, investors tend to overreact to recent good or bad news- leading to excessive optimism to good news and excessive pessimism to bad news[1]. Such reactions question the validity of the Efficient Market Hypothesis. However, some experts maintain that the overreactions of stock prices prove that stock markets are myopic- market overvalues short-term earnings/dividends and undervalues long-term earnings/ future dividends. Another set of studies highlight the differences in investor reactions to good and bad news. Investors, it was observed, react more aggressively to bad news implying thereby that bad news is more credible.

The anomalies in the asset prices are profitably used by traders, particularly high frequency traders. Trading strategies, like momentum and contrarian, show that one can make abnormal gains even for a fairly longer time (about a year). Sensing business opportunities, several software vendors, real-time news agencies have developed news-based trading models to exploit the anomalies of the stock market. News-based trading, it is claimed, can generate intraday abnormal profits. News based trading rule uses sentiments captured in the news and accordingly classify any news into positive, negative and neutral sentiments. A simple trading strategy could be to go long in 'positive sentiment' stocks and short on 'negative sentiment' stocks. An earlier article in this magazine has also shown such a phenomenon. The issue that the present article raises is whether the stock market knows what is positive news. Are the investors only bothered about corporate actions which affect, favourably or unfavourably, the concerned firm, irrespective of their impact on the society/ economy? Do the investors equally cheer corporate social initiatives and large dividend announcements? Empirical evidences suggest that investors are more concerned about short-term performance. Investors' activism, though a good measure to put incumbent management in check, may put excessive pressure on a company to continuously beat expectations. Such pressure may lead to decisions which satisfy the investors group, but not necessarily value enhancing in the long run. Some corporate have realized this danger and have started favouring more broad based shareholding pattern. Corporate action, like stock splits, is sometimes aimed at having more dispersed shareholders.

Is good bad?

If a company grows continuously, but at a rate lower than expected, is this a bad news? It seems that the market thinks so. The fact that the company is growing continuously appears to be lesser consequence. What seems to be more important is whether the company has outperformed. Hence, underperforming the market expected growth is a bad news for the investors. We have

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[1] Tversky A, and D. Kahneman, 1974, "Judgment under uncertainty: heuristics and biases" *Science 185,* 1124-1131

looked at market reaction to some such stories over the last couple of months. The stock reaction on the day following the release of the news is captured. Excess return is estimated as the difference between one-day stock return and the market (Nifty) return for the same day. Results (Table 1) clearly show that market penalizes underperformance. The firms have reported growth, though less than historical level or forecast, and still the market have treated the news as bad.

Table 1: Stock market reaction to lower-than-expected growth announcements

	News	Excess return
Adani Power	Sell recommendation	-0.14%
Asian Paints	Growth less than historical level	-0.03%
Godrej	Higher realization/volume growth	-1.29%
Havells India	High expected growth	1.59%
ICICI Bank	Higher growth prospect	-1.44%
IDFC	Growth less than expected	-2.43%
Mahindra & Mahindra	Hold recommendation	-0.13%
Navneet Publications	Modest growth	-2.28%
Tata Motors	JLR reported strong growth	0.80%
Wipro	Muted growth, demerger	1.58%

Is bad good?

How do you react to news of lay off? If you are an employee of the concerned organization, you'll definitely react negatively. Even if you are a concerned citizen, you may react adversely. The reaction will be quite opposite if you are investor!

If a company announces job cuts or loss of employment, that should be treated as bad news for the society. The firm must be facing some pressure on the margin or market share and hence there is a need for cost rationalization. The most vulnerable cost element that gets hit first is the 'wage bill'. Ignoring the impact of such corporate action on the morale of the employees and also the fact that such action may result in social unrest; investors react very positively to such drastic actions (Table 2). Thus, socially bad news becomes good news for the investors.

Table 2: Stock market reaction to job loss announcements

	News	Excess return
Arcelor Mittal	Job cut in France	0.74%
HP	Purging of 27000 employees	0.78%
NDTV	50 job cuts	9.57%
Sony	No job cut in India/ globally huge cut	0.50%
Tata Communications	Cuts 300 jobs worldwide	1.81%
Tata Steel	Cuts 900 jobs globally	1.75%

The results may incite skepticism on the role of capital market in addressing social concerns. The results may also suggest stock market is indeed myopic and emotionless.

