

# Outside investor lag: a predictive parameter to quantify hindrances in repairing NPA ripples in emerging economies

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## Key words

Bad loans, Asset Management Companies, NPA, Market- Making

## Abstract

*2014 and 2015 exhibited high NPLs in emerging economies. Despite strong vigilance, resulting repercussions could not be fenced timely. There were provisions made: some sufficed and some did not. In either case, beleaguered sectors continued (and are likely) to stay as they were. What regulatory authorities have, at least partially, missed is they are back to same situation where afflicted sectors cannot be neglected to diminish, private banks would hesitate to lend to them even now and it again would drill down to government, to make these sectors liquid. To a substantial extent we are trapped, and are in right state to modify our approach towards lending market. This paper views this banking scenario with a fresh pair of eyes in light of Treynor's model of 'Economics of Dealer Function'. Though the original model was established to analyse security-dealers, we have adapted the model to banks considering banks as 'market-makers' than mere 'businesses'. Market-making becomes pronounced in emerging economies since banks here also serve government's social agenda along with financial intermediation. We define bank-debt markets and fit Treynor's model to bank-debt markets. We introduce a parameter 'Outside-Investor Lag', to plumb repercussions of NPAs, and to identify endogenous risk. We suggest the Lag to be predictive input to Monetary and Fiscal Authorities to gauge how long it could take for bank-debt markets to retain liquidity.*

## Introduction and Motivation of Study

There have been a number of steps in the recent past, in various countries, at national and international level to ensure that banks either prevent bad loans or recover from them. The former of the two objectives is attended by robust credit analysis, norms of capital adequacy and regulatory decisions to ensure that banks have appreciable exposure to liquid assets as a proportion of its liabilities while the latter gets manifested by flourishing Asset Reconstruction Companies (or Asset Management Companies), bail-outs and capital infusion by the government. What stands common in both these cases, is the theme of governance. The common aim of such steps and measures is to perpetuate the functioning of banks as 'stand-alone companies'.

Though these steps revive the banking 'business' system, we fail to realize that there are two major aspects beyond this which stand substantially less attended –

- Market making ability of banks and

- Predictive nature of parameters indicating market making ability.

These aspects are not disparate and are to be looked upon with a common approach. In case of emerging economies, the two aspects become crucial anchors of banking system against default risk upheavals because unlike developed economies, banks here are more than mere agents of financial intermediation. They carry the additional responsibility of achieving the government's social agenda. With this backdrop, let us peep into the factors touched above in detail.

### 1.1 Market making ability of banks

From a macroeconomic perspective, a bank is not just a stand-alone business. It is a market maker: making markets between surplus participants of the market i.e. Depositors and the deficit participants i.e. the corporate borrowers. (There are other borrowers but we shall deal only with corporate borrowers in this paper.) In absence of these market makers, fund raising ability of companies takes a hit. Production recedes and National income is an obvious sufferer. In light of quantity theory of money, velocity of money abates, hitting GDP adversely.

### 1.2 Predictive nature of parameters indicating market making ability

Talking of the traditional method of measuring bank debt market liquidity, it has been based on NPAs in the past. This has been the classical paradox of decisions that need to be taken on PAST data for actions that will be done in the FUTURE. But what data other than 'past' data could make sense? The puzzle has always been to see if there is a PREDICTIVE index that can be correlated with the present and then can be suggested as

the parameter to LOOK for. In this paper, we introduce a parameter, **the outside investor lag**, which can be used to check how far an economy stands from resolving its NPA woes. This could work as an input to predict performance of the industries contributing to bad loans and could be used to relax or tighten international capital controls to improve liquidity of debt markets. The Outside Investor Lag would give insights about market making ability of banks, focused on sectors of the economy diseased of a possible imminent bankruptcy. We dive deeper into the construction of this parameter in the section 'The Outside Investor Lag'.

### Literature Review

Allen, Boffey and Powell discuss, in paper "The Impact of Contagion on Non-Performing Loans: Evidence from Australia and Canada" that the endogenous variables namely, Size of balance sheet of the bank, Balance Sheet Equity, Return on Equity, and Balance Sheet Loan ratio to total assets; fail to be significant reasons for growing impaired assets, in Canada and Australia. Regression model using these parameters as explanatory variables suffices to only 30% ( $R^2$  value).

This leaves space open for further research as to, what more could contribute to an NPA figure of banks. Though the same study attempts to answer the quandary by stating exogenous contagion variables as the possible solution, we posit in this paper that there is more to ferret and discover in the endogenous variables list before moving to the exogenous ones. This market discovery and identification is a major step, which if timely taken, could keep liquidity of debt markets intact, and prevent banks getting impacted due to loan failures. This deals with presence and strength of a value based trader in bank debt market and will be discussed ahead.