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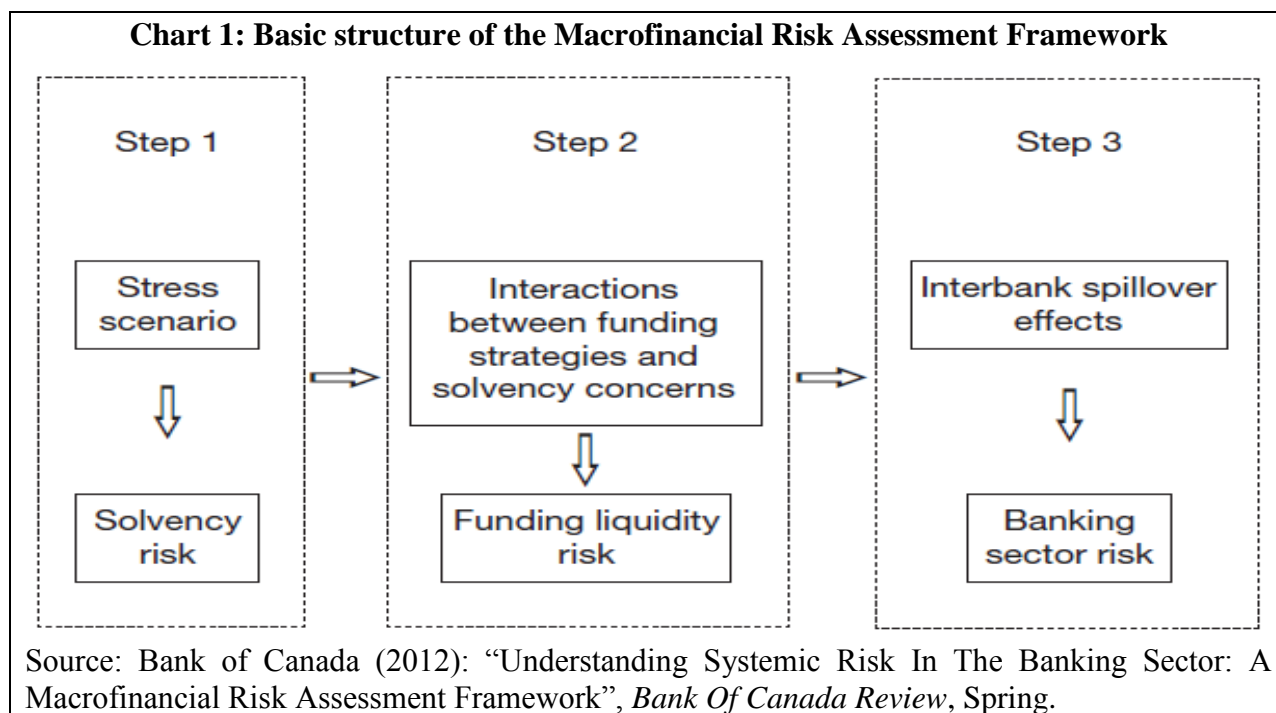# Macrofinancial Risks and the Indian Banking Sector

Prof. 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 emphasis on "Macrofinancial Risks" is a recent addition to the bankers' toolkit. Even to the academia, till the last decade macroeconomic risks and financial risks were often thought as distinct and these were conceptualized as silos. It was widely believed that macroeconomic risks provide the backdrop or the canvas while financial risks are the day-to-day existential question facing the banker – their independence was hardly considered. The global financial crisis changed all that! It is now widely believed there is a new class of risks called macrofinancial risks that affect the financial sector immensely across the class and that any stake-holder in the financial sector can neglect it at her own risk and peril.

But what constitutes the essential ingredients of a macrofinancial risk assessment framework? It is widely believed that a three stage framework whereby solvency risks, funding liquidity risks (including interbank spillover risks) and banking sector risks tend to emerge sequentially can characterize such a framework (Chart 1). Note that any macroeconomic shock tends to affect each of these three types of risks and interbank spillover risk adversely.

Chart 1: Basic structure of the Macrofinancial Risk Assessment Framework

Source: Bank of Canada (2012): "Understanding Systemic Risk In The Banking Sector: A Macrofinancial Risk Assessment Framework", *Bank Of Canada Review*, Spring.

It is in this context that the recently released Financial Stability Report (FER) of the Reserve Bank of India (No.6 of December 2012) gives an interesting perspective. Of the various issues that the FSR has flagged, those relating to global growth, downside risks associated with prolonged accommodative policies of the major central banks, concerns on domestic growth, systemic liquidity, fiscal consolidation, external sector vulnerabilities, gold imports and credit cycles in the Indian Economy deserve special mention. Illustratively in the domestic front the report categorically notes, "Amidst this global slowdown and uncertainty, the Indian economy remains sluggish, held down by slowing investment, weakening consumption and declining exports. The loss of growth momentum which started in 2011-12, extended in the current year with growth remaining below the trend, however, inflation continued to remain above the Reserve Bank's comfort zone. On the external front, the current account deficit (CAD) remains above the comfort level and the Indian rupee witnessed depreciation pressure. Another worrying development has been the reduction in the share of financial assets in household savings as households' preference for physical assets and valuables like gold seem to be rising, which is also adding to the pressure on the CAD". Thus, going forward there are four threats to Indian financial stability: (a) lower growth, (b) elevated inflation, (c) high fiscal deficit; and (d) current account deficit. Apart from the well-known fiscal risks, corporate sector risks (reflecting *inter alia* their high exposure to infrastructure sector) also seems to have gone up in recent period.

Figure 2: Macro Stability Map and Financial Market Stability Map
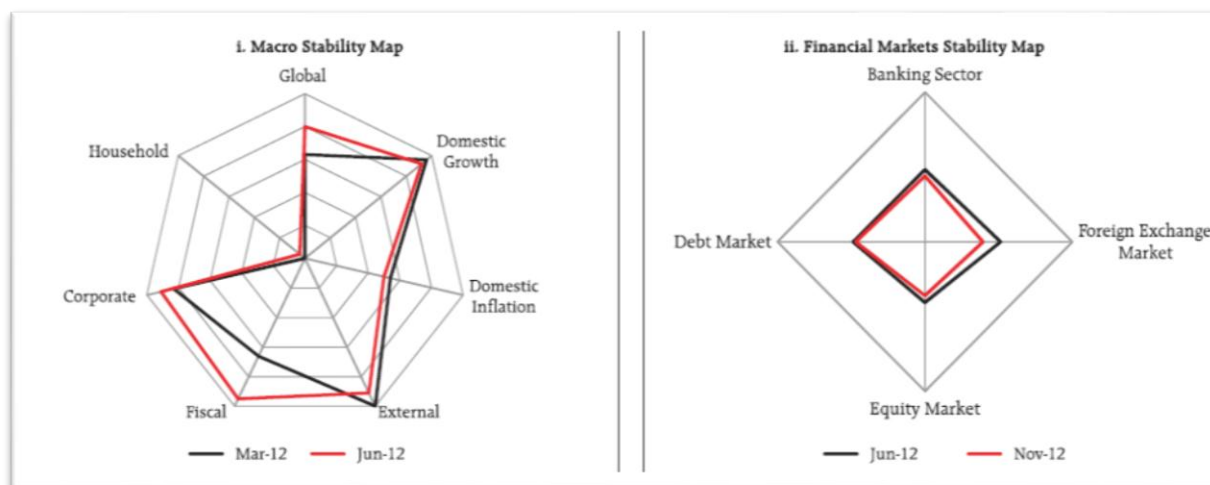
Source: Financial Stability Report, December 2012, RBI

Interestingly, Indian banking sector have very little to do with the genesis and containment of these risks and they are at the receiving end. Thus, no matter what happens to the efficiency of the Indian banking sector it is highly likely that in the event a less favorable macro scenario their performance is going to be affected. Coupled with adverse global scenario these are not good news for Indian banking!