### 2.1 Are we asking all the right questions?

If we glance through the macro-prudential measures and regulations, be it Liquidity ratios (LCR) prescribed by the Basel Committee or the ones touching upon the treatment of Loan provisions recommended by Central Banks, their objective falls into one of the following:

- To encumber bank's exposure to risky assets

- To have enough liquid assets/provisions to deal with unexpected defaults and deposit withdrawals

- To ensure all risk in assets gets reported and no stressed loans are swept under the carpet.

However, the question, we, at times, miss to ask is whether the measures taken to endure banks as businesses also improve their market making ability. Market making ability is judged neither by endurance of banks nor by their profitability. It is rather indicated by the velocity of money, the rate with which money changes hands

- from surplus holders (depositors) to banks,

- from banks to companies as loans and then

- back from the companies to banks as repayments.

We refer the last two legs of this series of debt changing hands as '*lending market*' or '*bank debt market*'. A smooth functioning of these two legs is vital to keep velocity of debt enough. At a given time, often it is a sector of economy or a few, where the major chunk of bad loans lies. For instance, in India's present case, RBI financial stability report shows that five sectors – mining, iron & steel, textiles, infrastructure and aviation – that together constitute 24.8 percent of the total advances of commercial banks, have a share of 51.1 percent in the total stressed advances.

In case of companies failing to service their borrowed obligations, Non-Performing Assets (NPAs) are eventually written off from balance sheets of ailing banks. Though new money (either through capital infusion or sale of assets/ loans) comes in to engender resurgence of banks, the market making in the distressed industry ratchets down. Banks revive and may continue to grow by lending to other sectors and by insulating themselves from affected borrowers in future. However, the infected sector takes a long time to make a comeback with reduced market makers.

On the front of lending strategy of commercial banks, this marks a conflict between the motive of reviving sectors parched of liquidity and the motive of keeping banks protected from the same sectors. The former demands lending; the latter demands holding it. As an example, the biggest Indian bank's Chairman recently stated that though the regulator has allowed lending to distraught industry, and that it was required in order to revive, most banks do not have any incentive once a borrower company has been marked as an NPA. With this problem at hand, considering banks as *market-makers* apart from businesses, we define a liquid market for loans/ debt, establish banks as linchpin of these markets and subsequently, with help of Economics

of Dealer function, make an attempt to realize significance of value based traders in price discovery and subsequently, price recovery, of loans in the market.

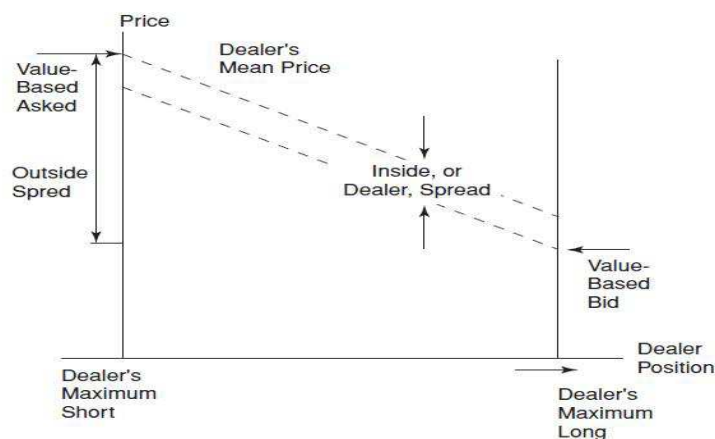
### 2.2 Defining a Liquid Market

A **liquid market** is "one in which an individual transaction does not disrupt the continuity of the market". More specifically, it is a market in which you can buy and sell **quickly, in volume, and without moving the price much**. It means that the price curve of traded commodity does not have air pockets or jumps with respect to time. Inspired by economists Hicks and Prof. Perry Mehrling, we consider example of a supermarket selling vegetables with no printed price: which means the seller has the privilege to flex the price. The supermarket shelf is full with vegetables when the day begins. It gets depleted as the day proceeds. However, the next day, the shelves are replete with the same commodities and to our surprise, the same price. No points to guess that there is a good reason for store owners to keep the price stable. However, let us notice that in this example all three checkboxes of a liquid goods market are ticked.

Moreover, the key element engendering this liquidity is 'inventory management'. Store-owners have a huge stock of the vegetable, out of which a little sample is available for sale at an instant on shelves. However the price per unit is calculated and decided keeping in mind the entire stock. As the stock on display gets sold, the inventory gets called for. Not only this, as the inventory in at the store exhausts, inventories with the wholesalers, dealers and in due course, the manufacturer are used. A key objective, among others, of a sound and supple inventory management system is to keep the price stable in short run.

Though the term inventory is native to supply chain management, it is pertinent to financial markets too. In a stock market, retail investors trading in securities are analogous to customers buying vegetables in a supermarket. Security dealers are analogous to store dealers and wholesalers who have inventories piled up. The difference, however, is that security dealers have two sides. They face security buyers as well as the sellers. Thus, they carry an inventory of cash and an inventory of securities. The positions taken by dealers are converse to what the retail market generally wants. The dealers cut down their inventory of cash to buy securities from a retail investor who is in a hurry to sell securities and they replenish cash inventory (and cut down the inventory of securities) when a retail investor is in a hurry to buy securities.

The time at which these two transactions happen is very likely to be different and in this interval the dealer retains the inventory. The carrying cost of this inventory is the risk taken by the dealer: risk that the inventory of securities might fetch less cash in future if prices fall and the risk that the inventory of cash would fetch less securities in future if the prices rise. Thus, as Jack Treynor states, a dealer facilitates market liquidity by intermediating between transactors to whom time is important in exchange for charging buyers a higher price than he pays sellers.



**Figure 1: Economics of Dealer Function**

The figure above shows the traditional Treynor's model along with its constituent elements. A dealer's balance sheet is made of capital on the liability side and has inventories of Cash and Securities on asset side, which are funded or sourced by Capital. Addition to existing Capital facilitates the dealer to expand one or both the inventories. Thus, as a crucial takeaway, expansion of a dealer's balance sheet adds elasticity to the stock market and augments market liquidity. More the capital, more is the ability of the dealer to absorb shocks in supply of cash or securities and more is the dealer's potential to maintain continuity of prices i.e. market liquidity.

### Setting Treynor model for banks

A bank is also a dealer which carries an inventory of cash represented by deposits and provisions. It also carries an inventory of securities represented by loans, statutory liquid assets and investments. They build the deposit cash inventory when people/depositors do not wish to keep cash and build inventory of loans by lending when people/companies need liquid cash. An effective way to understand this is to imagine a lending market without banks. If a business corporation needs to raise a debt, it would directly approach retail customers as borrowers who have surplus cash. A common man does not possess the right skill-set to measure the risks associated with lending his hard and hardly earned money and would be likely to refuse such an offer. Furthermore, it would be difficult for the corporation to collect small amounts from a number of people to raise a large debt. There would be no markets (or illiquid markets) in such a case and businesses would find it inimical to grow.

The price of the securities (loans here) is represented by interest rates, which is the reward the banks get for embracing a risk. However, the risk here is different from the one in case of securities. Translating Jack Treynor's statement to the context of banks, a bank, as a dealer, facilitates market liquidity by intermediating between 'depositors' who are masked from the reality that their money is not entirely available to them, and 'borrowers' who now do not have to pool in funds from unwilling yet potential lenders. For taking up the risk that a higher inventory of loans could make depositors' demands for their cash difficult to service, they charge the buyers of cash (i.e. borrowers) a higher price (interest) than they pay the sellers of cash (i.e. depositors). The interest is also a fee, the bank charges from the buyers of cash to pool in the funds. Compared to a security market, the transactions in lending-borrowing business are less and less frequent. So, in order to observe continuity of prices (interest rates), we would need to spread our analysis over a long period.

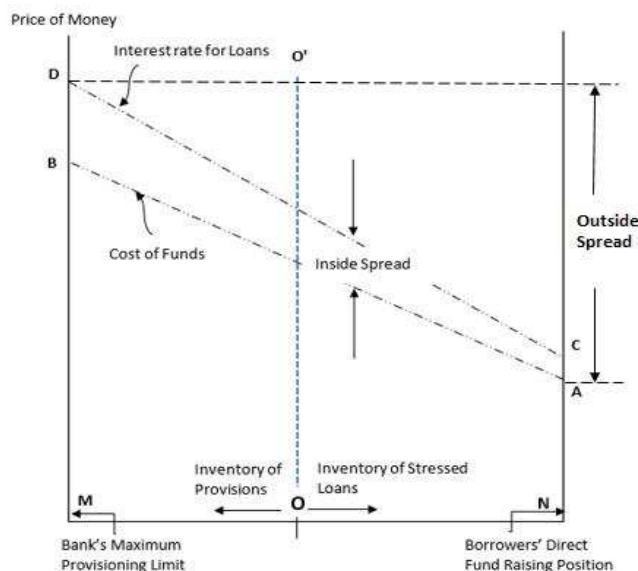
### 3.1 Limiting Economics of Dealer Function to Stressed Loans

It is cash inventory which keeps the price of securities (i.e. loans) sold by the bank (represented by interest rates) continuous and keeps the market liquid. We should note that it is a one sided inventory. Cash can be converted to loans if there are borrowers. But loans are not tradable. They have their fixed repayment schedules. Their conversion to cash is not at the will of the bank.