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Structural issues with Benchmark Rates*

Dr. Golaka C. Nath

Dr. Golaka C Nath is a Senior Vice President at the Clearing Corporation of India Ltd. (CCIL). He has over 21 years of experience in the banking and financial sector, having previously worked with the National Stock Exchange of India Ltd. and Vijaya Bank. In the past, he has worked on a World Bank Project on "Developing Bond Market in South Asia". He has also provided secretarial service to the High Powered Committee on "Corporate Bonds and Securitization" appointed by the Ministry of Finance, Government of India.

Many internationally well-known banks have either provided for or in the stage of setting aside a large chunk of money to be paid as fines for their role in LIBOR (London Interbank Offer Rate) misrepresentation. LIBOR has been more of an institution than a rate for all these years. People in the financial markets and corporate world vouched for it as true benchmark for funding the position with appropriate risk premium added to the LIBOR. Some of the top bankers lost their job after the LIBOR scandal came out in public domain. The LIBOR is being revamped to ensure the rate is not manipulated by anybody. However, as most of the global inter-bank markets are OTC (over the counter) in nature, it will be difficult to think of a rate without polling. A revamped LIBOR will possibly remain a polling rate with higher level of transparency.

Financial market participants require an unbiased reference rate to price the financial products. The reference rates are used for many purposes – investors use the same for estimating the risk premia for investing in risky securities, banks use it for pricing the obligations in their books as well as to calculate the opportunity cost of money with the reference maturity, regulators use the same to look at policy rate synchronization with the market. Most of the floating rate products are priced using these reference rates. The reference rate is a representative rate for the market at a particular day or at a particular time. The said reference rate must be dynamic to capture the changing financing scenarios. As the financial markets have been evolving over a period of time, market participants use various formats to estimate the said benchmark rates. In India, National Stock Exchange (NSE) has been providing Overnight MIBOR/MIBID (Mumbai Interbank Offer / Bid Rate) since 1998. NSE also provides other tenor (14-day, 1-month and 3-month) MIBOR/MIBID. Currently, NSE disseminated overnight MIBOR is widely used in swap market, for floating rate instruments, etc.

In Sept 2006, the Indian market introduced a computer based system inter-bank call market called NDS-Call, in order to capture the Interbank Call transactions through electronic negotiations. This system was very efficient as market participants could see the entire market including his/her own market. As a result, a very large part of the market shifted to electronic system from the start. Currently almost 85% of the inter-bank call transaction happens through this channel. Interbank call market does not have a central counter party mechanism of settlement and market participants have to settle their own trades among themselves using central bank money. Counter-parties explicitly provide exposure limits against each other to ensure counter-party credit risk is minimized.

* Personal views of the author only and not the views of his organization

The Interbank (includes Primary Dealers) call rate represents the rates which banks charge to each other for lending and borrowing without any collateral. Inter-bank call market typically is very active at the beginning of the day as participants try to cover their positions in the morning. Typically by 10.00AM, almost 80-85% of the deals are concluded in the market. This time also synchronizes with the Liquidity Adjustment Facility (LAF) time of RBI – LAF window is used by market participants to park their surplus funds or borrow from RBI funds in case they have shortage at fixed rates.

Since most of the Call deals were executed in the NDS-Call electronic system, CCIL started using these rates to calculate the CCIL MIBOR-MIBID since Sept'06. There are two CCIL MIBOR-MIBID disseminations at present – one at 10.00AM and the other at 1.00PM. The second fixing is released at 1.00PM as there may be market movement after the LAF results are published at about 12.30PM and this dynamics is captured in the second fixing of MIBOR. The NSE MIBOR is a polled based rate while CCIL MIBOR is a based on traded rate. Since traded rate was not publicly available before introduction of NDS-Call, market had no alternative but to use the NSE MIBOR as a benchmark. There are many advantages of using a traded rate and hence the market should look at using a traded benchmark rather than a polled based benchmark. Unlike LIBOR, no public information is available on the polled information provided by Banks.