However, if we hedge our analysis only to risky assets, we have a two faced inventory. Initially, the bank has an inventory of cash emanating from deposits and capital. Using this cash for disbursing loans to a company, the bank consumes cash inventory and builds an inventory of loans. As the risk element in a loan grows and becomes declassified to the bank, provisions get added to the cash inventory. Thus with no change in the present loan inventory level, the cash inventory level rises. This is a difference, when compared with the original Treynor model for securities. There, every change on one side was complemented by a converse on the other side; here

expansion of elasticity to see expansion discipline

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it is not. Thus, provisions cause balance sheets, but bring in no themarkets. It is rare to of balance sheets causing instead of elasticity.

trading soupcon of loans is in ARCs. So the inventory of securities isthe inventory of (irrespective of whether they are NPAs or not). It is important to trading soupcon is there *only* ARCs and other similar

Figure 2: Economics of Dealer Function for Banks

entities which we shall refer to as Outside investors. The model should give a sector specific snapshot of a bank at a time when it senses that the market for the industry in discussion, is not in upswing and that there is a risk of loans getting bad loans and bad loans getting NPAs. Thus the moment a loan or an asset is identified as risky, irrespective of whether it is partially repaid, totally unpaid or even when repayment time is away but the risk in the debt is visible, it enters the framework under discussion.

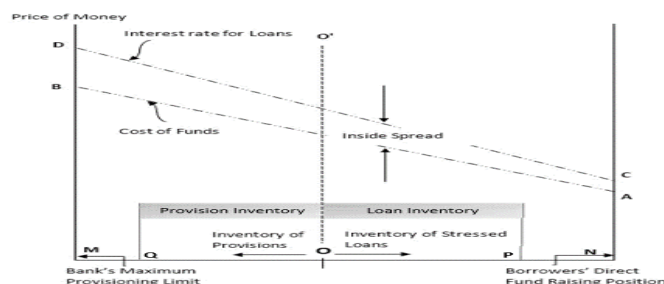


Figure 3: Economics of Dealer Function for Stressed Banks Assets

The loan inventory on the right, starting from point O and heading towards N, represents the amount lent to the sector or companies in question. The default cash inventory on the left, starting from point O and heading towards M, before lending, indicates the loanable deposits there with the bank. Once lent, the cash inventory is zero. The length of 'Loan Inventory' could be anywhere between Zero and distance 'ON'. But in dark periods of economy, provisioning becomes important or rather necessary. So, if the bank provides money tantamount to risky assets, there is a cash inventory as well. Here comes a 'Policy aspect'. If the central bank mandates that banks need to maintain provisions for 100% of risky loans, the cash inventory position of the bank is 100% on the left. That is a matched book position. It means that the bank is ready to absorb the shock of non-repayment of 100% of risky loans. This can be represented using the Economics of Dealer function. In the figure above,  $OP = OQ$ .

### Treynor Model Recipe for Bank-Debt Market

Similar to the Treynor model for security dealers, we have

Position limits (2) Inside spread, and (3) Outside spread

for the banks as market makers. Let us have a look at the ingredients of the Treynor's recipe.

#### 3.2.1 One. Position Limits

The *position limits* are the limits of the inventory of bad loans as well as that of the provisions. In the model figure 3, the distance OP represents the Loans inventory position limit and ON represents the Provisions inventory position limit. Please note that the maximum OP can be stretched to, is ON and the maximum OQ can be stretched to, is OM. We look at what determines points M and N, later in this section. Position Limits are decided by:

Capital buffer with the bank

Adequate long term capital boosts risk taking ability of a bank. Higher the access, better is the propensity of the bank to stretch its position of inventory of loans.

Risk Taking ability of the bank

A bank with higher risk appetite would augment its loan inventory even in stressed economic scenarios. A comparatively risk averse bank might want to abstain from lending to the stressed industry in near future or might even want to sell off its current non-performing assets. Such a bank is likely to have a net position inclined towards cash side when compared with a counterpart with higher risk appetite.

Funding liquidity of the bank

It is generally defined as the ease with which a bank can replace its untimely withdrawn deposits with capital. In this context funding liquidity would be defined as the ease with which a bank can raise provisions if a loan untimely declassifies as a stressed loan. Higher the sources of easy capital to the bank, more will be the position of inventory of provisions (cash). Market liquidity and interbank interest rates play a role in determining funding liquidity. As dealers, banks are buyers of Funding Liquidity, which they need, to be efficient market makers.

### 3.2.2 Two. Inside spread

In this context, 'Inside spread' is defined as the difference between the interest rate at which a bank lends a risky loan and the cost of raising funds and provisions for the same loan. Thus, in wake of a tightening exogenous change, a rise in cost of raising provisions in comparison with the rise in lending rates would cause the spread to drop. In principle, a bank, after its due diligence, would have an offer price of loan or a lending interest rate. In absence of a risk associated with the company or industry, if provisions are zero, its cost (of raising provisions) is nil. The spread equals the lending interest rate minus the cost of funds. However, if a company from a stressed industry approaches a bank to raise capital,

The bank would want to charge a higher interest rate as this loan entails more risk and encumbers bank's liquidity.

The bank would set aside provisions depending upon the risk level of the loan.

Normal risk free lending spread + risk premium + cost of provisions = Spread in Risky loan. Two offshoots sprout out of this analysis.

The input cost for the company has gone up due to higher cost of borrowing. Depending on the industry in question, this may have far reaching effect on overall prices in the economy. For example, if this is the power sector, and if higher borrowing costs are going to get reflected in higher power prices, this would cause an upward pressure on a plenty of other companies since power is a basic input to all sectors.

The bank has an additional cost (of provisions) to be covered. A noteworthy point here is that unlike the cost of funds (deposits), the cost of provisions is higher since provisions are a form of capital. This feature of provisions is pressing enough to push interest rates further up.

### 3.2.3 Three. Outside spread

This factor, extrinsic to boundaries of banks, but within the same economy, is extremely decisive in determining the price of money. The lower limit is represented by point A and the upper limit by point D. We also need to study the determination of position limits posed on inventories of the bank, due to the outside spread. The position limits are represented by OM and ON.

#### The Lower Limit (ON)

In flourishing business cycles of the sector, when low interest rates denote growing trust between the lenders and borrowers, the disparities between rungs of the ladder of money protract. While this happens, the banks ascend towards the point N on x-axis in the model figure. As a result, there comes a stage where corporations (borrowers) may see less incentive from leveraging their balance sheets (on account of low interest rates). They may find raising funds economical using equity or reaching the lenders (depositors of the bank) directly through commercial paper and corporate bonds. Thus, here is a little default risk to banks. Little, because the share of borrowers going direct is less. The risk of losing business, which very much is there, does not inhibit market making function in the economy. The ripples associated with the lower limit (ON) are less severe and so, the focus of this research is majorly on the upper limit, dealt in next paragraph.

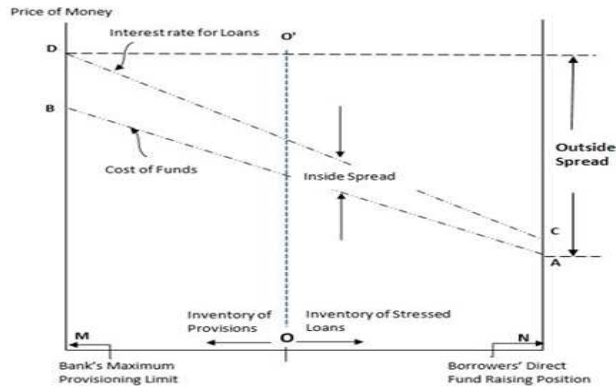
#### The Upper Limit (OM)

In security markets of shares, behind the scenes, there are some deep pockets like the pockets of Warren Buffet. They are the value based investors who get motivated by reduction of a security price to scrap. They pick up the stock when even the dealers are exhausted of their position limits. Analogous to this, in banking debt market, when the bad loans surge and NPAs go up, Performing Assets are under an increased pressure to perform. Consequently, for the new loans, interest rates go up. Up to a certain limit, banks can afford to look at the situation as an opportunity to charge a premium to lend to affected sectors for the risk intrinsic to them.

Point M denotes this limit of a bank. As the stress in lending reaches this point,

Arranging higher provisions than before becomes a necessity for the banks.

The option of lending at existing interest rates does not cover cost of funds, cost of provisions and risk incurred by the bank. In other words, expected inside spread rises.



**Figure 4: Outside Spread in Economics of Dealer Function for Bank Debt Markets**

Consequently, banks find it infeasible to make the markets anymore and are expected to look for laying off their inventory of loans. Thus, a higher supplier of liquidity, the outside investor, sets in. This could be The government, or Asset Reconstruction Companies.

This constituent of the Treynor's model has to have a piquancy of a value investor, someone who invests contrary to the bank, just like the bank takes positions converse to the ones taken by depositors and borrowers. In essence, the value investor is someone who is able to locate or create future value, even in a company dripping wet deeply into a bad loan. The dealer (bank in this case) knows that if interest rates cross the upper limit, he can get his inventories of loans replaced with inventory of cash from this outside investor. This makes the dealer continue making the markets and pile up inventories of loans once again. This also keeps borrowing interest rates within a controlled limit.

### 3.3 Outside investor: Why should he exist?

This section expands on the necessity of the outside investor from an economy's perspective. It is indispensable for an economy which is susceptible to loan failures, to have such deep pockets in the form of outside investors. In absence of it, a dealer would hesitate to carry inventory and prevent providing market liquidity to a substantial extent. One way to appreciate what outside investors do is to think about what would happen without them.

In situations of subdued market making, a depositor might have to wait for the borrower to repay him where the timeline of repayment would not match the continuum of depositor's demand, which may elicit depositor to charge a higher interest rate. Alternatively, a borrower might have to wait for funds to be available for borrowing since the depositor(s) might not have pooled the needed sum timely to match the borrower's need, thereby making the borrower demand a lower interest rate. Lenders would be forced to lower the rates then. Such disproportions and disparities in supply and demand of funds would result into frequent hops in interest rates making the market difficult to function and might induce torpor into economic activity.