The data used in CCIL MIBOR-MIBID is pulled out of the NDS-Call system soon after 10.00AM and 1.00PM to calculate the rates. These rates are for only Overnight positions. Only on Fridays, the Orders for settlement on next working Monday or next Mumbai Business Day (typically 3 days) is considered as very little activity is carried out on Saturdays for both trading and settlement in Inter-bank market. The following steps are used to calculate the rates:

1. All orders that have come to the system from 9:00:00AM to 10:00:00 are pulled out at about 10:02:00AM from the NDS-Call system.
2. All Cancelled and Indicative Orders are dropped. No Reciprocal deals are included in the data.
3. Remaining Orders are outstanding orders and / or traded orders. For the traded rate, the same will be clubbed with the original order placed in the system i.e. if the lender has first placed the order followed by borrower after which the trade is resulted, then such order will be added to the lending side.
4. The data is then divided into two categories - Borrowing Rates and Lending Rates.
5. The Mean Rate and Standard Deviation is calculated for each category.
6. Any Outstanding Order Rates in the Orders book which is outside the Mean Rate + / - 3 Standard Deviations are considered as outliers and dropped from the data. If any trade has happened at a rate which is found to be the outlier, the same is removed from the data set for computation of the benchmark rate.
7. The weighted average rate is computed for Borrowing and Lending side separately with their respective standard deviations.

8. These rates are disseminated as MIBOR-MIBID to the market as about 10:10:00.

The way the CCIL MIBOR is estimated, it will be difficult to manipulate and it would reflect the true market picture in the rate. CCIL MIBOR-MIBID is estimated using the actual order book of the NDS-Call market and each order has the potency to result in a trade if not cancelled in time. It is easy to have a proper audit trail. Since the rate is on the basis of actual deals, it is very difficult to manipulate the same. The methodology is robust and scientific and takes into account the market realities. The historical data also shows the robust relationship between the traded rate

and CCIL-MIBOR. By comparing MIBOR with the weighted average overnight rate (WAONR) at various times, we can see which MIBOR is closer to the dealt rate.

Parameters	CCIL MIBOR 9:30:00 AM	CCIL DEALT WAONR 9:30AM	CCIL MIBOR 10:00AM	CCIL Dealt WAONR 10:00AM	NSE MIBOR 9:30AM	CCIL MIBOR over WAONR 9:30AM	CCIL MIBOR over WAONR 10:00AM	NSE MIBOR over WAONR 9:30AM
Mean	6.2551	6.2460	6.2580	6.2442	6.2693	0.0091	0.0138	0.0233
Std Dev	2.3640	2.3633	2.3837	2.3799	2.4105	0.0249	0.0475	0.1792
Median	6.5003	6.4956	6.4964	6.4790	6.4950	0.0038	0.0057	0.0121
Max	17.4164	17.4164	18.2271	18.3236	20.7300	0.6473	1.0729	3.3136
Min	0.1370	0.1330	0.1389	0.1312	0.1700	-0.0885	-0.3019	-0.5795

Table – 1: Descriptive Statistics of Rates and Spread of MIBOR over WAONR

Typically a dealt rate (traded rate) should be between offer and bid rate. It should be higher than bid rate but lower than offer rate. But how much higher and lower will depend on the liquidity condition of the market and market participants' ability to source funds by timing the market.

Table – 2: Rate Efficiency Factor (1284 days)

	CCIL MIBOR over WAONR 9:30AM	CCIL MIBOR over WAONR 10:00AM	NSE MIBOR over WAONR 9:30AM
No. of Instances MIBOR >= WAONR	1201	1021	976
Percentage	93.54%	79.52%	76.01%
Average spread (MIBOR-WAONR)	0.0093	0.0154	0.0479
No. of Instances MIBOR < WAONR	83	263	308
Percentage	6.46%	20.48%	23.99%
Average spread (MIBOR-WAONR)	-0.0039	-0.0077	-0.0546

It is fair for the market to switch to a dealt rate from the polling rate. This will help the market in the long run. Benchmark rates are most important aspect of financial markets without which no efficient pricing can be done. Derivative products are based on benchmark rates. Hence, the rate like MIBOR should be designed in such a manner that it has proper audit trail and extremely difficult to manipulate.

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