Besides, if credible and robust outside investors are present, even when stress in the sector or industry has not reached its peak, but is anticipated with an uncertainty, banks, as dealers, know that if the anticipation turns real, the inventory can be laid off. In such times of anticipation, this makes the banks embrace some more risk and prompts them to continue making markets longer. In absence of such an investor, banks may succumb to the choice of ceasing market making at an earlier stage. In other words, length of OM in figure 6 would contract.

### Do we have the right outside investor?

To answer this question, we first need to know how a right investor is expected to be, in the context of this paper. The answer lies in the purpose for which we are researching – To maintain continuity in prices of money and to maintain market making ability of banks.

If we see government bailouts and Asset Reconstruction Companies as outside investors, two important facts transpire.

They work to just defer the problem rather than solving. If a sector is grief-stricken, how does transferring the payables from bank to ARC alleviate the problems? Bailouts may resurrect a bank, but do they resurrect the market making in the marred sector as well? They do not. This is what history has shown us.

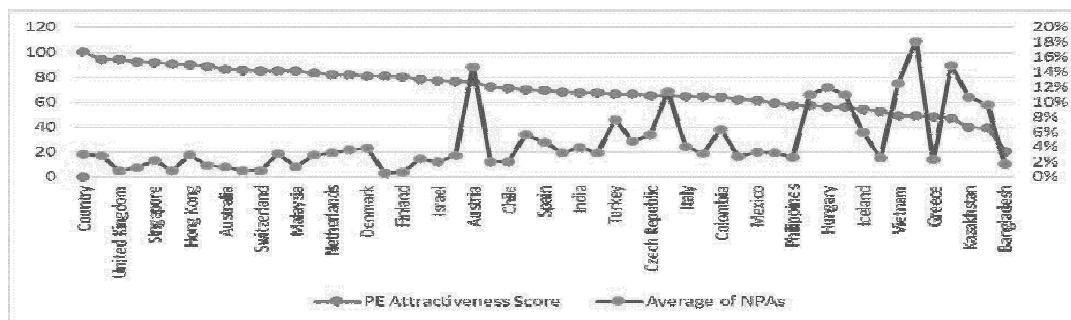
The deference of repayment comes at a great cost giving rise to a different spiral. The bailouts result in fiscal deficits; and ARCs hardly pay 100 percent in cash. They issue cash receipts which, similar to loans, are promises to pay cash in future. Banks then have better assets to back their liabilities, but not good enough to improve liquidity of bank debt markets. The situation with ARCs is a subdued version of securitization.

The right outside investor has to have the essence of value investing. Private Equity funds are the right candidate for this. It is their business. The differences, in the context of 'Outside Investing', between what it is now and what we expect is as under:

A value investor, here, does not only buy ailed securities, but is also expected to play a role in revival of the borrower. This just does not defer the problem, but also approaches the root of the issue.

Unlike governments, a value investor is not incurring sunk costs to purchase loans. He is investing into it, just to generate returns in future. He has a selfish interest in being an outside investor, unlike government bailouts. This makes more economic sense and gives superior reasons for the investor to source market liquidity.

The presence of PE as a source of liquidity has been identified and is in practice in countries including India, European nations and China. However, mere existence of PE does not suffice. There is a strong hindrance of **outside investor lag**, which prevents the presence of PE from taking effect on ground. Before we deconstruct the term, let us have an empirical view. The figure



**Figure 5: Plot of PE Attractiveness Score and Average NPAs**

Above does not conclude results, but there is a considerable negative correlation between PE attractiveness and growing NPAs. Correlation: -0.53. Source of PE Attractiveness score: The Global Venture Capital and Private Equity Country Attractiveness Index (IESE, EY EMLYON). Source of Average NPAs: World Bank Data

#### 4. The Outside Investor Lag

With reference to the Treynor model figure, let us take a typical case of stressed loans, where a bank sees tremendous default risk in loans already lent to an ailed industry. In recent times, a good example would be the case of Steel industry since it is witnessing some structural hindrances, worsened by demand woes. As soon as banks detect the risk, the central bank mandates higher provisioning for the loans. The provision inventory starts building up leftwards from O (Figure 6). The stressed industry continues to be afflicted. Interest rates for lending to the industry rise and reach D': thus provisioning becomes dearer for the banks. Banks find further lending extremely risky and further provisioning inordinately expensive. Banks seek an outside investor to exchange loans with cash, for which banks discount the value of stressed loans.

##### 4.1 The outside Investor Lag and Macro-prudential regulations

A question for the fiscal and monetary bodies is that **at this stage of debt cycle**,

Are the prices of money right to motivate an outside investor?

Are the prices of bank-debt lending markets capable or high enough to transmit the same information to capital markets? PE industry reads capital markets!

If this transmission mechanism is not efficient, it results into a lag. At point Q, banks stop making markets. But it is point M, on which the value investor would be motivated to invest. Unfortunately, M is never reached in reality. To bridge the difference QM, it takes a lot of time:

Time for the value investor to realize that the price benchmarks in the markets are not same as per his yardsticks;



Time for value investor to read the right information about the industry and companies;  
 Time for central banks and governments to make suitable prudent policy changes, suiting the situation,  
 for getting the value investor into the market and finally,  
 Time for due diligence and deal making

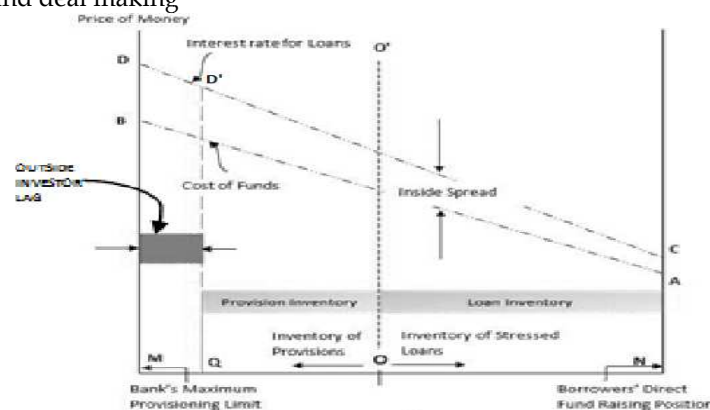


Figure 6: The Outside Investor Lag

In this research, this time gap for which market makers wait (though unknowingly) for apt outside investors for handing off their inventories of loans is jargonized as *Outside Investor Lag*. It is this outside investor lag which engenders discontinuity in lending interest rates. The industry suspends in limbo during this outside investor lag. This is the need where macro-prudential regulations play obligatory role. Please note that we are **not** referring to the traditional jargon of outside lag as the amount of time it takes for a government or central bank's actions, in the form of either monetary or fiscal policy, to have a noticeable effect on the economy.

#### 4.2 Empirical evidences for presence of Outside Investor Lag

The facts and verbiage below is exactly as per reports of financial analysts. The purpose of including these excerpts is to realize the requirement of defining and measuring a macro-economic parameter denoting how severe is the 'outside investor lag' in given geographies/ economies.

##### 4.2.1 The Case of India

As per data released by RBI (in the graph below), there has been a sharp rise in the quantum of NPAs reported by banks. The RBI has been keen on hawking bad loans and pursuing ARC by

Marking fee to recovery of bad loans than linking it to outstanding value of SRs.

Reducing recovery strategy planning duration to six months from a year.

Growing NPAs in Steel, Infrastructure and power sectors in India has been causing tremors to the respective industries and the banking sector as well. The risks in loans was evident from 2013. The RBI had made a few key changes in the ARC regulation that opened the gates for private equity in the ARC market. Though it was a prudent change apt for the situation, its implementation in entirety had some hindrances.

Kohlberg Kravis Roberts (KKR & Co.), a PE contender would have to *wait for about two years* to get a license in India for establishing an ARC. Fiscal Regulation could have been prudent in providing early clearances. These two years were a potential *outside investor lag*. On a temporal continuum, it is about three years which took KKR to quench the parched ARC with capital.

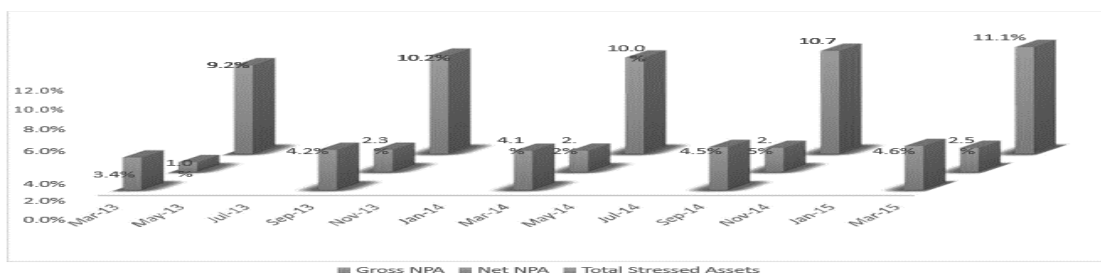


Figure 7: Growing Stress in Bank Debt Market in India

\*As percentage of total advances; (Source: RBI, EY Report: Unmasking India's NPA issues – can the banking sector overcome this phase?)

The bankruptcy regulation and ARC framework has been in place since *almost a decade*, but has not been efficacious to alleviate negative influences of the outside investor lag. Consequently, the manifestations of reduced market making are evident through repeated talks (interviews of economists from SBI and Axis Bank) on *reduced risk appetite* of banks' lending especially lending to the sectors which are still stressed.

#### 4.2.2 The Case of China

Chinese banks reported 982.5 billion yuan (\$154 billion) in problems loans as of March 31, 2015 up from CNY646.1 billion a year earlier according to official statistics from the China Banking Regulatory Commission. However, the *level of distressed-debt deal activity stands in contrast with the amount of deals required to sustain banks and opportunity available for PE firms*.

As per co-founder of Clearwater, a firm active in deals of distressed debt, it is not a question of How big the opportunity or the market is. It is about of buying good portfolios *at the right price*.

#### 4.2.3 The Case of Europe

According to reports, European banks have been *sitting on a large number of bad loans* and have already sold off record-breaking numbers. *The sale of loan portfolios increased by 133% in 2014*. The total amount of loans sold stood at €49 billion at the end of the year.

At the start of 2014, Financial Times shared that banks had around €264 billion of "non-core" real-estate loans still to be sold in October, with almost 40% remaining inside Spanish banks. *Banks in Spain have been too slow* to sell their bad real-estate loans, according to many experts, even

Though last year saw the country almost double its efforts to shed off bad loans.

As per another report by Financial Times, Italy's two biggest banks (UniCredit and Intesa Sanpaolo) teamed up with a US private equity house and a restructuring adviser (Kohlberg Kravis Roberts and Alvarez & Marsal) to pool some of their bad loans into a vehicle that will provide fresh capital for the struggling companies. *The move is a rare example of European banks teaming up with one of the many private equity houses* and hedge funds circling the continent's financial system in search of opportunities to snapup assets from capital-starved lenders.

### 5. Conclusion: A Modest Proposal

The observations above, especially the parts highlighted, uphold a reality that in several significant economies, either the need of right outside investor in bank debt market is not appreciated or is realized only when there is an alarming delay causing a mild contagion of inactivity. The outside spread is often considered to be non-existent or considered ignoring outside investor lag. Distance OM in Economics of Dealer Function is often taken to be narrow until the stagflation starts appearing conspicuously. Even then, the realization that cause for the economic lethargy had a reasonable relationship with the outside spread remains unattended and is let free to recur when the conditions are palatable for it to breed. Market making is a vital factor to economic growth. We have seen how this aspect remains partially attended in the parameters reported and is missed, in part, in analysis done to project future outlooks.

We ask same questions as we did in 'Introduction'. *The traditional method of measuring bank debt market liquidity risk has been based on the NPAs in the past. This has been the classical paradox of decisions that need to be taken on PAST data for actions that will be done in the FUTURE. Is there a PREDICTIVE index that can be correlated with the present and then can be suggested as the parameter to LOOK for?* We now have answers. In light of Treynor Model, we now appreciate the importance of Outside Investor and the repercussions of having a substantial 'Outside Investor Lag'. Thus, it should be necessary for economies to have the outside investor lag measured and reported periodically. Just the way NPAs are reported and work as a key parameter to gauge future economic outlook, plumbing Outside Investor Lag shall work as a predictive scale to measure how far is the banking system to revive its market making ability. Based on the outside investor lag, capital flows can be encouraged or discouraged using macro-prudential regulations.

### 6. Direction for further Analysis

The research in this paper establishes the need of the predictive parameter of 'Outside Investor Lag' as a means of identifying risk, endogenous to a given sector in a particular economy. Between this identification of risk and regulatory response from policy makers, there lies a gap of seeing the effect of the outside investor lag

in right units. As of now, we see the outside investor lag on the scale of cash and loan inventories as a percentage of position limits.

The next step would be to transform the same notion, Outside Investor Lag, into units of time: to have a parameter reported intimating analysts and policy makers know that for a given sector in a given country, which if currently debt-stressed, would take 'this' duration to make banks start laying off their bad loans to an outside investor and resume market making. Translation of units would entail a number of related factors idiosyncratic to a sector or an economy.

### 7. Limitations and Pointers for further analysis

Intuitively, NPAs mar banks as market makers and not just as businesses. However, it is also needed to see the same happening in numbers. Since our focus is on the impact of a beleaguered sector on banks, the response variable in this research is one which indicates

Liquidity of

Debt Market where the participants are

Commercial Banks and Companies

In a given sector.

Please note that this is different from 'Measuring liquidity position of a bank', 'Measuring liquidity position of a company in a troubled sector' or 'Measuring liquidity of stocks or bonds of companies in a troubled sector.'

There lack established parameters revealing liquidity of debt market. The closest analogy, we can get to, is to think of liquidity of a company's stock on the retail share market and gauging it by

Analysing the variance in bid-ask spread over a continuous period of time.

Analysing the variance in volume of trade over a continuous period of time.

Similarly, in a bank loan market, though the trades are not quick enough to have a dense daily list, inundated with transactions, to measure liquidity, we would need to consider a wider timeline and pick up similar data points spread across quarters. Response variables required are:

*Interest rate:* Closest proxy for the bid-ask spread is the interest rate offered to companies of a troubled sector. A monthly or quarterly record of interest rates on loans can be used.

*Outstanding credit:* A parameter close to the 'volume of stock market trades' would be the 'Outstanding credit by industry', arranged by the same interval as the interest rate.

As a limitation, we state that the Central Banks and Industry consortiums do not share the two required indicators of bank-debt market liquidity publicly across a considerable period of time.

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